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INFINITI

FX35/FX45

MODEL S50 SERIES

QUICK REFERENCE INDEX

A B C D E F G H I J K L M

INFINITI

CONSULT-II Function

AKS006YU

DESCRIPTION

CONSULT-II executes following functions by combining data reception and command transmission via communication line from ICC unit.

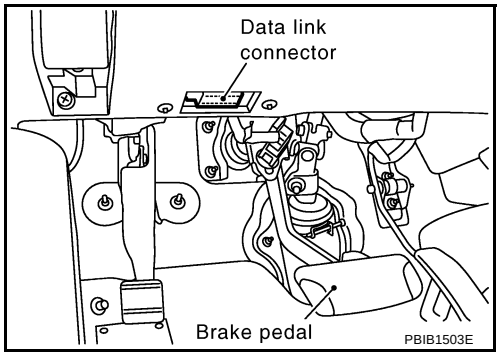
Test mode	Function
WORK SUPPORT	● Monitors aiming direction to facilitate laser beam aiming operation. ● Indicates causes of automatic cancellation of the ICC system.
SELF-DIAGNOSTIC RESULTS	Displays malfunctioning system memorized in ICC unit.
DATA MONITOR	Displays real-time input/output data of ICC unit.
CAN DIAG SUPPORT MNTR	The results of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	Enables operation check of electrical loads by sending driving signal to them.
ECU PART NUMBER	Displays part number of ICC unit.

CONSULT-II INSPECTION PROCEDURE

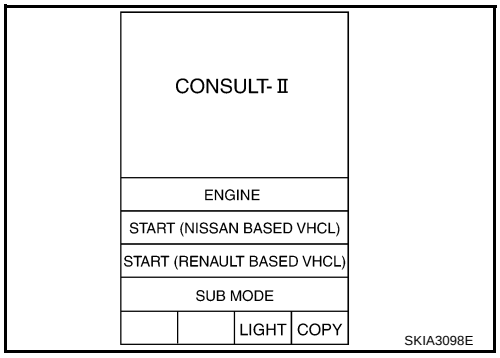
CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.

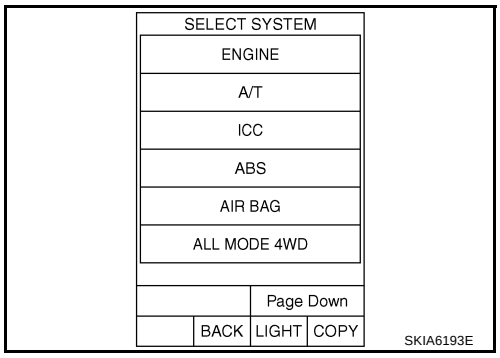
1. Turn ignition switch OFF.
2. Connect “CONSULT-II” and “CONSULT-II CONVERTER” to data link connector, which is located under LH dash panel near the hood opener handle.
3. Turn ignition switch ON.



4. Touch “START (NISSAN BASED VHCL)”.

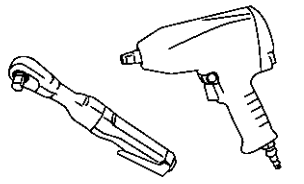
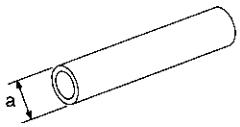
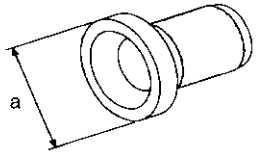


5. Touch “ICC” on the selection screen.
   If “ICC” is not indicated, go to GI-40, "CONSULT-II Data Link Connector (DLC) Circuit" .



Commercial Service Tools

ACS002LA

Tool name	Description
Power tool  PBIC0190E	Loosening bolts and nuts
Drift a: 22mm (0.87 in) dia.  NT083	Installing manual shaft oil seals
Drift a: 64 mm (2.52 in) dia.  SCIA5338E	Installing rear oil seal (AWD models)

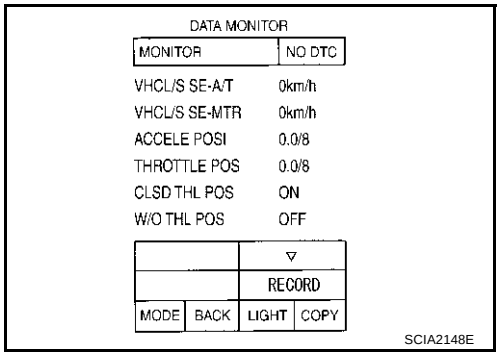
4	❑ Perform all road tests and enter checks in required inspection items.			AT-74
	4-1.	Check before engine is started		AT-75
		❑ The A/T CHECK Indicator Lamp does come on. AT-191 . ❑ Perform self-diagnostics. Enter checks for detected items.		
			❑ Vehicle speed sensor·A/T. AT-129 . ❑ Vehicle speed sensor·MTR. AT-151 . ❑ Direct clutch solenoid valve. AT-166 . ❑ TCC solenoid valve. AT-133 . ❑ Line pressure solenoid valve.AT-137 . ❑ Input clutch solenoid valve. AT-158 . ❑ Front brake solenoid valve. AT-162 . ❑ Low coast brake solenoid valve. AT-174 . ❑ High and low reverse clutch solenoid valve. AT-170 . ❑ PNP switch. AT-127 . ❑ A/T fluid temperature sensors 1, 2. AT-147 . ❑ Turbine revolution sensors 1, 2. AT-149 . ❑ A/T interlock. AT-153 . ❑ A/T 1st engine braking. AT-156 . ❑ Start signal. AT-124 . ❑ Accelerator pedal position signal. AT-145 . ❑ Engine speed signal. AT-131 . ❑ CAN communication. AT-122 . ❑ TCM power supply. AT-139 . ❑ Battery ❑ Other	
	4-2.	Idle inspection		AT-75
		❑ Engine Cannot Be Started in “P” and “N” Position. AT-192 . ❑ In “ P” Position, Vehicle Moves When Pushed. AT-193 . ❑ In “N” Position Vehicle Moves. AT-194 . ❑ Large Shock (“N” to “D” Position). AT-195 . ❑ Vehicle Does Not Creep Backward In “R” Position. AT-198 . ❑ Vehicle does Not Creep Forward In “D” Position. AT-201 .		
	4-3.	Cruise tests		AT-76
		Part 1		
		❑ Vehicle Cannot Be Started From D1. AT-204 . ❑ A/T Does Not Shift: D1 → D2. AT-206 . ❑ A/T Does Not Shift: D2 → D3. AT-209 . ❑ A/T Does Not Shift: D3 → D4. AT-211 . ❑ A/T Does Not Shift: D4 → D5. AT-214 . ❑ A/T Does Not Perform Lock-up. AT-216 ❑ A/T Does Not Hold Lock-up Condition. AT-219 . ❑ Lock-up Is Not Released. AT-220 . ❑ Engine Speed Does Not Return To Idle. AT-221 .		

No.	Items	Symptom	Condition	Diagnostic Item	Reference page
64	Others	Extremely large creep.	ON vehicle	1. Engine idle speed	EC-50 (for VQ35DE) or EC-691 (for VK45DE)
				2. CAN communication line	AT-122
				3. ATF pressure switch 5	AT-185
			OFF vehicle	4. Torque converter	AT-291
65		With selector lever in “P” position, vehicle does not enter parking condition or, with selector lever in another position, parking condition is not cancelled. Refer to AT-193, "In “P” Position, Vehicle Moves When Pushed" .	ON vehicle	1. PNP switch	AT-127
				2. Control linkage adjustment	AT-234
			OFF vehicle	3. Parking pawl components	AT-254(2WD models) or AT-291 (AWD models)
66		Vehicle runs with transmission in “P” position.	ON vehicle	1. PNP switch	AT-127
				2. Fluid level and state	AT-71
				3. Control linkage adjustment	AT-234
				4. Control valve with TCM	AT-242
			OFF vehicle	5. Parking pawl components	AT-254(2WD models) or AT-291 (AWD models)
				6. Gear system	AT-277
67		Vehicle runs with transmission in “N” position. Refer to AT-194, "In “N” Position, Vehicle Moves" .	ON vehicle	1. PNP switch	AT-127
				2. Fluid level and state	AT-71
				3. Control linkage adjustment	AT-234
				4. Control valve with TCM	AT-242
			OFF vehicle	5. Input clutch	AT-313
				6. Gear system	AT-277
				7. Direct clutch	AT-327
				8. Reverse brake	AT-291
				9. Forward one-way clutch (Parts behind drum support is impossible to perform inspection by disassembly. Refer to AT-14, "Cross-Sectional View (2WD Models)" or AT-15, "Cross-Sectional View (AWD Models)")	AT-291
				10. Low coast brake (Parts behind drum support is impossible to perform inspection by disassembly. Refer to AT-14, "Cross-Sectional View (2WD Models)" or AT-15, "Cross-Sectional View (AWD Models)")	AT-291

2. CHECK INPUT SIGNALS

With CONSULT-II

1. Start engine.
2. Select “ECU INPUT SIGNALS” in “DATA MONITOR” mode for “A/T” with CONSULT-II.
3. Drive vehicle and read out the value of “VHCL/S SE·MTR”.



Without CONSULT-II

1. Start engine.
2. Drive vehicle.
3. Perform self-diagnosis. Refer to DI-48, "CONSULT-II Function" .

OK or NG

OK >> GO TO 3.
NG >> Repair or replace damaged parts.

3. CHECK TCM

Perform TCM input/output signal inspection. Refer to AT-107, "TCM Input/Output Signal Reference Values" .

OK or NG

OK >> GO TO 5.
NG >> GO TO 4.

4. DETECT MALFUNCTIONING ITEM

Check the following items:

- Power supply and ground circuit for TCM.
- The A/T assembly harness connector pin terminals for damage or loose connection with harness connector.

OK or NG

OK >> Replace the transmission assembly. Refer to AT-269, "Removal and Installation (2WD Models)" , AT-272, "Removal and Installation (AWD Models)" .
NG >> Repair or replace damaged parts.

5. CHECK DTC

Perform DTC Confirmation Procedure.

- Refer to AT-151, "DTC Confirmation Procedure" .

OK or NG

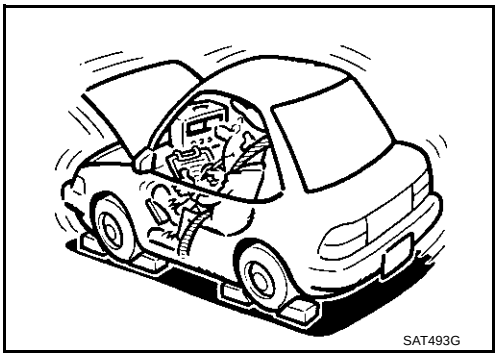
OK >> **INSPECTION END**
NG >> GO TO 3.

4. CHECK STALL TEST

Check stall revolution with selector lever in “M” and “R” positions.
Refer to AT-71, "STALL TEST" .

OK or NG

OK >> GO TO 6.
OK in “M” position, NG in “R” position>>GO TO 5
NG in both “M” and “R” positions>>GO TO 8.


SAT493G

5. DETECT MALFUNCTIONING ITEM

1. Disassemble A/T. Refer to AT-291, "DISASSEMBLY" .
2. Check the following items:

– Reverse brake. Refer to AT-291, "DISASSEMBLY" .

OK or NG

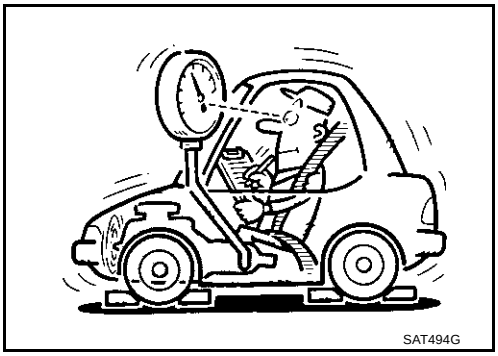
OK >> GO TO 9.
NG >> Repair or replace damaged parts.

6. CHECK LINE PRESSURE

Check the line pressure with the engine idling. Refer to AT-72, "LINE PRESSURE TEST" .

OK or NG

OK >> GO TO 9.
NG - 1 >> Line pressure high: GO TO 7.
NG - 2 >> Line pressure low: GO TO 8.


SAT494G

7. DETECT MALFUNCTIONING ITEM

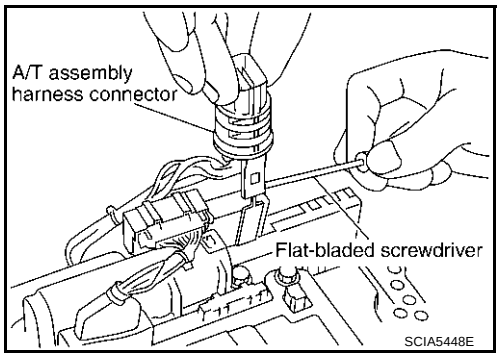
1. Check control valve with TCM. Refer to AT-242, "Control Valve with TCM and A/T Fluid Temperature Sensor 2" .
2. Disassemble A/T. Refer to AT-291, "DISASSEMBLY" .
3. Check the following items:

– Oil pump assembly. Refer to AT-308, "Oil Pump" .

OK or NG

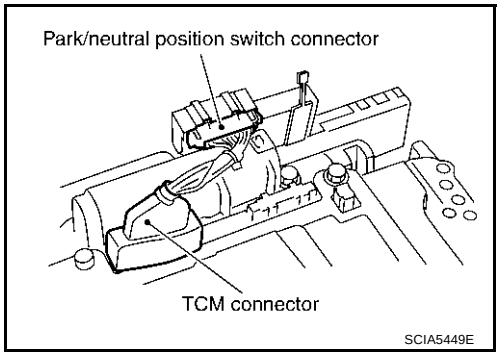
OK >> GO TO 9.
NG >> Repair or replace damaged parts.

21. Remove A/T assembly harness connector from control valve with TCM using a flat-bladed screwdriver.



22. Disconnect TCM connector and park/neutral position switch connector.

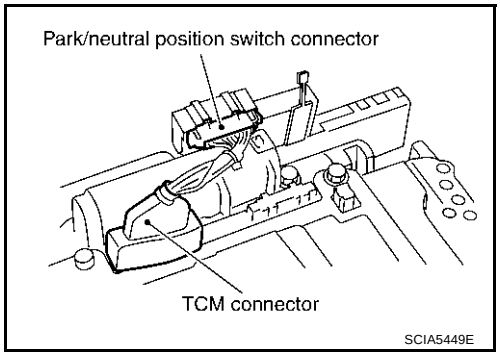
CAUTION:
Be careful not to damage connectors.



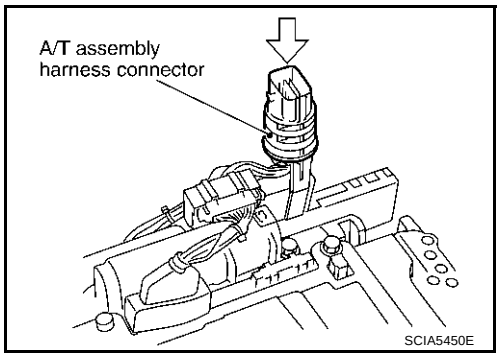
Installation

CAUTION:
After completing installation, check A/T fluid leakage and fluid level. Refer to AT-12, "Changing A/T Fluid" , AT-12, "Checking A/T Fluid" .

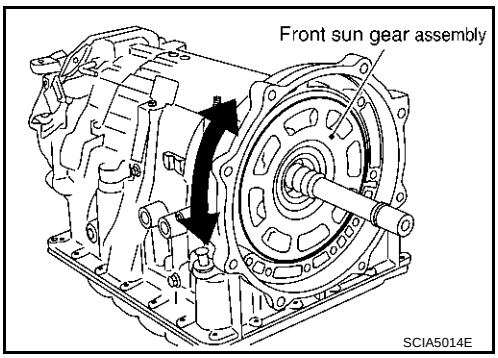
1. Connect TCM connector and park/neutral position switch connector.



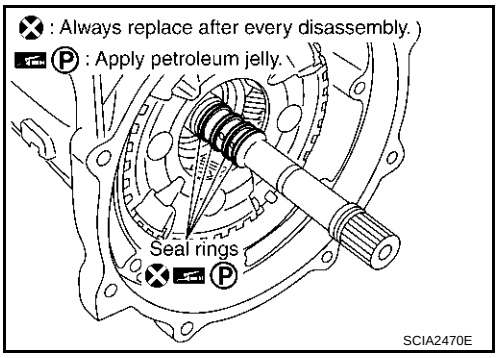
2. Install A/T assembly harness connector from control valve with TCM.



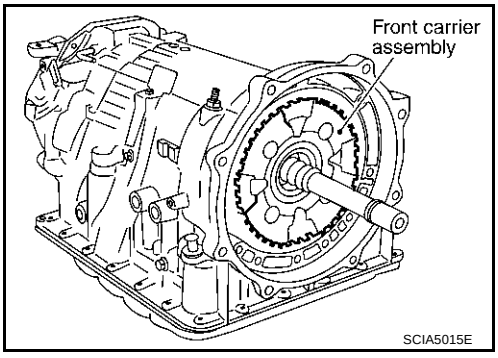
11. Remove front sun gear assembly from front carrier assembly.
NOTE:
Remove front sun gear by rotating left/right.



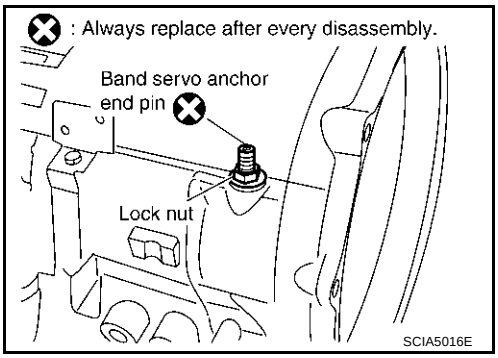
12. Remove seal rings from input clutch assembly.



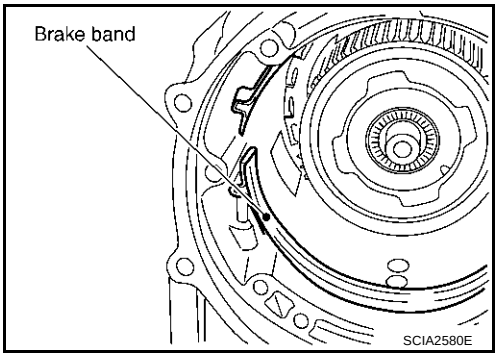
13. Remove front carrier assembly from rear carrier assembly. (With input clutch assembly and rear internal gear.)
CAUTION:
Be careful to remove it with needle bearing.



14. Loosen lock nut and remove band servo anchor end pin from transmission case.

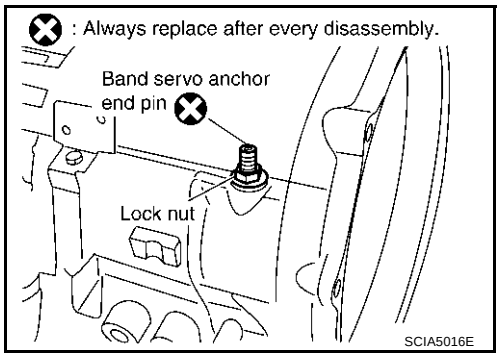


15. Remove brake band from transmission case.



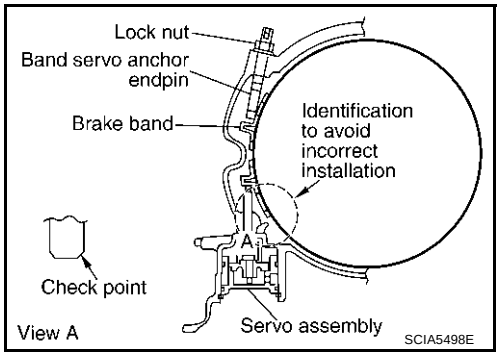
44. Install band servo anchor end pin and lock nut in transmission case.

CAUTION:
Do not reuse band servo anchor end pin.



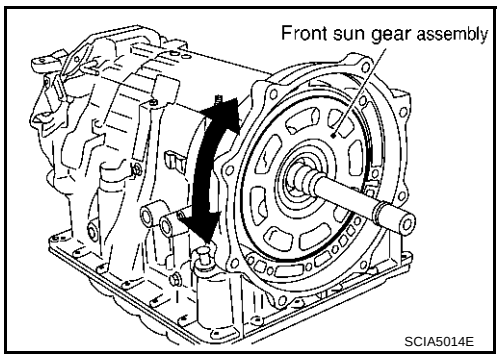
45. Install brake band in transmission case.

CAUTION:
Assemble it so that identification to avoid incorrect installation faces servo side.



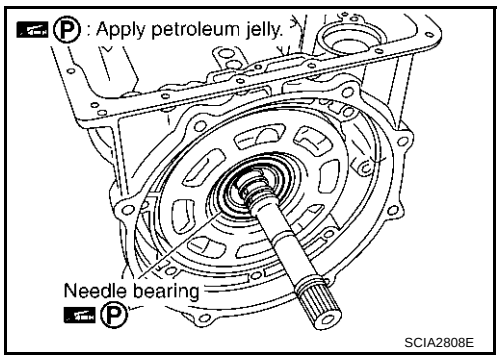
46. Install front sun gear to front carrier assembly.

CAUTION:
Apply ATF to front sun gear bearing and 3rd one-way clutch end bearing.

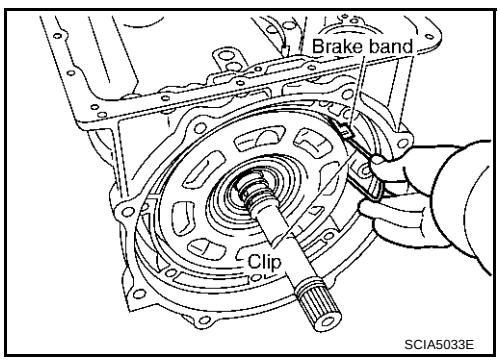


47. Install needle bearing to front sun gear.

CAUTION:
Apply petroleum jelly to needle bearing.



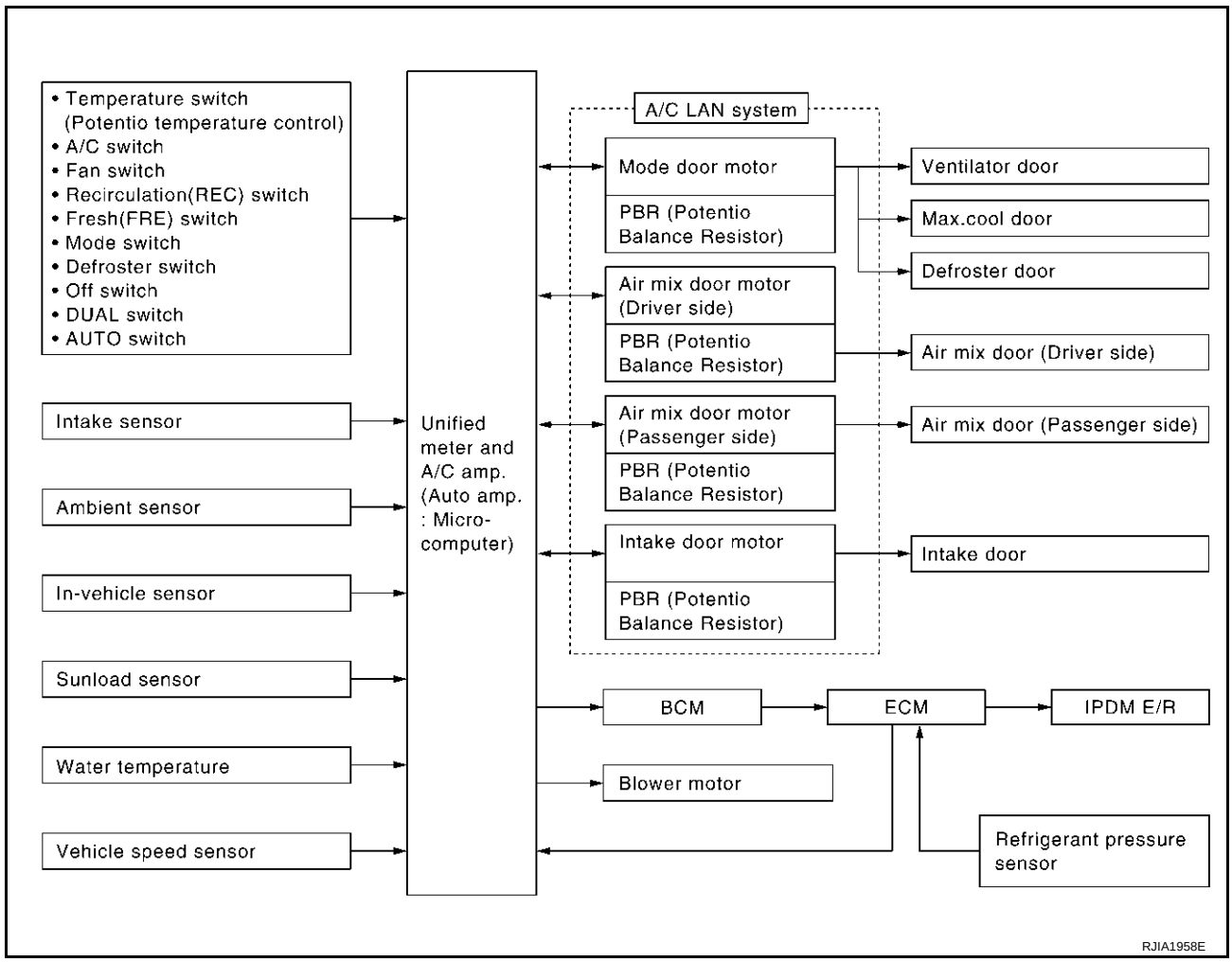
48. Adjust brake band tilting using clips so that brake band contacts front sun gear drum evenly.



Description of Control System

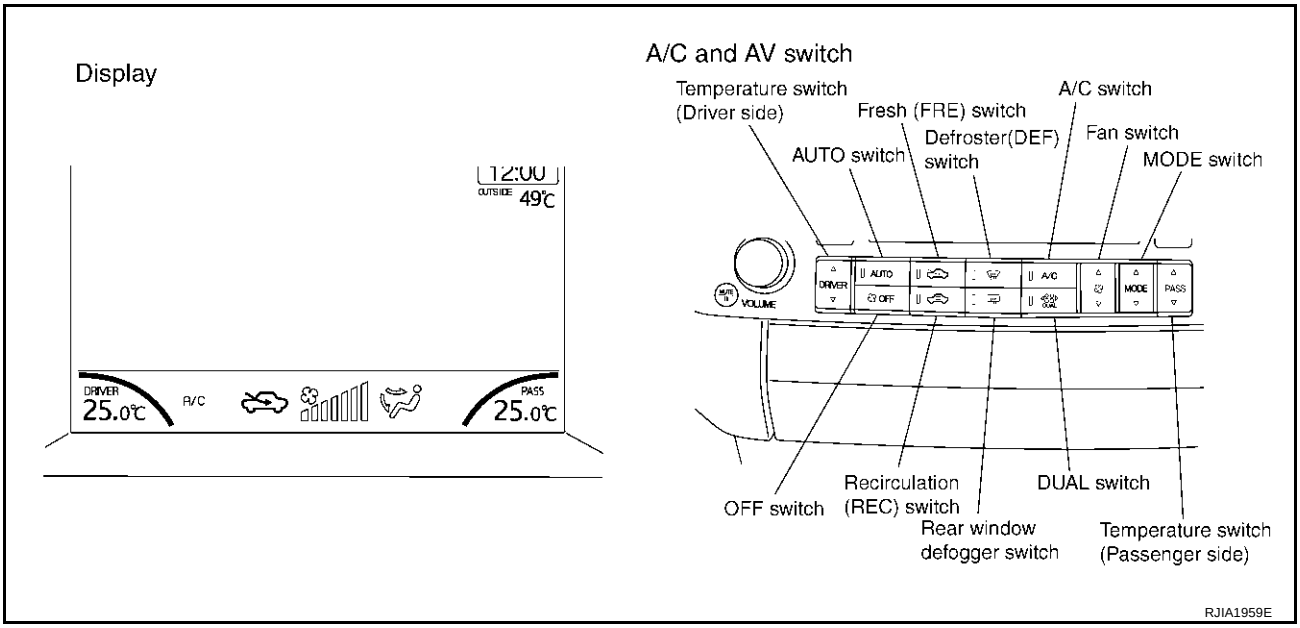
AJS0014C

The control system consists of input sensors, switches, the unified meter and A/C amp. (microcomputer) and outputs.
The relationship of these components is shown in the figure below:



Control Operation

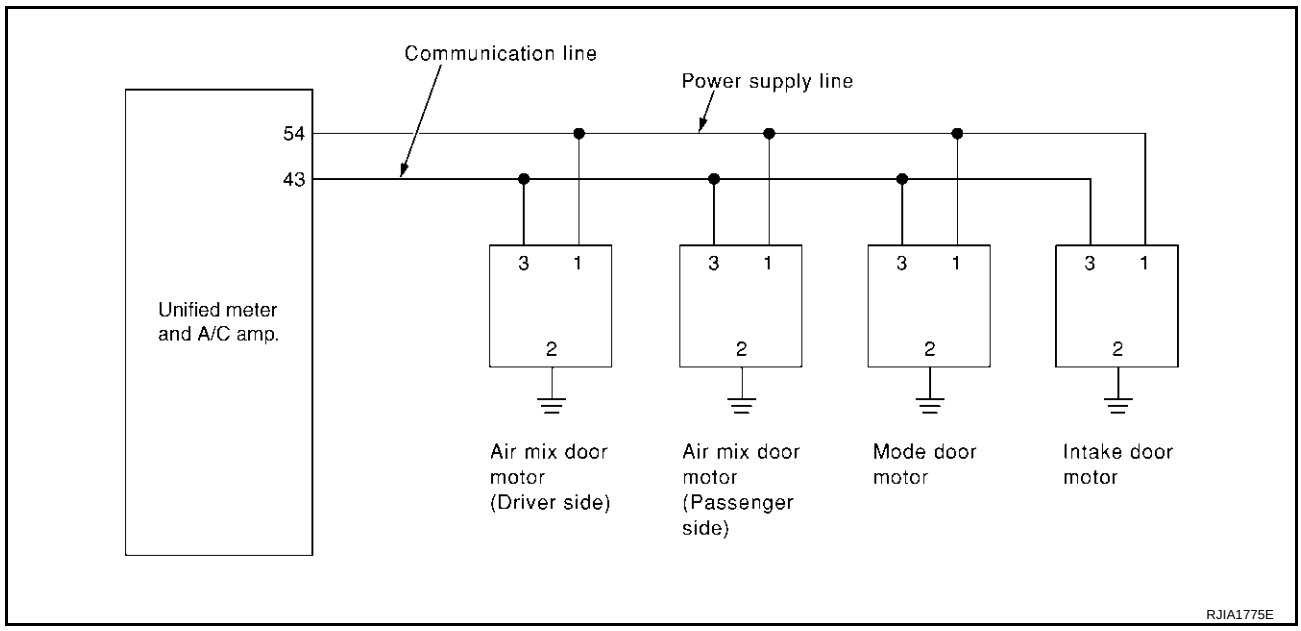
AJS0014D



LAN System Circuit

AJS0014S

SYMPTOM: Mode door motor, intake door motor and/or air mix door motor(s) does not operate normally.

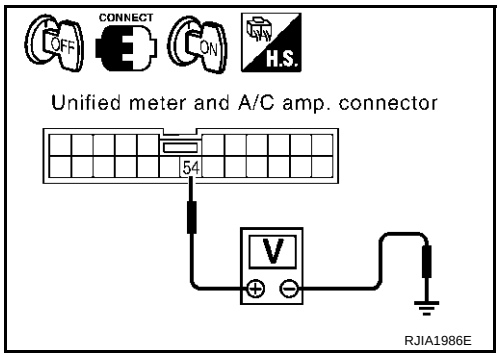


DIAGNOSTIC PROCEDURE FOR LAN CIRCUIT

1. CHECK POWER SUPPLY FOR UNIFIED METER AND A/C AMP.

1. Turn ignition switch ON.
2. Check voltage between unified meter and A/C amp. harness connector M57 terminal 54 (Y/R) and ground.

54 – Ground : Battery voltage

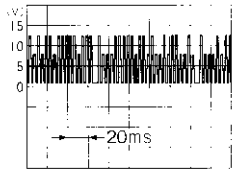


OK or NG

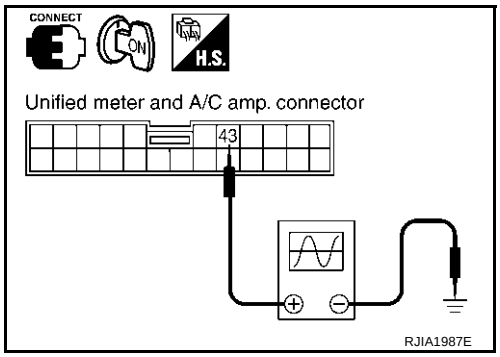
OK >> GO TO 2.
NG >> Replace unified meter and A/C amp.

2. CHECK SIGNAL FOR UNIFIED METER AND A/C AMP.

Confirm A/C LAN signal between unified meter and A/C amp. harness connector M57 terminal 43 (G/B) and ground using an oscilloscope.

Terminals			Voltage
(+)		(–)	
Auto amp. connector	Terminal No. (wire color)		
M57	43 (G/B)	Ground	

HAK0652D



OK or NG

OK >> GO TO 3.
NG >> Replace unified meter and A/C amp.

CONTROLLER

PFP:27500

Removal and Installation of A/C and AV Switch

AJS001BN

REMOVAL

Refer to AV-43, "Removal and Installation for A/C and AV Switch" .

INSTALLATION

Installation is basically the reverse order of removal.

SERVICE DATA AND SPECIFICATIONS (SDS)

PFP:00030

Compressor

AJS00167

Model		Calsonic Kansei make V-6
Type		V-6 variable displacement
Displacement cm^3 (cu in)/rev	Max.	184 (11.228)
	Min.	14.5 (0.885)
Cylinder bore × stroke mm (in)		37 (1.46) × [2.3 - 28.6 (0.091 - 1.126)]
Direction of rotation		Clockwise (viewed from drive end)
Drive belt		Poly V

Lubricant

AJS00168

Model		Calsonic Kansei make V-6
Name		Nissan A/C System Oil Type S (DH-PS)
Part number		KLH00-PAGS0
Capacity m ℓ (US fl oz, lmp fl oz)	Total in system	180 (6.0, 6.3)
	Compressor (Service part) charging amount	180 (6.0, 6.3)

Refrigerant

AJS00169

Type	HFC-134a (R-134a)
Capacity kg (lb)	0.55 (1.21)

Engine Idling Speed

AJS0016A

Refer to EC-50, "Idle Speed and Ignition Timing Check" (VQ35DE) or EC-691, "Idle Speed and Ignition Timing Check" (VK45DE).

Belt Tension

AJS0016B

Refer to EM-15, "DRIVE BELTS" (VQ35DE) or EM-167, "DRIVE BELTS" (VK45DE).

AUDIO ANTENNA

PFP:28200

System Description

AKS007WE

With the ignition switch in ACC or ON, power is supplied

- through 10A fuse [No. 6, located in the fuse block (J/B)]
- to audio unit terminal 10.

Ground is supplied through the case of the antenna amp.
When the radio switch is turned ON, antenna signal is supplied

- through audio unit terminal 5
- to the antenna amp.

Then the antenna amp. is activated.
The amplified radio signals are supplied to the audio unit through the antenna amp.

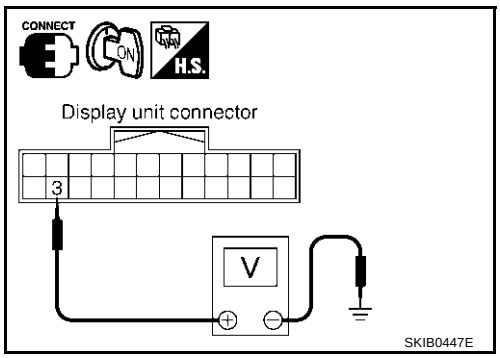
Ignition Signal Inspection

AKS005UG

1. CHECK IGNITION SIGNAL

1. Disconnect display unit connector.
2. Turn ignition switch ON.
3. Check voltage between display unit harness connector M62 terminal 3 (G/R) and ground.

3 – Ground : Battery voltage



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

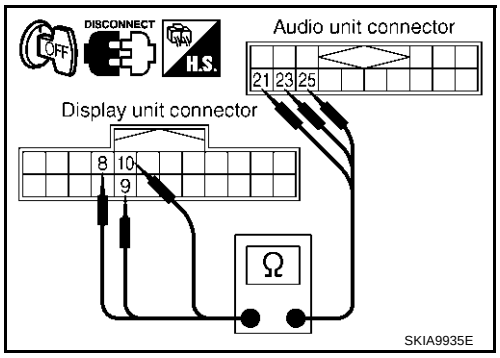
Audio Communication Line Inspection

AKS005UH

1. CHECK HARNESS

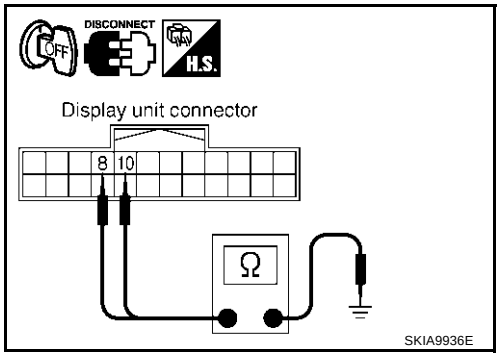
1. Turn ignition switch OFF.
2. Disconnect audio unit connector and display unit connector.
3. Check continuity between audio unit harness connector terminals and display unit harness connector terminals.

Terminals				Continuity
Display unit		Audio unit		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M62	8 (LG)	M60	23 (LG)	Yes
	10 (B/Y)		21 (B/Y)	
	9		25	



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

Terminals			Continuity
Display unit		Ground	
Connector	Terminal (Wire color)		
M62	8 (LG)		No
	10 (B/Y)		

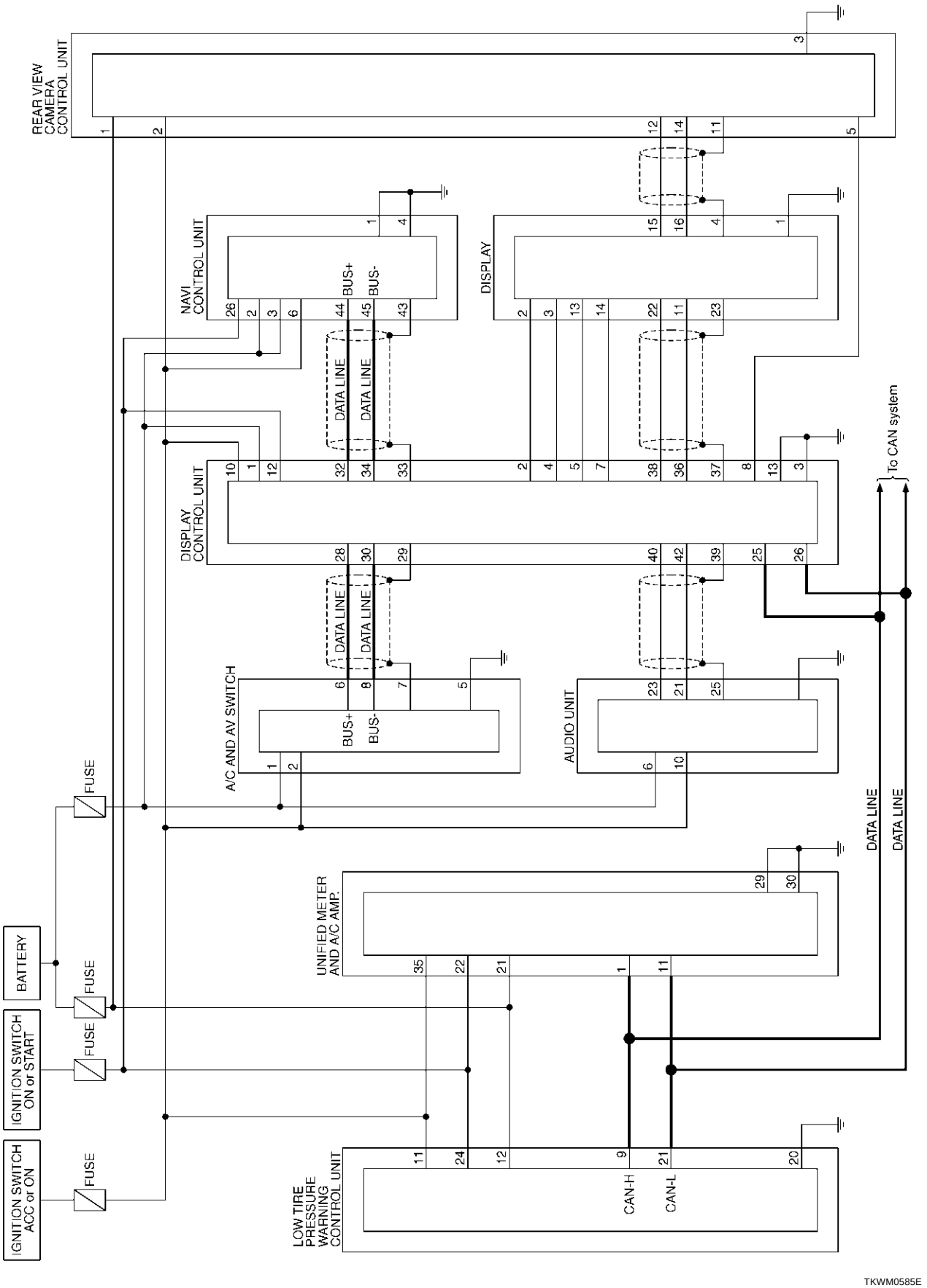


OK or NG

OK >> GO TO 2.
NG >> Repair harness or connector.

Schematic — COMM —

AKS00812

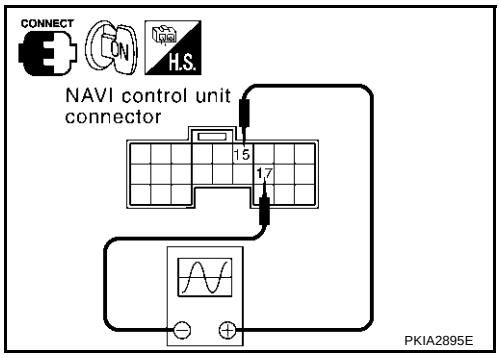


TKWM0585E

2. CHECK RGB SIGNAL

1. Connect NAVI control unit connector and display control unit connector.
2. Turn ignition switch ON.
3. Display “Color bar” by “CONFIRMATION/ADJUSTMENT” mode.
4. Check signal between NAVI control unit harness connector M208 terminal 15 (L) and 17 with CONSULT-II or oscilloscope.

15 – 17 : Refer to AV-147, "Terminals and Reference Value for NAVI Control unit" .



OK or NG

OK >> Replace display control unit.
NG >> Replace NAVI control unit.

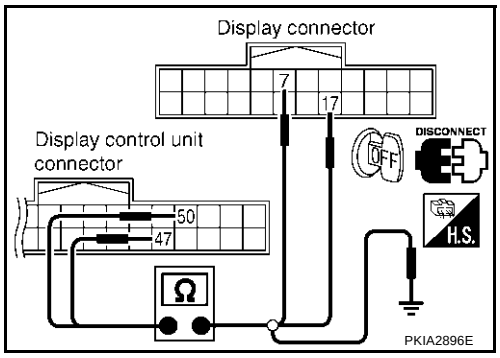
Color of RGB Image is Not Proper (All screens Looks Bluish)

AKS007JT

1. CHECK RGB HARNESS

1. Disconnect display control unit connector and display connector.
2. Check continuity between display control unit harness connector terminals and display harness connector terminals.

Terminals				Continuity
Display control unit		Display		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M76	50 (L/R)	M63	17 (L/R)	Yes
	47		7	



3. Check continuity between display control unit harness connector terminals and ground.

Terminals			Continuity
Display control unit		Ground	
Connector	Terminal (Wire color)		
M76	50 (L/R)		No
	47		

OK or NG

OK >> GO TO 2.
NG >> Repair harness or connector.

CAN Communication System Description

AKS00588

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicles are equipped with many electronic control units and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit

AKS00589

Body type	Wagon					
Axle	2WD			AWD		
Engine	VQ35DE			VQ35DE/VK45DE		
Transmission	A/T					
Brake control	VDC					
Navigation system			×			×
Low tire pressure warning system			×			×
ICC system			×			×
Intelligent Key system			×			×
Automatic drive positioner		×	×		×	×
CAN communication unit						
ECM	×	×	×	×	×	×
TCM	×	×	×	×	×	×
Display unit	×	×		×	×	
Display control unit			×			×
Low tire pressure warning control unit			×			×
AWD control unit				×	×	×
ICC unit			×			×
Intelligent Key unit			×			×
Data link connector	×	×	×	×	×	×
BCM	×	×	×	×	×	×
Steering angle sensor	×	×	×	×	×	×
Unified meter and A/C amp.	×	×	×	×	×	×
ICC sensor			×			×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×
Driver seat control unit		×	×		×	×
IPDM E/R	×	×	×	×	×	×
CAN communication type	BCS-10, "TYPE 1/ TYPE2"		BCS-13, "TYPE 3"	BCS-16, "TYPE 4/ TYPE5"		BCS-19, "TYPE 6"

×: Applicable

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Input shaft revolution signal	R	T			R								
Output shaft revolution signal	R	T			R								
A/C switch signal	R						T						
A/C compressor request signal	T												R
A/C relay status signal	R												T
A/C compressor feedback signal	T								R				
Blower fan motor switch signal	R						T						
A/C control signal			T						R				
			R						T				
Cooling fan speed signal	R												T
Position light request signal	R						T		R				R
Low beam request signal							T						R
Low beam status signal	R												T
High beam request signal							T		R				R
High beam status signal	R												T
Front fog light request signal							T						R
Day time running light request signal							T		R				
Turn LED burnout status signal							R		T				
Vehicle speed signal					R				R		T		
	R	R	R	R		R	R		T	R		R	
Sleep wake up signal							T		R			R	R
						T	R						
Door switch signal			R			R	T		R			R	R
Turn indicator signal							T		R				
Key fob ID signal							T					R	
Key fob door unlock signal							T					R	
Oil pressure switch signal							R						T
							T		R				
Buzzer output signal							T		R				
						T			R				
					T				R				

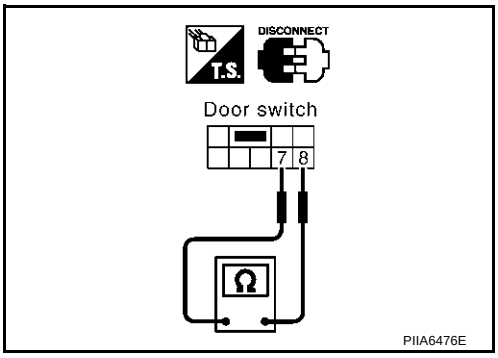
Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Accelerator pedal position signal	T	R			R						R		
Closed throttle position signal	T	R			R								
Wide open throttle position signal	T	R											
Battery voltage signal	T	R											
Key switch signal							T					R	
Ignition switch signal							T					R	R
P range signal		T			R						R	R	
Stop lamp switch signal		R							T				
ABS operation signal	R				R						T		
TCS operation signal	R				R						T		
VDC operation signal	R				R						T		
Fuel consumption monitor signal	T		R						R				
Input shaft revolution signal	R	T			R								
Output shaft revolution signal	R	T			R								
A/C switch signal	R						T						
A/C compressor request signal	T												R
A/C relay status signal	R												T
A/C compressor feedback signal	T								R				
Blower fan motor switch signal	R						T						
A/C control signal			T						R				
			R						T				
Cooling fan speed signal	R												T
Position light request signal	R						T		R				R
Low beam request signal							T						R
Low beam status signal	R												T
High beam request signal							T		R				R
High beam status signal	R												T
Front fog light request signal							T						R
Day time running light request signal							T		R				

Signals	ECM	TCM	Dis-play unit	BCM	Steer-ing angle sensor	Unified meter and A/C amp.	ABS actua-tor and electric unit (con-trol unit)	Driver seat control unit	IPDM E/R
ASCD operation signal	T	R							
ASCD OD cancel request	T	R							
Front wiper request signal				T					R
Front wiper stop position signal				R					T
Rear window defogger switch signal				T					R
Rear window defogger control signal	R		R	R					T
Hood switch signal				R					T
Theft warning horn request signal				T					R
Horn chirp signal				T					R
Steering angle sensor signal					T		R		
ABS warning lamp signal						R	T		
VDC OFF indicator lamp signal						R	T		
SLIP indicator lamp signal						R	T		
Brake warning lamp signal						R	T		
System setting signal			T	R				R	
A/T CHECK indicator lamp signal		T				R			
A/T position indicator lamp signal		T				R			
A/T shift schedule change demand signal		R					T		
Manual mode signal		R				T			
Not manual mode signal		R				T			
Manual mode shift up signal		R				T			
Manual mode shift down signal		R				T			
Manual mode indicator signal		T				R			
Distance to empty signal			R			T			
Hand brake switch				R		T			

3. BACK DOOR SWITCH INSPECTION

Check continuity between back door switch terminal 7 and 8.

Terminal	Back door condition	Continuity
7 – 8	Closed	No
	Open	Yes



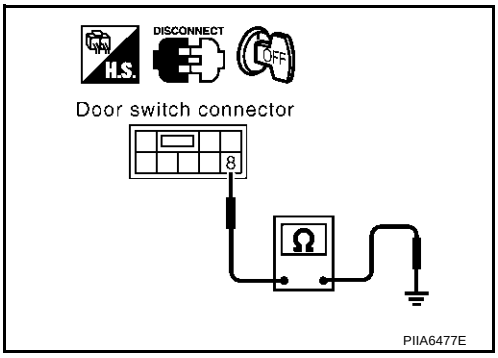
OK or NG

OK >> GO TO 4.
NG >> Replace back door closure motor (door switch).

4. BACK DOOR SWITCH GROUND CIRCUIT INSPECTION

Check continuity between back door switch connector D109 terminal 8 and ground.

8 (B) – Ground : Continuity should exist.



OK or NG

OK >> Check harness connection.
NG >> Repair or replace harness.

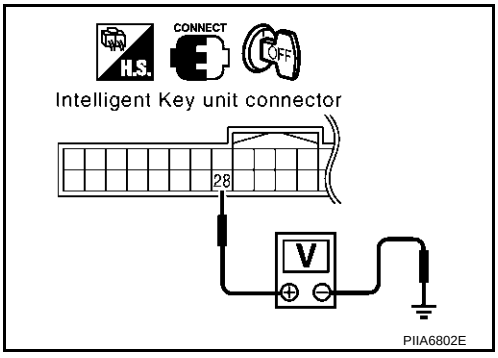
Check Unlock Sensor

AIS003KR

1. UNLOCK SENSOR POWER SUPPLY INSPECTION

Check voltage between Intelligent Key unit connector and ground.

Connector	Terminals (Wire color)		Condition	Voltage (V) (Approx.)
	(+)	(-)		
M34	28 (W/B)	Ground	Driver side door lock is locked	5
			Driver side door lock is unlocked	0



OK or NG

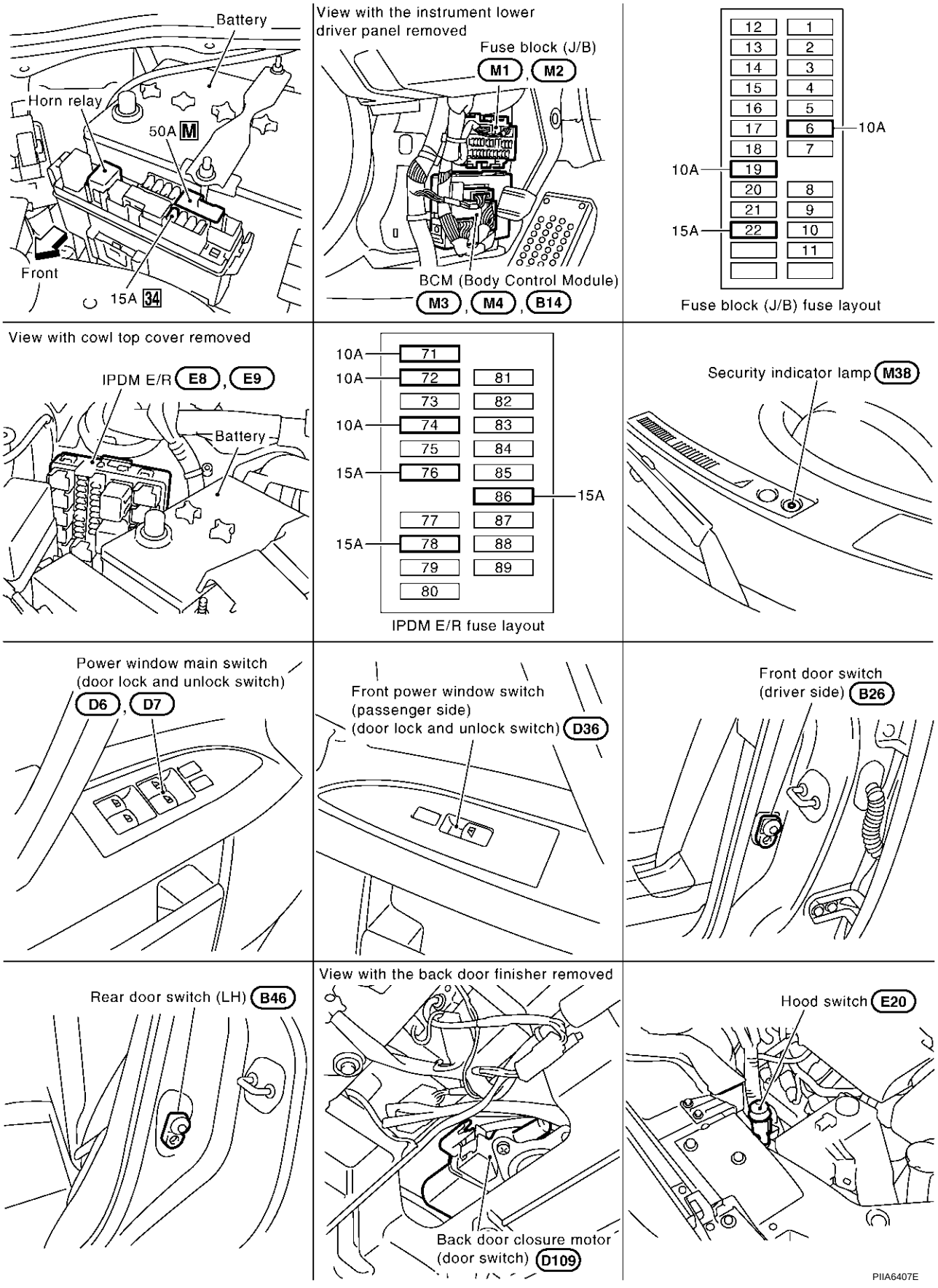
OK >> Unlock sensor is OK.
NG >> GO TO 2.

VEHICLE SECURITY (THEFT WARNING) SYSTEM

PFP:28491

Component Parts and Harness Connector Location

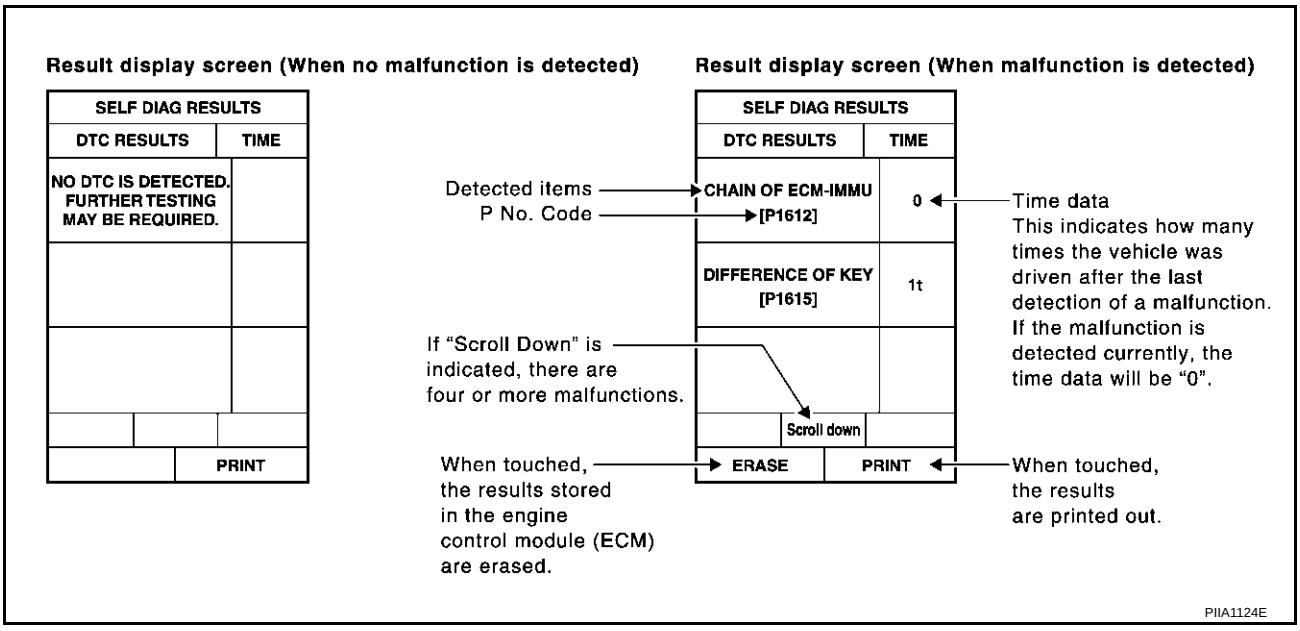
AIS003F2



CONSULT- II DIAGNOSTIC TEST MODE	Description
SELF- DIAGNOSTIC RESULTS	Detected items (screen terms) are as shown in the chart.
PIN READ	Individual control unit number can be read. For future information, refer to operation manual NATS-IVIS/NVIS

NOTE:
When any initialization is performed, all ID numbers previously registered will be erased and all ignition key or mechanical key must be registered again. The engine cannot be started with an unregistered key. The system will show “DIFFERENCE OF KEY” or “LOCK MODE” as a self-diagnostic result on the CONSULT-II screen.

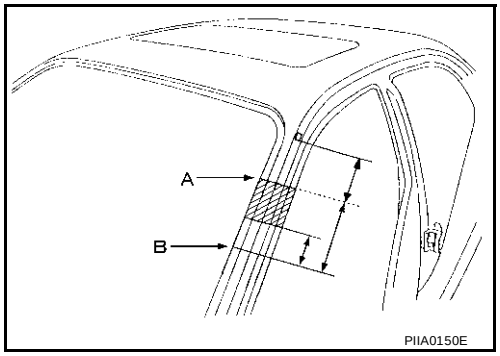
HOW TO READ SELF-DIAGNOSTIC RESULTS



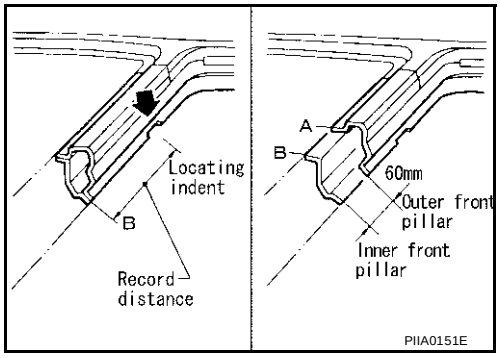
NATS SELF-DIAGNOSTIC RESULT ITEM CHART

Detected items (Screen terms)	P No.Code (Self-diagnostic result of “ENGINE”)	Description	Diagnostic procedure
ECM INT CIRC-IMMU	P1613	The malfunction of ECM internal circuit of BCM communication line is detected.	Refer to BL-266, "Diagnostic Procedure 1" .
CHAIN OF ECM-IMMU	P1612	Communication impossible between ECM and BCM.	Refer to BL-267, "Diagnostic Procedure 2" .
DIFFERENCE OF KEY	P1615	BCM can receive the key ID signal but the result of ID verification between key ID and BCM is NG.	Refer to BL-268, "Diagnostic Procedure 3" .
CHAIN OF IMMU-KEY	P1614	BCM cannot receive the key ID signal.	Refer to BL-271, "Diagnostic Procedure 6" .
ID DISCORD, IMM-ECM	P1611	The result of ID verification between BCM and ECM is NG. System initialization is required.	Refer to BL-269, "Diagnostic Procedure 4" .
LOCK MODE	P1610	When the starting operation is carried out 5 or more times consecutively under the following conditions, IVIS(NATS) will shift the mode to one which prevents the engine from being started. ● unregistered ignition key is used (without intelligent key system) ● BCM or ECM malfunctioning	Refer to BL-270, "Diagnostic Procedure 5" .
DON'T ERASE BEFORE CHECKING ENG DIAG	—	Engine trouble data and IVIS (NATS) trouble data have been detected in ECM.	Refer to BL-264, "WORK FLOW" .

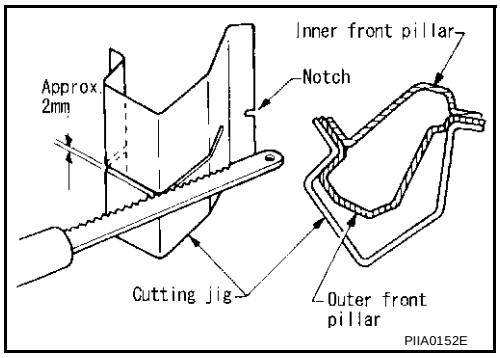
- Front pillar butt joint can be determined anywhere within shaded area as shown in the figure. The best location for the butt joint is at position A due to the construction of the vehicle. Refer to the front pillar section.



- Determine cutting position and record distance from the locating indent. Use this distance when cutting the service part. Cut outer front pillar over 60 mm above inner front pillar cut position.

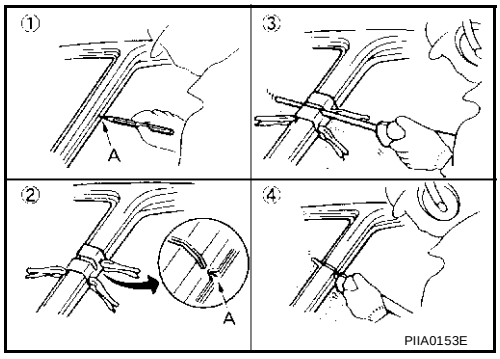


- Prepare a cutting jig to make outer pillar easier to cut. Also, this will permit service part to be accurately cut at joint position.



- An example of cutting operation using a cutting jig is as follows.

1. Mark cutting lines.
   A: Cut position of outer pillar
   B: Cut position of inner pillar
2. Align cutting line with notch on jig. Clamp jig to pillar.
3. Cut outer pillar along groove of jig. (At position A)
4. Remove jig and cut remaining portions.
5. Cut inner pillar at position B in same manner.



CALIPER INSPECTION

Cylinder Body

CAUTION:

- **Use new brake fluid for cleaning. Do not use mineral oils such as gasoline or kerosene.**
- **Check inside surface of cylinder for score, rust, wear, damage or foreign materials. If any of the above conditions are observed, replace cylinder body.**
- **Minor damage from rust or foreign materials may be eliminated by polishing surface with a fine emery paper. Replace cylinder body if necessary.**

Torque Member

Check for wear, cracks, and damage. If damage or deformation is present, replace the affected part.

Piston

Check piston for score, rust, wear, damage or presence of foreign materials. Replace if any of the above condition are observed.

CAUTION:

Piston sliding surface is plated, do not polish with emery paper even if rust of foreign materials are stuck to sliding surface.

Sliding Pins, and Sliding Pin Boots

Check sliding pin and sliding pin boot for wear, damage, and cracks. If damage or deformation is present, replace the affected part.

ASSEMBLY

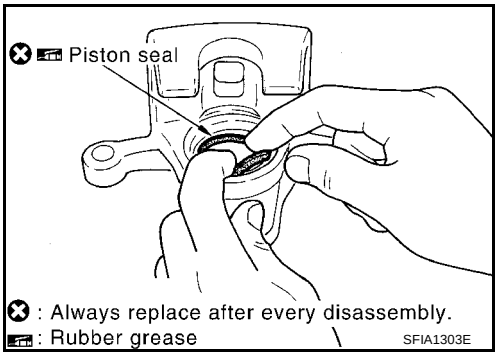
CAUTION:

Do not use NISSAN Rubber Grease (KRE00 00010, KRE00 00010 01) when assembling.

1. Apply rubber grease to new piston seal and insert seal in to groove on cylinder body.

   CAUTION:

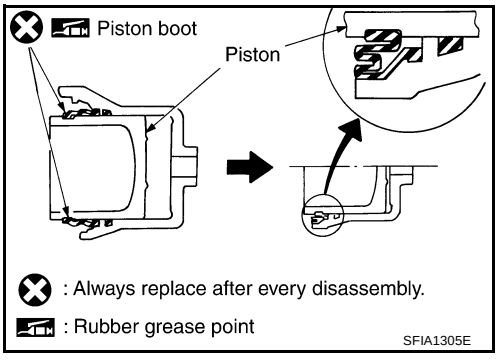
   Do not reuse piston seal.



2. Apply brake fluid to piston, rubber grease to piston boot, then install piston boot in to piston groove.

   CAUTION:

   Do not reuse piston boot.



3. Insert into cylinder body by hand and insert piston boot piston-side lip into piston groove.

   CAUTION:

   Press piston evenly and vary the pressing point to prevent cylinder inner wall from being rubbed.

4. Install sliding pins and sliding pin boots to torque member.
5. Attach inner shim and inner shim cover to inner pad, and attach the outer shim to the outer pad.
6. Install cylinder body. Tighten sliding pin bolt to the specified torque.

Monitor item	Display content	Data monitor		Note: Error inspection checklist
		Condition	Reference value in normal operation	
FLUID LEV SW	ON/OFF status of brake fluid level switch	When brake fluid level switch ON	ON	BRC-64, "Inspection 11: Brake Fluid Level Switch System"
		When brake fluid level switch OFF	OFF	
VDC FAIL SIG TCS FAIL SIG ABS FAIL SIG EBD FAIL SIG	Fail signal status	VDC fail TCS fail ABS fail EBD fail	ON	VDC system TCS system ABS system EBD system
		VDC normal TCS normal ABS normal EBD normal	OFF	
EBD WARN LAMP	Brake warning lamp on condition (Note 6)	Brake warning lamp ON	ON	BRC-50, "BASIC INSPECTION 3: ABS WARNING LAMP, VDC OFF INDICATOR LAMP, SLIP INDICATOR LAMP and BRAKE WARNING LAMP INSPECTION"
		Brake warning lamp OFF	OFF	
EBD SIGNAL	EBD operation	EBD active	ON	—
		EBD not active	OFF	
ABS SIGNAL	ABS operation	ABS active	ON	
		ABS not active	OFF	
TCS SIGNAL	TCS operation	TCS active	ON	
		TCS not active	OFF	
VDC SIGNAL	VDC operation	VDC active	ON	
		VDC not active	OFF	
CRANKING SIG	CRANKING status	Cranking	ON	
		Not cranking	OFF	
4WD FAIL REQ	ETS fail status (Note 5)	ETS fail	ON	
		ETS normal	OFF	
2WD/4WD	Drive axle	2WD model	2WD	
		AWD model	AWD	

Note 1: Confirm tire pressure is normal.
Note 2: ON/OFF timing of ABS warning lamp
ON: Approx. Within 2 seconds after ignition switch is turned ON, or when a malfunction is detected.
OFF: Approx. 2 seconds after ignition switch is turned ON (when system is in normal operation) and VDC/TCS function is not activated.
Note 3: ON/OFF timing of VDC OFF indicator lamp
ON: Approx. Within 2 seconds after ignition switch is turned ON, or when a malfunction is detected and VDC OFF switch is ON.
OFF: Approx 2 seconds after ignition switch is turned ON (when system is in normal operation.) And when VDC OFF switch is OFF.
Note 4: SLIP indicator lamp ON/OFF timing
ON: Approx. Within 2 seconds after ignition switch is turned ON, or when a malfunction is detected and VDC/TCS function is activated while driving.
OFF: Approx. 2 seconds after ignition switch is turned ON (when system is in normal operation) and VDC/TCS function is not activated.
Blinking: VDC/TCS function is active during driving
Note 5: Only AWD model.
Note 6: Serves as EBD warning lamp.

CONSULT-II Functions

AFS001SQ

CONSULT-II MAIN FUNCTION

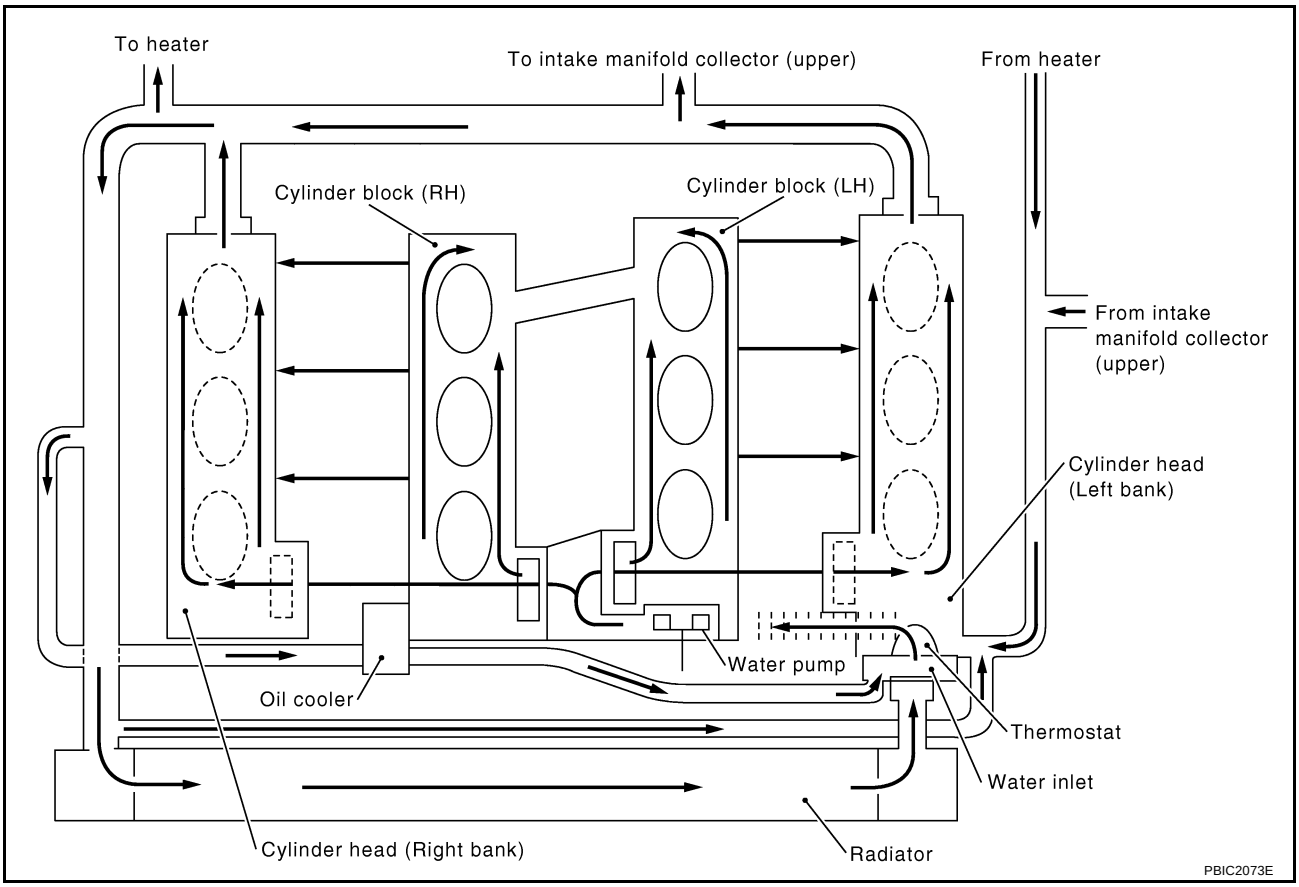
In a diagnosis function (main function), there are “WORK SUPPORT”, “SELF-DIAGNOSTIC RESULTS”, “DATA MONITOR”, “CAN DIAG SUPPORT MNTR”, “ACTIVE TEST”, “FUNCTION TEST”, “ECU PART NUMBER”.

COOLING SYSTEM

PFP:21020

Cooling Circuit

ABS00AMN



COMBINATION METERS

PFP:24814

System Description

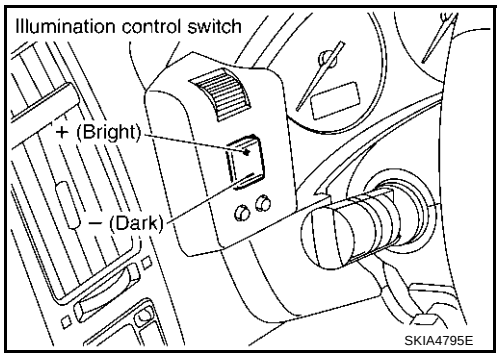
AKS005MH

UNIFIED METER CONTROL UNIT

- Speedometer, odo/trip meter, tachometer, fuel gauge and water temperature gauge are controlled by the unified meter control unit, which is built into the combination meter. Unified meter control unit receives signals from unified meter and A/C amp.
- Warning lamp and indicator lamp of combination meter are controlled by signals drawn from the unified meter and A/C amp.
- Digital meter is adopted for odo/trip meter*.
  *The record of the odo meter is kept even if the battery cable is disconnected. The record of the trip meter is erased when the battery cable is disconnected.
- Odo/trip meter, A/T indicator and ICC system display segments can be checked in diagnosis mode.
- Meters/gauges can be checked in diagnosis mode.

Illumination Control

The unified meter control unit outputs the odo/trip meter and A/T indicator lighting when the ignition switch is turned on. When the lighting switch is turned on, light on for the combination meter dial, illumination control switch and external lighting are output. In addition, when the lighting switch is turned on, the illumination control switch on the left side of the combination meter can be used to adjust the brightness of each light. The brightness can be adjusted to sixteen different levels: From 0 (no lights) to 15 (maximum). Pressing the illumination control switch will brighten or darken the lights. When the key switch is in the START position, the combination meter dial lighting and illumination control switch lighting are turned off.



UNIFIED METER AND A/C AMP.

Refer to DI-31, "System Description" in “UNIFIED METER AND A/C AMP”.

Display item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Contents
BRAKE SW [ON/OFF]		X	Indicates [ON/OFF] condition of brake switch (Stop lamp switch).
AT-M IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T manual mode indicator.
AT-M GEAR [5-1]	X	X	Indicates [5-1] condition of A/T manual mode gear position.
P RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift P range indicator.
R RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift R range indicator.
N RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift N range indicator.
D RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift D range indicator.
AT CHECK W/L		X	Indicates [ON/OFF] condition of AT CHECK warning lamp.
CRUISE IND [ON/OFF]		X	Indicates [ON/OFF] condition of CRUISE indicator.
SET IND [ON/OFF]		X	Indicates [ON/OFF] condition of SET indicator.
CRUISE W/L [ON/OFF]		X	Indicates [ON/OFF] condition of CRUISE warning lamp.
4WD LOCK SW [ON/OFF]		X	Indicates [ON/OFF] condition of AWD LOCK switch.
4WD LOCK IND [ON/OFF]		X	Indicates [ON/OFF] condition of AWD LOCK indicator lamp.
4WD W/L [ON/OFF]		X	Indicates [ON/OFF] condition of AWD warning lamp.

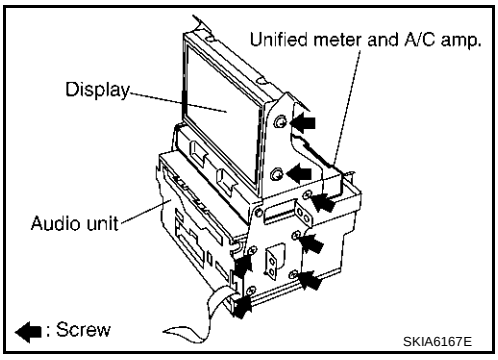
NOTE:
Any monitored item that does not match the vehicle being diagnosed is deleted from the display automatically.
*: Monitor keeps indicating “OFF” when brake warning lamp is on by the parking brake operation or low brake fluid level.

Removal and Installation of Unified Meter and A/C Amp.

AKS005NC

REMOVAL

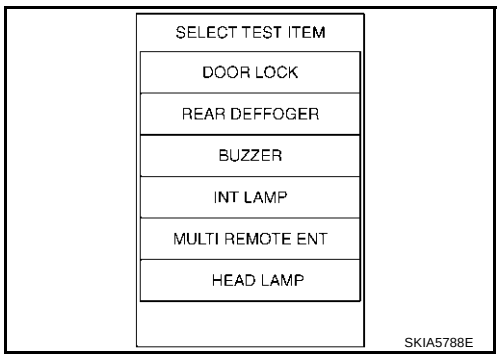
1. Remove the audio unit. Refer to AV-42, "Removal and Installation of Audio Unit" .
2. Remove the fixing screws, then remove the unified meter and A/C amp.



INSTALLATION

Installation is basically in the reverse order of removal.

4. Touch “BUZZER” or “BCM”.
5. Select “DATA MONITOR” or “SELF-DIAG RESULTS”.



DATA MONITOR

Operation Procedure

1. Touch “BUZZER” on “SELECT TEST ITEM” screen.
2. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.
3. Touch “ALL SIGNALS” or “SELECTION FROM MENU” on “DATA MONITOR″ screen.

ALL SIGNALS	Monitors main items.
SELECTION FROM MENU	Selects and monitors items.

4. If “SELECTION FROM MENU” is selected, touch the desired monitor item. If “ALL SIGNALS” is selected, all items required to control are monitored.
5. Touch “START”.
6. During monitoring, touching “RECORD” can start recording the monitored item status.

Data Monitor Item

Monitored item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
KEY ON SW	Indicates [ON/OFF] condition of key switch.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch (driver side).
TAIL LAMP SW	Indicates [ON/OFF] condition of lighting switch.

ACTIVE TEST

Operation Procedure

1. Touch “BUZZER” on “SELECT TEST ITEM” screen.
2. Touch “ACTIVE TEST” on “SELECT DIAG MODE” screen.
3. Touch the item to be tested, and check the operation.
4. During the operation check, touching “OFF” deactivates the operation.

Active Test Item

Test item	Malfunction is detected when…
LIGHT WARN ALM	This test is able to check light warning chime operation. Light warning chime sounds for 2 seconds after touching “ON” on CONSULT-II screen.
IGN KEY WARN ALM	This test is able to check key warning chime operation. Key warning chime sounds for 2 seconds after touching “ON” on CONSULT-II screen.
SEAT BELT WARN ALM	This test is able to check seat belt warning chime operation. Seat belt warning chime sounds for 2 seconds after touching “ON” on CONSULT-II screen.

SELF-DIAGNOSTIC RESULTS

Operation Procedure

1. Touch “BCM” on “SELECT TEST ITEM” screen.
2. Touch “SELF-DIAG RESULTS” on “SELECT DIAG MODE” screen.
3. Self-diagnostic results are displayed.

INDEX FOR DTC

PFP:00024

Alphabetical Index

ABS006JV

NOTE:
If DTC U1000 or U1001 is displayed with other DTC, first perform the trouble diagnosis for DTC U1000, U1001. Refer to EC-154, "DTC U1000, U1001 CAN COMMUNICATION LINE" .

×:Applicable —: Not applicable

Items (CONSULT-II screen terms)	DTC*1		Trip	MIL lighting up	Reference page
	CONSULT-II GST*2	ECM*3			
A/T INTERLOCK	P1730	1730	1	×	AT-153
A/T TCC S/V FNCTN	P0744	0744	2	×	AT-135
ACC COMMAND VALUE*7	P1568	1568	1	—	EC-529
APP SEN 1/CIRC	P2122	2122	1	×	EC-562
APP SEN 1/CIRC	P2123	2123	1	×	EC-562
APP SEN 2/CIRC	P2127	2127	1	×	EC-569
APP SEN 2/CIRC	P2128	2128	1	×	EC-569
APP SENSOR	P2138	2138	1	×	EC-583
ASCD BRAKE SW*6	P1572	1572	1	—	EC-530, EC-540
ASCD SW*6	P1564	1564	1	—	EC-516, EC-523
ASCD VHL SPD SEN*6	P1574	1574	1	—	EC-548, EC-550
ATF TEMP SEN/CIRC	P0710	0710	2	×	AT-147
BRAKE SW/CIRCUIT	P1805	1805	2	—	EC-557
CAN COMM CIRCUIT	U1000	1000*4	1	×	EC-154
CAN COMM CIRCUIT	U1001	1001*4	2	—	EC-154
CKP SEN/CIRCUIT	P0335	0335	2	×	EC-309
CLOSED LOOP-B1	P1148	1148	1	×	EC-476
CLOSED LOOP-B2	P1168	1168	1	×	EC-476
CMP SEN/CIRC-B1	P0340	0340	2	×	EC-315
CMP SEN/CIRC-B2	P0345	0345	2	×	EC-315
CTP LEARNING	P1225	1225	2	—	EC-493
CTP LEARNING	P1226	1226	2	—	EC-495
CYL 1 MISFIRE	P0301	0301	2	×	EC-299
CYL 2 MISFIRE	P0302	0302	2	×	EC-299
CYL 3 MISFIRE	P0303	0303	2	×	EC-299
CYL 4 MISFIRE	P0304	0304	2	×	EC-299
CYL 5 MISFIRE	P0305	0305	2	×	EC-299
CYL 6 MISFIRE	P0306	0306	2	×	EC-299
D/C SOLENOID/CIRC	P1762	1762	1	×	AT-166
D/C SOLENOID FNCTN	P1764	1764	1	×	AT-168
ECM	P0605	0605	1 or 2	× or —	EC-409
ECM BACK UP/CIRCUIT	P1065	1065	2	×	EC-412
ECT SEN/CIRCUIT	P0117	0117	1	×	EC-197
ECT SEN/CIRCUIT	P0118	0118	1	×	EC-197
ECT SENSOR	P0125	0125	1	×	EC-209
ENG OVER TEMP	P1217	1217	1	×	EC-480

31. REPLACE HEATED OXYGEN SENSOR 1

1. Stop engine.
2. Replace heated oxygen sensor 1 on the malfunctioning bank.

With CONSULT-II>>GO TO 32.
Without CONSULT-II>>GO TO 33.

32. CHECK HEATED OXYGEN SENSOR 1 (BANK 1)/(BANK 2) SIGNAL

With CONSULT-II

1. Start engine and warm it up until engine coolant temperature indicator points the middle of gauge.
2. See “HO2S1 MNTR (B1)/(B2)” in “DATA MONITOR” mode.
3. Running engine at 2,000 rpm under no-load (The engine is warmed up to normal operating temperature.), check that the monitor fluctuates between LEAN and RICH more than 5 times during 10 seconds.

1 time: RICH → LEAN → RICH
2 times: RICH → LEAN → RICH → LEAN → RICH

OK or NG

OK >> GO TO 4.
NG >> GO TO 34.

33. CHECK HEATED OXYGEN SENSOR 1 (BANK 1)/(BANK 2) SIGNAL

Without CONSULT-II

1. Set ECM to Self-diagnostic mode II (Heated oxygen sensor 1 monitor). Refer to EC-84, "HOW TO SWITCH DIAGNOSTIC TEST MODE" .
2. Switch the monitored sensor to the malfunctioning bank. Refer to EC-84, "How to Switch Monitored Sensor From Bank 1 to Bank 2 or Vice Versa" .
3. Running engine at 2,000 rpm under no-load (The engine is warmed up to normal operating temperature.), check that the MIL comes on more than 5 times during 10 seconds.

OK or NG

OK >> GO TO 4.
NG >> GO TO 34.

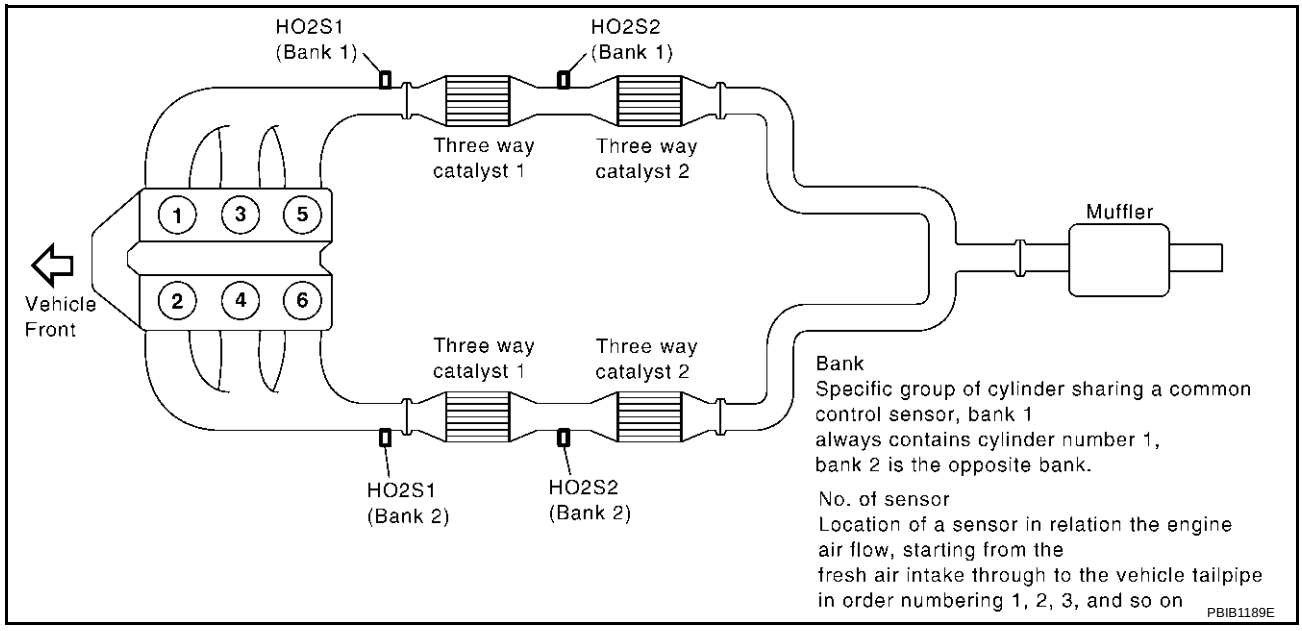
34. DETECT MALFUNCTIONING PART

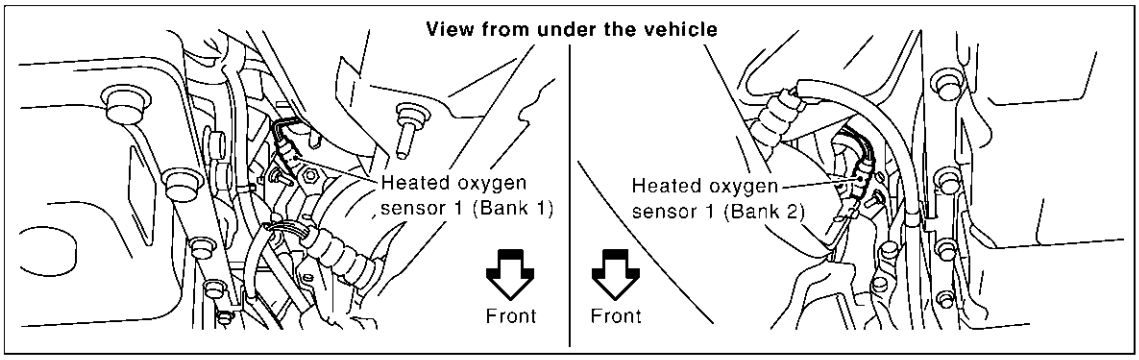
Check the following.

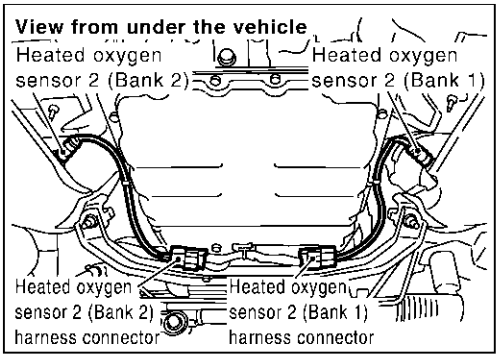
- Check fuel pressure regulator and repair or replace if necessary. Refer to EC-65, "Fuel Pressure Check" .
- Check mass air flow sensor and its circuit, and repair or replace if necessary. Refer to EC-177 and EC-185 .
- Check injector and its circuit, and repair or replace if necessary. Refer to EC-603 .
- Check engine coolant temperature sensor and its circuit, and repair or replace if necessary. Refer to EC-197 and EC-209 .

OK or NG

OK >> GO TO 36.
NG >> 1. Repair or replace.
2. GO TO 35.


HO2S1
(Bank 1)
HO2S2
(Bank 1)
Three way
catalyst 1
Three way
catalyst 2
Muffler
1
3
5
2
4
6
Vehicle
Front
Three way
catalyst 1
Three way
catalyst 2
HO2S1
(Bank 2)
HO2S2
(Bank 2)
Bank
Specific group of cylinder sharing a common control sensor, bank 1 always contains cylinder number 1, bank 2 is the opposite bank.
No. of sensor
Location of a sensor in relation the engine air flow, starting from the fresh air intake through to the vehicle tailpipe in order numbering 1, 2, 3, and so on
PBIB1189E


View from under the vehicle
Heated oxygen
sensor 1 (Bank 1)
Front
Heated oxygen
sensor 1 (Bank 2)
Front


View from under the vehicle
Heated oxygen
sensor 2 (Bank 2)
Heated oxygen
sensor 2 (Bank 1)
Heated oxygen
sensor 2 (Bank 2)
harness connector
Heated oxygen
sensor 2 (Bank 1)
harness connector

PBIB1617E

Diagnostic Procedure

ABS006LD

GO TO LAN-6, "CAN Communication Unit" .

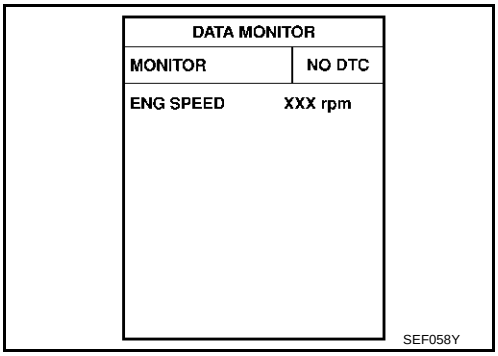
DTC Confirmation Procedure

ABS006N5

NOTE:
If “DTC Confirmation Procedure” has been previously conducted, always turn ignition switch “OFF” and wait at least 10 seconds before conducting the next test.
TESTING CONDITION:
Before performing the following procedure, confirm that battery voltage is more than 10V at idle.

WITH CONSULT-II

1. Turn ignition switch “ON”.
2. Select “DATA MONITOR” mode with CONSULT-II.
3. Start engine and let it idle for 1 second.
4. If DTC is detected, go to EC-205, "Diagnostic Procedure" .



WITH GST

Follow the procedure “WITH CONSULT-II” above.

Specification data are reference values and are measured between each terminal and ground.

CAUTION:

Do not use ECM ground terminals when measuring input/output voltage. Doing so may result in damage to the ECM's transistor. Use a ground other than ECM terminals, such as the ground.

TERMINAL NO.	WIRE COLOR	ITEM	CONDITION	DATA (DC Voltage)
74	LG/B	Heated oxygen sensor 2 (bank 1)	**[Engine is running]** ● **Warm-up condition** ● Revving engine from idle to 3,000 rpm quickly after the following conditions are met. – After keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load.	0 - Approximately 1.0V
78	B/R	Sensor ground (Heated oxygen sensor)	**[Engine is running]** ● **Warm-up condition** ● Idle speed	Approximately 0V

6. REPLACE ACCELERATOR PEDAL ASSEMBLY

1. Replace accelerator pedal assembly.
2. Perform EC-63, "Accelerator Pedal Released Position Learning" .
3. Perform EC-63, "Throttle Valve Closed Position Learning" .
4. Perform EC-63, "Idle Air Volume Learning" .

>> **INSPECTION END**

7. CHECK THROTTLE POSITION SENSOR 1 GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check harness continuity between electric throttle control actuator terminal 5 and ECM terminal 66. Refer to Wiring Diagram.

Continuity should exist.

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

OK or NG

OK >> GO TO 8.
NG >> Repair open circuit or short to ground or short to power in harness or connectors.

8. CHECK THROTTLE POSITION SENSOR 1 INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check harness continuity between ECM terminal 50 and electric throttle control actuator terminal 4. Refer to Wiring Diagram.

Continuity should exist.

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

OK or NG

OK >> GO TO 9.
NG >> Repair open circuit or short to ground or short to power in harness or connectors.

9. CHECK THROTTLE POSITION SENSOR

Refer to EC-298, "Component Inspection" .

OK or NG

OK >> GO TO 11.
NG >> GO TO 10.

10. REPLACE ELECTRIC THROTTLE CONTROL ACTUATOR

1. Replace the electric throttle control actuator.
2. Perform EC-63, "Throttle Valve Closed Position Learning" .
3. Perform EC-63, "Idle Air Volume Learning" .

>> **INSPECTION END**

11. CHECK INTERMITTENT INCIDENT

Refer to EC-148, "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT" .

>> **INSPECTION END**

On Board Diagnosis Logic

ABS006QV

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0444 0444	EVAP canister purge volume control solenoid valve circuit open	An excessively low voltage signal is sent to ECM through the valve	● Harness or connectors (The solenoid valve circuit is open or shorted.) ● EVAP canister purge volume control solenoid valve
P0445 0445	EVAP canister purge volume control solenoid valve circuit shorted	An excessively high voltage signal is sent to ECM through the valve	● Harness or connectors (The solenoid valve circuit is shorted.) ● EVAP canister purge volume control solenoid valve

DTC Confirmation Procedure

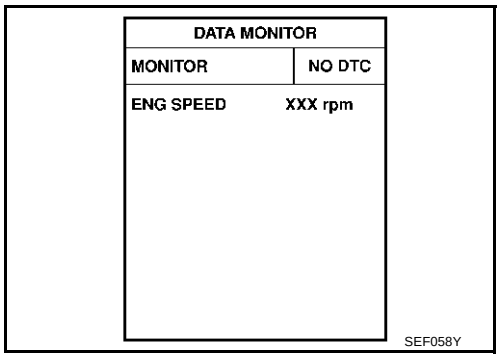
ABS006QW

NOTE:
If “DTC Confirmation Procedure” has been previously conducted, always turn ignition switch “OFF” and wait at least 10 seconds before conducting the next test.

TESTING CONDITION:
Before performing the following procedure, confirm battery voltage is more than 11V at idle.

WITH CONSULT-II

1. Turn ignition switch “ON”.
2. Select “DATA MONITOR” mode with CONSULT-II.
3. Start engine and let it idle for at least 13 seconds.
4. If 1st trip DTC is detected, go to EC-347, "Diagnostic Procedure"
   .



WITH GST

Follow the procedure “WITH CONSULT-II” above.

20. CHECK EVAP/ORVR LINE

Check EVAP/ORVR line between EVAP canister and fuel tank for clogging, kink, looseness and improper connection. For location, refer to EC-650, "ON BOARD REFUELING VAPOR RECOVERY (ORVR)" .

OK or NG

OK >> GO TO 21.
NG >> Repair or replace hoses and tubes.

21. CHECK RECIRCULATION LINE

Check recirculation line between filler neck tube and fuel tank for clogging, kink, cracks, looseness and improper connection.

OK or NG

OK >> GO TO 22.
NG >> Repair or replace hose, tube or filler neck tube.

22. CHECK REFUELING EVAP VAPOR CUT VALVE

Refer to EC-653, "Component Inspection" .

OK or NG

OK >> GO TO 23.
NG >> Replace refueling EVAP vapor cut valve with fuel tank.

23. CHECK FUEL LEVEL SENSOR

Refer to DI-28, "CHECK FUEL LEVEL SENSOR UNIT" .

OK or NG

OK >> GO TO 24.
NG >> Replace fuel level sensor unit.

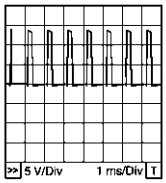
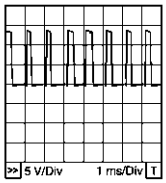
24. CHECK INTERMITTENT INCIDENT

Refer to EC-148, "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT" .

>> **INSPECTION END**

Specification data are reference values and are measured between each terminal and ground.
Pulse signal is measured by CONSULT-II.

CAUTION:
Do not use ECM ground terminals when measuring input/output voltage. Doing so may result in damage to the ECM's transistor. Use a ground other than ECM terminals, such as the ground.

TERMINAL NO.	WIRE COLOR	ITEM	CONDITION	DATA (DC Voltage)
4	L/W	Throttle control motor (Close)	**[Ignition switch "ON"]** ● Engine stopped ● Selector lever: "D" ● Accelerator pedal is released	0 - 14V★  PBIB1104E
5	L/B	Throttle control motor (Open)	**[Ignition switch "ON"]** ● Engine stopped ● Selector lever: "D" ● Accelerator pedal is fully depressed	0 - 14V★  PBIB1105E

★: Average voltage for pulse signal (Actual pulse signal can be confirmed by oscilloscope.)

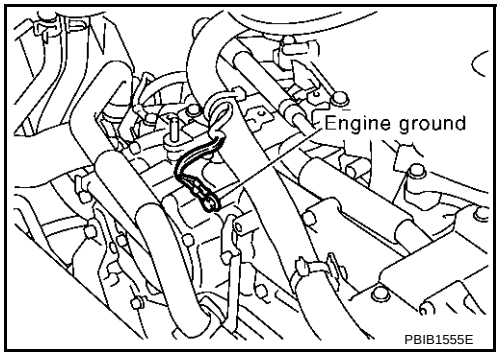
Diagnostic Procedure

ABS006TV

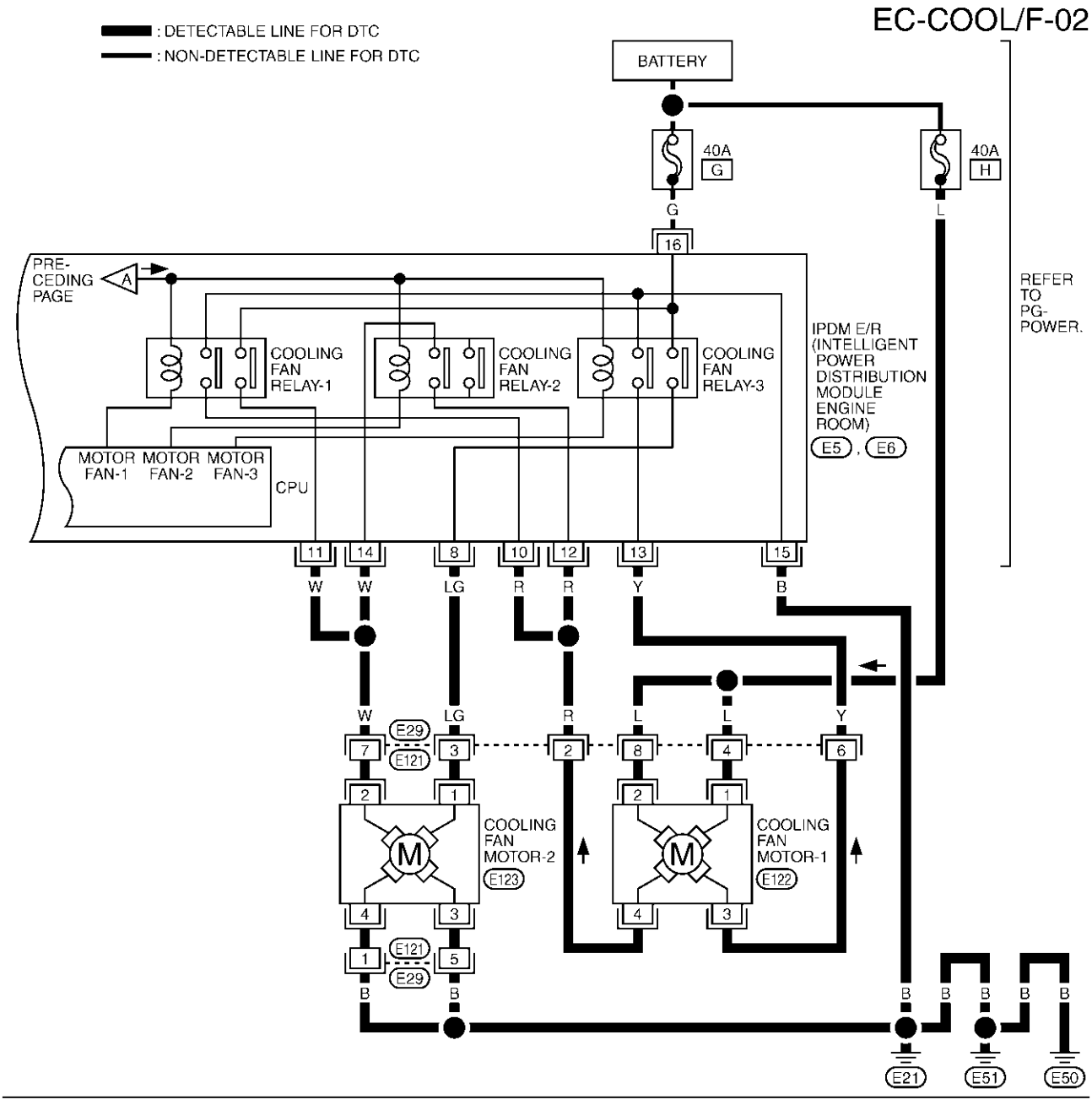
1. RETIGHTEN GROUND SCREWS

1. Turn ignition switch "OFF"
2. Loosen and retighten engine ground screws.

>> GO TO 2.



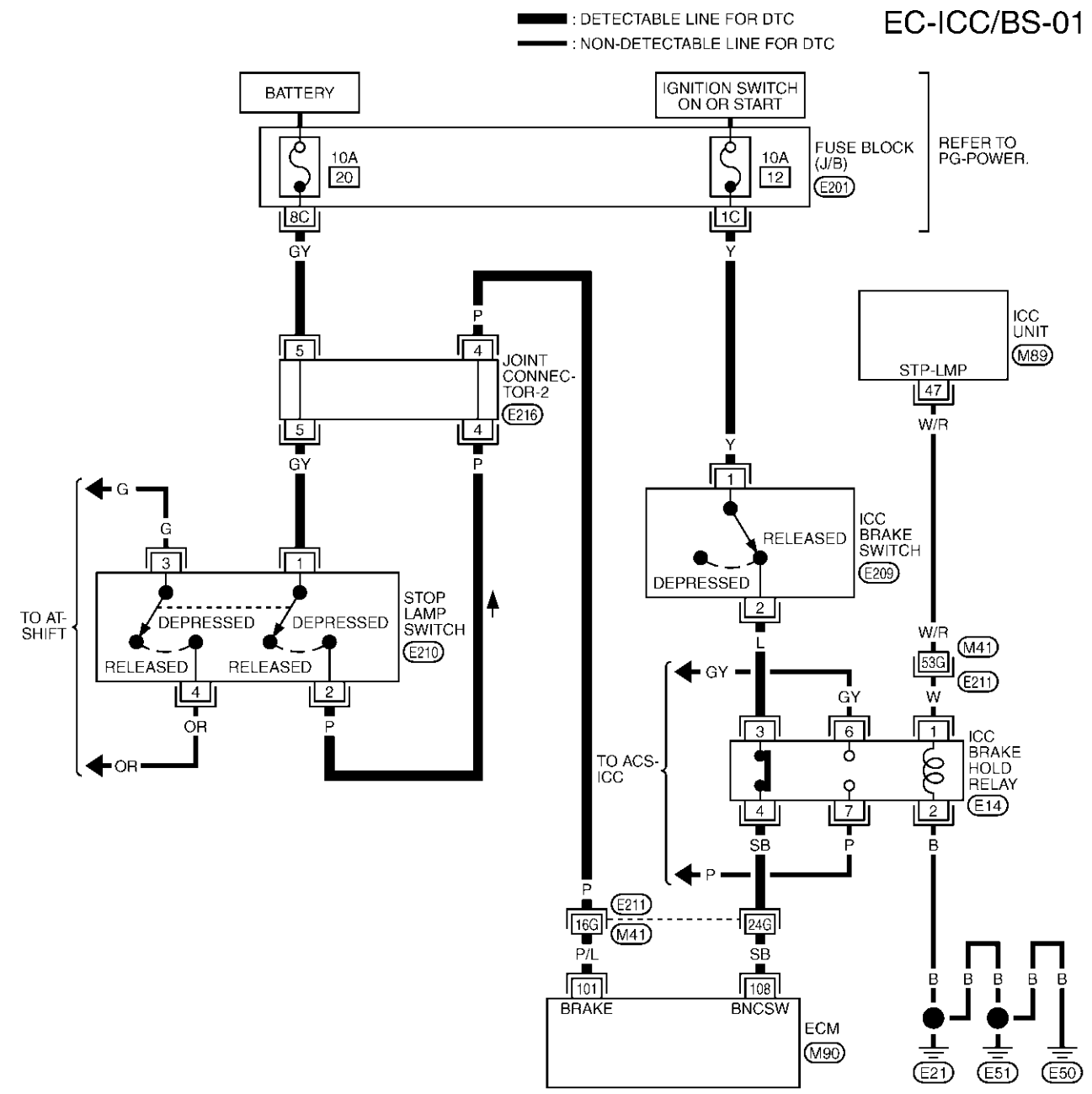
PBIB1555E


EC-COOL/F-02
: DETECTABLE LINE FOR DTC
: NON-DETECTABLE LINE FOR DTC
BATTERY
40A G
40A H
G
L
16
PRE-CEDING PAGE
A
COOLING FAN RELAY-1
COOLING FAN RELAY-2
COOLING FAN RELAY-3
MOTOR FAN-1
MOTOR FAN-2
MOTOR FAN-3
CPU
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5 , E6
REFER TO PG-POWER.
11 14 8 10 12 13 15
W W LG R R Y B
E29
E121
7 3 2 8 4 6
2 1
COOLING FAN MOTOR-2
E123
COOLING FAN MOTOR-1
E122
4 3
1 5
B B
E21 E51 E50
E5 B
E6 W
H.S.
E29 B
E122 GY , E123 GY

TBWM0307E

Wiring Diagram

ABS007ZA



TBWM0274E

Specification data are reference values and are measured between each terminal and ground.

CAUTION:

Do not use ECM ground terminals when measuring input/output voltage. Doing so may result in damage to the ECM's transistor. Use a ground other than ECM terminals, such as the ground.

TERMINAL NO.	WIRE COLOR	ITEM	CONDITION	DATA (DC Voltage)
47	L	Sensor power supply (Throttle position sensor)	**[Ignition switch: ON]**	Approximately 5V
50	W	Throttle position sensor 1	**[Ignition switch: ON]** ● Engine stopped ● Selector lever: D ● Accelerator pedal: Fully released	More than 0.36V
			[Ignition switch: ON] ● Engine stopped ● Selector lever: D ● Accelerator pedal: Fully depressed	Less than 4.75V
66	B	Sensor ground (Throttle position sensor)	**[Engine is running]** ● **Warm-up condition** ● Idle speed	Approximately 0V
69	R	Throttle position sensor 2	**[Ignition switch: ON]** ● Engine stopped ● Selector lever: D ● Accelerator pedal: Fully released	Less than 4.75V
			[Ignition switch: ON] ● Engine stopped ● Selector lever: D ● Accelerator pedal: Fully depressed	More than 0.36V
91	G	Sensor power supply (APP sensor 2)	**[Ignition switch: ON]**	Approximately 5V

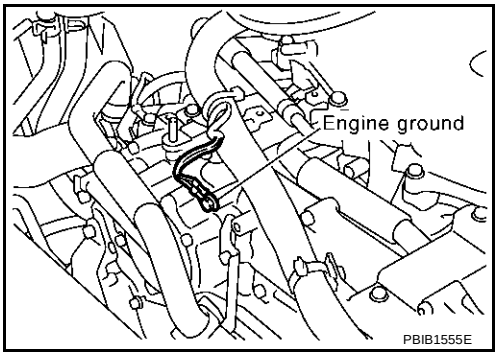
Diagnostic Procedure

ABS00D1G

1. RETIGHEN GROUND SCREWS

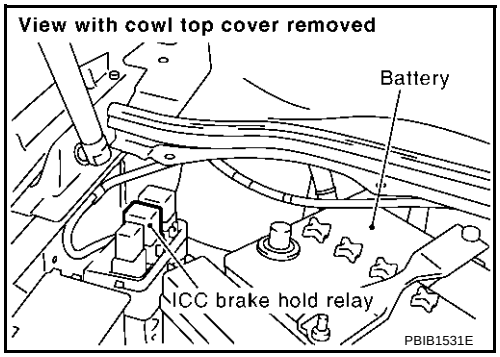
1. Turn ignition switch OFF.
2. Loosen and retighten engine ground three screws.

>> GO TO 2.



4. CHECK ICC BRAKE SWITCH CIRCUIT

1. Turn ignition switch “OFF”.
2. Disconnect ICC brake hold relay.
3. Turn ignition switch “ON”.

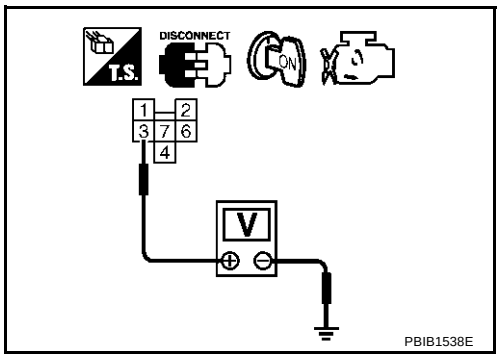


4. Check voltage between ICC brake hold relay terminal 3 and ground with CONSULT-II or tester.

Voltage: Battery voltage

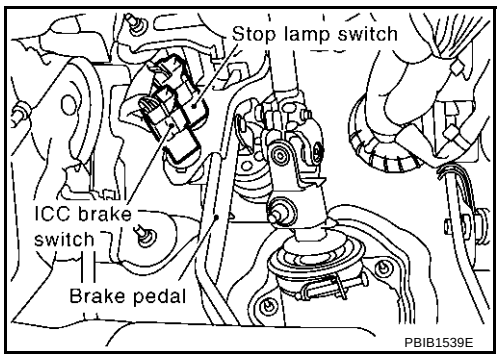
OK or NG

OK >> GO TO 9.
NG >> GO TO 5.



5. CHECK ICC BRAKE SWITCH POWER SUPPLY CIRCUIT

1. Turn ignition switch “OFF”.
2. Disconnect ICC brake switch harness connector.
3. Turn ignition switch “ON”.

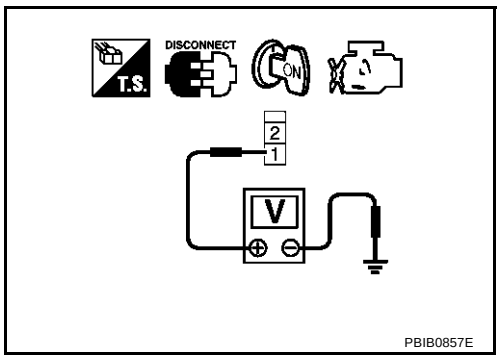


4. Check voltage between ICC brake switch terminal 1 and ground with CONSULT-II or tester.

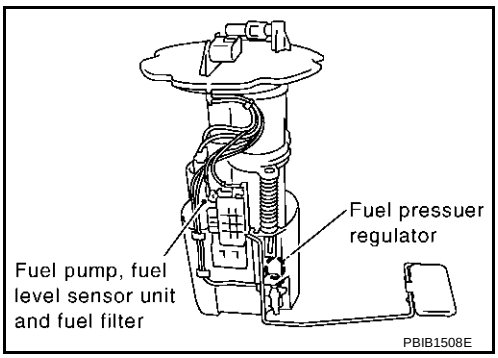
Voltage: Battery voltage

OK or NG

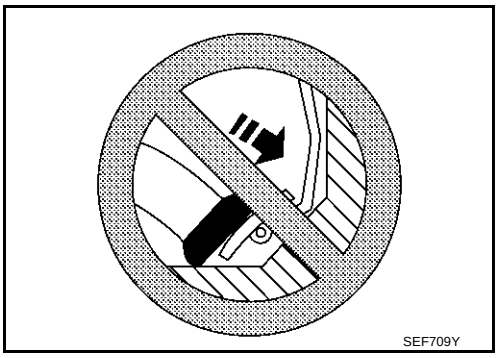
OK >> GO TO 7.
NG >> GO TO 6.



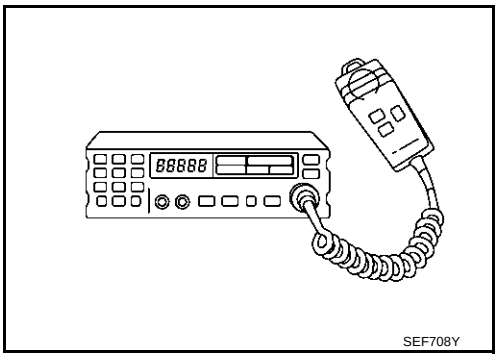
- **Do not operate fuel pump when there is no fuel in lines.**
- **Tighten fuel hose clamps to the specified torque.**



- **Do not depress accelerator pedal when starting.**
- **Immediately after starting, do not rev up engine unnecessarily.**
- **Do not rev up engine just prior to shutdown.**



- **When installing C.B. ham radio or a mobile phone, be sure to observe the following as it may adversely affect electronic control systems depending on installation location.**
  - **Keep the antenna as far as possible from the electronic control units.**
  - **Keep the antenna feeder line more than 20 cm (8 in) away from the harness of electronic controls.**
    Do not let them run parallel for a long distance.
  - **Adjust the antenna and feeder line so that the standing-wave radio can be kept smaller.**
  - **Be sure to ground the radio to vehicle body.**



Wiring Diagrams and Trouble Diagnosis

ABS007HB

When you read wiring diagrams, refer to the following:

- GI-15, "How to Read Wiring Diagrams"
- PG-3, "POWER SUPPLY ROUTING CIRCUIT" for power distribution circuit

When you perform trouble diagnosis, refer to the following:

- GI-11, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES"
- GI-27, "How to Perform Efficient Diagnosis for an Electrical Incident"

- The time required for each diagnosis varies with road surface conditions, weather, altitude, individual driving habits, etc.
  Zone A refers to the range where the time, required for the diagnosis under normal conditions*, is the shortest.
  Zone B refers to the range where the diagnosis can still be performed if the diagnosis is not completed within zone A.

*: Normal conditions refer to the following:

- Sea level
- Flat road
- Ambient air temperature: 20 - 30°C (68 - 86°F)
- Diagnosis is performed as quickly as possible under normal conditions.
  Under different conditions [For example: ambient air temperature other than 20 - 30°C (68 - 86°F)], diagnosis may also be performed.

Pattern 1:

- **The engine is started at the engine coolant temperature of −10 to 35°C (14 to 95°F) (where the voltage between the ECM terminal 73 and ground is 3.0 - 4.3V).**
- **The engine must be operated at idle speed until the engine coolant temperature is greater than 70°C (158°F) (where the voltage between the ECM terminal 73 and ground is lower than 1.4V).**
- **The engine is started at the fuel tank temperature of warmer than 0°C (32°F) (where the voltage between the ECM terminal 107 and ground is less than 4.1V).**

Pattern 2:

- When steady-state driving is performed again even after it is interrupted, each diagnosis can be conducted. In this case, the time required for diagnosis may be extended.

Pattern 3:

- The driving pattern outlined in *2 must be repeated at least 3 times.

Pattern 4:

- Tests are performed after the engine has been operated for at least 17 minutes.
- The accelerator pedal must be held very steady during steady-state driving.
- If the accelerator pedal is moved, the test must be conducted all over again.

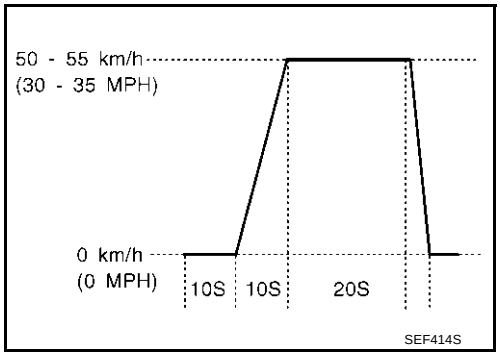
*1: Depress the accelerator pedal until vehicle speed is 90 km/h (56 MPH), then release the accelerator pedal and keep it released for more than 10 seconds. Depress the accelerator pedal until vehicle speed is 90 km/h (56 MPH) again.

*2: Operate the vehicle in the following driving pattern.

1. Decelerate vehicle to 0 km/h (0 MPH) and let engine idle.
2. Repeat driving pattern shown at right at least 10 times.

– **During acceleration, hold the accelerator pedal as steady as possible.**

*3: Checking the vehicle speed with GST is advised.



Suggested Transmission Gear Position
Set the selector lever in the “D” position.

TEST VALUE AND TEST LIMIT (GST ONLY — NOT APPLICABLE TO CONSULT-II)

The following is the information specified in Mode 6 of SAE J1979.
The test value is a parameter used to determine whether a system/circuit diagnostic test is “OK” or “NG” while being monitored by the ECM during self-diagnosis. The test limit is a reference value which is specified as the maximum or minimum value and is compared with the test value being monitored.
Items for which these data (test value and test limit) are displayed are the same as SRT code items (30 test items).
These data (test value and test limit) are specified by Test ID (TID) and Component ID (CID) and can be displayed on the GST screen.

Item			DIAGNOSTIC TEST MODE							
			WORK SUP-PORT	SELF-DIAGNOSTIC RESULTS		DATA MONI-TOR	DATA MONI-TOR (SPEC)	ACTIVE TEST	DTC & SRT CONFIRMATION	
				DTC*1	FREEZE FRAME DATA*2				SRT STATUS	DTC WORK SUP-PORT
ENGINE CONTROL COMPONENT PARTS	OUTPUT	Fuel Injector				×	×	×		
		Power transistor (Ignition timing)				×	×	×		
		Throttle control motor relay		×		×	×			
		Throttle control motor		×						
		EVAP canister purge volume control solenoid valve		×		×	×	×		×
		Air conditioner relay				×	×			
		Fuel pump relay	×			×	×	×		
		Cooling fan relay				×	×	×		
		Heated oxygen sensor 1 heater		×		×	×		×	
		Heated oxygen sensor 2 heater		×		×	×		×	
		EVAP canister vent control valve	×	×		×	×	×		
		Intake valve timing control solenoid valve		×		×	×	×		
		VIAS control solenoid valve				×	×	×		
		Calculated load value			×	×	×			

X: Applicable

*1: This item includes 1st trip DTCs.

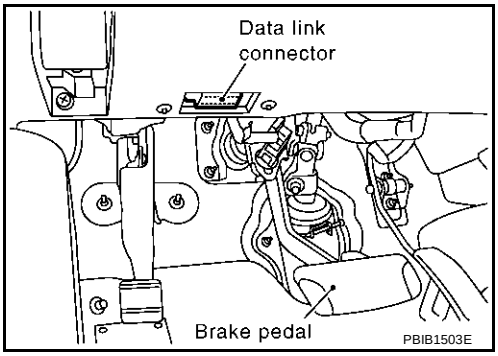
*2: This mode includes 1st trip freeze frame data or freeze frame data. The items appear on CONSULT-II screen in freeze frame data mode only if a 1st trip DTC or DTC is detected. For details, refer to EC-713 .

INSPECTION PROCEDURE

CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.

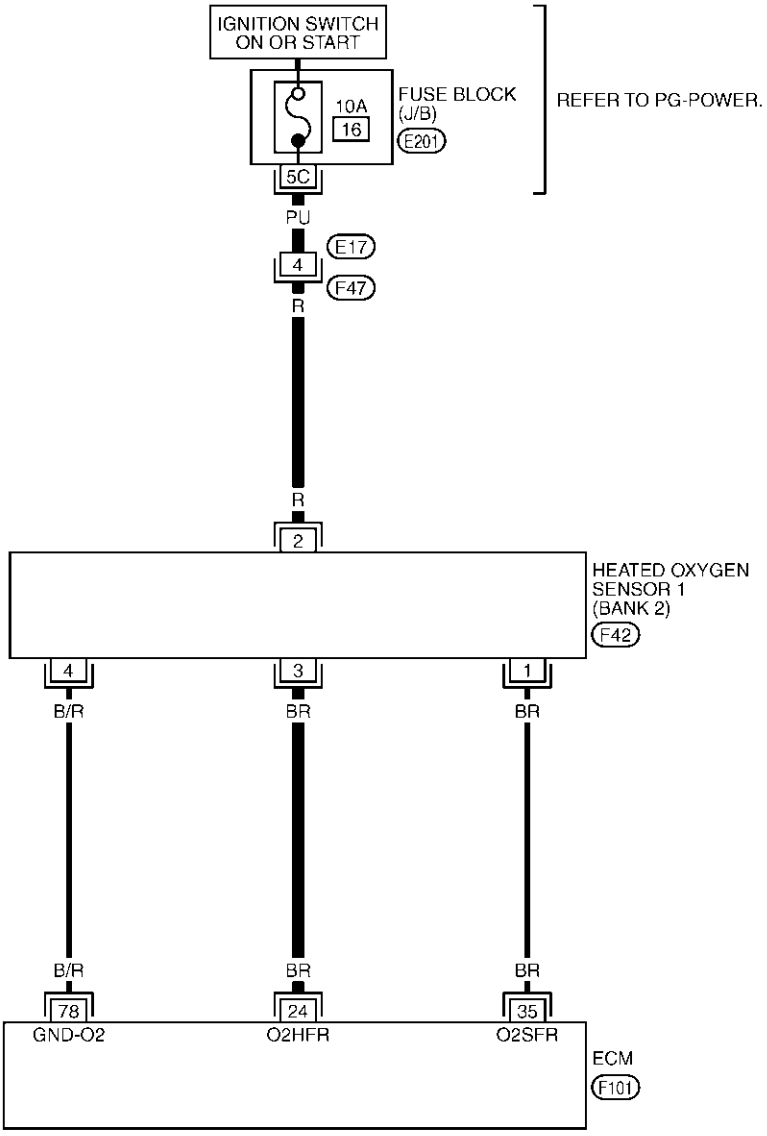
1. Turn ignition switch OFF.
2. Connect “CONSULT-II” and “CONSULT-II CONVERTER” to data link connector, which is located under LH dash panel near the hood opener handle.
3. Turn ignition switch ON.

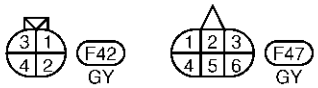


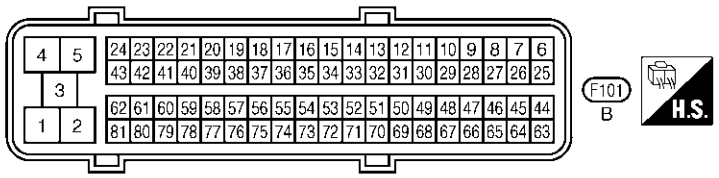
BANK 2

EC-O2H1B2-01

: DETECTABLE LINE FOR DTC
: NON-DETECTABLE LINE FOR DTC



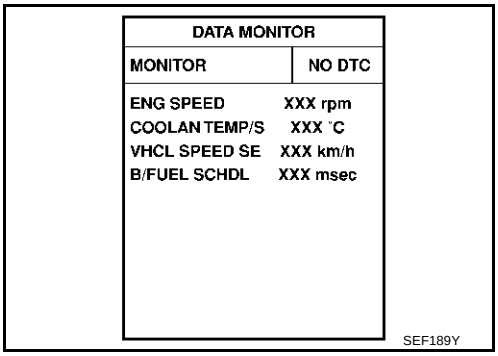




REFER TO THE FOLLOWING.
E201 -FUSE BLOCK-JUNCTION BOX (J/B)

TBWM0222E

b. Select “DATA MONITOR” mode with CONSULT-II.
c. Check the engine coolant temperature.
d. If the engine coolant temperature is not less than 90°C (194°F), turn ignition switch “OFF” and cool down engine.
   - Perform the following steps before engine coolant temperature is above 90°C (194°F).
2. Turn ignition switch “ON”.
3. Select “DATA MONITOR” mode with CONSULT-II.
4. Start engine.
5. Hold vehicle speed at more than 70 km/h (43 MPH) for 100 consecutive seconds.
6. If 1st trip DTC is detected, go to EC-861, "Diagnostic Procedure" .



WITH GST

Follow the procedure “WITH CONSULT-II” above.

Diagnostic Procedure

ABS007KO

1. CHECK INTAKE AIR TEMPERATURE SENSOR

Refer to EC-844, "Component Inspection" .

OK or NG

OK >> GO TO 2.
NG >> Replace mass air flow sensor (with intake air temperature sensor).

2. CHECK INTERMITTENT INCIDENT

Refer to EC-790, "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT" .

>> **INSPECTION END**

Component Inspection

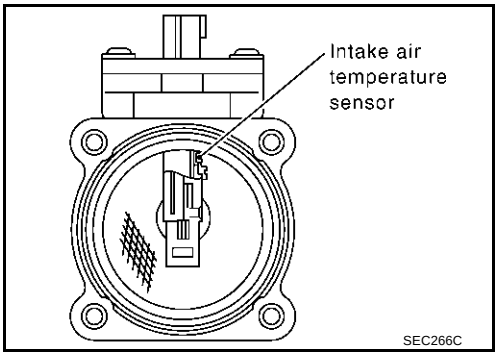
ABS007KP

INTAKE AIR TEMPERATURE SENSOR

1. Check resistance between intake air temperature sensor terminals 5 and 6 under the following conditions.

Intake air temperature °C (°F)	Resistance kΩ
25 (77)	1.9 - 2.1

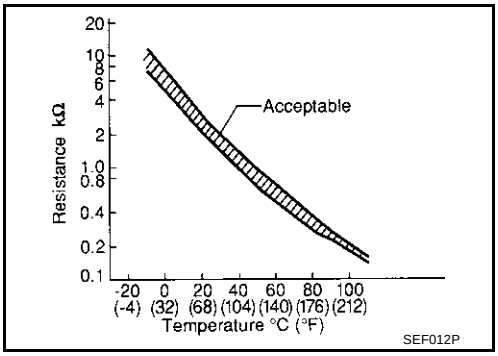
2. If NG, replace mass air flow sensor (with intake air temperature sensor).



Removal and Installation

ABS007KQ

MASS AIR FLOW SENSOR

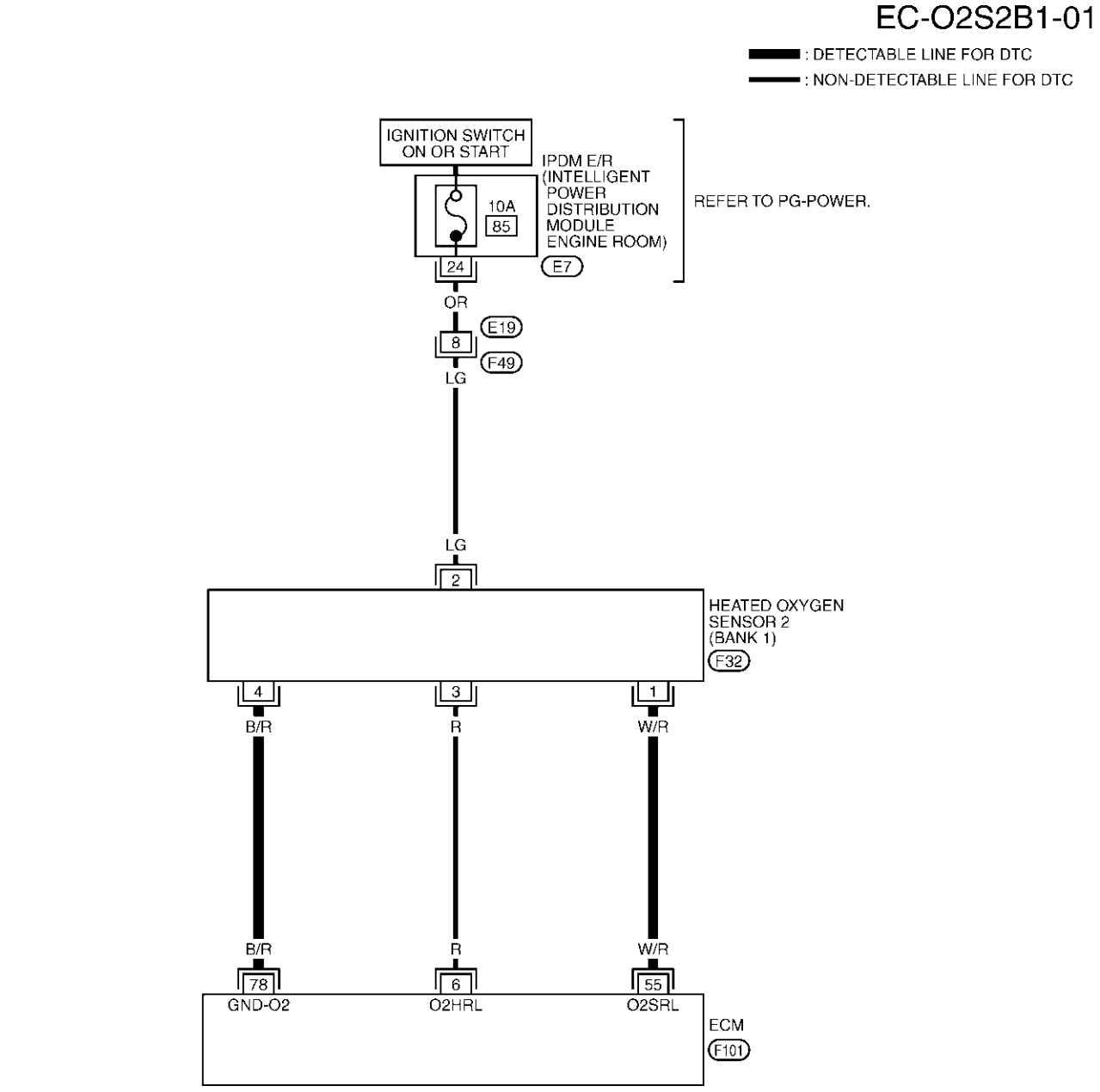


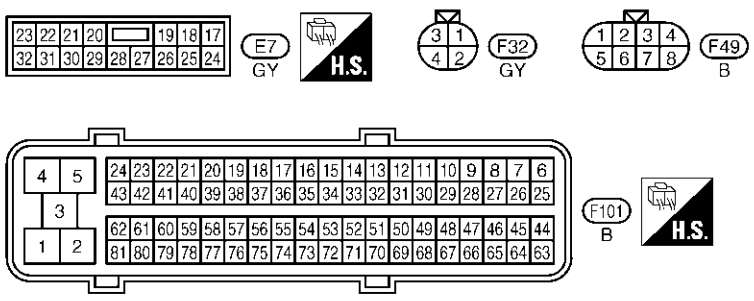
Refer to EM-170, "AIR CLEANER AND AIR DUCT" .

Wiring Diagram
BANK 1

ABS007LZ

EC-O2S2B1-01





TBWM0230E

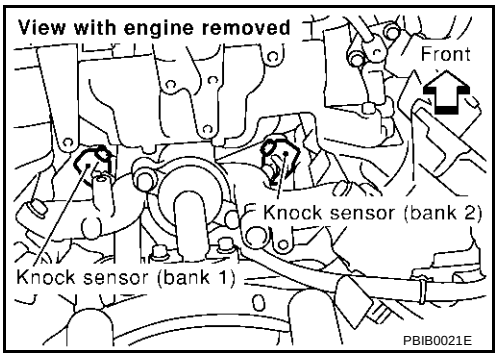
DTC P0327, P0328, P0332, P0333 KS

PFP:22060

Component Description

ABS007YK

The knock sensor is attached to the cylinder block. It senses engine knocking using a piezoelectric element. A knocking vibration from the cylinder block is sensed as vibrational pressure. This pressure is converted into a voltage signal and sent to the ECM.



On Board Diagnosis Logic

ABS007YL

The MIL will not light up for these diagnoses.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0327 0327 (bank 1)	Knock sensor circuit low input	An excessively low voltage from the sensor is sent to ECM.	● Harness or connectors (The sensor circuit is open or shorted.) ● Knock sensor
P0332 0332 (bank 2)			
P0328 0328 (bank 1)	Knock sensor circuit high input	An excessively high voltage from the sensor is sent to ECM.	
P0333 0333 (bank 2)			

DTC Confirmation Procedure

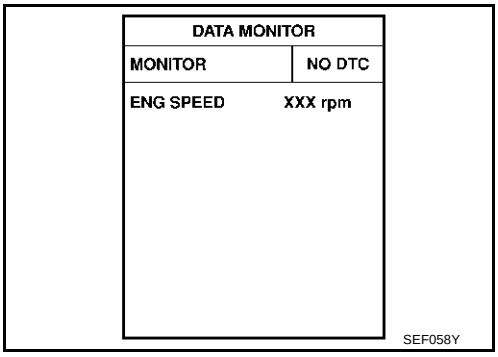
ABS007YM

NOTE:
If “DTC Confirmation Procedure” has been previously conducted, always turn ignition switch “OFF” and wait at least 10 seconds before conducting the next test.

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

WITH CONSULT-II

1. Turn ignition switch “ON” and select “DATA MONITOR” mode with CONSULT-II.
2. Start engine and run it for at least 5 seconds at idle speed.
3. If 1st trip DTC is detected, go to EC-957, "Diagnostic Procedure"
   .



WITH GST

Follow the procedure “With CONSULT-II” above.

6. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors M11, B1
- Harness for open or short between EVAP canister vent control valve and ECM

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

7. CHECK RUBBER TUBE FOR CLOGGING

1. Disconnect rubber tube connected to EVAP canister vent control valve.
2. Check the rubber tube for clogging.

OK or NG

OK >> GO TO 8.
NG >> Clean the rubber tube using an air blower.

8. CHECK EVAP CANISTER VENT CONTROL VALVE

Refer to EC-1002, "Component Inspection" .

OK or NG

OK >> GO TO 9.
NG >> Replace EVAP canister vent control valve.

9. CHECK INTERMITTENT INCIDENT

Refer to EC-790, "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT" .

>> **INSPECTION END**

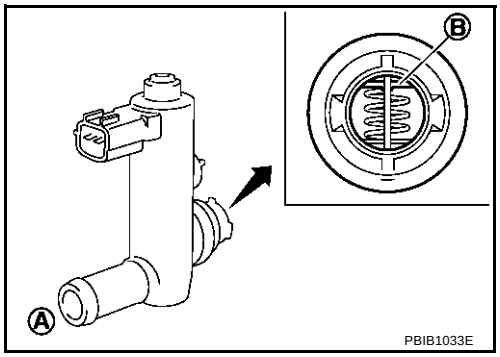
Component Inspection

ABS007OC

EVAP CANISTER VENT CONTROL VALVE

With CONSULT-II

1. Remove EVAP canister vent control valve from EVAP canister.
2. Check portion **B** of EVAP canister vent control valve for being rusted.
   If NG, replace EVAP canister vent control valve.
   If OK, go to next step.
3. Reconnect harness connectors disconnected.
4. Turn ignition switch “ON”.



PBIB1033E

5. Perform “VENT CONTROL/V” in “ACTIVE TEST” mode.
6. Check air passage continuity and operation delay time.
   Make sure new O-ring is installed properly.

Condition VENT CONTROL/V	Air passage continuity between A and B
ON	No
OFF	Yes

Operation takes less than 1 second.

If NG, replace EVAP canister vent control valve.
If OK, go to next step.

ACTIVE TEST	
VENT CONTROL/V	OFF
MONITOR	
ENG SPEED	XXX rpm
A/F ALPHA-B1	XXX %
A/F ALPHA-B2	XXX %
HO2S1 (B1)	XXX V
HO2S1 (B2)	XXX V

PBIB0151E

DTC P0507 ISC SYSTEM

PFP:23781

Description

ABS007PS

NOTE:
If DTC P0507 is displayed with other DTC, first perform the trouble diagnosis for the other DTC.
The ECM controls the engine idle speed to a specified level through the fine adjustment of the air, which is let into the intake manifold, by operating the electric throttle control actuator. The operating of the throttle valve is varied to allow for optimum control of the engine idling speed. The crankshaft position sensor (POS) detects the actual engine speed and sends a signal to the ECM.
The ECM controls the electric throttle control actuator so that the engine speed coincides with the target value memorized in the ECM. The target engine speed is the lowest speed at which the engine can operate steadily. The optimum value stored in the ECM is determined by taking into consideration various engine conditions, such as during warming up, deceleration, and engine load (air conditioner, power steering and cooling fan operation, etc.).

On Board Diagnosis Logic

ABS007PT

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0507 0507	Idle speed control system RPM higher than expected	The idle speed is more than the target idle speed by 200 rpm or more.	● Electric throttle control actuator ● Intake air leak ● PCV system

DTC Confirmation Procedure

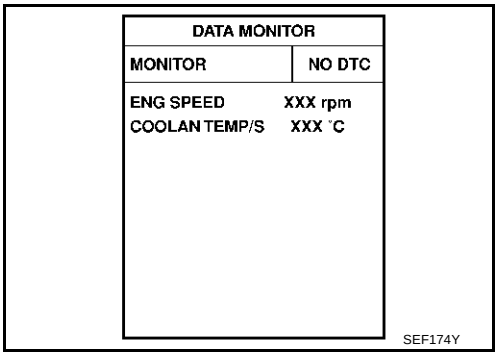
ABS007PU

NOTE:
- If “DTC Confirmation Procedure” has been previously conducted, always turn ignition switch “OFF” and wait at least 10 seconds before conducting the next test.
- **If the target idle speed is out of the specified value, perform “Idle Air Volume Learning”, EC-703 , before conducting “DTC Confirmation Procedure”. For the target idle speed, refer to the “Service Data and Specifications (SDS)”, EC-1331 .**

TESTING CONDITION:
- **Before performing the following procedure, confirm that battery voltage is more than 11V at idle.**
- **Always perform the test at a temperature above –10°C (14°F).**

WITH CONSULT-II

1. Open engine hood.
2. Start engine and warm it up to normal operating temperature.
3. Turn ignition switch “OFF” and wait at least 10 seconds.
4. Turn ignition switch “ON” again and select “DATA MONITOR” mode with CONSULT-II.
5. Start engine and run it for at least 1 minute at idle speed.
6. If 1st trip DTC is detected, go to EC-1050, "Diagnostic Procedure" .

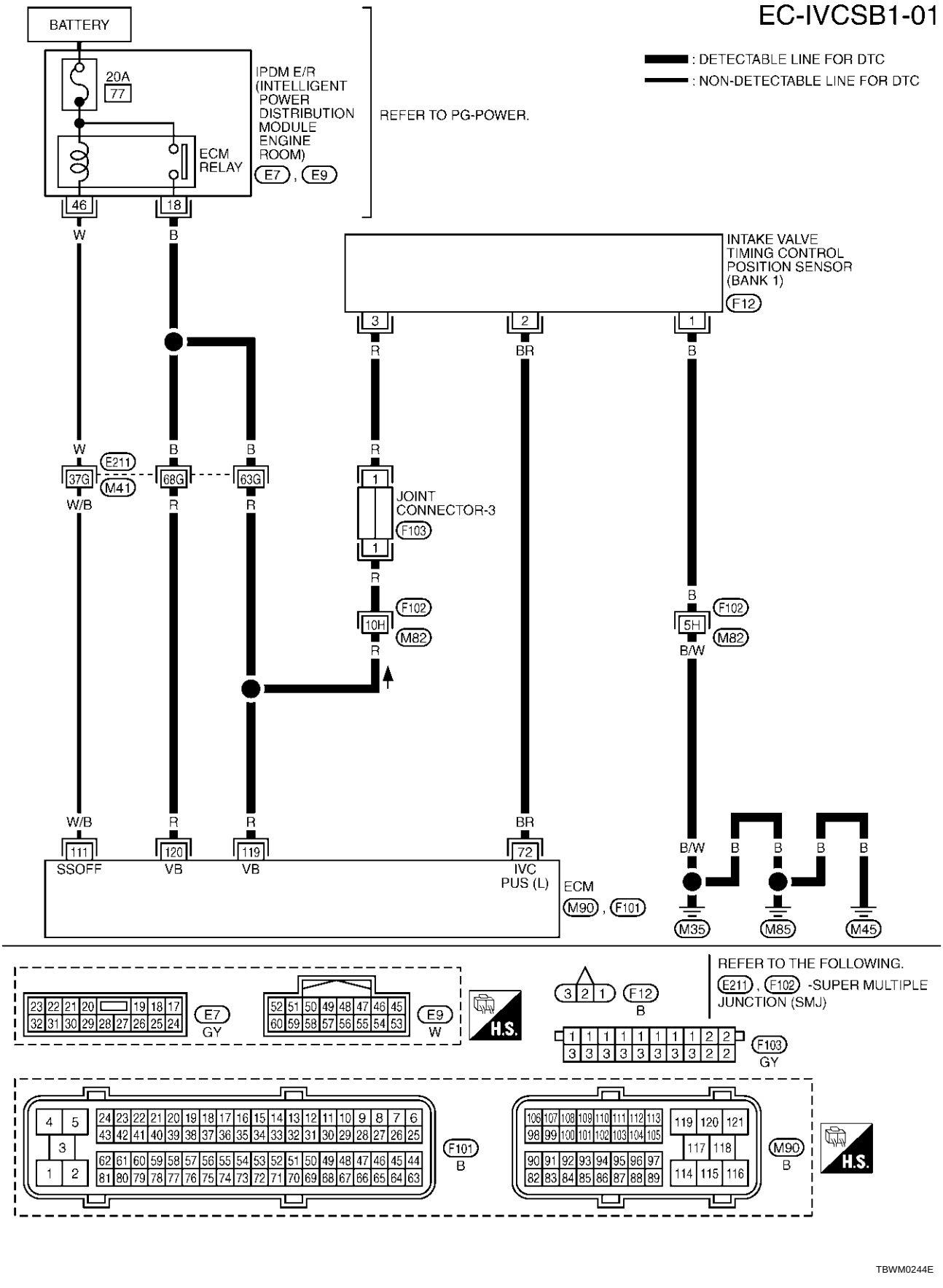


WITH GST

Follow the procedure “WITH CONSULT-II” above.

Wiring Diagram
BANK 1

ABS008G8



TBWM0244E

CONSULT-II Reference Value in Data Monitor Mode

ABS007SR

Specification data are reference values.

MONITOR ITEM	CONDITION		SPECIFICATION
COOLING FAN	● Engine: After warming up, idle the engine ● Air conditioner switch: OFF	Engine coolant temperature is 94°C (201°F) or less	OFF
		Engine coolant temperature is 95°C (221°F) or more	HI

On Board Diagnosis Logic

ABS007SS

If the cooling fan or another component in the cooling system malfunctions, engine coolant temperature will rise.
When the engine coolant temperature reaches an abnormally high temperature condition, a malfunction is indicated.
This self-diagnosis has the one trip detection logic.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1217 1217	Engine over temperature (Overheat)	● Cooling fan does not operate properly (Overheat). ● Cooling fan system does not operate properly (Overheat). ● Engine coolant was not added to the system using the proper filling method. ● Engine coolant is not within the specified range.	● Harness or connectors (The cooling fan circuit is open or shorted.) ● Cooling fan ● Radiator hose ● Radiator ● Radiator cap ● Water pump ● Thermostat For more information, refer to EC-1150, "Main 12 Causes of Overheating" .

CAUTION:
When a malfunction is indicated, be sure to replace the coolant. Refer to CO-35, "Changing Engine Coolant" . Also, replace the engine oil. Refer to LU-26, "Changing Engine Oil" .

1. **Fill radiator with coolant up to specified level with a filling speed of 2 liters per minute. Be sure to use coolant with the proper mixture ratio. Refer to MA-13, "Anti-Freeze Coolant Mixture Ratio" .**
2. **After refilling coolant, run engine to ensure that no water-flow noise is emitted.**

Overall Function Check

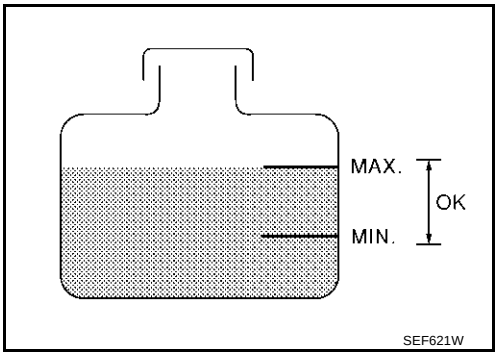
ABS007ST

Use this procedure to check the overall function of the cooling fan. During this check, a DTC might not be confirmed.

WARNING:
Never remove the radiator cap when the engine is hot. Serious burns could be caused by high pressure fluid escaping from the radiator.
Wrap a thick cloth around cap. Carefully remove the cap by turning it a quarter turn to allow built-up pressure to escape. Then turn the cap all the way off.

WITH CONSULT-II

1. Check the coolant level in the reservoir tank and radiator.
   Allow engine to cool before checking coolant level.
   If the coolant level in the reservoir tank and/or radiator is below the proper range, skip the following steps and go to EC-1147, "Diagnostic Procedure" .
2. Confirm whether customer filled the coolant or not. If customer filled the coolant, skip the following steps and go to EC-1147, "Diagnostic Procedure" .
3. Turn ignition switch “ON”.



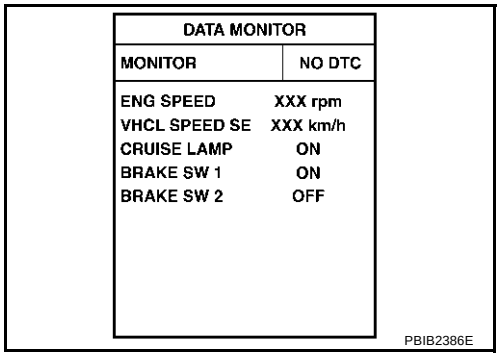
TESTING CONDITION:

Steps 4 and 5 may be conducted with the drive wheels lifted in the shop or by driving the vehicle. If a road test is expected to be easier, it is unnecessary to lift the vehicle.

WITH CONSULT-II

1. Start engine (VDC switch “OFF”).
2. Select “DATA MONITOR” mode with CONSULT-II.
3. Press ON/OFF (MAIN) switch and make sure that CRUISE indicator lights up.
4. Drive the vehicle for at least 5 consecutive seconds under the following conditions.

VHCL SPEED SE	More than 30 km/h (19 MPH)
Selector lever	Suitable position



If 1st trip DTC is detected, go to EC-1192, "Diagnostic Procedure" .
If 1st trip DTC is not detected, go to the following step.

5. Drive the vehicle for at least 5 consecutive seconds under the following conditions.

VHCL SPEED SE	More than 30 km/h (19 MPH)
Selector lever	Suitable position
Driving location	Depress the brake pedal for more than five seconds so as not to come off from the above-mentioned vehicle speed.

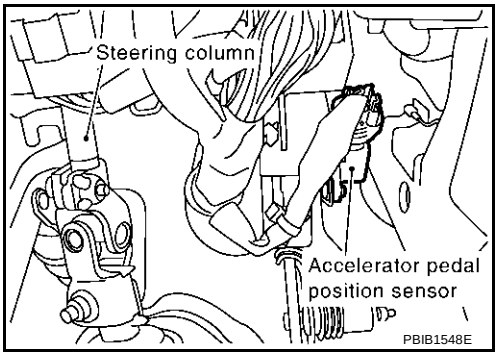
6. If 1st trip DTC is detected, go to EC-1192, "Diagnostic Procedure" .

WITH GST

Follow the procedure “WITH CONSULT-II” above.

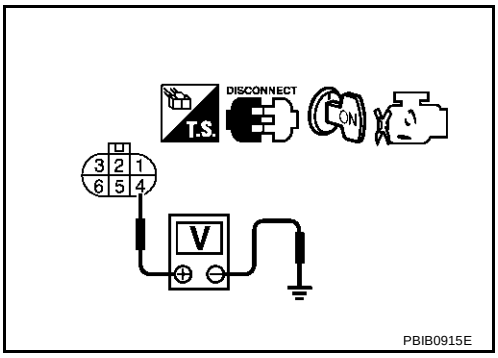
2. CHECK APP SENSOR 2 POWER SUPPLY CIRCUIT-I

1. Disconnect accelerator pedal position (APP) sensor harness connector.
2. Turn ignition switch ON.



3. Check voltage between APP sensor terminal 4 and ground with CONSULT-II or tester.

Voltage: Approximately 5V



OK or NG

OK >> GO TO 8.
NG >> GO TO 3.

3. CHECK APP SENSOR 2 POWER SUPPLY CIRCUIT-II

1. Turn ignition switch OFF.
2. Disconnect ECM harness connector.
3. Check harness continuity between APP sensor terminal 4 and ECM terminal 91. Refer to Wiring Diagram.

Continuity should exist.

OK or NG

OK >> GO TO 5.
NG >> GO TO 4.

4. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E211, M41
- Harness for open or short between ECM and accelerator pedal position sensor

>> Repair or replace open circuit.

5. CHECK APP SENSOR 2 POWER SUPPLY CIRCUIT-III

Check harness for short to power and short to ground, between the following terminals.

ECM terminal	Sensor terminal	Reference Wiring Diagram
91	APP sensor terminal 4	EC-1235
47	Electric throttle control actuator terminal 1	EC-852

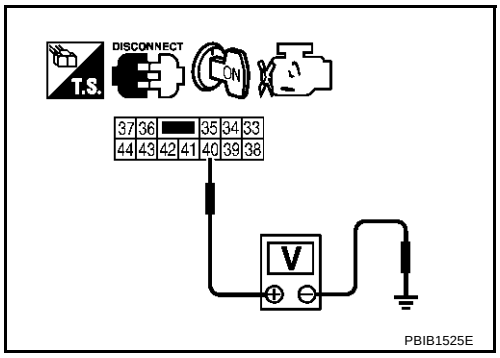
OK or NG

OK >> GO TO 6.
NG >> Repair short to ground or short to power in harness or connectors.

3. CHECK FUEL PUMP POWER SUPPLY CIRCUIT-II

1. Turn ignition switch “OFF”.
2. Disconnect IPDM E/R harness connector E8.
3. Turn ignition switch “ON”.
4. Check voltage between IPDM E/R terminal 40 and ground with CONSULT-II or tester.

Voltage: Battery voltage



OK or NG

OK >> GO TO 4.
NG >> GO TO 13.

4. DETECT MALFUNCTIONING PART

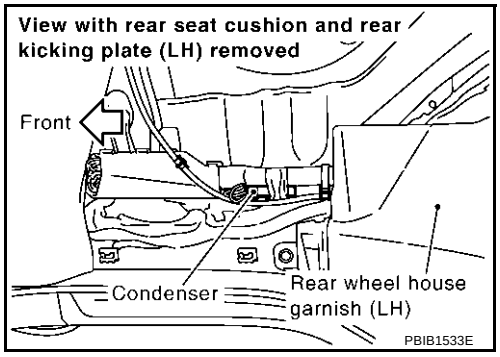
Check the following.

- Harness connectors E211, M41
- Harness for open or short between IPDM E/R and ECM

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

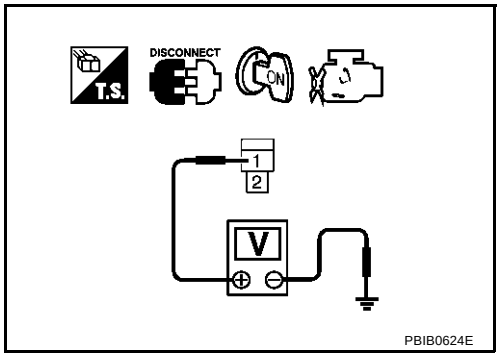
5. CHECK CONDENSER POWER SUPPLY CIRCUIT-I

1. Turn ignition switch “OFF”.
2. Reconnect all harness connectors disconnected.
3. Disconnect condenser harness connector.
4. Turn ignition switch “ON”.



5. Check voltage between condenser terminal 1 and ground with CONSULT-II or tester.

Voltage: Battery voltage should exist for 1 second after ignition switch is turned “ON”.



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

OK or NG

OK >> GO TO 9.
NG >> GO TO 6.

SERVICE DATA AND SPECIFICATIONS (SDS)

PFP:00030

Fuel Pressure

ABS007Y4

Fuel pressure at idling kPa (kg/cm^2 , psi)	Approximately 350 (3.57, 51)

Idle Speed and Ignition Timing

ABS007Y5

Target idle speed	No-load*1 (in “P” or “N” position)	650 ± 50 rpm
Air conditioner: ON	In “P” or N” position	700 rpm or more
Ignition timing	In “P” or N” position	12° ± 5° BTDC

*1: Under the following conditions:

- Air conditioner switch: OFF
- Electric load: OFF (Lights, heater fan & rear window defogger)
- Steering wheel: Kept in straight-ahead position

Calculated Load Value

ABS007Y6

Condition	Calculated load value % (Using CONSULT-II or GST)
At idle	14.0 - 33.0
At 2,500 rpm	12.0 - 25.0

Mass Air Flow Sensor

ABS007Y7

Supply voltage	Battery voltage (11 - 14V)
Output voltage at idle	1.2 - 1.8V*
Mass air flow (Using CONSULT-II or GST)	2.0 - 6.0 g·m/sec at idle* 7.0 - 20.0 g·m/sec at 2,500 rpm*

*: Engine is warmed up to normal operating temperature and running under no-load.

Intake Air Temperature Sensor

ABS007Y8

Temperature °C (°F)	Resistance kΩ
25 (77)	1.9 - 2.1
80 (176)	0.31 - 0.37

Engine Coolant Temperature Sensor

ABS007Y9

Temperature °C (°F)	Resistance kΩ
20 (68)	2.1 - 2.9
50 (122)	0.68 - 1.00
90 (194)	0.236 - 0.260

Heated Oxygen Sensor 1 Heater

ABS007YA

Resistance [at 25°C (77°F)]	3.3 - 4.0Ω

Heated Oxygen Sensor 2 Heater

ABS007YB

Resistance [at 25°C (77°F)]	5.0 - 7.0Ω

Crankshaft Position Sensor (POS)

ABS007YC

Refer to EC-964, "Component Inspection" .

Camshaft Position Sensor (PHASE)

ABS007YD

Refer to EC-970, "Component Inspection" .

Throttle Control Motor

ABS007YE

Resistance [at 25°C (77°F)]	Approximately 1 - 15Ω

BACK DOOR TRIM

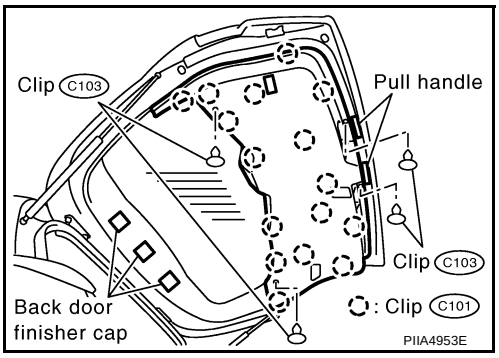
PFP:90900

Removal and Installation

AIS0037R

REMOVAL

1. Remove pull handle.
2. Remove clips of back door finisher and remove back door finisher.
3. Remove back door finisher cap.

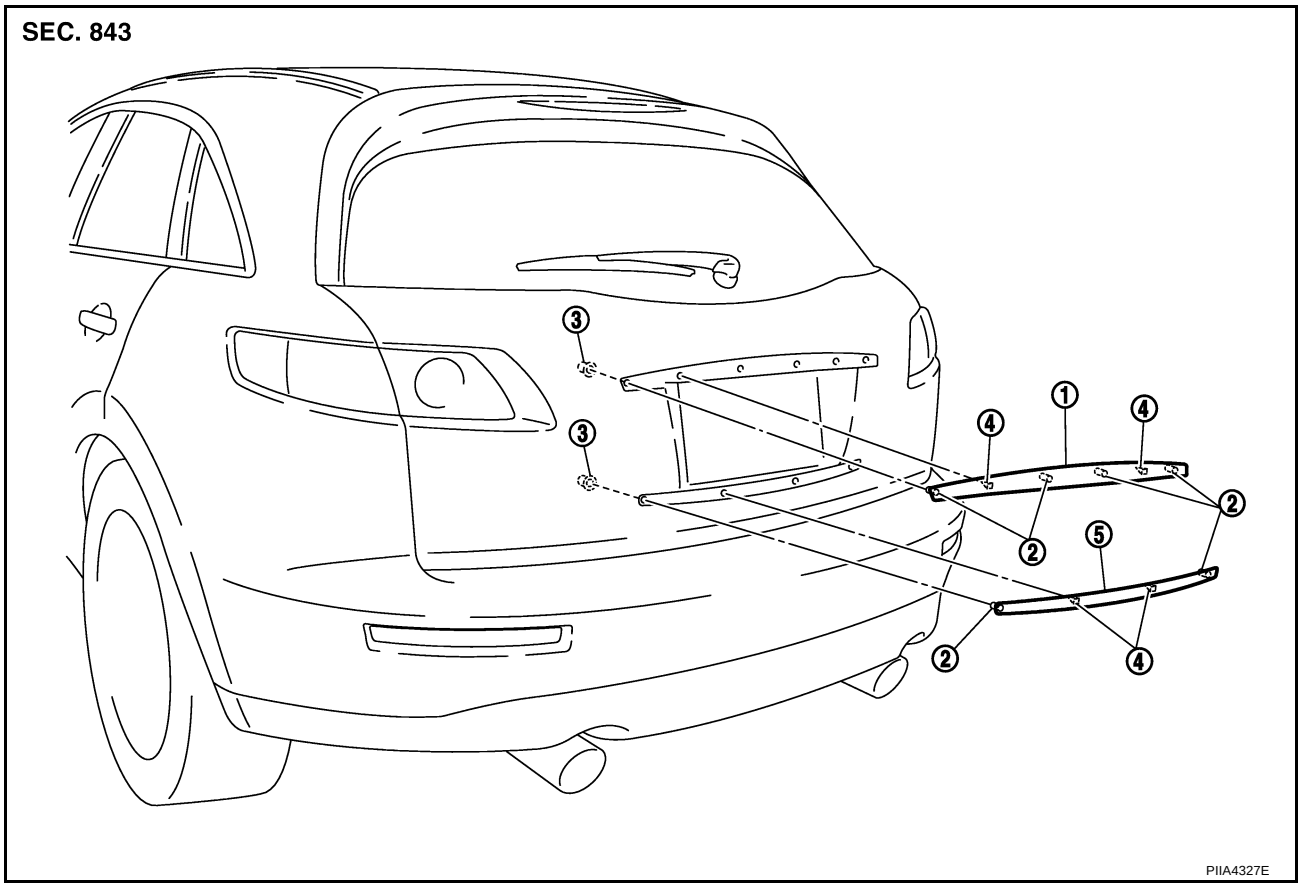


INSTALLATION

Install in the reverse order of removal.

BACK DOOR OUTSIDE FINISHER

Removal and Installation



1. Back door outside finisher upper
2. Bolt
3. Nut
4. Clip
5. Back door outside finisher lower

REMOVAL

1. Remove back door finisher. Refer to EI-46, "REMOVAL" .
2. Remove back door outside finisher upper nuts and back door outside finisher upper.
3. Remove back door outside finisher lower nuts and back door outside finisher lower.

INSTALLATION

Install in the reverse order of removal.

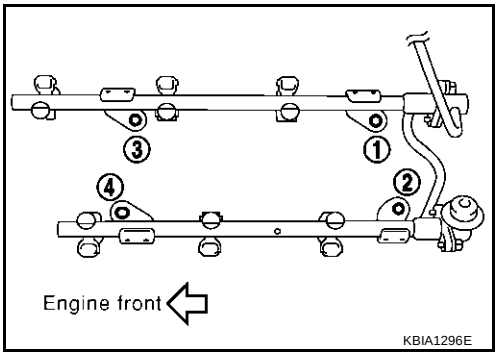
5. Install fuel tube and fuel injector assembly to intake manifold.

CAUTION:
Be careful not to let tip of injector nozzle come in contact with other parts.

- Tighten mounting bolts in two steps in numerical order shown in figure.

1st step: 10.1 N·m (1.0 kg-m, 7 ft-lb)

2nd step: 23.6 N·m (2.4 kg-m, 17 ft-lb)

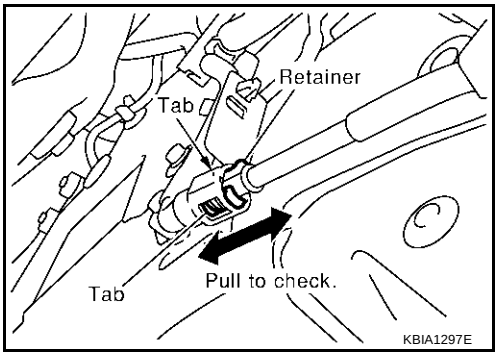


6. Connect injector sub-harness.
7. Install intake manifold collector (upper and lower). Refer to EM-19, "INTAKE MANIFOLD COLLECTOR" .
8. Install fuel sub-tube on rear end of intake manifold collector (lower).
9. Connect fuel feed hose (with damper).
   - Handling procedure of O-ring is the same as that of fuel damper and fuel sub-tube.
   - Insert fuel damper straight into fuel sub-tube.
   - Tighten mounting bolts evenly in turn.
   - After tightening mounting bolts, make sure that there is no gap between flange and fuel sub-tube.
10. Connect quick connector between fuel feed hose and centralized under-floor piping connection with the following procedure:

a. Check the connection for damage and foreign materials.

b. Align the connector with the tube, then insert the connector straight into the tube until a click is heard.

c. After connecting quick connector, use the following method to make sure it is full connected.
   - Visually confirm that the two retainer tabs are connected to the connector.
   - Pull the tube and the connector to make sure they are securely connected.

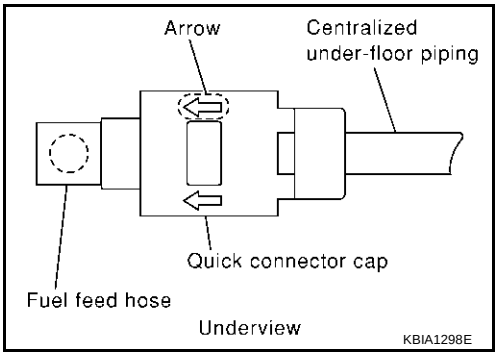


d. Install quick connector cap to quick connector connection.
   - Install quick connector cap with arrow on surface facing in direction of quick connector (fuel feed hose side).

CAUTION:
If cap cannot be installed smoothly, quick connector may have not been installed correctly. Check connection again.

e. Secure fuel feed hose to clamp.

11. Install in the reverse order of removal after this step.



INSPECTION AFTER INSTALLATION

Check on Fuel Leakage

- After installing fuel tubes, make sure there is no fuel leakage at connections in the following steps.

– a) Apply fuel pressure to fuel lines with turning ignition switch “ON” (with engine stopped). Then check for fuel leaks at connections.

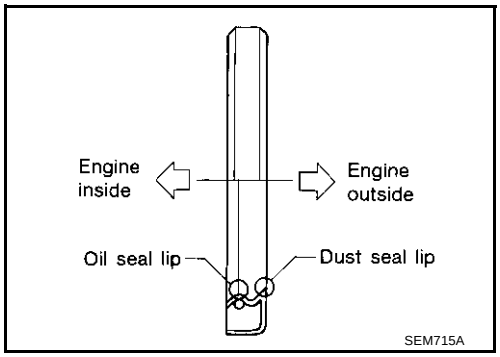
– b) Start engine and rev it up and check for fuel leaks at connections.

NOTE:
Use mirrors for checking on invisible points.

INSTALLATION

1. Apply engine oil on new front oil seal.
2. Using a suitable drift, press fit until the height of front oil seal is level with the mounting surface.
   - Suitable drift: outer diameter 59 mm (2.32 in), inner diameter 49 mm (1.93 in).

   CAUTION:
   Press fit straight and avoid causing burrs or tilting oil seal.



3. Perform steps in the reverse order of removal for the following operations.

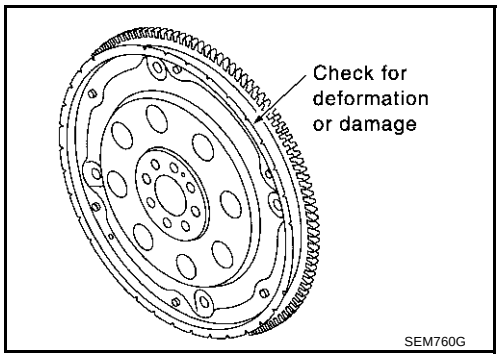
Removal and Installation of Rear Oil Seal

ABS004X6

REMOVAL

1. Remove oil pan (upper). Refer to EM-28, "OIL PAN AND OIL STRAINER" .
2. Remove transmission assembly. Refer to AT-269, "TRANSMISSION ASSEMBLY" .
3. Remove drive plate with power tool. Fix crankshaft with a ring gear stopper [SST: KV1011770 (J-44716)], and remove mounting bolts.
   - Loosen mounting bolts in diagonal order.

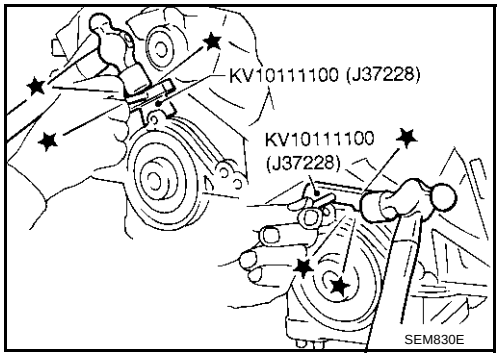
   CAUTION:
   - **Do not disassemble drive plate.**
   - **Never place drive plate with signal plate facing down.**
   - **When handling signal plate, take care not to damage or scratch it.**
   - **Handle signal plate in a manner that prevents it from becoming magnetized.**



4. Use a seal cutter (SST) to cut away liquid gasket and remove rear oil seal retainer.

   CAUTION:
   Be careful not to damage mounting surface.

   NOTE:
   Rear oil seal and retainer form a single part and are handled as an assembly.



INSTALLATION

1. Remove old liquid gasket on mating surface of cylinder block and oil pan using scraper.

MAIN BEARING OIL CLEARANCE

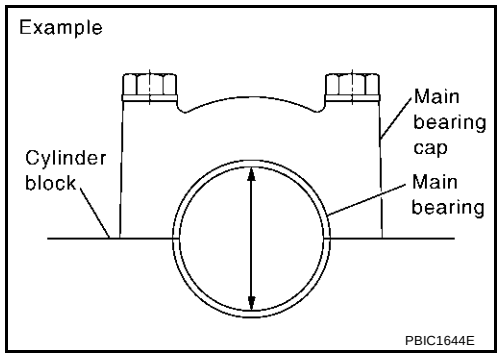
Method by Calculation

- Install the main bearings to cylinder block and main bearing cap. Measure the main bearing inner diameter with the bearing cap bolt tightened with main bearing beam to the specified torque. Refer to EM-124, "ASSEMBLY" for the tightening procedure.

(Oil clearance) = (Inner diameter of main bearing) – (Outer diameter of crankshaft journal)

Standard : 0.035 - 0.045 mm (0.0014 - 0.0018 in) (actual clearance)

Limit : 0.065 mm (0.0026 in)



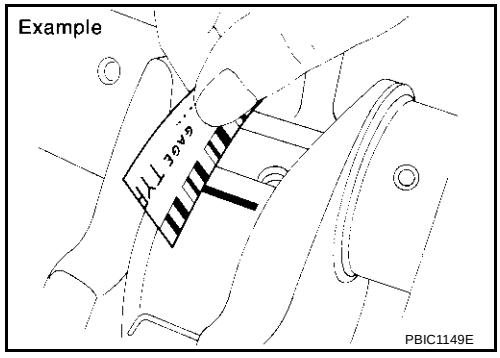
- If the measured value exceeds the limit, select main bearings referring to the main bearing inner diameter and crankshaft journal outer diameter, so that the oil clearance satisfies the standard. Refer to EM-131, "HOW TO SELECT MAIN BEARING" .

Method of Using Plastigage

- Remove engine oil and dust on the crankshaft journal and the surfaces of each bearing completely.
- Cut a plastigage slightly shorter than the bearing width, and place it in crankshaft axial direction, avoiding oil holes.
- Install main bearing to cylinder block and main bearing cap, and tighten the main bearing bolts with main bearing beam to the specified torque. Refer to EM-124, "ASSEMBLY" for the tightening procedure.

CAUTION:
Never rotate crankshaft.

- Remove bearing cap and bearings, and using the scale on the plastigage bag, measure the plastigage width.



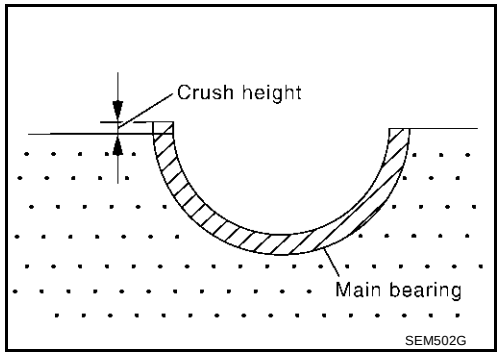
NOTE:
The procedure when the measured value exceeds the limit is same as that described in the “Method by Calculation”.

CRUSH HEIGHT OF MAIN BEARING

- When the main bearing cap is removed after being tightened to the specified torque with main bearings installed, the tip end of bearing must protrude. Refer to EM-124, "ASSEMBLY" for the tightening procedure.

Standard : There must be crush height.

- If the standard is not met, replace main bearings.

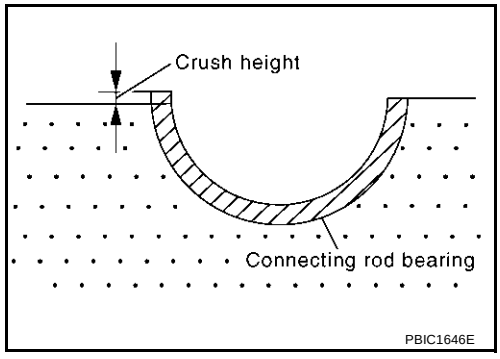


CRUSH HEIGHT OF CONNECTING ROD BEARING

- When the connecting rod bearing cap is removed after being tightened to the specified torque with connecting rod bearings installed, the tip end of bearing must protrude. Refer to EM-124, "ASSEMBLY" for the tightening procedure.

Standard : There must be crush height.

- If the standard is not met, replace connecting rod bearings.



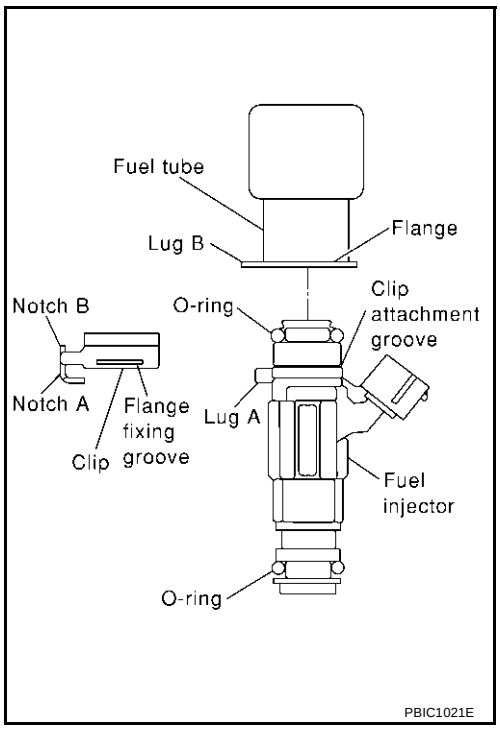
3. Install fuel injector to fuel tube with the following procedure.

a. Insert clip into clip mounting groove on fuel injector.
   - Insert clip so that lug “A” of fuel injector matches notch “A” of the clip.

   CAUTION:
   - **Do not reuse clip. Replace it with a new one.**
   - **Be careful to keep clip from interfering with O-ring. If interference occurs, replace O-ring.**

b. Insert fuel injector into fuel tube with clip attached.
   - Insert it while matching it to the axial center.
   - Insert fuel injector so that lug “B” of fuel tube matches notch “B” of the 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 fuel injector does not rotate or come off.
   - Make sure that protrusions of fuel injectors are aligned with cutouts of clips after installation.

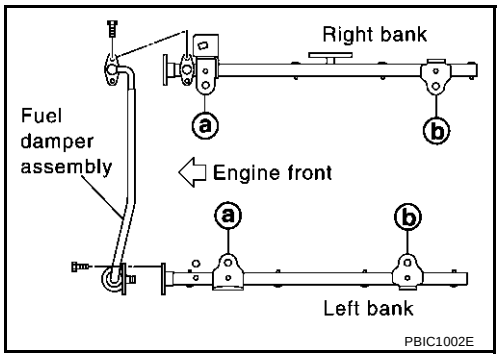


4. Install fuel tube and fuel injector assembly to intake manifold.

CAUTION:
Be careful not to let tip of injector nozzle come in contact with other parts.

- Tighten fuel tube assembly mounting bolts “a” to “b” in illustration and in two steps.

  1st step : 10.1 N·m (1.0 kg-m, 7 ft-lb)
  2nd step : 23.5 N·m (2.4 kg-m, 17 ft-lb)



5. Install all removed parts in the reverse order of removal.

INSPECTION AFTER INSTALLATION

Check on Fuel Leakage

After installing fuel tubes, make sure there is no fuel leakage at connections in the following steps.

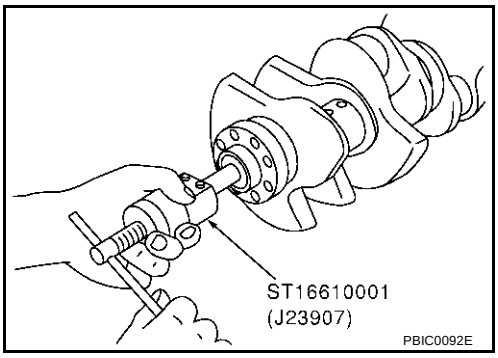
1. Apply fuel pressure to fuel lines with turning ignition switch ON (with engine stopped). Then check for fuel leaks at connections.
2. Start the engine and rev it up and check for fuel leaks at connections.

NOTE:
Use mirrors for checking on invisible points.

CAUTION:
Do not touch the engine immediately after stopped, as engine becomes extremely hot.

15. Remove the main bearings and thrust bearings from the cylinder block and main bearing caps.
    - When removing them, note the installation position. Keep them in the correct order.

16. If the pilot converter must be removed, remove it from the rear end of the crankshaft using a pilot bearing puller (SST).
    - Removal and installation without the engine stand is possible.

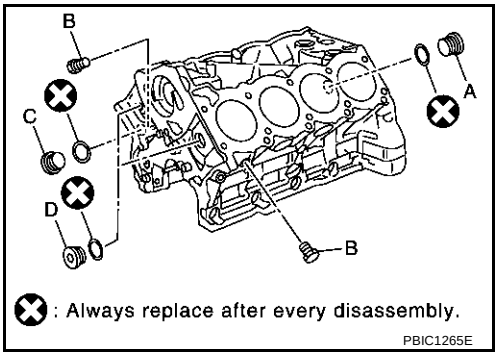


ASSEMBLY

1. Fully air-blow the coolant and oil passages in the cylinder block, the cylinder bore, and the crankcase to remove any foreign material.

CAUTION:
Use a goggles to protect your eye.

2. Install each plug to the cylinder block. (Only screwed-type plugs are shown in the figure.)
    - Apply liquid gasket.
      Use Genuine Thread Sealant or equivalent. Refer to GI-48, "RECOMMENDED CHEMICAL PRODUCTS AND SEALANTS".
    - Replace the copper washers with new ones.
    - Tighten each plug as specified below.

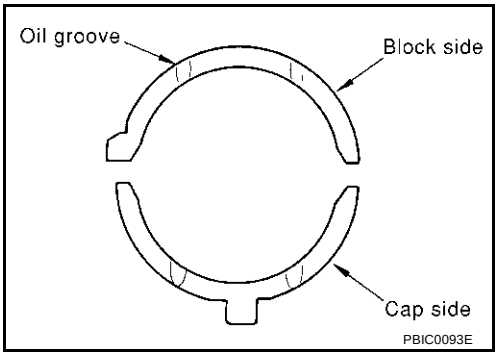


Part	Washer	Tightening torque
A	Yes	53.9 N·m (5.5 kg-m, 40 ft-lb)
B	No	19.6 N·m (2.0 kg-m, 15 ft-lb)
C	Yes	62.7 N·m (6.4 kg-m, 46 ft-lb)
D	Yes	62.7 N·m (6.4 kg-m, 46 ft-lb)

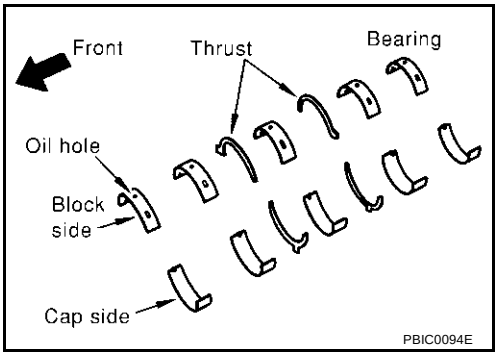
3. Install the main bearings and the thrust bearings.

a. Remove dust, dirt, and oil on the bearing mating surfaces of the cylinder block and the main bearing caps.

b. Install the thrust bearings to the both sides of the No. 3 journal housing on the cylinder block and main bearing caps
    - Install the thrust bearings with the oil groove facing the crankshaft arm (outside).
    - Install the thrust bearings with a protrusion in the center on the main bearing caps.



c. Install the main bearings paying attention to the direction.
    - Install the one with oil holes onto the cylinder block and the one without oil holes onto the main bearing cap.
    - Before installing the bearings, apply engine oil to the bearing surface (inside). Do not apply oil to the back surface, but thoroughly clean it.
    - When installing, align the bearing stopper to the notch.
    - Insure the oil holes on cylinder block and those on the corresponding bearing are aligned.



FRONT WHEEL HUB AND KNUCKLE

PFP:40202

On-Vehicle Inspection and Service

ADS000OL

Make sure the mounting conditions (looseness, back lash) of each component and component status (wear, damage) are normal.

WHEEL BEARING INSPECTION

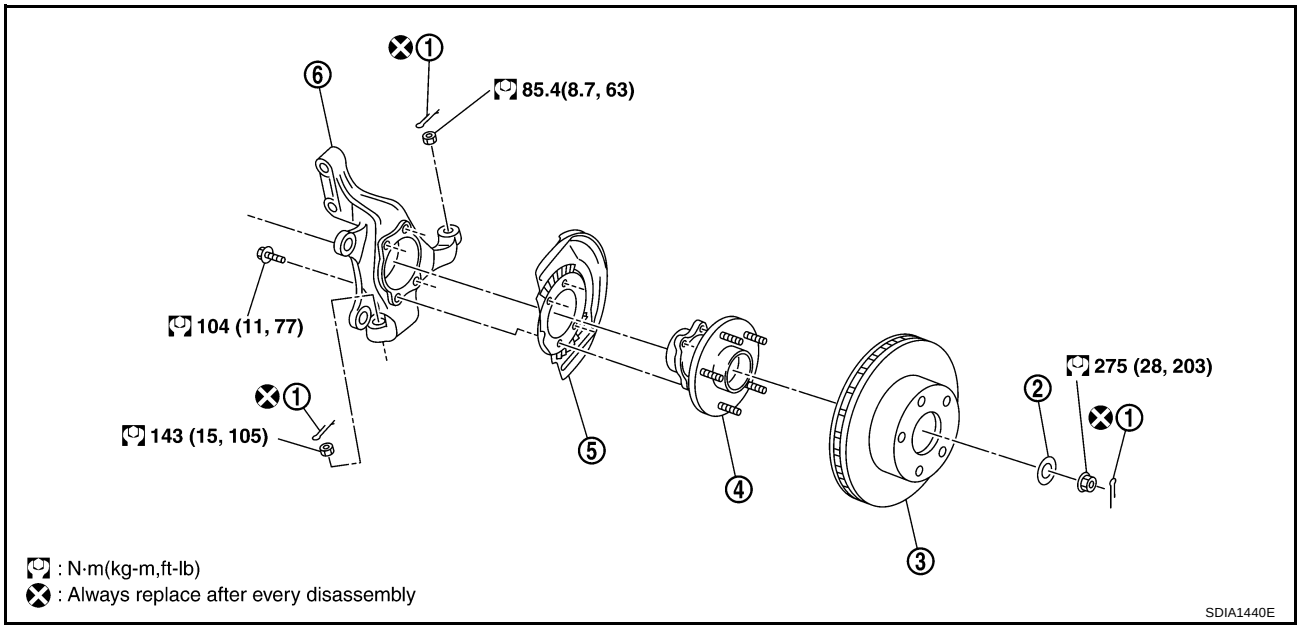
- Move wheel hub in the axial direction by hand. Make sure there is no looseness of wheel bearing.

  Axial end play : 0.05 mm (0.002 in) or less

- Rotate wheel hub and make sure there is no unusual noise or other irregular conditions. If there are any irregular conditions, replace wheel hub and bearing assembly.

Removal and Installation

ADS000OM



1. Cotter pin
2. Washer
3. Disc rotor
4. Wheel hub and bearing assembly
5. Splash guard
6. Steering knuckle

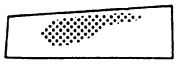
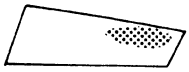
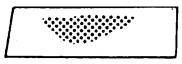
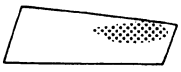
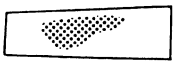
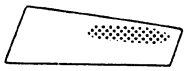
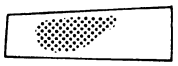
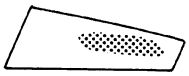
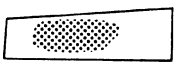
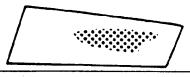
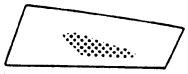
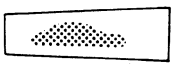
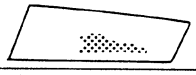
REMOVAL

1. Remove tire from vehicle with power tool.
2. Remove brake caliper with power tool. Hang it in a place where it will not interfere with work. Refer to BR-20, "FRONT DISC BRAKE" .

   NOTE:
   Avoid depressing brake pedal while brake caliper is removed.
3. Remove disc rotor.
4. Remove wheel sensor from wheel hub and bearing assembly. Refer to BRC-70, "WHEEL SENSORS" .

   CAUTION:
   Do not pull on wheel sensor harness.
5. Remove cotter pin at steering outer socket, then loosen mounting nut.

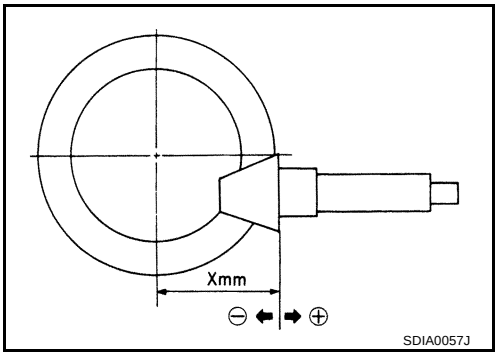
Tooth Contact Pattern and Height Adjusting Washer Selection

Tooth contact pattern		Pinion height adjusting washer selection value (unit:mm)	Adjustment requirement
Coast side	Drive side		
Heel side Toe side 	Toe side Heel side 	+0.15	Yes
Heel side Toe side 	Toe side Heel side 	+0.12	↑
Heel side Toe side 	Toe side Heel side 	+0.09	↑
Heel side Toe side 	Toe side Heel side 	+0.06	No
Heel side Toe side 	Toe side Heel side 	+0.03	↑
Heel side Toe side 	Toe side Heel side 	0	↑
Heel side Toe side 	Toe side Heel side 	−0.03	↑
Heel side Toe side 	Toe side Heel side 	−0.06	↑
Heel side Toe side 	Toe side Heel side 	−0.09	Yes
Heel side Toe side 	Toe side Heel side 	−0.12	↑
Heel side Toe side 	Toe side Heel side 	−0.15	↑

SDIA1673E

TOOTH CONTACT ADJUSTMENT

1. If tooth contact is incorrect, adjust tooth contact by replacing drive pinion height adjusting washer.



SDIA0057J

WARNING:
To prevent ECM from storing the diagnostic trouble codes, do not carelessly disconnect the harness connectors which are related to the engine control system and TCM (transmission control module) system. The connectors should be disconnected only when working according to the WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

Precautions for Three Way Catalyst

AAS000EZ

If a large amount of unburned fuel flows into the catalyst, the catalyst temperature will be excessively high. To prevent this, follow the instructions.

- Use unleaded gasoline only. Leaded gasoline will seriously damage the three way catalyst.
- When checking for ignition spark or measuring engine compression, make tests quickly and only when necessary.
- Do not run engine when the fuel tank level is low, otherwise the engine may misfire, causing damage to the catalyst.

Do not place the vehicle on flammable material. Keep flammable material off the exhaust pipe and the three way catalyst.

Precautions for Fuel (Unleaded Premium Gasoline Recommended)

AAS000F0

Use unleaded regular gasoline with an octane rating of at least 87 AKI (Anti-Knock Index) number (Research octane number 91).

For improved vehicle performance, NISSAN/INFINITI recommend the use of unleaded premium gasoline with an octane rating of at least 91 AKI number (Research octane number 96).

CAUTION:
Do not use leaded gasoline. Using leaded gasoline will damage the three way catalyst. Using a fuel other than that specified could adversely affect the emission control devices and systems, and could also affect the warranty coverage validity.

TERMINOLOGY

PFP:00011

SAE J1930 Terminology List

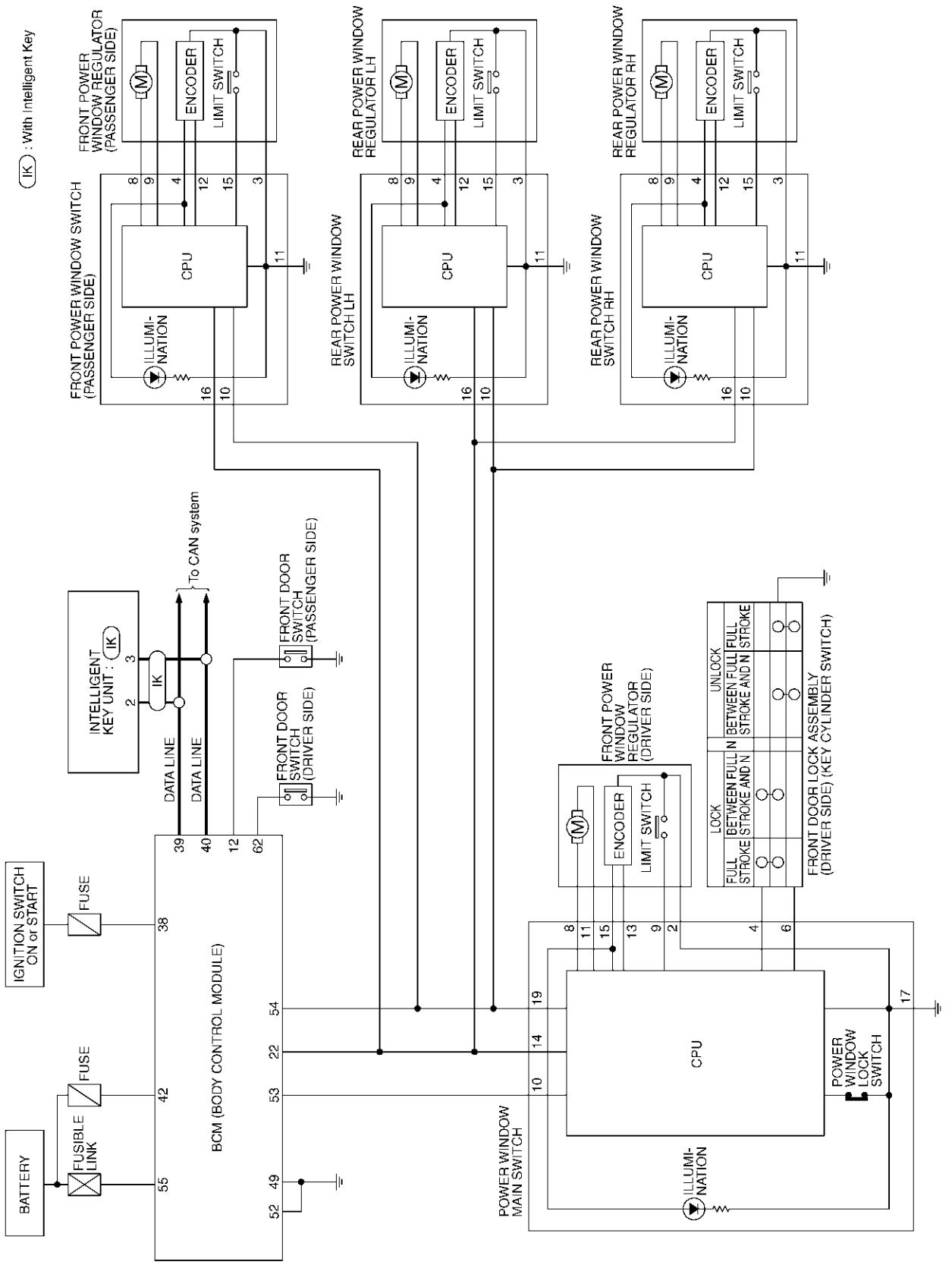
AAS000EO

All emission related terms used in this publication in accordance with SAE J1930 are listed. Accordingly, new terms, new acronyms/abbreviations and old terms are listed in the following chart.

NEW TERM	NEW ACRONYM / ABBREVIATION	OLD TERM
Air cleaner	ACL	Air cleaner
Barometric pressure	BARO	***
Barometric pressure sensor-BCDD	BAROS-BCDD	BCDD
Camshaft position	CMP	***
Camshaft position sensor	CMPS	Crank angle sensor
Canister	***	Canister
Carburetor	CARB	Carburetor
Charge air cooler	CAC	Intercooler
Closed loop	CL	Closed loop
Closed throttle position switch	CTP switch	Idle switch
Clutch pedal position switch	CPP switch	Clutch switch
Continuous fuel injection system	CFI system	***
Continuous trap oxidizer system	CTOX system	***
Crankshaft position	CKP	***
Crankshaft position sensor	CKPS	***
Data link connector	DLC	***
Data link connector for CONSULT-II	DLC for CONSULT-II	Diagnostic connector for CONSULT-II
Diagnostic test mode	DTM	Diagnostic mode
Diagnostic test mode selector	DTM selector	Diagnostic mode selector
Diagnostic test mode I	DTM I	Mode I
Diagnostic test mode II	DTM II	Mode II
Diagnostic trouble code	DTC	Malfunction code
Direct fuel injection system	DFI system	***
Distributor ignition system	DI system	Ignition timing control
Early fuel evaporation-mixture heater	EFE-mixture heater	Mixture heater
Early fuel evaporation system	EFE system	Mixture heater control
Electrically erasable programmable read only memory	EEPROM	***
Electronic ignition system	EI system	Ignition timing control
Engine control	EC	***
Engine control module	ECM	ECCS control unit
Engine coolant temperature	ECT	Engine temperature
Engine coolant temperature sensor	ECTS	Engine temperature sensor
Engine modification	EM	***
Engine speed	RPM	Engine speed
Erasable programmable read only memory	EPROM	***
Evaporative emission canister	EVAP canister	Canister
Evaporative emission system	EVAP system	Canister control solenoid valve
Exhaust gas recirculation valve	EGR valve	EGR valve

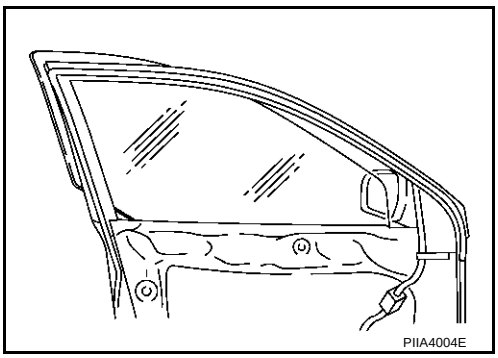
Schematic (With Front and Rear Power Window Anti-pinch System)

AIS003DE

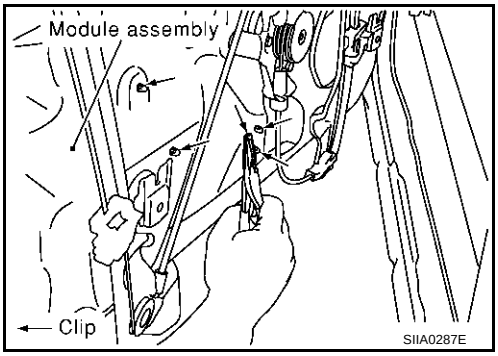


TIWM0350E

6. While holding the door glass, raise it at the rear end to pull the glass out of the sash toward the outside of the door.



7. Remove the mounting bolts, and remove the module assembly.
8. Disconnect the harness connector for the module assembly, and unclip the harness from the back.



INSTALLATION

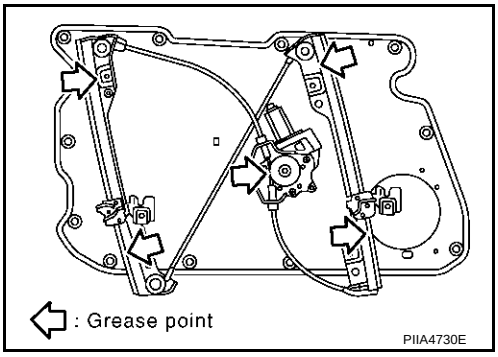
Install in the reverse order of removal.

INSPECTION AFTER REMOVAL

Check the regulator assembly for the following. If a malfunction is detected, replace or grease it.

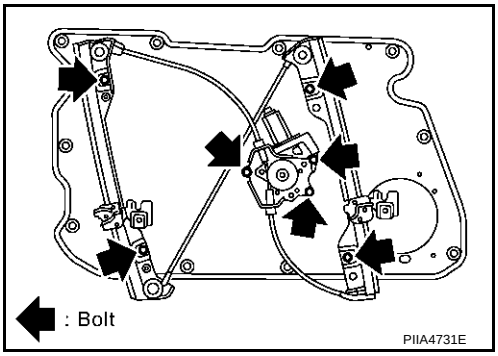
- Wire wear
- Regulator deformation
- Grease condition for each sliding part

The arrows in the figure show the application points of the multi-purpose grease.



DISASSEMBLY

Remove the power window motor and guide rail from the module assembly.

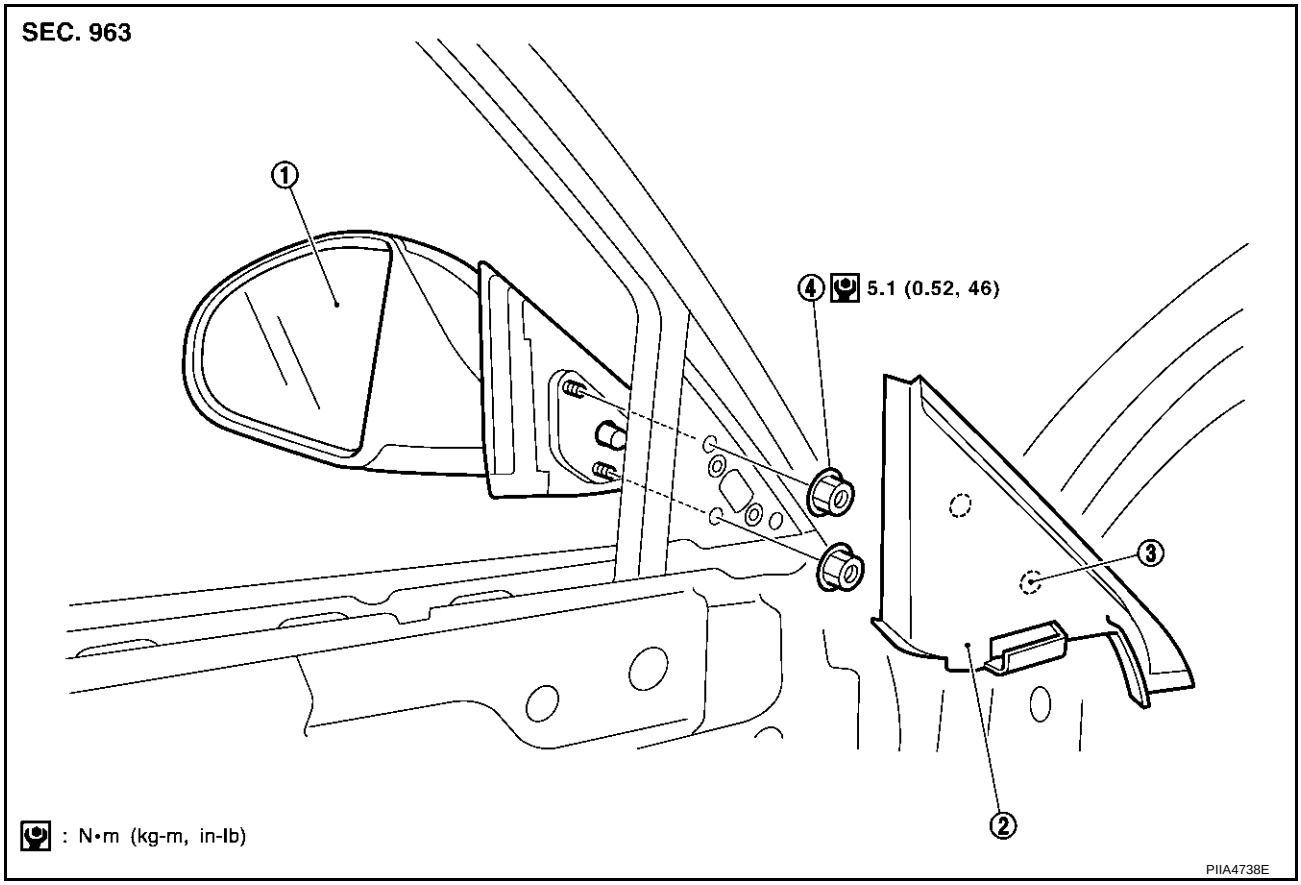


ASSEMBLY

Assemble in the reverse order of disassembly.

Removal and Installation

AIS003AQ



1. Door mirror assembly
2. Corner cover inner
3. Clip (C101)
4. Nut

CAUTION:
Be careful not to damage the mirror body.

REMOVAL

1. Remove the front door finisher. Refer to EI-35, "DOOR FINISHER" .
2. Remove the corner cover inner.
3. Remove the door mirror harness connector.
4. Remove the door mirror mounting nuts, and remove the door mirror assembly.

INSTALLATION

Install in the reverse order of removal.

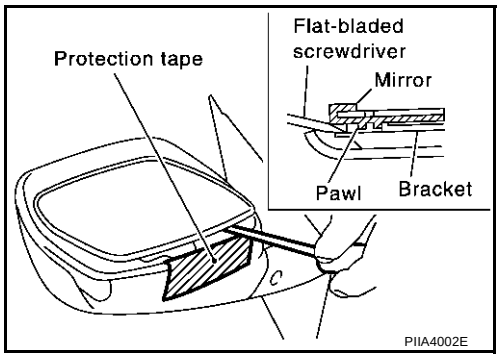
Disassembly and Assembly

AIS004C5

DISASSEMBLY

1. Place the mirror body with mirror glass facing upward.
2. Put strip of protection tape on mirror body.
3. As shown in the figure insert a small flat-bladed screwdriver into the recess between mirror base (mirror holder) and mirror holder bracket and push up pawls to remove mirror holder lower half side.

   NOTE:
   When pushing up pawls do not attempt to use one recess only, be sure to push up with both recesses.
   Insert screwdriver into recesses, and push up while rotating (twist) to make work easier.



4. Remove terminals of mirror heater attachment.

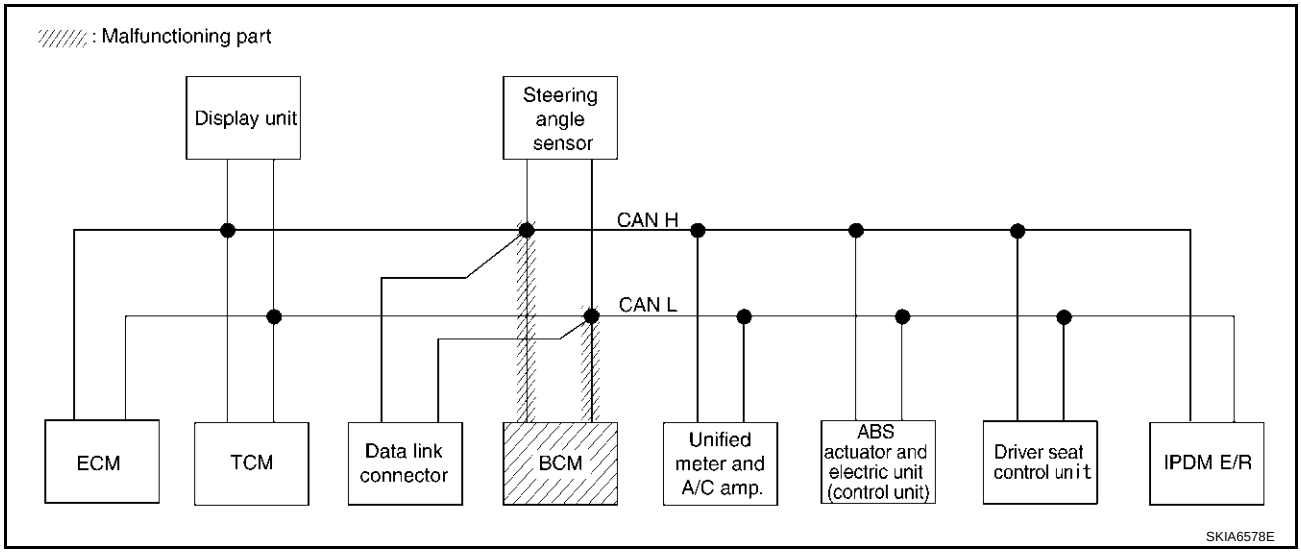
Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	AWD control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Brake warning lamp signal										R		T		
System setting signal			T				R						R	
AWD warning lamp signal					T					R				
AWD lock indicator lamp signal					T					R				
Distance to empty signal			R							T				
Hand brake switch signal					R			R		T				
Door lock/unlock request signal							T	R						
Door lock/unlock status signal							R	T						
Starter permission signal							T	R						
Back door open request signal							T	R						
Power window open request signal							T	R						
Alarm request signal							T	R						
Key warning signal							T			R				
ICC sensor signal						R					T			
ICC warning lamp signal						T				R				
ICC system display signal						T				R				
Current gear position signal		T				R						R		
Steering switch signal	T					R								
ASCD operation signal	T	R												
ASCD OD cancel request	T	R												
ICC OD cancel request	R	R				T								
A/T CHECK indicator lamp signal		T								R				
A/T position indicator lamp signal		T								R				
A/T shift schedule change demand signal		R										T		
Manual mode signal		R								T				
Not manual mode signal		R								T				
Manual mode shift up signal		R								T				
Manual mode shift down signal		R								T				
Manual mode indicator signal		T								R				
Ignition knob switch signal							T	R						

Case 9

Check BCM circuit. Refer to LAN-77, "BCM Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR									
		Initial diagnosis	Transmit diagnosis	Receive diagnosis							
				ECM	TCM	DISPLAY	BCM/SEC	STRG	METER /M&A	VDC/TCS /ABS	IPDM E/R
ENGINE	–	NG	UNKWN	–	UNKWN	–	UNKWN	–	UNKWN	UNKWN	UNKWN
A/T	–	NG	UNKWN	UNKWN	–	–	–	–	UNKWN	UNKWN	–
Display unit	–	CAN COMM	CAN 1	CAN 3	–	–	CAN 2	–	CAN 5	–	CAN 7
BCM	No indication	NG	UNKWN	UNKWN	–	–	–	–	UNKWN	–	UNKWN
METER A/C AMP	No indication	–	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	–	–	UNKWN	–
ABS	–	NG	UNKWN	UNKWN	UNKWN	–	–	UNKWN	–	–	–
AUTO DRIVE POS.	No indication	NG	UNKWN	–	UNKWN	–	UNKWN	–	UNKWN	–	–
IPDM E/R	No indication	–	UNKWN	UNKWN	–	–	UNKWN	–	–	–	–

PKIA7953E



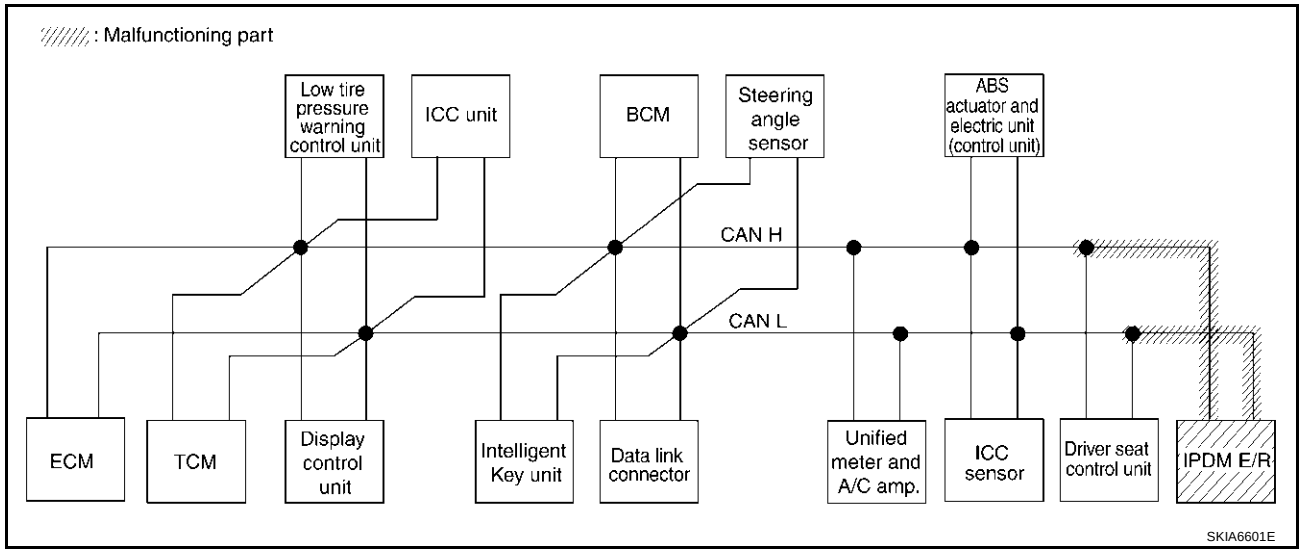
SKIA6578E

Case 18

Check IPDM E/R circuit. Refer to LAN-125, "IPDM E/R Circuit Check" .

SELECT SYSTEM screen		CAN DIAG SUPPORT MNTR													
		Initial diagnosis	Transmit diagnosis	Receive diagnosis											
				ECM	TCM	DISPLAY	TIRE-P	ICC /e4WD	I-KEY	BCM /SEC	STRG	METER /M&A	ICC SENSOR	VDC/TCS /ABS	IPDM E/R
ENGINE	—	NG	UNKWN	—	UNKWN	—	—	UNKWN	—	UNKWN	—	UNKWN	—	UNKWN	UNKWN
A/T	—	NG	UNKWN	UNKWN	—	—	—	UNKWN	—	—	—	UNKWN	—	UNKWN	—
Display control unit	—	CAN COMM	CAN CIRC 1	CAN CIRC 3	—	—	CAN CIRC 6	—	—	CAN CIRC 2	—	CAN CIRC 5	—	—	CAN CIRC 7
AIR PRESSURE MONITOR	No indication	NG	UNKWN	—	—	—	—	—	—	—	—	UNKWN	—	—	—
ICC	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	UNKWN	UNKWN	—
INTELLIGENT KEY	No indication	—	UNKWN	—	—	—	—	—	—	UNKWN	—	—	—	—	—
BCM	No indication	NG	UNKWN	UNKWN	—	—	—	—	UNKWN	—	—	UNKWN	—	—	UNKWN
METER A/C AMP	No indication	—	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	UNKWN	—	—	—	UNKWN	—
ABS	—	NG	UNKWN	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—	—	—	—
AUTO DRIVE POS.	No indication	NG	UNKWN	—	UNKWN	—	—	—	—	UNKWN	—	UNKWN	—	—	—
IPDM E/R	No indication	—	UNKWN	UNKWN	—	—	—	—	—	UNKWN	—	—	—	—	—

PKIA7981E



SKIA6601E

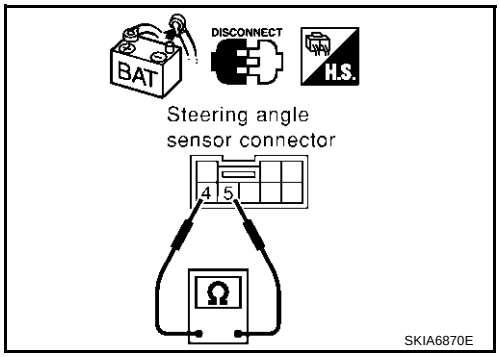
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector.
2. Check resistance between steering angle sensor harness connector M14 terminals 4 (L) and 5 (R).

4 (L) - 5 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace steering angle sensor.
NG >> Repair harness between steering angle sensor and data link connector.



Unified Meter and A/C Amp. Circuit Check

AKS007SV

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2.
NG >> Repair terminal or connector.

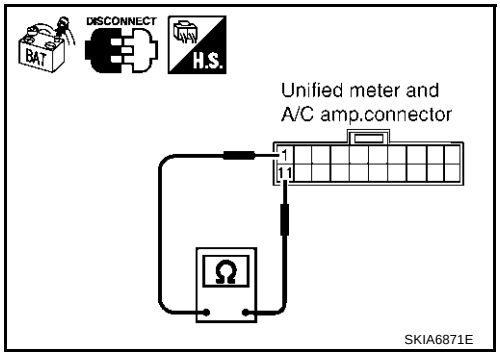
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect unified meter and A/C amp. connector.
2. Check resistance between unified meter and A/C amp. harness connector M55 terminals 1 (L) and 11 (R).

1 (L) - 11 (R) : Approx. 54 - 66Ω

OK or NG

OK >> Replace unified meter and A/C amp.
NG >> Repair harness between unified meter and A/C amp. and harness connector M41.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

AKS007SW

1. CHECK CONNECTOR

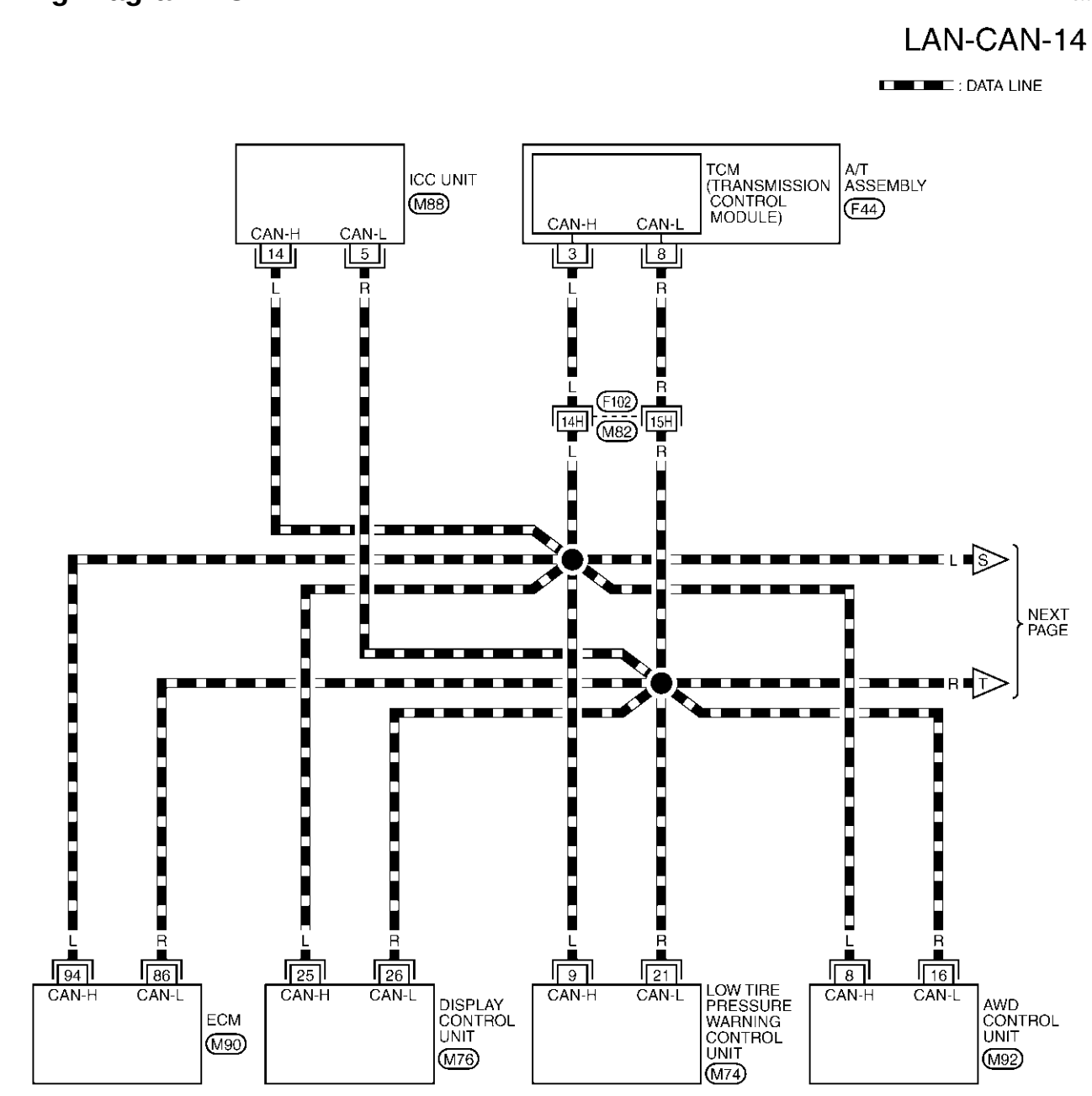
1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of ABS actuator and electric unit (control unit) for damage, bend and loose connection (control unit side and harness side).

OK or NG

OK >> GO TO 2.
NG >> Repair terminal or connector.

Wiring Diagram - CAN -

AKS007TQ



TKWM0759E

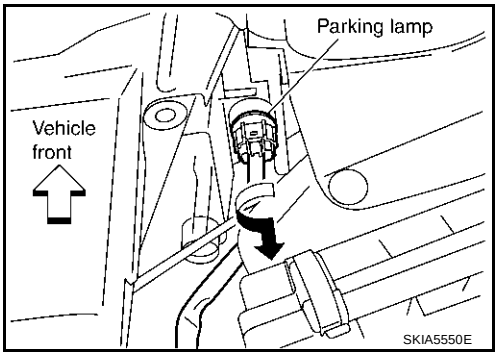
NOTE:
After installation, perform aiming adjustment. Refer to LT-47, "Aiming Adjustment" .

Headlamp high/low beam (Xenon) : 12V - 35W (D2S)

PARKING LAMP (CLEARANCE LAMP)

1. Turn lighting switch OFF.
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb from its socket.
4. Install in the reverse order of removal.

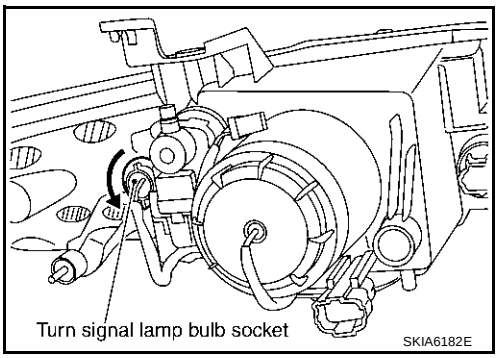
Parking lamp (Clearance lamp) : 12V - 5W



FRONT TURN SIGNAL LAMP

1. Turn lighting switch OFF.
2. Turn bulb socket counterclockwise with suitable tool and unlock it.
3. Remove bulb from its socket.
4. Install in the reverse order of removal.

Front turn signal lamp : 12V - 21W (amber)

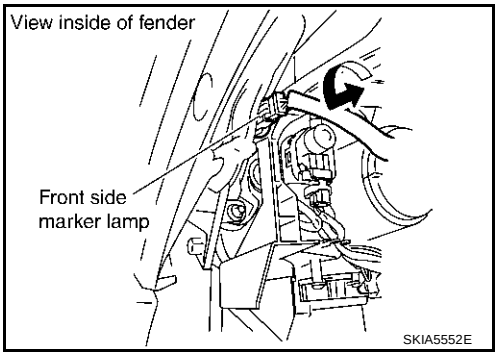


FRONT SIDE MARKER LAMP

1. Turn lighting switch OFF.
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb from its socket.
4. Install in the reverse order of removal.

Front side marker lamp : 12V - 3.8W

CAUTION:
After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness.

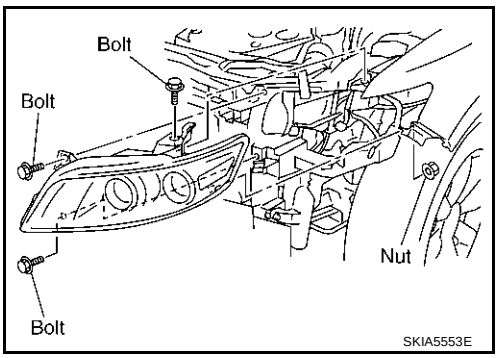


Removal and Installation

AKS007MX

REMOVAL

1. Disconnect the battery negative cable.
2. Remove front bumper. Refer to EI-14, "Removal and Installation" in “EI” section.
3. Remove headlamp mounting bolts.
4. Remove plastics bumper bracket, then pull headlamp toward vehicle front, disconnect connector, and remove headlamp.



Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	AWD control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Brake warning lamp signal										R		T		
System setting signal			T				R						R	
AWD warning lamp signal					T					R				
AWD lock indicator lamp signal					T					R				
Distance to empty signal			R							T				
Hand brake switch signal					R			R		T				
Door lock/unlock request signal							T	R						
Door lock/unlock status signal							R	T						
Starter permission signal							T	R						
Back door open request signal							T	R						
Power window open request signal							T	R						
Alarm request signal							T	R						
Key warning signal							T			R				
ICC sensor signal						R					T			
ICC warning lamp signal						T				R				
ICC system display signal						T				R				
Current gear position signal		T				R						R		
Steering switch signal	T					R								
ASCD operation signal	T	R												
ASCD OD cancel request	T	R												
ICC OD cancel request	R	R				T								
A/T CHECK indicator lamp signal		T								R				
A/T position indicator lamp signal		T								R				
A/T shift schedule change demand signal		R										T		
Manual mode signal		R								T				
Not manual mode signal		R								T				
Manual mode shift up signal		R								T				
Manual mode shift down signal		R								T				
Manual mode indicator signal		T								R				
Ignition knob switch signal							T	R						

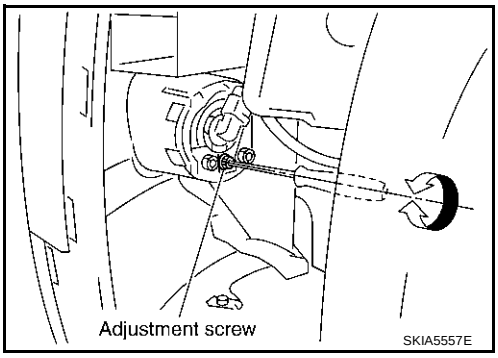
Aiming Adjustment

AKS007CT

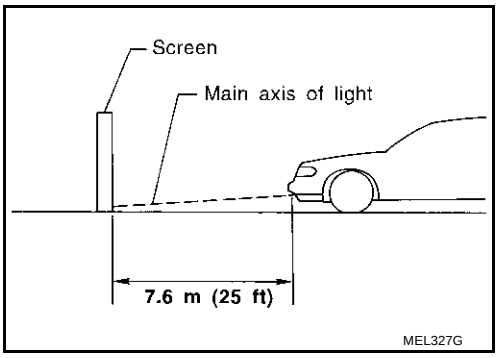
The fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb. Before performing aiming adjustment, make sure of the following.

- Keep all tires inflated to correct pressure.
- Place vehicle on level ground.
- See that vehicle is unloaded (except for full levels of coolant, engine oil and fuel, and spare tire, jack, and tools). Have the driver or equivalent weight placed in driver seat.

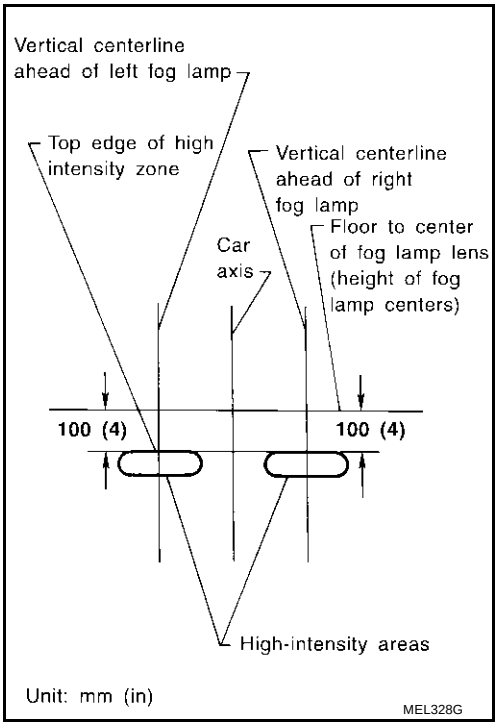
Adjust aiming in the vertical direction by turning the adjusting screw.



1. Set the distance between the screen and the center of the fog lamp lens as shown at left.
2. Turn front fog lamps ON.



3. Adjust front fog lamps using adjusting screw so that the top edge of the high intensity zone is 100 mm (4 in) below the height of the fog lamp centers as shown at left.
   - When performing adjustment, if necessary, cover the headlamps and opposite fog lamp.



Stop Lamp Does Not Operate

AKS007IJ

1. CHECK TAIL LANP AND TURN SIGNAL LAMP

Make sure tail lamps and turn signal lamps are illuminated.

OK or NG

OK >> GO TO 2.
NG >> GO TO 6.

2. CHECK FUSE

Check fuse No. 20 is blow out.

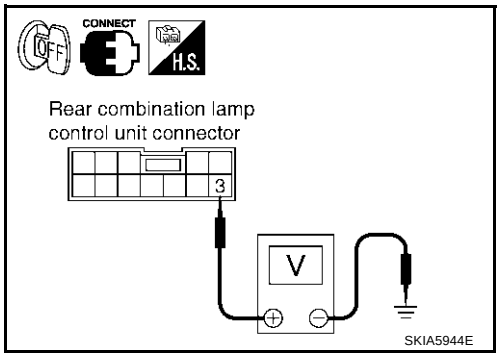
OK or NG

OK >> GO TO 3.
NG >> If fuse is blow out, be sure to eliminate cause of malfunction before installing new fuse.

3. CHECK INPUT SIGNAL

Check voltage between rear combination lamp control unit harness connector B65 terminal 3 (P) and ground.

Terminals		(-)	Condition	Voltage
Connector	Terminal (Wire color)			
B65	3 (P)	Ground	Stop lamp switch is ON.	Battery voltage
			Stop lamp switch is OFF.	Approx. 0



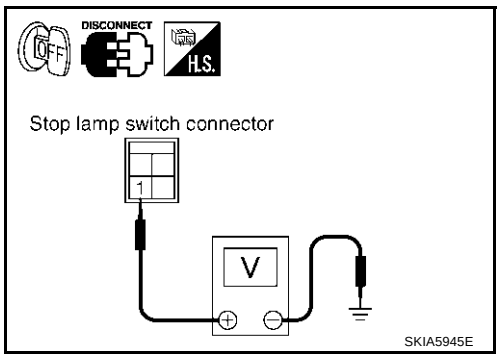
OK or NG

OK >> Replace rear combination lamp control unit.
NG >> GO TO 4.

4. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect stop lamp switch connector.
3. Check voltage between stop lamp switch harness connector E210 terminal 1 (GY) and ground.

1 (GY) – Ground : Battery voltage should exist.



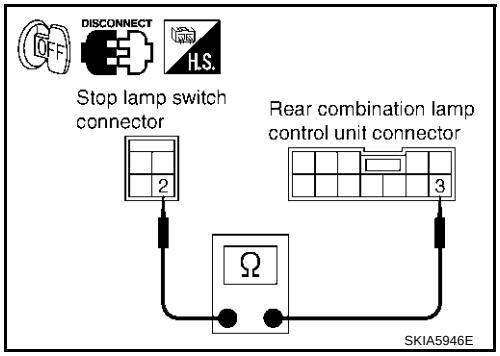
OK or NG

OK >> GO TO 5.
NG >> Repair harness or connector.

5. CHECK STOP LAMP SWITCH CIRCUIT

1. Disconnect rear combination lamp control unit connector.
2. Check continuity between stop lamp switch harness connector E210 terminal 2 (P) and rear combination lamp control unit harness connector B65 terminal 3 (P).

2 (P) – 3 (P) : Continuity should exist.



OK or NG

OK >> Replace stop lamp switch.
NG >> Repair harness or connector.

ASHTRAY ILLUMINATION

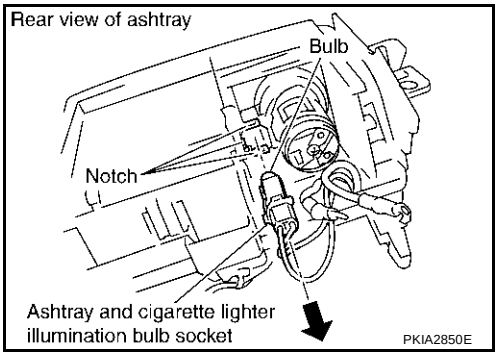
PFP:25860

Bulb Replacement and Removal and Installation

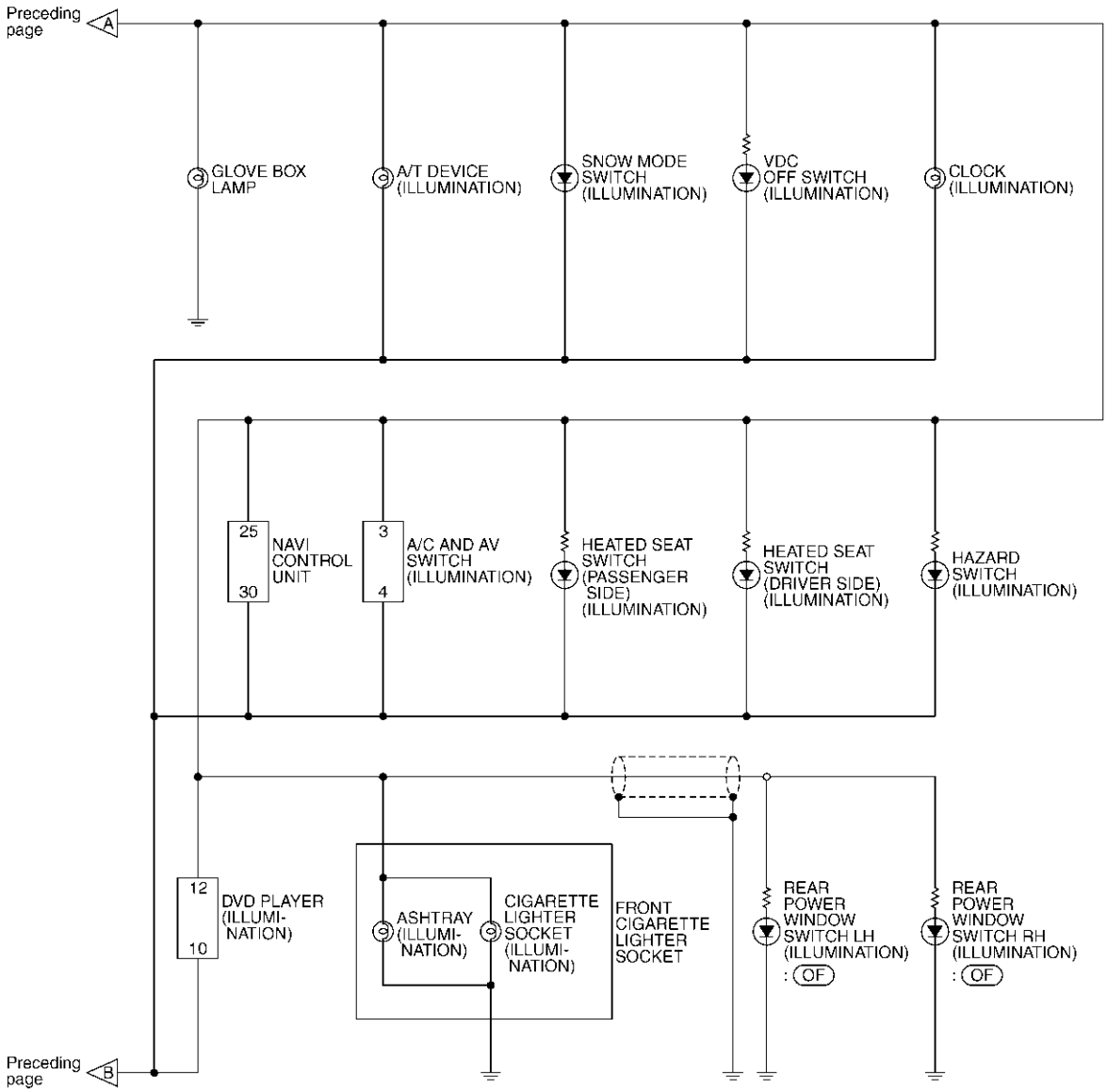
AKS007NZ

1. Remove A/T console finisher. Refer to IP-12, "(F) A/T Console Finisher" in “IP” section.
2. Remove instrument ashtray and hazard switch. Refer to IP-16, "A/T CONSOLE FINISHER" in “IP” section.
3. Use a screwdriver to undo ashtray finisher hooks.
4. Turn bulb socket on circuit board to left to undo lock. Remove bulb socket.
5. Install in the reverse order of removal.

Ashtray and cigarette lighter illumination : 12V - 1.4W



(OF) : Without interruption detection function for rear door window



TKWM1254E

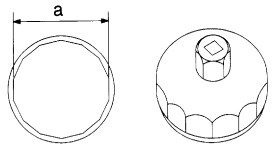
PREPARATION

PFP:00002

Special Service Tools

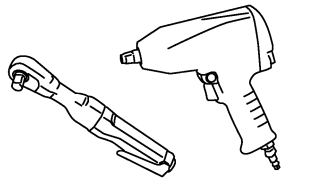
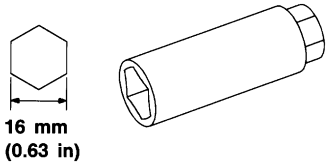
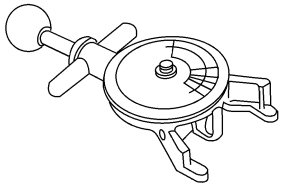
ALS000G2

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

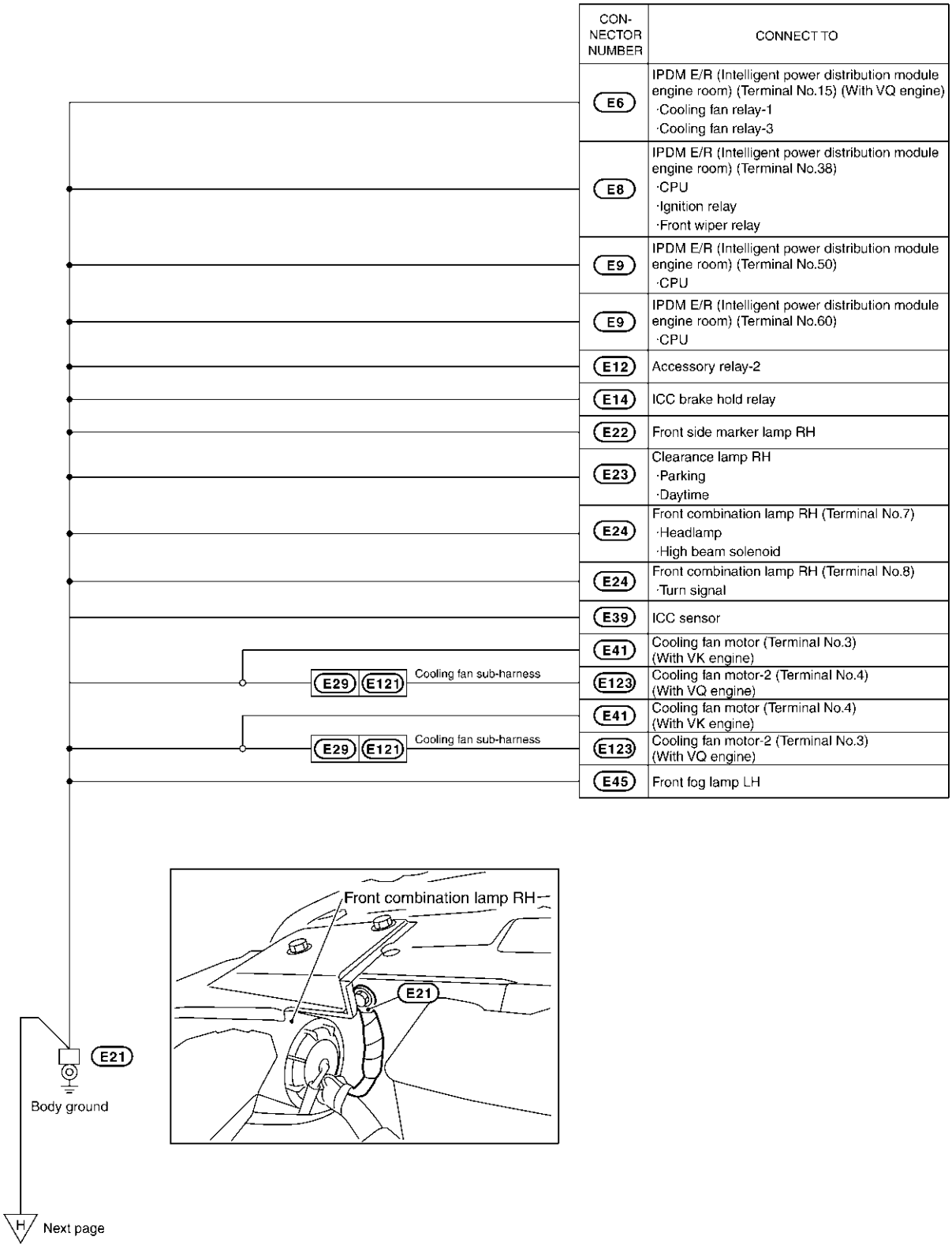
Tool number (Kent-Moore No.) Tool name	Description
KV10115801 (J38956) Oil filter wrench  S-NT375	Removing and installing oil filter **a: 64.3 mm (2.531 in)**

Commercial Service Tools

ALS000G3

Tool name (Kent-Moore No.)	Description
Power tool  PBIC0190E	Loosening bolts and nuts
Spark plug wrench  S-NT047	Removing and installing spark plug
Belt tension gauge (BT3373-F)  AMA126	Checking drive belt tension (VQ35DE)

ENGINE ROOM HARNESS



CON-NECTOR NUMBER	CONNECT TO
E6	IPDM E/R (Intelligent power distribution module engine room) (Terminal No.15) (With VQ engine) ·Cooling fan relay-1 ·Cooling fan relay-3
E8	IPDM E/R (Intelligent power distribution module engine room) (Terminal No.38) ·CPU ·Ignition relay ·Front wiper relay
E9	IPDM E/R (Intelligent power distribution module engine room) (Terminal No.50) ·CPU
E9	IPDM E/R (Intelligent power distribution module engine room) (Terminal No.60) ·CPU
E12	Accessory relay-2
E14	ICC brake hold relay
E22	Front side marker lamp RH
E23	Clearance lamp RH ·Parking ·Daytime
E24	Front combination lamp RH (Terminal No.7) ·Headlamp ·High beam solenoid
E24	Front combination lamp RH (Terminal No.8) ·Turn signal
E39	ICC sensor
E41	Cooling fan motor (Terminal No.3) (With VK engine)
E123	Cooling fan motor-2 (Terminal No.4) (With VQ engine)
E41	Cooling fan motor (Terminal No.4) (With VK engine)
E123	Cooling fan motor-2 (Terminal No.3) (With VQ engine)
E45	Front fog lamp LH

CKIM0200E

STANDARDIZED RELAY

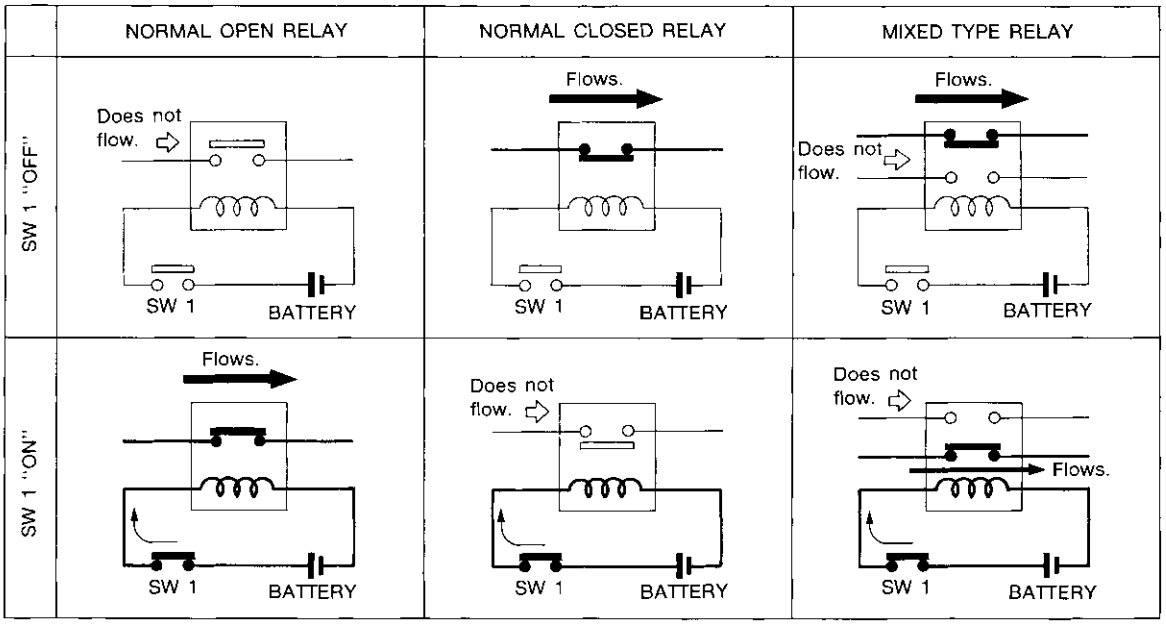
PFP:00011

Description

AKS007W7

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

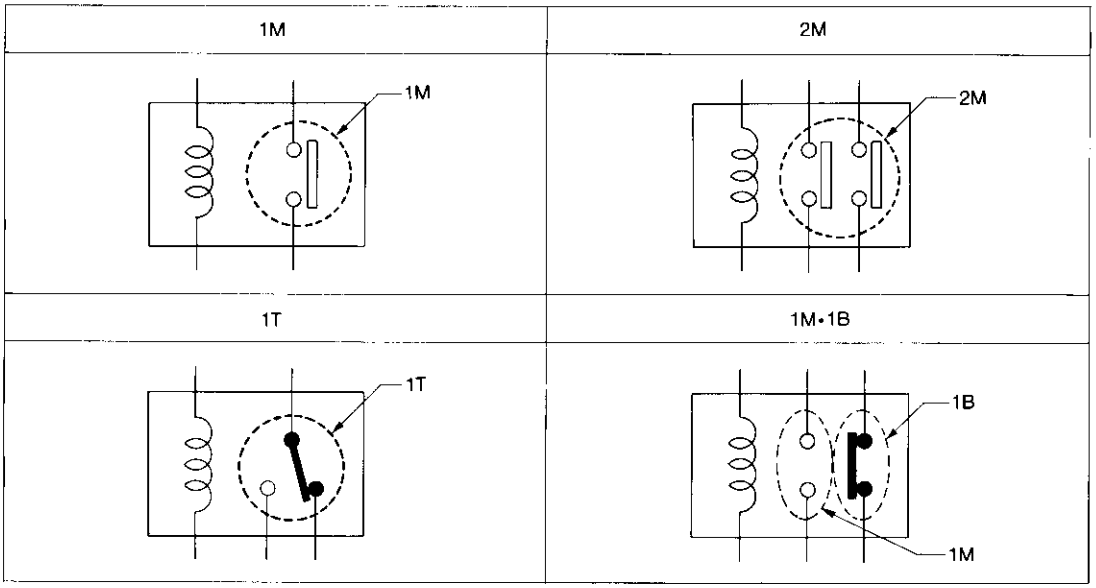
Relays can mainly be divided into three types: normal open, normal closed and mixed type relays.



SEL881H

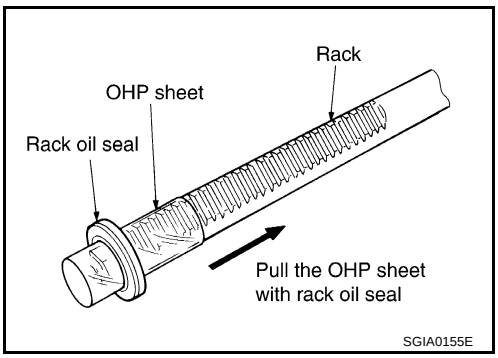
TYPE OF STANDARDIZED RELAYS

1M ····· 1 Make
1T ····· 1 Transfer
2M ····· 2 Make
1M·1B ····· 1 Make 1 Break

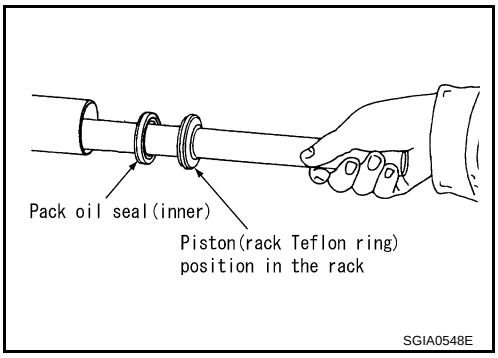


SEL882H

a. To avoid damaging inner rack oil seal, wrap an OHP sheet [approximately. 70 mm (2.76 in) × 100 mm (3.94 in) around rack tooth. Place oil seal on sheet. Then, pull oil seal along with OHP sheet until they pass the toothed section of rack, then remove it.

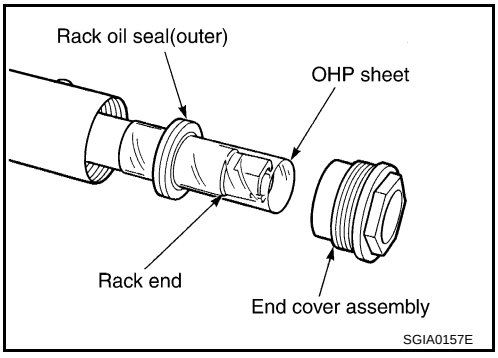


b. Insert rack oil seal (inner) to piston (rack Teflon ring) position and push retainer to adjust screw side with fingers lightly, and then make rack move in gear housing assembly, install rack oil seal (inner) to fit with gear housing assembly.



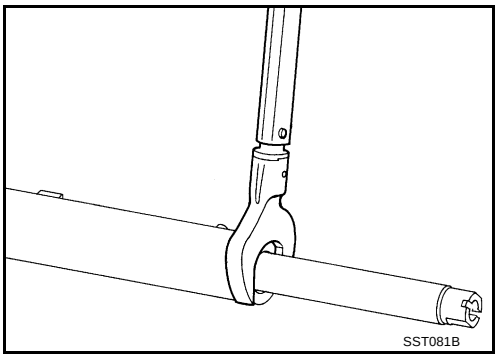
c. When installing outer rack oil seal, cover the end of rack with an OHP sheet [70 mm (2.76 in) × 100 mm (3.94 in)]. It will avoid damaging rack oil seal. Then place oil seal on sheet. Pull rack oil seal along with OHP sheet until they pass rack end. Then remove OHP sheet.

d. Install end cover assembly to rack, move it to gear housing assembly.



5. Using a 45 mm (1.77 in) open head (suitable tool), tighten end cover assembly at the specified torque.

CAUTION:
Do not damage rack surface. If it is damaged, it may cause oil leaks. Replace rack assembly.



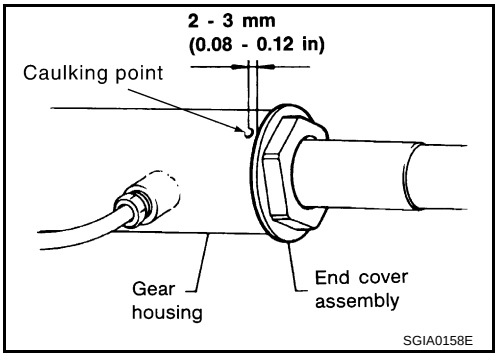
6. After tightening end cover assembly, caulk cylinder at one point as shown in the figure using a punch. This will prevent end cover from getting loose.

7. Install sub-gear assembly to gear housing assembly.

CAUTION:
In order to protect oil seal from any damage, insert sub-gear assembly out straightly.

8. Apply Genuine Nissan PSF or equivalent to O-ring. Install O-ring to rear cover.

NOTE:
Do not reuse O-ring.

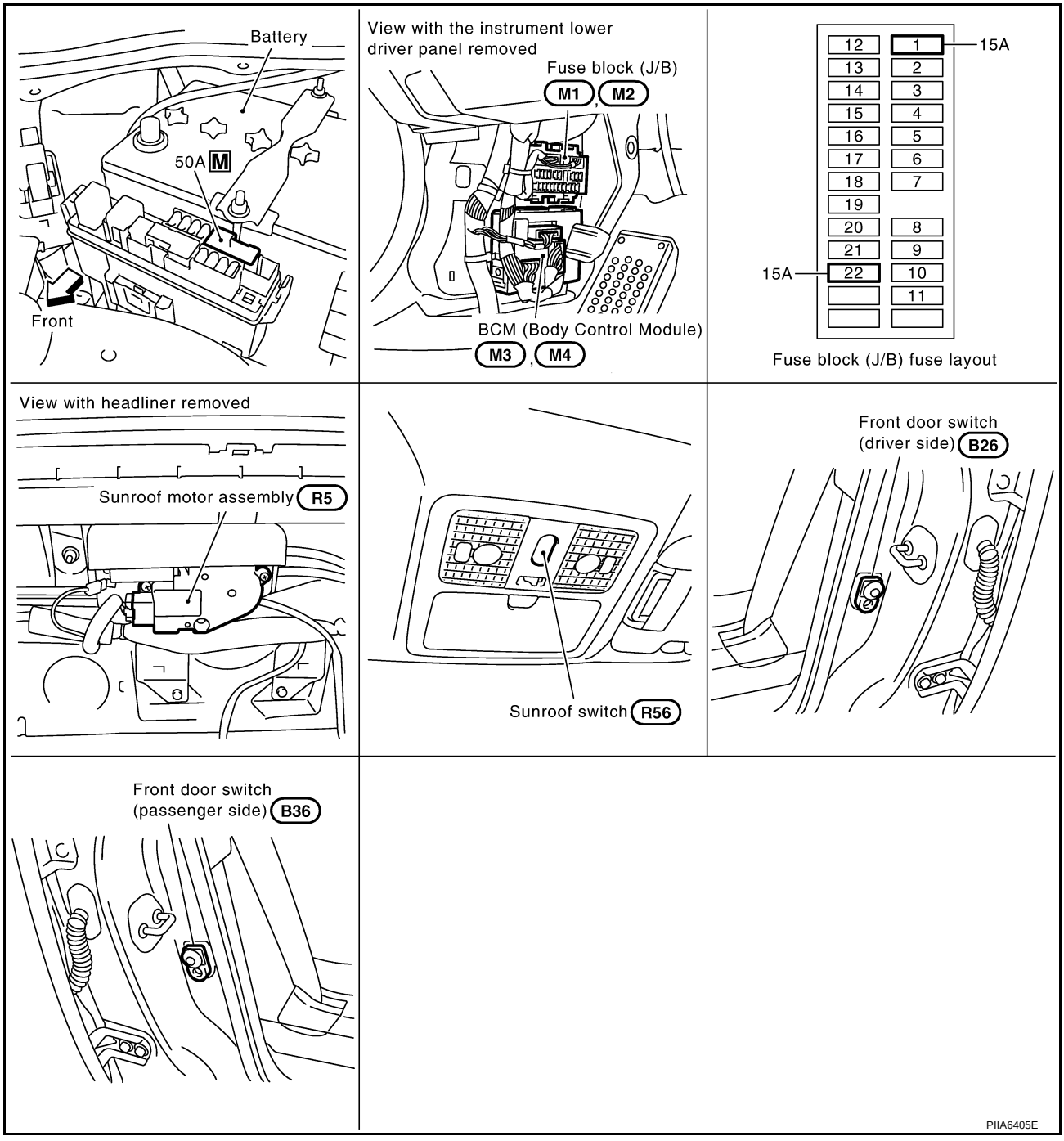


SUNROOF

PFP:91210

Component Parts and Harness Connector Location

AIS003CR



1. Drive pinion lock nut	2. Companion flange (Rebro joint type)	3. Front oil seal
4. Pinion front bearing	5. Pinion bearing adjusting spacer (Collapsible spacer)	6. Pinion rear bearing
7. Pinion height adjusting washer	8. Drive pinion	9. Side oil seal
10. Drive gear	11. Pinion mate shaft	12. Look pin
13. Pinion mate gear	14. Pinion mate thrust washer	15. Side gear
16. Side gear thrust washer	17. Differential case	18. Side bearing
19. Side bearing adjusting washer	20. Bearing cap	21. Rear cover
22. Filler plug	23. Drain plug	24. Gear carrier
25. Circlip	26. Gasket	

Pre-Inspection

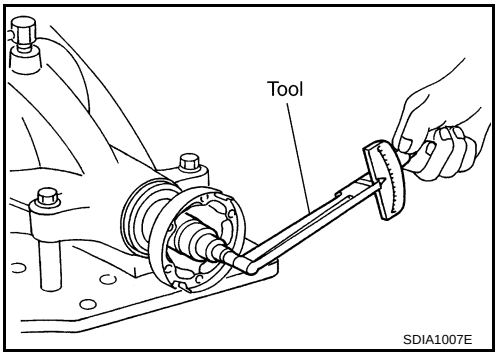
ADS000JT

Before disassembling final drive, drain off oil from the gear and remove the rear cover. Then, perform the following inspection.

TOTAL PRELOAD

1. Turn drive pinion in both directions several times to set bearing rollers.
2. Check total preload with tool.

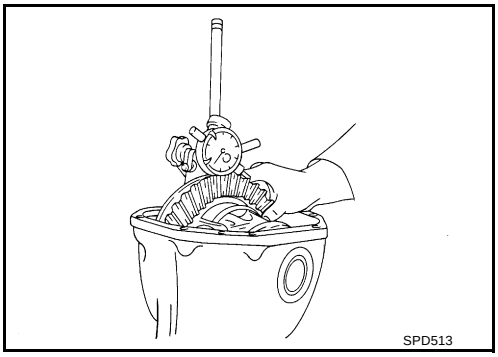
Tool number : ST3127S000 (see J25765-A)
Total preload : 2.84 - 3.75 N·m
(With oil seal) (0.29 - 0.38 kg-m, 26 - 33 in-lb)



DRIVE GEAR TO DRIVE PINION BACKLASH

Check drive gear to drive pinion backlash with a dial indicator at several points.

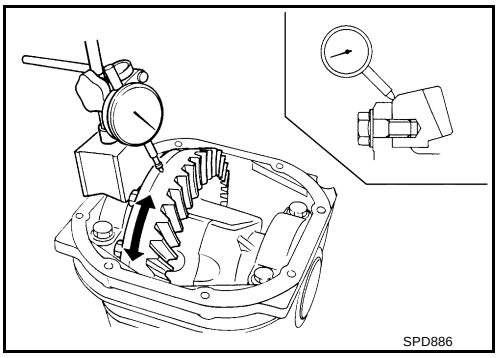
Drive gear to drive pinion backlash
: 0.10 - 0.15 mm (0.0039 - 0.0059 in)



DRIVE GEAR RUNOUT

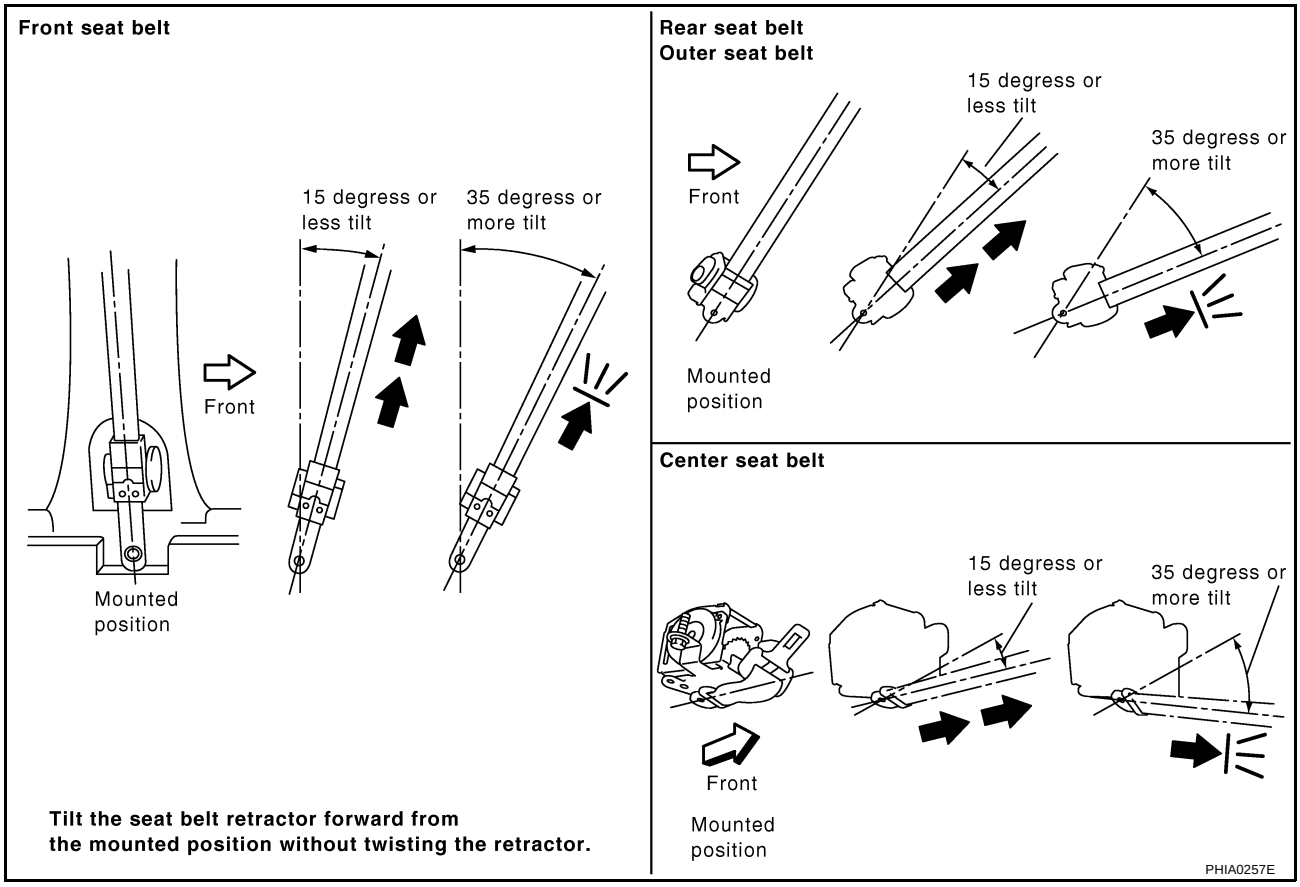
Check runout of drive gear with a dial indicator.

Drive gear runout limit : 0.05 mm (0.0020 in) or less



SEAT BELT RETRACTOR OFF-VEHICLE INSPECTION

1. Remove the seat belt retractor assembly.
2. Slowly pull out webbing while tilting the retractor assembly forward from the mounted position without twisting the retractor assembly as shown in the figure.



15 degrees or less tilt : Webbing can be pulled out.

35 degrees or more tilt : Webbing locks and cannot be pulled out.

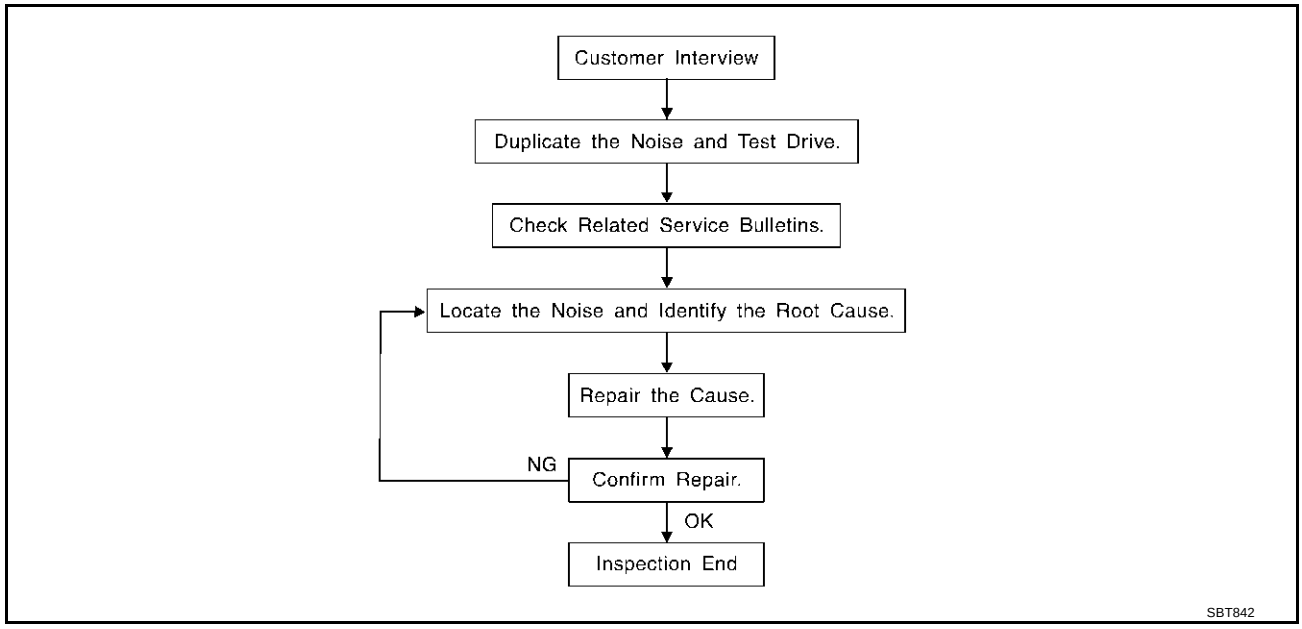
If NG, replace the retractor assembly.

SQUEAK AND RATTLE TROUBLE DIAGNOSIS

PFP:00000

Work Flow

AIS002WX



CUSTOMER INTERVIEW

Interview the customer if possible, to determine the conditions that exist when the noise occurs. Use the Diagnostic Worksheet during the interview to document the facts and conditions when the noise occurs and any customer's comments; refer to SE-9, "Diagnostic Worksheet" . This information is necessary to duplicate the conditions that exist when the noise occurs.

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

4. CHECK FUSE

Make sure any of the following fuse in the driver seat control unit and automatic drive positioner control unit are blown.

Unit	Power source	Fuse No.
Driver seat control unit	START power supply	9 (10A)

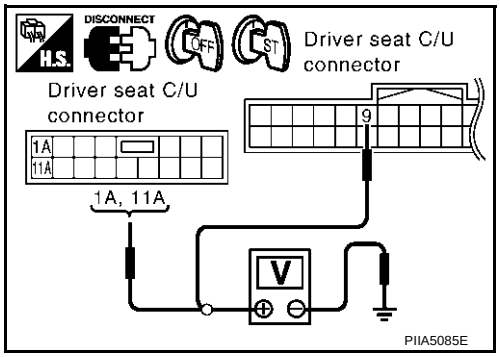
NOTE:
Refer to SE-16, "Component Parts and Harness Connector Location" .

OK or NG

OK >> GO TO 5.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to SE-16, "Component Parts and Harness Connector Location" .

5. CHECK POWER SUPPLY CIRCUIT (DRIVER SEAT CONTROL UNIT)

1. Disconnect driver seat control unit connector.
2. Check voltage between driver seat control unit and ground.



Connector	Terminals (Wire color)		Power source	condition	Voltage (V) (Approx.)
	(+)	(–)			
B152	9 (BR)	Ground	START power supply	Ignition switch START	Battery voltage
B153	1A (R), 11A (R/W)	Ground	Battery power supply	Ignition switch OFF	Battery voltage

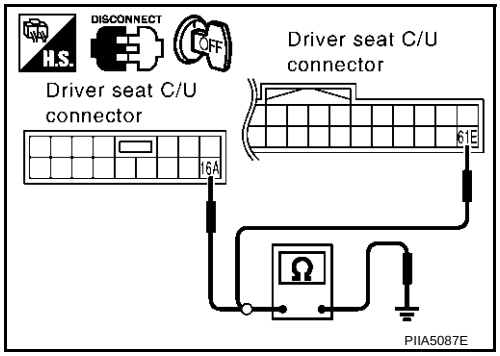
OK or NG

OK >> GO TO 6.
NG >> Repair or replace harness between driver seat control unit and fuse block (J/B) or BCM.

6. CHECK GROUND CIRCUIT (DRIVER SEAT CONTROL UNIT)

1. Turn ignition switch OFF.
2. Check continuity between the driver seat control unit connector B152, B153 terminal16A (B), 61E (B/Y) and ground.

16A (B) – Ground : Continuity should exist.
61E (B/Y) – Ground : Continuity should exist.



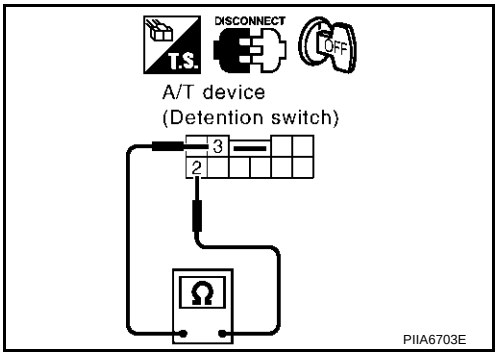
OK or NG

OK >> GO TO 7.
NG >> Repair or replace harness between driver seat control unit and ground.

3. CHECK DETENTION SWITCH

Check continuity between detection switch as follows.

Connector	Terminals (Wire color)		Condition	Continuity
	(+)	(–)		
M67	3	2	P position	Continuity should exist.
			Other than P position	Continuity should not exist.



OK or NG

OK >> GO TO 4.
NG >> Replace detention switch.

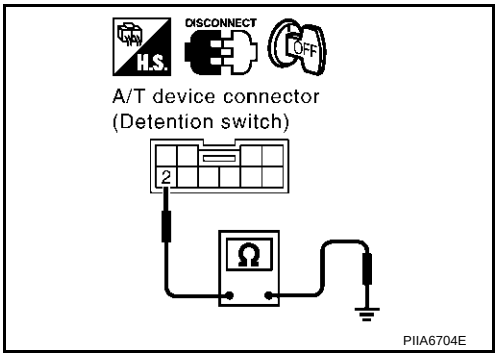
4. CHECK DETENTION SWITCH GROUND HARNESS

1. Check continuity between automatic drive positioner control unit connector M67 terminal 2 (B) and ground.

2 (B) – Ground : Continuity should exist.

OK or NG

OK >> Check the condition of the harness and connector.
NG >> Repair or replace harness between detention switch and ground.



Key Switch and Ignition Knob Switch Circuit Inspection (With Intelligent Key)

AIS002XY

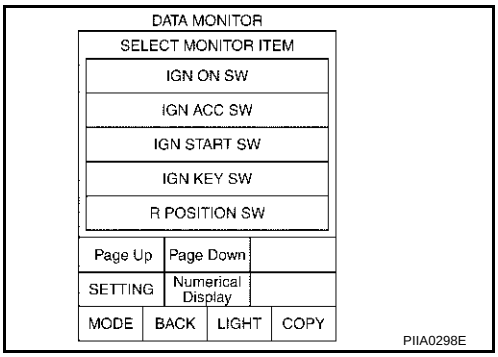
1. CHECK KEY SWITCH AND IGNITION KNOB SWITCH POWER SUPPRY CIRCUIT

With CONSULT-II

Touch "BCM". With “IGN KEY SW” on the DATA MONITOR, Check ON/OFF operation.

Monitor item [OPERATION or UNIT]		Contents
IGN KEY SW*	“ON/OFF”	Key inserted (ON)/key removed (OFF) status judged from the key-in detection switch is displayed.

*: Refer to BL-154 .



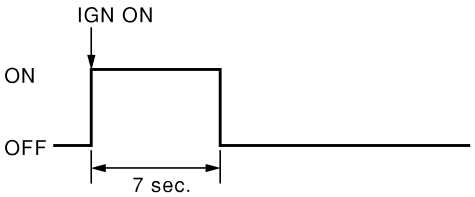
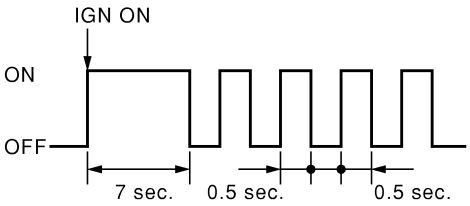
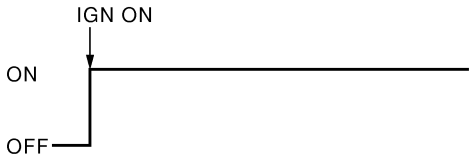
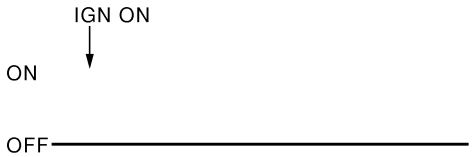
Without CONSULT-II

GO TO 2.

OK or NG

OK >> Key switch and ignition knob switch circuit is OK.
NG >> GO TO 2.

Warning lamp examples

“AIR BAG” warning lamp operation — User mode —	SRS condition	Reference item
 SHIA0011E	● No malfunction is detected. ● No further action is necessary.	—
 SHIA0012E	● The system is malfunctioning and needs to be repaired as indicated.	Go to SRS-19, "DIAGNOSTIC PROCEDURE 2" or SRS-26, "DIAGNOSTIC PROCEDURE 5" .
 SHIA0013E	● Air bag is deployed. ● Seat belt pre-tensioner is deployed.	Go to SRS-57, "COLLISION DIAGNOSIS" .
	● Diagnosis sensor unit is malfunctioning. ● Air bag power supply circuit is malfunctioning. ● SRS air bag warning lamp circuit is malfunctioning.	Go to SRS-35, "Trouble Diagnosis: “AIR BAG” Warning Lamp Does Not Turn Off" .
 SHIA0014E	● Diagnosis sensor unit is malfunctioning. ● Air bag warning lamp circuit is malfunctioning.	Go to SRS-36, "Trouble Diagnosis: “AIR BAG” Warning Lamp Does Not Turn On" .

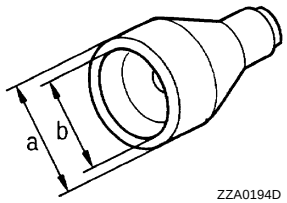
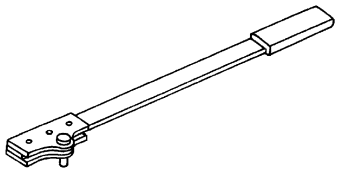
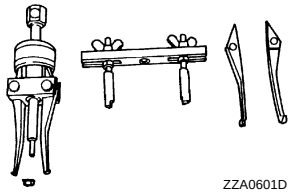
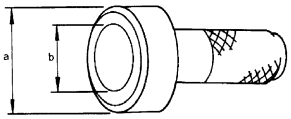
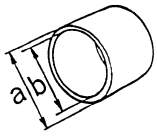
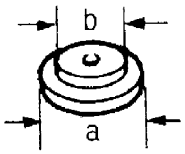
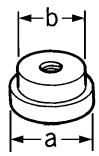
PREPARATION

PFP:00002

Special Service Tools

ADS000LG

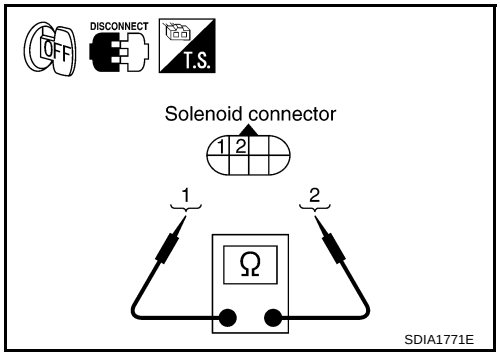
The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name		Description
ST27862000 (—) a: 62.5 mm (2.461 in) dia. b: 42 mm (1.654 in) dia. Drift	 ZZA0194D	Installing front oil seal into front case
KV38108300 (J44195) Companion flange wrench	 NT771	Removing and installing companion flange lock nut
KV381054S0 (J34286) Puller	 ZZA0601D	● Removing rear oil seal
ST30720000 (J25405) a: 77 mm (3.03 in) dia. b: 55.5 mm (2.185 in) dia. Drift	 ZZA0811D	● Installing rear oil seal
KV40104830 (—) a: 76.3 mm (3.004 in) dia. b: 67.9 mm (2.673 in) dia. Drift	 ZZA1003D	Installing rear oil seal
ST33061000 (J8107-2) a: 38 mm (1.50 in) dia. b: 28.5 mm (1.122 in) dia. Drift	 ZZA0810D	Removing front drive shaft front bearing
ST35322000 (—) a: 39 mm (1.54 in) dia. b: 31 mm (1.22 in) dia. Drift	 ZZA1000D	Removing front drive shaft rear bearing

3. CHECK AWD SOLENOID

1. Turn ignition switch “OFF”.
2. Disconnect the AWD solenoid valve connector F43.
3. Measure resistance between terminals 1 and 2.

1 - 2 : Approx. 2.45Ω



OK or NG

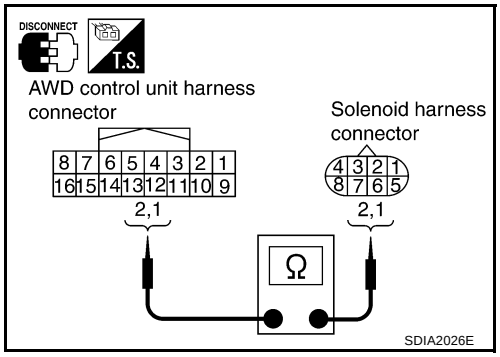
OK >> GO TO 4.
NG >> Replace AWD solenoid.

4. CHECK AWD SOLENOID CIRCUIT

1. Disconnect the AWD control unit connector and the AWD solenoid valve connector.
2. Check the continuity between the following terminals.

- AWD control unit harness connector M92 terminal 1 (L/W) and AWD solenoid valve harness connector F43 terminal 1 (W).
- AWD control unit harness connector M92 terminal 2 (L/OR) and AWD solenoid valve harness connector F43 terminal 2 (P).

1 (L/W) - 1 (W), 2 (L/OR) - 2 (P)
: Continuity should exist.



OK or NG

OK >> Check Battery and AWD control unit harness connector M92 terminal No. 9 (G/W). If NG, Repair or replace the parts.
NG >> Repair or replace the harness or connectors.

CAN COMMUNICATION SYSTEM

1. CHECK CAN COMMUNICATION CIRCUIT

With CONSULT-II

1. Turn ignition switch “ON” and start engine.
2. Select “ALL MODE 4WD” with “SELF-DIAG RESULTS” mode in CONSULT-II.
3. The “CAN COMM CIRCUIT” is detected.

YES or NO?

YES >> Refer to LAN-6, "CAN Communication Unit" .
NO >> **INSPECTION END**