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NISSAN XTERRA

MODEL N50 SERIES

QUICK REFERENCE INDEX

NORMAL OPERATING CONDITION

Description

INFOID:0000000004095401

The majority of the audio concerns are the result of outside causes (bad CD, electromagnetic interference, etc.).

NOISE

The following noise results from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources. It is not a malfunction.

- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from the waves sent directly from the broadcast station arriving at the antenna at a different time from the waves which reflect off mountains or buildings.

The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and determine the cause.

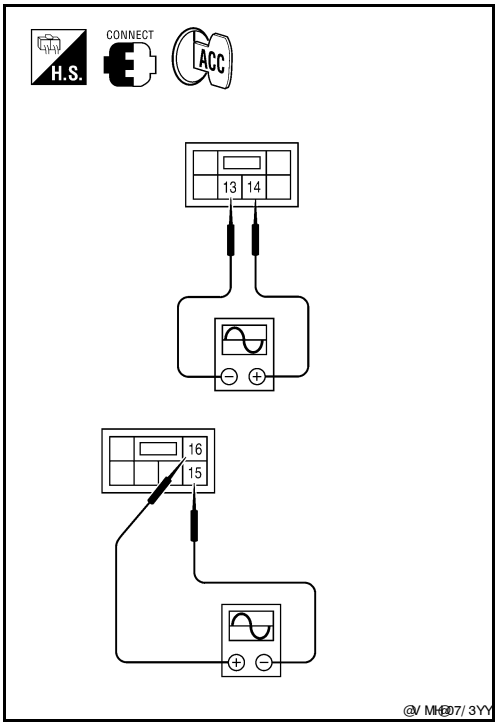
NOTE:

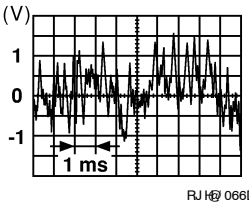
The source of the noise can be found easily by listening to the noise while removing the fuses of electrical components, one by one.

Type of Noise and Possible Cause

Occurrence condition		Possible cause
Occurs only when engine is ON.	A continuous growling noise occurs. The speed of the noise varies with changes in the engine speed.	• Ignition components
The occurrence of the noise is linked with the operation of the fuel pump.		• Fuel pump condenser
Noise only occurs when various electrical components are operating.	A cracking or snapping sound occurs with the operation of various switches.	• Relay malfunction, audio unit malfunction
	The noise occurs when various motors are operating.	• Motor case ground • Motor
The noise occurs constantly, not just under certain conditions.		• Rear defogger coil malfunction • Open circuit in printed heater • Poor ground of antenna feeder line
A cracking or snapping sound occurs while the vehicle is being driven, especially when it is vibrating excessively.		• Ground wire of body parts • Ground due to improper part installation • Wiring connections or a short circuit

1. Connect audio unit connector M44 and audio amp. connector B159.
2. Turn ignition switch to ACC.
3. Push “POWER” switch.
4. Check the signal between audio unit harness connector M44 terminals with CONSULT-III or oscilloscope.

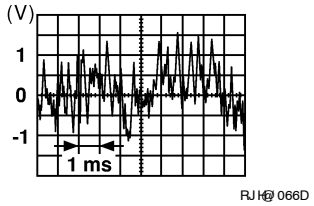
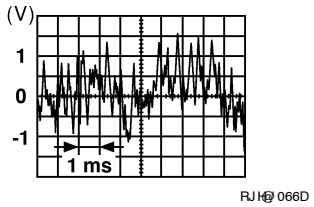
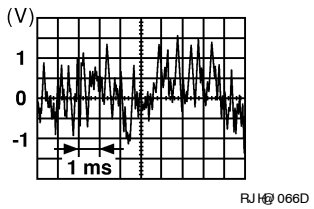


Connector	Terminals (+)	Terminals (-)	Condition	Reference signal
M44	14	13	Receive audio signal	
	16	15		

Is the audio signal voltage reading as specified?

YES >> Replace audio amp. Refer to AV-104, "Removal and Installation".

NO >> Replace audio unit. Refer to AV-103, "Removal and Installation".

Terminal (wire color)		Item	Signal input/ output	Condition		Reference value (Approx.)
+	–					
22 (W)	6 (B)	Audio sound signal front LH	Input	Ignition switch ON	Receive audio signal	 RJHA0066D
23 (L)	7 (B/W)	Audio sound signal rear RH	Input	Ignition switch ON	Receive audio signal	 RJHA0066D
24 (BR)	8 (B/R)	Audio sound signal rear LH	Input	Ignition switch ON	Receive audio signal	 RJHA0066D

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM)

INFOID:0000000004095074

APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
WORK SUPPORT	Changes the setting for each system function.
SELF-DIAG RESULTS	Displays the diagnosis results judged by BCM. Refer to BCS-53, "DTC Index".
CAN DIAG SUPPORT MNTR	Monitors the reception status of CAN communication viewed from BCM.
DATA MONITOR	The BCM input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from BCM.
ECU IDENTIFICATION	The BCM part number is displayed.
CONFIGURATION	• Enables to read and save the vehicle specification. • Enables to write the vehicle specification when replacing BCM.

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

It can perform the diagnosis modes except the following for all sub system selection items.

System	Sub system selection item	Diagnosis mode		
		WORK SUPPORT	DATA MONITOR	ACTIVE TEST
BCM	BCM	×		
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	
Warning chime	BUZZER		×	×
Interior room lamp timer	INT LAMP	×	×	×
Remote keyless entry system	MULTI REMOTE ENT	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER		×	×
Air conditioner	AIR CONDITONER		×	
Combination switch	COMB SW		×	
Immobilizer	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door open	TRUNK		×	×
Vehicle security system	THEFT ALM	×	×	×
RAP (retained accessory power)	RETAINED PWR	×	×	×
Signal buffer system	SIGNAL BUFFER		×	×
TPMS (tire pressure monitoring system)	AIR PRESSURE MONITOR	×	×	×
Panic alarm system	PANIC ALARM			×

BCM

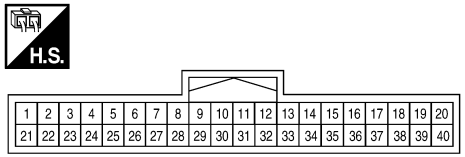
BCM : CONSULT-III Function (BCM - BCM)

INFOID:0000000004095075

WORK SUPPORT

BCM (BODY CONTROL MODULE) CONNECTORS

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	BR	KEY RING OUTPUT
2	P	INPUT 5
3	SB	INPUT 4
4	V	INPUT 3
5	L	INPUT 2
6	R	INPUT 1

Terminal No.	Color of Wire	Signal Name
7	GR	KEY CYLINDER UNLOCK SW
8	SB	KEY CYLINDER LOCK SW
9	Y	DEFOGGER SW
10	–	–
11	G/B	ACC_SW
12	LG	DOOR SW (AS)
13	L	DOOR SW (RR)
14	–	–
15	W	TPMS MODE TRIGGER SW
16	–	–
17	–	–
18	BR	KEYLESS & AUTO LIGHT SENSOR GND
19	V	KEYLESS TUNER POWER SUPPLY OUTPUT
20	G	KEYLESS TUNER SIGNAL
21	GR	IMMOBILIZER ANTENNA SIGNAL (CLOCK)

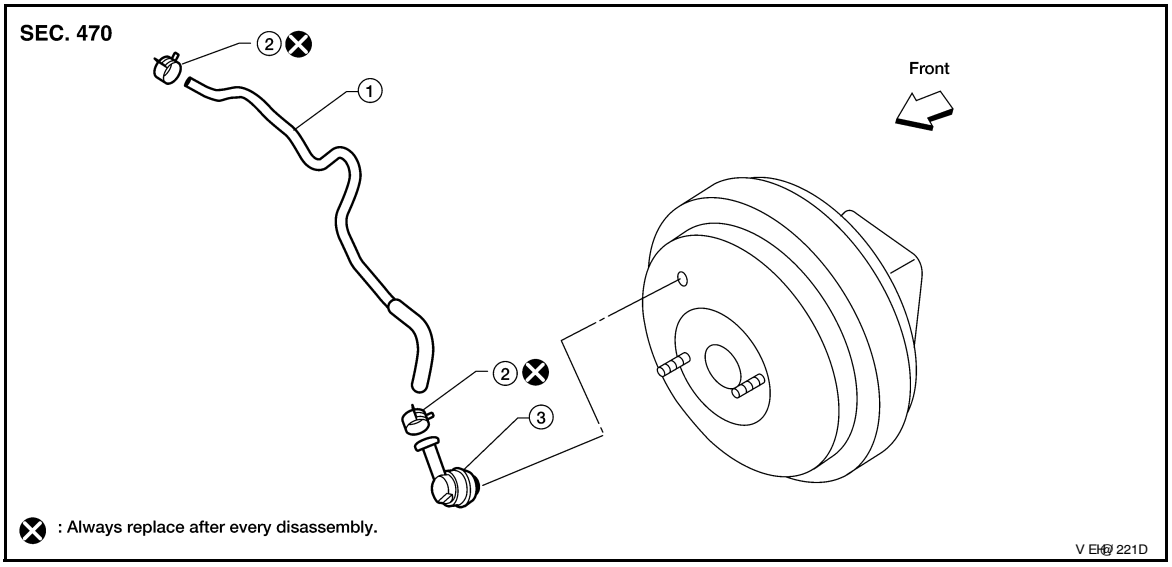
Terminal No.	Color of Wire	Signal Name
22	–	–
23	G	SECURITY INDICATOR OUTPUT
24	–	–
25	BR	IMMOBILIZER ANTENNA SIG (RX,TX)
26	–	–
27	W	AIRCON SW
28	R	BLOWER FAN SW
29	G	HAZARD SW
30	–	–
31	R	OFF ROAD LAMP SW
32	O	OUTPUT 5
33	GR	OUTPUT 4
34	G	OUTPUT 3
35	BR	OUTPUT 2
36	LG	OUTPUT 1
37	B	KEY SW
38	W/R	IGN SW
39	L	CAN-H
40	P	CAN-L

VACUUM LINES

Removal and Installation

INFOID:0000000004466852

Brake Booster Vacuum Hose



1. Brake booster hose
2. Brake booster hose clip
3. Brake booster vacuum check valve

REMOVAL

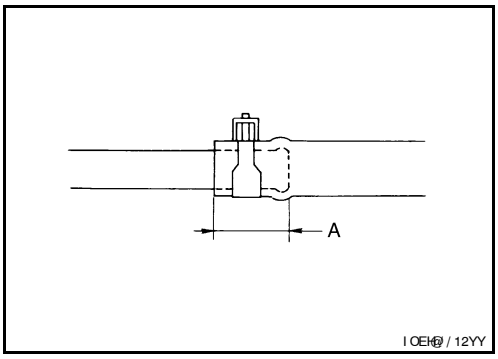
1. Disconnect brake booster hose from hose clip bracket.
2. Release the brake booster hose clips and remove the brake booster hose.
3. Remove the check valve from the brake booster.

INSTALLATION

Installation is in the reverse order of removal.

- Insert vacuum hose onto tube and brake booster vacuum check valve for a minimum length (A) before installing the brake booster hose clips.

Vacuum hose length (A) : 24 mm (0.94 in) or more



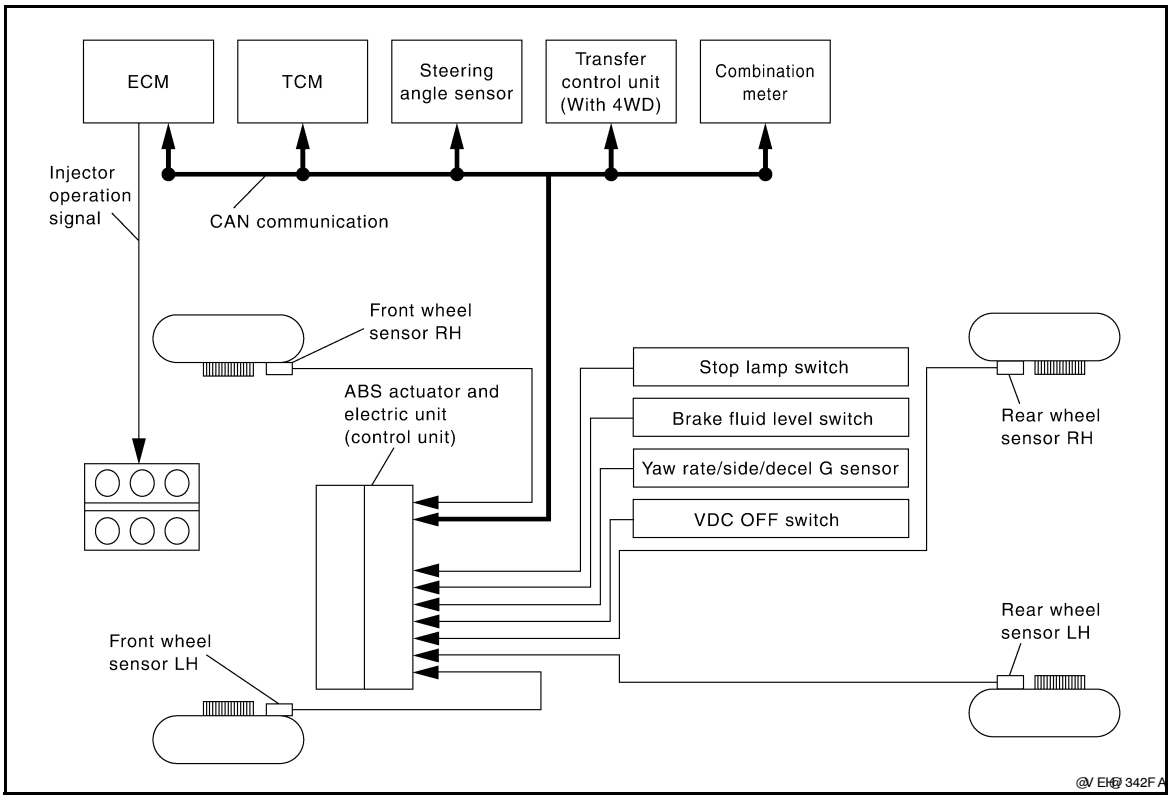
CAUTION:

Do not use lubricating oil during installation.

VDC

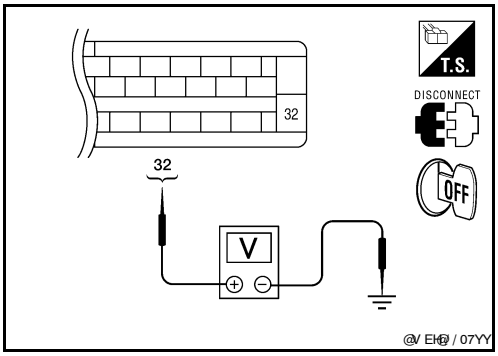
System Diagram

INFOID:0000000004064664



1. Turn ignition switch OFF.
2. Disconnect ABS actuator and electric unit (control unit) connector.
3. Check voltage between ABS actuator and electric unit (control unit) connector E125 terminal 32 and ground.

ABS actuator and electric unit (control unit)		—	Voltage
Connector	Terminal		
E125	32	Ground	Battery voltage



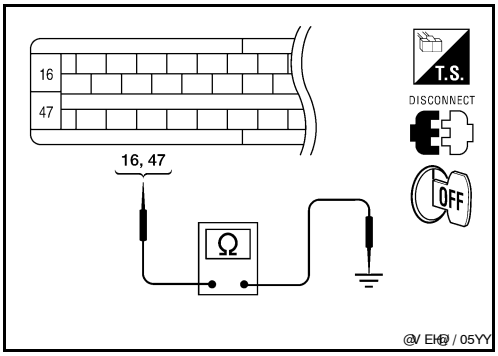
Is the inspection result normal?

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

3.CHECK SOLENOID, VDC SWITCH-OVER VALVE AND ACTUATOR RELAY GROUND CIRCUIT

Check continuity between ABS actuator and electric unit (control unit) connector E125 terminals 16, 47 and ground.

ABS actuator and electric unit (control unit)		—	Continuity
Connector	Terminal		
E125	16, 47	Ground	Yes



Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit). Refer to BRC-106, "Removal and Installation".
NO >> Repair or replace malfunctioning components.

Component Inspection

INFOID:0000000004064720

1.CHECK ACTIVE TEST

1. Select each test menu item on “ACTIVE TEST”.
2. On the display, touch “Up”, “Keep”, and “Down”, and check that the system operates as shown in the table below.

Operation		ABS solenoid valve		
		Up	Keep	Down
FR RH SOL	FR RH IN SOL	Off	On	On
	FR RH OUT SOL	Off	Off	On*
FR LH SOL	FR LH IN SOL	Off	On	On
	FR LH OUT SOL	Off	Off	On*
RR RH SOL	RR RH IN SOL	Off	On	On
	RR RH OUT SOL	Off	Off	On*
RR LH SOL	RR LH IN SOL	Off	On	On
	RR LH OUT SOL	Off	Off	On*
REAR SOL	This item is not used for this model.			

*: ON for 1 to 2 seconds after the touch, and then OFF

Is the inspection result normal?

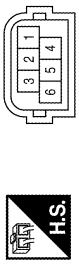
YES >> Inspection End
NO >> Go to diagnosis procedure. Refer to BRC-51, "Diagnosis Procedure".

Special Repair Requirement

INFOID:0000000004064721

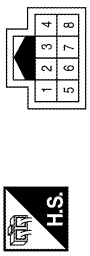
1.ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Connector No.	B73
Connector Name	YAW RATE/SIDE/DECEL G SENSOR
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	W	CAN-L
2	O	CAN-H
3	Y	CLU_P
5	BR	CLU_GND

Connector No.	B40
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
5	BR	--
6	O	--
7	W	--
8	Y	--

@V EH@ 063F A

Fail-Safe

INFOID:0000000004064780

CAUTION:

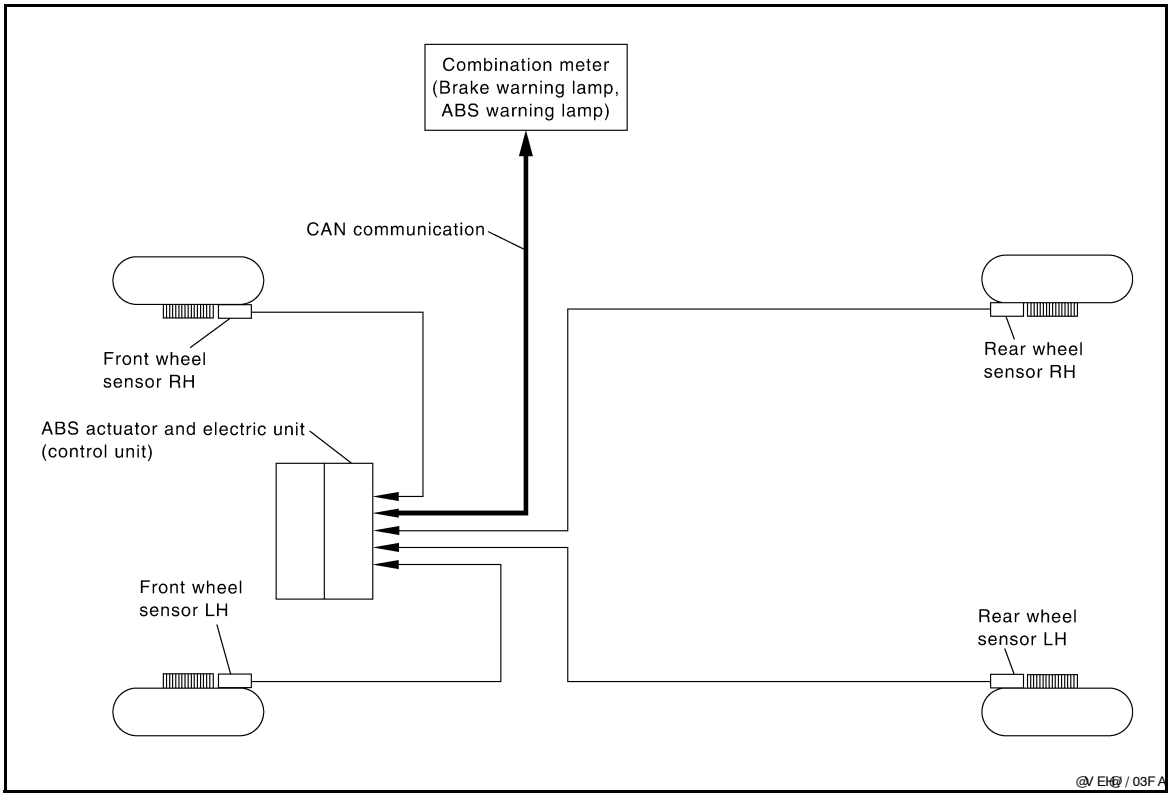
If the Fail-Safe function is activated, perform Self Diagnosis for ABS/TCS/VDC system.

ABS/EBD SYSTEM

ABS

System Diagram

INFOID:0000000004064818

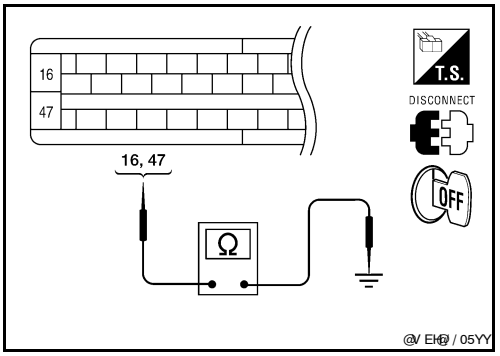


System Description

INFOID:0000000004064819

- Anti-Lock Braking System is a function that detects wheel revolution while braking, electronically controls braking force, and prevents wheel locking during sudden braking. It improves handling stability and maneuverability for avoiding obstacles.
- Electrical system diagnosis by CONSULT-III is available.

Check continuity between ABS actuator and electric unit (control unit) connector E125 terminals 16, 47 and ground.



ABS actuator and electric unit (control unit)		—	Continuity
Connector	Terminal		
E125	16, 47	Ground	Yes

Is the inspection result normal?

YES >> Replace ABS actuator and electric unit (control unit). Refer to BRC-209, "Removal and Installation".
NO >> Repair or replace malfunctioning components.

Component Inspection

INFOID:0000000004064877

1.CHECK ACTIVE TEST

1. On “ACTIVE TEST”, select “ABS MOTOR”.
2. Touch On and Off on screen. Make sure motor relay and actuator relay operates as shown in table below.

Operation	On	Off
MOTOR RELAY	On	Off
ACTUATOR RLY	On	On

Is the inspection result normal?

YES >> Inspection End
NO >> Go to diagnosis procedure. Refer to BRC-159, "Diagnosis Procedure".

Special Repair Requirement

INFOID:0000000004064878

1.ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

Always perform neutral position adjustment for the steering angle sensor when replacing the ABS actuator and electric unit (control unit). Refer to BRC-115, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Description".

>> GO TO 2

2.CALIBRATION OF DECEL G SENSOR

Always perform calibration of decel G sensor when replacing the ABS actuator and electric unit (control unit). Refer to BRC-116, "CALIBRATION OF DECEL G SENSOR : Description".

>> END

EXCESSIVE ABS FUNCTION OPERATION FREQUENCY

Diagnosis Procedure

INFOID:0000000004064932

1.CHECK START

Check front and rear brake force distribution using a brake tester.

Is the inspection result normal?

YES >> GO TO 2
NO >> Check brake system.

2.CHECK FRONT AND REAR AXLE

Make sure that there is no excessive play in the front and rear axles. Refer to front: FAX-5, "On-Vehicle Inspection and Service" or rear: RAX-20, "Rear Axle Bearing".

Is the inspection result normal?

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

3.CHECK WHEEL SENSOR AND SENSOR ROTOR

Check the following.
- Wheel sensor installation for damage.
- Sensor rotor installation for damage.
- Wheel sensor connector connection.
- Wheel sensor harness inspection.

Is the inspection result normal?

YES >> GO TO 4
NO >>
- Replace wheel sensor or sensor rotor. Refer to BRC-207, "Removal and Installation".
- Repair harness.

4.CHECK ABS WARNING LAMP DISPLAY

Make sure that the ABS warning lamp is turned off after the ignition switch is turned ON or when driving.

Is the ABS warning lamp illuminated?

YES >> Perform self-diagnosis. Refer to BRC-126, "CONSULT-III Function (ABS)".
NO >> Normal

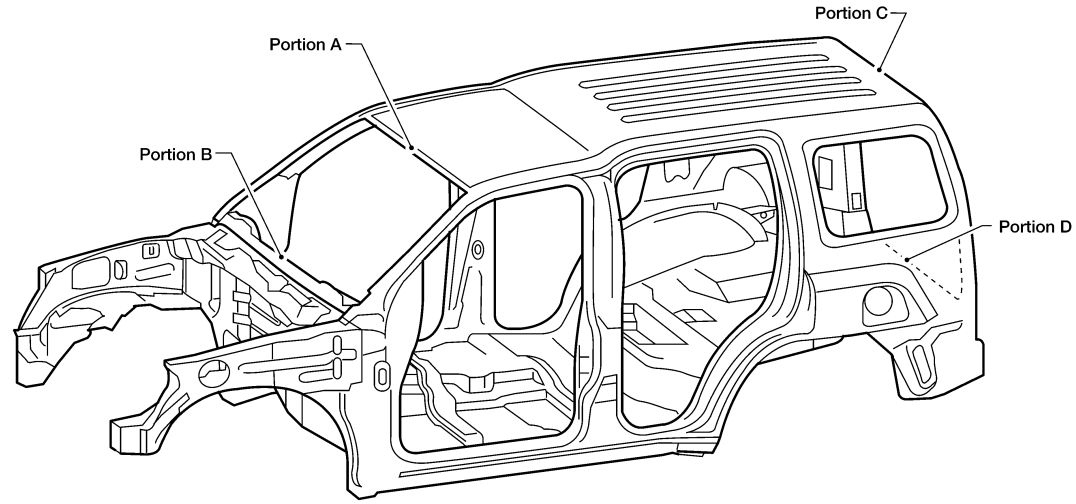
BODY ALIGNMENT

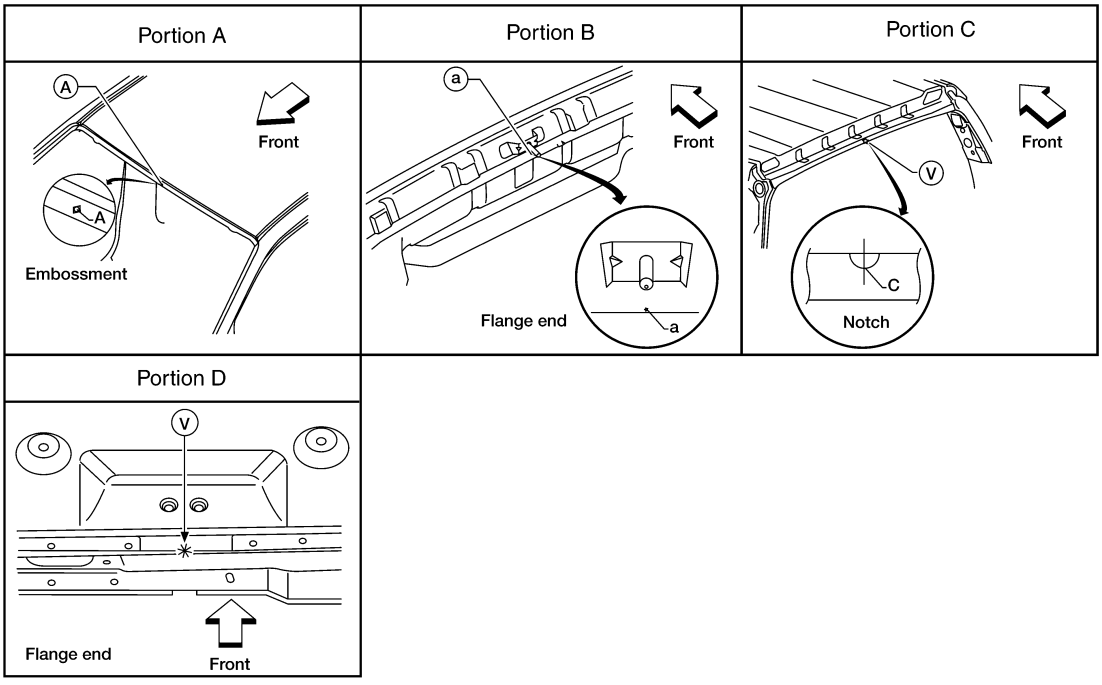
Body Alignment

INFOID:0000000004065490

BODY CENTER MARKS

A mark has been placed on each part of the body to indicate the vehicle center. When repairing parts damaged by an accident which might affect the vehicle frame (members, pillars, etc.), more accurate and effective repair will be possible by using these marks together with body alignment specifications.





KHG1 / 55D

PANEL PARTS MATCHING MARKS

FUNCTION DIAGNOSIS

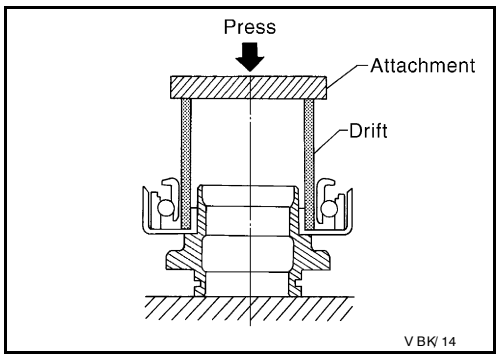
AUTOMATIC SPEED CONTROL DEVICE (ASCD)

Description

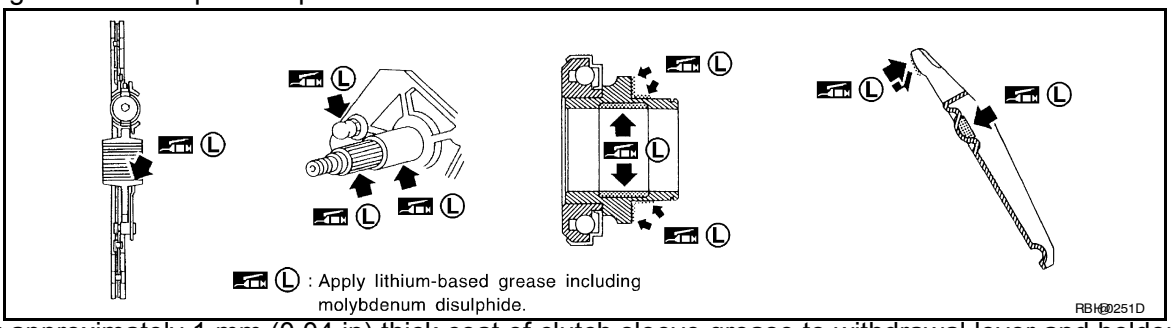
INFOID:0000000004095470

For information regarding the ASCD system, refer to EC-35, "System Description".

- Install the release bearing to release bearing sleeve using suitable tool, as shown.



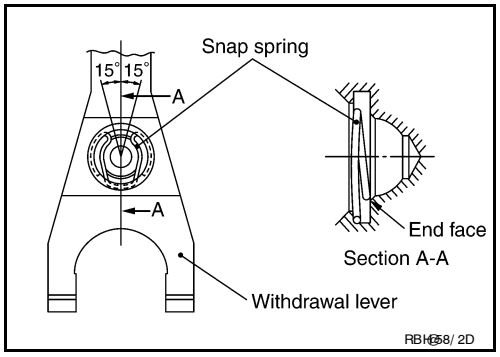
- Clean old grease and abrasive materials off the grease application areas.
- Apply grease to the specified points as shown.



- Apply approximately 1 mm (0.04 in) thick coat of clutch sleeve grease to withdrawal lever and holder spring frictional surfaces.
- Apply a coat of clutch sleeve grease to ball pin contact surface of the withdrawal lever and inner slots of the release bearing. The grease surface should be level with the surrounding area.
- Apply a thin coat of clutch sleeve grease to the release bearing frictional surface. After grease application, Install release bearing. Wipe off excess grease forced out during bearing installation.

CAUTION:

- **Before installing the manual transaxle to the vehicle, check that each sliding surface slides smoothly by operating withdrawal lever.**
- **Be careful not to bring any grease into contact with the clutch disc facing, pressure plate surface, or flywheel surface.**
- **When assembling, make sure that both ends of the snap spring touch the end face of the withdrawal lever.**
- **Be careful with the orientation of the installation.**



Inspection

INFOID:0000000004064187

INSPECTION AFTER REMOVAL

SECTION DEF
DEFOGGER

CONTENTS

SYMPTOM DIAGNOSIS

REAR WINDOW DEFOGGER AND DOOR MIRROR DEFOGGER DO NOT OPERATE.

Diagnosis Procedure

INFOID:0000000004065716

1. CHECK REAR WINDOW DEFOGGER SWITCH

Check rear window defogger switch.
Refer to DEF-13, "Component Function Check".

Is the inspection result normal?

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

2. CHECK REAR WINDOW DEFOGGER RELAY

Check rear window defogger relay.
Refer to DEF-12, "Component Function Check".

Is the inspection result normal?

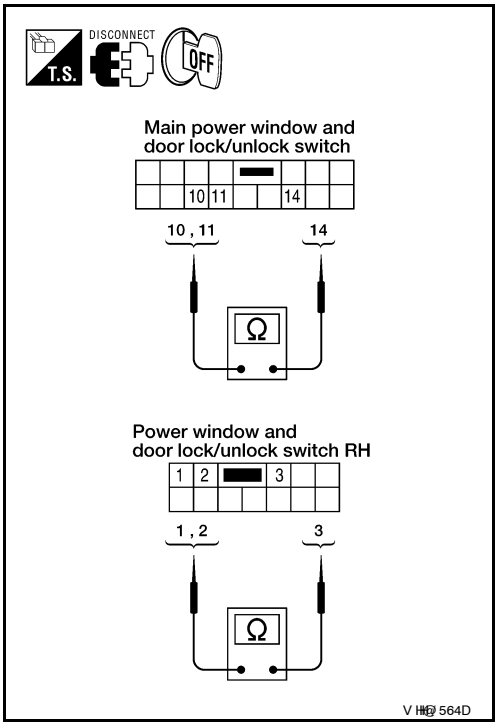
YES >> Check for intermittent incident. Refer to GI-37, "Intermittent Incident".
NO >> Repair or replace the malfunctioning parts.

3. Check continuity between main power window and door lock/unlock switch terminals 10, 11 and 14.

Terminal		Condition	Continuity
10	14	Lock	Yes
		Unlock/Neutral	No
11		Unlock	Yes
		Lock/Neutral	No

4. Check continuity between power window and door lock/unlock switch RH terminals 1, 2 and 3.

Terminal		Condition	Continuity
1	3	Lock	Yes
		Unlock/Neutral	No
2		Unlock	Yes
		Lock/Neutral	No



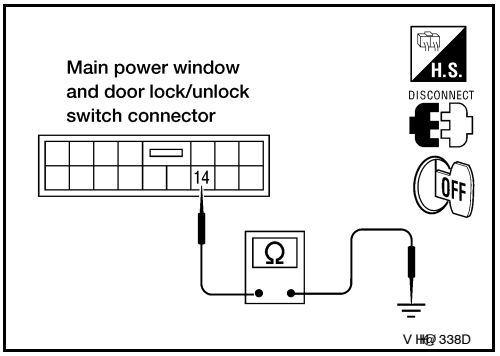
Is the inspection result normal?

YES >> GO TO 3
NO >> Replace door lock/unlock switch.

3. CHECK DOOR LOCK/UNLOCK SWITCH GROUND HARNESS

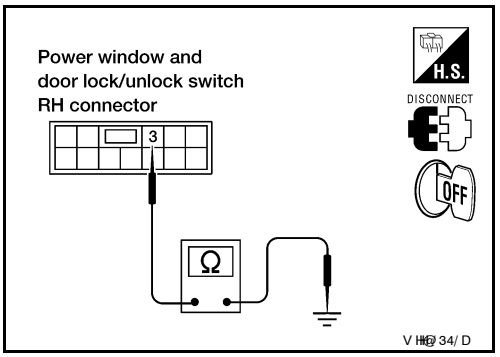
1. Disconnect main power window and door lock/unlock switch or power window and door lock/unlock switch RH.
2. Check continuity between main power window and door lock/unlock switch connector D7 terminal 14 and ground.

14 - Ground : Continuity should exist.



3. Check continuity between power window and door lock/unlock switch RH connector D105 terminal 3 and ground

3 - Ground : Continuity should exist.

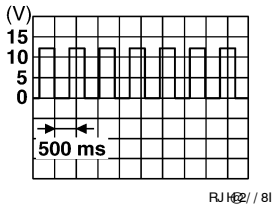
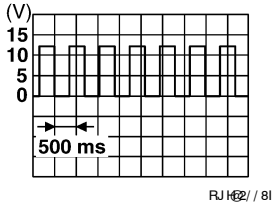
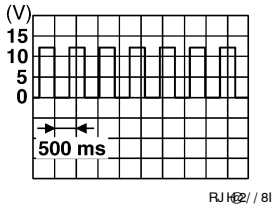


Is the inspection result normal?

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

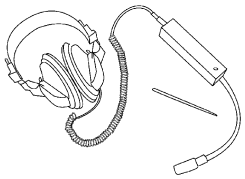
4. CHECK DOOR LOCK SWITCH CIRCUIT

1. Disconnect BCM.
2. Check continuity between BCM connector M19 terminal 45 and main power window and door lock/unlock switch connector D7 terminal 10 or power window and door lock/unlock switch RH connector D105 terminal 1.

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
45	V	Lock switch	Input	OFF	ON (lock)	0V
					OFF	Battery voltage
46	LG	Unlock switch	Input	OFF	ON (unlock)	0V
					OFF	Battery voltage
47	GR	Front door switch LH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
48	P	Rear door switch LH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
49	L	Cargo lamp	Output	OFF	Any door open (ON)	0V
					All doors closed (OFF)	Battery voltage
50	W	Off-road lamps relay	Output	ON	Off-road lamps switch: ON	0V
					Off-road lamps switch: OFF	Battery voltage
51	G	Trailer turn signal (right)	Output	ON	Turn right ON	 RJH0221E
52	V	Trailer turn signal (left)	Output	ON	Turn left ON	 RJH0221E
55	W	Rear wiper output circuit 1	Output	ON	OFF	0
					ON	Battery voltage
56	V	Battery saver output	Output	OFF	30 minutes after ignition switch is turned OFF	0V
				ON	—	Battery voltage
57	R/Y	Battery power supply	Input	OFF	—	Battery voltage
59	GR	Front door lock assembly LH actuator (unlock)	Output	OFF	OFF (neutral)	0V
					ON (unlock)	Battery voltage
60	LG	Turn signal (left)	Output	ON	Turn left ON	 RJH0221E

Commercial Service Tool

INFOID:0000000004065310

(Kent-Moore No.) Tool name	Description
(J-39565) Engine ear  PHG 884D	Locating the noise

NO >> Check transfer control unit pin terminals for damage or loose connection with harness connector. If any items are damaged, repair or replace damaged parts.

4. CHECK DTC

Drive vehicle and then perform Self-diagnosis.

Do DTC's P1801 or P1811 display?

YES >> Replace transfer control unit. Refer to DLN-91, "Removal and Installation".
NO >> Inspection End.

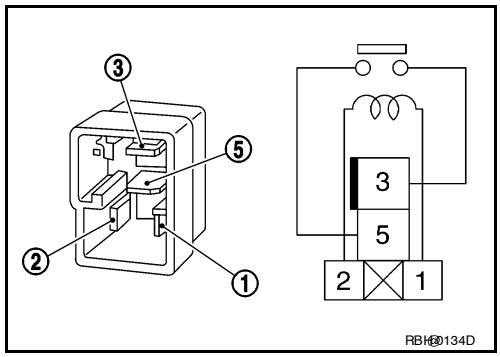
Component Inspection

INFOID:0000000004095526

1. Turn ignition switch “OFF”. (Stay for at least 5 seconds.)
2. Remove transfer shut off relay 1 and transfer shut off relay 2. Refer to DLN-12, "Component Parts Location".
3. Apply 12V direct current between transfer shut off relay terminals 1 and 2.
4. Check continuity between relay terminals 3 and 5.

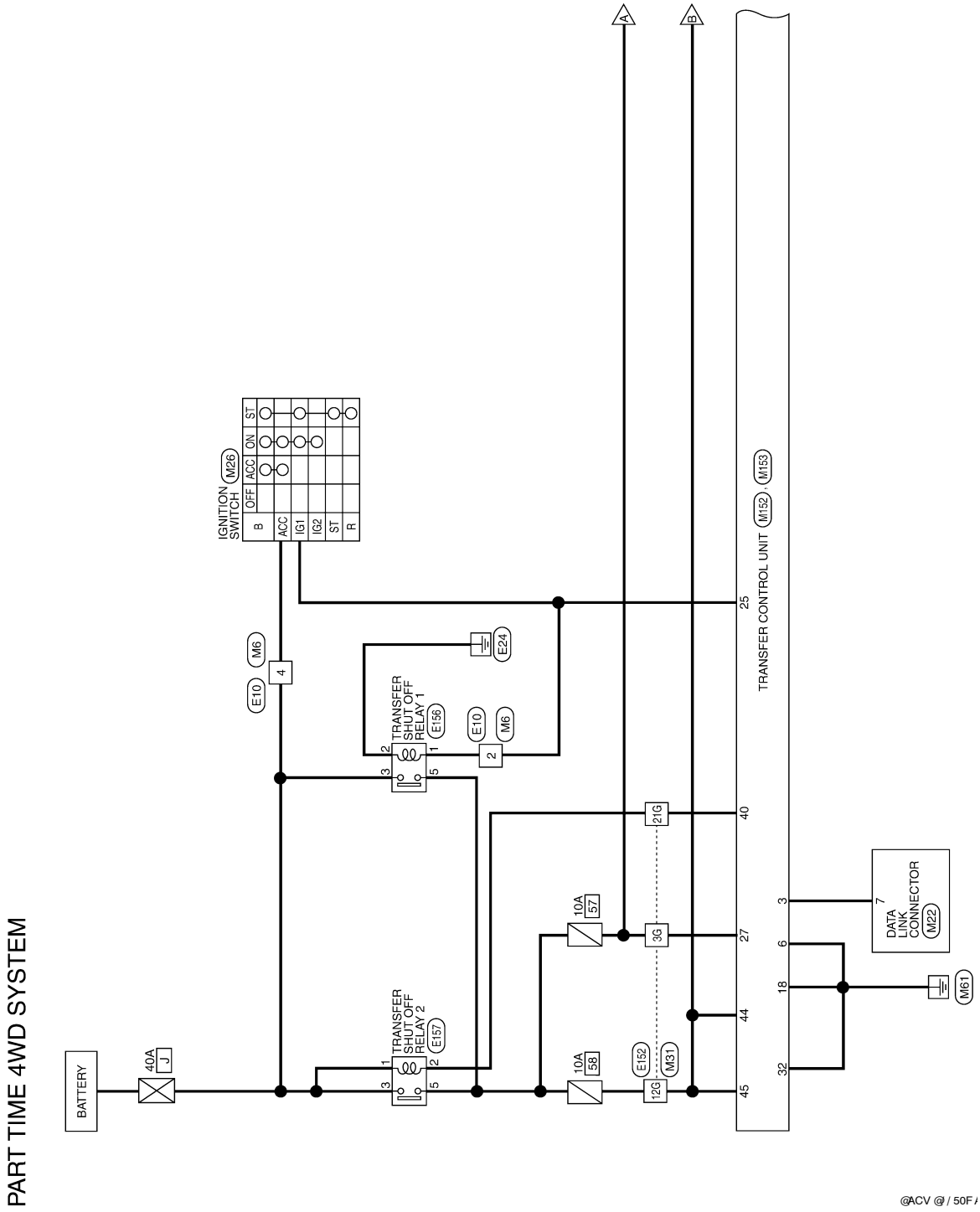
Condition	Continuity
12V direct current supply between terminals 1 and 2	Yes
OFF	No

5. If inspection results are not normal, replace the transfer shut off relay 1 or 2.



Wiring Diagram

INFOID:0000000004095569



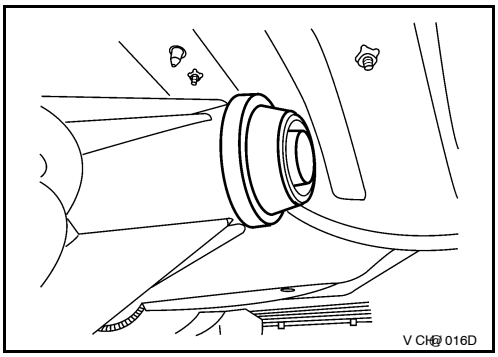
REAR OIL SEAL

Removal and Installation

INFOID:0000000004471350

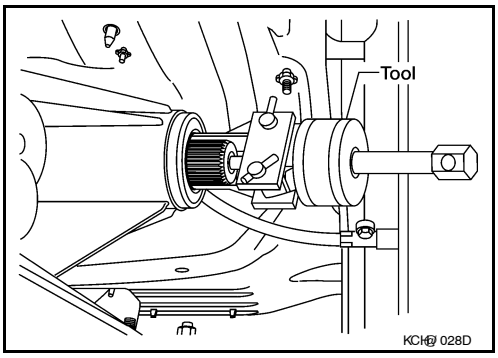
REMOVAL

1. Partially drain the transfer fluid. Refer to DLN-90, "Replacement".
2. Remove the rear propeller shaft. Refer to DLN-138, "Removal and Installation".
3. Remove the dust cover from the rear case.
   CAUTION:
   Do not damage the rear case.



4. Remove the rear oil seal from the rear case using Tool.
   CAUTION:
   Do not damage the rear case.

   Tool number : ST33290001 (J-34286)

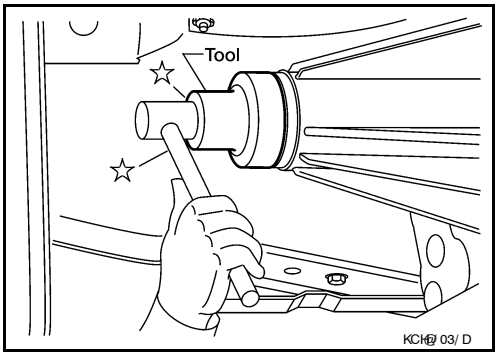


INSTALLATION

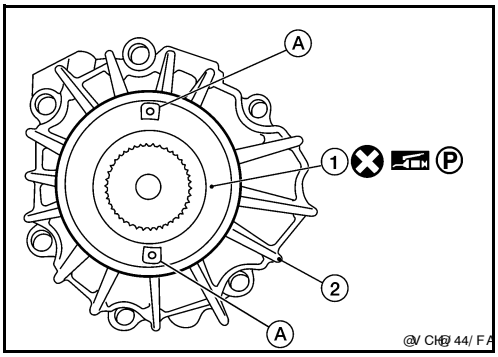
1. Install the new rear oil seal until it is flush with the end face of the rear case using Tool.

   Tool number : KV38100500 (—)

   CAUTION:
   - **Do not reuse oil seal.**
   - **Apply petroleum jelly to oil seal.**



2. Apply petroleum jelly to the circumference of the new dust cover. Position the new dust cover as shown.
   CAUTION:
   - **Do not reuse dust cover.**
   - **Position the protrusions mark at the position shown.**
   - 1: Dust cover
   - A: Protrusions
   - 2: Rear case assembly



REMOVAL AND INSTALLATION

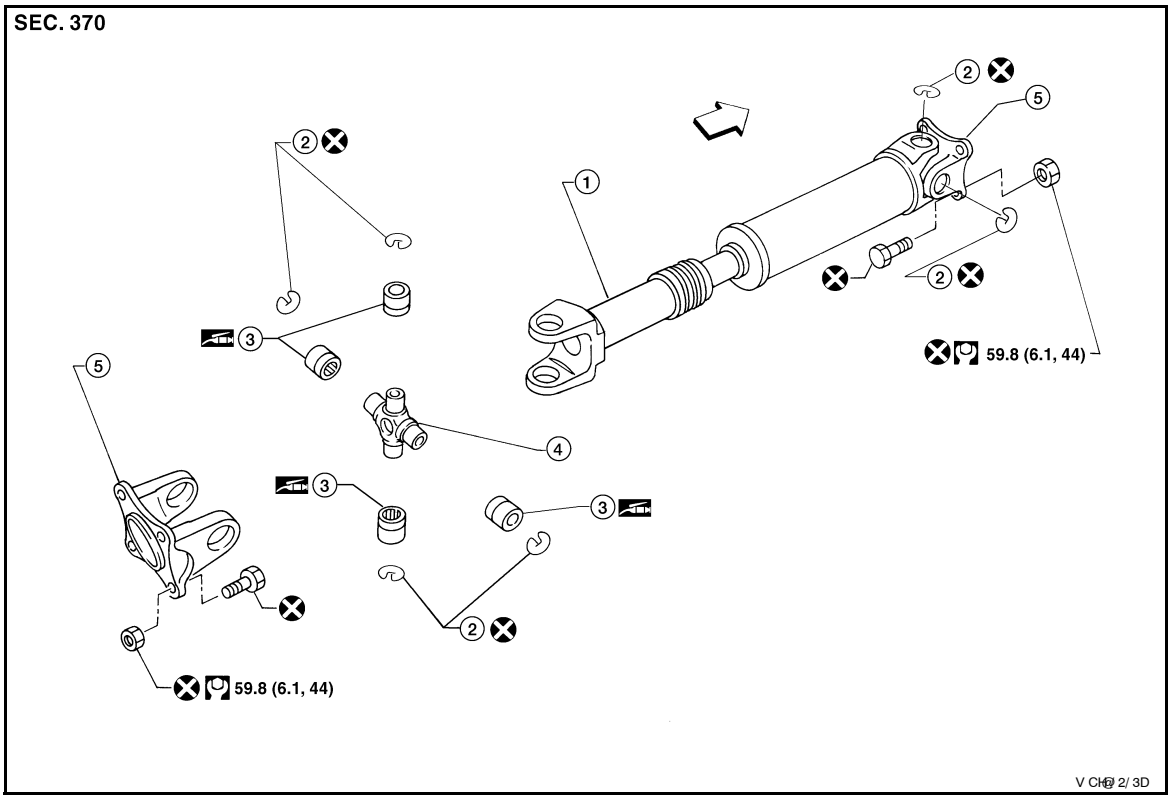
PROPELLER SHAFT

Removal and Installation

INFOID:0000000004095610

COMPONENTS

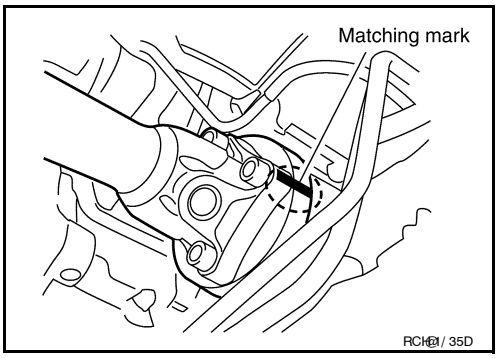
Model 2F1310



1. Propeller shaft tube
2. Snap ring
3. Journal bearing
4. Journal
5. Flange yoke
⇐: Front

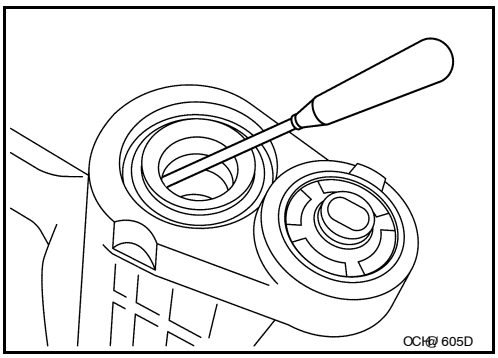
REMOVAL

1. Put matching marks on the front propeller shaft flange yoke and the front final drive companion flange as shown.
CAUTION:
For matching marks, use paint. Never damage the flange yoke and companion flange of the front final drive.
2. Put matching marks on the front propeller shaft flange yoke and the transfer companion flange.
CAUTION:
For matching marks, use paint. Never damage the flange yoke and companion flange of the front final drive.
3. Remove the bolts and then remove the front propeller shaft from the front final drive and transfer.

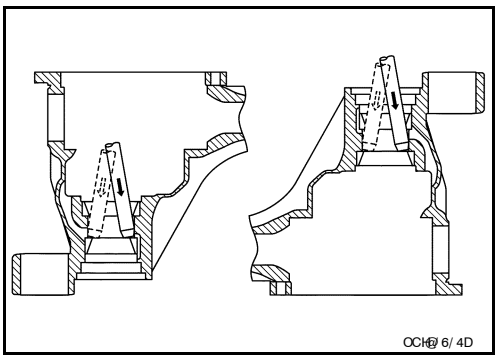


INSPECTION

7. Remove the front oil seal using suitable tool.
CAUTION:
Do not damage gear carrier.



8. Remove the drive pinion front bearing inner race.
9. Remove the drive pinion front and rear bearing outer races by tapping them uniformly using suitable tool.
CAUTION:
Do not damage gear carrier.



INSPECTION AFTER DISASSEMBLY

Clean the disassembled parts. Then inspect the parts for wear or damage. If wear or damage are found, follow the measures below.

Drive Pinion and Drive Gear
- If the drive pinion and drive gear teeth do not mesh or line-up correctly, determine the cause and adjust, repair, or replace as necessary.
- If the drive pinion or drive gear are worn, cracked, damaged, pitted or chipped (by friction) noticeably, replace with new drive pinion and drive gear.
- Drive pinion and drive gear are supplied in matched sets only. Matching numbers on both drive pinion and drive gear are etched for verification. If a new drive pinion and drive gear set are being used, verify the numbers of each drive pinion and drive gear before proceeding with assembly.

Bearing
- If bearings are chipped (by friction), pitted, worn, rusted, scratched, or unusual noise is coming from bearing, replace with new bearing assembly (as a new set).
- Bearing must be replaced with a new one whenever disassembled.

Side Gear and Pinion Mate Gear
- If any cracks or damage are found on the surface of the teeth, replace with new one.
- If any worn or chipped marks are found on the side of the side gear and pinion mate gear which contact the thrust washer, replace with new one.
- Replace both side gear and pinion mate gear as a set when replacing side gear or pinion mate gear.

Side Gear Thrust Washer and Pinion Mate Thrust Washer
- If any chips (by friction), damage, or unusual wear are found, replace with new one.

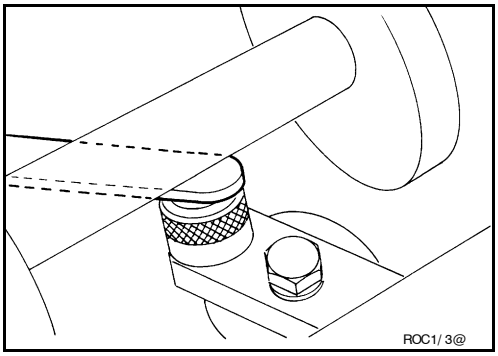
Gear Carrier
- If any wear or cracks are found on the contact sides of gear carrier, replace with new one.

Companion Flange
- If any chips (about 0.1mm, 0.004 in) or other damage on the companion flange surface which contacts the front oil seal lips are found, replace with new one.

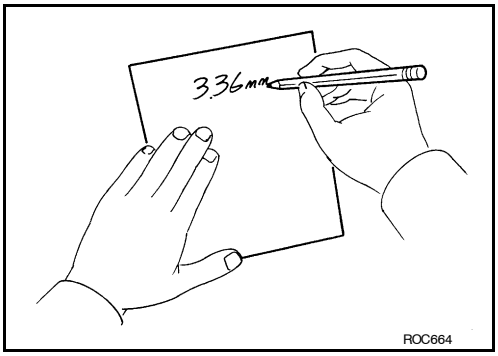
ADJUSTING AND SELECTING WASHERS

Side Gear Back Clearance
- Assemble the differential parts if they are disassembled. Refer to "Differential Assembly" in disassembly.

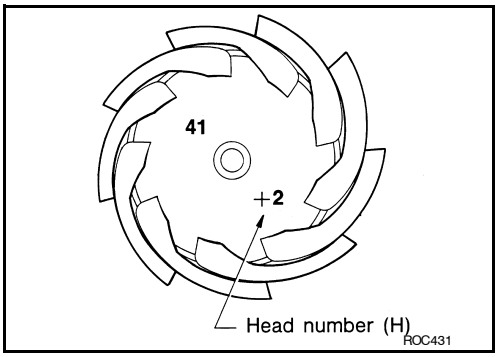
9. Select the correct standard drive pinion height adjusting washer thickness. Select by using a standard gauge of 3 mm (0.12 in) and your J-34309-101 feeler gauge. Measure the distance between the J-34309-11 drive pinion height adapter, including the standard gauge and the arbor.



10. Write down the exact measurement (the value of feeler gauge).



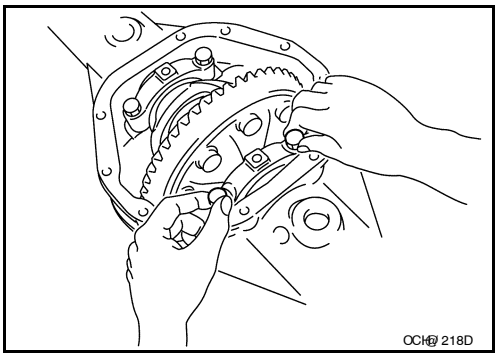
11. Correct the drive pinion height adjusting washer size by referring to the drive pinion “head number”.
There are two numbers painted on the drive pinion. The first one refers to the drive pinion and drive gear as a matched set. This number should be the same as the number on the drive gear. The second number is the drive pinion “head number”. It refers to the ideal drive pinion height from standard for quietest operation. Use the following chart to determine the correct drive pinion height adjusting washer.



Head number	Add or remove from the standard drive pinion height adjusting washer thickness measurement
- 6	Add 0.06 mm (0.0024 in)
- 5	Add 0.05 mm (0.0020 in)
- 4	Add 0.04 mm (0.0016 in)
- 3	Add 0.03 mm (0.0012 in)
- 2	Add 0.02 mm (0.0008 in)
- 1	Add 0.01 mm (0.0004 in)
0	Use the selected washer thickness
+1	Subtract 0.01 mm (0.0004 in)
+2	Subtract 0.02 mm (0.0008 in)
+3	Subtract 0.03 mm (0.0012 in)
+4	Subtract 0.04 mm (0.0016 in)
+5	Subtract 0.05 mm (0.0020 in)
+6	Subtract 0.06 mm (0.0024 in)

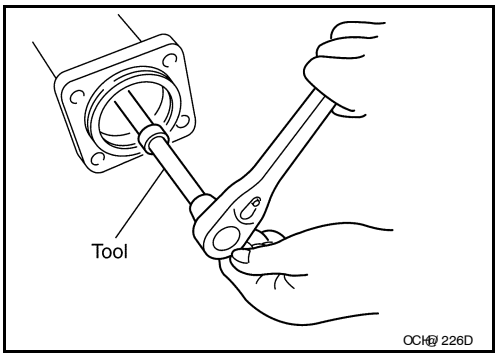
12. Select the correct drive pinion height adjusting washer. Refer to DLN-209, "Inspection and Adjustment".

15. Align paint matching mark on side bearing caps with that on gear carrier and install side bearing caps on gear carrier.
CAUTION:
Do not tighten at this point. This allows further tightening of side bearing adjusters.



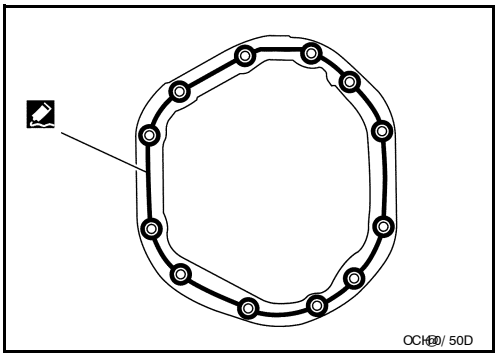
16. Tighten each side bearing adjusters using Tool.

Tool number : — (C - 4164)



17. Adjusting backlash of drive gear and drive pinion. Refer to DLN-223, "Disassembly and Assembly".
18. Check total preload. Refer to DLN-223, "Disassembly and Assembly".
19. Check tooth contact. Refer to DLN-223, "Disassembly and Assembly".

20. Apply a bead of sealant to the mating surface of the carrier cover as shown.
    • Use Genuine Silicone RTV or equivalent. Refer to GI-14, "Recommended Chemical Products and Sealants".
CAUTION:
Remove any old sealant adhering to the mating surfaces. Also remove any moisture, oil, or foreign material adhering to the application and mating surfaces.
21. Install the carrier cover to the gear carrier. Tighten the bolts to the specified torque. Refer to DLN-223, "Disassembly and Assembly".



Connector No.	C117
Connector Name	DIFFERENTIAL LOCK SOLENOID
Connector Color	BLACK

Terminal No.	Color of Wire	Signal Name
2	L	–
4	GR	–

@ACH@ 053F A

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

General Specification

INFOID:0000000004095735

Applied model	VQ40DE	
	4WD	
	5A/T	6M/T
Final drive model	M226	
Gear ratio	3.357	3.692
Number of pinion gears	2	
Number of teeth (Drive gear / drive pinion)	47/14	48/13
Oil capacity (Approx.)	2.01 ℓ (4-1/4 US pt, 3-1/2 Imp pt)	
Drive pinion adjustment spacer type	Collapsible	

Inspection and Adjustment

INFOID:0000000004095736

PRELOAD TORQUE

Unit: N·m (kg-m, in-lb)

Item	Specification
Drive pinion bearing preload torque	1.7 - 3.1 (0.18 - 0.31, 15 - 27)
Total preload torque (Total preload torque = drive pinion bearing preload torque + Side bearing preload torque)	2.38 - 4.46 (0.25 - 0.45, 21 - 39)

BACKLASH

Unit: mm (in)

Item	Standard
Drive gear to drive pinion gear	0.12 - 0.20 (0.0050 - 0.0079)

COMPANION FLANGE RUNOUT

Unit: mm (in)

Item	Runout limit
Companion flange face	0.10 (0.0039) or less
Companion flange inner side	0.13 (0.0051) or less

SELECTIVE PARTS

Drive Pinion Height Adjusting Washer

Unit: mm (in)

Thickness	Package part number*
0.076 (0.030) 0.079 (0.031) 0.081 (0.032) 0.084 (0.033) 0.086 (0.034)	38151 8S101
0.089 (0.035) 0.091 (0.036) 0.094 (0.037) 0.097 (0.038) 0.099 (0.039)	38151 8S102

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

System Description

INFOID:0000000004063669

INPUT/OUTPUT SIGNAL CHART

Sensor	Input signal to ECM	ECM function	Actuator
ASCD brake switch	Brake pedal operation	ASCD vehicle speed control	Electric throttle control actuator
Stop lamp switch	Brake pedal operation		
ASCD clutch switch	Clutch pedal operation		
ASCD steering switch	ASCD steering switch operation		
Park/Neutral position (PNP) switch	Gear position		
Wheel sensor	Vehicle speed*		
TCM	Powertrain revolution*		

*: This signal is sent to the ECM via the CAN communication line.

BASIC ASCD SYSTEM

Refer to Owner's Manual for ASCD operating instructions.
Automatic Speed Control Device (ASCD) allows a driver to keep vehicle at predetermined constant speed without depressing accelerator pedal. Driver can set vehicle speed in advance between approximately 40 km/h (25 MPH) and 144 km/h (89 MPH).
ECM controls throttle angle of electric throttle control actuator to regulate engine speed.
Operation status of ASCD is indicated by CRUISE indicator and SET indicator in combination meter. If any malfunction occurs in the ASCD system, it automatically deactivates control.
NOTE:
Always drive vehicle in a safe manner according to traffic conditions and obey all traffic laws.

SET OPERATION

Press MAIN switch. (The CRUISE indicator in combination meter illuminates.)
When vehicle speed reaches a desired speed between approximately 40 km/h (25 MPH) and 144 km/h (89 MPH), press SET/COAST switch. (Then SET indicator in combination meter illuminates.)

ACCELERATE OPERATION

If the RESUME/ACCELERATE switch is pressed during cruise control driving, increase the vehicle speed until the switch is released or vehicle speed reaches maximum speed controlled by the system.
And then ASCD will maintain the new set speed.

CANCEL OPERATION

When any of following conditions exist, cruise operation will be canceled.
- CANCEL switch is pressed
- More than 2 switches on ASCD steering switch are pressed at the same time (Set speed will be cleared)
- Brake pedal is depressed
- Clutch pedal is depressed or gear position is changed to the neutral position (M/T models)
- Selector lever position is changed to N, P or R (A/T models)
- Vehicle speed decreased to 13 km/h (8 MPH) lower than the set speed
- VDC system is operated

When the ECM detects any of the following conditions, the ECM will cancel the cruise operation and inform the driver by blinking indicator lamp.
- Engine coolant temperature is slightly higher than the normal operating temperature, CRUISE lamp may blink slowly.
  When the engine coolant temperature decreases to the normal operating temperature, CRUISE lamp will stop blinking and the cruise operation will be able to work by depressing SET/COAST switch or RESUME/ACCELERATE switch.
- Malfunction for some self-diagnoses regarding ASCD control: SET lamp will blink quickly.

If MAIN switch is turned to OFF while ASCD is activated, all of ASCD operations will be canceled and vehicle speed memory will be erased.

COAST OPERATION

Freeze frame data item*	Description
INT/A TEMP SE [°C] or [°F]	• The intake air temperature at the moment a malfunction is detected is displayed.
INT MANI PRES [kPa]	• Always a certain value is displayed. • These items are displayed but are not applicable to this model.
COMBUST CONDITION	

*: The items are the same as those of 1st trip freeze frame data.

DATA MONITOR MODE

Monitored Item

×: Applicable

Monitored item	Unit	Description	Remarks
ENG SPEED	rpm	• Indicates the engine speed computed from the signal of the crankshaft position sensor (POS) and camshaft position sensor (PHASE).	• Accuracy becomes poor if engine speed drops below the idle rpm. • If the signal is interrupted while the engine is running, an abnormal value may be indicated.
MAS A/F SE-B1	V	• The signal voltage of the mass air flow sensor is displayed.	• When the engine is stopped, a certain value is indicated. • When engine is runnning specification range is indicated in “SPEC”.
B/FUEL SCHDL	msec	• “Base fuel schedule” indicates the fuel injection pulse width programmed into ECM, prior to any learned on board correction.	• When engine is runnning specification range is indicated in “SPEC”.
A/F ALPHA-B1	%	• The mean value of the air-fuel ratio feedback correction factor per cycle is indicated.	• When the engine is stopped, a certain value is indicated. • When engine is runnning specification range is indicated in “SPEC”. • This data also includes the data for the air-fuel ratio learning control.
A/F ALPHA-B2	%		
COOLAN TEMP/S	°C or °F	• The engine coolant temperature (determined by the signal voltage of the engine coolant temperature sensor) is displayed.	• When the engine coolant temperature sensor is open or short-circuited, ECM enters fail-safe mode. The engine coolant temperature determined by the ECM is displayed.
A/F SEN1 (B1)	V	• The A/F signal computed from the input signal of the Air fuel ratio (A/F) sensor 1 is displayed.	
A/F SEN1 (B2)	V		
HO2S2 (B1)	V	• The signal voltage of the heated oxygen sensor 2 is displayed.	
HO2S2 (B2)	V		
HO2S2 MNTR (B1)	RICH/ LEAN	• Display of heated oxygen sensor 2 signal: RICH: Means the amount of oxygen after three way catalyst is relatively small. LEAN: Means the amount of oxygen after three way catalyst is relatively large.	• When the engine is stopped, a certain value is indicated.
HO2S2 MNTR (B2)	RICH/ LEAN		
VHCL SPEED SE	km/h or mph	• The vehicle speed computed from the vehicle speed signal sent from combination meter is displayed.	
BATTERY VOLT	V	• The power supply voltage of ECM is displayed.	
ACCEL SEN 1	V	• The accelerator pedal position sensor signal voltage is displayed.	• ACCEL SEN 2 signal is converted by ECM internally. Thus, it differs from ECM terminal voltage signal.
ACCEL SEN 2	V		
TP SEN 1-B1	V	• The throttle position sensor signal voltage is displayed.	• THRTL SEN 2 signal is converted by ECM internally. Thus, it differs from ECM terminal voltage signal.
TP SEN 2-B1	V		

3. Check the mass air flow sensor signal with Service $01.
4. Check for linear mass air flow sensor signal value rise in response to increases to about 4,000 rpm in engine speed.
5. If NG, go to EC-107, "Diagnosis Procedure".

CALC LOAD	20%
COOLANT TEMP	95°C
SHORT FT #1	2%
LONG FT #1	0%
SHORT FT #2	4%
LONG FT #2	0%
ENGINE SPD	2637RPM
VEHICLE SPD	0MPH
IGN ADVANCE	41.0°
INTAKE AIR	41°C
MAF	14.1gm/sec
THROTTLE POS	3%

RDE423O

Diagnosis Procedure

INFOID:0000000004063721

1.INSPECTION START

Which malfunction (A or B) is duplicated?

A or B

A >> GO TO 3.
B >> GO TO 2.

2.CHECK INTAKE SYSTEM

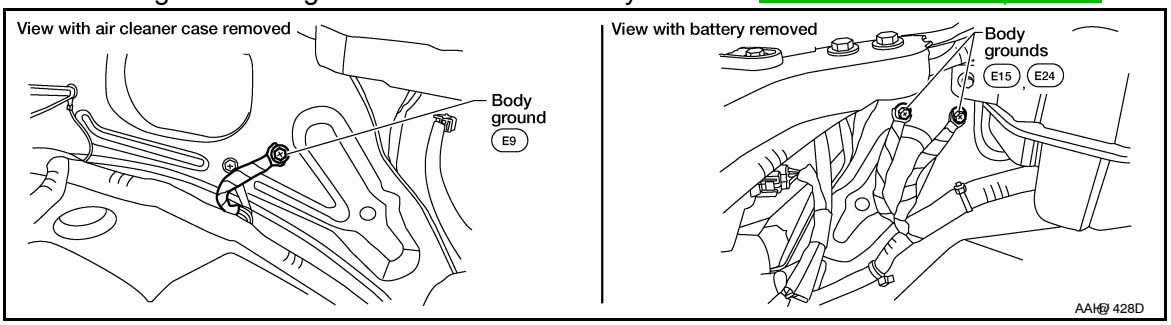
Check the following for connection.
- Air duct
- Vacuum hoses
- Intake air passage between air duct and intake manifold

OK or NG

OK >> GO TO 3.
NG >> Reconnect the parts.

3.CHECK GROUND CONNECTIONS

1. Turn ignition switch OFF.
2. Loosen and retighten three ground screws on the body. Refer to EC-89, "Ground Inspection".

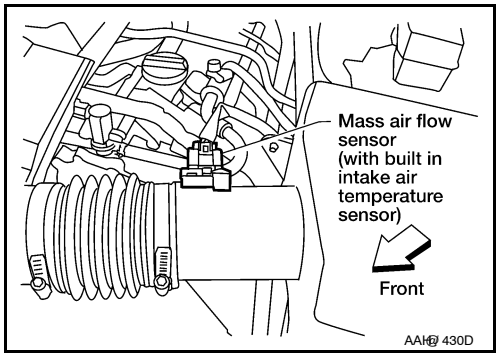


OK or NG

OK >> GO TO 4.
NG >> Repair or replace ground connections.

4.CHECK MAF SENSOR POWER SUPPLY CIRCUIT

1. Disconnect mass air flow (MAF) sensor harness connector.
2. Turn ignition switch ON.



5. Turn ignition switch ON.
6. Turn ignition switch OFF and wait at least 10 seconds.
7. Restart engine.
8. Drive and accelerate vehicle to more than 40 km/h (25 MPH) within 20 seconds after restarting engine.
9. Maintain the following conditions for about 20 consecutive seconds.

ENG SPEED	1,000 - 3,200 rpm
VHCL SPEED SE	More than 40 km/h (25 MPH)
B/FUEL SCHDL	1.5 - 9.0 msec
Gear position	Suitable position

NOTE:
- **Keep the accelerator pedal as steady as possible during cruising.**
- **If this procedure is not completed within 1 minute after restarting engine at step 4, return to step 4.**

10. Check 1st trip DTC.
11. If 1st trip DTC is displayed, go to EC-143, "Diagnosis Procedure".

WITH GST

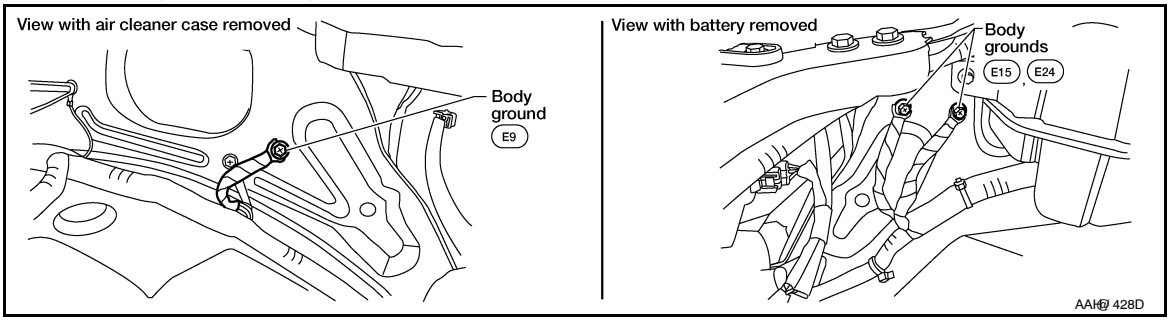
Follow the procedure “WITH CONSULT-III” above.

Diagnosis Procedure

INFOID:0000000004063765

1.CHECK GROUND CONNECTIONS

1. Turn ignition switch OFF.
2. Loosen and retighten three ground screws on the body. Refer to EC-89, "Ground Inspection".

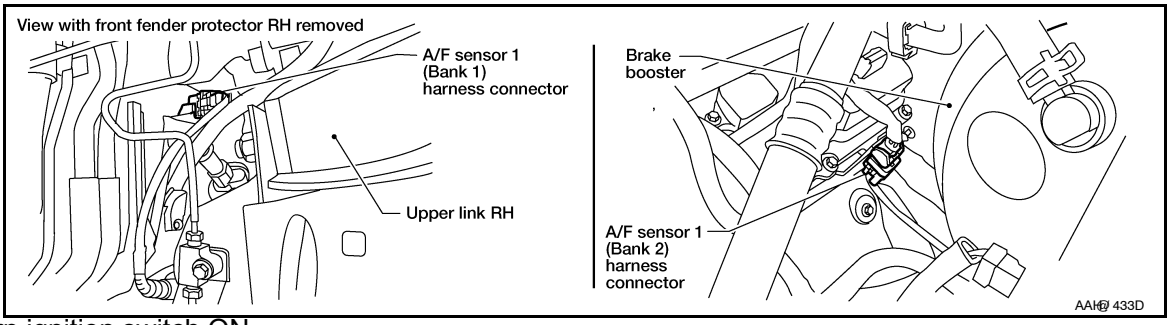


OK or NG

OK >> GO TO 2.
NG >> Repair or replace ground connections.

2.CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY CIRCUIT

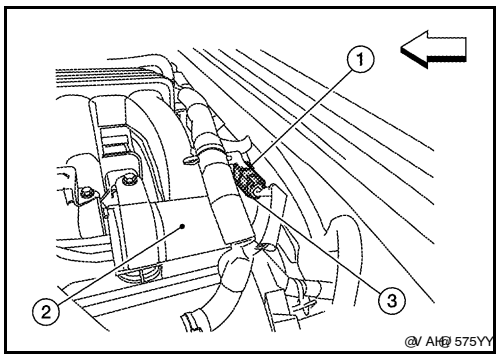
1. Disconnect A/F sensor 1 harness connector.



2. Turn ignition switch ON.

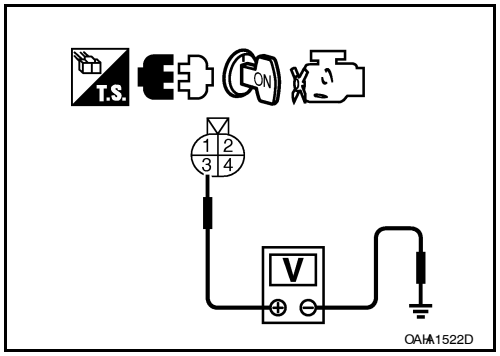
2. Disconnect harness connector F44 (3), F201 (1)

2 : Vacuum tank
⇦ : Front



3. Turn ignition switch ON.

4. Check voltage between harness connector F44 terminal 3 and ground with CONSULT-III or tester.



Voltage: Battery voltage

5. Turn ignition switch OFF.
6. Disconnect ECM harness connector.
7. Check harness continuity between harness connector F44 and ECM as follows.
Refer to Wiring Diagram.

Cylinder	Harness connector F44 terminal	ECM terminal
1	2	23
3	1	22
5	4	21

Continuity should exist.

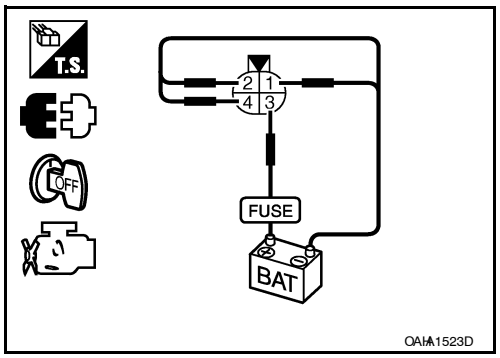
8. Also check harness for short to ground and short to power.

OK or NG

OK >> GO TO 10.
NG >> Perform trouble diagnosis for FUEL INJECTOR, refer to EC-398.

10. CHECK FUNCTION OF FUEL INJECTOR-II

Provide battery voltage between harness connector F201 as follows and then interrupt it. Listen to each fuel injector operating sound.



Cylinder	Harness connector F201 terminal	
	(+)	(–)
1	3	2
3	3	1
5	3	4

Operating sound should exist.

OK or NG

OK >> GO TO 12.
NG >> Perform trouble diagnosis for FUEL INJECTOR, refer to EC-398.

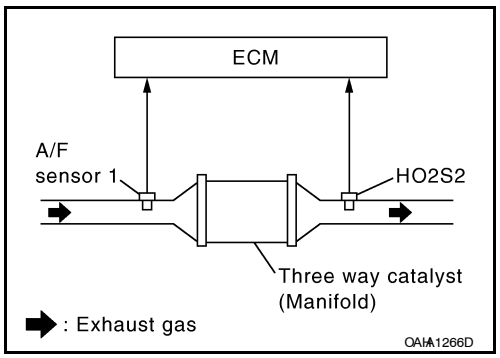
11. CHECK FUNCTION OF FUEL INJECTOR

P0420, P0430 THREE WAY CATALYST FUNCTION

On Board Diagnosis Logic

INFOID:0000000004063831

The ECM monitors the switching frequency ratio of air fuel ratio (A/F) sensor 1 and heated oxygen sensor 2.
A three way catalyst (manifold) with high oxygen storage capacity will indicate a low switching frequency of heated oxygen sensor 2. As oxygen storage capacity decreases, the heated oxygen sensor 2 switching frequency will increase.
When the frequency ratio of air fuel ratio (A/F) sensor 1 and heated oxygen sensor 2 approaches a specified limit value, the three way catalyst (manifold) malfunction is diagnosed.



DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0420 0420 (Bank 1)	Catalyst system efficiency below threshold	• Three way catalyst (manifold) does not operate properly. • Three way catalyst (manifold) does not have enough oxygen storage capacity.	• Three way catalyst (manifold) • Exhaust tube • Intake air leaks • Fuel injector • Fuel injector leaks • Spark plug • Improper ignition timing
P0430 0430 (Bank 2)			

DTC Confirmation Procedure

INFOID:0000000004063832

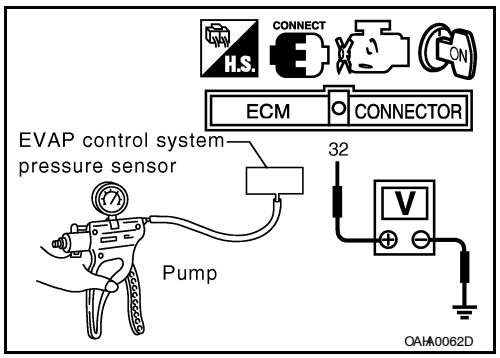
NOTE:
If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next step.
1. Turn ignition switch OFF and wait at least 10 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 10 seconds.

WITH CONSULT-III

TESTING CONDITION:
Do not maintain engine speed for more than the specified minutes below.

1. Turn ignition switch ON and select “DATA MONITOR” mode with CONSULT-III.
2. Start engine and warm it up to the normal operating temperature.
3. Turn ignition switch OFF and wait at least 10 seconds.
4. Turn ignition switch ON.
5. Turn ignition switch OFF and wait at least 10 seconds.
6. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
7. Let engine idle for 1 minute.
8. Make sure that “COOLAN TEMP/S” indicates more than 70°C (158°F).
   If not, warm up engine and go to next step when “COOLAN TEMP/S” indication reaches to 70°C (158°F).
9. Open engine hood.
10. Select “DTC & SRT CONFIRMATION” then “SRT WORK SUPPORT” mode with CONSULT-III.
11. Rev engine between 2,000 and 3,000 rpm and hold it for 3 consecutive minutes then release the accelerator pedal completely.
    If “INCMP” of “CATALYST” changed to “CMPLT”, go to step 12.
12. Wait 5 seconds at idle.
13. Rev engine between 2,000 and 3,000 rpm and maintain it until “INCMP” of “CATALYST” changes to “CMPLT” (It will take approximately 5 minutes).
    If not “CMPLT”, stop engine and cool it down to less than 70°C (158°F) and then retest from step 1.
14. Select “SELF-DIAG RESULTS” mode with CONSULT-III.

3. Turn ignition switch ON and check output voltage between ECM terminal 32 and ground under the following conditions.



Applied vacuum kPa (kg/cm^2 psi)	Voltage V
Not applied	1.8 - 4.8
-26.7 (-0.272, -3.87)	2.1 to 2.5V lower than above value

CAUTION:

- **Always calibrate the vacuum pump gauge when using it.**
- **Never apply below -93.3 kPa (-0.952 kg/cm^2, -13.53 psi) or pressure over 101.3 kPa (1.033 kg/cm^2, 14.69 psi).**

4. If NG, replace EVAP control system pressure sensor.

3.REPLACE ECM

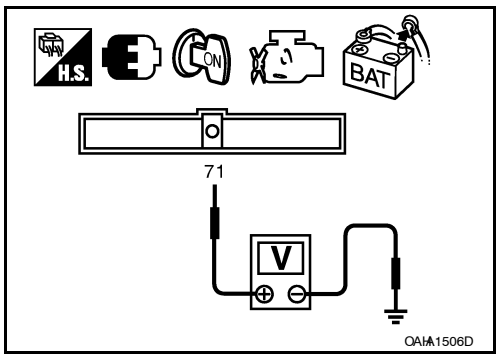
1. Stop engine.
2. Replace ECM.
3. Perform initialization of NVIS(NATS) system and registration of all NVIS(NATS) ignition key IDs. Refer to SEC-6, "ECM RE-COMMUNICATING FUNCTION : Special Repair Requirement".
4. Perform EC-19, "VIN Registration".
5. Perform EC-19, "Accelerator Pedal Released Position Learning".
6. Perform EC-19, "Throttle Valve Closed Position Learning".
7. Perform EC-19, "Idle Air Volume Learning".

>> **INSPECTION END**

5. Check voltage between ECM terminal 71 (battery current sensor signal) and ground.

Voltage: Approximately 2.5V

6. If NG, replace battery negative cable assembly.



OK >> GO TO 8.
NG >> Replace 20A fuse.

6. CHECK THROTTLE CONTROL MOTOR RELAY INPUT SIGNAL CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Disconnect IPDM E/R harness connector E119.
4. Check continuity between ECM terminal 3 and IPDM E/R terminal 6.
   Refer to Wiring Diagram.

Continuity should exist.

5. Also check harness for short to ground and short to power.

OK or NG

OK >> GO TO 8.
NG >> GO TO 7.

7. DETECT MALFUNCTIONING PART

Check the following.
- Harness connectors E2, F32
- Harness for open or short between ECM and IPDM E/R

>> Repair open circuit or short to ground or short to power in harness or connectors.

8. CHECK INTERMITTENT INCIDENT

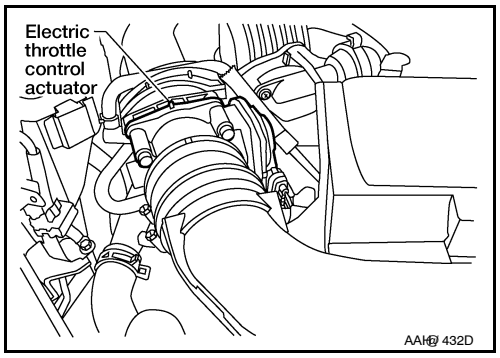
Refer to GI-37, "Intermittent Incident".

OK or NG

OK >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation of IPDM E/R".
NG >> Repair or replace harness or connectors.

9. CHECK THROTTLE CONTROL MOTOR OUTPUT SIGNAL CIRCUIT FOR OPEN OR SHORT

1. Turn ignition switch OFF.
2. Disconnect electric throttle control actuator harness connector.
3. Disconnect ECM harness connector.
4. Check harness continuity between the following terminals.
   Refer to Wiring Diagram.



Electric throttle control actuator terminal	ECM terminal	Continuity
5	5	Should not exist
	4	Should exist
6	5	Should exist
	4	Should not exist

5. Also check harness for short to ground and short to power.

OK or NG

OK >> GO TO 10.
NG >> Repair or replace.

10. CHECK ELECTRIC THROTTLE CONTROL ACTUATOR VISUALLY

1. Remove the intake air duct.

4. CHECK COOLING FAN MOTOR

Refer to EC-395, "Component Inspection".

OK or NG

OK >> GO TO 5.
NG >> Replace cooling fan motor.

5. CHECK INTERMITTENT INCIDENT

Perform GI-37, "Intermittent Incident".

OK or NG

OK >> INSPETION END
NG >> Repair or replace harness or connector.

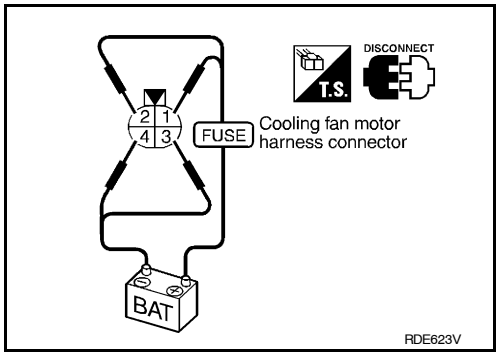
Component Inspection

INFOID:0000000004064056

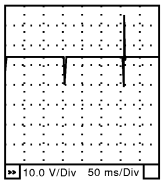
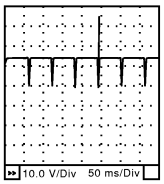
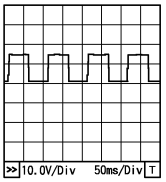
COOLING FAN MOTOR

1. Disconnect cooling fan motor harness connectors.
2. Supply cooling fan motor terminals with battery voltage and check operation.

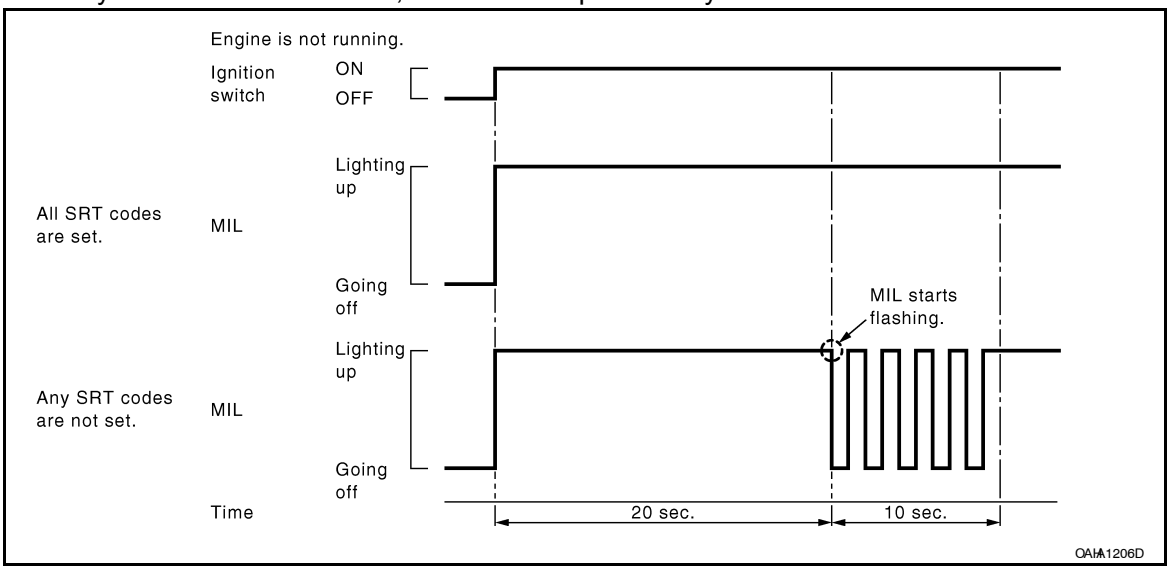
Cooling fan speed	Cooling fan motor terminals	
	(+)	(−)
Low	1	3 and 4
	2	3 and 4
High	1 and 2	3 and 4



Cooling fan motor should operate.
If NG, replace cooling fan motor.

TERMINAL NO.	WIRE COLOR	ITEM	CONDITION	DATA (DC Voltage)
21 22 23	W LG SB	Fuel injector No. 5 Fuel injector No. 3 Fuel injector No. 1	**[Engine is running]** • **Warm-up condition** • Idle speed **NOTE:** The pulse cycle changes depending on rpm at idle	BATTERY VOLTAGE (11 - 14V)★  RDB873B
			[Engine is running] • **Warm-up condition** • Engine speed: 2,000 rpm	BATTERY VOLTAGE (11 - 14V)★  RDB874B
24 43	G G	A/F sensor 1 heater (Bank 2)	**[Engine is running]** • **Warm-up condition** • Idle speed (More than 140 seconds after starting engine)	Approximately 2.9 - 8.8V★  OAH27037I
25	P	Heated oxygen sensor 2 heater (Bank 1)	**[Engine is running]** • Engine speed: Below 3,600 rpm after the following conditions are met - Engine: After warming up - Keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load	0 - 1.0V
			[Ignition switch: ON] • Engine: Stopped **[Engine is running]** • Engine speed: Above 3,600 rpm	BATTERY VOLTAGE (11 - 14V)
29	G	VIAS control solenoid valve	**[Engine is running]** • Idle speed	BATTERY VOLTAGE (11 - 14V)
			[Engine is running] • Engine speed: Between 2,200 and 3,300 rpm	0 - 1.0V
32	W	EVAP control system pressure sensor	**[Ignition switch: ON]**	Approximately 1.8 - 4.8V

- When any SRT codes are not set, MIL will flash periodically for 10 seconds.



How to Set SRT Code

To set all SRT codes, self-diagnosis for the items indicated above must be performed one or more times. Each diagnosis may require a long period of actual driving under various conditions.

WITH CONSULT-III

Perform corresponding DTC Confirmation Procedure one by one based on Performance Priority in the table on "SRT Item".

WITHOUT CONSULT-III

The most efficient driving pattern in which SRT codes can be properly set is explained on below. The driving pattern should be performed one or more times to set all SRT codes.

2. Confirm the type of noise.
3. Specify the operating condition of engine.
4. Check specified noise source.

If necessary, repair or replace these parts.

Location of noise	Type of noise	Operating condition of engine						Source of noise	Check item	Reference page
		Before warm-up	After warm-up	When starting	When idling	When racing	While driving			
Top of engine Rocker cover Cylinder head	Ticking or clicking	C	A	—	A	B	—	Tappet noise	Valve clearance	EM-17
	Rattle	C	A	—	A	B	C	Camshaft bearing noise	Camshaft runout Camshaft journal oil clearance	EM-80 EM-80
Crankshaft pulley Cylinder block (Side of engine) Oil pan	Slap or knock	—	A	—	B	B	—	Piston pin noise	Piston to piston pin oil clearance Connecting rod bushing oil clearance	EM-117 EM-117
	Slap or rap	A	—	—	B	B	A	Piston slap noise	Piston to cylinder bore clearance Piston ring side clearance Piston ring end gap Connecting rod bend and torsion	EM-117 EM-117 EM-117 EM-117
	Knock	A	B	C	B	B	B	Connecting rod bearing noise	Connecting rod bushing oil clearance Connecting rod bearing oil clearance	EM-117 EM-117
	Knock	A	B	—	A	B	C	Main bearing noise	Main bearing oil clearance Crankshaft runout	EM-117 EM-117
Front of engine Timing chain case	Tapping or ticking	A	A	—	B	B	B	Timing chain and chain tensioner noise	Timing chain cracks and wear Timing chain tensioner operation	EM-60 EM-60
Front of engine	Squeaking or fizzing	A	B	—	B	—	C	Drive belts (Sticking or slipping)	Drive belts deflection	EM-12
	Creaking	A	B	A	B	A	B	Drive belts (Slipping)	Idler pulley bearing operation	
	Squall Creak	A	B	—	B	A	B	Water pump noise	Water pump operation	CO-21
	Rattle	—	—	A	—	—	—	VTC	VTC lock pin clearance	EM-60

A: Closely related B: Related C: Sometimes related —: Not related

Fuel tube side : Blue
Nozzle side : Brown

- **Handle O-ring with bare hands. Never wear gloves.**
- **Lubricate O-ring with new engine oil.**
- **Do not clean O-ring with solvent.**
- **Make sure that O-ring and its mating part are free of foreign material.**
- **When installing O-ring, be careful not to scratch it with tool or fingernails.**
- **Do not twist or stretch O-ring. If O-ring was stretched while it was being attached, allow it to retract before inserting it into fuel tube.**
- **Insert O-ring straight into fuel injector. Do not angle or twist it.**

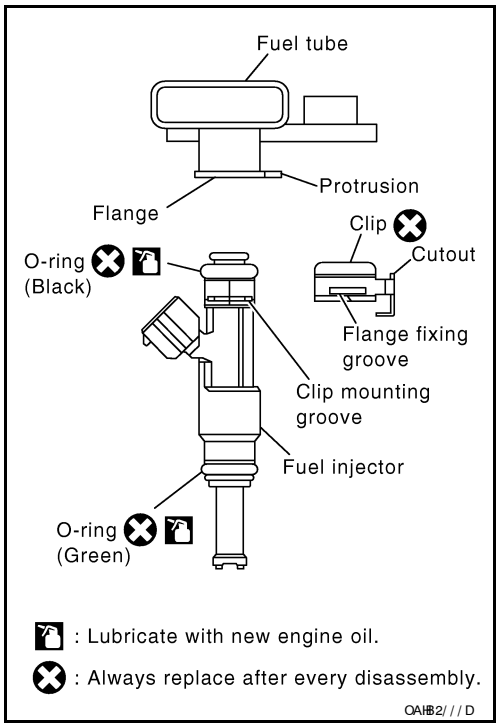
3. Install fuel injector to fuel tube.

a. Insert new clip into clip mounting groove on fuel injector.
   - Insert clip so that protrusion of fuel injector matches cutout of clip.

   CAUTION:
   - **Do not reuse clip. Replace it with a new one.**
   - **Do not allow the clip to interfere with the O-ring. If interference occurs, replace O-ring.**

b. Insert the fuel injector into the fuel tube with the clip attached.
   - Insert it while matching it to the axial center.
   - Insert fuel injector so that protrusion of fuel tube matches cutout of clip.
   - Make sure that fuel tube flange is securely fixed in flange fixing groove on clip.

c. Make sure that installation is complete by checking that the fuel injector does not rotate or come off.
   - Make sure that protrusions of fuel injectors are aligned with cutouts of clips after installation.



4. Connect the fuel tube (RH) to the fuel tube (LH), and tighten bolts temporarily.
   - Tighten bolts to the specified torque after installing fuel tube and fuel injector assembly.

   CAUTION:
   - **Handle O-ring with bare hands. Do not wear gloves.**
   - **Lubricate O-ring with new engine oil.**
   - **Do not clean O-ring with solvent.**
   - **Make sure that O-ring and its mating part are free of foreign material.**
   - **When installing O-ring, be careful not to scratch it with tool or fingernails.**
   - **Do not twist or stretch O-ring. If O-ring was stretched while it was being attached, allow it to retract before inserting it into fuel tube.**
   - **Insert new O-ring straight into fuel tube. Do not angle or twist it.**

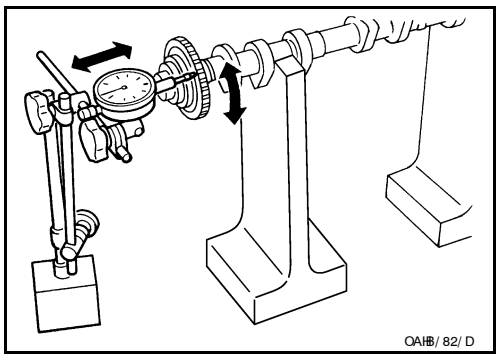
5. Install fuel tube and fuel injector assembly to intake manifold.

   CAUTION:
   Do not let the tip of the injector nozzle come in contact with other parts.

2. Measure the camshaft sprocket runout with dial indicator. (Total indicator reading)

Limit : 0.15 mm (0.0059 in)

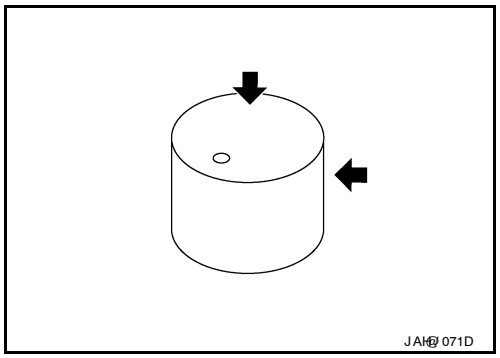
- If it exceeds the limit, replace camshaft sprocket.



Valve Lifter

Check if surface of valve lifter has any wear or cracks.

- If anything above is found, replace valve lifter. Refer to EM-134, "Standard and Limit".



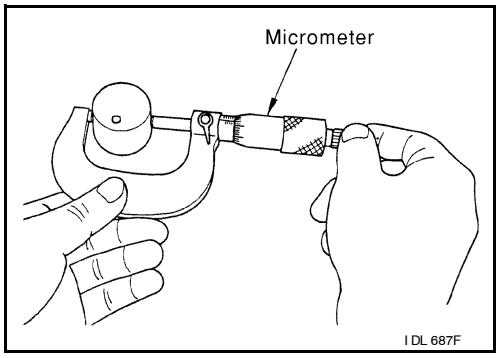
Valve Lifter Clearance

VALVE LIFTER OUTER DIAMETER

- Measure the outer diameter at 1/2 height of valve lifter with micrometer since valve lifter is in barrel shape.

Standard (Intake and exhaust)

: 33.977 - 33.987 mm (1.3377 - 1.3381 in)

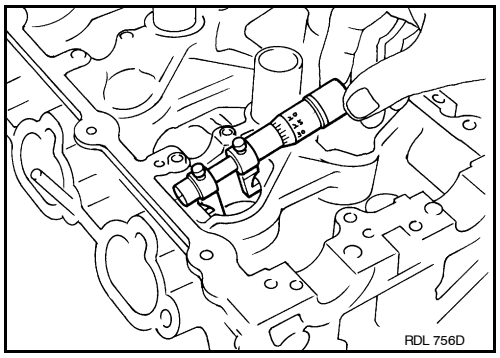


VALVE LIFTER HOLE DIAMETER

- Measure the inner diameter of valve lifter hole of cylinder head with inside micrometer.

Standard (Intake and exhaust)

: 34.000 - 34.016 mm (1.3386 - 1.3392 in)



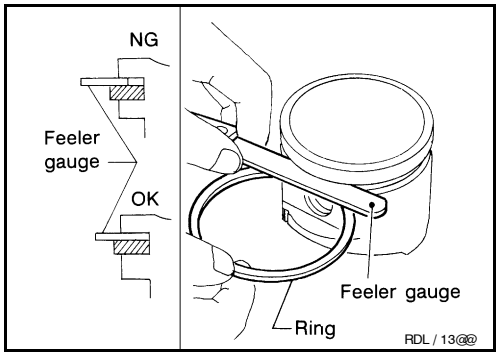
VALVE LIFTER CLEARANCE

- (Valve lifter clearance) = (Valve lifter hole diameter) – (Valve lifter outer diameter), Refer to EM-17, "Valve Clearance".

Standard (Intake and exhaust)

: 0.013 - 0.039 mm (0.0005 - 0.0015 in)

- Measure side clearance of piston ring and piston ring groove with feeler gauge.



Standard:

Top ring	**: 0.045 - 0.080 mm (0.0018 - 0.0031 in)**
2nd ring	**: 0.030 - 0.070 mm (0.0012 - 0.0028 in)**
Oil ring	**: 0.065 - 0.135 mm (0.0026 - 0.0053 in)**

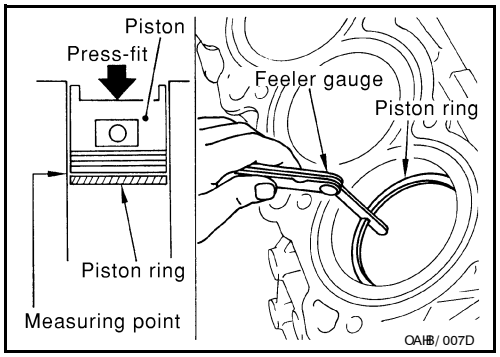
Limit:

Top ring	**: 0.11 mm (0.0043 in)**
2nd ring	**: 0.10 mm (0.0039 in)**

- If the measured value exceeds the limit, replace piston ring, and measure again. If it still exceeds the limit, replace piston also.

PISTON RING END GAP

- Make sure that the cylinder bore inner diameter is within the specification. Follow the "Cylinder Bore Inner Diameter" procedure.
- Lubricate with new engine oil to piston and piston ring, and then insert piston ring until middle of cylinder with piston, and measure the piston ring end gap with feeler gauge.



Standard:

Top ring	**: 0.23 - 0.33 mm (0.0091 - 0.0130 in)**
2nd ring	**: 0.33 - 0.48 mm (0.0130 - 0.0189 in)**
Oil ring	**: 0.20 - 0.50 mm (0.0079 - 0.0197 in)**

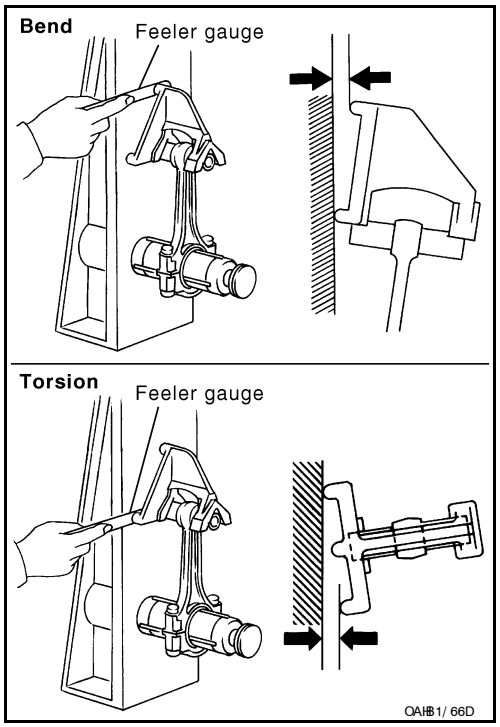
Limit:

Top ring	**: 0.56 mm (0.0220 in)**
2nd ring	**: 0.68 mm (0.0268 in)**
Oil ring	**: 0.85 mm (0.0335 in)**

- If the measured value exceeds the limit, replace piston ring, and measure again.

CONNECTING ROD BEND AND TORSION

- Check with connecting rod aligner.



Bend:

Limit: 0.15 mm (0.0059 in) per 100 mm (3.94 in) length

Torsion:

Limit: 0.30 mm (0.0118 in) per 100 mm (3.94 in) length

- If it exceeds the limit, replace connecting rod assembly.

CONNECTING ROD DIAMETER (BIG END)

DETAILED FLOW

1.INTERVIEW FOR MALFUNCTION

Find out what the customer's concerns are.

>> GO TO 2

2.SYMPTOM CHECK

Verify the symptom from the customer's information.

>> GO TO 3

3.BASIC INSPECTION

Check the operation of each part. Check that any concerns occur other than those mentioned in the customer interview.

>> GO TO 4

4.SELF-DIAGNOSIS WITH CONSULT-III

Perform the self diagnosis with CONSULT-III. Check that any DTC is detected.

Is any DTC detected?

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

5.TROUBLE DIAGNOSIS BY DTC

Perform the trouble diagnosis for the detected DTC. Specify the malfunctioning part.

>> GO TO 9

6.FAIL-SAFE ACTIVATION CHECK

Determine if the customer's concern is related to fail-safe activation.

Does the fail-safe activate?

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

7.SYSTEM DIAGNOSIS

Perform the system diagnosis for the system in which the fail-safe activates. Specify the malfunctioning part.

>> GO TO 9

8.SYMPTOM DIAGNOSIS

Perform the symptom diagnosis. Specify the malfunctioning part.

>> GO TO 9

9.MALFUNCTION PART REPAIR

Repair or replace the malfunctioning part.

>> GO TO 11

10.REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT-III)

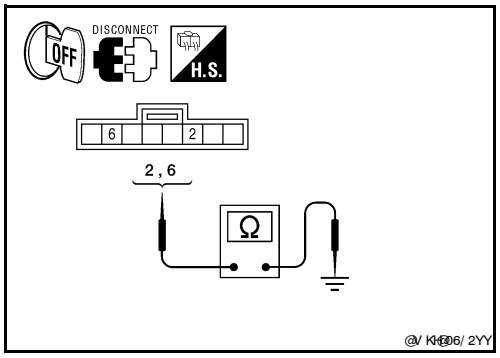
Perform the self diagnosis with CONSULT-III. Verfied that no DTCs are detected. Erase all DTCs detected prior to the repair. Verify that DTC is not detected again.

Is any DTC detected?

3. CHECK OFF-ROAD LAMPS SWITCH GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Check continuity between the off-road lamps switch harness connector M80 terminals 2, 6 and ground.

Connector	Terminal	—	Continuity
M80	2	Ground	Yes
	6		



Does continuity exist?

YES >> Inspection End.
NO >> Repair the harness or connector.

Connector No.	B527
Connector Name	OFF-ROAD LAMP ASSEMBLY LH
Connector Color	BLACK

Terminal No.	Color of Wire	Signal Name
1	–	–
2	–	–
3	–	–

Connector No.	B528
Connector Name	OFF-ROAD LAMP ASSEMBLY LH
Connector Color	BLACK

Terminal No.	Color of Wire	Signal Name
4	–	–
5	–	–

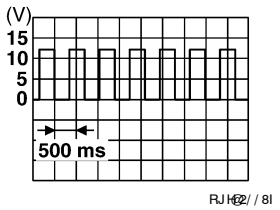
Connector No.	B529
Connector Name	OFF-ROAD LAMP ASSEMBLY RH
Connector Color	BLACK

Terminal No.	Color of Wire	Signal Name
1	–	–
2	–	–
3	–	–

Connector No.	B530
Connector Name	OFF-ROAD LAMP ASSEMBLY RH
Connector Color	BLACK

Terminal No.	Color of Wire	Signal Name
4	–	–
5	–	–

@AKH071/FA

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition			Reference value or waveform (Approx.)
				Ignition switch	Operation or condition		
61	G	Turn signal (right)	Output	ON	Turn right ON		
63	BR	Interior room/map lamp	Output	OFF	Any door switch	ON (open)	0V
						OFF (closed)	Battery voltage
65	V	All door lock actuators (lock)	Output	OFF	OFF (neutral)		0V
					ON (lock)		Battery voltage
66	L	Front door lock actuator RH, rear door lock actuators LH/RH and back door lock actuator (unlock)	Output	OFF	OFF (neutral)		0V
					ON (unlock)		Battery voltage
67	B	Ground	Input	ON	—		0V
68	O	Power window power supply (RAP)	Output	—	Ignition switch ON		Battery voltage
					Within 45 seconds after ignition switch OFF		Battery voltage
					More than 45 seconds after ignition switch OFF		0V
					When front door LH or RH is open or power window timer operates		0V
70	W	Battery power supply	Input	OFF	—		Battery voltage

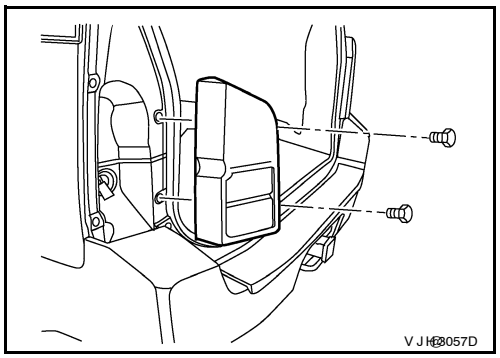
REAR COMBINATION LAMP

Bulb Replacement

INFOID:0000000004065600

REMOVAL

1. Remove rear combination lamp bolts.
2. Pull rear combination lamp to remove from the vehicle.
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb.



INSTALLATION

Installation is in the reverse order of removal.

Removal and Installation

INFOID:0000000004065601

REMOVAL

1. Remove rear combination lamp bolts.
2. Pull rear combination lamp to remove from the vehicle.
3. Disconnect rear combination lamp connector.

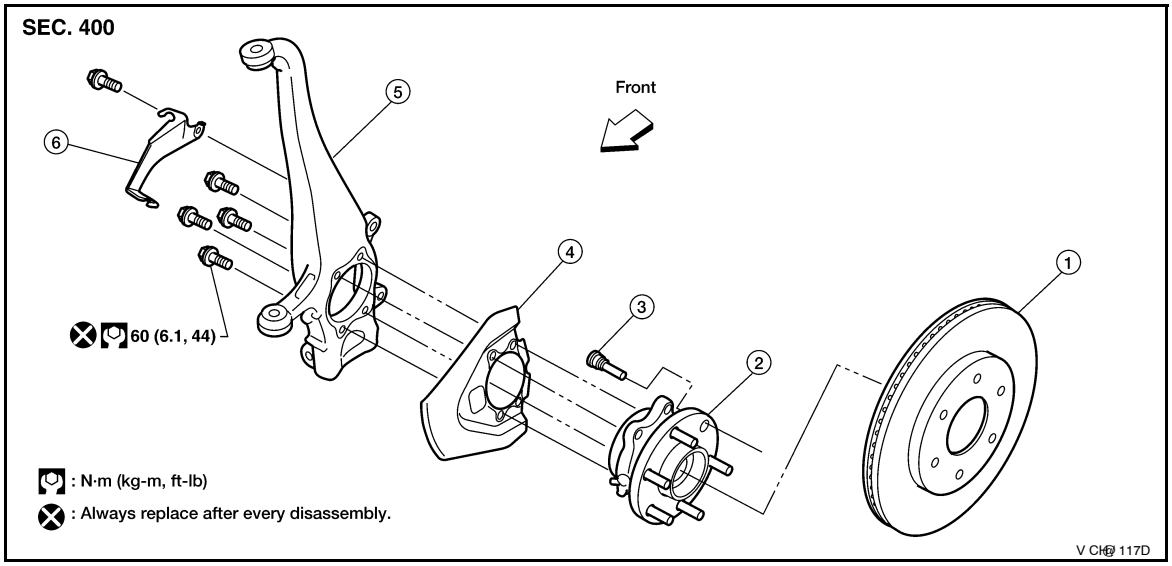
INSTALLATION

Installation is in the reverse order of removal.

WHEEL HUB

Removal and Installation

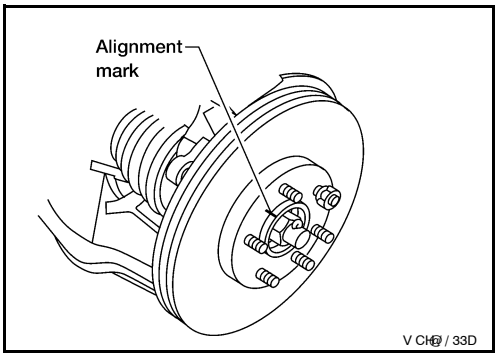
INFOID:0000000004064491



1. Disc rotor
2. Wheel hub and bearing assembly
3. Wheel stud
4. Splash guard
5. Steering knuckle
6. Wheel sensor bracket

REMOVAL

1. Remove wheel and tire using power tool.
2. Without disassembling the hydraulic lines, remove caliper torque member bolts using power tool. Then reposition brake caliper aside with wire. Refer to BR-33, "Removal and Installation of Brake Caliper and Disc Rotor".
   CAUTION:
   Do not press brake pedal while brake caliper is removed.
3. Put alignment mark on disc rotor and wheel hub and bearing assembly, then remove disc rotor.



4. On 4WD models, remove cotter pin, then remove lock nut from drive shaft using power tool. Refer to FAX-6, "Removal and Installation".
5. On 4WD models, remove drive shaft from wheel hub and bearing assembly. Refer to FAX-6, "Removal and Installation".
6. Remove wheel sensor from wheel hub and bearing assembly. Refer to BRC-207, "Removal and Installation".
   - Inspect the wheel sensor O-ring, replace the wheel sensor assembly if damaged.
   - Clean the wheel sensor hole and mounting surface with a suitable brake cleaner and clean lint-free shop rag. Be careful that dirt and debris do not enter the axle bearing area.
   - Apply a coat of suitable grease to the wheel sensor O-ring and mounting hole.

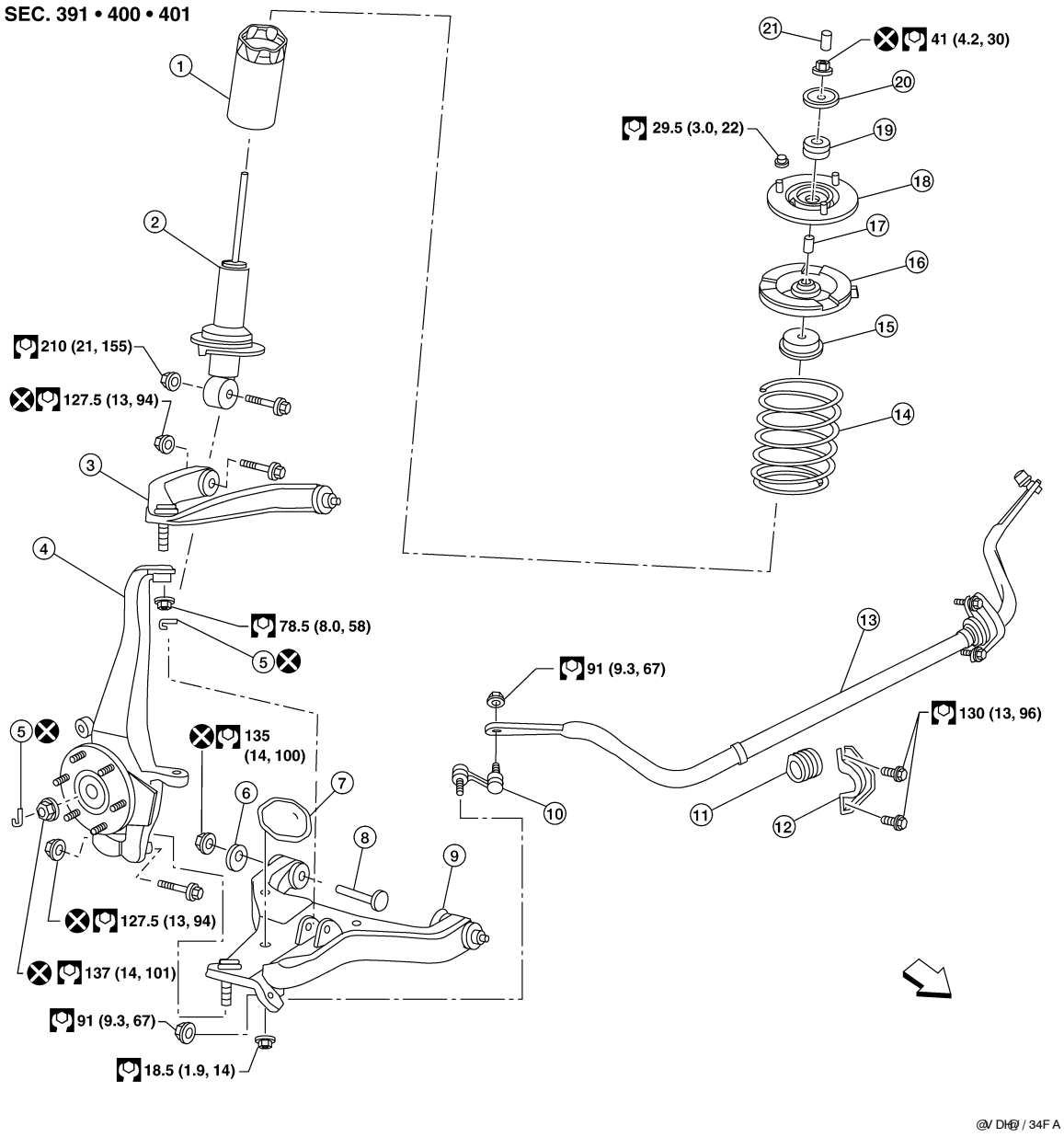
   CAUTION:
   Do not pull on the wheel sensor harness.
7. Remove wheel hub and bearing assembly bolts using power tool.

ON-VEHICLE REPAIR

FRONT SUSPENSION ASSEMBLY

Component

INFOID:0000000004064533



1. Dust cover
2. Shock absorber
3. Upper link
4. Steering knuckle
5. Cotter pin
6. Washer
7. Jounce bumper
8. Bolt
9. Lower link
10. Connecting rod
11. Stabilizer bar bushing
12. Stabilizer bar mounting bracket
13. Stabilizer bar
14. Coil spring
15. Dust cover cap
16. Upper spring seat
17. Spacer
18. Shock absorber mounting insulator
19. Spacer
20. Washer
21. Cap

⇐: Vehicle front

PRECAUTION

PRECAUTIONS

Description

INFOID:0000000004063531

Observe the following precautions to ensure safe and proper servicing. These precautions are not described in each individual section.

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

INFOID:0000000004063532

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 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.**

Precaution for NATS (NISSAN ANTI-THEFT SYSTEM)

INFOID:0000000004063533

NATS will immobilize the engine if someone tries to start it without the registered key of NATS.
Both of the originally supplied ignition key IDs have been NATS registered.
The security indicator is located on the instrument panel. The indicator blinks when the immobilizer system is functioning.
Therefore, NATS warns outsiders that the vehicle is equipped with the anti-theft system.

- When NATS detects trouble, the security indicator lamp lights up while ignition switch is in "ON" position. This lighting up indicates that the anti-theft is not functioning, so prompt service is required.
- When servicing NATS (trouble diagnoses, system initialization and additional registration of other NATS ignition key IDs), CONSULT-III hardware and CONSULT-III NATS software is necessary.
  Regarding the procedures of NATS initialization and NATS ignition key ID registration, refer to CONSULT-III operation manual, NATS.

Therefore, CONSULT-III NATS software (program card and operation manual) must be kept strictly confidential to maintain the integrity of the anti-theft function.

- When servicing NATS (trouble diagnoses, system initialization and additional registration of other NATS ignition key IDs), it may be necessary to re-register original key identification. Therefore, be sure to receive all keys from vehicle owner. A maximum of four or five key IDs can be registered into NATS.
- When failing to start the engine first time using the key of NATS, start as follows.

1. Leave the ignition key in "ON" position for approximately 5 seconds.
2. Turn ignition key to "OFF" or "LOCK" position and wait approximately 5 seconds.
3. Repeat step 1 and 2 again.
4. Restart the engine while keeping the key separate from any others on key-chain.

b. 10.0 mm (0.39 in)	c. 22.0 mm (0.78 in)	d. 20.0 mm (0.78 in)
e. 28.0 mm (1.10 in)	f. 12.0 mm (0.47 in)	g. 15.0 mm (0.59 in)

Repairing Water Leaks for Windshield

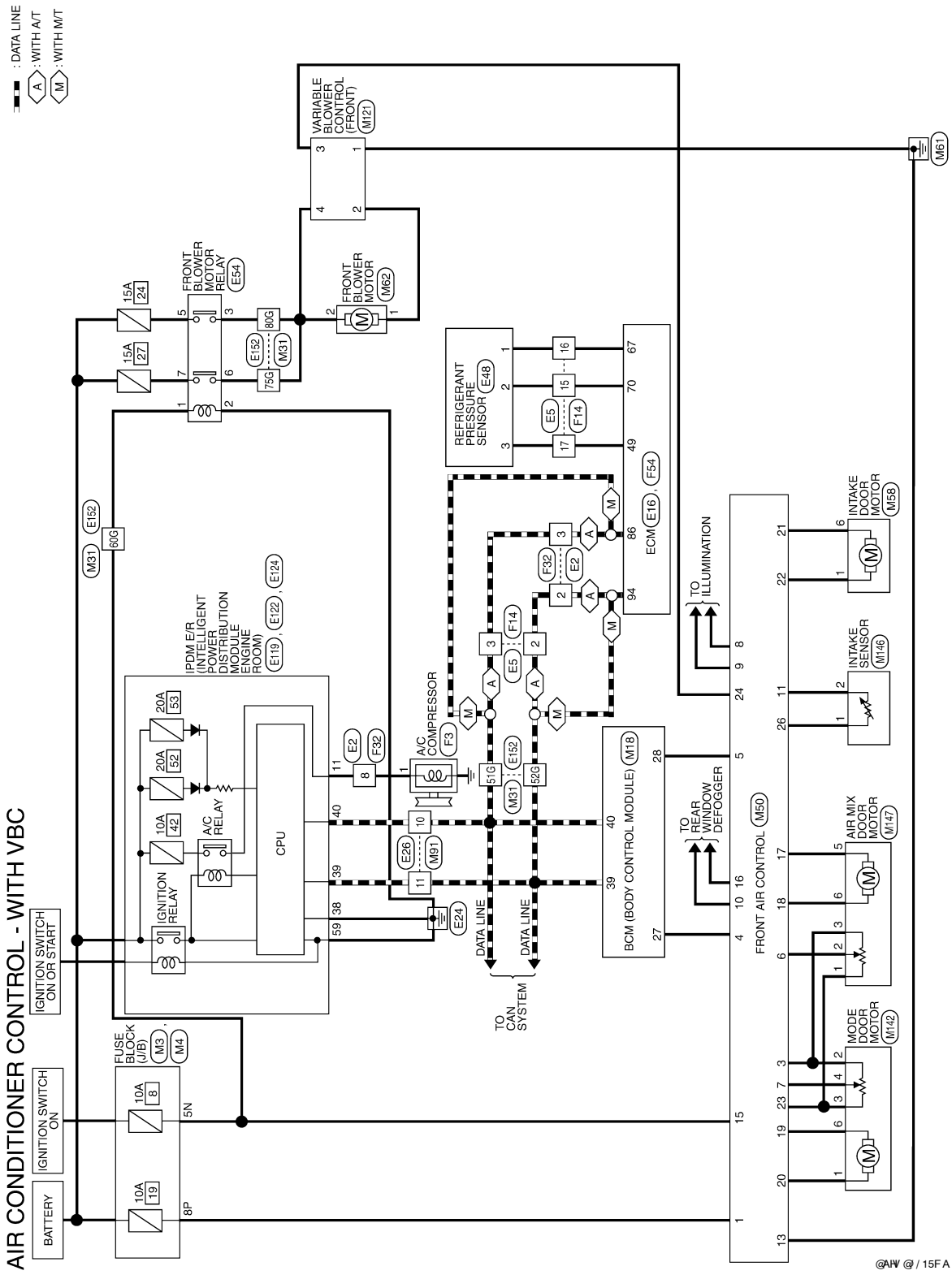
Leaks can be repaired without removing and reinstalling glass.
If water is leaking between the urethane adhesive material and body or glass, determine the extent of leakage. This can be done by applying water to the windshield area while pushing glass outward.
To stop the leak, apply primer (if necessary) and then urethane adhesive to the leak point.

6. With the engine still running, disconnect the HFC-134a (R-134a) dye injector (J-41459) from the low-pressure service valve.
7. Operate the A/C system for a minimum of 20 minutes to mix the HFC-134a (R-134a) fluorescent leak detection dye (J-41447) with the A/C system oil. Depending on the leak size, operating conditions and location of the leak, it may take from minutes to days for the HFC-134a (R-134a) fluorescent leak detection dye to penetrate an A/C system leak and become visible.

Monitor Item [Unit]	Contents
IGN ON SW [ON/OFF]	Display [ignition switch position (On)/(Off), ACC position (Off)] status as judged from ignition switch signal
FAN ON SIG [ON/OFF]	Display [FAN (On)/FAN (Off)] status as judged form blower fan motor switch signal
AIR COND SW [ON/OFF]	Display [COMP (On)/COMP (Off)] status as judged form air conditioner switch signal

Wiring Diagram - Air Conditioner Control - With VBC

INFOID:0000000004459352

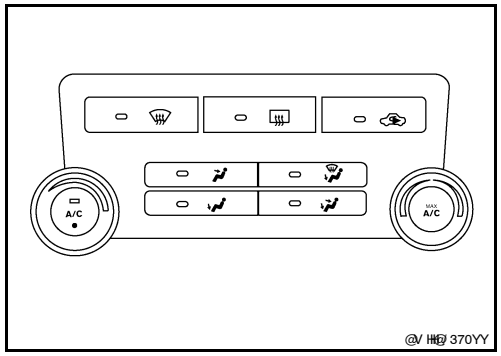
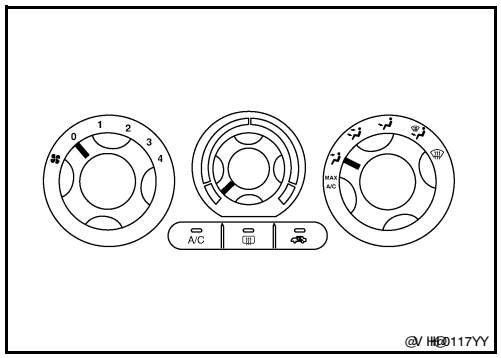


COMPONENT DIAGNOSIS

MANUAL A/C IDENTIFICATION TABLE

Application Table

INFOID:0000000004459377

Manual A/C Type	Description	Visual Identification
Manual A/C (Type 1)	Two Control Dial System [with variable blower control (VBC)]	
Manual A/C (Type 2)	Three Control Dial System [without variable blower control (VBC)]	

Connector No.	E122
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

H.S.

42	41	40	39	38	37
48	47	46	45	44	43

Terminal No.	Color of Wire	Signal Name
38	B	GND (SIGNAL)
39	L	CAN-H
40	P	CAN-L

Connector No.	E124
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

H.S.

59	58	57
62	61	60

Terminal No.	Color of Wire	Signal Name
59	B	GND (POWER)

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1G	2G	3G	4G	5G
6G	7G	8G	9G	10G

11G	12G	13G	14G	15G	16G	17G	18G	19G	20G	21G
22G	23G	24G	25G	26G	27G	28G	29G	30G		
31G	32G	33G	34G	35G	36G	37G	38G	39G	40G	41G
42G	43G	44G	45G	46G	47G	48G	49G	50G		
51G	52G	53G	54G	55G	56G	57G	58G	59G	60G	61G
62G	63G	64G	65G	66G	67G	68G	69G	70G		
71G	72G	73G	74G	75G						
76G	77G	78G	79G	80G						

Terminal No.	Color of Wire	Signal Name
51G	P	–
52G	L	–
60G	W/G	–
75G	W/G	–
80G	W/G	–

Connector No.	F3
Connector Name	A/C COMPRESSOR
Connector Color	BLACK

H.S.

1

Terminal No.	Color of Wire	Signal Name
1	Y	–

@AHA027F A

Monitor Item [Unit]	Description
KEYLESS LOCK [ON/OFF]	Lock signal status received from remote keyless entry receiver (integrated in the BCM)
KEYLESS UNLOCK [ON/OFF]	Unlock signal status received from remote keyless entry receiver (integrated in the BCM)

ACTIVE TEST

Test Item	Operation	Description
IGN ILLUM	ON	Outputs the ignition keyhole illumination control signal to turn the ignition keyhole illumination lamp ON.
	OFF	Stops the ignition keyhole illumination control signal to turn the ignition keyhole illumination lamp OFF.
INT LAMP	ON	Outputs the interior room lamp control signal to turn the interior room lamps ON.
	OFF	Stops the interior room lamp control signal to turn the interior room lamps OFF.
STEP LAMP TEST	ON	Outputs the step lamp control signal to turn the step lamps ON.
	OFF	Stops the step lamp control signal to turn the step lamps OFF.
LUGGAGE LAMP TEST	ON	Outputs the luggage lamp control signal to turn the luggage lamp ON.
	OFF	Stops the luggage lamp control signal to turn the luggage lamp OFF.

BATTERY SAVER

BATTERY SAVER : CONSULT-III Function (BCM - BATTERY SAVER)

INFOID:0000000004459277

WORK SUPPORT

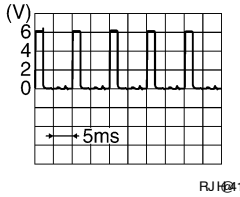
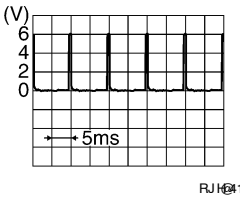
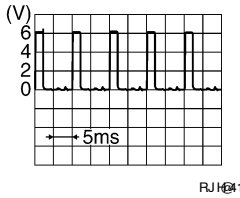
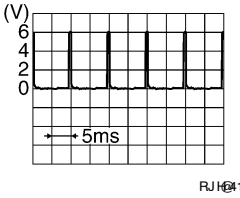
Work Item	Setting Item	Setting	
ROOM LAMP TIMER SET	MODE 1*	15 min.	Sets the interior room lamp battery saver timer operating time.
	MODE 2	30 min.	

*: Initial setting

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [ON/OFF]	Ignition switch (ON) status judges from IGN signal (ignition power supply)
KEY ON SW [ON/OFF]	The switch status input from key switch
DOOR SW-DR [ON/OFF]	The switch status input from front door switch (driver side)
DOOR SW-AS [ON/OFF]	The switch status input from front door switch (passenger side)
DOOR SW-RR [ON/OFF]	The switch status input from rear door switch RH
DOOR SW-RL [ON/OFF]	The switch status input from rear door switch LH
BACK DOOR SW [ON/OFF]	The switch status input from back door switch
KEY CYL LK-SW [ON/OFF]	Lock switch status input from door key cylinder switch
KEY CYL UN-SW [ON/OFF]	Unlock switch status input from door key cylinder switch
CDL LOCK SW [ON/OFF]	Lock switch status input from door lock and unlock switch
CDL UNLOCK SW [ON/OFF]	Unlock switch status input from door lock and unlock switch
KEYLESS LOCK [ON/OFF]	Lock signal status received from remote keyless entry receiver (integrated in the BCM)
KEYLESS UNLOCK [ON/OFF]	Unlock signal status received from remote keyless entry receiver (integrated in the BCM)

ACTIVE TEST

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
32	O	Combination switch output 5	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 RJIA4180D
33	GR	Combination switch output 4	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 RJIA4181D
34	G	Combination switch output 3	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 RJIA4180D
35	BR	Combination switch output 2	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 RJIA4181D
36	LG	Combination switch output 1				
37	B	Key switch and key lock solenoid	Input	OFF	Key inserted	Battery voltage
					Key inserted	0V
38	W/R	Ignition switch (ON)	Input	ON	—	Battery voltage
39	L	CAN-H	—	—	—	—
40	P	CAN-L	—	—	—	—
42	L	Off-road lamps	Output	ON	Off-road lamps switch: ON	0V
					Off-road lamps switch: OFF	Battery voltage
43	Y	Back door switch	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
44	O	Rear wiper auto stop switch	Input	ON	Rise up position (rear wiper arm on stopper)	0V
					A Position (full clockwise stop position)	Battery voltage
					Forward sweep (counterclockwise direction)	Fluctuating
					B Position (full counterclockwise stop position)	0V
					Reverse sweep (clockwise direction)	Fluctuating

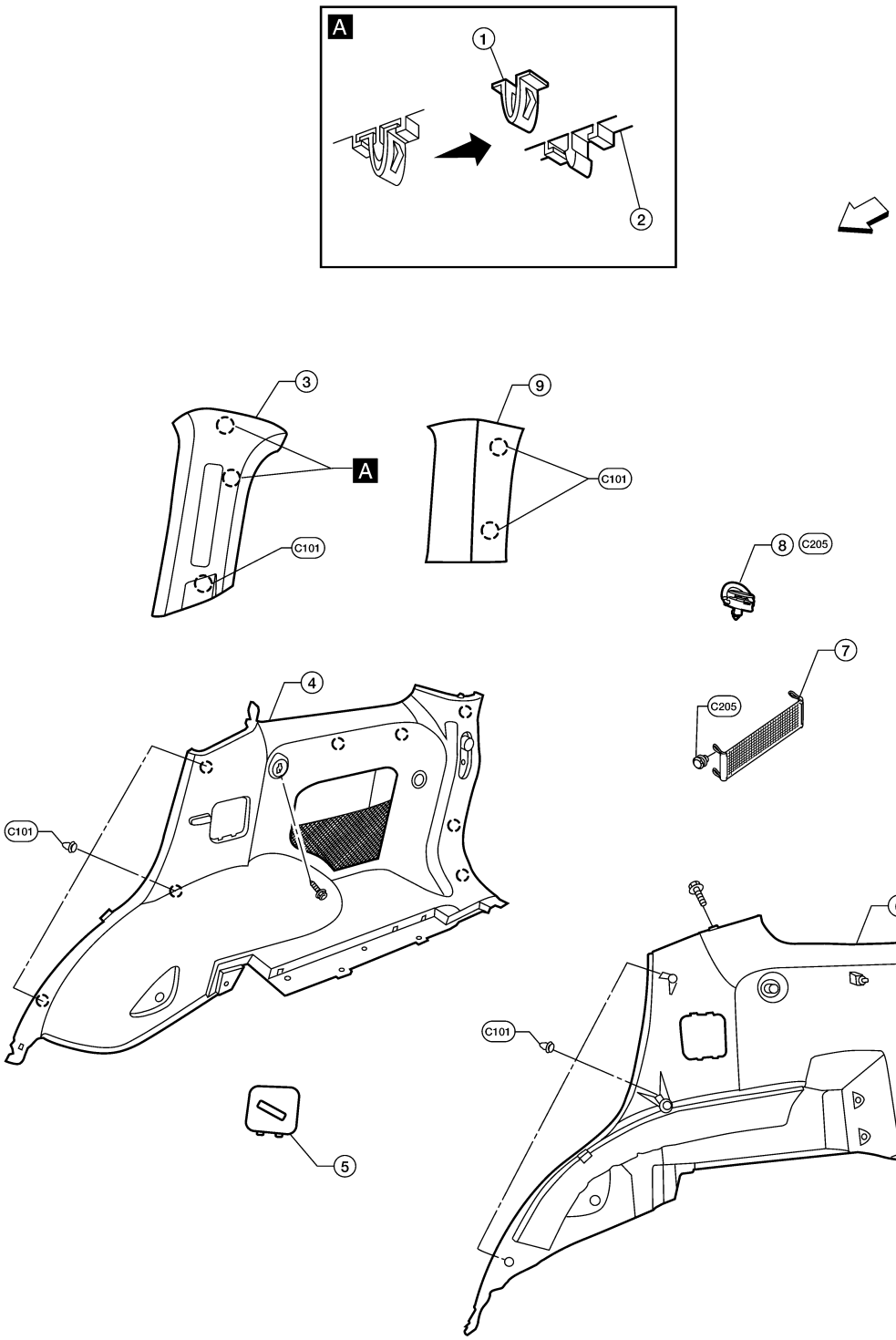
LUGGAGE FLOOR TRIM

Component

INFOID:0000000004065192

Luggage Trim - Side

SEC. 850

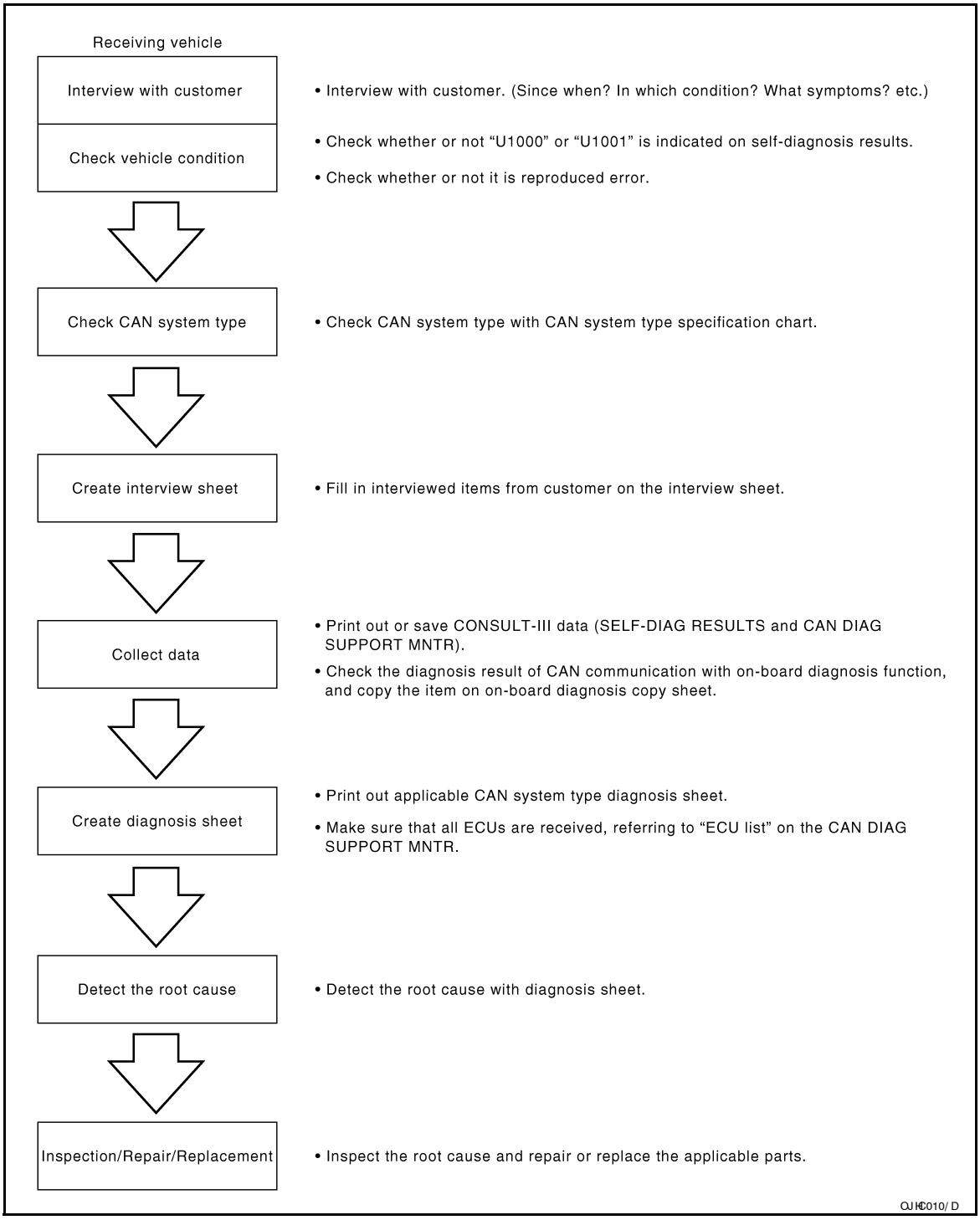


V HR20/ 71D

1. Metal clip
2. Garnish
3. Luggage side upper finisher RH
4. Luggage side lower finisher RH
5. Seat striker escutcheon
6. Luggage side lower finisher LH

Trouble Diagnosis Flow Chart

INFOID:0000000004095128



Trouble Diagnosis Procedure

INFOID:0000000004095129

INTERVIEW WITH CUSTOMER

Interview with the customer is important to detect the root cause of CAN communication system errors and to understand vehicle condition and symptoms for proper trouble diagnosis.

Points in interview
- What: Parts name, system name
- When: Date, Frequency
- Where: Road condition, Place
- In what condition: Driving condition/environment

ITEM	CAN DIAG SUPPORT MNTR	Description	Normal	Error
			PRSNT	
4WD	INITIAL DIAG	Status of CAN controller	OK	NG
	TRANSMIT DIAG	Signal transmission status		UNKWN
	ECM	Signal receiving status from the ECM		
	VDC/TCS/ABS	Signal receiving status from the ABS actuator and electric unit (control unit)		
	TCM	Signal receiving status from the TCM		
	METER/M&A	Signal receiving status from the combination meter		

BCM

NOTE:

Replace the unit when “NG” is indicated on the “INITIAL DIAG”.

ITEM	CAN DIAG SUPPORT MNTR	Description	Normal	Error
			PRSNT	
BCM	INITIAL DIAG	Status of CAN controller	OK	NG
	TRANSMIT DIAG	Signal transmission status		UNKWN
	ECM	Signal receiving status from the ECM		
	IPDM E/R	Signal receiving status from the IPDM E/R		
	METER/M&A	Signal receiving status from the combination meter		
	I-KEY	Not used even though indicated		

Differential Lock Control Unit

NOTE:

Replace the unit when “NG” is indicated on the “INITIAL DIAG”.

ITEM	CAN DIAG SUPPORT MNTR	Description	Normal	Error
			PRSNT	
DIFF	INITIAL DIAG	Status of CAN controller	OK	NG
	TRANSMIT DIAG	Signal transmission status		UNKWN
	ECM	Signal receiving status from the ECM		
	VDC/TCS/ABS	Signal receiving status from the ABS actuator and electric unit (control unit)		
	AWD/4WD	Signal receiving status from the transfer control unit		

Combination Meter

CAUTION:
Perform this step when engine is cold.

4. Remove oil filter. Refer to LU-10, "Removal and Installation".
5. Remove connector bolt, and remove oil cooler.

INSPECTION AFTER REMOVAL

Oil Cooler

Check oil cooler for cracks. Check oil cooler for clogging by blowing compressed air through engine coolant inlet. If necessary, replace oil cooler assembly.

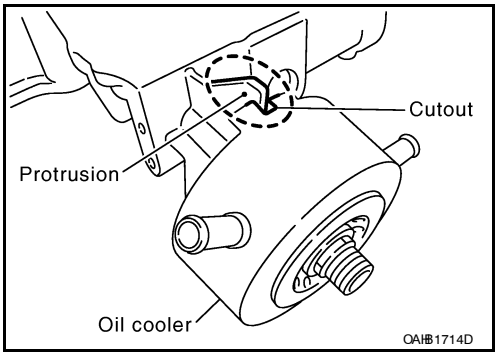
Relief Valve

Check relief valve for movement, cracks and breaks by pushing the ball. If replacement is necessary, remove relief valve by prying it out using a suitable tool. Install a new relief valve in place by tapping it in.

INSTALLATION

Installation is in the reverse order of removal, paying attention to the following.

- Confirm that no foreign objects are adhering to the sealing surfaces of the oil cooler and oil pan (upper).
- Tighten connector bolt after aligning cutout on oil cooler with protrusion on oil pan (upper) side.



INSPECTION AFTER INSTALLATION

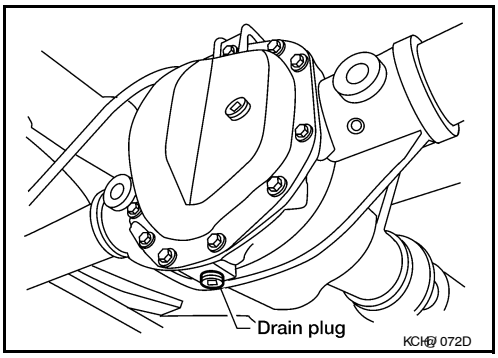
1. Check engine oil and engine coolant levels and add engine oil and engine coolant. Refer to LU-7, "Inspection" and CO-10, "System Inspection".
2. Start the engine, and check for leaks of engine oil or engine coolant.
3. Stop engine and wait for 10 minutes.
4. Check the engine oil level and the engine coolant level again. Refer to LU-7, "Inspection" and CO-10, "System Inspection".

DIFFERENTIAL GEAR OIL : Changing Rear Final Drive Oil (M226)

INFOID:0000000004095503

DRAINING

1. Stop engine.
2. Remove the drain plug from the rear final drive assembly to drain the differential gear oil.
3. Install the drain plug with sealant applied on the threads to the rear final drive assembly. Tighten to the specified torque. Refer to DLN-223, "Disassembly and Assembly".
   - Use High Performance Thread Sealant or equivalent. Refer to GI-14, "Recommended Chemical Products and Sealants"

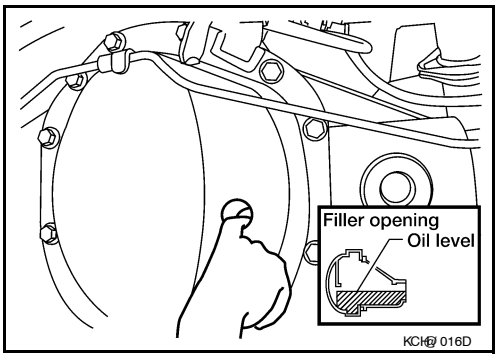


FILLING

1. Remove the filler plug from the rear final drive assembly.
2. Fill the rear final drive assembly with new differential gear oil until the level reaches the specified level near the filler plug hole.

Differential gear oil grade and capacity	**: Refer to MA-11, "Fluids and Lubricants".**

3. Install the filler plug with sealant applied on the threads to the rear final drive assembly. Tighten to the specified torque. Refer to DLN-223, "Disassembly and Assembly".
   - Use High Performance Thread Sealant or equivalent. Refer to GI-14, "Recommended Chemical Products and Sealants".



WHEELS

WHEELS : Balancing Wheels

INFOID:0000000004095504

WHEEL BALANCE REMOVAL

1. Remove wheel and tire using power tool.
2. Using releasing agent, remove double-faced adhesive tape from the wheel.
   CAUTION:
   - **Be careful not to scratch the wheel during removal.**
   - **After removing double-faced adhesive tape, wipe clean traces of releasing agent from the wheel.**

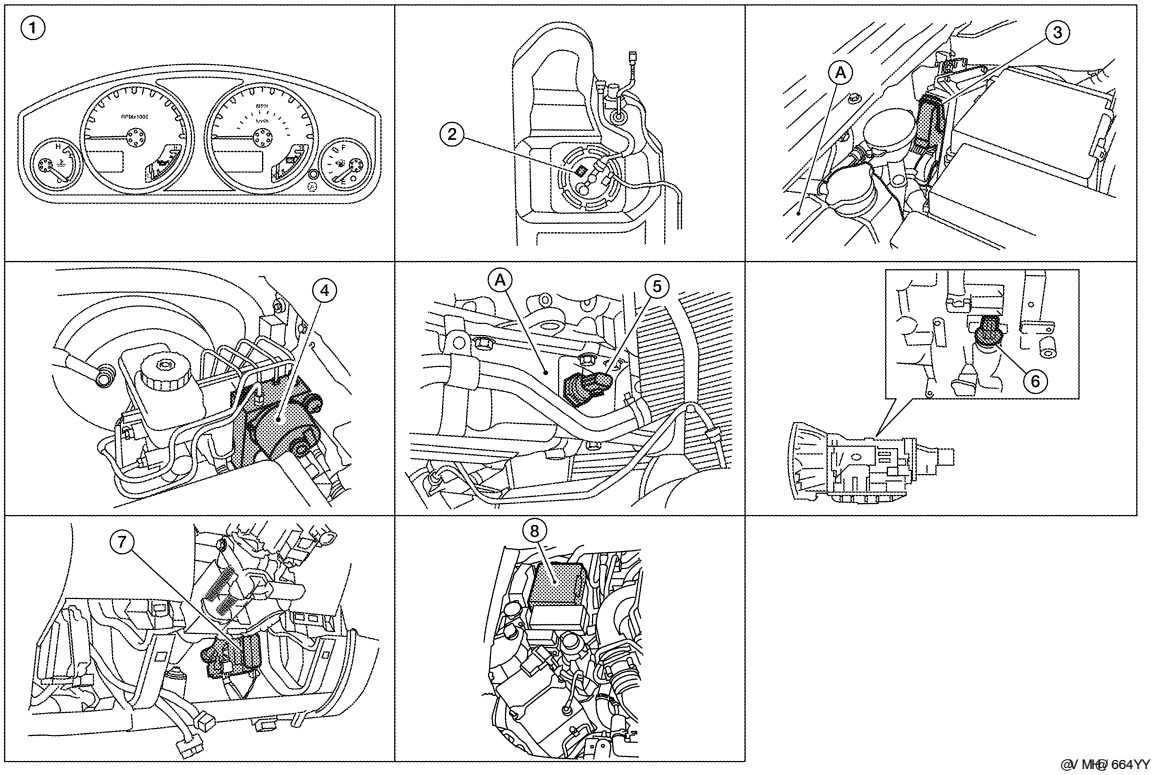
WHEEL BALANCE INSTALLATION AND ADJUSTMENT

- If a tire balance machine has adhesion balance weight mode settings and drive-in weight mode setting, select and adjust a drive-in weight mode suitable for wheels.

1. Set wheel on wheel balancer using the center hole as a guide. Start the tire balance machine.
2. When inner and outer imbalance values are shown on the wheel balancer indicator, multiply outer imbalance value by 1.6 to determine balance weight that should be used. Select the outer balance weight with a value closest to the calculated value and install it to the designated outer position of, or at the designated angle in relation to the road wheel.
   CAUTION:
   - **Do not install the inner balance weight before installing the outer balance weight.**
   - **Before installing the balance weight, be sure to clean the mating surface of the wheel.**

VOLTAGE GAUGE : Component Parts Location

INFOID:0000000004469751



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1. Combination meter M24
2. Fuel level sensor unit and fuel pump C5 (view with fuel tank removed)
3. ECM E16 (view with ECM cover removed)
   A. Coolant reservoir
4. ABS actuator and electric unit (control unit) E125
5. Oil pressure switch E208
   A. Oil pan (upper)
6. A/T assembly F9
7. BCM M18, M19 (view with lower instrument panel LH removed)
8. IPDM E/R E122, E124

VOLTAGE GAUGE : Component Description

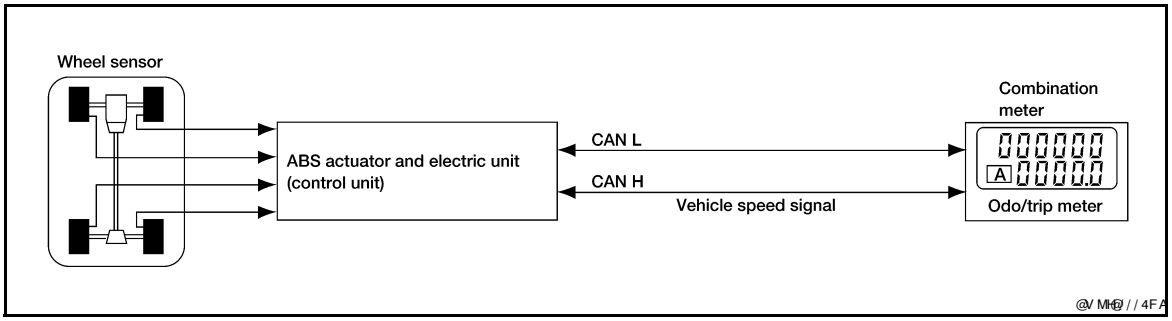
INFOID:0000000004095272

Unit	Description
Combination meter	Indicates the battery voltage according to the voltage signal received from the fuse block (J/B).
Fuse block (J/B)	Transmits the battery voltage signal to the combination meter.

ODO/TRIP METER

ODO/TRIP METER : System Diagram

INFOID:0000000004095273



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Connector No.	E208
Connector Name	OIL PRESSURE SWITCH
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
1	GR	–

Connector No.	E205
Connector Name	GENERATOR
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
2	P	L

Connector No.	F14
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
2	L	–
3	P	–
21	R	–

Connector No.	E201
Connector Name	WIRE TO WIRE
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
5	GR	–
8	P	–

Connector No.	F9
Connector Name	A/T ASSEMBLY
Connector Color	GREEN

H.S.

Terminal No.	Color of Wire	Signal Name
3	L	–
8	P	–
9	R	–

Connector No.	E209
Connector Name	GENERATOR
Connector Color	–

H.S.

Terminal No.	Color of Wire	Signal Name
5	B	E

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THE OIL PRESSURE WARNING LAMP DOES NOT TURN ON

Description

INFOID:0000000004095329

The oil pressure warning lamp stays off when the ignition switch is turned ON.

Diagnosis Procedure

INFOID:0000000004095330

1.CHECK OIL PRESSURE WARNING LAMP

Perform IPDM E/R auto active test. Refer to PCS-13, "Diagnosis Description".

Is oil pressure warning lamp illuminated?

YES >> GO TO 2
NO >> Replace combination meter. Refer to MWI-90, "Removal and Installation".

2.CHECK OIL PRESSURE SWITCH SIGNAL CIRCUIT

Check the oil pressure switch signal circuit. Refer to MWI-34, "Diagnosis Procedure".

Is the inspection result normal?

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

3.CHECK OIL PRESSURE SWITCH UNIT

Perform a unit check for the oil pressure switch. Refer to MWI-34, "Component Inspection".

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation of IPDM E/R".
NO >> Replace oil pressure switch.

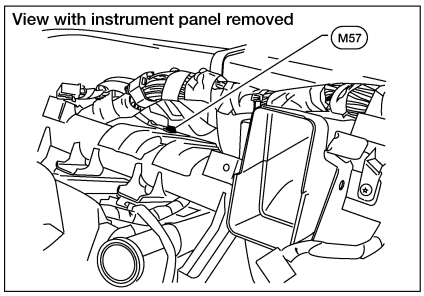
Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value (Approx.)
				Ignition switch	Operation or condition	
1	W	Battery power supply	Input	OFF	—	Battery voltage
2	R	Battery power supply	Input	OFF	—	Battery voltage
3	G	ECM relay	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
4	P	ECM relay	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
6	V	Throttle control motor relay	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
7	BR	ECM relay control	Input	—	Ignition switch ON or START	0V
					Ignition switch OFF or ACC	Battery voltage
8	W/R	Fuse 54	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
10	R/B	Fuse 45	Output	ON	Daytime light system active	0V
					Daytime light system inactive	Battery voltage
11	Y	A/C compressor	Output	ON or START	A/C switch ON or defrost A/C switch	Battery voltage
					A/C switch OFF or defrost A/C switch	0V
12	W/G	Ignition switch supplied power	Input	—	OFF or ACC	0V
					ON or START	Battery voltage
13	R	Fuel pump relay	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
14	W/G	Fuse 49	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
15	W/R	Fuse 50 (ABS)	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
16	W/G	Fuse 51	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
17	W/G	Fuse 55	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
19	W	Starter motor	Output	START	—	Battery voltage
20	BR	Cooling fan motor (low)	Output	ON or START	—	Battery voltage
21	GR	Ignition switch supplied power	Input	—	OFF or ACC	0V
					START	Battery voltage
22	G	Battery power supply	Output	OFF	—	Battery voltage
23	LG	Door mirror defogger output signal	Output	—	When rear defogger switch is ON	Battery voltage
					When raker defogger switch is OFF	0V

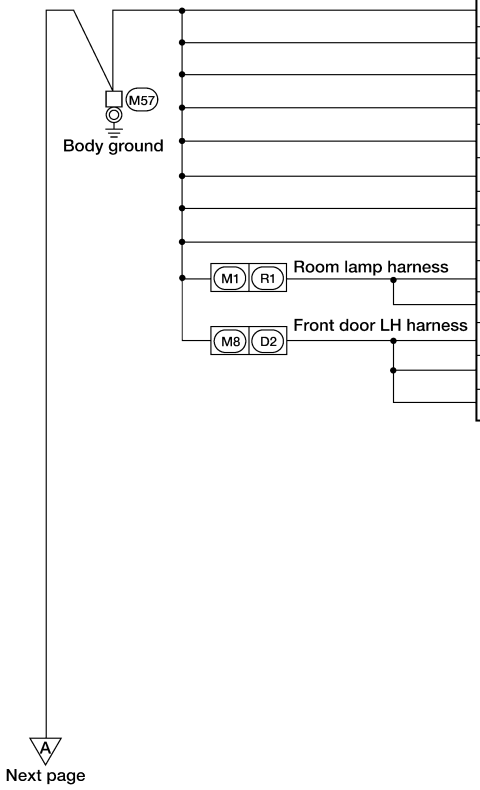
GROUND CIRCUIT

Ground Distribution

INFOID:0000000004095231

Main Harness





CONNECTOR NUMBER	CONNECT TO
M20	BCM (Body control module) (Terminal No. 67)
M21	Nats antena amp. (Terminal No. 3)
M22	Data link connector (Terminal No. 4)
M22	Data link connector (Terminal No. 5)
M24	Combination meter (Terminal No. 23)
M28	Combination switch
M80	Off-road lamps switch (Terminal No. 2)
M80	Off-road lamps switch (Terminal No. 6)
R7	Auto anti-dazzling inside mirror
R9	Front room/map lamp assembly
D4	Door mirror LH
D7	Main power window and door lock/unlock switch
D14	Front door lock assembly LH

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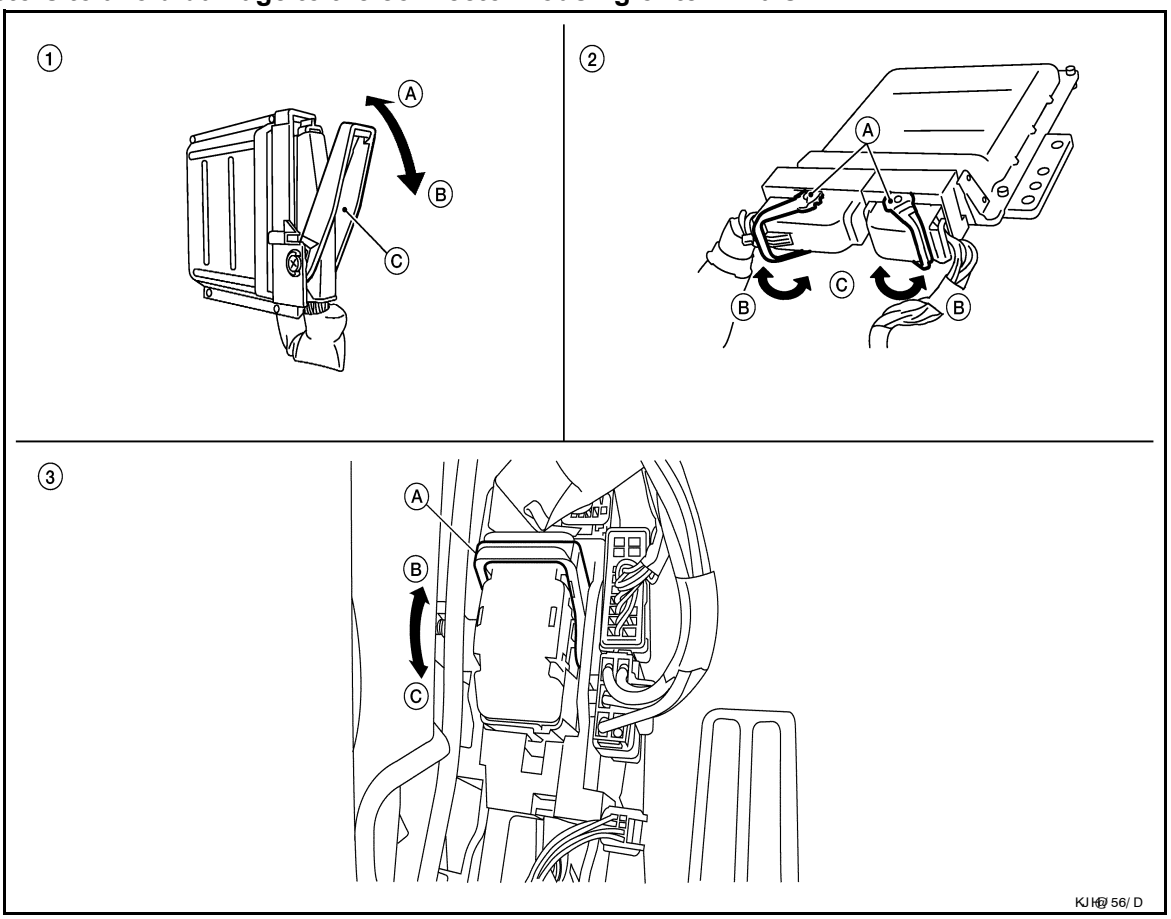
Always confirm the lever is fully released (loosened) before attempting to disconnect or connect these connectors to avoid damage to the connector housing or terminals.



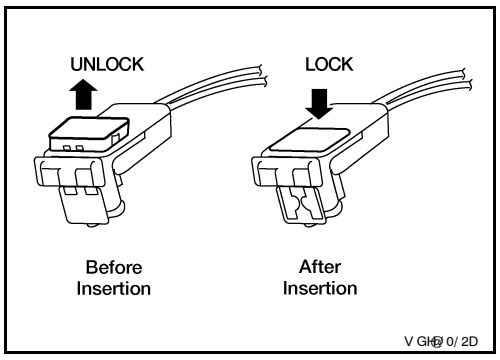
1. Control unit with single lever
   A. Fasten
   B. Loosen
   C. Lever
2. Control unit with dual levers
   A. Levers
   B. Fasten
   C. Loosen
3. SMJ connector
   A. Lever
   B. Fasten
   C. Loosen

HARNESS CONNECTOR (DIRECT-CONNECT SRS COMPONENT TYPE)

- SRS direct-connect type harness connectors are used on certain SRS components such as air bag modules and seat belt pre-tensioners.
- Always pull up to release black locking tab prior to removing connector from SRS component.
- Always push down to lock black locking tab after installing connector to SRS component. When locked, the black locking tab is level with the connector housing.

CAUTION:

- **Do not pull the harness or wires when removing connectors from SRS components.**



ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000004460405

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
IGN ON SW	Ignition switch OFF or ACC	OFF
	Ignition switch ON	ON
KEY ON SW	Mechanical key is removed from key cylinder	OFF
	Mechanical key is inserted to key cylinder	ON
CDL LOCK SW	Door lock/unlock switch does not operate	OFF
	Press door lock/unlock switch to the lock side	ON
CDL UNLOCK SW	Door lock/unlock switch does not operate	OFF
	Press door lock/unlock switch to the unlock side	ON
DOOR SW-DR	Driver's door closed	OFF
	Driver's door opened	ON
DOOR SW-AS	Passenger door closed	OFF
	Passenger door opened	ON
DOOR SW-RR	Rear RH door closed	OFF
	Rear RH door opened	ON
DOOR SW-RL	Rear LH door closed	OFF
	Rear LH door opened	ON
BACK DOOR SW	Back door closed	OFF
	Back door opened	ON
KEY CYL LK-SW	Other than driver door key cylinder LOCK position	OFF
	Driver door key cylinder LOCK position	ON
KEY CYL UN-SW	Other than driver door key cylinder UNLOCK position	OFF
	Driver door key cylinder UNLOCK position	ON
KEYLESS LOCK	“LOCK” button of key fob is not pressed	OFF
	“LOCK” button of key fob is pressed	ON
KEYLESS UNLOCK	“UNLOCK” button of key fob is not pressed	OFF
	“UNLOCK” button of key fob is pressed	ON
ACC ON SW	Ignition switch OFF	OFF
	Ignition switch ACC or ON	ON
REAR DEF SW	Rear window defogger switch OFF	OFF
	Rear window defogger switch ON	ON
LIGHT SW 1ST	Lighting switch OFF	OFF
	Lighting switch 1ST	ON
BUCKLE SW	The seat belt (driver side) is unfastened. [Seat belt switch (driver side) OFF]	OFF
	The seat belt (driver side) is fastened. [Seat belt switch (driver side) ON]	ON
KEYLESS PANIC	PANIC button of key fob is not pressed	OFF
	PANIC button of key fob is pressed	ON

PRECAUTION

PRECAUTIONS

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

INFOID:0000000004095057

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 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.**

ON-VEHICLE MAINTENANCE

REAR SUSPENSION ASSEMBLY

On-Vehicle Inspection and Service

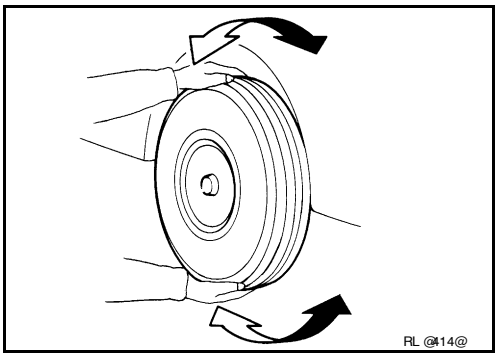
INFOID:0000000004064550

- Check the rear suspension parts for any excessive play, cracks, wear, and other damage.
- Shake each rear wheel to check for any excessive play as shown.
- Tighten all of the nuts and bolts to the specified torque.

CAUTION:

When installing the components with rubber bushings, the final tightening of the nuts and bolts must be done with the vehicle in an unladen condition (the fuel, engine coolant, and engine oil full; the spare tire, jack, hand tools and mats in their designated positions) with the tires on the ground.

- Check the shock absorbers for oil leaks, deformation, and other damage.
- Check the shock absorber bushings for excessive wear and other damage.



Connector No.	B372
Connector Name	RECLINING MOTOR RH
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
11	R/B	–
12	B/O	–

Connector No.	B371
Connector Name	WIRE TO WIRE
Connector Color	GRAY

Terminal No.	Color of Wire	Signal Name
11	B/O	–
12	R/B	–

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DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM)

INFOID:0000000004458391

APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
WORK SUPPORT	Changes the setting for each system function.
SELF-DIAG RESULTS	Displays the diagnosis results judged by BCM. Refer to BCS-53, "DTC Index".
CAN DIAG SUPPORT MNTR	Monitors the reception status of CAN communication viewed from BCM.
DATA MONITOR	The BCM input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from BCM.
ECU IDENTIFICATION	The BCM part number is displayed.
CONFIGURATION	• Enables to read and save the vehicle specification. • Enables to write the vehicle specification when replacing BCM.

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

It can perform the diagnosis modes except the following for all sub system selection items.

System	Sub system selection item	Diagnosis mode		
		WORK SUPPORT	DATA MONITOR	ACTIVE TEST
BCM	BCM	×		
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	
Warning chime	BUZZER		×	×
Interior room lamp timer	INT LAMP	×	×	×
Remote keyless entry system	MULTI REMOTE ENT	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER		×	×
Air conditioner	AIR CONDITONER		×	
Combination switch	COMB SW		×	
Immobilizer	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door open	TRUNK		×	×
Vehicle security system	THEFT ALM	×	×	×
RAP (retained accessory power)	RETAINED PWR	×	×	×
Signal buffer system	SIGNAL BUFFER		×	×
TPMS (tire pressure monitoring system)	AIR PRESSURE MONITOR	×	×	×
Panic alarm system	PANIC ALARM			×

IMMU

IMMU : CONSULT-III Function (BCM - IMMU)

INFOID:0000000004458392

DATA MONITOR

Connector No.	E26
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
10	P	–
11	L	–

Connector No.	E122
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE

H.S.

42	41	40	39	38	37
48	47	46	45	44	43

Terminal No.	Color of Wire	Signal Name
38	B	GND (SIGNAL)
39	L	CAN-H
40	P	CAN-L
45	LG	ANTI THEFT HORN

Connector No.	E123
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BROWN

H.S.

51		50	49
56	55	54	53	52

Terminal No.	Color of Wire	Signal Name
52	P	H/LAMP LO LH
54	R	H/LAMP LO RH
55	G	H/LAMP HI LH
56	L	H/LAMP HI RH

Connector No.	E124
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK

H.S.

59	58	57
62	61	60

Terminal No.	Color of Wire	Signal Name
59	B	GND (POWER)

Connector No.	E162
Connector Name	HORN (WITH SINGLE NOTE HORN)
Connector Color	BLACK

H.S.

2

Terminal No.	Color of Wire	Signal Name
2	B	–

Connector No.	B8
Connector Name	FRONT DOOR SWITCH LH
Connector Color	WHITE

H.S.

1
2
3

Terminal No.	Color of Wire	Signal Name
2	GR	–

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FRONT PASSENGER AIR BAG MODULE

Removal and Installation

INFOID:0000000004064991

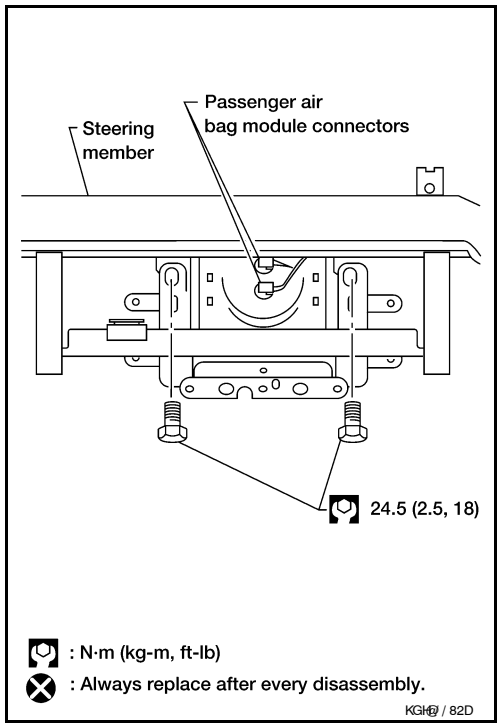
The passenger air bag module originally installed in the vehicle uses direct-connect style harness connectors. Service replacement passenger air bag modules use tab-locking style harness connectors. If the passenger air bag module is replaced or if the direct-connect harness connectors are damaged, the vehicle wiring harness must be modified to allow connection of the service replacement passenger air bag module. Follow the "WIRING HARNESS MODIFICATION" procedure.

REMOVAL

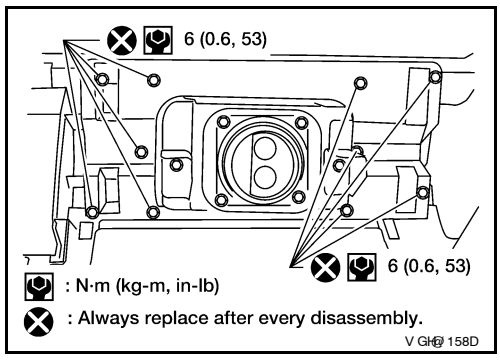
CAUTION:

- **Do not attempt to repair or replace damaged direct-connect front passenger air bag module connectors. If a direct-connect harness connector is damaged, the front passenger air bag must be replaced and the wiring harness modified.**
- **Before servicing SRS, turn the ignition switch off, disconnect both battery terminals and wait at least three minutes.**
- **Always work from the side of or under front passenger air bag module.**

1. Disconnect the negative and positive battery terminals, then wait at least three minutes.
2. Remove the glove box. Refer to IP-11, "Removal and Installation".
3. Remove 2 bolts (through glove box opening) retaining front passenger air bag module to the steering member.
4. Disconnect the passenger air bag module connectors.
   - For removal/installation of the direct-connect SRS connectors, refer to SRC-9, "Direct-connect SRS Component Connectors".
5. Remove the instrument panel assembly from the vehicle. Refer to IP-11, "Removal and Installation".



6. Remove front passenger air bag module screws then remove passenger air bag module from instrument panel assembly.



CAUTION:

Turn ignition switch ON.

>> GO TO 2

2.IGNITION SWITCH

After air bag warning lamp lights for 7 seconds, turn ignition switch OFF within 1 second.

>> GO TO 3

3.WAIT TIME

Wait more than 3 seconds.

>> GO TO 4

4.REPEAT STEPS

Repeat steps 1 to 3 twice.

>> GO TO 5

5.IGNITION SWITCH

Turn ignition switch ON.

>> GO TO 6

6.DIAGNOSTIC MODE

SRS system is now in diagnostic mode and AIR BAG warning lamp flashes. Refer to SRC-15, "Trouble Diagnosis without CONSULT-III".

>> **END**

Diagnosis Procedure (Component Diagnosis)

INFOID:0000000004065029

Recheck SRS after each replacement.

1.HARNESS CONNECTOR

Is there any visible damage to the connector?

YES or NO

YES >> Replace the harness.
NO >> GO TO 2

2.WIRING HARNESS

Is there any visible damage to the harness?

YES or NO

YES >> Replace the harness.
NO >> GO TO 3

3.FRONT LH SIDE AIR BAG MODULE

Replace the front LH seat back assembly. Refer to SE-26, "Removal and Installation".

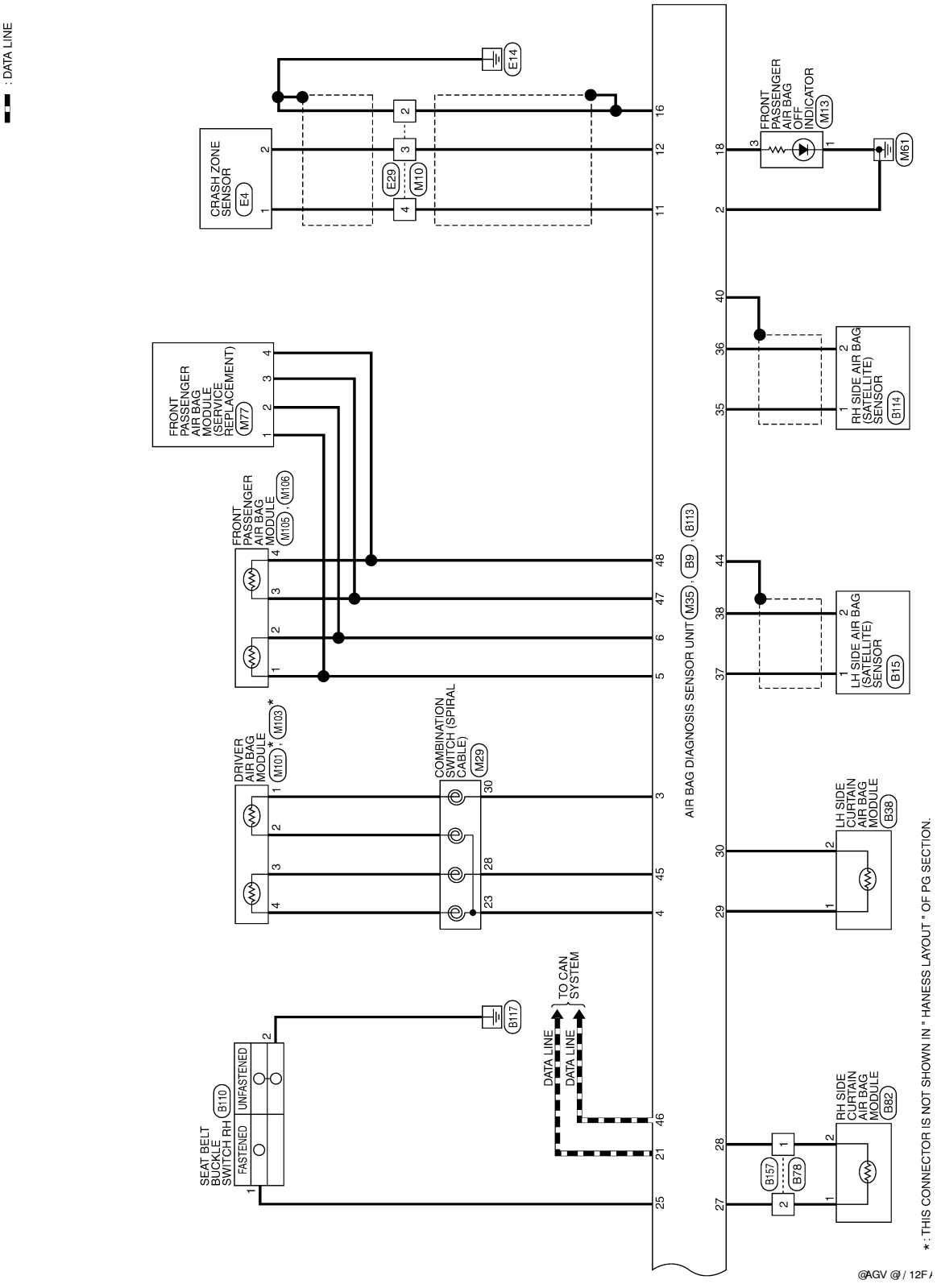
>> GO TO 4

4.AIR BAG DIAGNOSIS SENSOR UNIT

Replace the air bag diagnosis sensor unit. Refer to SR-15, "Removal and Installation".

>> GO TO 5

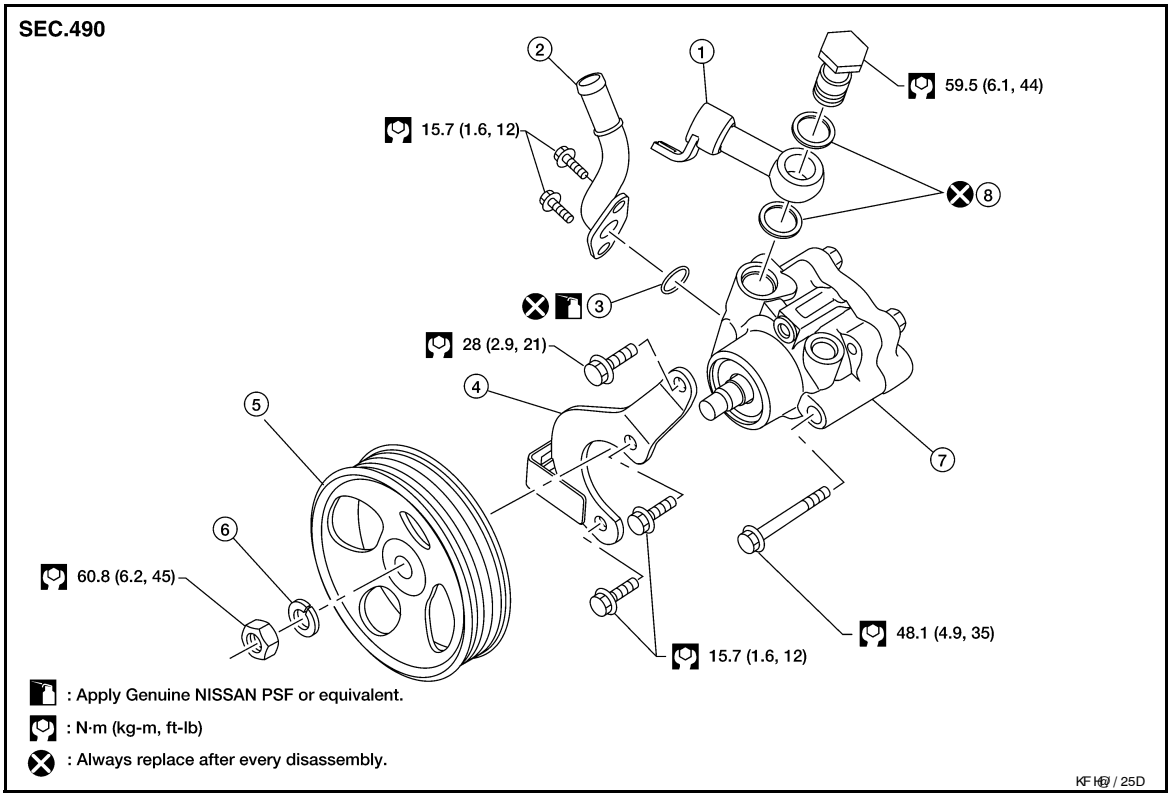
5.RELATED HARNESS


: DATA LINE
CRASH ZONE SENSOR E4
E14
E29
M10
FRONT PASSENGER AIR BAG MODULE (SERVICE REPLACEMENT) M77
FRONT PASSENGER AIR BAG MODULE M105 M106
DRIVER AIR BAG MODULE M101 M103*
COMBINATION SWITCH (SPIRAL CABLE) M29
SEAT BELT BUCKLE SWITCH RH B110
FASTENED
UNFASTENED
B117
DATA LINE
TO CAN SYSTEM
AIR BAG DIAGNOSIS SENSOR UNIT M35, B9, B113
FRONT PASSENGER AIR BAG INDICATOR M13
M61
RH SIDE AIR BAG (SATELLITE) SENSOR B114
LH SIDE AIR BAG (SATELLITE) SENSOR B15
LH SIDE CURTAIN AIR BAG MODULE B38
RH SIDE CURTAIN AIR BAG MODULE B82
B157
B78
*: THIS CONNECTOR IS NOT SHOWN IN " HANESS LAYOUT " OF PG SECTION.

POWER STEERING OIL PUMP

Component

INFOID:0000000004478554



1. Joint
2. Suction pipe
3. O-ring
4. Front bracket
5. Pulley
6. Lock washer
7. Body assembly
8. Copper washers

Removal and Installation

INFOID:0000000004064967

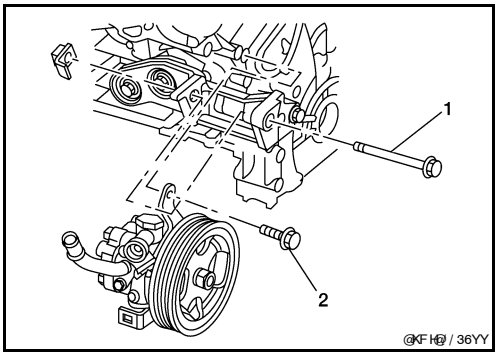
REMOVAL

1. Drain the power steering fluid from the reservoir tank.
2. Remove the engine room cover. Refer to EM-23, "Removal and Installation".
3. Remove the air duct assembly. Refer to EM-24, "Exploded View".
4. Remove the serpentine drive belt from the auto tensioner and power steering oil pump. Refer to EM-12, "Removal and Installation".
5. Disconnect the pressure sensor electrical connector.
6. Remove the high pressure and low pressure piping from the power steering oil pump.
7. Remove the power steering oil pump bolts, then remove the power steering pump.

INSTALLATION

Installation is in the reverse order of removal.

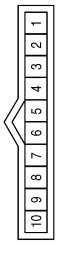
- Install the bolts to specification in the order shown.
- After installation, bleed the air from the hydraulic circuit thoroughly. Refer to ST-6, "Air Bleeding Hydraulic System".



Power steering pump to bracket bolt (1)	**48.1 N·m (4.9 kg-m, 35 ft-lb)**
Power steering pump to block bolt (2)	**28 N·m (2.9 kg-m, 21 ft-lb)**

NOTE:
Belt tension is automatic and requires no adjustment.

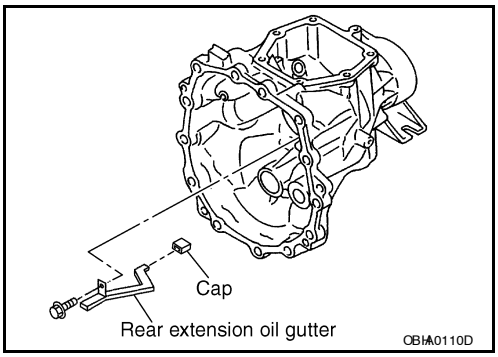
Connector No.	F502
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Color	GRAY



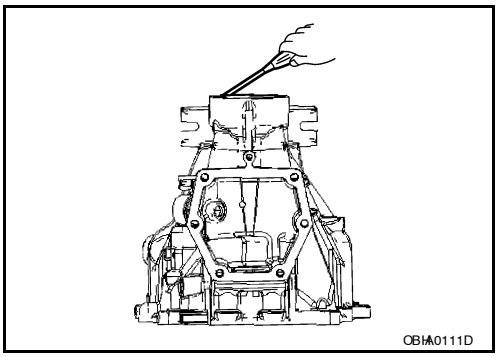
Terminal No.	Color of Wire	Signal Name
8	G	START-RLY

@AAH@ 065F A

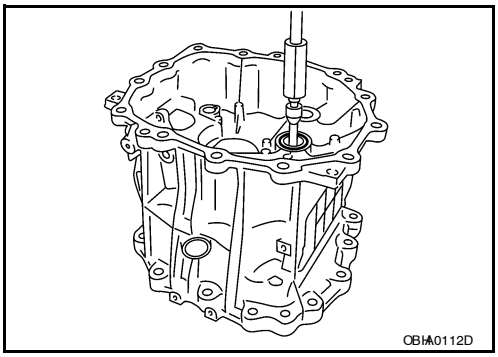
8. Remove rear extension oil gutter bolt, and then remove rear extension oil gutter and cap from rear extension. (For 2WD models)



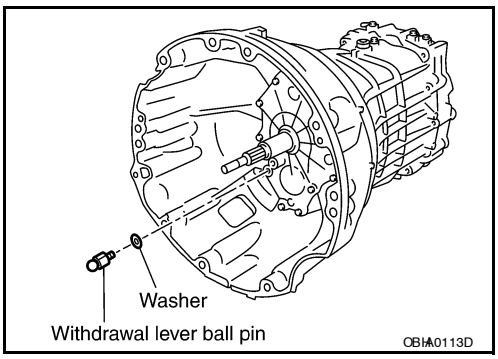
9. Remove dust seal and rear oil seal from rear extension using suitable tool. (For 2WD models)
CAUTION:
Be careful not to damage rear extension.



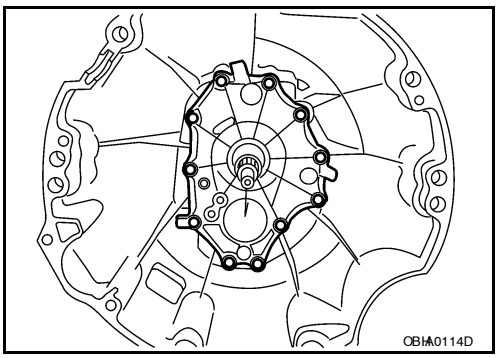
10. Remove counter end bearing from rear extension (or OD gear case) using suitable tool.
CAUTION:
Be careful not to damage rear extension (or OD gear case).



11. Remove withdrawal lever ball pin and washer from front cover.



12. Remove front cover bolts, and then remove front cover and front cover gasket from transmission case.

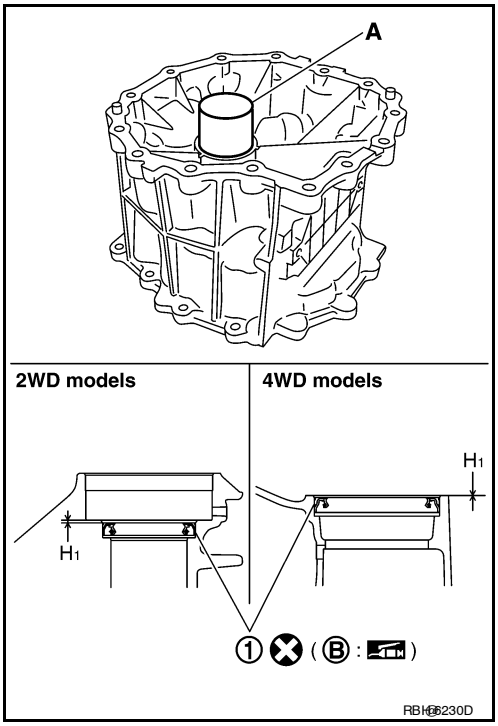


15. Install rear oil seal (1) to rear extension (or OD gear case) using Tool A.

Tool number : ST33200000 (J-26082)

Dimension H1
2WD models : 1.2 - 2.2 mm (0.047 - 0.087 in)
4WD models : -0.5 - 0.5 mm (-0.020 - 0.020 in)

CAUTION:
When installing, do not incline rear oil seal.
(B): Seal lip

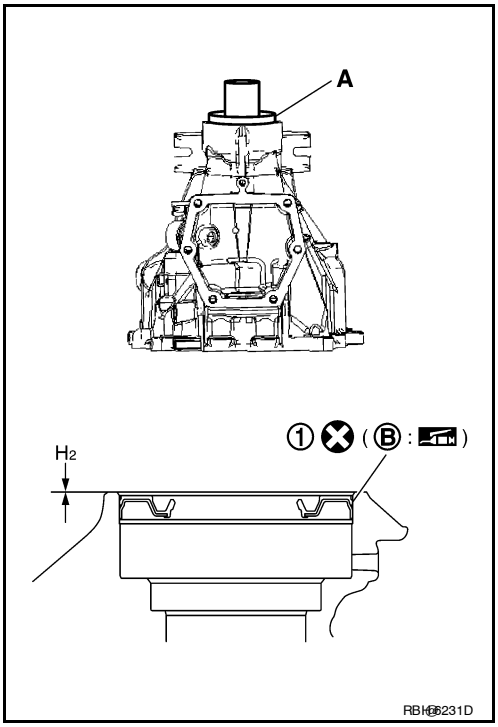


16. Install dust seal (1) to rear extension using Tool A (for 2WD models).

Tool number : KV38100500 (—)

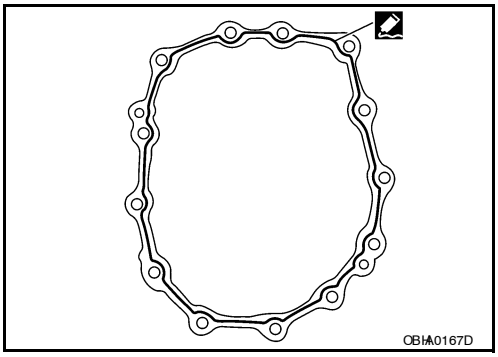
Dimension H2 : 0.5 - 1.5 mm (0.020 - 0.059 in)

CAUTION:
When installing, do not incline dust seal.
(B): Seal lip



17. Apply recommended sealant to mating surface of rear extension as shown.
- **Use Genuine Silicone RTV or the equivalent. Refer to GI-14, "Recommended Chemical Products and Sealants".**

CAUTION:
Remove old sealant adhering to the mating surfaces. Also remove any moisture, oil, or foreign material adhering to both mating surfaces.



Items (CONSULT-III screen terms)	Malfunction is detected when...	TCM self-diagnosis	OBD-II (DTC)	Reference page
		"TRANSMISSION" with CONSULT-III	MIL indicator lamp*1, "ENGINE" with CONSULT-III or GST	
VEH SPD SEN/CIR AT (Revolution sensor)	• Signal from vehicle speed sensor A/T (Revolution sensor) not input due to cut line or the like • Unexpected signal input during running • After ignition switch is turned ON, unexpected signal input from vehicle speed sensor MTR before the vehicle starts moving	P0720	P0720	TM-119
ENGINE SPEED SIG	• TCM does not receive the CAN communication signal from the ECM.	P0725	—	TM-122
A/T 1ST GR FNCTN	• A/T cannot shift to 1st gear	P0731	P0731	TM-125
A/T 2ND GR FNCTN	• A/T cannot shift to 2nd gear	P0732	P0732	TM-127
A/T 3RD GR FNCTN	• A/T cannot shift to 3rd gear	P0733	P0733	TM-129
A/T 4TH GR FNCTN	• A/T cannot shift to 4th gear	P0734	P0734	TM-131
A/T 5TH GR FNCTN	• A/T cannot shift to 5th gear	P0735	P0735	TM-133
TCC SOLENOID/CIRC	• Normal voltage not applied to solenoid due to cut line, short, or the like	P0740	P0740	TM-134
A/T TCC S/V FNCTN	• A/T cannot perform lock-up even if electrical circuit is good. • TCM detects as irregular by comparing difference value with slip rotation.	P0744	P0744*2	TM-136
L/PRESS SOL/CIRC	• Normal voltage not applied to solenoid due to cut line, short, or the like • TCM detects as irregular by comparing target value with monitor value.	P0745	P0745	TM-138
TP SEN/CIRC A/T	• TCM does not receive the proper accelerator pedal position signals (input by CAN communication) from ECM.	P1705	—	TM-140
ATF TEMP SEN/CIRC	• During running, the ATF temperature sensor signal voltage is excessively high or low	P1710	P0710	TM-142
VEH SPD SE/CIR·MTR	• Signal (CAN communication) from vehicle speed sensor MTR not input due to cut line or the like • Unexpected signal input during running	P1721	—	TM-144
A/T INTERLOCK	• Except during shift change, the gear position and ATF pressure switch states are monitored and comparative judgement made.	P1730	P1730	TM-146
A/T 1ST E/BRAKING	• Each ATF pressure switch and solenoid current is monitored and if a pattern is detected having engine braking 1st gear other than in the "1" position, a malfunction is detected.	P1731	—	TM-148
I/C SOLENOID/CIRC	• Normal voltage not applied to solenoid due to functional malfunction, cut line, short, or the like • TCM detects as irregular by comparing target value with monitor value.	P1752	P1752	TM-150
FR/B SOLENOID/CIRC	• Normal voltage not applied to solenoid due to functional malfunction, cut line, short, or the like • TCM detects as irregular by comparing target value with monitor value.	P1757	P1757	TM-152
D/C SOLENOID/CIRC	• Normal voltage not applied to solenoid due to cut line, short, or the like • TCM detects as irregular by comparing target value with monitor value.	P1762	P1762	TM-154

DTC P1705 THROTTLE POSITION SENSOR

Description

INFOID:0000000004064320

Electric throttle control actuator consists of throttle control motor, accelerator pedal position sensor, throttle position sensor, etc. The actuator sends a signal to the ECM, and ECM sends signals to TCM with CAN communication.

CONSULT-III Reference Value in Data Monitor Mode

INFOID:0000000004064321

Item name	Condition	Display value (Approx.)
ACCELE POSI	Released accelerator pedal.	0.0/8
	Fully depressed accelerator pedal.	8/8

On Board Diagnosis Logic

INFOID:0000000004064322

- This is not an OBD-II self-diagnostic item.
- Diagnostic trouble code “P1705 TP SEN/CIRC A/T” with CONSULT-III or 15th judgement flicker without CONSULT-III is detected when TCM does not receive the proper accelerator pedal position signals (input by CAN communication) from ECM.

Possible Cause

INFOID:0000000004064323

Harness or connectors
(The sensor circuit is open or shorted.)

DTC Confirmation Procedure

INFOID:0000000004064324

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch “OFF” and wait at least 10 seconds before performing the next test.
After the repair, perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-III
1. Turn ignition switch “ON”. (Do not start engine.)
2. Select “DATA MONITOR” mode for "TRANSMISSION" with CONSULT-III.
3. Start engine and let it idle for 1 second.
4. If DTC is detected, go to TM-140, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000004064325

1.CHECK CAN COMMUNICATION LINE

Perform the self-diagnosis. Refer to TM-102, "CONSULT-III Function (TRANSMISSION)".

Is a malfunction in the CAN communication indicated in the results?

YES >> Check CAN communication line. Refer to TM-111.
NO >> GO TO 2.

2.CHECK DTC WITH TCM

With CONSULT-III
1. Turn ignition switch ON. (Do not start engine.)
2. Select “ECU INPUT SIGNALS” in “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-III.
3. Depress accelerator pedal and read out the value of “ACCELE POSI”.
4. Select “SELF-DIAG RESULTS” mode for “TRANSMISSION” with CONSULT-III. Refer to TM-102, "CONSULT-III Function (TRANSMISSION)".

Is the inspection result normal?

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

3.CHECK DTC WITH ECM

Connector No.	M156
Connector Name	A/T DEVICE
Connector Color	WHITE

H.S.

1	3		7	9
2	4	5	6	8	10

Terminal No.	Color of Wire	Signal Name
7	Y	–
8	B	–
9	L	–
10	B	–

Connector No.	E2
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
2	L	–
3	P	–

Connector No.	E5
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24

Terminal No.	Color of Wire	Signal Name
2	L	–
3	P	–
9	LG	–
13	W/G	–
14	V	–
21	R	–
22	R/B	–

Connector No.	E16
Connector Name	ECM
Connector Color	BLACK

H.S.

106	107	108	109	110	111	112	113		119	120	121
98	99	100	101	102	103	104	105			117	118
90	91	92	93	94	95	96	97		114	115	116
82	83	84	85	86	87	88	89				

Terminal No.	Color of Wire	Signal Name
86	P	CAN-L
94	L	CAN-H

Connector No.	E39
Connector Name	STOP LAMP SWITCH (WITH A/T)
Connector Color	WHITE

H.S.

3	4
1	2

Terminal No.	Color of Wire	Signal Name
1	R/B	–
2	Y	–

Connector No.	E45
Connector Name	BACK-UP LAMP RELAY
Connector Color	BROWN

H.S.

2		1
7	5	
6		3

Terminal No.	Color of Wire	Signal Name
1	LG	–
2	W/G	–
3	SB	–
5	W/G	–
6	Y	–
7	W	–

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No.	Items	Symptom	Condition	Diagnostic Item	Reference page
7	Shift Shock	Shock is too large for upshift when accelerator pedal is released.	ON vehicle	1. Accelerator pedal position sensor	TM-140
				2. Control cable adjustment	TM-251
				3. Engine speed signal	TM-122
				4. CAN communication line	TM-111
				5. Turbine revolution sensor	TM-117
				6. Vehicle speed sensor A/T and vehicle speed sensor MTR	TM-119, TM-144
				7. Fluid level and state	TM-235
				8. Control valve with TCM	TM-254
			OFF vehicle	9. Front brake (brake band)	TM-274
				10. Input clutch	TM-308
				11. High and low reverse clutch	TM-318
				12. Direct clutch	TM-320
8		Shock is too large for lock-up.	ON vehicle	1. Accelerator pedal position sensor	TM-140
				2. Control cable adjustment	TM-251
				3. Engine speed signal	TM-122
				4. CAN communication line	TM-111
				5. Turbine revolution sensor	TM-117
				6. Vehicle speed sensor A/T and vehicle speed sensor MTR	TM-119, TM-144
				7. Torque converter clutch solenoid valve	TM-134
				8. Fluid level and state	TM-235
				9. Control valve with TCM	TM-254
			OFF vehicle	10. Torque converter	TM-285
9		Shock is too large during engine brake.	ON vehicle	1. Accelerator pedal position sensor	TM-140
				2. Control cable adjustment	TM-251
				3. CAN communication line	TM-111
				4. Fluid level and state	TM-235
				5. Control valve with TCM	TM-254
			OFF vehicle	6. Front brake (brake band)	TM-274
				7. Input clutch	TM-308
				8. High and low reverse clutch	TM-318
				9. Direct clutch	TM-320

Cruise Test - Part 2

INFOID:0000000004064439

1.CHECK STARTING FROM D1

1. Move selector lever to “D” position.
2. Accelerate at half throttle.

With CONSULT-III

Read the gear position.

Does it start from D1?

YES >> GO TO 2.
NO >> Record the malfunction, “then continue the road test.

2.CHECK SHIFT - DOWN

During D4 driving, move gear selector from D → 3 → 2 → 1.

With CONSULT-III

Read the gear position.

Is downshifting correctly performed→?

YES >> GO TO 3.
NO >> Record the malfunction, “then continue the road test.

3.CHECK ENGINE BRAKE

Does engine braking effectively reduce speed in 11 position?

YES >> 1. Stop the vehicle.
2. Carry out the self-diagnostics. Refer to TM-102, "CONSULT-III Function (TRANSMISSION)".

NO >> Record the malfunction, “then continue the trouble diagnosis.

Cruise Test - Part 3

INFOID:0000000004064440

1.CHECK VEHICLE EQUIPMENT

Is vehicle equipped with manual mode shifter?

YES or NO?

YES >> GO TO 2.
NO >> GO TO 4.

2.MANUAL MODE FUNCTION

Move to manual mode from “D” position.

Does it switch to manual mode?

YES >> GO TO 3.
NO >> Enter a check mark at “Cannot Be Changed to Manual Mode” on the diagnostics worksheet, then continue the road test.

3.CHECK SHIFT-DOWN

During manual mode driving, move gear selector from M5 → M4 → M3 → M2 → M1.

With CONSULT-III

Read the gear position.

Is downshifting correctly performed?

YES >> GO TO 6.
NO >> Enter a check mark at “A/T Does Not Shift” at the corresponding position (5th → 4th, 4th → 3rd, 3rd → 2nd, 2nd → 1st) on the diagnostics worksheet, then continue the road test.

4.CHECK SHIFT-DOWN

1. Confirm overdrive control switch is ON position.
2. Confirm gear selector lever is in “D” position.
3. Accelerate vehicle using half-throttle to D5.
4. Release accelerator pedal.
5. Set overdrive control switch to OFF position while driving in D5.

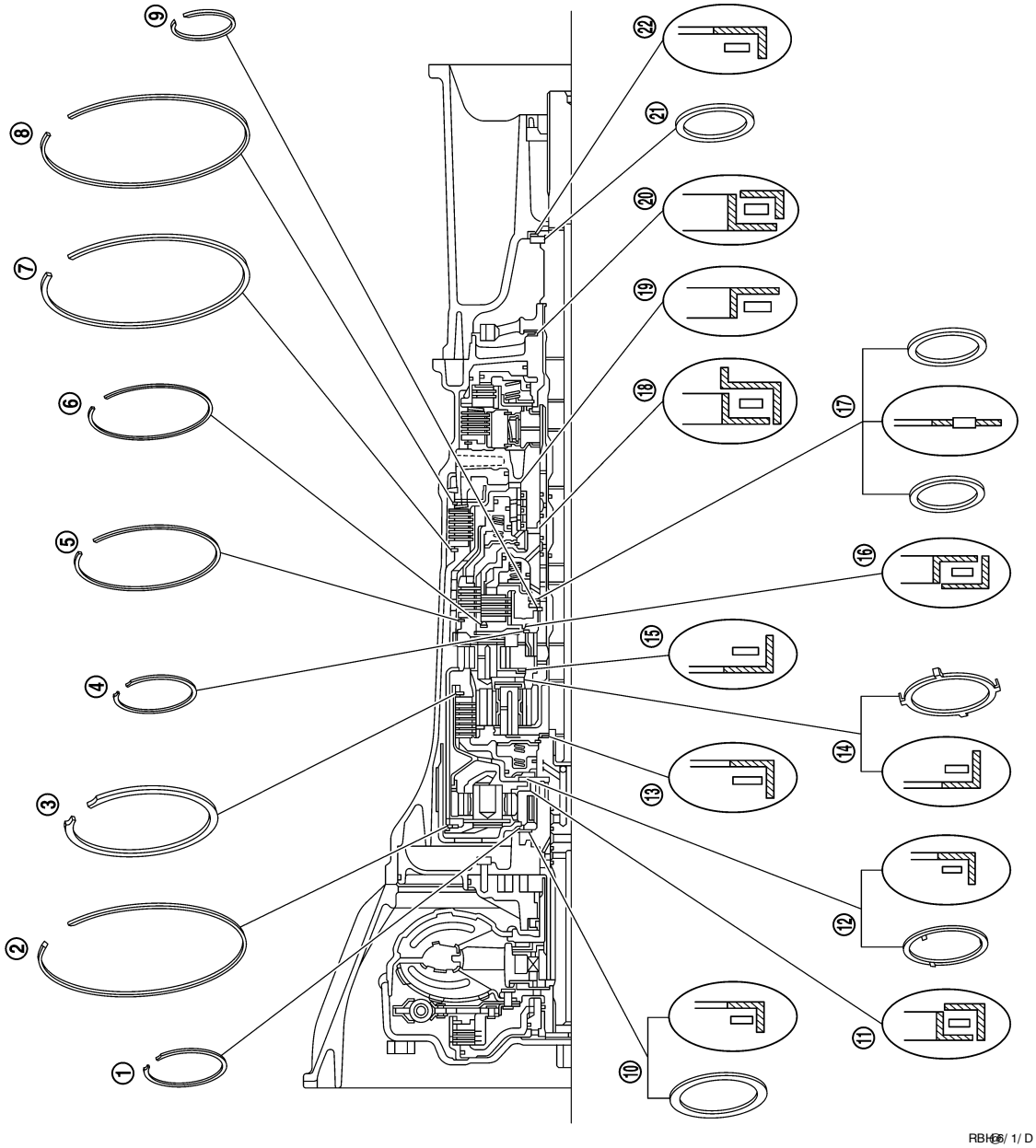
4WD models

Outer diameter of snap rings

Item number	Outer diameter mm (in)
①	63 (2.48)
②	183 (7.20)
③	173 (6.81)
④	70 (2.76)
⑤	170 (6.69)
⑥	135 (5.31)
⑦	180 (7.09)
⑧	185 (7.28)
⑨	48 (1.89)

Outer diameter of needle bearings

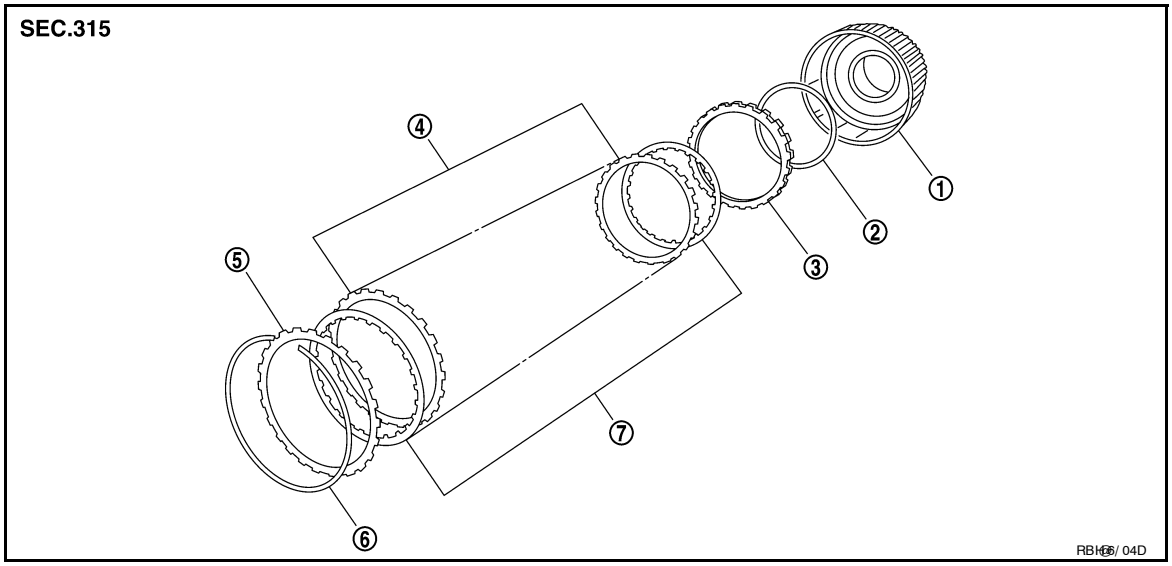
Item number	Outer diameter mm (in)
⑩	80 (3.15)
⑪	77 (3.03)
⑫	77 (3.03)
⑬	47 (1.85)
⑭	84 (3.31)
⑮	80 (3.15)
⑯	92 (3.62)
⑰	60 (2.36)
⑱	63 (2.48)
⑲	92 (3.62)
⑳	65 (2.56)
㉒	60 (2.36)



DIRECT CLUTCH

Exploded View

INFOID:0000000004064469



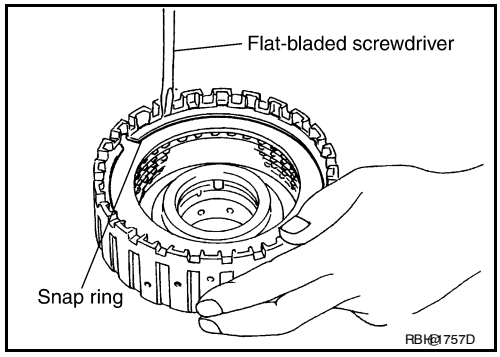
1. Direct clutch drum
2. Dish plate
3. Retaining plate
4. Driven plate
5. Retaining plate
6. Snap ring
7. Drive plate

Disassembly and Assembly

INFOID:0000000004064470

DISASSEMBLY

1. Remove snap ring from direct clutch drum using suitable tool.
2. Remove retaining plates, drive plates, driven plates and dish plate from direct clutch drum.



INSPECTION

- **Check the following, and replace direct clutch assembly if necessary.**

Direct Clutch Snap Ring
- Check for deformation, fatigue or damage.

Direct Clutch Drive Plates
- Check facing for burns, cracks or damage.

Direct Clutch Retaining Plate and Driven Plates
- Check facing for burns, cracks or damage.

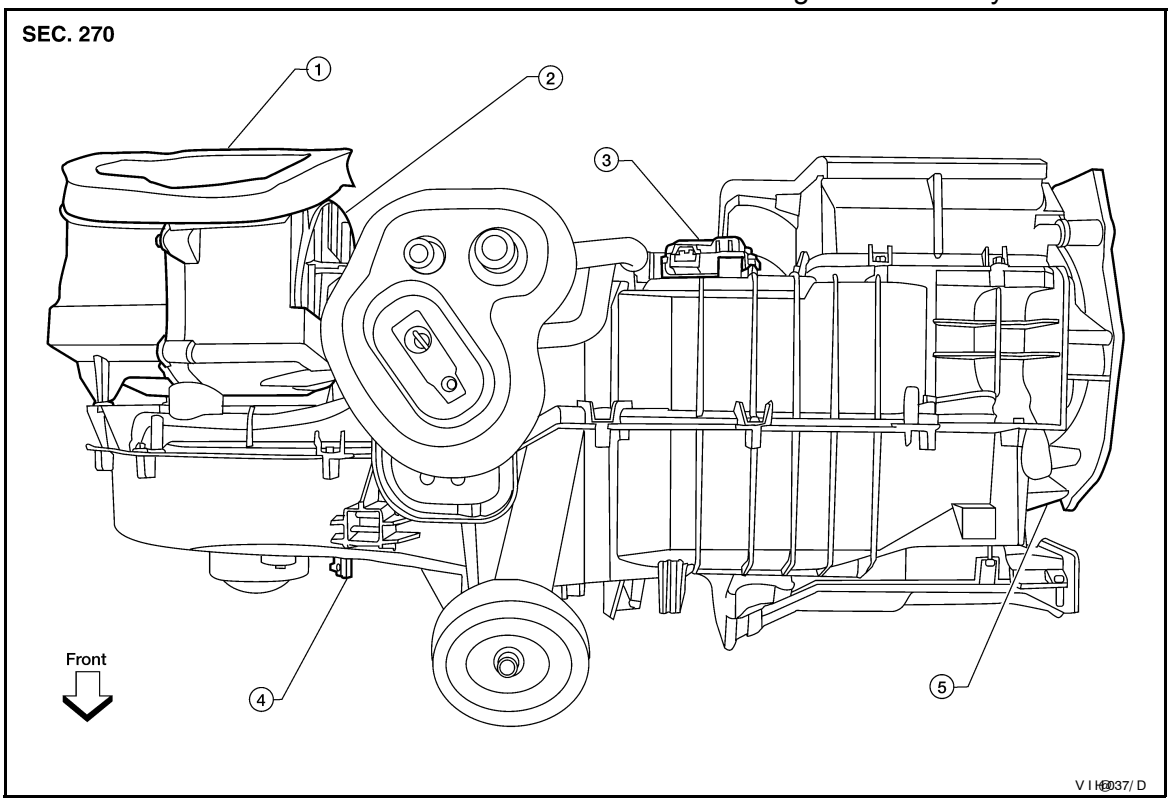
ASSEMBLY

FRONT BLOWER MOTOR RESISTOR

Removal and Installation

INFOID:0000000004065085

Blower Motor Resistor - Front Heater and Cooling Unit Assembly



1. Front heater and cooling unit assembly
2. Intake door motor
3. Air mix door motor
4. Blower motor resistor
5. Mode door motor

REMOVAL

1. Disconnect the blower motor resistor electrical connector.
2. Remove the two screws and remove the blower motor resistor.

INSTALLATION

Installation is in the reverse order of removal.

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK

H.S.

56	57	58	59	60	61	62	63	64
65	66	67	68	69	70			

Terminal No.	Color of Wire	Signal Name
67	B	GND (POWER)
70	W	BAT (F/L)

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.

20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21

Terminal No.	Color of Wire	Signal Name
3	R/Y	BATTERY
11	P	CAN-L
12	L	CAN-H
13	GR	GROUND
16	W/G	RUN START
23	B	POWER GND
24	V	BUCKLE (SEATBELT) SW

Connector No.	M27
Connector Name	KEY SWITCH
Connector Color	WHITE

H.S.

2	1

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

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	LG	INPUT 1
2	BR	INPUT 2
3	G	INPUT 3
4	GR	INPUT 4
5	O	INPUT 5
6	R	OUTPUT 1
7	L	OUTPUT 2
8	P	OUTPUT 5
9	SB	OUTPUT 4
10	V	OUTPUT 3

Display contents of CONSULT	Fail-safe	Cancellation
U1000: CAN COMM CIRCUIT	Inhibit engine cranking	When the BCM re-establishes communication with the other modules.
U1010: CONTROL UNIT (CAN)	Inhibit engine cranking	When the BCM re-start communicating with the other modules.

DTC Inspection Priority Chart

INFOID:0000000004465028

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	DTC
1	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	• B2190: NATS ANTENNA AMP • B2191: DIFFERENCE OF KEY • B2192: ID DISCORD BCM-ECM • B2193: CHAIN OF BCM-ECM
3	• C1729: VHCL SPEED SIG ERR • C1735: IGNITION SIGNAL
4	• C1704: LOW PRESSURE FL • C1705: LOW PRESSURE FR • C1706: LOW PRESSURE RR • C1707: LOW PRESSURE RL • C1708: [NO DATA] FL • C1709: [NO DATA] FR • C1710: [NO DATA] RR • C1711: [NO DATA] RL • C1712: [CHECKSUM ERR] FL • C1713: [CHECKSUM ERR] FR • C1714: [CHECKSUM ERR] RR • C1715: [CHECKSUM ERR] RL • C1716: [PRESSDATA ERR] FL • C1717: [PRESSDATA ERR] FR • C1718: [PRESSDATA ERR] RR • C1719: [PRESSDATA ERR] RL • C1720: [CODE ERR] FL • C1721: [CODE ERR] FR • C1722: [CODE ERR] RR • C1723: [CODE ERR] RL • C1724: [BATT VOLT LOW] FL • C1725: [BATT VOLT LOW] FR • C1726: [BATT VOLT LOW] RR • C1727: [BATT VOLT LOW] RL

DTC Index

INFOID:0000000004465029

NOTE:

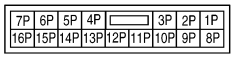
Details of time display

- CRNT: Displays when there is a malfunction now or after returning to the normal condition until turning ignition switch OFF → ON again.
- 1 - 39: Displayed if any previous malfunction is present when current condition is normal. It increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. The counter remains at 39 even if the number of cycles exceeds it. It is counted from 1 again when turning ignition switch OFF → ON after returning to the normal condition if the malfunction is detected again.

TIRE PRESSURE MONITORING SYSTEM CONNECTORS

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
5P	W/G	–
8P	R/Y	–
15P	W/R	–

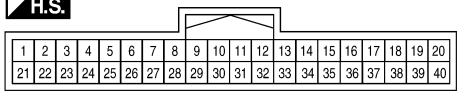
Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
6	W	–

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE

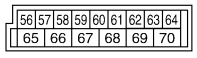
H.S.



Terminal No.	Color of Wire	Signal Name
15	W	TMPS MODE TRIGGER SW
18	BR	KEYLESS & AUTO LIGHT SENSOR GND
19	V	KEYLESS TUNER POWER SUPPLY OUTPUT
20	G	KEYLESS TUNER SIGNAL
38	W/R	IGN SW
39	L	CAN-H
40	P	CAN-L

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK

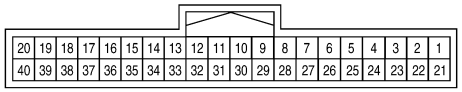
H.S.



Terminal No.	Color of Wire	Signal Name
67	B	GND (POWER)
70	W	BAT (F/L)

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
3	R/Y	BATTERY
11	P	CAN-L
12	L	CAN-H
13	GR	GROUND
16	W/G	RUN START
23	B	POWER GND

Test item	Operation	Description
MOTOR FAN	1	OFF
	2	OFF
	3	Operates the cooling fan relay.
	4	Operates the cooling fan relay.
EXTERNAL LAMPS	OFF	OFF
	TAIL	Operates the tail lamp relay.
	LO	Operates the headlamp low relay.
	HI	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.
	FOG	Operates the front fog lamp relay
HORN	ON	Operates horn relay for 20 ms.

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	LG	INPUT 1
2	BR	INPUT 2
3	G	INPUT 3
4	GR	INPUT 4
5	O	INPUT 5
6	R	OUTPUT 1
7	L	OUTPUT 2
8	P	OUTPUT 5
9	SB	OUTPUT 4
10	V	OUTPUT 3
11	O	WASH FR (-) RR (+)
12	B	GND
13	L	WASH FR (+) RR (-)
14	W	IGN

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK

H.S.

56	57	58	59	60	61	62	63	64
65	66	67	68	69	70			

Terminal No.	Color of Wire	Signal Name
56	V	BATTERY SAVER OUTPUT
57	R/Y	BAT (FUSE)
58	–	–
59	GR	DOOR UNLOCK OUTPUT (DR)
60	LG	FLASHER OUTPUT (LEFT)
61	G	FLASHER OUTPUT (RIGHT)
62	–	–
63	BR	ROOM LAMP OUTPUT
64	–	–
65	V	DOOR LOCK OUTPUT (ALL)
66	L	DOOR UNLOCK OUTPUT (OTHER)
67	B	GND (POWER)
68	O	POWER WINDOW POWER SUPPLY OUT (LINKED TO RAP)
69	–	–
70	W	BAT (F/L)

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE

H.S.

41	42	43	44	45	46	47	48	49
50	51	52	53	54	55			

Terminal No.	Color of Wire	Signal Name
41	–	–
42	L	PCA OUTPUT
43	Y	BACK DOOR SW
44	O	REAR WIPER AUTO STOP SW1
45	V	CDL LOCK SW
46	LG	CDL UNLOCK SW
47	GR	DOOR SW (DR)
48	P	DOOR SW (RL)
49	L	CARGO LAMP OUTPUT
50	W	OFF ROAD LAMP OUTPUT
51	G	TRAILER FLASHER OUTPUT (RIGHT)
52	V	TRAILER FLASHER OUTPUT (LEFT)
53	–	–
54	–	–
55	W	REAR WIPER MOTOR OUTPUT 1

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Fail Safe

INFOID:0000000004459436

Fail-safe index

BCM performs fail-safe control when any DTC listed below is detected.