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CONTENTS

HOW TO USE THIS MANUAL3	PRECAUTION29
HOW TO USE THIS MANUAL3	PRECAUTIONS29
Description3	Description29
Terms3	Precaution for Supplemental Restraint System
Units3	(SRS) "AIR BAG" and "SEAT BELT PRE-TEN-
Contents3	SIONER" 29
Relation between Illustrations and Descriptions4	Precaution for Procedure without Cowl Top Cover29
Components4	Precautions For Xenon Headlamp Service29
·	Precautions for Removing Battery Terminal30
HOW TO FOLLOW TROUBLE DIAGNOSES 6	General Precautions30
Description6	Three Way Catalyst32
How to Follow Test Groups in Trouble Diagnosis6	Multiport Fuel Injection System or Engine Control
Key to Symbols Signifying Measurements or Pro-	System32
cedures7	Hoses32
HOW TO DEAD WIDING DIA ODAMO	Engine Oils33
HOW TO READ WIRING DIAGRAMS9	Air Conditioning
Connector Symbols9	Fuel34
Sample/Wiring Diagram -Example10	
Connector Information12	LIFTING POINT35
How to Repair Aluminum Wires13	Commercial Service Tools35
ABBREVIATIONS16	Garage Jack and Safety Stand and 2-Pole Lift35
Abbreviation List	Board-On Lift36
Appleviation List10	TOW TRUCK TOWING
TIGHTENING TORQUE OF STANDARD	TOW TRUCK TOWING3/
BOLTS21	Tow Truck Towing37
Description21	Vehicle Recovery (Freeing a Stuck Vehicle)38
Tightening Torque Table (New Standard Includ-	PREPARATION40
ed)21	FREFARATION40
•	PREPARATION40
RECOMMENDED CHEMICAL PRODUCTS	Special Service Tools40
AND SEALANTS24	Commercial Service Tools40
Recommended Chemical Products and Sealants24	Repair Parts40
	P
VEHICLE INFORMATION25	BASIC INSPECTION41
IDENTIFICATION INFORMATION25	SERVICE INFORMATION FOR ELECTRICAL
Model Variation25	INCIDENT41
Information About Identification or Model Code25	Work Flow41
Dimensions27	Control Units and Electrical Parts41
Wheels & Tires27	How to Check Terminal42

Intermittent Incident	Wiring Diagram - CONSULT/GST CHECKING SYSTEM55
CONSULT/GST CHECKING SYSTEM53	INSPECTION AND ADJUSTMENT 62
Description	ADDITIONAL SERVICE WHEN REMOVING BAT- TERY NEGATIVE TERMINAL62
CONSULT/GST Data Link Connector (DLC) Circuit54	ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Required
	Procedure After Battery Disconnection

HOW TO USE THIS MANUAL

< HOW TO USE THIS MANUAL >

HOW TO USE THIS MANUAL

HOW TO USE THIS MANUAL

Description INFOID:0000000010599302

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

Terms INFOID:000000010599303

 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:000000010599304

• 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

• A QUICK REFERENCE INDEX, a black tab (e.g. Est) 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.

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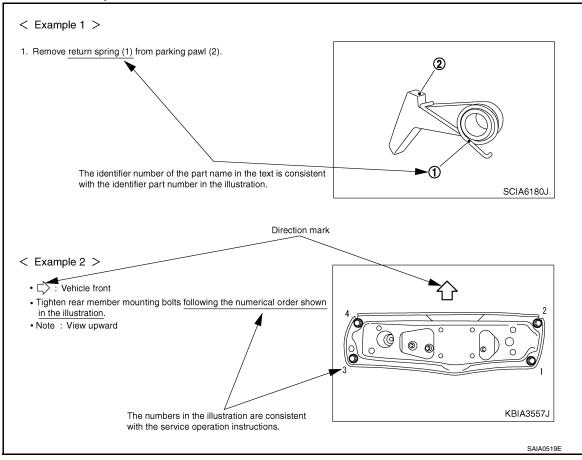
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Relation between Illustrations and Descriptions

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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.



Components

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. Union bolt

4. Cap

7. Piston seal

10. Cylinder body

Washer 13.

16. Torque member

19. Inner pad

Outer pad 22.

1: PBC (Poly Butyl Cuprysil) grease 2: Rubber grease or silicone-based grease

2. Copper washer

5. Bleed valve

8. Piston

11. Sliding pin

Sliding pin boot 14.

Inner shim cover 17.

20. Pad retainer

23. Outer shim

3. Brake hose

6. Sliding pin bolt

9. Piston boot

12. Torque member mounting bolt

15. Bushing

18. Inner shim

21. Pad wear sensor

Outer shim cover

: Brake fluid

Refer to GI section for additional symbol definitions.

SYMBOLS

SYMBOL	DESCRIPTIO	N	SYMBOL	DESCRIPTION
Ø	Tightening torque The tightening torque specifications of bolts and nuts may be presented	: N•m (kg-m, ft-lb)	3	Always replace after every disassembly.
•		P : N•m (kg-m, in-lb)	 P	Apply petroleum jelly.
5	Should be lubricated with grease. Un indicated, use recommended multi-p			Apply molybdenum added petroleum jelly.
7	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

< HOW TO USE THIS MANUAL >

HOW TO FOLLOW TROUBLE DIAGNOSES

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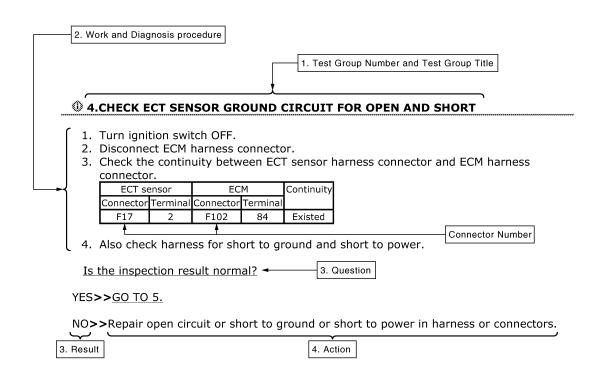
NOTICE:

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.
- Action
 - Next action for each test group is indicated based on result of each guestion.

HOW TO FOLLOW TROUBLE DIAGNOSES

< HOW TO USE THIS MANUAL >

Symbols	Signifying Measurements	oi Piocedu	INFOID:00
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
€ŧ	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.	TOOLS	Procedure without CONSULT or GST
	Insert key into ignition switch.	A/C OFF	A/C switch is "OFF".
	Remove key from ignition switch.	A/C ON	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.	FUSE	Apply fuse.
ACC ACC	Turn ignition switch from "OFF" to "ACC" position.	(FUSE)	
(ACC) ON	Turn ignition switch from "ACC" to "ON" position.	BAT	Apply positive voltage from battery with fuse directly to components.
CACC OFF	Turn ignition switch from "ACC" to "OFF" position.		

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HOW TO FOLLOW TROUBLE DIAGNOSES

< HOW TO USE THIS MANUAL >

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
(CFF) ON	Turn ignition switch from "OFF" to "ON" position.	= 6	Drive vehicle.
OFF OFF	Turn ignition switch from "ON" to "OFF" position.		Drive verlicie.
	Do not start engine, or check with engine stopped.	BAT	Disconnect battery negative cable.
	Start engine, or check with engine running.		Depress brake pedal.
- Landing	Apply parking brake.		Release brake pedal.
Sanding.	Release parking brake.		Depress accelerator pedal.
СФРН	Check after engine is warmed up sufficiently.		Release accelerator pedal.
V ⊕ ⊖	Voltage should be measured with a voltmeter.	HS.	Pin terminal check for SMJ type ECM or TCM connectors. For details regarding the terminal
Ω • • • •	Circuit resistance should be measured with an ohmmeter.		arrangement, refer to the "ELECTRICAL UNITS" electrical reference page at the end of the manual.
A ⊕ ⊖	Current should be measured with an ammeter.		
₽ Θ	Pulse signal should be checked with an oscilloscope.	÷	
	Procedure with CONSULT		
	Procedure without CONSULT		
	Place selector lever in "P" position.		
0	Place selector lever in "N" position.		
	Jack up front portion.		
G.	Jack up rear portion.		
	Inspect under engine room.		
	Inspect under floor.		
6-Q	Inspect rear under floor.		

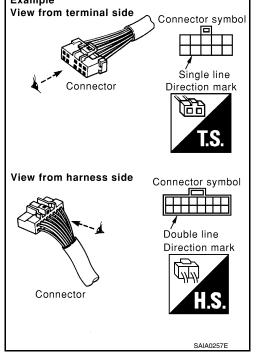
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Connector Symbols

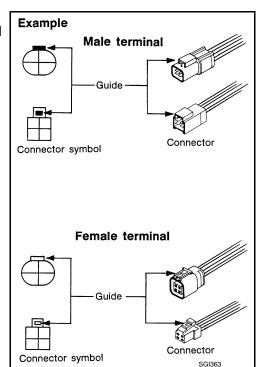
Most of connector symbols in wiring diagrams are shown from the terminal side.

- Connector symbols shown from the terminal side are enclosed by a single line and followed by the direction mark.

 Example View from
- 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.



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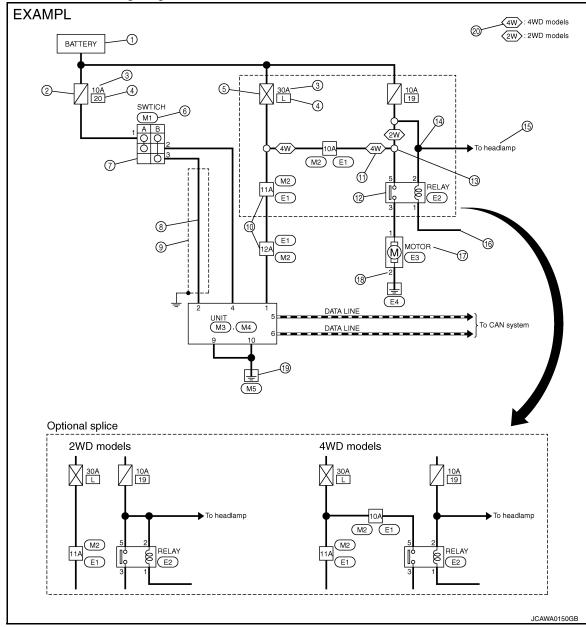
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Sample/Wiring Diagram -Example-

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Each section includes wiring diagrams.



Description	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.				

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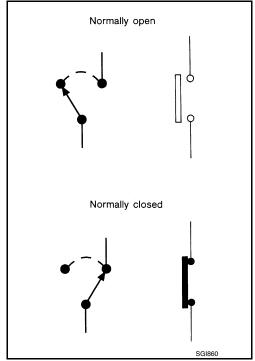
Number	Item	Description	
9	Shielded line	The line enclosed by broken line circle shows shield wire.	GI
10	Connectors	This means that a transmission line bypasses two connectors or more.	
11	Option abbreviation	This means the vehicle specifications which layouts the circuit between "O".	В
12	Relay	This 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.	D
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	Explation of option description	This shows a description of the option abbreviation used on the page.	F

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.

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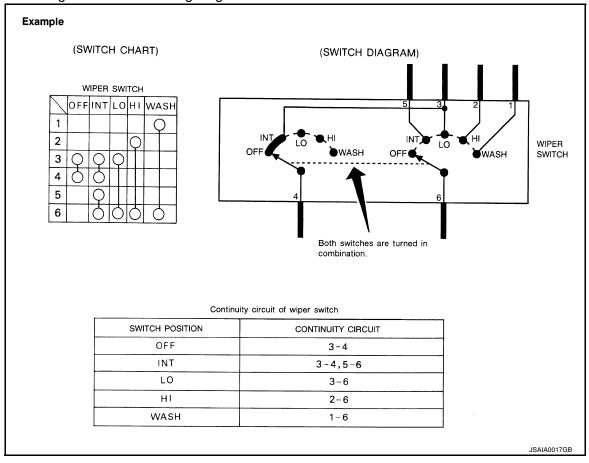
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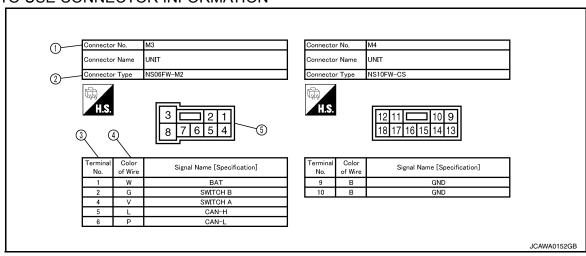
· The switch diagram is used in wiring diagrams.



Connector Information

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HOW TO USE CONNECTOR INFORMATION



< HOW TO USE THIS MANUAL >

Number	Item		Description	
1	Connector number	Alphabetic characters show to which h Numeric characters show the identification.		
2	Connector type	1: Connector model 2: Cavity 3: Male (M) and female (F) terminals 4: Connector color 5: Special type	Example:	
3	Terminal number	This means the terminal number of a continuous con	JPMIA0113GB connector.	<u>]</u>
		This shows a code for the color of the	wire.	_
		B = Black W = White R = Red G = Green	BR = Brown OR or O = Orange P = Pink PU or V (Violet) = Purple	
4	Wire color	L = Blue Y = Yellow LG = Light Green BG or BE = Beige LA = Lavender	GY or GR = Gray SB = Sky Blue CH = Dark Brown DG = Dark Green	
		When the wire color is striped, the bas shown below: Example: L/W = Blue with White Stripe	e color is given first, followed by the stripe color as	_
5	Connector	This means the connector information. This unit-side is described by the connector.		_

How to Repair Aluminum Wires

INFOID:0000000010944740

PRECAUTIONS FOR THE HANDLING OF ALUMINUM WIRES

- If an aluminum wire is damaged (e.g. broken), never perform the repair method for copper wires (soldering).
- Never perform electrotap for connecting broken aluminum wires.
- To secure the wire fixing strength (a force to protect aluminum wire from being disconnected from crimp terminal) and electrical conductivity, always use the dedicated harness repair kit and crimping pliers [SST: KV99112600 (J-48817-8)] when repairing broken wires.

HOW TO DISTINGUISH ALUMINUM WIRES

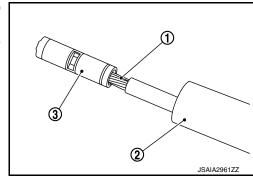
Wiring color: Lavender (Color code: LA)

HOW TO REPAIR BROKEN WIRES

- Insert heat shrinkable tube (2) into the target aluminum wire (1) beforehand.
- Strip wire terminal approximately 10 mm and insert it into crimp terminal (3).

CAUTION:

Check wire size and use appropriate crimp terminal.



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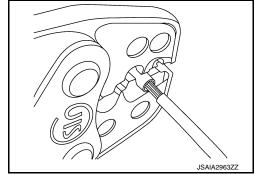
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3. Set crimp terminal to the die (tooth) of crimping pliers [SST: KV99112600 (J-48817-8)].

CAUTION:

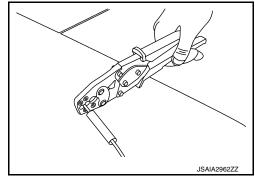
Use appropriate die (tooth) of crimping pliers [SST: KV99112600 (J-48817-8)] according to the crimp terminal size.



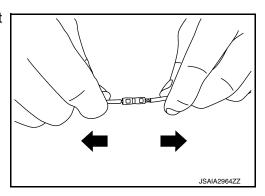
4. Apply load until the handle of crimping pliers [SST: KV99112600 (J-48817-8)] is released.

NOTE:

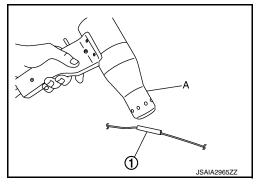
The handle of the specified crimping pliers [SST: KV99112600(J-48817-8)] is not opened until crimping is completed.



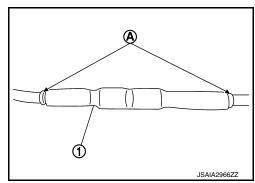
5. After crimping both sides, pull wire at both ends to check that they are not disconnected from crimp terminals.



6. Cover the crimp terminal with heat shrinkable tube (1) and heat the tube with industrial dryer (A).

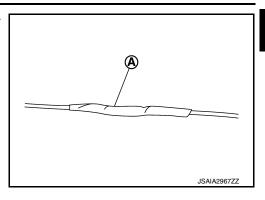


7. After heating heat shrinkable tube (1), check that adhesive (A) is squeezed out from both ends of tube to the entire perimeter.



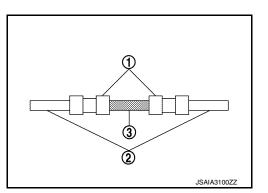
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8. Wind insulating tape (A) around heat shrinkable tube for the purpose of waterproof and anticorrosion.



HOW TO EXTEND WIRES

When repairing a broken aluminum wire, it can be extended by connecting aluminum wire (2) with copper wire (3) by using crimp terminal (1).



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ABBREVIATIONS

Abbreviation List

The following **ABBREVIATIONS** are used:

Α	
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
В	
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
С	
ABBREVIATION	DESCRIPTION
CKP	Crankshaft position
CL	Closed loop
CMP	Camshaft position
CPP	Clutch pedal position
СТР	Closed throttle position
CVT	Continuously variable transaxle/transmission
D	
ABBREVIATION	DESCRIPTION
D1	Drive range first gear
D2	Drive range second gear
D3	Drive range third gear
D4	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

ABBREVIATION	DESCRIPTION	GI
E/T	Exhaust temperature	
EBD	Electric brake force distribution	
EC	Engine control	В
ECL	Engine coolant level	
ECM	Engine control module	С
ECT	Engine coolant temperature	
ECV	Electrical control valve	
EEPROM	Electrically erasable programmable read only memory	D
EFT	Engine fuel temperature	
EGR	Exhaust gas recirculation	
EGRT	Exhaust gas recirculation temperature	
EGT	Exhaust gas temperature	
EOP	Engine oil pressure	F
EP	Exhaust pressure	
EPR	Exhaust pressure regulator	
EPS	Electronically controlled power steering	
ESP	Electronic stability program system	
EVAP canister	Evaporative emission canister	Н
EVSE	Electric vehicle supply equipment	
EXC	Exhaust control	
ABBREVIATION	DESCRIPTION	
FC	Fan control	J
FCW	Forward collision warning	
FEB	Forward emergency braking	
FIC	Fuel injector control	K
FP	Fuel pump	
FR	Front	L
FRP	Fuel rail pressure	
FRT	Fuel rail temperature	
FTP	Fuel tank pressure	
FTT	Fuel tank temperature	
ADDDE MATION	DESCRIPTION	N
ABBREVIATION	DESCRIPTION	
GND	Ground	
GPS	Global positioning system	
GST	Generic scan tool	
ABBREVIATION	DESCRIPTION	
HBMC	Hydraulic body-motion control system	· ·
HDD	Hard disk drive	
HO2S	Heated oxygen sensor	
HOC	Heated oxidation catalyst	

<u>< </u>	HOW TO USE TH	HIS MANUAL >
<u> </u>	ABBREVIATION	DESCRIPTION
		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	ADDDE MATION	DECODIDATION
	ABBREVIATION	DESCRIPTION
_	KS	Knock sensor
<u>L</u>	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
<u></u>	LIIV	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		· · · · · · · · · · · · · · · · · · ·
<u> </u>	ABBREVIATION	DESCRIPTION
	NOX	Nitrogen oxides
0		
	ABBREVIATION	DESCRIPTION
	O2	Oxygen
	O2S	Oxygen sensor
-	OBD	On board diagnostic
-	OC	Oxidation catalytic converter
-	OD	Overdrive
	OL	Open loop
	OSS	Output shaft speed
_		·

ABBREVIATION	DESCRIPTION	Gl
P/S	Power steering	
PBR	Potentio balance resistor	
PCV	Positive crankcase ventilation	В
PFCW	Predictive forward collision warning	
PNP	Park/Neutral position	C
PSP	Power steering pressure	
PTC	Positive temperature coefficient	 -
PTO	Power takeoff	D
PWM	Pulse width modulation	
?		E
ABBREVIATION	DESCRIPTION	
RAM	Random access memory	
RAS	Rear active steer	F
RH	Right-hand	
ROM	Read only memory	0
RPM	Engine speed	G
RR	Rear	
3		Н
ABBREVIATION	DESCRIPTION	
SAE	Society of Automotive Engineers, Inc.	
SCK	Serial clock	
SDS	Service Data and Specifications	
SRT	System readiness test	J
SST	Special Service Tools	
-		
ABBREVIATION	DESCRIPTION	K
TC	Turbocharger	
TCM	Transmission control module	
TCS	Traction control system	
TCU	Telematics communication unit	
TP	Throttle position	M
TPMS	Tire pressure monitoring system	
TSS	Turbine shaft speed	N
TWC	Three way catalytic converter	14
J		
ABBREVIATION	DESCRIPTION	
USS	Uphill start support	
ADDDEVIATION	DECODIDEION	
ABBREVIATION	DESCRIPTION Webigle control module	P
VCM	Vehicle dynamics control system	
VDC	Vehicle identification number	
VIN	Vehicle identification number	

_	IOW TO USE II	IIO MANOAL >		
W				
	ABBREVIATION		DESCRIPTION	
	WOT	Wide open throttle		
1				
	ABBREVIATION		DESCRIPTION	
	11	1st range first gear		
	12	1st range second gear		
	1GR	First gear		
2				
	ABBREVIATION		DESCRIPTION	
	21	2nd range first gear		
	22	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

< HOW TO USE THIS MANUAL >

TIGHTENING TORQUE OF STANDARD BOLTS

Description INFOID:0000000010599315

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-21, "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-21, "Tightening Torque Table (New Standard Included)".
- *ISO: International Organization for Standardization

Tightening Torque Table (New Standard Included)

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

Tightening torque (Without lubricant) Hexagonal Bolt di-Grade Bolt Pitch width Hexagon head bolt (Strength ameter Hexagon flange bolt size across flats mm grade) mm ft-lb N·m kg-m in-lb $N \cdot m$ kg-m ft-lb in-lb mm M6 6.0 10 1.0 5.5 0.56 4 49 7 0.71 5 62 10 17 1.25 13.5 1.4 1.7 13 8.0 **M8** 12 1.0 13.5 1.4 10 17 1.7 13 2.9 26 1.5 28 21 35 3.6 4T 10.0 M10 14 2.9 1.25 28 21 35 3.6 26 1.75 4.6 45 33 55 5.6 41 12.0 M12 17 45 1.25 4.6 33 65 66 48 M14 14.0 19 1.5 80 8.2 59 100 10 74 M6 6.0 10 1.0 9 0.92 7 80 11 1.1 8 97 1.25 22 2.2 16 28 2.9 21 8.0 **M8** 12 2.2 1.0 22 16 28 2.9 21 1.5 45 4.6 33 55 5.6 41 7T M10 10.0 14 1.25 4.6 33 5.6 41 45 55 8.2 100 74 1.75 80 59 10 M12 12.0 17 1.25 80 8.2 59 100 10 74 M14 14.0 19 1.5 130 13 96 170 17 125 M6 6.0 10 1.0 11 1.1 8 13.5 1.4 10 2.9 1.25 28 21 35 3.6 26 **M8** 8.0 12 1.0 28 2.9 21 35 3.6 26 55 5.6 80 8.2 59 1.5 41 9T 10.0 M10 14 1.25 41 55 5.6 80 8.2 59 1.75 100 74 130 96 10 13 M12 12.0 17 1.25 100 10 74 130 13 96 M14 14.0 170 125 210

CAUTION:

GI-21 Revision: February 2015 2015 QX50

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TIGHTENING TORQUE OF STANDARD BOLTS

< HOW TO USE THIS MANUAL >

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

NEW STANDARD BASED ON ISO

Grade		Bolt di-	Hexagonal width across flats		Tightening torque							
(Strength	Bolt size	ameter		Pitch mm		Hexagon	head bolt	t		Hexagon	flange bol	t
grade)	0120	mm	mm		N·m	kg-m	ft-lb	in-lb	N·m	kg-m	ft-lb	ft-lb in-lb
	M6	6.0	10	1.0	5.5	0.56	4	49	7	0.71	5	62
	MO	8.0	13	1.25	13.5	1.4	10	_	17	1.7	13	_
	M8	0.0	13	1.0	13.5	1.4	10	_	17	1.7	13	_
4.8	M40	10.0	16	1.5	28	2.9	21	_	35	3.6	26	_
(Without lubricant)	M10	10.0	16	1.25	28	2.9	21	_	35	3.6	26	_
	M12	12.0	18	1.75	45	4.6	33	_	55	5.6	41	_
	IVI I Z	12.0	10	1.25	45	4.6	33	_	65	6.6	48	_
	M14	14.0	21	1.5	80	8.2	59	_	100	10	74	_
	M6	6.0	10	1.0	4	0.41	3	35	5.5	0.56	4	49
		8.0	13	1.25	11	1.1	8	_	13.5	1.4	10	_
	M8	0.0		1.0	11	1.1	8	_	13.5	1.4	10	_
4.8 (With lu-	M10 10.0	10.0	16	1.5	22	2.2	16	_	28	2.9	21	_
bricant)		10.0		1.25	22	2.2	16	_	28	2.9	21	_
	M12 12.0	12.0	18	1.75	35	3.6	26	_	45	4.6	33	_
		12.0	10	1.25	35	3.6	26	_	45	4.6	33	_
	M14	14.0	21	1.5	65	6.6	48	_	80	8.2	59	_
	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	_	
		13	1.0	21	2.1	15	_	25	2.6	18	_	
8.8 (With lu-	M10 10.0	16	1.5	40	4.1	30	_	50	5.1	37	_	
bricant)		10.0	10	1.25	40	4.1	30	_	50	5.1	37	_
	M12	12.0	18	1.75	70	7.1	52	_	85	8.7	63	_
	IVI I Z	12.0	10	1.25	70	7.1	52	_	85	8.7	63	_
	M14	14.0	21	1.5	120	12	89	_	140	14	103	_
	M6	6.0	10	1.0	10	1.0	7	89	12	1.2	9	106
	M8	9.0	13	1.25	27	2.8	20	_	32	3.3	24	_
	IVIO	8.0	13	1.0	27	2.8	20	_	32	3.3	24	_
10.9 (With lu-	M10	10.0	16	1.5	55	5.6	41	_	65	6.6	48	_
(vvitn iu- bricant)			.0 16	1.25	55	5.6	41	_	65	6.6	48	_
	M12	12.0	18	1.75	95	9.7	70	_	110	11	81	_
	IVI I Z	12.0	10	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

TIGHTENING TORQUE OF STANDARD BOLTS

< HOW TO USE THIS MANUAL >

DISCRIMINATION OF BOLTS AND NUTS

BOLTS

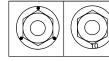
	Grade (Strength)	Discrim	nination
	4T (392N/mm²)	4	(No number/ symbol)
Previous standard	7T (686N/mm²)	7	
	9T (883N/mm²)	9	
	4.8 (420N/mm²)	4.8	(No number/symbol)
New Standard	8.8 (800N/mm²)	8.8	
	10.9 (1040N/mm²)	10.9	

NUTS

	Grade (Proof load stress)	Discrimination			
Previous	7N (686N/mm²)	(No number/symbol)			
standard	9N (883N/mm²)				
New	8 (800N/mm²)			(No number/symbol)	
Standard	10 (1040N/mm²)				

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	Screw	Torx size
size	diameter	TOTA 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.

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RECOMMENDED CHEMICAL PRODUCTS AND SEALANTS

< HOW TO USE THIS MANUAL >

RECOMMENDED CHEMICAL PRODUCTS AND SEALANTS

Recommended Chemical Products and Sealants

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Refer to the following chart for help in selecting the appropriate chemical product or sealant.

	Product Description	Purpose	Nissan North America Part No. (USA)	Nissan Canada Part No. (Canada)	Aftermarket Cross- reference Part Nos.
1	Rear View Mirror Adhesive	Used to permanently remount rear view mirrors to windows.	999MP-AM000P	99998-50505	Permatex 81844
2	Anaerobic Liquid Gas- ket	For metal-to-metal flange sealing. Can fill a 0.38 mm (0.015 inch) gap and provide instant sealing for most powertrain applications.	999MP-AM001P	99998-50503	Permatex 51813 and 51817
3	High Performance Thread Sealant	Provides instant sealing on any threaded straight or parallel threaded fitting. (Thread sealant only, no locking ability.) • Do not use on plastic.	999MP-AM002P	999MP-AM002P	Permatex 56521
4	Silicone RTV	Gasket Maker	999MP-AM003P (Ultra Grey)	99998-50506 (Ultra Grey)	Permatex Ultra Grey 82194; Three Bond 1207,1215, 1216, 1217F, 1217G and 1217H Nissan RTV Part No. 999MP-A7007
		Gasket Maker for Maxima/ Quest 5-speed automatic transmission (RE5F22A)	-	_	Three Bond 1281B or exact equivalent in its quality
5	High Temperature, High Strength Thread Locking Sealant (Red)	gh Strength Thread Threadlocker		999MP-AM004P	Permatex 27200; Three Bond 1360, 1360N, 1305 N&P, 1307N, 1335, 1335B, 1363B, 1377C, 1386B, D&E and 1388 Loctite 648
6	Medium Strength Thread Locking Sealant (Blue) Threadlocker (service tool removable)		999MP-AM005P	999MP-AM005P	Permatex 24200, 24206, 24240, 24283 and 09178; Three Bond 1322, 1322N, 1324 D&N, 1333D, 1361C, 1364D, 1370C and 1374

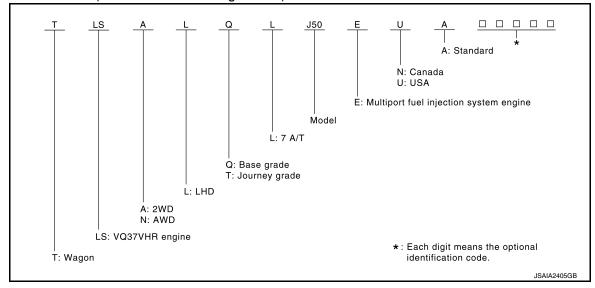
VEHICLE INFORMATION

IDENTIFICATION INFORMATION

Model Variation

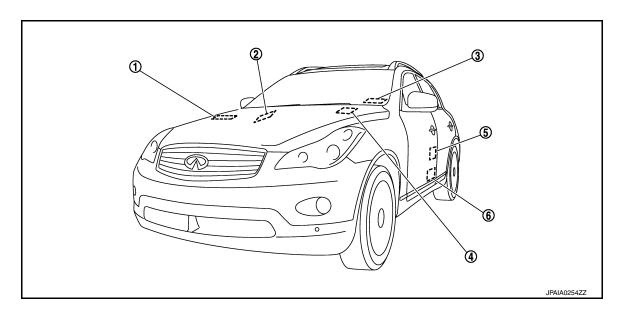
Destination	Body	Engine	Axle	Handle	Transmission	Grade	Model
		2\	3///D	2WD LHD) 7A/T	Base	TLSALQL-EUA
USA			2000			Journey	TLSALTL-EUA
USA	Wagon \	VQ37VHR	AWD			Base	TLSNLQL-EUA
						Journey	TLSNLTL-EUA
Canada						Base	TLSNLQL-ENA
						Journey	TLSNLTL-ENA

Model variation code (Prefix and suffix designations)



Information About Identification or Model Code

IDENTIFICATION NUMBER



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IDENTIFICATION INFORMATION

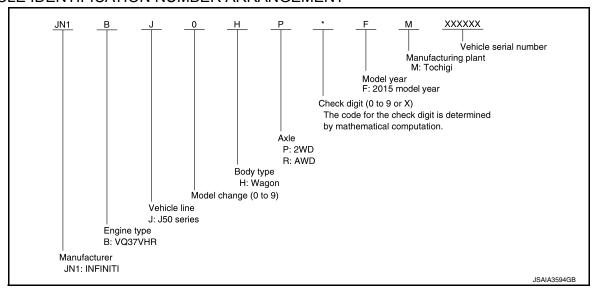
< VEHICLE INFORMATION >

- 1. Emission control information label
- Vehicle identification number (Chassis number)
- Vehicle identification number plate

- 4. Air conditioner specification label
- 5. Tire and loading information label
- FMVSS certification label (For USA) CMVSS certification label (For Canada)

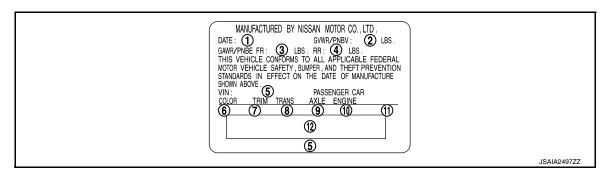
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VEHICLE IDENTIFICATION NUMBER ARRANGEMENT



CERTIFICATION LABEL

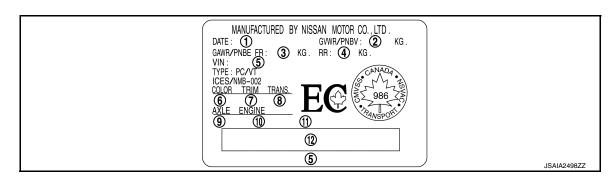
FMVSS certification label



- 1. MFR Month/Year
- 4. Gross axle weight rating (Rear)
- 7. Trim color code
- 10. Engine model

- Gross vehicle weight rating
- 5. Vehicle identification number
- 8. Transmission model
- 11. Engine displacement
- Gross axle weight rating (Front)
- 6. Body color code
- Axle model
- 12. Vin bar code

CMVSS certification label



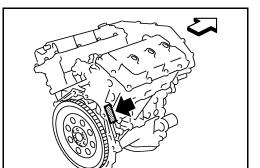
IDENTIFICATION INFORMATION

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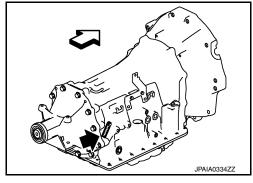
ENGINE SERIAL NUMBER

- MFR Month/Year 1.
- Gross axle weight rating (Rear) 4.
- 7. Trim color code
- 10. Engine model

- 2. Gross vehicle weight rating
- 5. Vehicle identification number
- Transmission model
- 11. Engine displacement
- 3. Gross axle weight rating (Front)
- 6. Body color code
- Axle model
- 12. Vin bar code



AUTOMATIC TRANSMISSION NUMBER



Dimensions INFOID:0000000010599320

	Unit: mm (in)
Overall length (With front license plate)	4,636 (182.5)
Overall width	1,803 (71.0)
	1,577 (62.1)*1,*3
Overall height (Without roof rail)	1,578 (62.1) ^{*4}
	1,579 (62.2) ^{*2}
	1,599 (63.0) ^{*1}
Overall height (Mith roof roil)	1,601 (63.0)* ²
Overall height (With roof rail)	1,598 (62.9) ^{*3}
	1,600 (63.0)*4
Front tread	1,535 (60.4)*1,*2
FIOIL LIEAU	1,540 (60.6) ^{*3, *4}
Rear tread	1,545 (60.8)
Wheelbase	2,800 (110.2)

*1: 2WD 18-inch wheel models

*2: 2WD 19-inch wheel models

*3: AWD 18-inch wheel models

*4: AWD 19-inch wheel models

Wheels & Tires INFOID:0000000010599321

GI-27 Revision: February 2015 2015 QX50 GI

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IDENTIFICATION INFORMATION

< VEHICLE INFORMATION >

	18 inch	Tire		P225/55R18 97V
		Road wheel	Size	18 × 8J
Conventional		(Aluminum)	Inset	47 mm (1.85 in)
Conventional	19 inch	Tire		P245/45R19 98V
		19 inch Road wheel (Aluminum)	Size	19 × 8J
			Inset	47 mm (1.85 in)
		Tire		T165/80R17 104M T165/80D17 104M
Spare		Road wheel (Steel)	Size	17 × 4T
			Inset	30 mm (1.18 in)

PRECAUTIONS

Description

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"

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

WARNING:

Always observe the following items for preventing accidental activation.

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

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

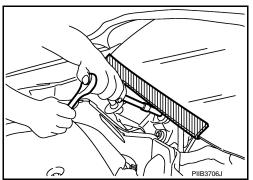
WARNING:

Always observe the following items for preventing accidental activation.

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

Precaution for Procedure without Cowl Top Cover

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



Precautions For Xenon Headlamp Service

WARNING:

Comply with the following warnings to prevent any serious accident.

Revision: February 2015 GI-29 2015 QX50

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< PRECAUTION >

- Disconnect the battery cable (negative terminal) or the power supply fuse before installing, removing, or touching the xenon headlamp (bulb included). The xenon headlamp contains high-voltage generated parts.
- · Never work with wet hands.
- Check the xenon headlamp ON-OFF status after assembling it to the vehicle. Never turn the xenon headlamp ON in other conditions. Connect the power supply to the vehicle-side connector. (Turning it ON outside the lamp case may cause fire or visual impairments.)
- Never touch the bulb glass immediately after turning it OFF. It is extremely hot.

CAUTION:

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

- Install the xenon bulb securely. (Insufficient bulb socket installation may melt the bulb, the connector, the housing, etc. by high-voltage leakage or corona discharge.)
- Never perform HID circuit inspection with a tester.
- Never touch the xenon bulb glass with hands. Never put oil and grease on it.
- Dispose of the used xenon bulb after packing it in thick vinyl without breaking it.
- Never wipe out dirt and contamination with organic solvent (thinner, gasoline, etc.).

Precautions for Removing Battery Terminal

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 When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption 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.

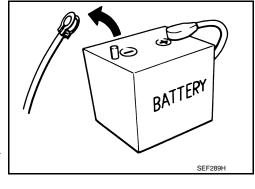
After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
 NOTE:

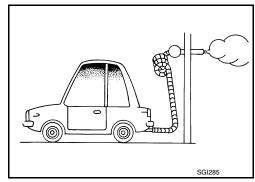
The removal of 12V battery may cause a DTC detection error.

General Precautions

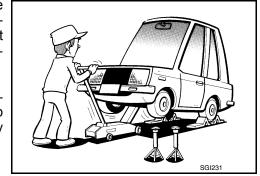
 Do not operate the engine for an extended period of time without proper exhaust ventilation.

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.



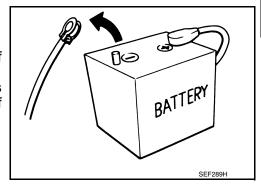


- Before jacking up the vehicle, apply wheel chocks or other tire blocks to the wheels to prevent the vehicle from moving. After jacking up the vehicle, support the vehicle weight with safety stands at the points designated for proper lifting before working on the vehicle.
- These operations should be 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.



< PRECAUTION >

- 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.
- For vehicles with two batteries, be sure to remove both batteries when instructed to remove 12V battery in the service manual. If specified as main battery or sub battery, then do as instructed.

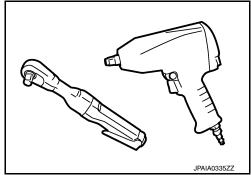


• To prevent serious burns:

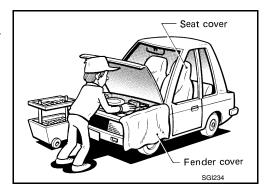
Avoid contact with hot metal parts.

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.
- 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.



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



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WARNING:

< PRECAUTION >

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

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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

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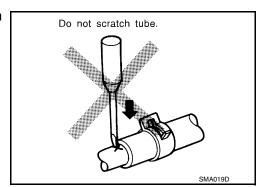
- Before connecting or disconnecting any harness connector for the multiport fuel injection system or ECM:
 - Turn ignition switch to "OFF" position.
 - Disconnect negative battery terminal.
 - Otherwise, there may be damage to ECM.
- Before disconnecting pressurized fuel line from fuel pump to injectors,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



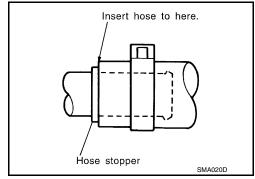
Hoses

HOSE REMOVAL AND INSTALLATION

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



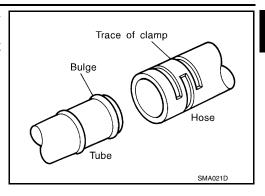
 To reinstall the rubber hose securely, check that hose insertion length and orientation is correct. (If tube is equipped with hose stopper, insert rubber hose into tube until it butts up against hose stopper.)



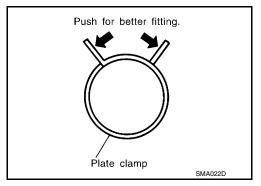
HOSE CLAMPING

< PRECAUTION >

- · 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

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 regu-
- 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

Use an approved refrigerant recovery unit any time the air conditioning system must be discharged. Refer to HA section "REFRIGERANT" for specific instructions.

GI-33 Revision: February 2015 2015 QX50 GΙ

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INFOID:0000000010599332

< PRECAUTION >

Fuel (INFOID:000000001059933:

Use unleaded premium gasoline with an octane rating of at least 91 AKI (Anti-Knock Index) number (Research octane number 96).

If unleaded premium gasoline is not available, unleaded regular gasoline with an octane rating of at least 87 AKI number (Research octane number 91) may be temporarily used, but only under the following precautions:

- Have the fuel tank filled only partially with unleaded regular gasoline, and fill up with unleaded premium gasoline as soon as possible.
- · Avoid full throttle driving and abrupt acceleration.

Use unleaded premium gasoline for maximum vehicle performance.

CAUTION:

- Using a fuel other than that specified could adversely affect the emission control system, and may also affect warranty coverage.
- Under no circumstances should a leaded gasoline be used, because this will damage the three-way catalyst.
- Do not use E-15 or E-85 fuel in the vehicle. The vehicle is not designed to run on E-15 or E-85 fuel.
 Using E-15 or E-85 fuel in a vehicle not specifically designed for E-15 or E-85 fuel can adversely
 affect the emission control devices and systems of the vehicle. Damage caused by such fuel is not
 covered by the INFINITI new vehicle limited warranty.
- U.S. government regulations require ethanol dispensing pumps to be identified by a small, square, orange and black label with the common abbreviation or the appropriate percentage for that region.

LIFTING POINT

Commercial Service Tools

INFOID:0000000010599334

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

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.

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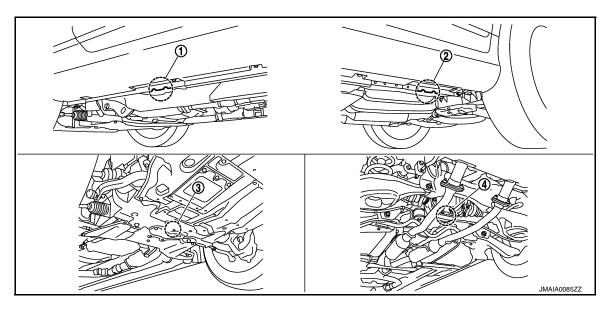
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- 1. Safety stand point and lift up point (front) 2. Safety stand point and lift up point 3. Garage jack point (front) (rear)
- 4. Garage jack point (rear)

CAUTION:

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

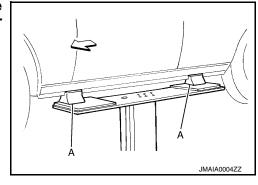
Board-On Lift

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.





TOW TRUCK TOWING

< PRECAUTION >

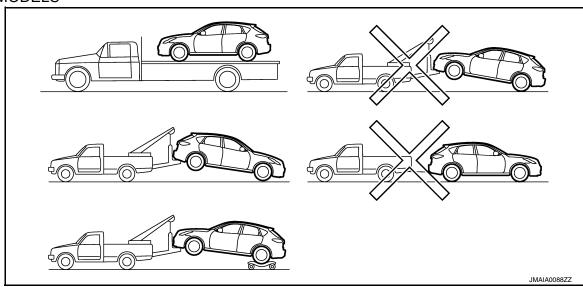
TOW TRUCK TOWING

Tow Truck Towing

CAUTION:

- All applicable state or Provincial (in Canada) 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 automatic transmission 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



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

CAUTION:

- Never tow automatic transmission models with the rear 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 front wheels raised, always use towing dollies under the rear wheels.
- When towing rear wheel drive models with the front wheels on the ground or 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.

If the speed or distance must necessarily be greater, remove the propeller shaft before towing to prevent damage to the transmission.

GI-37

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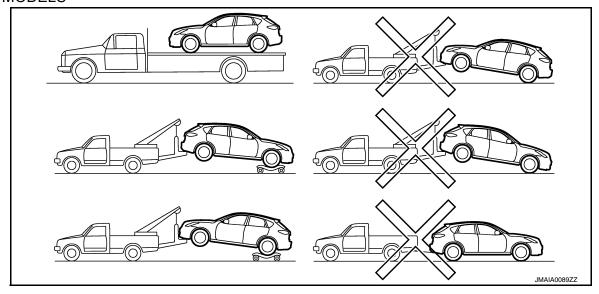
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2015 QX50

Revision: February 2015

AWD MODELS



INFINITI recommends that a dolly be used as illustrated when towing AWD models.

CAUTION:

Never tow AWD models with any of the wheels on the ground as this may cause serious and expensive damage to the powertrain.

Vehicle Recovery (Freeing a Stuck Vehicle)

INFOID:0000000010599338

FRONT

Securely install the vehicle recovery hook stored with jacking tools. 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.

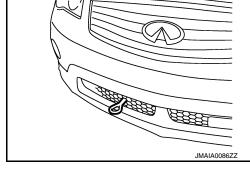
CAUTION:

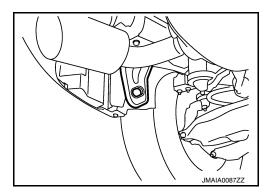
- Tow chains or cables must be attached only to the vehicle recovery hooks or main structural members of the vehicle. Otherwise, the vehicle body will be damaged.
- Never use the vehicle tie downs to free a vehicle stuck in sand, snow, mud, etc. Never tow the vehicle using the vehicle tie downs or recovery 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 never 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

WARNING:

· Rear hook is not available.





TOW TRUCK TOWING

< PRECAUTION >

AUTOMATIC TRANSMISSION

To tow a vehicle equipped with an automatic transmission, an appropriate vehicle dolly **MUST** be placed under the towed vehicle's drive wheels. **Always** follow the dolly manufacture's recommendations when using their product.

If the vehicle is stuck in sand, snow, mud, etc., use the following procedure:

Turn off the Vehicle Dynamic Control System.

Do not spin the tires above 35 mph (55 km/h).

- 2. Check the area in front and behind the vehicle is clear of obstructions.
- 3. Turn the steering wheel right and left to clear an area around the front tires.
- Slowly rock the vehicle forward and backward.
 Shift back and forth between R (reverse) and D (drive).
 Apply the accelerator as little as possible to maintain the rocking motion.
 Release the accelerator pedal before shifting between R and D.
- 5. If the vehicle can not be freed after a few tries, contact a professional towing service to remove the vehicle.

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PREPARATION

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Special Service Tools

INFOID:0000000010944747

The actual shapes of TechMate tools may differ from those of special service tools illustrated here.

Tool number (TechMate No.) Tool name	Description
KV99112600 (J-48817-8) Crimping Pliers	Crimping terminals

Commercial Service Tools

INFOID:0000000010944748

Tool name		Description
Industrial dryer		Heating heat shrinkable tube
	JSAIA3281ZZ	

Repair Parts

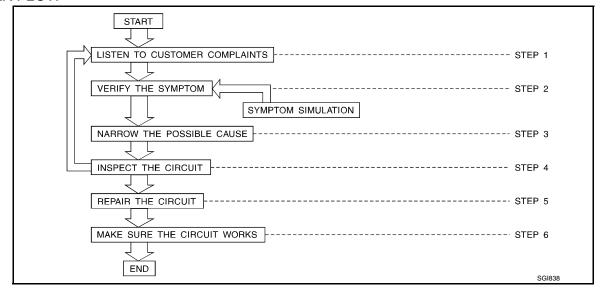
Part name		Description
Harness repair kit A: Heat shrinkable tube B: Crimp terminal (For harness with the diameter of 1.00 or less) C: Crimp terminal (For harness with the diameter of 1.25 or more)	A —B —C JSAIA3388ZZ	Connecting aluminum wires

BASIC INSPECTION

SERVICE INFORMATION FOR ELECTRICAL INCIDENT

Work Flow INFOID:0000000010599339

WORK FLOW



STEP	DESCRIPTION							
		formation about the conditions and the environment when the incident occurred. are key pieces of information required to make a good analysis:						
	WHAT	Vehicle Model, Engine, Transmission/Transaxle and the System (i.e. Radio).						
STEP 1 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	Verify the para	rstem, road test if necessary. meter of the incident. 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		stem for mechanical binding, loose connectors or wiring damage. ch circuits and components are involved and diagnose using the Power Supply Routing and Harness Lay-						
STEP 5	Repair or repla	nce the incident circuit or component.						
STEP 6		rstem in all modes. Verify the system works properly under all conditions. Check you have not inadvertance in new incident during your diagnosis or repair steps.						

Control Units and Electrical Parts

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.

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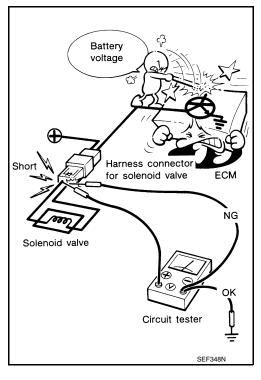
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< BASIC INSPECTION >

- 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.



How to Check Terminal

INFOID:0000000010599341

CONNECTOR AND TERMINAL PIN KIT

- Use the connector and terminal pin kits listed below when replacing connectors or terminals.
- The connector and terminal pin kits contain some of the most commonly used NISSAN/INFINITI connectors and terminals. For detailed connector and terminal pin replacement procedures, refer to the latest NISSAN/ INFINITI CONNECTOR AND TERMINAL PIN SERVICE MANUAL.

< BASIC INSPECTION >

Tool number (TechMate No.) Tool name		Desc	cription	
- (J38751-95NI) Connector and terminal pin kit (NISSAN) - (J38751-95INF) Connector and terminal pin kit (INFINITI) - (J42992-98KIT) OBD and terminal repair kit - (J42992-2000UPD) OBD-II Connector Kit Update	J38751-95NI	J38751-95INF	J42992-98KIT	J42992-2000UPD

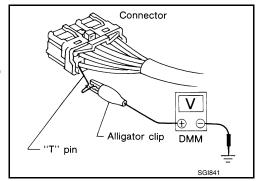
HOW TO PROBE CONNECTORS

- Connector damage and an intermittent connection can result from improperly probing of the connector during circuit checks.
- The probe of a digital multimeter (DMM) may not correctly fit the connector cavity. To correctly probe the connector, follow the procedures below using a "T" pin. For the best contact grasp the "T" pin using an alligator clip.

Probing from Harness Side

Standard type (not waterproof type) connector should be probed from harness side with "T" pin.

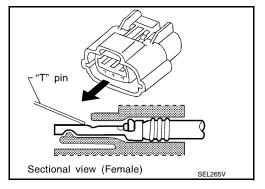
- If the connector has a rear cover such as a ECM connector, remove the rear cover before probing the terminal.
- Do not probe waterproof connector from harness side. Damage to the seal between wire and connector may result.



Probing from Terminal Side

FEMALE TERMINAL

 There is a small notch above each female terminal. Probe each terminal with the "T" pin through the notch.
 Do not insert any object other than the same type male terminal into female terminal.



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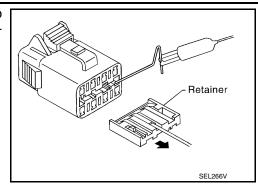
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 Some connectors do not have a notch above each terminal. To probe each terminal, remove the connector retainer to make contact space for probing.

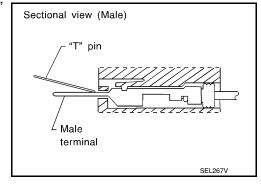


MALE TERMINAL

 Carefully probe the contact surface of each terminal using a "T" pin.

CAUTION:

Never bend terminal.

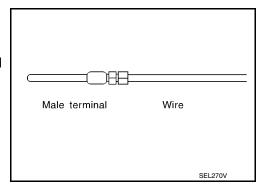


How to Check Enlarged Contact Spring of Terminal

- An enlarged contact spring of a terminal may create intermittent signals in the circuit.
- If the intermittent open circuit occurs, follow the procedure below to inspect for open wires and enlarged contact spring of female terminal.
- 1. Assemble a male terminal and approx. 10 cm (3.9 in) of wire. **NOTE:**

Use a male terminal which matches the female terminal.

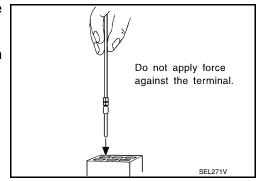
2. Disconnect the suspected faulty connector and hold it terminal side up.



3. While holding the wire of the male terminal, try to insert the male terminal into the female terminal.

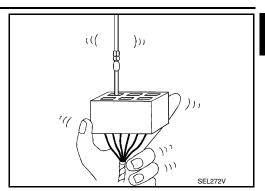
CAUTION:

Never force the male terminal into the female terminal with your hands.



< BASIC INSPECTION >

4. While moving the connector, check whether the male terminal can be easily inserted or not.



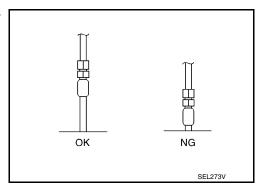
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If the male terminal can be easily inserted into the female terminal, replace the female terminal.



Waterproof Connector Inspection

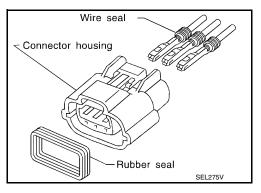
If water enters the connector, it can short interior circuits. This may lead to intermittent problems. Check the following items to maintain the original waterproof characteristics.

RUBBER SEAL INSPECTION

- Most waterproof connectors are provided with a rubber seal between the male and female connectors. If the seal is missing, the waterproof performance may not meet specifications.
- The rubber seal may come off when connectors are disconnected.
 Whenever connectors are reconnected, make sure the rubber seal is properly installed on either side of male or female connector.

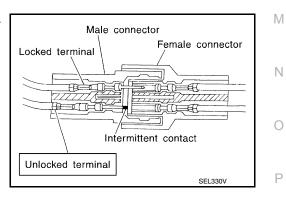
WIRE SEAL INSPECTION

 The wire seal must be installed on the wire insertion area of a waterproof connector. Be sure that the seal is installed properly.



Terminal Lock Inspection

Check for unlocked terminals by pulling wire at the end of connector. An unlocked terminal may create intermittent signals in the circuit.



Intermittent Incident

INFOID:0000000010599342

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 fol-

< BASIC INSPECTION >

lowing 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

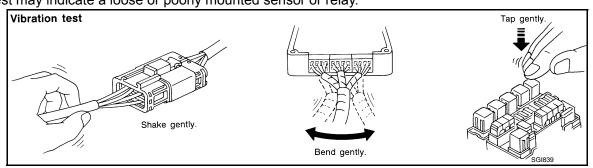
Determine which connectors and wiring harness would affect the electrical system you are inspecting. Gently shake each connector and harness while monitoring the system for the incident you are trying to duplicate. This test may indicate a loose or poor electrical connection.

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

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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.

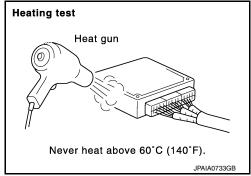
HEAT SENSITIVE

- 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:

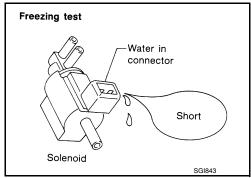
Never heat components above 60°C (140°F).

 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.

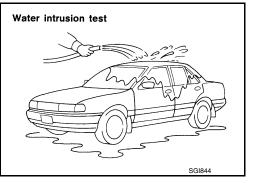


WATER INTRUSION

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.

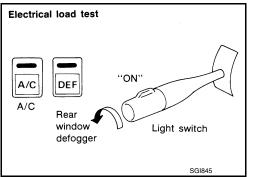
CAUTION:

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.

GI-47 Revision: February 2015 2015 QX50 GI

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Circuit Inspection

INFOID:0000000010599343

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.

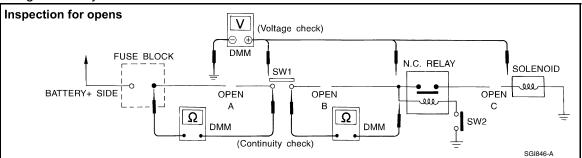
OPEN	A circuit is open when there is no continuity through a section of the circuit.							
	There are two types of shorts.							
SHORT	SHORT CIRCUIT	When a circuit contacts another circuit and causes the normal resistance to change.						
	SHORT TO GROUND	When a circuit contacts a ground source and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

NOTE:

Refer to GI-42, "How to Check Terminal" to probe or check terminal.

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.

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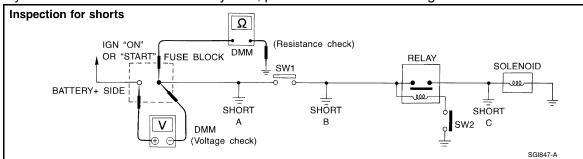
no voltage: open is between fuse block and SW1 (point A).

- 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.

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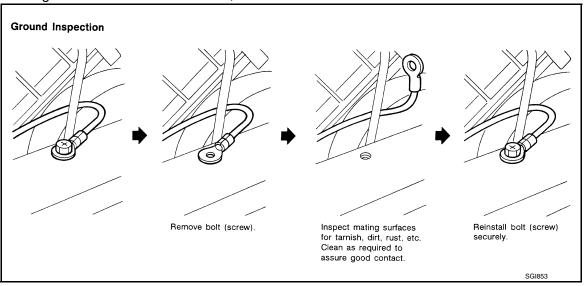
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< BASIC INSPECTION >

- 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.

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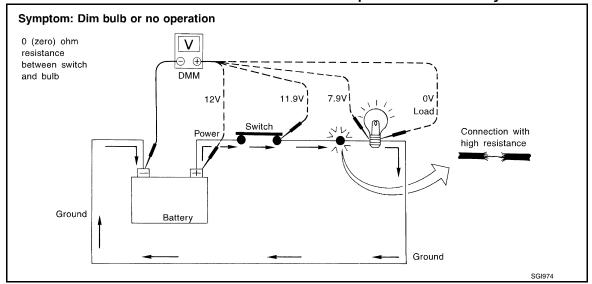
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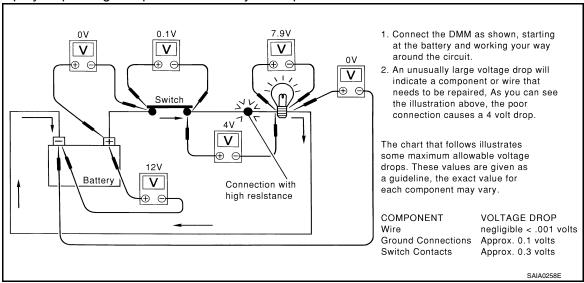
< BASIC INSPECTION >

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.

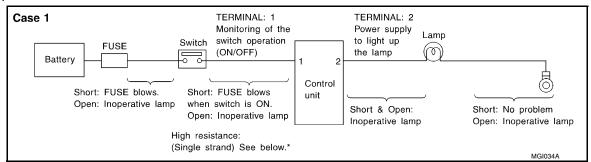


CONTROL UNIT CIRCUIT TEST

System Description

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

CASE 1

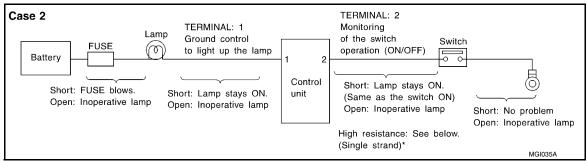


< BASIC INSPECTION >

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

Ter	minal No.	Descrip	tion			In case of high resistance such as single
+	_	Signal name	Input/ Output	Condition	Value (Approx.)	strand (V) *
1	Body	Lamp	Output	Switch ON	0 V	Battery voltage (Inoperative lamp)
ı	ground	Lamp	Output	Switch OFF	Battery voltage	Battery voltage
2	2 Body ground Switch	Switch	Input	Switch ON	0 V	Higher than 0 Approx. 4 (Example)
		OWILLII	input	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

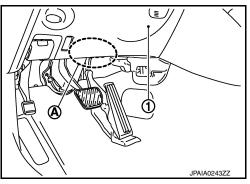
< BASIC INSPECTION >

CONSULT/GST CHECKING SYSTEM

Description INFOID:0000000010599344

 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 : Instrument lower panel LH
- Refer to "CONSULT Software Operation Manual" for more information.



INFOID:0000000010599345

CONSULT Function and System Application*1

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.
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

System	All DTC Reading	Work Support	Self Diagnostic Results	Data Monitor	CAN Diagnosis	CAN Diagnosis Support Monitor	Active Test	ECU Identification	Configuration	SRT&P-DTC Confirmation	DTC work support	Others
ENGINE	Х	х	х	х	х	х	х	х	-	x*2	х	-
TRANSMISSION	х	-	х	х	х	х	-	х	-	-	х	CALIB DATA
AIR BAG	х	-	х	-	Х	-	-	х	-	-	-	TROUBLE DIAG RECORD
METER / M&A	х	-	X	X	х	х	-	Х	-	-	-	-
ВСМ	х	х	х	х	х	х	х	х	х	-	-	-

Revision: February 2015 GI-53 2015 QX50

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System	All DTC Reading	Work Support	Self Diagnostic Results	Data Monitor	CAN Diagnosis	CAN Diagnosis Support Monitor	Active Test	ECU Identification	Configuration	SRT&P-DTC Confirmation	DTC work support	Others
AUTO DRIVE POS.	х	х	х	х	х	х	х	х	-	-	-	-
ABS	х	Х	х	Х	х	х	х	Х	-	-	-	SPECIFIC DATA MONITOR
IPDM E/R	х	-	х	х	х	х	х	х	-	-	-	-
ALL MODE AWD / 4WD	х	-	х	х	х	х	х	х	-	-	-	-
MULTI AV	-	Х	х	Х	х	х	-	Х	х	-	-	-
ICC / ADAS	х	х	х	х	х	х	х	х	-	-	-	-
LANE CAMERA	х	х	х	х	х	х	х	х	-	-	-	-
SONAR	х	Х	х	Х	-	-	х	Х	-	-	-	-
ADAPTIVE LIGHT	х	х	х	х	х	х	х	х	-	-	-	-
ACCEL PEDAL ACT	Х	-	х	х	х	х	х	х	-	-	-	-
SIDE RADAR LEFT	Х	-	Х	Х	Х	Х	Х	Х	-	-	-	-
SIDE RADAR RIGHT	х	-	Х	Х	Х	х	х	Х	-	-	-	-
BSW	х	-	х	х	х	х	х	х	-	-	-	-

x: Applicable

CONSULT/GST Data Link Connector (DLC) Circuit

INFOID:0000000010599346

INSPECTION PROCEDURE

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

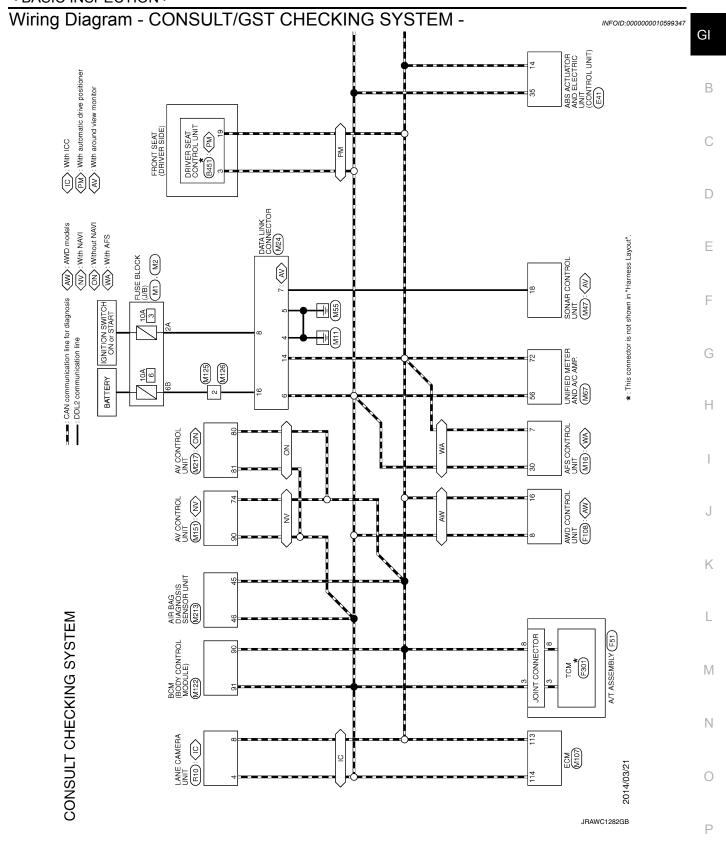
Symptom	Check item
CONSULT/GST cannot access any system.	CONSULT/GST DLC power supply circuit (Terminal 8 and 16) and ground circuit (Terminal 4 and 5)
CONSULT cannot access individual system. (Other systems can be accessed.)	 Power supply and ground circuit for the control unit of the system (For detailed 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-16, "Trouble Diagnosis Flow Chart".

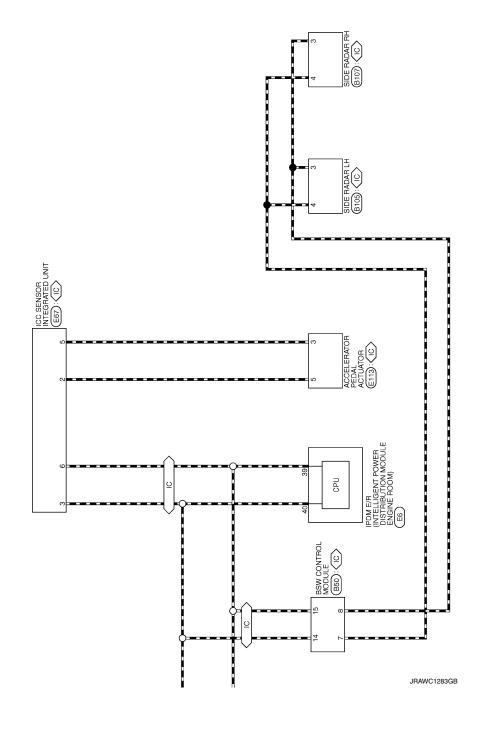
NOTE:

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.

^{*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.





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Connector No. B50	Connector No.	B107	- 02	PULSE (REAR LIFTER)	Terminal	0	Signal Name [Specification]	
Connector Name BSW CONTROL MODULE	Connector Name	SIDE RADAR RH	- 21	PULSE(TILT)	ģ	Wire	,	Т
7		Т	- 22	ADDRESS 1	-	8	GROUND	7
Connector Type TH16FW-NH	Connector Type	AAC06FB-WP-5P	- 23	IND 1	2	ŋ	UBMR	7
ú	(24 -	SLIDE SW (FORWARD)	3	ĸ	UBVR	_
	E		- 25	RECLINER SW (FORWARD)	4	В	GROUND	
	Ē	[- 56	FRONT LIFTER SW (UPWARD)	2	٨	DS FL	
S. 1 €	\ \ \		- 22	REAR LIFTER SW (UPWARD)	9	BG	DP RL	П
		((2 3 4 5 6))	- 28	SET SW	7	BR	DP RR	
16 15 14					6	8	DP FR	Г
					10	W	DS FR	
			Connector No.	Ee	12	_	VAC	Γ
Terminal Color Of	Terminal Color Of	L		JPOM E/R ONTELLIGENT POWER DISTRIBUTION MODULE ENGINE	41	۵	CAN-L	Г
No. Wire Signal Name [Specification]		Signal Name [Specification]	Connector Name	RDOM)	12	SHELD	GROUND	Т
6 B GROUND	2 B	GROUND	Connector Type	TH08FW-NH	19	۵	ISD	Т
7 BSW COMM-H	×	BSW COMM-I			25	. >	BIISH	Т
- A BSW COMM	4	H-MMCO MSB	Œ		96		DPE	Τ
14 CAN-H			手	<u></u>	27	ag	IS SU	Τ
1 0	9	BS	S :		28	į	117	Т
				41 40 39	02	, =	JOS BB	Т
,				AB AB AA A3	2 6	3 9		Т
	Connector No	19761		0± ±± 0± 0±	3 5	3 0	VDC OFF SW	Т
20 to	COLLEGE NO.	Т			,	-	MS IIO OCA	Т
Т	Connector Name	DRIVER SEAT CONTROL UNIT	Tominal Colos Of		S s	10	H-NIS-H	T
Connector Name SIDE RADAR LH	Connector Tone	TH32EW		Signal Name [Specification]	7		E-200	7
Connector Type AAC06FB-WP-5P	edit i she	W 125TW	+	,				
1	Œ		40	-	Connector No.	r No. E67	7	Г
	手		41 B/W	1			THE COLUMN COUNTY COL	Т
	\ \ \	11 11 11 11 11 11 11 11 11 11 11 11 11	43 SB	1	Connecto	Connector Name	SENSOR INTEGRALED ONLY	
		+ 00 00	44 BR	-	Connector Type		RS06FB-PR	
(2 3 4 5 6)		[11 01 61 17 17 17 17 17 17 1	45 G	-	(
			46 R		E		[]	
					Ę			
	E C	Of Signal Name [Specification]			2		(1 2 3)	
E E	No. Wire		Connector No.	E41			/ 4 5 8 /	
No. Wire	-	CAN-H	Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)				
2 B GROUND	2 -	UART (TX/RX))	
3 Y BSW COMM-L	-	PULSE (RECLINER)	Connector Type	BAA42FB-AHZ4-LH				I
4 L BSW COMM-H	- 2	PULSE(TELESCOPIC)	ľ		Terminal	О	Simul Name [Specification]	
5 G IGNITION	9	ADDRESS 2	E		No.	Wire	Digual Marrie Copecification	
6 R BSW INDICATOR	7	IND 2	主		-	ď	IGNITION	Г
		SLIDE SW (BACKWARD)	ς; -		2	_	ITS COMM-H	Γ
	6	RECLINER SW (BACKWARD)		(A)	67	_	CAN-H	Т
	ç	FRONT LIFTER SW (DOWNWARD)			4	α	GBOLIND	Τ
		DEAD LIETER CW (COMMINABLE)			u		CHACO SE	Т
	= \$	DOWER CIPIER SW (DOWNWARD)			0	1 6	II S COMMIT	Т
	- 21	POWER SUPPLY (ENCODER)			9	a	CAN-L	٦
		CAN-L						
	+							
	- 61	PULSE (FRONT LIFTER)						

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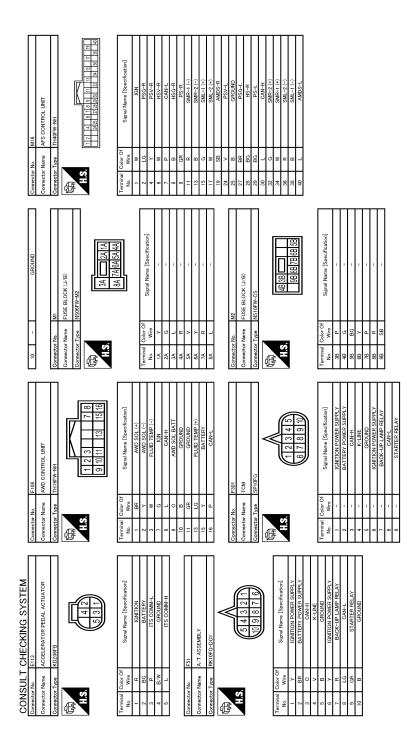
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BCM (BODY CONTROL MODULE)

UNIFIED METER AND A/C AMP.

CONSULT CHECKING SYSTEM
Connector No. M24
Connector Name DATA LINK CONNECTOR

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ППП	Е
STOP LAMP SWITCH ECM GROUND	F
	G
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SONAR CONTROL UNIT

CONSULT CHECKING SYSTEM							
Connector No. M125	Connector No). M151	Connector No.	M213	Connector No.	. M217	
Connector Name WIRE TO WIRE	Connector Name	ame AV CONTROL UNIT	Connector Name	AIR BAG DIAGNOSIS SENSOR UNIT	Connector Name	me AV CONTROL UNIT	
Connector Type M03FW-LC	Connector Type	rpe TH32FW-NH	Connector Type	NH28FY-EX	Connector Type	5e TH32FW-NH	
雪	偃		售		Œ		
7 H.S.	H.S.	178 174 175 174 175	χ.	23/24/25/26 24/30 31/32 34/35 38/39 41/42 44/45/46/47 50	H.S.	76 77 77 78 79 90 81 82 86 87 88 82 92 93 94 95 96	
Terminal Color Of Signal Name [Specification]	Terminal Co	Color Of Signal Name [Specification]	Terminal Color Of	Of Signal Name [Specification]	-Ba	Color Of Signal Name [Specification]	
No. Wife	+	V DARKING RDAKE SIGNAL	No. Wire	\downarrow	NO.	Mre AV COMM (1)	
2 ×:	67	G COMPOSITE IMAGE SIGNAL GND	24	INFLATOR AS2-	╀		
3 R	89	R COMPOSITE IMAGE SIGNAL	25 Y	INFLATOR, AS1-	78	LG AV COMM (L)	
	H	O.	Н	INFLATOR,AS1+	Н	AV	
	72		27 B	GND	80	P CAN-L	
	73	R CAMERA POWER SUPPLY	× ×	INFLATOR DR2+	E 6	L CAN-H	
Connector Name WIRE TO WIRE	75	LIG AV COMM(1)	- > 62	INFLATOR DR1+	28	-	
Connector Type M03MW-I C	+		31 %	FGZS-	t	DV IHL	
1	H		32 BR	SIDE_SENS_RH2-	88	P TEL VOICE SIGNAL (-)	
	80	G IGNITION SIGNAL	34 G	OIS	92	R VEHICLE SPEED SIGNAL (8-PULSE)	
	Н	BG REVERSE SIGNAL	35 BR		Н	PAF	
	┪	VEHICLE SPE	┪	SEA	\dashv		
6	7	٩	Ś		92	G IGNITION SIGNAL	
	7	MICRO	41 SB		96	Y DISK EJECT SIGNAL	
	†	O.	+	SIDE SENS RH2+			
	69	G COMMI (DISP -)COMI)	+	SIDE SENS THE		l	
Signal Name [Specification]	+		45 P	CANTEO	Connector No.	K10	
+	8	SB AV COMM (H)	46 47 P	A/B CHTOFF TELL TALE	Connector Name	THE CAMERA UNIT	
2 ×	┨		╀	IGN	Connector Type	TH08FW-NH	
2 2					Œ		
					Ġ.	3 2	
						8 7 6 5	
					Terminal Co	Color Of Signal Name [Specification]	
					-	B GROUND	
					2	SB WARNING SYSTEMS ON INDICATOR	
					m 4	V WARNING SYSTEMS SWITCH	
					. 2	B GROUND	

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INSPECTION AND ADJUSTMENT

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL

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

SYSTEM	ITEM	REFERENCE
	Temperature setting trimmer (Front)	HAC-9, "Temperature Set- ting Trimmer"
	Foot position setting trimmer	HAC-10, "Foot Position Setting Trimmer"
Front automatic air conditioning system	Inlet port memory function	HAC-11, "Inlet Port Memory Function"
	Inlet port memory function (FRE)	_
	Inlet port memory function (REC)	_
ACCS	Exhaust gas / outside odor detecting sensor sensitivity adjustment function	HAC-11, "Exhaust Gas/Outside Odor Detecting Sensor Sensitivity Adjustment Function (With ACCS)"
(Advanced Climate Control System)	Auto intake interlocking movement change function	HAC-12, "Auto Intake Inter- locking Movement Change Function (With ACCS)"
	Clean switch interlocking movement change function*	_
Rear automatic air conditioning system	Temperature setting trimmer (Rear)	_
Automatic drive positioner	Automatic drive positioner system	ADP-8, "ADDITIONAL SERVICE WHEN REMOV-ING BATTERY NEGATIVE TERMINAL : Description"
Power window control	Power window control system	PWC-5, "ADDITIONAL SERVICE WHEN REMOV- ING BATTERY NEGATIVE TERMINAL : Description"
Sunroof system	Sunroof system	_
Sunshade system	Sunshade system	_
Rear view monitor	Rear view monitor predictive course line center position adjustment	_
Around view monitor	Predictive course line center position adjustment	_
Automatic back door system*	Automatic back door system	_
Engine oil level read*	Engine oil level read	_

^{*:} Not equipped.