GENERAL INFORMATION

GI

	G
UI	MA
	GI

LC

EF & EC

CONTENTS

PRECAUTIONS	
Precautions for Supplemental Restraint	
System "AIR BAG"	
General Precautions	
Precautions for Multiport Fuel Injection	
System or ECCS Engine	4
Precautions for Three Way Catalyst	4
Engine Oils	
Precautions for Fuel	5
HOW TO USE THIS MANUAL	6
HOW TO READ WIRING DIAGRAMS	8
HOW TO FOLLOW FLOW CHART IN TROUBLE	
DIAGNOSES	12
CONSULT CHECKING SYSTEM	15

System Application and Function	15	FE
Lithium Battery Replacement	15	
Checking Equipment	16	
IDENTIFICATION INFORMATION	17	AT
Model Variation	17	
Identification Number	18	۵Ŋ
Dimensions	20	PD
Wheels and Tires	20	·.
LIFTING POINTS AND TOW TRUCK TOWING	21	FA
Garage Jack and Safety Stand	21	
2-pole Lift	22	
Tow Truck Towing		RA
TIGHTENING TORQUE OF STANDARD BOLTS		÷
SAE J1930 TERMINOLOGY LIST	25	BR

ST

BF

HA

EL

IDX

7

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



Precautions for Supplemental Restraint System "AIR BAG"

This model has a Supplemental Restraint System "Air Bag". It helps to reduce the risk or severity of injury to the driver and the front passenger in certain types of frontal collision. The Supplemental Restraint System consists of air bags (located in the center of the steering wheel and on the instrument panel on the passenger side), sensors, a diagnosis unit, warning lamp, wiring harness and spiral cable. Information necessary to service the system safely is included in the **BF section** of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal collision, all maintenance must be performed by an authorized INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system.
- All SRS electrical wiring harnesses and connectors are covered with yellow outer insulation. Do not use electrical test equipment on any circuit related to the SRS "Air Bag".

General Precautions

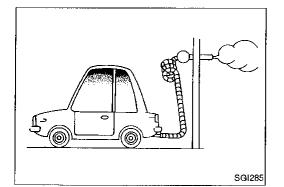
- 1. Do not operate the engine for an extended period of time without proper exhaust ventilation.
 - Keep the work area well ventilated and free of any inflammable materials. Special care should be taken when handling any inflammable or poisonous materials, such as gasoline, refrigerant gas, etc. When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

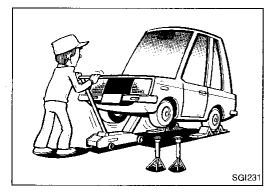
Do not smoke while working on the vehicle.

2. 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.

3. 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.





PRECAUTIONS

SGI232



Before starting repairs which do not require battery power, 4. always turn off the ignition switch, then disconnect the ground cable from the battery to prevent accidental short circuit.

GI

MΔ

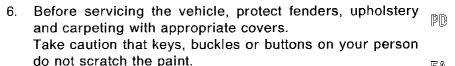
- ΞM
- To prevent serious burns, avoid contact with hot metal 5. parts such as the radiator, exhaust manifold, tail pipe and LC muffler. Do not remove the radiator cap when the engine is hot.

EF &

ΞC

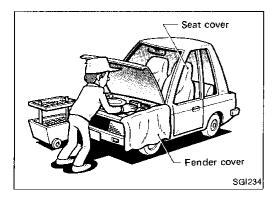
EE

AT



FA

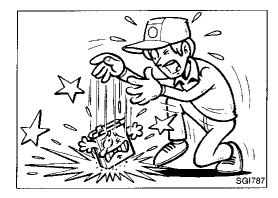
- RA
- BR
- 7. Clean all disassembled parts in the designated liquid or ST solvent prior to inspection or assembly.
- Replace oil seals, gaskets, packings, O-rings, locking 8. washers, cotter pins, self-locking nuts, etc. with new ones. BF
- 9. Replace inner and outer races of tapered roller bearings and needle bearings as a set.
- 10. Arrange the disassembled parts in accordance with their Hassembled locations and sequence.
- 11. Do not touch the terminals of electrical components which EL use microcomputers (such as electronic control module). Static electricity may damage internal electronic components. [D))X
- 12. After disconnecting vacuum or air hoses, attach a tag to indicate the proper connection.
- 13. Use only the fluids and the lubricants specified in MA section or their equivalents.
- 14. Use approved bonding agent, sealants or their equivalents when required.
- 15. Use tools and recommended special tools where specified for safe and efficient service repairs.
- 16. When repairing the fuel, oil, water, vacuum or exhaust systems, check all affected lines for leaks.



SGI233

General Precautions (Cont'd)

17. Dispose of drained oil or the solvent used for cleaning parts in an appropriate manner.



Precautions for Multiport Fuel Injection System or ECCS Engine

- Before connecting or disconnecting multiport fuel injection system or ECCS harness connector to or from any multiport fuel injection system or ECM (ECCS control module), be sure to turn the ignition switch to the "OFF" position and disconnect the negative battery terminal. Otherwise, there may be damage to ECM.
- 2. Before disconnecting pressurized fuel line from fuel pump to injectors, be sure to release fuel pressure to eliminate danger.
- 3. Be careful not to jar components such as ECM and mass air flow sensor.

Precautions for Three Way Catalyst

If a large amount of unburned fuel flows into the converter, the converter temperature will be excessively high. To prevent this, follow the procedure below:

- 1. Use unleaded gasoline only. Leaded gasoline will seriously damage the three way catalyst.
- 2. When checking for ignition spark or measuring engine compression, make tests quickly and only when necessary.
- 3. Do not run engine when the fuel tank level is low, otherwise the engine may misfire causing damage to the converter.
- 4. Do not place the vehicle on inflammable material. Keep inflammable material off the exhaust pipe.

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

- 1. Avoid prolonged and repeated contact with oils, particularly used engine oils.
- 2. Wear protective clothing, including impervious gloves where practicable.
- 3. Do not put oily rags in pockets.
- 4. Avoid contaminating clothes, particularly underpants, with oil.
- 5. Heavily soiled clothing and oil-impregnated footwear should not be worn. Overalls must be cleaned regularly.
- 6. First Aid treatment should be obtained immediately for open cuts and wounds.

Engine Oils (Cont'd)

- 7. 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.
- 9. Do not use gasoline, kerosine, diesel fuel, gas oil, thinners or solvents for cleaning skin.
- 10. If skin disorders develop, obtain medical advice without delay.
- 11. Where practicable, degrease components prior to handling. $_{\Xi M}$
- 12. 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

Burning used engine oil in small space heaters or boilers can be recommended only for units of approved design. The heating system must meet the requirements of HM Inspectorate of Pollution for small burners of less than 0.4 MW. If in doubt check with the appropriate local authority and/or manufacturer of the approved appliance.

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 courses.

The regulations concerning the pollution of the environment will vary from country to country.

Precautions for Fuel

To maintain engine and exhaust system durability and performance, UNLEADED PREMIUM gasoline with an octane rating of at least 91 AKI (Research octane number 96) must be used.

If premium unleaded gasoline is not available, REGULAR UNLEADED gasoline with an octane rating of 87 AKI (Research octane number 91) may be used temporarily, but only under the BF following conditions:

- The fuel tank should be filled only partially with unleaded regular gasoline, and filled up with premium unleaded gasoline as soon as possible.
- Full throttle driving and abrupt acceleration should be avoided.

Use UNLEADED fuel only. Under no circumstances should leaded gasoline be used. Lead gasoline will damage the three way catalyst and increase dangerous emissions from the vehicity cle exhaust.

11

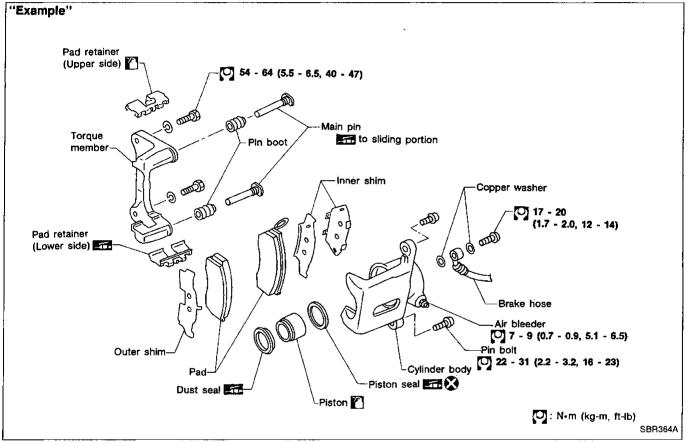
GL

FΑ

RA

- 1. ALPHABETICAL INDEX is provided at the end of this manual so that you can rapidly find the item and page you are searching for.
- 2. A QUICK REFERENCE INDEX, a black tab (e.g. ER) is provided on the first page. You can quickly find the first page of each section by mating it to the section's black tab.
- 3. THE CONTENTS are listed on the first page of each section.
- 4. THE TITLE is indicated on the upper portion of each page and shows the part or system.
- 5. **THE PAGE NUMBER** of each section consists of two letters which designate the particular section and a number (e.g. "BR-5").
- THE LARGE ILLUSTRATIONS are exploded views (See below.) and contain tightening torques, lubrication points and other information necessary to perform repairs. The illustrations should be used in reference to service matters only. When ordering parts, refer to

The illustrations should be used in reference to service matters only. When ordering parts, refer to the appropriate **PARTS CATALOG**.



7. **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 complicated units such as the automatic transaxle or transmission, etc. are presented in a step-by-step format where necessary.

8. The following SYMBOLS AND ABBREVIATIONS are used:

0		Tightening torque Should be lubricated with grease. Unless otherwise indicated, use rec-	P/S SAE		Power Steering Society of Automotive Engineers, Inc.	
		ommended multi-purpose grease.	Tool	:	Special Service Tools	Gl
	:	Should be lubricated with oil.	ATF	:	Automatic Transmission Fluid	
	:	Sealing point	D1	:	Drive range 1st gear	MA
<u>.</u>	:	Checking point	D_2	:	Drive range 2nd gear	0.000-0
. Ś	:	Always replace after every disassem-	D_3	:	Drive range 3rd gear	
-		bly.	D_4	:	Drive range 4th gear	EM
	:	Apply petroleum jelly.	0D	:	Overdrive	
ATF		Apply ATF.	2 ₂	:	2nd range 2nd gear	
*		Select with proper thickness.	21		2nd range 1st gear	ЦC
☆		Adjustment is required.	1 ₂		1st range 2nd gear	
SDS		Service Data and Specifications	1 ₁		1st range 1st gear	EF &
LH, RH		Left-Hand, Right-Hand	3 ₃		3rd range 3rd gear	EC
FR, RR		Front, Rear	3 ₂		3rd range 2nd gear	
A/T		Automatic Transaxle/Transmission			-	ee
A/C		Air Conditioner	31	•	3rd range 1st gear	F/C J S

9.	The UNITS given in this manual are primarily expressed as SI UNITS (International System of Unit),	
	and alternately expressed in the metric system and in the yard/pound system.	AT
	"Example"	b b c
	Tightening torque:	

	59 - 78 N·m (6.0 - 8.0 kg-m, 43 - 58 ft-lb)	PD
10.	TROUBLE DIAGNOSES are included in sections dealing with complicated components.	
11.	SERVICE DATA AND SPECIFICATIONS are contained at the end of each section for quick reference	
	of data.	FA
12.	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.	RA
•	CAUTION indicates the possibility of component damage if instructions are not followed.	
•	BOLD TYPED STATEMENTS except WARNING and CAUTION give you helpful information.	
		BR

ST

BF

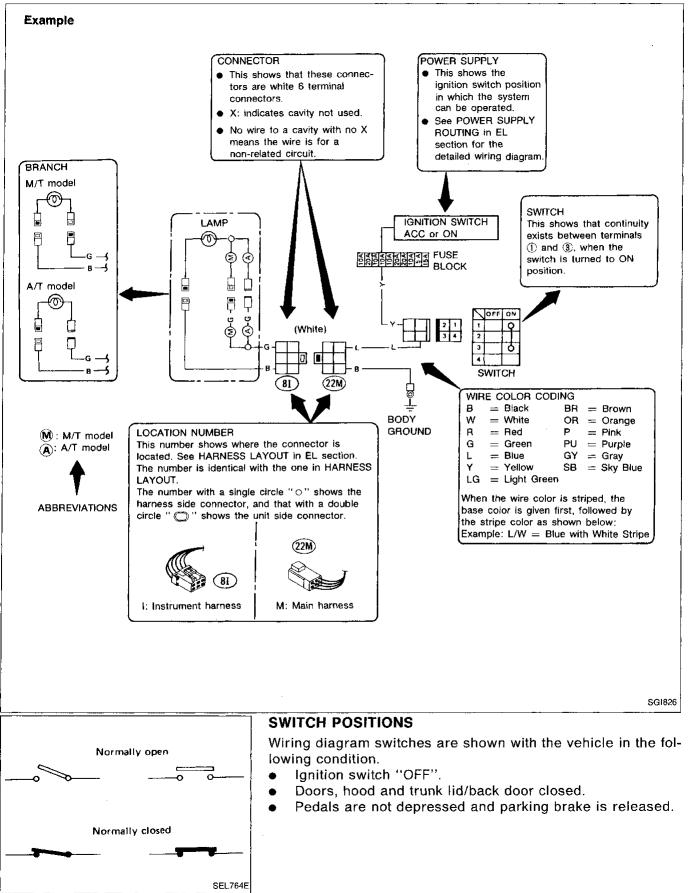
[<u>]</u>A

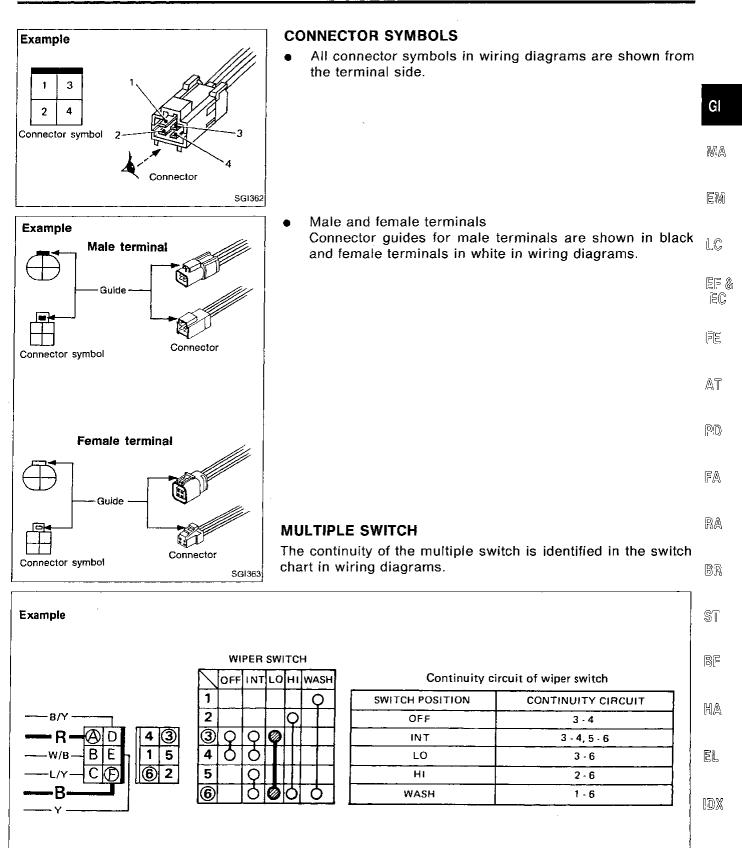
EL

IDX

WIRING DIAGRAM

Symbols used in WIRING DIAGRAM are shown below:



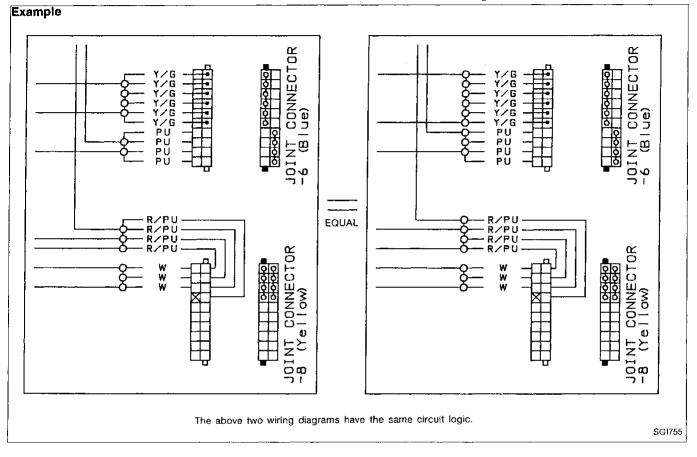


Example: Wiper switch in LO position Continuity circuit: Red wire - (A) terminal - (3) terminal - Wiper switch ($\bigcirc \bigcirc$: LO) - (6) terminal - (F) terminal - Black wire

SGI365

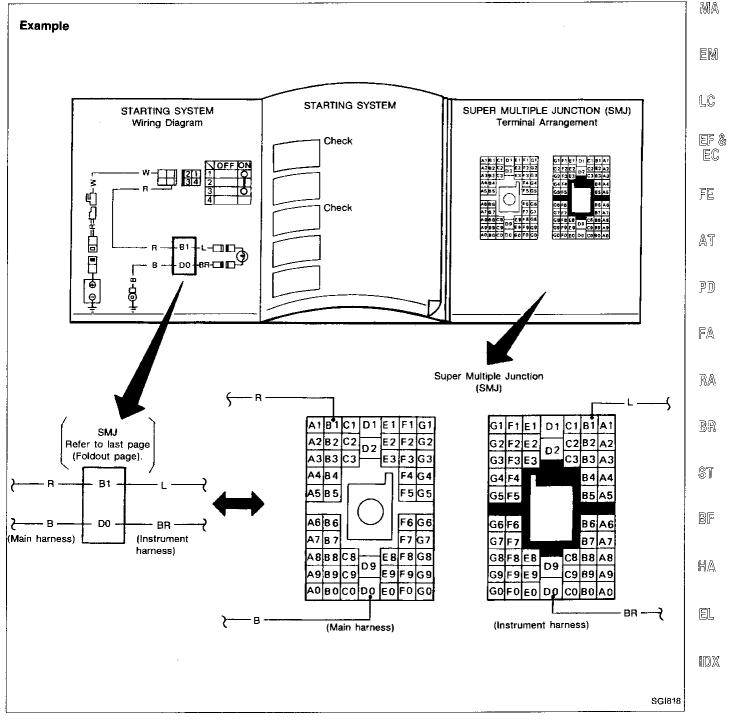
JOINT CONNECTORS

Wires of the same color are grouped at random in the connector. They are grouped together and connected to the pins of similar groups in no set order. (In other words, the location of each particular connection is random.) Therefore, the locations of connections shown in the circuit diagram in the manual should be served only as a reference. The actual locations of the connections in the vehicle may be different. The manual does show the actual circuit logic.



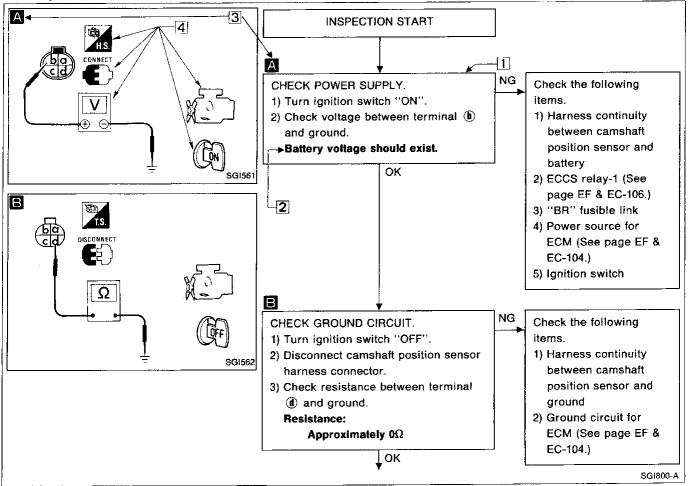
SUPER MULTIPLE JUNCTION (SMJ)

- The "SMJ" indicated in wiring diagrams is shown in a simplified form. The terminal arrangement should therefore be referred to in the foldout at the end of the Service Manual.
- The foldout should be spread to read the entire wiring diagram.



GI

Example



NOTICE

The flow chart indicates work procedures required to diagnose problems effectively. Observe the following instructions before diagnosing.

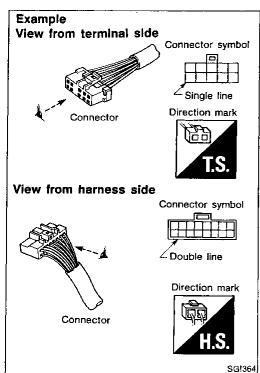
- 1) Use the flow chart after locating probable causes of a problem following the "Preliminary Check" or the "Symptom Chart".
- 2) After repairs, re-check that the problem has been completely eliminated.
- 3) Refer to Component Parts Location and Harness Layout for the Systems described in each section for identification/ location of components and harness connectors.
- 4) Refer to the Circuit Diagram for Quick Pinpoint Check. If you must check circuit continuity between harness connectors in more detail, such as when a sub-harness is used, refer to Wiring Diagram and Harness Layout in EL section for identification of harness connectors.
- 5) When checking circuit continuity, ignition switch should be "OFF".
- 6) Before checking voltage at connectors, check battery voltage.
- 7) After accomplishing the Diagnostic Procedures and Electrical Components Inspection, make sure that all harness connectors are reconnected as they were.

HOW TO FOLLOW THIS FLOW CHART

1 Work and diagnostic procedure

Start to diagnose a problem using procedures indicated in enclosed blocks, as shown in the following example.

A	
1) T	CK POWER SUPPLY. Check item being per- formed.
í ai	heck voltage between terminal (b) hd ground. attery voltage should exist. Procedure, steps or mea- surement results
2	Measurement results
	Required results are indicated in bold type in the corre- sponding block, as shown below:
	These have the following meanings:
	Battery voltage \rightarrow 11 - 14V or approximately 12V Voltage: Approximately 0V \rightarrow Less than 1V
3	Cross reference of work symbols in the text and illustrations
	Illustrations are provided as visual aids for work proce-
	dures. For example, symbol A indicated in the left upper portion of each illustration corresponds with the symbol in
	the flow chart for easy identification. More precisely, the
	procedure under the "CHECK POWER SUPPLY" outlined previously is indicated by an illustration A .
4	Symbols used in illustrations Symbols included in illustrations refer to measurements or
	procedures. Before diagnosing a problem, familiarize your-
	self with each symbol.
Dir	ection mark
A d	irection mark is shown to clarify the side of connector (ter-
	al side or harness side). ection marks are mainly used in the illustrations indicating
	ninal inspection.
B	: View from terminal side TS
	T.S.
•	All connector symbols shown from the terminal side are enclosed by a single line.
18	
Ģ	: View from harness side HS HS



HOW TO FOLLOW FLOW CHART IN TROUBLE DIAGNOSES

Symbol Symbol explanation Symbol Symbol explanation Check after disconnecting the connec-Current should be measured with an A tor to be measured. ammeter Check after connecting the connector Procedure with CONSULT **E**) to be measured. R Insert key into ignition switch. Procedure without CONSULT AT. A/C switch is "OFF" Remove key from ignition switch. A/C) A/C switch is "ON". Turn ignition switch to "OFF" position. Fan switch is "ON". (At any position SOFF 1 2 3 4 Turn ignition switch to "ON" position. except for "OFF" position) \$ OFF 1 2 3 4 Turn ignition switch to "START" posi-Fan switch is "OFF". tion. Turn ignition switch from "OFF" to Apply positive voltage from battery "ACC" position. with fuse directly to components. Turn ignition switch from "ACC" to Drive vehicle. "OFF" position. Turn ignition switch from "OFF" to Disconnect battery negative cable. "ON" position. Turn ignition switch from "ON" to Depress brake pedal. "OFF" position. Do not start engine, or check with Release brake pedal. engine stopped. Start engine, or check with engine run-Depress accelerator pedal. ning. Apply parking brake. Release accelerator pedal. Pin terminal check for SMJ type Release parking brake. ECM and A/T control unit connec-CIUNIT O CONNECTOR tors. Check after engine is warmed up suffiс Л For details regarding the terminal OCONNECTOR ECN ciently. arrangement, refer to the foldout page. Voltage should be measured with a V voltmeter. 1230458 71880101112 V ΘE ۷ Ω ÐΘ Circuit resistance should be measured with an ohmmeter. Ω

Key to symbols signifying measurements or procedures

Function	ECCS	A/T	Air bag	HICAS	ASCD	Auto A/C
This mode enables a technician to adjust some devices faster and more accurately by following the indica- tions on CONSULT.	x	—			_	x
Self-diagnostic results can be read and erased quickly.	х	х	x	х	х	X
Input/Output data in the ECM can be read.	x	х	_	x	х	х
Diagnostic Test Mode in which CON- SULT drives some actuators apart from the ECMs and also shifts some parameters in a specified range.	x		_	x		x
ECM part number can be read.	х	х	_	х		_
ECCS faults can be isolated to a general area, semi-automatically and in a short time, by following the directions on the screen.	x	_	_		_	
	This mode enables a technician to adjust some devices faster and more accurately by following the indica- tions on CONSULT. Self-diagnostic results can be read and erased quickly. Input/Output data in the ECM can be read. Diagnostic Test Mode in which CON- SULT drives some actuators apart from the ECMs and also shifts some parameters in a specified range. ECM part number can be read. ECCS faults can be isolated to a general area, semi-automatically and	This mode enables a technician to adjust some devices faster and more accurately by following the indica- tions on CONSULT.XSelf-diagnostic results can be read and erased quickly.XInput/Output data in the ECM can be read.XDiagnostic Test Mode in which CON- SULT drives some actuators apart from the ECMs and also shifts some parameters in a specified range.XECM part number can be read.XECCS faults can be isolated to a general area, semi-automatically and XX	This mode enables a technician to adjust some devices faster and more accurately by following the indica- tions on CONSULT.X—Self-diagnostic results can be read and erased quickly.XXXInput/Output data in the ECM can be read.XXXDiagnostic Test Mode in which CON- SULT drives some actuators apart from the ECMs and also shifts some parameters in a specified range.XXECM part number can be read.XXECCS faults can be isolated to a general area, semi-automatically and XX—	This mode enables a technician to adjust some devices faster and more accurately by following the indica- tions on CONSULT.X—Self-diagnostic results can be read and erased quickly.XXXInput/Output data in the ECM can be read.XXXDiagnostic Test Mode in which CON- SULT drives some actuators apart from the ECMs and also shifts some parameters in a specified range.XX—ECM part number can be read.XXX—ECCS faults can be isolated to a general area, semi-automatically and XX——	This mode enables a technician to adjust some devices faster and more accurately by following the indica- tions on CONSULT.XSelf-diagnostic results can be read and erased quickly.XXXXXInput/Output data in the ECM can be read.XXXXDiagnostic Test Mode in which CON- SULT drives some actuators apart from the ECMs and also shifts some parameters in a specified range.XXXXECM part number can be read.XXXXECCS faults can be isolated to a general area, semi-automatically and XX	This mode enables a technician to adjust some devices faster and more accurately by following the indica- tions on CONSULT.XSelf-diagnostic results can be read and erased quickly.XXXXXXXInput/Output data in the ECM can be read.XXXXXXXDiagnostic Test Mode in which CON- SULT drives some actuators apart from the ECMs and also shifts some parameters in a specified range.XXX-X-ECCS faults can be isolated to a general area, semi-automatically and XXX-X

System Application and Function

Lithium Battery Replacement

CONSULT contains a lithium battery. When replacing the battery obey the following: **WARNING:**

Replace the lithium battery with SANYO Electric Co., Ltd., CR2032 only. Use of another battery may present a risk of fire or explosion. The battery may present a fire or chemical burn hazard if mistreated. Do not recharge, disassemble of dispose of in fire.

Keep the battery out of reach of children and discard used battery conforming to the local regulations.

BR

PD)

FA

RA

ST

BF

KA

EL

[DX

GI-15

Checking Equipment

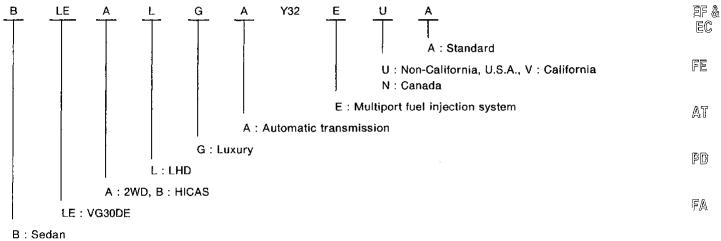
When ordering the below equipment, contact your INFINITI distributor.

Tool name	Description
 NISSAN CONSULT kit ① CONSULT unit and accessories ② Program card (UE 930) ③ Operation manuals ④ Binder ⑤ Carrying case ⑥ Thermal paper (Rolls) 	NTCCS

Model Variation

Body	Destination	Grade	Model	Engine	Transmission	Differential carrier	
			BLEALGA-EUA				GI
	Non-California		BLEBLGA-EUA				
<u>~</u> .		1.	BLEALGA-EVA		DEADOAA	D0001	MA
Sedan	California	Luxury	BLEBLGA-EVA	- VG30DE	RE4R01A	R200V	
			BLEALGA-ENA	1			EM
	Canada		BLEBLGA-ENA				6000
	suffix designations:	I	· · · · · · · · · · · · · · · · · · ·	- I - <u>-</u>	.l		LĈ

Prefix and suffix designations:



BR

BF

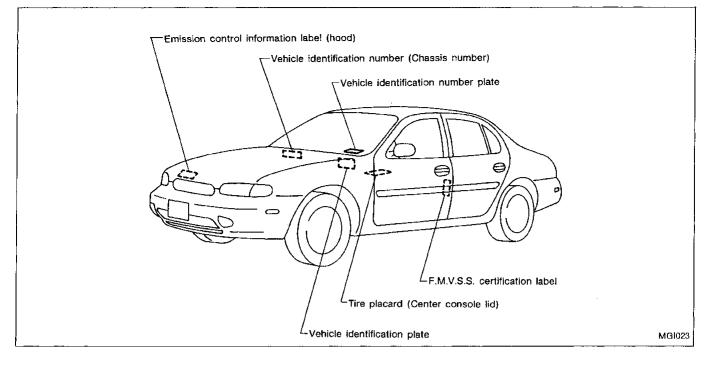
ST

HA

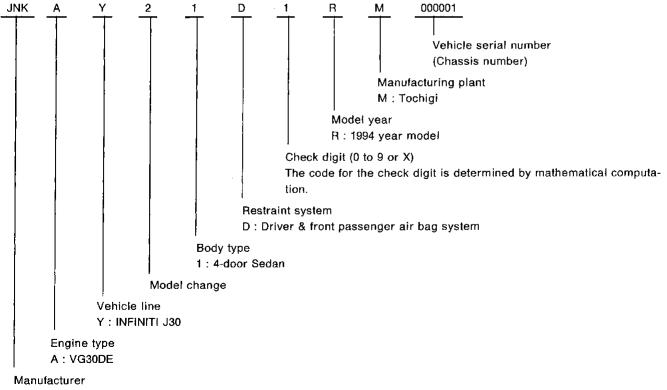
EL

IDX

Identification Number



VEHICLE IDENTIFICATION NUMBER ARRANGEMENT

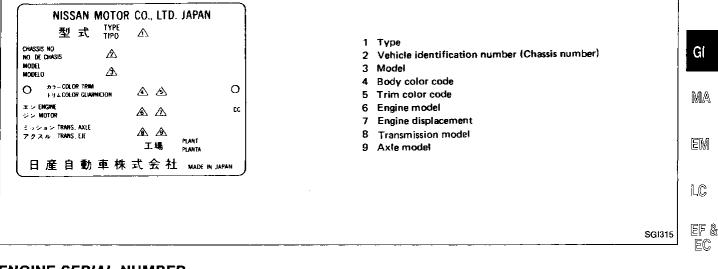


JNK : Nissan, Passenger vehicle

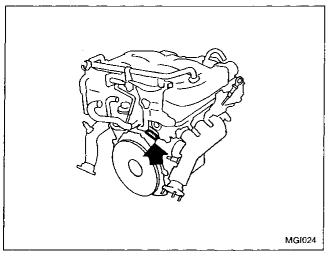
IDENTIFICATION INFORMATION

Identification Number (Cont'd)

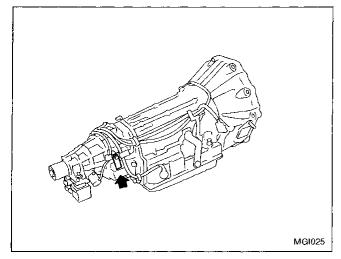
IDENTIFICATION PLATE



ENGINE SERIAL NUMBER



AUTOMATIC TRANSMISSION NUMBER



FĒ

AT

PD

FA

RA

BR

ST

BF

HA

Dimensions

Unit: mm (in)

		Model
		Sedan
ltem		
Overall lei	ngth	4,859 (191.3)
Overall wi	dth	1,770 (69.7)
Overall height		1,389 (54.7)
Wheel bas	e	2,761 (108.7)
Tread	Front	1,500 (59.1)
	Rear	1,495 (58.9)

Wheels and Tires

Road wheel	Aluminum	15 x 6-1/2 JJ
	Spare	16 x 4T*
	Offset mm (in)	40 (1.57)
Tire size	Conventional	P215/60R15 93H
	Spare	T125/90D16*

*: T-type spare tire

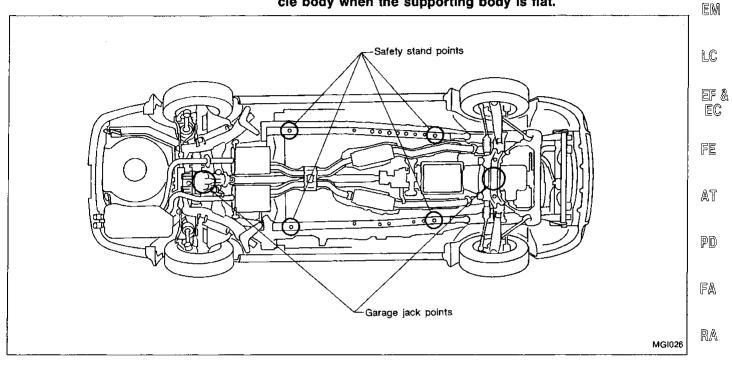
Garage Jack and Safety Stand

WARNING:

- Never get under the vehicle while it is supported only by the jack. Always use safety stands to support the frame when you have to get under the vehicle.
- Place wheel chocks at both front and back of the wheels on the ground.

CAUTION:

Place a wooden or rubber block between safety stand and vehicle body when the supporting body is flat.



ST

BF

HA

EL

1DX

GI

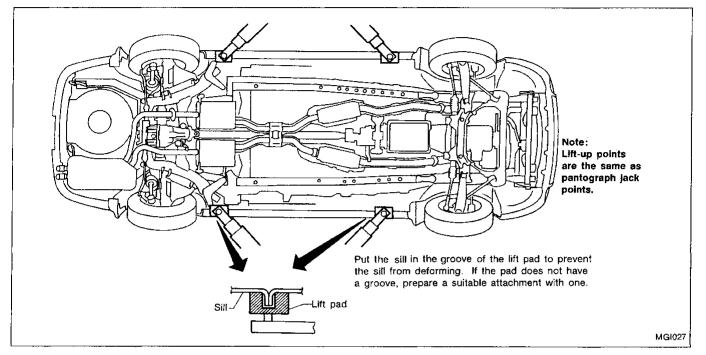
MA

2-pole Lift

WARNING:

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.

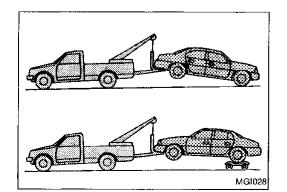
When setting the lift arm, do not allow the arm to contact the brake tubes and fuel lines.



Tow Truck Towing

CAUTION:

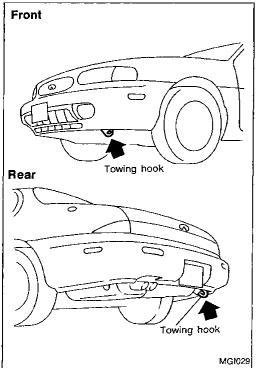
- All applicable state or Provincial (in Canada) laws and local laws regarding the towing operation must be obeyed.
- It is necessary to use proper towing equipment to avoid possible damage to the vehicle during towing operation. Towing is in accordance with Towing Procedure Manual at dealer.
- When towing with the rear wheels on the ground, release the parking brake and move the shift lever to neutral ("N" position).
- Never tow the vehicle from the rear (i.e., backward) with four wheels on the ground as this may cause serious and expensive damage to the transmission.



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

Tow Truck Towing (Cont'd) TOWING AN AUTOMATIC TRANSMISSION MODEL WITH FOUR WHEELS ON GROUND OR TOWING WITH FRONT WHEELS RAISED (With rear wheels on ground)

	WHELE'S MAISED (Whith real wheels on ground)	
	Observe the following restricted towing speeds and distances. Speed:	GI
	Below 50 km/h (30 MPH) Distance:	MA
	Less than 65 km (40 miles) If the speed or distance must necessarily be greater, remove the propeller shaft beforehand to prevent damage to the trans-	-iWitA)
	mission.	EM
	 TOWING POINT Never tow the vehicle using only the towing hooks. Use proper towing equipment when towing. Otherwise, the 	LC
	 vehicle body will be damaged. Always pull the cable straight out from the vehicle. Never pull on the hook at a sideways angle. 	EF & EC
()		ĒĒ
		AT
8		PD
		FA
owing hook		RA
MG1029		BR
		ST
		BF



HA

ΞL

IDX

TIGHTENING TORQUE OF STANDARD BOLTS

	Bolt			Tightening torque (Without lubricant)					
Grade Bolt si:	Bolt size		Pitch mm	Hexagon head bolt			Hexagon flange bolt		
		mm		N∙m	kg-m	ft-lb	N∙m	kg-m	ft-lb
M6	M6	6.0	1.0	5.1	0.52	3.8	6.1	0.62	4.5
	M8	8.0	1.25	13	1.3	9	15	1.5	11
	IVIO		1.0	13	1.3	9	16	1.6	12
4T M10	N10	1	1.5	25	2.5	18	29	3.0	22
	MITU	10.0	1.25	25	2.6	19	30	3.1	22
	M12		1.75	42	4.3	31	51	5.2	38
	10112	12.0	1.25	46	4.7	34	56	5.7	41
	M14	14.0	1.5	74	7.5	54	88	9.0	65
	M6	6.0	1.0	8.4	0.86	6.2	10	1.0	7
	MD		1.25	21	2.1	15	25	2.5	18
7T M10	IVIO	8.0	1.0	22	2.2	16	26	2.7	20
) 10.0	1.5	41	4.2	30	48	4.9	35
	MIU		1.25	43	4.4	32	51	5.2	38
	140		1.75	71	7.2	52	84	8.6	62
	M12	12.0	1.25	77	7.9	57	92	9.4	68
	M14	14.0	1.5	127	13.0	94	147	15.0	108
M6 M8	M6	6.0	1.0	12	1.2	9	15	1.5	11
		8.0	1.25	29	3.0	22	35	3.6	26
	NI8		1.0	31	3.2	23	37	3.8	27
	MIO	M10 10.0 -	1.5	59	6.0	43	70	7.1	51
9T	MIU		1.25	62	6.3	46	74	7.5	54
	MIO	M12 12.0	1,75	98	10.0	72	118	12.0	87
	10/12		1.25	108	11.0	80	137	14.0	101
	M14	14.0	1.5	177	18.0	130	206	21.0	152

1. Special parts are excluded.

2. This standard is applicable to bolts having the following marks embossed on the bolt head.

Grade	Mark
4τ	4
7T	7
9T	9

* : Nominal diameter

M 6 Nominal diameter of bolt threads (Unit: mm)

Metric screw threads

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

***: Not applicable

NEW TERM	NEW ACRONYM / ABBREVIATION	OLD TERM	Gl
Air cleaner	ACL	Air cleaner	
Barometric pressure	BARO	***	 M/
Barometric pressure sensor-BCDD	BAROS-BCDD	BCDD	
Camshaft position	CMP	***	 EN
Camshaft position sensor	CMPS	Crank angle sensor	
Carburetor	CARB	Carburetor	— — LC
Charge air cooler	CAC	Intercooler	— LG
Closed loop	CL	Closed loop	 EF
Closed throttle position switch	CTP switch	Idle switch	E(
Clutch pedal position switch	CPP switch	Clutch switch	_
Continuous fuel injection system	CFI system	***	FE
Continuous trap oxidizer system	CTOX system	***	_
Crankshaft position	СКР	***	 At
Crankshaft position sensor	CKPS	***	
Data link connector	DLC	***	 PD
Data link connector for CONSULT	DLC for CONSULT	Diagnostic connector for CONSULT	_ •=
Diagnostic test mode	DTM	Diagnostic mode	 FA
Diagnostic test mode selector	DTM selector	Diagnostic mode selector	— ra
Diagnostic test mode I	DTM I	Mode I	—
Diagnostic test mode II	DTM II	Mode II	RA
Diagnostic trouble code	DTC	Malfunction code	
Direct fuel injection system	DFI system	***	BR
Distributor ignition system	DI system	Ignition timing control	_
Early fuel evaporation-mixture heater	EFE-mixture heater	Mixture heater	ST
Early fuel evaporation system	EFE system	Mixture heater control	
Electrically erasable programmable read only nemory	EEPROM	***	— Bf
Electronic ignition system	El system	Ignition timing control	—
Engine control module	ECM	ECCS control unit	— HA
ngine coolant temperature	ECT	Engine temperature	_
ngine coolant temperature sensor	ECTS	Engine temperature sensor	ĒL
Ingine modification	EM	***	_
Ingine speed	RPM	Engine speed	 MD:
rasable programmable read only memory	EPROM	***	
vaporative emission system	EVAP system	Evaporative emission control system	_
xhaust gas recirculation valve	EGR valve	EGR valve	

i.

***: Not applicable

NEW TERM	NEW ACRONYM / ABBREVIATION	OLD TERM
Exhaust gas recirculation control -BPT valve	EGRC-BPT valve	BPT valve
Exhaust gas recirculation control -solenoid valve	EGRC-solenoid valve	EGR control solenoid valve
Exhaust gas recirculation temperature sensor	EGR temperature sensor	Exhaust gas temperature sensor
Flash electrically erasable programmable read only memory	FEEPROM	***
Flash erasable programmable read only memory	FEPROM	***
Flexible fuel sensor	FFS	***
Flexible fuel system	FF system	***
Heated oxygen sensor	HO2S	Exhaust gas sensor
Idle air control system	IAC system	Idle speed control
Idle air control valve-air regulator	IACV-air regulator	Air regulator
Idle air control valve-auxiliary air control valve	IACV-AAC valve	Auxiliary air control(AAC) valve
Idle air control valve-FICD solenoid valve	IACV-FICD solenoid valve	FICD solenoid valve
Idle air control valve-idle up control solenoid valve	IACV-idle up control sole- noid valve	Idle up control solenoid valve
Idle speed control-FI pot	ISC-FI pot	FI pot
Idle speed control system	ISC system	***
Ignition control module	ICM	***
Indirect fuel injection system	IFI system	***
Intake air temperature sensor	IATS	Air temperature sensor
Knock	***	Detonation
Knock sensor	KS	Detonation sensor
Malfunction indicator lamp	MIL	Check engine light
Manifold absolute pressure	МАР	***
Manifold absolute pressure sensor	MAPS	***
Manifold differential pressure	MDP	***
Manifold differential pressure sensor	MDPS	***
Manifold surface temperature	MST	***
Manifold surface temperature sensor	MSTS	***
Manifold vacuum zone	MVZ	***
Manifold vacuum zone sensor	MVZS	***
Mass air flow sensor	MAFS	Air flow meter
Mixture control solenoid valve	MC solenoid valve	Air-fuel ratio control solenoid valve
Multiport fuel injection System	MFI system	Fuel injection control
Neutral position switch	***	Neutral switch
Non-volatile random access memory	NVRAM	***
On-board diagnostic system	OBD system	Self-diagnosis
Open loop	OL	Open loop
Oxidation catalyst	00	Catalyst

***: Not applicable

NEW TERM	NEW ACRONYM / ABBREVIATION	OLD TERM	
Oxidation catalytic converter system	OC system	***	
Oxygen sensor	02\$	Exhaust gas sensor	GI
Park position switch	***	Park switch	
Park/neutral position switch	PNP switch	Park/neutral switch	MA
Periodic trap oxidizer system	PTOX system	***	_
Powertrain control module	PCM	***	ĒM
Programmable read only memory	PROM	***	-
Pulsed secondary air injection control sole- noid valve	PAIRC solenoid valve	AIV control solenoid valve	LC
Pulsed secondary air injection system	PAIR system	Air induction valve(AIV) control	_ EF.
Pulsed secondary air injection valve	PAIR valve	Air induction valve	ĒC
Random access memory	RAM	***	-
Read only memory	ROM	***	ĒE
Scan tool	ST	***	-
Secondary air injection pump	AIR pump	4**	_ AT
Secondary air injection system	AIR system	***	-
Sequential multiport fuel injection system	SFI system	Sequential fuel injection	- PD
Service reminder indicator	SRI	***	
Simultaneous multiport fuel injection system	***	Simultaneous fuel injection	- - FA
Smoke puff limiter system	SPL system	***	- 05-1
Supercharger	sc	***	-
Supercharger bypass	SCB	***	- RA
System readiness test	SRT	***	-
Thermal vacuum valve	τνν	Thermal vacuum valve	BR
Three way catalyst	тwс	Catalyst	-
Three way catalytic converter system	TWC system	***	ST
Three way + oxidation catalyst	TWC+OC	Catalyst	~
Three way + oxidation catalytic converter sys- tem	TWC+OC system	***	BF
Throttle body	тв	Throttle chamber	- HA
		SPI body	INA
Throttle body fuel injection system	TBI system	Fuel injection control	
Throttle position	ТР	Throttle position	<u>s</u> l
Throttle position sensor	TPS	Throttle sensor	_
Throttle position switch	TP switch	Throttle switch	_ IDX
Torque converter clutch solenoid valve	TCC solenoid valve	Lock-up cancel solenoid	-
		Lock-up solenoid	_
Turbocharger	тс	Turbocharger	_
Vehicle speed sensor	VSS	Vehicle speed sensor	-
Volume air flow sensor	VAFS	Air flow meter	

SAE J1930 TERMINOLOGY LIST

***: Not applicable

NEW TERM	NEW ACRONYM / ABBREVIATION	OLD TERM
Warm up oxidation catalyst	WU-OC	Catalyst
Warm up oxidation catalytic converter system	WU-OC system	***
Warm up three-way catalyst	WU-TWC	Catalyst
Warm up three-way catalytic converter system	WU-TWC system	***
Wide open throttle position switch	WOTP switch	Full switch