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HOW TO USE THIS MANUAL

HOW TO USE THIS MANUAL

Description

INFOID:0000000010242402

This volume explains “Removal, Disassembly, Installation, Inspection and Adjustment” and “Trouble Diagnoses”.

Terms

INFOID:0000000010242403

- The captions **WARNING** and **CAUTION** warn you of steps that must be followed to prevent personal injury and/or damage to some part of the vehicle.
  WARNING indicates the possibility of personal injury if instructions are not followed.
  CAUTION indicates the possibility of component damage if instructions are not followed.
  BOLD TYPED STATEMENTS except **WARNING** and **CAUTION** give you helpful information.
  Standard value: Tolerance at inspection and adjustment.
  Limit value: The maximum or minimum limit value that should not be exceeded at inspection and adjustment.

Units

INFOID:0000000010242404

- The **UNITS** given in this manual are primarily expressed as the SI UNIT (International System of Unit), and alternatively expressed in the metric system and in the yard/pound system.
  Also with regard to tightening torque of bolts and nuts, there are descriptions both about range and about the standard tightening torque.

  “Example”
  Range

  Outer Socket Lock Nut : 59 - 78 N·m (6.0 - 8.0 kg-m, 43 - 58 ft-lb)

  Standard

  Drive Shaft Installation Bolt : 44.3 N·m (4.5 kg-m, 33 ft-lb)

Contents

INFOID:0000000010242405

- **A QUICK REFERENCE INDEX**, a black tab (e.g. BR) is provided on the first page. You can quickly find the first page of each section by matching it to the section's black tab.
- **THE CONTENTS** are listed on the first page of each section.
- **THE TITLE** is indicated on the upper portion of each page and shows the part or system.
- **THE PAGE NUMBER** of each section consists of two or three letters which designate the particular section and a number (e.g. “BR-5”).
- **THE SMALL ILLUSTRATIONS** show the important steps such as inspection, use of special tools, knacks of work and hidden or tricky steps which are not shown in the previous large illustrations.
  Assembly, inspection and adjustment procedures for the complicated units such as the automatic transaxle or transmission, etc. are presented in a step-by-step format where necessary.

Relation between Illustrations and Descriptions

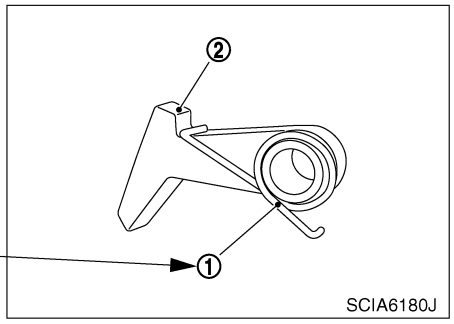
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The following sample explains the relationship between the part description in an illustration, the part name in the text and the service procedures.

< Example 1 >

1. Remove return spring (1) from parking pawl (2).

The identifier number of the part name in the text is consistent with the identifier part number in the illustration.

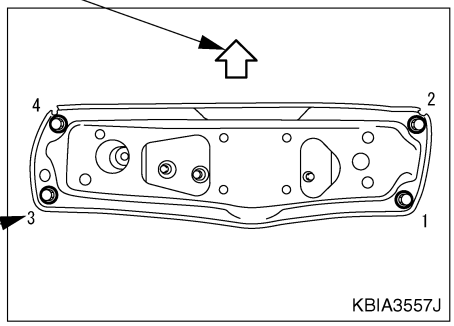


< Example 2 >

- ⇨ : Vehicle front
- Tighten rear member mounting bolts following the numerical order shown in the illustration.
- Note : View upward

Direction mark

The numbers in the illustration are consistent with the service operation instructions.

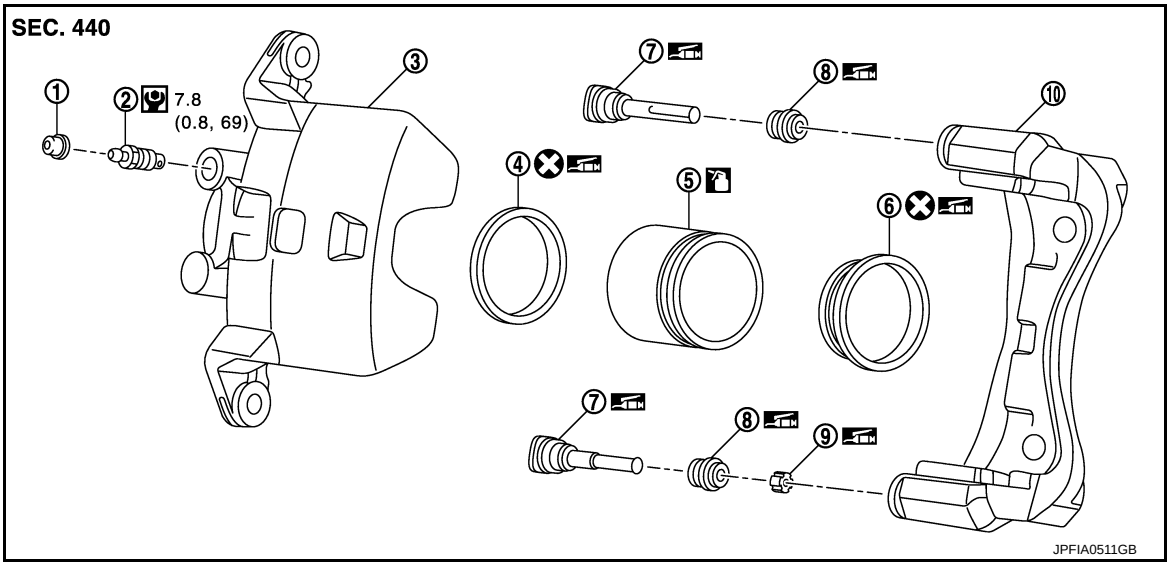


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Components

INFOID:0000000010242407

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



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

: Apply rubber grease.

: Apply brake fluid.

: N·m (kg-m, in-lb)

: Always replace after every disassembly

SYMBOLS

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

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HOW TO FOLLOW TROUBLE DIAGNOSES

Description

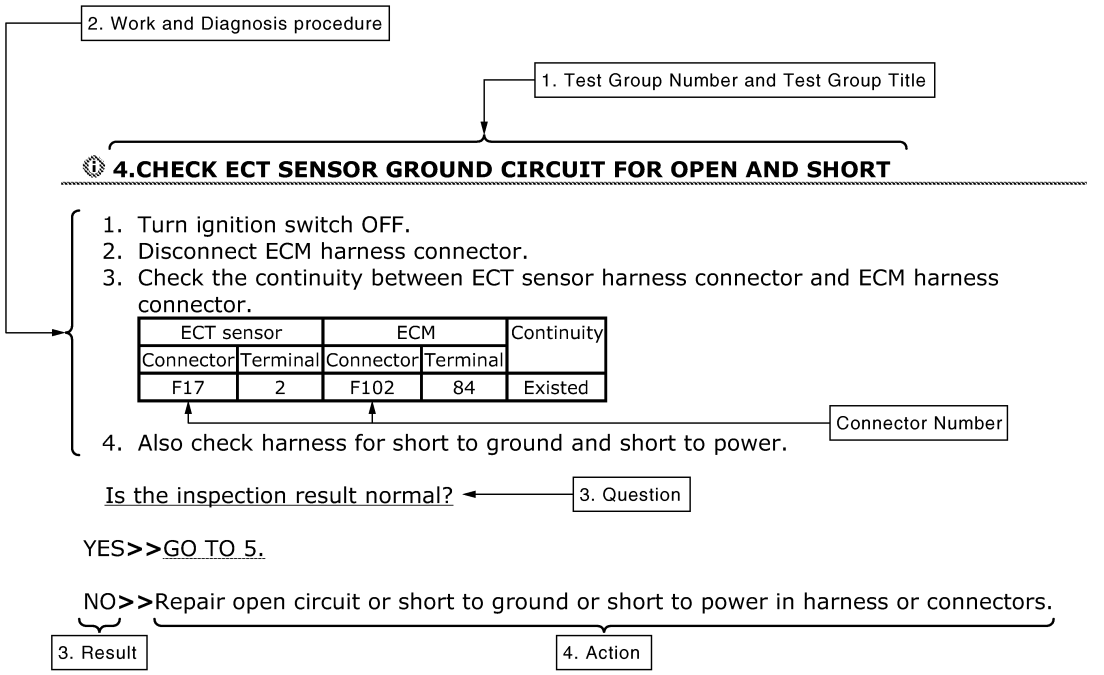
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NOTICE:
Trouble diagnoses indicate work procedures required to diagnose problems effectively. Observe the following instructions before diagnosing.

- Before performing trouble diagnoses, read the “Work Flow” in each section.
- After repairs, re-check that the problem has been completely eliminated.
- Refer to Component Parts and Harness Connector Location for the Systems described in each section for identification/location of components and harness connectors.
- When checking circuit continuity, ignition switch should be OFF.
- Refer to the Circuit Diagram for quick pinpoint check.
  If you need to check circuit continuity between harness connectors in more detail, such as when a sub-harness is used, refer to Wiring Diagram in each individual section and Harness Layout in PG section for identification of harness connectors.
- Before checking voltage at connectors, check battery voltage.
- After accomplishing the Diagnosis Procedures and Electrical Components Inspection, check that all harness connectors are reconnected as they were.

How to Follow Test Groups in Trouble Diagnosis

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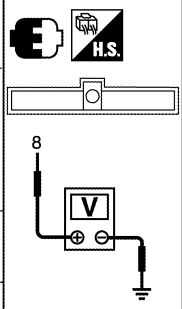
1. Test group number and test group title
   - Test group number and test group title are shown in the upper portion of each test group.
2. Work and diagnosis procedure
   - Start to diagnose a problem using procedures indicated in enclosed test groups.
3. Questions and results
   - Questions and required results are indicated in test group.
4. Action
   - Next action for each test group is indicated based on result of each question.

Key to Symbols Signifying Measurements or Procedures

INFOID:0000000010242410

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	Check after disconnecting the connector to be measured.		Procedure with Generic Scan Tool. (GST, OBD-II scan tool)
	Check after connecting the connector to be measured.		Procedure without CONSULT or GST
	Insert key into ignition switch.		A/C switch is “OFF”.
	Remove key from ignition switch.		A/C switch is “ON”.
	Insert and remove key repeatedly.		REC switch is “ON”.
	Turn ignition switch to “OFF” position.		REC switch is “OFF”.
	Turn ignition switch to “ACC” position.		Fan switch is “ON”. (At any position except for “OFF” position)
	Turn ignition switch to “ON” position.		Fan switch is “OFF”.
	Turn ignition switch to “START” position.		Apply fuse.
	Turn ignition switch from “OFF” to “ACC” position.		Apply positive voltage from battery with fuse directly to components.
	Turn ignition switch from “ACC” to “ON” position.		
	Turn ignition switch from “ACC” to “OFF” position.		

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SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	Turn ignition switch from “OFF” to “ON” position.		Drive vehicle.
	Turn ignition switch from “ON” to “OFF” position.		
	Do not start engine, or check with engine stopped.		Disconnect battery negative cable.
	Start engine, or check with engine running.		Depress brake pedal.
	Apply parking brake.		Release brake pedal.
	Release parking brake.		Depress accelerator pedal.
	Check after engine is warmed up sufficiently.		Release accelerator pedal.
	Voltage should be measured with a voltmeter.		Pin terminal check for SMJ type ECM or TCM connectors. **For details regarding the terminal arrangement, refer to the “ELECTRICAL UNITS” electrical reference page at the end of the manual.**
	Circuit resistance should be measured with an ohmmeter.		
	Current should be measured with an ammeter.		
	Pulse signal should be checked with an oscilloscope.		
	Procedure with CONSULT		
	Procedure without CONSULT		
	Place selector lever in “P” position.		
	Place selector lever in “N” position.		
	Jack up front portion.		
	Jack up rear portion.		
	Inspect under engine room.		
	Inspect under floor.		
	Inspect rear under floor.		

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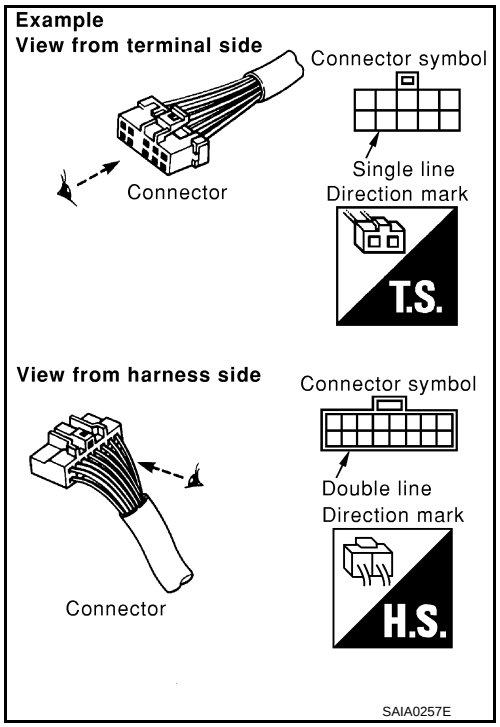
HOW TO READ WIRING DIAGRAMS

Connector Symbols

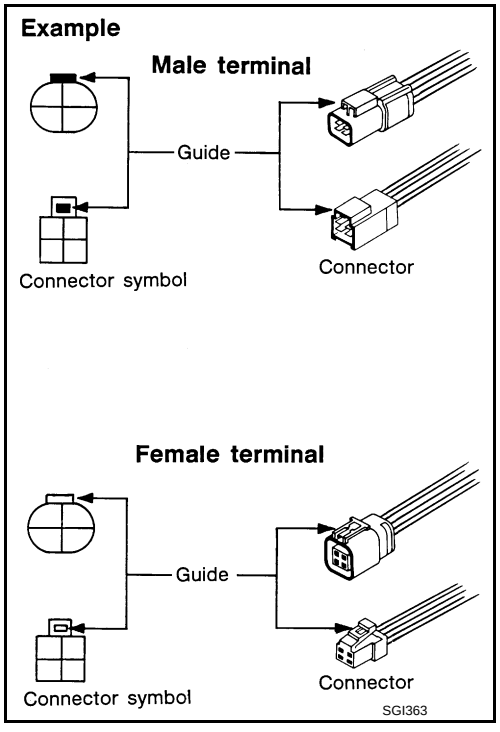
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Most of connector symbols in wiring diagrams are shown from the terminal side.

- Connector symbols shown from the terminal side are enclosed by a single line and followed by the direction mark.
- Connector symbols shown from the harness side are enclosed by a double line and followed by the direction mark.
- Certain systems and components, especially those related to OBD, may use a new style slide-locking type harness connector. For description and how to disconnect, refer to PG section, “Description”, “HARNESS CONNECTOR”.



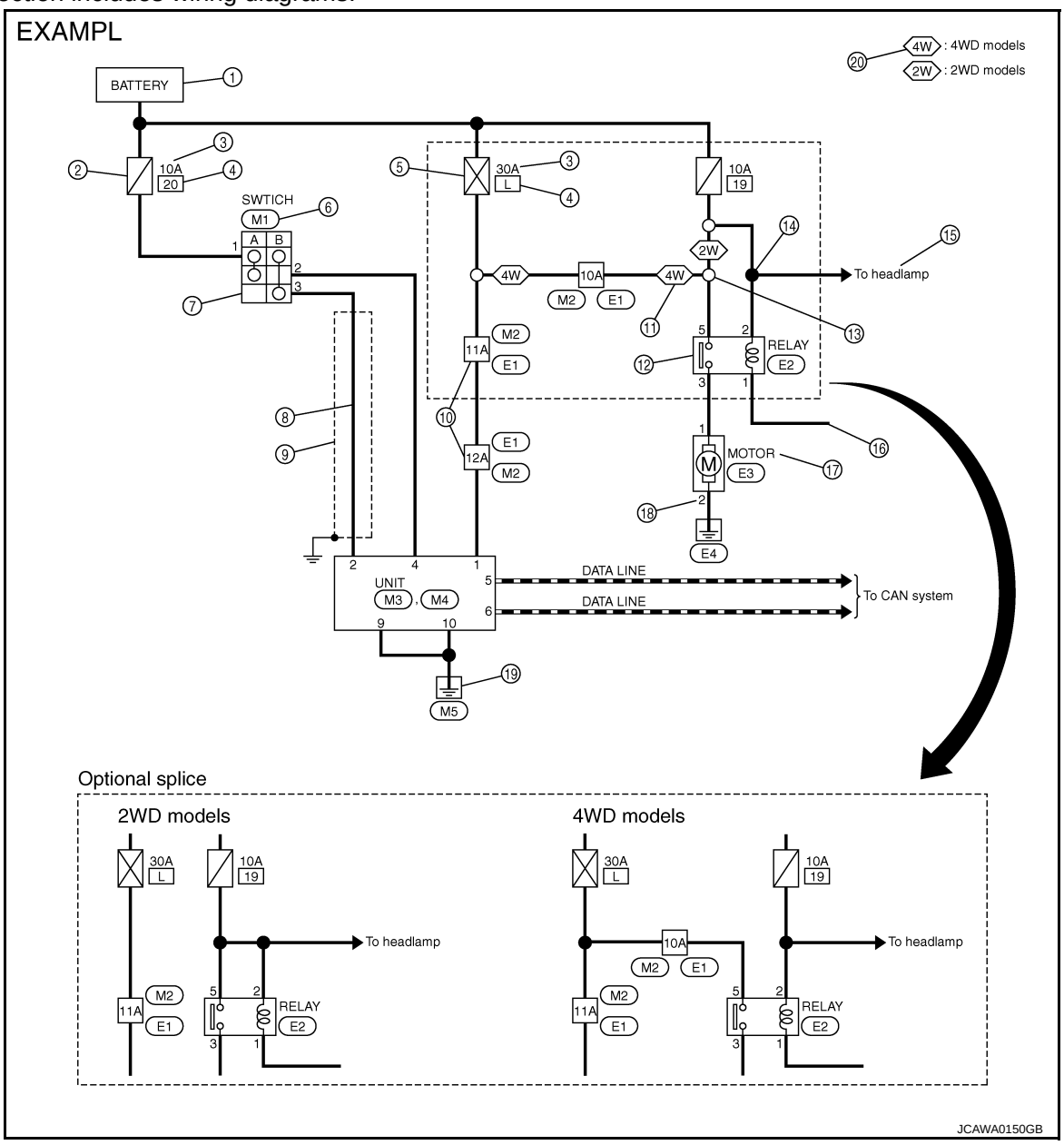
- Male and female terminals
  Connector guides for male terminals are shown in black and female terminals in white in wiring diagrams.



Sample/Wiring Diagram -Example-

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Each section includes wiring diagrams.



Description

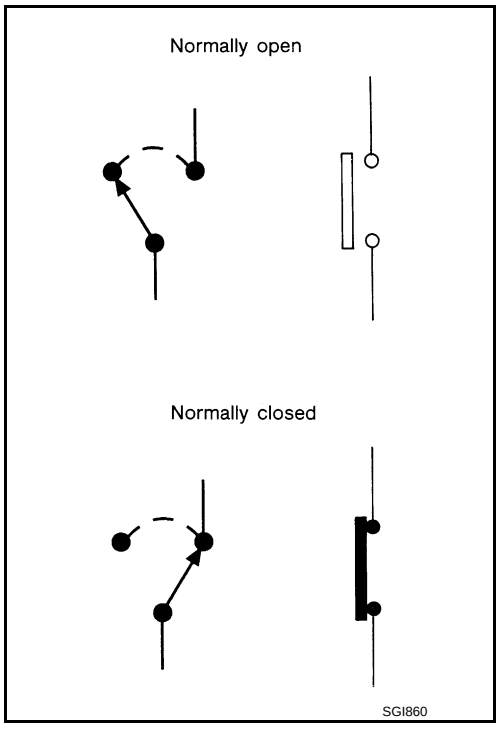
Number	Item	Description
1	Power supply	• This means the power supply of fusible link or fuse.
2	Fuse	• "/" means the fuse.
3	Current rating of fusible link/fuse	• This means the current rating of the fusible link or fuse.
4	Number of fusible link/ fuse	• This means the number of fusible link or fuse location.
5	Fusible link	• "X" means the fusible link.
6	Connector number	• Alphabetic characters show to which harness the connector is placed. • Numeric characters show the identification number of connectors.
7	Switch	• This shows that continuity exists between terminals 1 and 2 when the switch is in the A position. Continuity exists between terminals 1 and 3 when the switch is in the B position.
8	Circuit (Wiring)	• This means the wiring.

Number	Item	Description
9	Shielded line	• The line enclosed by broken line circle shows shield wire.
10	Connectors	• This means that a transmission line bypasses two connectors or more.
11	Option abbreviation	• This means the vehicle specifications which layouts the circuit between "○".
12	Relay	• This shows an internal representation of the relay.
13	Optional splice	• The open circle shows that the splice is optional depending on vehicle application.
14	Splice	• The shaded circle "●" means the splice.
15	System branch	• This shows that the circuit is branched to other systems.
16	Page crossing	• This circuit continues to an adjacent page.
17	Component name	• This shows the name of a component.
18	Terminal number	• This means the terminal number of a connector.
19	Ground (GND)	• This shows the ground connection.
20	Explanation of option description	• This shows a description of the option abbreviation used on the page.

SWITCH POSITIONS

Switches are shown in wiring diagrams as if the vehicle is in the "normal" condition.
A vehicle is in the "normal" condition when:

- ignition switch is "OFF"
- doors, hood and trunk lid/back door are closed
- pedals are not depressed
- parking brake is released



MULTIPLE SWITCH

The continuity of multiple switch is described in two ways as shown below.

- The switch chart is used in schematic diagrams.

- The switch diagram is used in wiring diagrams.

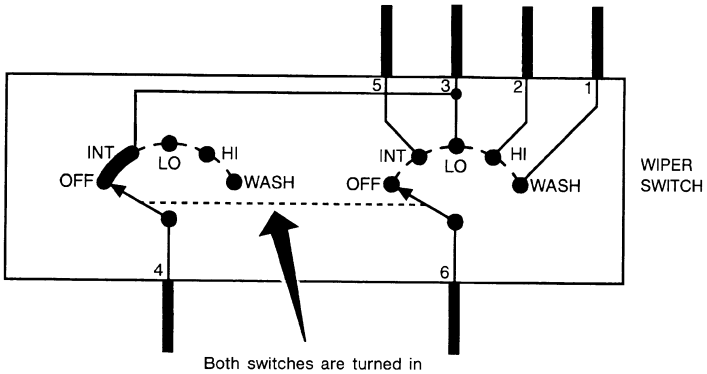
Example

(SWITCH CHART)

WIPER SWITCH

	OFF	INT	LO	HI	WASH
1					○
2				○	
3	○	○	○		
4	○	○			
5		○			
6		○	○	○	○

(SWITCH DIAGRAM)



Both switches are turned in combination.

Continuity circuit of wiper switch

SWITCH POSITION	CONTINUITY CIRCUIT
OFF	3 - 4
INT	3 - 4, 5 - 6
LO	3 - 6
HI	2 - 6
WASH	1 - 6

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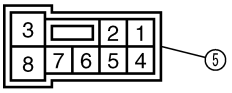
Connector Information

INFOID:0000000010242413

HOW TO USE CONNECTOR INFORMATION

Connector No.	M3
Connector Name	UNIT
Connector Type	NS06FW-M2

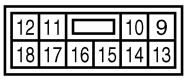
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
1	W	BAT
2	G	SWITCH B
4	V	SWITCH A
5	L	CAN-H
6	P	CAN-L

Connector No.	M4
Connector Name	UNIT
Connector Type	NS10FW-CS

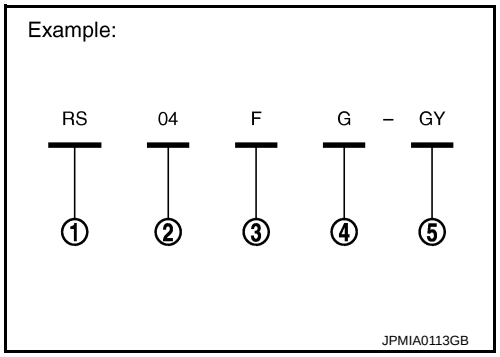
H.S.



Terminal No.	Color of Wire	Signal Name [Specification]
9	B	GND
10	B	GND

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Description

Number	Item	Description
①	Connector number	• Alphabetic characters show to which harness the connector is placed. • Numeric characters show the identification number of connectors.
②	Connector type	①: Connector model ②: Cavity ③: Male (M) and female (F) terminals ④: Connector color ⑤: Special type 
③	Terminal number	• This means the terminal number of a connector.
④	Wire color	• This shows a code for the color of the wire. B = Black W = White R = Red G = Green L = Blue Y = Yellow LG = Light Green BG or BE = Beige LA = Lavender BR = Brown OR or O = Orange P = Pink PU or V (Violet) = Purple GY or GR = Gray SB = Sky Blue CH = Dark Brown DG = Dark Green • When the wire color is striped, the base color is given first, followed by the stripe color as shown below: Example: L/W = Blue with White Stripe
⑤	Connector	• This means the connector information. • This unit-side is described by the connector symbols.

ABBREVIATIONS

Abbreviation List

INFOID:0000000010242414

The following **ABBREVIATIONS** are used:

A

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

B

ABBREVIATION	DESCRIPTION
BARO	Barometric pressure
BCI	Back-up collision intervention
BCM	Body control module
BLSD	Brake limited slip differential
BPP	Brake pedal position
BSW	Blind spot warning

C

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

D

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

E

ABBREVIATION	DESCRIPTION
E/T	Exhaust temperature
EBD	Electric brake force distribution
EC	Engine control
ECL	Engine coolant level
ECM	Engine control module
ECT	Engine coolant temperature
ECV	Electrical control valve
EEPROM	Electrically erasable programmable read only memory
EFT	Engine fuel temperature
EGR	Exhaust gas recirculation
EGRT	Exhaust gas recirculation temperature
EGT	Exhaust gas temperature
EOP	Engine oil pressure
EP	Exhaust pressure
EPR	Exhaust pressure regulator
EPS	Electronically controlled power steering
ESP	Electronic stability program system
EVAP canister	Evaporative emission canister
EVSE	Electric vehicle supply equipment
EXC	Exhaust control

F

ABBREVIATION	DESCRIPTION
FC	Fan control
FCW	Forward collision warning
FEB	Forward emergency braking
FIC	Fuel injector control
FP	Fuel pump
FR	Front
FRP	Fuel rail pressure
FRT	Fuel rail temperature
FTP	Fuel tank pressure
FTT	Fuel tank temperature

G

ABBREVIATION	DESCRIPTION
GND	Ground
GPS	Global positioning system
GST	Generic scan tool

H

ABBREVIATION	DESCRIPTION
HBMC	Hydraulic body-motion control system
HDD	Hard disk drive
HO2S	Heated oxygen sensor
HOC	Heated oxidation catalyst
HPCM	Hybrid power train control module

I

ABBREVIATION	DESCRIPTION
I/M	Inspection and maintenance
IA	Intake air
IAC	Idle air control
IAT	Intake air temperature
IBA	Intelligent brake assist
IC	Ignition control
ICC	Intelligent cruise control
ICM	Ignition control module
IPDM E/R	Intelligent power distribution module engine room
ISC	Idle speed control
ISS	Input shaft speed

K

ABBREVIATION	DESCRIPTION
KS	Knock sensor

L

ABBREVIATION	DESCRIPTION
LBC	Li-ion battery controller
LCD	Liquid crystal display
LCU	Local control unit
LDP	Lane departure prevention
LDW	Lane departure warning
LED	Light emitting diode
LH	Left-hand
LIN	Local interconnect network

M

ABBREVIATION	DESCRIPTION
M/T	Manual transaxle/transmission
MAF	Mass airflow
MAP	Manifold absolute pressure
MDU	Multi display unit
MI	Malfunction indicator
MIL	Malfunction indicator lamp

N

ABBREVIATION	DESCRIPTION
NOX	Nitrogen oxides

O

ABBREVIATION	DESCRIPTION
O2	Oxygen
O2S	Oxygen sensor
OBD	On board diagnostic
OC	Oxidation catalytic converter
OD	Overdrive
OL	Open loop
OSS	Output shaft speed

P

ABBREVIATION	DESCRIPTION
P/S	Power steering
PBR	Potentio balance resistor
PCV	Positive crankcase ventilation
PFCW	Predictive forward collision warning
PNP	Park/Neutral position
PSP	Power steering pressure
PTC	Positive temperature coefficient
PTO	Power takeoff
PWM	Pulse width modulation

R

ABBREVIATION	DESCRIPTION
RAM	Random access memory
RAS	Rear active steer
RH	Right-hand
ROM	Read only memory
RPM	Engine speed
RR	Rear

S

ABBREVIATION	DESCRIPTION
SAE	Society of Automotive Engineers, Inc.
SCK	Serial clock
SDS	Service Data and Specifications
SRT	System readiness test
SST	Special Service Tools

T

ABBREVIATION	DESCRIPTION
TC	Turbocharger
TCM	Transmission control module
TCS	Traction control system
TCU	Telematics communication unit
TP	Throttle position
TPMS	Tire pressure monitoring system
TSS	Turbine shaft speed
TWC	Three way catalytic converter

U

ABBREVIATION	DESCRIPTION
USS	Uphill start support

V

ABBREVIATION	DESCRIPTION
VCM	Vehicle control module
VDC	Vehicle dynamics control system
VIN	Vehicle identification number
VSS	Vehicle speed sensor

W

ABBREVIATION	DESCRIPTION
WOT	Wide open throttle

1

ABBREVIATION	DESCRIPTION
1_1	1st range first gear
1_2	1st range second gear
1GR	First gear

2

ABBREVIATION	DESCRIPTION
2_1	2nd range first gear
2_2	2nd range second gear
2GR	Second gear
2WD	2-wheel drive

3

ABBREVIATION	DESCRIPTION
3GR	Third gear

4

ABBREVIATION	DESCRIPTION
4GR	Fourth gear
4WAS	Four wheel active steer
4WD	Four wheel drive

5

ABBREVIATION	DESCRIPTION
5GR	Fifth gear

6

ABBREVIATION	DESCRIPTION
6GR	Sixth gear

7

ABBREVIATION	DESCRIPTION
7GR	Seventh gear

TIGHTENING TORQUE OF STANDARD BOLTS

Description

INFOID:0000000010242415

This vehicle has both new standard based on ISO* and previous standard bolts/nuts. There are some differences between these two types of bolts/ nuts; shape of the head, grade of strength, hexagonal width across flats and the standard tightening torque.

- For guidance in discriminating, refer to GI-19, "Tightening Torque Table (New Standard Included)".
- The new standard machine screws and tapping screws have a head of ISO standard torx recess.
- If the tightening torque is not described in the description or figure, refer to GI-19, "Tightening Torque Table (New Standard Included)".

*ISO: International Organization for Standardization

Tightening Torque Table (New Standard Included)

INFOID:0000000010242416

CAUTION:

- **The special parts are excluded.**
- **The bolts/nuts in these tables have a strength (discrimination) number/symbol assigned to the head or the like. As to the relation between the strength grade in these tables and the strength (discrimination) number/symbol, refer to “DISCRIMINATION OF BOLTS AND NUTS”.**

PREVIOUS STANDARD

Grade (Strength grade)	Bolt size	Bolt diameter mm	Hexagonal width across flats mm	Pitch mm	Tightening torque (Without lubricant)							
					Hexagon head bolt				Hexagon flange bolt			
					N·m	kg-m	ft-lb	in-lb	N·m	kg-m	ft-lb	in-lb
4T	M6	6.0	10	1.0	5.5	0.56	4	49	7	0.71	5	62
	M8	8.0	12	1.25	13.5	1.4	10	—	17	1.7	13	—
				1.0	13.5	1.4	10	—	17	1.7	13	—
	M10	10.0	14	1.5	28	2.9	21	—	35	3.6	26	—
				1.25	28	2.9	21	—	35	3.6	26	—
	M12	12.0	17	1.75	45	4.6	33	—	55	5.6	41	—
				1.25	45	4.6	33	—	65	6.6	48	—
	M14	14.0	19	1.5	80	8.2	59	—	100	10	74	—
7T	M6	6.0	10	1.0	9	0.92	7	80	11	1.1	8	97
	M8	8.0	12	1.25	22	2.2	16	—	28	2.9	21	—
				1.0	22	2.2	16	—	28	2.9	21	—
	M10	10.0	14	1.5	45	4.6	33	—	55	5.6	41	—
				1.25	45	4.6	33	—	55	5.6	41	—
	M12	12.0	17	1.75	80	8.2	59	—	100	10	74	—
				1.25	80	8.2	59	—	100	10	74	—
	M14	14.0	19	1.5	130	13	96	—	170	17	125	—
9T	M6	6.0	10	1.0	11	1.1	8	—	13.5	1.4	10	—
	M8	8.0	12	1.25	28	2.9	21	—	35	3.6	26	—
				1.0	28	2.9	21	—	35	3.6	26	—
	M10	10.0	14	1.5	55	5.6	41	—	80	8.2	59	—
				1.25	55	5.6	41	—	80	8.2	59	—
	M12	12.0	17	1.75	100	10	74	—	130	13	96	—
				1.25	100	10	74	—	130	13	96	—
	M14	14.0	19	1.5	170	17	125	—	210	21	155	—

CAUTION:

TIGHTENING TORQUE OF STANDARD BOLTS

The parts with aluminum or the cast iron washer surface/thread surface are excluded.

NEW STANDARD BASED ON ISO

Grade (Strength grade)	Bolt size	Bolt diameter mm	Hexagonal width across flats mm	Pitch mm	Tightening torque							
					Hexagon head bolt				Hexagon flange bolt			
					N·m	kg-m	ft-lb	in-lb	N·m	kg-m	ft-lb	in-lb
4.8 (Without lubricant)	M6	6.0	10	1.0	5.5	0.56	4	49	7	0.71	5	62
	M8	8.0	13	1.25	13.5	1.4	10	—	17	1.7	13	—
				1.0	13.5	1.4	10	—	17	1.7	13	—
	M10	10.0	16	1.5	28	2.9	21	—	35	3.6	26	—
				1.25	28	2.9	21	—	35	3.6	26	—
	M12	12.0	18	1.75	45	4.6	33	—	55	5.6	41	—
				1.25	45	4.6	33	—	65	6.6	48	—
	M14	14.0	21	1.5	80	8.2	59	—	100	10	74	—
4.8 (With lubricant)	M6	6.0	10	1.0	4	0.41	3	35	5.5	0.56	4	49
	M8	8.0	13	1.25	11	1.1	8	—	13.5	1.4	10	—
				1.0	11	1.1	8	—	13.5	1.4	10	—
	M10	10.0	16	1.5	22	2.2	16	—	28	2.9	21	—
				1.25	22	2.2	16	—	28	2.9	21	—
	M12	12.0	18	1.75	35	3.6	26	—	45	4.6	33	—
				1.25	35	3.6	26	—	45	4.6	33	—
	M14	14.0	21	1.5	65	6.6	48	—	80	8.2	59	—
8.8 (With lubricant)	M6	6.0	10	1.0	8	0.82	6	71	10	1.0	7	89
	M8	8.0	13	1.25	21	2.1	15	—	25	2.6	18	—
				1.0	21	2.1	15	—	25	2.6	18	—
	M10	10.0	16	1.5	40	4.1	30	—	50	5.1	37	—
				1.25	40	4.1	30	—	50	5.1	37	—
	M12	12.0	18	1.75	70	7.1	52	—	85	8.7	63	—
				1.25	70	7.1	52	—	85	8.7	63	—
	M14	14.0	21	1.5	120	12	89	—	140	14	103	—
10.9 (With lubricant)	M6	6.0	10	1.0	10	1.0	7	89	12	1.2	9	106
	M8	8.0	13	1.25	27	2.8	20	—	32	3.3	24	—
				1.0	27	2.8	20	—	32	3.3	24	—
	M10	10.0	16	1.5	55	5.6	41	—	65	6.6	48	—
				1.25	55	5.6	41	—	65	6.6	48	—
	M12	12.0	18	1.75	95	9.7	70	—	110	11	81	—
				1.25	95	9.7	70	—	110	11	81	—
	M14	14.0	21	1.5	160	16	118	—	180	18	133	—

CAUTION:

1. **Use tightening torque with lubricant for the new standard bolts/nuts in principle. Friction coefficient stabilizer is applied to the new standard bolts/nuts.**
2. **However, use tightening torque without lubricant for the following cases. Friction coefficient stabilizer is not applied to the following bolts/nuts.**

- **Grade 4.8, M6 size bolt, Conical spring washer installed**
- **Paint removing nut (Size M6 and M8) for fixing with weld bolt**

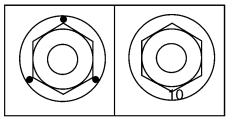
BOLTS

	Grade (Strength)	Discrimination	
Previous standard	4T ($392N/mm^2$)	4	(No number/ symbol)
	7T ($686N/mm^2$)	7	
	9T ($883N/mm^2$)	9	
New Standard	4.8 ($420N/mm^2$)	4.8	(No number/ symbol)
	8.8 ($800N/mm^2$)	8.8	
	10.9 ($1040N/mm^2$)	10.9	

NUTS

	Grade (Proof load stress)	Discrimination		
Previous standard	7N ($686N/mm^2$)	(No number/ symbol)		
	9N ($883N/mm^2$)	9		
New Standard	8 ($800N/mm^2$)	8		(No number/ symbol)
	10 ($1040N/mm^2$)	10		

NOTICE:
- A number is assigned on the side of the nuts in some cases.
- A number or symbol is assigned on the upper surface of the flange for the nut with flange.



MACHINE SCREWS AND TAPPING SCREWS

Shape of the head :
Cross recess for the previous standard
Torx recess for the new standard

Screw size	Screw diameter	Torx size
M4	4.0	T20
M5	5.0	T20
M6	6.0	T30

NOTICE:
Use torx size T20 (united with M4 screw) for M5 screw although ISO standard specifies T25.

SAIA0453E

VEHICLE INFORMATION

IDENTIFICATION INFORMATION

Model Variation

INFOID:0000000010242435

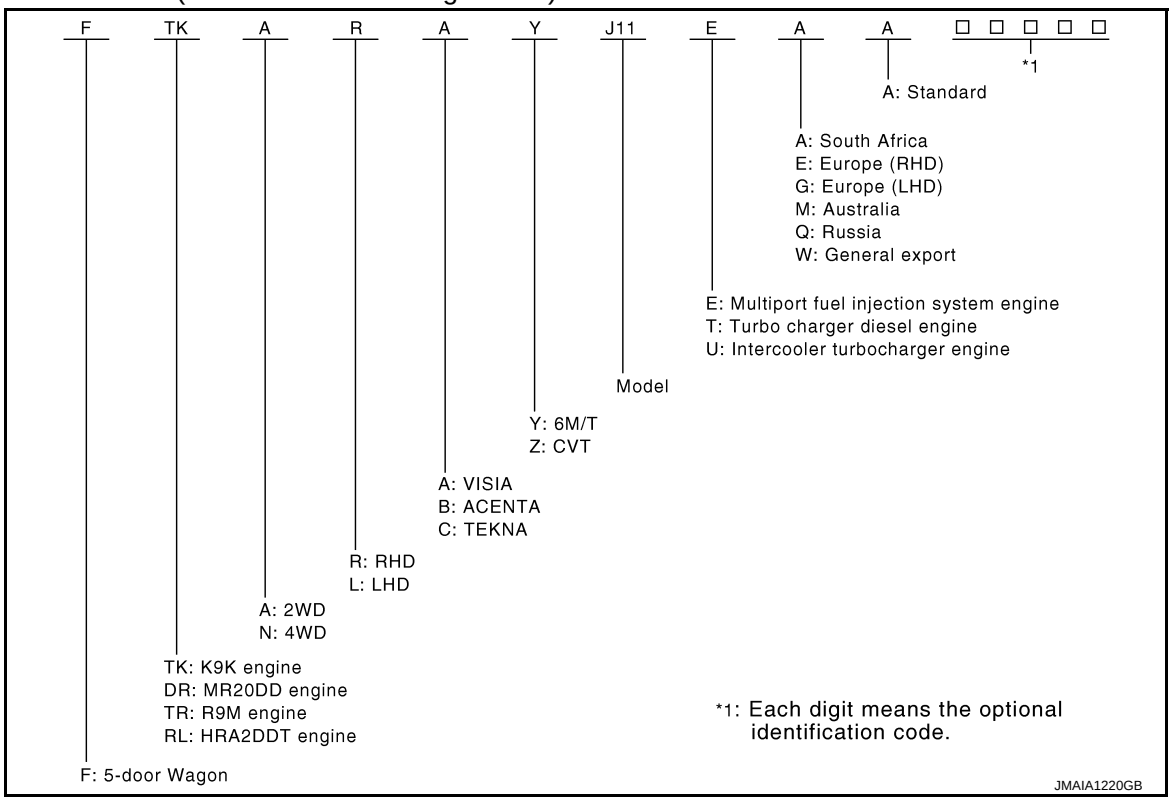
LHD MODELS

Destination	Body	Engine	Trans-mission	Axle	Grade	Model
Europe	5-door wagon	HRA2DDT	6M/T	2WD	VISIA	FRLALAY-UGA
					ACENTA	FRLALBY-UGA
					TEKNA	FRLALCY-UGA
		K9K			VISIA	FTKALAY-TGA
					ACENTA	FTKALBY-TGA
					TEKNA	FTKALCY-TGA
		R9M			VISIA	FTRALAY-TGA
					ACENTA	FTRALBY-TGA
					TEKNA	FTRALCY-TGA
			CVT		VISIA	FTRALAZ-TGA
					ACENTA	FTRALBZ-TGA
					TEKNA	FTRALCZ-TGA
			6M/T	4WD	VISIA	FTRNLAY-TGA
					ACENTA	FTRNLBY-TGA
					TEKNA	FTRNLCY-TGA
Russia/Ukraine / Kazakhstan		HRA2DDT		2WD	VISIA	FRLALAY-UQA
					ACENTA	FRLALBY-UQA
		MR20DD			VISIA	FDRALAY-EQA
					ACENTA	FDRALBY-EQA
			CVT		VISIA	FDRALAZ-EQA
					ACENTA	FDRALBZ-EQA
					TEKNA	FDRALCZ-EQA
				4WD	ACENTA	FDRNLBZ-EQA
					TEKNA	FDRNLCZ-EQA
		R9M		2WD	ACENTA	FTRALBZ-TQA
					TEKNA	FTRALCZ-TQA
General export		HRA2DDT	6M/T		VISIA	FRLALAY-UWA
		MR20DD				FDRALAY-EWA
					ACENTA	FDRALBY-EWA
			CVT	4WD	VISIA	FDRNLAZ-EWA
					ACENTA	FDRNLBZ-EWA
				2WD		FDRALBZ-EWA
		R9M	6M/T		VISIA	FTRALAY-TWA
					ACENTA	FTRALBY-TWA
				4WD	VISIA	FTRNLAY-TWA
					ACENTA	FTRNLBY-TWA

RHD MODELS

Destination	Body	Engine	Trans-mission	Axle	Grade	Model
Europe	5-door wagon	HRA2DDT	6M/T	2WD	VISIA	FRLARAY-UEA
					ACENTA	FRLARBY-UEA
					TEKNA	FRLARCY-UEA
		K9K			VISIA	FTKARAY-TEA
					ACENTA	FTKARBY-TEA
					TEKNA	FTKARCY-TEA
		R9M			VISIA	FTRARAY-TEA
					ACENTA	FTRARBY-TEA
					TEKNA	FTRARCY-TEA
				4WD	VISIA	FTRNRAY-TEA
					ACENTA	FTRNRBY-TEA
					TEKNA	FTRNRCY-TEA
			CVT	2WD	VISIA	FTRARAZ-TEA
					ACENTA	FTRARBZ-TEA
					TEKNA	FTRARCZ-TEA
South Africa		HRA2DDT	6M/T		VISIA	FRLARAY-UAA
					ACENTA	FRLARBY-UAA
		K9K				FTKARBY-TAA
		R9M		4WD		FTRNRBY-TAA
			CVT	2WD		FTRARBZ-TAA
Australia		MR20DD			VISIA	FDRARAZ-EMA
					ACENTA	FDRARBZ-EMA
			6M/T		VISIA	FDRARAY-EMA
					ACENTA	FDRARBY-EMA
		R9M	CVT			FTRARBZ-TMA
General export		HRA2DDT	6M/T		VISIA	FRLARAY-UWA
		MR20DD				FDRARAY-EWA
					ACENTA	FDRARBY-EWA
			CVT		VISIA	FDRARAZ-EWA
					ACENTA	FDRARBZ-EWA
				4WD	VISIA	FDRNRAZ-EWA
					ACENTA	FDRNRBZ-EWA
		R9M	6M/T		VISIA	FTRNRAY-TWA
					ACENTA	FTRNRBY-TWA
				2WD	VISIA	FTRARAY-TWA
					ACENTA	FTRARBY-TWA

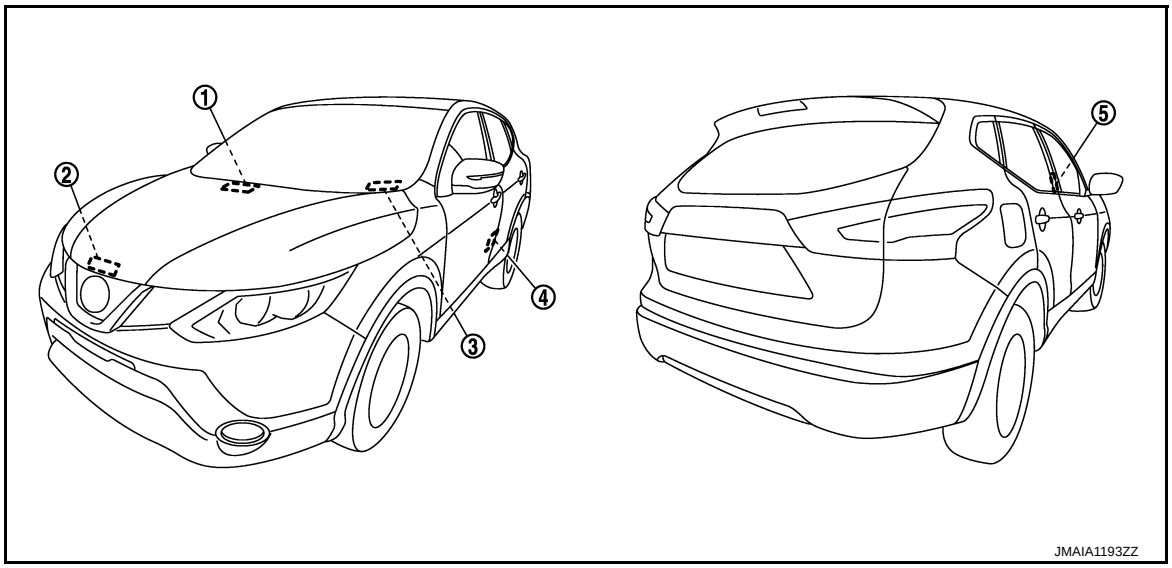
Model variation code (Prefix and suffix designations)



Information About Identification or Model Code

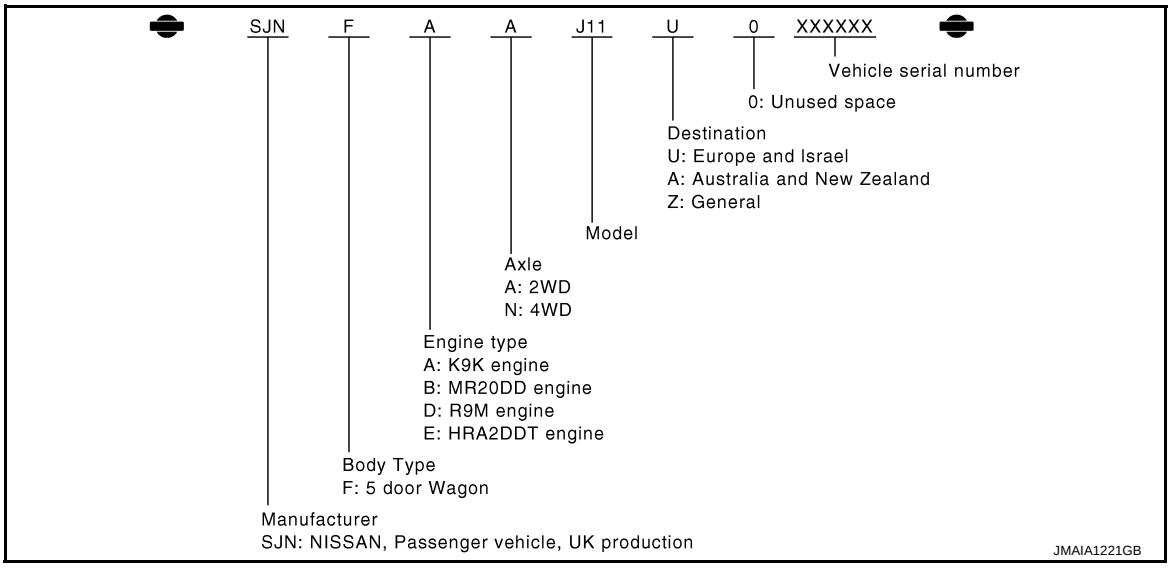
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IDENTIFICATION NUMBER

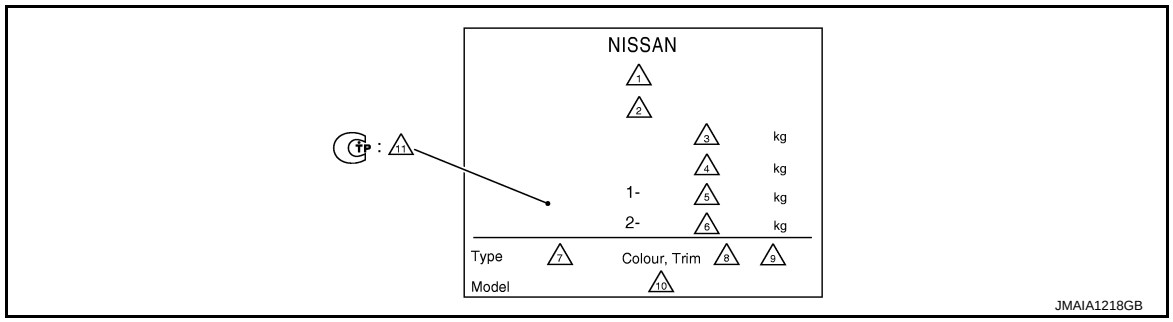


1. Vehicle identification number (Chassis number) (behind the cover)
2. Air conditioner specification label
3. Vehicle identification number plate
4. Tire placard (driver side center pillar)
5. Vehicle identification plate

VEHICLE IDENTIFICATION NUMBER ARRANGEMENT



IDENTIFICATION PLATE

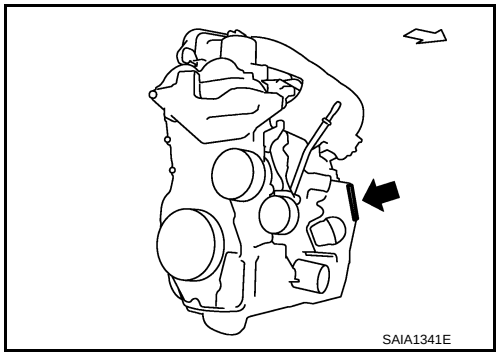


1. Type approval number (Models with WVTA or NTA)
   Blank (Models without WVTA or NTA)
2. Vehicle identification number (Chassis number)
3. Gross vehicle weight
4. Gross combination weight
   Gross vehicle weight
   + Gross trailing capacity (Weight)
5. Gross axle weight (Front)
6. Gross axle weight (Rear)
7. Vehicle type
8. Body color code
9. Trim color code
10. Model variation code
11. CTP mark for Russia

ENGINE SERIAL NUMBER

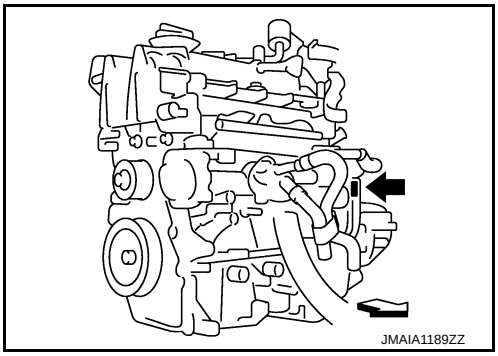
MR20DD engine

⇦ : Vehicle front



HRA2DDT engine

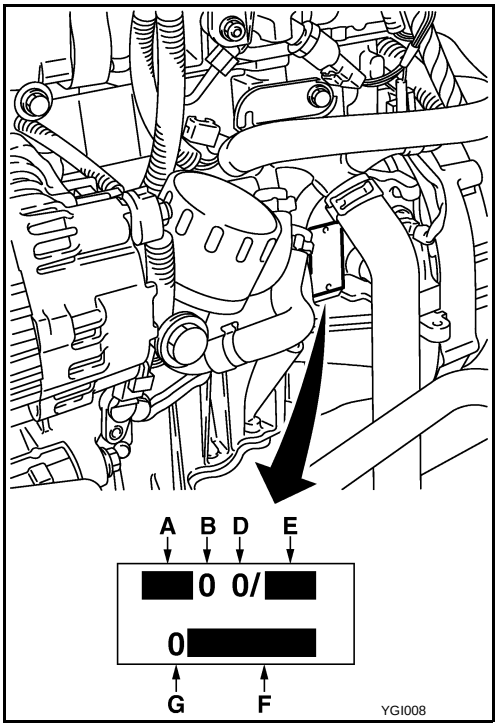
⇦ : Vehicle front



K9K engine

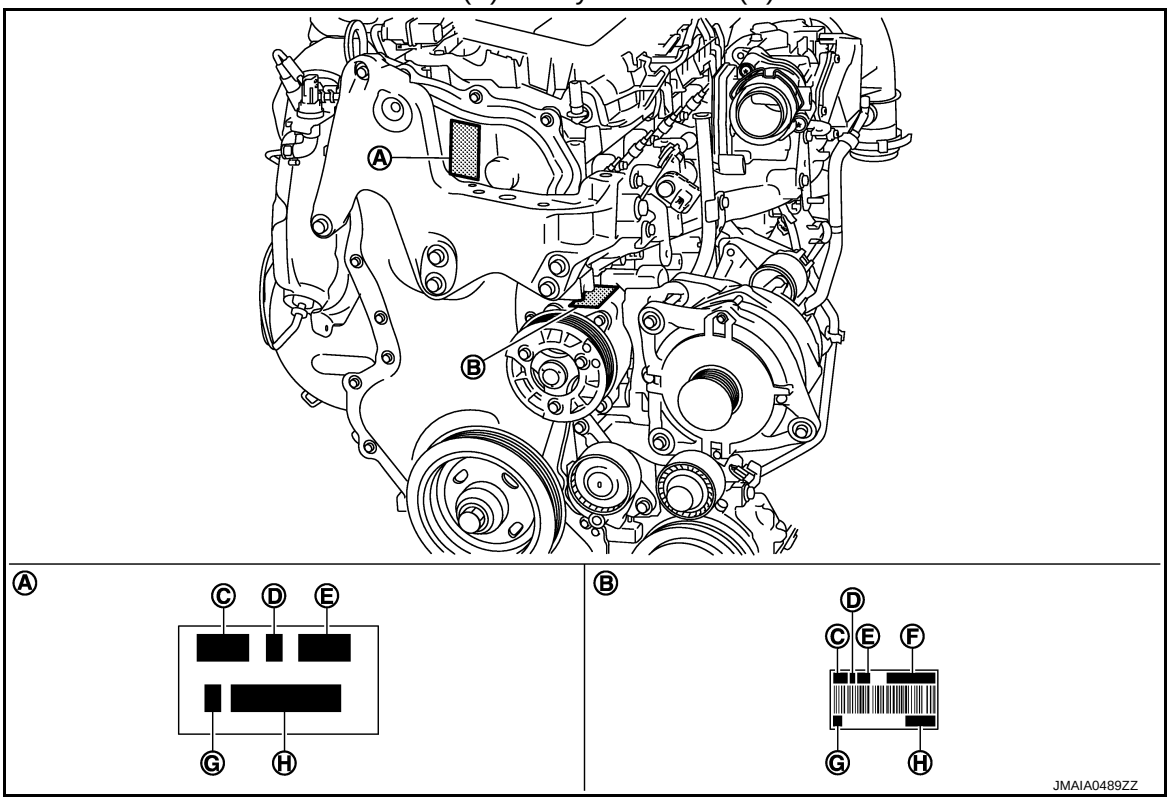
Identification is engraved on the cylinder block which carries:

- A: Engine type
- B: Engine type approval letter
- D: Renault code
- E: Engine suffix
- F: Engine fabrication number
- G: Engine assembly plant



R9M ENGINE

Engine identification is shown on front cover (A) and cylinder block (B).

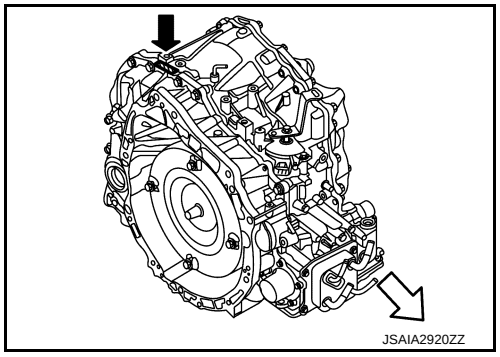


C	Engine type	D	Engine type approval letter	E	Engine suffix
F	Engine assembly part number	G	Engine assembly plant	H	Engine fabrication number

AUTOMATIC TRANSAXLE SERIAL NUMBER

CVT Unit (RE0F10D/RE0F10G)

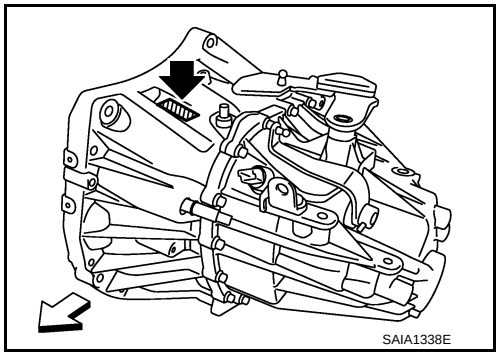
⇦ : Vehicle front



MANUAL TRANSAXLE SERIAL NUMBER

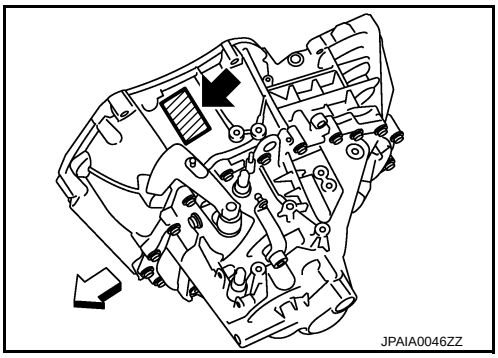
6M/T (RS6F94R)

⇦ : Vehicle front



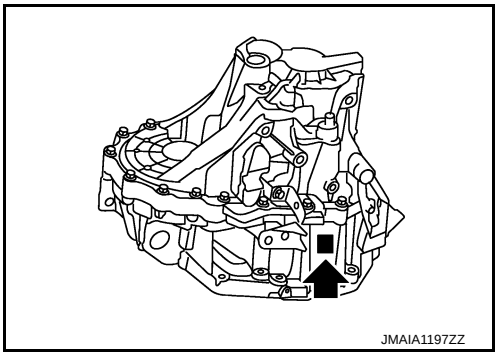
6M/T (RS6F52A)

⇦ : Vehicle front



6M/T (RS6F95R)

⇦ : Vehicle front



Dimensions

INFOID:0000000010242437

Unit: mm (in)

Transmission	2WD	4WD
Overall length	4,377 (172.3)	4,377 (172.3)
Overall width	1,806 (71.1)	1,806 (71.1)
Overall height	1,590 (62.6) 1,624 (63.9) *1	1,595 (62.8) 1,630 (64.2)*1
Front tread	1,560 (61.4)	1,560 (61.4)
Rear tread	1,560 (61.4) 1,540 (56.7)*2	1,540 (56.7)
Wheelbase	2,646 (104.2)	2,646 (104.2)

*1: with roof rail

*2: models with Independent Multi-link type suspension (where fitted)

Wheels & Tires

INFOID:0000000010242438

		Steel	Aluminum
Road wheel/offset	mm (in)	16 x 6.5 J/40 (1.57) 16 x 4T*2 /40 (1.57)	17 x 7.0 J/40 (1.57) 18 x 7.0 J/40 (1.57) 19 x 7.0J/40 (1.57)
		Conventional	Spare
Tire size		215/65R16 215/60R17*2 215/55R18*2 225/45R19*1	Conventional*1 T145/90R16*2

*1: where fitted

*2: Temporary use spare tire (where fitted)

PRECAUTION

PRECAUTIONS

Description

INFOID:0000000010242453

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

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

INFOID:0000000010242454

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

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

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

WARNING:

Always observe the following items for preventing accidental activation.

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

Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:0000000010504806

CAUTION:

Comply with the following cautions to prevent any error and malfunction.

- **Before removing and installing any control units, first turn the ignition power source and accessory power source to the OFF, then disconnect both battery cables.**
- **After finishing work, confirm that all control unit connectors are connected properly, then re-connect both battery cables.**
- **Always use CONSULT to perform self-diagnosis as a part of each function inspection after finishing work. If a DTC is detected, perform trouble diagnosis according to self-diagnosis results.**

For vehicle with steering lock unit, if the battery is disconnected or discharged, the steering wheel will lock and cannot be turned.

If turning the steering wheel is required with the battery disconnected or discharged, follow the operation procedure below before starting the repair operation.

OPERATION PROCEDURE

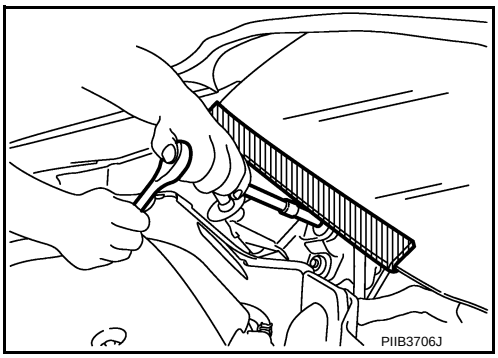
1. Connect both battery cables.
   NOTE:
   Supply power using jumper cables if battery is discharged.
2. Open driver door.
3. Turn the ignition switch to the ON position.
   (At this time, the steering lock will be released.)

4. Turn the ignition switch to OFF position with driver door open.
5. Wait for 3 minutes or longer with driver door open.
   NOTE:
   - Do not close driver door because the steering wheel locks when driver door is closed.
   - The auto acc function is adapted to this vehicle. For this reason, even when the ignition switch is turned to OFF position, the accessory power source does not turned OFF and continues to be supplied for a certain amount of time.
6. Disconnect both battery cables. The steering lock will remain released with both battery cables disconnected and the steering wheel can be turned.
7. Perform the necessary repair operation.
8. When the repair work is completed, re-connect both battery cables. With the brake pedal released, turn the ignition switch from OFF position to ON position, then to LOCK position. (The steering wheel will lock when the ignition switch is turned to LOCK position.)
9. Perform self-diagnosis check of all control units using CONSULT.

Precaution for Procedure without Cowl Top Cover

INFOID:0000000010242456

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc to prevent damage to windshield.



Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit)

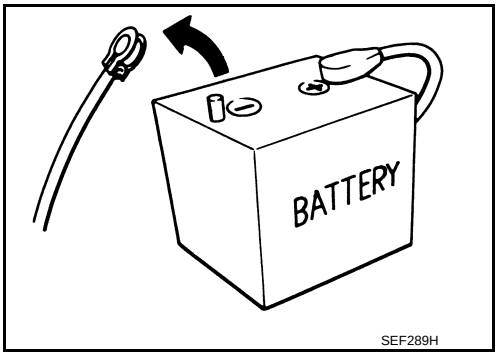
INFOID:0000000010242457

CAUTION:
Remove battery terminal and AV control unit after a lapse of 30 seconds or more after turning the ignition switch OFF.
NOTE:
After the ignition switch is turned OFF, the AV control unit continues operating for approximately 30 seconds. Therefore, data corruption may occur if battery voltage is cut off within 30 seconds.

Precautions for Removing Battery Terminal

INFOID:0000000010505461

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



HOW TO DISCONNECT 12V BATTERY TERMINAL

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

INSTRUCTION 1

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

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

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

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

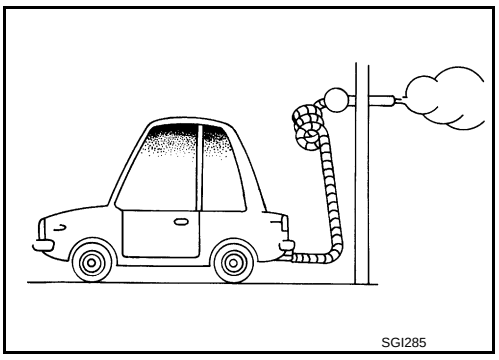
INSTRUCTION 2 (FOR VEHICLES PARKED BY IGNITION SWITCH OFF)

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

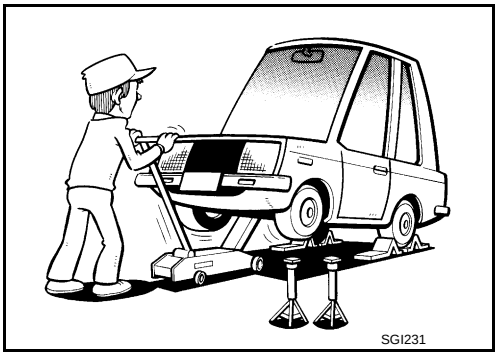
General Precautions

INFOID:0000000010242459

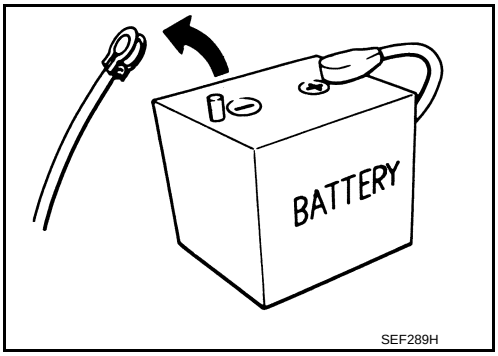
- Do not operate the engine for an extended period of time without proper exhaust ventilation.
Keep the work area well ventilated and free of any inflammable materials. Special care should be taken when handling any inflammable or poisonous materials, such as gasoline, refrigerant gas, etc. When working in a pit or other enclosed area, be sure to properly ventilate the area before working with hazardous materials.
Do not smoke while working on the vehicle.



- Before jacking up the vehicle, apply wheel chocks or other tire blocks to the wheels to prevent the vehicle from moving. After jacking up the vehicle, support the vehicle weight with safety stands at the points designated for proper lifting before working on the vehicle.
  These operations should be done on a level surface.
- When removing a heavy component such as the engine or transaxle/transmission, be careful not to lose your balance and drop them. Also, do not allow them to strike adjacent parts, especially the brake tubes and master cylinder.


SGI231

- Before starting repairs which do not require battery power:
  Turn off ignition switch.
  Disconnect the negative battery terminal.
- If the battery terminals are disconnected, recorded memory of radio and each control unit is erased.

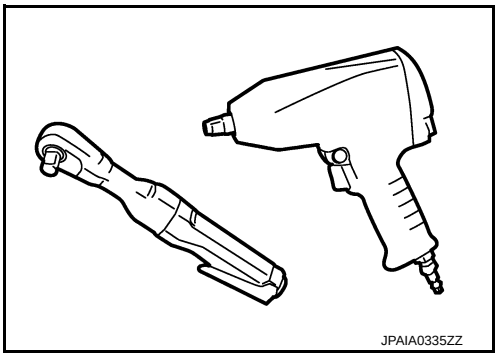


SEF289H

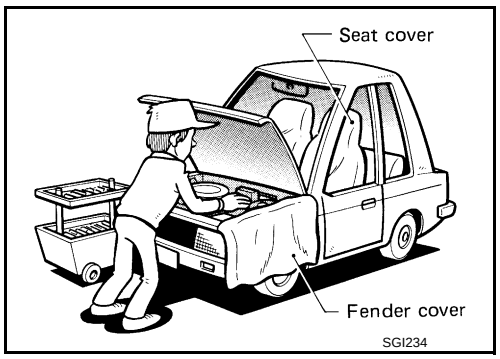
- To prevent serious burns:
  Avoid contact with hot metal parts.
  Do not remove the radiator cap when the engine is hot.
- Dispose of drained oil or the solvent used for cleaning parts in an appropriate manner.
- Do not attempt to top off the fuel tank after the fuel pump nozzle shuts off automatically.
  Continued refueling may cause fuel overflow, resulting in fuel spray and possibly a fire.
- Clean all disassembled parts in the designated liquid or solvent prior to inspection or assembly.
- Replace oil seals, gaskets, packings, O-rings, locking washers, cotter pins, self-locking nuts, etc. with new ones.


SGI233

- Replace inner and outer races of tapered roller bearings and needle bearings as a set.
- Arrange the disassembled parts in accordance with their assembled locations and sequence.
- Do not touch the terminals of electrical components which use microcomputers (such as ECM).
  Static electricity may damage internal electronic components.
- After disconnecting vacuum or air hoses, attach a tag to indicate the proper connection.
- Use only the fluids and lubricants specified in this manual.
- Use approved bonding agent, sealants or their equivalents when required.
- Use hand tools, power tools (disassembly only) and recommended special tools where specified for safe and efficient service repairs.
- When repairing the fuel, oil, water, vacuum or exhaust systems, check all affected lines for leakage.


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- Before servicing the vehicle:
  Protect fenders, upholstery and carpeting with appropriate covers.
  Take caution that keys, buckles or buttons do not scratch paint.



WARNING:
To prevent ECM from storing the diagnostic trouble codes, never 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 TM sections.

Three Way Catalyst

INFOID:0000000010242460

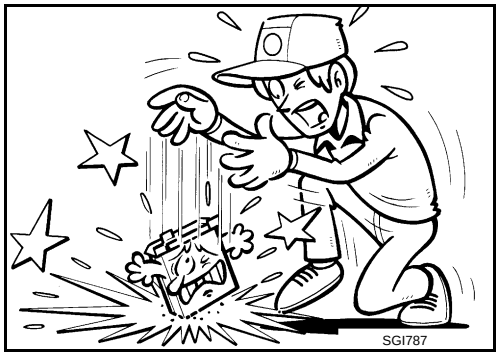
If a large amount of unburned fuel flows into the catalyst, the catalyst temperature will be excessively high. To prevent this, follow the instructions.
- Use unleaded gasoline only. Leaded gasoline will seriously damage the three way catalyst.
- When checking for ignition spark or measuring engine compression, 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.

Multiport Fuel Injection System or Engine Control System

INFOID:0000000010242461

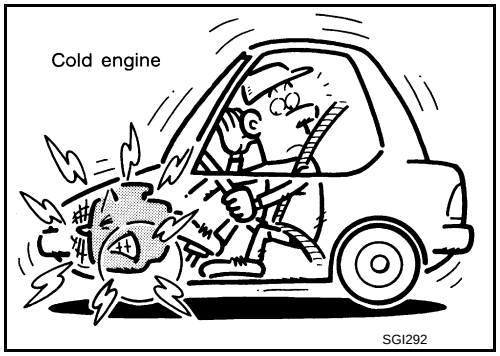
- Before connecting or disconnecting any harness connector for the multiport fuel injection system or ECM:
  Turn ignition switch to “OFF” position.
  Disconnect negative battery terminal.
  Otherwise, there may be damage to ECM.
- Before disconnecting pressurized fuel line from fuel pump to injectors, be sure to release fuel pressure.
- Be careful not to jar components such as ECM and mass air flow sensor.



Turbocharger (If Equipped)

INFOID:0000000010242462

The turbocharger turbine revolves at extremely high speeds and becomes very hot. Therefore, it is essential to maintain a clean supply of oil flowing through the turbocharger and to follow all required maintenance instructions and operating procedures.
- Always use the recommended oil. Follow the instructions for proper time to change the oil and proper oil level.
- Avoid accelerating engine to a high rpm immediately after starting.
- If engine had been operating at high rpm for an extended period of time, let it idle for a few minutes prior to shutting if off.

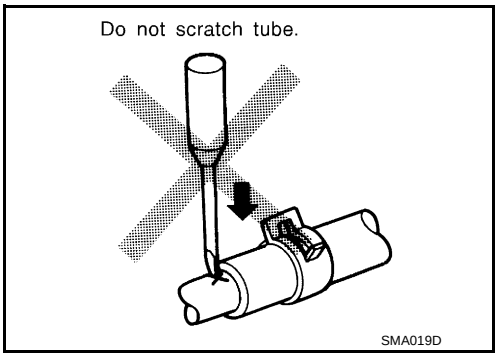


Hoses

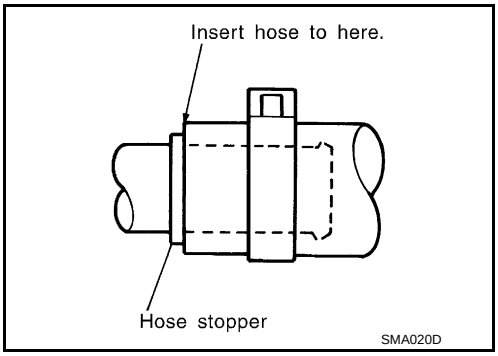
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HOSE REMOVAL AND INSTALLATION

- To prevent damage to rubber hose, do not pry off rubber hose with tapered tool or screwdriver.

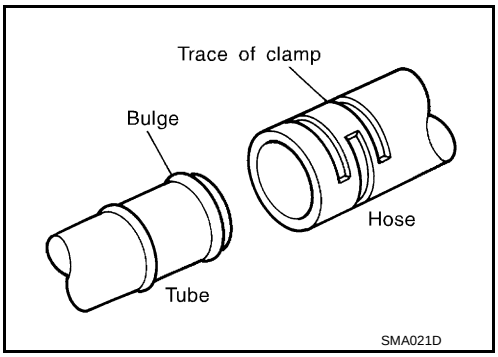


- To reinstall the rubber hose securely, check that hose insertion length and orientation is correct. (If tube is equipped with hose stopper, insert rubber hose into tube until it butts up against hose stopper.)

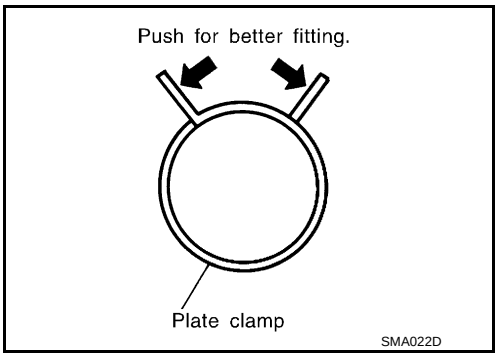


HOSE CLAMPING

- If old rubber hose is re-used, install hose clamp in its original position (at the indentation where the old clamp was). If there is a trace of tube bulging left on the old rubber hose, align rubber hose at that position.
- Discard old clamps; replace with new ones.



- After installing plate clamps, apply force to them in the direction of the arrow, tightening rubber hose equally all around.



Engine Oils

INFOID:0000000010242464

Prolonged and repeated contact with used engine oil may cause skin cancer. Try to avoid direct skin contact with used oil.
If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.

HEALTH PROTECTION PRECAUTIONS

- Avoid prolonged and repeated contact with oils, particularly used engine oils.
- Wear protective clothing, including impervious gloves where practicable.
- Do not put oily rags in pockets.
- Avoid contaminating clothes, particularly underpants, with oil.
- Heavily soiled clothing and oil-impregnated footwear should not be worn. Overalls must be cleaned regularly.
- First aid treatment should be obtained immediately for open cuts and wounds.
- Use barrier creams, applying them before each work period, to help the removal of oil from the skin.
- Wash with soap and water to ensure all oil is removed (skin cleansers and nail brushes will help). Preparations containing lanolin replace the natural skin oils which have been removed.
- Do not use gasoline, kerosene, diesel fuel, gas oil, thinners or solvents for cleaning skin.
- If skin disorders develop, obtain medical advice without delay.
- Where practical, degrease components prior to handling.
- Where there is a risk of eye contact, eye protection should be worn, for example, chemical goggles or face shields; in addition an eye wash facility should be provided.

ENVIRONMENTAL PROTECTION PRECAUTIONS

Dispose of used oil and used oil filters through authorized waste disposal contractors to licensed waste disposal sites, or to the waste oil reclamation trade. If in doubt, contact the local authority for advice on disposal facilities.
It is illegal to pour used oil on to the ground, down sewers or drains, or into water sources.
The regulations concerning pollution vary between regions.

Air Conditioning

INFOID:0000000010242465

Use an approved refrigerant recovery unit any time the air conditioning system must be discharged. Refer to HA section “REFRIGERATION SYSTEM” for specific instructions.

Fuel

INFOID:0000000010242466

GASOLINE ENGINE

CAUTION:

- **Do not use leaded gasoline. Using leaded gasoline will damage the catalytic converter.**

MR20DD engine:
Use UNLEADED REGULAR gasoline with an octane rating of at least 91 (RON).

HRA2DDT engine
Use UNLEADED PREMIUM gasoline with an octane rating of at least 95 (RON).

DIESEL ENGINE

Diesel fuel above 51 cetane and with less than 10 ppm of sulfur (EN590 and Euro 5 specification) must be used.
If two types of diesel fuel are available, use summer or winter fuel properly according to the following temperature conditions.

- Above -7°C (20°F) ... Summer type diesel fuel.
- Below -7°C (20°F) ... Winter type diesel fuel.

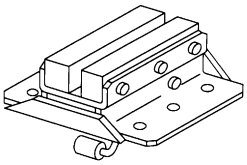
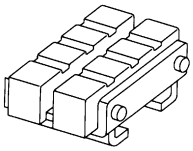
CAUTION:

- **Do not use home heating oil, gasoline or other alternate fuels in diesel engine, this can cause engine damage.**
- **Do not add gasoline or other alternate fuels to diesel fuel.**
- **Do not use summer fuel at temperatures below -7°C (20°F). Cold temperatures will cause wax to form in the fuel and may prevent the engine from running smoothly.**

LIFTING POINT

Commercial Service Tools

INFOID:0000000010242467

Tool name	Description
Board on attachment	 S-NT001
Safety stand attachment	 S-NT002

CAUTION:

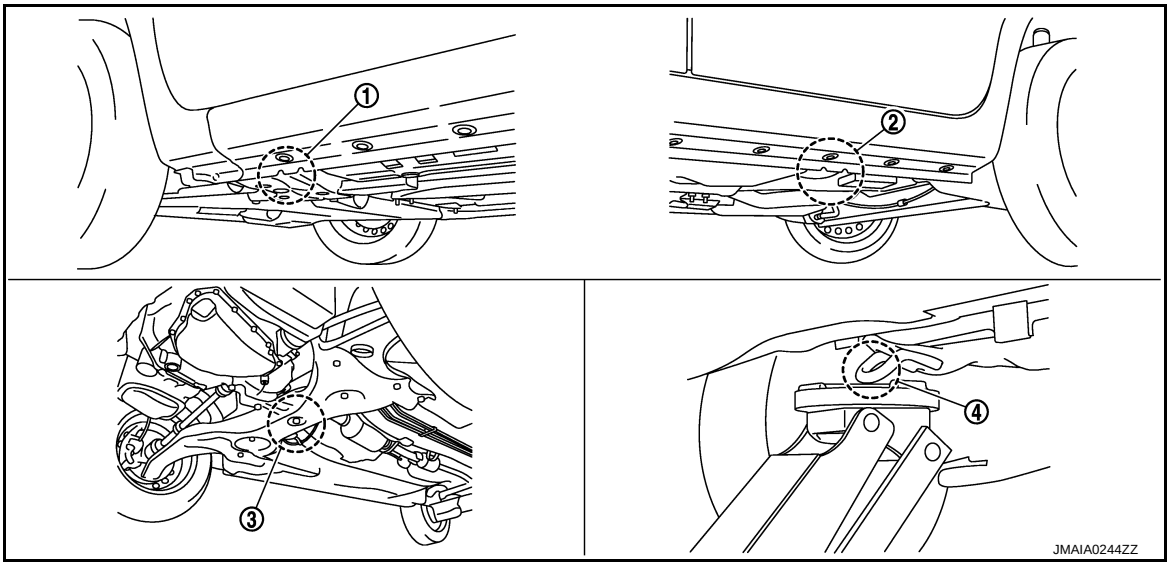
- **Every time the vehicle is lifted up, maintain the complete vehicle curb condition.**
- **Since the vehicle's center of gravity changes when removing main parts on the front side (engine, transmission, suspension etc.), support a jack up point on the rear side garage jack with a mission jack or equivalent.**
- **Since the vehicle's center of gravity changes when removing main parts on the rear side (rear axle, suspension, etc.), support a jack up point on the front side garage jack with a mission jack or equivalent.**
- **Be careful not to smash or never do anything that would affect piping parts.**

Garage Jack and Safety Stand and 2-Pole Lift

INFOID:0000000010242468

WARNING:

- **Park the vehicle on a level surface when using the jack. Check to avoid damaging pipes, tubes, etc. under the vehicle.**
- **Never get under the vehicle while it is supported only by the jack. Always use safety stands when you have to get under the vehicle.**
- **Place wheel chocks at both front and back of the wheels on the ground.**
- **When lifting the vehicle, open the lift arms as wide as possible and ensure that the front and rear of the vehicle are well balanced.**
- **When setting the lift arm, never allow the arm to contact the brake tubes, brake cable, fuel lines and sill spoiler.**



1. Safety stand point and lift up point (front)
2. Safety stand point and lift up point (rear)
3. Garage jack point (front)
4. Garage jack point (rear)

CAUTION:
There is canister just behind Garage jack point rear. Jack up carefully.

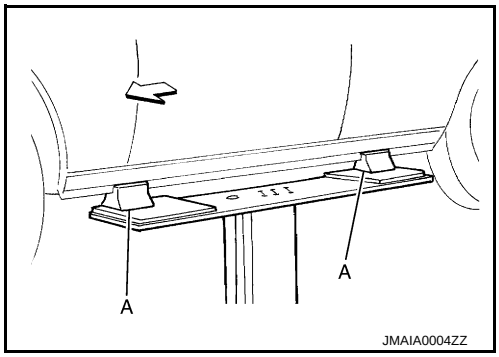
Board-On Lift

INFOID:0000000010242469

CAUTION:
Check vehicle is empty when lifting.

- **The board-on lift attachment (A) set at front end of vehicle should be set on the front of the sill under the front door opening.**
- **Position attachments at front and rear ends of board-on lift.**

⇦ : Vehicle front



TOW TRUCK TOWING

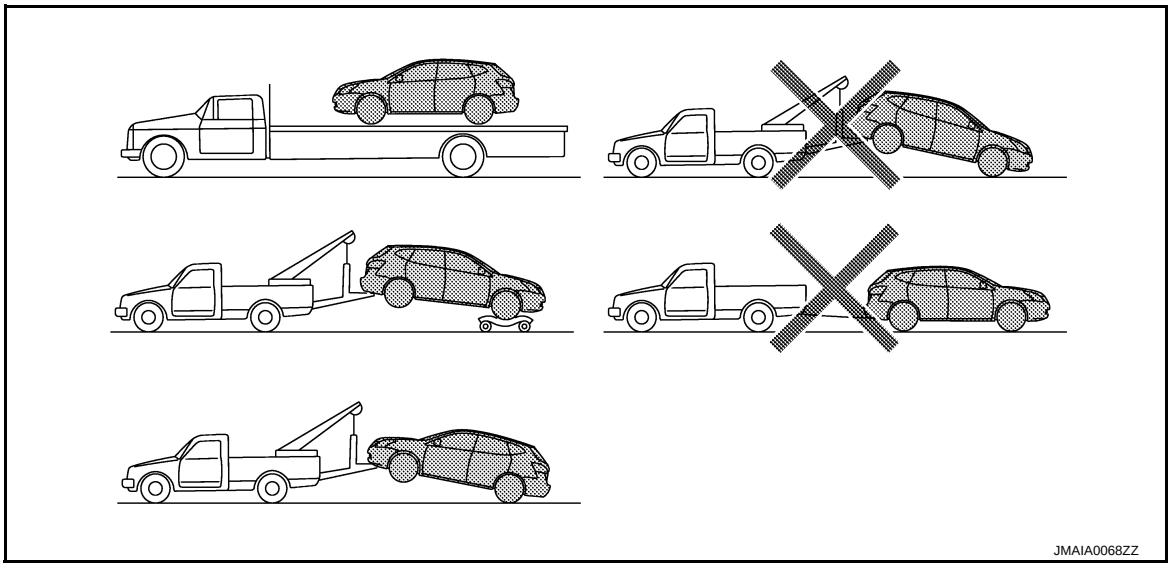
Tow Truck Towing

INFOID:0000000010242470

CAUTION:

- **All applicable state or Provincial laws and local laws regarding the towing operation must be obeyed.**
- **It is necessary to use proper towing equipment to avoid possible damage to the vehicle during towing operation. Towing is in accordance with Towing Procedure Manual at dealer.**
- **Always attach safety chains before towing.**
- **When towing, check that the transmission, steering system and powertrain are in good order. If any unit is damaged, dollies must be used.**
- **Never tow a CVT model from the rear (that is backward) with four wheels on the ground. This may cause serious and expensive damage to the transmission.**

2WD MODELS



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NISSAN recommends that vehicle be towed with the driving (front) wheels off the ground or that a dolly be used as illustrated.

CAUTION:

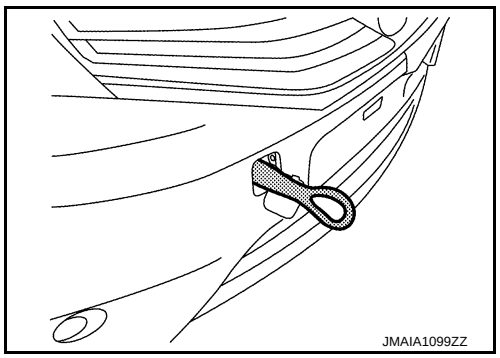
- **Never tow CVT models with the front wheels on the ground or four wheels on the ground (forward or backward), as this may cause serious and expensive damage to the transmission.**
  If it is necessary to tow the vehicle with the rear wheels raised, always use towing dollies under the front wheels.
- **When towing CVT models with the front wheels on towing dollies:**
- **Turn the ignition switch to the OFF position, and secure the steering wheel in a straight ahead position with a rope or similar device. Never secure the steering wheel by turning the ignition switch to the LOCK position. This may damage the steering lock mechanism.**
- **Move the selector lever to the N (Neutral) position.**
- **When the battery of vehicle equipped with the Intelligent Key system is discharged, your vehicle should be towed with the front wheels on towing dollies or place the vehicle on a flat bed truck.**
- **When towing two wheel drive CVT model with the rear wheels on the ground (if you do not use towing dollies): Always release the parking brake.**

Vehicle Recovery (Freeing a Stuck Vehicle)

INFOID:0000000010242471

FRONT

1. Remove the hook cover from the bumper using a remover tool.
2. Securely install the vehicle recovery hook stored with jacking tools.


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Check that the hook is properly secured in the stored place after use.

WARNING:

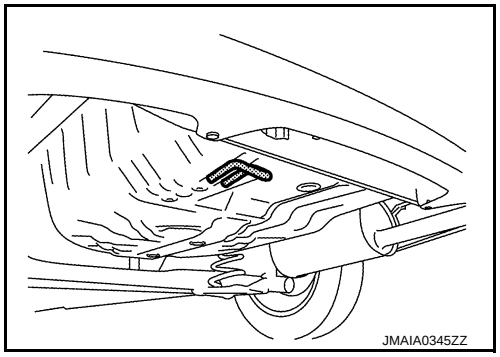
- **Stand clear of a stuck vehicle.**
- **Never spin your tires at high speed. This could cause them to explode and result in serious injury. Parts of your vehicle could also overheat and be damaged.**

CAUTION:

- **Tow chains or cables must be attached only to the vehicle recovery hooks or main structural members of the vehicle. Otherwise, the vehicle body will be damaged.**
- **Never use the vehicle tie downs to free a vehicle stuck in sand, snow, mud, etc. Never tow the vehicle using the vehicle tie downs or recovery hooks.**
- **Always pull the cable straight out from the front of the vehicle. Never pull on the hook at an angle.**
- **Pulling devices should be routed so they do not touch any part of the suspension, steering, brake or cooling systems.**
- **Pulling devices such as ropes or canvas straps are not recommended for use in vehicle towing or recovery.**

REAR

Securely install the vehicle recovery hook stored with jacking tools.


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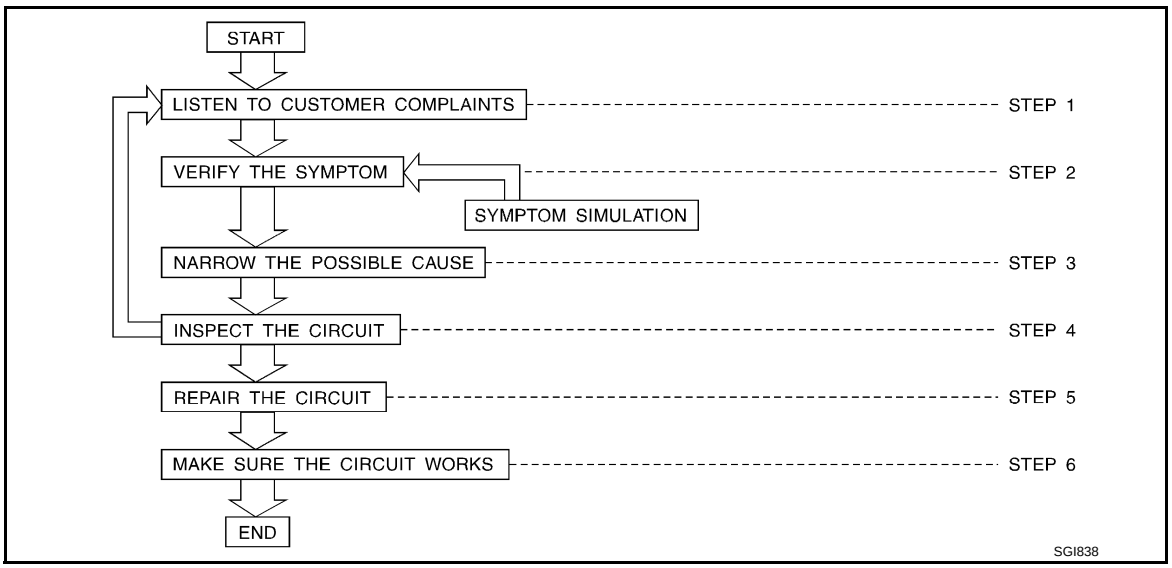
BASIC INSPECTION

SERVICE INFORMATION FOR ELECTRICAL INCIDENT

Work Flow

INFOID:0000000010242493

WORK FLOW



STEP	DESCRIPTION	
STEP 1	Get detailed information about the conditions and the environment when the incident occurred. The following are key pieces of information required to make a good analysis:	
	WHAT	Vehicle Model, Engine, Transmission/Transaxle and the System (i.e. Radio).
	WHEN	Date, Time of Day, Weather Conditions, Frequency.
	WHERE	Road Conditions, Altitude and Traffic Situation.
	HOW	System Symptoms, Operating Conditions (Other Components Interaction). Service History and if any After Market Accessories have been installed.
STEP 2	Operate the system, road test if necessary. Verify the parameter of the incident. If the problem cannot be duplicated, refer to “Incident Simulation Tests”.	
STEP 3	Get the proper diagnosis materials together including: • Power Supply Routing • System Operation Descriptions • Applicable Service Manual Sections • Check for any Service Bulletins Identify where to begin diagnosis based upon your knowledge of the system operation and the customer comments.	
STEP 4	Inspect the system for mechanical binding, loose connectors or wiring damage. Determine which circuits and components are involved and diagnose using the Power Supply Routing and Harness Layouts.	
STEP 5	Repair or replace the incident circuit or component.	
STEP 6	Operate the system in all modes. Verify the system works properly under all conditions. Check you have not inadvertently created a new incident during your diagnosis or repair steps.	

Control Units and Electrical Parts

INFOID:0000000010242494

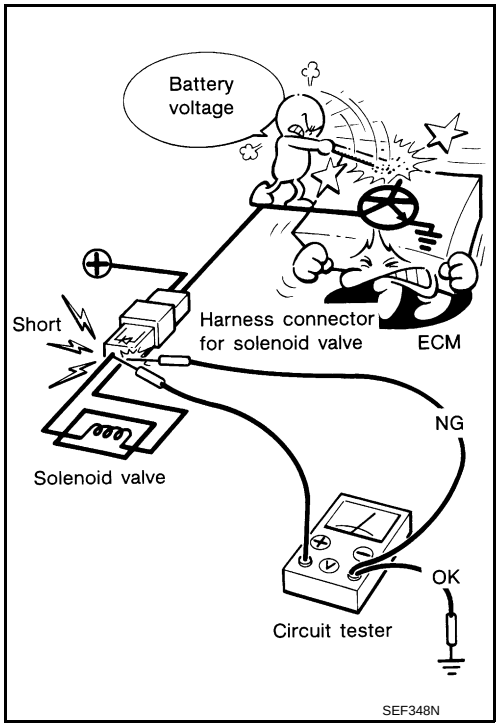
PRECAUTIONS

- Never reverse polarity of battery terminals.
- Install only parts specified for a vehicle.
- Before replacing the control unit, check the input and output and functions of the component parts.
- Do not apply excessive force when disconnecting a connector.

- Do not apply excessive shock to the control unit by dropping or hitting it.
- Be careful to prevent condensation in the control unit due to rapid temperature changes and do not let water or rain get on it. If water is found in the control unit, dry it fully and then install it in the vehicle.
- Be careful not to let oil to get on the control unit connector.
- Avoid cleaning the control unit with volatile oil.
- Do not disassemble the control unit, and do not remove the upper and lower covers.



- When using a DMM, be careful not to let test probes get close to each other to prevent the power transistor in the control unit from damaging battery voltage because of short circuiting.
- When checking input and output signals of the control unit, use the specified check adapter.



Intermittent Incident

INFOID:0000000010242495

DESCRIPTION

Sometimes the symptom is not present when the vehicle is brought in for service. If possible, re-create the conditions present at the time of the incident. Doing so may help avoid a No Trouble Found Diagnosis. The following section illustrates ways to simulate the conditions/environment under which the owner experiences an electrical incident.

The section is broken into the six following topics:

- Vehicle vibration
- Heat sensitive
- Freezing
- Water intrusion
- Electrical load
- Cold or hot start up

Get a thorough description of the incident from the customer. It is important for simulating the conditions of the problem.

VEHICLE VIBRATION

The problem may occur or become worse while driving on a rough road or when engine is vibrating (idle with A/C on). In such a case, you will want to check for a vibration related condition. Refer to the following illustration.

Connector & Harness

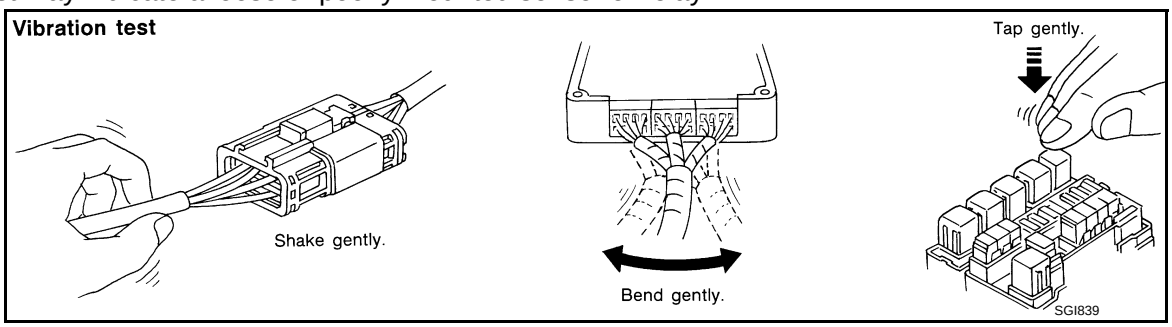
Determine which connectors and wiring harness would affect the electrical system you are inspecting. Gently shake each connector and harness while monitoring the system for the incident you are trying to duplicate. This test may indicate a loose or poor electrical connection.

Hint

Connectors can be exposed to moisture. It is possible to get a thin film of corrosion on the connector terminals. A visual inspection may not reveal this without disconnecting the connector. If the problem occurs intermittently, perhaps the problem is caused by corrosion. It is a good idea to disconnect, inspect and clean the terminals on related connectors in the system.

Sensor & Relay

Gently apply a slight vibration to sensors and relays in the system you are inspecting.
This test may indicate a loose or poorly mounted sensor or relay.



Engine Compartment

There are several reasons a vehicle or engine vibration could cause an electrical complaint. Some of the things to check for are:

- Connectors not fully seated.
- Wiring harness not long enough and is being stressed due to engine vibrations or rocking.
- Wires laying across brackets or moving components.
- Loose, dirty or corroded ground wires.
- Wires routed too close to hot components.

To inspect components under the hood, start by verifying the integrity of ground connections. (Refer to Ground Inspection described later.) First check that the system is properly grounded. Then check for loose connection by gently shaking the wiring or components as previously explained. Using the wiring diagrams inspect the wiring for continuity.

Behind the Instrument Panel

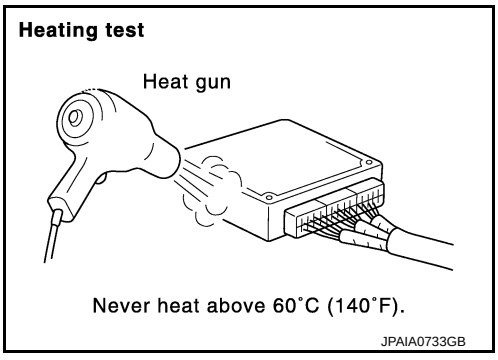
An improperly routed or improperly clamped harness can become pinched during accessory installation. Vehicle vibration can aggravate a harness which is routed along a bracket or near a screw.

Under Seating Areas

An unclamped or loose harness can cause wiring to be pinched by seat components (such as slide guides) during vehicle vibration. If the wiring runs under seating areas, inspect wire routing for possible damage or pinching.

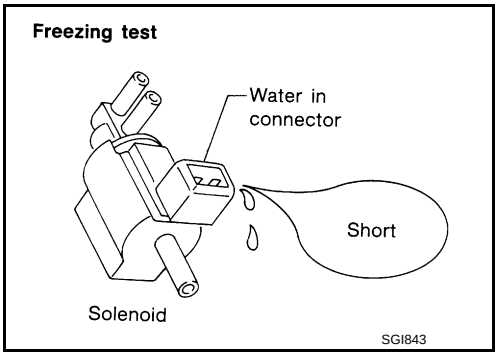
HEAT SENSITIVE

- The customer's concern may occur during hot weather or after car has sat for a short time. In such cases you will want to check for a heat sensitive condition.
- To determine if an electrical component is heat sensitive, heat the component with a heat gun or equivalent.
  CAUTION:
  Never heat components above 60°C (140°F).
- If incident occurs while heating the unit, either replace or properly insulate the component.



FREEZING

- The customer may indicate the incident goes away after the car warms up (winter time). The cause could be related to water freezing somewhere in the wiring/electrical system.
- There are two methods to check for this. The first is to arrange for the owner to leave his car overnight. Check it will get cold enough to demonstrate his complaint. Leave the car parked outside overnight. In the morning, do a quick and thorough diagnosis of those electrical components which could be affected.
- The second method is to put the suspect component into a freezer long enough for any water to freeze. Reinstall the part into the car and check for the reoccurrence of the incident. If it occurs, repair or replace the component.

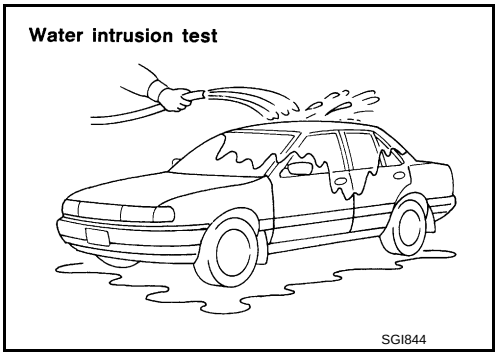


WATER INTRUSION

The incident may occur only during high humidity or in rainy/snowy weather. In such cases the incident could be caused by water intrusion on an electrical part. This can be simulated by soaking the car or running it through a car wash.

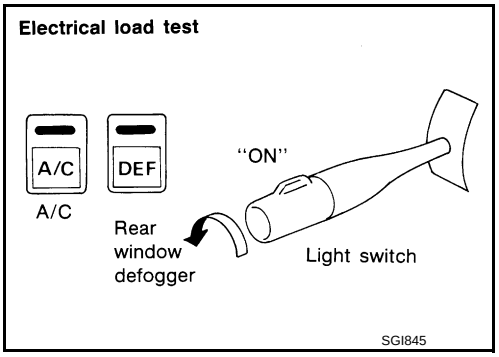
CAUTION:

Never spray water directly on any electrical components.



ELECTRICAL LOAD

The incident may be electrical load sensitive. Perform diagnosis with all accessories (including A/C, rear window defogger, radio, fog lamps) turned on.



COLD OR HOT START UP

On some occasions an electrical incident may occur only when the car is started cold, or it may occur when the car is restarted hot shortly after being turned off. In these cases you may have to keep the car overnight to make a proper diagnosis.

Circuit Inspection

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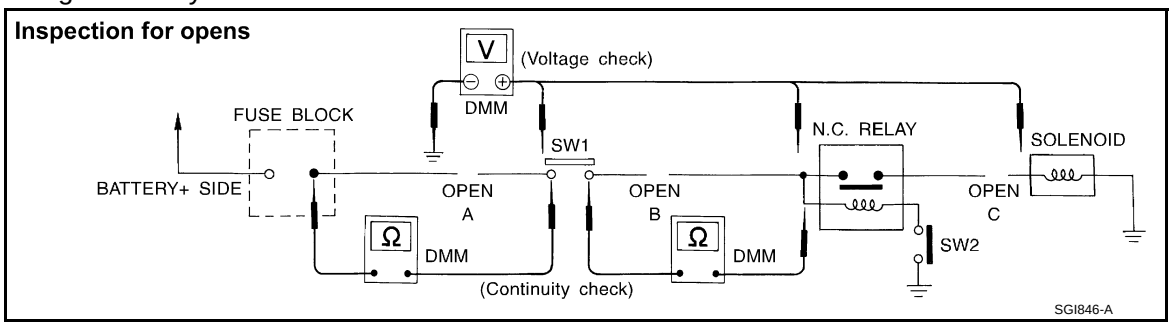
DESCRIPTION

- In general, testing electrical circuits is an easy task if it is approached in a logical and organized method. Before beginning it is important to have all available information on the system to be tested. Also, get a thorough understanding of system operation. Then you will be able to use the appropriate equipment and follow the correct test procedure.
- You may have to simulate vehicle vibrations while testing electrical components. Gently shake the wiring harness or electrical component to do this.

OPEN	A circuit is open when there is no continuity through a section of the circuit.	
SHORT	There are two types of shorts.	
	• SHORT CIRCUIT	When a circuit contacts another circuit and causes the normal resistance to change.
	• SHORT TO GROUND	When a circuit contacts a ground source and grounds the circuit.

TESTING FOR “OPENS” IN THE CIRCUIT

Before you begin to diagnose and test the system, you should rough sketch a schematic of the system. This will help you to logically walk through the diagnosis process. Drawing the sketch will also reinforce your working knowledge of the system.



Continuity Check Method

The continuity check is used to find an open in the circuit. The digital multimeter (DMM) set on the resistance function will indicate an open circuit as over limit (no beep tone or no ohms symbol). Check to always start with the DMM at the highest resistance level.

To help in understanding the diagnosis of open circuits, please refer to the previous schematic.

- Disconnect the battery negative cable.
- Start at one end of the circuit and work your way to the other end. (At the fuse block in this example)
- Connect one probe of the DMM to the fuse block terminal on the load side.
- Connect the other probe to the fuse block (power) side of SW1. Little or no resistance will indicate that portion of the circuit has good continuity. If there were an open in the circuit, the DMM would indicate an over limit or infinite resistance condition. (point A)
- Connect the probes between SW1 and the relay. Little or no resistance will indicate that portion of the circuit has good continuity. If there were an open in the circuit, the DMM would indicate an over limit or infinite resistance condition. (point B)
- Connect the probes between the relay and the solenoid. Little or no resistance will indicate that portion of the circuit has good continuity. If there were an open in the circuit, the DMM would indicate an over limit or infinite resistance condition. (point C)

Any circuit can be diagnosed using the approach in the previous example.

Voltage Check Method

To help in understanding the diagnosis of open circuits please refer to the previous schematic.

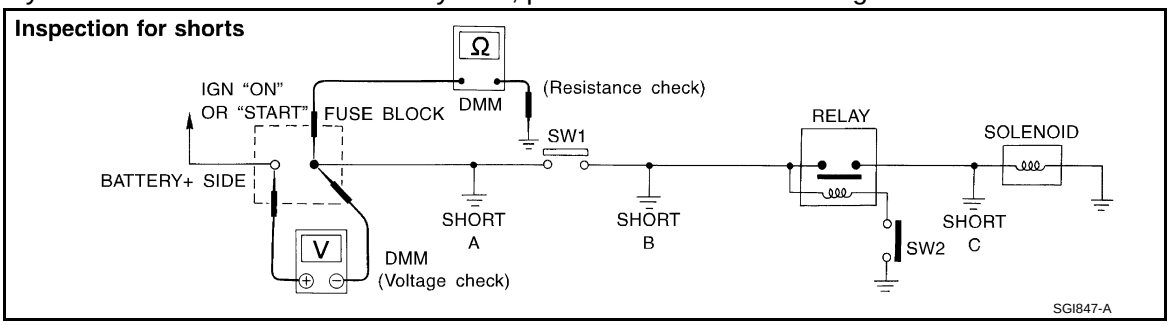
In any powered circuit, an open can be found by methodically checking the system for the presence of voltage. This is done by switching the DMM to the voltage function.

- Connect one probe of the DMM to a known good ground.
- Begin probing at one end of the circuit and work your way to the other end.
- With SW1 open, probe at SW1 to check for voltage.
  voltage: open is further down the circuit than SW1.
  no voltage: open is between fuse block and SW1 (point A).
- Close SW1 and probe at relay.
  voltage: open is further down the circuit than the relay.
  no voltage: open is between SW1 and relay (point B).
- Close the relay and probe at the solenoid.
  voltage: open is further down the circuit than the solenoid.
  no voltage: open is between relay and solenoid (point C).

Any powered circuit can be diagnosed using the approach in the previous example.

TESTING FOR “SHORTS” IN THE CIRCUIT

To simplify the discussion of shorts in the system, please refer to the following schematic.



Resistance Check Method

- Disconnect the battery negative cable and remove the blown fuse.
- Disconnect all loads (SW1 open, relay disconnected and solenoid disconnected) powered through the fuse.
- Connect one probe of the DMM to the load side of the fuse terminal. Connect the other probe to a known good ground.
- With SW1 open, check for continuity.
  continuity: short is between fuse terminal and SW1 (point A).
  no continuity: short is further down the circuit than SW1.
- Close SW1 and disconnect the relay. Put probes at the load side of fuse terminal and a known good ground. Then, check for continuity.
  continuity: short is between SW1 and the relay (point B).
  no continuity: short is further down the circuit than the relay.
- Close SW1 and jump the relay contacts with jumper wire. Put probes at the load side of fuse terminal and a known good ground. Then, check for continuity.
  continuity: short is between relay and solenoid (point C).
  no continuity: check solenoid, retrace steps.

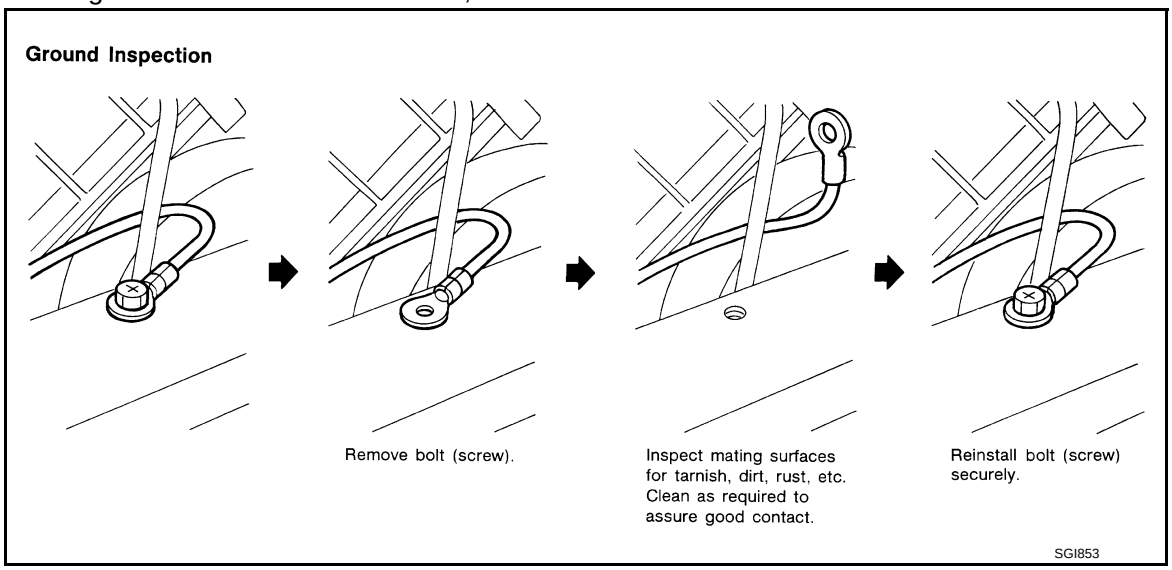
Voltage Check Method

- Remove the blown fuse and disconnect all loads (i.e. SW1 open, relay disconnected and solenoid disconnected) powered through the fuse.
- Turn the ignition switch to the ON or START position. Verify battery voltage at the battery + side of the fuse terminal (one lead on the battery + terminal side of the fuse block and one lead on a known good ground).
- With SW1 open and the DMM leads across both fuse terminals, check for voltage.
  voltage: short is between fuse block and SW1 (point A).
  no voltage: short is further down the circuit than SW1.
- With SW1 closed, relay and solenoid disconnected and the DMM leads across both fuse terminals, check for voltage.
  voltage: short is between SW1 and the relay (point B).
  no voltage: short is further down the circuit than the relay.
- With SW1 closed, relay contacts jumped with fused jumper wire check for voltage.
  voltage: short is down the circuit of the relay or between the relay and the disconnected solenoid (point C).
  no voltage: retrace steps and check power to fuse block.

GROUND INSPECTION

- Ground connections are very important to the proper operation of electrical and electronic circuits. Ground connections are often exposed to moisture, dirt and other corrosive elements. The corrosion (rust) can become an unwanted resistance. This unwanted resistance can change the way a circuit works.
- Electronically controlled circuits are very sensitive to proper grounding. A loose or corroded ground can drastically affect an electronically controlled circuit. A poor or corroded ground can easily affect the circuit. Even when the ground connection looks clean, there can be a thin film of rust on the surface.
- When inspecting a ground connection follow these rules:
- Remove the ground bolt or screw.
- Inspect all mating surfaces for tarnish, dirt, rust, etc.
- Clean as required to assure good contact.
- Reinstall bolt or screw securely.
- Inspect for "add-on" accessories which may be interfering with the ground circuit.
- If several wires are crimped into one ground eyelet terminal, check for proper crimps. Check all of the wires are clean, securely fastened and providing a good ground path. If multiple wires are cased in one eyelet check no ground wires have excess wire insulation.

• For detailed ground distribution information, refer to “Ground Distribution” in PG section.



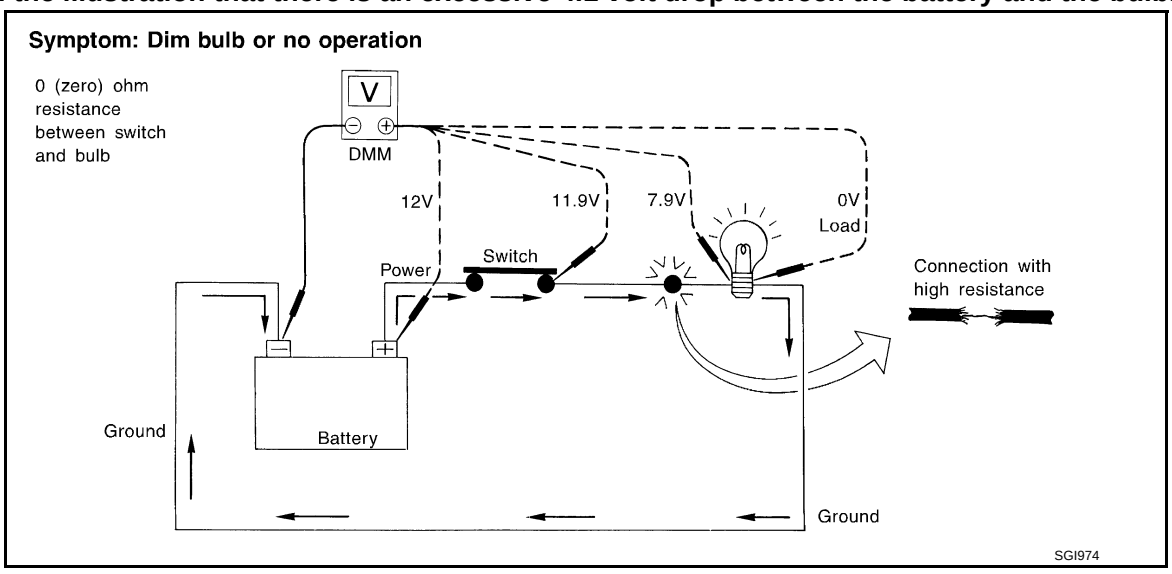
VOLTAGE DROP TESTS

• Voltage drop tests are often used to find components or circuits which have excessive resistance. A voltage drop in a circuit is caused by a resistance when the circuit is in operation.
• Check the wire in the illustration. When measuring resistance with DMM, contact by a single strand of wire will give reading of 0 ohms. This would indicate a good circuit. When the circuit operates, this single strand of wire is not able to carry the current. The single strand will have a high resistance to the current. This will be picked up as a slight voltage drop.
• Unwanted resistance can be caused by many situations as follows:
- Undersized wiring (single strand example)
- Corrosion on switch contacts
- Loose wire connections or splices.
• If repairs are needed always use wire that is of the same or larger gauge.

Measuring Voltage Drop — Accumulated Method

• Connect the DMM across the connector or part of the circuit you want to check. The positive lead of the DMM should be closer to power and the negative lead closer to ground.
• Operate the circuit.
• The DMM will indicate how many volts are being used to “push” current through that part of the circuit.

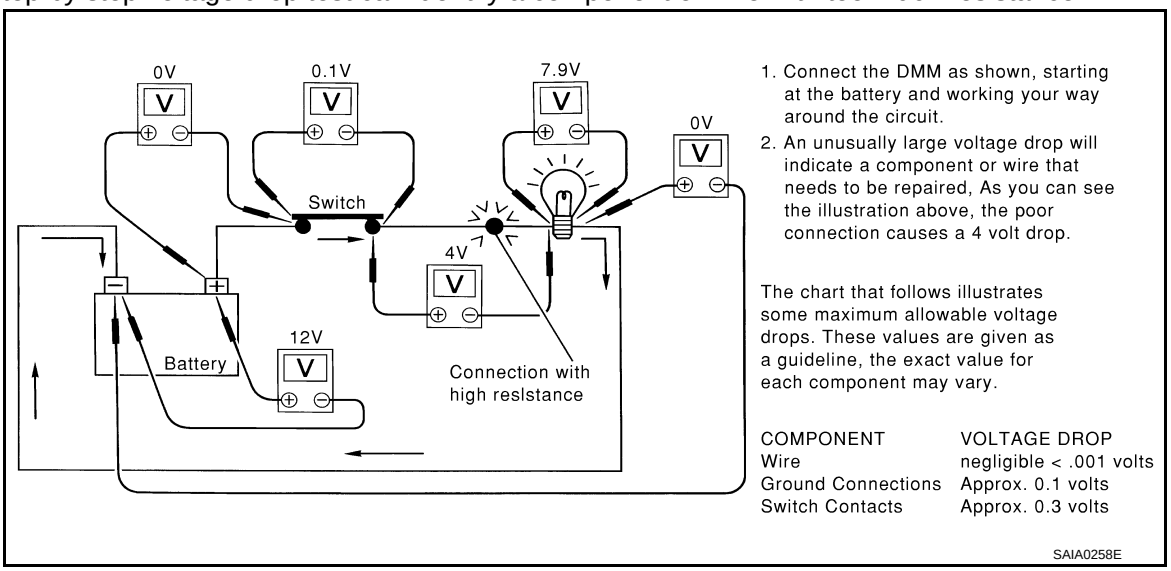
Note in the illustration that there is an excessive 4.1 volt drop between the battery and the bulb.



Measuring Voltage Drop — Step-by-Step

• The step-by-step method is most useful for isolating excessive drops in low voltage systems (such as those in “Computer Controlled Systems”).
• Circuits in the “Computer Controlled System” operate on very low amperage.

- The (Computer Controlled) system operations can be adversely affected by any variation in resistance in the system. Such resistance variation may be caused by poor connection, improper installation, improper wire gauge or corrosion.
- The step by step voltage drop test can identify a component or wire with too much resistance.

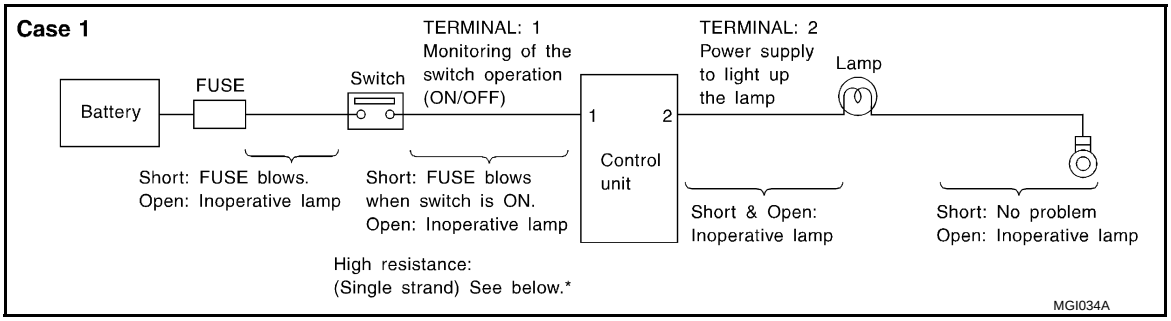


CONTROL UNIT CIRCUIT TEST

System Description

- When the switch is ON, the control unit lights up the lamp.

CASE 1

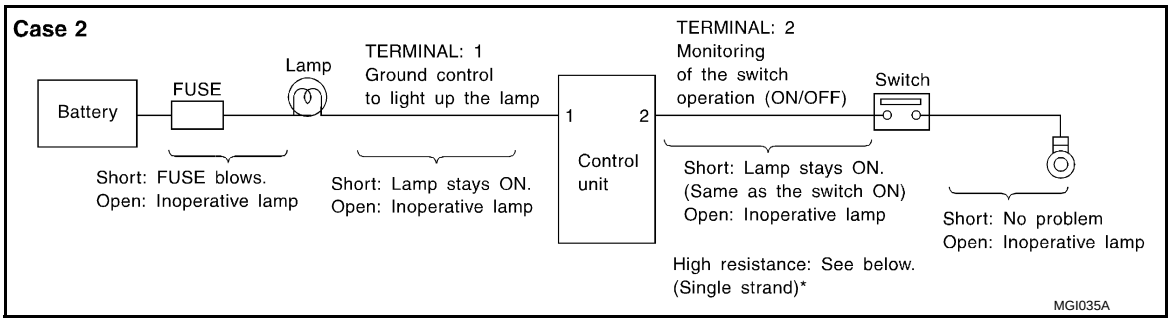


INPUT-OUTPUT VOLTAGE CHART

Terminal No.		Description		Condition	Value (Approx.)	In case of high resistance such as single strand (V) *
+	–	Signal name	Input/ Output			
1	Body ground	Switch	Input	Switch ON	Battery voltage	Lower than battery voltage Approx. 8 (Example)
				Switch OFF	0 V	Approx. 0
2	Body ground	Lamp	Output	Switch ON	Battery voltage	Approx. 0 (Inoperative lamp)
				Switch OFF	0 V	Approx. 0

- The voltage value is based on the body ground.
- *: If high resistance exists in the switch side circuit (caused by a single strand), terminal 1 does not detect battery voltage. Control unit does not detect the switch is ON even if the switch does not turn ON. Therefore, the control unit does not supply power to light up the lamp.

CASE 2



INPUT-OUTPUT VOLTAGE CHART

Terminal No.		Description		Condition	Value (Approx.)	In case of high resistance such as single strand (V) *
+	–	Signal name	Input/ Output			
1	Body ground	Lamp	Output	Switch ON	0 V	Battery voltage (Inoperative lamp)
				Switch OFF	Battery voltage	Battery voltage
2	Body ground	Switch	Input	Switch ON	0 V	Higher than 0 Approx. 4 (Example)
				Switch OFF	5 V	Approx. 5

- The voltage value is based on the body ground.
- *: If high resistance exists in the switch side circuit (caused by a single strand), terminal 2 does not detect approx. 0 V. Control unit does not detect the switch is ON even if the switch does not turn ON. Therefore, the control unit does not control ground to light up the lamp.

CONSULT/GST CHECKING SYSTEM

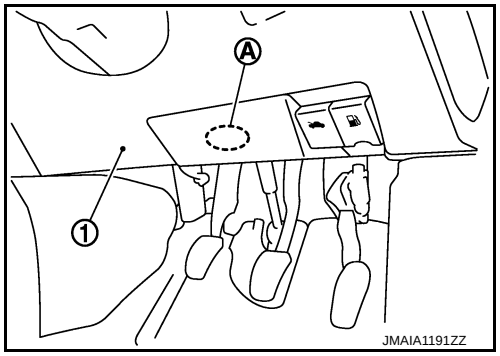
Description

INFOID:0000000010242497

- When CONSULT/GST is connected with a data link connector (A) equipped on the vehicle side, it will communicate with the control unit equipped in the vehicle and then enable various kinds of diagnostic tests.

  1 : Lower instrument panel, driver side

- Refer to CONSULT Software Operation Manual for more information.



CONSULT Function and System Application*1

INFOID:0000000010242498

FUNCTION

Mode	Function
All DTC Reading	Display all DTCs or diagnostic items that all ECUs are recording and judging.
Work Support	This mode enables a technician to adjust some devices faster and more accurately.
Self Diagnostic Results	Retrieve DTC from ECU and display diagnostic items.
Data Monitor	Monitor the input/output signal of the control unit in real time.
CAN Diagnosis	This mode displays a network diagnosis result about CAN by diagram.
CAN Diagnosis Support Monitor	It monitors the status of CAN communication.
Active Test	Send the drive signal from CONSULT to the actuator. The operation check can be performed.
ECU Identification	Display the ECU identification number (part number etc.) of the selected system.
Function Test	This mode can show results of self-diagnosis of ECU with either “OK” or “NG”. For engines, more practical tests regarding sensors/switches and/or actuator are available.
Configuration	Function to READ/WRITE vehicle configuration.
SRT&P-DTC Confirmation	The state of System Readiness Test (SRT) items, the presence or absence of permanent DTC*, and driving conditions can be checked.
DTC work support	DTC reproduction procedure can be performed speedily and precisely.
Others	Other results or histories, etc. that are recorded in ECU are displayed.

*: Permanent DTC is not applied for regions where it is not mandated.

SYSTEM APPLICATION*1

×: Applicable

System	All DTC Reading	Work Support	Self Diagnostic Results	Data Monitor	CAN Diagnosis	CAN Diagnosis Support Monitor	Active Test	ECU Identification	Function Test	Configuration	SRT&P-DTC Confirmation	DTC work support	Others
ENGINE	x	x	x	x	x	x	x	x	-	x*4	x*2*3	x*3	-
TRANSMISSION	x	x	x	x	x	x	-	x	-	-	x*2	-	• CALIB DATA
IPDM E/R	x	x	x	x	x	x	x	x	x	x	-	-	-

System	All DTC Reading	Work Support	Self Diagnostic Results	Data Monitor	CAN Diagnosis	CAN Diagnosis Support Monitor	Active Test	ECU Identification	Function Test	Configuration	SRT&P-DTC Confirmation	DTC work support	Others
EPS	x	-	x	x	x	-	-	x	-	-	-	-	-
LASER/RADAR	x	x	x	x	x	x	x	x	-	-	-	-	-
HVAC	-	x	x	x	x	x	x	x	-	-	-	-	-
AIR BAG	x	-	x	x	x	-	-	x	-	x	-	-	• TROUBLE DIAG RECORD
CHASSIS CONTROL	x	-	x	x	x	x	x	x	-	x	-	-	-
BCM	x	x	x	x	x	x	x	x	x	x	-	-	-
LANE CAMERA	x	x	x	x	x	x	-	x	-	-	-	-	-
TPMS	x	x	x	x	-	-	x	x	-	x	-	-	-
METER / M&A	-	x	-	x	x	x	-	-	-	-	-	-	• Warning History
ABS	x	x	x	x	x	x	x	x	-	x	-	-	-
EHS/PKB	x	x	x	x	x	x	x	x	-	-	-	-	-
SONAR	x	-	x	-	x	x	-	x	-	x	-	-	-
ALL MODE AWD/4WD	x	x	x	x	x	x	x	x	-	-	-	-	-
MULTI AV	x	-	x	x	x	x	-	x	-	x	-	-	-
AVM	x	x	x	x	x	x	x	x	-	x	-	-	-

*1: If GST application is equipped, functions in accordance with SAE J1979 and ISO 15031-5 can be used.

*2: Permanent DTC is not applied for regions where it is not mandated.

*3: Used only in models with gasoline engine.

*4: Used only in models with diesel engine.

CONSULT/GST Data Link Connector (DLC) Circuit

INFOID:0000000010242499

INSPECTION PROCEDURE

If the CONSULT/GST cannot diagnose the system properly, check the following items.

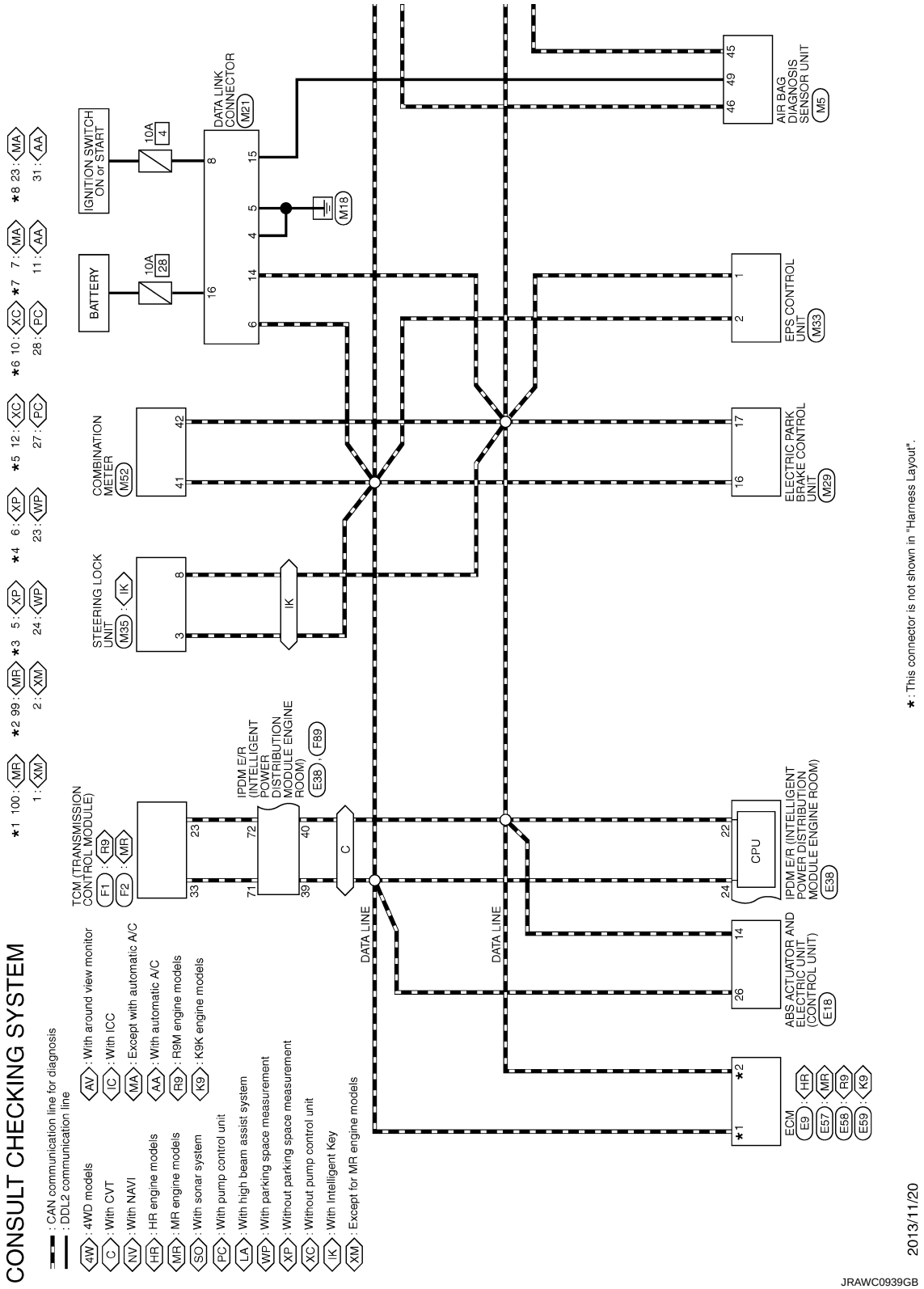
Symptom	Check item
CONSULT cannot access any system.	• CONSULT DLC power supply circuit (Terminal 8 and 16) and ground circuit (Terminal 4 and 5)
CONSULT cannot access individual system. (Other systems can be accessed.)	• Power supply and ground circuit for the control unit of the system (For detailed circuit, refer to wiring diagram for each system.) • Open or short circuit between the system and CONSULT DLC (For detailed circuit, refer to wiring diagram for each system.) • Open or short circuit CAN communication line. Refer to LAN-24, "Trouble Diagnosis Flow Chart".

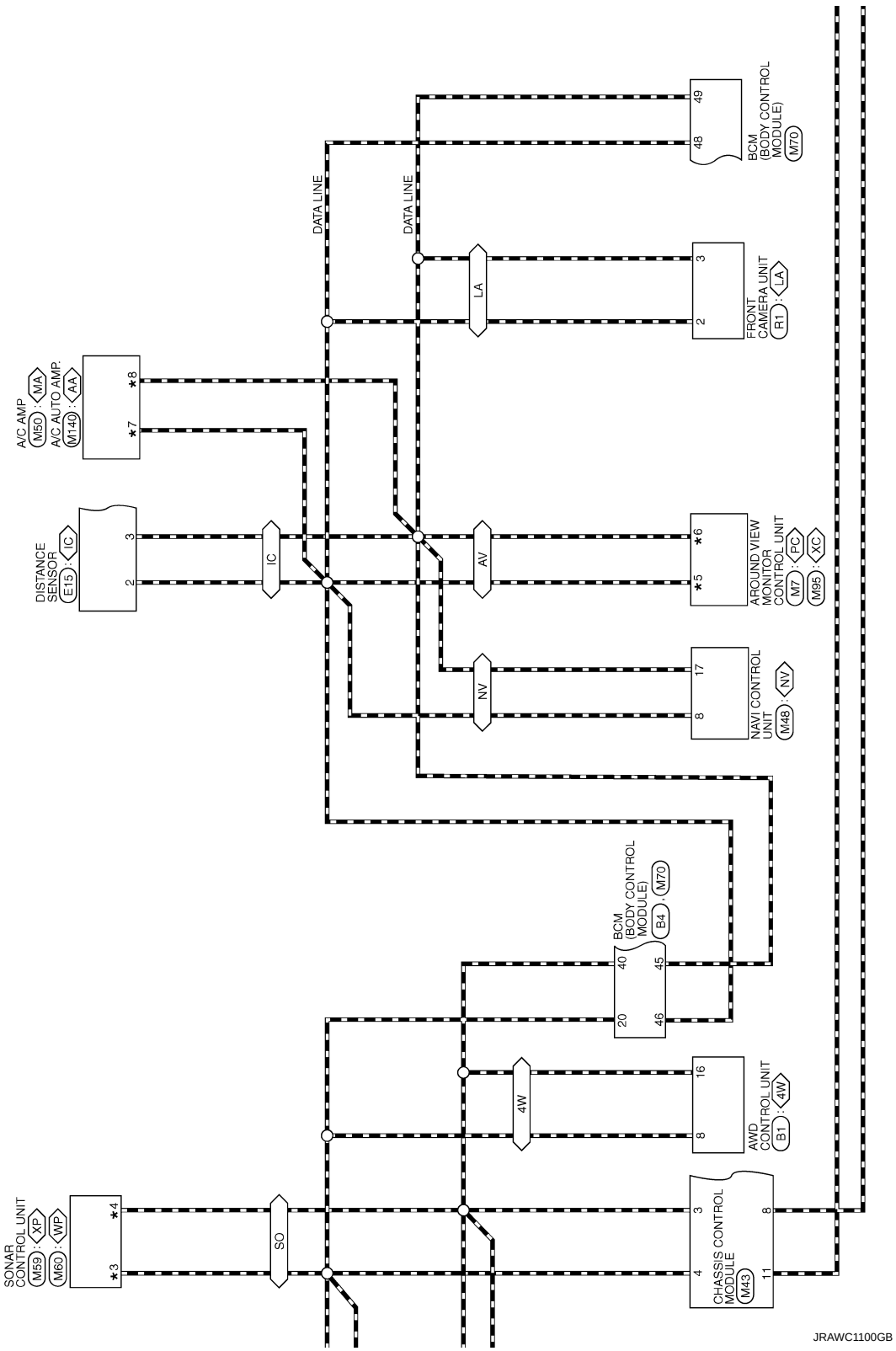
NOTE:

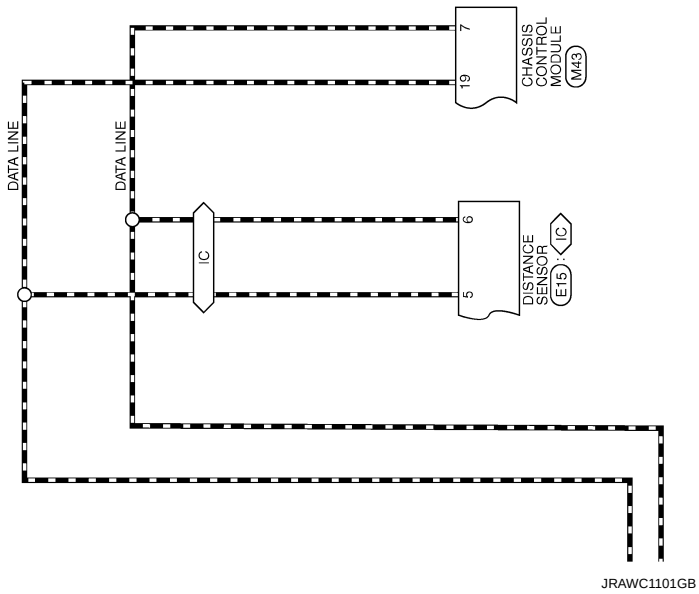
The DDL1 and DDL2 circuits from DLC pins 12, 13, 14 and 15 may be connected to more than one system. A short in a DDL circuit connected to a control unit in one system may affect CONSULT access to other systems. If the GST cannot operate properly, check the circuit based on the information of SAE J1962 and ISO 15031-3.

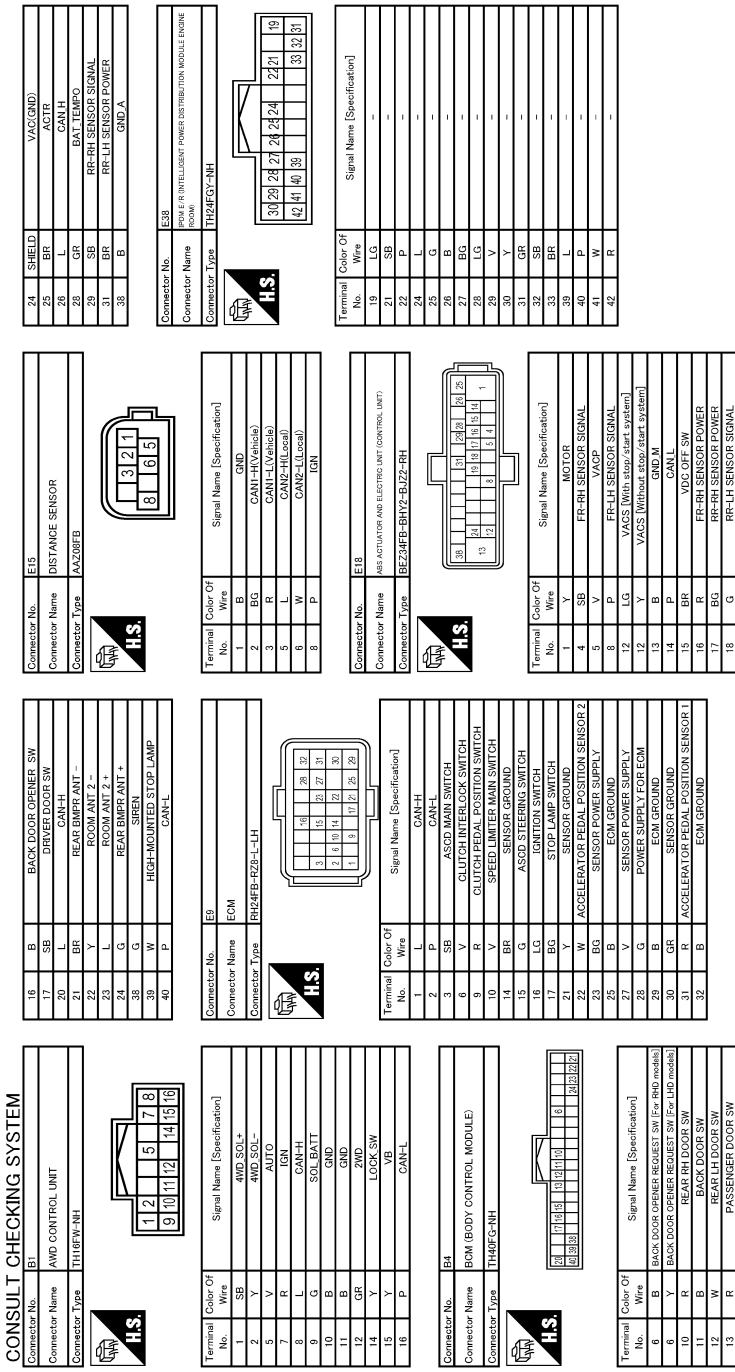
Wiring Diagram - CONSULT/GST CHECKING SYSTEM -

INFOID:0000000010242500




BCM (BODY CONTROL MODULE) M70
49
48
DATA LINE
DATA LINE
LA
FRONT CAMERA UNIT R1 : LA
3
2
A/C AMP M50 : MA
A/C AUTO AMP. M140 : A4
*8
*7
DISTANCE SENSOR E15 : IC
IC
AV
AROUND VIEW MONITOR CONTROL UNIT M7 : PC M95 : XC
*6
*5
NV
NAVI CONTROL UNIT M48 : NV
17
8
BCM (BODY CONTROL MODULE) B4 : M70
40
45
20
46
4W
AWD CONTROL UNIT B1 : 4W
16
8
SONAR CONTROL UNIT M59 : XP M60 : WP
*4
*3
SO
CHASSIS CONTROL MODULE M43
3
8
4
11
JRAWC1100GB


DATA LINE
DATA LINE
IC
7
19
CHASSIS CONTROL MODULE
M43
6
5
DISTANCE SENSOR
E15
IC
JRAWC1101GB



JRAWC0951GB

CONSULT CHECKING SYSTEM

Connector No.	E57
Connector Name	ECM
Connector Type	RH24FB-RZ8-L-LH

H.S.

			97	107		109		121		125		
			110			119		122		126		
			98			111	115	118	123	127		
			100			108	116	120	124	128		

Terminal No.	Color Of Wire	Signal Name [Specification]
97	W	ATMOSPHERIC PRESSURE SENSOR
99	P	CAN-L
100	L	CAN-H
101	Y	SENSOR POWER SUPPLY (ATMOSPHERIC PRESSURE SENSOR)
108	R	CLUTCH PEDAL POSITION SENSOR
109	LG	IGNITION SWITCH
110	G	ASCD STEERING SWITCH
111	BR	SENSOR GROUND
115	V	STOP LAMP SWITCH
116	GR	ASCD BRAKE SWITCH
118	BG	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 2)
119	W	ACCELERATOR PEDAL POSITION SENSOR 2
120	Y	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR 2)
121	BR	POWER SUPPLY FOR ECM
122	V	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 1)
123	B	ECM GROUND
124	R	SENSOR GROUND (ATMOSPHERIC PRESSURE SENSOR)
125	B	ECM GROUND
126	R	ACCELERATOR PEDAL POSITION SENSOR 1
127	GR	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR 1)
128	B	ECM GROUND

Connector No.	E58
Connector Name	ECM
Connector Type	RH24FB-RZ8-L-LH

H.S.

			3			11	15		23	27	31	
			2	6	10	14		22	26	30		
			1			9	13	17	21	25	29	

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-H
2	P	CAN-L
3	SB	ASCD MAIN SWITCH
6	V	CLUTCH INTERLOCK SWITCH
9	R	CLUTCH PEDAL POSITION SWITCH
10	V	SPEED LIMITER MAIN SWITCH
11	G	FUEL PUMP CONTROL MODULE (DIAGNOSIS)
13	BR	FUEL PUMP CONTROL MODULE (COMMAND)
14	BR	ASCD STEERING SWITCH GROUND
15	G	ASCD STEERING SWITCH
16	LG	IGNITION SWITCH
17	BG	STOP LAMP SWITCH [With M/T]
17	R	STOP LAMP SWITCH [With CVT]
21	P	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR 2)
22	V	ACCELERATOR PEDAL POSITION SENSOR 2
23	L	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 2)
24	L	WATER IN FUEL LEVEL SENSOR
25	B	ECM GROUND
26	B	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 1)
27	G	POWER SUPPLY FOR ECM
28	B	ECM GROUND
29	Y	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR 1)
30	W	ACCELERATOR PEDAL POSITION SENSOR 1
32	B	ECM GROUND

Connector No.	E59
Connector Name	ECM
Connector Type	RH24FB-RZ8-L-LH

H.S.

			3			11	15		23	27	31	
			2	6	10	14		22	26	30		
			1			9	13	17	21	25	29	

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CAN-H
2	P	CAN-L
3	SB	ASCD MAIN SWITCH
6	V	CLUTCH INTERLOCK SWITCH
9	R	CLUTCH PEDAL POSITION SWITCH
10	V	SPEED LIMITER MAIN SWITCH
11	G	FUEL PUMP CONTROL MODULE (DIAGNOSIS)
13	BR	FUEL PUMP CONTROL MODULE (COMMAND)
14	BR	ASCD STEERING SWITCH GROUND
15	G	ASCD STEERING SWITCH
16	LG	ECM POWER SUPPLY (IGNITION)
17	BG	STOP LAMP SWITCH
21	Y	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR 2)
22	W	ACCELERATOR PEDAL POSITION SENSOR 2
23	BG	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR)
24	L	FUEL HEATER AND WATER IN FUEL SENSOR
25	B	ECM GROUND
26	B	ECM GROUND
27	V	SENSOR POWER SUPPLY (ACCELERATOR PEDAL POSITION SENSOR 1)
29	B	ECM GROUND
30	GR	SENSOR GROUND (ACCELERATOR PEDAL POSITION SENSOR 1)
31	R	ACCELERATOR PEDAL POSITION SENSOR 1
32	B	ECM GROUND

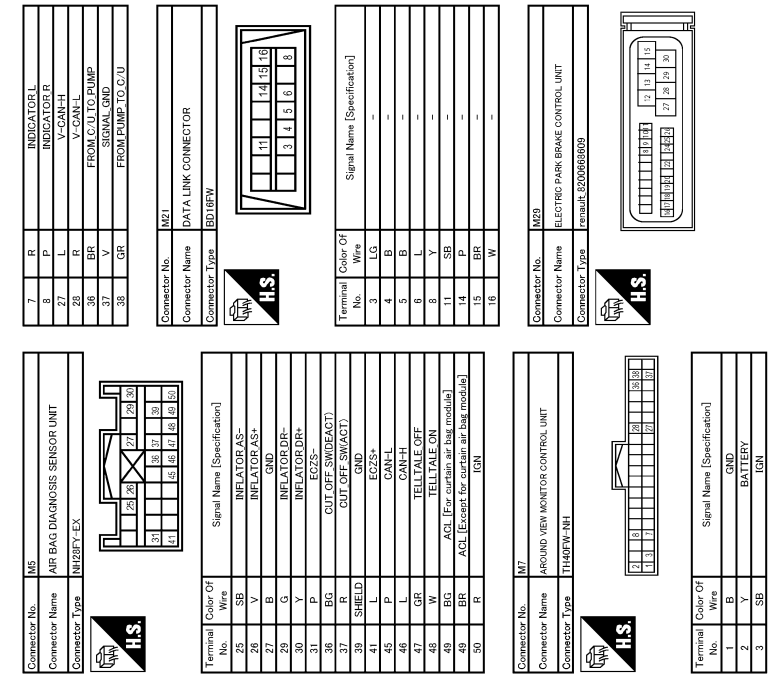
Connector No.	F1
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Type	RH40FB-RZ8-L-LH

H.S.

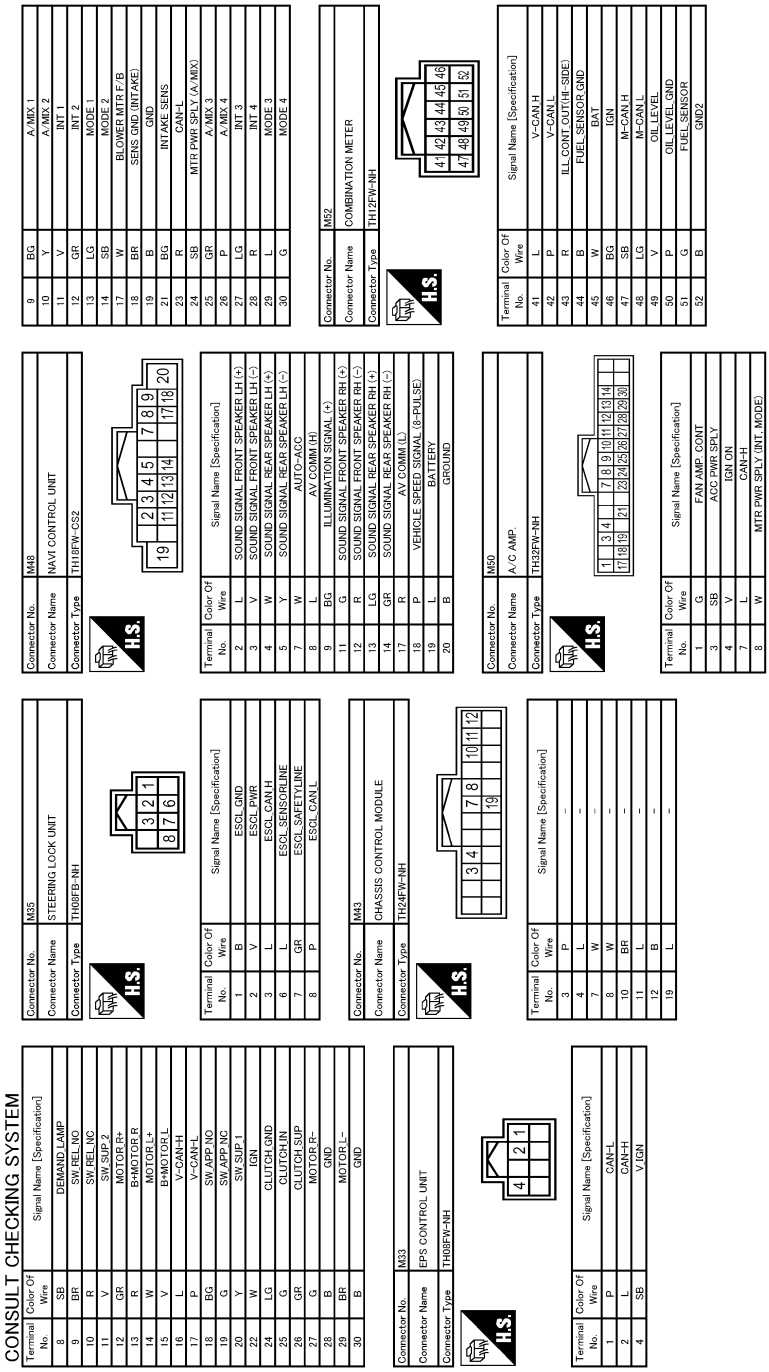
			33	34	35		37	38	39	40	47	48
				23	24	25			39	45	46	
			11	12		14		16	17			
			1	2		4	5	6	7		41	42

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

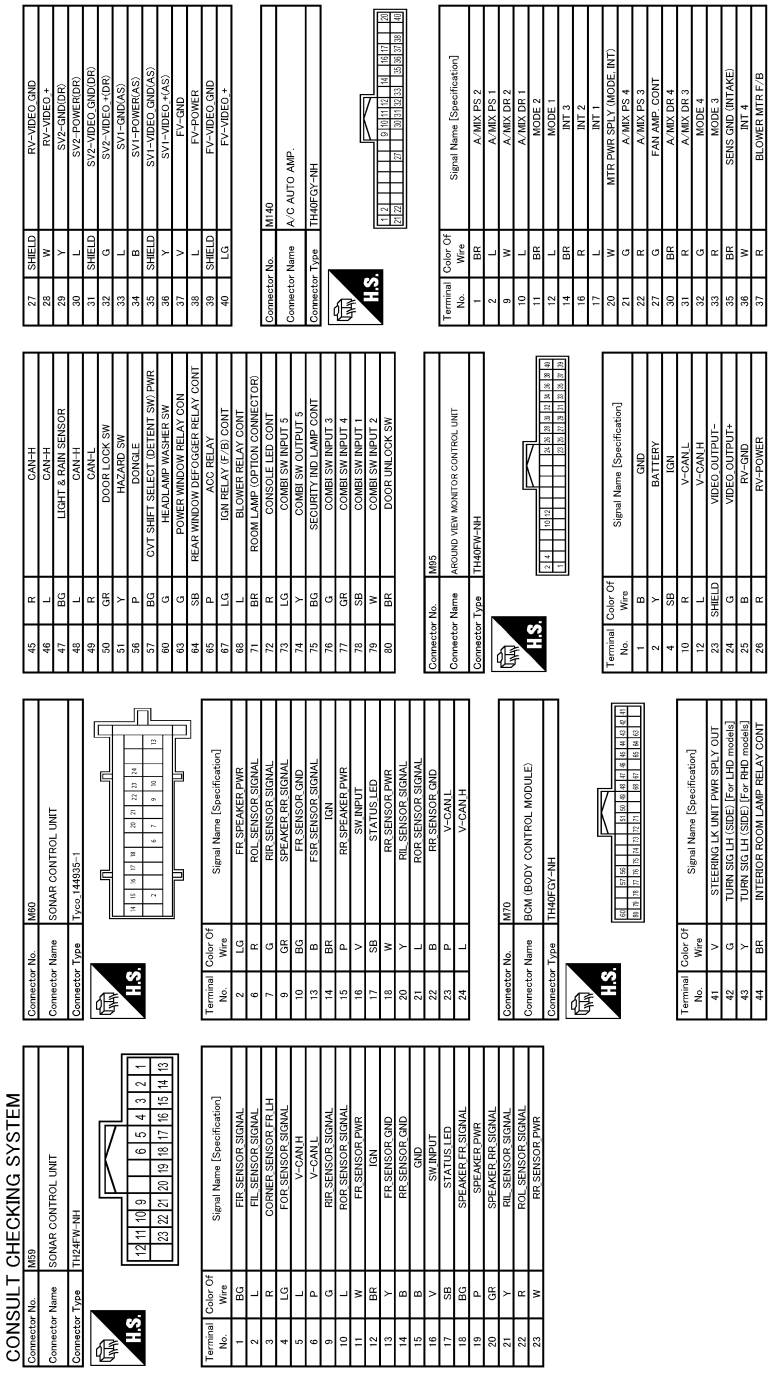
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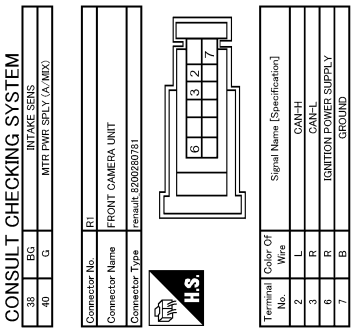
JRAWC0953GB



JRAWC0954GB



JRAWC0955GB



JRAWC0956GB

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL

ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Required Procedure After Battery Disconnection

INFOID:0000000010242501

SYSTEM	ITEM	REFERENCE
Automatic air conditioning system*	Temperature setting trimmer	—
	Foot position setting trimmer	—
	Inlet port memory function	—
	Inlet port memory function (FRE)	—
	Inlet port memory function (REC)	—
	Gas sensor sensitivity adjustment function	—
	Auto intake switch interlocking movement change	—
	Clean switch interlocking movement change	—
Automatic drive positioner*	Automatic drive positioner system	—
Power window control	Power window control system	PWC-30, "Description"
Sunroof system*	Sunroof system	—
Sunshade system*	Sunshade system	—
Engine control system (HR)	Throttle valve closed position learning	ECH-105, "Description"
	Flywheel learning	ECH-107, "Description"
Rear view monitor	Rear view monitor predictive course line center position adjustment	DAS-101, "Description"
Around view monitor	Predictive course line center position adjustment	AV-180, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Description"
Automatic back door system*	Automatic back door system	—

*: Not equipped