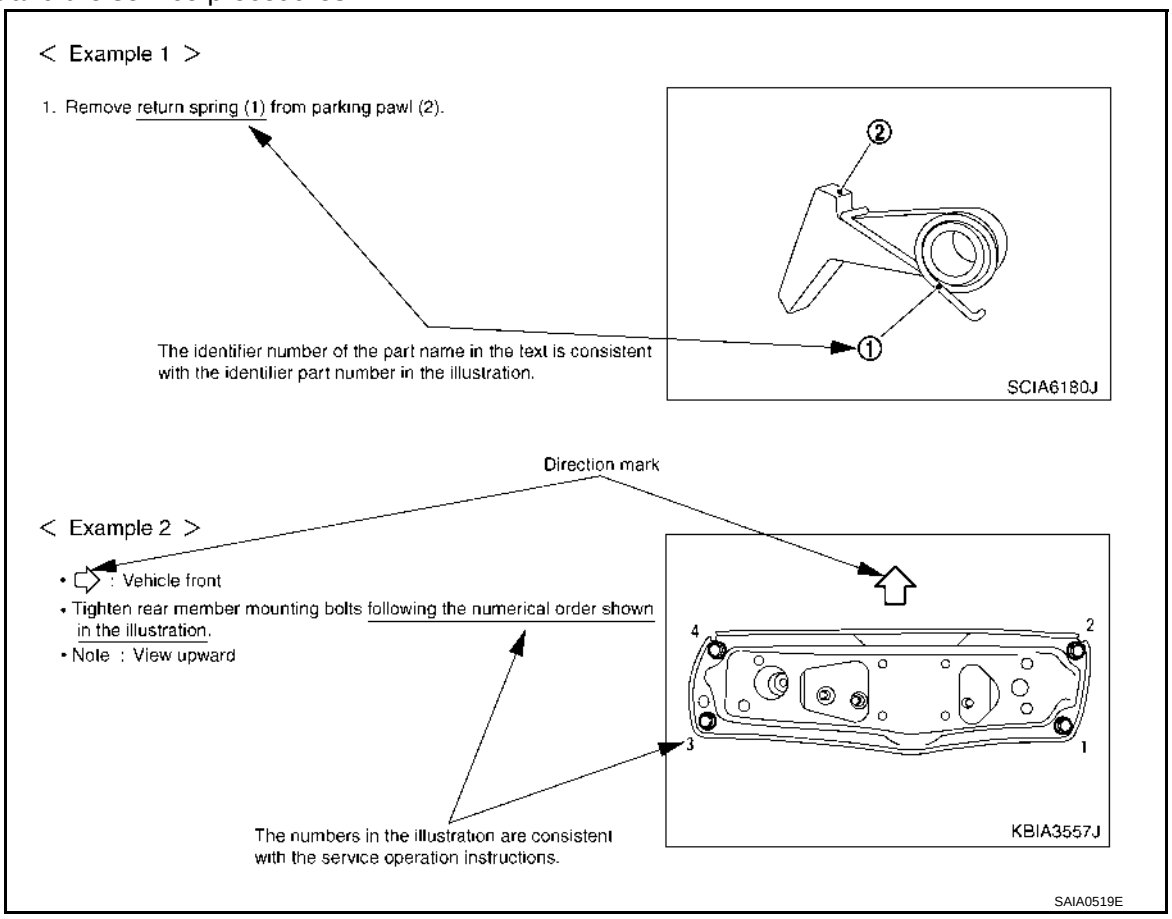
Relation between Illustrations and Descriptions

INFOID:0000000009061026

The following sample explains the relationship between the part description in an illustration, the part name in the text and the service procedures.



Components

INFOID:0000000009061027

- **THE LARGE ILLUSTRATIONS** are exploded views (see the following) and contain tightening torques, lubrication points, section number of the **PARTS CATALOG** (e.g. SEC. 440) and other information necessary to perform repairs.
  The illustrations should be used in reference to service matters only. When ordering parts, refer to the appropriate **PARTS CATALOG**.
  Components shown in an illustration may be identified by a circled number. When this style of illustration is used, the text description of the components will follow the illustration.

ABBREVIATIONS

Abbreviation List

INFOID:0000000009061034

The following **ABBREVIATIONS** are used:

A

ABBREVIATION	DESCRIPTION
A/C	Air conditioner
A/C	Air conditioning
A/F sensor	Air fuel ratio sensor
A/T	Automatic transaxle/transmission
ABS	Anti-lock braking system
ACCS	Advance climate control system
ACL	Air cleaner
AP	Accelerator pedal
APP	Accelerator pedal position
ATF	Automatic transmission fluid
AV	Audio visual
AWD	All wheel drive

B

ABBREVIATION	DESCRIPTION
BARO	Barometric pressure
BCM	Body control module
BLSD	Brake limited slip differential
BPP	Brake pedal position
BSW	Blind spot warning

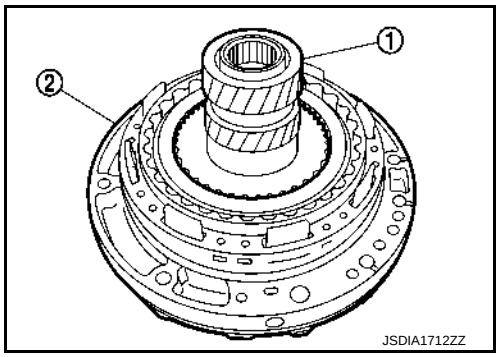
C

ABBREVIATION	DESCRIPTION
CKP	Crankshaft position
CL	Closed loop
CMP	Camshaft position
CPP	Clutch pedal position
CTP	Closed throttle position
CVT	Continuously variable transaxle/transmission

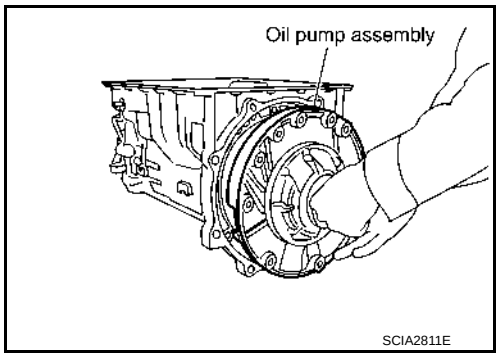
D

ABBREVIATION	DESCRIPTION
D_1	Drive range first gear
D_2	Drive range second gear
D_3	Drive range third gear
D_4	Drive range fourth gear
DCA	Distance control assist
DDS	Downhill drive support
DFI	Direct fuel injection system
DLC	Data link connector
DTC	Diagnostic trouble code

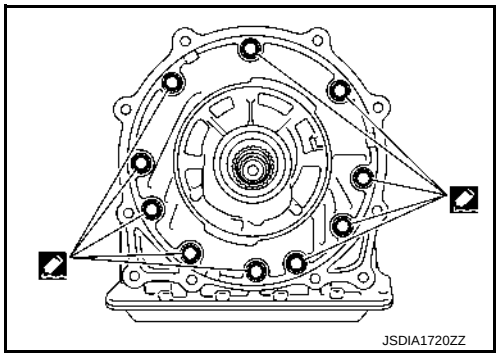
55. Install under drive sun gear (with needle bearing) (1) to oil pump assembly (2).



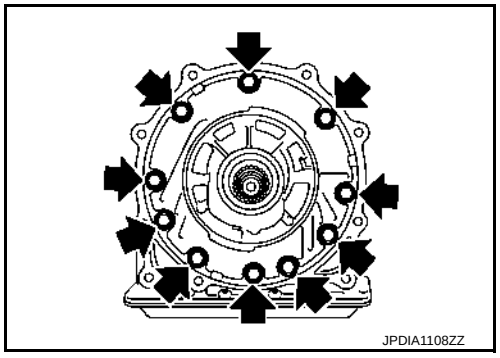
56. Install oil pump assembly (with under drive sun gear) to transmission case.
CAUTION:
Apply ATF to oil pump bearing.



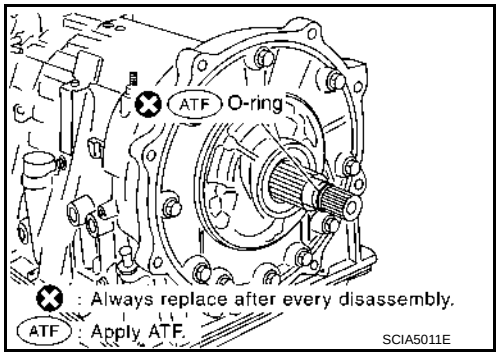
57. Apply recommended sealant to oil pump assembly as shown in the figure.
Use Genuine RTV Silicone Sealant or an equivalent. Refer to GI-22, "Recommended Chemical Products and Sealants".
CAUTION:
Completely remove all moisture, oil and old sealant, etc. from the oil pump mounting bolts and oil pump mounting bolt mounting surfaces.

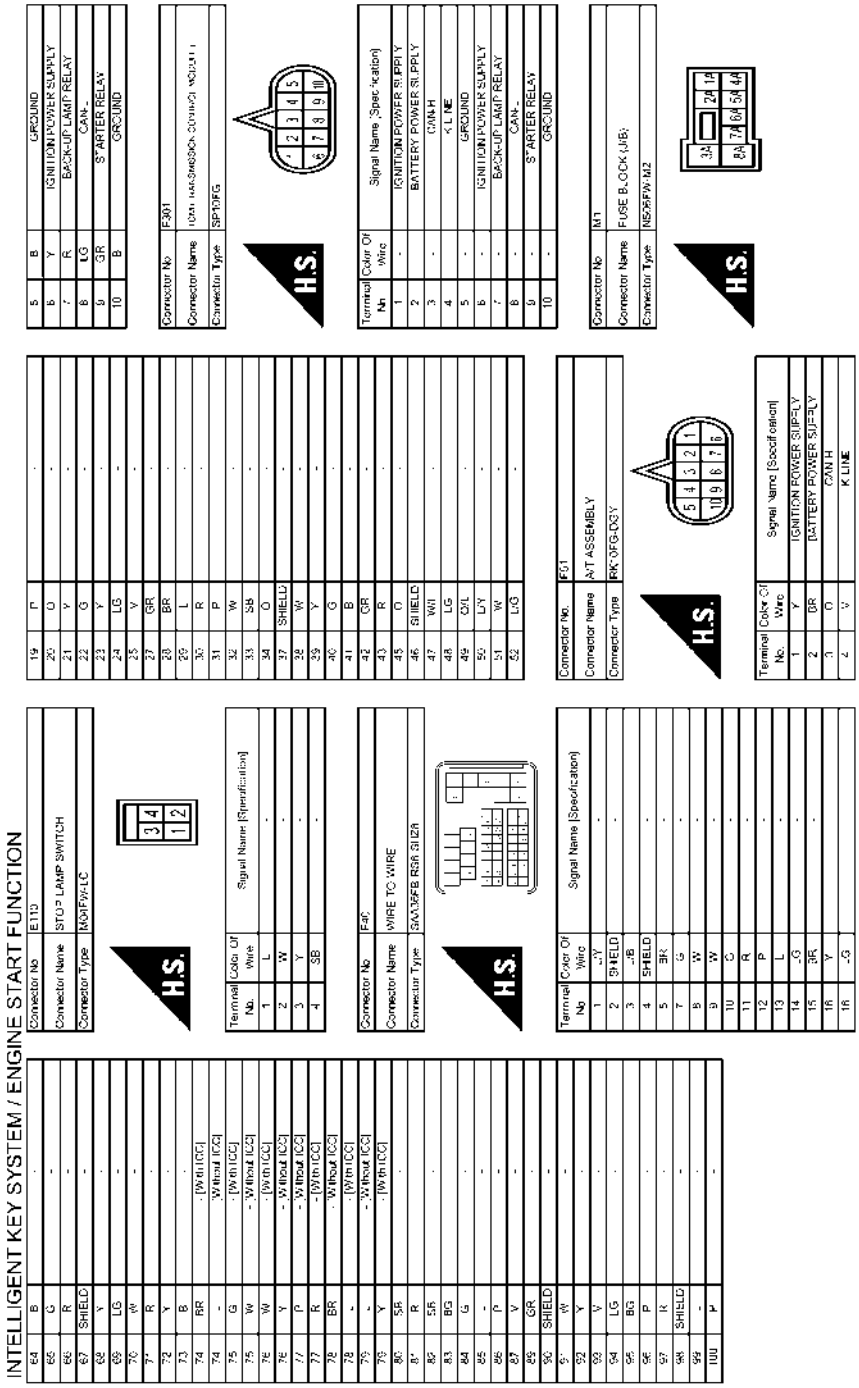


58. Tighten oil pump bolts (⬅) to the specified torque.



59. Install O-ring to input clutch assembly.





JRKWC3217GB

PRECAUTION

PRECAUTIONS

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

INFOID:0000000009065495

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

WARNING:

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.**

STEERING SWITCH SIGNAL B CIRCUIT

Description

INFOID:0000000009061838

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000009061839

1.CHECK STEERING SWITCH SIGNAL B CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M208	16	M36	31	Existed

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

AV control unit		Ground	Continuity
Connector	Terminal		
M208	16		Not existed

Is the inspection result normal?

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

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable.

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit		AV control unit		
Connector	Terminal	Connector	Terminal	
M208	16	M208	15	5.0 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-519, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-502, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to ST-15, "Exploded View".

Component Inspection

INFOID:0000000009061840

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

ASCD BRAKE SWITCH

Description

INFOID:0000000010597098

When the brake pedal is depressed, ASCD brake switch is turned OFF and stop lamp switch is turned ON. ECM detects the state of the brake pedal by those two types of input (ON/OFF signal).
Refer to EC-77, "System Description" for the ASCD function.

Component Function Check

INFOID:0000000010597099

1.CHECK ASCD BRAKE SWITCH FUNCTION

With CONSULT
1. Turn ignition switch ON.
2. Select “BRAKE SW1” in “DATA MONITOR” mode with CONSULT.
3. Check “BRAKE SW1” indication under the following conditions.

Monitor item	Condition		Indication
BRAKE SW1	Brake pedal	Slightly depressed	OFF
	Brake pedal	Fully released	ON

Without CONSULT
1. Turn ignition switch ON.
2. Check the voltage between ECM harness connector terminals as per the following.

ECM			Condition		Voltage (V)
Connector	+	–			
	Terminal	Terminal			
M107	126 (ASCD brake switch signal)	128	Brake pedal	Slightly depressed	Approx. 0
			Brake pedal	Fully released	Battery voltage

Is the inspection result normal?

YES >> INSPECTION END
NO >> Go to EC-496, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000010597100

1.CHECK ASCD BRAKE SWITCH POWER SUPPLY CIRCUIT

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

ASCD brake switch		Ground	Voltage
Connector	Terminal		
E109	1	Ground	Battery voltage

Is the inspection result normal?

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

2.DETECT MALFUNCTIONING PART

Check the following.
- Fuse block (J/B) connector E103
- 10 A fuse (No. 3)
- Harness for open or short between ASCD brake switch and fuse

NO >> Repair or replace front disc brake. Refer to BR-39, "BRAKE CALIPER ASSEMBLY : Removal and Installation".

10. CHECK REAR DISC BRAKE

Check the rear disc brake. Refer to BR-48, "BRAKE CALIPER ASSEMBLY : Inspection".

Is the inspection result normal?

YES >> GO TO 11.
NO >> Repair or replace rear disc brake. Refer to BR-45, "BRAKE CALIPER ASSEMBLY : Removal and Installation".

11. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) POWER SUPPLY AND GROUND CIRCUIT

Check the ABS actuator and electric unit (control unit) power supply and ground circuit. Refer to BRC-118, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 12.
NO >> Repair / replace harness, connector, fuse, or fusible link.

12. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

With CONSULT

1. Erase self-diagnosis result for “ABS”.
2. Turn the ignition switch OFF → ON.
   CAUTION:
   Be sure to wait of 10 seconds after turning ignition switch OFF or ON.
3. Repeat step 2 two or more times.
4. Start the engine and drive the vehicle for a short period of time.
5. Stop the vehicle.
6. Perform self-diagnosis for “ABS”.

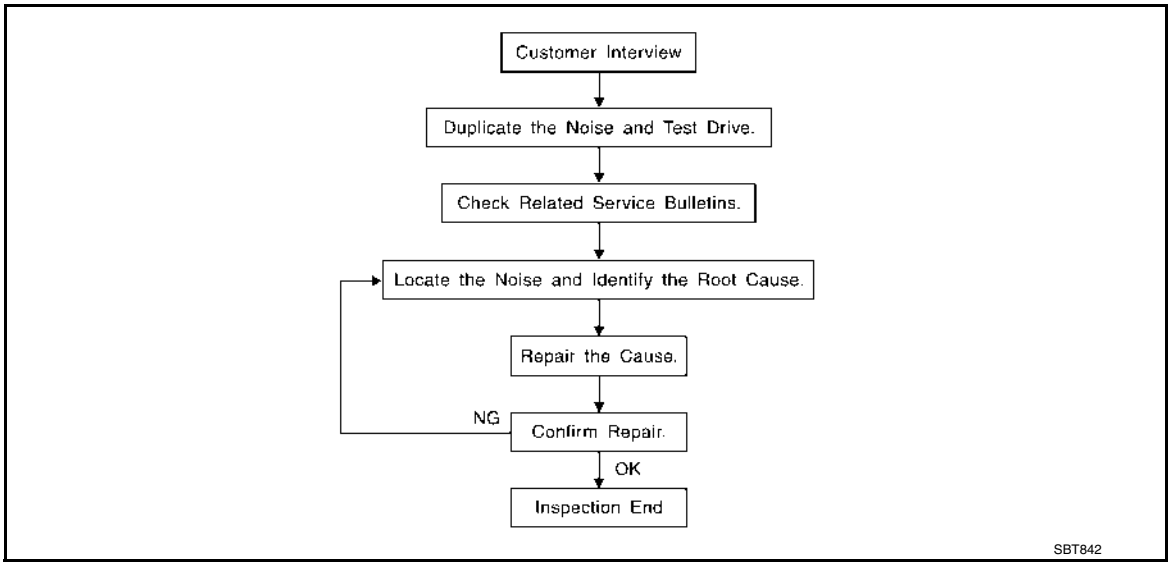
Is DTC “C1142” detected?

YES >> Replace the ABS actuator and electric unit (control unit). Refer to BRC-156, "Removal and Installation".
NO >> Check the ABS actuator and electric unit (control unit) harness connector and terminal for damage, looseness and disconnection. Repair / replace harness, connector, or terminal.

SQUEAK AND RATTLE TROUBLE DIAGNOSES

Work Flow

INFOID:0000000010597960



CUSTOMER INTERVIEW

Interview the customer if possible, to determine the conditions that exist when the noise occurs. Use the Diagnostic Worksheet during the interview to document the facts and conditions when the noise occurs and any of customer's comments; refer to MIR-116, "Diagnostic Worksheet". This information is necessary to duplicate the conditions that exist when the noise occurs.

- The customer may not be able to provide a detailed description or the location of the noise. Attempt to obtain all the facts and conditions that exist when the noise occurs (or does not occur).
- If there is more than one noise in the vehicle, perform a diagnosis and repair the noise that the customer is concerned about. This can be accomplished by performing a cruise test on the vehicle with the customer.
- After identifying the type of noise, isolate the noise in terms of its characteristics. The noise characteristics are provided so the customer, service adviser and technician are all speaking the same language when defining the noise.
- Squeak —(Like tennis shoes on a clean floor)
  Squeak characteristics include the light contact/fast movement/brought on by road conditions/hard surfaces=higher pitch noise/softer surfaces=lower pitch noises/edge to surface=chirping
- Creak—(Like walking on an old wooden floor)
  Creak characteristics include firm contact/slow movement/twisting with a rotational movement/pitch dependent on materials/often brought on by activity.
- Rattle—(Like shaking a baby rattle)
  Rattle characteristics include the fast repeated contact/vibration or similar movement/loose parts/missing clip or fastener/incorrect clearance.
- Knock —(Like a knock on a door)
  Knock characteristics include hollow sounding/sometimes repeating/often brought on by driver action.
- Tick—(Like a clock second hand)
  Tick characteristics include gentle contacting of light materials/loose components/can be caused by driver action or road conditions.
- Thump—(Heavy, muffled knock noise)
  Thump characteristics include softer knock/dead sound often brought on by activity.
- Buzz—(Like a bumblebee)
  Buzz characteristics include high frequency rattle/firm contact.
- Often the degree of acceptable noise level will vary depending up on the person. A noise that you may judge as acceptable may be very irritating to the customer.
- Weather conditions, especially humidity and temperature, may have a great effect on noise level.

DUPLICATE THE NOISE AND TEST DRIVE

If possible, drive the vehicle with the customer until the noise is duplicated. Note any additional information on the Diagnostic Worksheet regarding the conditions or location of the noise. This information can be used to duplicate the same conditions when you confirm the repair.

LANE BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010593549

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the following terminals and connectors for damage, bend and loose connection (unit side and connector side).

- Lane camera unit
- Harness connector R7
- Harness connector M110

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of lane camera unit.
2. Check the resistance between the lane camera unit harness connector terminals.

Lane camera unit harness connector			Resistance (Ω)
Connector No.	Terminal No.		
R10	4	8	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the lane camera unit branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check the power supply and the ground circuit of the lane camera unit. Refer to DAS-298, "LANE CAMERA UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the lane camera unit. Refer to DAS-334, "Exploded View".
YES (Past error)>>Error was detected in the lane camera unit branch line.
NO >> Repair the power supply and the ground circuit.

M&A BRANCH LINE CIRCUIT

Diagnosis Procedure

INFOID:0000000010593554

1.CHECK CONNECTOR

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check the terminals and connectors of the unified meter and A/C amp. for damage, bend and loose connection (unit side and connector side).

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair the terminal and connector.

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect the connector of unified meter and A/C amp.
2. Check the resistance between the unified meter and A/C amp. harness connector terminals.

Unified meter and A/C amp. harness connector			Resistance (Ω)
Connector No.	Terminal No.		
M67	56	72	Approx. 54 – 66

Is the measurement value within the specification?

YES >> GO TO 3.
NO >> Repair the unified meter and A/C amp. branch line.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

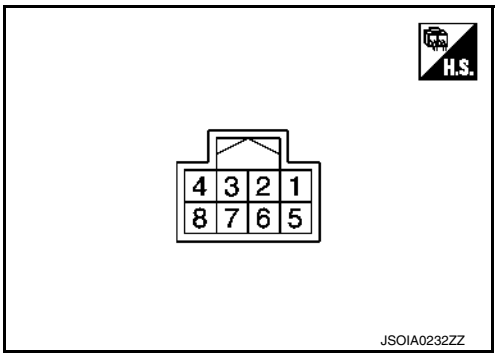
Check the power supply and the ground circuit of the unified meter and A/C amp. Refer to MWI-55, "UNIFIED METER AND A/C AMP. : Diagnosis Procedure".

Is the inspection result normal?

YES (Present error)>>Replace the unified meter and A/C amp. Refer to MWI-137, "Exploded View".
YES (Past error)>>Error was detected in the unified meter and A/C amp. branch line.
NO >> Repair the power supply and the ground circuit.

Monitor Item	Condition	Value/Status
AIMING DONE	Camera aiming is completed	OK
	Camera aiming is not adjusted	NG
AIMING RESULT	Camera aiming is completed	OK
	Camera aiming is not completed	NOK
XOFFSET	Camera aiming is completed	Approx. 180 pixel
AIM CHK YAW	**NOTE:** The item is indicated, but not used.	—
AIM CHK ROLL	**NOTE:** The item is indicated, but not used.	—
AIM CHK PITCH	**NOTE:** The item is indicated, but not used.	—
FCTRY AIM YAW	Camera aiming is not completed	+12.0 deg
	Camera aiming is completed	0 ± 5.0 deg
FCTRY AIM ROL	Camera aiming is not completed	0.0 deg
	Camera aiming is completed	0 ± 5.0 deg
FCTRY AIM PIT	Camera aiming is not completed	+12.0 deg
	Camera aiming is completed	0 ± 5.0 deg

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	—		0 V
2 (SB)	Ground	Warning systems ON indicator	Output	Warning systems ON indicator	Illuminated	0 V
					OFF	12 V
3 (V)	Ground	Warning systems switch	Input	Warning systems switch	Pressed	0 V
					Released	5 V
4 (L)	Ground	CAN-H	—	—		—
5 (B)	Ground	Ground	—	—		0 V
6 (R)	Ground	Lane departure warning buzzer	Output	Lane departure warning buzzer	Sounding	0 V
					Not sounding	12 V

B0020 SIDE AIR BAG MODULE

DTC Logic

INFOID:0000000012172797

DTC DETECTION LOGIC

DTC	CONSULT screen items (Trouble diagnosis content)		DTC detecting condition	Possible cause
B0020–09	SIDE A/B MODULE LH [Left Side Airbag Deployment Control (Subfault)]	[SHORT]	Side air bag module LH circuits are shorted to each other	• Connection malfunction or short circuit of harness and connector • Internal malfunction of side air bag module LH • Internal malfunction of air bag diagnosis sensor unit
B0020–11		[GND-SHORT]	Side air bag module LH circuit is shorted to ground	• Connection malfunction or short circuit to ground of harness and connector • Internal malfunction of side air bag module LH • Internal malfunction of air bag diagnosis sensor unit
B0020–12		[VB-SHORT]	Side air bag module LH circuit is shorted to power supply circuit	• Connection malfunction or short circuit to power supply of harness and connector • Internal malfunction of side air bag module LH • Internal malfunction of air bag diagnosis sensor unit
B0020–13		[OPEN]	Side air bag module LH circuit is open	• Connection malfunction or open circuit of harness and connector • Internal malfunction of side air bag module LH • Internal malfunction of air bag diagnosis sensor unit
B0020–1A		[SHORT]	Side air bag module LH circuits are shorted to each other	• Connection malfunction or short circuit of harness and connector • Internal malfunction of side air bag module LH • Internal malfunction of air bag diagnosis sensor unit

DTC CONFIRMATION PROCEDURE

1.CHECK SELF-DIAG RESULT

With CONSULT
1. Turn ignition switch ON.
2. Perform “Self Diagnostic Result” mode of “AIR BAG” using CONSULT.

Without CONSULT
1. Turn ignition switch ON.
2. Check the air bag warning lamp status. Refer to SRC-14, "On Board Diagnosis Function".

NOTE:
SRS does not enter the diagnosis mode if no malfunction is detected in the user mode.

Is malfunctioning part detected?

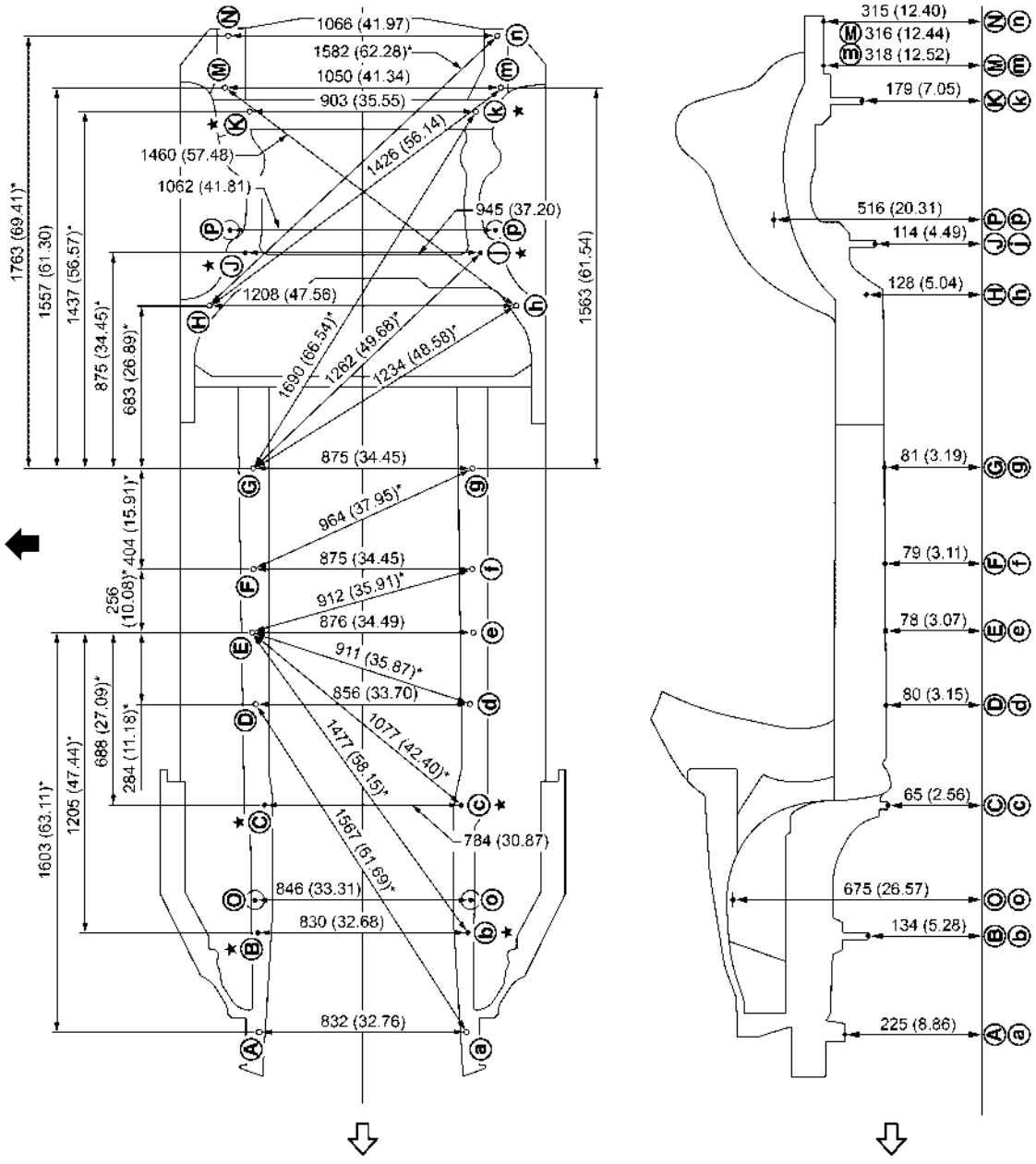
YES >> Refer to SRC-32, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000012172798

WARNING:
- **Before servicing, turn ignition switch OFF, disconnect battery negative terminal, and wait at least 3 minutes or more. (To discharge backup capacitor.)**

Dimensions marked with "*" indicate symmetrically identical dimensions on both the right and left hand of the vehicle.
The following figure shows a bottom view and a side view of the vehicle.



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Unit: mm (in)
⇦: Vehicle front
⬅: Vehicle left side
★: Bolt head

RGB (B: BLUE) SIGNAL CIRCUIT

Description

INFOID:0000000012169511

Transmit the image displayed with AV control unit with RGB signal to the display unit.

Diagnosis Procedure

INFOID:0000000012169512

1.CHECK CONTINUITY RGB (B: BLUE) SIGNAL CIRCUIT

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	18	M215	45	Existed

4. Check continuity between display unit harness connector and ground.

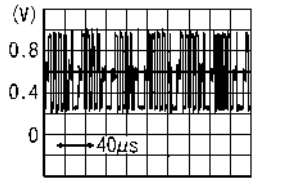
Display unit		Ground	Continuity
Connector	Terminal		
M194	18		Not existed

Is inspection result normal?

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

2.CHECK RGB (B: BLUE) SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+)		(−)	Condition	Reference value
Display unit				
Connector	Terminal			
M194	18	Ground	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 JSNIA1031ZZ

Is inspection result normal?

YES >> Replace display unit. Refer to AV-267, "Removal and Installation".
NO >> Replace AV control unit. Refer to AV-266, "Removal and Installation".