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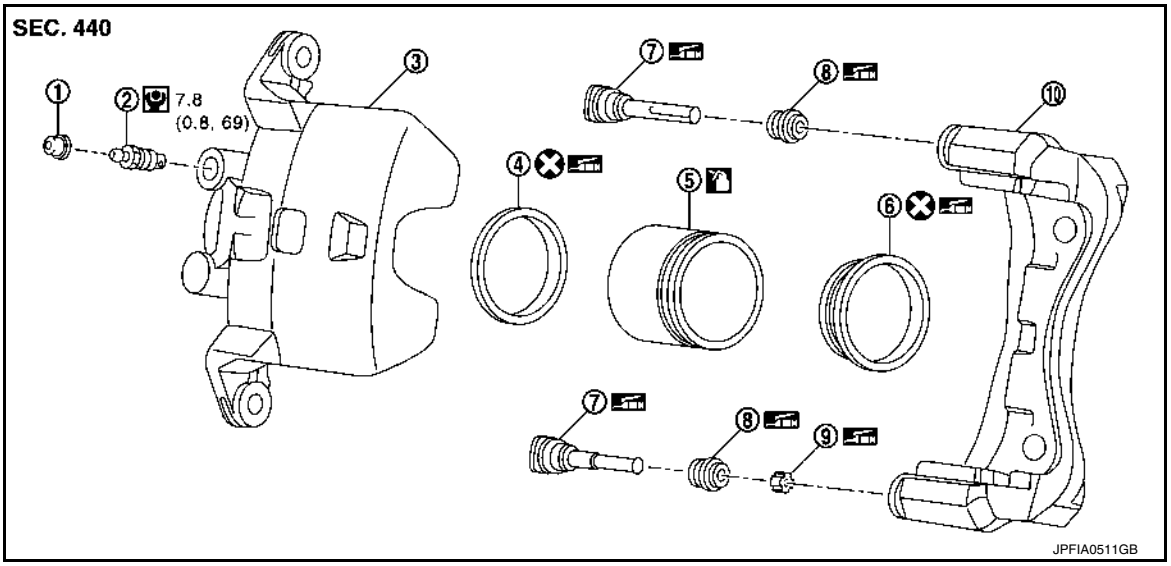
NISSAN PATHFINDER

MODEL R52 SERIES

QUICK REFERENCE INDEX



1. Cap
2. Bleeder valve
3. Cylinder body
4. Piston seal
5. Piston
6. Piston boot
7. Sliding pin
8. Sliding pin boot
9. Bushing
10. Torque member

: Apply rubber grease.

: Apply brake fluid.

: N·m (kg-m, in-lb)

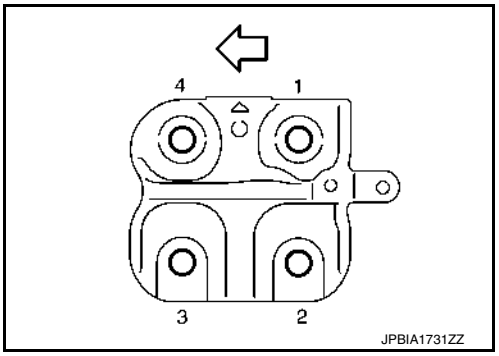
: Always replace after every disassembly

SYMBOLS

SYMBOL	DESCRIPTION		SYMBOL	DESCRIPTION
	Tightening torque The tightening torque specifications of bolts and nuts may be presented as either a range or a standard tightening torque.	: N•m (kg-m, ft-lb)		Always replace after every disassembly.
		: N•m (kg-m, in-lb)	Ⓟ	Apply petroleum jelly.
	Should be lubricated with grease. Unless otherwise indicated, use recommended multi-purpose grease.		Ⓜ	Apply molybdenum added petroleum jelly.
	Should be lubricated with oil.		ATF	Apply ATF.
	Sealing point		★	Select with proper thickness.
Ⓛ	Sealing point with locking sealant.		☆	Adjustment is required.
	Checking point			

SAIA0749E

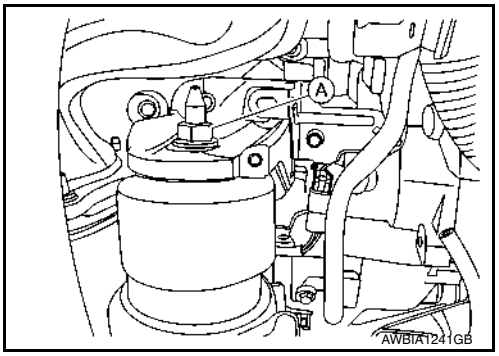
4. Tighten the engine mount bracket (front) bolts to specification in the order shown.



⇦ : Engine front

Engine mount bracket (front) bolts	**: 40 N·m (4.1 kg-m, 30 ft-lb)**

5. Install the engine mount insulator (front) nut (A) and tighten to specification.



Engine mount insulator (front) nut	**: 103 N·m (11 kg-m, 76 ft-lb)**

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

P1225 TP SENSOR

DTC Logic

INFOID:0000000009178275

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1225	CTP LEARNING-B1 (Closed throttle position learning performance)	Closed throttle position learning value is excessively low.	• Electric throttle control actuator (TP sensor 1 and 2)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 10 seconds.
3. Turn ignition switch ON.
4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-364, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

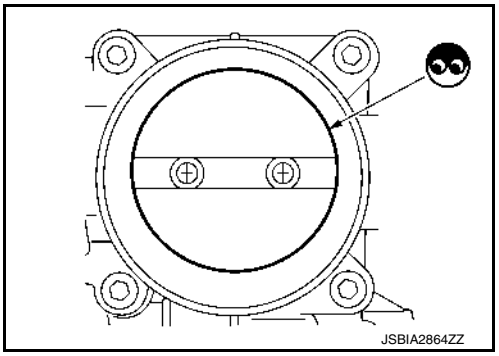
INFOID:0000000009178276

1.CHECK ELECTRIC THROTTLE CONTROL ACTUATOR VISUALLY

1. Turn ignition switch OFF.
2. Remove the intake air duct. Refer to EM-24, "Removal and Installation".
3. Check if foreign matter is caught between the throttle valve and the housing.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Remove the foreign matter and clean the electric throttle control actuator inside, and then perform throttle valve closed position learning. Refer to EC-142, "Description".



2.REPLACE ELECTRIC THROTTLE CONTROL ACTUATOR

1. Replace electric throttle control actuator. Refer to EM-26, "Removal and Installation".
2. Go to EC-143, "Description".

>> INSPECTION END

P0863 TCM COMMUNICATION

DTC Logic

INFOID:0000000009177600

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	Possible causes
P0863	CONTROL UNIT (CAN) (TCM Communication Circuit)	An error is detected at the initial CAN diagnosis of TCM.	TCM

DTC CONFIRMATION PROCEDURE

1.PREPARATION BEFORE WORK

If another "DTC CONFIRMATION PROCEDURE" occurs just before, turn ignition switch OFF and wait for at least 10 seconds, then perform the next test.

>> GO TO 2.

2.CHECK DTC DETECTION

1. Start the engine.
2. Check the DTC.

Is “P0863” detected?

YES >> Go to TM-145, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009177601

1.CHECK INTERMITTENT INCIDNT

Refer to GI-49, "Intermittent Incident".

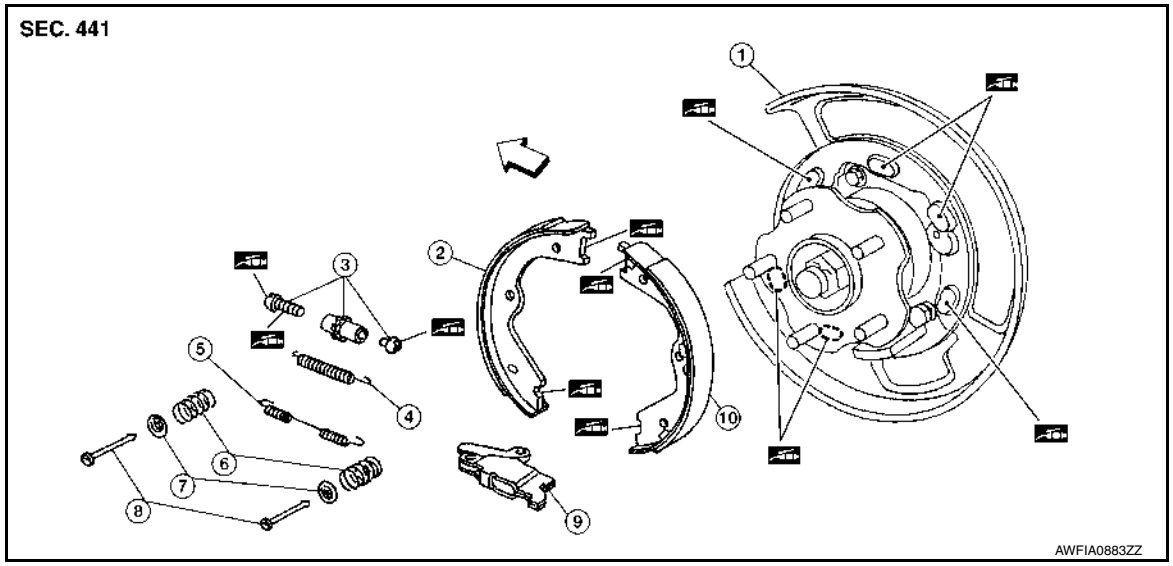
Is the inspection result normal?

YES >> Replace TCM. Refer to TM-195, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

PARKING BRAKE SHOE

Exploded View

INFOID:0000000009177222



1. Back plate
2. Parking brake shoe (front)
3. Adjuster
4. Adjuster spring
5. Return spring
6. Anti-rattle spring
7. Retainer
8. Anti-rattle pin
9. Toggle lever
10. Parking brake shoe (rear)
- Front
- Apply PBC (Poly Butyl Cuprysil) grease or silicone based grease

Removal and Installation

INFOID:0000000009177223

REMOVAL

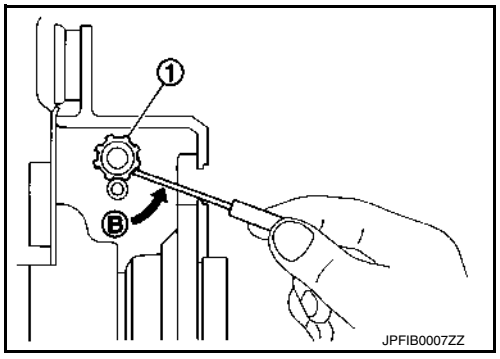
WARNING:

Clean dust on the parking brake shoes with a vacuum dust collector to minimize the hazard of air borne particles or other materials.

1. Remove the rear wheel and tire using power tool. Refer to WT-58, "Adjustment".
2. Remove disc rotor. Refer to BR-40, "BRAKE CALIPER ASSEMBLY : Removal and Installation".
   CAUTION:
   Parking brake must be in the completely released position.
3. If disc rotor cannot be removed, remove as follows:

a. Secure the disc rotor with wheel nuts and remove the adjusting hole plug.

b. Using a suitable tool, rotate adjuster (1) in direction (B) to retract and loosen parking brake shoe.



4. Remove anti-rattle pins, retainers, anti-rattle springs, adjuster spring and return spring.
   CAUTION:
   Do not drop the removed parts.
5. Remove parking brake shoes, adjuster assembly and toggle lever.
   CAUTION:
   - **The parking brake shoes for the front side are made of different materials from those for the rear side. Do not misidentify them when removing.**
   - **Do not drop the removed parts.**

INSTALLATION

Installation is in the reverse order of removal.

- **The A/C system contains a fluorescent leak detection dye used for locating refrigerant leaks. An ultraviolet (UV) lamp is required to illuminate the dye when inspecting for leaks.**
- **Always wear fluorescence enhancing UV safety goggles to protect eyes and enhance the visibility of the fluorescent dye.**
- **The fluorescent dye leak detector is not a replacement for an electronic leak detector (SST: J-41995). The fluorescent dye leak detector should be used in conjunction with an electronic leak detector (SST: J-41995) to pin-point refrigerant leaks.**
- **Read and follow all manufacture's operating instructions and precautions prior to performing the work for the purpose of safety and customer's satisfaction.**
- **A compressor shaft seal should not necessarily be repaired because of dye seepage. The compressor shaft seal should only be repaired after confirming the leak with an electronic leak detector (SST: J-41995).**
- **Always remove any remaining dye from the leak area after repairs are completed to avoid a misdiagnosis during a future service.**
- **Do not allow dye to come into contact with painted body panels or interior components. Clean immediately with the approved dye cleaner if dye is spilled. Fluorescent dye left on a surface for an extended period of time cannot be removed.**
- **Do not spray the fluorescent dye cleaning agent on hot surfaces (engine exhaust manifold, etc.).**
- **Do not use more than one refrigerant dye bottle [1/4 ounce (7.4 cc)] per A/C system.**
- **Leak detection dyes for HFC-134a (R-134a) and CFC-12 (R-12) A/C systems are different. Do not use HFC-134a (R-134a) leak detection dye in CFC-12 (R-12) A/C system or CFC-12 (R-12) leak detection dye in HFC-134a (R-134a) A/C system or A/C system damage may result.**
- **The fluorescent properties of the dye remains for three or more years unless a compressor malfunction occurs.**

NOTE:

Identification

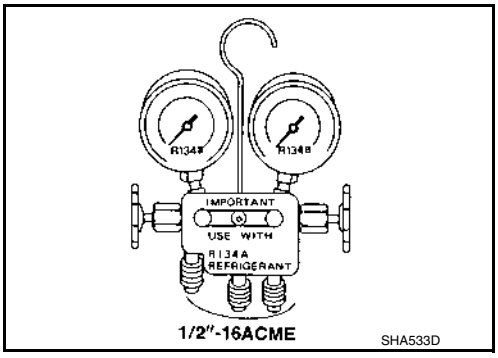
- Vehicles with factory installed fluorescent dye have a green label.
- Vehicles without factory installed fluorescent dye have a blue label.

Precaution for Service Equipment

INFOID:0000000009176774

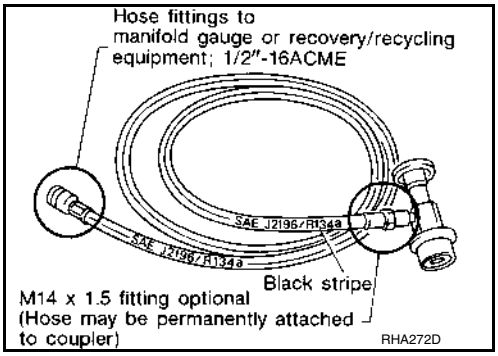
MANIFOLD GAUGE SET

Be certain that the gauge face indicates R-134a or 134a. Make sure the gauge set has 1/2″-16 ACME threaded connections for service hoses. Confirm the set has been used only with refrigerant HFC-134a (R-134a) along with specified oil.



SERVICE HOSES

Be certain that the service hoses display the markings described (colored hose with black stripe). All hoses must include positive shut-off devices (either manual or automatic) near the end of the hoses opposite the manifold gauge.



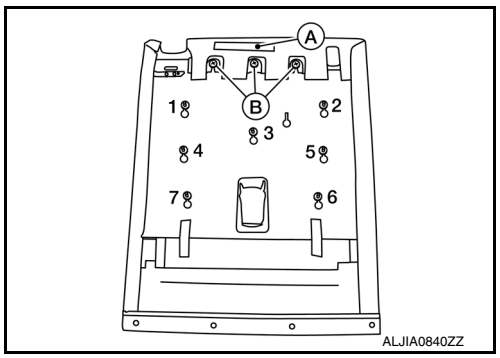
SERVICE COUPLERS

5. Remove the seatback board.
NOTE:
Backside of seatback board shown for clarity.

a. Release the hook fastener (A) along the upper edge.

b. Release three clips (B) that retain the seatback board to the seat frame assembly.

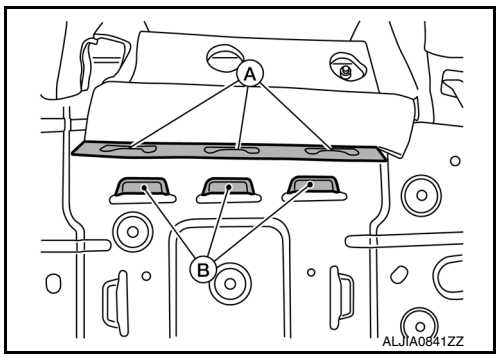
c. Release the remaining clips in the order shown.



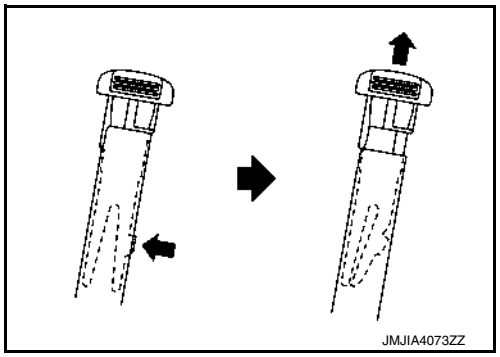
6. Remove the seatback trim and seatback pad.

a. Release retainer strip (A) from the seat frame assembly slots (B) on the top edge of the seat frame assembly.

b. Repeat at the lower and LH/RH edges.



c. Reach up behind the seatback pad, release the headrest holder locks as shown and remove the headrest holders.
CAUTION:
Before removing/installing headrest holder, check its orientation (front/rear and right/left).

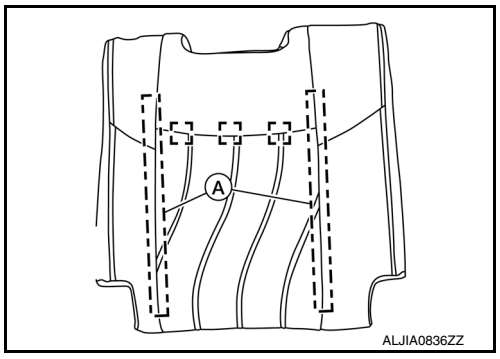


d. Remove the seatback pad and seatback trim as an assembly from the seat frame assembly.

7. Separate the seatback trim from the seatback pad.

a. Pull seatback trim upward in front to release hook fasteners (A).

b. Remove hog rings and separate the seatback trim from the seatback pad.
NOTE:
Remove all pieces of hog rings and discard them.
: Hog ring



8. Remove the screw and the seatback pull strap.

Check continuity between automatic back door switch harness connector and ground.

Automatic back door switch		Ground	Continuity
Connector	Terminal		
M186	2		Yes

Is the inspection result normal?

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

4.CHECK AUTOMATIC BACK DOOR SWITCH

Refer to DLK-212, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace automatic back door switch. Refer to DLK-323, "Removal and Installation".

5.CHECK INTERMITTENT INCIDENT

Refer to GI-49, "Intermittent Incident".

>> Inspection End.

Component Inspection

INFOID:0000000009175772

1.CHECK AUTOMATIC BACK DOOR SWITCH

1. Turn ignition switch OFF.
2. Disconnect automatic back door switch connector.
3. Check continuity between automatic back door switch terminals.

Automatic back door switch		Condition		Continuity
Terminal				
1	2	Automatic back door switch	Pressed	Yes
			Released	No

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace automatic back door switch. Refer to DLK-323, "Removal and Installation".

POWER WINDOW LOCK FUNCTION

Ground circuit inside power window main switch shuts off when power window lock switch is ON. This inhibits power window switch operation except with the power window main switch.

DOOR KEY CYLINDER SWITCH OPERATION

Hold the door key cylinder to the LOCK or UNLOCK direction for 1 second or more to OPEN or CLOSE all power windows when ignition switch is OFF. In addition, it stops when key position is moved to N (NEUTRAL) when operating.

Operation Condition

- Ignition switch OFF.
- Hold door key cylinder to LOCK position for 1 second or more to perform CLOSE operation of the door glass.
- Hold door key cylinder to UNLOCK position for 1 second or more to perform OPEN operation of the door glass.

KEYLESS POWER WINDOW DOWN FUNCTION

All power windows open when the unlock button on Intelligent Key is activated and pressed for more than 3 seconds with the ignition switch OFF. The windows keep opening if the unlock button is continuously pressed. The power window opening stops when the following operations are performed.

- When the unlock button is pressed for more than 15 seconds.
- When the ignition switch is turned ON while the power window opening is operated.
- When the unlock button is released.

While retained power operation activate, keyless power window down function cannot be operated.

Fail-safe

INFOID:0000000009176107

FAIL-SAFE CONTROL

Switches to fail-safe control when malfunction is detected in encoder signal that detects up/down speed and direction of door glass. Switches to fail-safe control when an error beyond the regulation value is detected between the fully closed position and the actual position of the glass.

Malfunction	Malfunction condition
Pulse sensor malfunction	When only one side of pulse signal is being detected for more than the specified value.
Both pulse sensors malfunction	When both pulse signals have not been detected for more than the specified value during glass open/close operation.
Pulse direction malfunction	When the pulse signal that is detected during glass open/close operation detects the opposite condition of power window motor operating direction.
Glass recognition position malfunction 1	When it detects the error between glass fully closed position in power window switch memory and actual fully closed position during glass open/close operation is more than the specified value.
Glass recognition position malfunction 2	When it detects pulse count more that the value of glass full stroke during glass open/close operation.
Malfunction of not yet updated closed position of glass	When glass open/close operation is continuously performed without fully closing more that the specified value (approximately 10 strokes).

It changes to condition before initialization and the following functions do not operate when switched to fail-safe control:

- Auto-up operation
- Retained power function

Perform initial operation to recover when switched to fail-safe mode. However, it switches back to fail-safe control when malfunction is found in power window switch or in motor.

Connector No.	B407
Connector Name	REAR COMBINATION LAMP RH
Connector Color	GRAY

H.S.

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

Connector No.	D501
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
24	LG	–

Connector No.	D502
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
2	B	–

Connector No.	D503
Connector Name	HIGH-MOUNTED STOP LAMP
Connector Color	BROWN

H.S.

Terminal No.	Color of Wire	Signal Name
1	LG	–
2	B	–

ABLIA5101GB

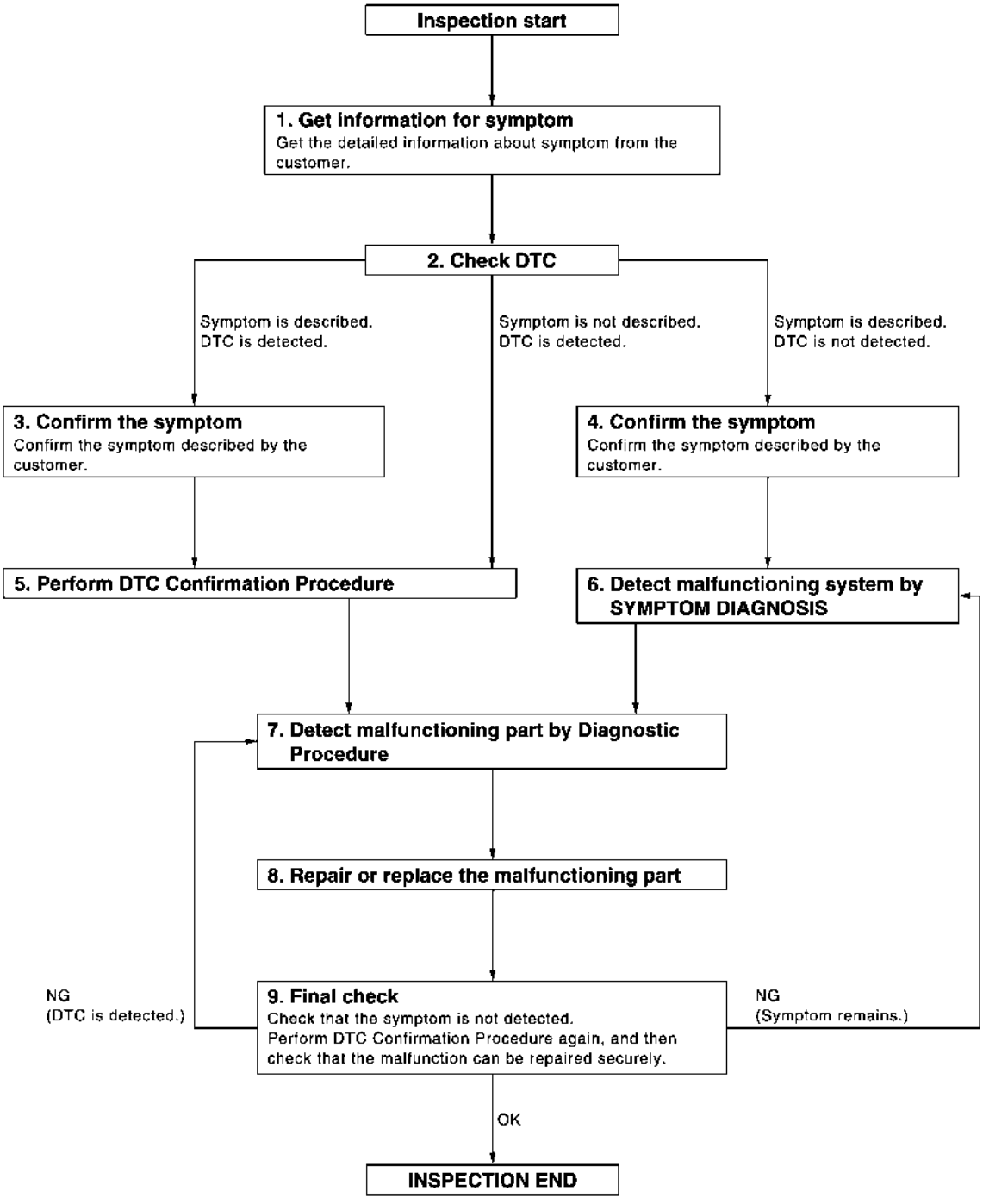
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000009175554

OVERALL SEQUENCE



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DETAILED FLOW

CAN COMMUNICATION CIRCUIT 2

Diagnosis Procedure

INFOID:0000000009175079

1.CONNECTOR INSPECTION

1. Turn the ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Disconnect all the unit connectors on CAN communication circuit 2.
4. Check terminals and connectors for damage, bend and loose connection.

Is the inspection result normal?

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

2.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector terminals.

Data link connector			Continuity
Connector No.	Terminal No.		
M22	13	12	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check the harness and repair the root cause.

3.CHECK HARNESS CONTINUITY (SHORT CIRCUIT)

Check the continuity between the data link connector and the ground.

Data link connector		Ground	Continuity
Connector No.	Terminal No.		
M22	13		Not existed
	12		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Check the harness and repair the root cause.

4.CHECK CAN GATEWAY TERMINATION CIRCUIT

1. Remove the CAN gateway.
2. Check the resistance between the CAN gateway terminals.

CAN gateway		Resistance (Ω)
Terminal No.		
4	10	Approx. 108 – 132
6	12	Approx. 108 – 132

Is the measurement value within the specification?

YES >> GO TO 5.
NO >> Replace the CAN gateway.

5.CHECK SYMPTOM

Connect all the connectors. Check if the symptoms described in the “Symptom (Results from interview with customer)” are reproduced.

Inspection result

Reproduced>>GO TO 6.
Non-reproduced>>Start the diagnosis again. Follow the trouble diagnosis procedure when past error is detected.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000009175283

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 SR and SB section of this Service Manual.

WARNING:

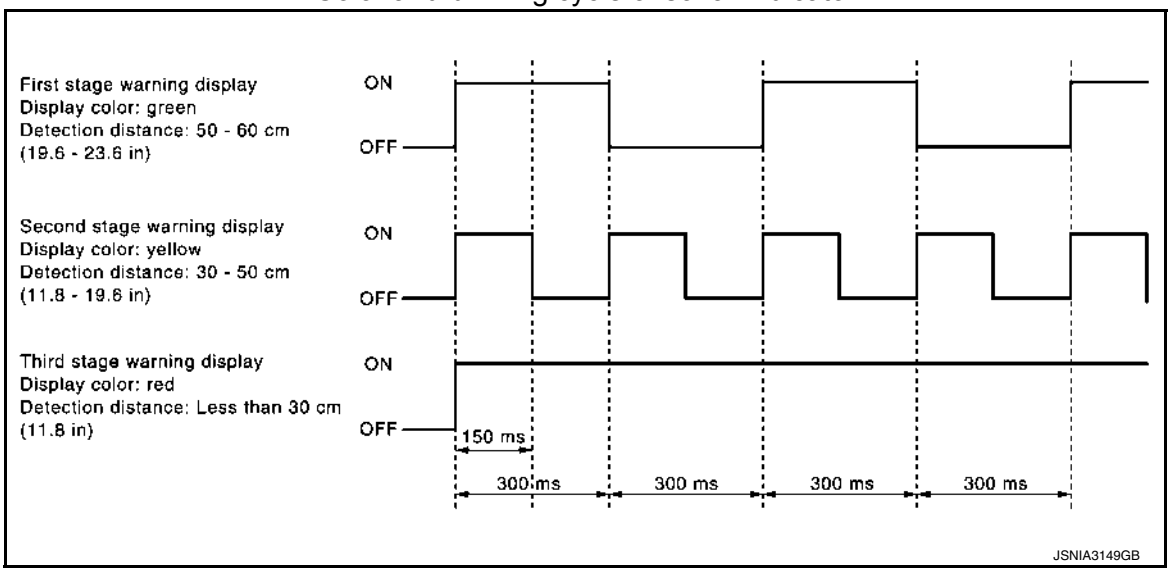
- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

WARNING:

- **When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least three minutes before performing any service.**

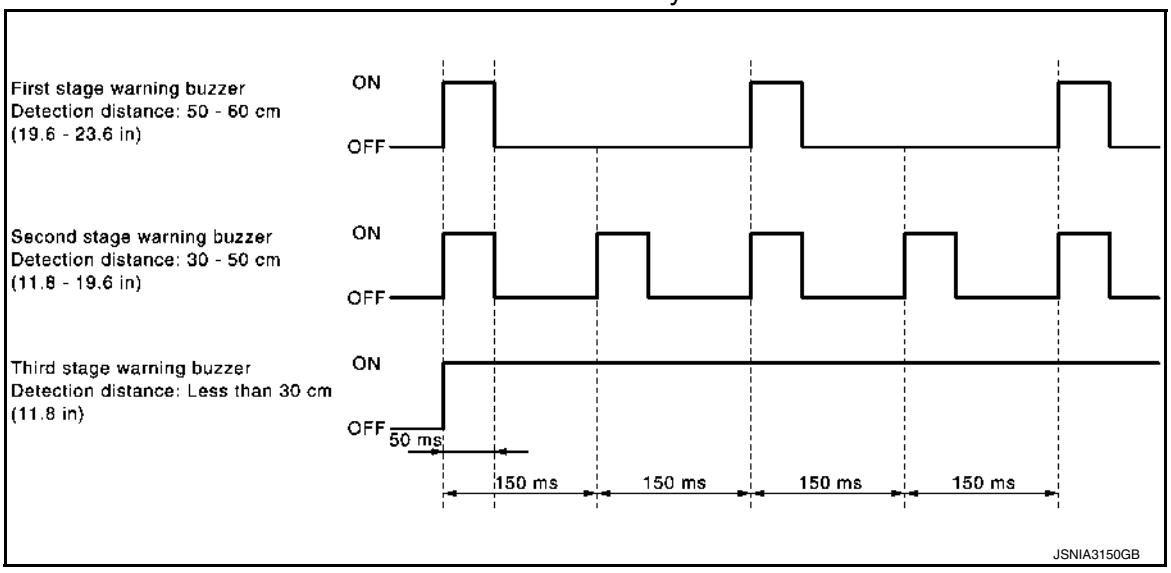
Color and blinking cycle of sonar indicator



SONAR BUZZER OPERATION

- Sonar sensors transmit a sensor signal to sonar control unit when detecting an obstacle.
- Sonar control unit converts signal received from each sensor into distance and transmits detection distance signal to combination meter via CAN communication.
- Sonar control unit transmits a buzzer signal to the rear sonar buzzer.
- When a rear corner sensor detects an obstacle, rear sonar buzzer is heard.
- Sonar control unit changes buzzer cycle in 3 stages according to detection distance.

Sonar buzzer cycle



BLUETOOTH® VOICE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000009174601

Regarding Wiring Diagram information, refer to AV-242, "Wiring Diagram".

1.CHECK BLUETOOTH® VOICE SIGNAL CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M42 and Bluetooth® control unit connector B3.
3. Check continuity between AV control unit connector M42 terminal 5 and Bluetooth® control unit connector B3 terminal 9.

AV control unit		Bluetooth® control unit		Continuity
Connector	Terminal	Connector	Terminal	
M42	5	B3	9	Yes

4. Check continuity between AV control unit connector M42 terminal 5 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M42	5	—	No

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace harness or connectors.

2.CHECK BLUETOOTH® VOICE SIGNAL GROUND CIRCUIT CONTINUITY

Check continuity between AV control unit connector M42 terminal 4 and Bluetooth® control unit connector B3 terminal 10.

AV control unit		Bluetooth® control unit		Continuity
Connector	Terminal	Connector	Terminal	
M42	4	B3	10	Yes

Is inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness or connectors.

3.CHECK BLUETOOTH® VOICE SIGNAL

1. Connect AV control unit connector M42 and Bluetooth® control unit connector B3.
2. Turn ignition switch to ACC.
3. Press switch.
4. Check the signal between the terminals of AV control unit connector M42.