

## SECTION **EL**

GI  
MA  
EM  
LC  
EC  
FE  
CL

**When you read wiring diagrams:**

- Read GI section, "HOW TO READ WIRING DIAGRAMS".

**When you perform trouble diagnoses, read GI section, "HOW TO FOLLOW FLOW CHART IN TROUBLE DIAGNOSES" and "HOW TO PERFORM EFFICIENT DIAGNOSIS FOR AN ELECTRICAL INCIDENT".**

- Check for applicable service bulletins before servicing the vehicle.

## CONTENTS

<b>PRECAUTIONS</b> .....	2	<b>STEERING SWITCH</b> .....	37
Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" .....	2	Check .....	37
<b>HARNESS CONNECTOR</b> .....	3	<b>HEADLAMP</b> .....	38
Description .....	3	System Description (For U.S.A.) .....	38
<b>STANDARDIZED RELAY</b> .....	5	Wiring Diagram (For U.S.A.) — H/LAMP — .....	39
Description .....	5	Trouble Diagnoses/Headlamp .....	40
<b>POWER SUPPLY ROUTING</b> .....	7	Bulb Replacement .....	41
Schematic .....	7	Bulb Specifications .....	41
Wiring Diagram — POWER — .....	8	Aiming Adjustment .....	41
Fuse .....	15	<b>HEADLAMP — Daytime Light System —</b> .....	43
Fusible Link .....	15	System Description (For Canada) .....	43
Circuit Breaker Inspection .....	15	Operation (For Canada) .....	44
<b>GROUND DISTRIBUTION</b> .....	16	Schematic (For Canada) .....	44
<b>BATTERY</b> .....	21	Wiring Diagram (For CANADA) — DTRL — .....	45
How to Handle Battery .....	21	Trouble Diagnoses (For Canada) .....	48
Service Data and Specifications (SDS) .....	24	Bulb Replacement .....	49
<b>STARTING SYSTEM</b> .....	25	Aiming Adjustment .....	49
System Description .....	25	<b>PARKING, LICENSE AND TAIL LAMPS</b> .....	50
Wiring Diagram — START —/M/T Models .....	26	Wiring Diagram — TAIL/L — .....	50
Wiring Diagram — START —/A/T Models .....	27	<b>TURN SIGNAL AND HAZARD WARNING LAMPS</b> .....	52
Construction .....	28	System Description .....	52
Removal and Installation .....	28	Wiring Diagram — TURN — .....	53
Pinion/Clutch Check .....	29	Trouble Diagnoses .....	55
Service Data and Specifications (SDS) .....	29	Electrical Components Inspection .....	55
<b>CHARGING SYSTEM</b> .....	30	<b>STOP LAMP</b> .....	56
System Description .....	30	Wiring Diagram — STOP/L — .....	56
Wiring Diagram — CHARGE — .....	31	<b>BACK-UP LAMP</b> .....	58
Trouble Diagnoses .....	32	Wiring Diagram — BACK/L — .....	58
Construction .....	33	<b>FRONT FOG LAMP</b> .....	59
Removal and Installation .....	33	System Description .....	59
Service Data and Specifications (SDS) .....	34	Wiring Diagram — F/FOG — .....	60
<b>COMBINATION SWITCH</b> .....	35	Aiming Adjustment .....	61
Check .....	35	Bulb Specifications .....	61
Replacement .....	36	<b>ILLUMINATION</b> .....	62
		System Description .....	62

MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# CONTENTS (Cont'd)

Schematic.....	63	Wiring Diagram — P/ANT —.....	128
Wiring Diagram — ILL —.....	64	Trouble Diagnoses.....	129
<b>SPOT, VANITY MIRROR AND TRUNK ROOM</b>		Location of Antenna.....	129
<b>LAMP</b> .....	68	Antenna Rod Replacement.....	130
Wiring Diagram — INT/L —.....	68	Window Antenna Repair.....	131
<b>METER AND GAUGES</b> .....	69	<b>TELEPHONE (Pre wire)</b> .....	132
System Description.....	69	Wiring Diagram — PHONE —.....	132
Combination Meter.....	71	<b>ELECTRIC SUNROOF</b> .....	133
Wiring Diagram — METER —.....	72	System Description.....	133
Meter/Gauge Operation and Odo/Trip Meter		Wiring Diagram — SROOF —.....	134
Segment Check in Diagnosis Mode.....	73	<b>POWER SEAT</b> .....	135
Flexible Print Circuit (FPC).....	74	Wiring Diagram — SEAT —.....	135
Trouble Diagnoses.....	75	<b>HEATED SEAT</b> .....	137
Electrical Components Inspection.....	79	Wiring Diagram — HSEAT —.....	137
<b>WARNING LAMPS</b> .....	81	<b>POWER DOOR MIRROR</b> .....	138
Schematic.....	81	Wiring Diagram — MIRROR —.....	138
Wiring Diagram — WARN —.....	82	<b>TRUNK LID AND FUEL FILLER LID OPENER</b> .....	139
Electrical Components Inspection.....	86	Wiring Diagram — TLID —.....	139
<b>WARNING BUZZER</b> .....	87	<b>AUTOMATIC SPEED CONTROL DEVICE (ASCD)</b> .....	140
System Description.....	87	Component Parts and Harness Connector	
Wiring Diagram — BUZZER —.....	88	Location.....	140
<b>CONSULT</b> .....	89	System Description.....	141
Trouble Diagnoses.....	90	Schematic/M/T Models.....	143
<b>WIPER AND WASHER</b> .....	95	Schematic/A/T Models.....	144
System Description.....	95	Wiring Diagram — ASCD —.....	145
Wiring Diagram — WIPER —.....	97	<b>CONSULT</b> .....	150
<b>CONSULT</b> .....	99	Fail-safe System Description.....	152
Trouble Diagnoses.....	100	Fail-safe System Check.....	153
Removal and Installation.....	105	Trouble Diagnoses.....	154
Washer Nozzle Adjustment.....	106	Electrical Components Inspection.....	162
Check Valve (Built in washer nozzles).....	106	ASCD Wire Adjustment.....	163
<b>HORN</b> .....	107	<b>IVMS (LAN)</b> .....	164
Wiring Diagram — HORN —.....	107	Overall Description.....	164
<b>CIGARETTE LIGHTER</b> .....	108	Component Parts Location.....	165
Wiring Diagram — CIGAR —.....	108	System Diagram.....	166
<b>CLOCK</b> .....	109	Sleep/Wake-up Control.....	167
Wiring Diagram — CLOCK —.....	109	Fail-safe System.....	167
<b>REAR WINDOW DEFOGGER</b> .....	110	<b>CONSULT</b> .....	168
System Description.....	110	On board Diagnosis.....	175
Wiring Diagram — DEF —.....	111	On board Diagnosis — Mode I (IVMS	
<b>CONSULT</b> .....	113	communication diagnosis).....	176
Trouble Diagnoses.....	114	On board Diagnosis — Mode II (Switch monitor) ...	178
Filament Check.....	117	Wiring Diagram — COMM —.....	180
Filament Repair.....	118	Trouble Diagnoses.....	183
<b>AUDIO</b> .....	119	<b>BCM (Body Control Module)</b> .....	187
System Description.....	119	Schematic.....	187
Schematic.....	120	Input/Output Operation Signal.....	188
Wiring Diagram — AUDIO —.....	121	<b>DRIVER DOOR CONTROL UNIT (LCU01)</b> .....	190
Wiring Diagram — AUDIO —/Base System.....	124	Schematic.....	190
Trouble Diagnoses.....	126	Input/Output Operation Signal.....	191
<b>AUDIO ANTENNA</b> .....	127	<b>PASSENGER DOOR CONTROL UNIT (LCU02)</b> .....	192
System Description.....	127	Schematic.....	192

# CONTENTS (Cont'd)

Input/Output Operation Signal.....	193	<b>STEP LAMP — IVMS</b> .....	289
<b>REAR RH/LH DOOR CONTROL UNIT (LCU03/04)</b> .....	194	System Description.....	289
Schematic.....	194	Wiring Diagram — STEP/L —.....	290
Input/Output Operation Signal.....	196	CONSULT.....	292
<b>MULTI-REMOTE CONTROL UNIT (LCU05)</b> .....	197	Trouble Diagnoses.....	293
Schematic.....	197	<b>NVIS (Nissan Vehicle Immobiliser System —</b>	
Input/Output Operation Signal.....	197	<b>NATS)</b> .....	295
<b>POWER WINDOW — IVMS</b> .....	198	Component Parts and Harness Connector	
System Description.....	198	Location.....	295
Schematic.....	199	System Description.....	296
Wiring Diagram — WINDOW —.....	200	System Composition.....	296
CONSULT.....	204	Wiring Diagram — NATS —.....	297
On board Diagnosis — Mode IV (Power window		CONSULT.....	298
monitor).....	205	Trouble Diagnoses.....	300
Trouble Diagnoses.....	207	<b>INTEGRATED HOMELINK TRANSMITTER</b> .....	310
<b>POWER DOOR LOCK — IVMS</b> .....	213	Wiring Diagram — TRNSMT —.....	310
System Description.....	213	Trouble Diagnoses.....	311
Schematic.....	214	<b>LOCATION OF ELECTRICAL UNITS</b> .....	312
Wiring Diagram — D/LOCK —.....	215	Engine Compartment.....	312
CONSULT.....	219	Passenger Compartment.....	313
On board Diagnosis — Mode III (Power door		Luggage Compartment.....	314
lock operation).....	222	<b>HARNES LAYOUT</b> .....	315
Trouble Diagnoses.....	224	Outline.....	315
<b>MULTI-REMOTE CONTROL SYSTEM — IVMS</b> .....	232	How to Read Harness Layout.....	316
System Description.....	232	Engine Room Harness.....	317
Schematic.....	234	Main Harness.....	320
Wiring Diagram — MULTI —.....	235	Engine Control Harness.....	322
CONSULT.....	240	Body Harness.....	324
Trouble Diagnoses.....	241	Body No. 2 Harness.....	326
ID Code Entry Procedure.....	249	Tail Harness.....	326
<b>THEFT WARNING SYSTEM — IVMS</b> .....	250	Room Lamp Harness.....	327
Component Parts and Harness Connector		Air Bag Harness.....	327
Location.....	250	Door Harness (LH side).....	328
System Description.....	251	Door Harness (RH side).....	329
Schematic.....	254	<b>BULB SPECIFICATIONS</b> .....	330
Wiring Diagram — THEFT —.....	256	Headlamp.....	330
CONSULT.....	263	Exterior Lamp.....	330
Trouble Diagnoses.....	264	Interior Lamp.....	330
<b>REAR POWER WINDOW SWITCH ILLUMINATION</b>		<b>WIRING DIAGRAM CODES (Cell codes)</b> .....	331
<b>— IVMS</b> .....	277	<b>SUPER MULTIPLE JUNCTION (SMJ)</b> .....	Foldout
System Description.....	277	Terminal Arrangement.....	Foldout
Wiring Diagram — SW/ILL —.....	278	<b>FUSE BLOCK — Junction Box (J/B)</b> .....	Foldout
CONSULT.....	279	<b>FUSE AND FUSIBLE LINK BOX</b> .....	Foldout
Trouble Diagnoses.....	280	Terminal Arrangement.....	Foldout
<b>INTERIOR LAMP CONTROL — IVMS</b> .....	281	<b>ELECTRICAL UNITS</b> .....	Foldout
System Description.....	281	Terminal Arrangement.....	Foldout
Wiring Diagram — ROOM/L —.....	282	<b>JOINT CONNECTOR (J/C)</b> .....	Foldout
CONSULT.....	284	Terminal Arrangement.....	Foldout
Trouble Diagnoses.....	285		

## PRECAUTIONS

---

### **Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”**

The Supplemental Restraint System “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a seat belt, help to reduce the risk or severity of injury to the driver and front passenger in a frontal collision. The Supplemental Restraint System consists of air bag modules (located in the center of the steering wheel and on the instrument panel on the passenger side), seat belt pre-tensioners, a diagnosis sensor unit, warning lamp, wiring harness and spiral cable.

In addition to the supplemental air bag modules for a frontal collision, the supplemental side air bag used along with the seat belt helps to reduce the risk or severity of injury to the driver and front passenger in a side collision. The supplemental side air bag consists of air bag modules (located in the outer side of front seats), satellite sensor, diagnosis sensor unit (which is one of components of supplemental air bags for a frontal collision), wiring harness, warning lamp (which is one of components of supplemental air bags for a frontal collision). Information necessary to service the system safely is included in the **RS section** of this Service Manual.

#### **WARNING:**

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses (except “SEAT BELT PRE-TENSIONER” connector) can be identified with yellow harness connector (and with yellow harness protector or yellow insulation tape before the harness connectors).**

# HARNESS CONNECTOR

## Description

### HARNES CONNECTOR (TAB-LOCKING TYPE)

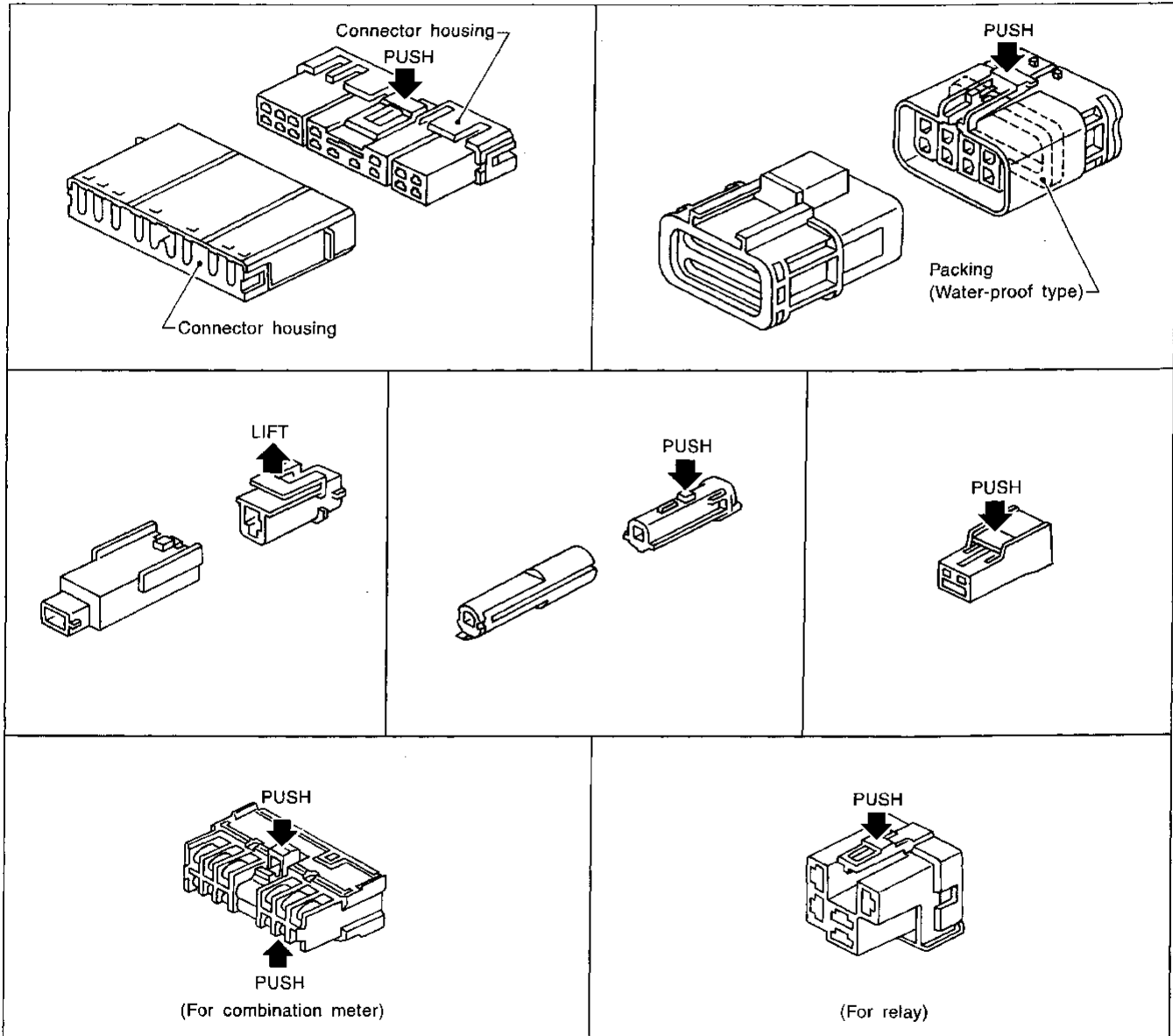
- The tab-locking type connectors help prevent accidental looseness or disconnection.
- The tab-locking type connectors are disconnected by pushing or lifting the locking tab(s). Refer to illustration below.

Refer to the next page for description of the slide-locking type connector.

#### CAUTION:

Do not pull the harness or wires when disconnecting the connector.

[Example]



GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

EL

IDX

SEL769DA

# HARNESS CONNECTOR

## Description (Cont'd)

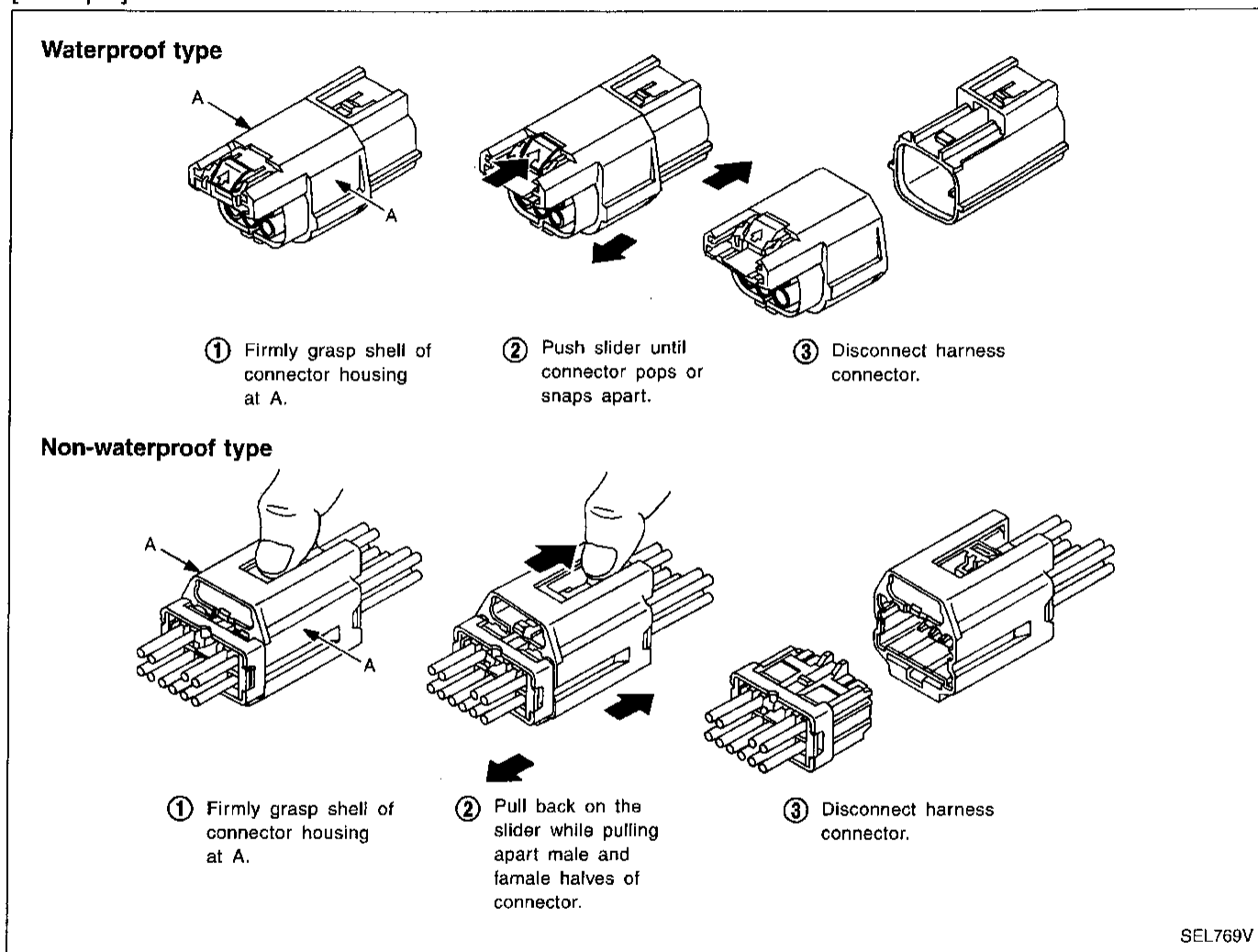
### HARNESS CONNECTOR (SLIDE-LOCKING TYPE)

- A new style slide-locking type connector is used on certain systems and components, especially those related to OBD.
- The slide-locking type connectors help prevent incomplete locking and accidental looseness or disconnection.
- The slide-locking type connectors are disconnected by pushing or pulling the slider. Refer to the illustration below.

#### CAUTION:

- Do not pull the harness or wires when disconnecting the connector.
- Be careful not to damage the connector support bracket when disconnecting the connector.

[Example]

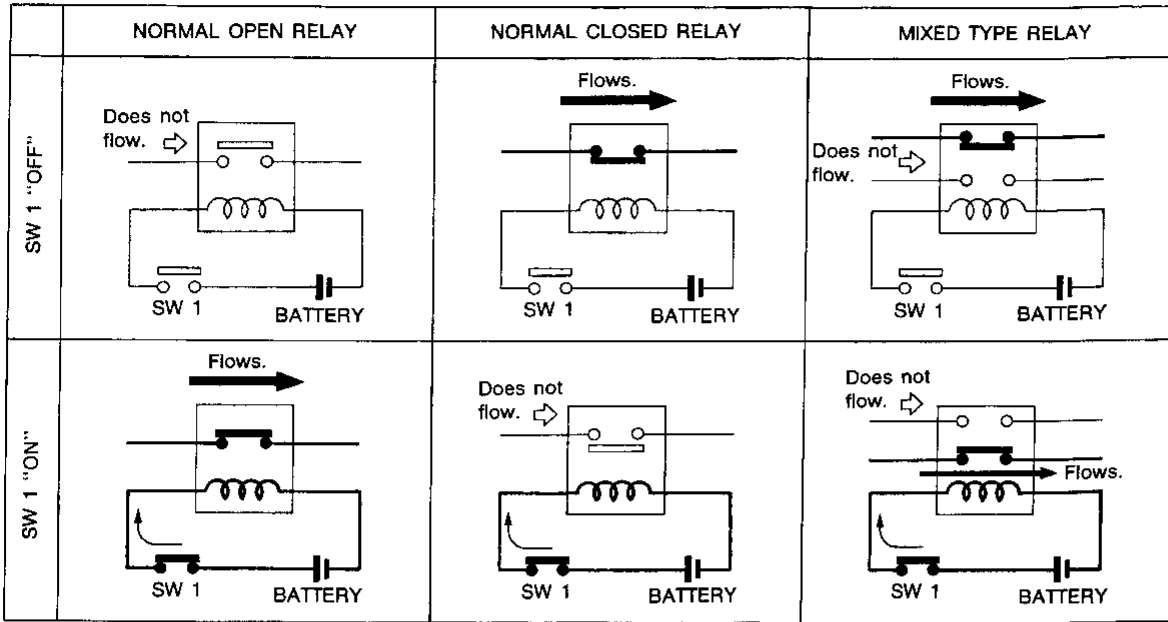


# STANDARDIZED RELAY

## Description

### NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

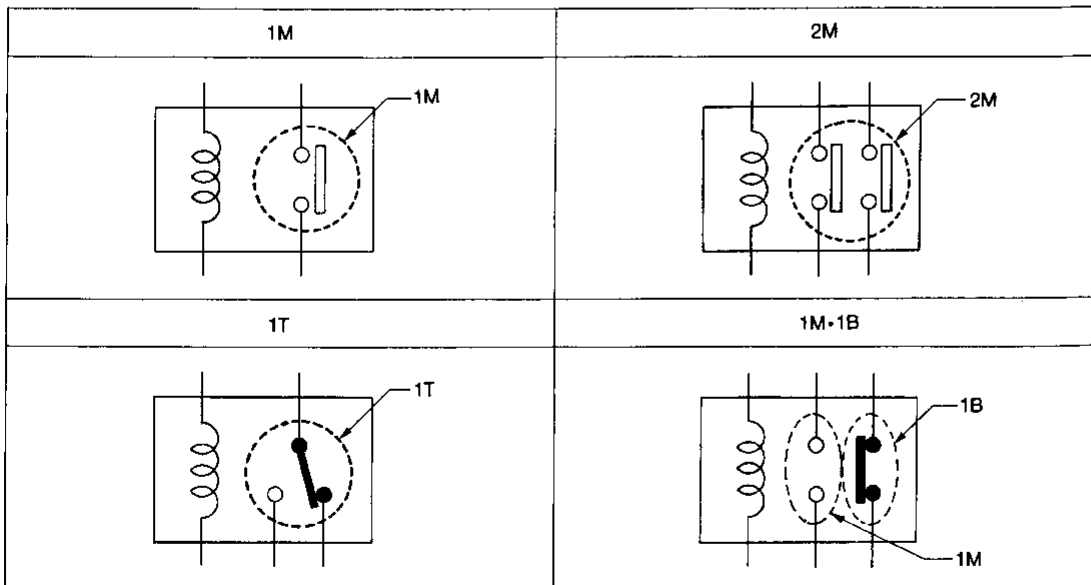
Relays can mainly be divided into three types: normal open, normal closed and mixed type relays.



SEL881H

### TYPE OF STANDARDIZED RELAYS

1M ..... 1 Make      2M ..... 2 Make  
 1T ..... 1 Transfer      1M-1B ..... 1 Make 1 Break



SEL882H

GI  
 MA  
 EM  
 LC  
 EC  
 FE  
 CL  
 MT  
 AT  
 FA  
 RA  
 BR  
 ST  
 RS  
 BT  
 HA  
 EL  
 IDX

# STANDARDIZED RELAY

## Description (Cont'd)

Type	Outer view	Circuit	Connector symbol and connection	Case color
1T				BLACK
2M				BROWN
1M-1B				GRAY
1M				BLUE

The arrangement of terminal numbers on the actual relays may differ from those shown above.



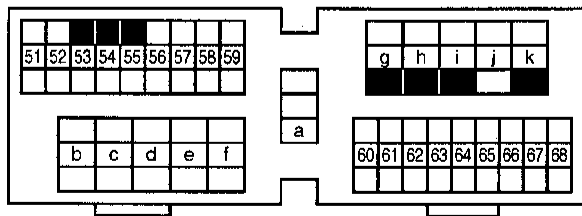
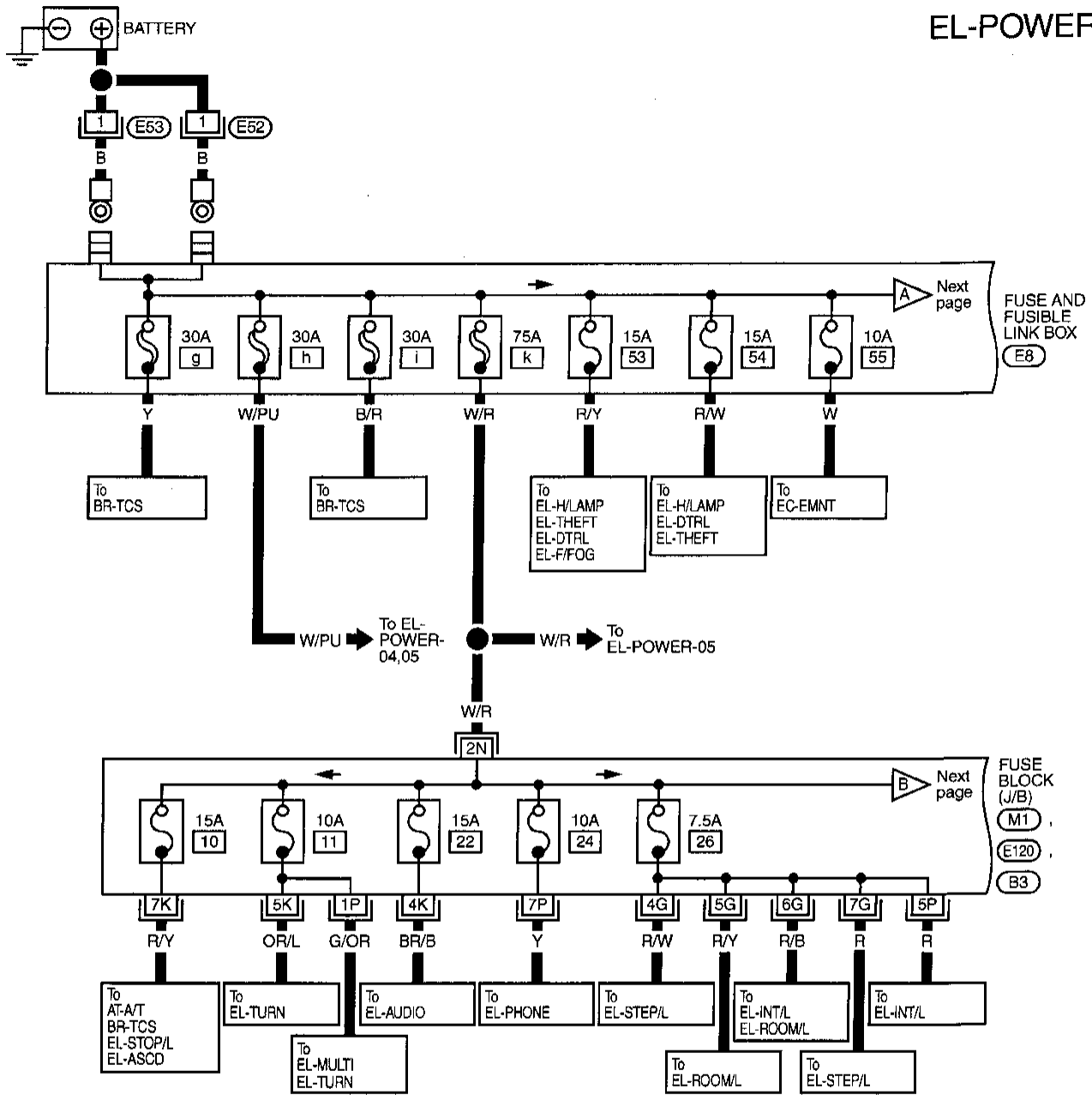


# POWER SUPPLY ROUTING

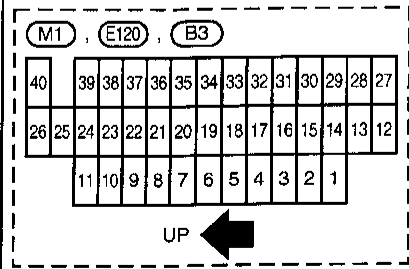
## Wiring Diagram — POWER —

### BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION

EL-POWER-01



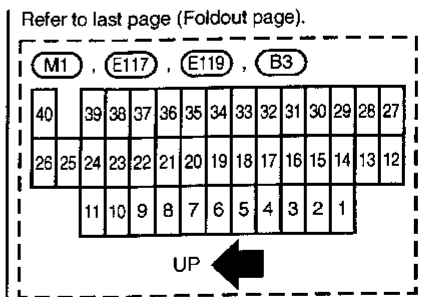
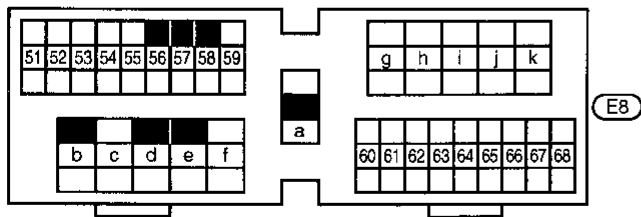
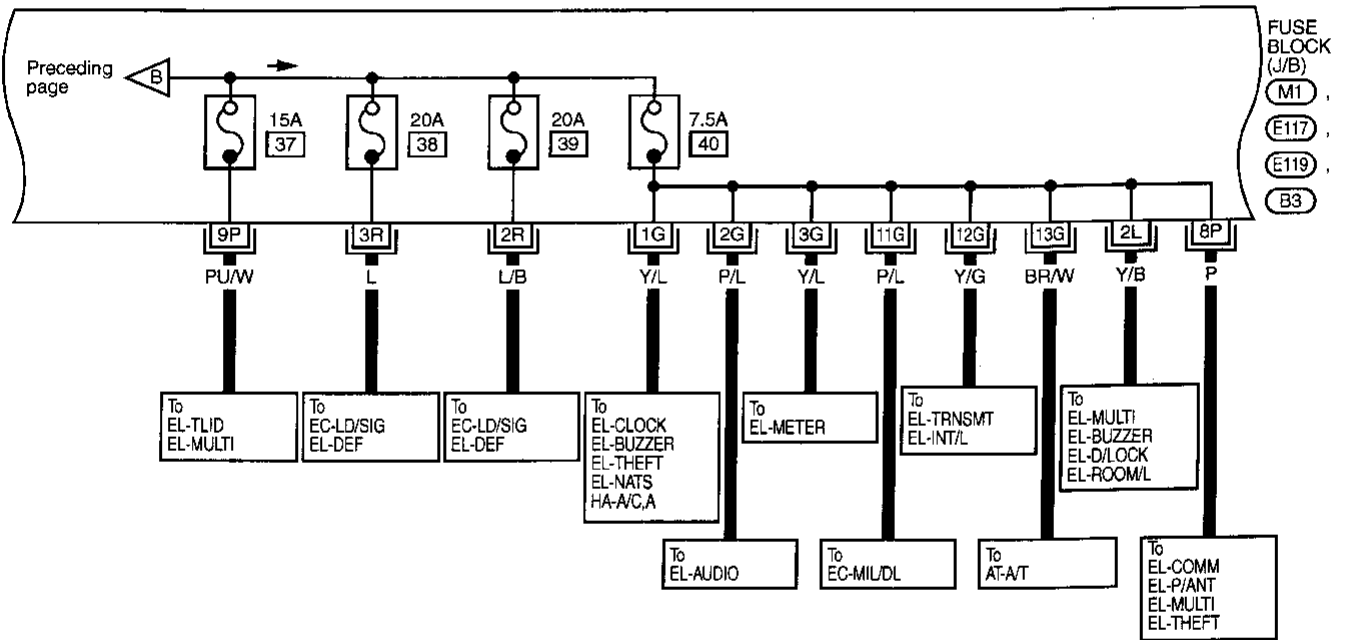
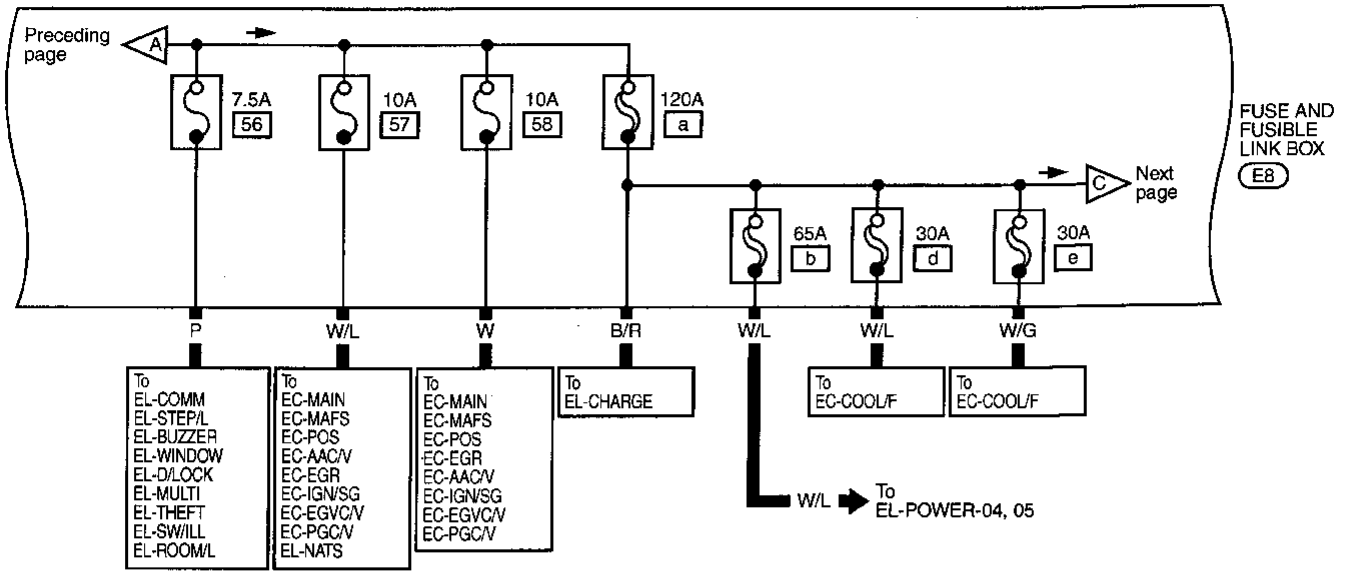
Refer to last page (Foldout page).



# POWER SUPPLY ROUTING

## Wiring Diagram — POWER — (Cont'd)

EL-POWER-02

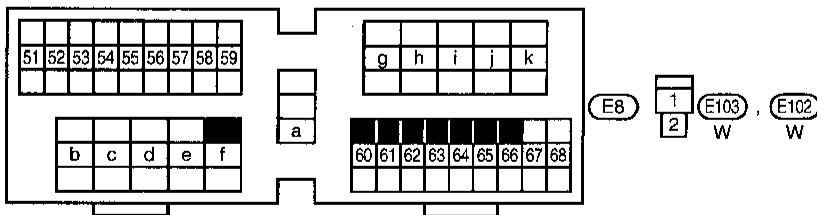
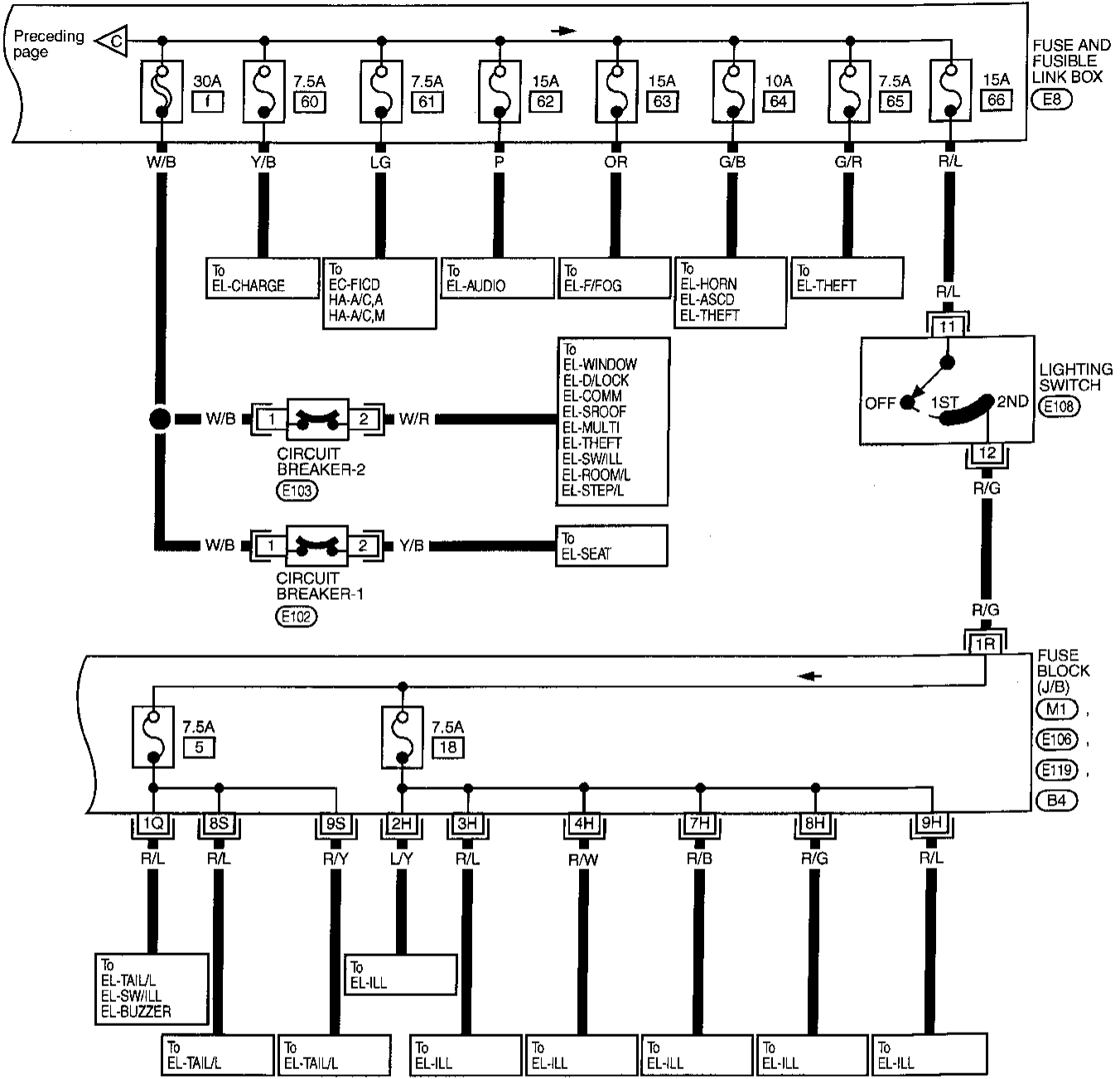


GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

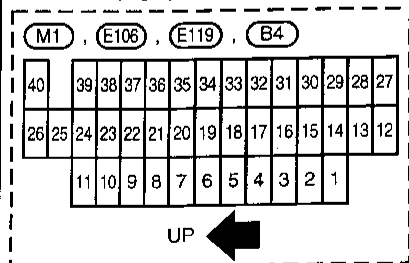
# POWER SUPPLY ROUTING

## Wiring Diagram — POWER — (Cont'd)

EL-POWER-03



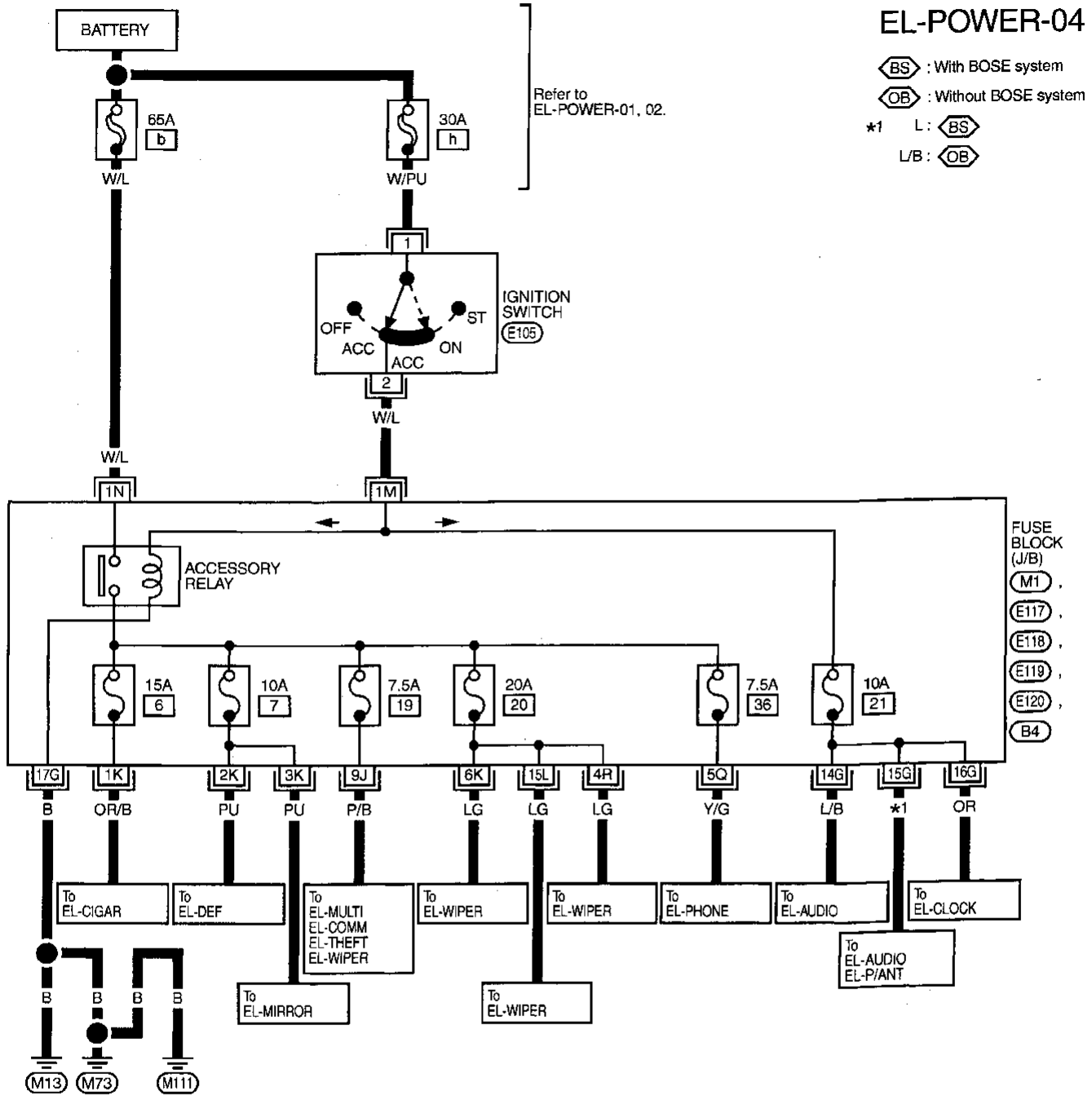
Refer to last page (Foldout page).



# POWER SUPPLY ROUTING

## Wiring Diagram — POWER — (Cont'd)

### ACCESSORY POWER SUPPLY — IGNITION SW. IN "ACC" OR "ON"

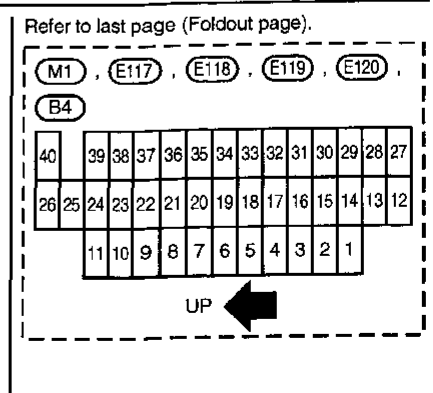
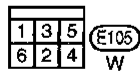


### EL-POWER-04

- BS : With BOSE system
- OB : Without BOSE system
- \*1 L: BS
- L/B: OB

Refer to EL-POWER-01, 02.

- FUSE BLOCK (J/B)
- (M1)
  - (E117)
  - (E118)
  - (E119)
  - (E120)
  - (B4)



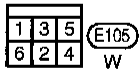
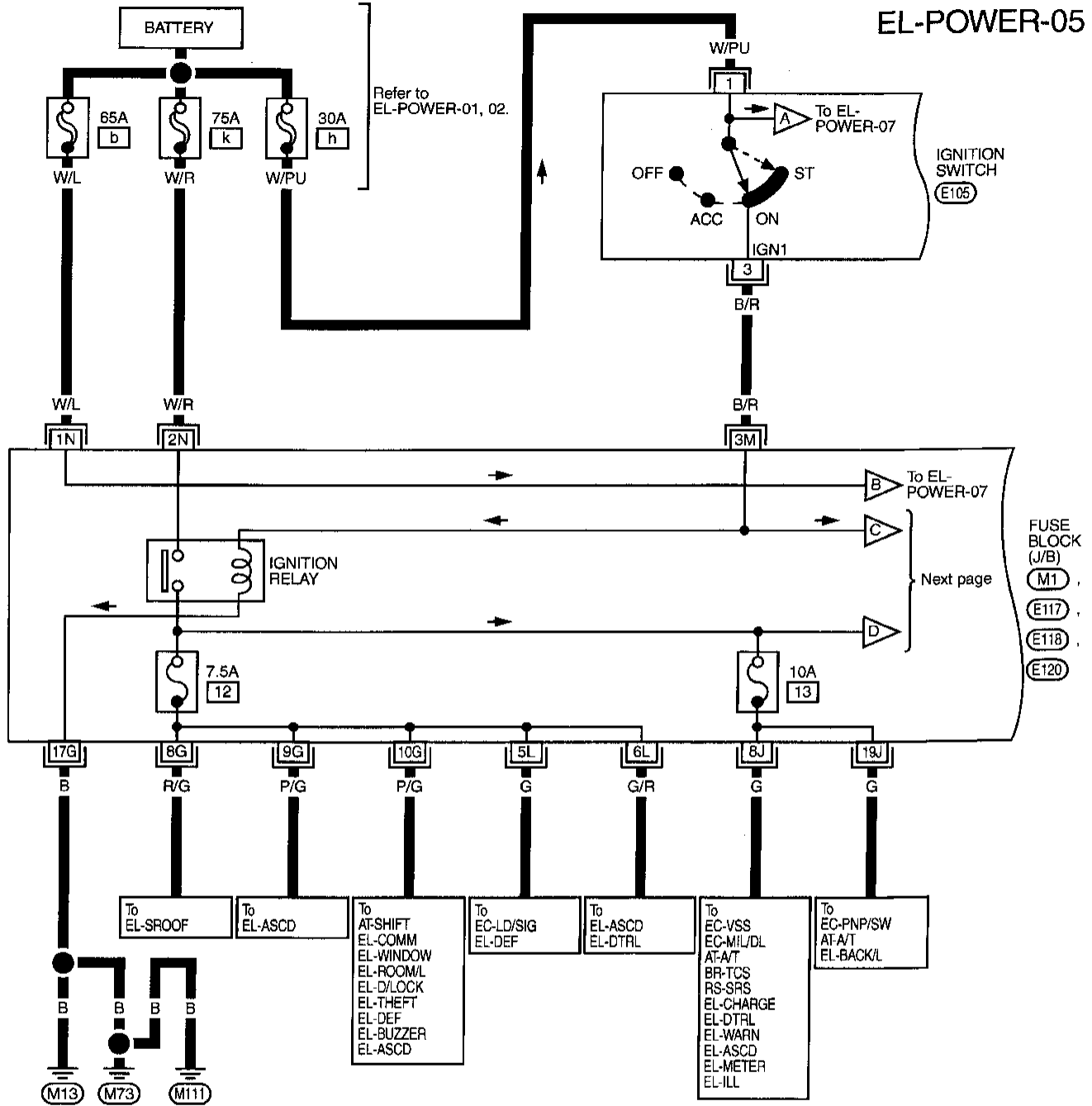
GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# POWER SUPPLY ROUTING

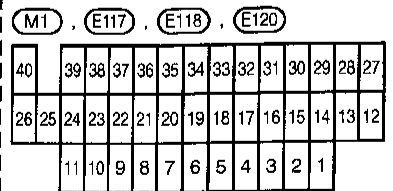
## Wiring Diagram — POWER — (Cont'd)

### IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START"

EL-POWER-05



Refer to last page (Foldout page).



# POWER SUPPLY ROUTING

## Wiring Diagram — POWER — (Cont'd)

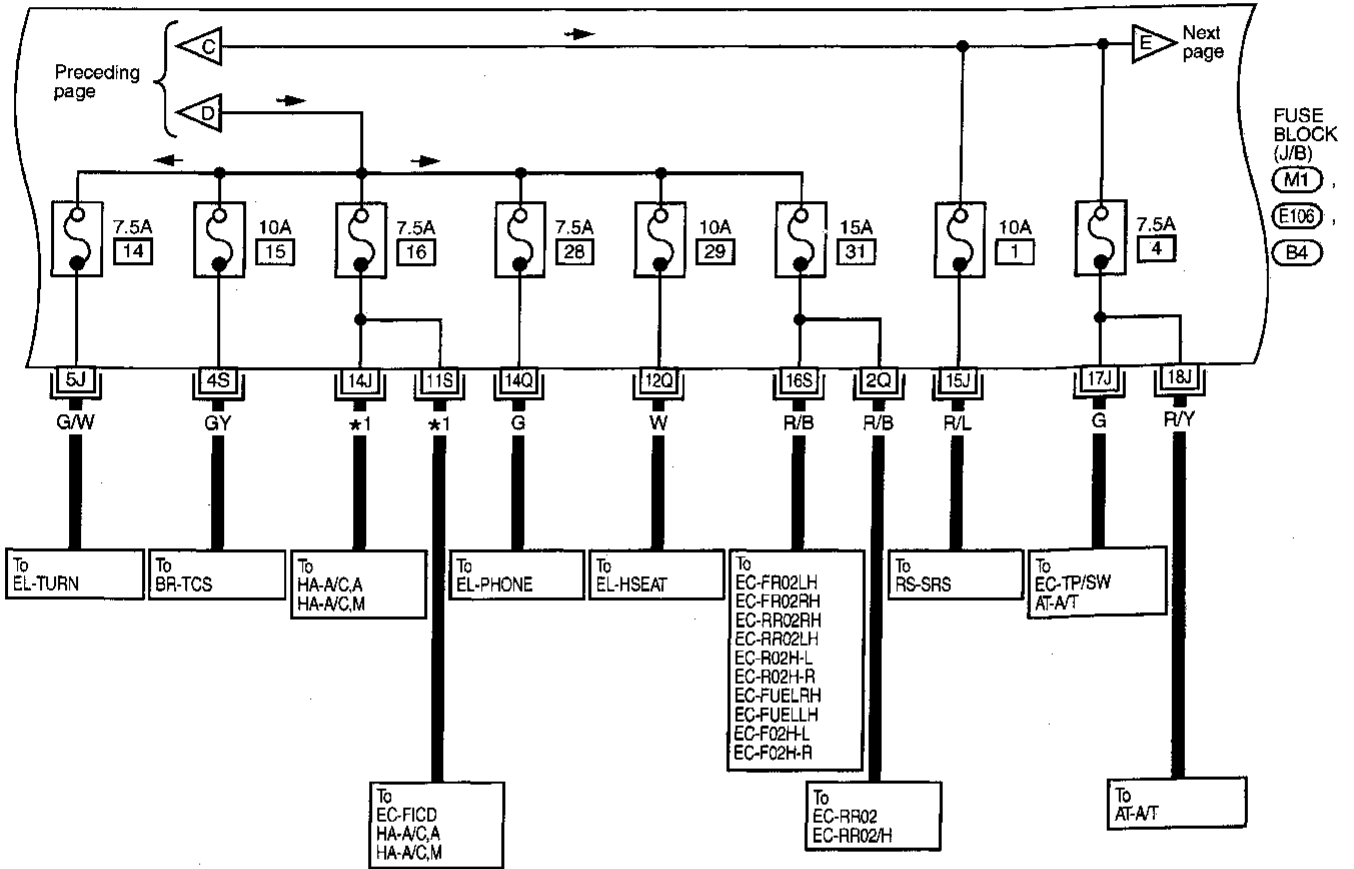
EL-POWER-06

AA : With auto A/C

MA : With manual A/C

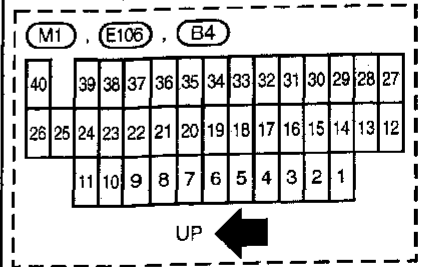
\*1 P : AA

LG/B : MA



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

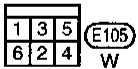
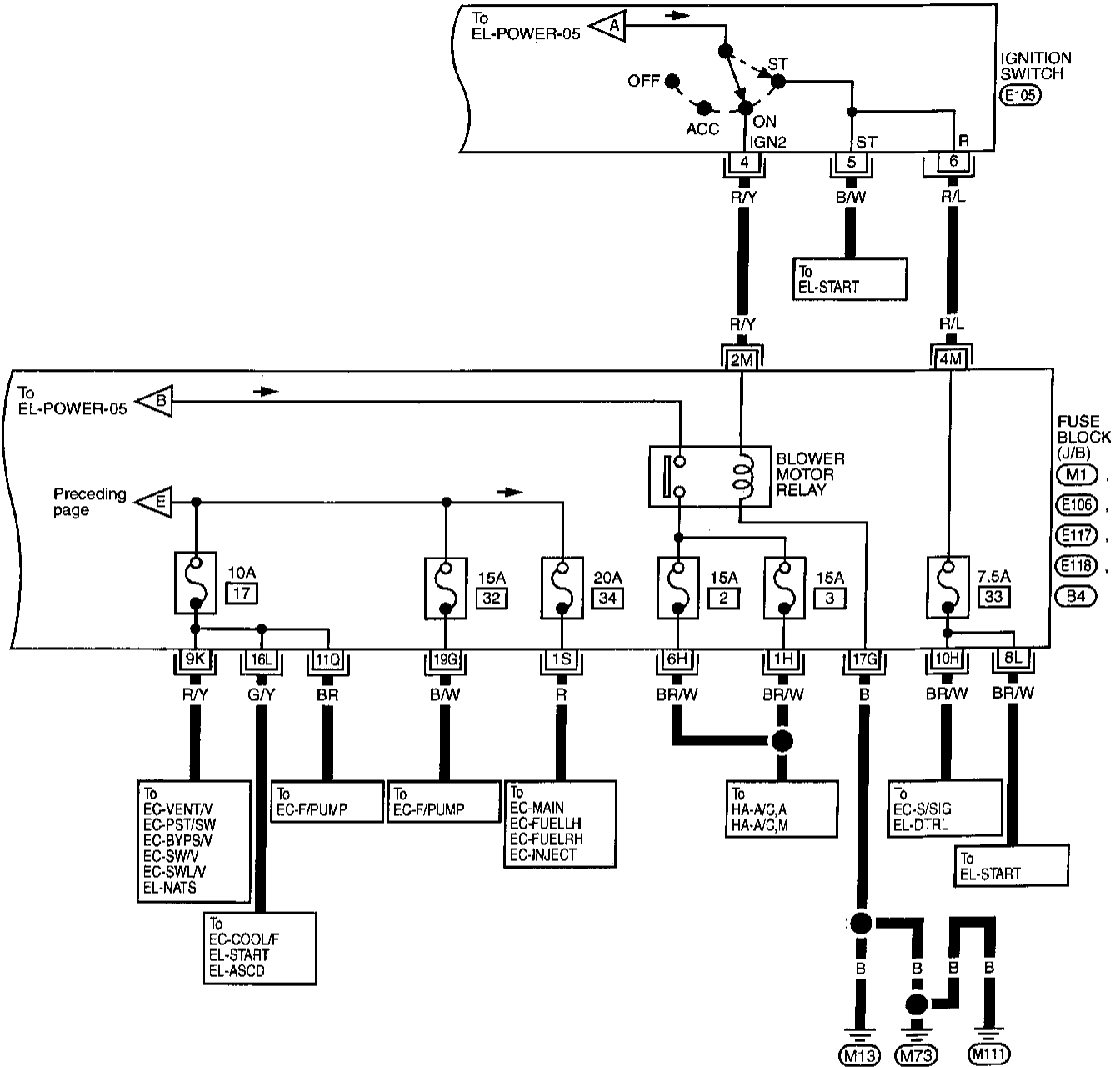
Refer to last page (Foldout page).



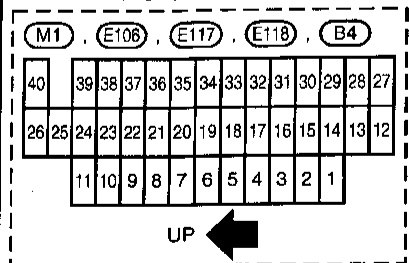
# POWER SUPPLY ROUTING

## Wiring Diagram — POWER — (Cont'd)

EL-POWER-07

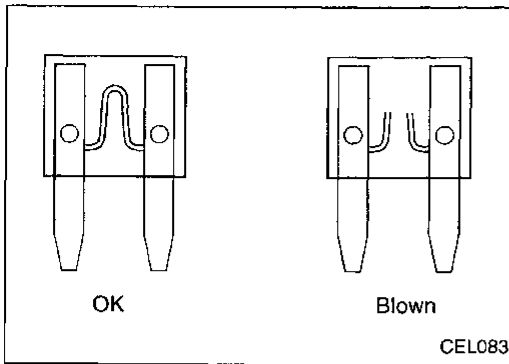


Refer to last page (Foldout page).





# POWER SUPPLY ROUTING



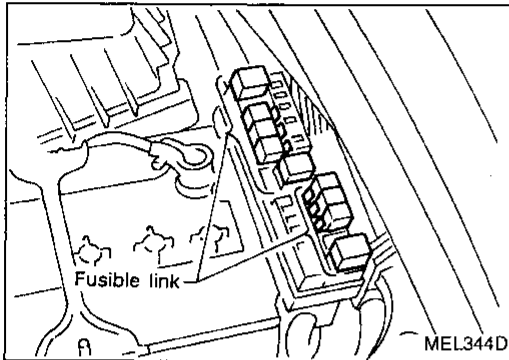
## Fuse

- If fuse is blown, be sure to eliminate cause of problem before installing new fuse.
- Use fuse of specified rating. Never use fuse of more than specified rating.
- Do not partially install fuse; always insert it into fuse holder properly.
- Remove fuse for "ELECTRICAL PARTS (BAT)" if vehicle is not used for a long period of time.

GI

MA

EM



## Fusible Link

A melted fusible link can be detected either by visual inspection or by feeling with finger tip. If its condition is questionable, use circuit tester or test lamp.

### CAUTION:

- If fusible link is melted, it is possible that a critical circuit (power supply or large current carrying circuit) is shorted. In such a case, carefully check these circuits and eliminate cause.

- Never wrap outside of fusible link with vinyl tape.

**Important:** Never let fusible link touch any other wiring harness, vinyl or rubber parts.

LC

EC

FE

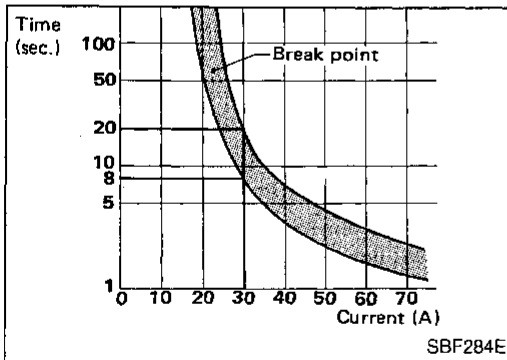
CL

MT

AT

FA

RA



## Circuit Breaker Inspection

For example, when current is 30A, the circuit is broken within 8 to 20 seconds.

BR

ST

RS

BT

HA

EL

IDX

## GROUND DISTRIBUTION

EARTH	CONNECT TO	CONN. NO.	CELL CODE
E5/E30	ABS SOLENOID VALVE RELAY	E79	BR-TCS
	ASCD HOLD RELAY	E58, E59	EL-ASCD
	BRAKE FLUID LEVEL SWITCH	E1	EL-WARN
	COOLING FAN MOTOR-1	E26	EC-COOL/F
	COOLING FAN MOTOR-2	E27	EC-COOL/F
	COOLING FAN RELAY-2	E56	EC-COOL/F
	COOLING FAN RELAY-3	E62	EC-COOL/F
	DAYTIME LIGHT CONTROL UNIT	E67	EL-DTRL EL-THEFT
	FRONT FOG LAMP LH	E21	EL-F/FOG
	FRONT FOG LAMP RH	E34	EL-F/FOG
	FRONT FOG LAMP SWITCH	E113	EL-F/FOG
	FRONT SIDE MARKER LAMP LH	E23	EL-TAIL/L
	FRONT SIDE MARKER LAMP RH	E33	EL-TAIL/L
	FRONT TURN SIGNAL LAMP LH	E22	EL-TURN
	FRONT TURN SIGNAL LAMP RH	E32	EL-TURN
	FRONT WIPER RELAY	E75	EL-WIPER
	FRONT WIPER SWITCH	E112	EL-WIPER
	HEADLAMP LH	E24	EL-H/LAMP EL-DTRL EL-THEFT
	HEADLAMP RH	E31	EL-H/LAMP EL-THEFT
	HOOD SWITCH	E19	EL-THEFT
	PARKING LAMP LH	E6	EL-TAIL/L
	PARKING LAMP RH	E44	EL-TAIL/L
	THEFT WARNING HORN RELAY-2	E70	EL-THEFT
	TRIPLE-PRESSURE SWITCH	E25	EC-COOL/F HA-A/C, A HA-A/C, M
	WASHER LEVEL SWITCH	E45	EL-WARN
	A/C AUTO AMP.	M98	HA-A/C, A
	E35	ALTERNATOR	E37
E115	SHIELD WIRE (FRONT WHEEL SENSOR LH)	E17	BR-TCS
	SHIELD WIRE (FRONT WHEEL SENSOR RH)	M102	BR-TCS
	SHIELD WIRE (REAR WHEEL SENSOR LH)	B109	BR-TCS
	SHIELD WIRE (REAR WHEEL SENSOR RH)	B105	BR-TCS
M13/M73/ M111	ABS/TCS CONTROL UNIT	E114	BR-TCS
	A/C AUTO AMP.	M97	HA-A/C, A
	A/T DEVICE (OVER DRIVE CONTROL SWITCH)	M62	AT-A/T
	A/T DEVICE (PARK POSITION SWITCH)	M62	AT-SHIFT
	ACCESSORY RELAY	M1	EL-POWER
	AIR MIX DOOR MOTOR	M49	HA-A/C, M
	AIR MIX DOOR MOTOR	M113	HA-A/C, A
	ASCD CONTROL UNIT	M30	EL-ASCD
	ASCD MAIN SWITCH	M27	EL-ASCD
	ASHTRAY (ILLUMINATION)	M46	EL-ILL
	AUDIO AMP. RELAY	M79	EL-AUDIO
	BCM (BODY CONTROL MODULE)	M105	EL-BUZZER EL-COMM EL-WINDOW EL-ROOM/L EL-D/LOCK EL-MULTI EL-THEFT EL-STEP/L EL-WIPER EL-SW/ILL

## GROUND DISTRIBUTION

EARTH	CONNECT TO	CONN. NO.	CELL CODE	
M13/M73/ M111	BLOWER MOTOR RELAY	M1	EL-POWER	
	CIGARETTE LIGHTER SOCKET	M45	EL-CIGAR	
	CLOCK	M59	EL-CLOCK	GI
	CLOCK (ILLUMINATION)	M59	EL-ILL	
	CLUTCH INTERLOCK SWITCH	M16	EL-START	
	COMBINATION FLASHER UNIT	M34	EL-TURN	MA
	COMBINATION METER (AIR BAG Warn lamp)	M83	RS-SRS EL-WARN	
	COMBINATION METER (CRUISE INDICATOR)	M82	EL-ASCD	EM
	COMBINATION METER (FUEL GAUGE)	M83	EL-METER	
	COMBINATION METER (HIGH BEAM INDICATOR)	M83	EL-H/LAMP EL-DTRL	LC
	COMBINATION METER (UNIFIED METER CONTROL UNIT)	M83	AT-A/T EL-METER EL-ASCD EC-VSS	EC
	COMBINATION METER (TURN)	M82	EL-TURN	
	COMBINATION METER (WATER TEMP. GAUGE)	M83	EL-METER	FE
	DATA LINK CONNECTOR FOR CONSULT	M2	EC-MIL/DL AT-A/T	
	DATA LINK CONNECTOR FOR GST	M63	EC-MIL/DL	CL
	DOOR MIRROR REMOTE CONTROL SWITCH	M26	EL-MIRROR	
	FAN CONTROL AMP.	M57	HA-A/C, A	
	FAN SWITCH	M39	HA-A/C, M	MT
	FRONT WIPER MOTOR	M101	EL-WIPER	
	GLOVE BOX LAMP SWITCH	M55	EL-ILL	AT
	IGNITION RELAY	M1	EL-POWER	
	ILLUMINATION CONTROL SWITCH	M32	EL-ILL	
	INTAKE DOOR MOTOR	M69	HA-A/C, A HA-A/C, M	FA
	MODE DOOR MOTOR	M38	HA-A/C, M	
	MODE DOOR MOTOR	M112	HA-A/C, A	RA
	PUSH CONTROL UNIT	M85	HA-A/C, M	
	REAR WINDOW DEFOGGER SWITCH	M60	EL-DEF	
	SUNROOF RELAY	M7	EL-SROOF	BR
	DOOR MIRROR DEFOGGER RELAY	M78	EL-DEF	
	DOOR MIRROR DEFOGGER (DRIVER SIDE)	D5	EL-DEF	ST
	DOOR MIRROR DEFOGGER (PASSENGER SIDE)	D35	EL-DEF	
	DRIVER DOOR CONTROL UNIT (LCU01)	D9	EL-COMM EL-WINDOW EL-D/LOCK EL-ROOM/L EL-STEP/L EL-MULTI EL-THEFT	RS
	FRONT DOOR KEY CYLINDER SWITCH LH	D7	EL-D/LOCK EL-THEFT	BT
	FRONT DOOR KEY CYLINDER SWITCH RH	D37	EL-D/LOCK EL-THEFT	
	FRONT DOOR LOCK ACTUATOR LH (DOOR UNLOCK SENSOR)	D12	EL-D/LOCK EL-THEFT EL-MULTI EL-ROOM/L	HA
	FRONT DOOR LOCK ACTUATOR RH (DOOR UNLOCK SENSOR)	D41	EL-D/LOCK EL-THEFT EL-MULTI	EL
	FRONT DOOR SPEAKER LH	D6	EL-AUDIO	
	FRONT DOOR SPEAKER RH	D36	EL-AUDIO	
	PASSENGER DOOR CONTROL UNIT (LCU02)	D39	EL-COMM EL-WINDOW EL-STEP/L EL-D/LOCK EL-MULTI EL-THEFT	IDX
	NATS IMMU	M114	EL-NATS	

## GROUND DISTRIBUTION

EARTH	CONNECT TO	CONN. NO.	CELL CODE
M13/M73/ M111	SHIELD WIRE (FRONT DOOR SPEAKER AND TWEETER LH)	D6, D13	EL-AUDIO
	SHIELD WIRE (FRONT DOOR SPEAKER AND TWEETER RH)	D36, D42	EL-AUDIO
	TCS ON/OFF SWITCH	M115	BR-TCS
	TRUNK LID OPENER SWITCH	D10	EL-TLID EL-MULTI
	INTEGRATED HOMELINK TRANSMITTER (VANITY MIRROR LH)	R2	EL-TRNSMT
	SPOT LAMP	R4	EL-INT/L
	VANITY MIRROR LH (ILLUMINATION)	R2	EL-INT/L
	VANITY MIRROR RH (ILLUMINATION)	R5	EL-INT/L
	AIR BAG DIAGNOSIS SENSOR UNIT	Z4	RS-SRS
F18/F19	TCM (TRANSMISSION CONTROL MODULE)	F109	AT-A/T
	CONDENSER	F22	EC-IGN/SG
	ECM	F101	EC-MAIN
	IGNITION COIL NO. 1	F3	EC-IGN/SG
	IGNITION COIL NO. 2	F31	EC-IGN/SG
	IGNITION COIL NO. 3	F4	EC-IGN/SG
	IGNITION COIL NO. 4	F30	EC-IGN/SG
	IGNITION COIL NO. 5	F6	EC-IGN/SG
	IGNITION COIL NO. 6	F29	EC-IGN/SG
	PARK/NEUTRAL POSITION SWITCH	F47	AT-A/T EL-START EL-ASCD
	PARK/NEUTRAL POSITION SWITCH	F32	EC-PNP/SW
	POWER STEERING OIL PRESSURE SWITCH	F1	EC-PST/SW
	SHIELD WIRE [CAMSHAFT POSITION SENSOR (PHASE)]	F15	EC-PHASE
	SHIELD WIRE [CRANKSHAFT POSITION SENSOR (POS)]	F112	EC-POS
	CRANKSHAFT POSITION SENSOR (REF)	F136	EC-REF
	SHIELD WIRE [CRANKSHAFT POSITION SENSOR (REF)]	F136	EC-REF
	SHIELD WIRE [FRONT HEATED OXYGEN SENSOR (Left bank)]	F28	EC-FRO2LH EC-FUELLH EC-FO2H-L
	SHIELD WIRE [FRONT HEATED OXYGEN SENSOR (Right bank)]	F2	EC-FRO2RH EC-FUELRH EC-FO2H-R
	SHIELD WIRE (KNOCK SENSOR)	F122	EC-KS
	SHIELD WIRE (MASS AIR FLOW SENSOR)	F33	EC-MAFS
	SHIELD WIRE (THROTTLE POSITION SENSOR)	F8	EC-TPS AT-A/T
	SHIELD WIRE (ABSOLUTE PRESSURE SENSOR)	F45	EC-AP/SEN
	DATA LINK CONNECTOR FOR GST	M63	EC-MIL/DL
	SHIELD WIRE (EVAP CONTROL SYSTEM PRESSURE SENSOR)	B52	EC-PRE/SE
	REAR HEATED OXYGEN SENSOR	B9	EC-RRO2 EC-RRO2/H
	SHIELD WIRE (REAR HEATED OXYGEN SENSOR)	B9	EC-RRO2 EC-RRO2/H

## GROUND DISTRIBUTION

EARTH	CONNECT TO	CONN. NO.	CELL CODE	
F18/F19	SWIRL CONTROL VALVE CONTROL VACUUM CHECK SWITCH	F51	EC-S/VCSW	
	CRANKSHAFT POSITION SENSOR (POS)	F112	EC-POS	GI
	CAMSHAFT POSITION SENSOR (PHASE)	F15	EC-PHASE	
	REAR HEATED OXYGEN SENSOR (Left bank)	F48	EC-RR02LH EC-R02H-L	MA
	SHIELD WIRE [REAR HEATED OXYGEN SENSOR (Left bank)]	F48	EC-RR02LH EC-R02H-L	EM
	REAR HEATED OXYGEN SENSOR (Right bank)	F49	EC-RR02RH EC-R02H-R	LC
	SHIELD WIRE [REAR HEATED OXYGEN SENSOR (Right bank)]	F49	EC-RR02RH EC-R02H-R	
B16/B19	FRONT DOOR SWITCH LH	B18	EL-BUZZER EL-MULTI RS-SRS EL-ROOM/L EL-D/LOCK EL-THEFT	EC
	FRONT DOOR SWITCH RH	B15	EL-D/LOCK EL-THEFT EL-MULTI	
	FUEL TANK GAUGE UNIT	B22	EL-METER EL-WARN EC-TFTS	FE
	FUEL PUMP	B21	EC-F/PUMP	
	HEATED SEAT SWITCH LH	B11	EL-HSEAT	CL
	HEATED SEAT SWITCH RH	B12	EL-HSEAT	
	HEATED SEAT LH	B8	EL-HSEAT	MT
	HEATED SEAT RH	B13	EL-HSEAT	
	REAR SPEAKER LH	B37	EL-AUDIO	AT
	REAR SPEAKER RH	B41	EL-AUDIO	
	SEAT BELT BUCKLE SWITCH	B7	EL-WARN EL-BUZZER RS-SRS	FA
	TELEPHONE	B53	EL-PHONE	
	TRUNK LID COMBINATION LAMP LH	B30	EL-TAIL/L EL-STOP/L EL-BACK/L	RA
	TRUNK LID COMBINATION LAMP RH	B33	EL-TAIL/L EL-STOP/L EL-BACK/L	
	REAR DOOR LOCK ACTUATOR LH (DOOR UNLOCK SENSOR)	D55	EL-MULTI EL-THEFT	BR
	REAR DOOR LOCK ACTUATOR RH (DOOR UNLOCK SENSOR)	D75	EL-MULTI EL-THEFT	
	REAR LH DOOR CONTROL UNIT (LCU04)	D53	EL-COMM EL-WINDOW EL-D/LOCK EL-MULTI EL-SW/ILL EL-THEFT	ST
	REAR RH DOOR CONTROL UNIT (LCU03)	D73	EL-COMM EL-WINDOW EL-D/LOCK EL-MULTI EL-SW/ILL EL-THEFT	RS
	HIGH-MOUNTED STOP LAMP (With rear air spoiler)	H1	EL-STOP/L	BT
	HIGH-MOUNTED STOP LAMP (Without rear air spoiler)	B40	EL-STOP/L	HA
	POWER SEAT LH	B6	EL-SEAT	
	POWER SEAT RH	B14	EL-SEAT	EL
	TRUNK LID KEY CYLINDER SWITCH	B32	EL-THEFT	
TRUNK ROOM LAMP SWITCH	B31	EL-INT/L EL-THEFT	IDX	
TRUNK ROOM LAMP SWITCH	B71	EL-INT/L EL-THEFT		
B55	REAR WINDOW DEFOGGER	B54	EL-DEF	
B57	SHIELD WIRE (SATELLITE SENSOR LH)	B58	RS-SRS	

## GROUND DISTRIBUTION

EARTH	CONNECT TO	CONN. NO.	CELL CODE
B63	SHIELD WIRE (SATELLITE SENSOR LH, SATELLITE SENSOR RH)	B58, B62	RS-SRS
B64	SHIELD WIRE (SATELLITE SENSOR RH)	B62	RS-SRS
T6/T9	LICENSE PLATE LAMP	T8	EL-TAIL/L
	MULTI-REMOTE CONTROL UNIT (LCU05)	T12	EL-COMM   EL-MULTI   EL-THEFT
	POWER ANTENNA TIMER AND MOTOR	T13	EL-P/ANT
	REAR COMBINATION LAMP LH	T4	EL-TAIL/L   EL-STOP/L   EL-TURN
	REAR COMBINATION LAMP RH	T10	EL-TAIL/L   EL-STOP/L   EL-TURN
	REAR SIDE MARKER LAMP LH	T3	EL-TAIL/L
	REAR SIDE MARKER LAMP RH	T11	EL-TAIL/L

# BATTERY

## CAUTION:

- If it becomes necessary to start the engine with a booster battery and jumper cables, use a 12-volt booster battery.
- After connecting battery cables, ensure that they are tightly clamped to battery terminals for good contact.
- Never add distilled water through the hole used to check specific gravity.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

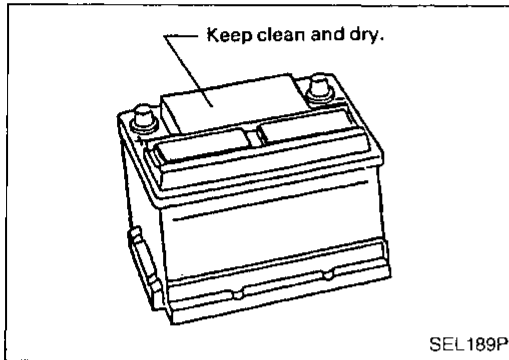
RS

BT

HA

EL

IDX

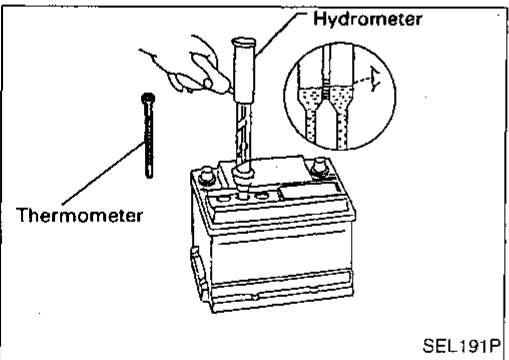
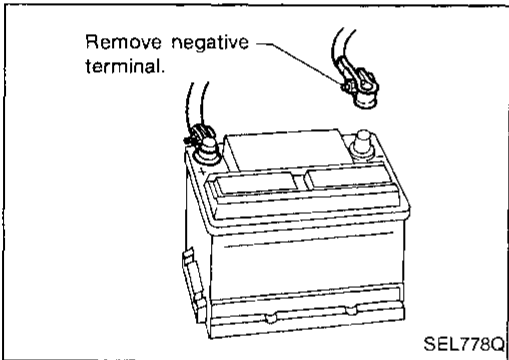


## How to Handle Battery

### METHODS OF PREVENTING OVER-DISCHARGE

The following precautions must be taken to prevent over-discharging a battery.

- The battery surface (particularly its top) should always be kept clean and dry.
- The terminal connections should be clean and tight.
- At every routine maintenance, check the electrolyte level. This also applies to batteries designated as "low maintenance" and "maintenance-free".
- When the vehicle is not going to be used over a long period of time, disconnect the negative battery terminal. (If the vehicle has an extended storage switch, turn it off.)



- Check the condition of the battery by checking the specific gravity of the electrolyte.

### CHECKING ELECTROLYTE LEVEL

#### WARNING:

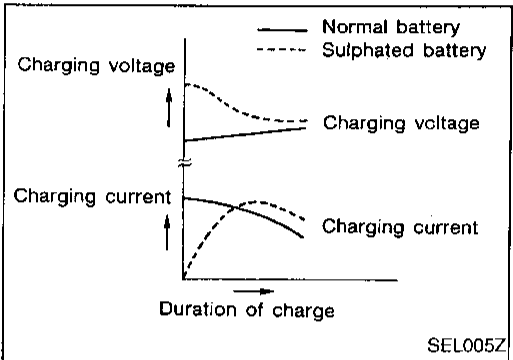
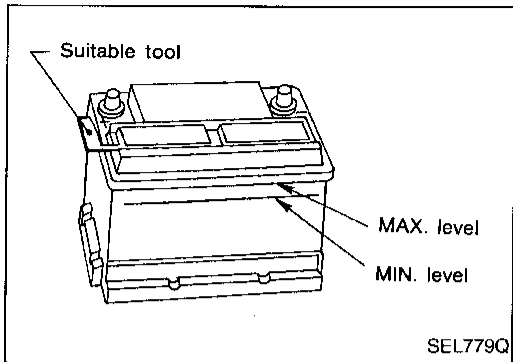
Do not allow battery fluid to come in contact with skin, eyes, fabrics, or painted surfaces. After touching a battery, do not touch or rub your eyes until you have thoroughly washed your hands. If the acid contacts the eyes, skin or clothing, immediately flush with water for 15 minutes and seek medical attention.

Normally the battery does not require additional water. However, when the battery is used under severe conditions, adding distilled water may be necessary during the battery life.

# BATTERY

## How to Handle Battery (Cont'd)

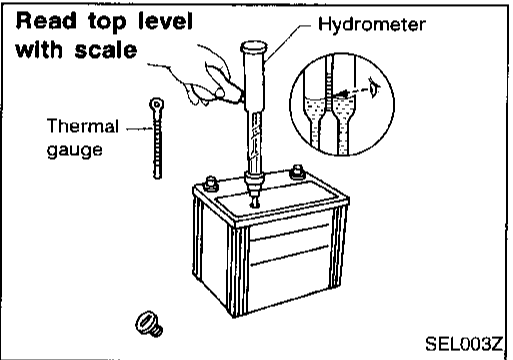
- Remove the cell plug using a suitable tool.
- Add distilled water up to the MAX level.



## SULPHATION

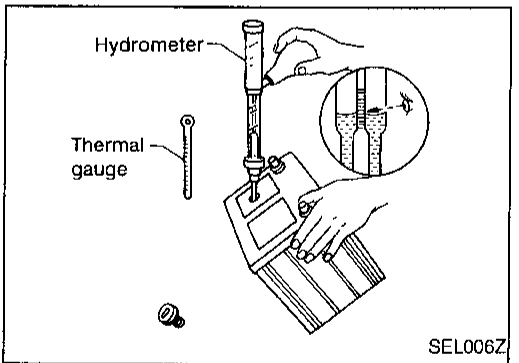
A battery will be completely discharged if it is left unattended for a long time and the specific gravity becomes less than 1.100. This may result in sulphation on the cell plates.

To find if a battery has been "sulphated", pay attention to its voltage and current when charging it. As shown in the figure at left, if the battery has been "sulphated", less current and higher voltage may be observed in the initial stages of charging.



## SPECIFIC GRAVITY CHECK

- Read hydrometer and thermometer indications at eye level.



- When the electrolyte level is too low, tilt battery case for easier measurement.



# BATTERY

## How to Handle Battery (Cont'd)

- Use the chart below to correct your hydrometer reading according to electrolyte temperature.

### Hydrometer temperature correction

Battery electrolyte temperature °C (°F)	Add to specific gravity reading	
71 (160)	0.032	GI
66 (150)	0.028	
60 (140)	0.024	MA
54 (130)	0.020	
49 (120)	0.016	EM
43 (110)	0.012	
38 (100)	0.008	
32 (90)	0.004	LC
27 (80)	0	
21 (70)	-0.004	EC
16 (60)	-0.008	
10 (50)	-0.012	FE
4 (40)	-0.016	
-1 (30)	-0.020	CL
-7 (20)	-0.024	
-12 (10)	-0.028	MT
-18 (0)	-0.032	

Corrected specific gravity	Approximate charge condition	
1.260 - 1.280	Fully charged	AT
1.230 - 1.250	3/4 charged	
1.200 - 1.220	1/2 charged	FA
1.170 - 1.190	1/4 charged	
1.140 - 1.160	Almost discharged	RA
1.110 - 1.130	Completely discharged	

## CHARGING THE BATTERY

### CAUTION:

- Do not "quick charge" a fully discharged battery.
- Keep the battery away from open flame while it is being charged.
- When connecting the charger, connect the leads first, then turn on the charger. Do not turn on the charger first, as this may cause a spark.
- If battery electrolyte temperature rises above 60°C (140°F), stop charging. Always charge battery at a temperature below 60°C (140°F).

### Charging rates:

Amps	Time
50	1 hour
25	2 hours
10	5 hours
5	10 hours

Do not charge at more than 50 ampere rate.

## BATTERY

### How to Handle Battery (Cont'd)

**Note:** The ammeter reading on your battery charger will automatically decrease as the battery charges. This indicates that the voltage of the battery is increasing normally as the state of charge improves. The charging amps indicated above refer to initial charge rate.

- If, after charging, the specific gravity of any two cells varies more than .050, the battery should be replaced.

### MEMORY RESET

If the battery is disconnected or goes dead, the following items must be reset:

- Radio AM and FM preset
- Clock
- AUTO temperature setting trimmer

### Service Data and Specifications (SDS)

Applied area	USA		Canada
	Standard	Option	Standard
Type	55D23L	80D26L	
Capacity	V-AH	12-60	12-65
Cold cranking current (For reference)	A	356	582

# STARTING SYSTEM

## System Description

### M/T models

Power is supplied at all times

- through 30A fusible link (letter **h** , located in the fuse and fusible link box)
- to ignition switch terminal **①** .

With the ignition switch in the START position, power is supplied

- through terminal **⑤** of the ignition switch
- to clutch interlock relay terminal **③** .

With the ignition switch in the START position, power is supplied

- through 7.5A fuse [No. **33**], located in the fuse block (J/B)
- to clutch interlock relay terminal **①** .

When the clutch pedal is depressed, ground is supplied to clutch interlock relay terminal **②** through the clutch interlock switch and body grounds **(M13)**, **(M73)** and **(M111)**.

The clutch interlock relay is energized and power is supplied

- from terminal **⑤** of the clutch interlock relay
- to terminal **①** of the starter motor windings.

The starter motor plunger closes and provides a closed circuit between the battery and the starter motor. The starter motor is grounded to the cylinder block. With power and ground supplied, the starter motor operates.

### A/T models

Power is supplied at all times

- through 30A fusible link (letter **h** , located in the fuse and fusible link box)
- to ignition switch terminal **①** .

With the ignition switch in the ON or START position, power is supplied

- through 10A fuse [No. **17**], located in the fuse block (J/B)
- to park/neutral position relay terminal **①** .

Also, with the ignition switch in the START position, power is supplied

- from ignition switch terminal **⑤**
- to park/neutral position relay terminal **⑥** .

Ground is supplied, with the selector lever in the P or N position

- to park/neutral position relay terminal **②**
- through park/neutral position switch and engine grounds **(F18)** and **(F19)**.

The park/neutral position relay is energized and power is supplied

- from ignition terminal **⑤**
- through park/neutral position relay terminals **⑥** and **⑦**
- to terminal **①** of the starter motor windings.

The starter motor plunger closes and provides a closed circuit between the battery and the starter motor. The starter motor is grounded to the cylinder block. With power and ground supplied, the starter motor operates.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

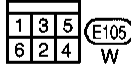
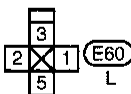
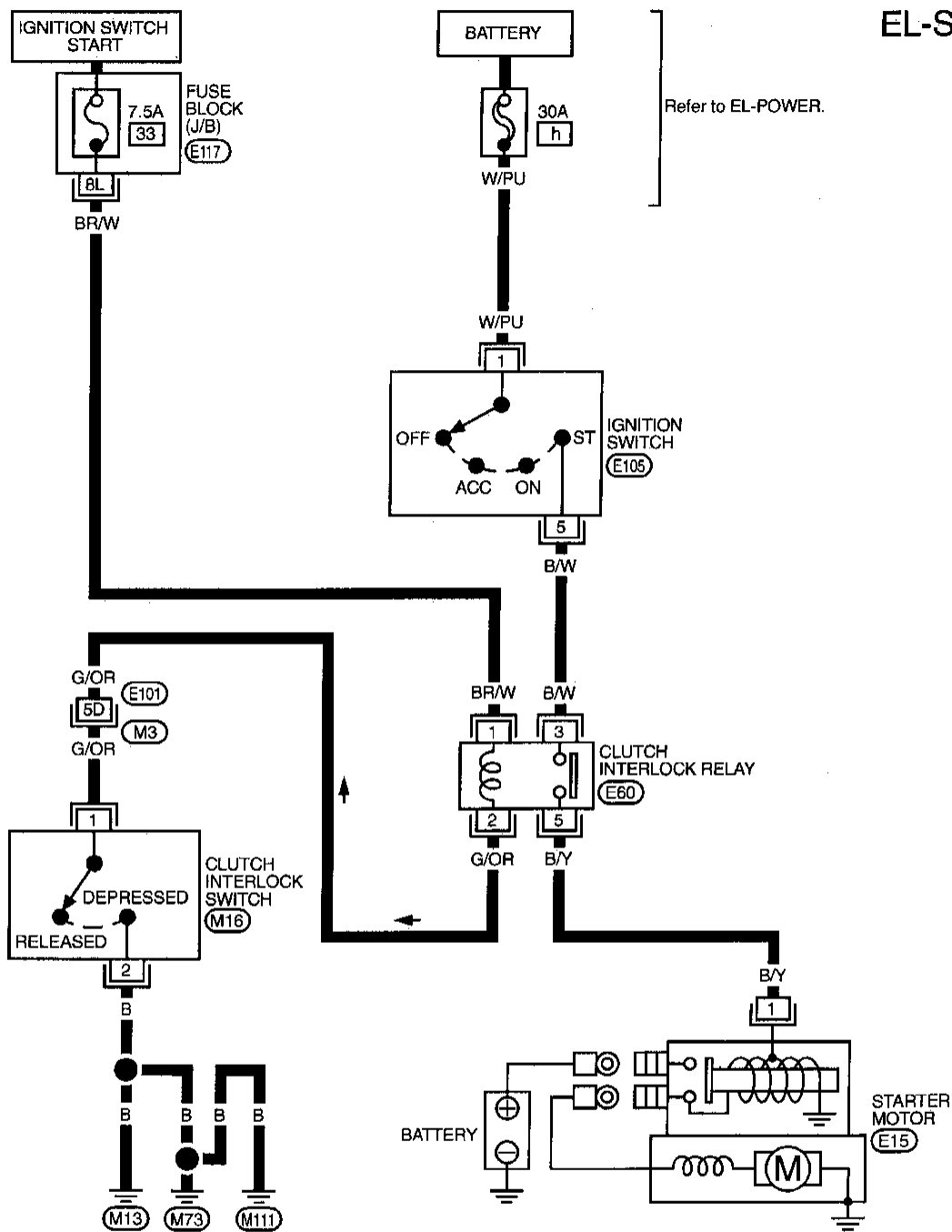
EL

IDX

# STARTING SYSTEM

## Wiring Diagram — START —/M/T Models

EL-START-01



Refer to last page (Foldout page).

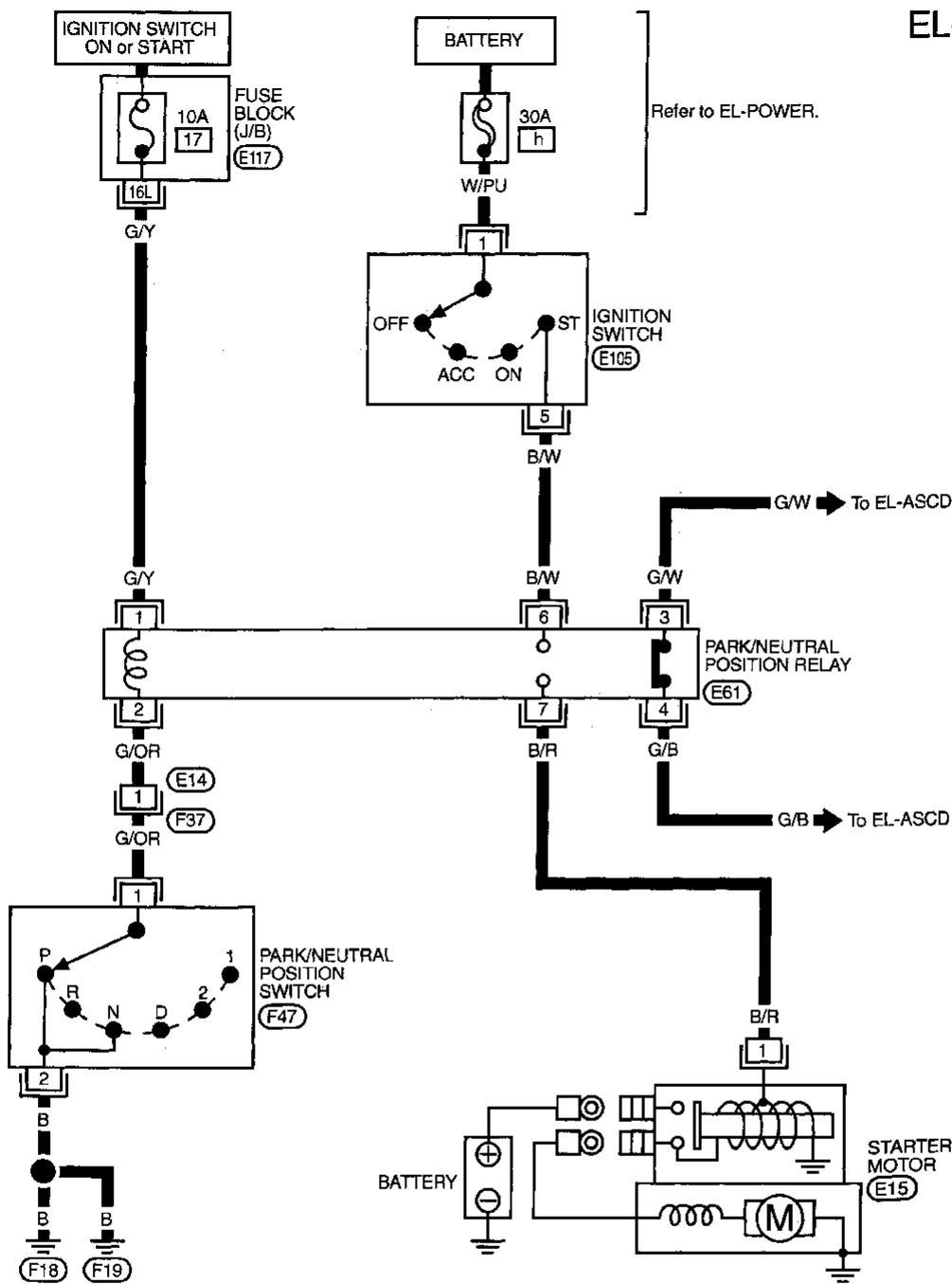
M3, E101

E117

# STARTING SYSTEM

## Wiring Diagram — START —/A/T Models

EL-START-02



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT

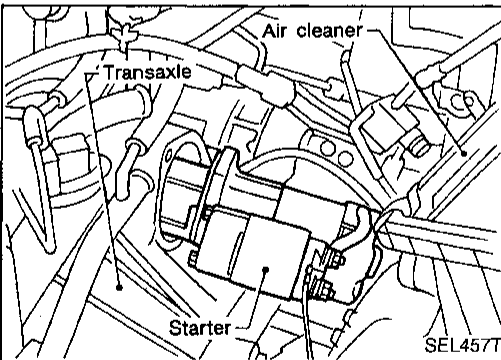
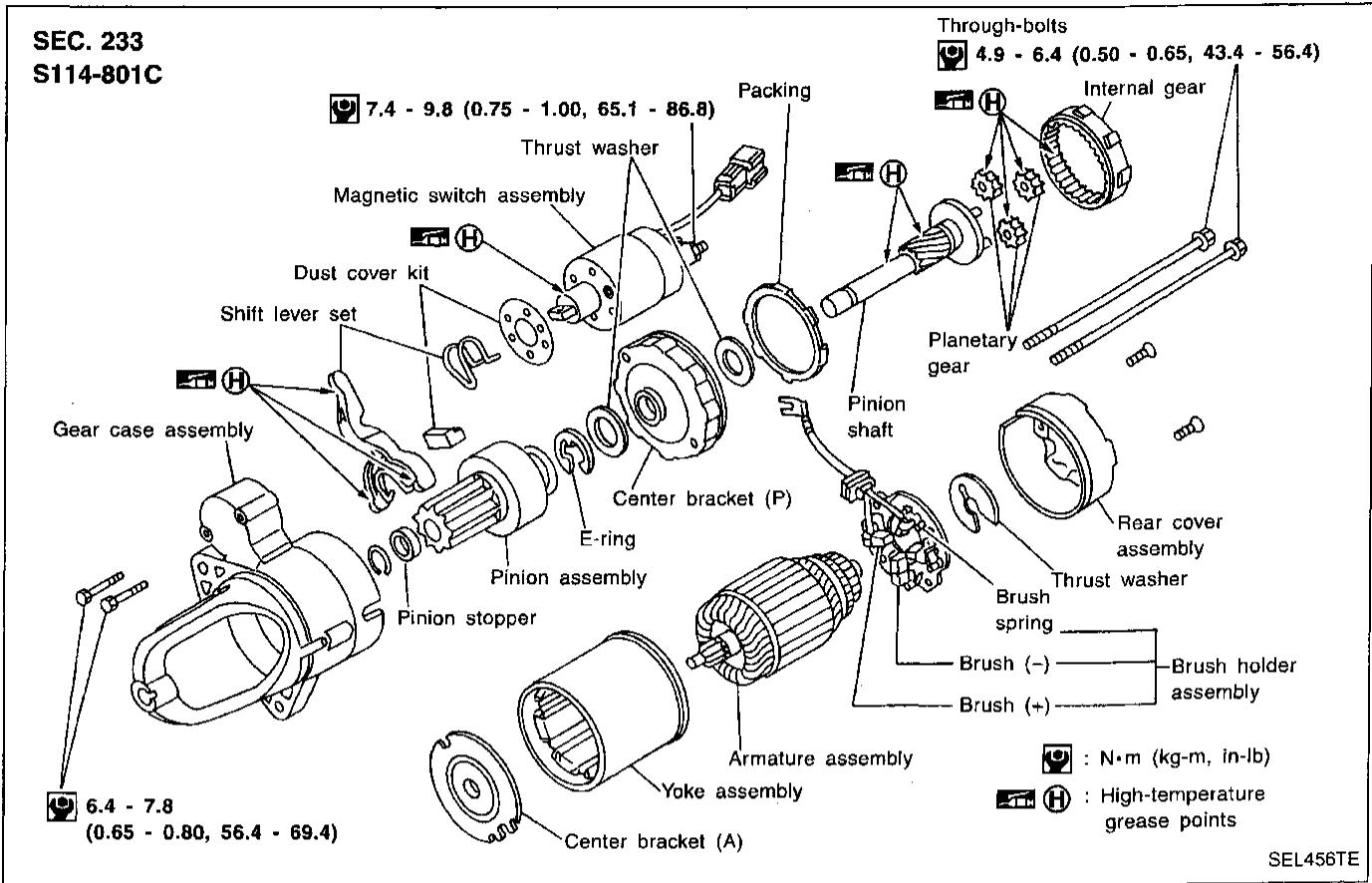


Refer to last page (Foldout page).  
E117

HA  
EL  
IDX

# STARTING SYSTEM

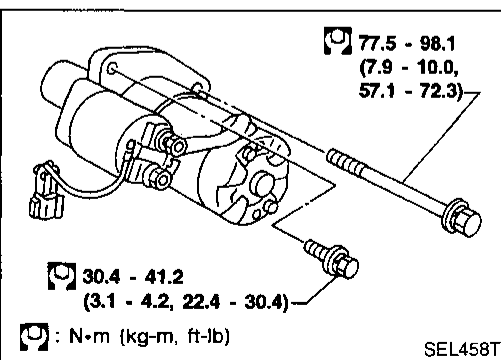
## Construction



## Removal and Installation

### REMOVAL

1. Remove air duct assembly.
2. Disconnect starter harness.
3. Remove starter bolts (two).
4. Remove starter.



### INSTALLATION

To install, reverse the removal procedure.

# STARTING SYSTEM

## Pinion/Clutch Check

1. Inspect pinion teeth.
  - Replace pinion if teeth are worn or damaged. (Also check condition of ring gear teeth.)
2. Inspect reduction gear teeth.
  - Replace reduction gear if teeth are worn or damaged. (Also check condition of armature shaft gear teeth.)
3. Check to see if pinion locks in one direction and rotates smoothly in the opposite direction.
  - If it locks or rotates in both directions, or unusual resistance is evident, replace.

GI

MA

EM

## Service Data and Specifications (SDS)

LC

### STARTER

Type	S114-801C		EC
	HITACHI make		
	Reduction gear type		FE
System voltage	V	12	
No-load			
Terminal voltage	V	11.0	CL
Current	A	Less than 90	MT
Revolution	rpm	More than 2,700	
Minimum diameter of commutator	mm (in)	28 (1.10)	AT
Minimum length of brush	mm (in)	10.5 (0.413)	
Brush spring tension	N (kg, lb)	12.7 - 17.7 (1.3 - 1.8, 2.9 - 4.0)	FA
Clearance of bearing metal and armature shaft	mm (in)	Less than 0.2 (0.008)	
Clearance between pinion front edge and pinion stopper	mm (in)	0.3 - 2.5 (0.012 - 0.098)	RA

BR

ST

RS

BT

HA

EL

IDX

# CHARGING SYSTEM

---

## System Description

The alternator provides DC voltage to operate the vehicle's electrical system and to keep the battery charged. AC voltage is converted into DC voltage by the diode assembly in the alternator.

Power is supplied at all times to alternator terminal **(S)** through:

- 120A fusible link (letter **(A)**, located in the fuse and fusible link box), and
- 7.5A fuse (No. **(60)**, located in the fuse and fusible link box).

Voltage output through alternator terminal **(B)**, is controlled by the IC regulator at terminal **(S)**. The charging circuit is protected by the 120A fusible link.

Terminal **(E)** of the alternator supplies ground through body ground **(E35)**.

With the ignition switch in the ON or START position, power is supplied

- through 10A fuse [No. **(13)**, located in the fuse block (J/B)]
- to combination meter terminal **(37)** for the charge warning indicator.

Ground is supplied to terminal **(30)** of the combination meter through terminal **(L)** of the alternator. With power and ground supplied, the charge warning indicator will illuminate. When the alternator is providing sufficient voltage, the ground is opened and the charge warning indicator will go off.

If the charge warning indicator illuminates with the engine running, a malfunction is indicated. Refer to "Trouble Diagnoses" (EL-32).





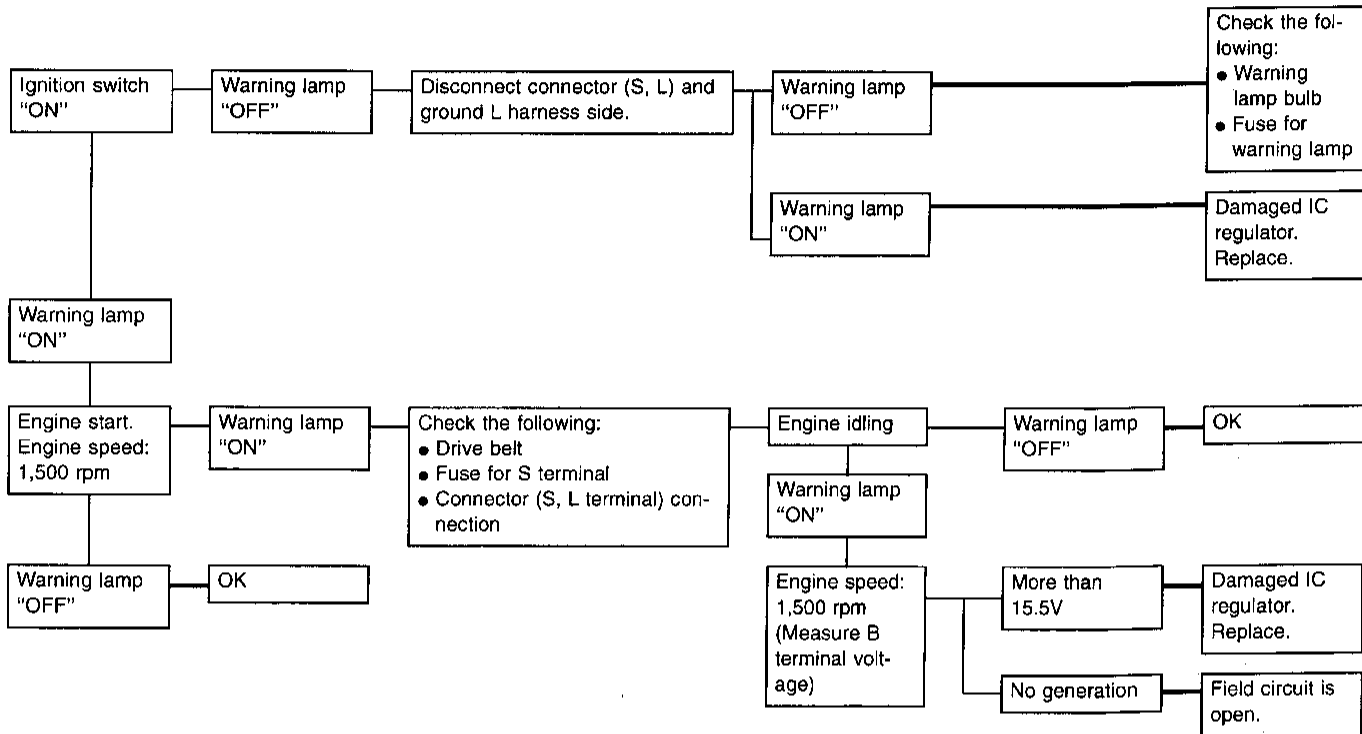
# CHARGING SYSTEM

## Trouble Diagnoses

Before conducting an alternator test, make sure that the battery is fully charged. A 30-volt voltmeter and suitable test probes are necessary for the test. The alternator can be checked easily by referring to the Inspection Table.

- Before starting, inspect the fusible link.
- Use fully charged battery.

### WITH IC REGULATOR



Warning lamp: "CHARGE" warning lamp in combination meter

#### Note:

- If the inspection result is OK even though the charging system is malfunctioning, check the B terminal connection. (Check the tightening torque.)
- When field circuit is open, check condition of rotor coil, rotor slip ring and brush. If necessary, replace faulty parts with new ones.

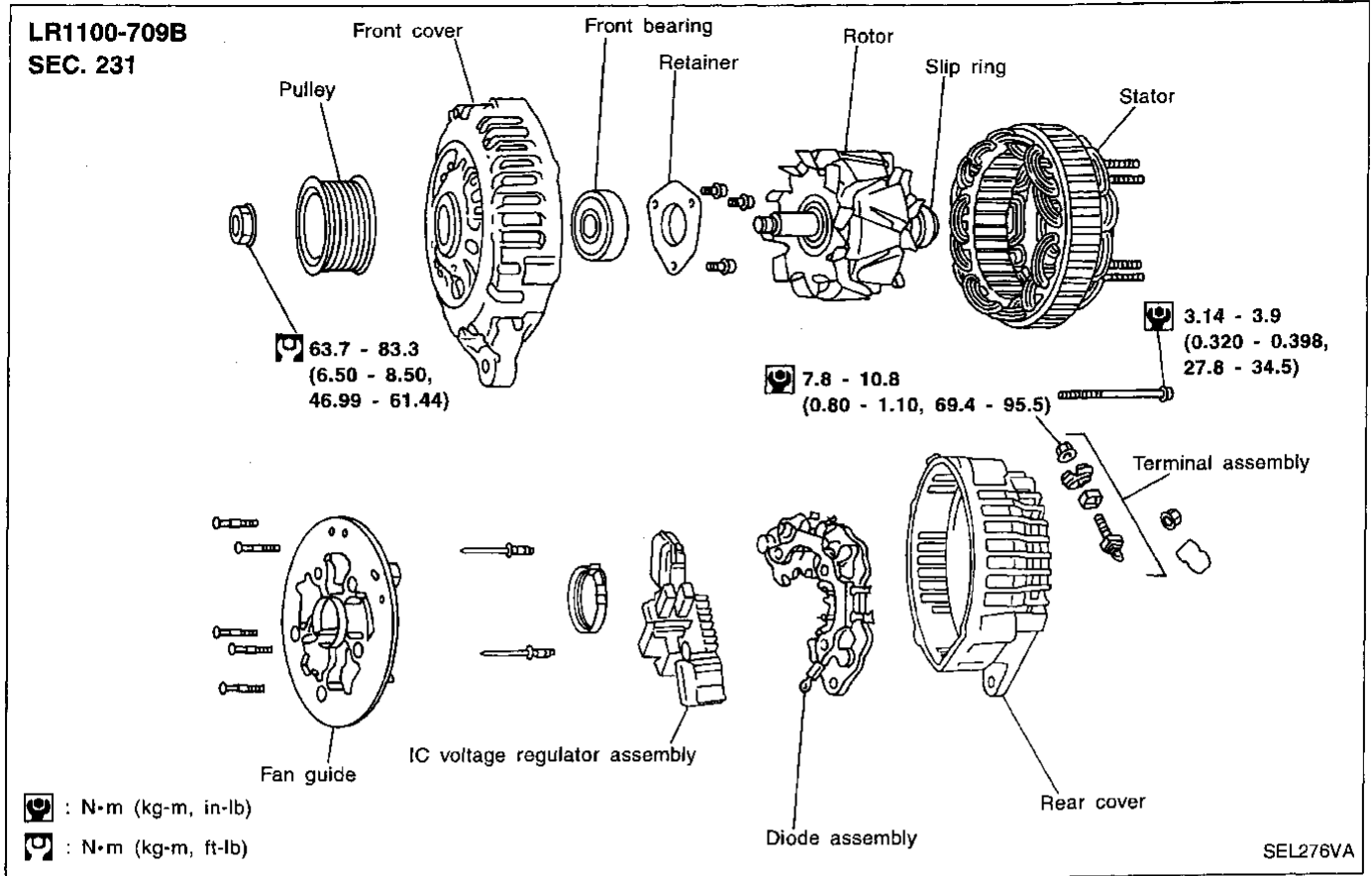
### MALFUNCTION INDICATOR

The IC regulator warning function activates to illuminate "CHARGE" warning lamp, if any of the following symptoms occur while alternator is operating:

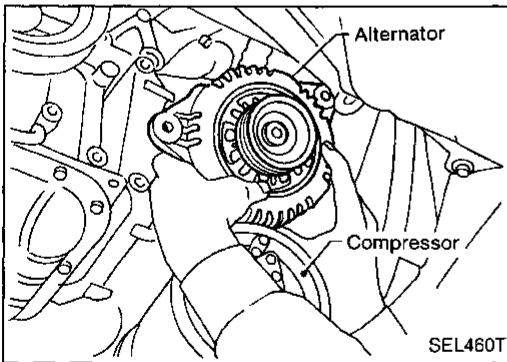
- Excessive voltage is produced.
- No voltage is produced.

# CHARGING SYSTEM

## Construction



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX



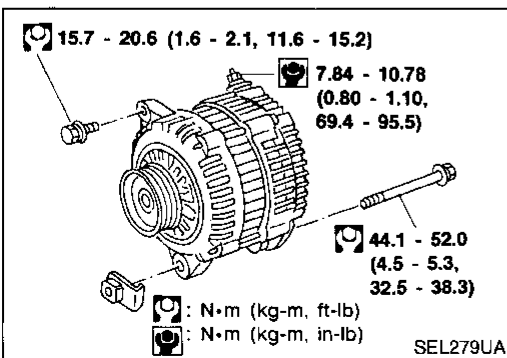
## Removal and Installation

### REMOVAL

1. Remove engine undercover RH.
2. Remove side inspection cover RH.
3. Loosen belt idler pulley.
4. Remove drive belt.
5. Remove A/C compressor mounting bolts (four).
6. Remove cooling fan and fan shroud.
7. Slide A/C compressor forward.
8. Disconnect alternator harness connector.
9. Remove alternator upper bolt and lower bolt.

### INSTALLATION

To install, reverse the removal procedure.



# CHARGING SYSTEM

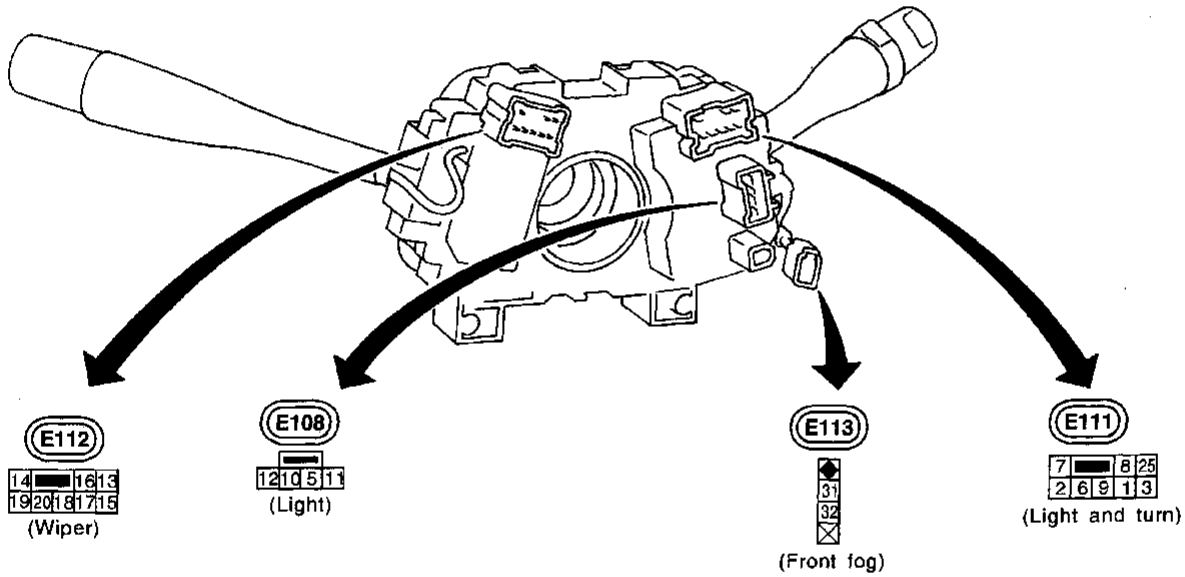
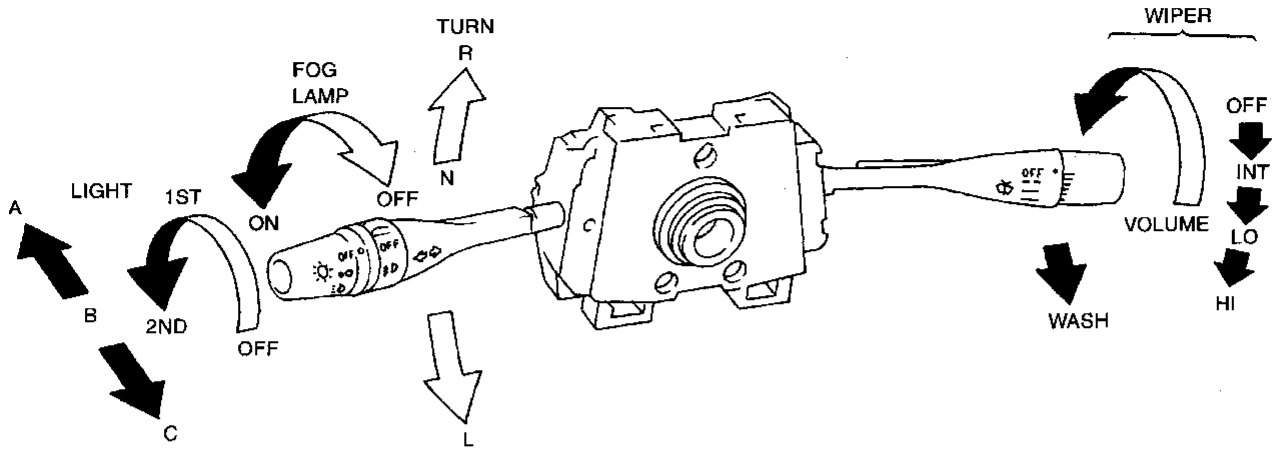
## Service Data and Specifications (SDS)

### ALTERNATOR

Type		LR1100-709B
		HITACHI make
Nominal rating	V-A	12-110
Ground polarity		Negative
Minimum revolution under no-load (When 13.5 volts is applied)	rpm	Less than 1,000
Hot output current (When 13.5 volts is applied)	A/rpm	More than 36/1,300 More than 85/2,500 More than 110/9,000
Regulated output voltage	V	14.1 - 14.7
Minimum length of brush	mm (in)	More than 6.00 (0.2362)
Brush spring pressure	N (g, oz)	1.000 - 3.432 (102 - 350, 3.60 - 12.34)
Slip ring minimum diameter	mm (in)	More than 26.0 (1.024)
Rotor (field coil) resistance	$\Omega$	2.31

# COMBINATION SWITCH

## Check

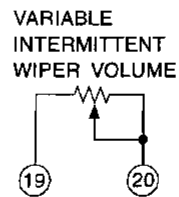


LIGHTING SWITCH

	OFF			1			2		
	A	B	C	A	B	C	A	B	C
5			○			○	○	○	○
6			○			○			
7									○
8		○			○		○	○	○
9		○			○				
10									○
11					○		○	○	○
12					○		○	○	○

FRONT WIPER SWITCH

	OFF	INT	LO	HI	WASH
13	○	○			
14	○	○	○		
15		○			
16				○	
17		○		○	○
18					○



FRONT FOG LAMP SWITCH

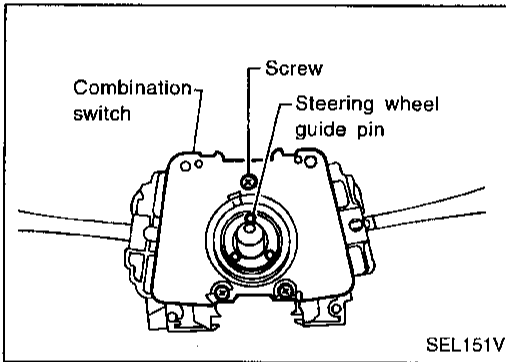
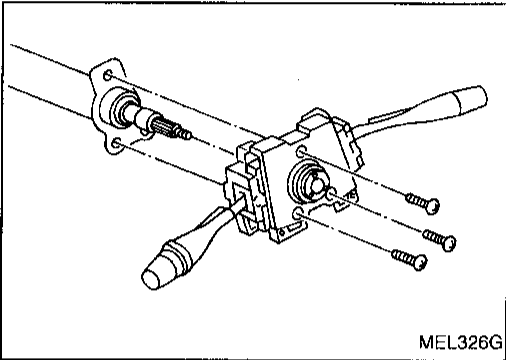
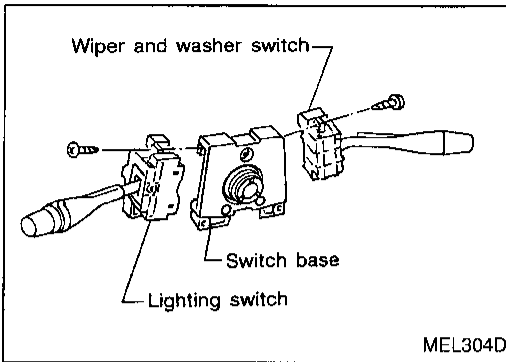
	OFF	ON
31		○
32		○

TURN SIGNAL LAMP SWITCH

	L	N	R
1	○		○
2			○
3	○		

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# COMBINATION SWITCH



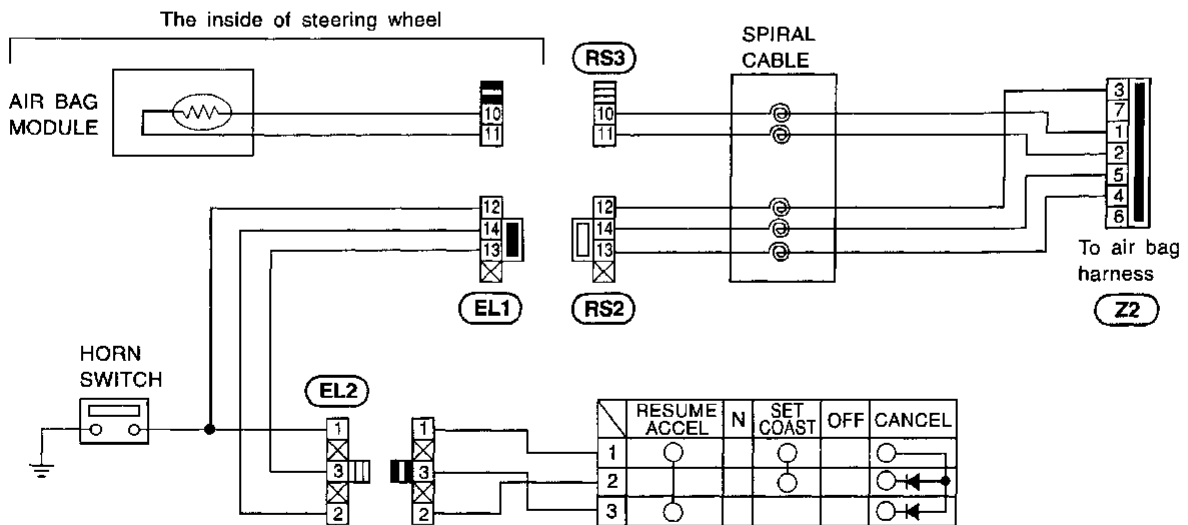
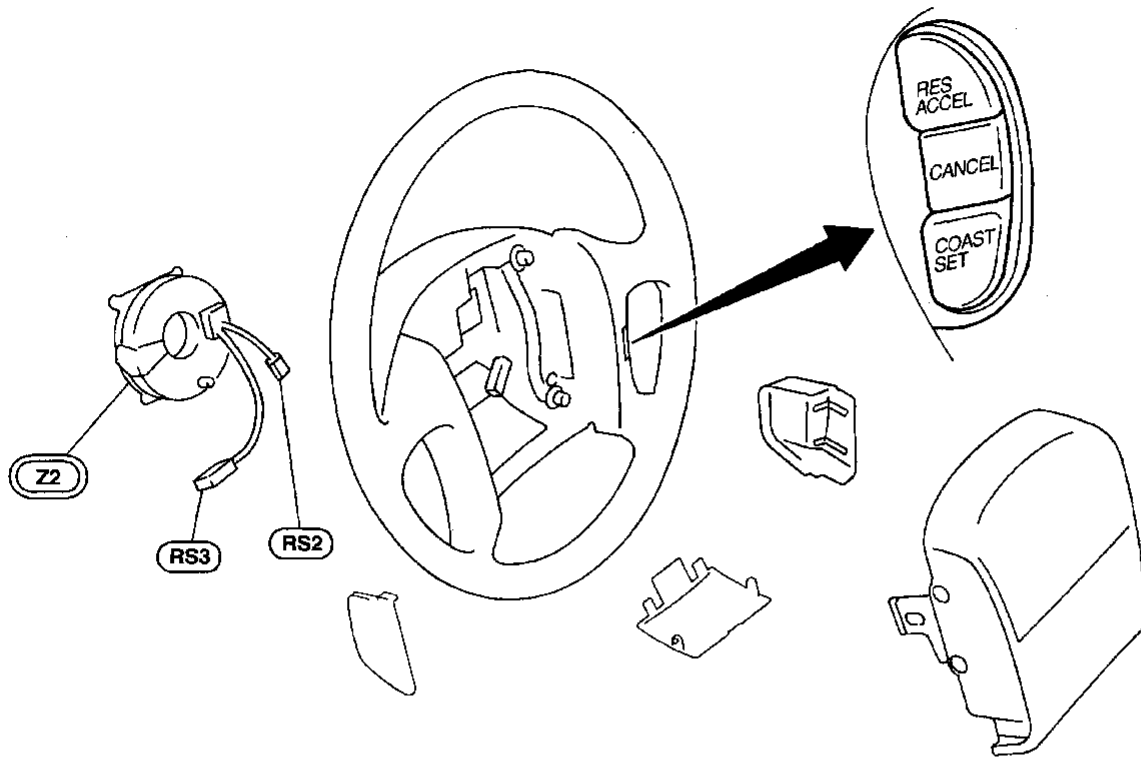
## Replacement

For removal and installation of spiral cable, refer to RS section ["Installation — Air Bag Module and Spiral Cable", "SUPPLEMENTAL RESTRAINT SYSTEM (SRS)"].

- Each switch can be replaced without removing combination switch base.
- To remove combination switch base, remove base attaching screw.
- Before installing the steering wheel, align the steering wheel guide pins with the screws which secure the combination switch as shown in the left figure.

# STEERING SWITCH

Check



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

## System Description (For U.S.A.)

Power is supplied at all times

- through 15A fuse (No. 54), located in the fuse and fusible link box
- to lighting switch terminal 5, and
- through 15A fuse (No. 53), located in the fuse and fusible link box
- to lighting switch terminal 8.

When the lighting switch is turned to the 2ND and LOW ("B") position, power is supplied

- from lighting switch terminal 10
- to terminal 2 of the headlamp LH, and
- from lighting switch terminal 7
- to terminal 2 of the headlamp RH.

Terminal 3 of each headlamp supplies ground through body grounds E5 and E30.

With power and ground supplied, the headlamps will illuminate.

When the lighting switch is placed in the 2ND and HIGH ("A") or PASS ("C") position, power is supplied

- from lighting switch terminal 9
- to terminal 1 of the headlamp LH, and
- to combination meter terminal 21 for the HIGH BEAM indicator, and
- from lighting switch terminal 6
- to terminal 1 of the headlamp RH.

Ground is supplied to terminal 20 of the combination meter through body grounds M13, M73 and M111.

With power and ground supplied, the high beams and the HIGH BEAM indicator illuminate.

### **With theft warning system**

The theft warning system will flash the high beams if the system is triggered. Refer to "THEFT WARNING SYSTEM — IVMS" (EL-250).

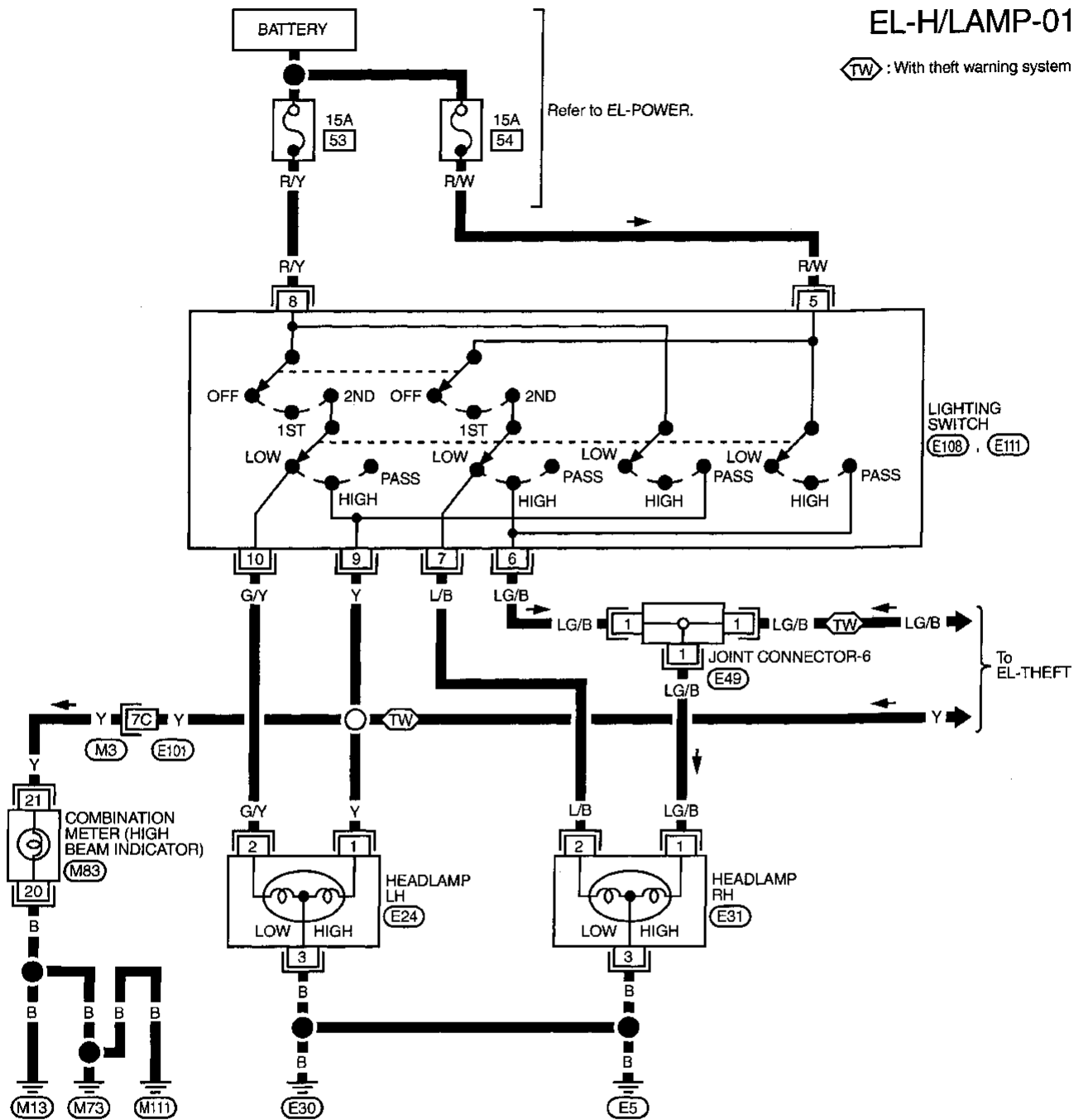


# HEADLAMP

## Wiring Diagram (For U.S.A.) — H/LAMP —

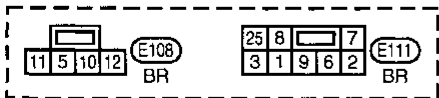
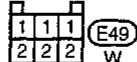
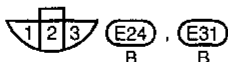
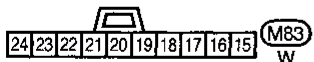
EL-H/LAMP-01

(TW) : With theft warning system



Refer to last page (Foldout page).

(M3), (E101)



GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

EL

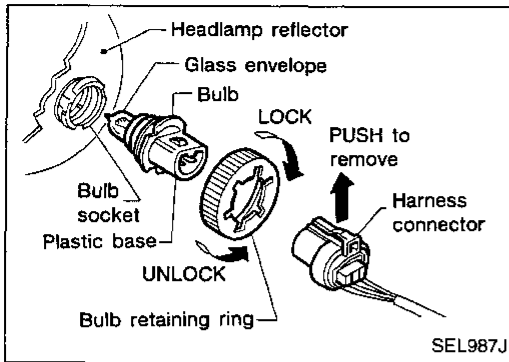
IDX

# HEADLAMP

## Trouble Diagnoses/Headlamp

Symptom	Possible cause	Repair order
LH headlamps do not operate.	<ol style="list-style-type: none"> <li>1. Bulb</li> <li>2. 15A fuse</li> <li>3. Lighting switch</li> </ol>	<ol style="list-style-type: none"> <li>1. Check bulb.</li> <li>2. Check 15A fuse (No. 53, located in fusible link).</li> <li>3. Check lighting switch.</li> </ol>
RH headlamps do not operate.	<ol style="list-style-type: none"> <li>1. Bulb</li> <li>2. 15A fuse</li> <li>3. Lighting switch</li> </ol>	<ol style="list-style-type: none"> <li>1. Check bulb.</li> <li>2. Check 15A fuse (No. 54, located in fusible link).</li> <li>3. Check lighting switch.</li> </ol>
LH high beam does not operate, but LH low beam operates.	<ol style="list-style-type: none"> <li>1. Bulb</li> <li>2. Open in LH high beam circuit</li> <li>3. Lighting switch</li> </ol>	<ol style="list-style-type: none"> <li>1. Check bulb.</li> <li>2. Check harness between lighting switch terminal ⑨ and headlamp LH for an open circuit.</li> <li>3. Check lighting switch.</li> </ol>
LH low beam does not operate, but LH high beam operates.	<ol style="list-style-type: none"> <li>1. Bulb</li> <li>2. Open in LH low beam circuit</li> <li>3. Lighting switch</li> </ol>	<ol style="list-style-type: none"> <li>1. Check bulb.</li> <li>2. Check harness between lighting switch terminal ⑩ and headlamp LH for an open circuit.</li> <li>3. Check lighting switch.</li> </ol>
RH high beam does not operate, but RH low beam operates.	<ol style="list-style-type: none"> <li>1. Bulb</li> <li>2. Open in RH high beam circuit</li> <li>3. Lighting switch</li> </ol>	<ol style="list-style-type: none"> <li>1. Check bulb.</li> <li>2. Check harness between lighting switch terminal ⑥ and headlamp RH for an open circuit.</li> <li>3. Check lighting switch.</li> </ol>
RH low beam does not operate, but RH high beam operates.	<ol style="list-style-type: none"> <li>1. Bulb</li> <li>2. Open in RH low beam circuit</li> <li>3. Lighting switch</li> </ol>	<ol style="list-style-type: none"> <li>1. Check bulb.</li> <li>2. Check harness between lighting switch terminal ⑦ and headlamp RH for an open circuit.</li> <li>3. Check lighting switch.</li> </ol>
High beam indicator does not work.	<ol style="list-style-type: none"> <li>1. Bulb</li> <li>2. Open in high beam circuit</li> </ol>	<ol style="list-style-type: none"> <li>1. Check bulb in combination meter.</li> <li>2-1. Check harness between lighting switch and combination meter for an open circuit.</li> <li>2-2. Verify battery positive voltage is present at terminal ⑫ of combination meter, when high beam illuminates.</li> </ol>

# HEADLAMP



## Bulb Replacement

The headlamp is a semi-sealed beam type which uses a replaceable halogen bulb. The bulb can be replaced from the engine compartment side without removing the headlamp body.

- **Grasp only the plastic base when handling the bulb. Never touch the glass envelope.**

1. Disconnect the battery cable.
2. Turn the bulb retaining ring counterclockwise until it is free from the headlamp reflector, and then remove it.
3. Disconnect the harness connector from the back side of the bulb.
4. Remove the headlamp bulb carefully. Do not shake or rotate the bulb when removing it.
5. Install in the reverse order of removal.

### CAUTION:

Do not leave the bulb out of the headlamp reflector for a long period of time as dust, moisture, smoke, etc. may enter the headlamp body and affect the performance of the headlamp. Thus, the headlamp bulb should not be removed from the headlamp reflector until just before a replacement bulb is to be installed.

## Bulb Specifications

Item	Wattage (12V)
Semi-sealed beam High/Low	60/45 (HB1)

## Aiming Adjustment

When performing headlamp aiming adjustment, use an aiming machine, aiming wall screen or headlamp tester. For operating instructions of any aimer, it should be in good repair, calibrated and used according to respective operation manuals supplied with the unit.

If any aimer is not available, aiming adjustment can be done as follows:

**For details, refer to the regulations in your own country.**

- a. Keep all tires inflated to correct pressures.
- b. Place vehicle and tester on one and same flat surface.
- c. See that there is no-load in vehicle (coolant, engine oil filled up to correct level and full fuel tank) other than the driver (or equivalent weight placed in driver's position).

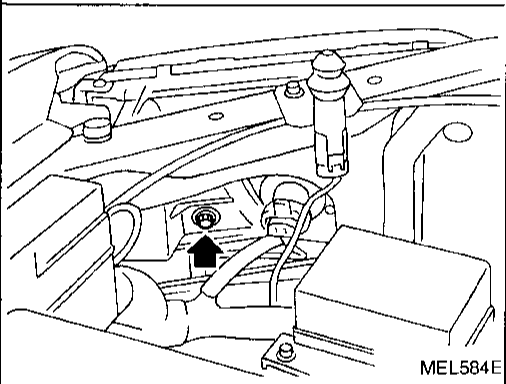
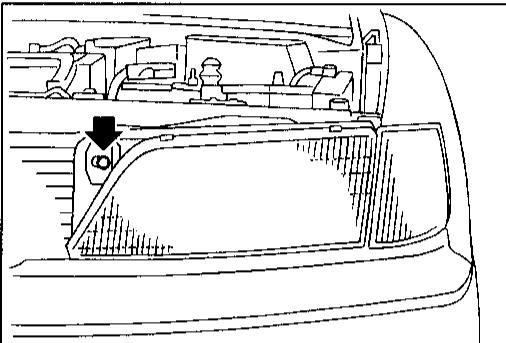
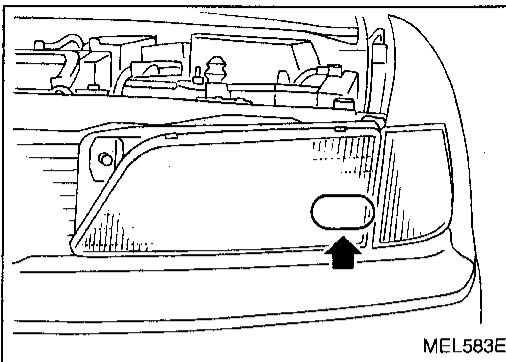
# HEADLAMP

## Aiming Adjustment (Cont'd)

### AIMER ADJUSTMENT MARK

When using a mechanical aimer, adjust adapter legs to the data marked on the headlamps.

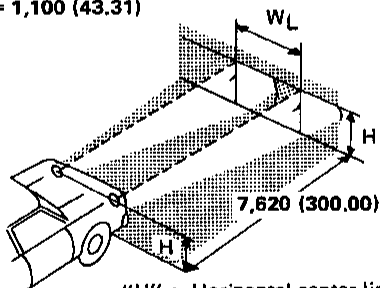
Example:



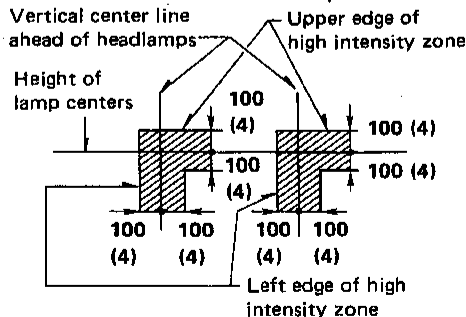
### LOW BEAM

1. Turn headlamp low beam on.
  2. Use adjusting screws to perform aiming adjustment.
- First tighten the adjusting screw all the way and then make adjustment by loosening the screw.

$W_L = 1,100 (43.31)$



"H" : Horizontal center line of headlamps



▨ = ACCEPTABLE RANGE

Unit: mm (in)

SEL866L

- Upper edge and left edge of high intensity zone should be within the range shown at left. Adjust headlamps accordingly.
  - Dotted lines in illustration show center of headlamp.
- "H": Horizontal center line of headlamps  
 "W<sub>L</sub>": Distance between each headlamp center

**System Description (For Canada)**

The headlamp system on vehicles for Canada contains a daytime light unit. The unit activates the high beam headlamps at approximately half illumination whenever the engine is running. If the parking brake is applied before the engine is started, the daytime lights will not be illuminated. The daytime lights will illuminate once the parking brake is released. After that, the daytime lights will continue to operate even when the parking brake is applied.

Power is supplied at all times

- through 15A fuse (No. 53, located in the fuse and fusible link box)
- to daytime light control unit terminal ③ and
- to lighting switch terminal ⑧.

Power is also supplied at all times

- through 15A fuse (No. 54, located in the fuse and fusible link box)
- to daytime light control unit terminal ②,
- to lighting switch terminal ⑤ and

With the ignition switch in the ON or START position, power is supplied

- through 7.5A fuse [No. 12, located in the fuse block (J/B)]
- to daytime light control unit terminal 12.

Ground is supplied to daytime light control unit terminal ⑨ through body grounds E5 and E30.

**HEADLAMP OPERATION**

**Low beam operation**

When the lighting switch is moved to the 2ND and LOW ("B") position, power is supplied

- from lighting switch terminal 10
- to headlamp LH terminal 2.

Ground is supplied to headlamp LH terminal ③ through body grounds E5 and E30.

Also, when the lighting switch is moved to the 2ND and LOW ("B") position, power is supplied

- from lighting switch terminal 7
- to headlamp RH terminal 2.

Ground is supplied

- to headlamp RH terminal ③
- from daytime light control unit terminal 7
- through daytime light control unit terminal ⑨
- through body grounds E5 and E30.

With power and ground supplied, the low beam headlamps illuminate.

**High beam operation**

When the lighting switch is moved to the 2ND and HIGH ("A") or PASS ("C") position, power is supplied

- from lighting switch terminal 9
- to headlamp LH terminal 1.

Also, when the lighting switch is moved to the 2ND and HIGH ("A") or PASS ("C") position, power is supplied

- from lighting switch terminal 6
- to daytime light control unit terminal 5
- to combination meter terminal 21 for the high beam indicator
- through daytime light control unit terminal 6
- to headlamp RH terminal 1.

Ground is supplied in the same manner as low beam operation.

Ground is supplied to terminal 20 of the combination meter through body grounds M13, M73 and M111.

With power and ground supplied, the high beam headlamps illuminate.

**DAYTIME LIGHT OPERATION**

With the engine running and the lighting switch in the OFF position, power is supplied

- to daytime light control unit terminal ③
- through daytime light control unit terminal ⑥
- to headlamp RH terminal ①
- through headlamp RH terminal ③
- to daytime light control unit terminal 7
- through daytime light control unit terminal ⑧
- to headlamp LH terminal ①.

Ground is supplied to headlamp LH terminal ③ through body grounds E5 and E30.

Because the high beam headlamps are now connected in series, they operate at half illumination.

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# HEADLAMP — Daytime Light System —

## Operation (For Canada)

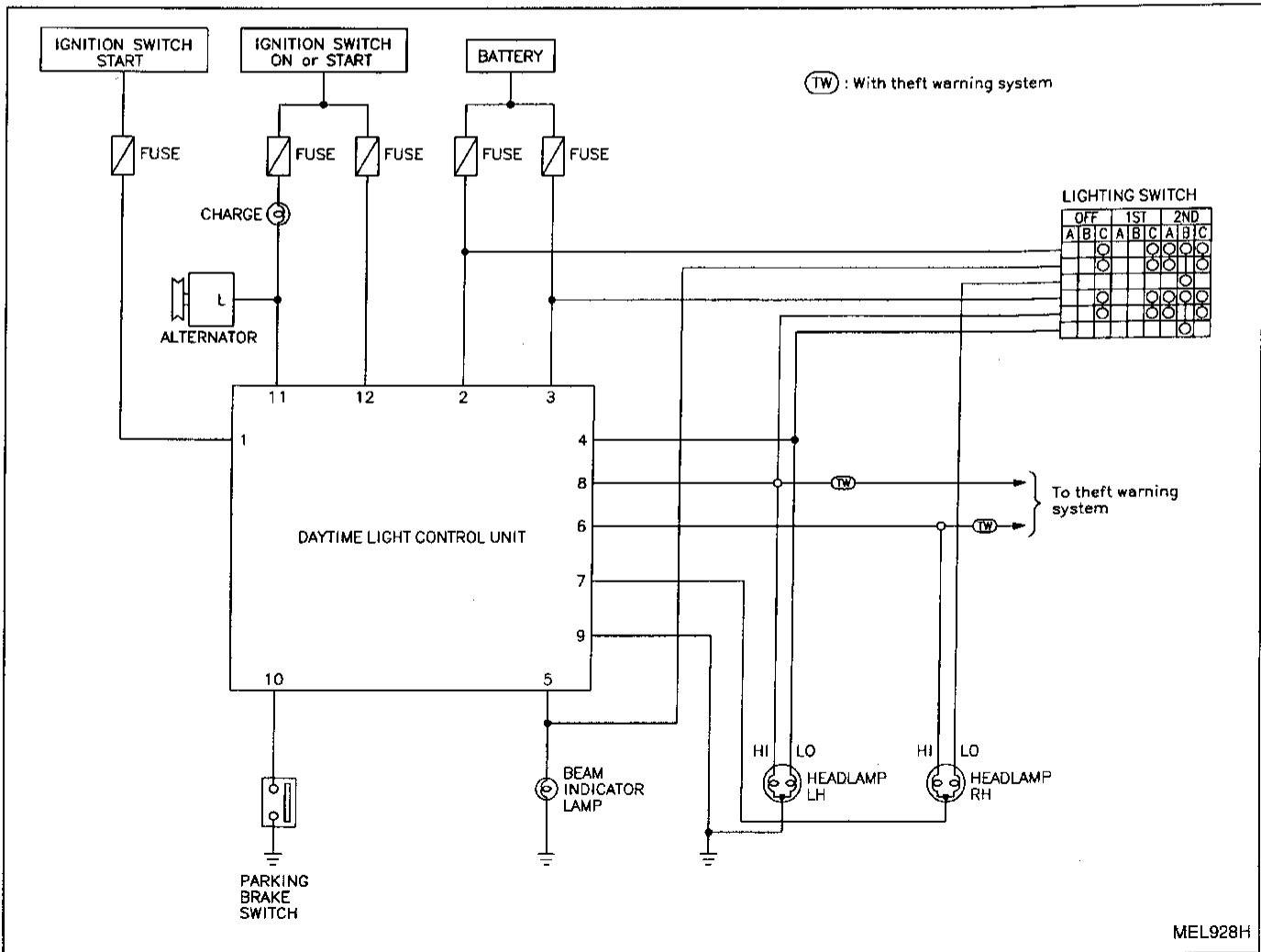
After starting the engine with the lighting switch in the "OFF" position or "1ST" position, the headlamp high beam automatically turns on. Lighting switch operations other than the above are the same as conventional light systems.

Engine		With engine stopped									With engine running								
Lighting switch		OFF			1ST			2ND			OFF			1ST			2ND		
		A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Headlamp	High beam	X	X	O	X	X	O	O	X	O	△*	△*	O	△*	△*	O	O	X	O
	Low beam	X	X	X	X	X	X	X	O	X	X	X	X	X	X	X	X	O	X
Clearance and tail lamp		X	X	X	O	O	O	O	O	O	X	X	X	O	O	O	O	O	O
License and instrument illumination lamp		X	X	X	O	O	O	O	O	O	X	X	X	O	O	O	O	O	O

- A : "HIGH BEAM" position
- B : "LOW BEAM" position
- C : "FLASH TO PASS" position
- O : Lamp "ON"
- X : Lamp "OFF"
- △ : Lamp dims.

\* : When starting the engine with the parking brake released, the daytime lamp will come ON.  
 When starting the engine with the parking brake pulled, the daytime lamp will not come ON.

## Schematic (For Canada)

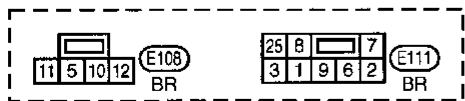
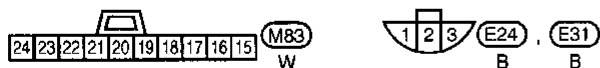
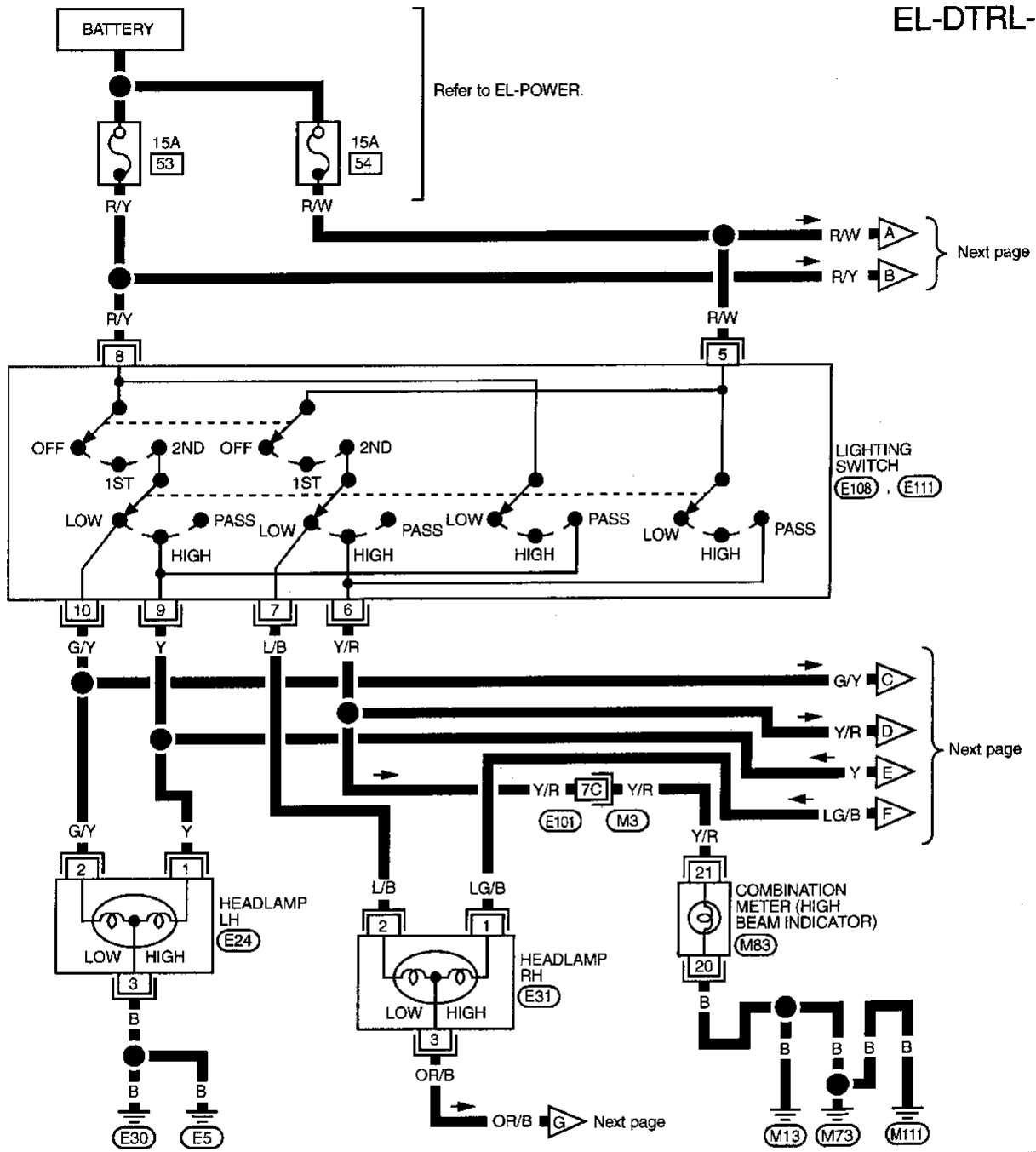


MEL928H

# HEADLAMP — Daytime Light System —

## Wiring Diagram (For CANADA) — DTRL —

EL-DTRL-01



Refer to last page (Foldout page).  
M3, E101

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

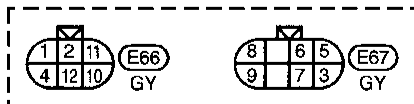
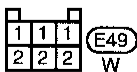
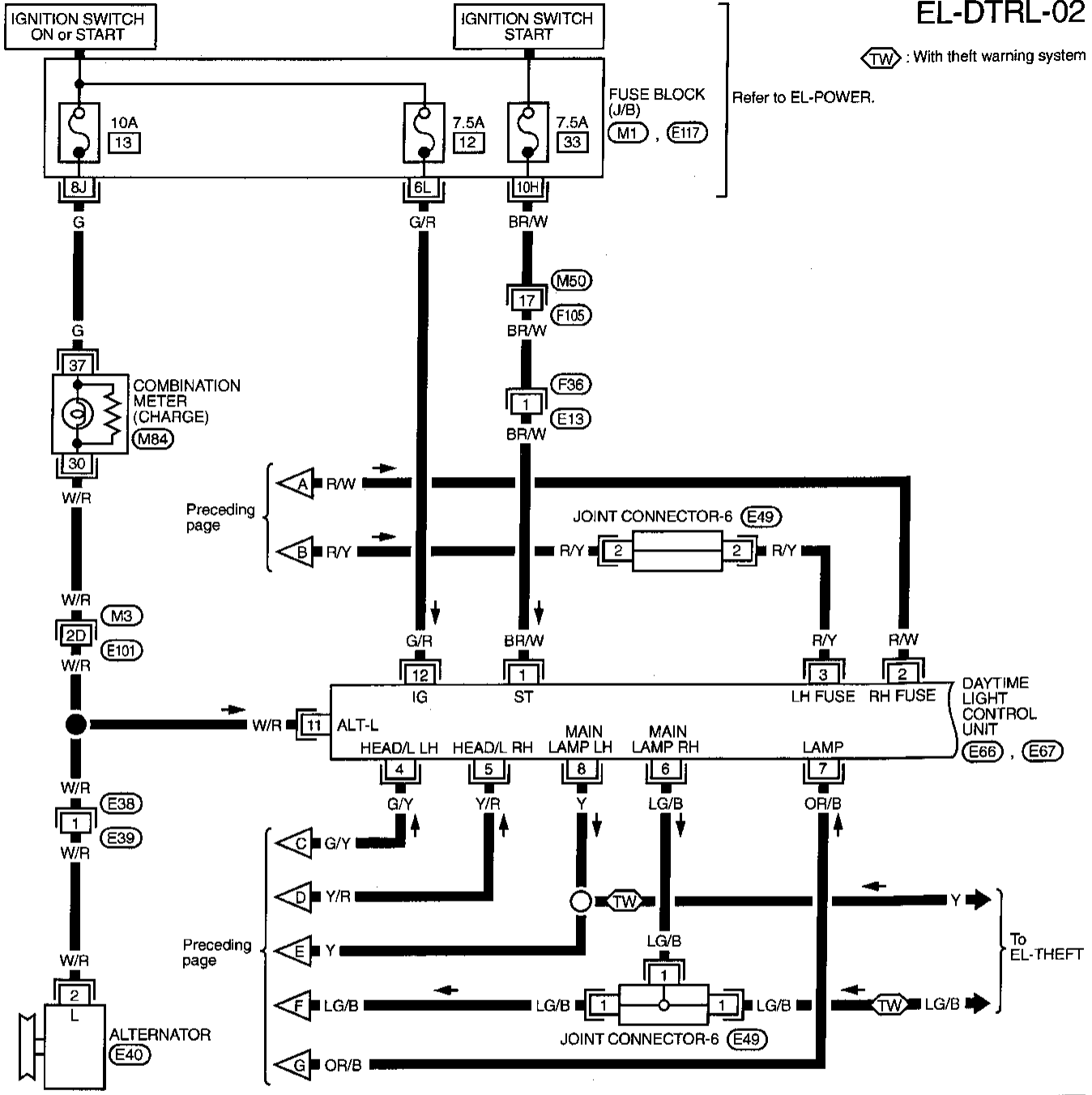
# HEADLAMP — Daytime Light System —

## Wiring Diagram (For CANADA) — DTRL — (Cont'd)

EL-DTRL-02

: With theft warning system

Refer to EL-POWER.



Refer to last page (Foldout page).

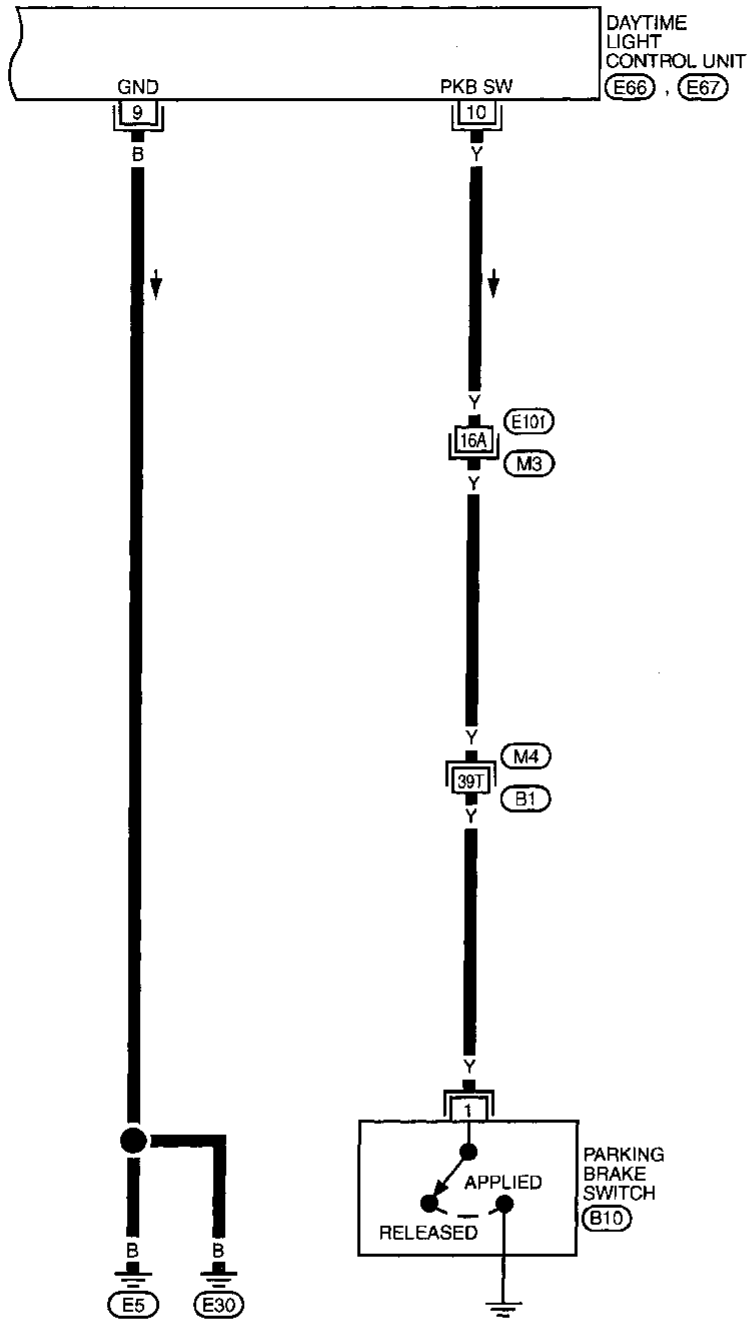
- (M1)
- (M3) , (E101)
- (E117)



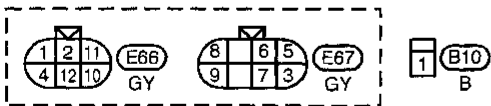
# HEADLAMP — Daytime Light System —

## Wiring Diagram (For CANADA) — DTRL — (Cont'd)

EL-DTRL-03



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX



Refer to last page (Foldout page).









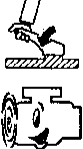

M3, E101  
M4, B1

# HEADLAMP — Daytime Light System —

## Trouble Diagnoses (For Canada)









### DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

(Data are reference values.)

Terminal No.	Wire color	Item	Condition	Judgement standard
1	BR/W	Start signal	 When turning ignition switch to "ST"	Battery voltage
			 When turning ignition switch to "ON" from "ST"	Less than 1V
			 When turning ignition switch to "OFF"	Less than 1V
2	R/W	Power source	 When turning ignition switch to "ON"	Battery voltage
			 When turning ignition switch to "OFF"	Battery voltage
3	R/Y	Power source	 When turning ignition switch to "ON"	Battery voltage
			 When turning ignition switch to "OFF"	Battery voltage
4	G/Y	Lighting switch (Low beam)	When turning lighting switch to headlamp "ON" (2ND) position, "LOW BEAM"	Battery voltage
5	Y/R	Lighting switch (High beam)	When turning lighting switch to "HIGH" ("A")	Battery voltage
			When turning lighting switch to "PASS" ("C")	Battery voltage
6	LG/B	RH high beam	When turning lighting switch to "HIGH" ("C")	Battery voltage
			 When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) <b>CAUTION: Block wheels and ensure selector lever is in N or P position.</b>	Battery voltage
7	OR/B	RH headlamp control (ground)	When lighting switch is turned to headlamp "ON" (2ND) position, "LOW BEAM"	Less than 1V
			 When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) <b>CAUTION: Block wheels and ensure selector lever is in N or P position.</b>	Approx. half battery voltage
8	Y	LH high beam	When turning lighting switch to "HIGH" ("A")	Battery voltage
			 When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) <b>CAUTION: Block wheels and ensure selector lever is in N or P position.</b>	Approx. half battery voltage
9	B	Ground	—	—

# HEADLAMP — Daytime Light System —

## Trouble Diagnoses (For Canada) (Cont'd)

Terminal No.	Wire color	Item	Condition		Judgement standard
10	Y	Parking brake switch		When parking brake is released	Battery voltage
				When parking brake is set	Less than 1.5V
11	W/R	Alternator		When turning ignition switch to "ON"	Less than 1V
				When engine is running	Battery voltage
				When turning ignition switch to "OFF"	Less than 1V
12	G/R	Power source		When turning ignition switch to "ON"	Battery voltage
				When turning ignition switch to "ST"	Battery voltage
				When turning ignition switch to "OFF"	Less than 1V

### Bulb Replacement

Refer to "HEADLAMP" (EL-41).

### Aiming Adjustment

Refer to "HEADLAMP" (EL-41).

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

EL

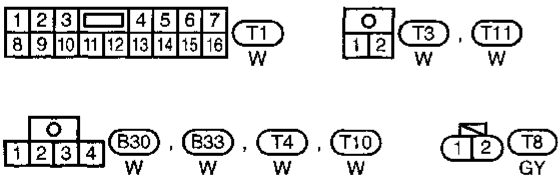
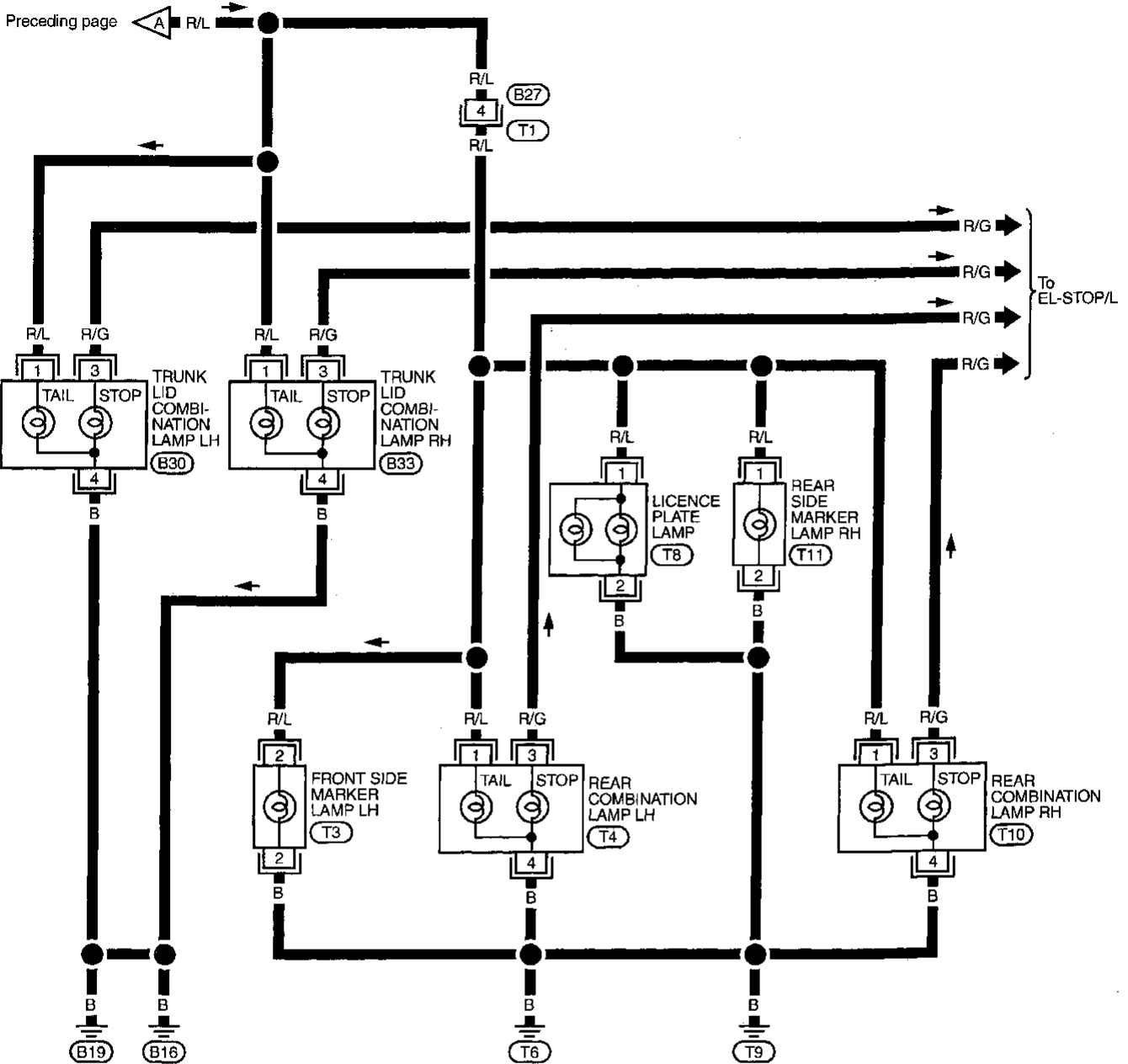
IDX



# PARKING, LICENSE AND TAIL LAMPS

## Wiring Diagram — TAIL/L — (Cont'd)

EL-TAIL/L-02



GI  
MA  
EM  
LG  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

## System Description

### TURN SIGNAL OPERATION

With the hazard switch in the OFF position and the ignition switch in the ON or START position, power is supplied

- through 7.5A fuse [No. 14], located in the fuse block (J/B)
- to hazard switch terminal ②
- through terminal ① of the hazard switch
- to combination flasher unit terminal ①
- through terminal ③ of the combination flasher unit
- to turn signal switch terminal ①.

Ground is supplied to combination flasher unit terminal ② through body grounds (M13), (M73) and (M111).

#### LH turn

When the turn signal switch is moved to the LH position, power is supplied from turn signal switch terminal ③ to

- front turn signal lamp LH terminal ① [through fuse block (J/B) terminals (5S) and (6S)]
- rear combination lamp LH terminal ② [through fuse block (J/B) terminals (5S) and (4Q)] and
- combination meter terminal ⑭ [through fuse block (J/B) terminals (5S) and (12J)].

Ground is supplied to the front turn signal lamp LH terminal ② through body grounds (E5) and (E30).

Ground is supplied to the rear combination lamp LH terminal ④ through body grounds (T6) and (T9).

Ground is supplied to combination meter terminal ⑦ through body grounds (M13), (M73) and (M111).

With power and grounds supplied, the combination flasher unit controls the flashing interval of the LH turn signal lamps.

#### RH turn

When the turn signal switch is moved to the RH position, power is supplied from turn signal switch terminal ② to

- front turn signal lamp RH terminal ① [through fuse block (J/B) terminals (14S) and (10S)]
- rear combination lamp RH terminal ② [through fuse block (J/B) terminals (14S) and (13Q)] and
- combination meter terminal ⑭ [through fuse block (J/B) terminals (14S) and (5H)].

Ground is supplied to the front turn signal lamp RH terminal ② through body grounds (E5) and (E30).

Ground is supplied to the rear combination lamp RH terminal ④ through body grounds (T6) and (T9).

Ground is supplied to combination meter terminal ⑦ through body grounds (M13), (M73) and (M111).

With power and ground supplied, the combination flasher unit controls the flashing interval of the RH turn signal lamps.

### HAZARD LAMP OPERATION

Power is supplied at all times

- through 10A fuse [No. 11], located in the fuse block (J/B)
- to hazard switch terminal ③.

With the hazard switch in the ON position, power is supplied

- through terminal ① of the hazard switch
- to combination flasher unit terminal ①
- through terminal ③ of the combination flasher unit
- to hazard switch terminal ④.

Ground is supplied to the combination flasher unit terminal ② through body grounds (M13), (M73) and (M111).

Power is supplied from hazard switch terminal ⑤ to LH side turn signal lamps.

Power is also supplied from hazard switch terminal ⑥ to RH side turn signal lamps.

With power and ground supplied, the combination flasher unit controls the flashing interval of the hazard warning lamps.

### HAZARD REMINDER FOR MULTI-REMOTE CONTROL SYSTEM

Power is supplied at all times

- through 10A fuse [No. 11], located in the fuse block (J/B)
- to multi-remote control relay terminals ①, ③ and ⑥.

When the multi-remote control system receives a LOCK signal from the remote controller, intermittent ground signal is supplied twice

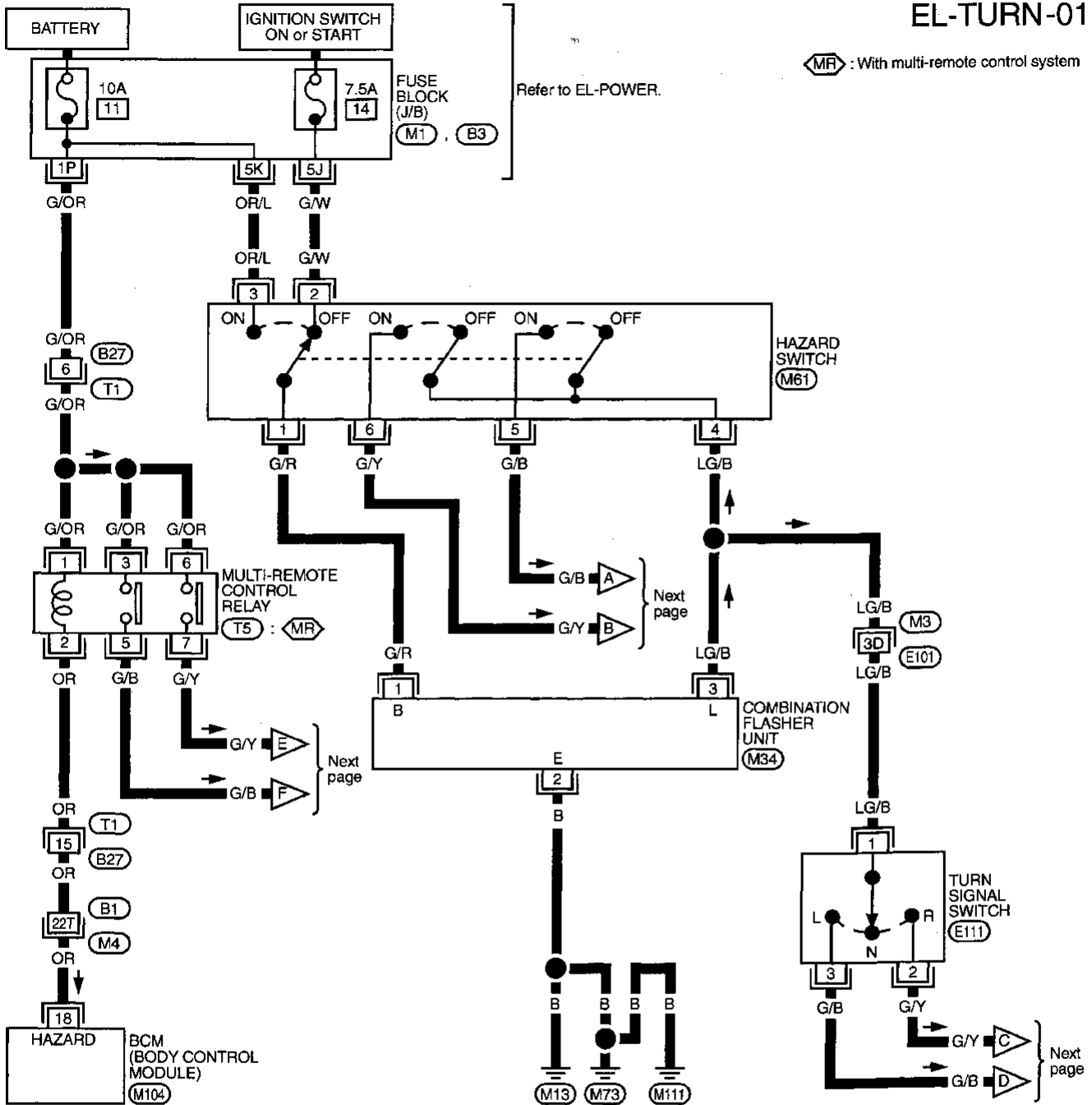
- to multi-remote control relay terminal ②
- through BCM terminal 18.

Multi-remote control relay is energized, and hazard warning lamp flashes twice as a reminder. For detailed description, refer to "Multi-remote Control System", EL-232.

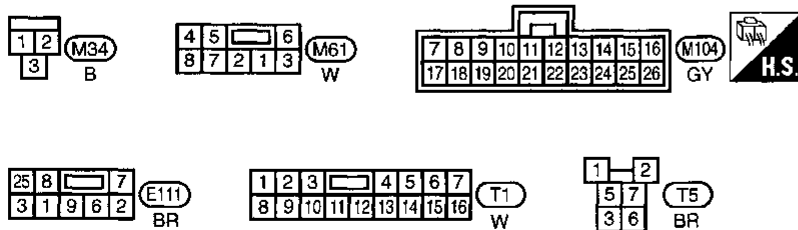
# TURN SIGNAL AND HAZARD WARNING LAMPS

## Wiring Diagram — TURN —

EL-TURN-01



Refer to last page (Foldout page).



- M1
- M3, E101
- M4, B1
- B3

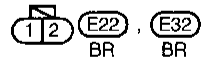
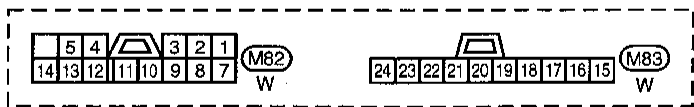
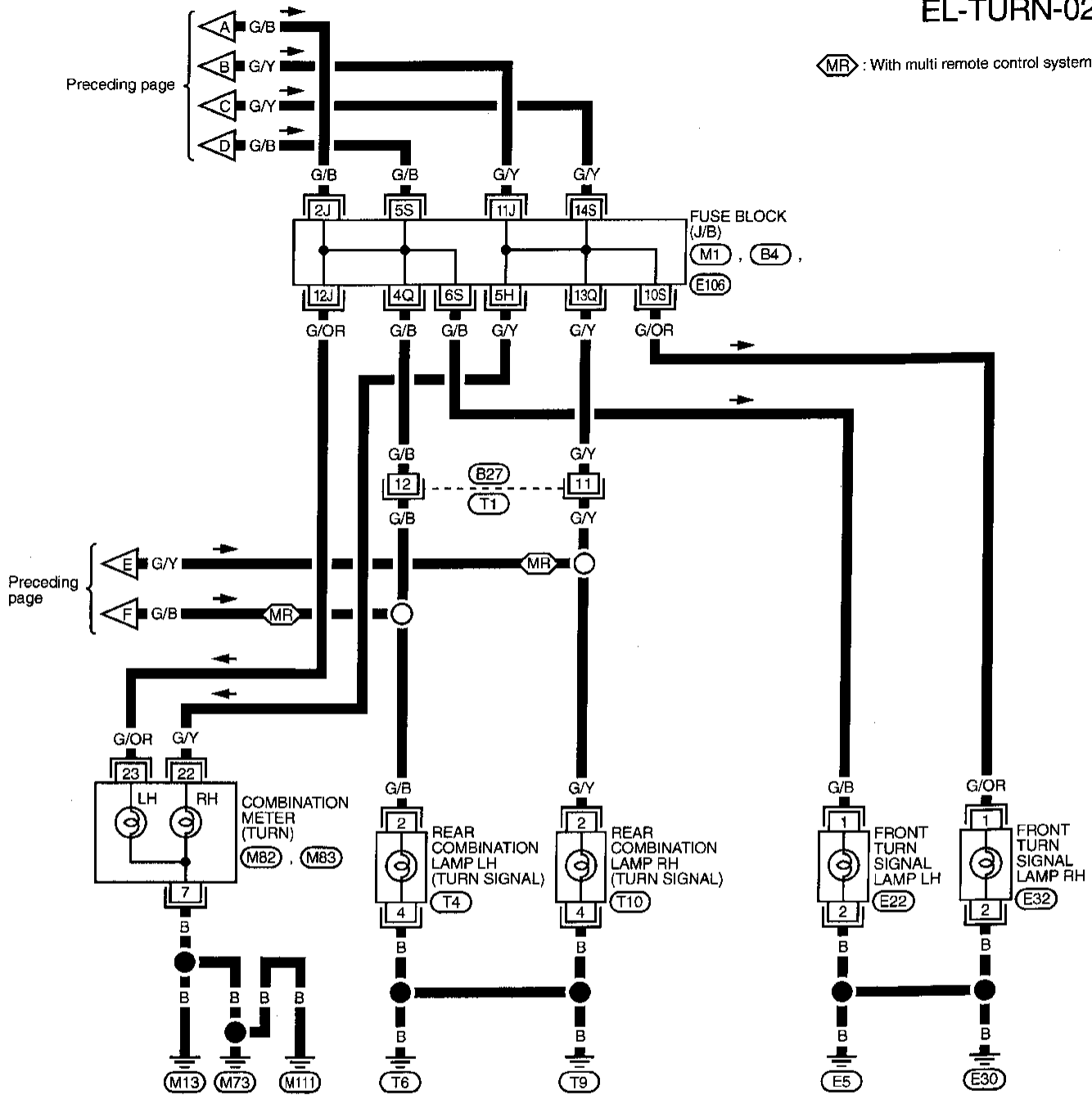
GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# TURN SIGNAL AND HAZARD WARNING LAMPS

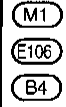
## Wiring Diagram — TURN — (Cont'd)

EL-TURN-02

ⓂR : With multi remote control system



Refer to last page (Foldout page).





# TURN SIGNAL AND HAZARD WARNING LAMPS

## Trouble Diagnoses

Symptom	Possible cause	Repair order
Turn signal and hazard warning lamps do not operate.	<ol style="list-style-type: none"> <li>1. Hazard switch</li> <li>2. Combination flasher unit</li> <li>3. Open in combination flasher unit circuit</li> </ol>	<ol style="list-style-type: none"> <li>1. Check hazard switch.</li> <li>2. Refer to combination flasher unit check.</li> <li>3. Check wiring to combination flasher unit for open circuit.</li> </ol>
Turn signal lamps do not operate but hazard warning lamps operate.	<ol style="list-style-type: none"> <li>1. 7.5A fuse</li> <li>2. Hazard switch</li> <li>3. Turn signal switch</li> <li>4. Open in turn signal switch circuit</li> </ol>	<ol style="list-style-type: none"> <li>1. Check 7.5A fuse (No. <u>14</u>, located in fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal ② of hazard switch.</li> <li>2. Check hazard switch.</li> <li>3. Check turn signal switch.</li> <li>4. Check harness between combination flasher unit terminal ③ and turn signal switch terminal ① for open circuit.</li> </ol>
Hazard warning lamps do not operate but turn signal lamps operate.	<ol style="list-style-type: none"> <li>1. 10A fuse</li> <li>2. Hazard switch</li> <li>3. Open in hazard switch circuit</li> </ol>	<ol style="list-style-type: none"> <li>1. Check 10A fuse (No. <u>11</u>, located in fuse block). Verify battery positive voltage is present at terminal ③ of hazard switch.</li> <li>2. Check hazard switch.</li> <li>3. Check harness between combination flasher unit terminal ③ and hazard switch terminal ④ for open circuit.</li> </ol>
Individual turn signal lamp or turn indicators do not operate.	<ol style="list-style-type: none"> <li>1. Bulb</li> <li>2. Grounds</li> </ol>	<ol style="list-style-type: none"> <li>1. Check bulb.</li> <li>2. Check ground circuit for the bulb.</li> </ol>

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

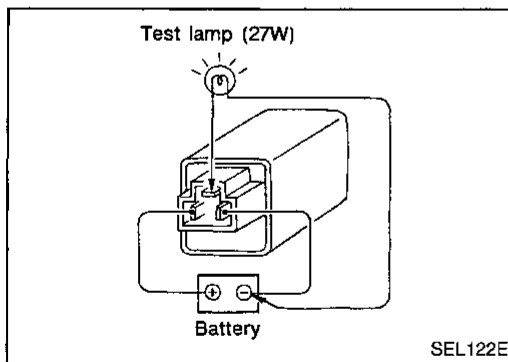
RS

BT

HA

EL

IDX



## Electrical Components Inspection

### COMBINATION FLASHER UNIT CHECK

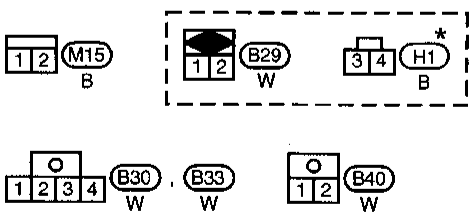
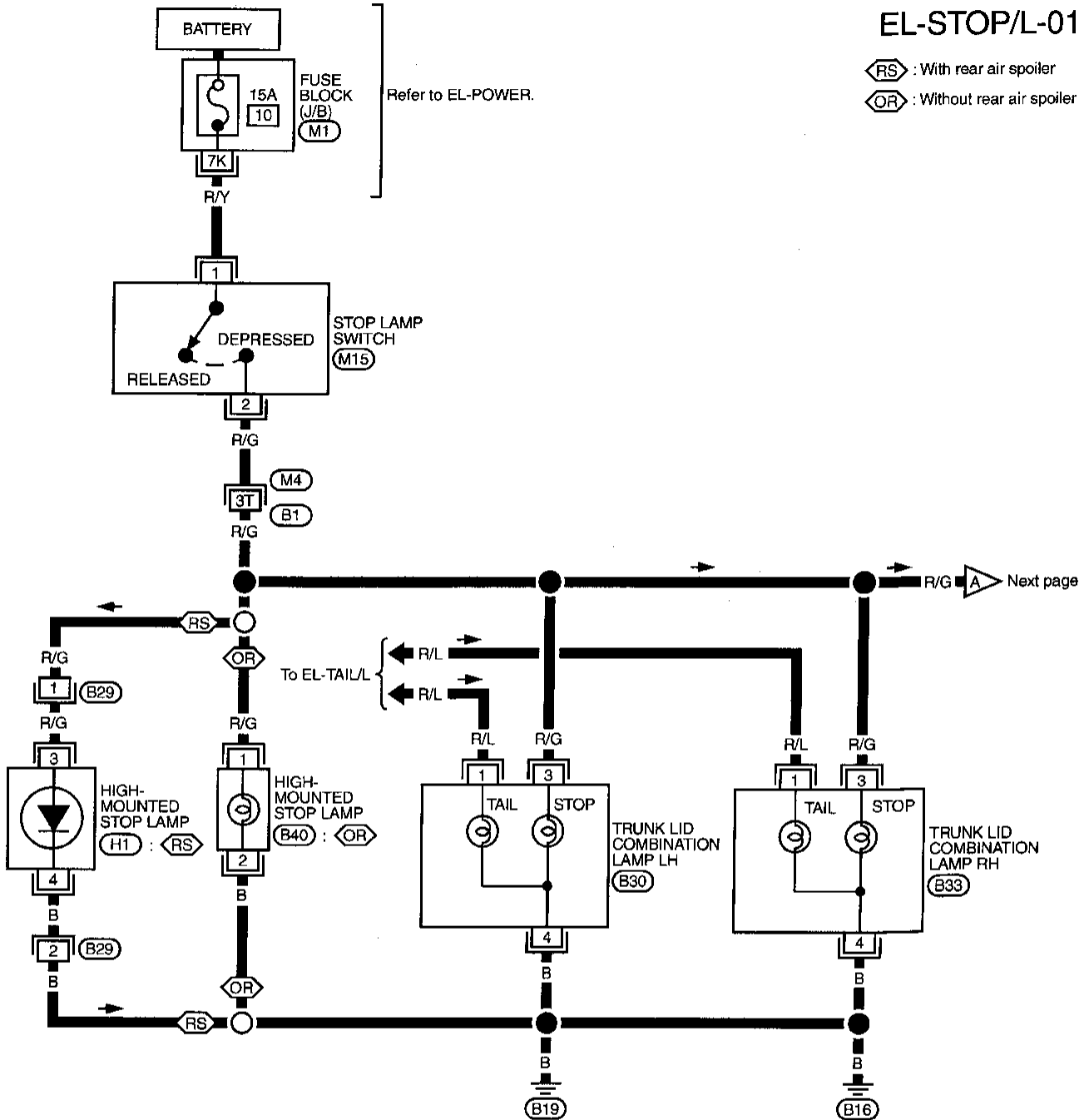
- Before checking, ensure that bulbs meet specifications.
- Connect a battery and test lamp to the combination flasher unit, as shown. Combination flasher unit is properly functioning if it blinks when power is supplied to the circuit.

# STOP LAMP

## Wiring Diagram — STOP/L —

EL-STOP/L-01

RS : With rear air spoiler  
OR : Without rear air spoiler



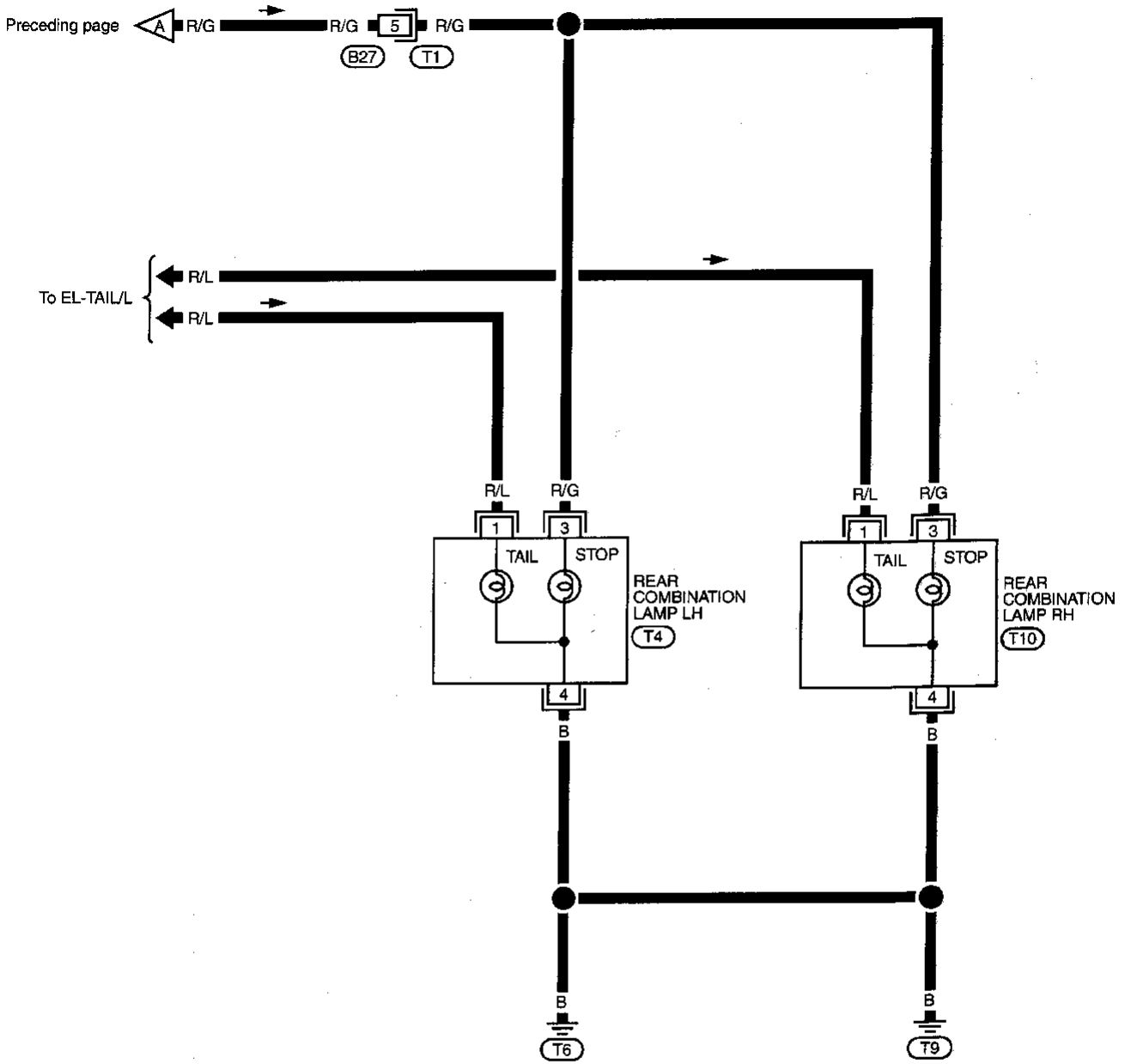
Refer to last page (Foldout page).  
M1  
M4, B1

\*: This connector is not shown in "HARNESS LAYOUT".

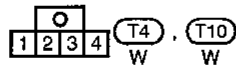
# STOP LAMP

## Wiring Diagram — STOP/L — (Cont'd)

EL-STOP/L-02



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
**EL**  
IDX

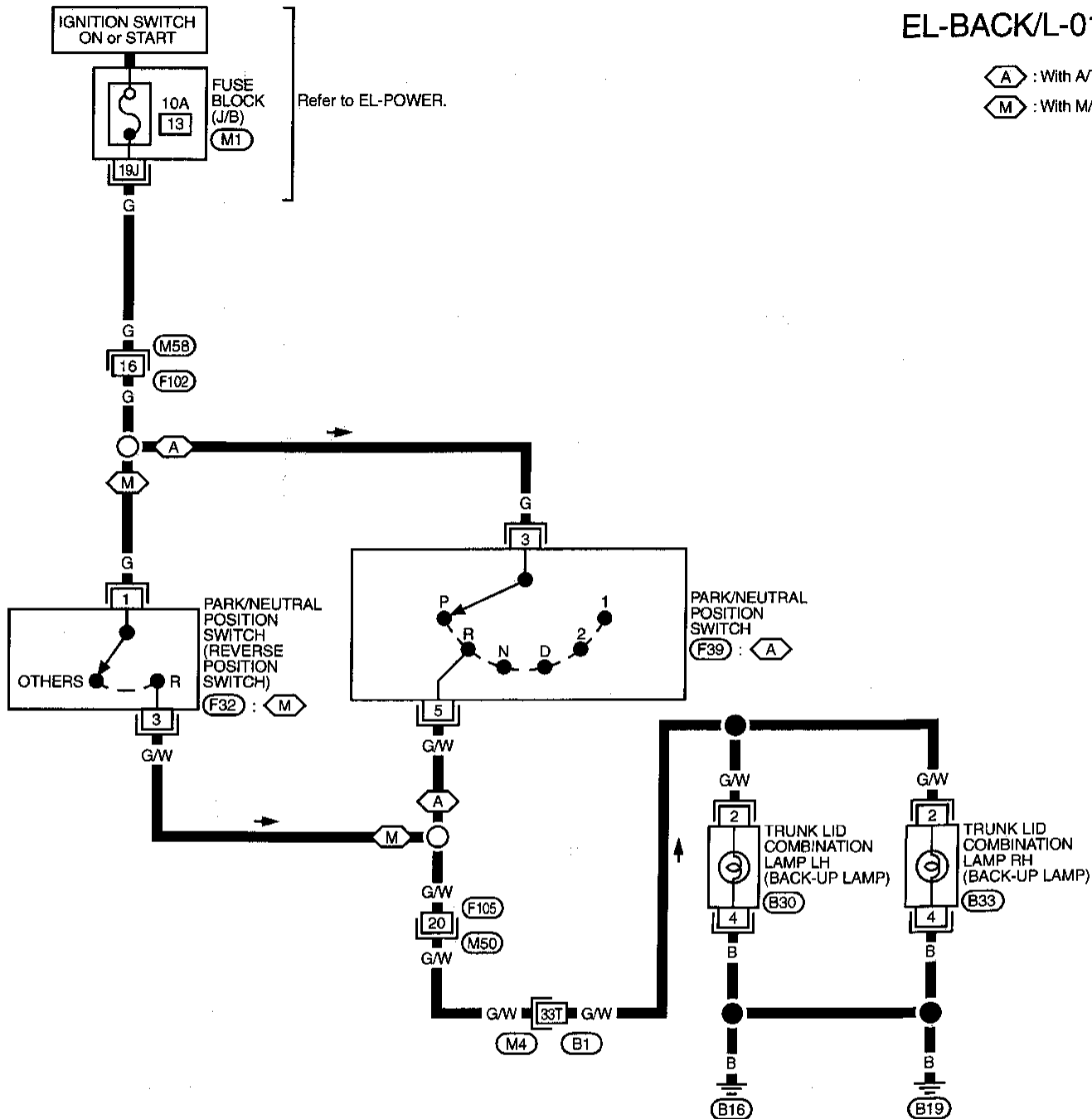


# BACK-UP LAMP

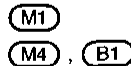
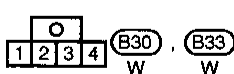
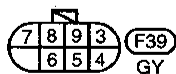
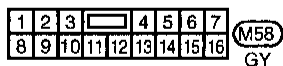
## Wiring Diagram — BACK/L —

EL-BACK/L-01

⬡ : With A/T  
 ⬢ : With M/T



Refer to last page (Foldout page).



# FRONT FOG LAMP

## System Description

Power is supplied at all times to front fog lamp relay terminal ③ through

- 15A fuse (No. 63), located in the fuse and fusible link box.
- With the lighting switch in the 2ND and LOW ("B") position, power is supplied
  - through 15A fuse (No. 53), located in the fuse and fusible link box
  - to lighting switch terminal ⑧
  - through terminal ⑩ of the lighting switch
  - to front fog lamp relay terminal ①.

### Front fog lamp operation

The lighting switch must be in the 2ND and LOW ("B") position for front fog lamp operation.

With the front fog lamp switch in the ON position

- ground is supplied to front fog lamp relay terminal ② through the front fog lamp switch and body grounds E5 and E30.

The front fog lamp relay is energized and power is supplied

- from front fog lamp relay terminal ⑤
- to terminal ① of each front fog lamp.

Ground is supplied to terminal ② of each front fog lamp through body grounds E5 and E30.

With power and ground supplied, the front fog lamps illuminate.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

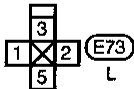
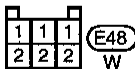
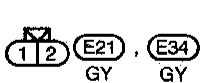
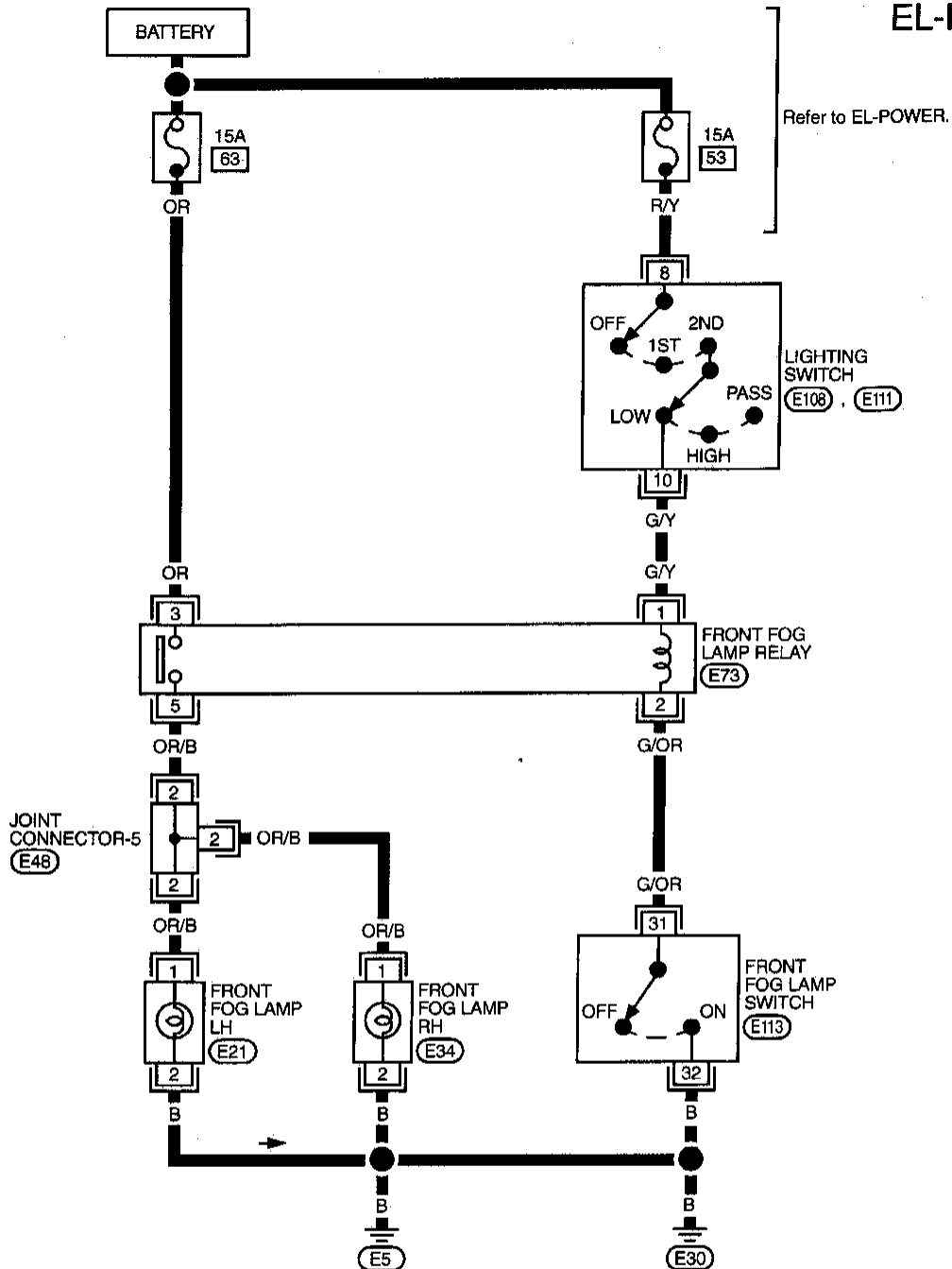
EL

IDX

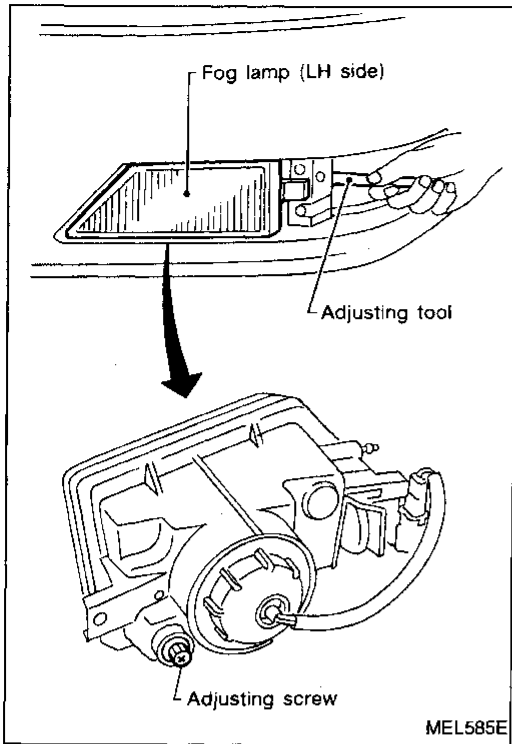
# FRONT FOG LAMP

## Wiring Diagram — F/FOG —

EL-F/FOG-01



# FRONT FOG LAMP

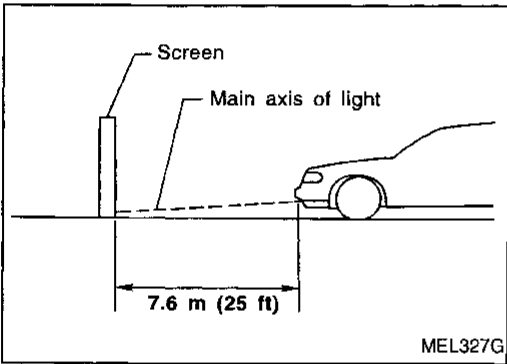


## Aiming Adjustment

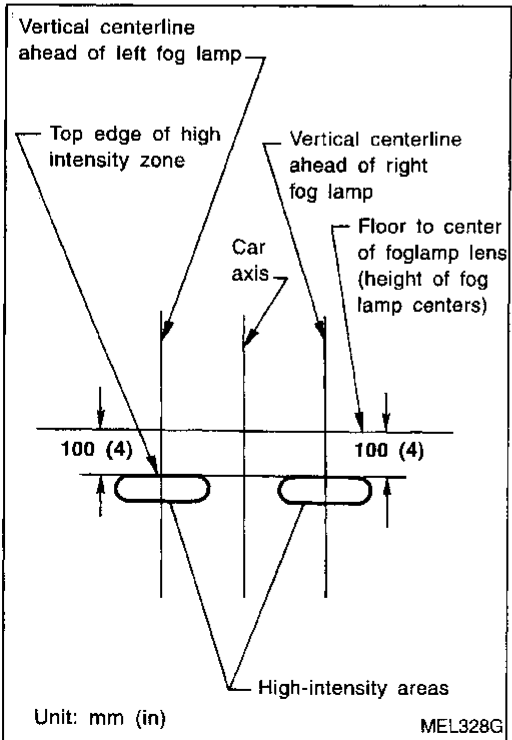
Before performing aiming adjustment, make sure of the following.

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

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



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



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

## Bulb Specifications

Item	Wattage (W)
Front fog lamp	55

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

EL

IDX

# ILLUMINATION

## System Description

Power is supplied at all times

- through 15A fuse (No. 66), located in the fuse and fusible link box
- to lighting switch terminal ⑪.

With the ignition switch in the ON or START position, power is supplied

- through 10A fuse [No. 13], located in the fuse block (J/B)]
- to combination meter terminal ⑳.

Then the illumination of odo/trip meter in combination meter turns on.

The lighting switch must be in the 1ST or 2ND position for illumination.

A variable resistor is built in the illumination control switch to control the amount of current to the illumination system.

The ashtray, clock and the glove box lamp are not controlled by the illumination control switch. The brightness of these lamps does not change.

The following chart shows the power and ground connector terminals for the components included in the illumination system.

Component	Power terminal	Ground terminal
Illumination control switch	①	② and ③
Combination meter	⑳	⑳
Combination meter (Odo/trip meter)	⑳	⑳
A/C auto amp. (With auto A/C)	⑳	⑳
Heater control unit (With manual A/C)	⑱	⑱
Rear window defogger switch	⑤	⑥
Power window switch LH	⑦	⑩
Hazard switch	⑦	⑧
Audio	⑧	⑦
A/T device	④	③
CD player	⑳	⑳
ASCD main switch	⑤	⑥
Power window switch RH	⑭	⑩
Ashtray	①	②
Glove box lamp	①	②
Clock	②	①

With the exception of the glove box lamp, clock illumination and the ashtray illumination, the ground for all of the components are controlled through terminals ② and ③ of the illumination control switch and body grounds M13, M73 and M111.

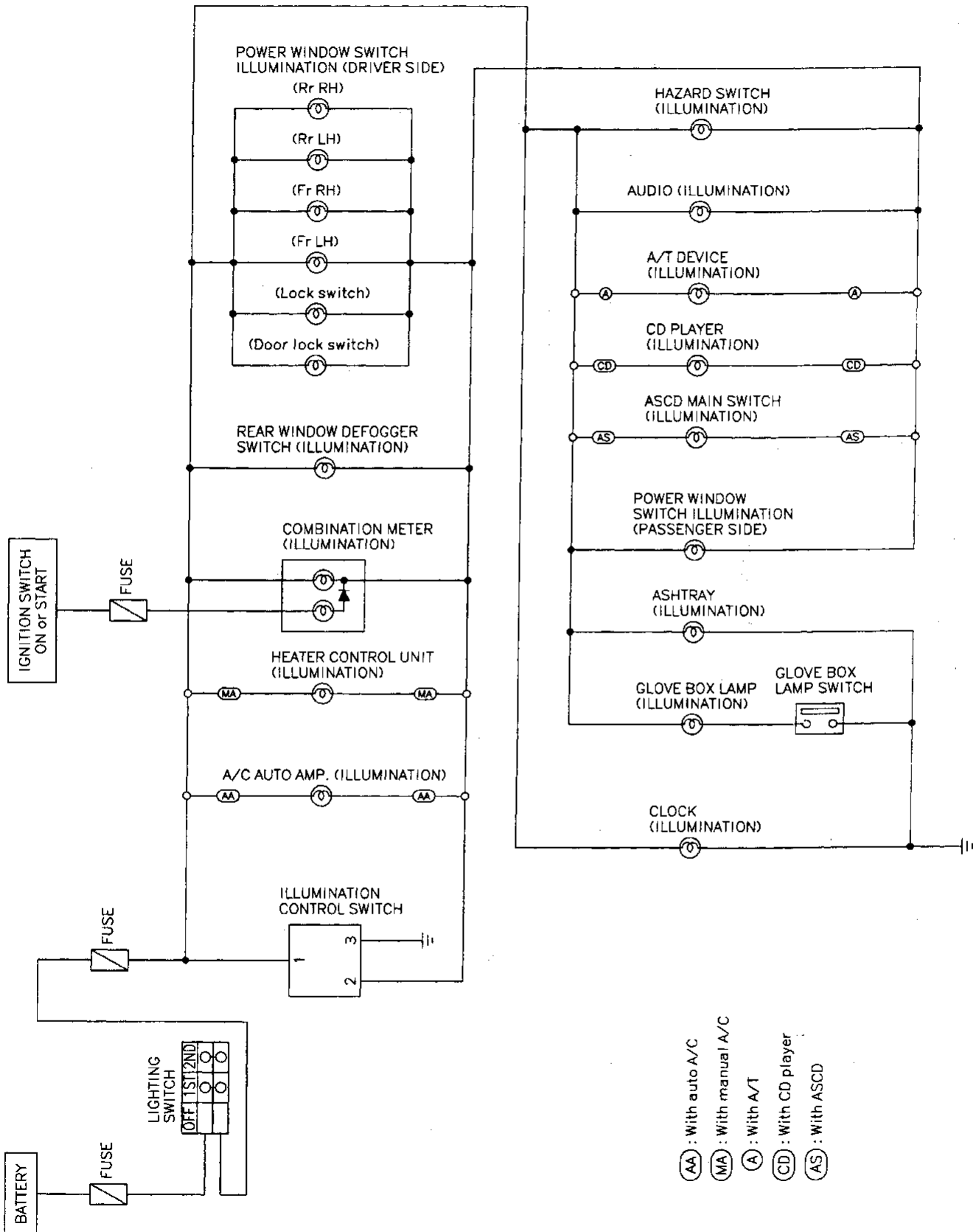
When the glove box is open, glove box lamp terminal ② is grounded through the glove box lamp switch terminal ① and body grounds M13, M73 and M111.

The ashtray illumination terminal ② and clock illumination terminal ① are grounded directly through body grounds M13, M73 and M111.



# ILLUMINATION

## Schematic

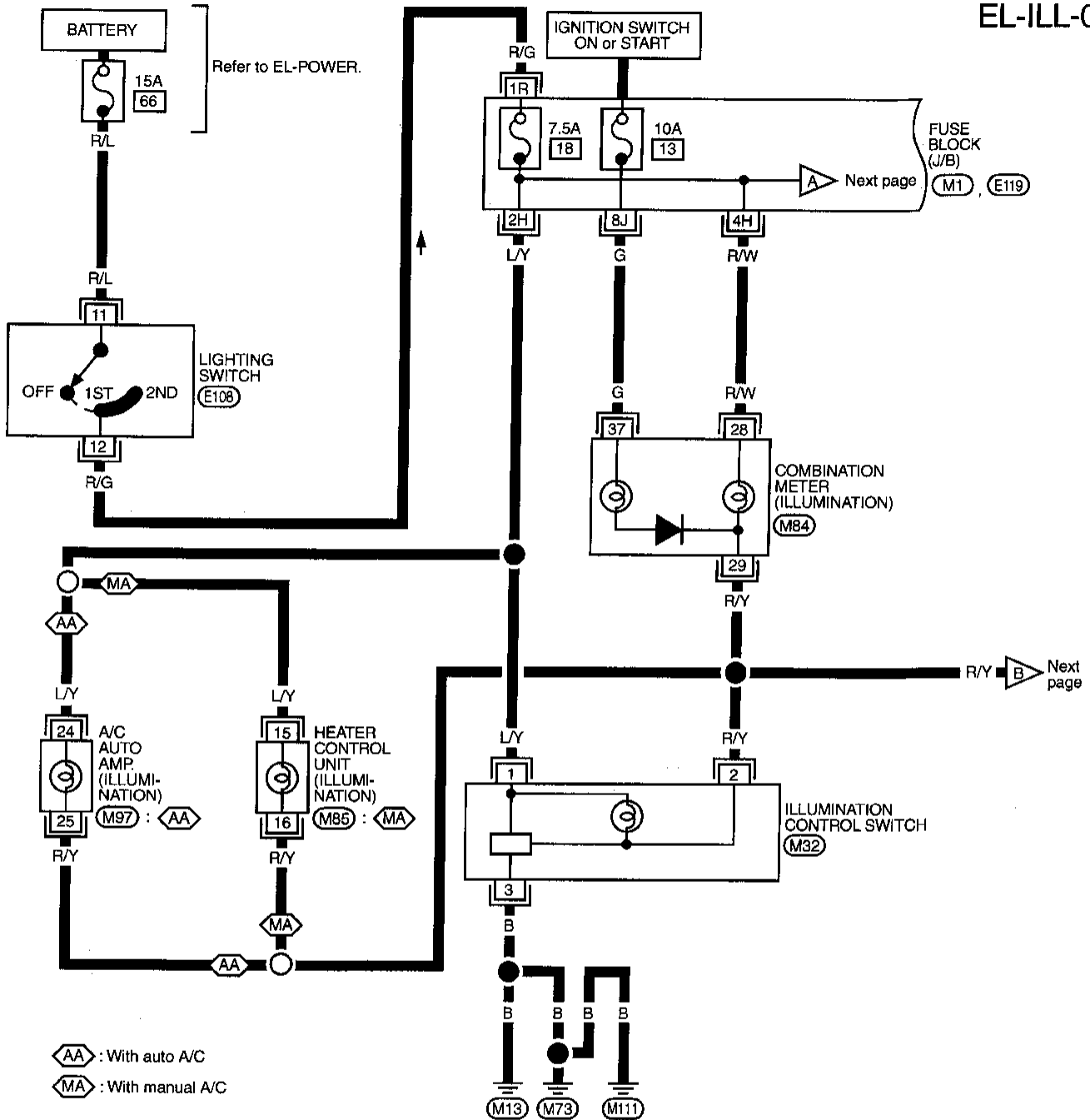


GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# ILLUMINATION

## Wiring Diagram — ILL —

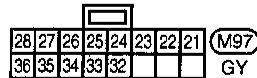
EL-ILL-01



Refer to last page (Foldout page).

M1

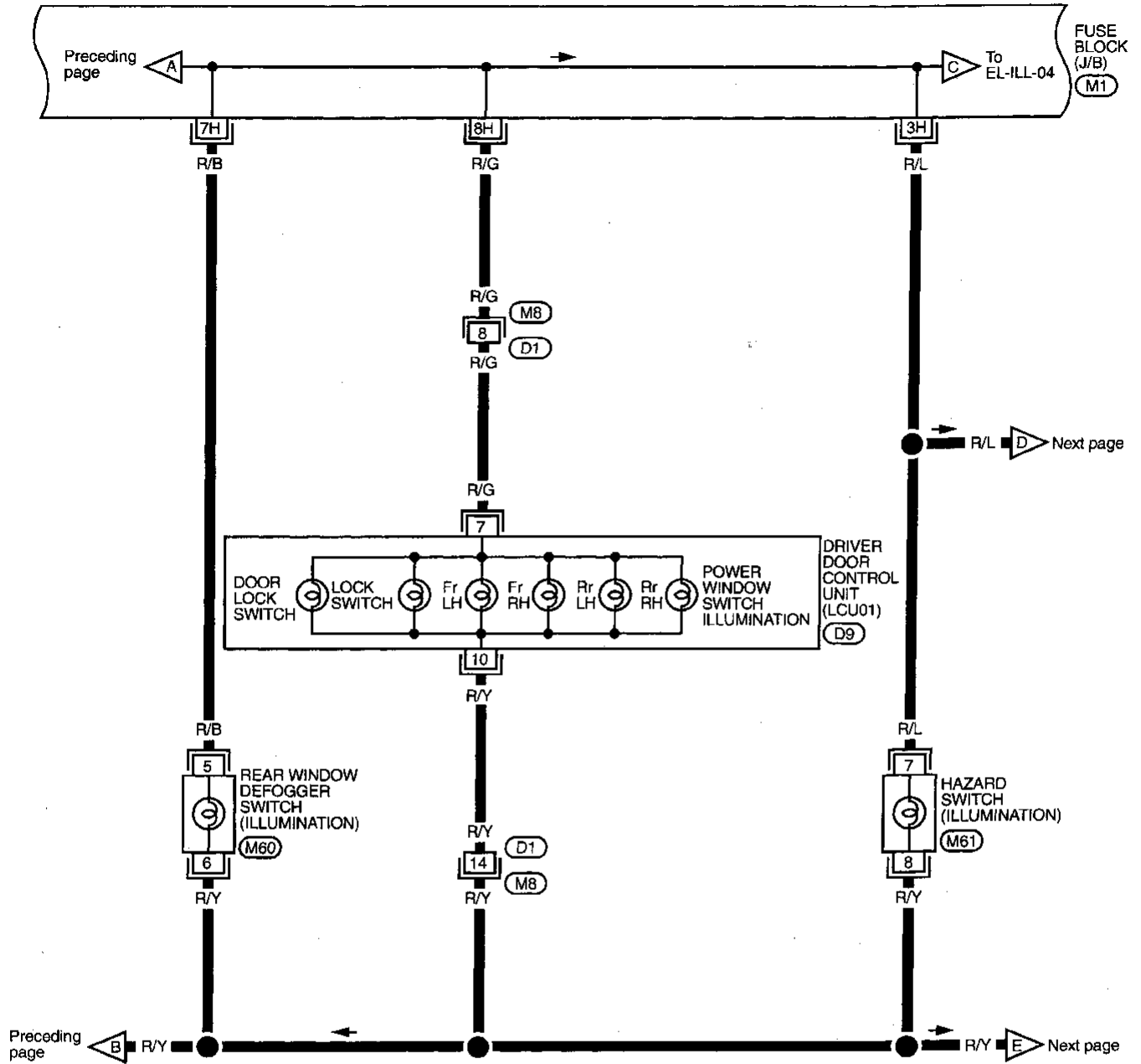
E119



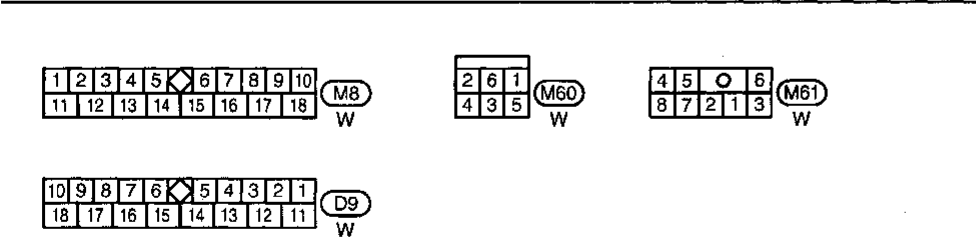
# ILLUMINATION

## Wiring Diagram — ILL — (Cont'd)

EL-ILL-02



GI  
 MA  
 EM  
 LC  
 EC  
 FE  
 CL  
 MT  
 AT  
 FA  
 RA  
 BR  
 ST  
 RS  
 BT  
 HA  
**EL**  
 IDX

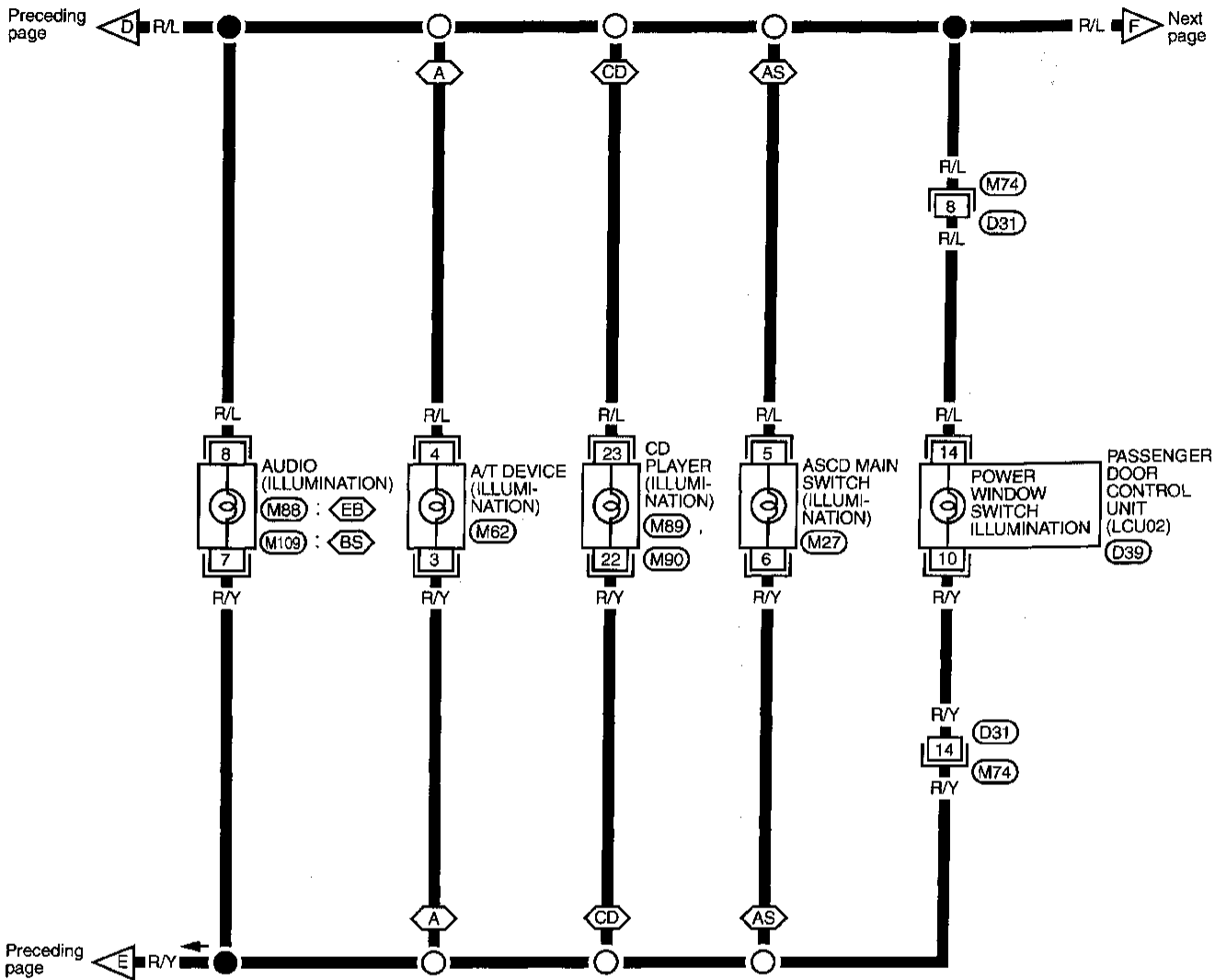


Refer to last page (Foldout page).  
(M1)

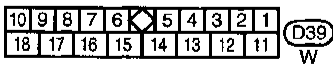
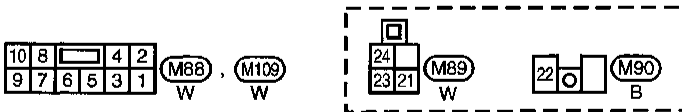
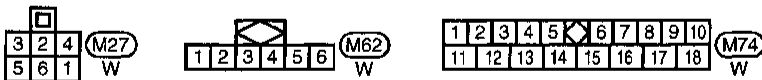
# ILLUMINATION

## Wiring Diagram — ILL — (Cont'd)

EL-ILL-03



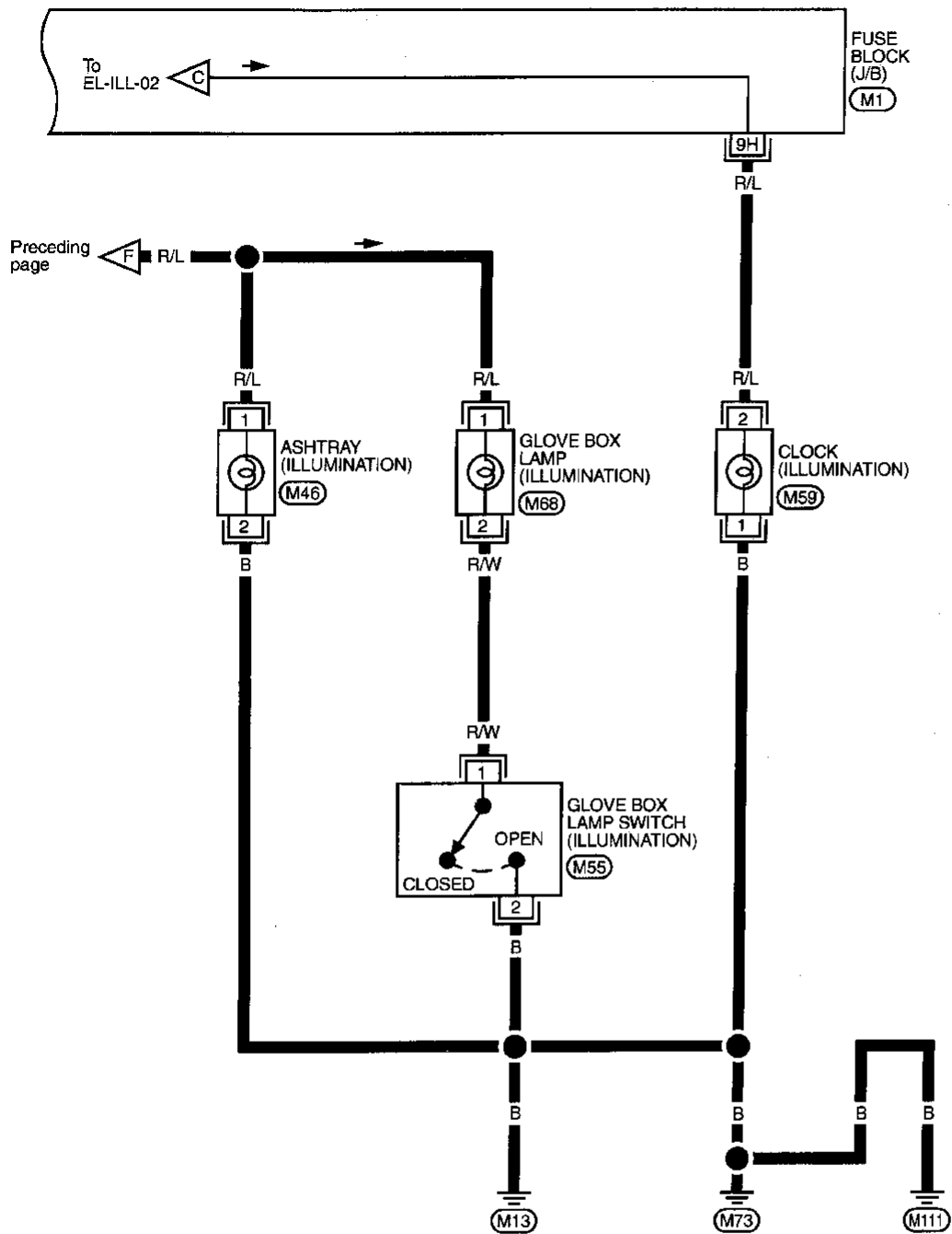
- CD : With CD player      BS : BOSE system
- AS : With ASCD      EB : Except for BOSE system
- A : With A/T



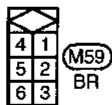
# ILLUMINATION

## Wiring Diagram — ILL — (Cont'd)

EL-ILL-04



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

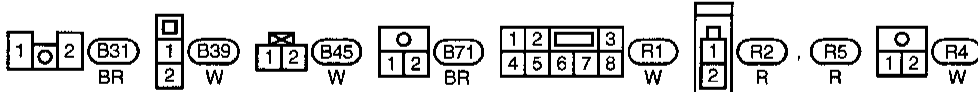
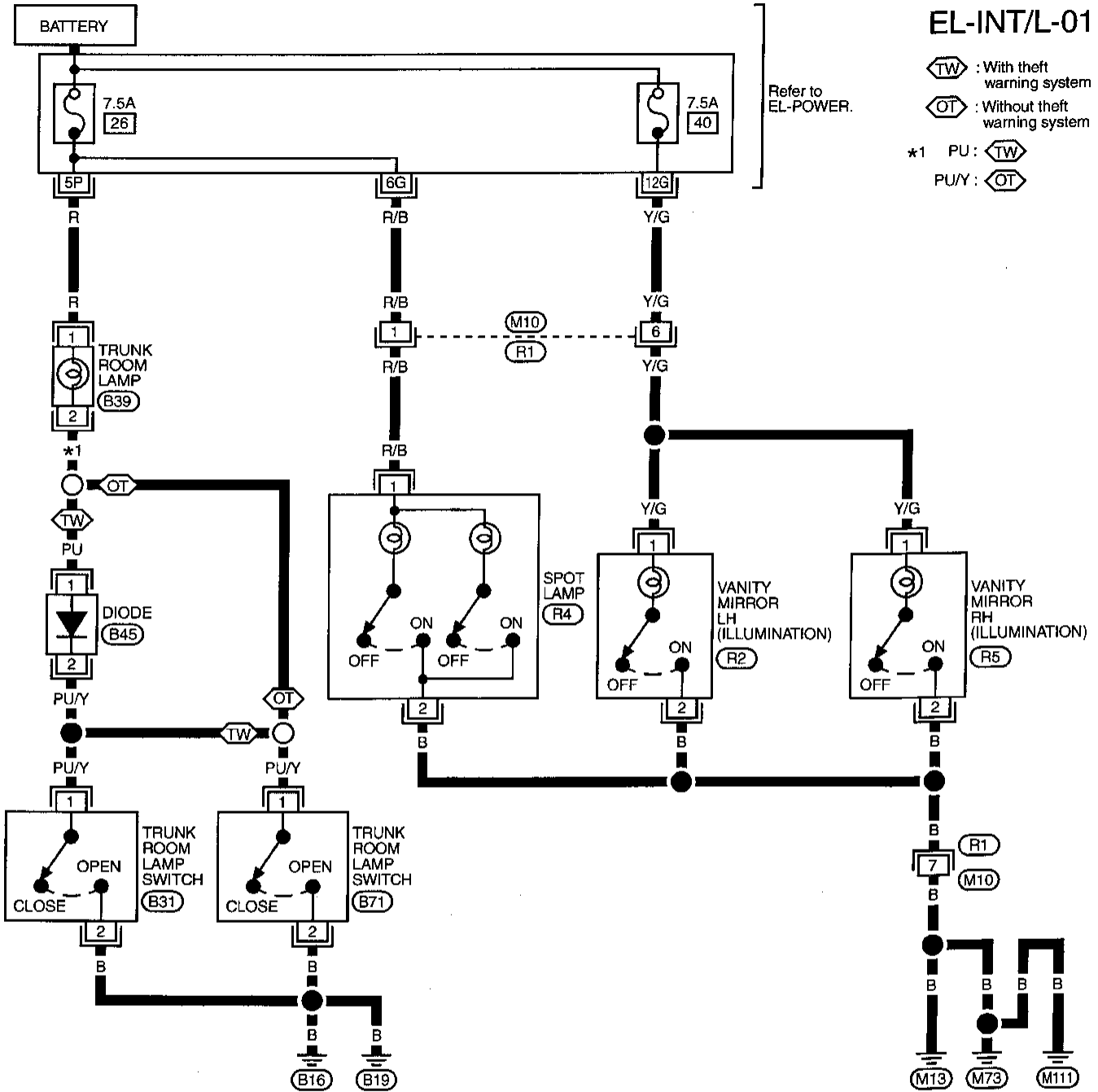


Refer to last page (Foldout page).



# SPOT, VANITY MIRROR AND TRUNK ROOM LAMP

## Wiring Diagram — INT/L —



Refer to last page (Foldout page).

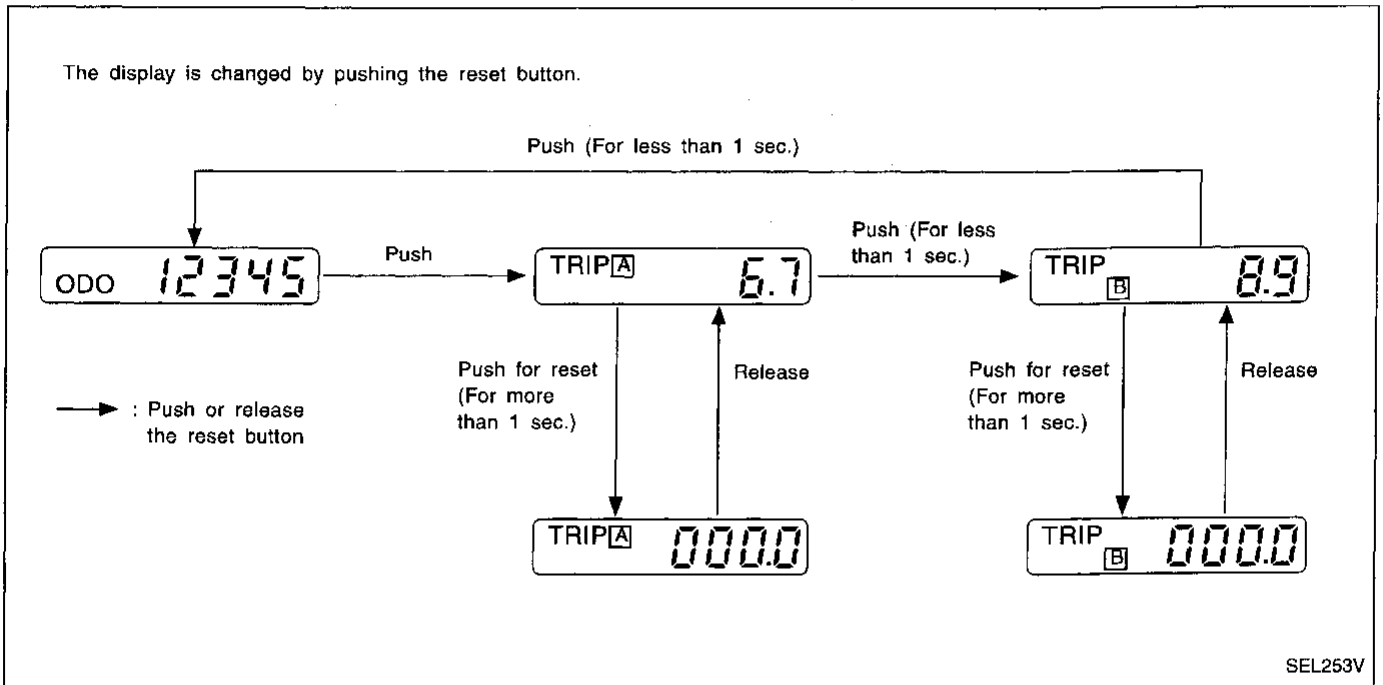


## System Description

### UNIFIED CONTROL METER

- Speedometer, odo/trip meter, tachometer, fuel gauge and water temperature gauge are controlled totally by control unit combined with speedometer.
- Digital meter is adopted for odo/trip meter.\*  
\*The record of the odo meter is kept even if the battery cable is disconnected. The record of the trip meter is erased when the battery cable is disconnected.
- Odo/trip meter segment can be checked in diagnosis mode.
- Meter/gauge can be checked in diagnosis mode.

### HOW TO CHANGE THE DISPLAY FOR ODO/TRIP METER



Note:

Turn ignition switch to the "ON" position to operate odo/trip meter.

### POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times

- through 7.5A fuse [No. 40], located in the fuse block (J/B)
- to combination meter terminal 15.

With the ignition switch in the ON or START position, power is supplied

- through 10A fuse [No. 13], located in the fuse block (J/B)
- to combination meter terminal 37.

Ground is supplied

- to combination meter terminal 16
- through body grounds M13, M73 and M111.

### FUEL GAUGE

The fuel gauge indicates the approximate fuel level in the fuel tank.

The fuel gauge is regulated by a variable ground signal supplied

- to combination meter terminal 5 for the fuel gauge
- from terminal 3 of the fuel tank gauge unit
- through terminal 2 of the fuel tank gauge unit and
- through body grounds B16 and B19.

## METER AND GAUGES

---

### System Description (Cont'd)

#### WATER TEMPERATURE GAUGE

The water temperature gauge indicates the engine coolant temperature. The reading on the gauge is based on the resistance of the thermal transmitter.

As the temperature of the coolant increases, the resistance of the thermal transmitter decreases. A variable ground is supplied to terminal ⑭ of the combination meter for the water temperature gauge. The needle on the gauge moves from "C" to "H".

#### TACHOMETER

The tachometer indicates engine speed in revolutions per minute (rpm).

The tachometer is regulated by a signal

- from terminal ⑤ of the ECM
- to combination meter terminal ③ for the tachometer.

#### SPEEDOMETER

The vehicle speed sensor provides a voltage signal to the combination meter for the speedometer.

The voltage signal is sent

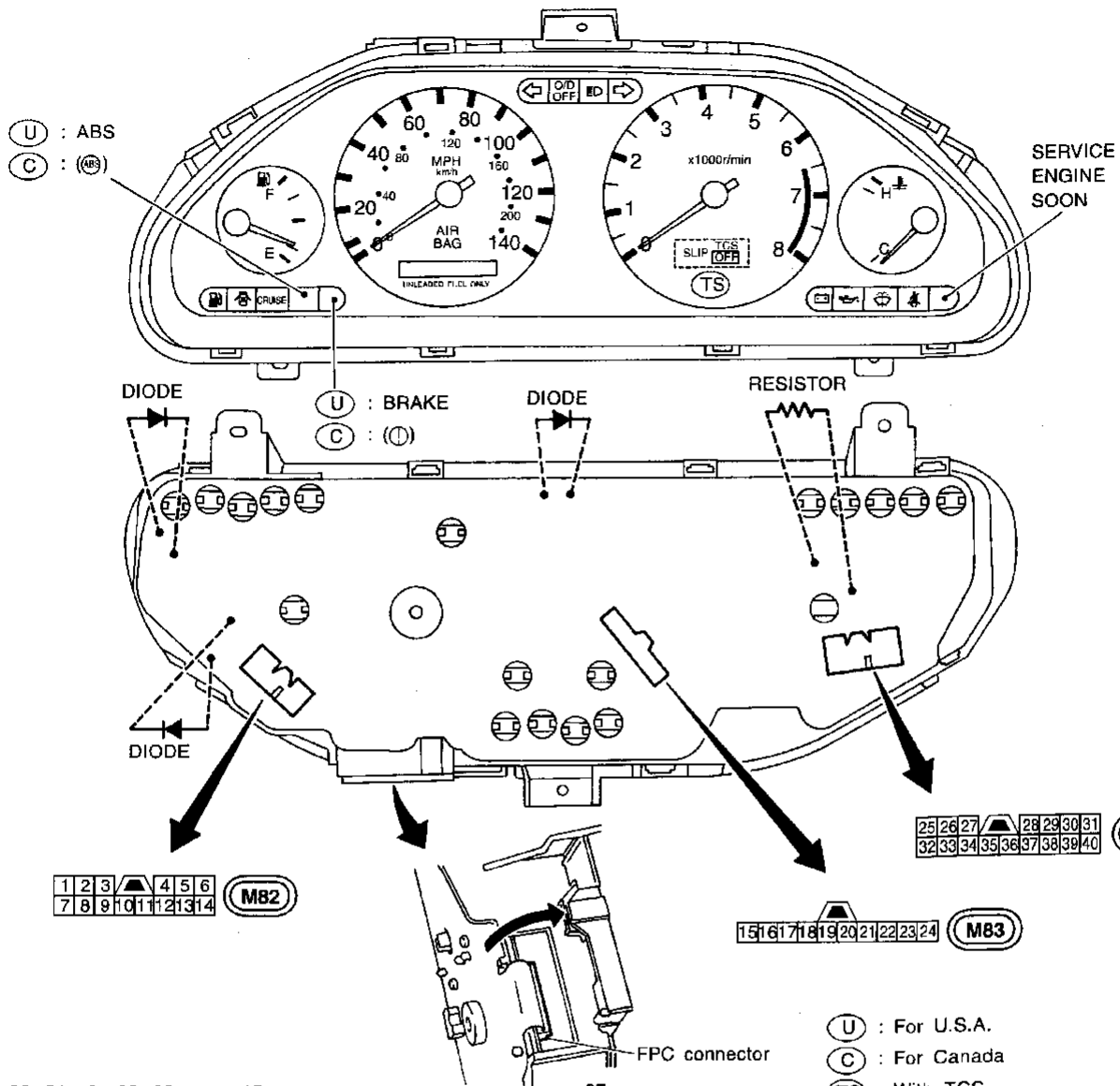
- to combination meter terminals ② and ④ for the speedometer
- from terminals ① and ② of the vehicle speed sensor.

The speedometer converts the voltage into the vehicle speed displayed.



# METER AND GAUGES

## Combination Meter



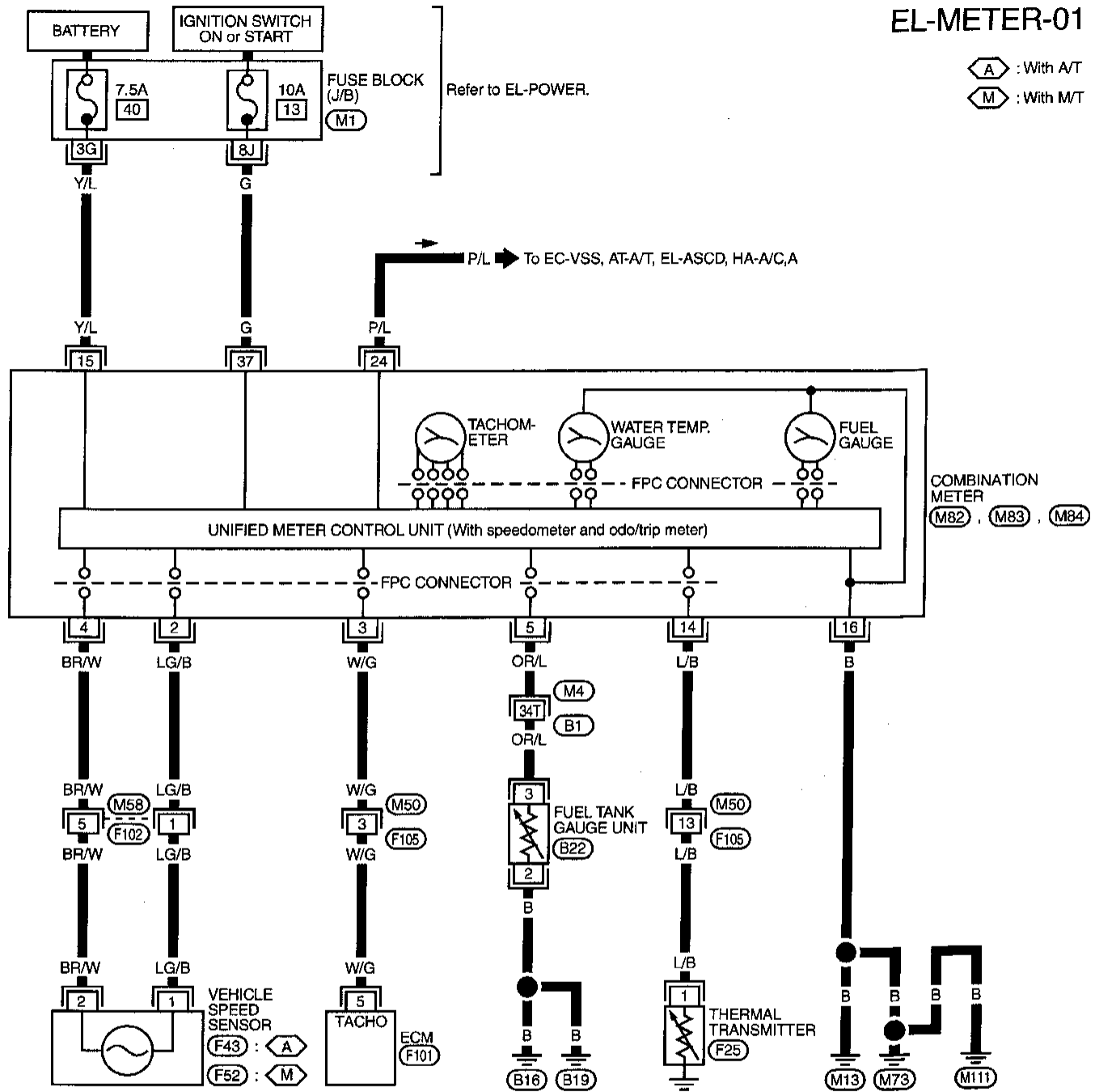
GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# METER AND GAUGES

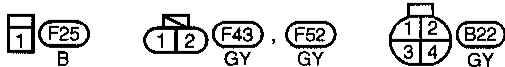
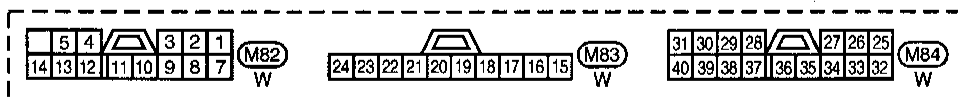
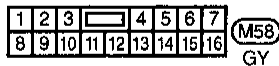
## Wiring Diagram — METER —

EL-METER-01

⬡ : With A/T  
 ⬢ : With M/T



COMBINATION METER  
 ⬢ : M82, ⬢ : M83, ⬢ : M84



Refer to last page (Foldout page).

⬢ : M1  
 ⬢ : M4, ⬢ : B1  
 ⬢ : F101

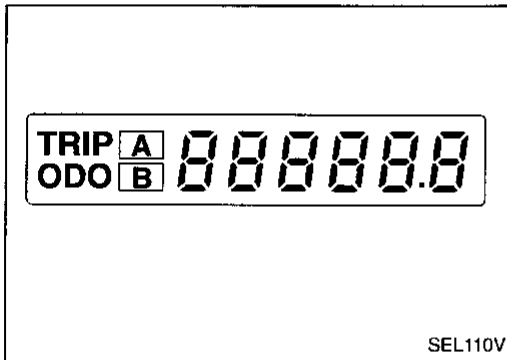
## Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode

### DIAGNOSIS FUNCTION

- Odo/trip meter segment can be checked in diagnosis mode.
- Meters/gauges can be checked in diagnosis mode.

### HOW TO ALTERNATE DIAGNOSIS MODE

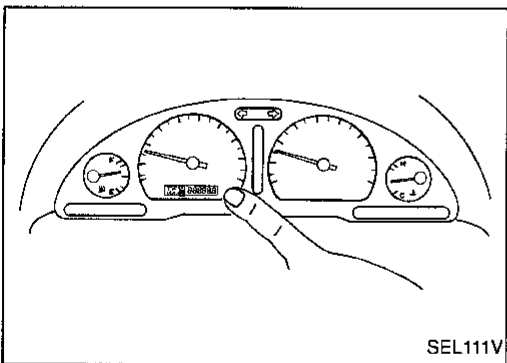
1. Turn ignition switch to ON and change odo/trip meter to "TRIP A" or "TRIP B".
2. Turn ignition switch to OFF.
3. Turn ignition switch to ON when pushing odo/trip meter switch.
4. Confirm that trip meter indicates "000.0".
5. Push odo/trip meter switch more than three times within 5 seconds.



6. All odo/trip meter segments should be turned on.

**NOTE: If some segments are not turned on, speedometer (unified meter control unit) with odo/trip meter should be replaced.**

At this point, the unified control meter is turned to diagnosis mode.



7. Push odo/trip meter switch. Indication of each meter/gauge should be as shown left during pushing odo/trip meter switch if it is no malfunctioning.

**NOTE: It takes about 1 minute for indication of fuel gauge to become stable.**

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

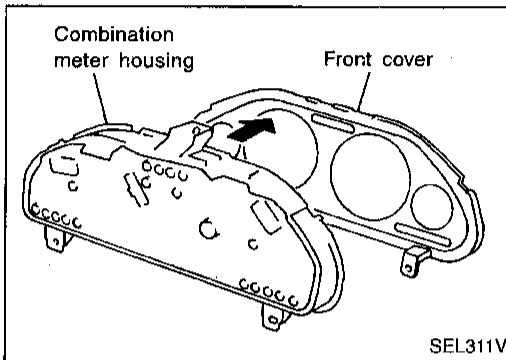
HA

EL

IDX

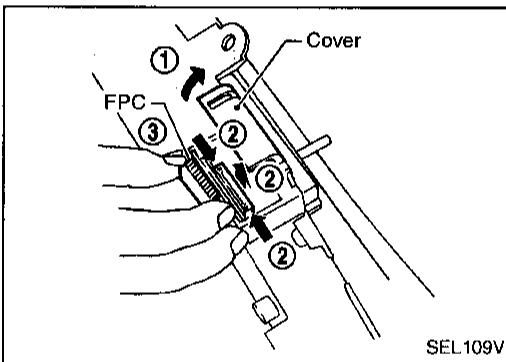
## Flexible Print Circuit (FPC)

Tachometer, fuel gauge and water temperature gauge are connected with unified meter control unit (speedometer) by Flexible Print Circuit (FPC) connector. When replace or remove and install unified control unit (speedometer), disconnect and connect FPC connector according to the following steps.

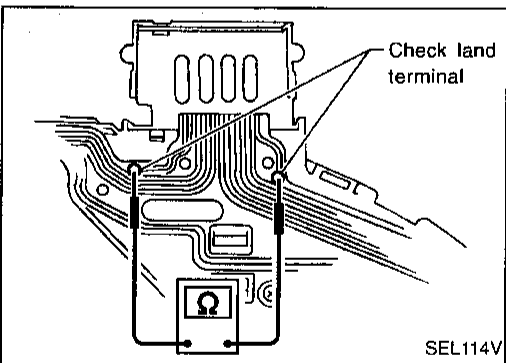


### DISCONNECT

1. Remove front cover from combination meter housing.



2. Open connector cover.
3. Release connector lock by holding both ends of it and pulling it up.
4. Disconnect FPC by pulling it up.

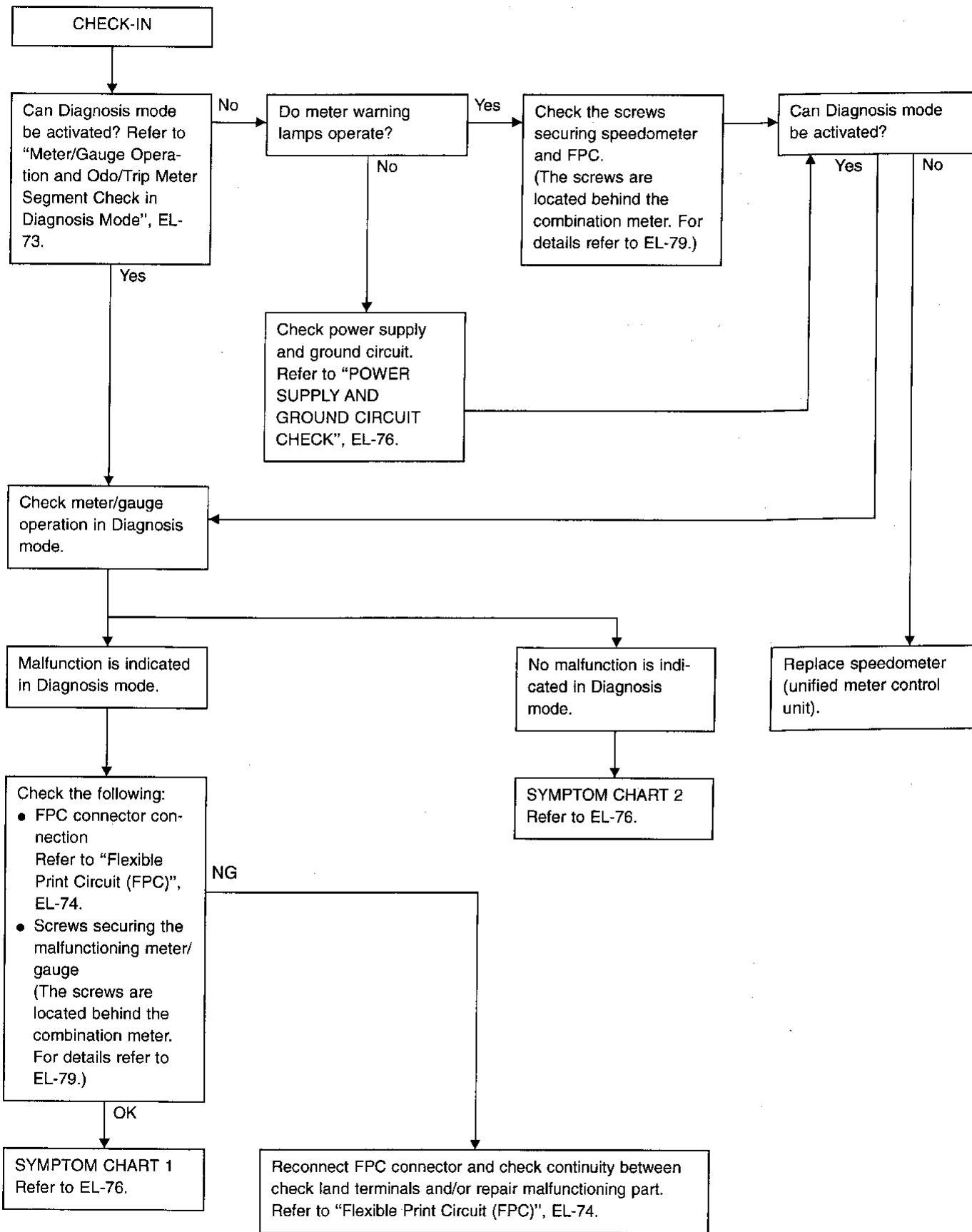


### CONNECT

1. Insert FPC into connector and lock connector pushing FPC downward.
2. Check secure connection of FPC.
3. Check continuity of check land terminal for secure connection of FPC.  
**Resistance: 0Ω**
4. Close connector cover.

## Trouble Diagnoses

### PRELIMINARY CHECK



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# METER AND GAUGES

## Trouble Diagnoses (Cont'd)

### SYMPTOM CHART

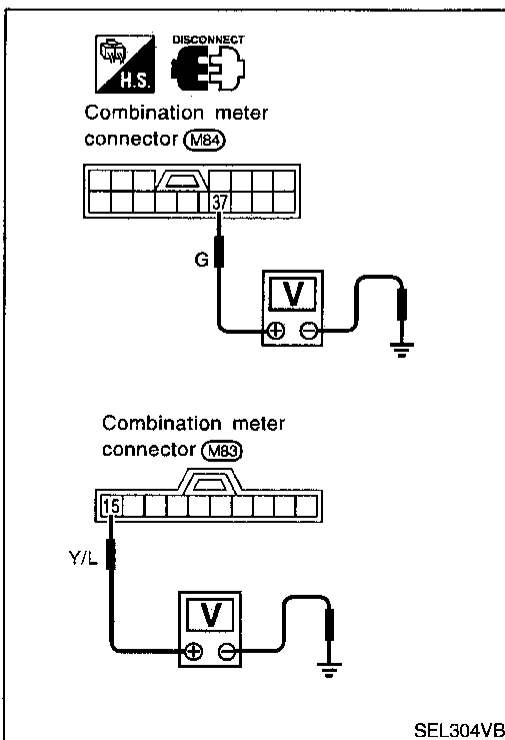
#### Symptom chart 1 (Malfunction is indicated in Diagnosis mode)

Symptom	Possible causes	Repair order
Speedometer and/or odo/trip meter indicate(s) malfunction in Diagnosis mode.	<ul style="list-style-type: none"> <li>Speedometer (Unified meter control unit)</li> </ul>	<ul style="list-style-type: none"> <li>Replace speedometer (unified meter control unit).</li> </ul>
Multiple meter/gauge indicate malfunction in Diagnosis mode.		
One of tachometer/fuel gauge/water temp. gauge indicates malfunction in Diagnosis mode.	<ul style="list-style-type: none"> <li>Meter/Gauge</li> <li>Speedometer (Unified meter control unit)</li> </ul>	<ol style="list-style-type: none"> <li>Check resistance of meter/gauge indicating malfunction. If the resistance is NG, replace the meter/gauge. Refer to "METER/GAUGE RESISTANCE CHECK", EL-79.</li> <li>If the resistance is OK, replace speedometer (unified meter control unit).</li> </ol>

#### Symptom chart 2 (No malfunction is indicated in Diagnosis mode)

Symptom	Possible causes	Repair order
Speedometer and odo/trip meter are malfunctioning.	<ol style="list-style-type: none"> <li>Sensor                             <ul style="list-style-type: none"> <li>Speedometer, Odo/Trip meter</li> </ul> </li> <li>FPC connector</li> <li>Speedometer (Unified meter control unit)</li> </ol>	<ol style="list-style-type: none"> <li>Check vehicle speed sensor. INSPECTION/VEHICLE SPEED SENSOR (Refer to EL-77.)</li> <li>Check FPC connector. Refer to "Flexible Print Circuit (FPC)", EL-74.</li> <li>Replace speedometer (unified meter control unit).</li> </ol>
Multiple meter/gauge are malfunctioning. (except speedometer, odo/trip meter)	<ol style="list-style-type: none"> <li>FPC connector</li> <li>Speedometer (Unified meter control unit)</li> </ol>	<ol style="list-style-type: none"> <li>Check FPC connector. Refer to "Flexible Print Circuit (FPC)", EL-74.</li> <li>Replace speedometer (unified meter control unit).</li> </ol>
One of tachometer/fuel gauge/water temp. gauge is malfunctioning.	<ol style="list-style-type: none"> <li>Sensor/Engine revolution signal                             <ul style="list-style-type: none"> <li>Tachometer</li> <li>Fuel gauge</li> <li>Water temp. gauge</li> </ul> </li> <li>FPC connector</li> <li>Speedometer (Unified meter control unit)</li> </ol>	<ol style="list-style-type: none"> <li>Check the sensor for malfunctioning meter/gauge. INSPECTION/ENGINE REVOLUTION SIGNAL (Refer to EL-78.) INSPECTION/FUEL TANK GAUGE (Refer to EL-78.) INSPECTION/THERMAL TRANSMITTER (Refer to EL-79.)</li> <li>Check FPC connector. Refer to "Flexible Print Circuit (FPC)", EL-74.</li> <li>Replace speedometer (unified meter control unit).</li> </ol>

Before starting trouble diagnoses above, perform PRELIMINARY CHECK, EL-75.



### POWER SUPPLY AND GROUND CIRCUIT CHECK

#### Power supply circuit check

Terminals		Ignition switch position		
⊕	⊖	OFF	ACC	ON
15	Ground	Battery voltage	Battery voltage	Battery voltage
37	Ground	0V	0V	Battery voltage

If NG, check the following.

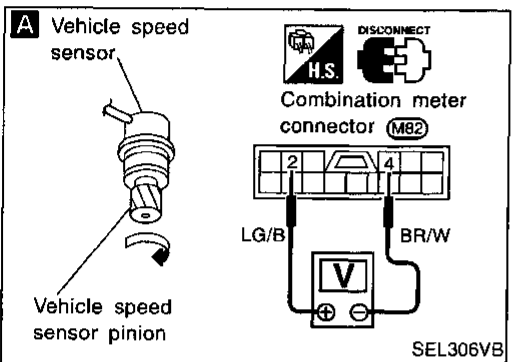
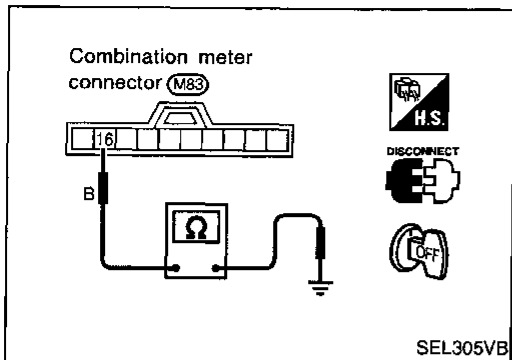
- 7.5A fuse [No. 40], located in fuse block (J/B)
- 10A fuse [No. 13], located in fuse block (J/B)
- Harness for open or short between fuse and combination meter

# METER AND GAUGES

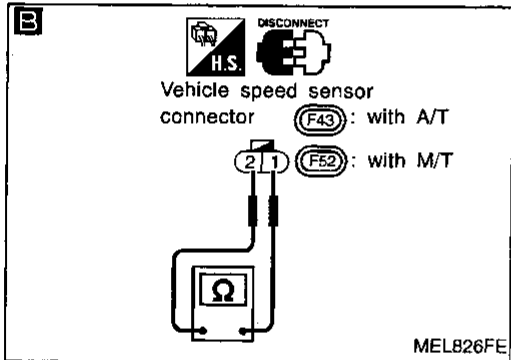
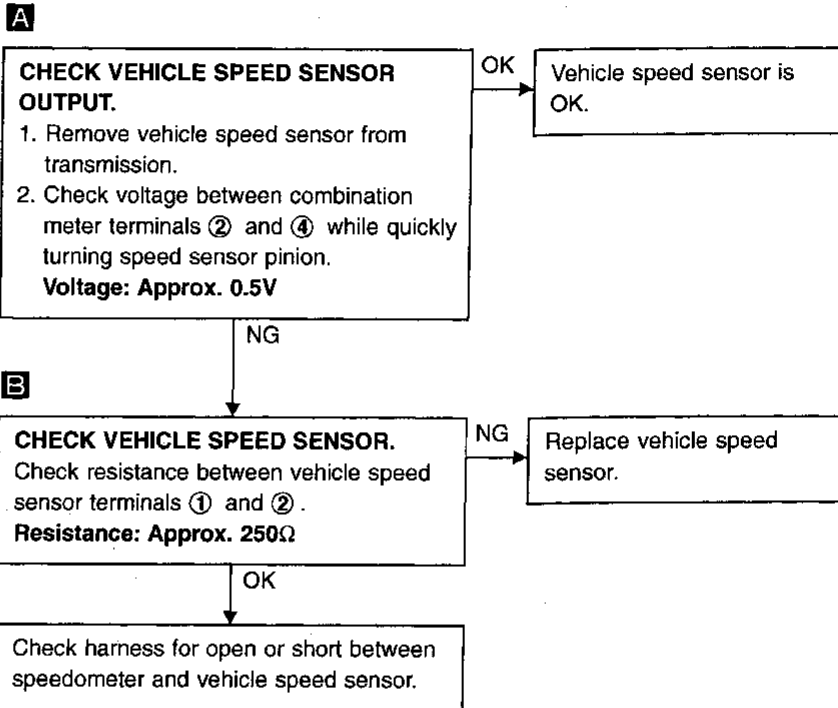
## Trouble Diagnoses (Cont'd)

### Ground circuit check

Terminals	Continuity
⑩ - Ground	Yes



### INSPECTION/VEHICLE SPEED SENSOR



GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

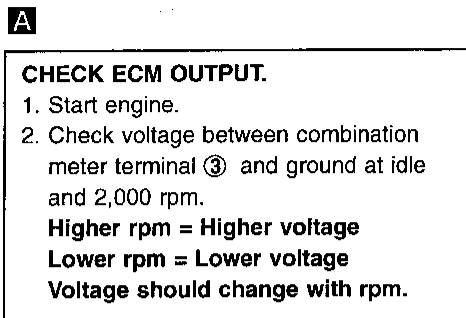
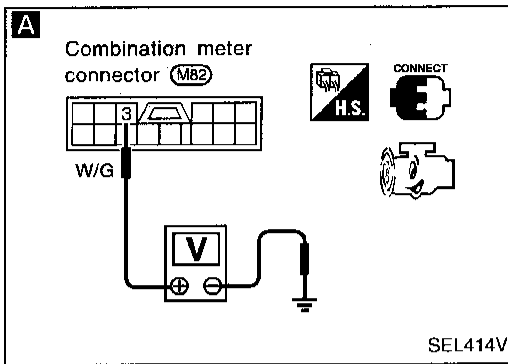
EL

IDX

# METER AND GAUGES

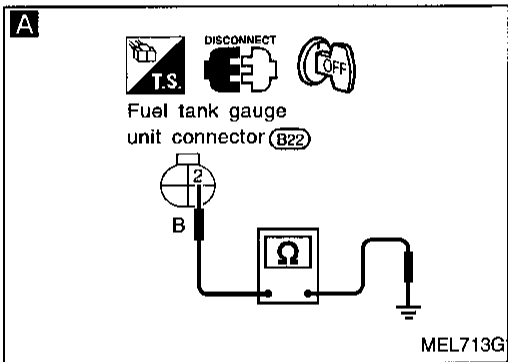
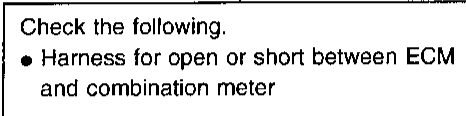
## Trouble Diagnoses (Cont'd)

### INSPECTION/ENGINE REVOLUTION SIGNAL

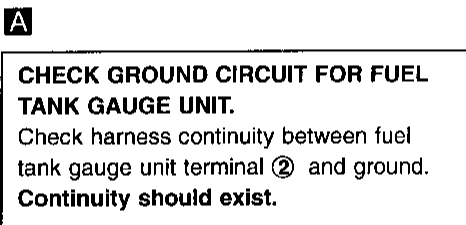


OK → Engine revolution signal is OK.

NG

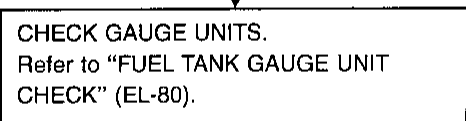


### INSPECTION/FUEL TANK GAUGE



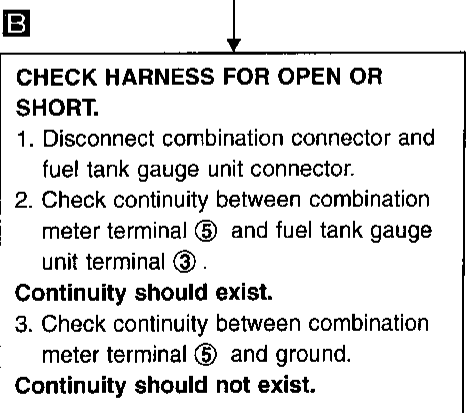
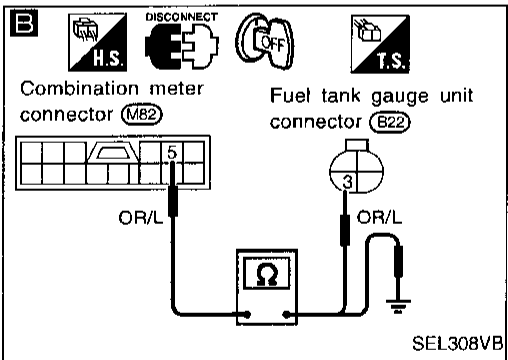
NG → Repair harness or connector.

OK



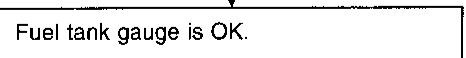
NG → Repair or replace. Refer to FE section.

OK



NG → Repair harness or connector.

OK

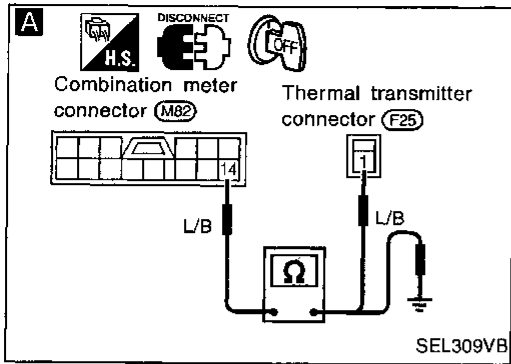




# METER AND GAUGES

## Trouble Diagnoses (Cont'd)

### INSPECTION/THERMAL TRANSMITTER



```

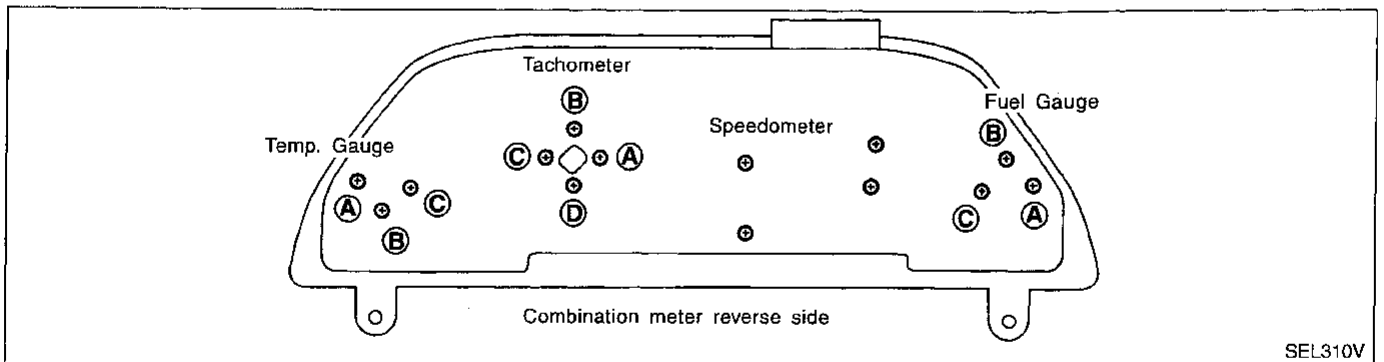
    graph TD
      Start[CHECK THERMAL TRANSMITTER.  
Refer to "THERMAL TRANSMITTER  
CHECK" (EL-80).] -- NG --> NG1[Repair or replace.]
      Start -- OK --> StepA[CHECK HARNESS FOR OPEN OR  
SHORT.  
1. Disconnect combination connector and  
thermal transmitter connector.  
2. Check continuity between combination  
meter terminal 14 and thermal transmit-  
ter terminal 1.  
Continuity should exist.  
3. Check continuity between combination  
meter terminal 14 and ground.  
Continuity should not exist.]
      StepA -- NG --> NG2[Repair harness or connec-  
tor.]
      StepA -- OK --> End[Thermal transmitter is OK.]
  
```

## Electrical Components Inspection

### METER/GAUGE RESISTANCE CHECK

1. Disconnect FPC connector. Refer to "Flexible Print Circuit (FPC)" (EL-74).
2. Check resistance between installation screws of meter/gauge.

Screws		Resistance
Tachometer	Fuel/Temp. gauge	$\Omega$
A - C	A - C	Approx. 70 - Approx. 140
B - D	B - C	Approx. 90 - Approx. 170



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

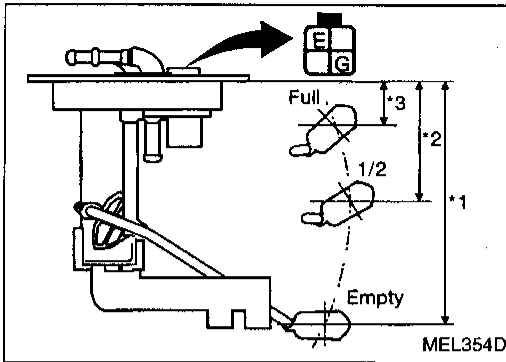
## METER AND GAUGES

### Electrical Components Inspection (Cont'd)

#### FUEL TANK GAUGE UNIT CHECK

- For removal, refer to FE section.

Check the resistance between terminals Ⓔ and Ⓔ.

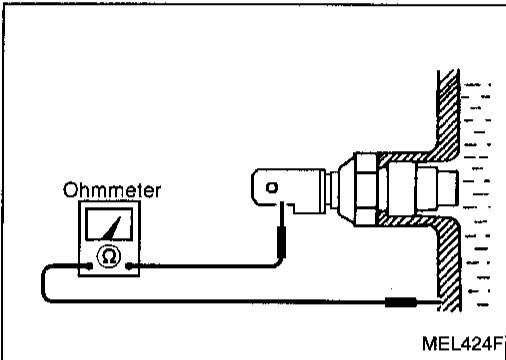


Ohmmeter		Float position		Resistance value (Ω)
(+)	(-)	mm (in)		
E	G	*1	Full	32 (1.26)
		*2	1/2	93 (3.66)
		*3	Empty	157 (6.18)

\*1 and \*3: When float rod is in contact with stopper.

#### THERMAL TRANSMITTER CHECK

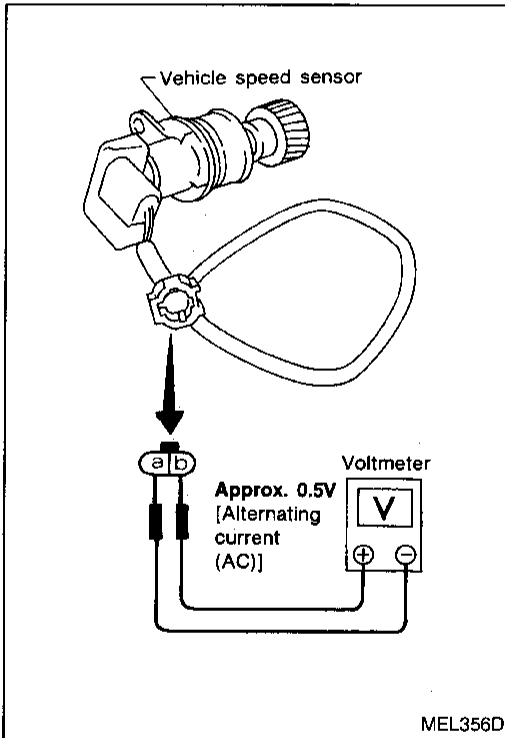
Check the resistance between the terminals of thermal transmitter and body ground.



Water temperature	Resistance (Ω)
60°C (140°F)	Approx. 170 - 210
100°C (212°F)	Approx. 47 - 53

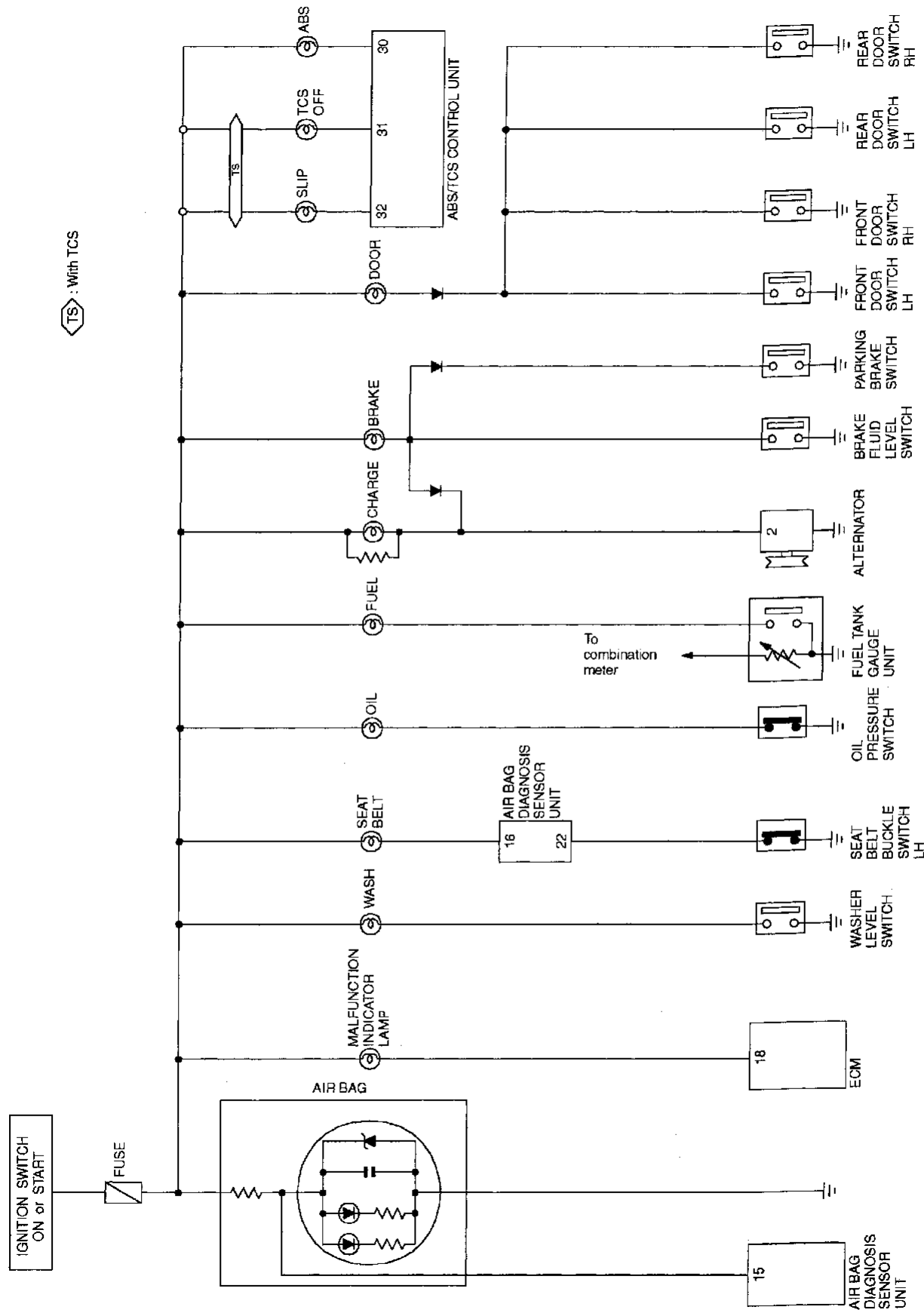
#### VEHICLE SPEED SENSOR CHECK

- Remove vehicle speed sensor from transmission.
- Turn vehicle speed sensor pinion quickly and measure voltage between terminals Ⓐ and Ⓑ.



# WARNING LAMPS

## Schematic

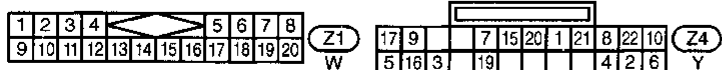
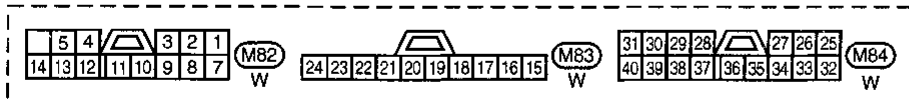
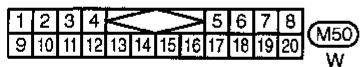
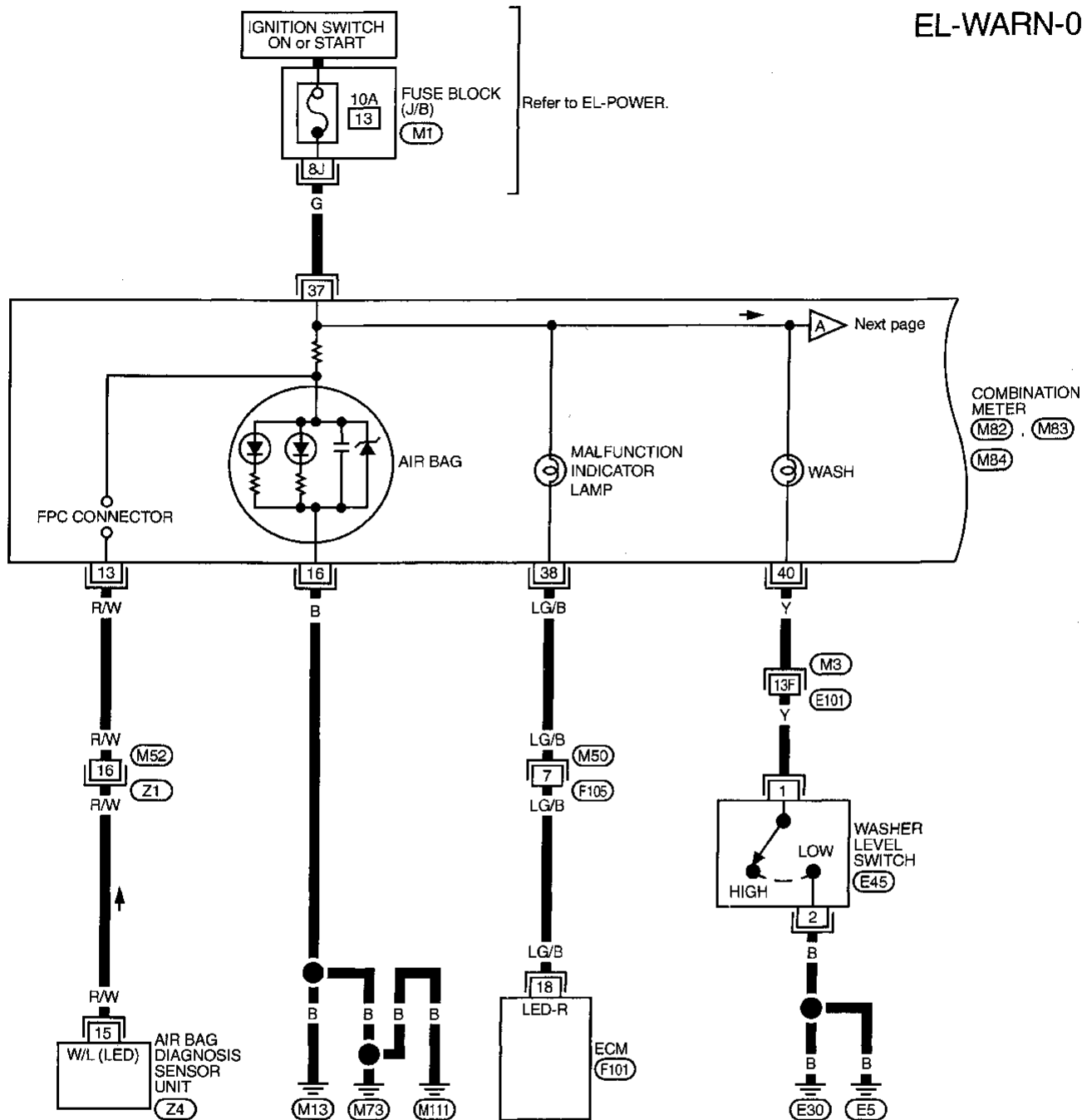


- GI
- MA
- EM
- LC
- EC
- FE
- CL
- MT
- AT
- FA
- RA
- BR
- ST
- RS
- BT
- HA
- EL**
- IDX

# WARNING LAMPS

## Wiring Diagram — WARN —

EL-WARN-01



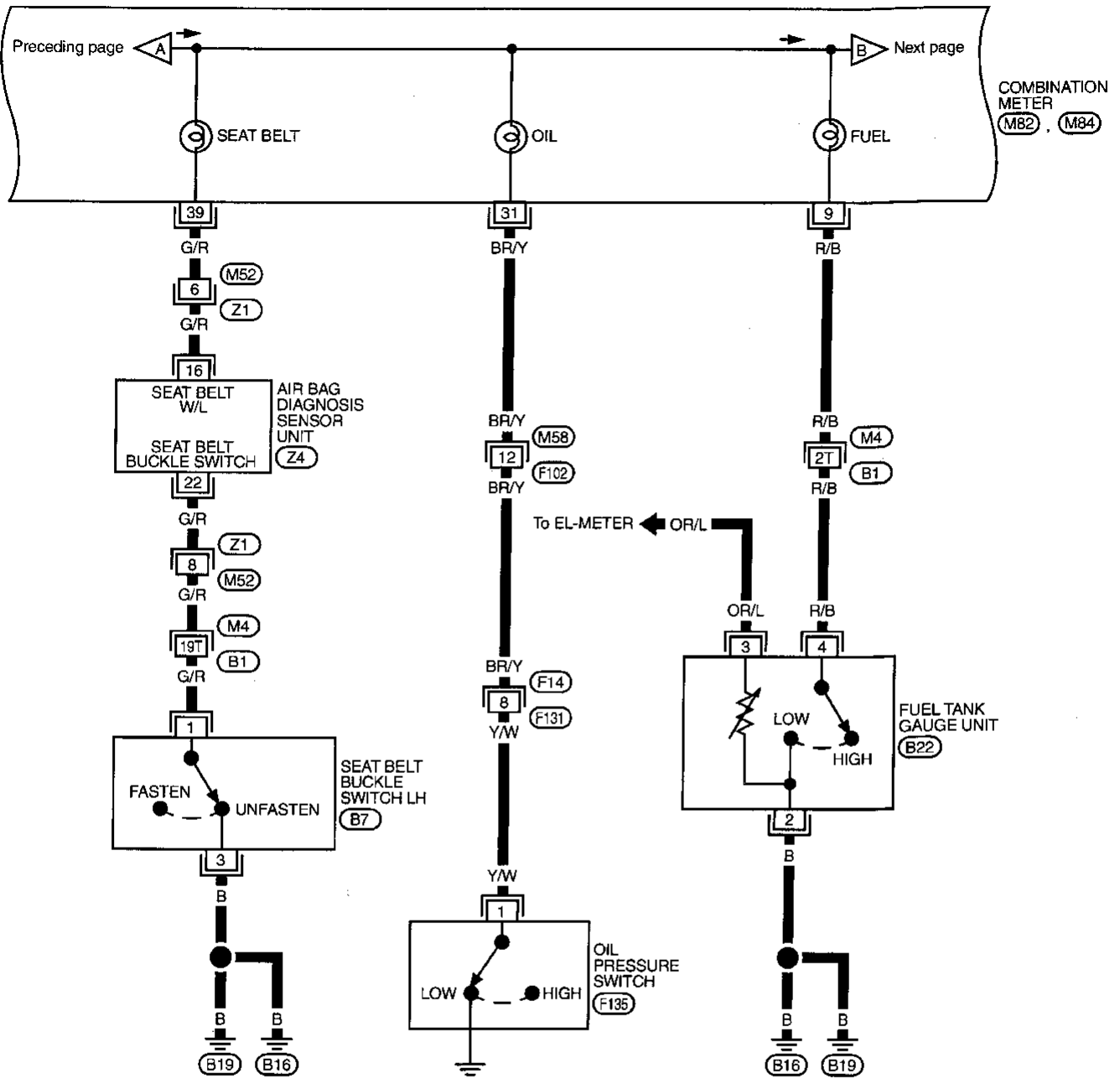
Refer to last page (Foldout page).

- (M1)
- (M3), (E101)
- (F101)

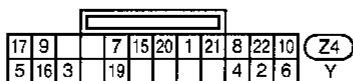
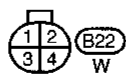
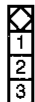
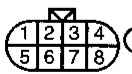
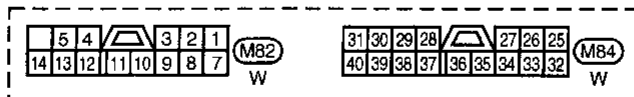
# WARNING LAMPS

## Wiring Diagram — WARN — (Cont'd)

EL-WARN-02



COMBINATION METER (M82, M84)



Refer to last page (Foldout page).  
(M4, B1)

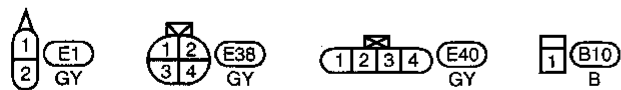
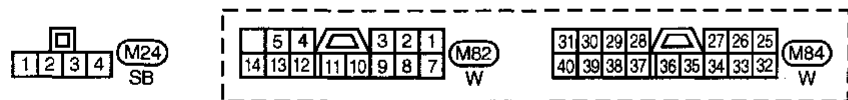
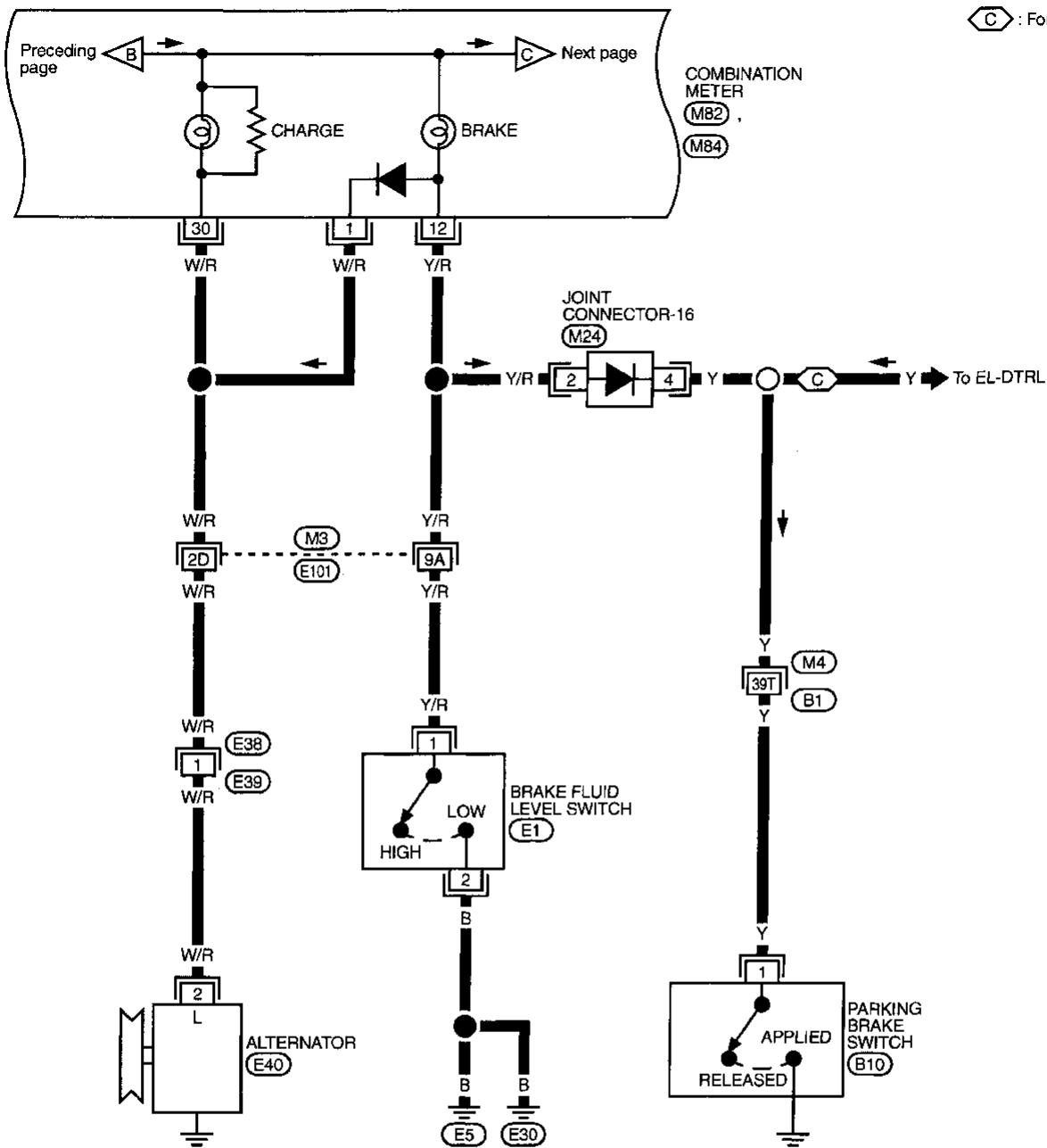
CI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# WARNING LAMPS

## Wiring Diagram — WARN — (Cont'd)

EL-WARN-03

Ⓢ : For Canada



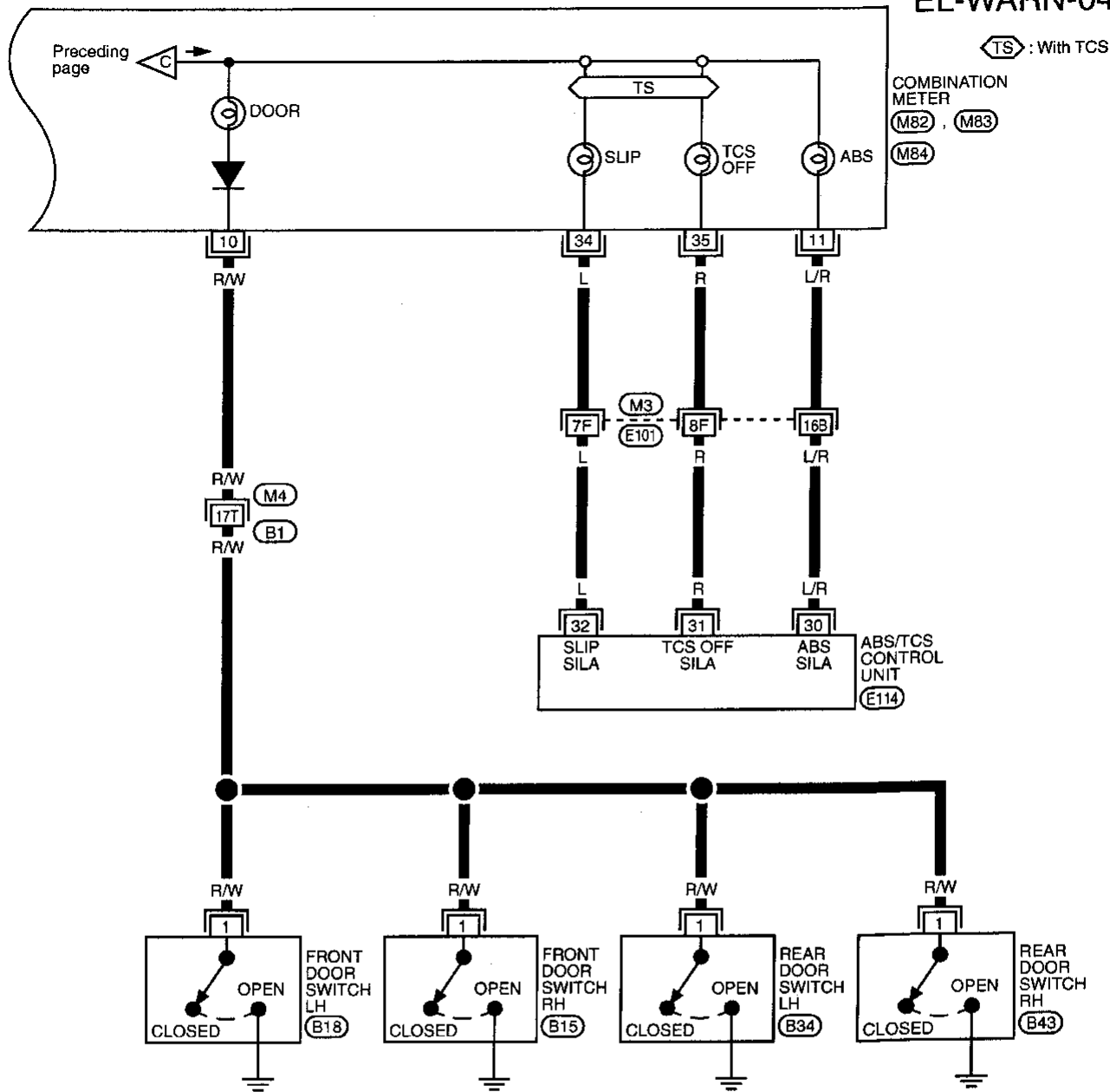
Refer to last page (Foldout page).

M3, E101  
M4, B1

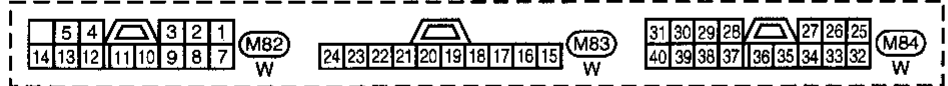
# WARNING LAMPS

## Wiring Diagram — WARN — (Cont'd)

EL-WARN-04

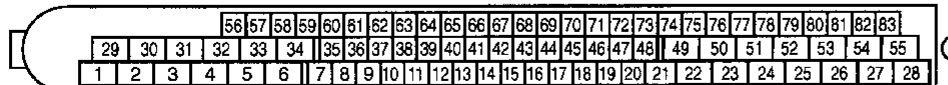
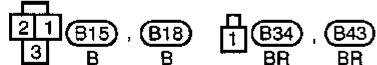


GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX



Refer to last page (Foldout page).

(M3), (E101)  
(M4), (B1)



# WARNING LAMPS

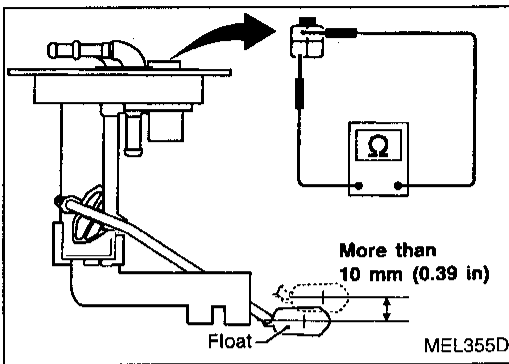
## Electrical Components Inspection

### FUEL WARNING LAMP SENSOR CHECK

- Raise the float with fingers more than the distance shown in the figure at left. Make sure that continuity does not exist.

#### CAUTION:

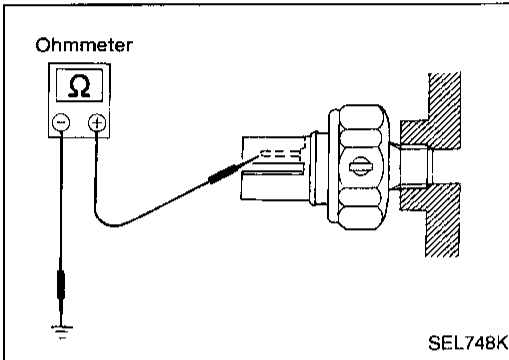
Do not move the float beyond its mobile range.



### OIL PRESSURE SWITCH CHECK

	Oil pressure kPa (kg/cm <sup>2</sup> , psi)	Continuity
Engine start	More than 10 - 20 (0.1 - 0.2, 1 - 3)	NO
Engine stop	Less than 10 - 20 (0.1 - 0.2, 1 - 3)	YES

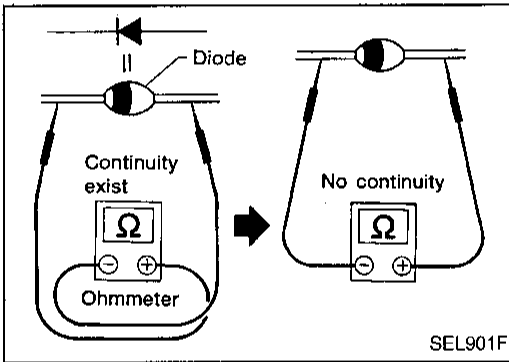
Check the continuity between the terminals of oil pressure switch and body ground.



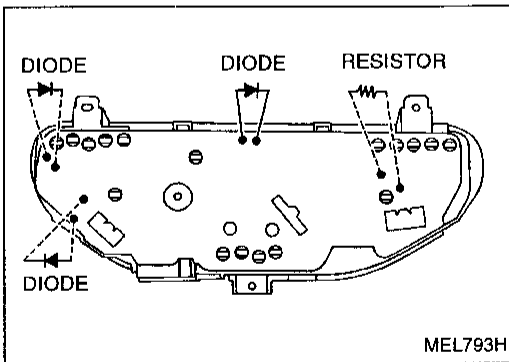
### DIODE CHECK

- Check continuity using an ohmmeter.
- Diode is functioning properly if test results are as shown in the figure at left.

**NOTE:** Specifications may vary depending on the type of tester. Before performing this inspection, be sure to refer to the instruction manual of your tester.



- Diodes for warning lamps are built into the combination meter printed circuit.





## System Description

The warning buzzer is controlled by the BCM.

Power is supplied at all times

- through 7.5A fuse [No. 40, located in the fuse block (J/B)]
- to warning buzzer terminal ①
- to key switch terminal ①.

Power is supplied at all times

- through 15A fuse (No. 66, located in the fuse and fusible link box)
- to lighting switch terminal ⑩.

Power is supplied at all times

- through 7.5A fuse (No. 56, located in the fuse and fusible link box)
- to BCM terminal ①.

With the ignition switch in the ON or START position, power is supplied

- through 7.5A fuse [No. 12, located in the fuse block (J/B)]
- to BCM terminal ⑳.

Ground is supplied to BCM terminal ③ through body grounds (M13), (M73) and (M11).

When a signal, or combination of signals, is received by the BCM, ground is supplied

- through BCM terminal ⑰
- to warning buzzer terminal ③.

With power and ground supplied, the warning buzzer will sound.

### Ignition key warning buzzer

With the key in the ignition switch in the OFF or ACC position, and the driver's door open, the warning buzzer will sound. A battery positive voltage is supplied

- from key switch terminal ②
- to BCM terminal ⑳.

Ground is supplied

- from front door switch LH terminal ②
- to BCM terminal ㉑.

Front door switch LH terminal ③ is grounded through body grounds (B16) and (B19).

### Light warning buzzer

With ignition switch OFF or ACC, driver's door open, and lighting switch in 1ST or 2ND position, warning buzzer will sound. A battery positive voltage is supplied.

- from tail lamp relay terminal ⑤
- through 7.5A fuse [No. 5, located in the fuse block (J/B)]
- to BCM terminal ㉒.

Ground is supplied

- from front door switch LH terminal ②
- to BCM terminal ㉑.

Front door switch LH terminal ③ is grounded through body grounds (B16) and (B19).

### Seat belt warning buzzer

With ignition switch turned ON and seat belt unfastened (seat belt switch ON), warning buzzer will sound for approximately 6 seconds.

Ground is supplied

- from seat belt switch terminal ①
- to BCM terminal ⑧.

Seat belt switch terminal ③ is grounded through body grounds (B16) and (B19).

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

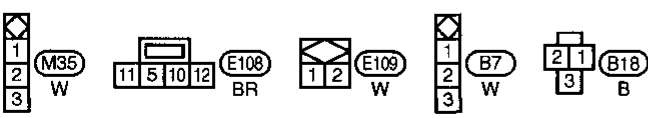
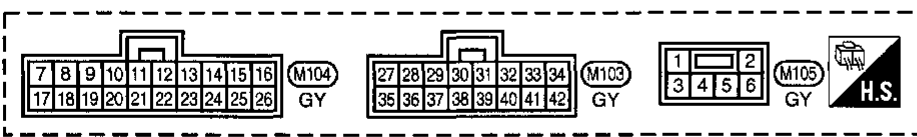
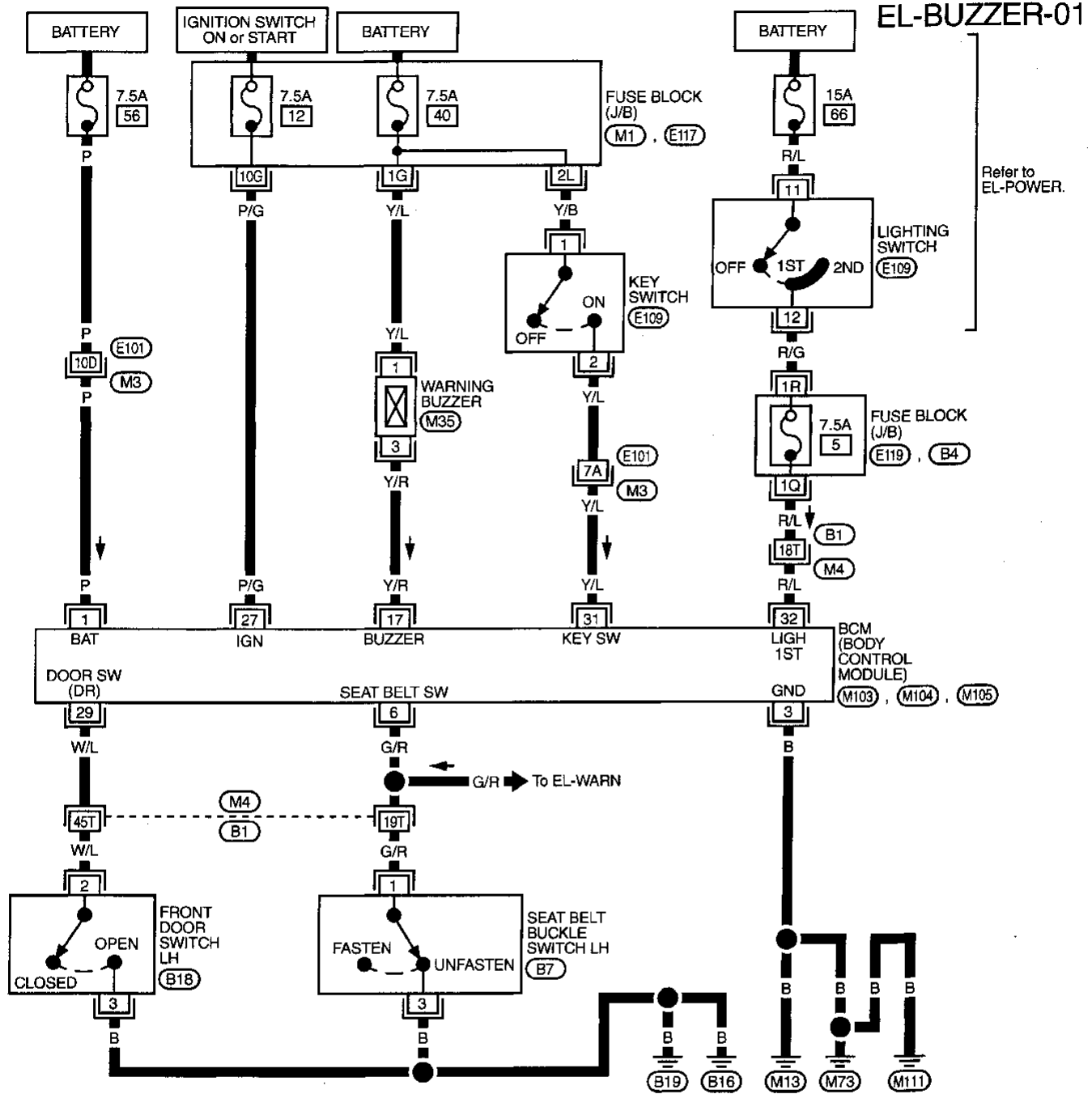
HA

EL

IDX

# WARNING BUZZER

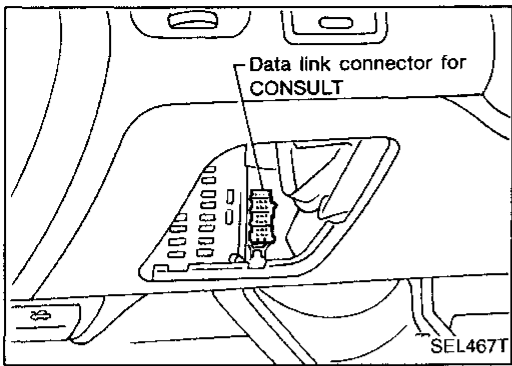
## Wiring Diagram — BUZZER —



Refer to last page (Foldout page).

- (M1)
- (M3) , (E101)
- (M4) , (B1)
- (E117)
- (E119)
- (B4)

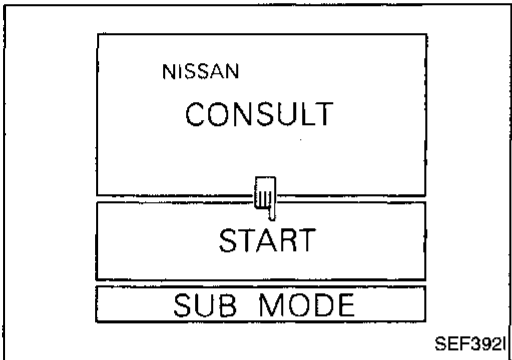
# WARNING BUZZER



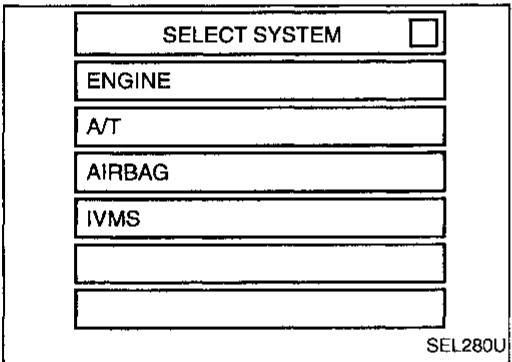
## CONSULT

### CONSULT INSPECTION PROCEDURE

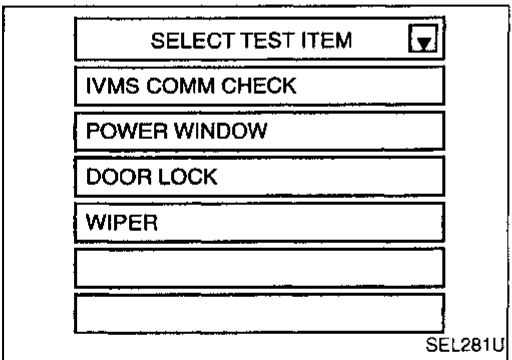
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



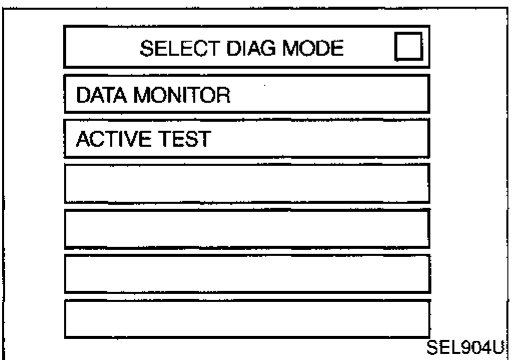
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



6. Touch "IGN KEY WARN ALM", "LIGHT WARN ALM" or "SEAT BELT TIMER".



- DATA MONITOR and ACTIVE TEST are available for the warning buzzer.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

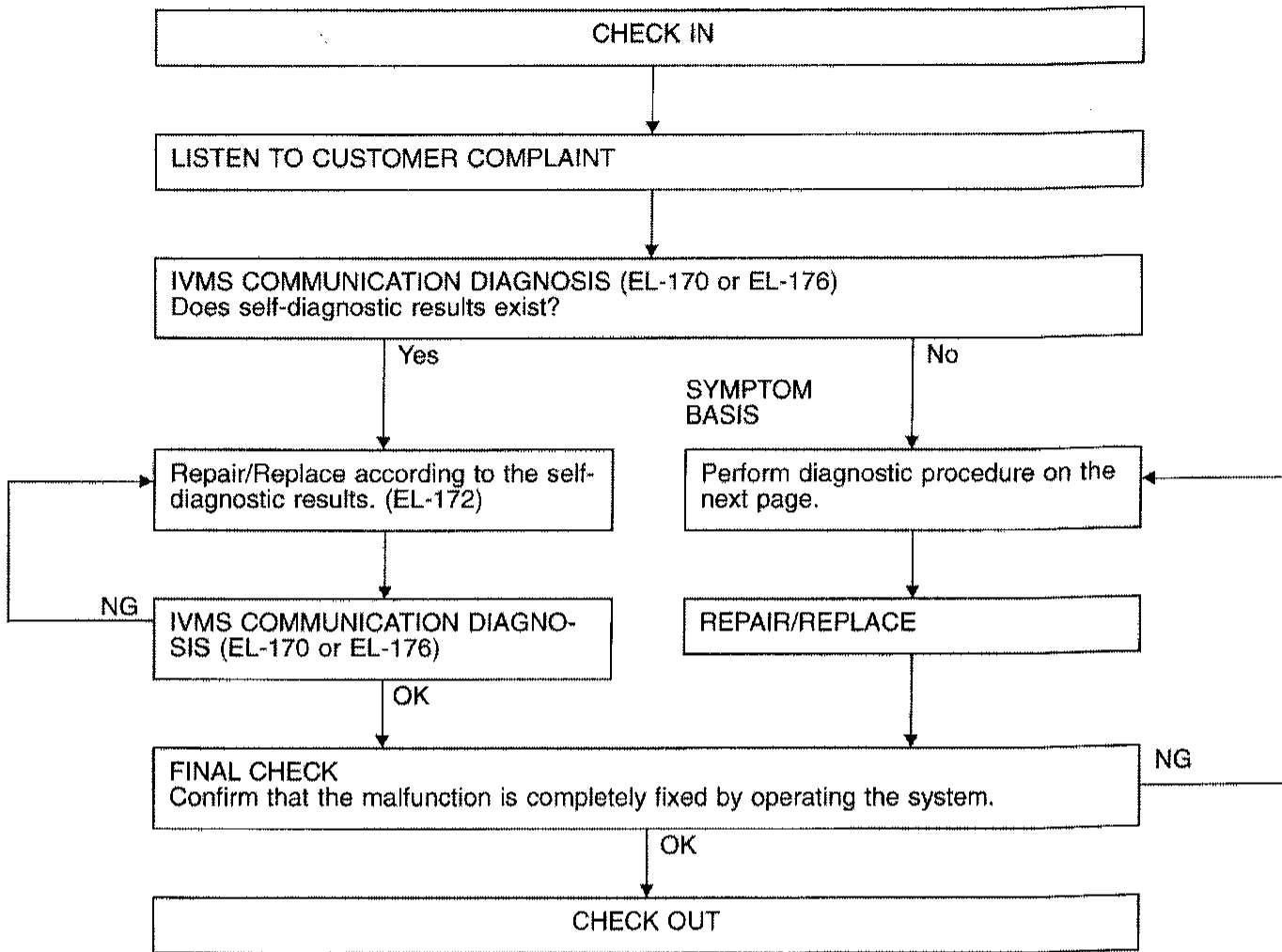
EL

IDX

# WARNING BUZZER

## Trouble Diagnoses

### WORK FLOW



### NOTICE:

- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.  
Erase the memory with CONSULT (refer to EL-170) or turn the ignition switch to “OFF” position and remove 7.5A fuse (No. 56), located in the fuse and fusible link box).

# WARNING BUZZER

## Trouble Diagnoses (Cont'd)

### SYMPTOM CHART

REFERENCE PAGE	EL-92	EL-92	EL-93	EL-93
SYMPTOM	DIAGNOSTIC PROCEDURE 1 (Lighting switch input signal check)	DIAGNOSTIC PROCEDURE 2 (Key switch input signal check)	DIAGNOSTIC PROCEDURE 3 (Seat belt buckle switch input signal check)	DIAGNOSTIC PROCEDURE 4
Light warning buzzer does not activate.	X			X
Ignition key warning buzzer does not activate.		X		X
Seat belt warning buzzer does not activate.			X	X
All warning buzzers do not activate.				X

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

EL

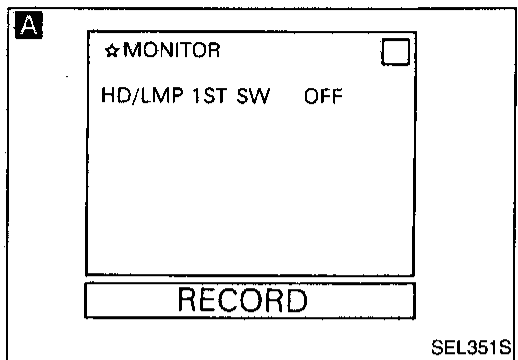
IDX

# WARNING BUZZER

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 1

#### (Lighting switch input signal check)



#### CHECK LIGHTING SWITCH INPUT SIGNAL.

**A** CONSULT

See "HD/LMP 1ST SW" in "Data Monitor" mode.

When lighting switch is in 1ST or 2ND:

**HD/LMP 1ST SW ON**

When lighting switch is OFF:

**HD/LMP 1ST SW OFF**

OR



**ON BOARD**

Perform On board diagnosis — Mode II (Switch monitor) for light switch. Refer to EL-178.

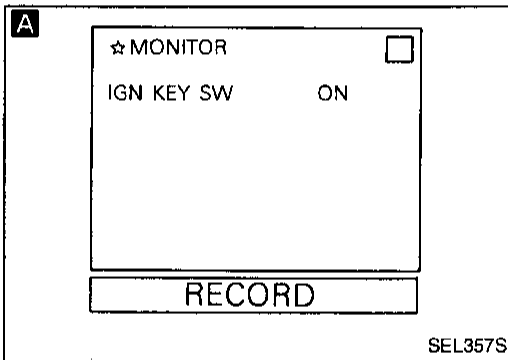
NG

Check the following.

- 7.5A fuse (No. **5**), located in the fuse block
- Harness for open or short between fuse and BCM

OK

Go to Procedure 4.



### DIAGNOSTIC PROCEDURE 2

#### (Key switch input signal check)

#### CHECK KEY SWITCH INPUT SIGNAL.

**A** CONSULT

See "IGN KEY SW" in "Data Monitor" mode.

When key is in ignition:

**IGN KEY SW ON**

When key is out of ignition:

**IGN KEY SW OFF**

OR



**TESTER**

Check voltage between BCM terminal ③ and ground.

Condition of key switch	Voltage [V]
Key is inserted	Approx. 12
Key is withdrawn	0

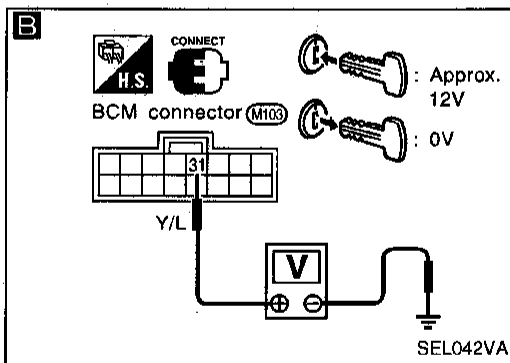
NG

Check the following.

- 7.5A fuse [No. **40**], located in the fuse block (J/B)
- Key switch (insert)
- Harness for open or short between key switch and fuse
- Harness for open or short between BCM and key switch

OK

Go to Procedure 4.

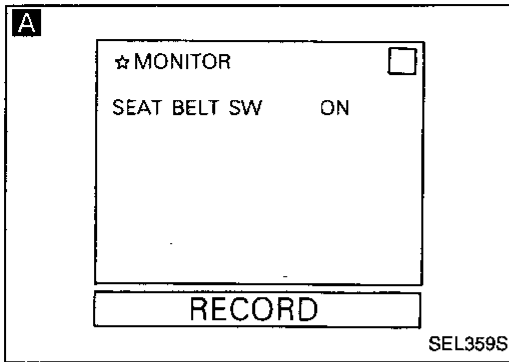


# WARNING BUZZER

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 3

(Seat belt buckle switch input signal check)



#### CHECK SEAT BELT BUCKLE SWITCH INPUT SIGNAL.

**A** CONSULT

See "SEAT BELT SW" in "Data Monitor" mode.

When driver's seat belt is not fastened:

**SEAT BELT SW ON**

When driver's seat belt is fastened:

**SEAT BELT SW OFF**

OR



ON BOARD

Perform On board diagnosis — Mode II (switch monitor) for seat belt buckle switch. Refer to EL-178.

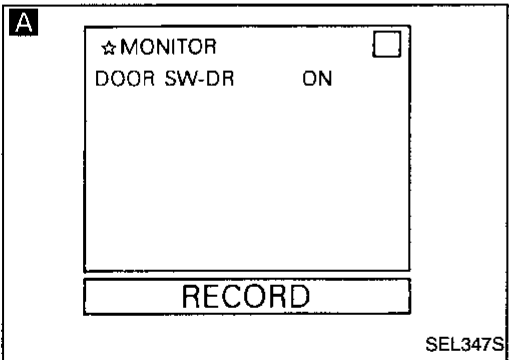
NG

Check the following.

- Seat belt buckle switch
- Seat belt buckle switch ground circuit
- Harness for open or short between BCM and seat belt buckle switch

OK

Go to Procedure 4.



#### DIAGNOSTIC PROCEDURE 4

#### CHECK DRIVER DOOR SWITCH INPUT SIGNAL.

**A** CONSULT

See "DOOR SW-DR" in "Data monitor" mode.

When driver's door is open:

**DOOR SW-DR ON**

When driver's door is closed:

**DOOR SW-DR OFF**

OR



ON BOARD

Perform On board diagnosis — Mode II (switch monitor) for door switch (driver side). Refer to EL-178.

NG

Check the following.

- Driver door switch
- Driver door switch ground circuit
- Harness for open or short between driver door switch and BCM

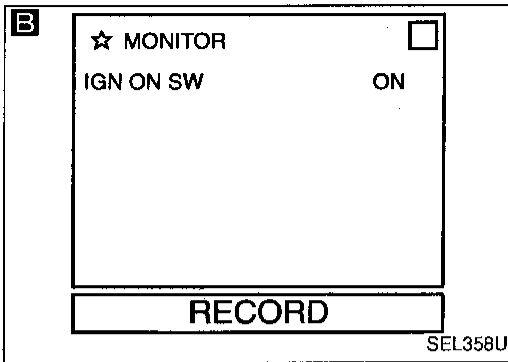
OK

**A**

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# WARNING BUZZER

## Trouble Diagnoses (Cont'd)



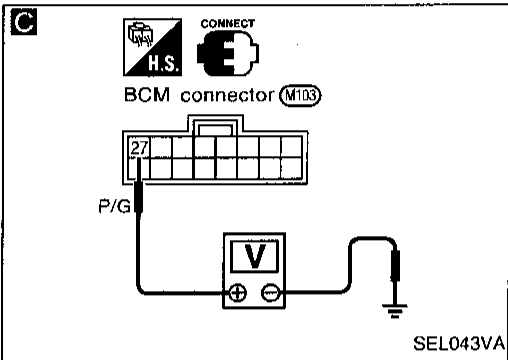
Ⓐ

**CHECK IGNITION ON INPUT SIGNAL**  
**Ⓑ CONSULT**  
 See "IGN ON SW" in "Data Monitor" mode.  
 When ignition switch is ON:  
**IGN ON SW ON**  
 When ignition switch is ACC or OFF:  
**IGN ON SW OFF**

NG

Check the following.

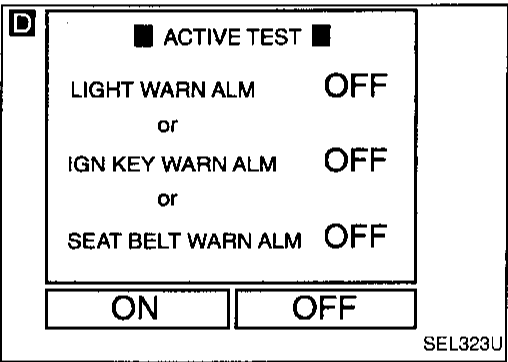
- 7.5A fuse (No. 12, located in the fuse block)
- Harness for open or short between fuse and BCM



OR

**Ⓒ TESTER**  
 Check voltage between BCM terminal 27 and ground.

Condition of ignition switch	Voltage [V]
ON	Approx. 12
ACC or OFF	0

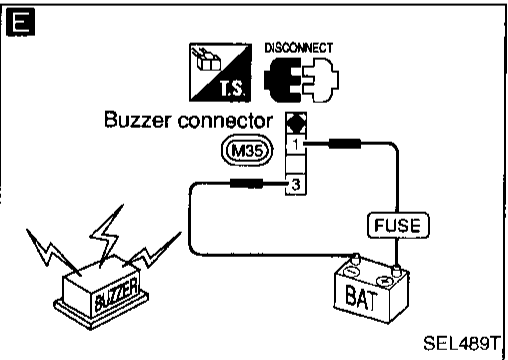


OK

**Ⓓ**  
 Perform "WARN ALM" in "Active Test" mode.  
 Check buzzer operation.  
**If CONSULT is not available, skip this procedure and go to the next procedure below.**

OK

System is OK.



NG

**Ⓔ CHECK WARNING BUZZER**  
 1. Disconnect buzzer connector.  
 2. Apply 12V direct current to buzzer and check buzzer operation.

NG

Replace buzzer.

OK

Check the following.

- 7.5A fuse (No. 40, located in the fuse block)
- Harness for open or short between fuse and buzzer
- Harness for open or short between buzzer and BCM



## System Description

### WIPER OPERATION

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

- through 20A fuse [No. 20], located in the fuse block (J/B)
- to front wiper motor terminal ④.

#### Low and high speed wiper operation

Ground is supplied to front wiper switch terminal ⑰ through body grounds (E5) and (E30).

When the front wiper switch is placed in the LO position, ground is supplied

- through terminal ⑭ of the front wiper switch
- to front wiper motor terminal ②.

With power and ground supplied, the front wiper motor operates at low speed.

When the front wiper switch is placed in the HI position, ground is supplied

- through terminal ⑯ of the front wiper switch
- to front wiper motor terminal ③.

With power and ground supplied, the front wiper motor operates at high speed.

#### Auto stop operation

When the front wiper switch is placed in the OFF position, the front wiper motor will continue to operate until the wiper arms reach the base of the windshield (Auto stop).

When the front wiper switch is placed in the OFF position, ground is supplied

- from terminal ⑭ of the front wiper switch
- to front wiper motor terminal ②, in order to continue front wiper motor operation at low speed.

Ground is also supplied until the wiper arms reaches the base of the windshield

- through terminal ⑬ of the front wiper switch,
- to front wiper relay terminal ③
- through terminal ④ of the front wiper relay,
- to front wiper motor terminal ⑤
- through terminal ⑥ of the front wiper motor, and
- through body grounds (M13), (M73) and (M11).

When the wiper arms reach the base of the windshield, the switch in the front wiper motor moves to the "STOP" position. The ground path is interrupted and the front wiper motor stops.

#### Intermittent operation

Intermittent operation is controlled by the BCM.

When the front wiper switch is placed in the INT position, ground is supplied

- to BCM terminal ③③
- from front wiper switch terminal ⑮
- through body grounds (E5) and (E30).

The desired interval time is input

- to BCM terminal ②④
- from front wiper switch terminal ⑰.

Based on these two inputs, an intermittent ground is supplied

- to front wiper relay terminal ②
- from BCM terminal ⑨.

With power and ground supplied, the front wiper relay is activated.

When activated, an intermittent ground is supplied

- to front wiper motor terminal ②
- through the front wiper switch terminal ⑭,
- to front wiper switch terminal ⑬
- through front wiper relay terminal ③,
- to front wiper relay terminal ⑤
- through body grounds (E5) and (E30).

Front wiper motor operates at desired low speeds with BCM terminal ③③ grounded.

### WASHER OPERATION

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

- through 20A fuse [No. 20], located in the fuse block (J/B)
- to front washer motor terminal ①.

When the lever is pulled to the WASH position, ground is supplied

- to washer motor terminal ②, and

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

EL

IDX

## WIPER AND WASHER

---

### System Description (Cont'd)

- to BCM terminal ③④
- from terminal ①⑧ of the front wiper switch
- through terminal ①⑦ of the front wiper switch, and
- through body grounds ⑤⑤ and ⑤③①.

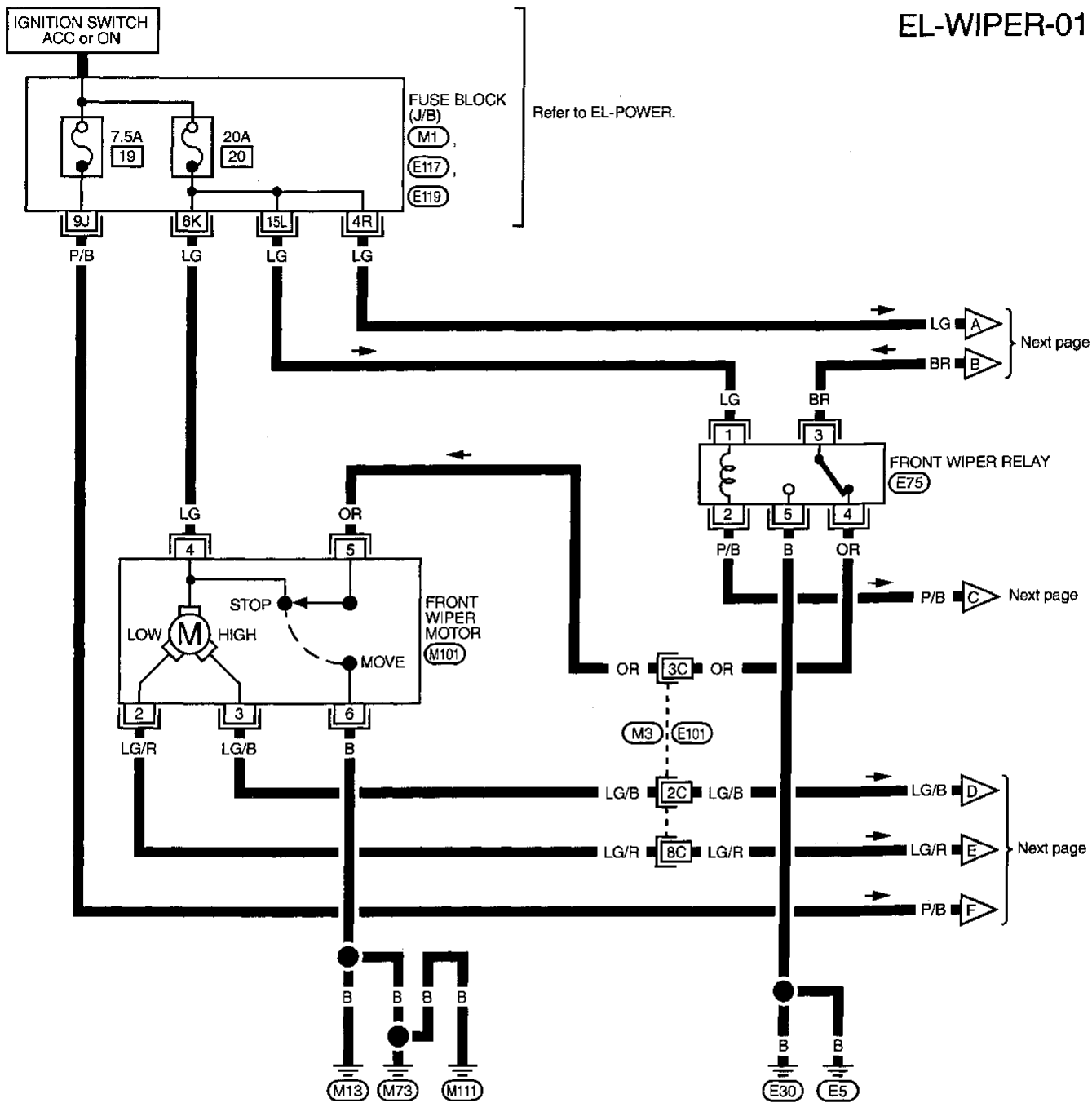
With power and ground supplied, the washer motor operates.

The front wiper motor operates at low speed for about 3 seconds. This feature is controlled by the BCM in the same manner as the intermittent operation.

# WIPER AND WASHER

## Wiring Diagram — WIPER —

EL-WIPER-01

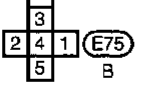
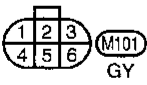


Refer to EL-POWER.

Next page

Next page

Next page



Refer to last page (Foldout page).

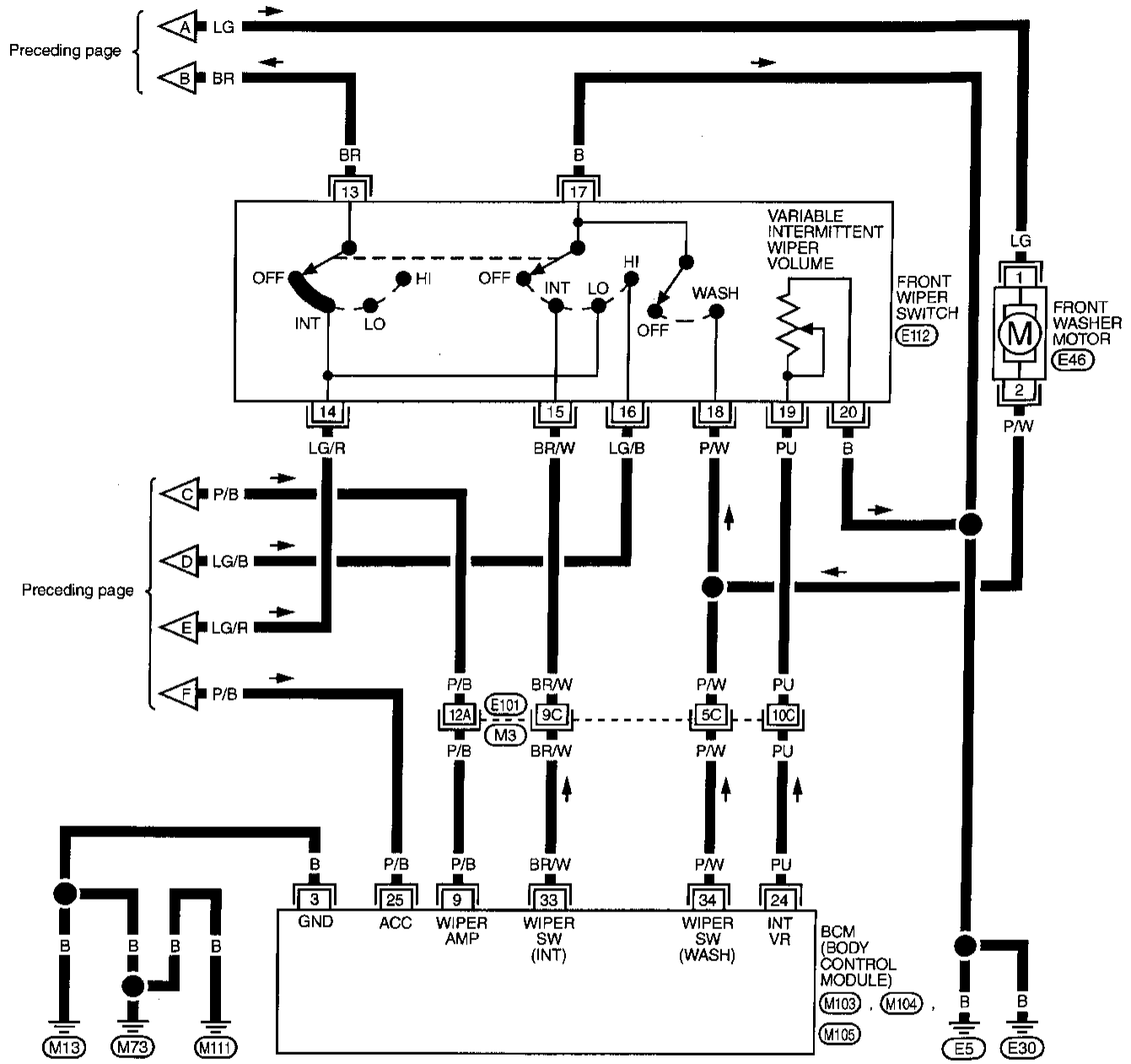
- (M1)
- (M3) (E101)
- (E117)
- (E119)

GI  
 MA  
 EM  
 LC  
 EC  
 FE  
 CL  
 MT  
 AT  
 FA  
 RA  
 BR  
 ST  
 RS  
 BT  
 HA  
**EL**  
 IDX

# WIPER AND WASHER

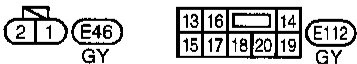
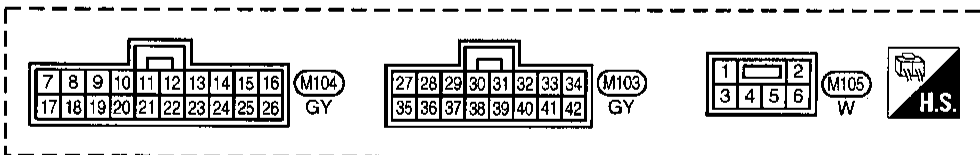
## Wiring Diagram — WIPER — (Cont'd)

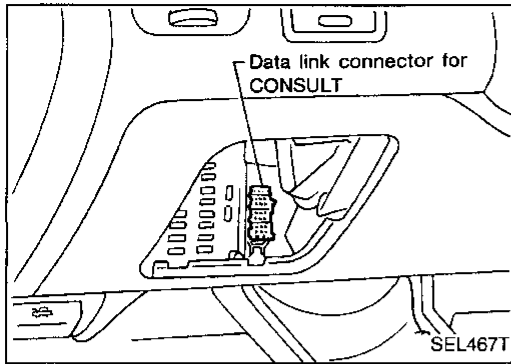
EL-WIPER-02



Refer to last page (Foldout page).

(M3), (E101)

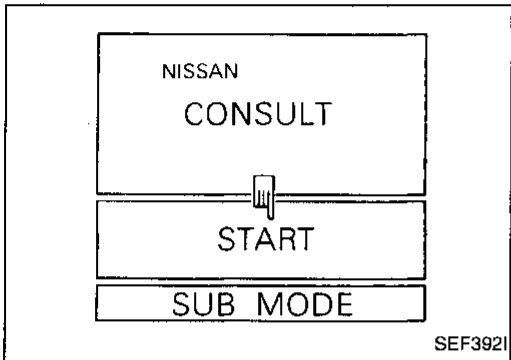




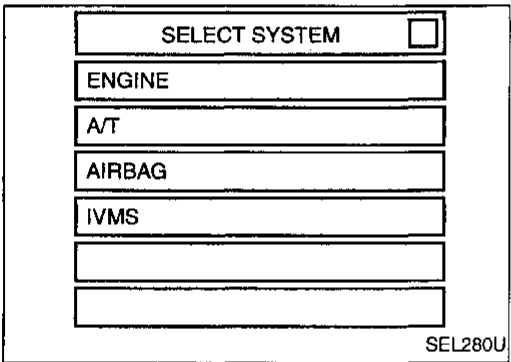
## CONSULT

### CONSULT INSPECTION PROCEDURE

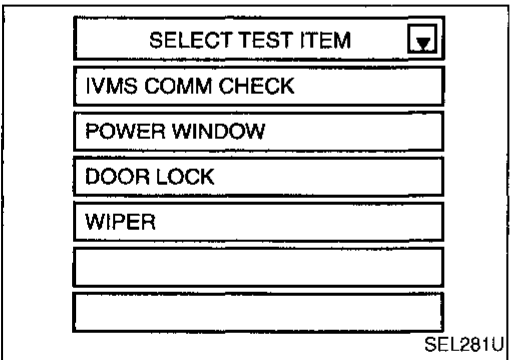
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



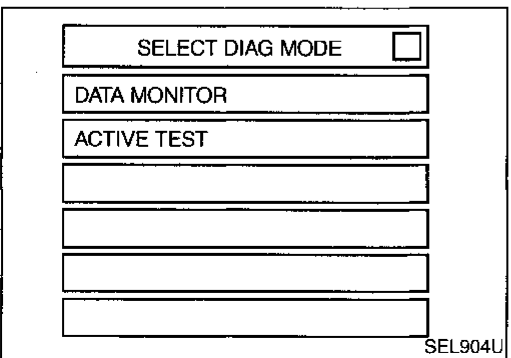
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



6. Touch "WIPER".



- DATA MONITOR and ACTIVE TEST are available for the wiper and washer.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

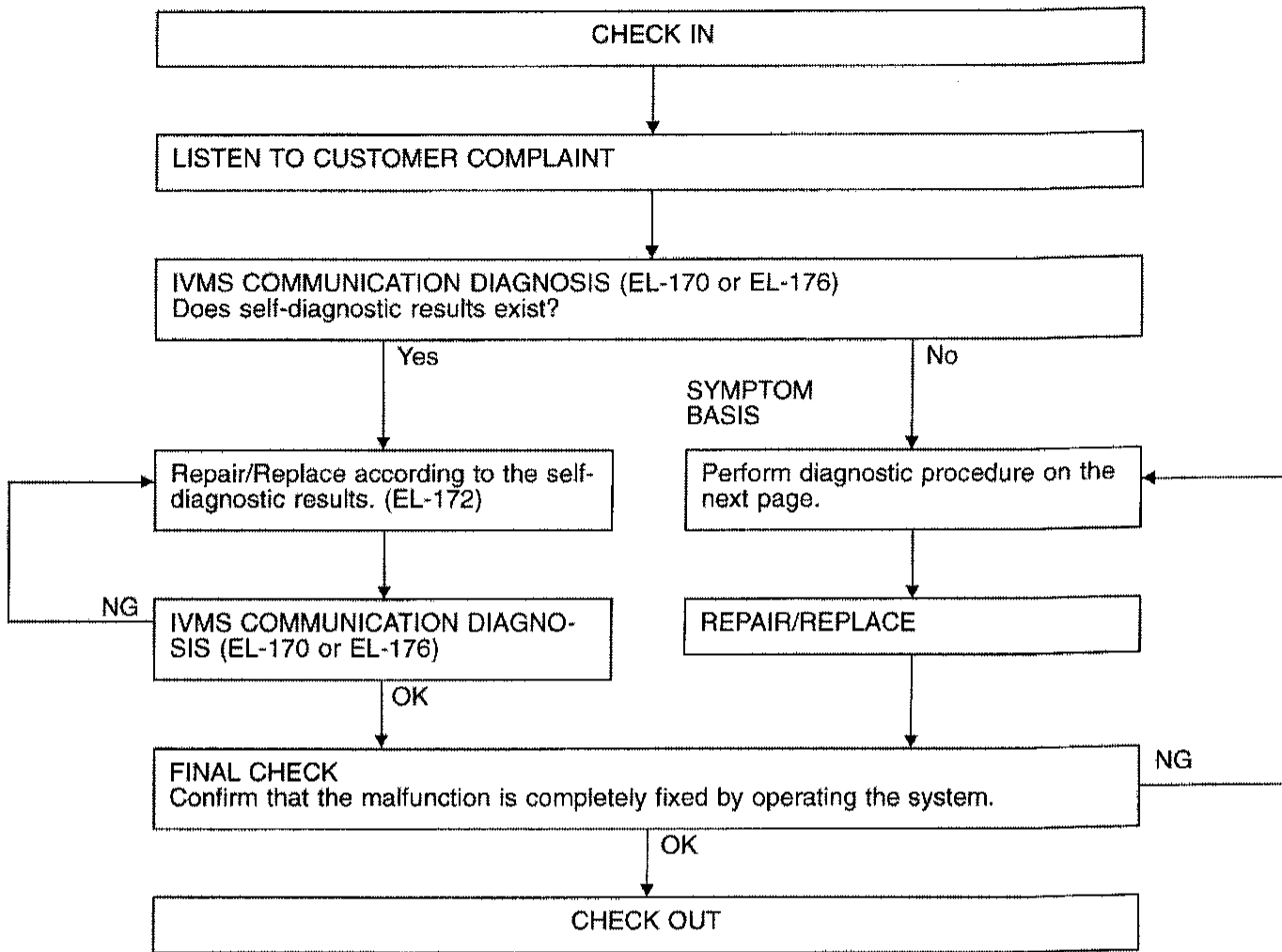
HA

**EL**

IDX

## Trouble Diagnoses

### WORK FLOW



#### NOTICE:

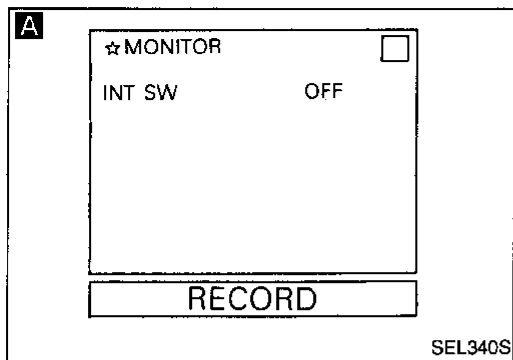
- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.  
Erase the memory with CONSULT (refer to EL-170) or turn the ignition switch to “OFF” position and remove 7.5A fuse (No. 56), located in the fuse and fusible link box).

# WIPER AND WASHER

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 1

**SYMPTOM: Intermittent wiper does not operate.**



**CHECK INTERMITTENT WIPER SWITCH INPUT SIGNAL**  
**A** **TESTER**

See "INT SW" in "Data monitor" mode.  
 When wiper switch is in INT position:  
**INT SW ON**  
 When wiper switch is in OFF position:  
**INT SW OFF**

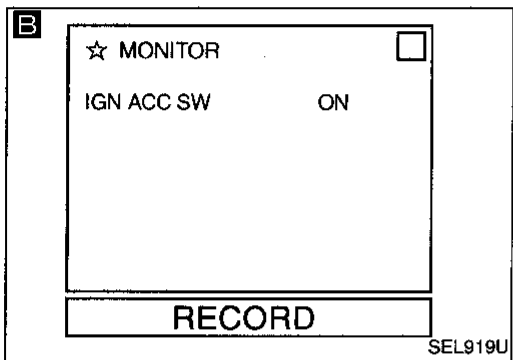
\_\_\_\_\_ OR \_\_\_\_\_

**ON BOARD**

Perform On board diagnosis — Mode II (switch monitor) for wiper switch (INT). Refer to EL-178.

- NG → Check the following.
- Front wiper switch
  - Front wiper switch ground circuit
  - Harness for open or short between BCM and wiper switch

Note: When "Data monitor" is operating, intermittent wiper do not operate.



**CHECK IGNITION SWITCH ACC SIGNAL**  
**B** **CONSULT**

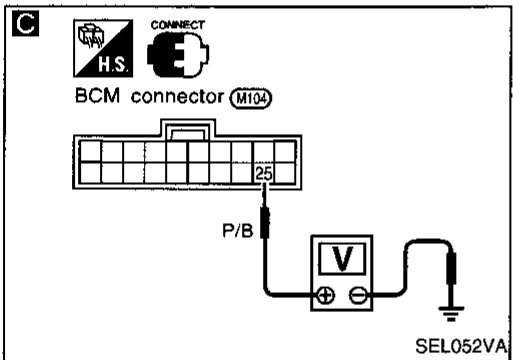
See "IGN ACC SW" in "Data monitor" mode.  
 When ignition switch is ACC or ON:  
**IGN ACC SW ON**  
 When ignition switch is OFF:  
**IGN ACC SW OFF**

\_\_\_\_\_ OR \_\_\_\_\_

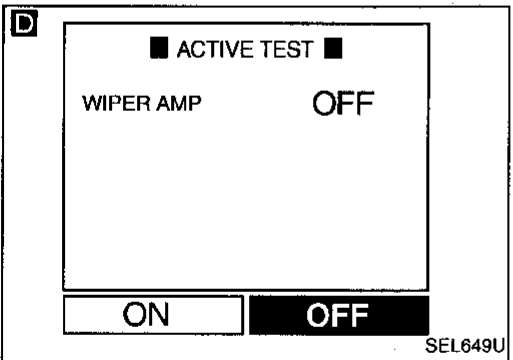
**C** **TESTER**

Check voltage between BCM terminal 25 and ground.

- NG → Check the following.
- 7.5A fuse [No. 19], located in the fuse block (J/B)]
  - Harness for open or short between fuse and BCM



Condition of ignition switch	Voltage [V]
ACC or ON	Approx. 12
OFF	0



**CHECK WIPER OPERATION**  
**D** See "WIPER AMP" in "Active test" mode.  
 Perform operation shown on display.  
 Wiper motor should operate.

Note:  
 If CONSULT is not available, skip this procedure and go to procedure 5.

OK → Replace BCM.

NG → Check wiper relay.

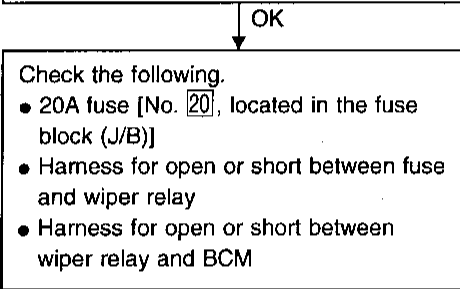
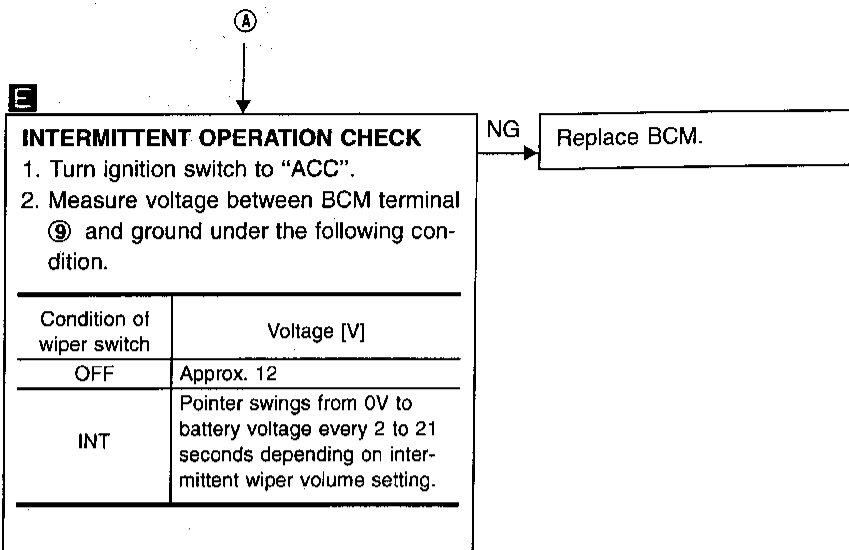
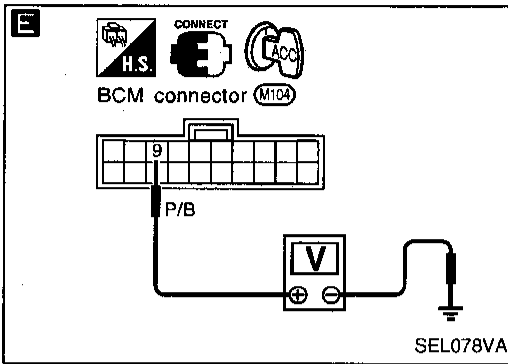
NG → Replace wiper relay.

OK →

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# WIPER AND WASHER

## Trouble Diagnoses (Cont'd)



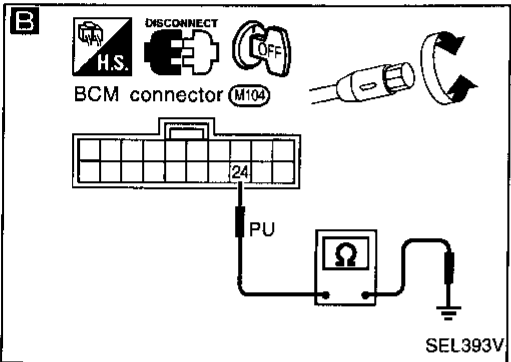
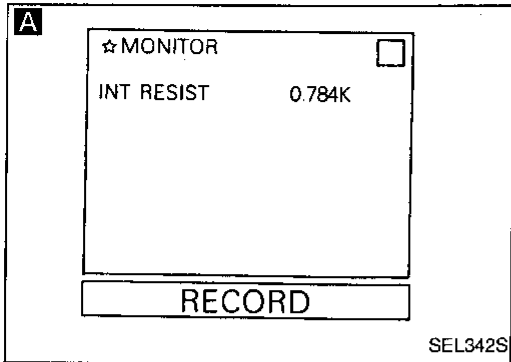


# WIPER AND WASHER

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 2

**SYMPTOM: Intermittent time of wiper cannot be adjusted.**



#### CHECK INTERMITTENT WIPER VOLUME INPUT SIGNAL

**A** CONSULT

See "INT RESIST" in "Data monitor" mode while turning intermittent wiper volume.

Position of wiper knob	Resistance [kΩ]
Short interval	0
Long interval	Approx. 1

OR

**B** TESTER

Measure resistance between BCM terminal ② and ground while turning intermittent wiper volume.

Position of wiper knob	Resistance [kΩ]
Short interval	0
Long interval	Approx. 1

OK → Replace BCM.

NG

Check intermittent wiper volume. Refer to "COMBINATION SWITCH".

NG → Replace intermittent wiper volume.

OK

- Check the following.
- Harness for open or short between BCM and intermittent wiper volume
  - Intermittent wiper volume ground circuit

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

**EL**

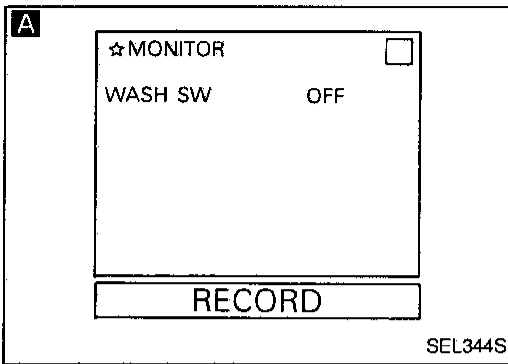
IDX

# WIPER AND WASHER

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 3

**SYMPTOM: Wiper and washer activate individually but not in combination.**



#### CHECK WASHER SWITCH INPUT SIGNAL

**A**  CONSULT

See "WASH SW" in "Data monitor" mode.

When washer switch is ON:

**WASH SW ON**

When washer switch is OFF:

**WASH SW OFF**

OR



ON BOARD

Perform On board diagnosis — Mode II (switch monitor) for wiper switch (WASH). Refer to EL-178.

OK

Replace BCM.

NG

Check the following.

- Front wiper switch
- Harness for open or short between BCM and wiper switch

## Removal and Installation

### WIPER ARMS

1. Turn on wiper switch to operate wiper motor and then turn it "OFF" (Auto Stop).
2. Lift the blade up and then set it down onto glass surface. Set the blade center to clearance "L<sub>1</sub>" or "L<sub>2</sub>" immediately before tightening nut.
3. Eject washer fluid. Turn on wiper switch to operate wiper motor and then turn it "OFF".
4. Ensure that wiper blades stop within clearance "L<sub>1</sub>" & "L<sub>2</sub>".

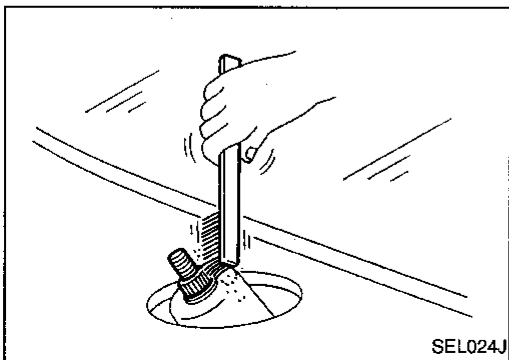
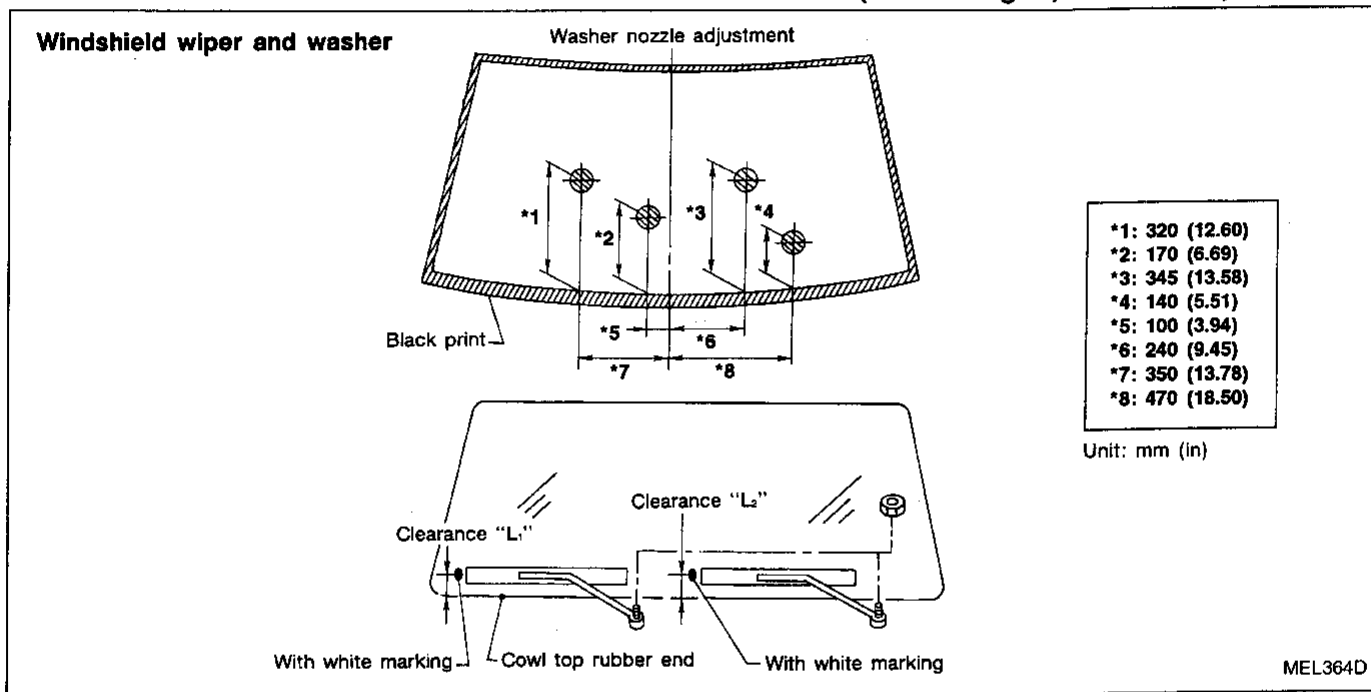
**Clearance "L<sub>1</sub>": 40 - 56 mm (1.57 - 2.20 in)**

**Clearance "L<sub>2</sub>": 37 - 47 mm (1.46 - 1.85 in)**

- Tighten windshield wiper arm nuts to specified torque.

**Windshield wiper:**

**21 - 26 N·m (2.1 - 2.7 kg-m, 15 - 20 ft-lb)**



- Before reinstalling wiper arm, clean up the pivot area as illustrated. This will reduce possibility of wiper arm looseness.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

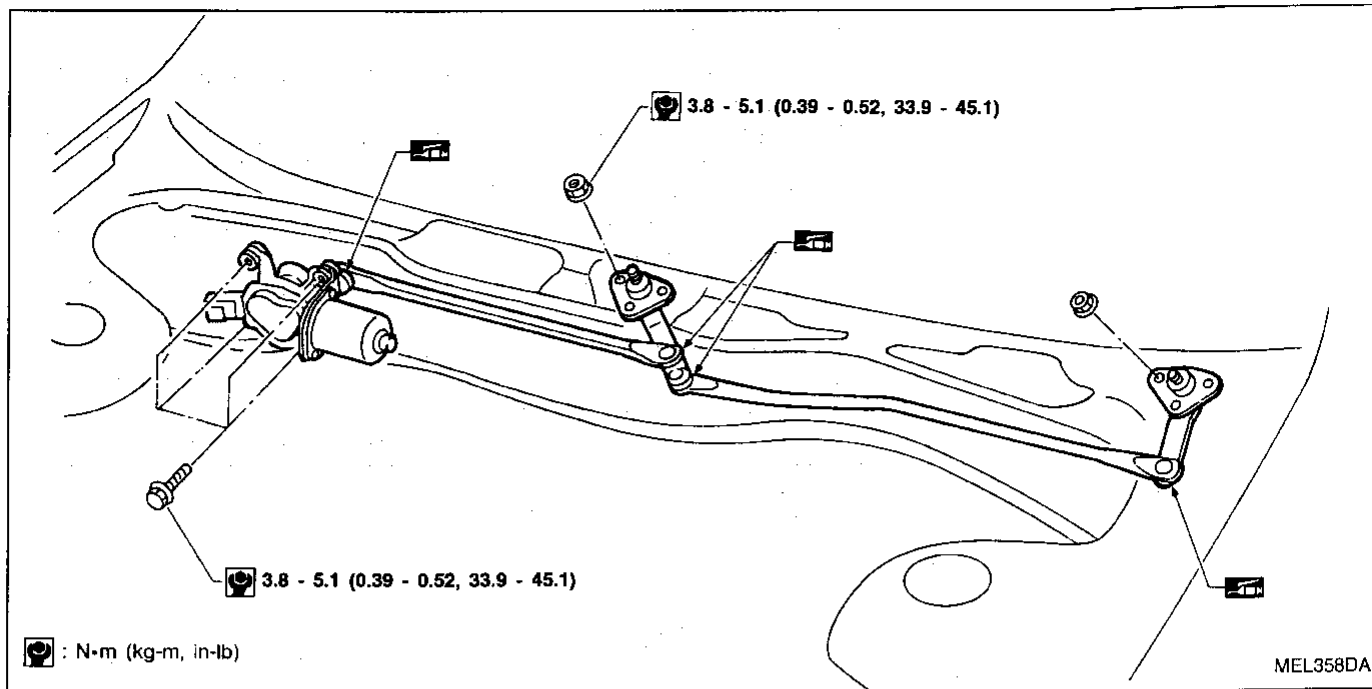
HA

EL

IDX

# WIPER AND WASHER

## Removal and Installation (Cont'd) WIPER LINKAGE



### Removal

1. Remove 4 bolts that secure wiper motor.
2. Detach wiper motor from wiper linkage at ball joint.
3. Remove wiper linkage.

**Be careful not to break ball joint rubber boot.**

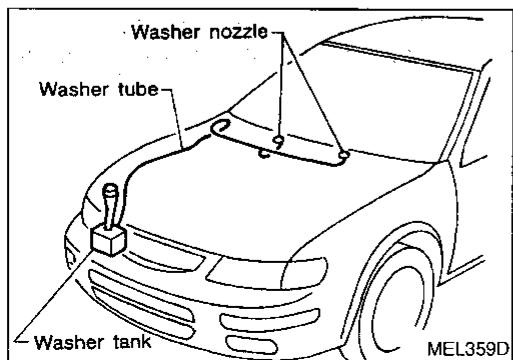
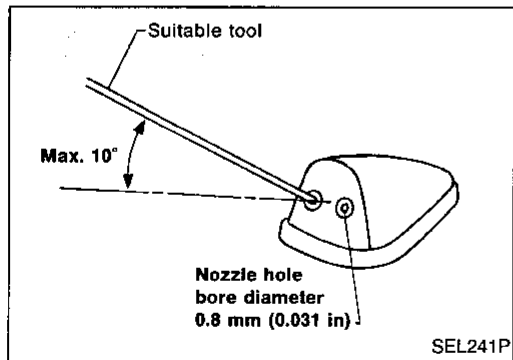
### Installation

- Grease ball joint portion before installation.
- Installation is in reverse order of removal.

### Washer Nozzle Adjustment

- Adjust washer nozzle with suitable tool as shown in the figure at left.

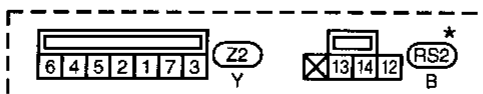
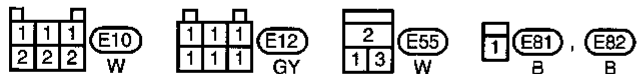
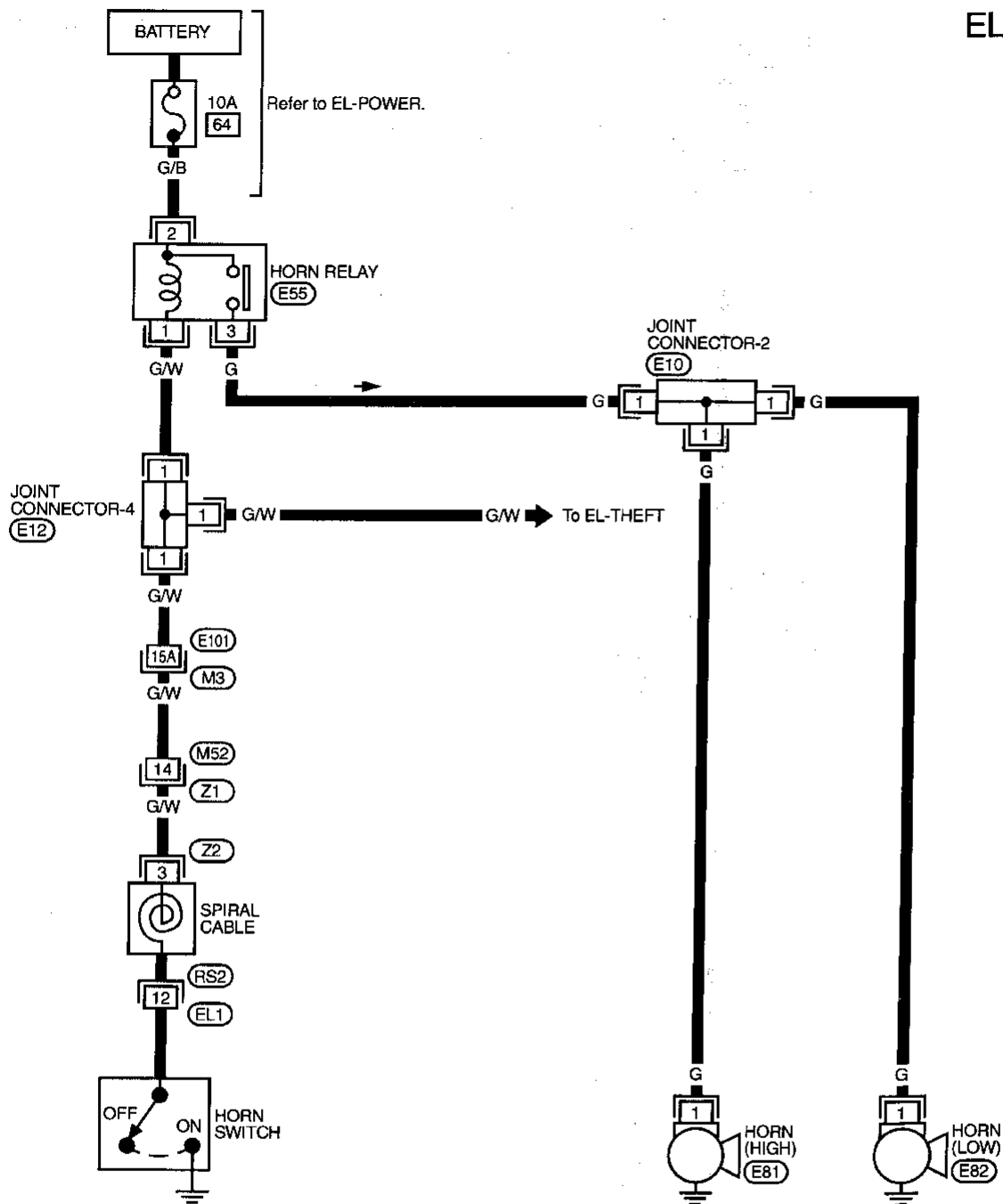
**Adjustable range:  $\pm 10^\circ$**



### Check Valve (Built in washer nozzles)

Wiring Diagram — HORN —

EL-HORN-01



Refer to last page (Foldout page).

M3, E101

\*: This connector is not shown in "HARNES LAYOUT".

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

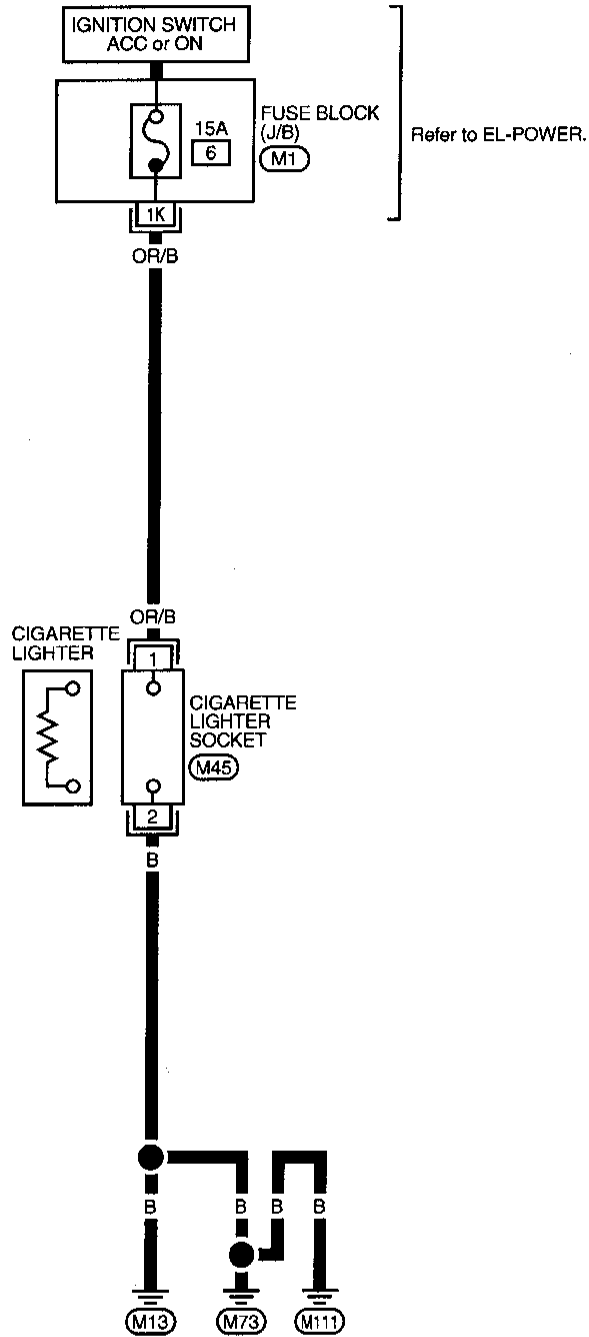
EL

IDX

# CIGARETTE LIGHTER

## Wiring Diagram — CIGAR —

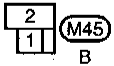
EL-CIGAR-01



Refer to EL-POWER.

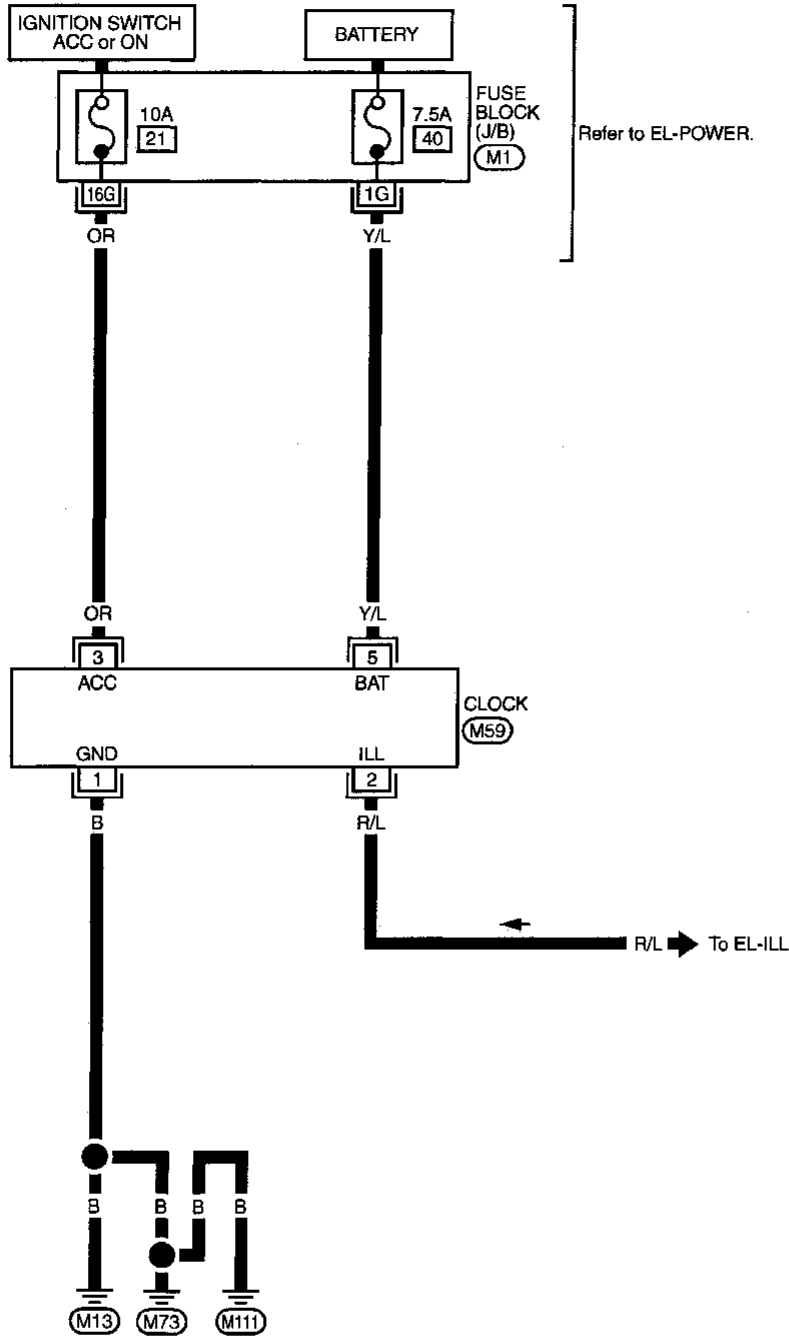
Refer to last page (Foldout page).

M1



Wiring Diagram — CLOCK —

EL-CLOCK-01



GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

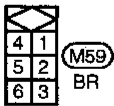
RS

BT

HA

EL

IDX



Refer to last page (Foldout page).

(M1)

# REAR WINDOW DEFOGGER

## System Description

### FUNCTION

- The following time control function is controlled by BCM.

Item	Details of control
Rear window defogger timer	Turn off rear window defogger about 15 minutes after the rear window defogger switch is turned "ON".

### REAR WINDOW DEFOGGER TIMER

The rear window defogger system is controlled by the BCM.

Power is supplied at all times

- through 20A fuse [No. 38], located in the fuse block (J/B)
- to the rear window defogger relay terminal ③, and
- through 20A fuse [No. 39], located in the fuse block (J/B)
- to the rear window defogger relay terminal ⑥.

With the ignition switch in the ON or START position, power is supplied

- through 7.5A fuse [No. 12], located in the fuse block (J/B)
- to the rear window defogger relay terminal ① and,
- to BCM terminal 27.

When the rear window defogger switch is ON, ground is supplied

- through terminal ① of the rear window defogger switch
- to BCM terminal 28.

Terminal 7 of the BCM then supplies ground to the rear window defogger relay terminal ②.

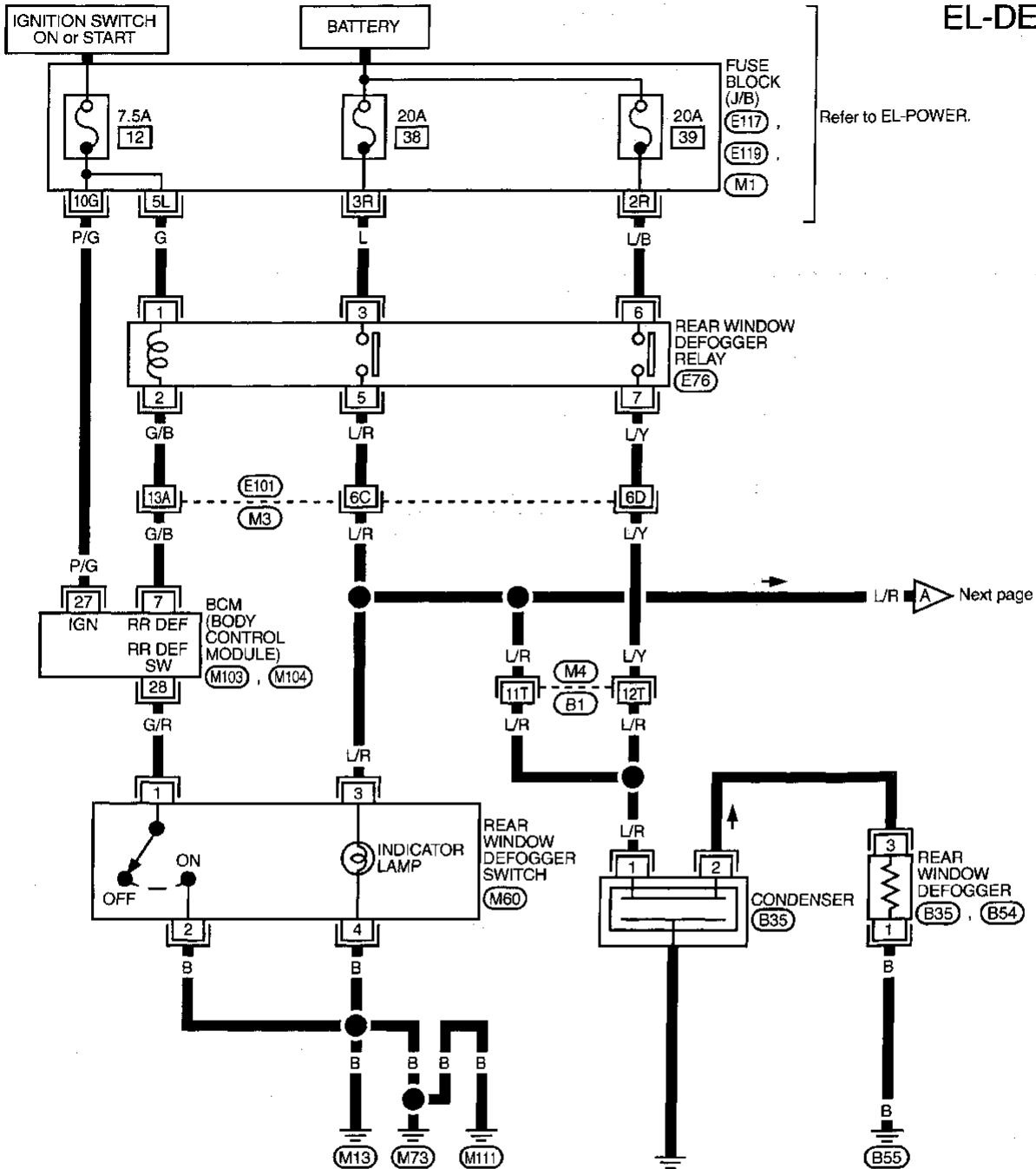
With power and ground supplied, the rear window defogger relay is energized to operate rear window defogger for about 15 minutes.



# REAR WINDOW DEFOGGER

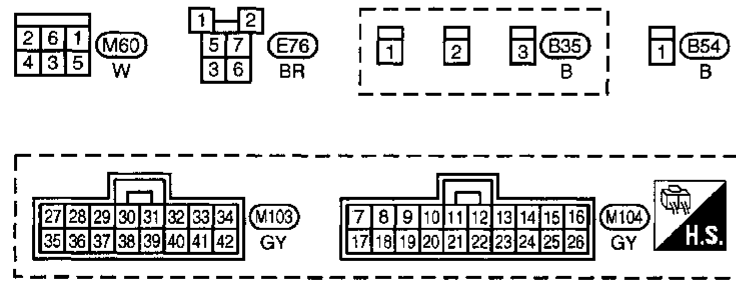
## Wiring Diagram — DEF —

EL-DEF-01



Refer to EL-POWER.

Next page



Refer to last page (Foldout page).

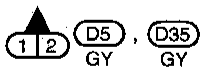
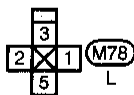
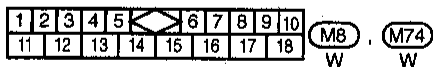
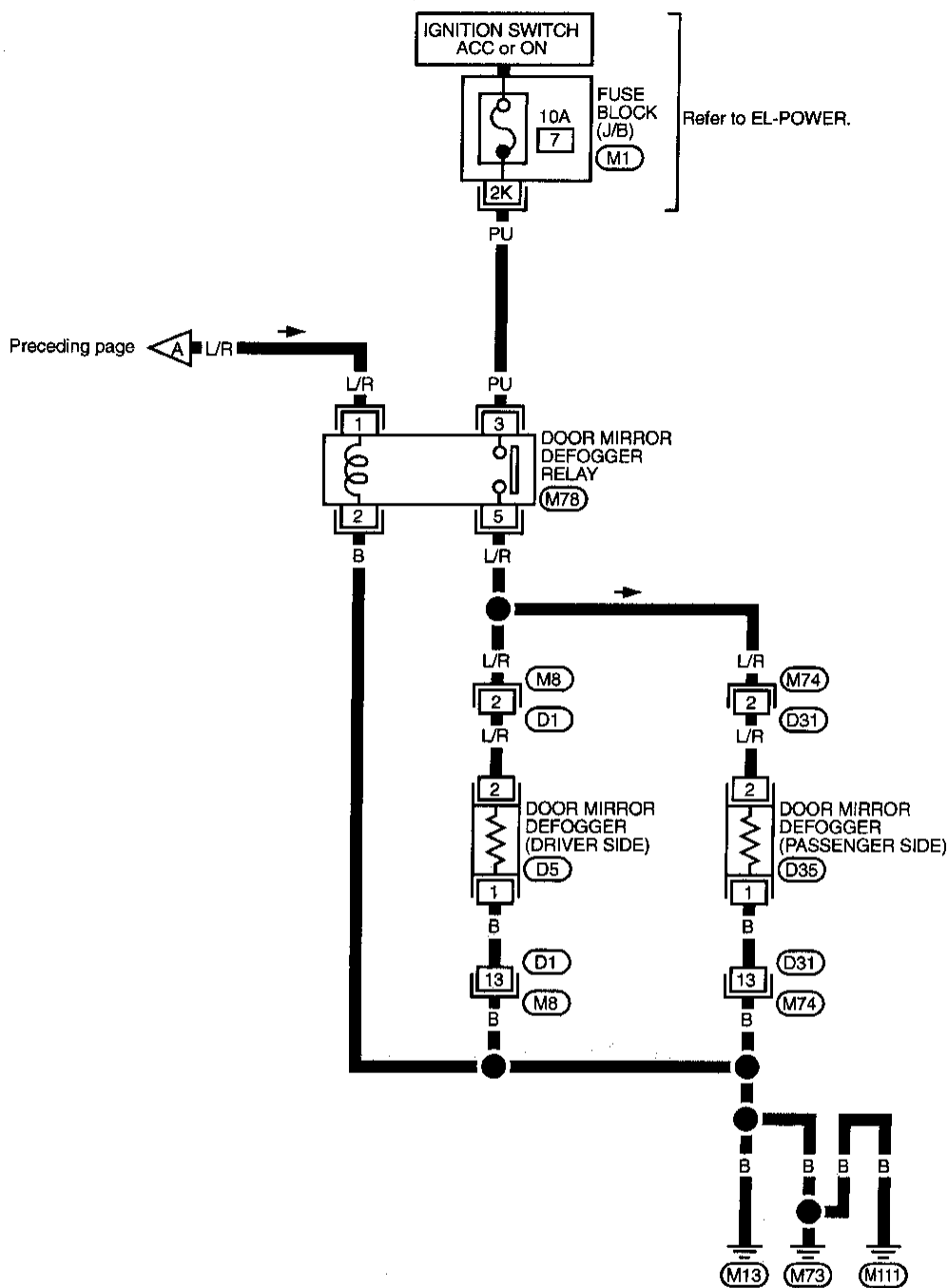
- (M1)
- (M3), (E101)
- (M4), (B1)
- (E117)
- (E119)

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# REAR WINDOW DEFOGGER

## Wiring Diagram — DEF — (Cont'd)

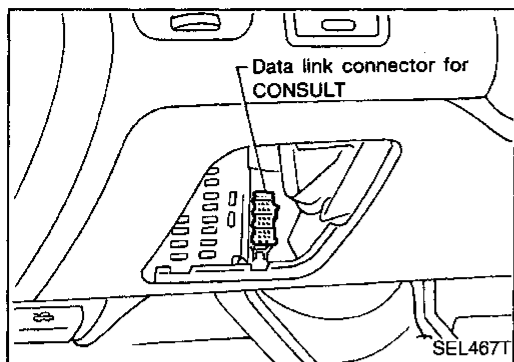
EL-DEF-02



Refer to last page (Foldout page).

M1

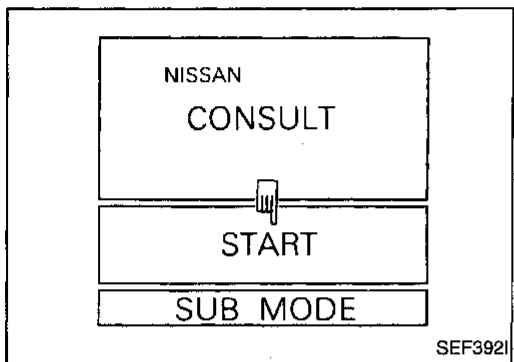
# REAR WINDOW DEFOGGER



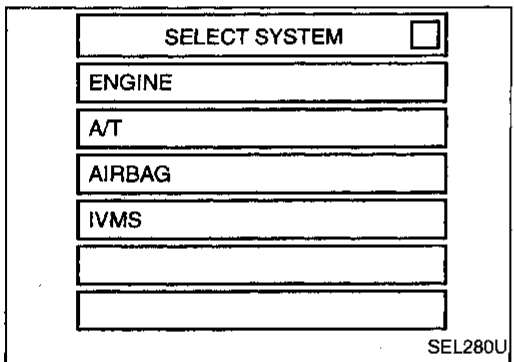
## CONSULT

### CONSULT INSPECTION PROCEDURE

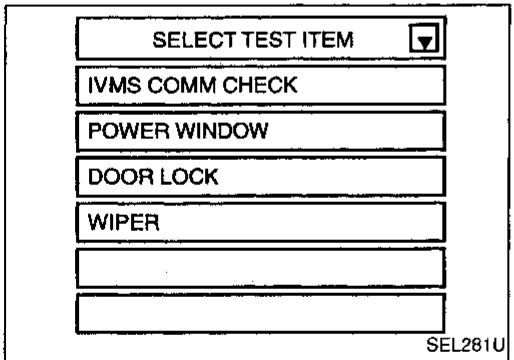
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



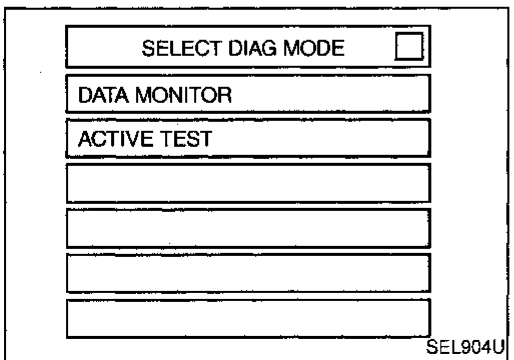
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



6. Touch "REAR DEFOGGER".



- DATA MONITOR and ACTIVE TEST are available for the rear window defogger.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

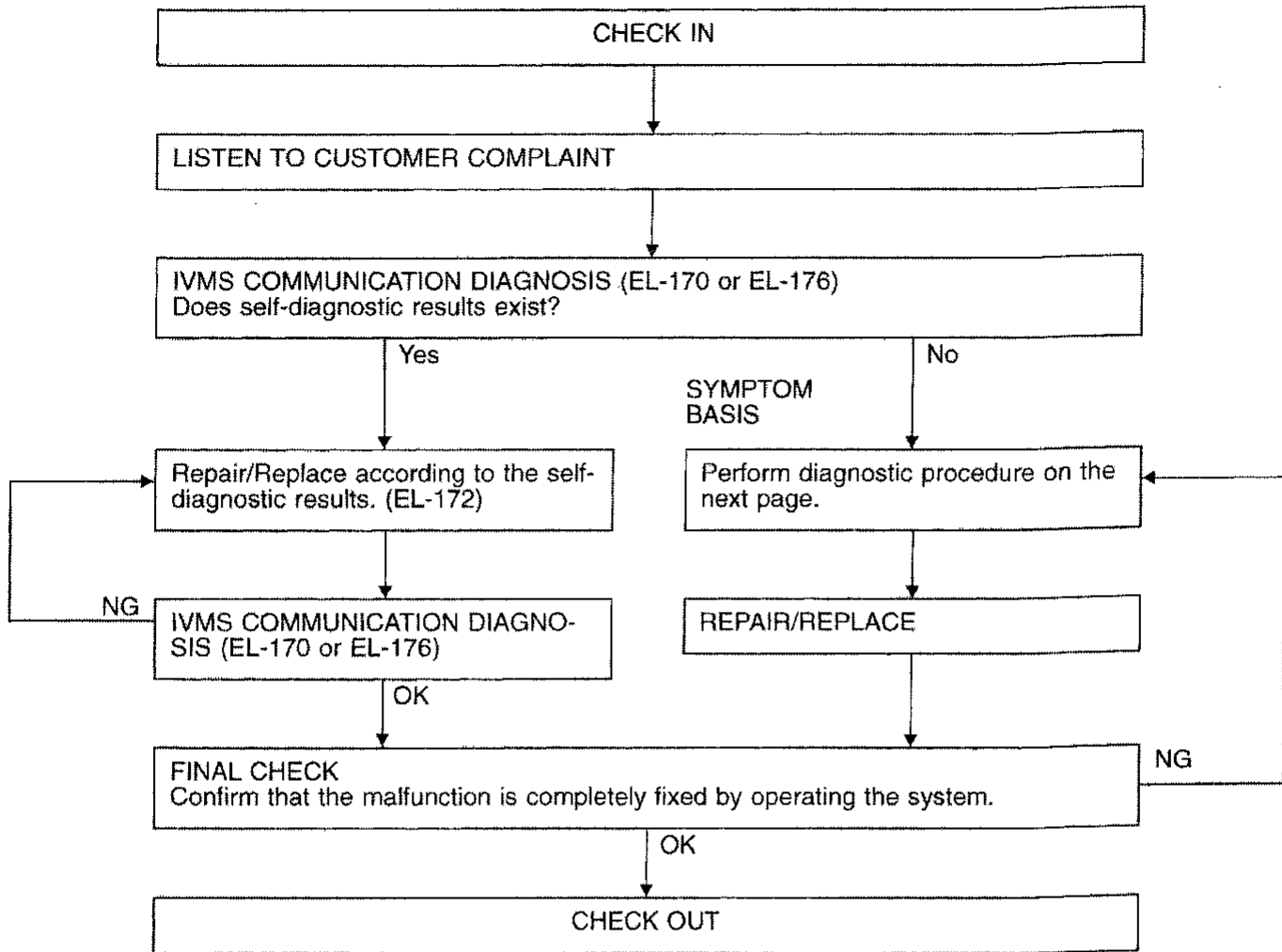
EL

IDX

# REAR WINDOW DEFOGGER

## Trouble Diagnoses

### WORK FLOW



### NOTICE:

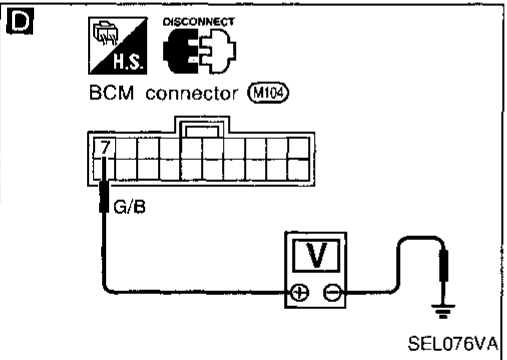
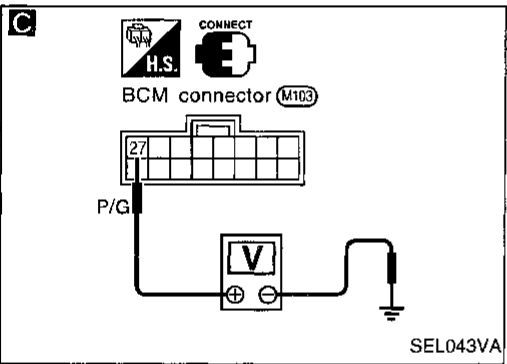
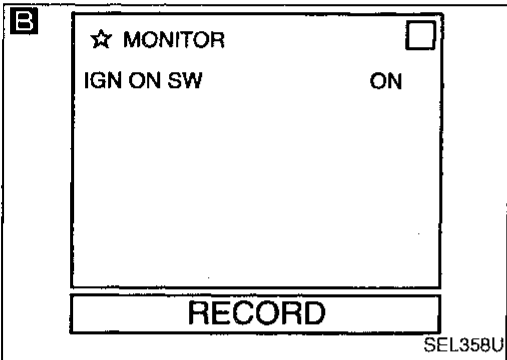
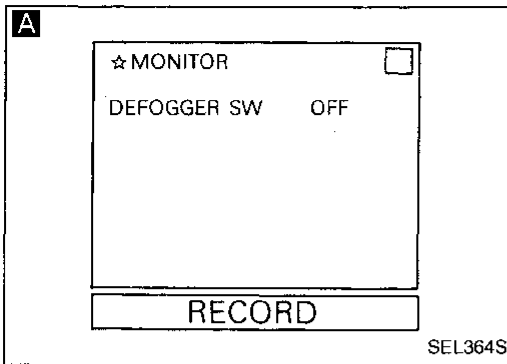
- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.  
Erase the memory with CONSULT (refer to EL-170) or turn the ignition switch to “OFF” position and remove 7.5A fuse (No. 56, located in the fuse and fusible link box).

# REAR WINDOW DEFOGGER

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE

**SYMPTOM:** Rear window defogger does not activate or does not turn off after activating.



**CHECK REAR WINDOW DEFOGGER SWITCH INPUT SIGNAL**

**A** **CONSULT**

See "DEFOGGER SW" in DATA MONITOR mode.  
When defogger switch is pushed (turned ON):  
**DEFOGGER SW ON**  
When defogger switch is pushed again (turned OFF):  
**DEFOGGER SW OFF**

**ON BOARD**

Check rear window defogger switch in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-178.)

**CHECK IGNITION SWITCH ON SIGNAL**

**B** **CONSULT**

See "IGN ON SW" in DATA MONITOR mode.  
When ignition switch is ON:  
**IGN ON SW ON**  
When ignition switch is ACC or OFF:  
**IGN ON SW OFF**

**TESTER**

Check voltage between BCM terminal ② and ground.

Condition of ignition switch	Voltage [V]
ON	Approx. 12
ACC or OFF	0

**CHECK REAR WINDOW DEFOGGER OUTPUT SIGNAL**

1. Disconnect BCM connector.  
2. Check voltage between BCM terminal ⑦ and ground.

Condition of ignition switch	Voltage [V]
ON	Approx. 12
OFF	0

Check rear window defogger switch.

OK → [ ]  
NG → **Replace rear window defogger switch.**

Check the following.

- Harness for open or short between BCM and rear window defogger switch
- Rear window defogger switch ground circuit

Check the following.

- 7.5A fuse [No. 12, located in the fuse block (J/B)]
- Harness for open or short between fuse and BCM

Check rear window defogger relay.

OK → [ ]  
NG → **Replace relay.**

Check the following.

- 7.5A fuse [No. 12, located in the fuse block (J/B)]
- Harness for open or short between fuse and rear window defogger relay
- Harness for open or short between rear window defogger relay and BCM

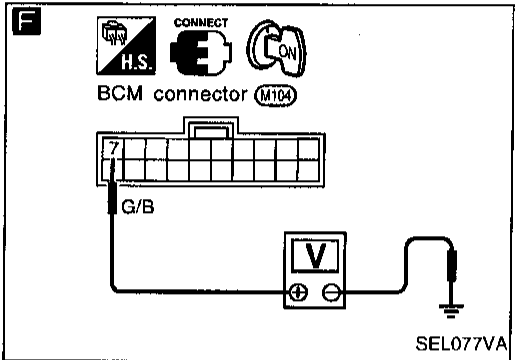
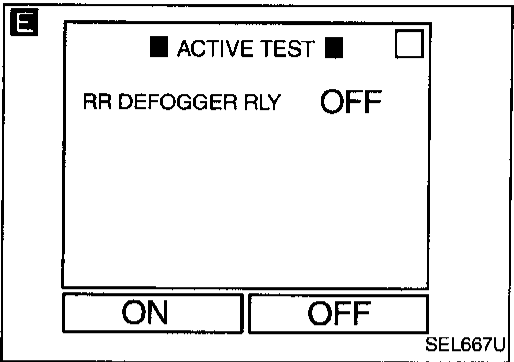
Connect BCM connector.

Ⓐ

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# REAR WINDOW DEFOGGER

## Trouble Diagnoses (Cont'd)



Ⓐ

**REAR WINDOW DEFOGGER ACTIVE TEST**

**CONSULT**

Perform "RR DEFOGGER RLY" in ACTIVE TEST mode. Check rear defogger relay operation.

OR

**TESTER**

1. Turn ignition switch to ON.  
2. Check voltage between BCM terminal ⑦ and ground.

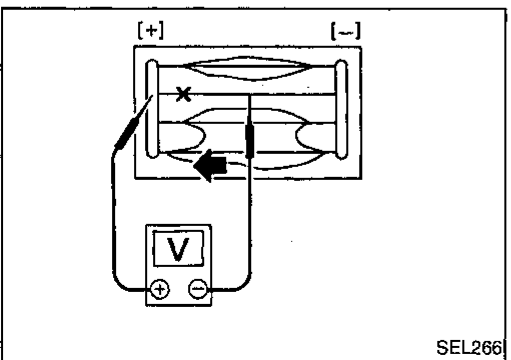
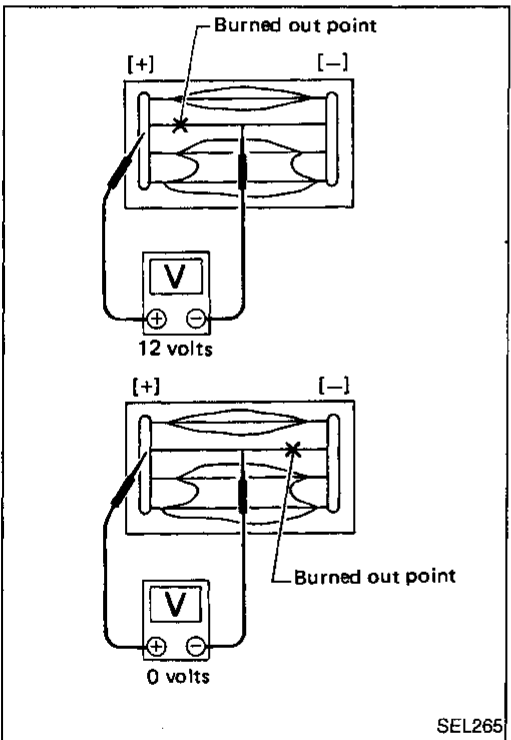
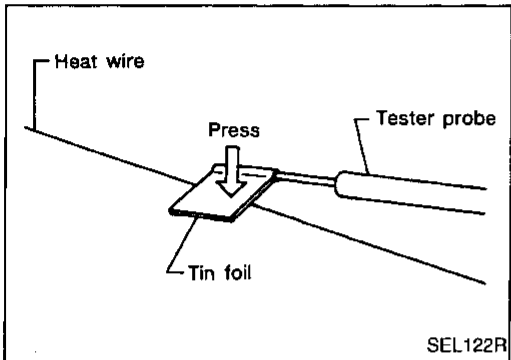
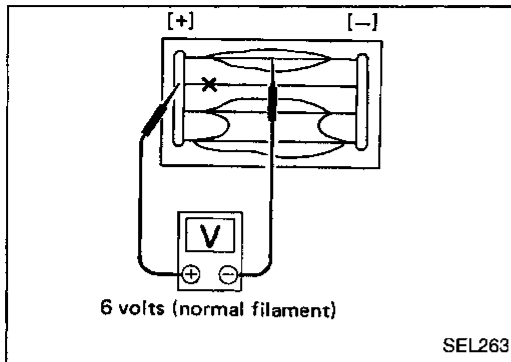
Condition of rear defogger switch	Voltage [V]
ON	0
OFF	Approx. 12

OK

NG → Replace BCM.

Check rear window defogger circuit.

# REAR WINDOW DEFOGGER



## Filament Check

1. Attach probe circuit tester (in volt range) to middle portion of each filament.

- When measuring voltage, wrap tin foil around the top of the negative probe. Then press the foil against the wire with your finger.

2. If a filament is burned out, circuit tester registers 0 or 12 volts.

3. To locate burned out point, move probe along filament. Tester needle will swing abruptly when probe passes the point.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

EL

IDX

# REAR WINDOW DEFOGGER

## Filament Repair

### REPAIR EQUIPMENT

1. Conductive silver composition (Dupont No. 4817 or equivalent)
2. Ruler 30 cm (11.8 in) long
3. Drawing pen
4. Heat gun
5. Alcohol
6. Cloth

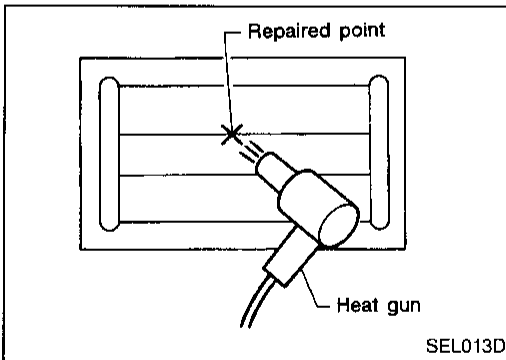
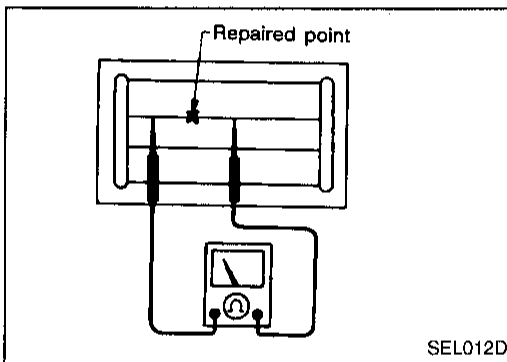
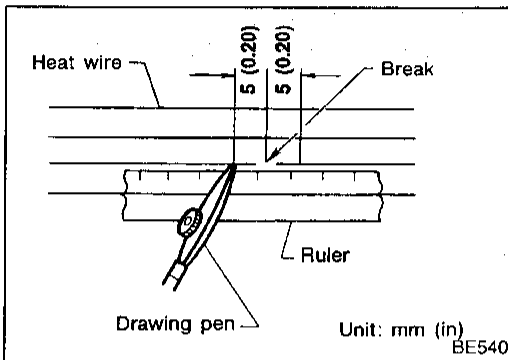
### REPAIRING PROCEDURE

1. Wipe broken heat wire and its surrounding area clean with a cloth dampened in alcohol.
2. Apply a small amount of conductive silver composition to tip of drawing pen.

#### Shake silver composition container before use.

3. Place ruler on glass along broken line. Deposit conductive silver composition on break with drawing pen. Slightly overlap existing heat wire on both sides [preferably 5 mm (0.20 in)] of the break.
4. After repair has been completed, check repaired wire for continuity. This check should be conducted 10 minutes after silver composition is deposited.

**Do not touch repaired area while test is being conducted.**



5. Apply a constant stream of hot air directly to the repaired area for approximately 20 minutes with a heat gun. A minimum distance of 3 cm (1.2 in) should be kept between repaired area and hot air outlet. If a heat gun is not available, let the repaired area dry for 24 hours.



## System Description

Refer to Owner's Manual for audio system operating instructions.

### BOSE SYSTEM

Power is supplied at all times

- through 15A fuse (No. 62, located in the fuse and fusible link box)
- to audio terminal 6 .

Power is supplied at all times

- through 15A fuse [No. 22, located in the fuse block (J/B)]
- to audio amp. relay terminal 3 .

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

- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to audio terminal 10 .

Ground is supplied through the case of the radio.

Ground is also supplied

- to audio amp. relay terminal 2 ,
- to front door speaker LH terminal 2 and
- to front door speaker RH terminal 2
- through body grounds M13, M73 and M111.
- to rear speaker LH terminal 1 and
- to rear speaker RH terminal 1
- through body grounds B16 and B19.

When the audio POWER button is pressed, power is supplied to audio amp. relay 1 from audio terminal 12 .

Then audio amp. relay is energized and power is supplied

- to front door speaker LH terminal 5
- to front door speaker RH terminal 5 and
- to rear speaker LH terminal 3 and RH terminal 3 .

Audio signals are supplied

- through audio terminals 1 , 2 , 3 , 4 , 13 , 14 , 15 and 16
- to terminals 3 and 6 of the LH and RH front speakers and terminals 2 and 4 of the LH and RH rear speakers
- to LH and RH tweeters through terminals 1 and 4 of the front speakers.

### BASE SYSTEM

Power is supplied at all times

- through 15A fuse [No. 62, located in the fuse and fusible link box]
- to audio terminal 6 and,
- through 7.5A fuse [No. 40, located in the fuse block (J/B)]
- to CD player terminal 24 .

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

- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to audio terminal 10 and CD player terminal 21 .

Ground is supplied through the case of the audio and CD player.

When the audio power knob is pushed to the ON position, the audio signal is supplied

- through radio terminals 1 , 2 , 3 , 4 , 13 , 14 , 15 and 16
- to terminals 1 and 2 of the LH and RH front speaker, LH and RH tweeter and LH and RH rear speaker.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

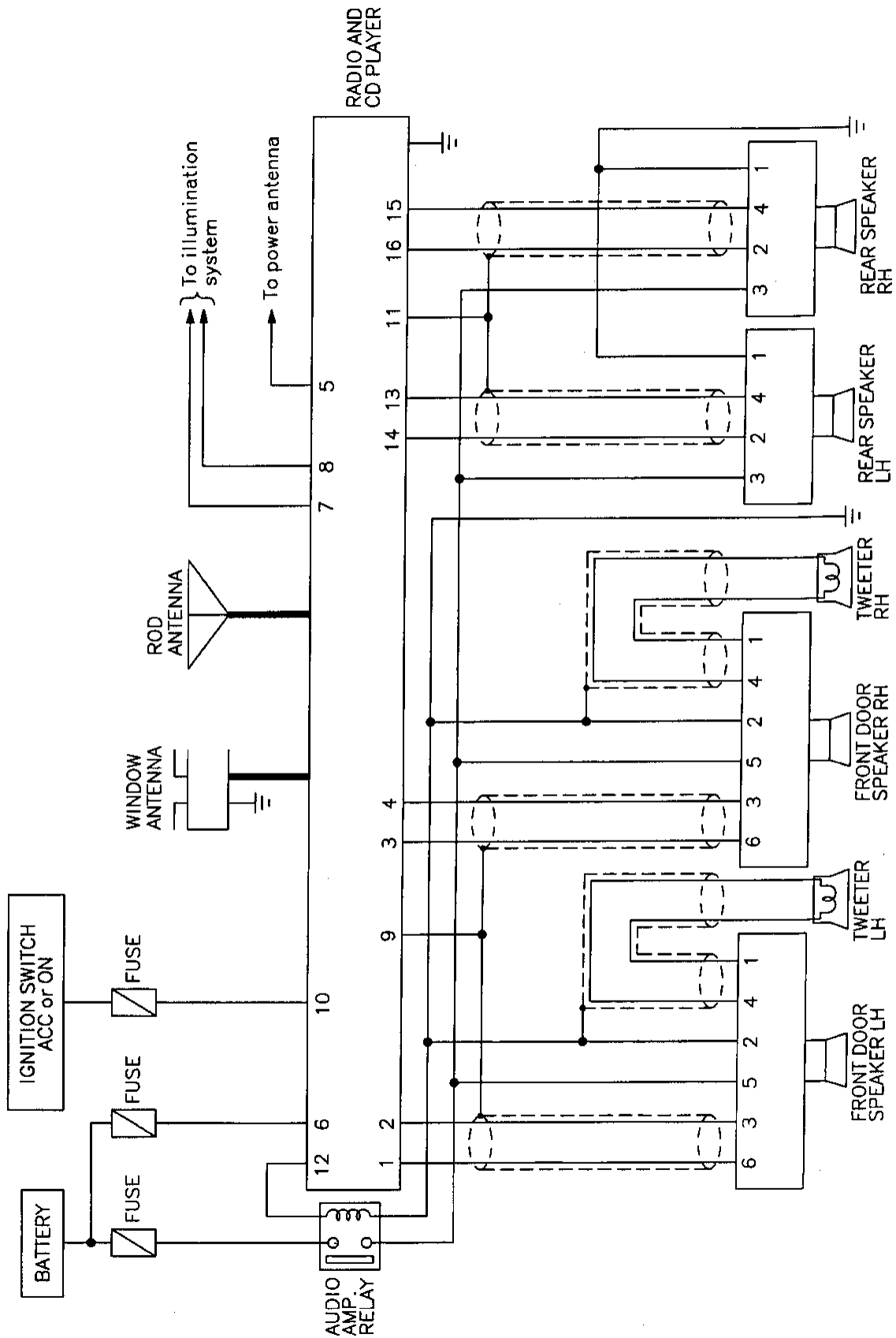
BT

HA

**EL**

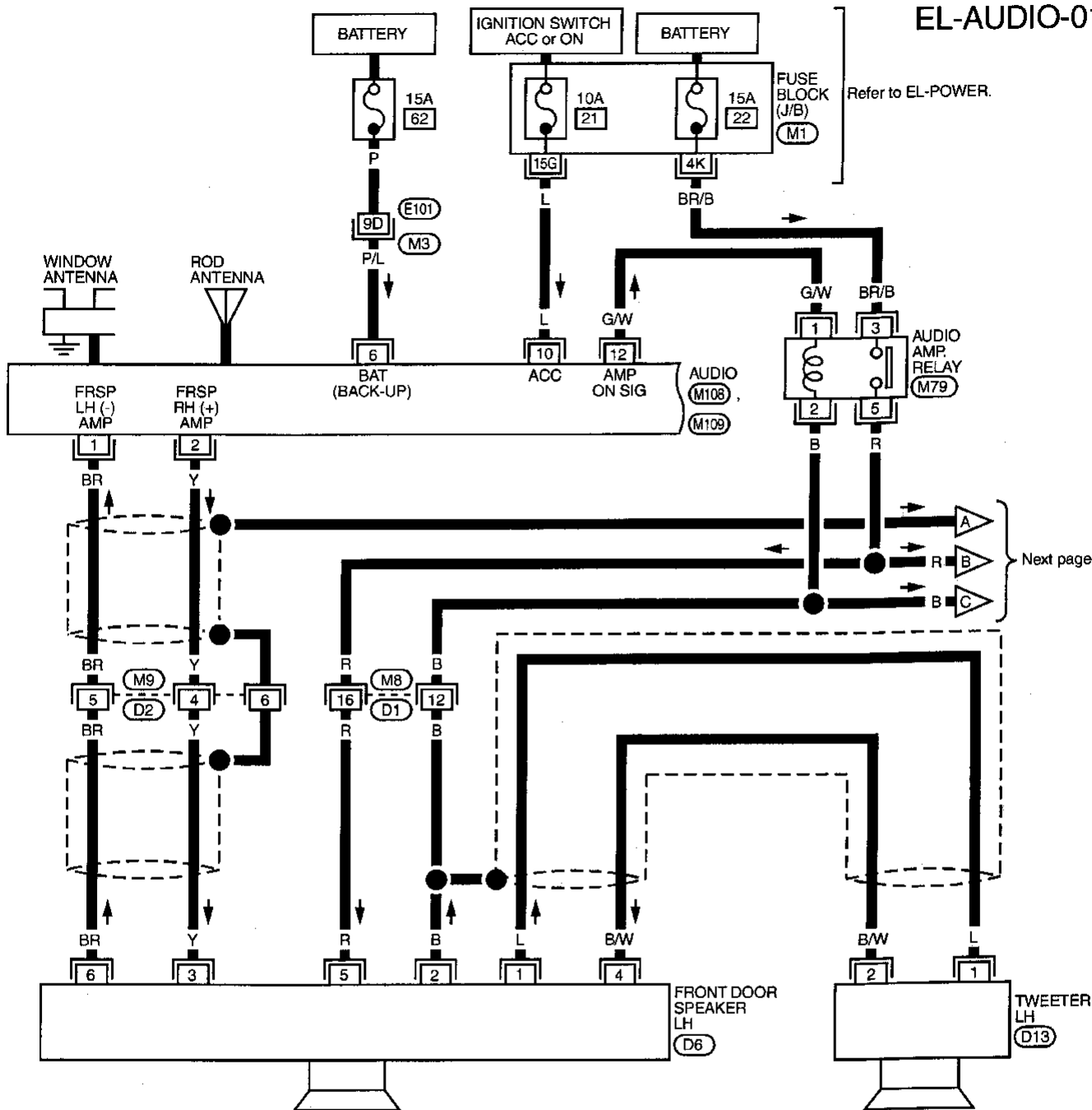
IDX

Schematic



Wiring Diagram — AUDIO —

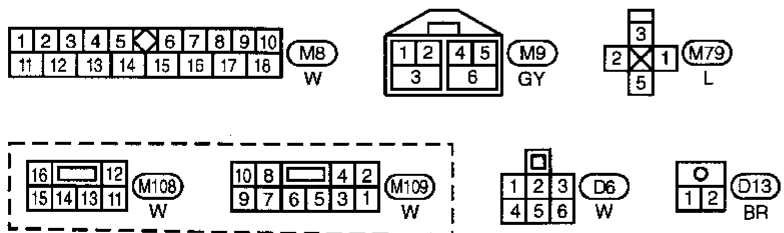
EL-AUDIO-01



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

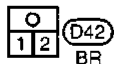
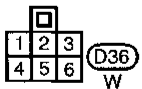
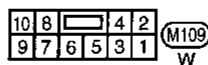
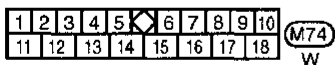
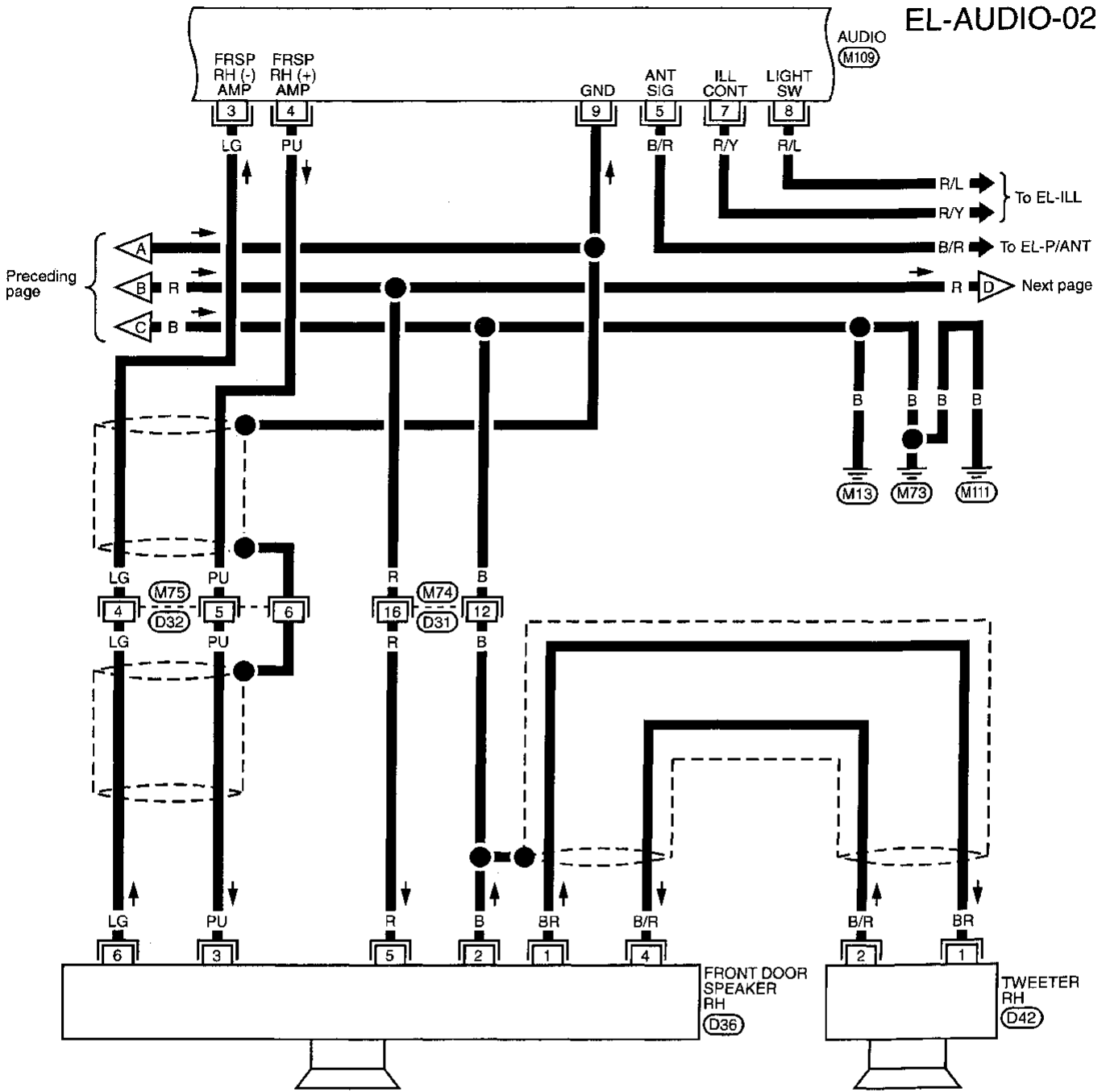
Next page

Refer to last page (Foldout page).



# AUDIO

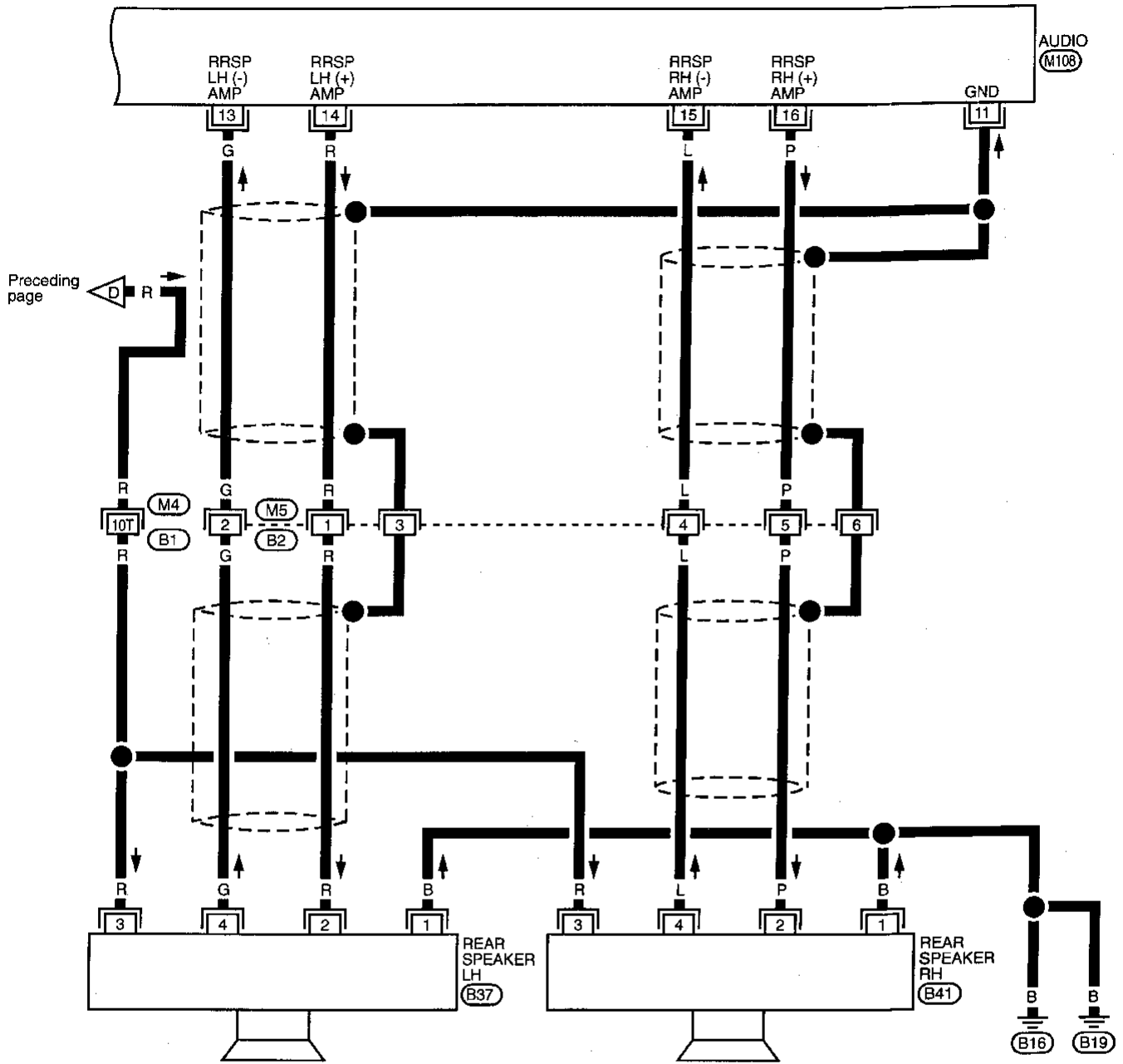
## Wiring Diagram — AUDIO — (Cont'd)



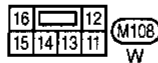
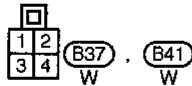
# AUDIO

## Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-03



GI  
 MA  
 EM  
 LC  
 EC  
 FE  
 CL  
 MT  
 AT  
 FA  
 RA  
 BR  
 ST  
 RS  
 BT  
 HA  
 EL  
 IDX



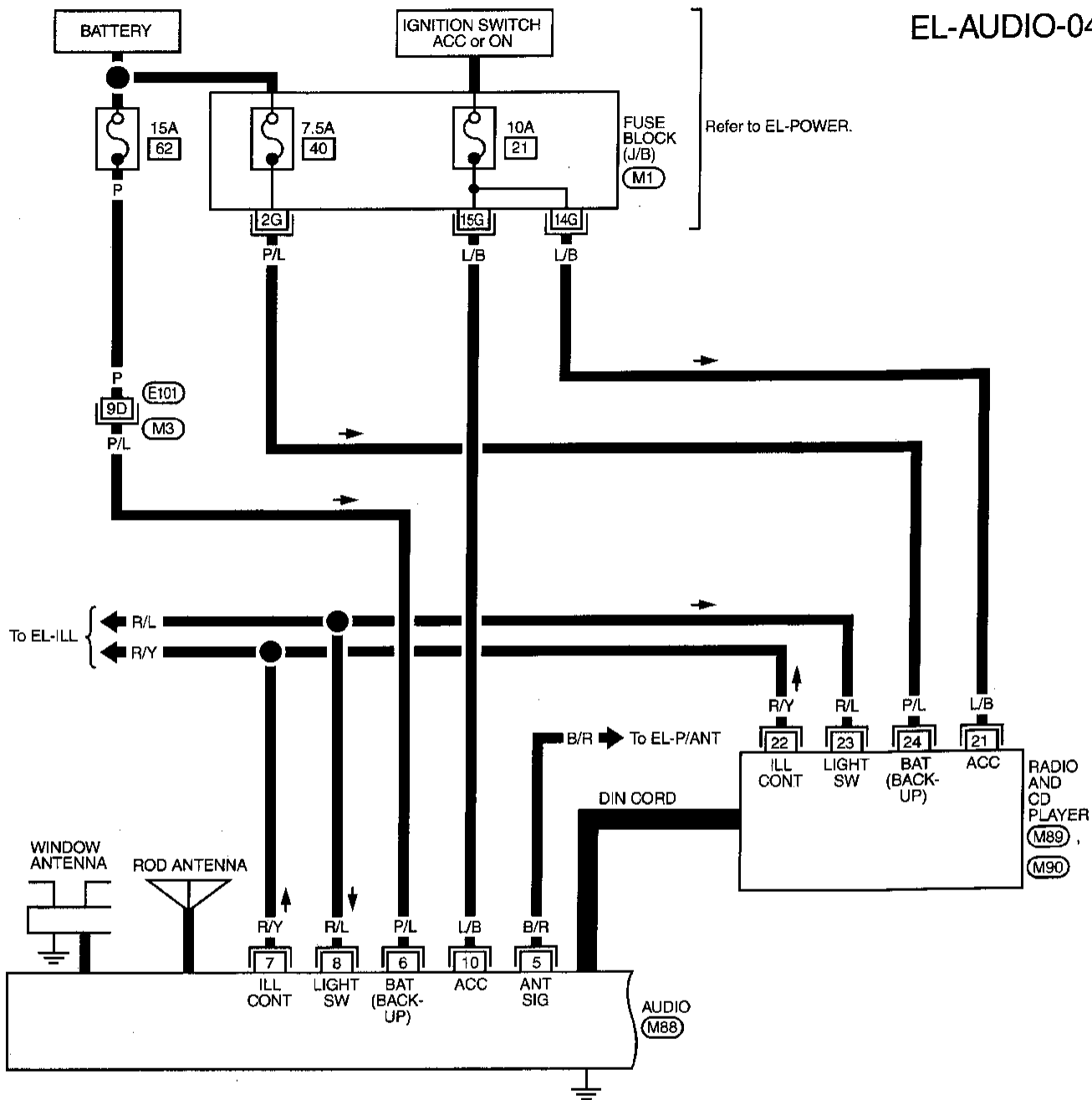
Refer to last page (Foldout page).

(B1) (M4)

# AUDIO

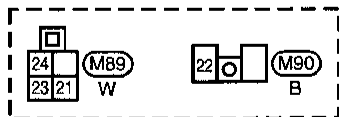
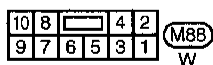
## Wiring Diagram — AUDIO —/Base System

EL-AUDIO-04



Refer to last page (Foldout page).

(M1)  
(M3), (E101)

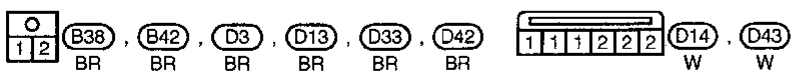
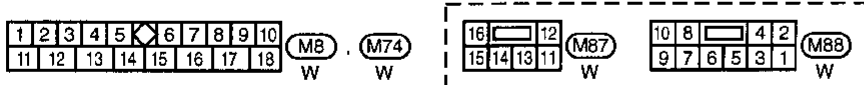
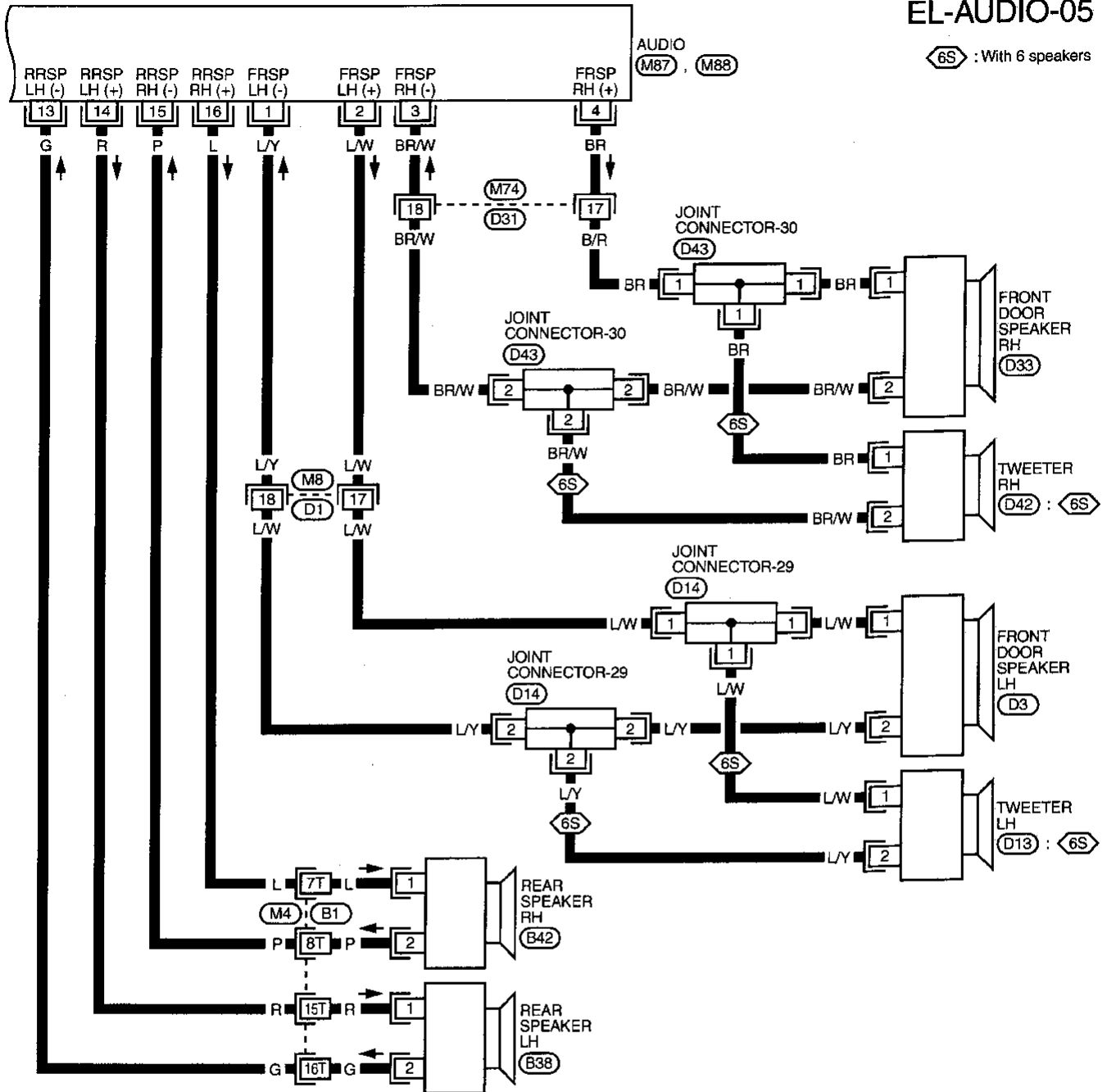


# AUDIO

## Wiring Diagram — AUDIO —/Base System (Cont'd)

EL-AUDIO-05

⬡6S : With 6 speakers



Refer to last page (Foldout page).  
(M4), (B1)

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# AUDIO

## Trouble Diagnoses

Symptom	Possible causes	Repair order
Radio inoperative (no digital display and no sound from speakers).	<ol style="list-style-type: none"> <li>1. 10A fuse</li> <li>2. Poor radio case ground</li> <li>3. Radio</li> </ol>	<ol style="list-style-type: none"> <li>1. Check 10A fuse [No. 21], located in fuse block (J/B). Turn ignition switch ON and verify that battery positive voltage is present at terminal 10 of radio.</li> <li>2. Check radio case ground.</li> <li>3. Remove radio for repair.</li> </ol>
Radio controls are operational, but no sound is heard from any speaker.	<ol style="list-style-type: none"> <li>1. 15A fuse</li> <li>2. Audio amp. relay</li> <li>3. Audio amp. relay ground</li> <li>4. Amp. ON signal</li> <li>5. Radio output</li> <li>6. Radio</li> </ol>	<ol style="list-style-type: none"> <li>1. Check 15A fuse [No. 22], located in fuse block (J/B). Verify battery positive voltage is present at terminal 3 of audio amp. relay.</li> <li>2. Check audio amp. relay.</li> <li>3. Check audio amp. relay ground (Terminal 2).</li> <li>4. Turn ignition switch ACC and radio ON. Verify battery positive voltage is present at terminal 1 of audio amp. relay.</li> <li>5. Check radio output voltage.</li> <li>6. Remove radio for repair.</li> </ol>
Radio presets are lost when ignition switch is turned OFF.	<ol style="list-style-type: none"> <li>1. 7.5A fuse</li> <li>2. Radio</li> </ol>	<ol style="list-style-type: none"> <li>1. Check 15A fuse (No. 62), located in fuse and fusible link box) and verify that battery positive voltage is present at terminal 6 of radio.</li> <li>2. Remove radio for repair.</li> </ol>
Individual speaker is noisy or inoperative.	<ol style="list-style-type: none"> <li>1. Speaker ground</li> <li>2. Power supply</li> <li>3. Radio output</li> <li>4. Speaker</li> </ol>	<ol style="list-style-type: none"> <li>1. Check speaker ground (Terminal 2 : FR LH/RH, 1 : RR LH/RH).</li> <li>2. Check power supply for speaker (Terminal 5 : FR LH/RH, 3 : RR LH/RH).</li> <li>3. Check radio output voltage for speaker.</li> <li>4. Replace speaker.</li> </ol>
AM stations are weak or noisy (FM stations OK).	<ol style="list-style-type: none"> <li>1. Antenna</li> <li>2. Poor radio ground</li> <li>3. Radio</li> </ol>	<ol style="list-style-type: none"> <li>1. Check antenna.</li> <li>2. Check radio ground.</li> <li>3. Remove radio for repair.</li> </ol>
FM stations are weak or noisy (AM stations OK).	<ol style="list-style-type: none"> <li>1. Window antenna</li> <li>2. Radio</li> </ol>	<ol style="list-style-type: none"> <li>1. Check window antenna.</li> <li>2. Remove radio for repair.</li> </ol>
Radio generates noise in AM and FM modes with engine running.	<ol style="list-style-type: none"> <li>1. Poor radio ground</li> <li>2. Loose or missing ground bonding straps</li> <li>3. Ignition condenser or rear window defogger noise suppressor condenser</li> <li>4. Alternator</li> <li>5. Ignition coil or secondary wiring</li> <li>6. Radio</li> </ol>	<ol style="list-style-type: none"> <li>1. Check radio ground.</li> <li>2. Check ground bonding straps.</li> <li>3. Replace ignition condenser or rear window defogger noise suppressor condenser.</li> <li>4. Check alternator.</li> <li>5. Check ignition coil and secondary wiring.</li> <li>6. Remove radio for repair.</li> </ol>
Radio generates noise in AM and FM modes with accessories on (switch pops and motor noise).	<ol style="list-style-type: none"> <li>1. Poor radio ground</li> <li>2. Antenna</li> <li>3. Accessory ground</li> <li>4. Faulty accessory</li> </ol>	<ol style="list-style-type: none"> <li>1. Check radio ground.</li> <li>2. Check antenna.</li> <li>3. Check accessory ground.</li> <li>4. Replace accessory.</li> </ol>

### ANTENNA INSPECTION

1. Using a jumper wire, clip an auxiliary ground between antenna and body.
  - If reception improves, check antenna ground (at body surface).
  - If reception does not improve, check main feeder cable for short circuit or open circuit.

### RADIO INSPECTION

All voltage inspections are made with:

- Ignition switch ON or ACC
- Radio ON
- Radio and speakers connected (If radio or speaker is removed for inspection, supply a ground to the case using a jumper wire.)



# AUDIO ANTENNA

## System Description

Power is supplied at all times

- through 7.5A fuse [No. 40], located in the fuse block (J/B)]
- to power antenna timer and motor terminal ③ .

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

- through 10A fuse [No. 21], located in the fuse block (J/B)]
- to radio and CD player terminal ⑩ .

Ground is supplied to the power antenna timer and motor terminal ⑥ through body grounds T6 and T9 .

When the radio is turned to the ON position, battery voltage is supplied

- through radio and CD player terminal ⑤
- to power antenna timer and motor terminal ④ .

The antenna rises and is held in the extended position.

When the radio is turned to the OFF position, battery voltage is interrupted

- from radio and CD player terminal ⑤
- to power antenna terminal ④ .

The antenna retracts.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

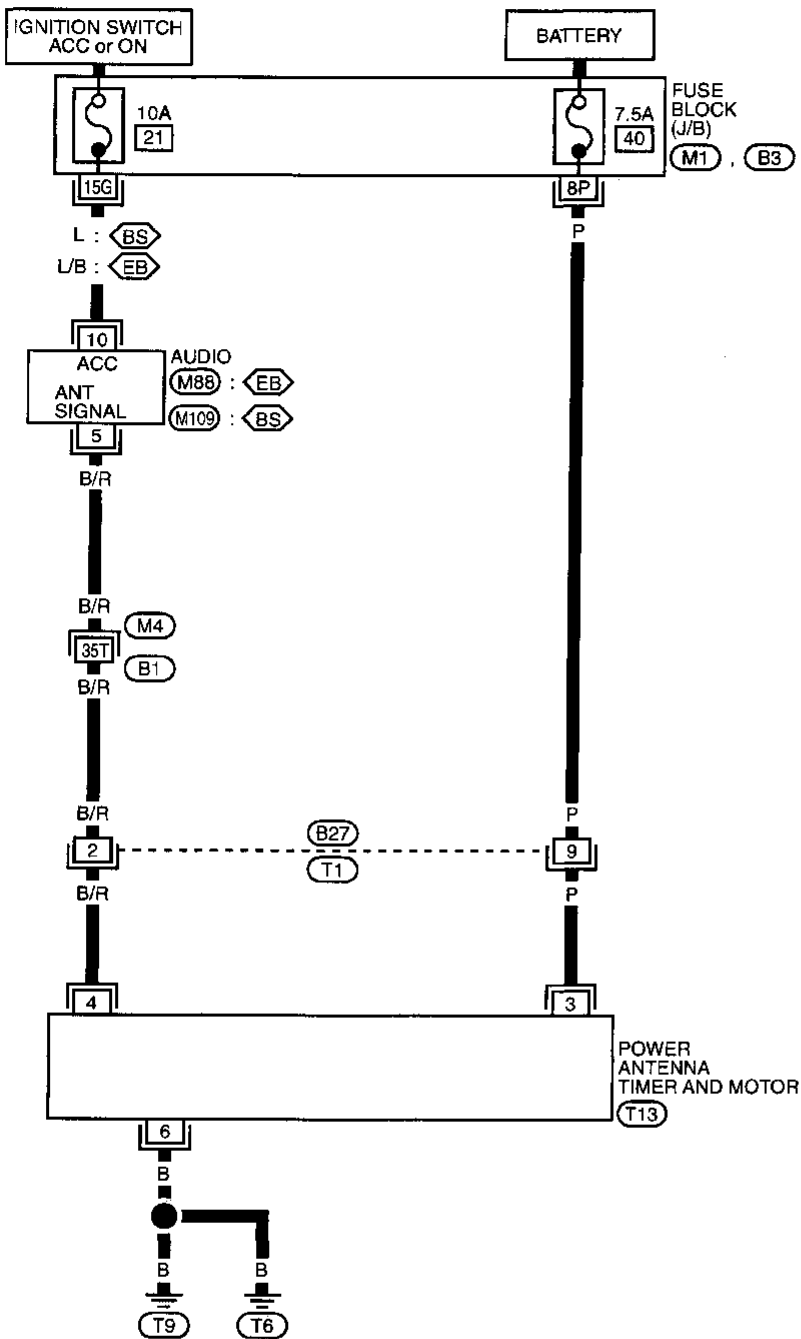
EL

IDX

# AUDIO ANTENNA

## Wiring Diagram — P/ANT —

EL-P/ANT-01



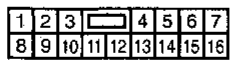
Refer to EL-POWER.

- ⬡ BS : BOSE system
- ⬡ EB : Except for BOSE system

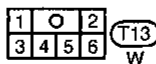


M88  
W

M109  
W



T1  
W



T13  
W

Refer to last page (Foldout page).

M1 , B3

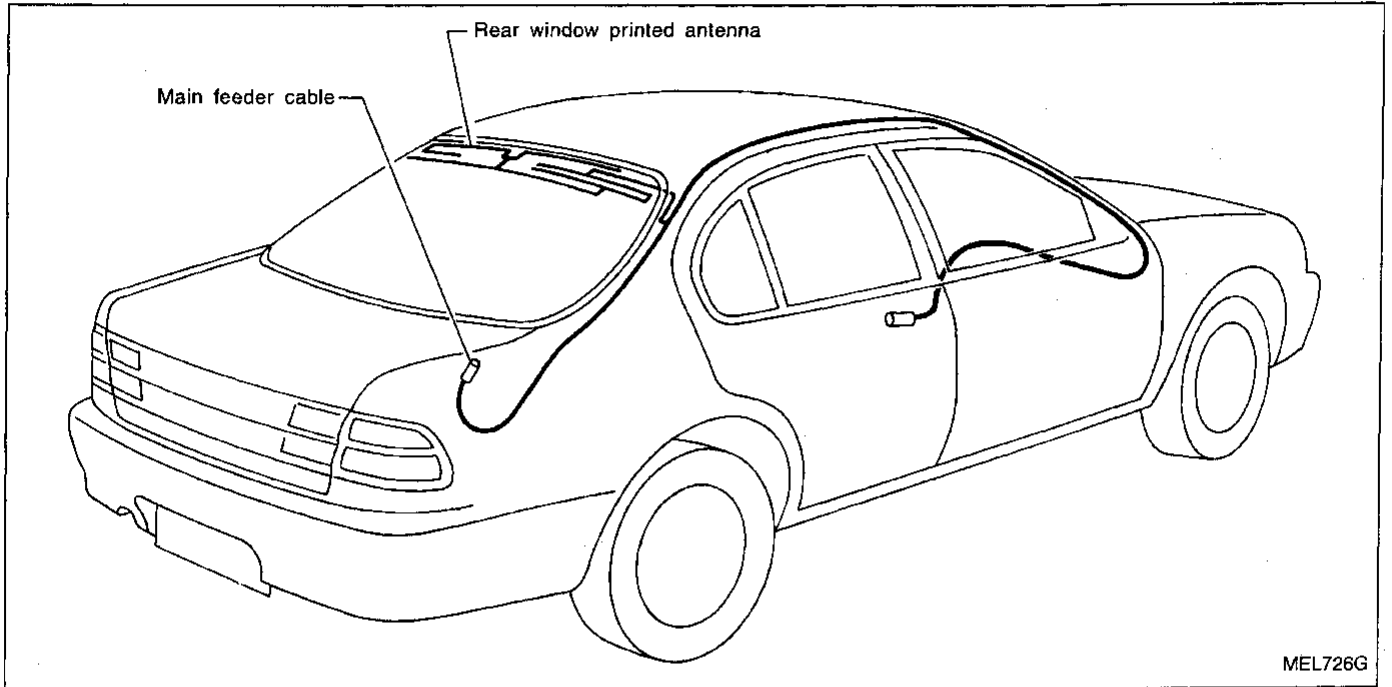
M4 , B1

# AUDIO ANTENNA

## Trouble Diagnoses

Symptom	Possible causes	Repair order
Power antenna does not operate.	<ol style="list-style-type: none"> <li>7.5A fuse</li> <li>Radio signal</li> <li>Grounds <b>T6</b> and <b>T9</b></li> </ol>	<ol style="list-style-type: none"> <li>Check 7.5A fuse [No. <b>40</b>], located in fuse block (J/B). Verify that battery positive voltage is present at terminal <b>3</b> of power antenna.</li> <li>Turn ignition switch and radio ON. Verify that battery positive voltage is present at terminal <b>4</b> of power antenna.</li> <li>Check grounds <b>T6</b> and <b>T9</b>.</li> </ol>

## Location of Antenna



GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

**EL**

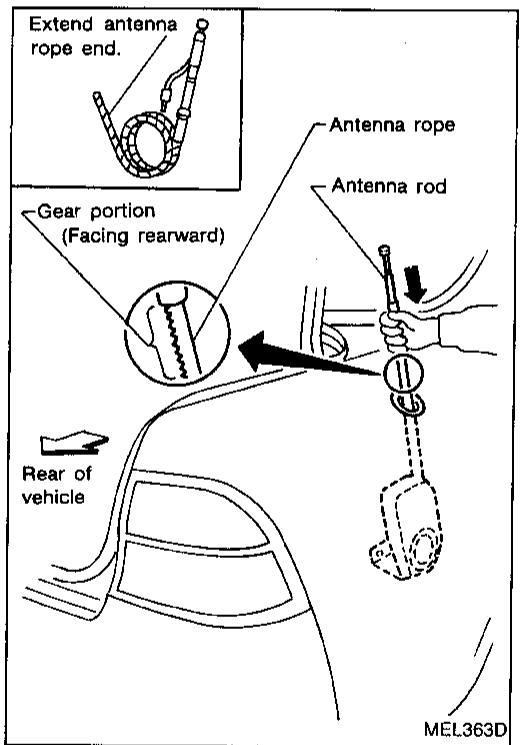
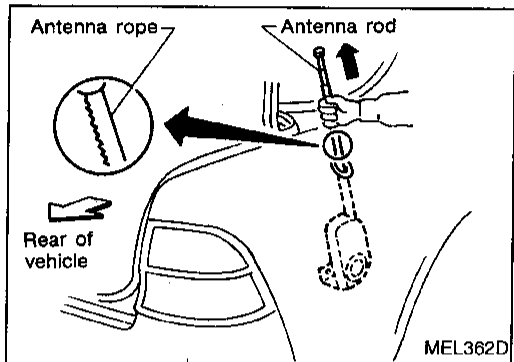
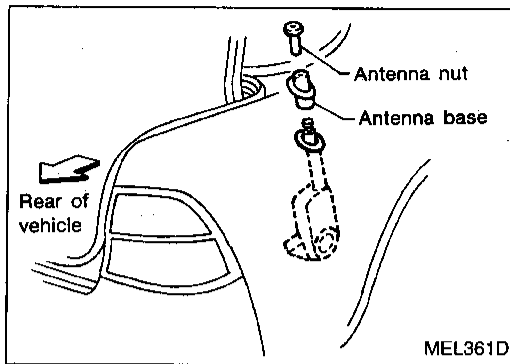
IDX

# AUDIO ANTENNA

## Antenna Rod Replacement

### REMOVAL

1. Remove antenna nut and antenna base.
2. Withdraw antenna rod while raising it by operating antenna motor.



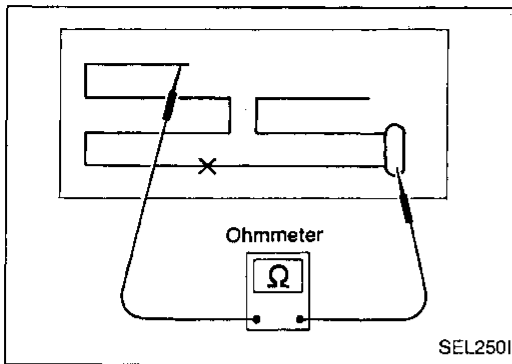
### INSTALLATION

1. Lower antenna rod by operating antenna motor.
2. Insert gear section of antenna rope into place with it facing toward antenna motor.
3. As soon as antenna rope is wound on antenna motor, stop antenna motor. Insert antenna rod lower end into antenna motor pipe.
4. Retract antenna rod completely by operating antenna motor.
5. Install antenna nut [Tightening torque: 2.0 - 3.9 N·m (0.2 - 0.4 kg·m, 17.4 - 34.7 in·lb)] and base.

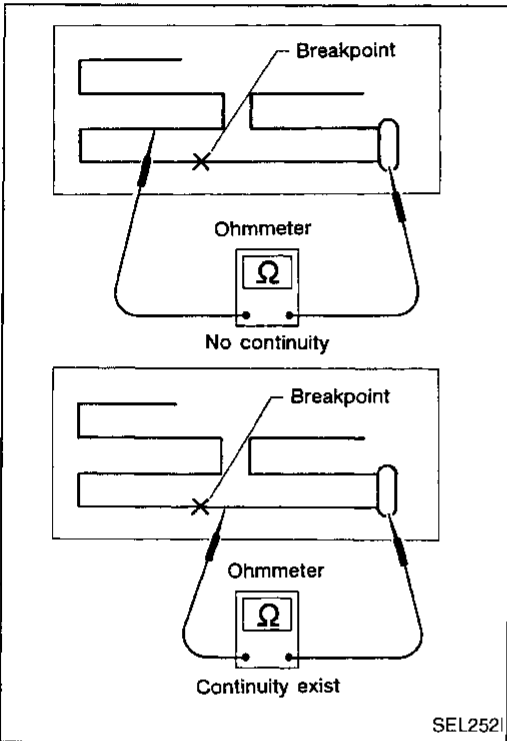
## Window Antenna Repair

### ELEMENT CHECK

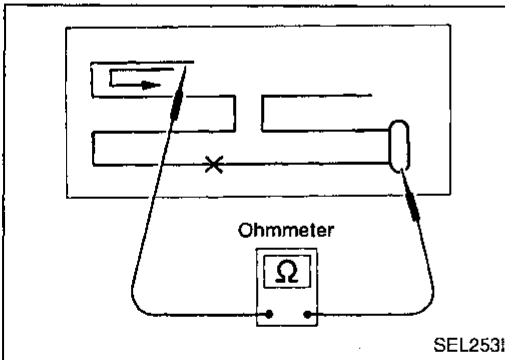
1. Attach probe circuit tester (in ohm range) to antenna terminal on each side.



2. If an element is broken, no continuity will exist.



3. To locate broken point, move probe along element. Tester needle will swing abruptly when probe passes the point.



### ELEMENT REPAIR

Refer to "Filament Repair", "REAR WINDOW DEFOGGER" (EL-118).

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

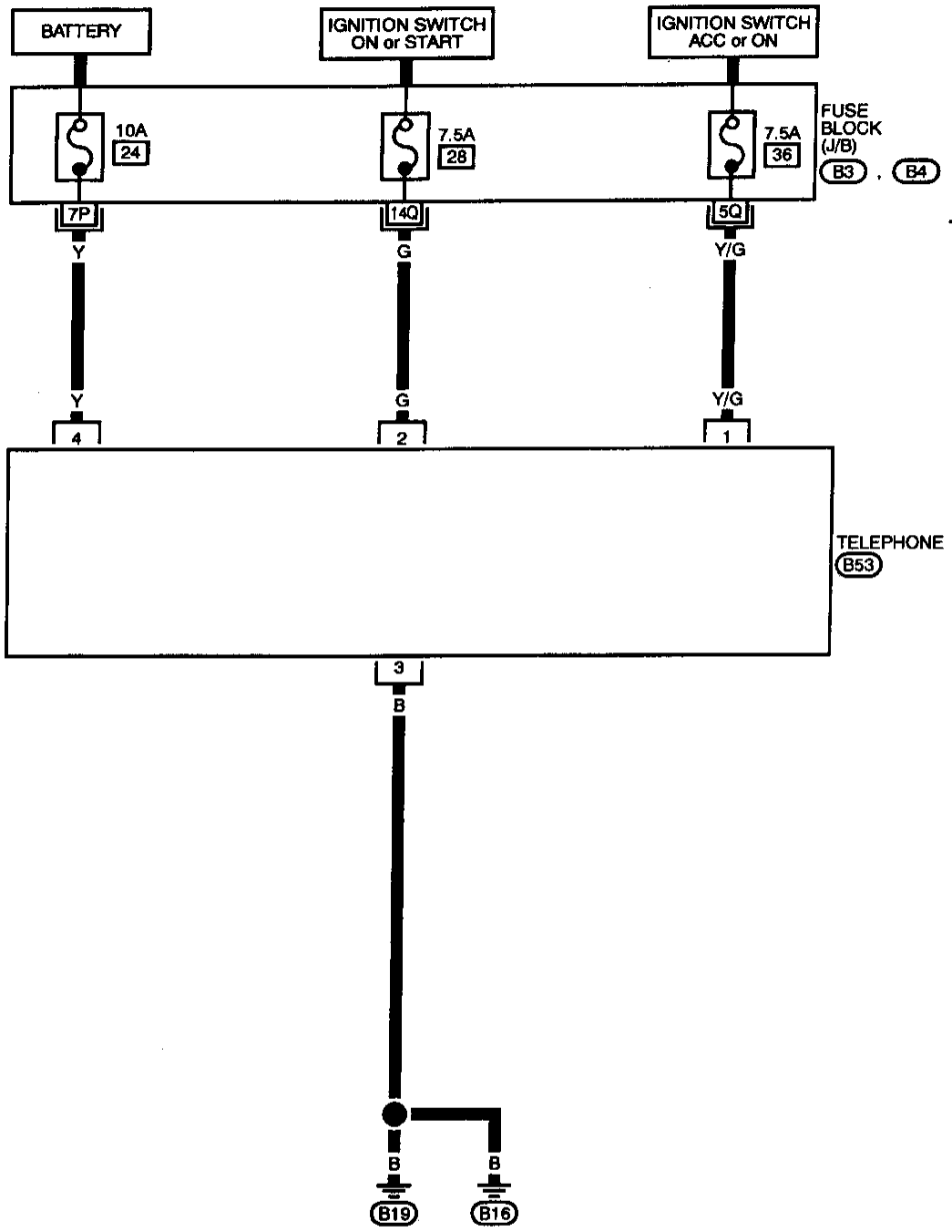
BT

HA

EL

IDX

Wiring Diagram — PHONE —



EL-PHONE-01

Refer to EL-POWER.

TELEPHONE  
(B53)

Refer to last page (Foldout page).

(B3) (B4)

1	2
3	4

 (B53)  
W

## System Description

### POWER

Power is supplied to the sunroof motor assembly by the sunroof relay. When the ignition switch is turned ON, the relay is energized. The power circuit is protected by the circuit breaker-2. The sunroof motor assembly is grounded through case grounds.

GI

### TILT AND SLIDE OPERATION

The sunroof is controlled by the sunroof switch. When sunroof in closed position, depressing UP/CLOSE switch will tilt rear of sunroof up. The sunroof will stop when the switch is released, or when the sunroof reaches its maximum tilt position.

MA

EM

The sunroof will tilt down when in tilt up position and DOWN/OPEN switch is depressed. The sunroof will stop when switch is released, or when sunroof is fully closed.

With sunroof in closed position, pressing DOWN/OPEN switch will cause sunroof to slide open. The sunroof will slide open until switch is released or until it is all the way open. The sunroof will close when in open position, and UP/CLOSE switch is depressed. The sunroof will slide until switch is released, or when sunroof is fully closed.

LC

EC

All automatic operations in sunroof are controlled by internal limit switches located in sunroof motor assembly.

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

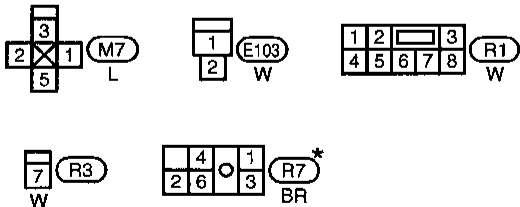
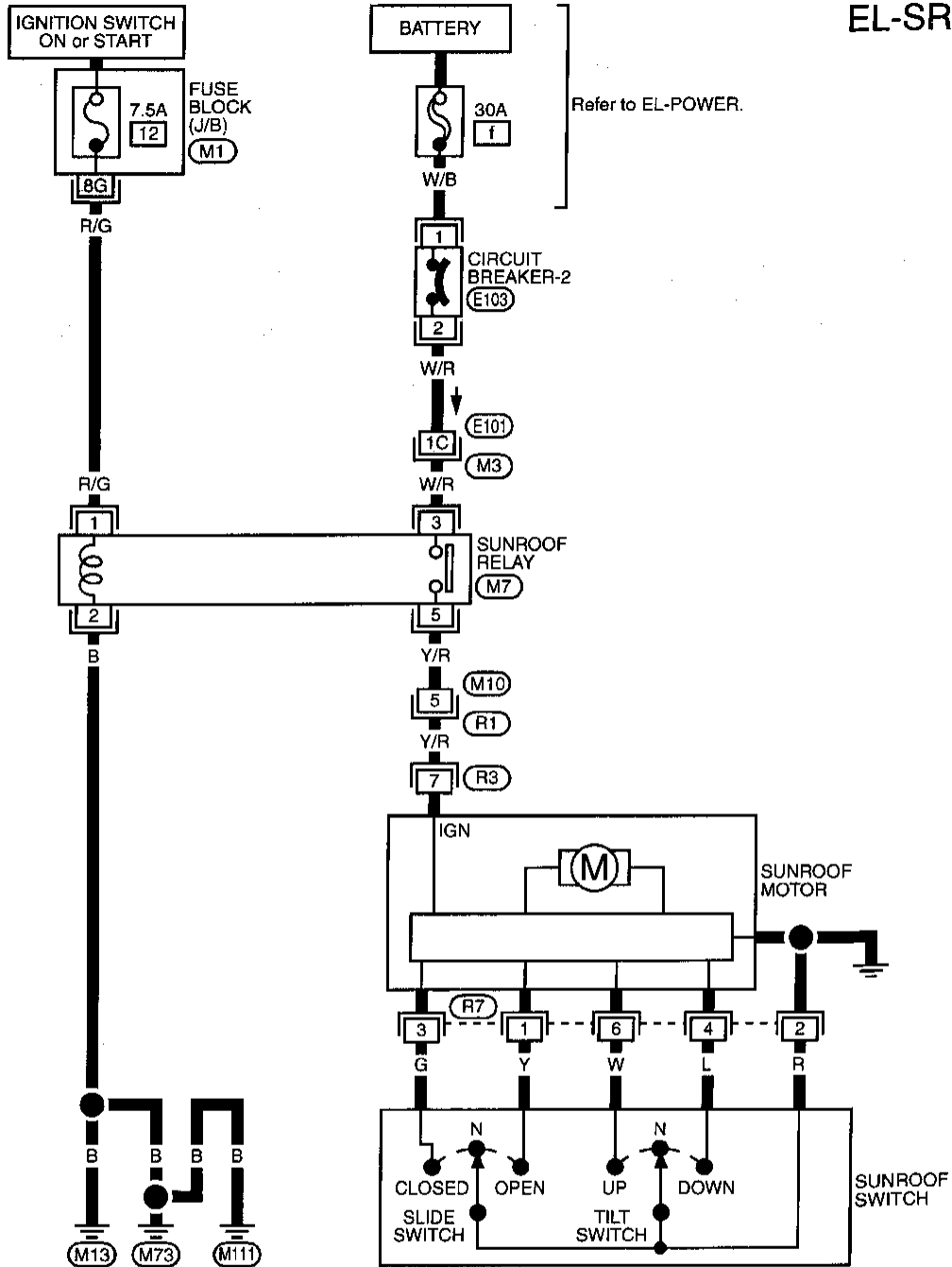
EL

IDX

# ELECTRIC SUNROOF

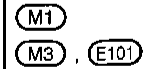
## Wiring Diagram — SROOF —

EL-SROOF-01



\*:This connector is not shown in "HARNESS LAYOUT" of EL section.

Refer to last page (Foldout page).

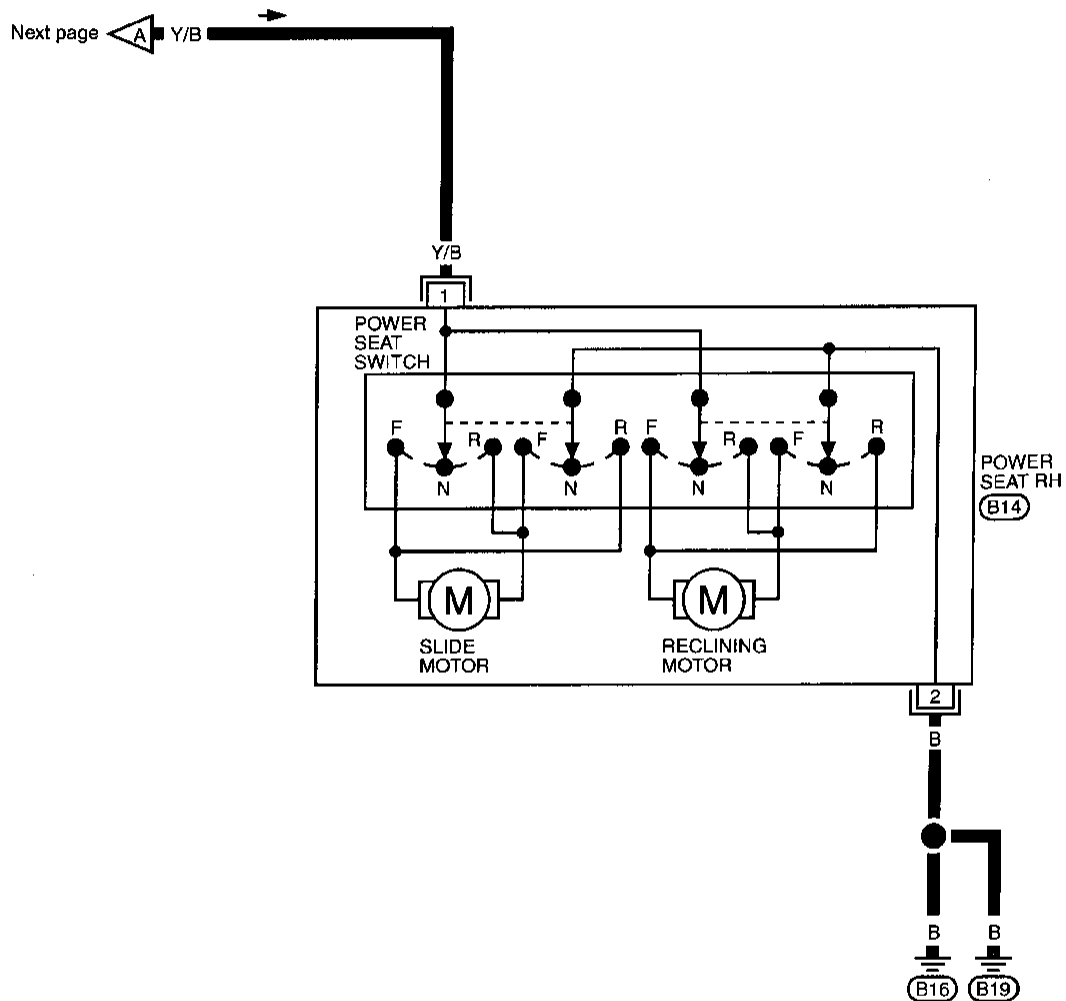






# POWER SEAT Wiring Diagram — SEAT — (Cont'd)

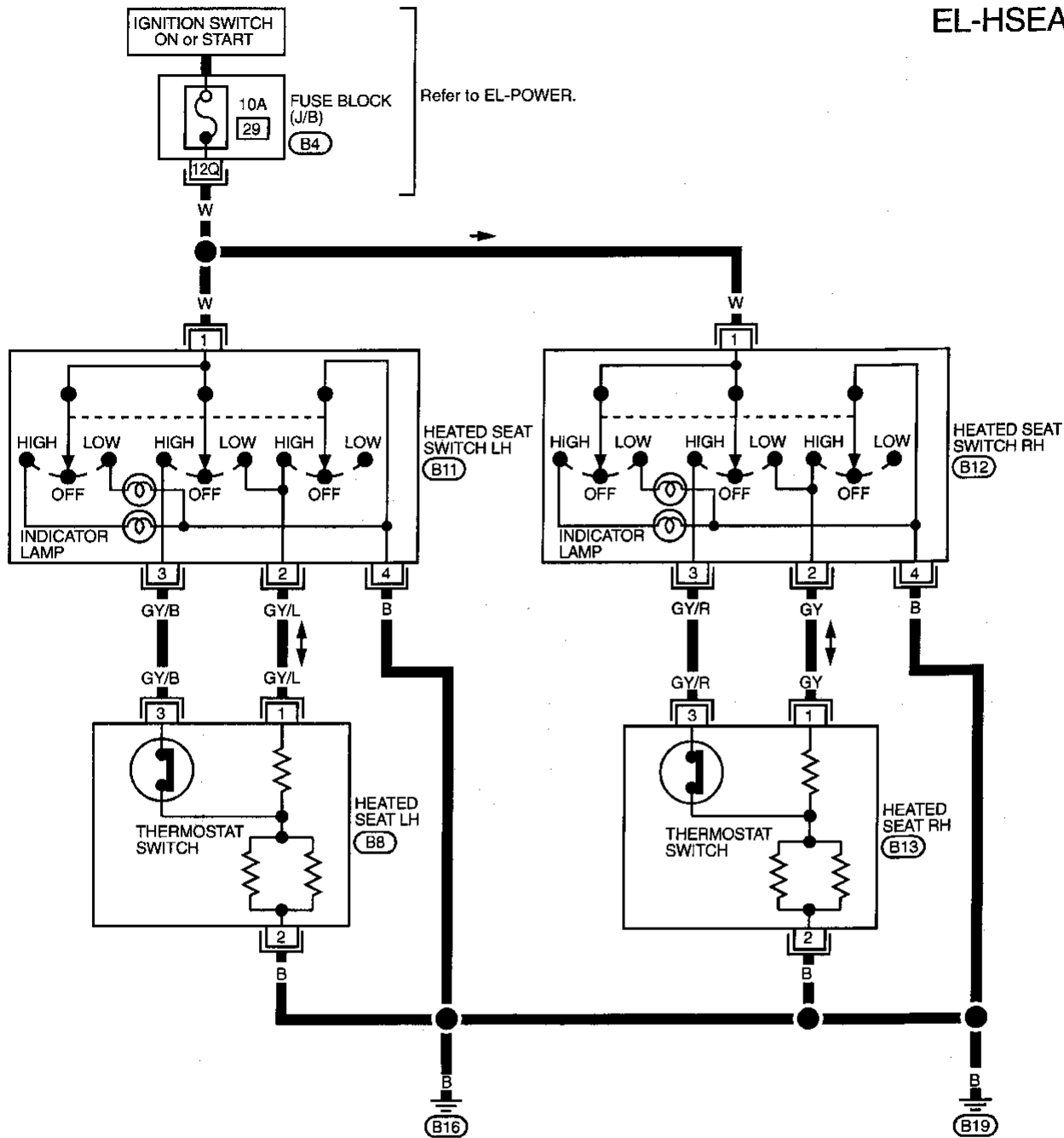
EL-SEAT-02



# HEATED SEAT

## Wiring Diagram — HSEAT —

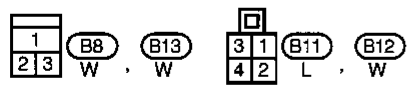
EL-HSEAT-01



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT

HA  
**EL**  
IDX

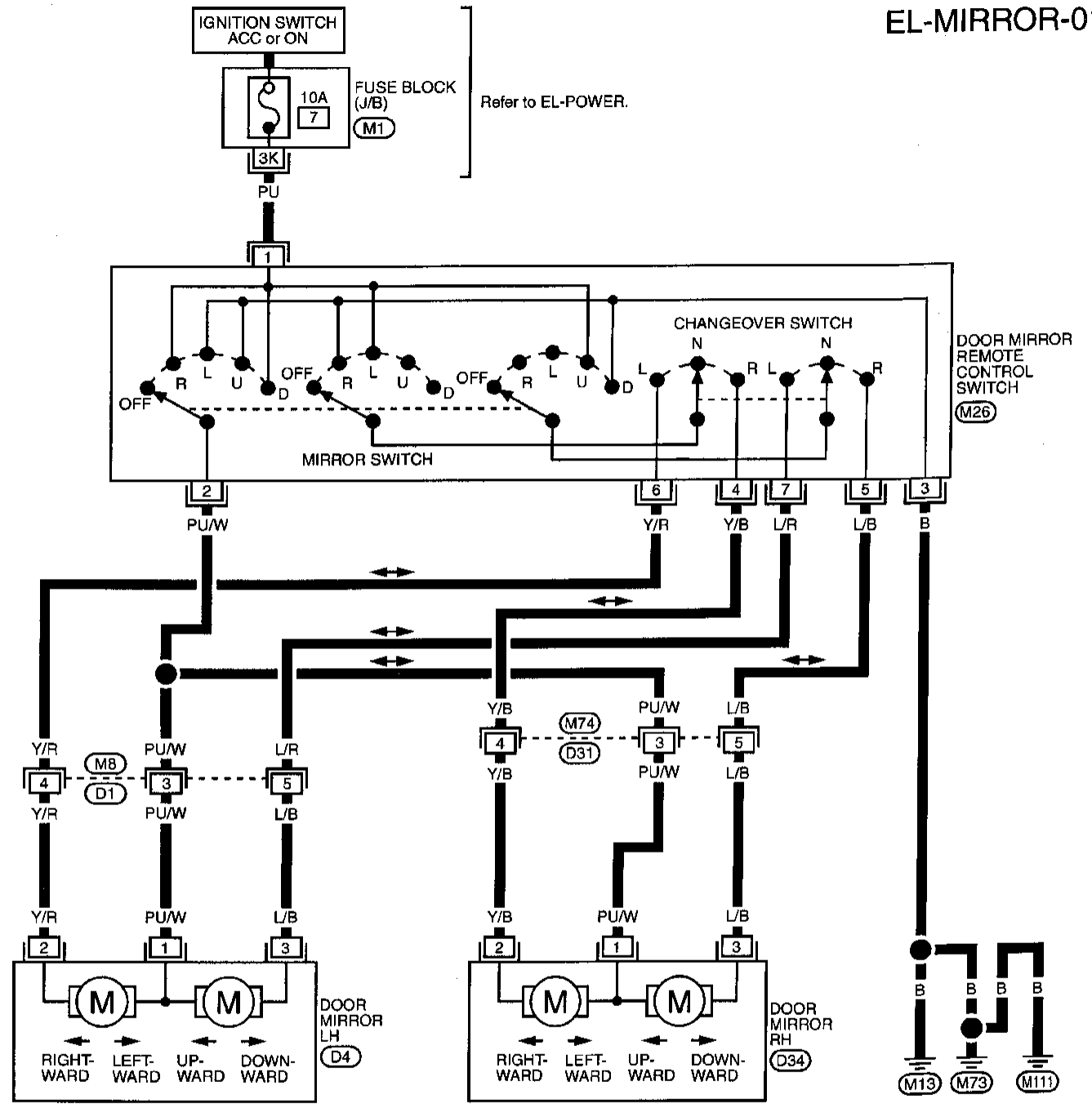
Refer to last page (Foldout page).  
B4



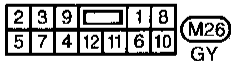
# POWER DOOR MIRROR

## Wiring Diagram — MIRROR —

EL-MIRROR-01



Refer to last page (Foldout page).

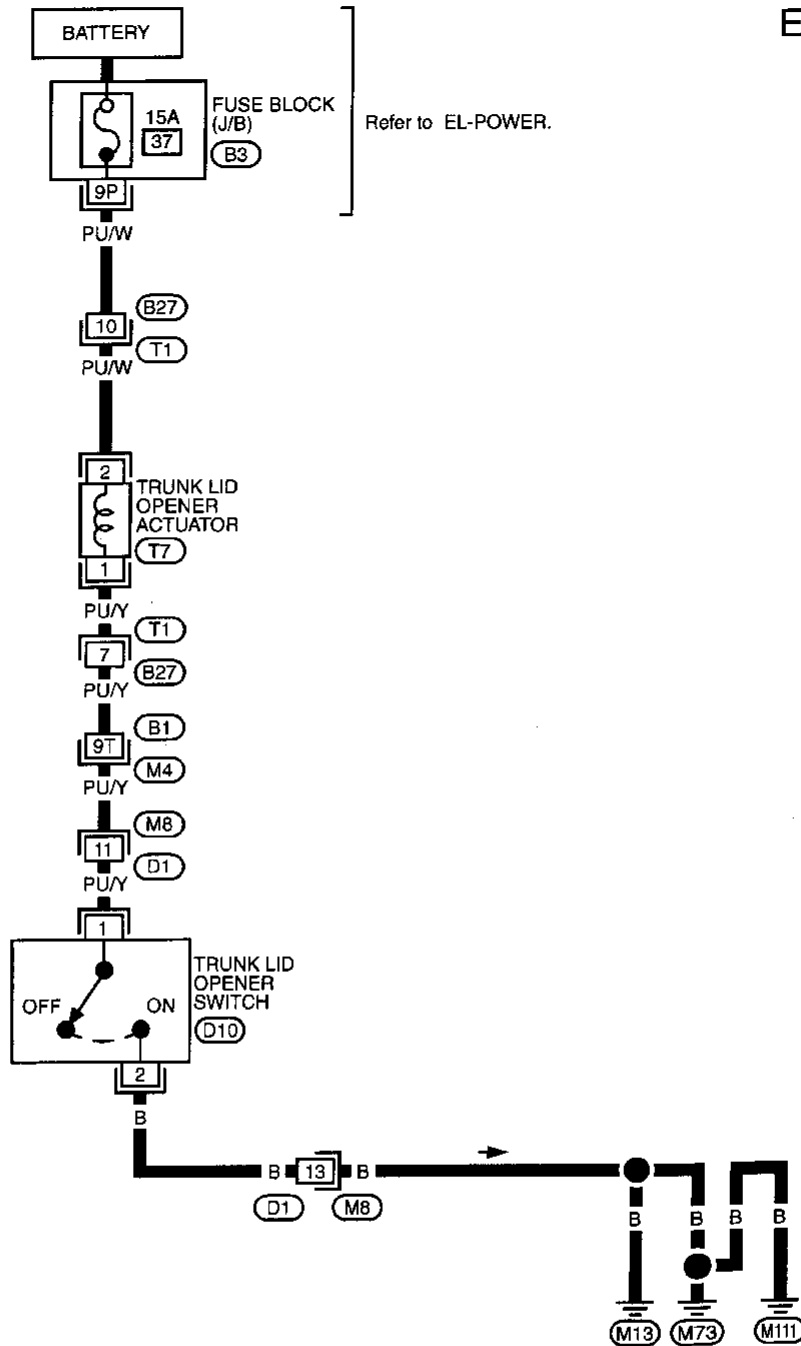


M1

# TRUNK LID AND FUEL FILLER LID OPENER

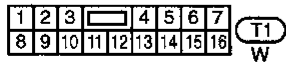
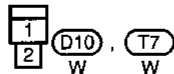
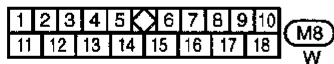
## Wiring Diagram — TLID —

EL-TLID-01



Refer to EL-POWER.

Refer to last page (Foldout page).

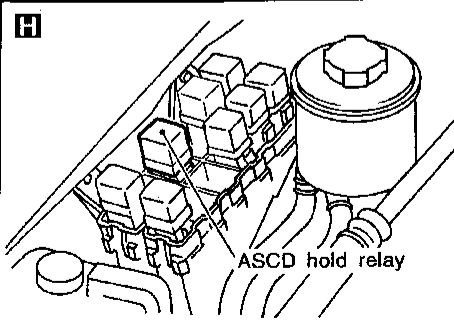
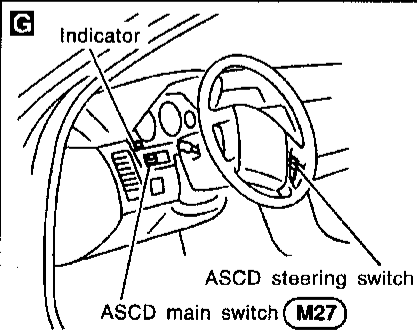
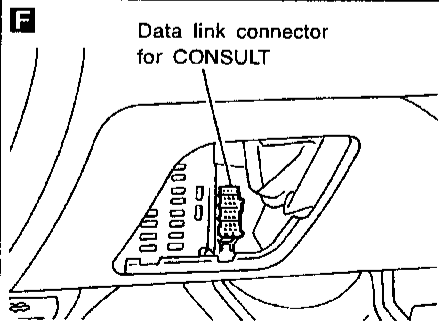
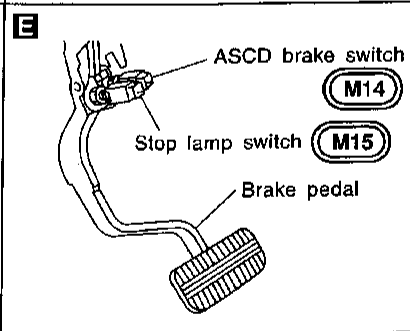
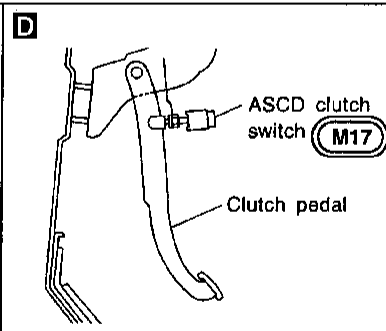
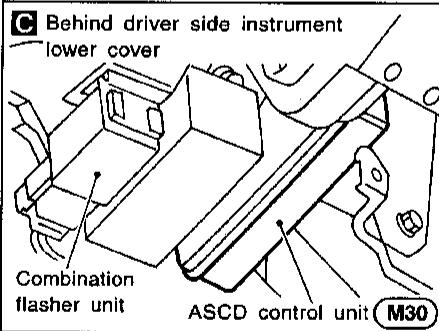
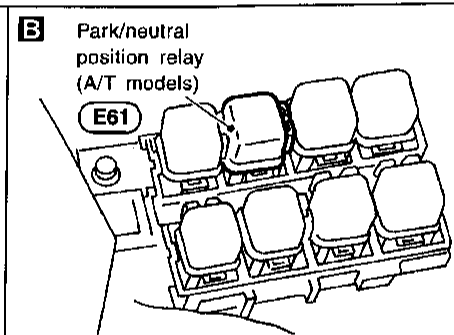
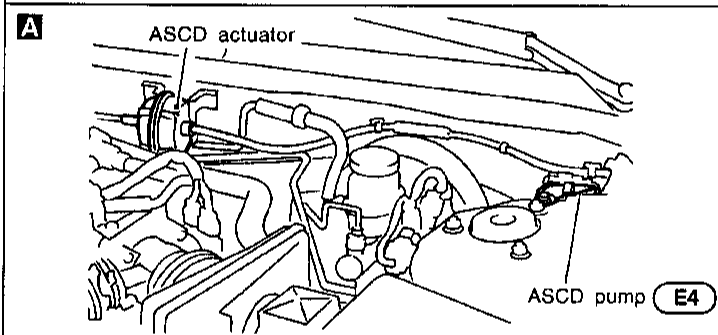
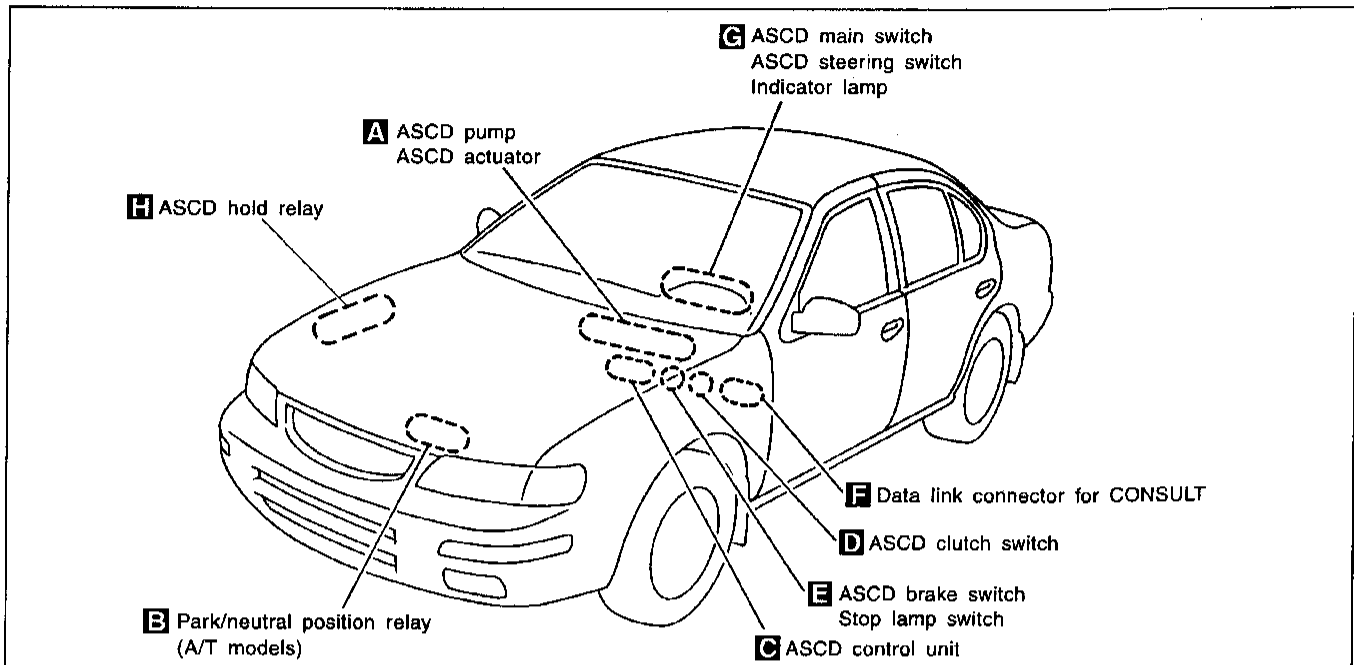


(M4) (B1) (B3)

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

## Component Parts and Harness Connector Location



## System Description

Refer to Owner's Manual for ASCD operating instructions.

### POWER SUPPLY AND GROUND

When ignition switch is in the ON or START position, power is supplied

- through 7.5A fuse [No. 12], located in the fuse block (J/B)
- to ASCD hold relay terminal ⑤ and
- to ASCD main switch terminal ①.

When ASCD main switch is in the ON position, power is supplied

- from ASCD main switch terminal ③
- to ASCD hold relay terminal ①.

Ground is supplied

- to ASCD hold relay terminal ②
- through body grounds (E5) and (E30).

With power and ground is supplied, ASCD hold relay is energized. And then power is supplied

- from ASCD hold relay terminal ③
- to ASCD control unit terminal ④ and
- to ASCD main switch terminal ②.

After the ASCD main switch is released, power remains supplied

- to the coil circuit of ASCD hold relay
- through ASCD main switch terminals ② and ③.

This power supply is kept until one of following conditions exists.

- Ignition switch is returned to the ACC or OFF position.
- ASCD main switch is turned to OFF position.

During ASCD hold relay is energized power is also supplied to ASCD control unit terminal ⑤

- through ASCD clutch switch and ASCD brake switch (M/T models) or
- through ASCD brake switch, ASCD hold relay and park/neutral position relay (A/T models).

Ground is supplied

- to ASCD control unit terminal ③
- through body grounds (M13), (M73) and (M11).

### OPERATION

#### Set operation

To activate the ASCD, all of following conditions must exist.

- Power supply to ASCD control unit terminal ④
- Power supply to ASCD control unit terminal ⑤ [Brake and clutch (M/T models) pedal is released and A/T selector lever is in other than P and N position (A/T models).]
- Vehicle speed is greater than 48 km/h (30 MPH). (Signal from combination meter)

When the SET/COAST switch is depressed, power is supplied

- from ASCD steering switch terminal ②
- to ASCD control unit terminal ②.

And then ASCD pump is activated to control throttle wire and ASCD control unit supply power

- to combination meter terminal ⑧ to illuminate CRUISE indicator.

#### A/T overdrive control during cruise control driving (A/T models)

When the vehicle speed is approximately 8 km/h (5 MPH) below set speed, a signal is sent

- from ASCD control unit terminal ⑫
- to TCM (transmission control module) terminal ⑳.

When this occurs, the TCM (transmission control module) cancels overdrive.

After vehicle speed is approximately 3 km/h (2 MPH) above set speed, overdrive is reactivated.

#### Coast operation

When the SET/COAST switch is depressed during cruise control driving, ASCD actuator returns the throttle cable to decrease vehicle set speed until the switch is released. And then ASCD will keep the new set speed.

#### Accel operation

When the RESUME/ACCEL switch is depressed, power is supplied

- from ASCD steering switch terminal ③
- to ASCD control unit terminal ①.

If the RESUME/ACCEL switch is depressed during cruise control driving, ASCD actuator pulls the throttle cable to increase the vehicle speed until the switch is released or vehicle speed is reached to maximum controlled speed by the system. And then ASCD will keep the new set speed.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

EL

IDX

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

## System Description (Cont'd)

### Cancel operation

When any of following condition exists, cruise operation will be canceled.

- CANCEL switch is depressed. (Power supply to ASCD control unit terminals ① and ②)
- Brake pedal is depressed. (Power supply to ASCD control unit terminal ⑩ from stop lamp switch)
- Brake or clutch (M/T models) pedal is depressed or A/T selector lever is shifted to P or N position (A/T models). (Power supply to ASCD control unit terminal ⑤ is interrupted.)

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

### Resume operation

When the RESUME/ACCEL switch is depressed after cancel operation other than depressing MAIN switch is performed, vehicle speed will return to last set speed. To resume vehicle set speed, vehicle condition must meet following conditions.

- Brake pedal is released.
- Clutch pedal is released (M/T models).
- A/T selector lever is in other than P and N position (A/T models).
- Vehicle speed is greater than 48 km/h (30 MPH).

### ASCD PUMP OPERATION

The ASCD pump consists of a vacuum motor, an air valve and a release valve. When the ASCD activates, power is supplied

- from terminal ⑧ of ASCD control unit
- to ASCD pump terminal ①.

Ground is supplied to vacuum motor, air valve and release valve from ASCD control unit depending on the operated condition as shown in the below table.

The pump is connected to ASCD actuator by vacuum hose. When the ASCD pump is activated, the ASCD pump vacuum the diaphragm of ASCD actuator to control throttle cable.

		Air valve (*1)	Release valve (*1)	Vacuum motor	Actuator inner pressure
ASCD not operating		Open	Open	Stopped	Atmosphere
ASCD operating	Releasing throttle cable	Open	Closed	Stopped	Vacuum
	Holding throttle position	Closed	Closed	Stopped	Vacuum (*2)
	Pulling throttle cable	Closed	Closed	Operated	Vacuum

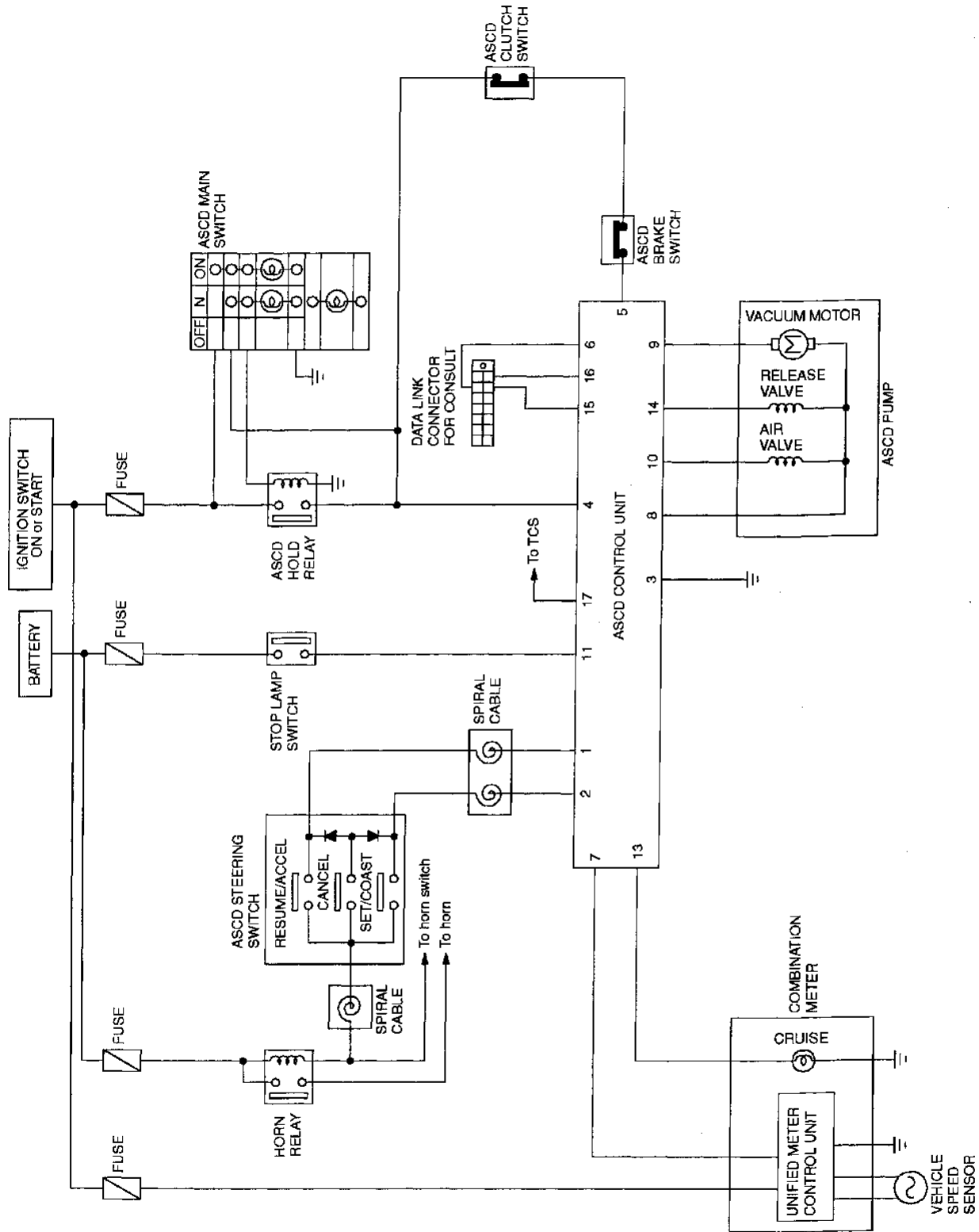
\*1: When power and ground is supplied, valve is closed.

\*2: Set position held.



# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

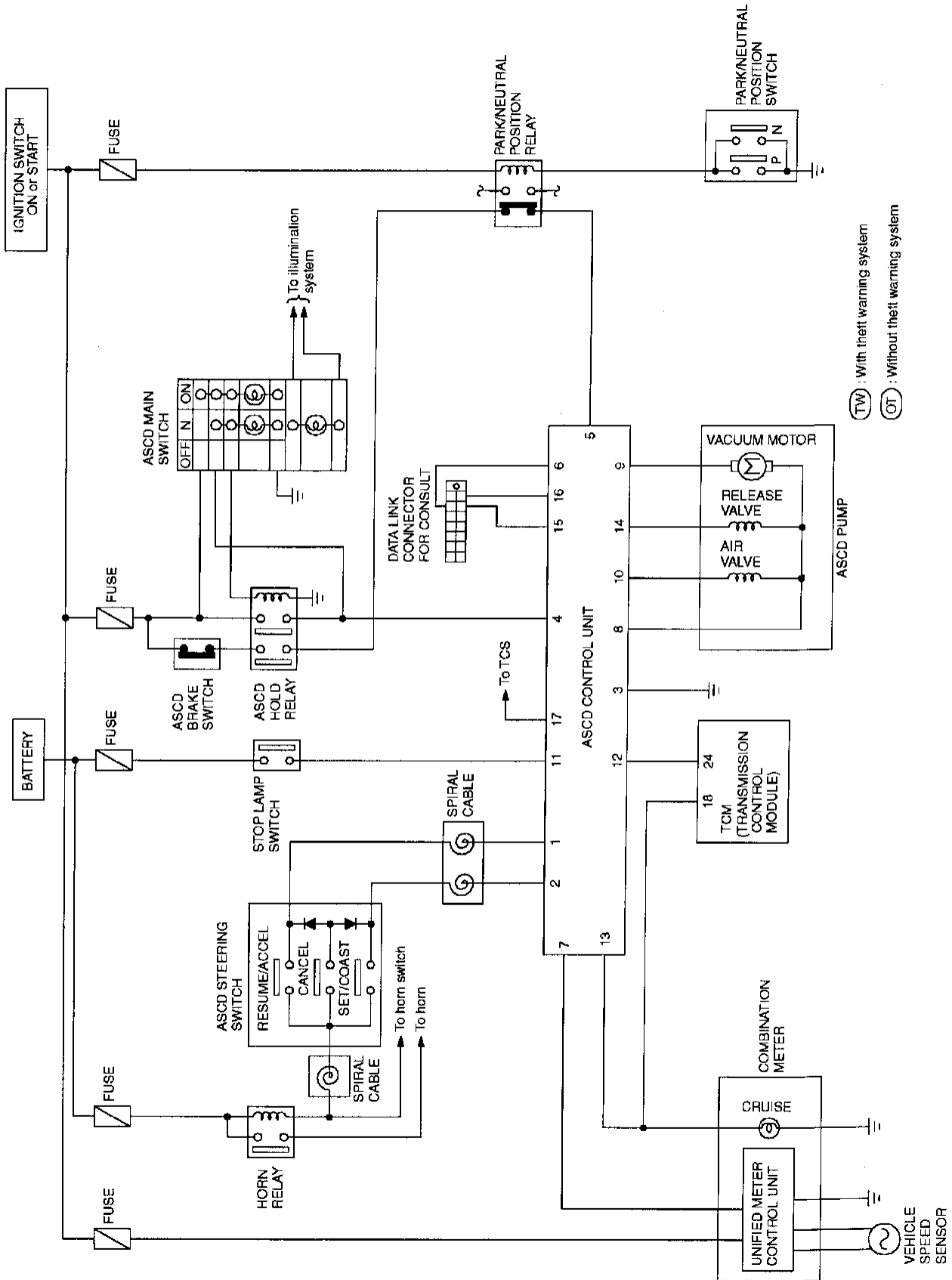
## Schematic/M/T Models



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

## Schematic/A/T Models

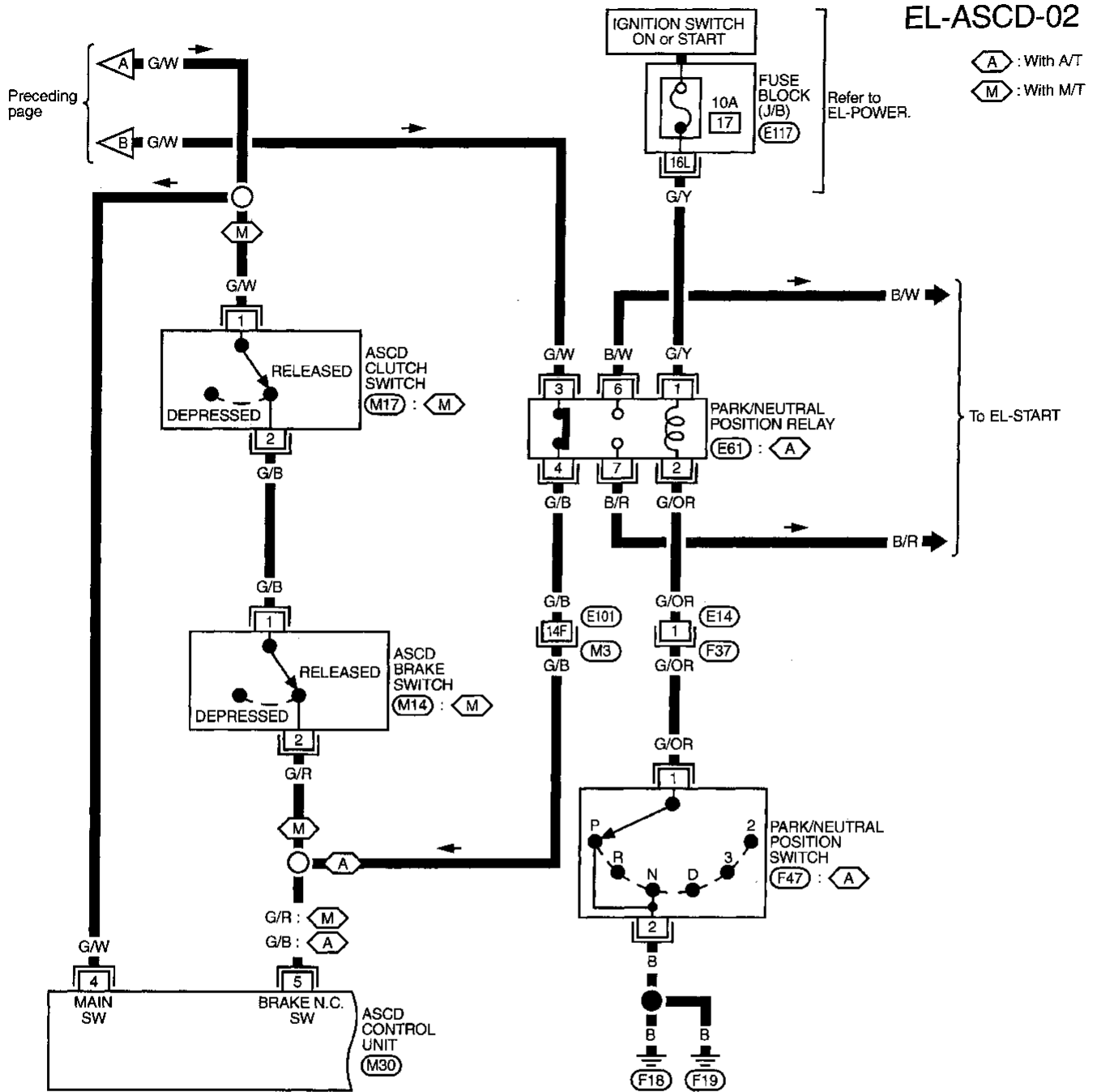




# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

## Wiring Diagram — ASCD — (Cont'd)

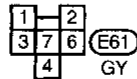
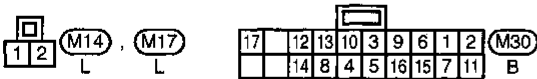
FIG. 2



Refer to last page (Foldout page).

M3 , E101

E117

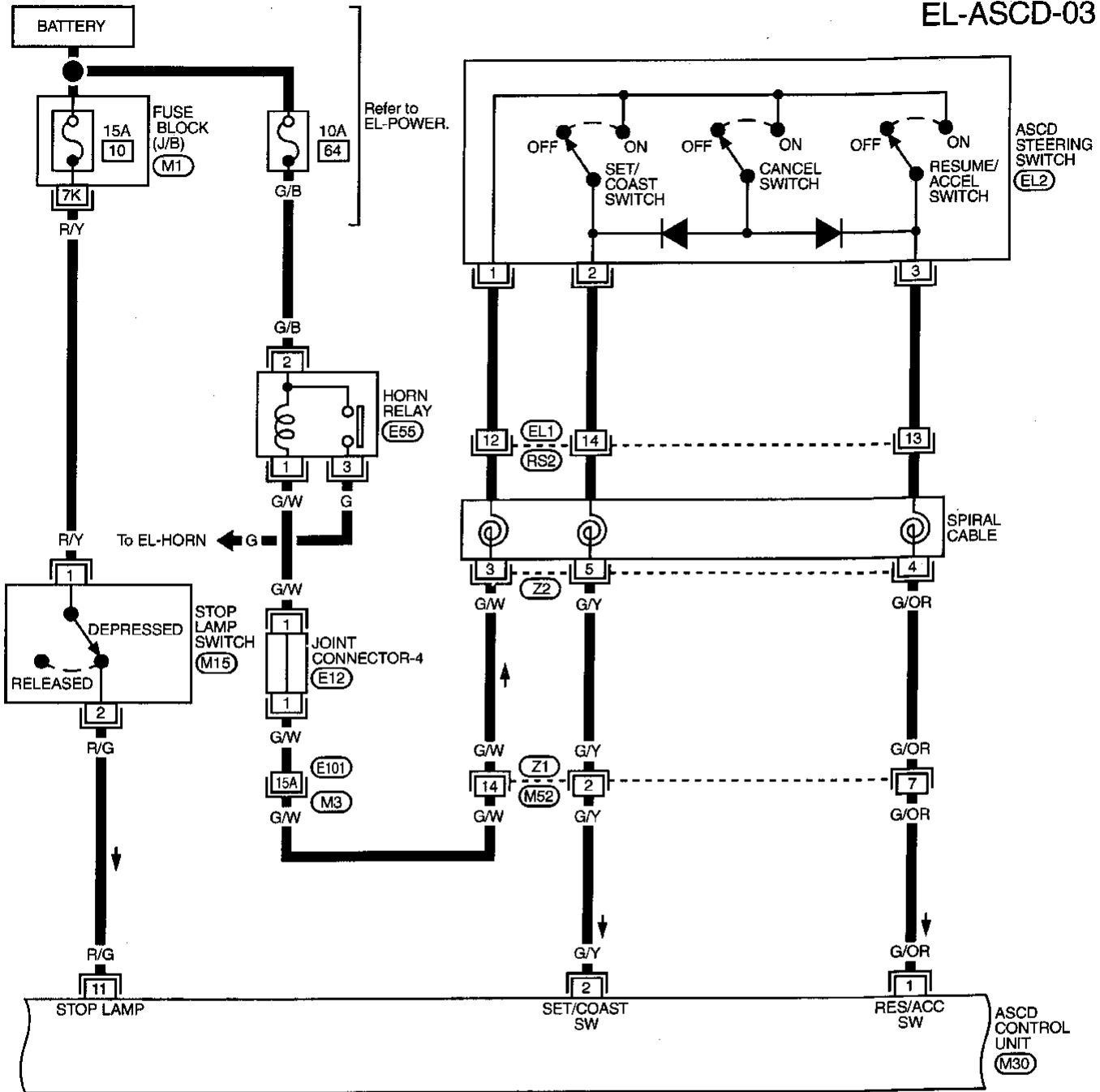


# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

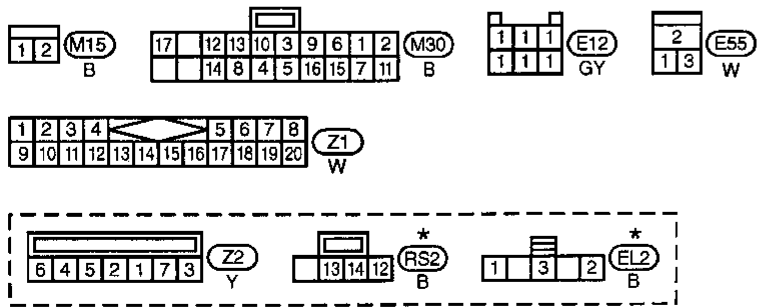
## Wiring Diagram — ASCD — (Cont'd)

FIG. 3

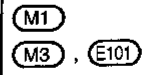
EL-ASCD-03



GI  
 MA  
 EM  
 LC  
 EC  
 FE  
 CL  
 MT  
 AT  
 FA  
 RA  
 BR  
 ST  
 RS  
 BT  
 HA  
 EL  
 IDX



Refer to last page (Foldout page).



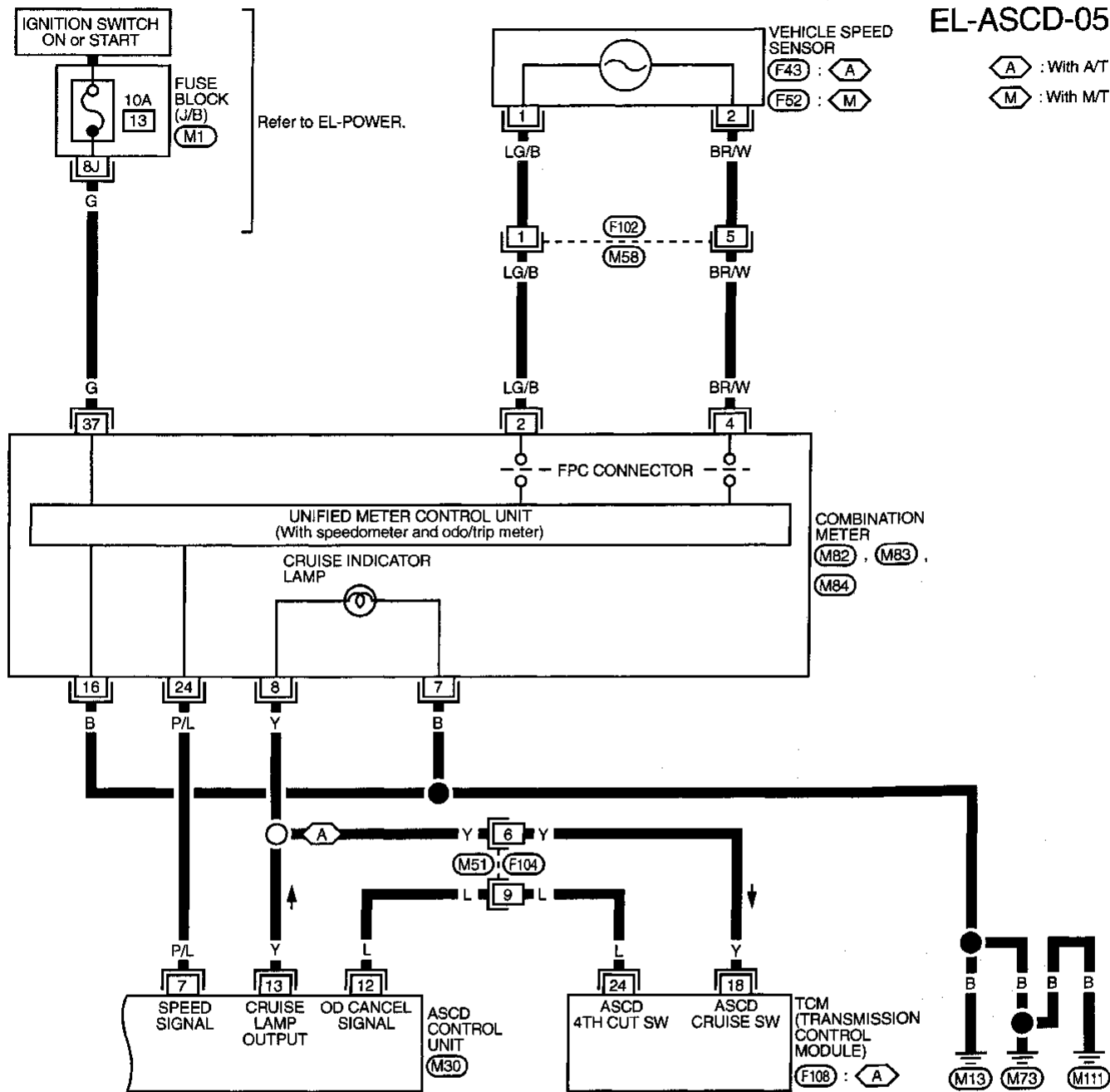
\*: This connectors is not shown in "HARNESS LAYOUT" of EL section.



# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

## Wiring Diagram — ASCD — (Cont'd)

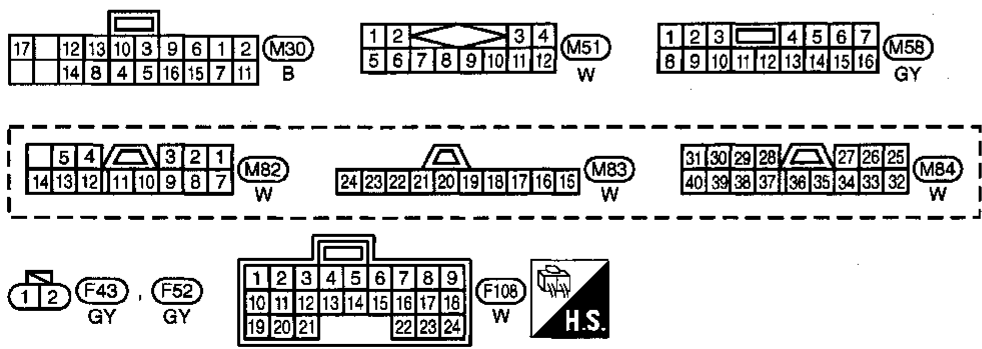
FIG. 5



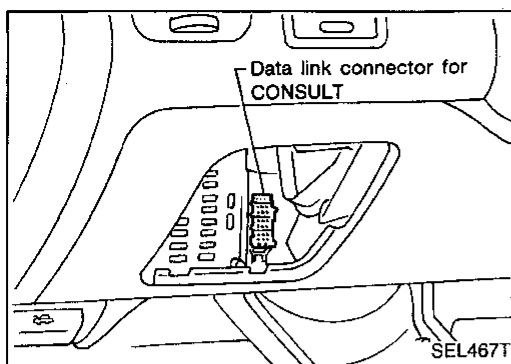
GI  
 MA  
 EM  
 LC  
 EC  
 FE  
 CL  
 MT  
 AT  
 FA  
 RA  
 BR  
 ST  
 RS  
 BT  
 HA  
EL  
 IDX

Refer to last page (Foldout page).

(M1)

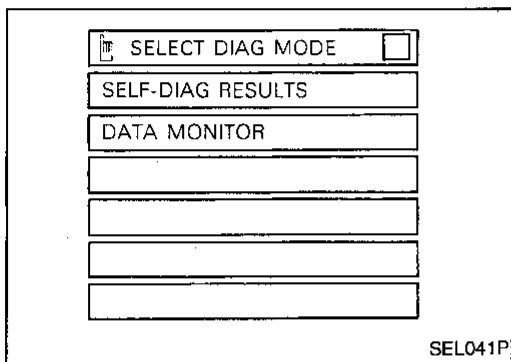


# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

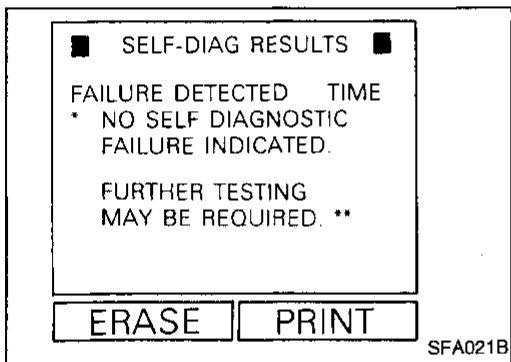


## CONSULT

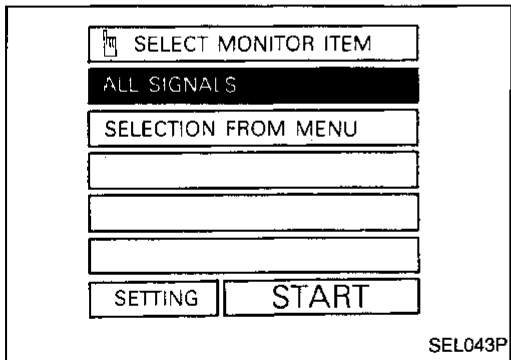
1. Turn ignition switch OFF.
2. Connect "CONSULT" to Data link connector.



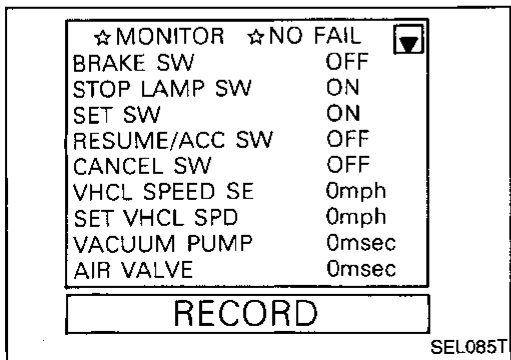
3. Turn ignition switch ON.
4. Turn ASCD main switch ON.
5. Touch START (on CONSULT display).
6. Touch ASCD.
7. Touch SELF-DIAG RESULTS.



- Self-diagnostic results are shown on display. Refer to table on the next page.



8. Touch DATA MONITOR.



- Touch START.
- Data monitor results are shown on display. Refer to table on the next page.

**For further information, read the CONSULT Operation Manual.**



# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

## CONSULT (Cont'd)

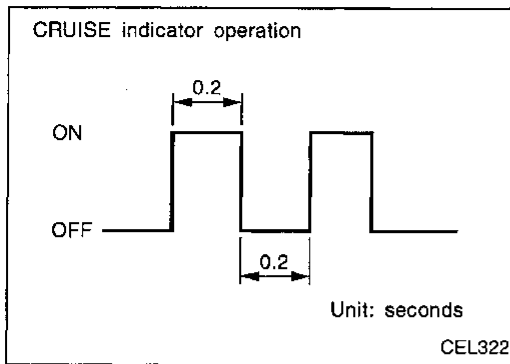
### SELF-DIAGNOSTIC RESULTS

Diagnostic item	Description	Repair/Check order
* NO SELF DIAGNOSTIC FAILURE INDICATED. FURTHER TESTING MAY BE REQUIRED.**	<ul style="list-style-type: none"> <li>Even if no self diagnostic failure is indicated, further testing may be required as far as the customer complains.</li> </ul>	—
POWER SUPPLY-VALVE	<ul style="list-style-type: none"> <li>The power supply circuit for the valves is open. (An abnormally high voltage is entered.)</li> </ul>	Diagnostic procedure 7 (EL-160)
VACUUM PUMP	<ul style="list-style-type: none"> <li>The vacuum pump circuit is open or shorted. (An abnormally high or low voltage is entered.)</li> </ul>	Diagnostic procedure 7 (EL-160)
AIR VALVE	<ul style="list-style-type: none"> <li>The air valve circuit is open or shorted. (An abnormally high or low voltage is entered.)</li> </ul>	Diagnostic procedure 7 (EL-160)
RELEASE VALVE	<ul style="list-style-type: none"> <li>The release valve circuit is open or shorted. (An abnormally high or low voltage is entered.)</li> </ul>	Diagnostic procedure 7 (EL-160)
VHCL SP-S/FAILSAFE	<ul style="list-style-type: none"> <li>The vehicle speed sensor or the fail-safe circuit is malfunctioning.</li> </ul>	Diagnostic procedure 6 (EL-159)
CONTROL UNIT	<ul style="list-style-type: none"> <li>The ASCD control unit is malfunctioning.</li> </ul>	Replace ASCD control unit.
BRAKE SW/STOP/L SW	<ul style="list-style-type: none"> <li>The brake switch or stop lamp switch is malfunctioning.</li> </ul>	Diagnostic procedure 4 (EL-157)

### DATA MONITOR

Monitored item	Description
BRAKE SW	<ul style="list-style-type: none"> <li>Indicates [ON/OFF] condition of the brake switch circuit.</li> </ul>
STOP LAMP SW	<ul style="list-style-type: none"> <li>Indicates [ON/OFF] condition of the stop lamp switch circuit.</li> </ul>
SET SW	<ul style="list-style-type: none"> <li>Indicates [ON/OFF] condition of the set switch circuit.</li> </ul>
RESUME/ACC SW	<ul style="list-style-type: none"> <li>Indicates [ON/OFF] condition of the resume/accelerate switch circuit.</li> </ul>
CANCEL SW	<ul style="list-style-type: none"> <li>Indicates [ON/OFF] condition of the cancel circuit.</li> </ul>
VHCL SPEED SE	<ul style="list-style-type: none"> <li>The present vehicle speed computed from the vehicle speed sensor signal is displayed.</li> </ul>
SET VHCL SPD	<ul style="list-style-type: none"> <li>The preset vehicle speed is displayed.</li> </ul>
VACUUM PUMP	<ul style="list-style-type: none"> <li>The operation time of the vacuum pump is displayed.</li> </ul>
AIR VALVE	<ul style="list-style-type: none"> <li>The operation time of the air valve is displayed.</li> </ul>
PW SUP-VALVE	<ul style="list-style-type: none"> <li>Indicates [ON/OFF] condition of the circuit for the air valve and the release valve.</li> </ul>
CRUISE LAMP	<ul style="list-style-type: none"> <li>Indicates [ON/OFF] condition of the cruise lamp circuit.</li> </ul>
AVT-OD CANCEL	<ul style="list-style-type: none"> <li>Indicates [ON/OFF] condition of the OD cancel circuit.</li> </ul>
FAIL SAFE-LOW	<ul style="list-style-type: none"> <li>The fail-safe (LOW) circuit function is displayed.</li> </ul>
FAIL SAFE-SPD	<ul style="list-style-type: none"> <li>The fail-safe (SPEED) circuit function is displayed.</li> </ul>

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

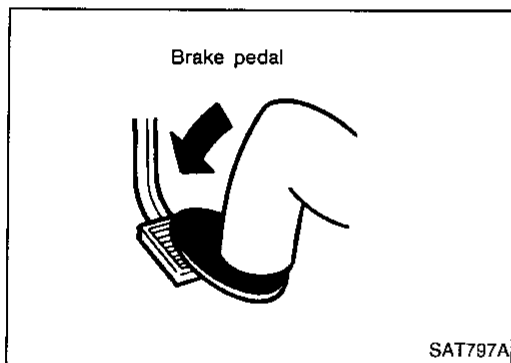
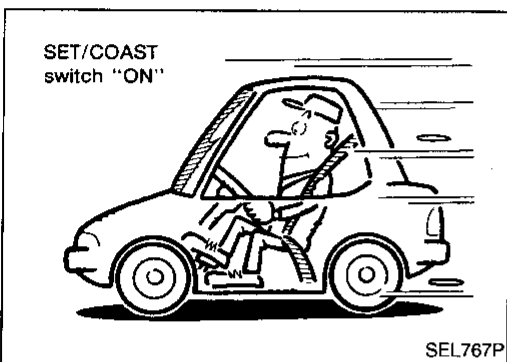
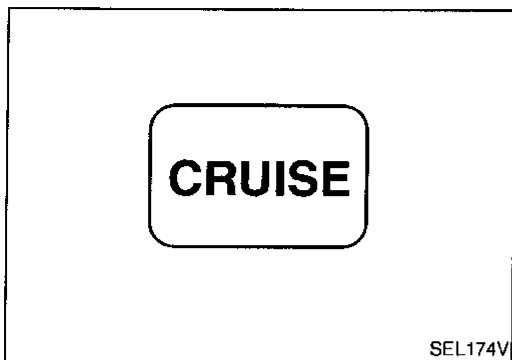


## Fail-safe System Description

When the fail-safe system senses a malfunction, it deactivates ASCD operation. The CRUISE indicator in the combination meter will then flash.

## MALFUNCTION DETECTION CONDITIONS

Detection conditions	ASCD operation during malfunction detection
<ul style="list-style-type: none"> <li>● ASCD steering (RESUME/ACCEL, CANCEL, SET/COAST) switch is stuck.</li> <li>● Vacuum motor ground circuit or power circuit is open or shorted.</li> <li>● Air valve ground circuit or power circuit is open or shorted.</li> <li>● Release valve ground circuit or power circuit is open or shorted.</li> <li>● Vehicle speed sensor is faulty.</li> <li>● ASCD control unit internal circuit is malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>● ASCD is deactivated.</li> <li>● Vehicle speed memory is canceled.</li> </ul>
<ul style="list-style-type: none"> <li>● ASCD brake switch or stop lamp switch is faulty.</li> </ul>	<ul style="list-style-type: none"> <li>● ASCD is deactivated.</li> <li>● Vehicle speed memory is not canceled.</li> </ul>



## Fail-safe System Check

1. Turn ignition switch to ON position.
2. Turn ASCD main switch to ON and check if the "CRUISE indicator" blinks.

**If the indicator lamp blinks, check the following.**

- ASCD steering switch. Refer to "DIAGNOSTIC PROCEDURE 5" (EL-158).

3. Drive the vehicle at more than 48 km/h (30 MPH) and push SET/COAST switch.

**If the indicator lamp blinks, check the following.**

- Vehicle speed sensor. Refer to "DIAGNOSTIC PROCEDURE 6" (EL-159).
- ASCD pump circuit. Refer to "DIAGNOSTIC PROCEDURE 7" (EL-160).
- Replace control unit.

4. Depress brake pedal slowly (brake pedal should be depressed more than 5 seconds).

**If the indicator lamp blinks, check the following.**

- ASCD brake/stop lamp switch. Refer to "DIAGNOSTIC PROCEDURE 4" (EL-157).

5. END. (System is OK.)

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

EL

IDX

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

## Trouble Diagnoses

### SYMPTOM CHART

PROCEDURE	—		Diagnostic procedure							
REFERENCE PAGE	EL-150	EL-153	EL-155	EL-155	EL-156	EL-157	EL-158	EL-159	EL-160	EL-161
SYMPTOM	Self-diagnosis in CONSULT	Fail-safe system check	DIAGNOSTIC PROCEDURE 1 (POWER SUPPLY AND GROUND CIRCUIT CHECK)	DIAGNOSTIC PROCEDURE 2 (ASCD MAIN SWITCH CHECK)	DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CHECK)	DIAGNOSTIC PROCEDURE 4 (ASCD BRAKE/STOP LAMP SWITCH CHECK)	DIAGNOSTIC PROCEDURE 5 (ASCD STEERING SWITCH CHECK)	DIAGNOSTIC PROCEDURE 6 (VEHICLE SPEED SENSOR CHECK)	DIAGNOSTIC PROCEDURE 7 (ASCD PUMP CIRCUIT CHECK)	DIAGNOSTIC PROCEDURE 8 (ASCD ACTUATOR/PUMP CHECK)
ASCD cannot be set. ("CRUISE" indicator lamp does not blink.)	X		X	X	X		X	X		
ASCD cannot be set. ("CRUISE" indicator lamp blinks.★1)	X	X				X	X	X	X	
Vehicle speed does not decrease after SET/COAST switch has been pressed.	X						X			X
Vehicle speed does not return to the set speed after RESUME/ACCEL switch has been pressed.★2	X						X			X
Vehicle speed does not increase after RESUME/ACCEL switch has been pressed.	X						X			X
System is not released after CAN-CEL switch (steering) has been pressed.	X						X			X
Large difference between set speed and actual vehicle speed.	X									X
Deceleration is greatest immediately after ASCD has been set.	X									X

★1: It indicates that system is in fail-safe. After completing diagnostic procedures, perform "Fail-safe System Check" (EL-153) to verify repairs.

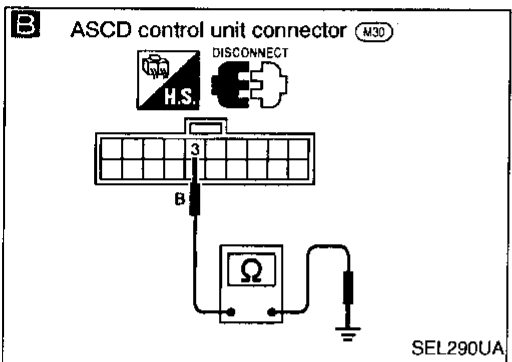
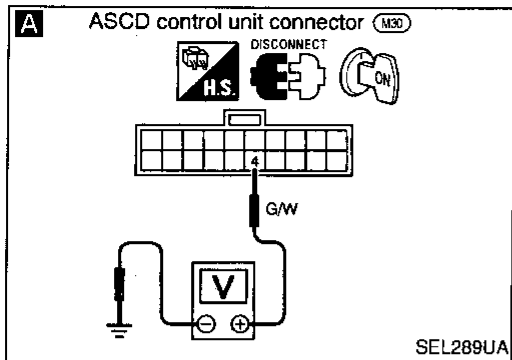
★2: If vehicle speed is greater than 48 km/h (30 MPH) after system has been released, pressing RESUME/ACCEL switch returns vehicle speed to the set speed previously achieved. However, doing so when the ASCD main switch is turned to "OFF", vehicle speed will not return to the set speed since the memory is canceled.

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 1

#### (POWER SUPPLY AND GROUND CIRCUIT CHECK)



1. Turn ignition switch ON.  
2. Turn ASCD main switch "ON" to make sure indicators illuminate.

NG → Go to DIAGNOSTIC PROCEDURE 2 (ASCD MAIN SWITCH CHECK).

**A**

**CHECK POWER SUPPLY CIRCUIT FOR ASCD CONTROL UNIT**

1. Disconnect ASCD control unit connector.  
2. Turn ignition switch ON.  
3. Turn ASCD main switch "ON".  
4. Check voltage between control unit connector terminal ④ and ground.  
**Battery voltage should exist.**

Refer to wiring diagram in EL-146.

NG → Go to DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CHECK). Refer to EL-156.

**B**

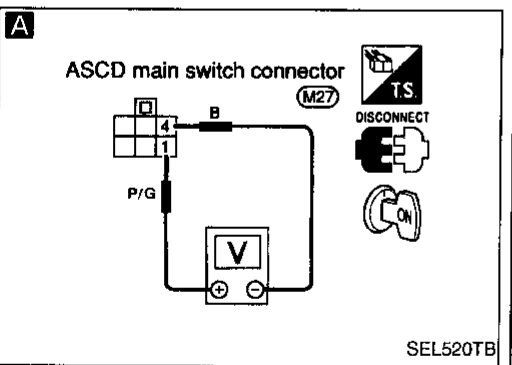
**CHECK GROUND CIRCUIT FOR ASCD CONTROL UNIT**

Check continuity between ASCD control unit harness terminal ③ and ground.

Refer to wiring diagram in EL-148.

NG → Repair harness.

OK → Power supply and ground circuit is OK.



### DIAGNOSTIC PROCEDURE 2

#### (ASCD MAIN SWITCH CHECK)

**A**

**CHECK POWER SUPPLY FOR ASCD MAIN SWITCH**

1. Disconnect main switch connector.  
2. Turn ignition switch "ON".  
3. Measure voltage between main switch terminals ① and ④.  
**Battery voltage should exist.**

Refer to wiring diagram in EL-145.

NG → Check the following.

- 7.5A fuse [No. 12], located in the fuse block (J/B)
- Harness for open or short between fuse and ASCD main switch
- Ground circuit for ASCD main switch

OK → Check ASCD main switch. Refer to "Electrical Components Inspection" (EL-162).

NG → Replace ASCD main switch.

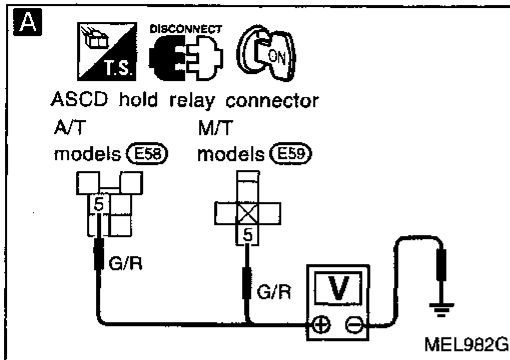
OK → Go to DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CHECK). Refer to EL-156.

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CHECK)



**A**

**CHECK POWER SUPPLY CIRCUIT FOR ASCD HOLD RELAY**

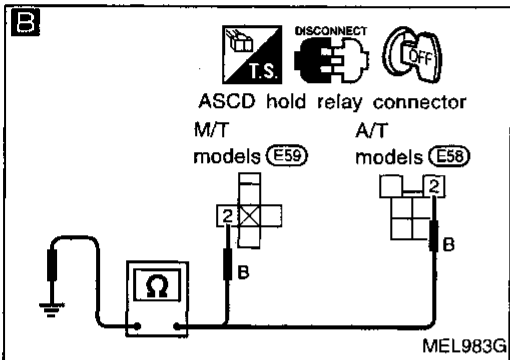
1. Disconnect ASCD hold relay
2. Turn ignition switch ON.
3. Does approx. 12 volt exist between ASCD hold relay harness terminal ⑤ and ground?

No

Check the following.

- 7.5A fuse [No. 12], located in the fuse block (J/B)]
- Harness for open or short between fuse and ASCD hold relay

Refer to wiring diagram in EL-145.



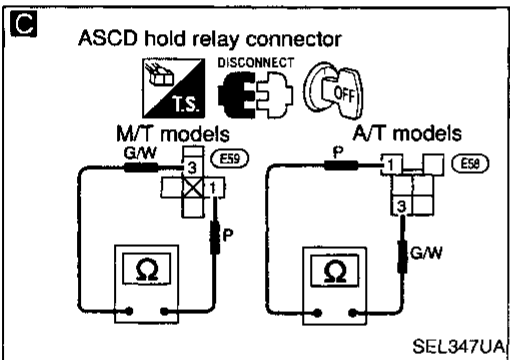
**B**

**CHECK GROUND CIRCUIT FOR ASCD HOLD RELAY**

1. Turn ignition switch OFF.
2. Does continuity exist between ASCD hold relay harness terminal ② and ground?

No

Repair harness.



**C**

**CHECK ASCD HOLD RELAY CIRCUIT**

Does continuity exist between ASCD hold relay harness terminals ③ and ① ?

Yes

Check ASCD hold relay.

No

**CHECK ASCD MAIN SWITCH.**  
Refer to "Electrical Components Inspection" (EL-162).

NG

Replace ASCD main switch.

OK

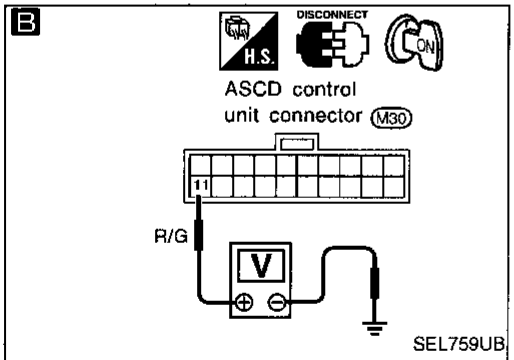
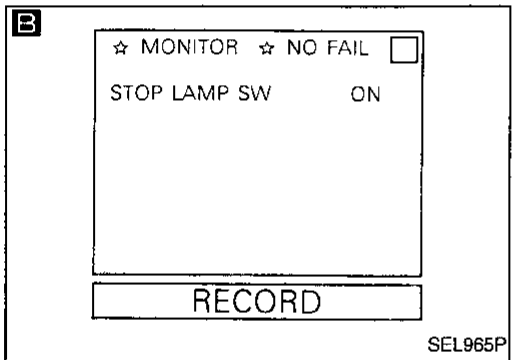
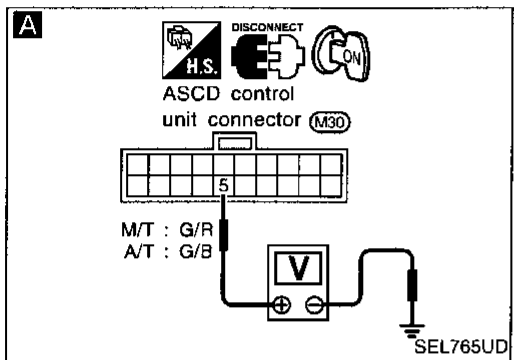
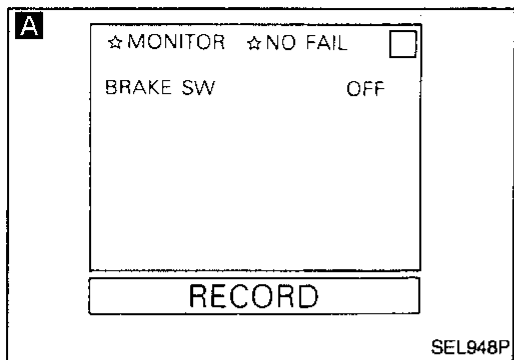
ASCD hold relay is OK.

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 4

#### (ASCD BRAKE/STOP LAMP SWITCH CHECK)



**A**

#### CHECK ASCD BRAKE SWITCH CIRCUIT

See "BRAKE SW" in "Data monitor" mode.  
When brake pedal or clutch pedal (M/T) is depressed or A/T selector lever (A/T) is in "N" or "P" range:  
**BRAKE SW OFF**  
When both brake pedal and clutch pedal (M/T) are released and A/T selector lever (A/T) is not in "N" or "P" range:  
**BRAKE SW ON**

OR

1. Disconnect control unit connector.  
2. Turn ignition switch ON.  
3. Turn ASCD main switch "ON".  
4. Check voltage between control unit connector terminal ⑤ and ground.  
When brake pedal or clutch pedal (M/T) is depressed or A/T selector lever (A/T) is in "N" or "P" range:  
**Approx. 0V**  
When both brake pedal and clutch pedal (M/T) are released and A/T selector lever (A/T) is not in "N" or "P" range:  
**Battery voltage should exist.**

Refer to wiring diagram in EL-146.

- NG
- Check the following.
- ASCD brake switch  
Refer to "Electrical Components Inspection" (EL-162).
  - ASCD clutch switch (M/T model)  
Refer to "Electrical Components Inspection" (EL-162).
  - Park/neutral position switch (A/T model)  
Refer to "Electrical Components Inspection" (EL-162).
  - ASCD hold relay
  - Harness for open or short

**B**

#### CHECK STOP LAMP SWITCH CIRCUIT

See "STOP LAMP SW" in "Data monitor" mode.  
**STOP LAMP SW**  
When brake pedal is released:  
OFF  
When brake pedal is depressed:  
ON

OR

1. Disconnect control unit connector.  
2. Check voltage between control unit terminal ⑪ and ground.

Condition		Voltage [V]
Stop lamp switch	Depressed	Approx. 12
	Released	0

Refer to wiring diagram in EL-147.

- NG
- Check the following.
- 15A fuse [No. 10], located in the fuse block (J/B)]
  - Harness for open or short between ASCD control unit and stop lamp switch
  - Stop lamp switch  
Refer to "Electrical Components Inspection" (EL-162).

OK

ASCD brake/stop lamp switch is OK.

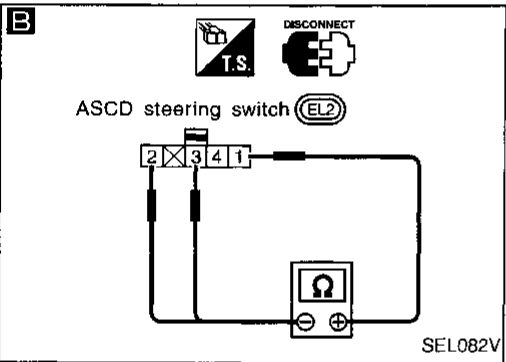
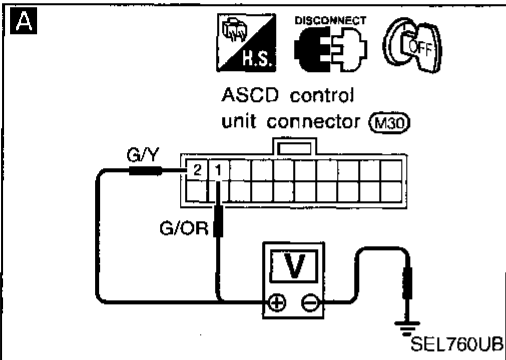
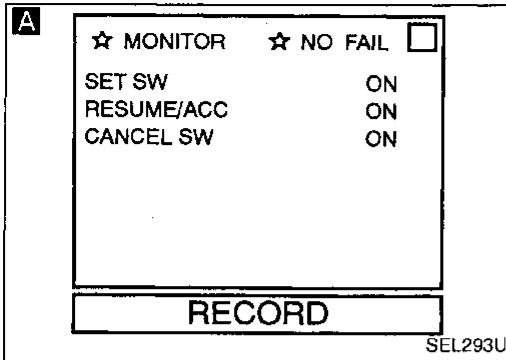
GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 5

#### (ASCD STEERING SWITCH CHECK)



**A**

**CHECK ASCD STEERING SWITCH CIRCUIT FOR ASCD CONTROL UNIT**

See "SET SW", "RESUME/ACC SW" and "CANCEL SW" in "Data monitor" mode.

**SET SW, RESUME/ACC SW and CANCEL SW**

**When switch is pressed: ON**

**When switch is released: OFF**

OR

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

	Terminal No.		Switch condition	
	⊕	⊖	Pressed	Released
SET/COAST SW	②	Ground	12V	0V
RESUME/ACC SW	①	Ground	12V	0V
CANCEL SW	②	Ground	12V	0V
	①	Ground	12V	0V

Refer to wiring diagram in EL-147.

OK → ASCD steering switch is OK.

NG

**CHECK POWER SUPPLY FOR ASCD STEERING SWITCH.**

Does horn work?

- NG → Check the following.
- 10A fuse (No. 64, located in the relay box)
  - Horn relay
  - Harness for open or short between horn relay and fuse

OK

**B**

**CHECK ASCD STEERING SWITCH**

Check continuity between terminals by pushing each switch.

NG → Replace ASCD steering switch.

Switch	Terminal		
	①	③	②
SET/COAST	○	—	○
RESUME/ACCEL	○	○	
CANCEL	○	▶	○
	○	▶	○

OK

Check harness for open or short between ASCD steering switch and ASCD control unit.




# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 6

#### (VEHICLE SPEED SENSOR CHECK)

**A**




☆ MONITOR ☆ NO FAIL   
 VHCL SPEED SE      45mph

RECORD


SEL084T

**A**

**CHECK VEHICLE SPEED SENSOR CIRCUIT**

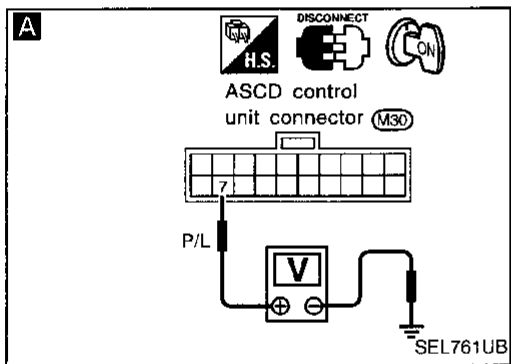
 See "VHCL SPEED SE" in "Data monitor" mode while driving.

— OR —

 1. Apply wheel chocks and jack up drive wheel.  
 2. Disconnect control unit connector.  
 3. Connect voltmeter between control unit terminal ⑦ and ground.  
 4. Slowly turn drive wheel.  
 5. Check deflection of voltmeter pointer.

Refer to wiring diagram in EL-149.

OK → Vehicle speed sensor is OK.



NG

Does speedometer operate normally?

No → Check speedometer and vehicle speed sensor circuit. Refer to EL-75.

Yes

Check harness for open or short between ASCD control unit terminal ⑦ and combination meter terminal ②.

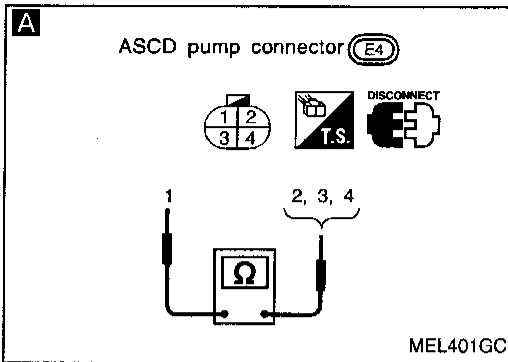
GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 7

#### (ASCD PUMP CIRCUIT CHECK)



**A**

#### CHECK ASCD PUMP

1. Disconnect ASCD pump connector.
2. Measure resistance between control unit harness terminals ① and ②, ③, ④.

Terminals	Resistance [Ω]	
①	④	Approx. 3
	②	Approx. 65
	③	Approx. 65

Refer to wiring diagram in EL-148.

NG → Replace ASCD pump.

OK

Check harness for open or short between ASCD pump and ASCD control unit.



If a self-diagnostic result has already been accomplished, check using the following table.

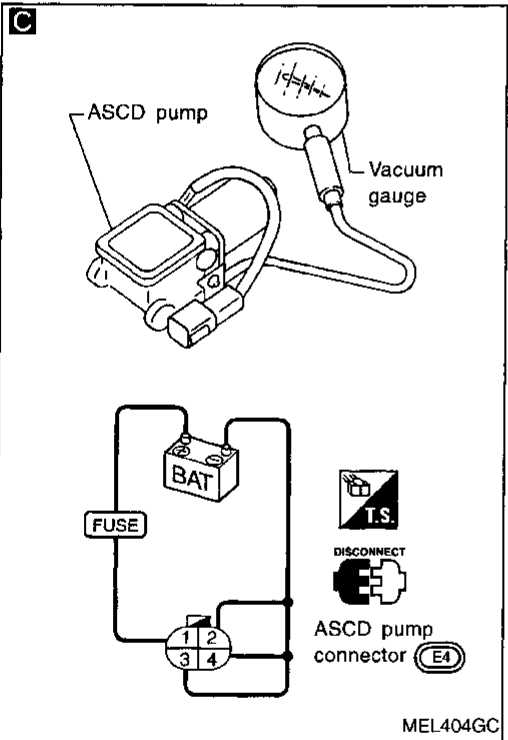
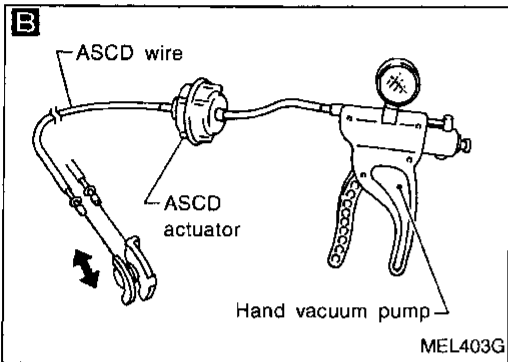
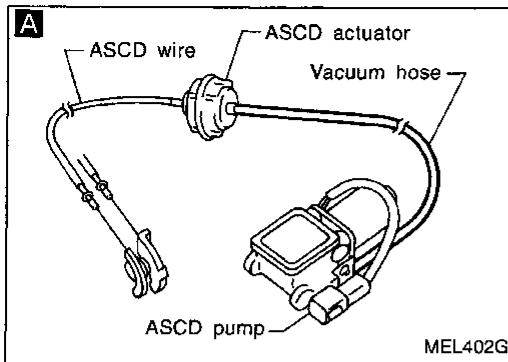
CONSULT self-diagnostic result	Check circuit	
	ASCD control unit terminal	ASCD pump terminal
POWER SUPPLY-VALVE	⑧	①
VACUUM PUMP	⑨	④
AIR VALVE	⑩	②
RELEASE VALVE	⑪	③

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 8

#### (ASCD ACTUATOR/PUMP CHECK)



**A**

**CHECK VACUUM HOSE**  
Check vacuum hose (between ASCD actuator and ASCD pump) for breakage, cracks and fracture.

NG → Repair or replace hose.

OK ↓

**CHECK ASCD WIRE.**  
Check wire for improper installation, rust formation and breaks.

NG → Repair or replace wire. Refer to "ASCD Wire Adjustment" (EL-163).

OK ↓

**B**

**CHECK ASCD ACTUATOR**

1. Disconnect vacuum hose from ASCD actuator.
2. Apply -40 kPa (-0.41 kg/cm<sup>2</sup>, -5.8 psi) vacuum to ASCD actuator with hand vacuum pump.  
**ASCD wire should move to pull throttle drum.**
3. Wait 10 seconds and check for decrease in vacuum pressure.  
**Vacuum pressure decrease:  
Less than 2.7 kPa (0.028 kg/cm<sup>2</sup>, 0.39 psi)**

NG → Replace ASCD actuator.

OK ↓

**C**

**CHECK ASCD PUMP**

1. Disconnect vacuum hose from ASCD pump and ASCD pump connector.
2. If necessary remove ASCD pump.
3. Connect vacuum gauge to ASCD pump.
4. Apply 12V direct current to ASCD pump and check operation.

	12V direct current supply terminals		Operation
	⊕	⊖	
Air valve	①	②	Close
Release valve		③	Close
Vacuum motor		④	Operate

**A vacuum pressure of at least -35 kPa (-0.36 kg/cm<sup>2</sup>, -5.1 psi) should be generated.**

NG → Replace ASCD pump.

OK ↓

ASCD actuator/pump is OK.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

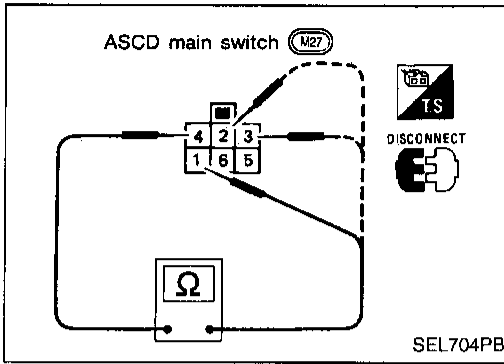
BT

HA

EL

IDX

# AUTOMATIC SPEED CONTROL DEVICE (ASCD)

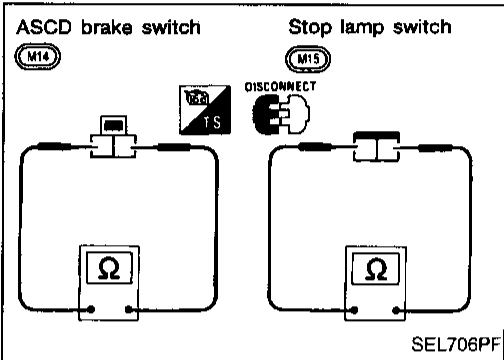


## Electrical Components Inspection

### ASCD MAIN SWITCH

Check continuity between terminals by pushing switch to each position.

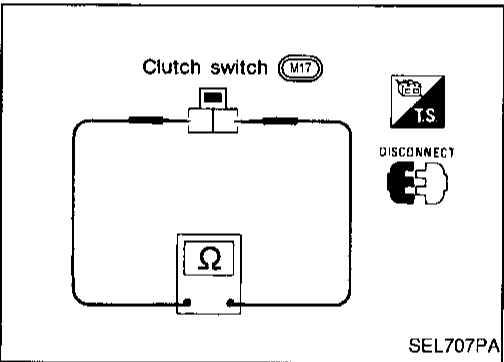
Switch position	Terminals					
	1	2	3	4	5	6
ON	○	○	○	○		
N		○	○	○	○	ILL.
OFF			○	○		



### ASCD BRAKE SWITCH AND STOP LAMP SWITCH

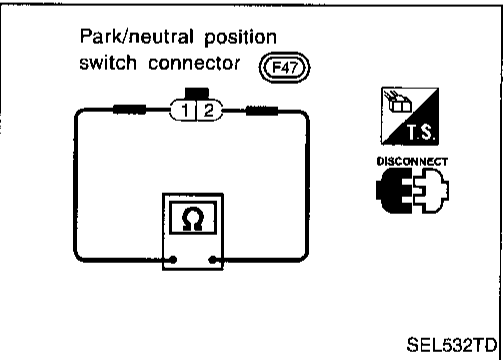
Condition	Continuity	
	ASCD brake switch	Stop lamp switch
When brake pedal is depressed	No	Yes
When brake pedal is released	Yes	No

Check each switch after adjusting brake pedal — refer to BR section.



### CLUTCH SWITCH (For M/T models)

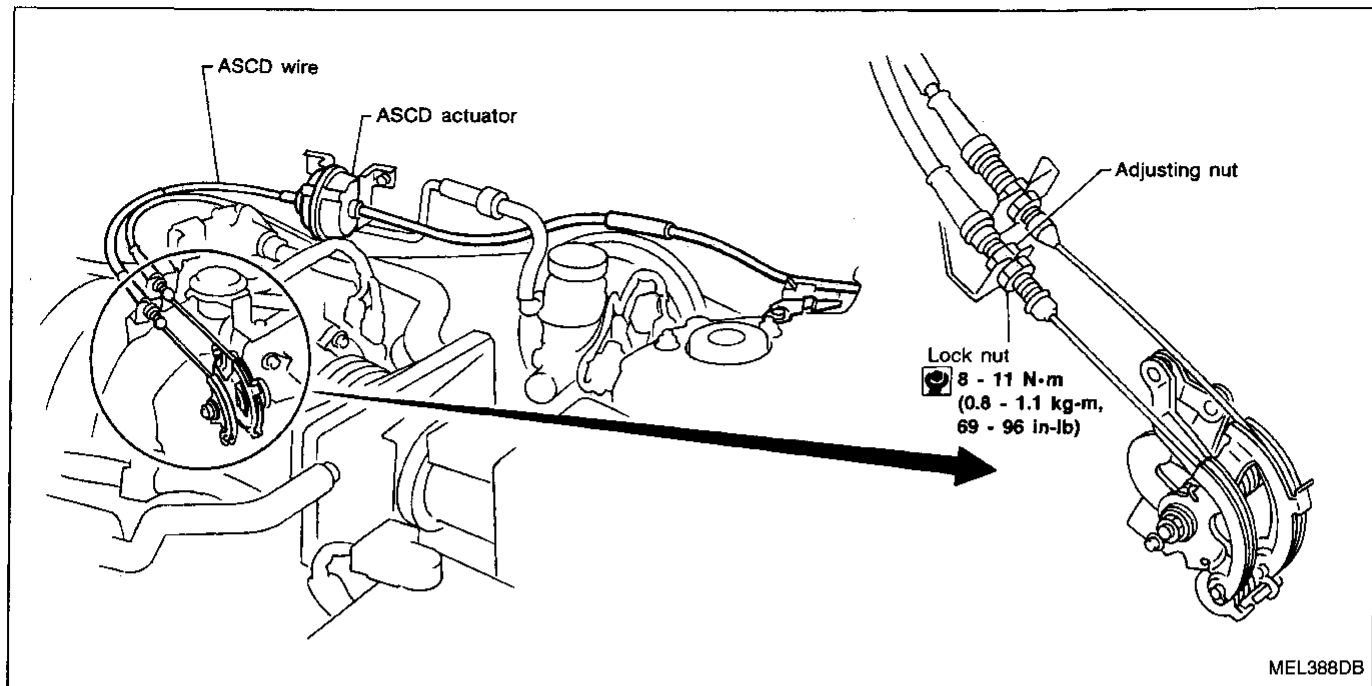
Condition	Continuity
When clutch pedal is depressed	No
When clutch pedal is released	Yes



### PARK/NEUTRAL POSITION SWITCH (For A/T models)

Condition	Continuity
When shift lever position is "N" or "P"	Yes
When shift lever position is not "N" or "P"	No

## ASCD Wire Adjustment



### CAUTION:

- Be careful not to twist ASCD wire when removing it.
- Do not tense ASCD wire excessively during adjustment.

Adjust the tension of ASCD wire in the following manner.

1. Loosen lock nut and adjusting nut.
2. Make sure that accelerator wire is properly adjusted. (Refer to FE section, "ACCELERATOR CONTROL SYSTEM".)
3. Tighten adjusting nut until throttle drum just starts to move.
4. Loosen adjusting nut again 1/2 to 1 turn.
5. Tighten lock nut.

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

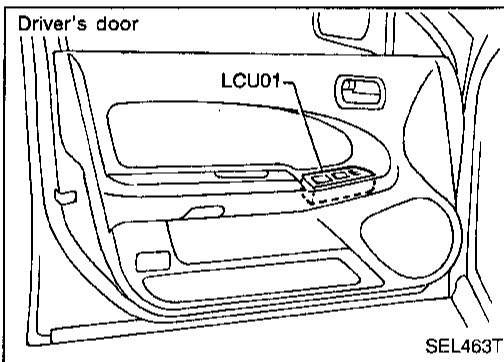
## Overall Description

### OUTLINE

The In-Vehicle Multiplexing System, IVMS (LAN system), consists of a BCM (Body Control Module) and five LCUs (Local Control Units). Some switches and electrical loads are connected to each LCU. Some electrical systems are directly connected to the BCM. Control of each LCU, (which is provided by a switch and electrical load), is accomplished by the BCM, via multiplex data lines (A-1, A-2) connected between them.

### BCM (Body Control Module)

The BCM, which is a master unit of the IVMS (LAN), consists of microprocessor, memory and communication LSI sections and has communication and control functions. It receives data signals from the LCUs and sends electrical load data signals to them.



### LCU (Local Control Unit)

The LCUs, which are slave units of the BCM, have only a communication function and consist of communication LSI and input-output interface circuits. They receive data signals from the BCM, control the ON/OFF operations of electrical loads and the sleep operation, as well as send switch signals to the BCM.

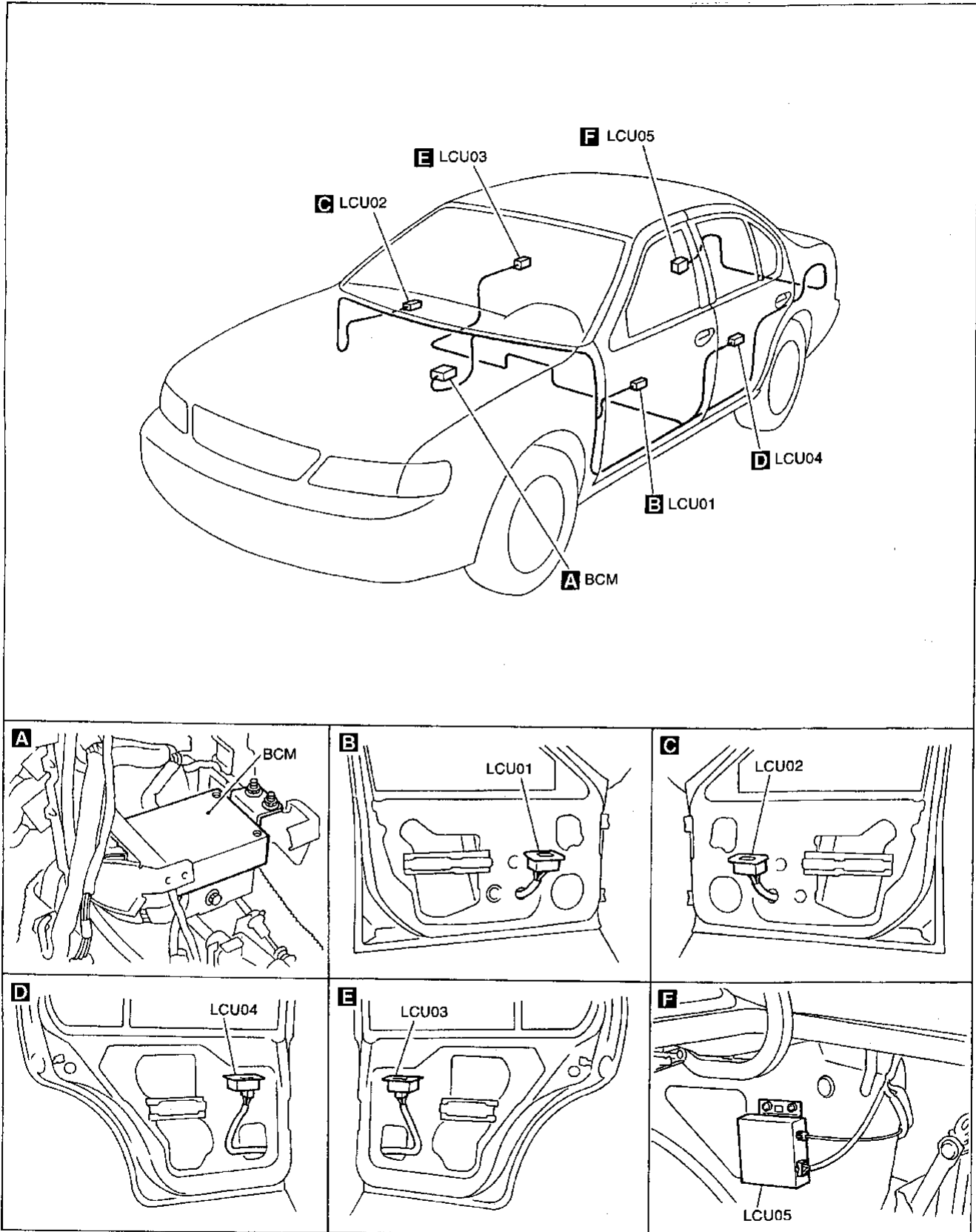
### CONTROLLED SYSTEMS

The IVMS controls several body-electrical systems. The systems included in the IVMS are as follows:

- Power window
- Power door lock
- Multi-remote control system
- Theft warning system
- Interior lamp (ON-OFF control)
- Step lamp
- Illumination (Power window switch illumination)
- Ignition key warning (Refer to "WARNING BUZZER".)
- Light warning (Refer to "WARNING BUZZER".)
- Seat belt warning (Refer to "WARNING BUZZER".)
- Wiper amp. (Refer to "WIPER AND WASHER".)
- Rear window defogger timer (Refer to "REAR WINDOW DEFOGGER".)
- Power window (Refer to "POWER WINDOW — IVMS".)
- Trouble-diagnosing system
  - with CONSULT
  - ON BOARD

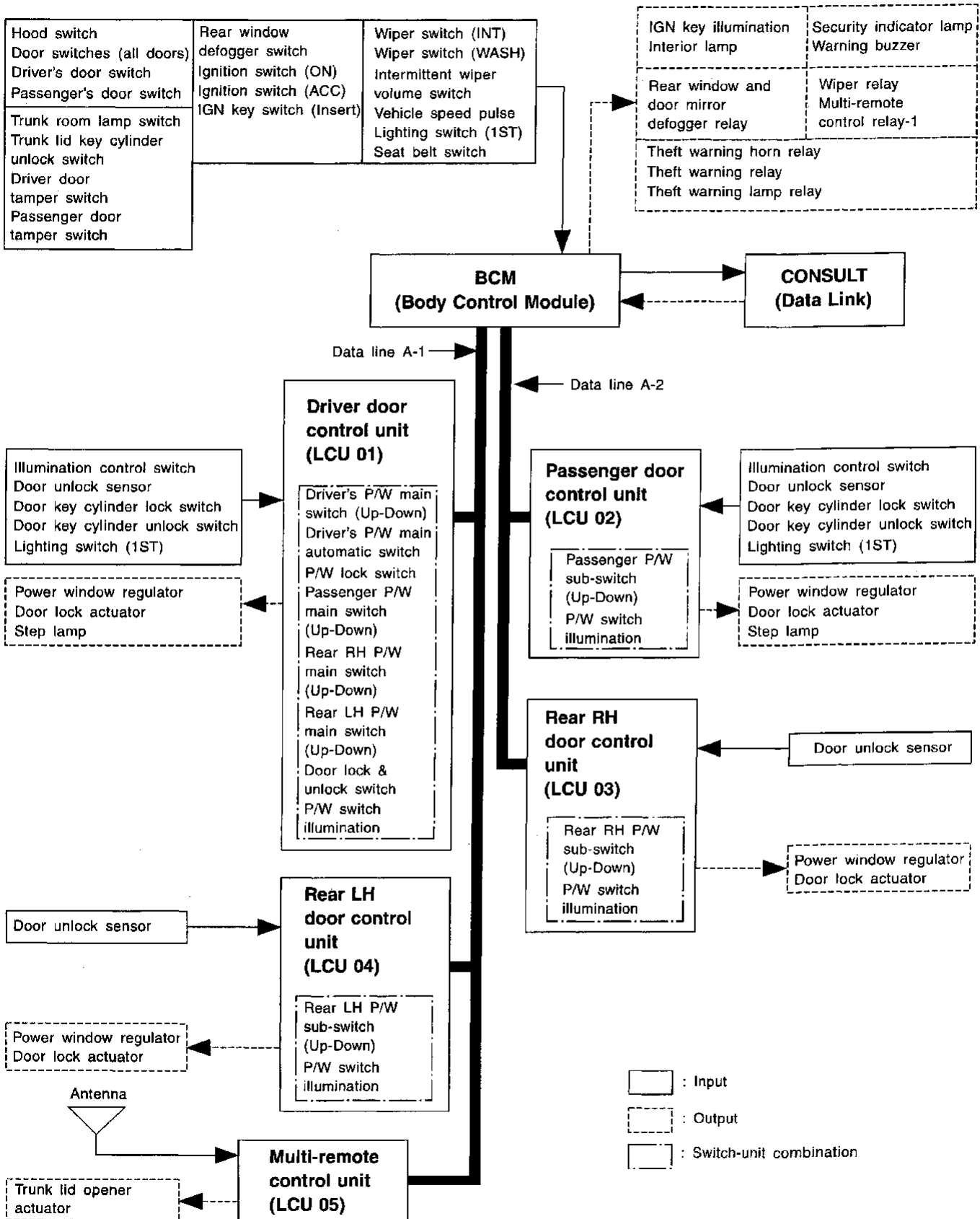
Also, IVMS has the "sleep/wake-up control" function. IVMS puts itself (the whole IVMS system) to sleep under certain conditions to prevent unnecessary power consumption. Then, when a certain input is detected, the system wakes itself up. For more detailed information, refer to "Sleep/Wake-up Control".

Component Parts Location



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

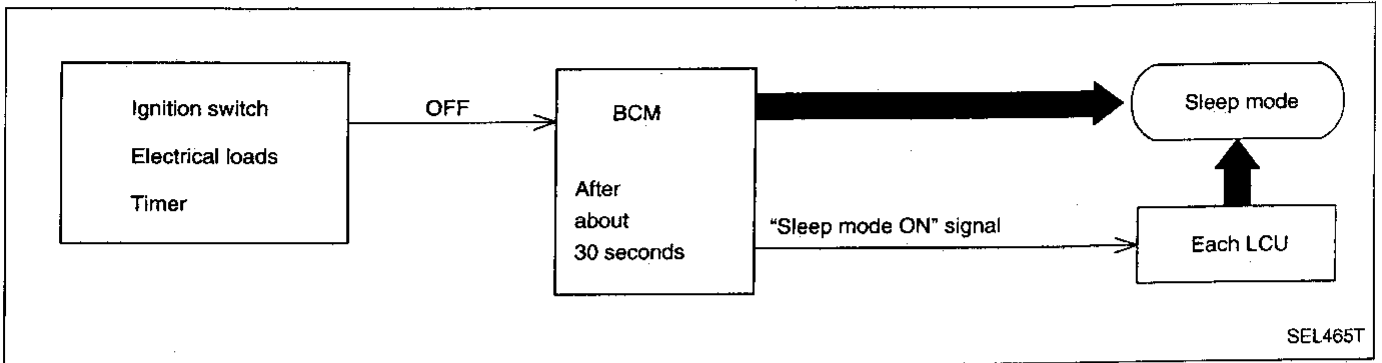
System Diagram





Sleep/Wake-up Control

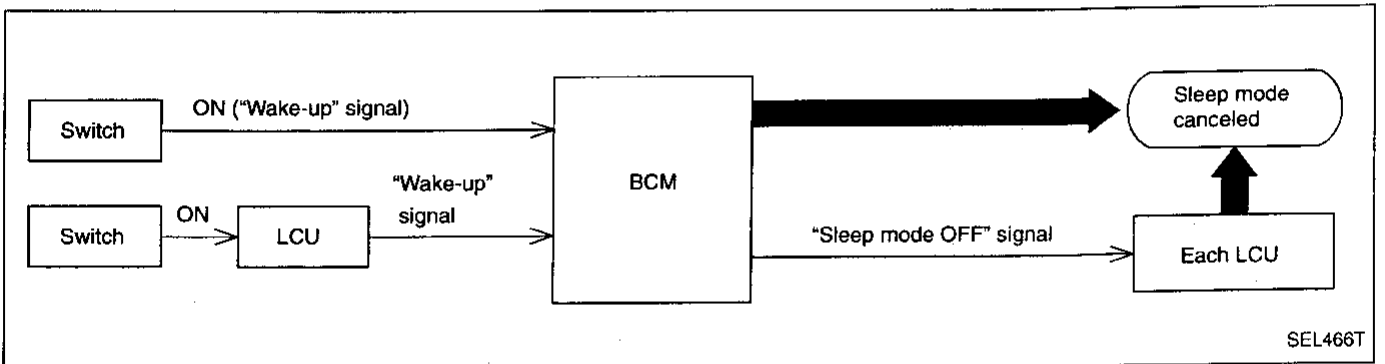
SLEEP CONTROL



“Sleep” control prevents unnecessary power consumption. About 30 seconds after the following conditions are met, the BCM suspends the communication between itself and all LCUs. The whole IVMS system is set in the “sleep” mode.

- Ignition switch “OFF”
- All electrical loads (in the IVMS) “OFF” (except the security indicator lamp)
- Timer “OFF”

WAKE-UP CONTROL



As shown above, when the BCM detects a “wake-up” signal, it wakes up the whole system and starts communicating again. The “sleep” mode of all LCUs is now canceled, and the BCM returns to the normal control mode. When any one of the following switches are turned ON, the “sleep” mode is canceled:

- Ignition key switch (Insert)\*
- Ignition switch “ACC” or “ON”
- Lighting switch (1st)
- Door switches (all doors)
- Trunk room lamp switch
- Hood switch
- Driver/passenger side door key cylinder tamper switch
- Driver/passenger side door key cylinder switch
- Trunk lid key cylinder switch
- Multi-remote controller
- Door unlock sensors (all doors)

\* Also, when key is pulled out of ignition (ignition key switch is turned from ON to OFF), the “sleep” mode is canceled.

Fail-safe System

Fail-safe system operates when the signal from LCU is judged to be malfunctioning by BCM. If LCU sends no signal or an abnormal signal to BCM a certain number of times in succession, the IVMS is set in a fail-safe condition. In the fail-safe condition, no electrical loads on the questionable LCU will operate.

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

CONSULT

DIAGNOSTIC ITEMS APPLICATION

Test item	Diagnosed system	MODE				
		IVMS COMM DIAGNOSIS	WAKE-UP DIAGNOSIS	SELF-DIAG-NOSTIC RESULTS	DATA MONI-TOR	ACTIVE TEST
IVMS-COMM CHECK	IVMS communication and wake-up function	X	X			
POWER WINDOW	Power window				X	X
DOOR LOCK	Power door lock			X	X	X
MULTI-REMOTE CONT SYS	Multi-remote control				X	X
THEFT WARNING SYS-TEM	Theft warning system				X	X
ROOM LAMP TIMER	Interior lamp control				X	X
STEP LAMP	Step lamps				X	X
ILLUM LAMP	Illumination				X	X
IGN KEY WARN ALM	Warning buzzer				X	X
LIGHT WARN ALM	Warning buzzer				X	X
SEAT BELT TIMER	Warning buzzer				X	X
WIPER	Wiper and washer				X	X
REAR DEFOGGER	Rear window defogger				X	X

X: Applicable

For diagnostic item in each control system, read the CONSULT Operation Manual.

DIAGNOSTIC ITEMS DESCRIPTION

MODE	Description
IVMS COMM DIAGNOSIS	Diagnosis of continuity in the communication line(s), and of the function of the communication interface between the body control module and the local control units, accomplished by transmitting a signal from the body control module to the local control units.
WAKE-UP DIAGNOSIS	Diagnosis of the "wake-up" function of local control units by having a technician input the switch data into the local control unit that is in the temporary "sleep" condition.
SELF-DIAGNOSTIC RESULTS	—
DATA MONITOR	Displays data relative to the body control module (BCM) input signals and various control related data for each system.
ACTIVE TEST	Turns on/off actuators, relay and lamps according to the commands transmitted by the CONSULT unit.

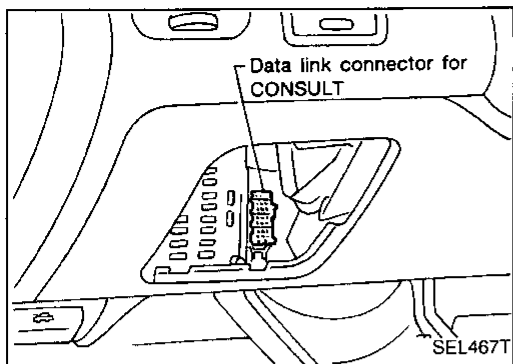
NOTE: When CONSULT diagnosis is operating, some systems under IVMS control do not operate.

# IVMS (LAN)

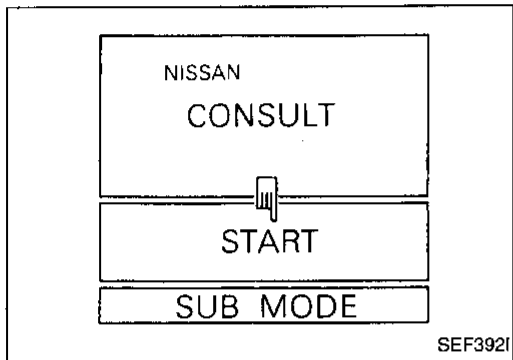
## CONSULT (Cont'd)

### CONSULT INSPECTION PROCEDURE

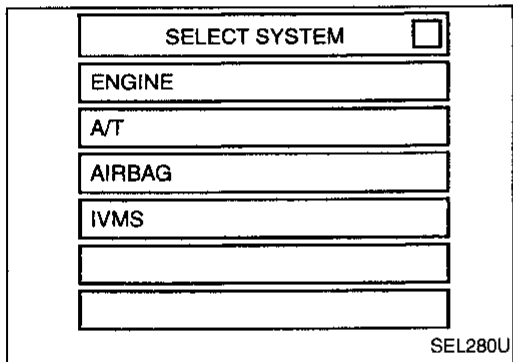
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



3. Turn ignition switch "ON".
4. Touch "START".

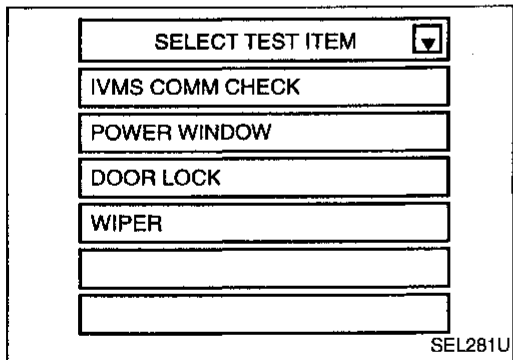


5. Touch "IVMS".



6. Perform each diagnostic item according to the item application chart as follows:

**For further information, read the CONSULT Operation Manual.**



GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

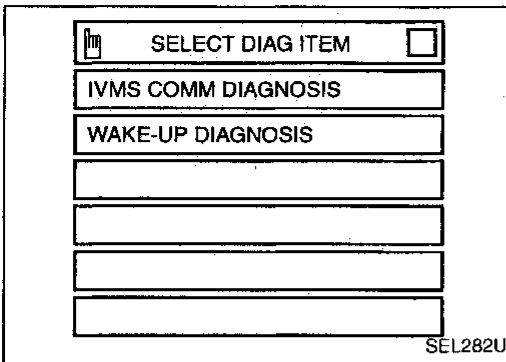
EL

IDX

CONSULT (Cont'd)

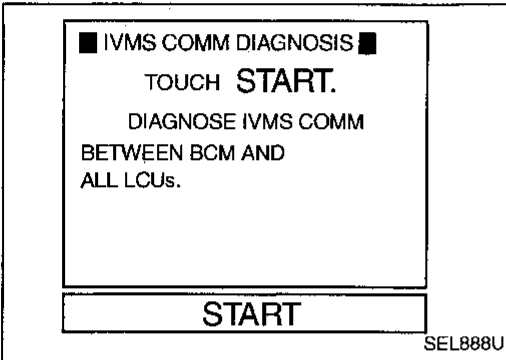
IVMS COMMUNICATION DIAGNOSIS

1. Touch "IVMS COMM DIAGNOSIS" in "IVMS-COMM CHECK".



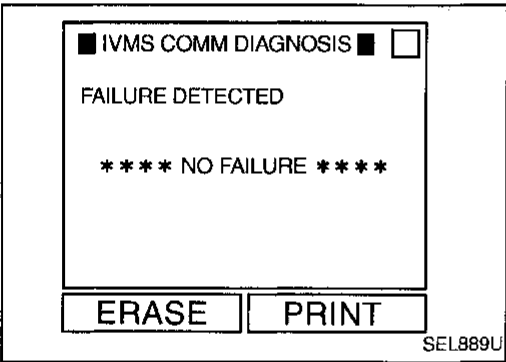
SEL282U

2. Touch "START".



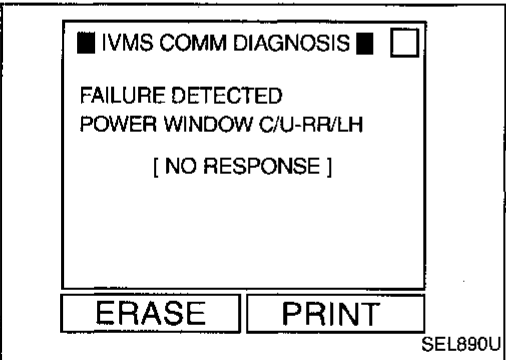
SEL888U

3. If no failure is detected, inspection is end.



SEL889U

If any problem code is displayed, repair/replace the system according to the IVMS communication diagnosis results. (Refer to EL-172.)



SEL890U

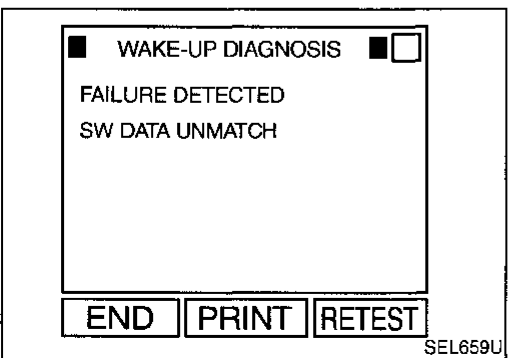
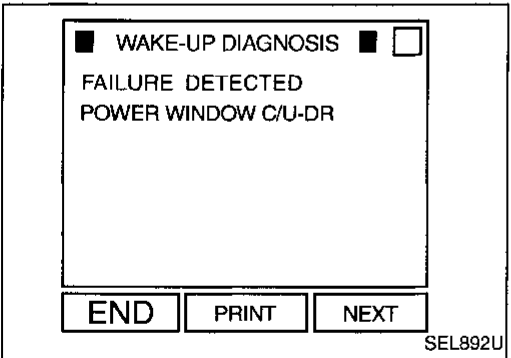
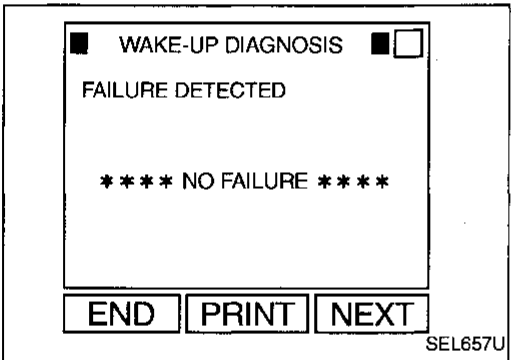
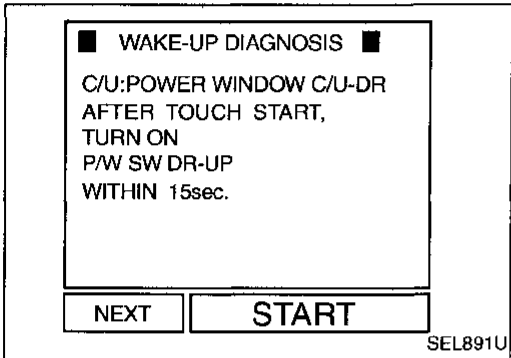
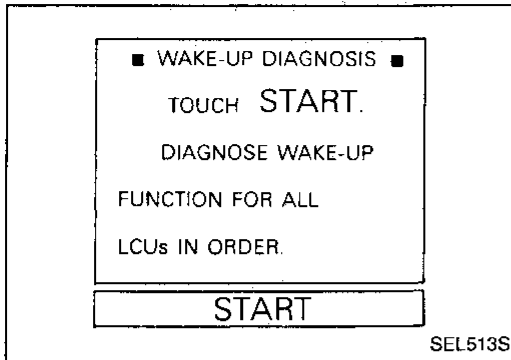
4. Erase the diagnostic results memory.
  - a. Turn ignition switch "ON".
  - b. Touch "IVMS".
  - c. Touch "IVMS COMM DIAGNOSIS" in "IVMS-COMM CHECK".
  - d. Touch "START" for "IVMS COMM DIAGNOSIS".
  - e. Touch "ERASE".

# IVMS (LAN)

## CONSULT (Cont'd)

### WAKE-UP DIAGNOSIS

1. Touch "WAKE-UP DIAGNOSIS" in "IVMS-COMM CHECK".
2. Touch "START" for "WAKE-UP DIAGNOSIS".



3. After touching "START", turn ON switch designated on CONSULT display within 15 seconds.

4. If no failure is detected, touch "NEXT" and perform wake-up diagnosis for next LCU or touch "END". (INSPECTION END)

If any problem is displayed, replace the LCU.

If "SW DATA UNMATCH" is displayed, touch "RETEST" and perform wake-up diagnosis again.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

EL

IDX

# IVMS (LAN)

## CONSULT (Cont'd)

### IVMS COMMUNICATION DIAGNOSES RESULTS LIST-1

Diagnostic item	Number of malfunctioning LCU	CONSULT diagnosis result	On board diagnosis (Mode 1) code No.	Expected cause	Service procedure
IVMS system is in good order	—	NO FAILURE	11	—	—
Communication malfunctioning	One	POWER WINDOW C/U-DR [COMM FAIL]	24	1. Malfunctioning LCU	1. Replace LCU.*
		POWER WINDOW C/U-AS [COMM FAIL]	34		
		POWER WINDOW C/U-RR [COMM FAIL]	41		
		POWER WINDOW C/U-RL [COMM FAIL]	44		
		MULTI-REMOTE [COMM FAIL]	54		
	Two or more	Combination of POWER WINDOW C/U-DR [COMM FAIL] POWER WINDOW C/U-AS [COMM FAIL] POWER WINDOW C/U-RR [COMM FAIL] POWER WINDOW C/U-RL [COMM FAIL] MULTI-REMOTE [COMM FAIL]	Combination of 24 34 41 44 54	1. Malfunctioning LCU	1. Replace LCU.*
All	BCM [COMM FAIL]	24, 34, 41, 44 and 54	1. Malfunctioning BCM 2. Malfunctioning all LCUs	1. Replace BCM.* 2. Replace all LCUs.*	
	BCM [COMM FAIL 2]				

\*: Before replacing BCM/LCU, clear the memory of diagnoses result and perform communication diagnoses again.  
If the diagnoses result is still NG, replace BCM/LCU.

NOTE: When CONSULT indicates [PAST COMM FAIL] or [PAST NO RESPONSE], erase the memory and perform communication diagnoses again.

To erase the memory, perform the procedure below.

Erase the memory by CONSULT (refer to EL-170) or turn the ignition to "OFF" position and remove 7.5A fuse (No. 56), located in the fuse and fusible link box).

# IVMS (LAN)

## CONSULT (Cont'd)

### IVMS COMMUNICATION DIAGNOSES RESULTS LIST-2

Diagnostic Item	Number of malfunctioning LCU	CONSULT diagnosis result	On board diagnosis (Mode 1) code No.	Expected cause	Service procedure (Reference page)
Communication via data line not responded	One	POWER WINDOW C/U-DR [NO RESPONSE]	25	1. Power supply circuit for LCU	1. Check power supply circuit of the LCU in question. (EL-184) 2. Check connector connection of LCU in question. 3. Check ground circuit of the LCU in question. (EL-185) 4. Check open circuit in the data line between BCM and LCU in question. (EL-186) 5. Replace LCU.*
		POWER WINDOW C/U-AS [NO RESPONSE]	35	2. Poor connection at LCU connector.	
		POWER WINDOW C/U-RR [NO RESPONSE]	42	3. Ground circuit of the LCU	
		POWER WINDOW C/U-RL [NO RESPONSE]	45	4. Open circuit in the data line	
		MULTI-REMOTE [NO RESPONSE]	55	5. Malfunctioning LCU	
	Two or more	Combination of POWER WINDOW C/U-DR [NO RESPONSE] POWER WINDOW C/U-AS [NO RESPONSE] POWER WINDOW C/U-RR [NO RESPONSE] POWER WINDOW C/U-RL [NO RESPONSE] MULTI-REMOTE [NO RESPONSE]	Combination of 25 35 42 45 55	Combination of causes below 1. Power supply circuit for LCU 2. Poor connection at LCU connector 3. Open circuit in the data line	1. Check power supply circuit of the LCU in question. (EL-184) 2. Check connector connection of LCU in question. 3. Check open circuit in the data line between BCM and LCU in question. (EL-186)
	All	BCM/HARNESS [COMM LINE]	25, 35, 42, 45 and 55	1. Short circuit in the data line 2. Poor connection at BCM connector 3. Open circuit in the data line between BCM and all LCUs. 4. Malfunctioning BCM 5. Short circuit in the data line of LCU internal circuit	1. Short circuit in the data line between BCM and any LCU. (EL-186) 2. Check connector connection of BCM. 3. Check open circuit in the data line between BCM and all LCUs. (EL-186) 4. Replace BCM.* 5. Disconnect each LCUs one by one to check whether the other LCUs operate properly.

GI  
 MA  
 EM  
 LC  
 EC  
 FE  
 CL  
 MT  
 AT  
 FA  
 RA  
 BR  
 ST  
 RS  
 BT  
 HA  
**EL**

\*: Before replacing BCM/LCU, clear the memory of diagnoses result and perform communication diagnoses again.  
 If the diagnoses result is still NG, replace BCM/LCU.  
 NOTE: When CONSULT indicates [PAST COMM FAIL] or [PAST NO RESPONSE], erase the memory and perform communication diagnoses again.  
 To erase the memory, perform the procedure below.  
 Erase the memory by CONSULT (refer to EL-170) or turn the ignition to "OFF" position and remove 7.5A fuse (No. 56), located in the fuse and fusible link box).

## IVMS (LAN)

### CONSULT (Cont'd)

#### IVMS COMMUNICATION DIAGNOSES RESULTS LIST-3

Diagnostic item	Number of malfunctioning LCU	CONSULT diagnosis result	On board diagnosis (Mode 1) code No.	Expected cause	Service procedure
Sleep control of LCU is malfunctioning	One	POWER WINDOW C/U-DR [SLEEP] POWER WINDOW C/U-AS [SLEEP] POWER WINDOW C/U-RR [SLEEP] POWER WINDOW C/U-RL [SLEEP] MULTI-REMOTE [SLEEP]	—	1. Malfunctioning LCU	1. Replace LCU.
		Combination of above results	—	1. Malfunctioning LCU	1. Replace LCU.
	Two or more	All of above results	—	1. Malfunctioning BCM 2. Malfunctioning all LCUs	1. Replace BCM.* 2. Replace all LCUs.

\*: Before replacing BCM/LCU, clear the memory of diagnoses result and perform communication diagnoses again.  
If the diagnoses result is still NG, replace BCM/LCU.

NOTE: When CONSULT indicates [PAST COMM FAIL] or [PAST NO RESPONSE], erase the memory and perform communication diagnoses again.

To erase the memory, perform the procedure below.

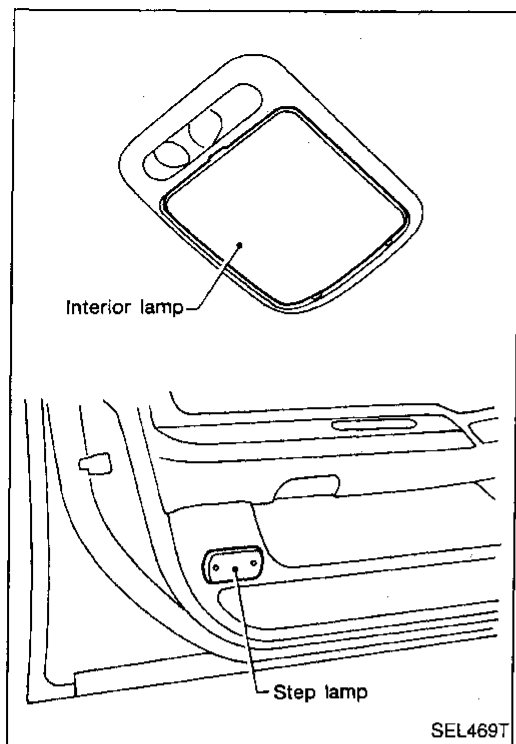
Erase the memory by CONSULT (refer to EL-170) or turn the ignition to "OFF" position and remove 7.5A fuse (No. 56), located in the fuse and fusible link box).



**On board Diagnosis**

**ON BOARD DIAGNOSTIC RESULTS INDICATOR LAMP**

The interior lamp and step lamps (front seats) act as the indicators for the on board diagnosis. These lamps blink simultaneously in response to diagnostic results.

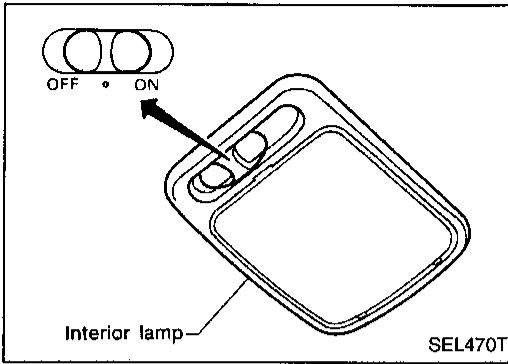


**ON BOARD DIAGNOSTIC FUNCTION**

Mode	Function		Refer page
Mode I	IVMS communication diagnosis	Diagnosing any abnormality or inability of communication between BCM and LCUs (DATA LINES A-1 and A-2).	EL-176
Mode II	Switch monitor	Monitoring conditions of switches connected to BCM and LCUs.	EL-178
Mode III	Power door lock self-diagnosis	—	EL-222
Mode IV	Power window operation	Operation of driver side window	EL-205

NOTE: ● When ON BOARD diagnosis is operating, some systems under IVMS control do not operate.  
 ● The step lamp of malfunctioning LCU does not blink.

GI  
 MA  
 EM  
 LC  
 EC  
 FE  
 CL  
 MT  
 AT  
 FA  
 RA  
 BR  
 ST  
 RS  
 BT  
 HA  
 EL  
 IDX

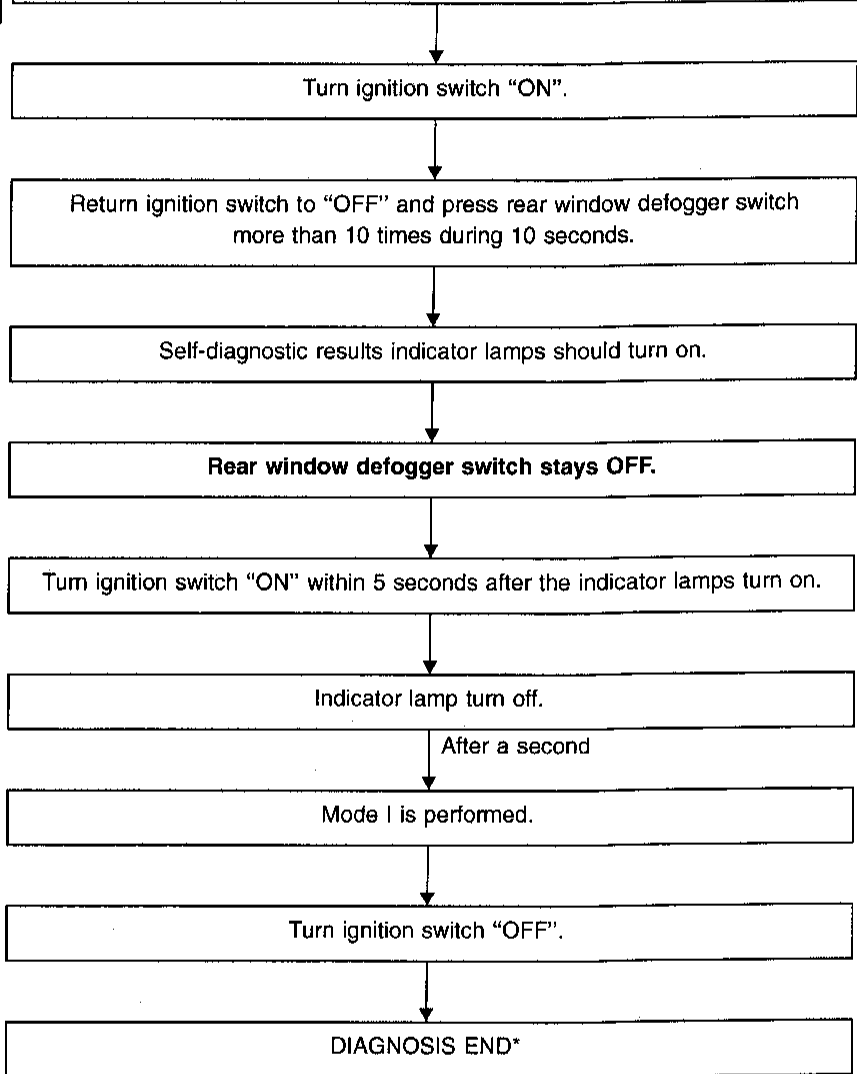


## On board Diagnosis — Mode I (IVMS communication diagnosis)

### HOW TO PERFORM MODE I

**Condition**

- Ignition switch: OFF
- **Lighting switch: OFF**
- Rear window defogger switch: OFF
- Doors: Closed
- Interior lamp: Center "○" position



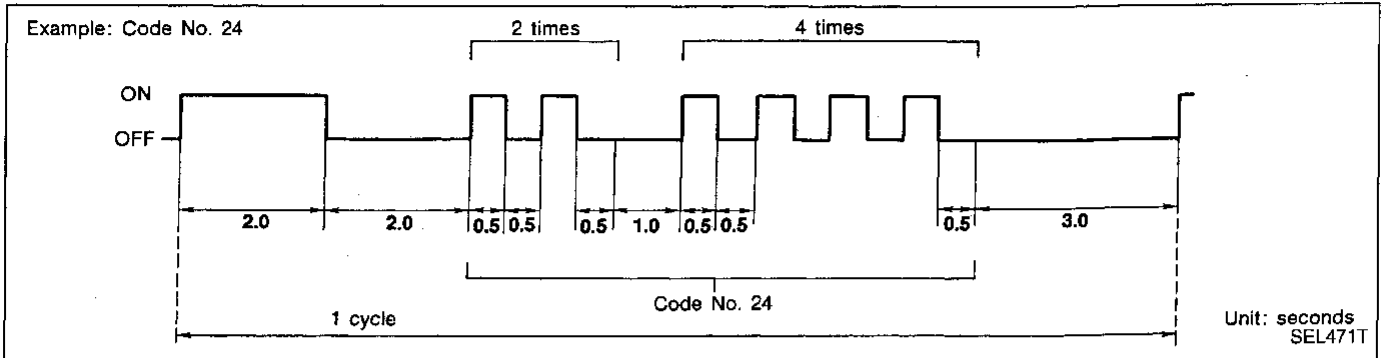
\*: Diagnosis ends after self-diagnostic results have been indicated for 10 minutes if left unattended.

# IVMS (LAN)

## On board Diagnosis — Mode I (IVMS communication diagnosis) (Cont'd)

### DESCRIPTION

In this mode, a malfunction code is indicated by the number of flashes from the front map lamps and step lamps as shown below:



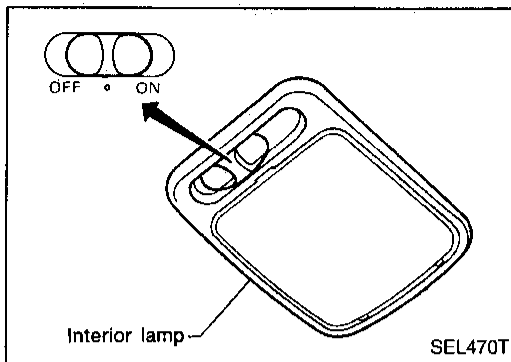
After indicator lamp turns on for 2 seconds then off for 2 seconds, it flashes [cycling ON (0.5 sec.)/OFF (0.5 sec.)] to indicate a malfunction code of the first digit. Then, 1 second after indicator lamp turns off, it again flashes [cycling ON (0.5 sec.)/OFF (0.5 sec.)] to indicate a malfunction code of the second digit.

For example, the indicator lamp goes on and off for 0.5 seconds twice and after 1.0 second, it goes on and off for 0.5 seconds four times. This indicates malfunction code "24".

### MALFUNCTION CODE TABLE

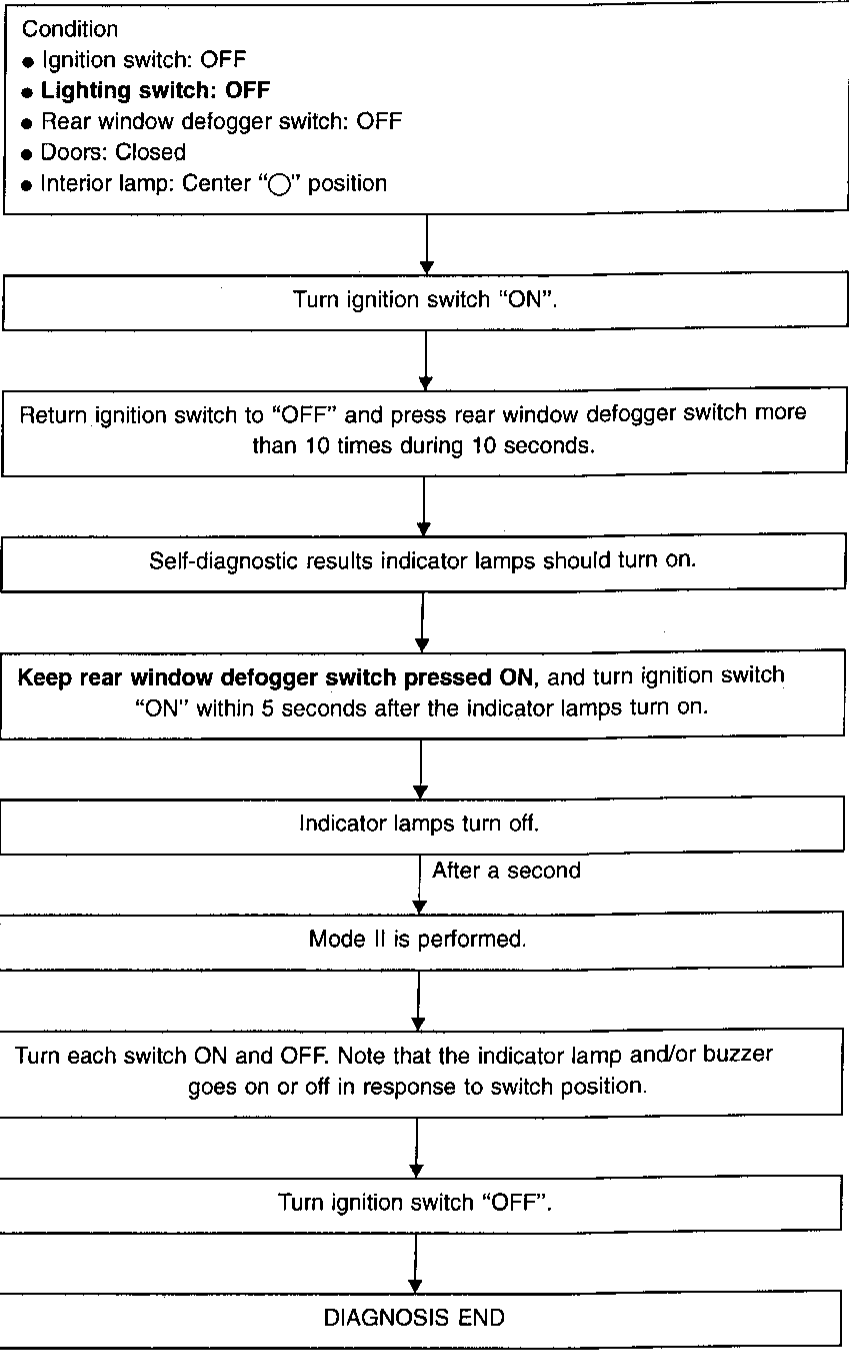
Code No.	Malfunctioning LCU	Detected items	Diagnostic procedure
24	Driver door control unit (LCU01)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-172).
25		No response from data line A-1	Refer to CONSULT DIAGNOSTIC CHART, "NO RESPONSE" (EL-173).
34	Passenger door control unit (LCU02)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-172).
35		No response from data line A-2	Refer to CONSULT DIAGNOSTIC CHART, "NO RESPONSE" (EL-173).
41	Rear RH door control unit (LCU03)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-172).
42		No response from data line A-2	Refer to CONSULT DIAGNOSTIC CHART, "NO RESPONSE" (EL-173).
44	Rear LH door control unit (LCU04)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-172).
45		No response from data line A-1	Refer to CONSULT DIAGNOSTIC CHART, "NO RESPONSE" (EL-173).
54	Multi-remote control unit (LCU05)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-172).
55		No response from data line A-1	Refer to CONSULT DIAGNOSTIC CHART, "NO RESPONSE" (EL-173).
11	No malfunction		---

GI  
 MA  
 EM  
 LC  
 EC  
 FE  
 CL  
 MT  
 AT  
 FA  
 RA  
 BR  
 ST  
 RS  
 BT  
 HA  
 EL  
 IDX



## On board Diagnosis — Mode II (Switch monitor)

### HOW TO PERFORM MODE II

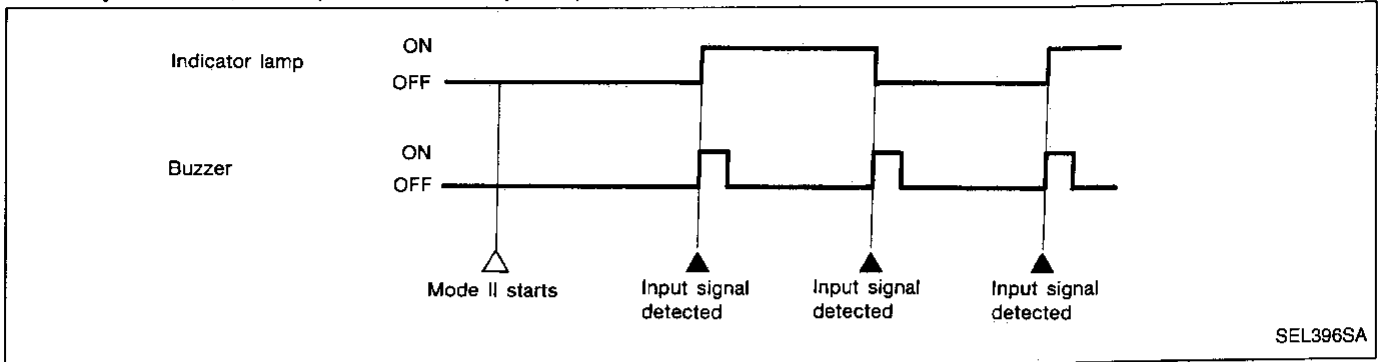


# IVMS (LAN)

## On board Diagnosis — Mode II (Switch monitor) (Cont'd)

### DESCRIPTION

In this mode, when BCM detects the input signal from a switch in IVMS as shown below, the detection is indicated by the interior lamp and front step lamps with buzzer.



### SWITCH MONITOR ITEM

BCM	<ul style="list-style-type: none"> <li>● Hood switch</li> <li>● Trunk room lamp switch</li> <li>● Trunk lid key cylinder switch (UNLOCK)</li> <li>● Lighting switch (1st)</li> <li>● Rear window defogger switch</li> <li>● Wiper switch (INT)</li> <li>● Wiper switch (WASH)</li> <li>● Door switch (driver side)</li> <li>● Door switch (passenger side)</li> <li>● Door switches (all doors)</li> <li>● Seat belt buckle switch</li> <li>● Front door key cylinder tamper switches</li> </ul>	LCU 02	<ul style="list-style-type: none"> <li>● Door key cylinder switch (LOCK/UNLOCK)</li> <li>● Door unlock sensor</li> <li>● Passenger power window sub-switch (UP/DOWN)</li> </ul>
		LCU 03	<ul style="list-style-type: none"> <li>● Door unlock sensor</li> <li>● Power window sub-switch (Rear RH) (UP/DOWN)</li> </ul>
		LCU 04	<ul style="list-style-type: none"> <li>● Door unlock sensor</li> <li>● Power window sub-switch (Rear LH) (UP/DOWN)</li> </ul>
		LCU 05	<ul style="list-style-type: none"> <li>● Door lock button</li> <li>● Door unlock button</li> <li>● Panic alarm button</li> <li>● Trunk lid opener button</li> </ul>
LCU 01	<ul style="list-style-type: none"> <li>● Power window lock switch</li> <li>● Power window main switches (UP/DOWN)</li> <li>● Power window automatic switch</li> <li>● Door lock &amp; unlock switch (LOCK/UNLOCK)</li> <li>● Door unlock sensor</li> <li>● Door key cylinder switch (LOCK/UNLOCK)</li> </ul>		

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

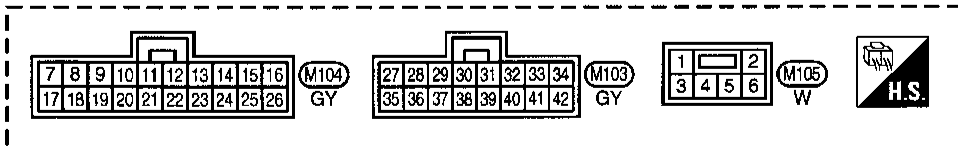
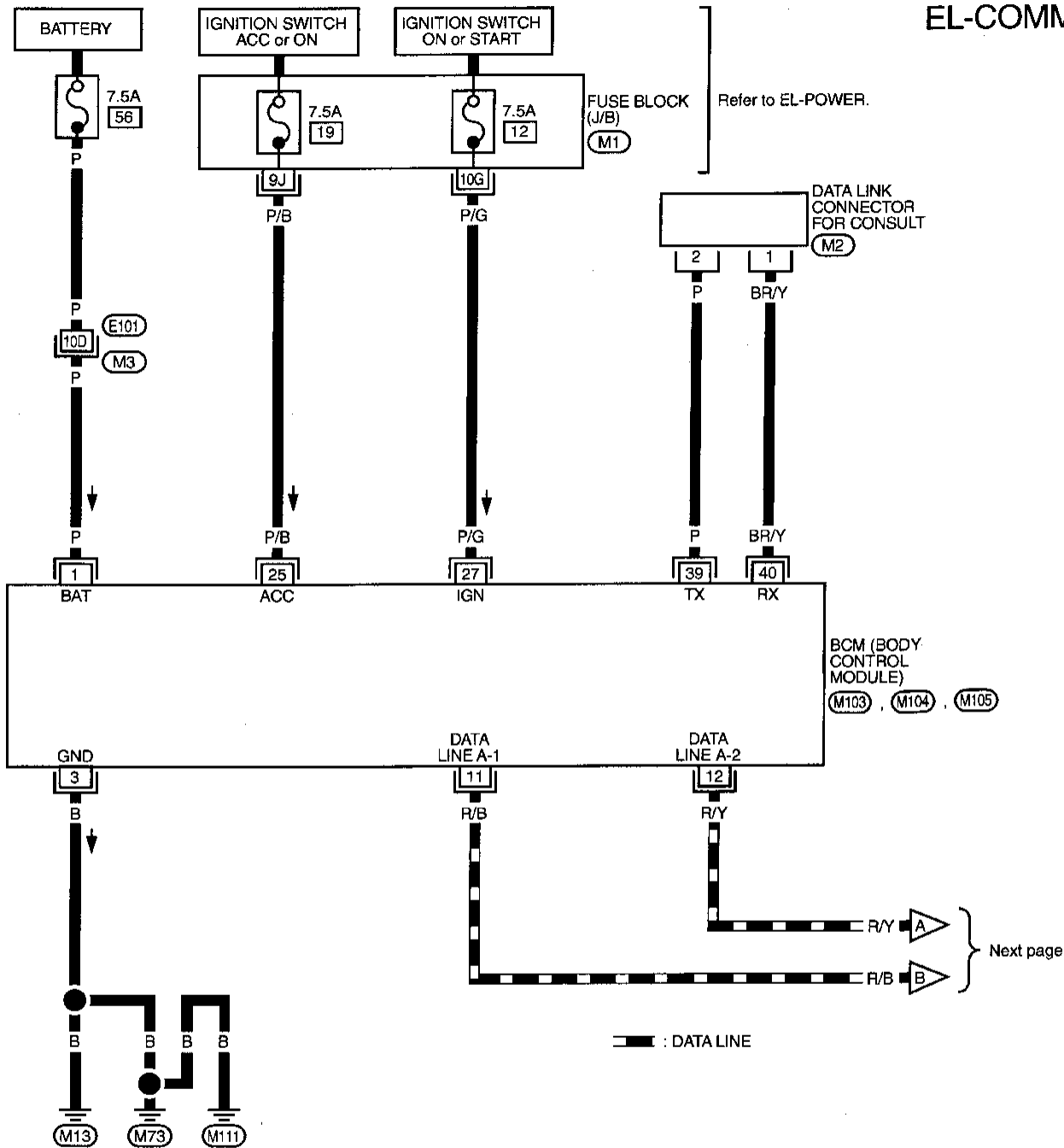
EL

IDX

Wiring Diagram — COMM —

POWER SUPPLY, GROUND AND COMMUNICATION CIRCUITS

EL-COMM-01

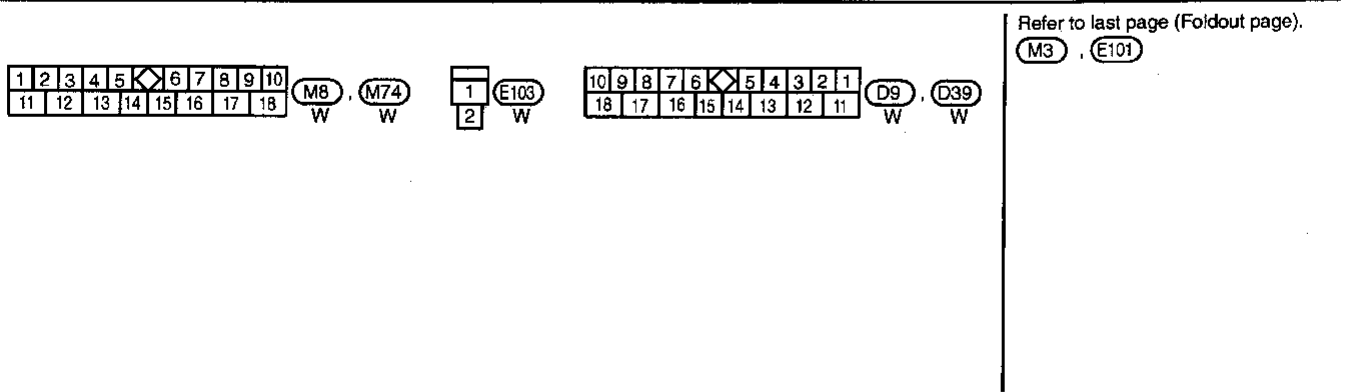
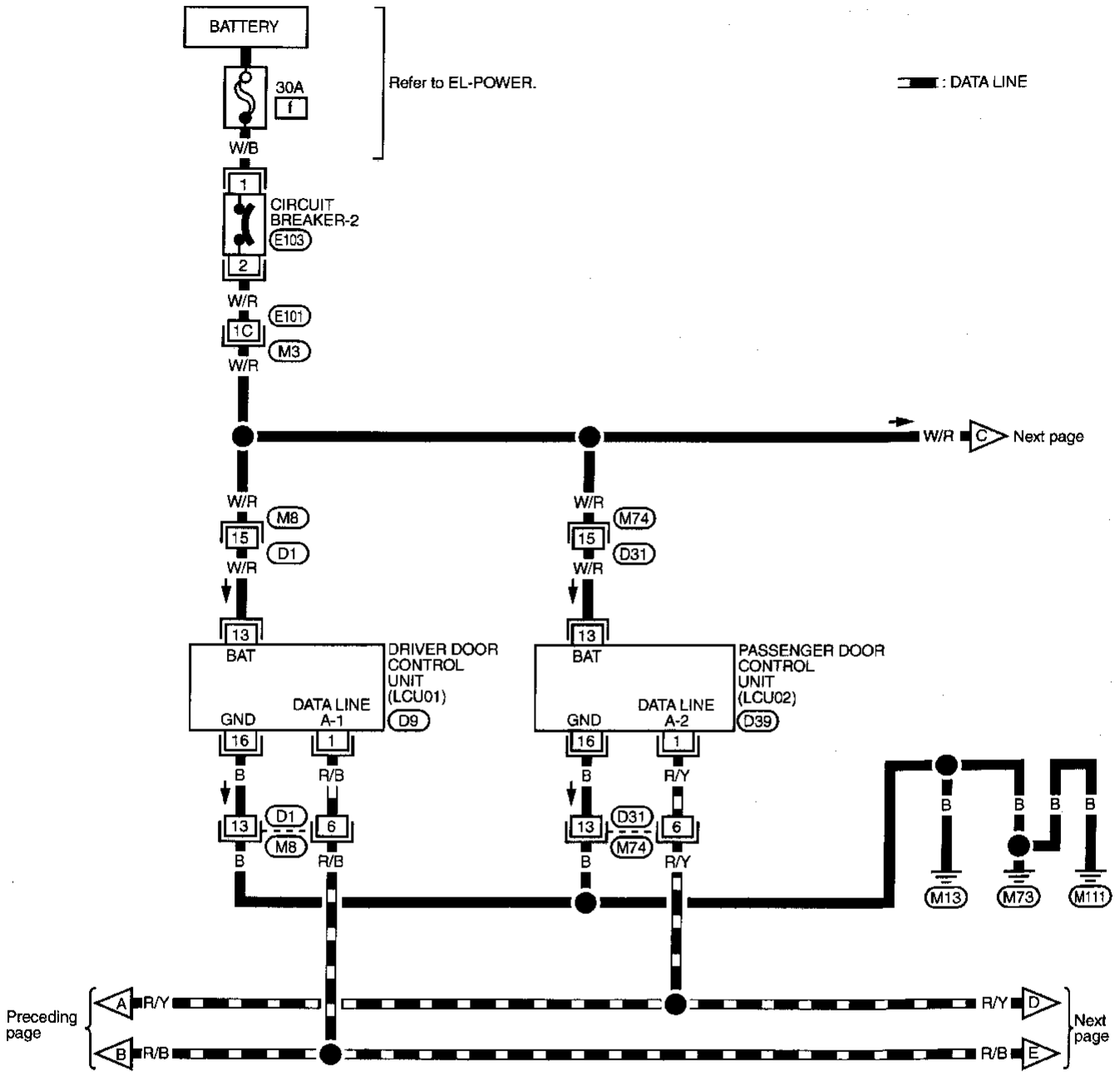


Refer to last page (Foldout page).

M1  
M3, E101

# IVMS (LAN) Wiring Diagram — COMM — (Cont'd)

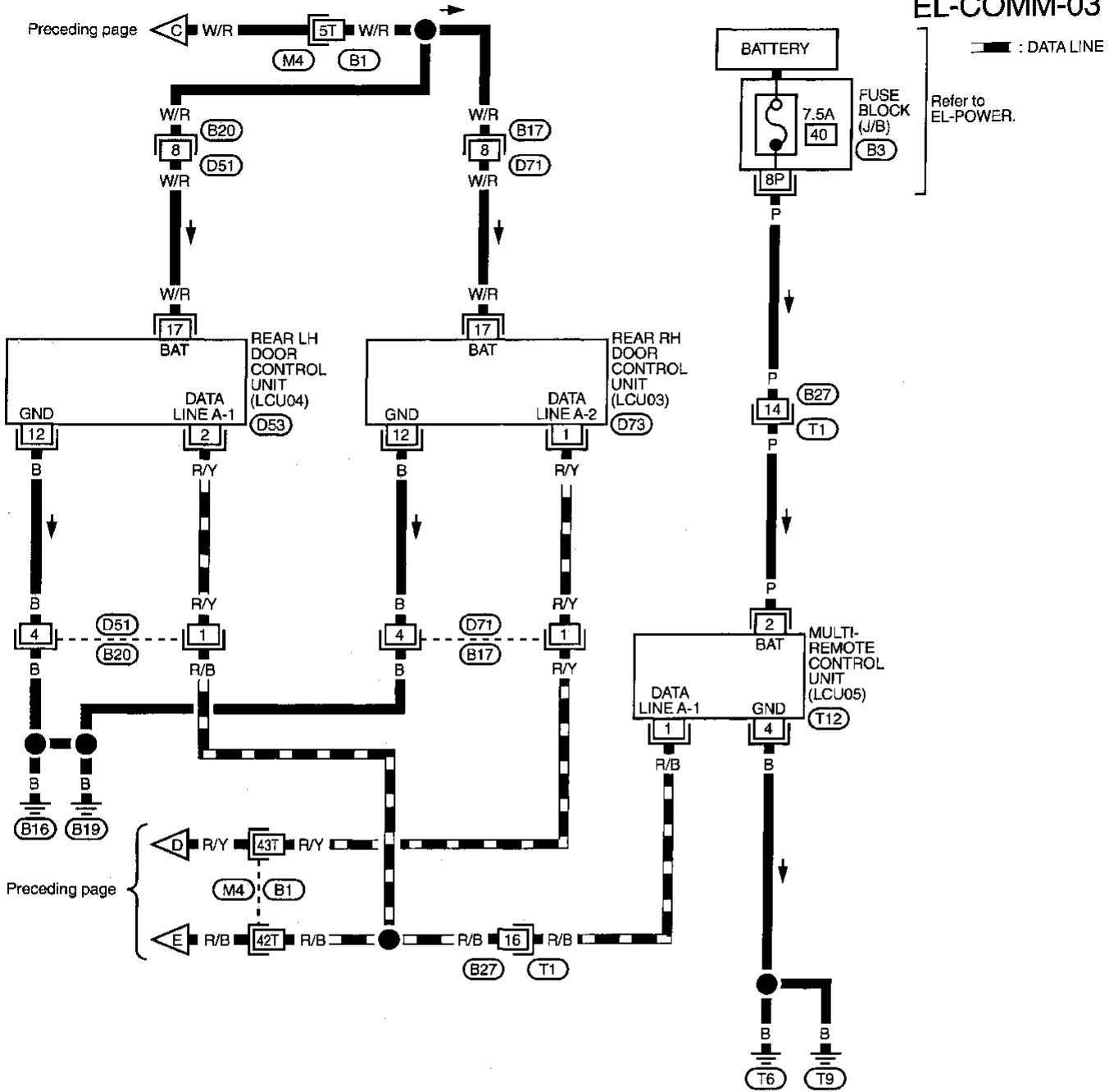
EL-COMM-02



GI  
 MA  
 EM  
 LC  
 EC  
 FE  
 CL  
 MT  
 AT  
 FA  
 RA  
 BR  
 ST  
 RS  
 BT  
 HA  
**EL**  
 IDX

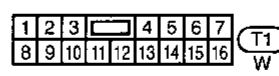
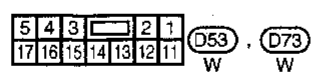
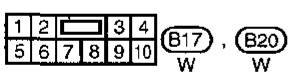
# IVMS (LAN) Wiring Diagram — COMM — (Cont'd)

EL-COMM-03

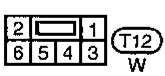
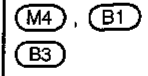


— : DATA LINE

Refer to EL-POWER.



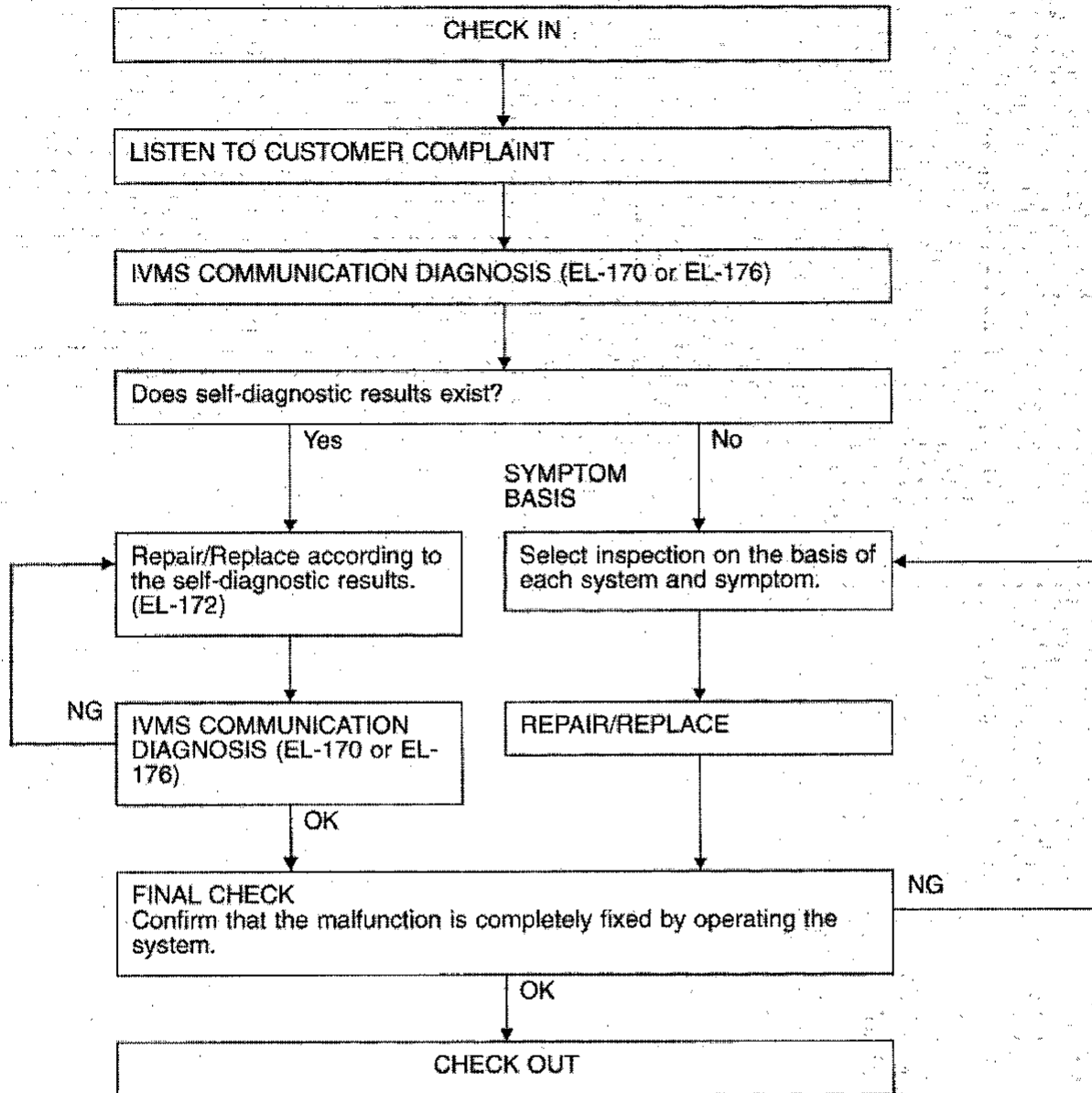
Refer to last page (Foldout page).





Trouble Diagnoses

WORK FLOW

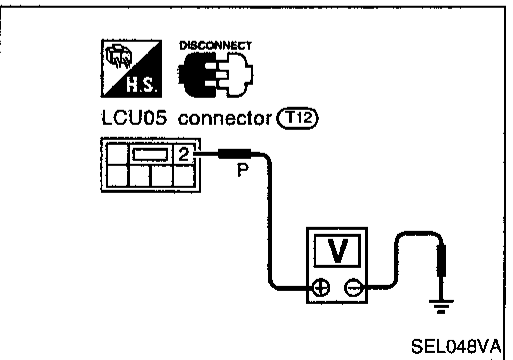
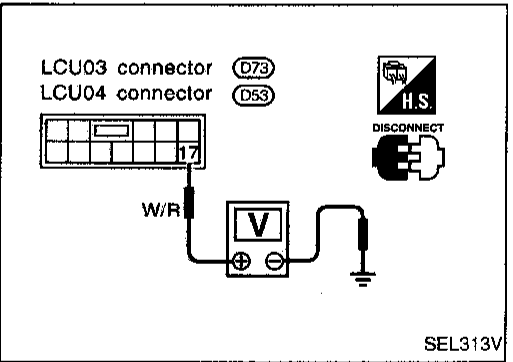
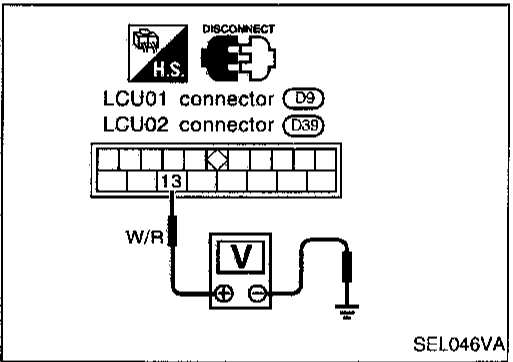
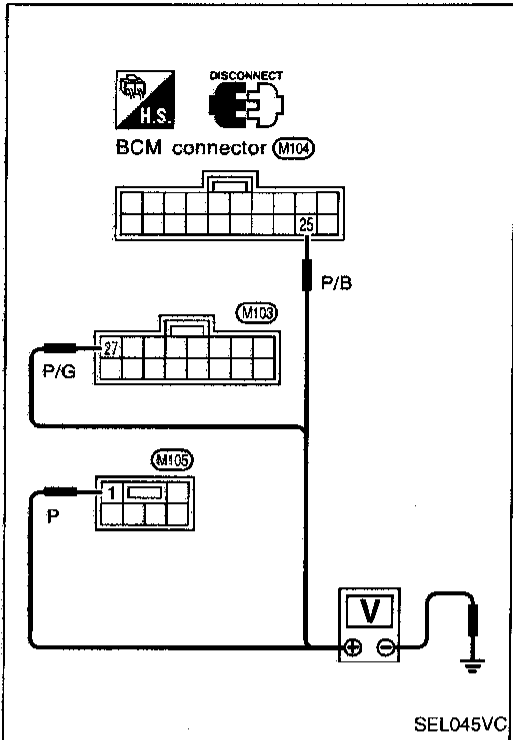


NOTICE:

- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.  
Erase the memory with CONSULT (refer to EL-170) or turn the ignition switch to “OFF” position and remove 7.5A fuse (No. 56), located in the fuse and fusible link box).

Trouble Diagnoses (Cont'd)

POWER SUPPLY CIRCUIT CHECK



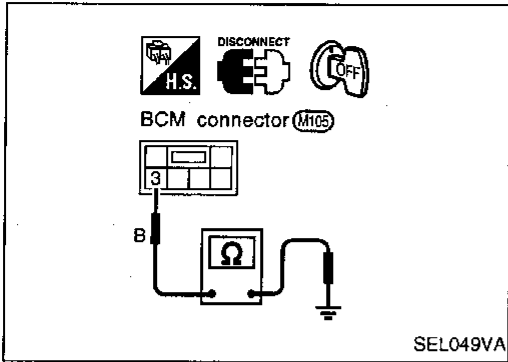
Control unit	Terminals		Ignition switch position		
	⊕	⊖	OFF	ACC	ON
BCM	①	Ground	Battery voltage		
	⑫	Ground	Approx. 0V	Battery voltage	
	⑳	Ground	Approx. 0V		Battery voltage
LCU01 and LCU02	⑬	Ground	Battery voltage		
LCU03 and LCU04	⑰	Ground	Battery voltage		
LCU05	②	Ground	Battery voltage		

\*CONSULT (data monitor) may be used to check for the ignition switch input (ACC, ON).

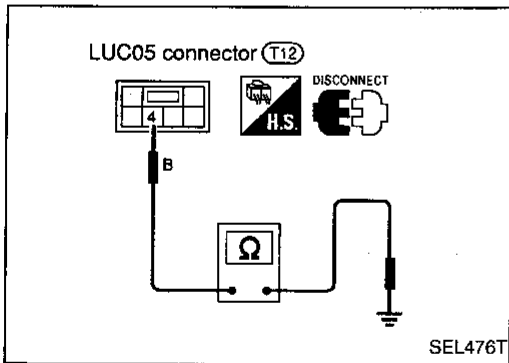
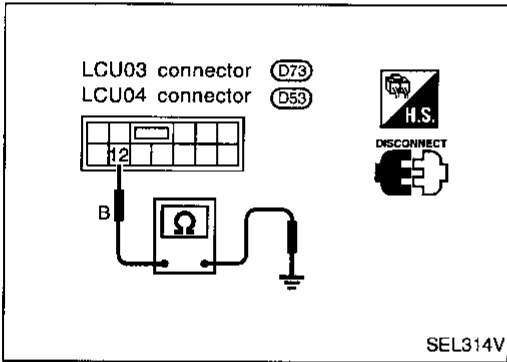
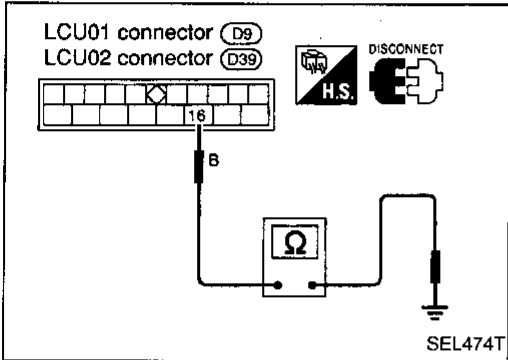
# IVMS (LAN)

## Trouble Diagnoses (Cont'd)

### GROUND CIRCUIT CHECK



Control unit	Terminals	Continuity
BCM	③ - Ground	Yes
LCU01	⑩ - Ground	
LCU02	⑩ - Ground	
LCU03	⑫ - Ground	
LCU04	⑫ - Ground	
LCU05	④ - Ground	



GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

EL

IDX

## Trouble Diagnoses (Cont'd)

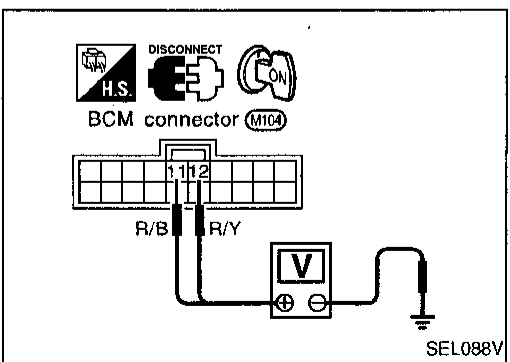
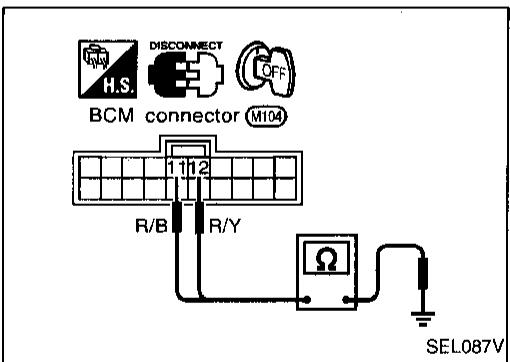
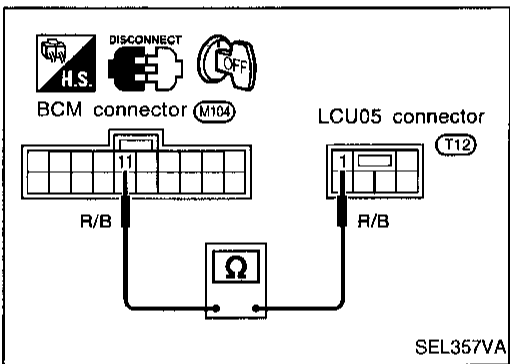
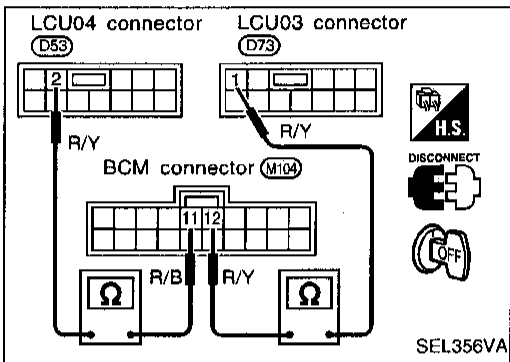
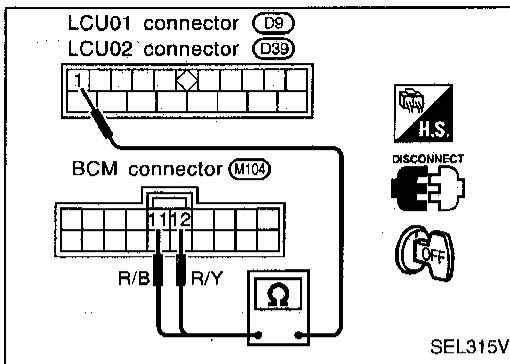
### DATA LINES CIRCUIT CHECK

#### Data lines open circuit check

NOTE: When checking data line circuit, disconnect BCM and all LCU connectors.

1. Disconnect BCM and LCU connectors.
2. Check continuity between BCM and LCU terminals.

Control unit	Terminals		Continuity
	LCU	BCM	
LCU01	①	⑪	Yes
LCU02	①	⑫	
LCU03	①	⑫	
LCU04	②	⑪	
LCU05	①	⑪	



#### Data lines short circuit check

1. Disconnect BCM and all LCU connectors.
2. Check continuity between BCM terminal and body ground.

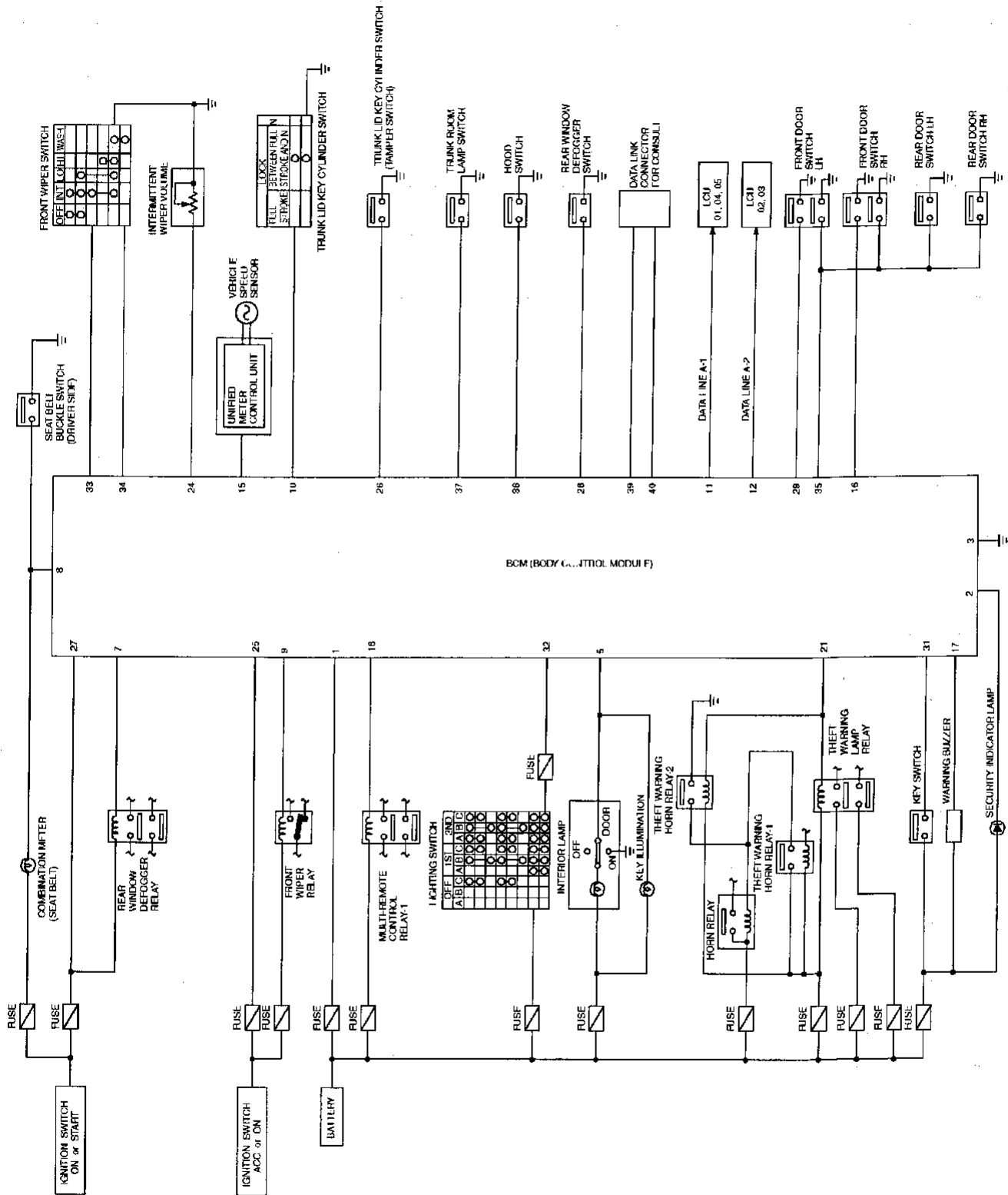
Terminals	Continuity
⑪ - Ground	No
⑫ - Ground	

3. Check voltage between BCM terminal and body ground.

Terminals	Voltage [V]
⑪ - Ground	0
⑫ - Ground	

# BCM (Body Control Module)

## Schematic



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

## BCM (Body Control Module)

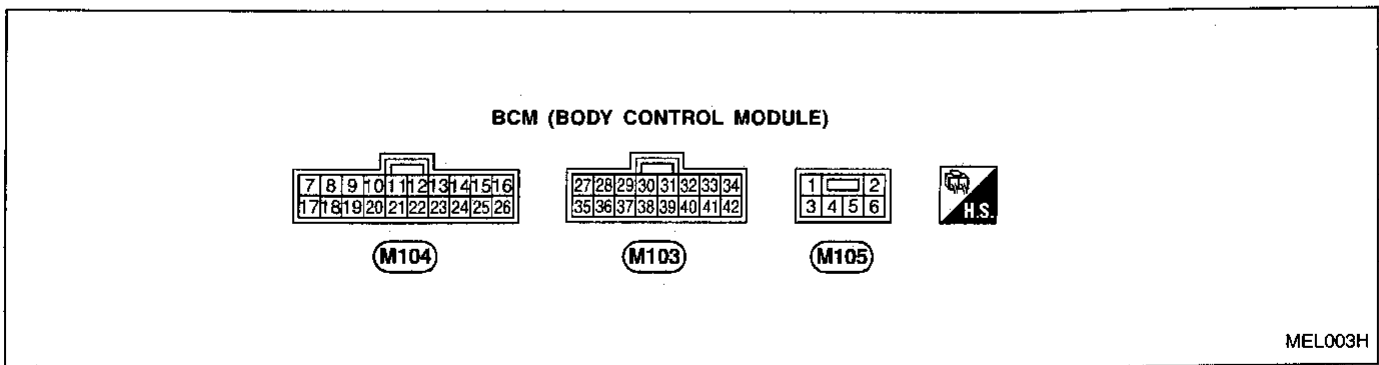
### Input/Output Operation Signal

Terminal No.	Wire color	Connections	INPUT (I)/ OUTPUT (O)	Operated condition		Voltage (V) (Approximate values)
1	P	Power source	—	—		12
2	G/OR	Security indicator lamp	O	Theft warning control	Illuminated	0
					Turned off	12
3	B	Ground	—	—		—
5	R/W	Interior lamp/Ignition key hole illumination	O	ON (Illuminated)		0
				OFF		12
7	G/B	Rear window defogger relay	O	Ignition switch "ON"	ON (Timer is operated.)	0
					OFF (Timer is not operated.)	12
8	G/R	Seat belt buckle switch	I	Ignition switch "ON"	When the seat belt is fastened	12
					When the seat belt is not fastened	0
9	P/B	Front wiper relay	O	Wiper motor intermittent/washer operation	Operate	0
					Stop	12
10	G/Y	Trunk lid unlock switch	I	Unlocked (ON)		0
				Neutral (OFF)		5
11	R/B	Data line A-1	I/O	—		—
12	R/Y	Data line A-2	I/O	—		—
15		Vehicle speed pulse	I	Pulse		0 - 5
16	R/G	Door switch (Passenger side)	I	ON (Open)		0
				OFF (Closed)		12
17	Y/R	Warning buzzer	O	ON		0
				OFF		12
18	OR	Multi-remote control relay	O	Hazard lamp	ON	0
					OFF	12
21	Y/G	Theft warning horn relays and theft warning lamp relay	O	ON		0
				OFF		12
24	PU	Intermittent wiper volume switch	I	Ignition switch "ACC" or "ON" Wiper switch intermittent time	Max. (20 sec)	3.6
					Min. (2 sec)	0

# BCM (Body Control Module)

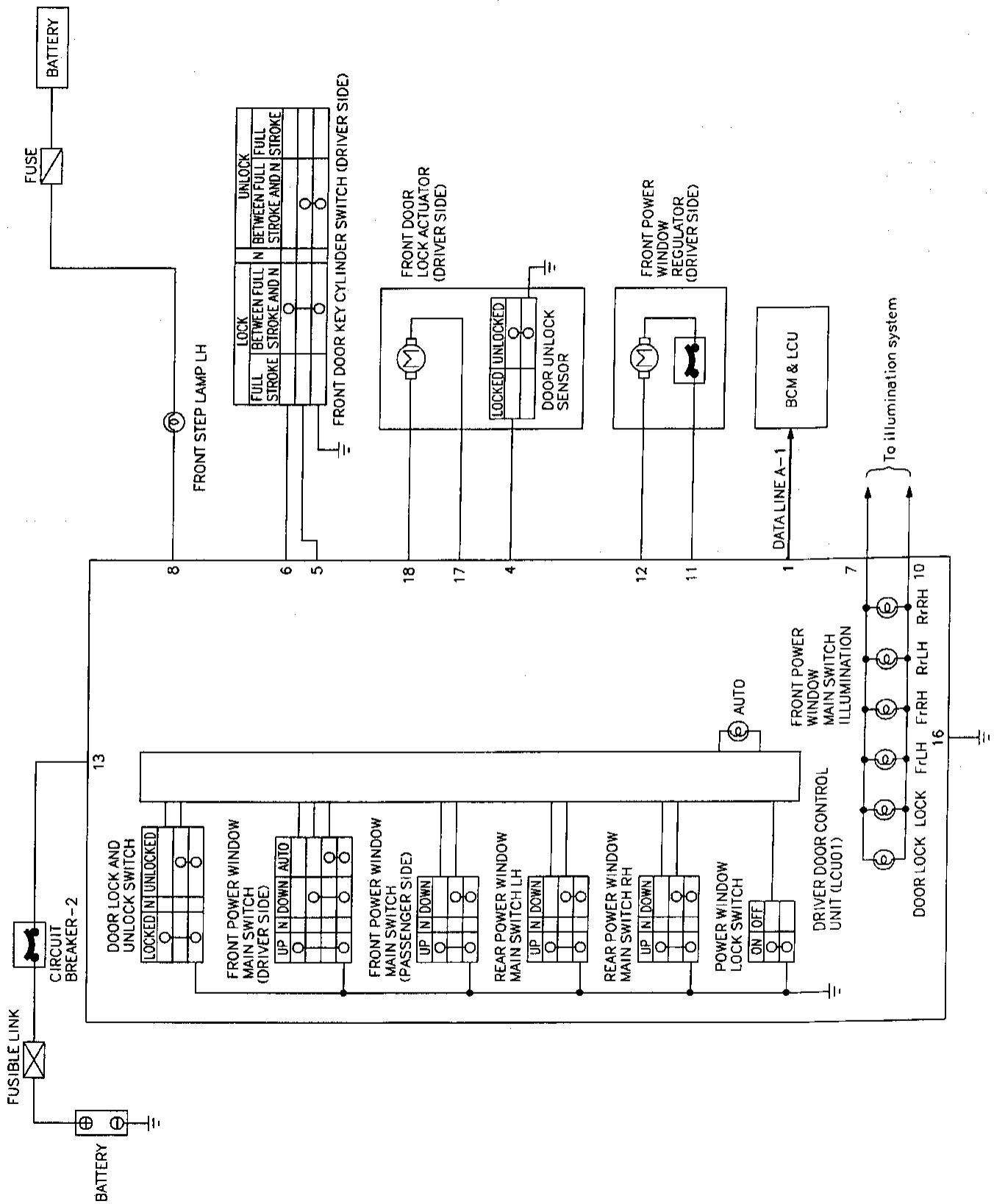
## Input/Output Operation Signal (Cont'd)

Terminal No.	Wire color	Connections	INPUT (I)/ OUTPUT (O)	Operated condition	Voltage (V) (Approximate values)	
25	P/B	Ignition switch (ACC)	I	Ignition switch "ACC"	12	
26	BR/Y	Key cylinder tamper switches (Driver/passenger side)	I	Both front door key cylinders installed	12	
				One of front door key cylinders withdrawn	0	
27	P/G	Ignition switch (ON)	I	Ignition switch "ON"	12	
28	G/R	Rear window defogger switch	I	Ignition switch "ON"	ON	0
					OFF	5
29	W/L	Door switch (Driver side)	I	Open (ON)	0	
				Closed (OFF)	12	
31	Y/L	Key switch (Insert)	I	IGN key removed from ignition key cylinder (OFF)	0	
				IGN key inserted into ignition key cylinder (ON)	12	
32	R/L	Lighting switch (1ST)	I	1ST, 2ND positions: ON	12	
				OFF	0	
33	BR/W	Wiper switch (Intermittent)	I	Ignition switch "ACC" or "ON"	INT	0
					OFF	12
34	P/W	Wiper switch (Wash)	I	Ignition switch "ACC" or "ON"	WASH	0
					OFF	12
35	R/W	Door switches (All doors)	I	Door switch	ON (Open)	0
					OFF (Closed)	12
36	Y/B	Hood switch	I	Open (ON)	0	
				Closed (OFF)	5	
37	PU/Y	Trunk room lamp switch	I	Open (ON)	0	
				Closed (OFF)	12	
39	P	CONSULT	TX signal	—	—	
40	BR/Y		RX signal	—	—	



# DRIVER DOOR CONTROL UNIT (LCU01)

## Schematic

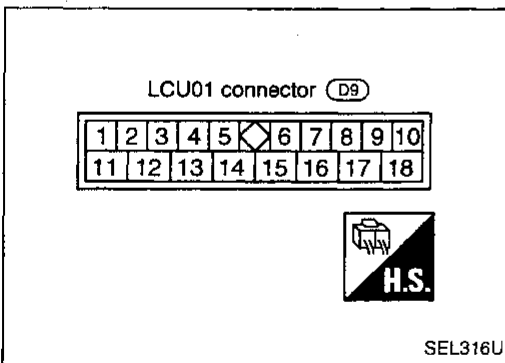




# DRIVER DOOR CONTROL UNIT (LCU01)

## Input/Output Operation Signal

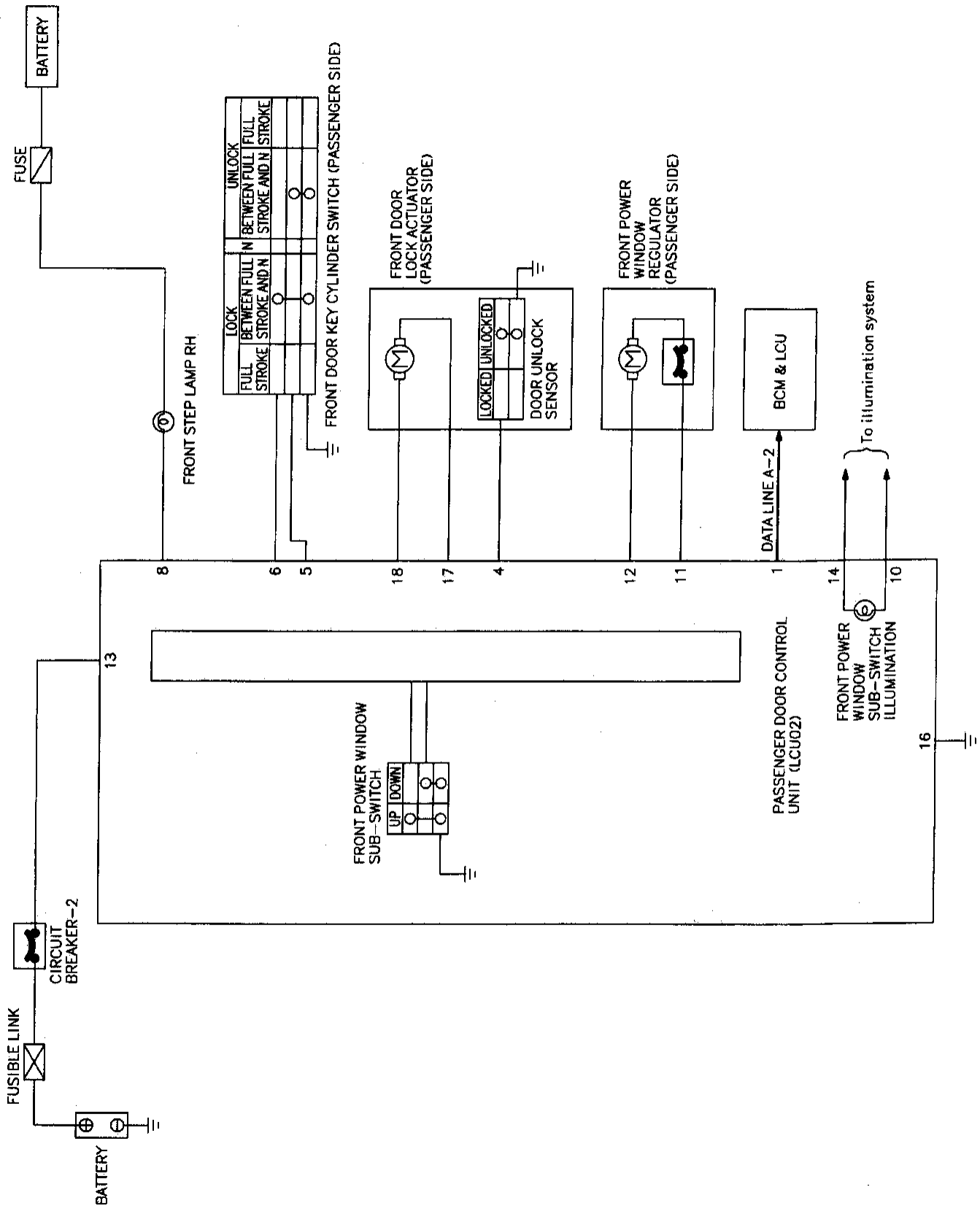
Terminal No.	Wire color	Connections	INPUT (I)/ OUTPUT (O)	Operated condition	Voltage (V) (Approximate values)	
1	R/B	Data line A-1	I/O	—	—	
4	G/B	Door unlock sensor	I	Unlocked (ON)	0	
				Locked (OFF)	5	
5	G/Y	Door key cylinder unlock switch	I	Unlocked (ON)	0	
				Locked (OFF) or neutral (OFF)	5	
6	LG/R	Door key cylinder lock switch	I	Locked (ON)	0	
				Unlocked (OFF) or neutral (OFF)	5	
7	R/G	Lighting switch (1st)	I	1st, 2nd: ON	12	
				OFF	0	
8	R/L	Step lamp	O	ON	0	
				OFF	12	
10	R/Y	Illumination control signal	I	Brightened - Darkened	0 - 12	
11	L/R	Power window regulator (P/W) — Up	O	Driver's P/W switch	Up	12
					Free	0
12	L/B	Power window regulator (P/W) — Down	O	Driver's P/W switch	Down	12
					Free	0
13	W/R	Power source (C/B)	—	—	12	
16	B	Ground	—	—	—	
17	BR/W	Door lock actuator — Lock	O	Door lock & unlock switch	Locked	12
					Free	0
18	BR	Door lock actuator — Unlock	O	Door lock & unlock switch	Unlocked	12
					Free	0



GI  
 MA  
 EM  
 LC  
 EC  
 FE  
 CL  
 MT  
 AT  
 FA  
 RA  
 BR  
 ST  
 RS  
 BT  
 HA  
 EL  
 IDX

# PASSENGER DOOR CONTROL UNIT (LCU02)

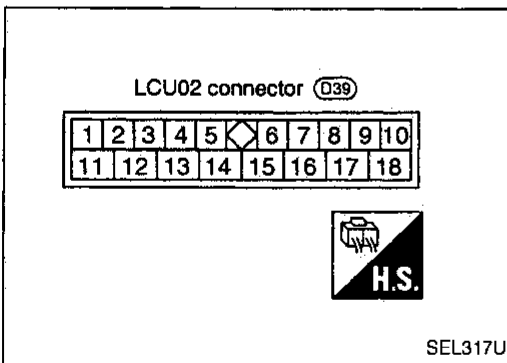
## Schematic



# PASSENGER DOOR CONTROL UNIT (LCU02)

## Input/Output Operation Signal

Terminal No.	Wire color	Connections	INPUT (I)/ OUTPUT (O)	Operated condition		Voltage (V) (Approximate values)
1	R/Y	Data line A-2	I/O	—		—
4	G/B	Door unlock sensor	I	Unlocked (ON)		0
				Locked (OFF)		5
5	G/Y	Door key cylinder unlock switch	I	Unlocked (ON)		0
				Locked (OFF) or neutral		5
6	LG/R	Door key cylinder lock switch	I	Locked (ON)		0
				Unlocked (OFF) or neutral		5
8	R/L	Step lamp	O	ON		0
				OFF		12
10	R/Y	Illumination control signal	I	Brightened - Darkened		0 - 12
11	L/R	Power window regulator (P/W) — Up	O	Passenger's P/W switch	Up	12
					Free	0
12	L/B	Power window regulator (P/W) — Down	O	Passenger's P/W switch	Down	12
					Free	0
13	W/R	Power source (C/B)	—	—		12
14	R/L	Lighting switch (1st)	I	1st, 2nd: ON		12
				OFF		0
16	B	Ground	—	—		—
17	BR/W	Door lock actuator — Lock	O	Door lock & unlock switch	Locked	12
					Free	0
18	BR	Door lock actuator — Unlock	O	Door lock & unlock switch	Unlocked	12
					Free	0



GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

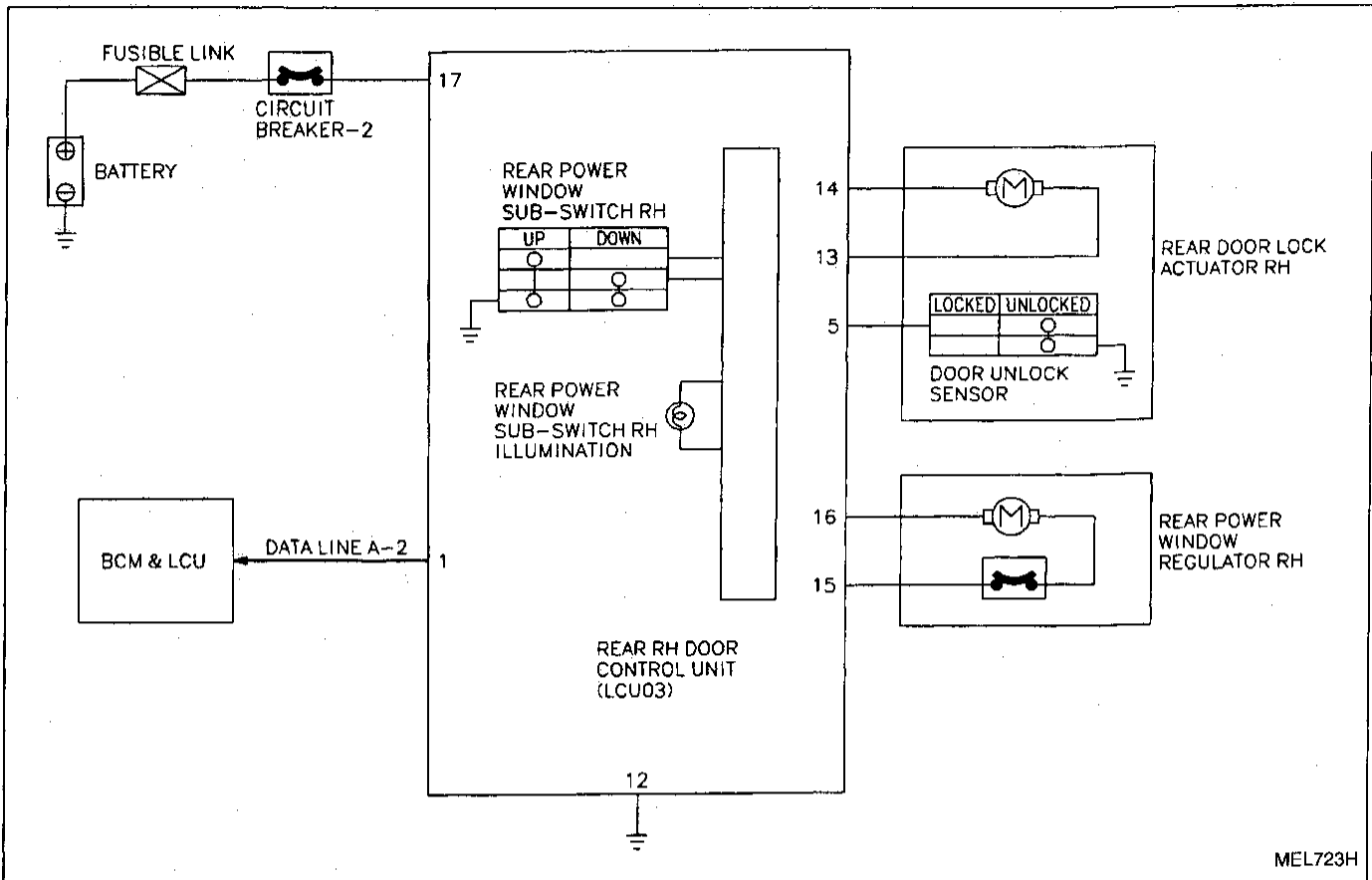
EL

IDX

# REAR RH/LH DOOR CONTROL UNIT (LCU03/04)

## Schematic

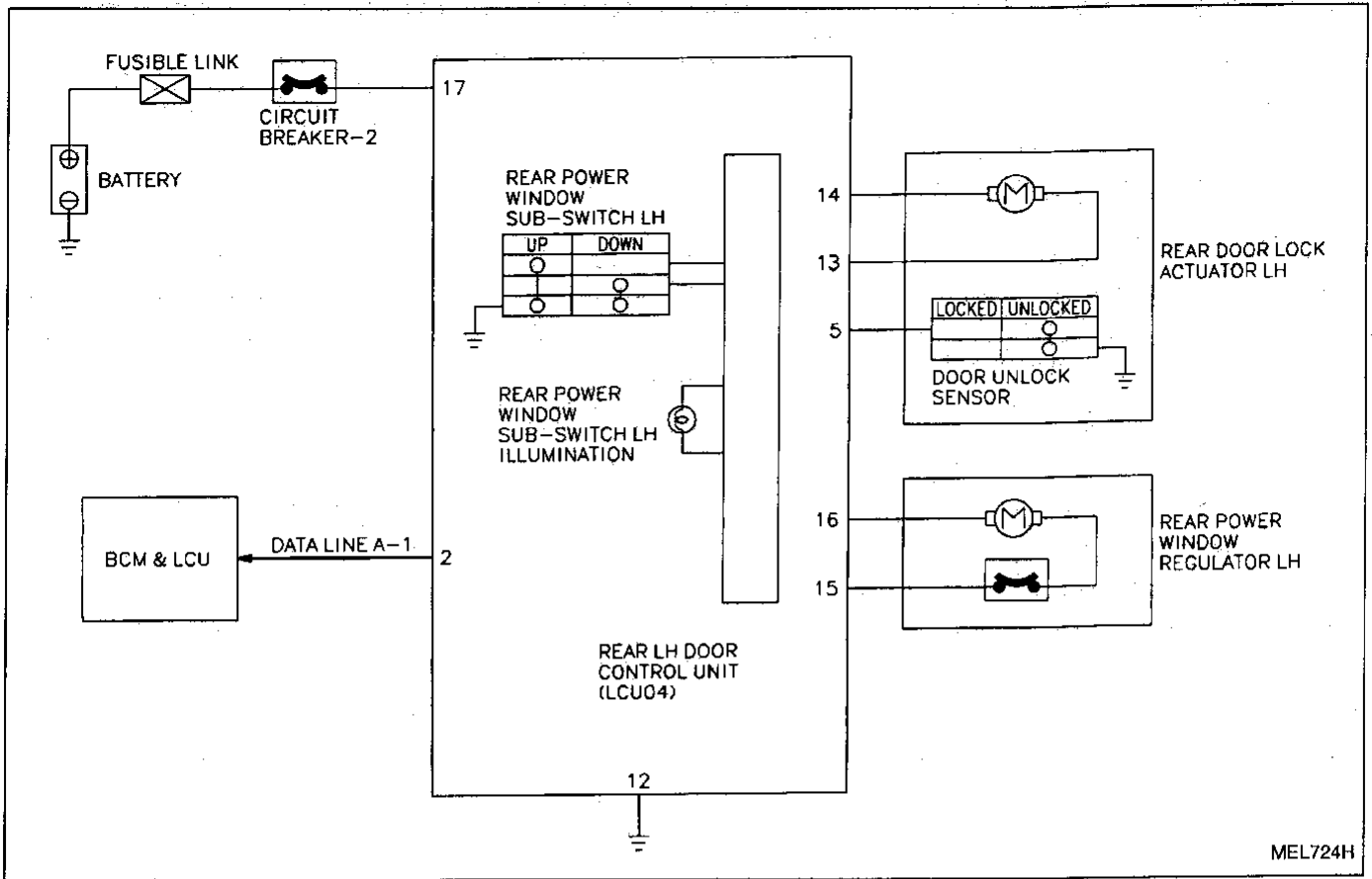
### REAR RH DOOR CONTROL UNIT (LCU03)



# REAR RH/LH DOOR CONTROL UNIT (LCU03/04)

## Schematic (Cont'd)

### REAR LH DOOR CONTROL UNIT (LCU04)



MEL724H

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

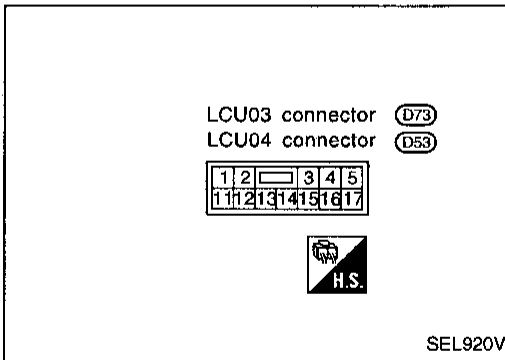
EL

IDX

# REAR RH/LH DOOR CONTROL UNIT (LCU03/04)

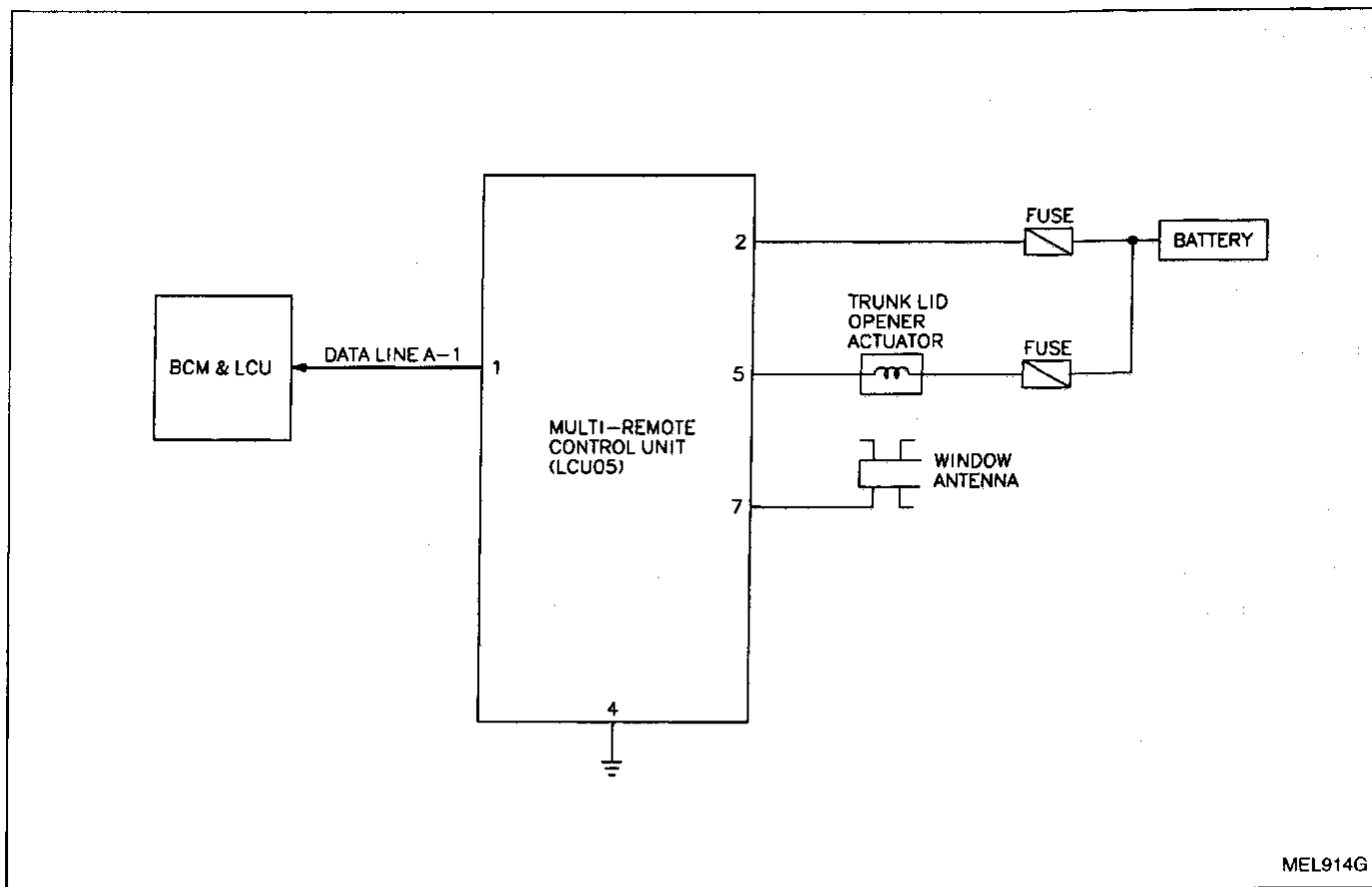
## Input/Output Operation Signal

Terminal No.	Wire color	Connections	INPUT (I)/ OUTPUT (O)	Operated condition		Voltage (V) (Approximate values)
1	R/Y	Data line A-2 (LCU03)	I/O	—		—
2	R/Y	Data line A-1 (LCU04)	I/O	—		—
5	G/B	Door unlock sensor	I	Unlocked (ON)		0
				Locked (OFF)		5
12	B	Ground	—	—		—
13	BR/W	Door lock actuator — Lock	O	Door lock & unlock switch	Locked	12
					Free	0
14	BR	Door lock actuator — Unlock	O	Door lock & unlock switch	Unlocked	12
					Free	0
15	L/R	Power window regu- lator (P/W) — Up	O	Rear P/W switch	Up	12
					Free	0
16	L/B	Power window regu- lator (P/W) — Down	O	Rear P/W switch	Down	12
					Free	0
17	W/R	Power source (C/B)	—	—		12



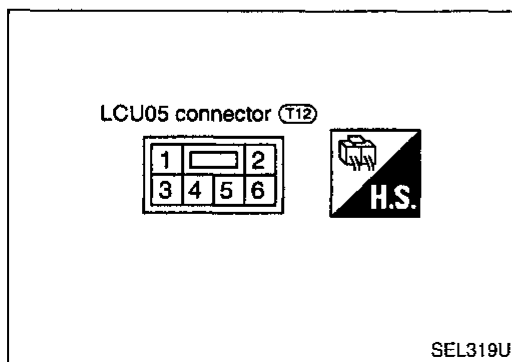
# MULTI-REMOTE CONTROL UNIT (LCU05)

## Schematic



## Input/Output Operation Signal

Terminal No.	Wire color	Connections	INPUT (I)/ OUTPUT (O)	Operated condition	Voltage (V) (Approximate values)
1	R/B	Data line A-1	I/O	—	—
2	P	Power source	—	—	12
4	B	Ground	—	—	—
5	PU/Y	Trunk lid opener actuator	O	Open	0
				OFF	12



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

## System Description

### OUTLINE

Power window system consists of

- a BCM (Body Control Module)
- four LCUs (Local Control Module)
- four power window regulators

BCM is connected to each LCU via DATA LINE A-1 or A-2 and LCUs supply power and ground to each power window regulator.

When ignition switch is in the "ON" position, power window will be operated depending on power window sub/main switch (which is combined with each LCU) condition.

### OPERATION

- Power windows can be raised or lowered with each sub-switch or the power window main switch located on the driver's door trim when ignition key is in the "ON" position and power window lock switch on the driver's door trim is unlocked.
- When power window lock switch is locked, no windows can be raised or lowered except for driver side window.
- When ignition key is in the "ON" position, to fully open the driver side window, press down completely on the automatic switch (main switch) and release it; it needs not be held. The window will automatically open all the way. To stop the window, pull up then release the switch.

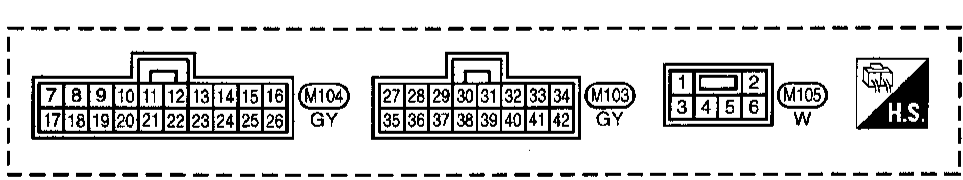
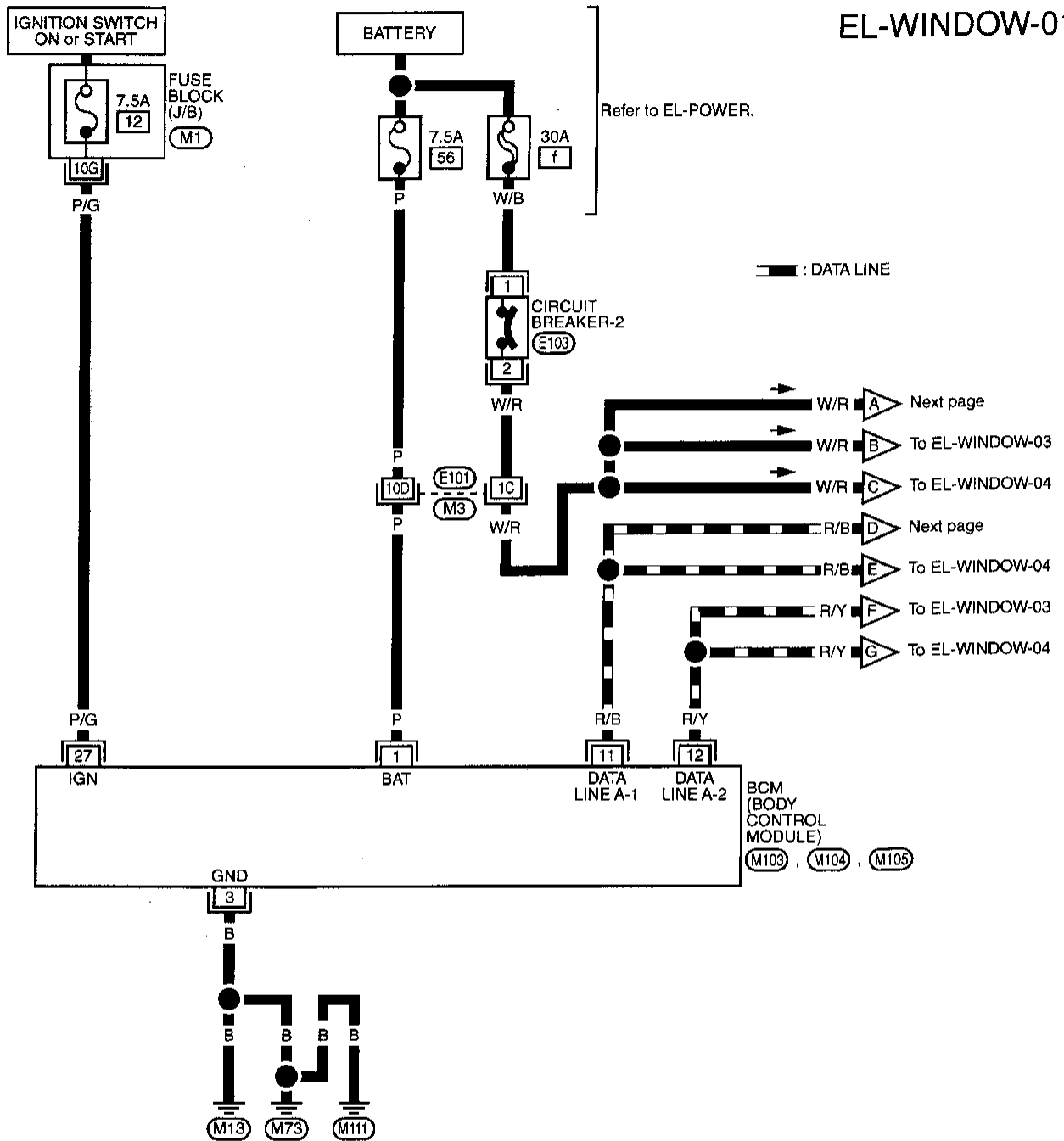




Wiring Diagram — WINDOW —

FIG. 1

EL-WINDOW-01



Refer to last page (Foldout page).

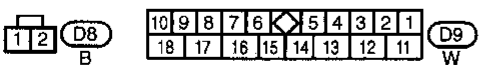
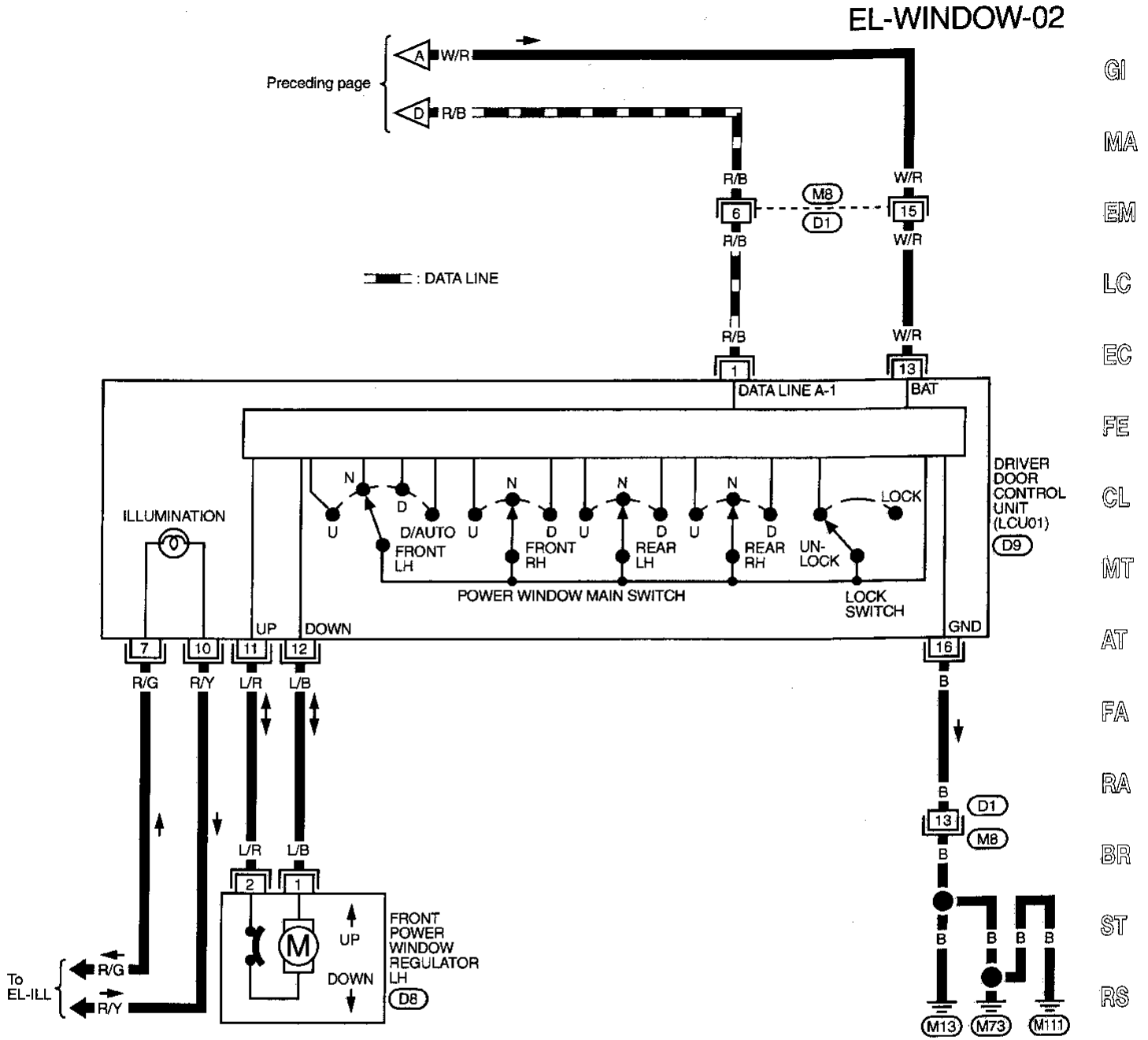
- M1
- M3, E101



POWER WINDOW — IVMS

Wiring Diagram — WINDOW — (Cont'd)

FIG. 2



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

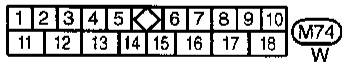
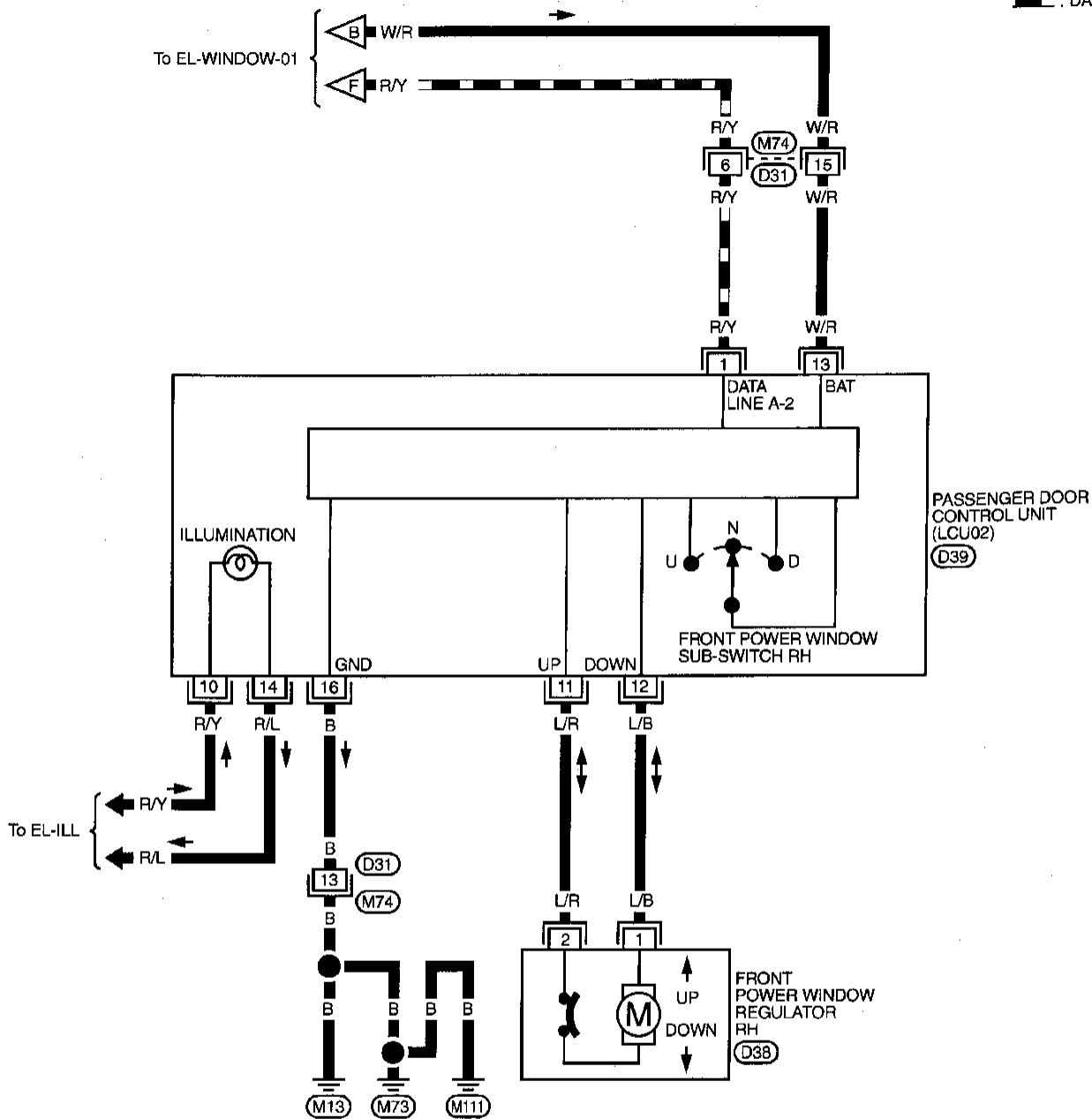
POWER WINDOW — IVMS

Wiring Diagram — WINDOW — (Cont'd)

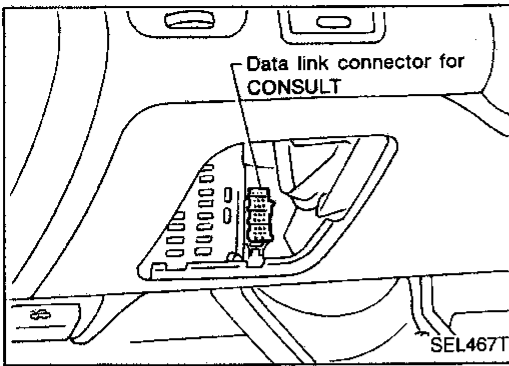
FIG. 3

EL-WINDOW-03

— : DATA LINE



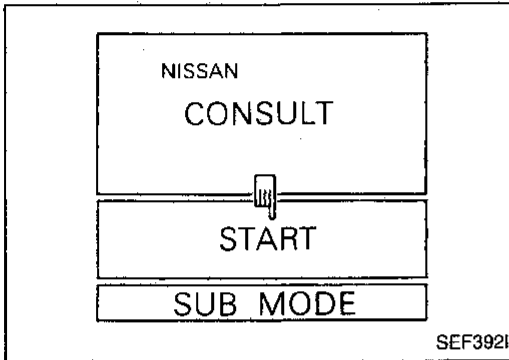




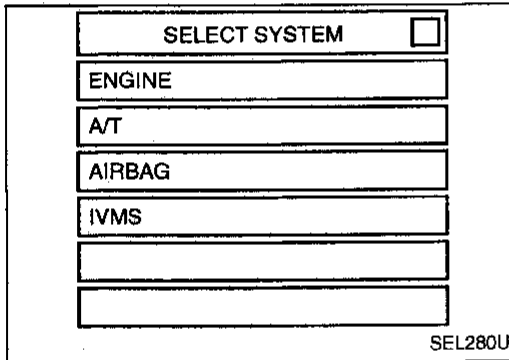
**CONSULT**

**CONSULT INSPECTION PROCEDURE**

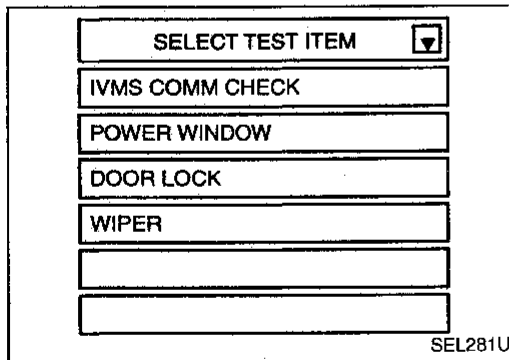
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



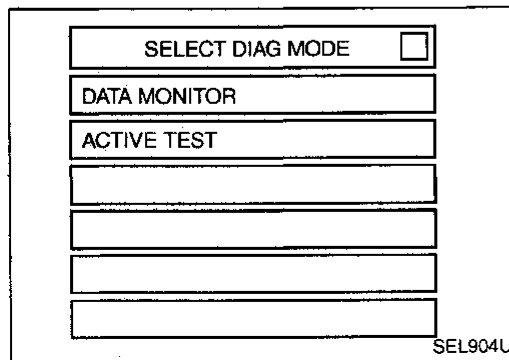
3. Turn ignition switch "ON".
4. Touch "START".



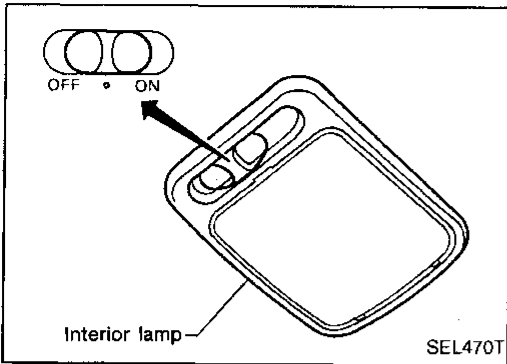
5. Touch "IVMS".



6. Touch "POWER WINDOW".



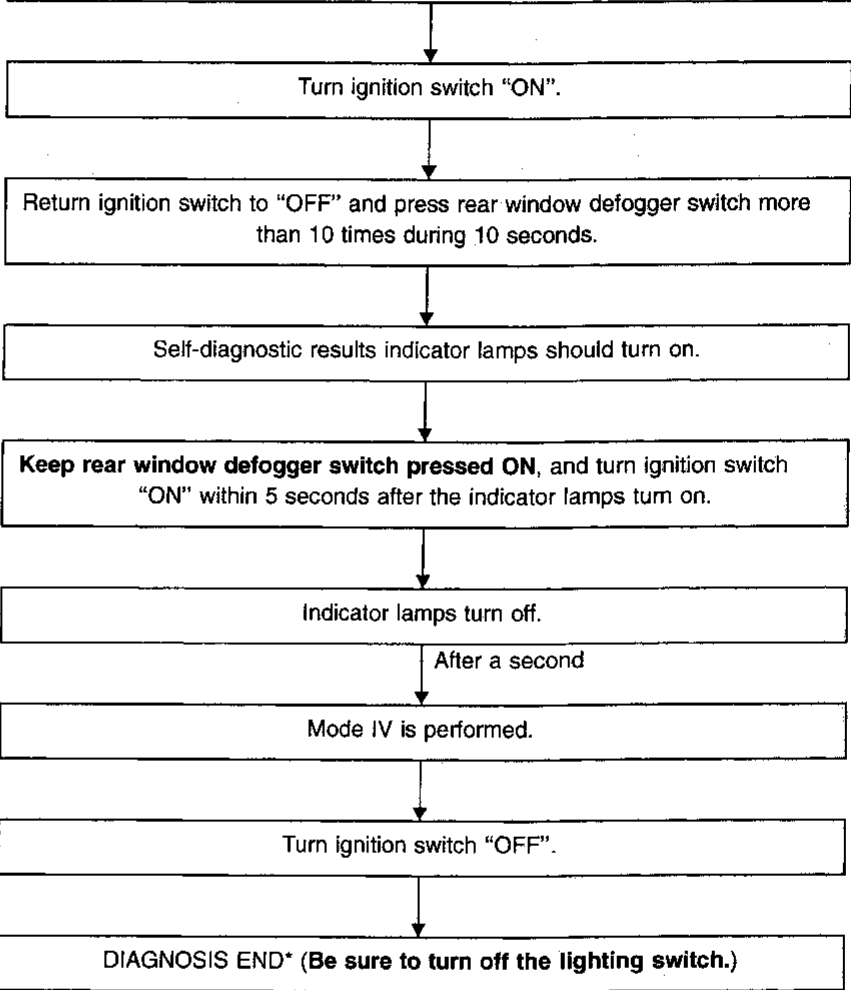
- DATA MONITOR and ACTIVE TEST are available for the power window.



**On board Diagnosis — Mode IV (Power window monitor)**

**HOW TO PERFORM MODE IV**

- Condition
- Ignition switch: OFF
  - **Lighting switch 1st: ON**
  - Rear window defogger switch: OFF
  - Front LH window: Closed
  - Doors: Closed
  - Interior lamp: Center "O" position



\*: Diagnosis ends after self-diagnostic results have been indicated for 10 minutes if left unattended.

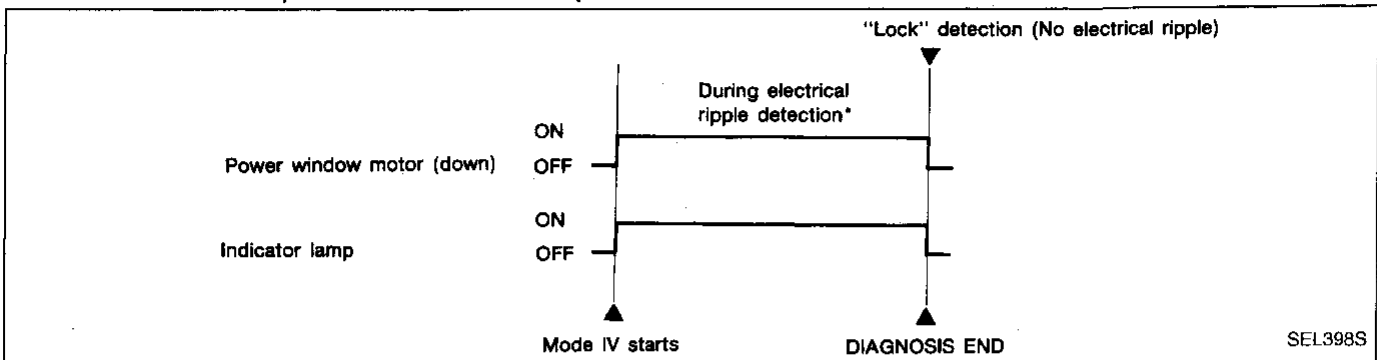
GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

## POWER WINDOW — IVMS

### On board Diagnosis — Mode IV (Power window monitor) (Cont'd)

#### DESCRIPTION

In mode IV, driver window is automatically operated. In conjunction with power window motor (DOWN) "ON", indicator lamps (interior lamp and front step lamps) turn on. When power window "lock" is detected, power window motor will stop and the indicator lamps will turn off.



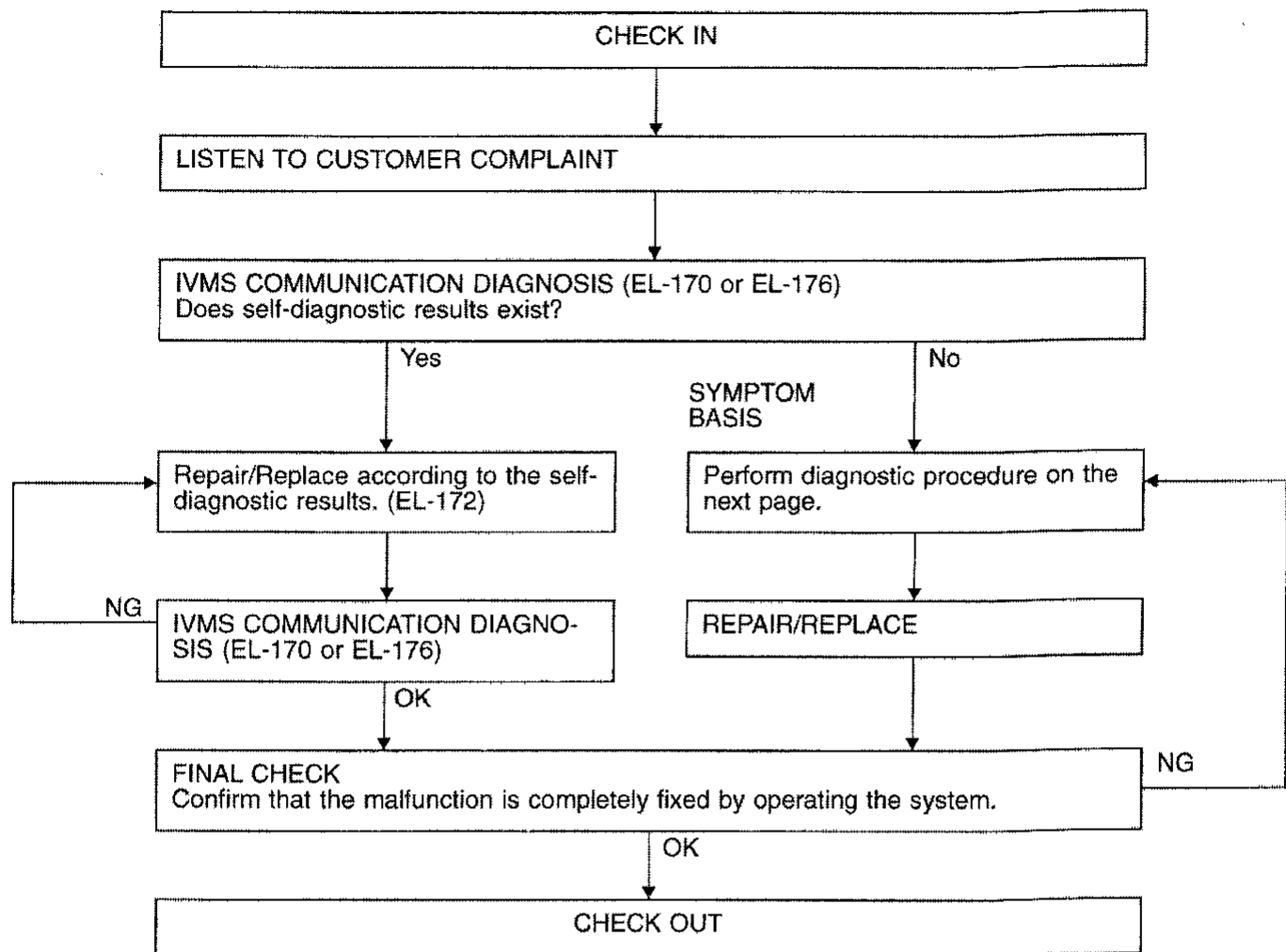
NOTE: As soon as manual switches (each seat's power window switch) turn ON, driver power window motor (DOWN) stops and diagnosis ends.

\* While power window motor is being operated, electrical ripple occurs.



Trouble Diagnoses

WORK FLOW



NOTICE:

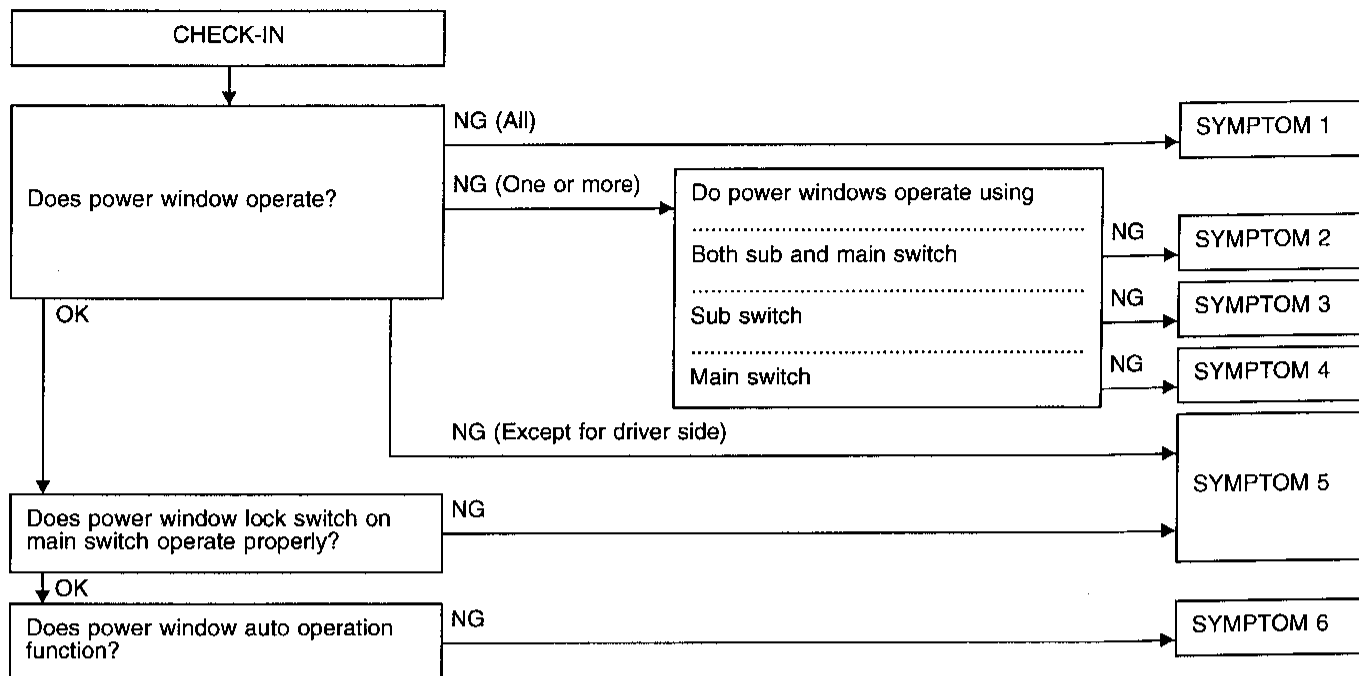
- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.  
Erase the memory with CONSULT (refer to EL-170) or turn the ignition switch to “OFF” position and remove 7.5A fuse (No. 56), located in the fuse and fusible link box).

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# POWER WINDOW — IVMS

## Trouble Diagnoses (Cont'd)

### PRELIMINARY CHECK



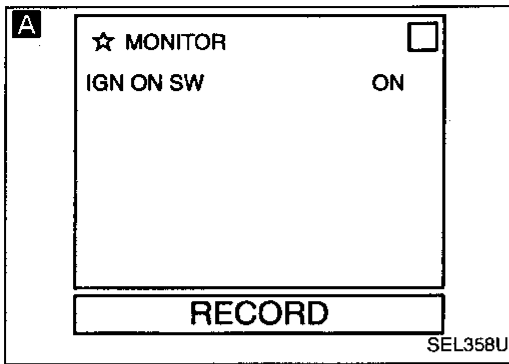
### SYMPTOM CHART

PROCEDURE		Diagnostic procedure						
		EL-209	EL-209	EL-210	EL-210	EL-211	EL-212	EL-0
REFERENCE PAGE								
SYMPTOM		Procedure 1 (Ignition switch ON signal check)	Procedure 2 (Power window lock switch check)	Procedure 3 (Power window main switch check)	Procedure 4 (Power window sub-switch check)	Procedure 5 (Power window regulator check)	Procedure 6 (Power window automatic switch check)	Procedure 7 (Front door switch check)
1	All power window do not operate.	X						
2	One or more of the power windows do not operate by turning either sub or main switch.					X		
3	One or more of the sub-switches do not function.				X			
4	One or more of the main switches on driver's door trim do not function.			X				
5	Power window lock switch on main switch does not operate properly.		X					
6	Driver power window automatic operation does not function.						X	
-	Delayed power timer does not operate properly.	X						X

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

(Ignition switch ON signal check)



CHECK IGNITION SWITCH ON SIGNAL

**A** CONSULT

See "IGN ON SW" in DATA MONITOR mode.

When ignition switch is ON:

**IGN ON SW ON**

When ignition switch is ACC or OFF:

**IGN ON SW OFF**

OR

**B** TESTER

Check voltage between BCM terminal ② and ground.

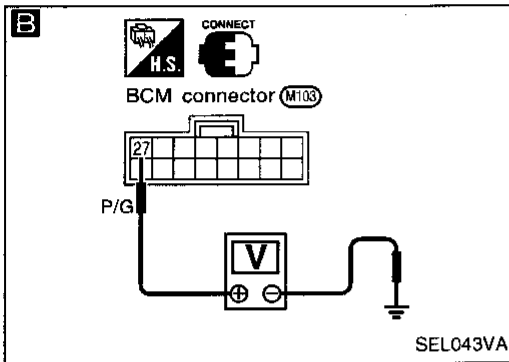
Condition of ignition switch	Voltage [V]
ON	Approx. 12
ACC or OFF	0

Refer to wiring diagram in EL-200.

NG

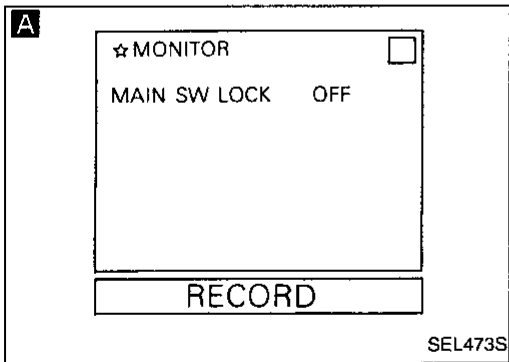
Check the following.

- 7.5A fuse [No. 12, located in the fuse block (J/B)]
- Harness for open or short between fuse and BCM



OK

Ignition switch ON signal is OK.



DIAGNOSTIC PROCEDURE 2

(Power window lock switch check)

CHECK POWER WINDOW LOCK SWITCH INPUT SIGNAL

**A** CONSULT

See "MAIN SW LOCK" in DATA MONITOR mode.

"MAIN SW LOCK" should change from "OFF" to "ON" when pushing power window lock switch.

OR

**ON BOARD**

Check power window lock switch operation in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-178.)

NG

Replace LCU01.

OK

Power window lock switch is OK.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

EL

IDX

# POWER WINDOW — IVMS

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 3

(Power window main switch)

**A** ☆ MONITOR □

MAIN SW AS-UP	OFF
MAIN/S AS-DWN	OFF
MAIN SW RR-UP	OFF
MAIN/S RR-DWN	OFF
MAIN SW RL-UP	OFF
MAIN/S RL-DWN	OFF
P/W SW DR-UP	OFF
P/W SW DR-DWN	OFF
P/W SW DR-AUT	OFF

**RECORD**

SEL440T

**CHECK DRIVER'S DOOR TRIM POWER WINDOW MAIN SWITCH INPUT SIGNAL**

**A** **CONSULT**

See "MAIN SW UP or DOWN" in DATA MONITOR mode.  
**"MAIN SW UP or DOWN" should change from "OFF" to "ON" when pushing power window main switches.**

OR

**ON BOARD**

Check power window main switch operation in Switch monitor (Mode II) mode.  
 (Refer to On board Diagnosis, EL-178.)

NG → Replace LCU01.

OK ↓

Power window main switch is OK.

**A** ☆ MONITOR □

P/W SW AS-UP	OFF
P/W SW AS-DWN	OFF
P/W SW RR-UP	OFF
P/W SW RR-DWN	OFF
P/W SW RL-UP	OFF
P/W SW RL-DWN	OFF

**RECORD**

SEL455T

### DIAGNOSTIC PROCEDURE 4

[Power window sub-switch (Passenger side, Rear LH, RH) check]

**CHECK POWER WINDOW SUB-SWITCH INPUT SIGNAL**

**A** **CONSULT**

See "P/W SW UP or DOWN" in DATA MONITOR mode.  
**"P/W SW UP or DOWN" should change from "OFF" to "ON" when each sub-switch is turned ON.**

OR

**ON BOARD**

Check power window sub-switch operation in Switch monitor (Mode II) mode.  
 (Refer to On board Diagnosis, EL-178.)

NG → Replace LCU for malfunctioning portion.

- Passenger: LCU02
- Rear LH: LCU04
- Rear RH: LCU03

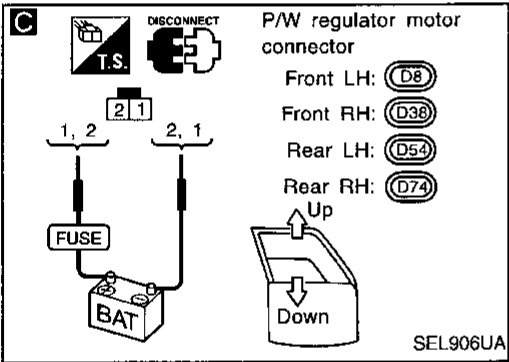
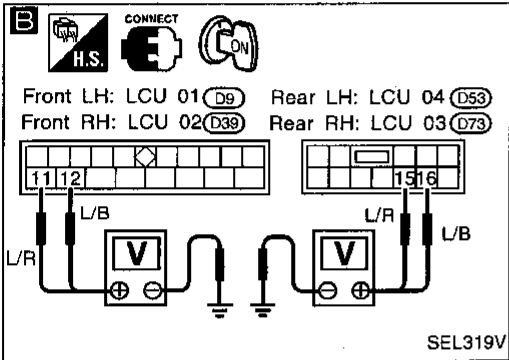
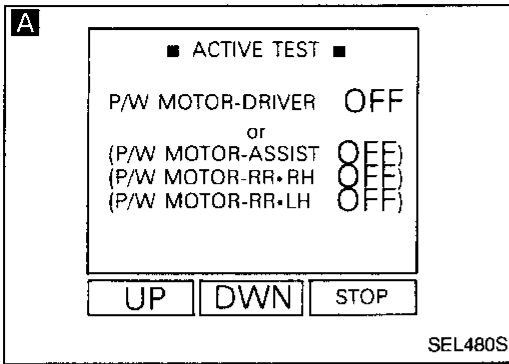
OK ↓

Power window sub-switch is OK.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

(Power window regulator check)



**A**

**POWER WINDOW REGULATOR ACTIVE TEST**

OK → Power window regulator is OK.

CONSULT

See "P/W MOTOR" in ACTIVE TEST mode.

Perform operation shown on display.

**Power window motor should operate.**

**NOTE: If CONSULT is not available, start with diagnostic procedure B .**

GI  
MA  
EM

NG

**B**

**CHECK LCU OUTPUT SIGNAL TO POWER WINDOW REGULATOR**

Check voltage between LCU connector terminals and ground.

Operation		Terminals		Voltage
		+	-	
Front (LCU01, LCU02)	Down	⑩	Ground	Battery voltage
	Up	⑪	Ground	
Rear (LCU03, LCU04)	Down	⑫	Ground	
	Up	⑬	Ground	

NG → Replace LCU for malfunctioning portion.

Refer to wiring diagram in EL-201, 202 or 203.

LC  
EC  
FE  
CL  
MT

OK

**C**

**CHECK POWER WINDOW REGULATOR MOTOR**

1. Disconnect power window regulator motor connector.

2. Apply 12V DC direct current to motor and check operation.

Terminals		Operation
+	-	
①	②	Downward
②	①	Upward

NG → Replace power window regulator motor.

OK

Check harness for open or short between power window switch, and power window regulator motor.

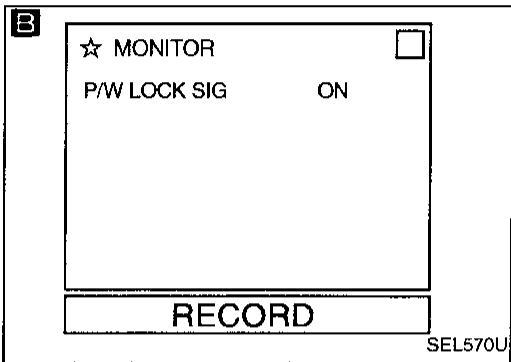
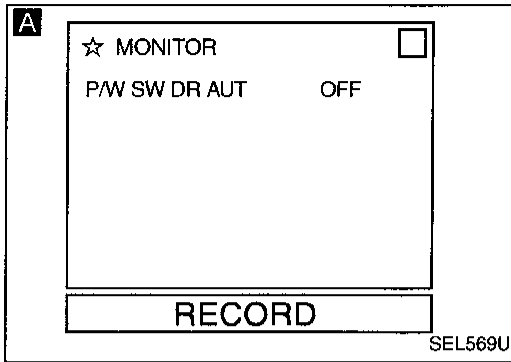
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

(Power window automatic switch check)



**CHECK POWER WINDOW AUTO SWITCH INPUT SIGNAL**

**A** CONSULT

See "P/W SW DR AUT" in DATA MONITOR mode.

"P/W SW DR AUT" should change from "ON" to "OFF" when completely pushing in or pulling out driver power window switch.

NG → Replace LCU01.

OR

ON BOARD

Check power window switch driver auto operation in switch monitor (Mode II) mode.  
(Refer to On board Diagnosis, EL-178.)

OK ↓

**CHECK POWER WINDOW LOCK SIGNAL**

**B** CONSULT

See "P/W LOCK SIG" in DATA MONITOR mode.

"P/W LOCK SIG" should change from "ON" to "OFF" when the window is moving.

NG → Replace LCU01.

OR

ON BOARD

Perform On board diagnosis Mode IV.  
(Refer to EL-205.)  
Electrical ripple should occur, when the window is moving.

OK ↓

Check the system again.

System Description

POWER SUPPLY AND GROUND

Power is supplied at all times

- through 7.5A fuse [No. 40], located in the fuse block (J/B)
- to key switch terminal ①.

Power is supplied to BCM terminal ③ through key switch terminal ② when key switch is in ON position (ignition key is inserted in the key cylinder).

BCM is connected to LCU01, LCU02, LCU03 and LCU04 as DATA LINE A-1 or A-2.

Ground is supplied

- to BCM terminal ② or ①
- from front LH or RH door switch terminal ②
- through front LH or RH door switch terminal ③ when door switch is in OPEN position and
- through body grounds (B16) and (B19).

Ground is supplied

- to driver door control unit (LCU01) terminals ⑥ or ⑤
- from front LH door key cylinder switch terminals ① or ② when door key cylinder is in BETWEEN FULL STROKE AND N position
- through front LH door key cylinder switch terminal ④ and
- through body grounds (M13), (M73) and (M11).

Front RH door key cylinder switch will supply ground to passenger door control unit (LCU02) in the same manner as driver side.

Ground is supplied

- to driver door control unit (LCU01) terminal ④
- from door unlock sensor (in the front LH door lock actuator) terminal ② when door lock is in UNLOCKED position
- through front LH door lock actuator terminal ④ and
- through body grounds (M13), (M73) and (M11).

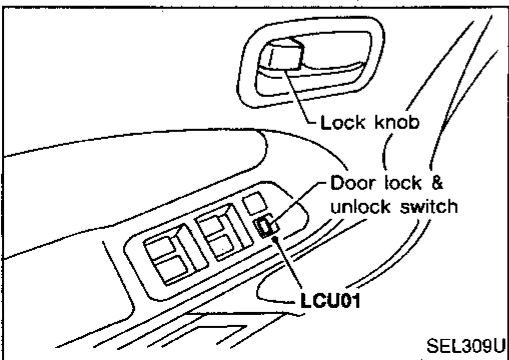
Front passenger door unlock sensor (in the door lock actuators) will supply ground to passenger door control unit (LCU02) in the same manner as driver side.

When lock/unlock signal is sent to BCM or LCU, BCM sends a lock/unlock signal to LCUs via DATA LINE A-1 or A-2. LCUs then supply power and ground to each door lock actuator.

OPERATION

- The lock & unlock switch (SW) on driver's door trim can lock and unlock all doors.
- With the lock knob on front LH or RH door set to "LOCK", all doors are locked. (Signals from front door unlock sensor)
- With the door key inserted in the key cylinder on front LH or RH door, turning it to "LOCK", will lock all doors; turning it to "UNLOCK" once unlocks the corresponding door; turning it to "UNLOCK" again within 5 seconds after the first unlock operation unlocks all of the other doors. (Signals from door key cylinder switch)

However, if the ignition key is in the ignition key cylinder and one or more of the front doors are open, setting the lock & unlock switch, lock knob, or the door key to "LOCK" locks the doors once but then immediately unlocks them. (Combination signals from key switch, front LH or RH door switch and LH or RH door unlock sensor) — (KEY REMINDER DOOR SYSTEM)



GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

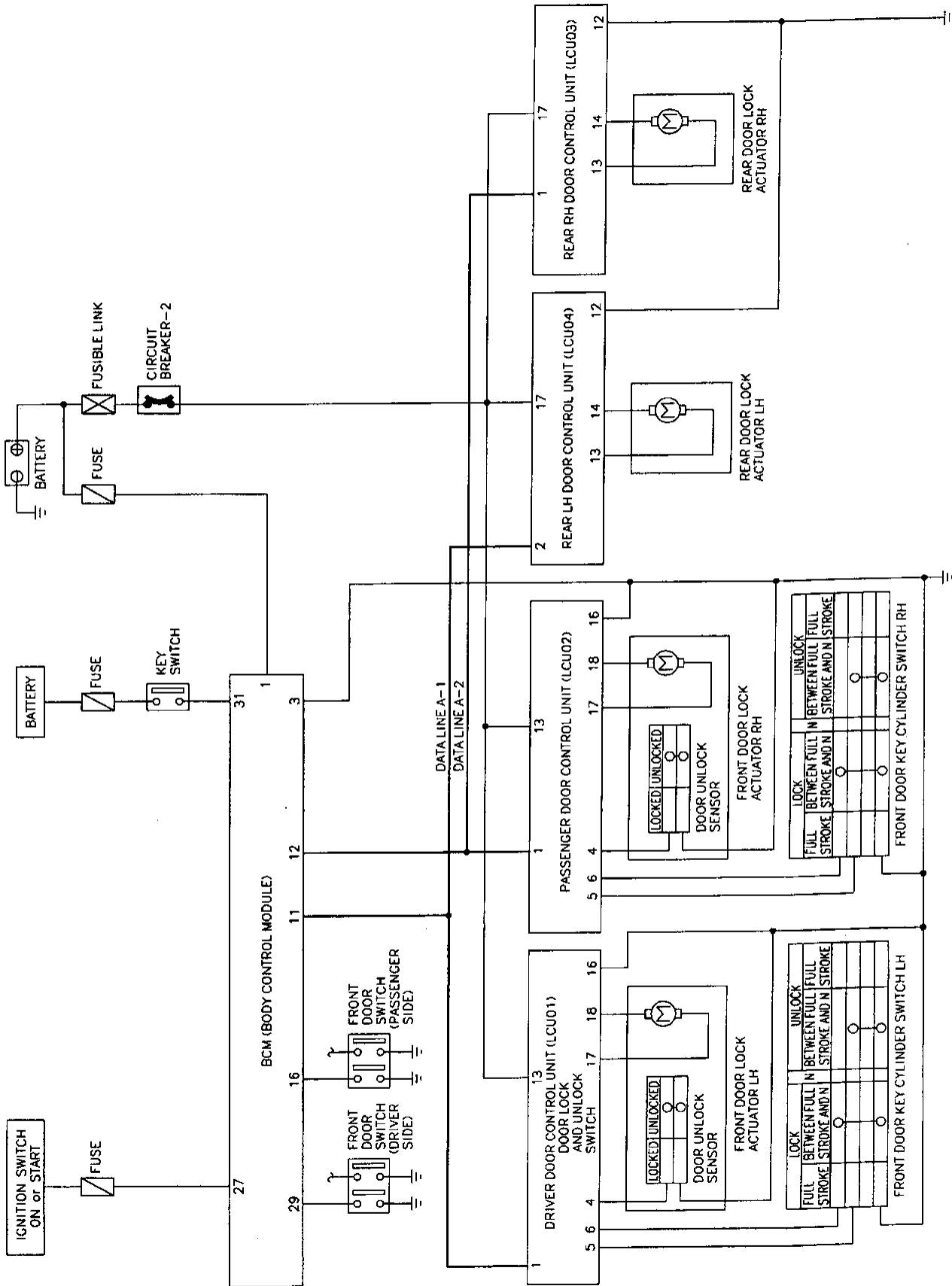
HA

EL

IDX

# POWER DOOR LOCK — IVMS

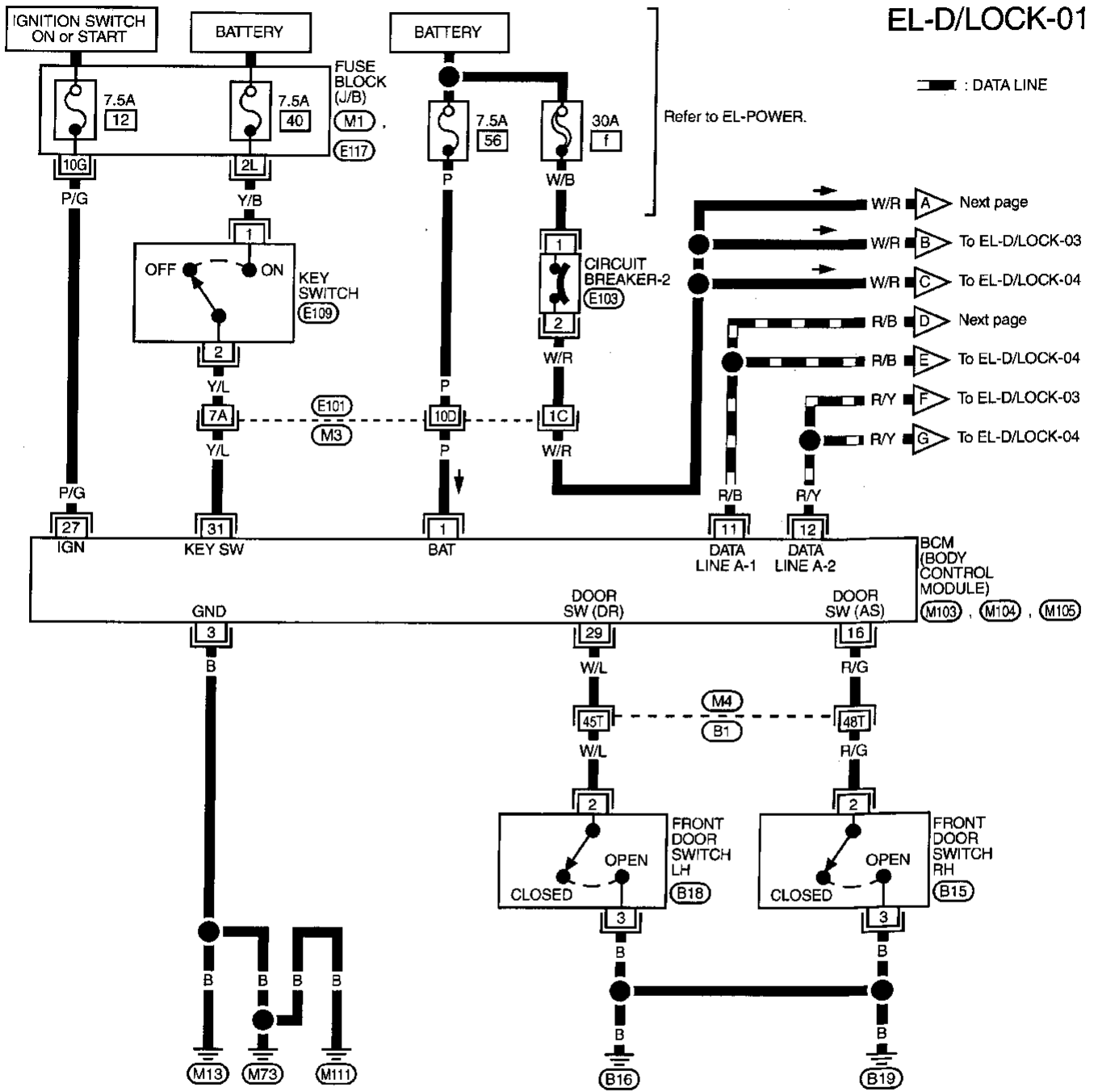
## Schematic





Wiring Diagram — D/LOCK —

FIG. 1



EL-D/LOCK-01

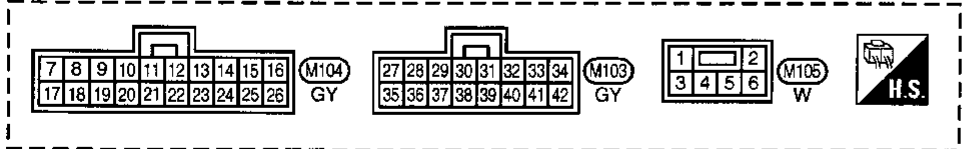
— : DATA LINE

Refer to EL-POWER.

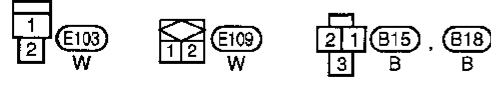
- A Next page
- B To EL-D/LOCK-03
- C To EL-D/LOCK-04
- D Next page
- E To EL-D/LOCK-04
- F To EL-D/LOCK-03
- G To EL-D/LOCK-04

BCM (BODY CONTROL MODULE) (M103, M104, M105)

Refer to last page (Foldout page).



- (M1)
- (M3), (E101)
- (M4), (B1)
- (E117)

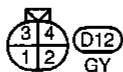
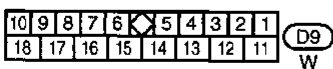
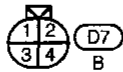
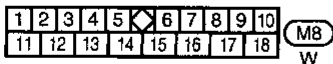
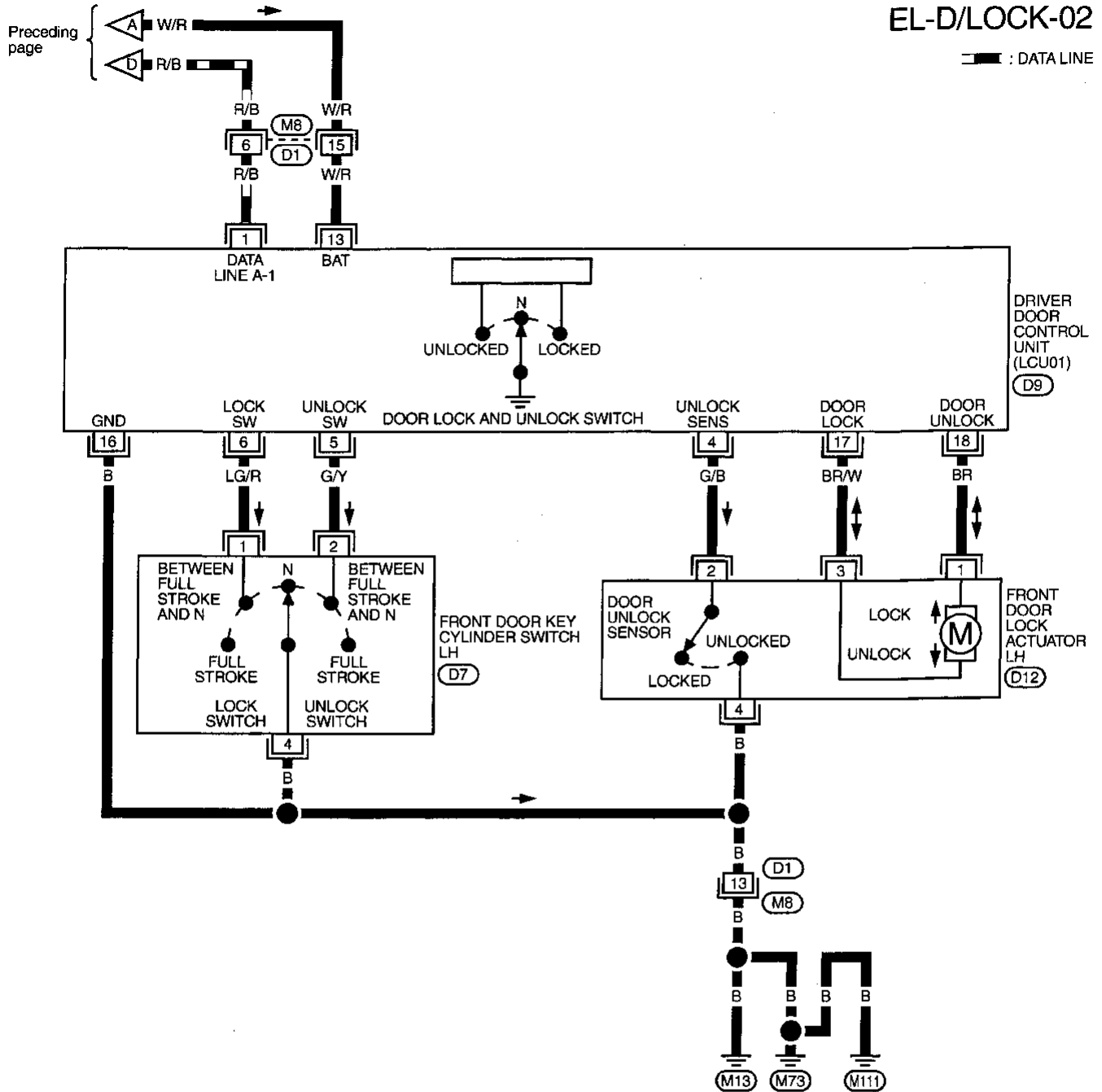


GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# POWER DOOR LOCK — IVMS

## Wiring Diagram — D/LOCK — (Cont'd)

FIG. 2

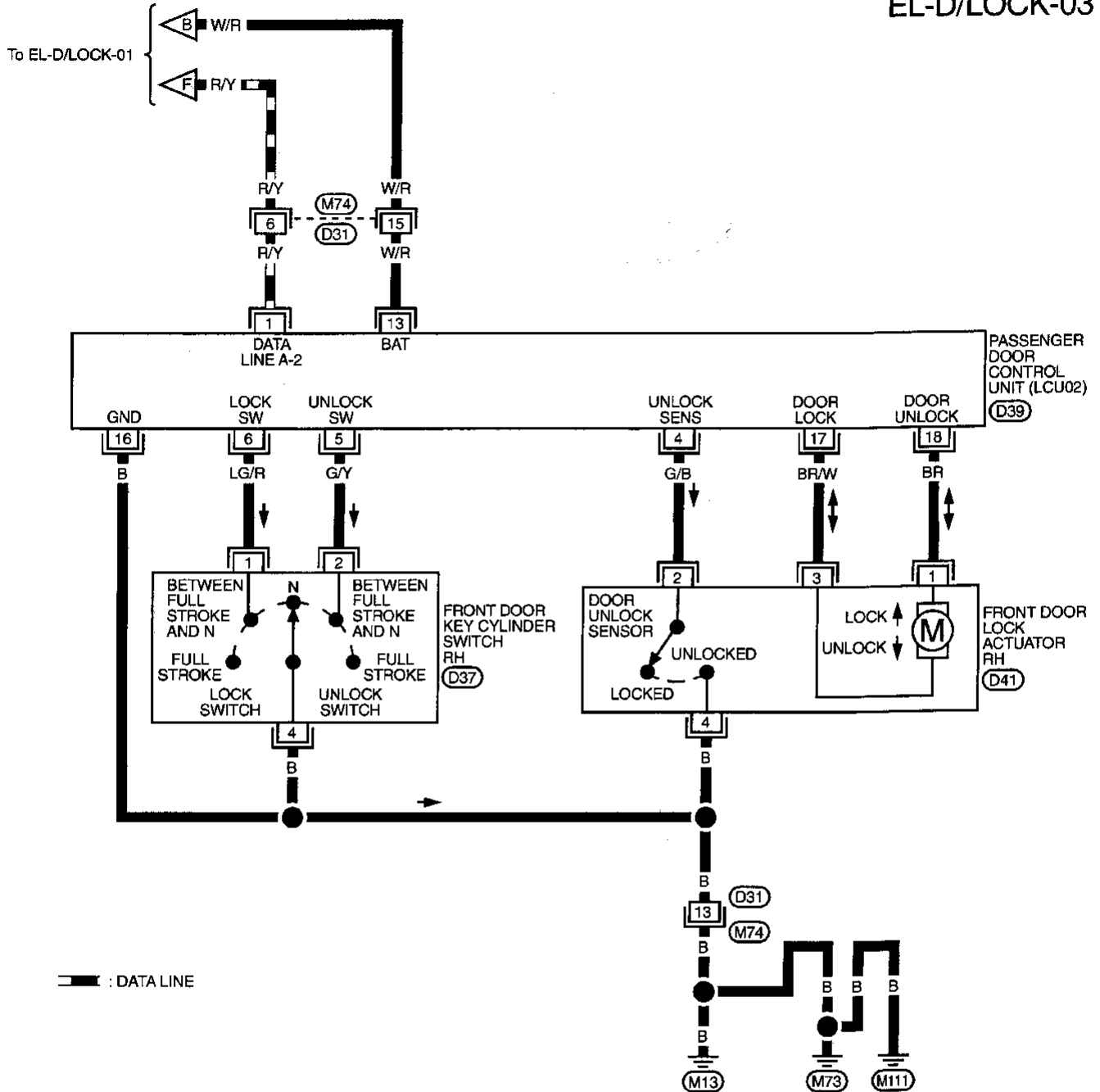


POWER DOOR LOCK — IVMS

Wiring Diagram — D/LOCK — (Cont'd)

FIG. 3

EL-D/LOCK-03



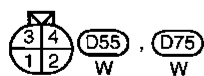
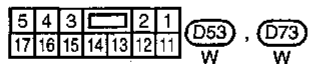
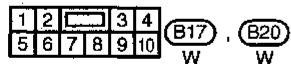
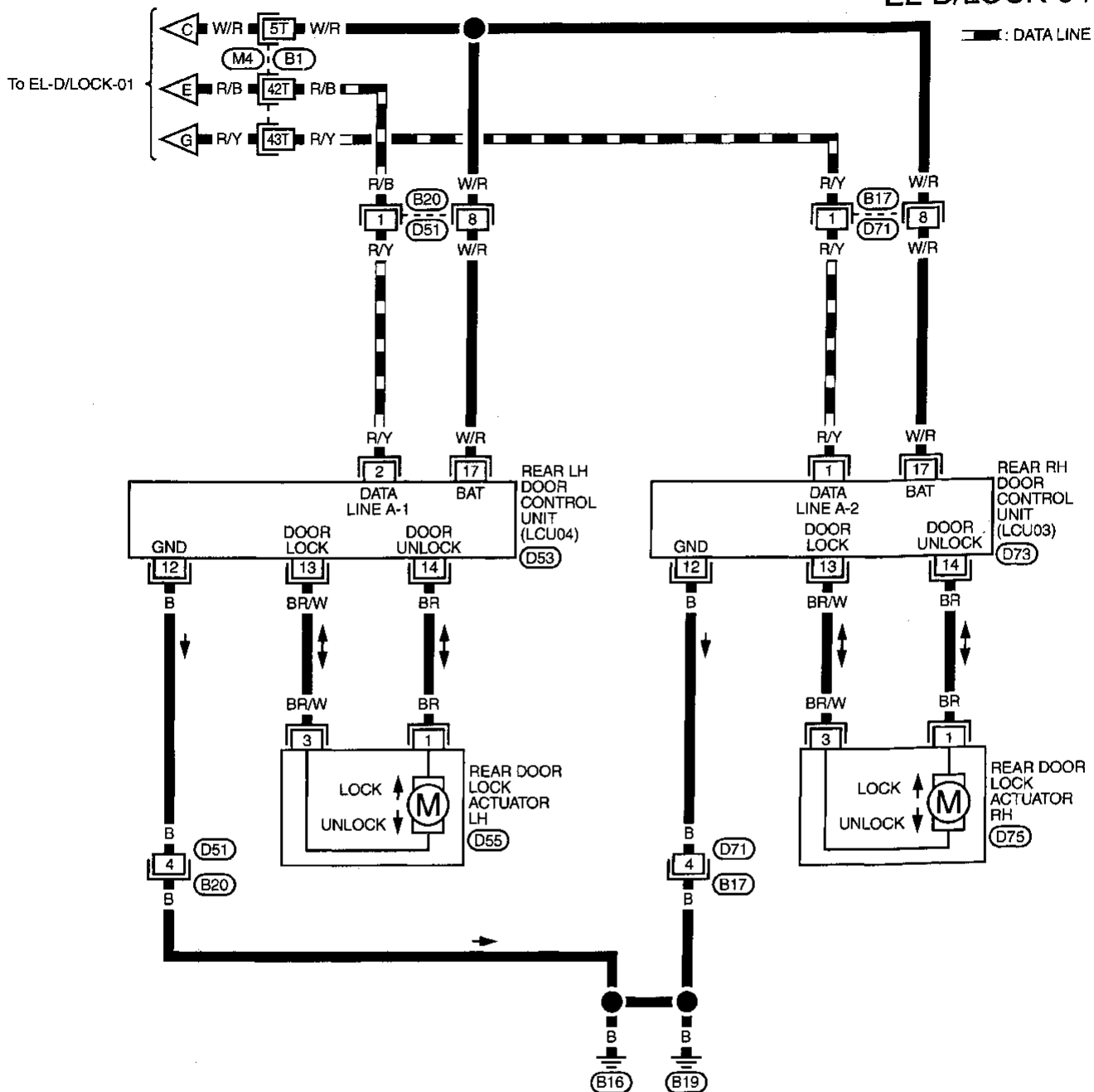
GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# POWER DOOR LOCK — IVMS

## Wiring Diagram — D/LOCK — (Cont'd)

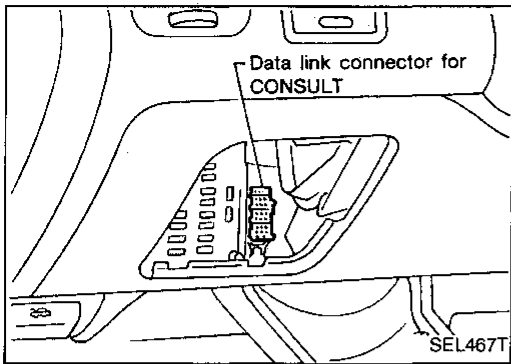
FIG. 4

EL-D/LOCK-04



Refer to last page (Foldout page).

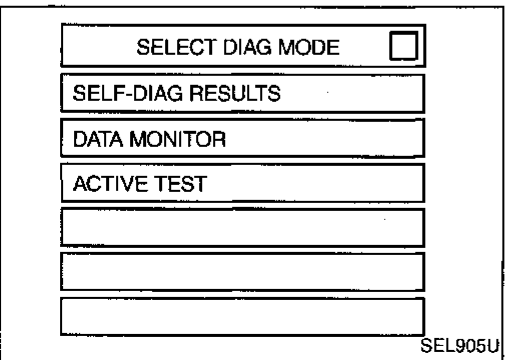
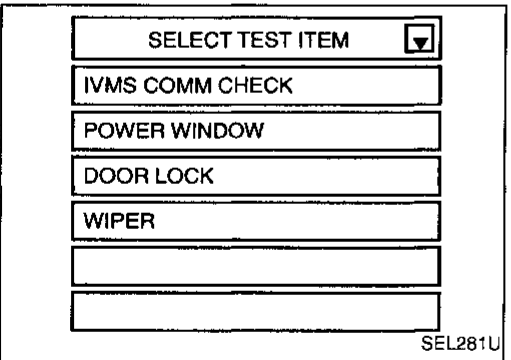
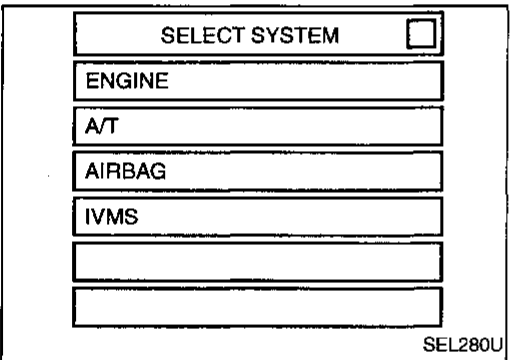
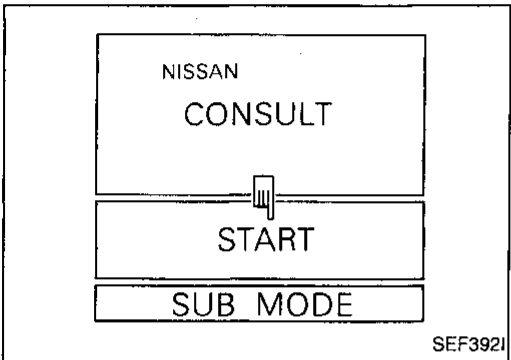
M4, B1



**CONSULT**

**CONSULT INSPECTION PROCEDURE**

1. Turn ignition switch "OFF".
2. Connect "CONSULT" to Data link connector.
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".

6. Touch "DOOR LOCK".

- DATA MONITOR, ACTIVE TEST and SELF-DIAGNOSIS are available for the power door lock.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

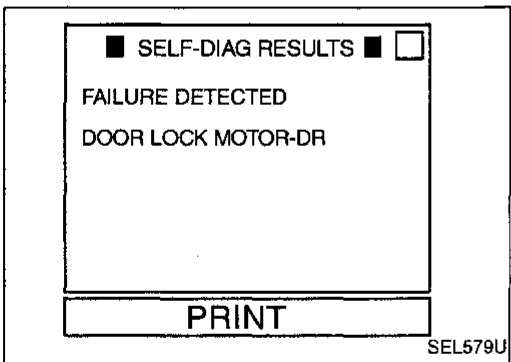
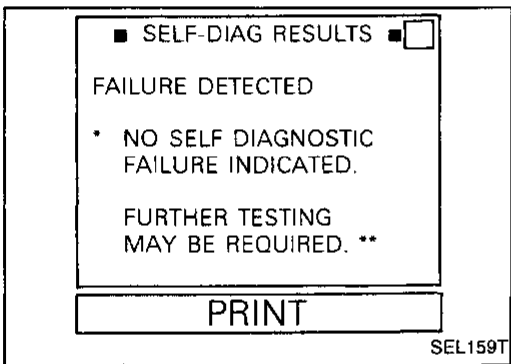
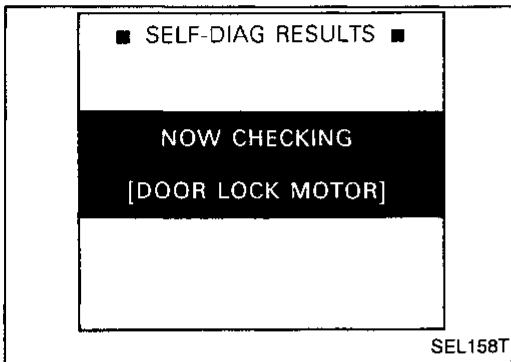
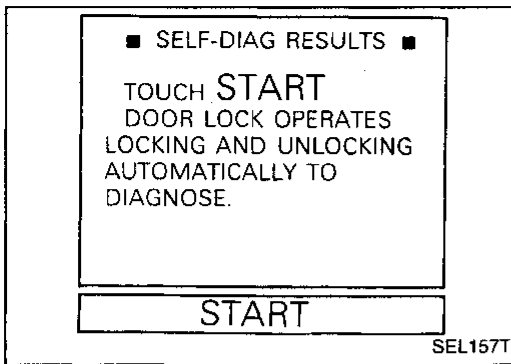
EL

IDX

## CONSULT (Cont'd)

### HOW TO PERFORM SELF-DIAGNOSIS

1. Choose "DOOR LOCK" in SELECT TEST ITEM.
2. Touch "SELF-DIAG RESULTS" of SELECT DIAG mode.
3. Touch "START".



4. Start self-diagnosis on all door motors. Lock and unlock all doors by operating door motors automatically.

- When no malfunction is detected

- When malfunction is detected  
A summary of diagnostic results is given in the following chart.

**POWER DOOR LOCK — IVMS**

**CONSULT (Cont'd)**

**SELF-DIAGNOSTIC RESULT LIST**

Diagnostic result	Explanation	Diagnostic procedure	Reference page
DOOR LOCK MOTOR-DR	The circuit for the driver side door lock actuator/unlock sensor is malfunctioning.	Procedure 5 (Door unlock sensor check)  Procedure 6 (Door lock actuator check)	EL-230
DOOR LOCK MOTOR-AS	The circuit for the passenger side door lock actuator/unlock sensor is malfunctioning.		
DOOR LOCK MOTOR-RR/RH	The circuit for the rear RH side door lock actuator/unlock sensor is malfunctioning.		EL-231
DOOR LOCK MOTOR-RR/LH	The circuit for the rear LH side door lock actuator/unlock sensor is malfunctioning.		
*NO SELF DIAGNOSTIC FAILURE INDICATED/FURTHER TESTING MAY BE REQUIRED.**	No malfunction in the above items.	—	—

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

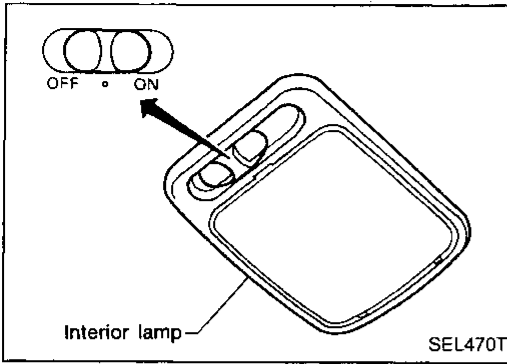
RS

BT

HA

**EL**

IDX

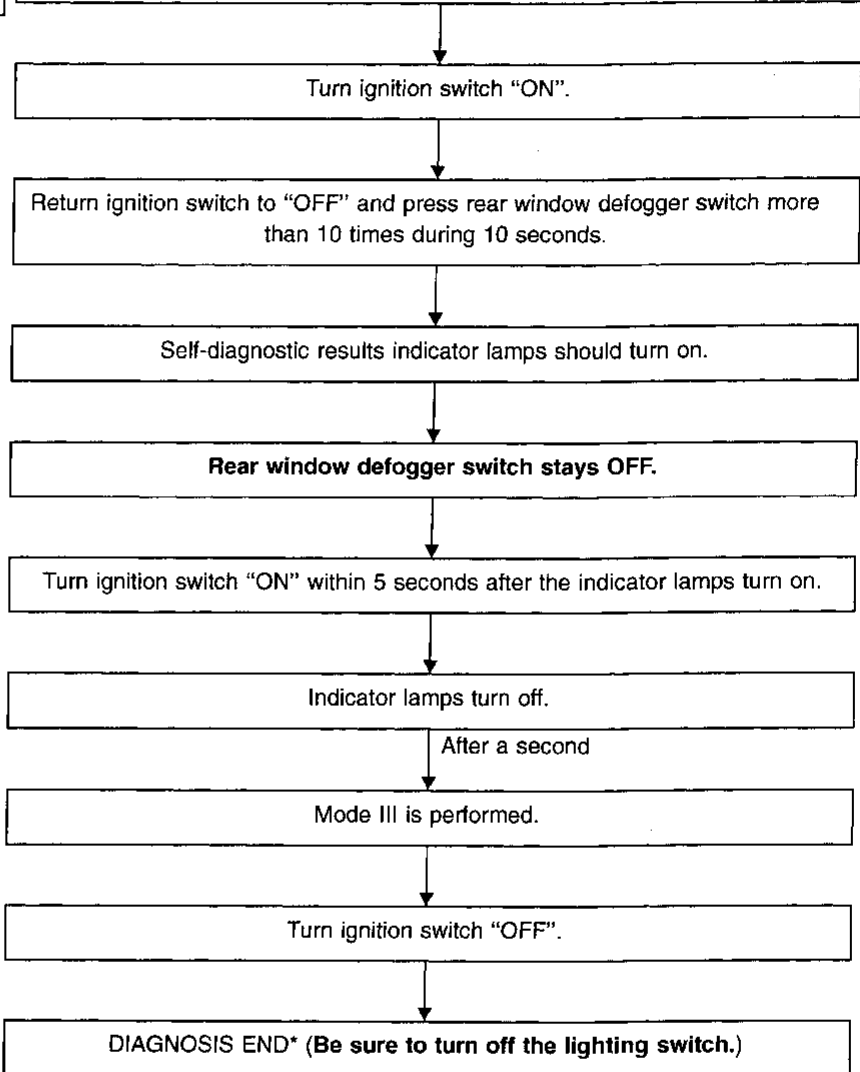


## On board Diagnosis — Mode III (Power door lock operation)

### HOW TO PERFORM MODE III

#### Condition

- Ignition switch: OFF
- **Lighting switch 1st: ON**
- Rear window defogger switch: OFF
- Doors: Closed
- Interior lamp: Center "○" position



\*: Diagnosis ends after self-diagnostic results have been indicated for 10 minutes if left unattended.

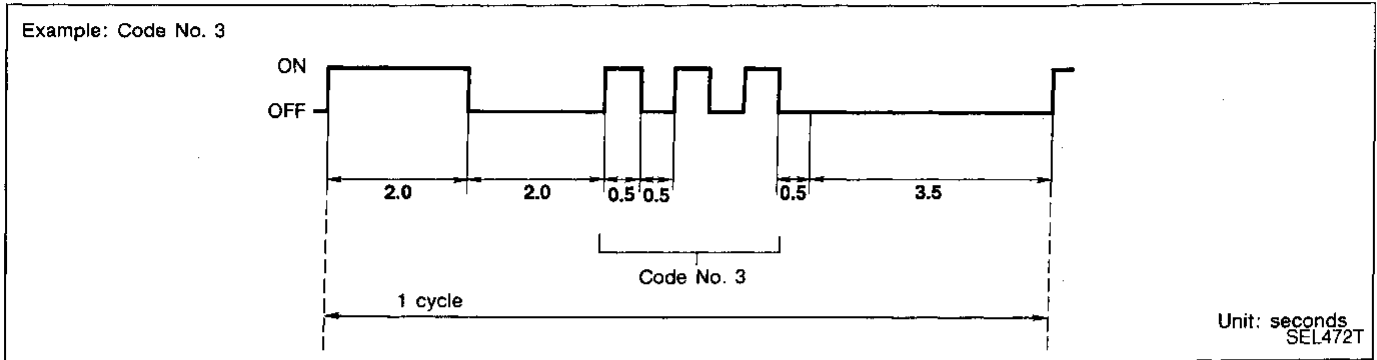


# POWER DOOR LOCK — IVMS

## On board Diagnosis — Mode III (Power door lock operation) (Cont'd)

### DESCRIPTION

In this mode, a malfunction code is indicated by the number of flashes from the front map lamps and step lamps as shown below:



After indicator lamp turns ON for 2 seconds and then turns OFF, it flashes to indicate a malfunction code. For example, the indicator lamp goes on and off for 0.5 seconds three times. This indicates malfunction code "3".

The self-diagnostic results will remain in the BCM memory.

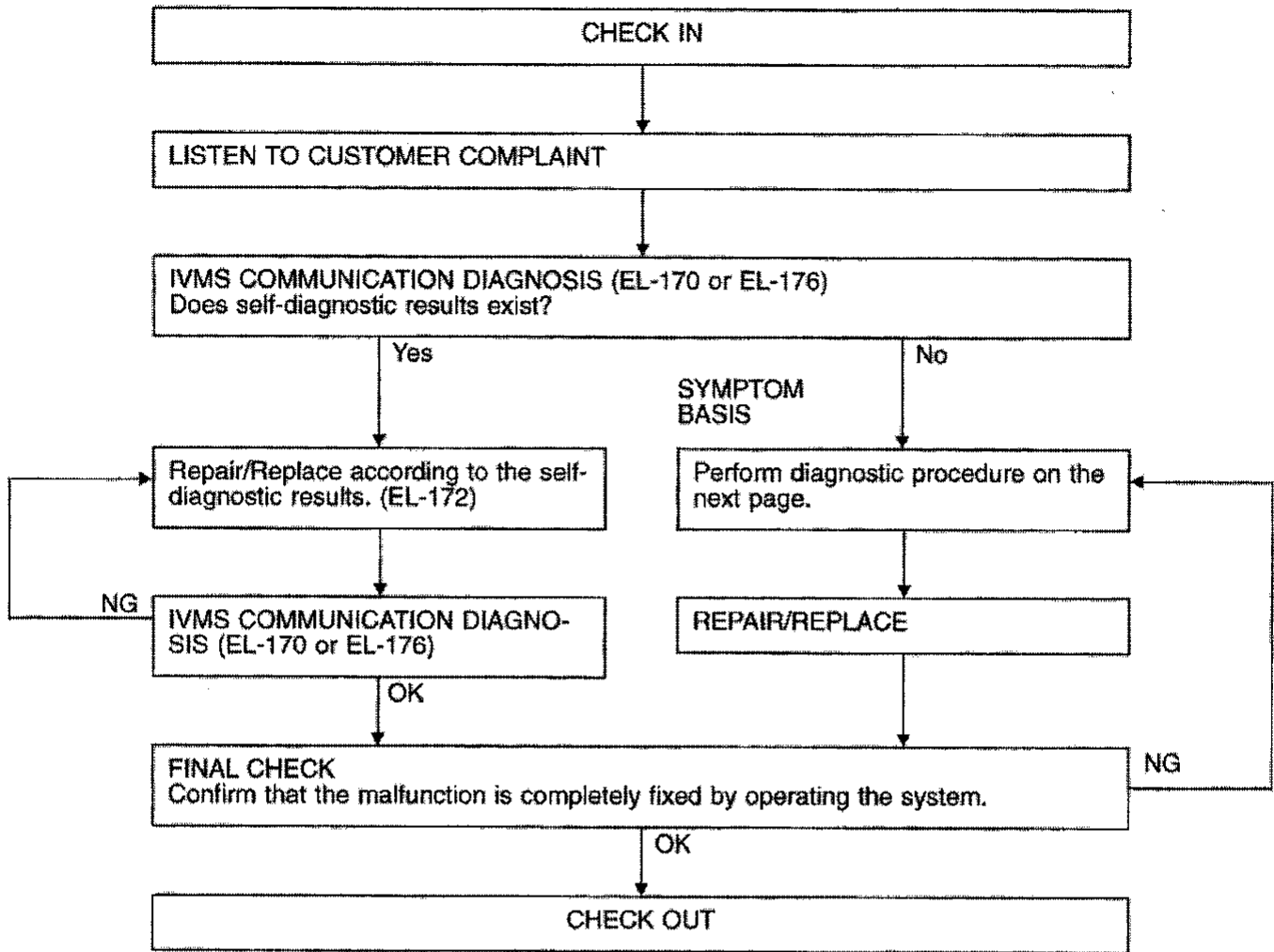
### MALFUNCTION CODE TABLE

Code No.	Detected items	Diagnostic procedure	Reference page
1	Driver door lock actuator/unlock sensor	Procedure 5 (Door unlock sensor check)	EL-230
2	Passenger door lock actuator/unlock sensor		
3	Rear RH door lock actuator/unlock sensor		
4	Rear LH door lock actuator/unlock sensor	Procedure 6 (Door lock actuator check)	EL-231
9	No malfunction in the above items	—	—

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

Trouble Diagnoses

WORK FLOW



NOTICE:

- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.  
Erase the memory with CONSULT (refer to EL-170) or turn the ignition switch to “OFF” position and remove 7.5A fuse (No. 56, located in the fuse block and fusible link box).

# POWER DOOR LOCK — IVMS

## Trouble Diagnoses (Cont'd)

### SYMPTOM CHART

PROCEDURE	Self-diagnosis		Diagnostic procedure						—
REFERENCE PAGE	EL-220	EL-222	EL-226	EL-227	EL-228	EL-229	EL-230	EL-231	EL-171
SYMPTOM	CONSULT	On board diagnosis (Mode III)	Procedure 1 (Front door switch check)	Procedure 2 (Key switch check)	Procedure 3 (Lock & unlock switch check)	Procedure 4 (Door key cylinder switch check)	Procedure 5 (Door unlock sensor check)	Procedure 6 (Door lock actuator check)	Wake-up diagnosis
Key reminder door system does not operate properly.	X	X	X	X			X	X	
Specific door lock actuator does not operate.	X	X					X	X	
Power door lock does not operate with door lock and unlock switch on power window main switch.	X	X			X				X (LCU01)
Power door lock does not operate with front door key cylinder operation.	X	X				X			X (LCU01, LCU02)
Power door lock does not operate with front door lock knob switch.	X	X					X		X (LCU01, LCU02)

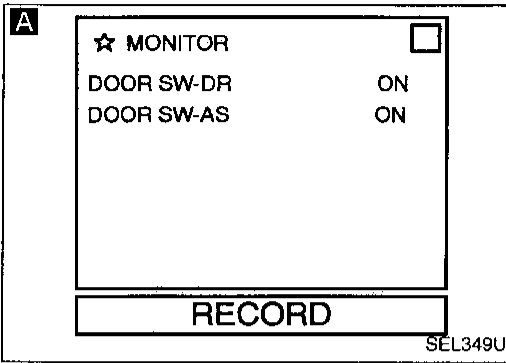
GI  
 MA  
 EM  
 LG  
 EC  
 FE  
 CL  
 MT  
 AT  
 FA  
 RA  
 BR  
 ST  
 RS  
 BT  
 HA  
**EL**  
 IDX

# POWER DOOR LOCK — IVMS

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 1

#### (Front door switch check)



#### CHECK FRONT DOOR SWITCH INPUT SIGNAL

**A** CONSULT

See "DOOR SWITCH" in DATA MONITOR mode.

When door is open:

**DOOR SW ON**

When door is closed:

**DOOR SW OFF**

OR

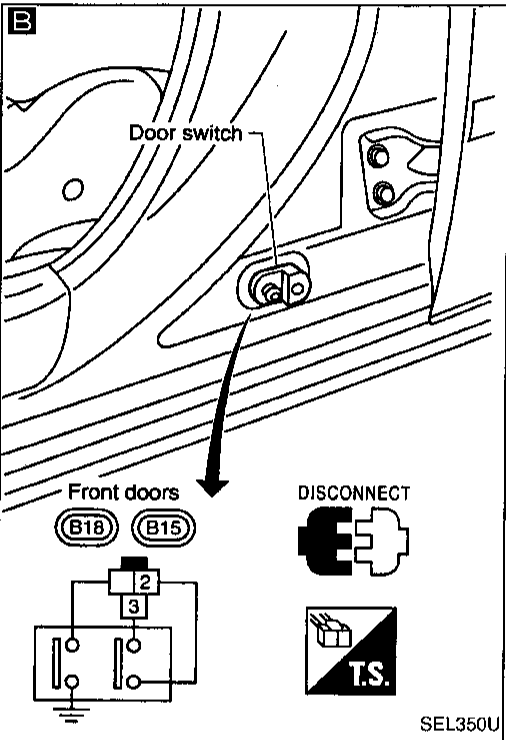
ON BOARD

Check front door switches in Switch monitor (Mode II) mode.

(Refer to On board Diagnosis, EL-178.)

Refer to wiring diagram in EL-215.

OK → Door switch is OK.



NG

#### **B** CHECK DOOR SWITCH

1. Disconnect door switch connector.
2. Check continuity between door switch terminals.

	Terminals	Condition	Continuity
Front door switch	② - ③	Pressed	No
		Released	Yes

NG → Replace door switch.

OK

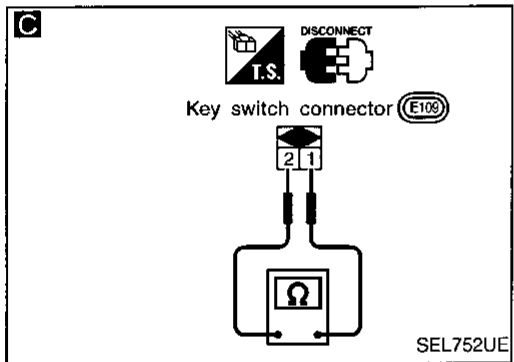
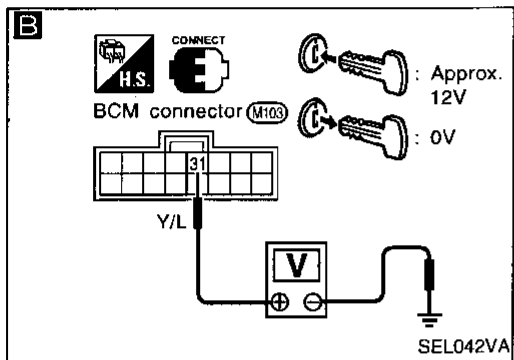
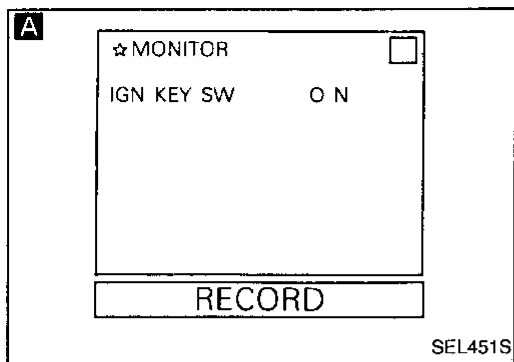
Check the following.

- Door switch ground circuit
- Harness for open or short between door switch and BCM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

[Key switch (Insert) check]



CHECK KEY SWITCH INPUT SIGNAL

**A** CONSULT

See "IGN KEY SW" in DATA MONITOR mode.  
When key is inserted in ignition key cylinder:

**IGN KEY SW ON**

When key is removed from ignition key cylinder:

**IGN KEY SW OFF**

OR

**B** TESTER

Check voltage between BCM terminal ③① and ground.

Condition of key switch	Voltage [V]
Key is inserted	Approx. 12
Key is removed	0

Refer to wiring diagram in EL-215.

OK → Ignition key switch is OK.

**C** CHECK KEY SWITCH

1. Disconnect key switch connector.
2. Check continuity between key switch (insert) terminals ① and ② when key is inserted in ignition key cylinder and key is removed from ignition key cylinder.

Condition	Continuity
Key is inserted	Yes
Key is removed	No

NG → Replace key switch (insert).

Check the following.

- 7.5A fuse [No. 40], located in fuse block (J/B)]
- Harness for open or short between key switch and fuse
- Harness for open or short between BCM and key switch

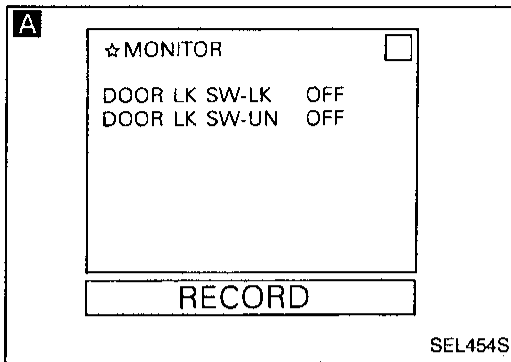
GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# POWER DOOR LOCK — IVMS

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 3

#### (Lock & unlock switch check)



#### CHECK DOOR LOCK & UNLOCK SWITCH INPUT SIGNAL

##### **A** CONSULT

See "DOOR LK SW-LK or UN" in DATA MONITOR mode.

When lock & unlock switch is turned to lock:

**DOOR LK SW-LK ON**

When lock & unlock switch is turned to unlock:

**DOOR LK SW-UN ON**

OR

##### **ON BOARD**

Check door lock & unlock switch operation in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-178.)

OK

Lock & unlock switch is OK.

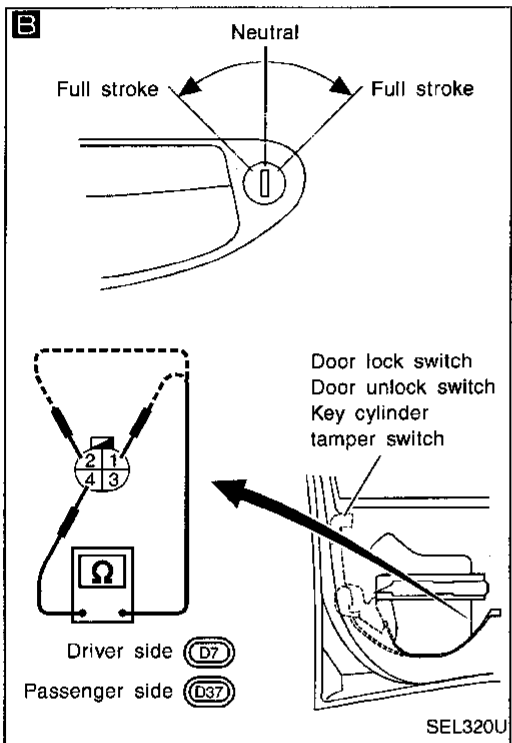
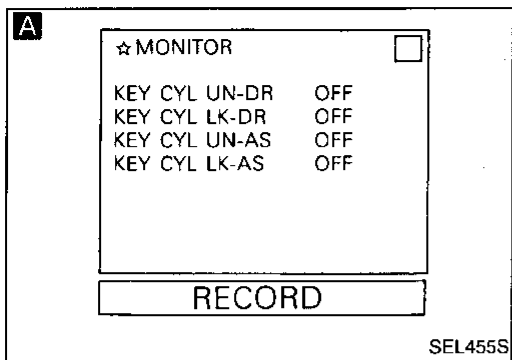
NG

Replace driver door control unit (LCU01).

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

(Door key cylinder switch check)



**CHECK DOOR KEY CYLINDER SIGNAL**

**A** CONSULT

See "KEY CYL DR or AS" in DATA MONITOR mode.

These signals should be "ON" when ignition key inserted in the door key cylinder was turned to lock or unlock.

**If signals turn from "OFF" to "ON" too quickly on CONSULT display when key cylinder is turned, check these signals in the graphic mode.**

(Refer to CONSULT OPERATION MANUAL.)

OK → Door key cylinder switch is OK.

OR

**ON BOARD**

Check front LH or RH door lock key cylinder lock and unlock switch in Switch monitor (Mode II) mode.

(Refer to On board Diagnosis, EL-178.)

Refer to wiring diagram in EL-216 or 217.

**B**

**CHECK DOOR KEY CYLINDER SWITCH**

1. Disconnect door key cylinder switch connector.
2. Check continuity between door key cylinder switch terminals.

NG → Replace door key cylinder switch.

Terminals	Condition	Continuity
① - ④	Neutral	No
	Between full stroke and Neutral	Yes
	Full stroke (Lock)	No
② - ④	Neutral	No
	Between full stroke and Neutral	Yes
	Full stroke (Unlock)	No

OK

Check the following.

- Door key cylinder switch ground circuit
- Harness for open or short between door key cylinder switch and LCU01/02

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

EL

IDX

# POWER DOOR LOCK — IVMS

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 5

#### (Door unlock sensor check)

**A**

☆ MONITOR		<input type="checkbox"/>
LOCK SIG-DR	UNLK	
LOCK SIG-AS	LOCK	
LOCK SG-RR/RH	UNLK	
LOCK SG-RR/LH	UNLK	

**RECORD**

SEL457S

#### CHECK DOOR UNLOCK SENSOR INPUT SIGNAL

##### **A** CONSULT

See "LOCK SIG SW" in DATA MONITOR mode.

When door is locked:

**LOCK SIG LOCK**

When door is unlocked:

**LOCK SIG UNLK**

OR

##### **ON BOARD**

Check front door lock knob operation in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-178.)

Refer to wiring diagram in EL-216 or 217.

OK → Door unlock sensor is OK.

**B**

**DISCONNECT**

**T.S.**

Door lock actuator connector

Front LH: (D12)

Front RH: (D41)

SEL390VA

#### **B** CHECK DOOR UNLOCK SENSOR

1. Disconnect door lock actuator connector.
2. Check continuity between door lock actuator (door unlock sensor) terminals ② and ④.

Condition	Continuity
Locked	No
Unlocked	Yes

NG → Replace door lock actuator.

OK

Check the following.

- Harness for open or short between LCU and door unlock sensor
- Ground circuit for door unlock sensor

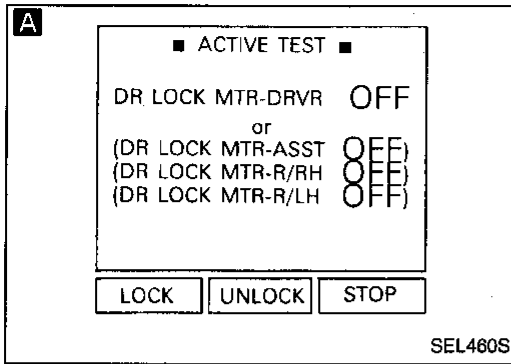


# POWER DOOR LOCK — IVMS

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 6

#### (Door lock actuator check)



**CHECK DOOR LOCK MOTOR OPERATION**

**A** **CONSULT**

See "DR LOCK MTR" in ACTIVE TEST mode.

Perform operation shown on display. **Door lock motor should operate.**

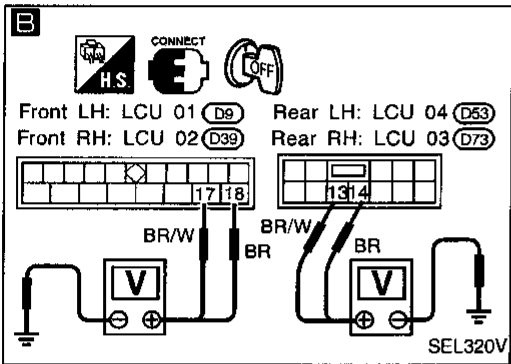
OR

**ON BOARD**

Perform On board Diagnosis Mode III. (Refer to EL-222.)

**Door lock motor should operate.**

OK → Door lock actuator is OK.



**B**

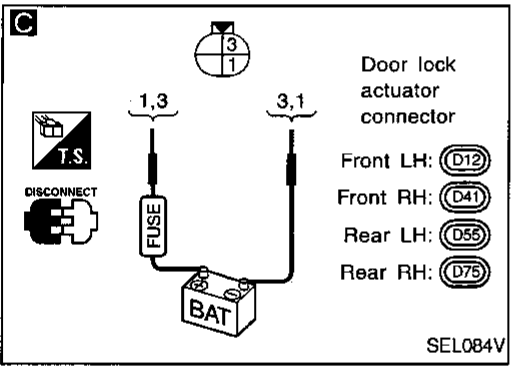
Check voltage between LCU connector terminals and body ground.

NG → Replace LCU for malfunctioning portion.

Door lock operation	Terminals		Voltage
	+	-	
Front (LCU01, LCU02)	Lock	⑩	Battery voltage
	Unlock	⑪	
Rear (LCU03, LCU04)	Lock	⑬	
	Unlock	⑭	

Refer to wiring diagram in EL-216, 217 or 218.

OK



**C**

**CHECK DOOR LOCK ACTUATOR**

- Disconnect door lock actuator.
- Apply 12V DC direct current to door lock actuator and check operation.

Door lock operation	Terminals	
	+	-
Lock	③	①
Unlock	①	③

NG → Replace door lock actuator.

OK

OK

Check harness for open or short between door lock actuator and LCU.

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

## System Description

### POWER SUPPLY AND GROUND

BCM is connected to Multi-remote control unit (LCU05) and each door control unit (LCU01, 02, 03 and 04) via DATA LINE A-1 or A-2.

Power is supplied at all times

- through 7.5A fuse [No. 40], located in the fuse block (J/B)
- to key switch terminal ①.

When the key switch is in ON position (ignition key is inserted in key cylinder), power is supplied

- through key switch terminal ②
- to BCM terminal ③.

When any of the four door switches is in OPEN position, ground is supplied

- to BCM terminal ⑤
- through door switches body grounds.

When the driver side door lock actuator (door unlock sensor) is in UNLOCKED position, ground is supplied

- to driver door control unit (LCU01) terminal ④
- through driver side door lock actuator (door unlock sensor) terminal ② ,
- to driver side door lock actuator (door unlock sensor) terminal ④
- through body grounds ①13, ①73 and ①11.

When the passenger side door lock actuator (door unlock sensor) is in UNLOCKED position, ground is supplied

- to passenger door control unit (LCU02) terminal ④
- through passenger side door lock actuator (door unlock sensor) terminal ② ,
- to passenger side door lock actuator (door unlock sensor) terminal ④
- through body grounds ①13, ①73 and ①11.

When the rear door lock actuator LH and/or RH (door unlock sensor) is in UNLOCKED position, ground is supplied

- to rear LH and/or RH door control unit (LCU04/03) terminal ⑤
- through rear door lock actuator LH (door unlock sensor) terminal ② and/or
- through rear door lock actuator RH (door unlock sensor) terminal ②
- to rear door lock actuator LH (door unlock sensor) terminal ④ and/or
- to rear door lock actuator RH (door unlock sensor) terminal ④
- through body grounds ①16 and ①19.

Remote controller signal input

- through window antenna
- to multi-remote control unit (LCU05) terminal ⑦.

**System Description (Cont'd)**

**OPERATING PROCEDURE**

The multi-remote control system controls operation of the

- power door lock
- power window
- hazard reminder
- trunk lid opener
- panic alarm

Multi-remote control unit (LCU05) can receive signals from remote controller when key switch is in OFF position (key not in cylinder). And it sends the signals to BCM and LCUs as DATA LINES A-1 or A-2.

**Power door lock operation**

- Key switch OFF signal (ignition key is not in key cylinder)
- Door switch CLOSE signal (all doors closed)

The two above signals are already input into BCM. At this point, multi-remote control unit receives a LOCK signal from remote controller. Multi-remote control unit (LCU05) will then send a LOCK signal to BCM via DATA LINE A-1.

When an UNLOCK signal is sent from remote controller, door lock actuators unlock all doors and interior lamp illuminates if interior lamp switch is in DOOR position.

For detailed description, refer to "POWER DOOR LOCK — IVMS" (EL-213).

**Power window operation**

When an UNLOCK signal from remote controller is input into multi-remote control unit (LCU05) continuously more than 1.5 seconds, front power windows lower the windows.

**Hazard reminder**

Power is supplied at all times

- through 10A fuse [No. 11], located in the fuse block (J/B)]
- to multi-remote control relay-1 terminals ①, ③ and ⑥.

When multi-remote control unit (LCU05) receives a LOCK signal, ground is supplied

- to multi-remote control relay-1 terminal ②
- through BCM terminal 18.

Multi-remote control relay is now energized and door lock actuators lock all doors. (Hazard warning lamps flash twice as a reminder.)

**Trunk lid opener operation**

Power is supplied at all times

- through 15A fuse [No. 37], located in the fuse block (J/B)]
- to trunk lid opener actuator terminal ②.

When a TRUNK OPEN signal is sent from multi-remote controller, ground is supplied

- to trunk lid opener actuator terminal ①
- through multi-remote control unit (LCU05) terminal ⑤.

Then power and ground are supplied, trunk lid opener actuator opens trunk lid.

**Panic alarm operation**

Multi-remote control system activates horn and headlamps intermittently when an alarm signal is sent from remote controller to multi-remote control system.

For detailed description, refer to "THEFT WARNING SYSTEM — IVMS" (EL-251).

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

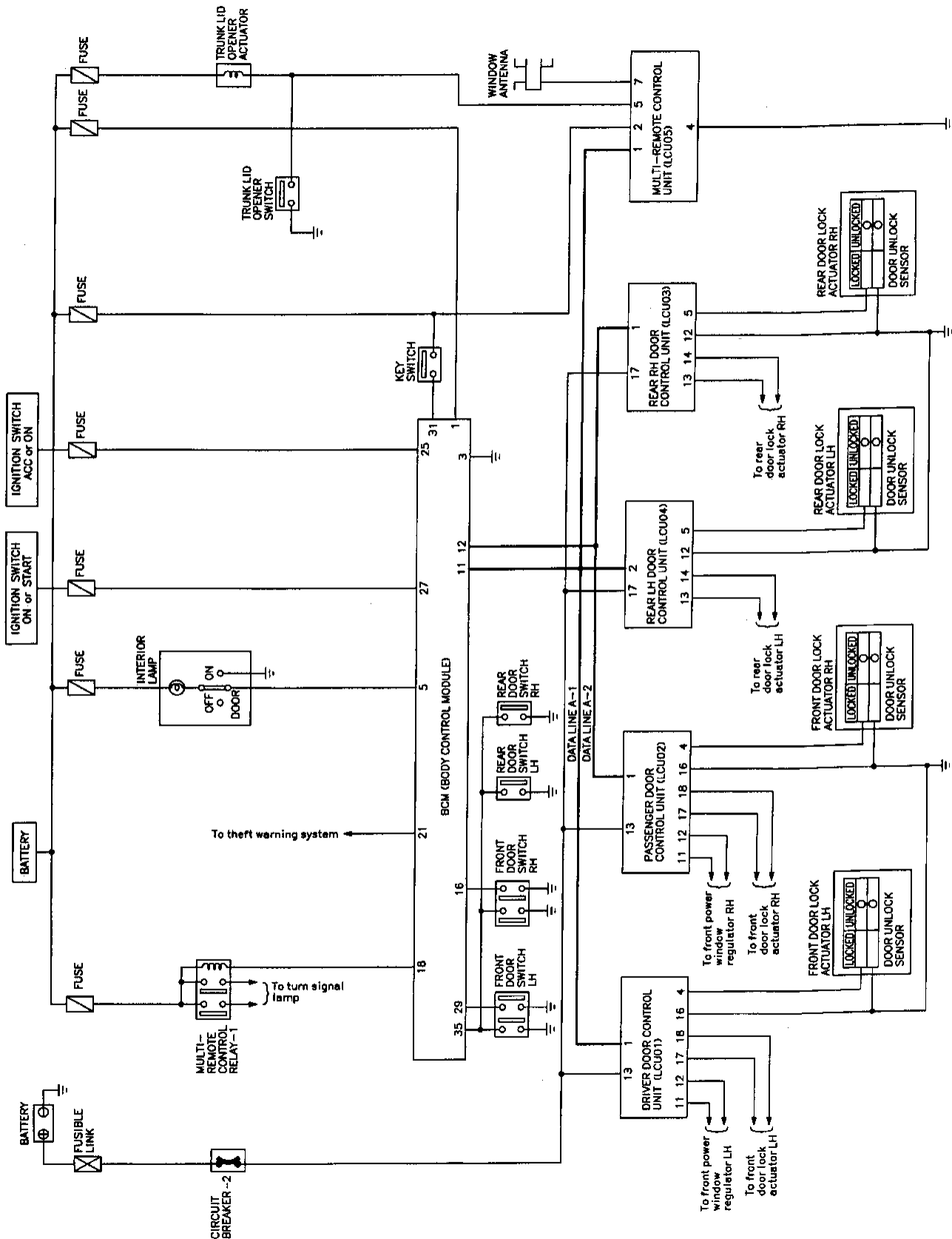
HA

EL

IDX

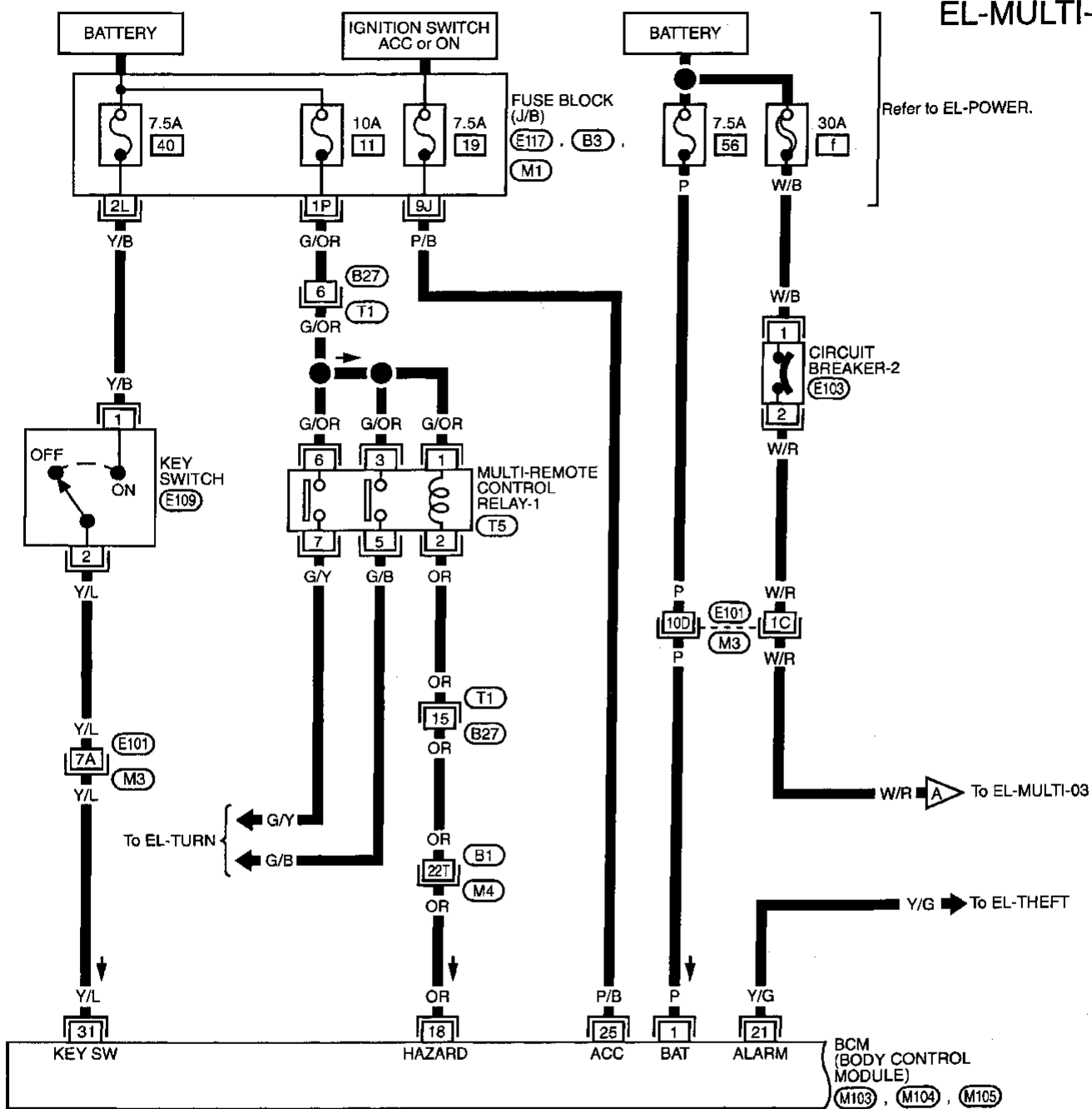
# MULTI-REMOTE CONTROL SYSTEM — IVMS

## Schematic



Wiring Diagram — MULTI —

FIG. 1



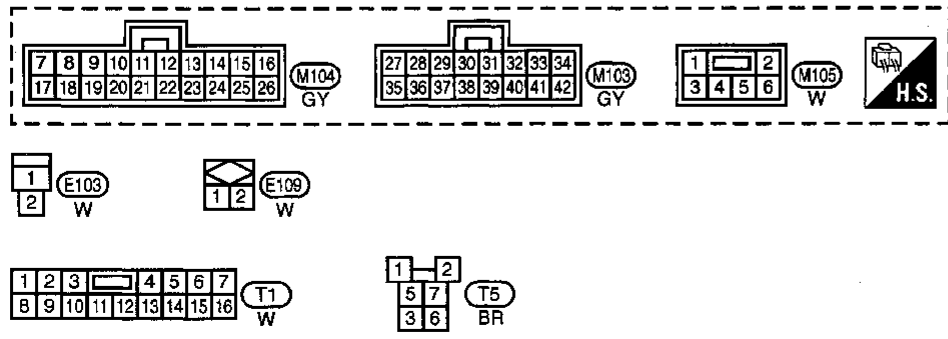
EL-MULTI-01

Refer to EL-POWER.

BCM (BODY CONTROL MODULE)  
M103, M104, M105

- GI
- MA
- EM
- LC
- EC
- FE
- CL
- MT
- AT
- FA
- RA
- BR
- ST
- RS
- BT

- HA
- EL
- IDX



Refer to last page (Foldout page).

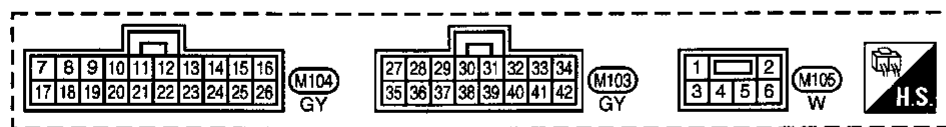
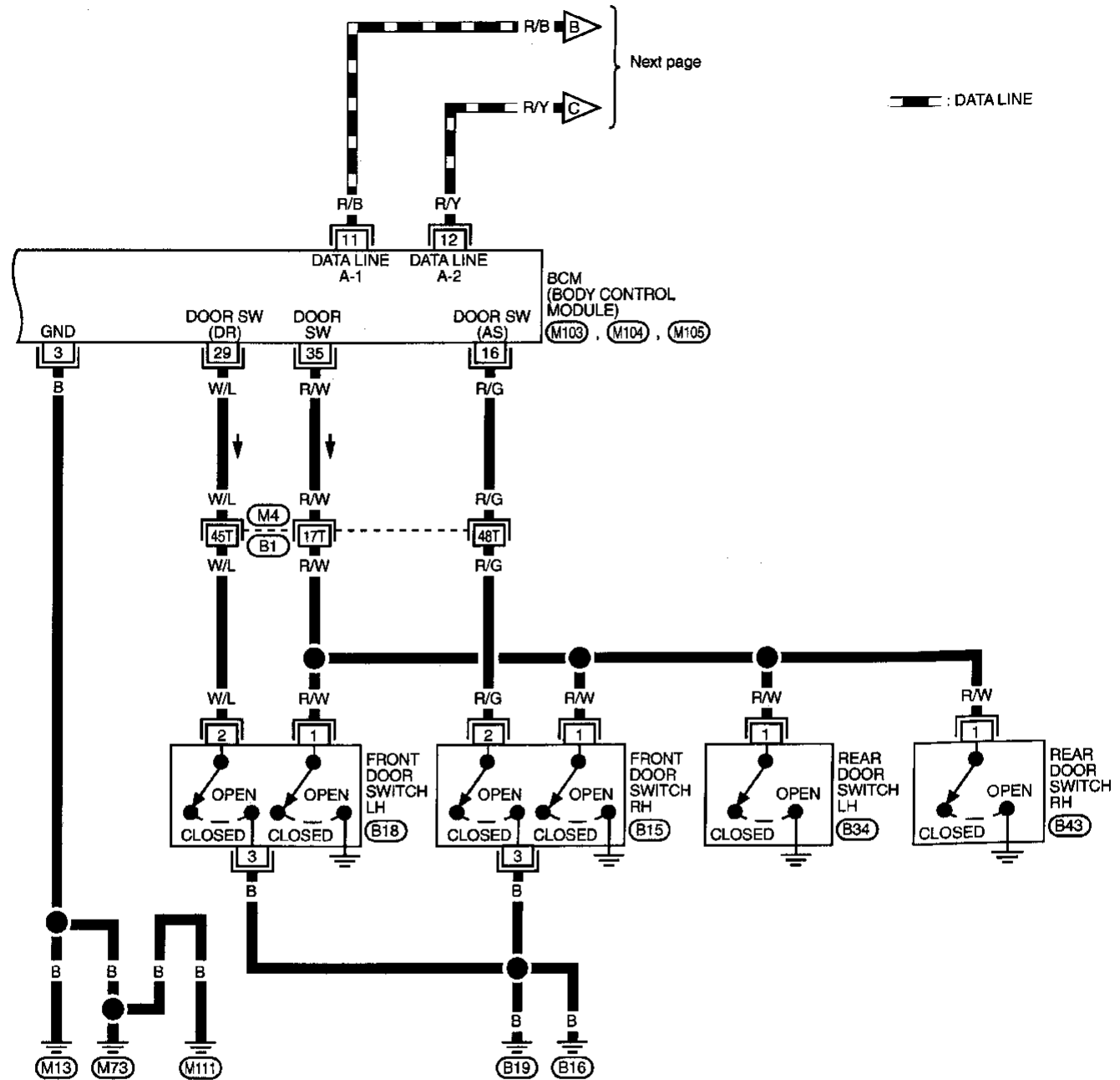
- M1
- M3, E101
- M4, B1
- E117
- B3

# MULTI-REMOTE CONTROL SYSTEM — IVMS

## Wiring Diagram — MULTI — (Cont'd)

FIG. 2

EL-MULTI-02



Refer to last page (Foldout page).

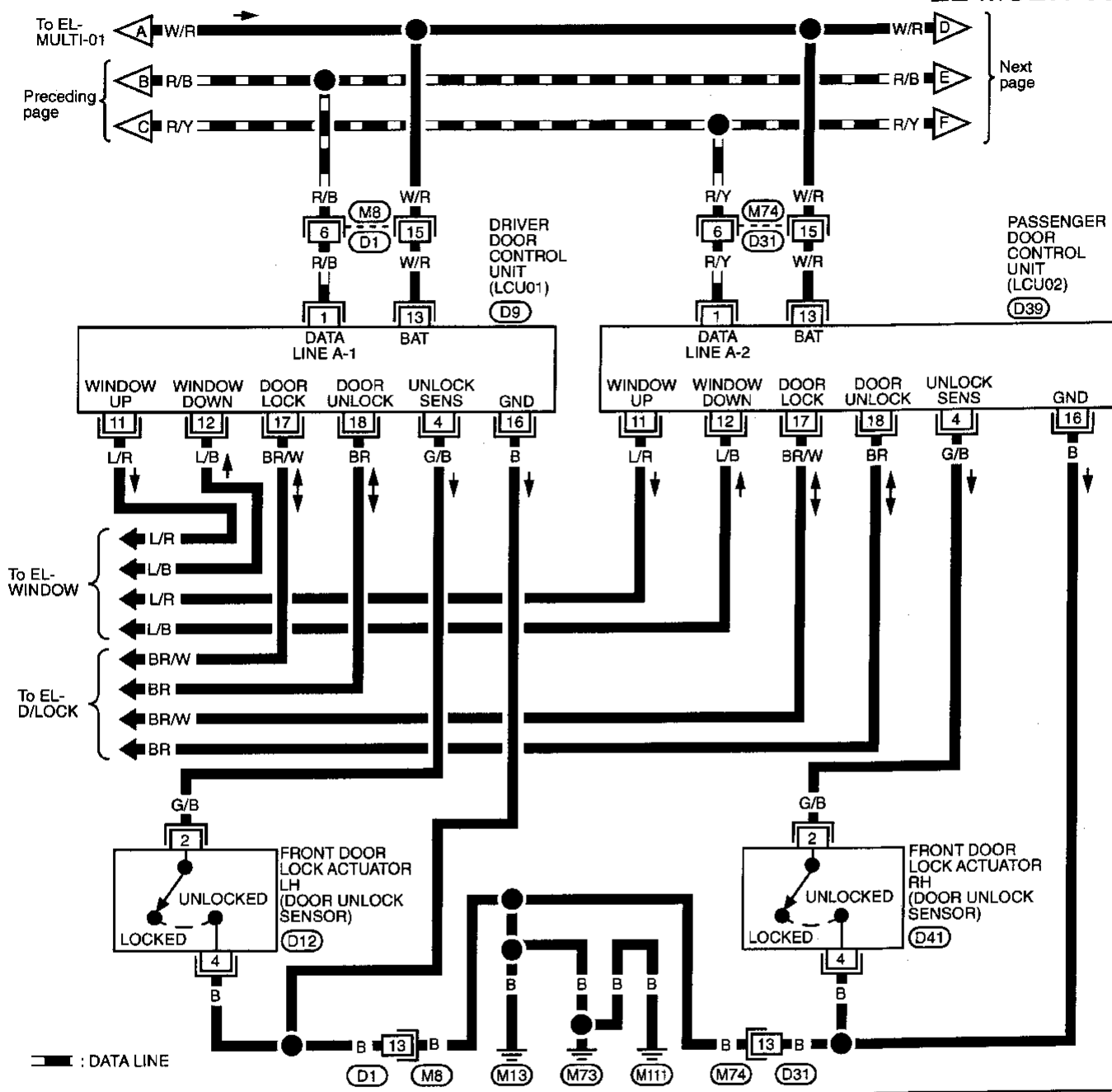
(M4), (B1)

# MULTI-REMOTE CONTROL SYSTEM — IVMS

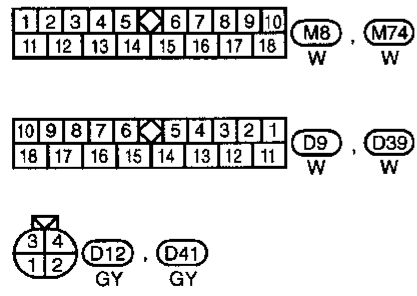
## Wiring Diagram — MULTI — (Cont'd)

FIG. 3

EL-MULTI-03



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

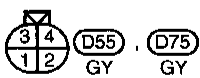
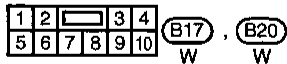
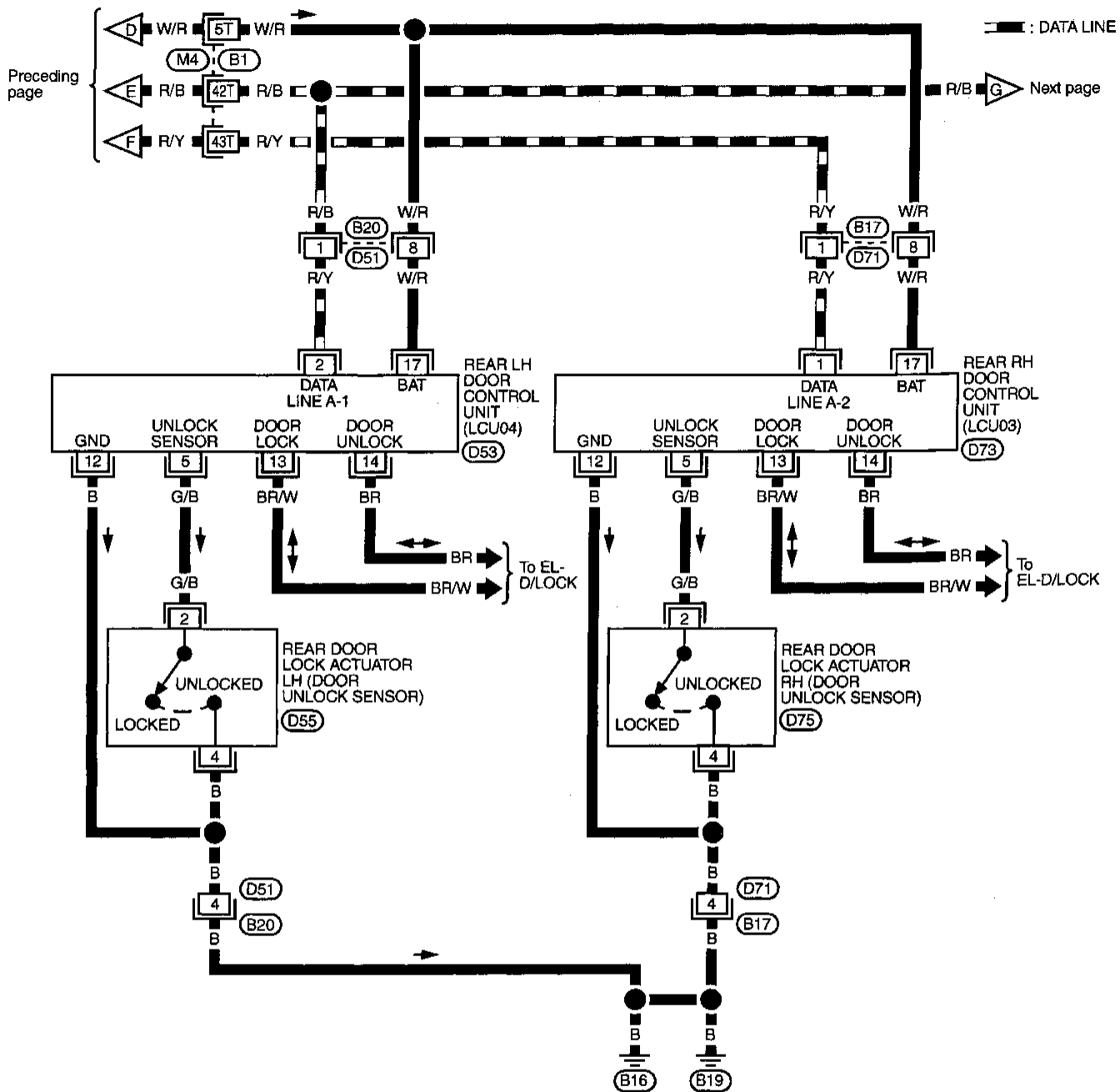


# MULTI-REMOTE CONTROL SYSTEM — IVMS

## Wiring Diagram — MULTI — (Cont'd)

FIG. 4

EL-MULTI-04

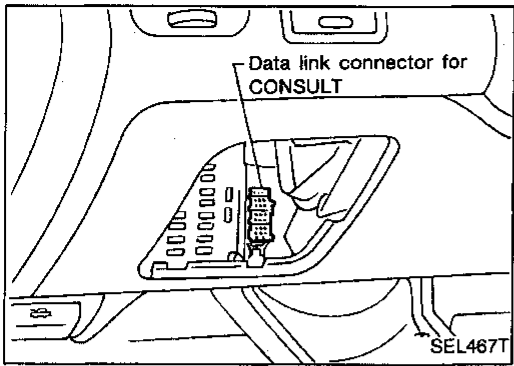


Refer to last page (Foldout page).

(M4), (B1)



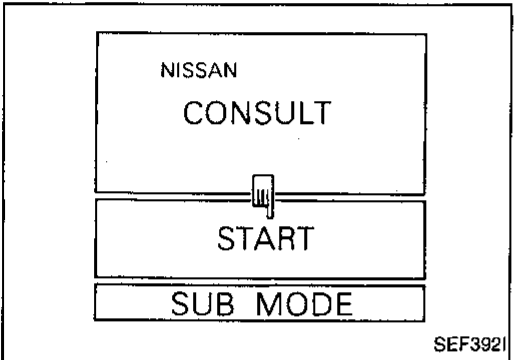




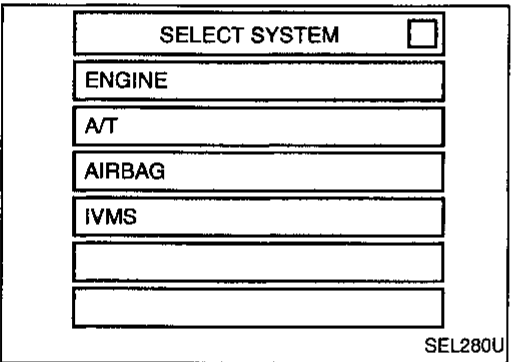
## CONSULT

### CONSULT INSPECTION PROCEDURE

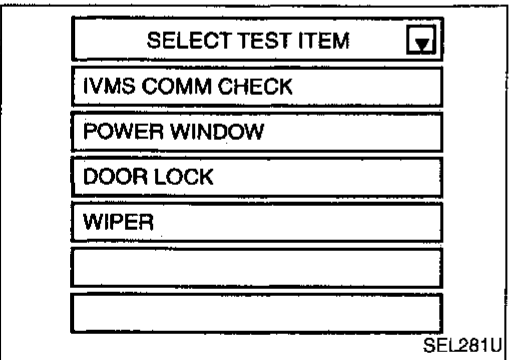
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



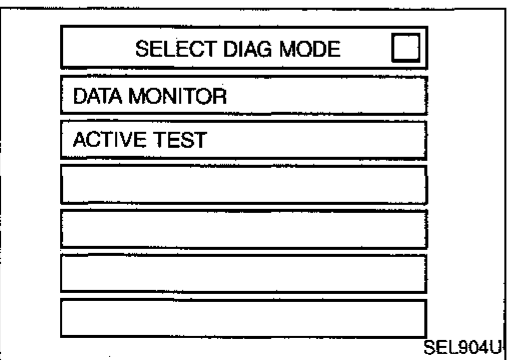
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



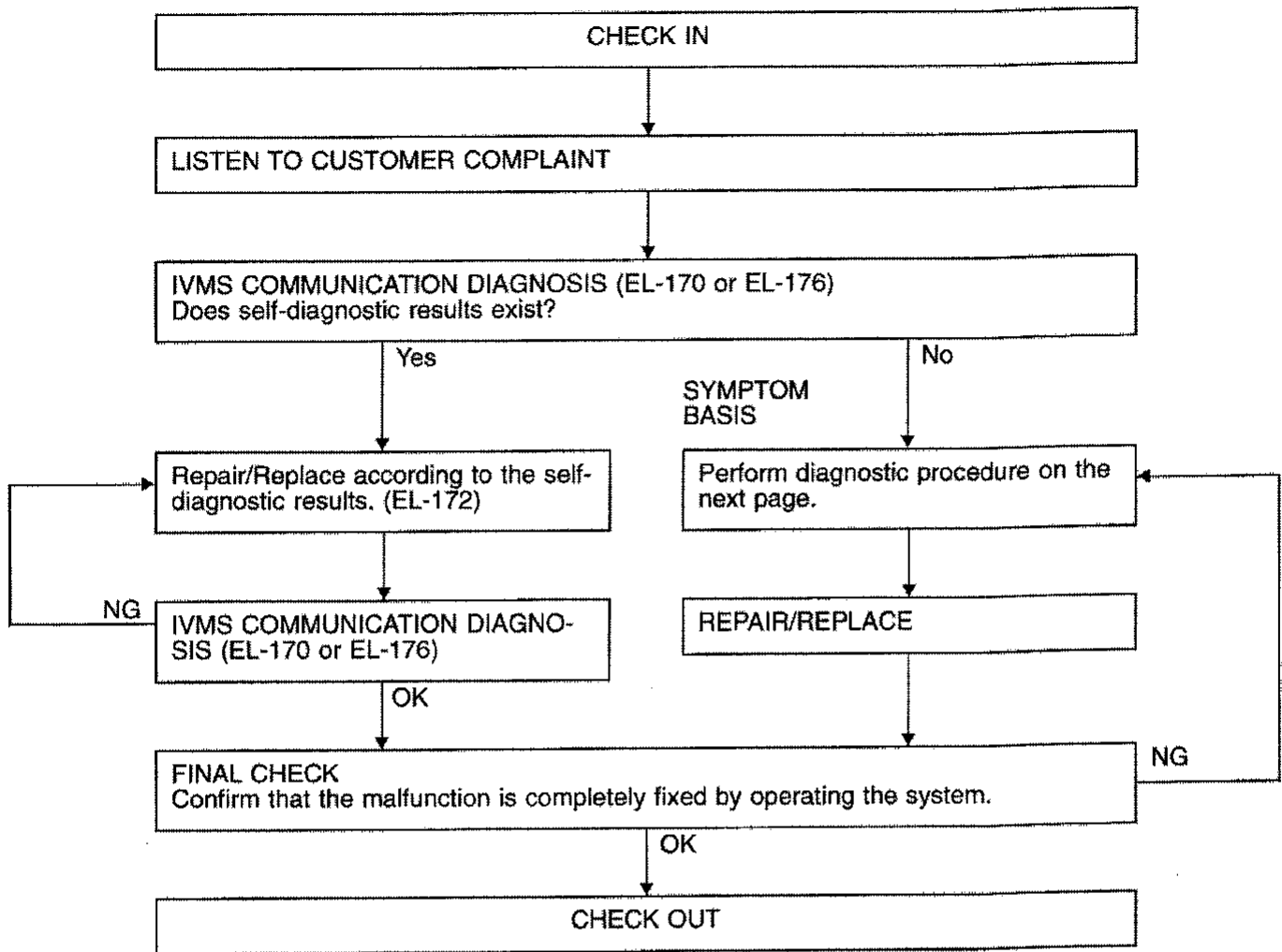
6. Touch "MULTI-REMOTE CONT SYS".



- DATA MONITOR and ACTIVE TEST are available for the multi-remote control system.

Trouble Diagnoses

WORK FLOW



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

NOTICE:

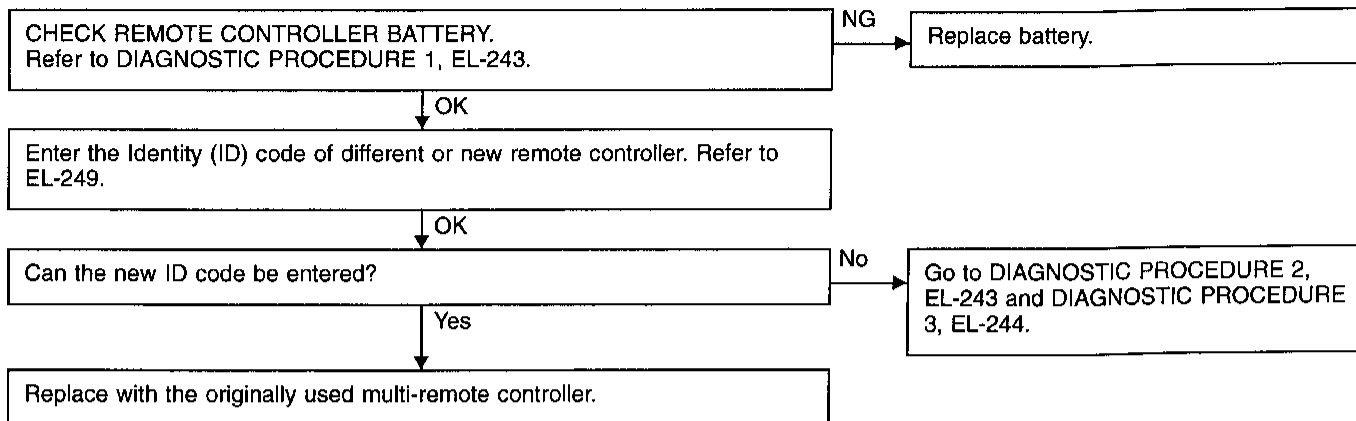
- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.  
Erase the memory with CONSULT (refer to EL-170) or turn the ignition switch to “OFF” position and remove 7.5A fuse (No. 56, located in the fuse and fusible link box).

# MULTI-REMOTE CONTROL SYSTEM — IVMS

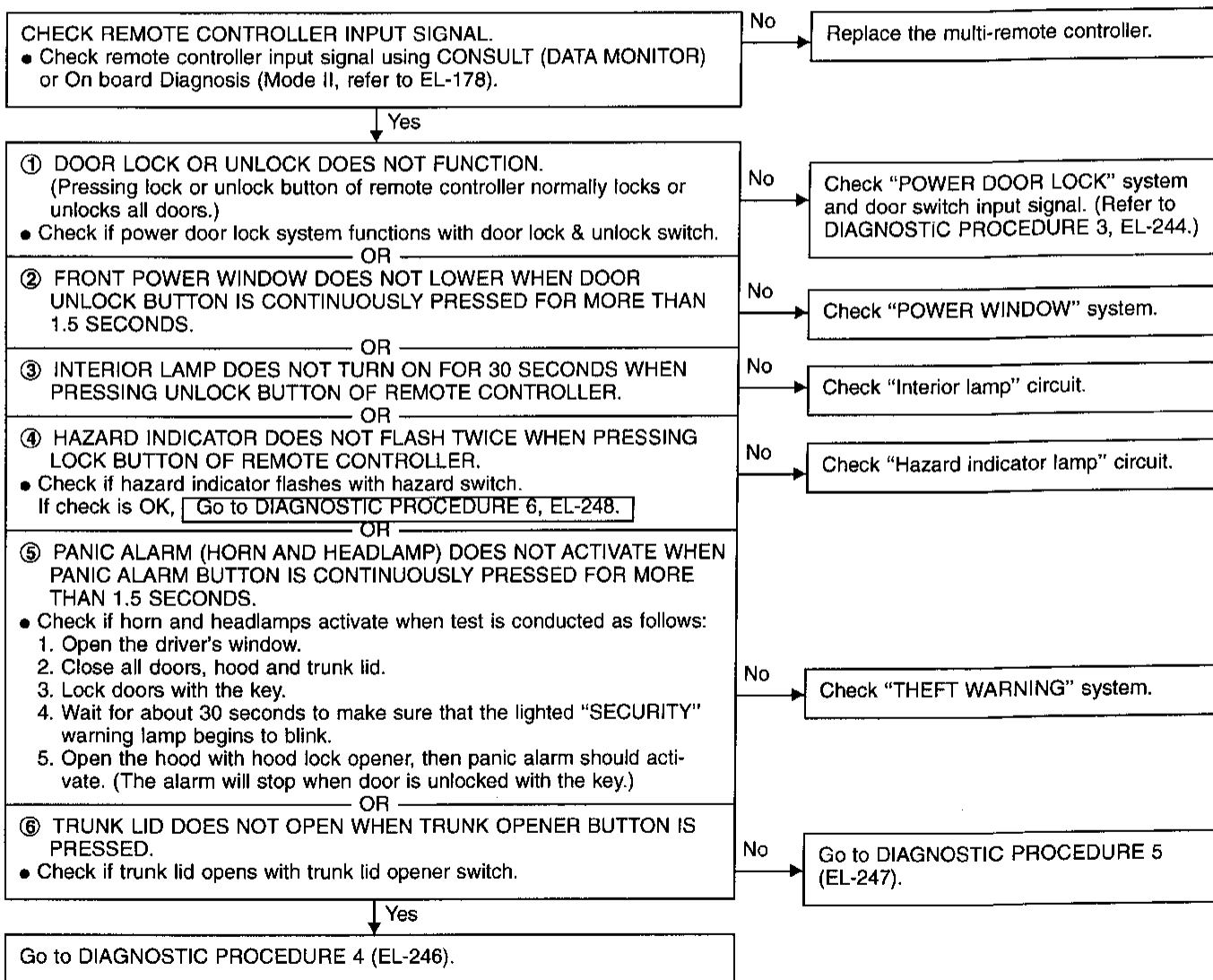
## Trouble Diagnoses (Cont'd)

### TROUBLE SYMPTOM

- All functions of remote control system do not operate.



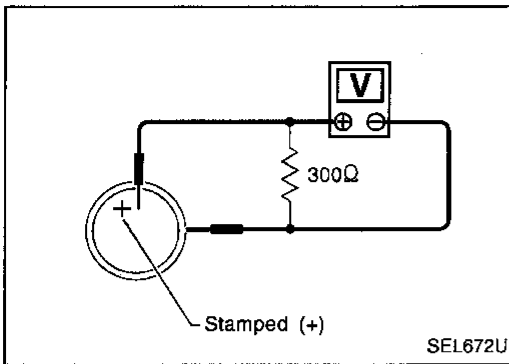
- Some functions of multi-remote controller do not operate.



- Note:
- The unlock and trunk open operation of multi-remote control system does not activate with the ignition key inserted in the ignition key cylinder.
  - The lock operation of multi-remote control system does not activate with the key inserted in the ignition key cylinder or if one of the doors is opened.

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 1



#### CHECK REMOTE CONTROLLER BATTERY.

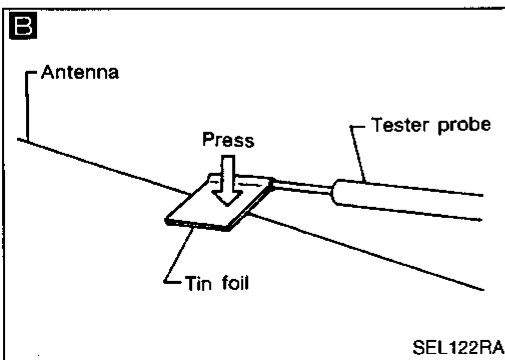
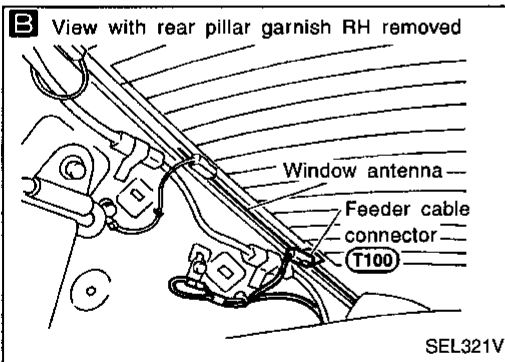
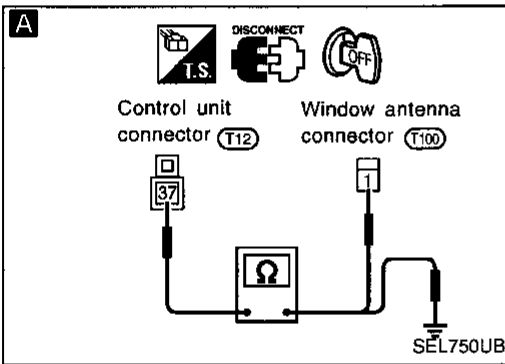
Remove battery and measure voltage across battery positive and negative terminals, ⊕ and ⊖.

Measuring terminal		Standard value
⊕	⊖	
Battery positive terminal	Battery negative terminal	2.5 - 3.0V
⊕	⊖	

#### Note:

Remote controller does not function if battery is not set correctly.

### DIAGNOSTIC PROCEDURE 2



**A**

#### CHECK ANTENNA FEEDER CABLE.

1. Disconnect feeder cable connector from control unit.
2. Remove rear pillar garnish and disconnect feeder cable connector from rear window glass antenna. (Feeder cable connector is the one at bottom left.)
3. Check continuity between the feeder cable connectors.  
**Continuity should exist.**
4. Check continuity between the feeder cable connector terminal and ground.  
**Continuity should not exist.**

Refer to wiring diagram in EL-239.

NG

Replace feeder cable.

OK

**B**

#### CHECK REAR WINDOW GLASS ANTENNA.

1. Remove rear pillar garnish and disconnect feeder cable connector from rear window glass antenna.
2. Check continuity between glass antenna terminal and end of glass antenna.  
**Continuity should exist.**

Note: When checking continuity, wrap tin foil around top of the probe. Then press the foil against the wire with your finger.

NG

Repair glass window antenna. Refer to "Filament Repair", "REAR WINDOW DEFOGGER" (EL-118).

OK

Antenna of multi-remote control is OK.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

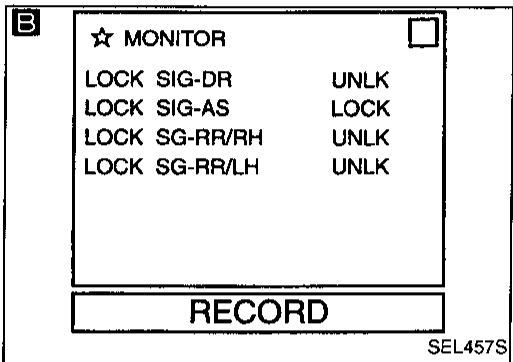
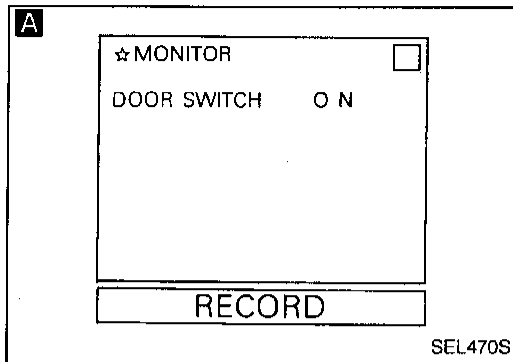
HA

EL


IDX

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3



**CHECK DOOR SWITCH INPUT SIGNAL**

**A**  CONSULT

See "DOOR SWITCH" in DATA MONITOR mode.

When door is open:  
**DOOR SW ON**


When door is closed:  
**DOOR SW OFF**

OR

NG →

Check the following.


- Door switch
- Door switch ground condition
- Harness for open or short between BCM and door switch

 ON BOARD

Check all doors switches in Switch monitor (Mode II) mode.  
(Refer to On board Diagnosis, EL-178.)

Refer to wiring diagram in EL-236.

**CHECK DOOR UNLOCK SENSOR INPUT SIGNAL**

**B**  CONSULT

See "LOCK SIG SW" in DATA MONITOR mode.

When door is locked:  
**LOCK SIG LOCK**


When door is unlocked:  
**LOCK SIG UNLK**

OR

NG →

Check the following.

- Door unlock sensor
- Door unlock sensor ground circuit
- Harness for open or short between LCU and unlock sensor

 ON BOARD

Check front door lock knob operation in Switch monitor (Mode II) mode.  
(Refer to On board Diagnosis, EL-178.)

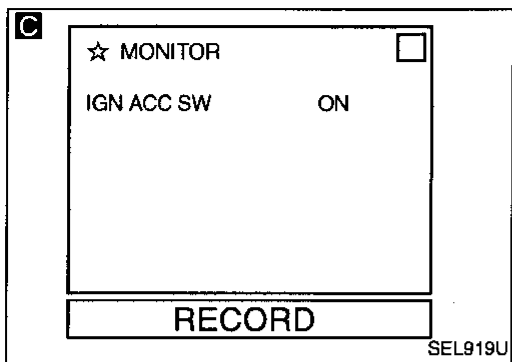
Refer to wiring diagram in EL-237 or 238.

OK ↓

**A**

# MULTI-REMOTE CONTROL SYSTEM — IVMS

## Trouble Diagnoses (Cont'd)



**A**

**CHECK IGNITION SWITCH "ACC" CIRCUIT**

**C** **CONSULT**

See "IGN ACC SW" in DATA MONITOR mode.

When ignition switch is ACC or ON:  
**IGN ACC SW ON**

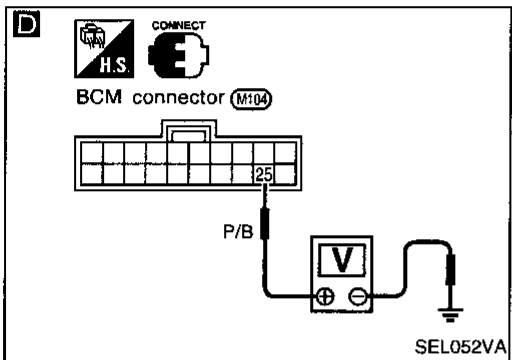
When ignition switch is OFF:  
**IGN ACC SW OFF**

OR

NG

Check the following.

- 7.5A fuse [No. 19], located in fuse block (J/B)]
- Harness for open or short between BCM and fuse

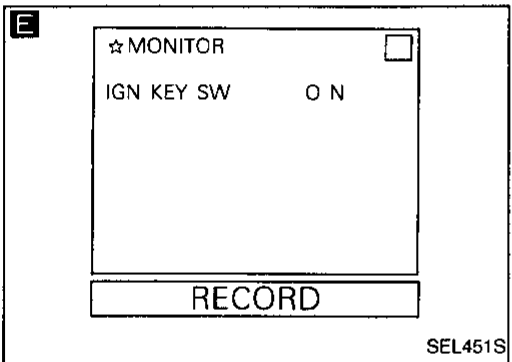


**D** **TESTER**

Check voltage between BCM terminal 25 and ground.

Condition of ignition switch	Voltage [V]
ACC or ON	Approx. 12
OFF	0

Refer to wiring diagram in EL-235.



**OK**

**CHECK KEY SWITCH INPUT SIGNAL**

**E** **CONSULT**

See "IGN KEY SW" in DATA MONITOR mode.

When key is inserted in ignition key cylinder:  
**IGN KEY SW ON**

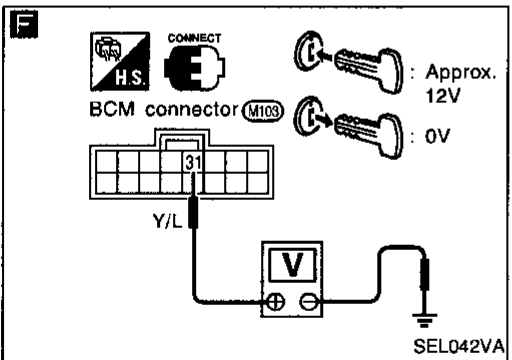
When key is removed from ignition key cylinder:  
**IGN KEY SW OFF**

OR

NG

Check the following.

- 7.5A fuse [No. 40], located in fuse block (J/B)]
- Key switch
- Harness for open or short between key switch and fuse
- Harness for open or short between BCM and key switch



**F** **TESTER**

Check voltage between BCM terminal 31 and ground.

Condition	Voltage [V]
Key is inserted	Approx. 12
Key is removed	0

Refer to wiring diagram in EL-235.

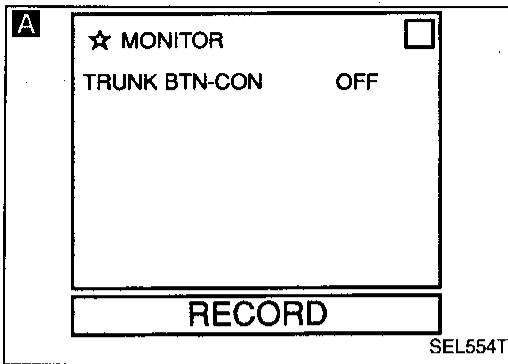
**OK**

Check operation parts in multi-remote control system for function.

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

Trouble Diagnoses (Cont'd)

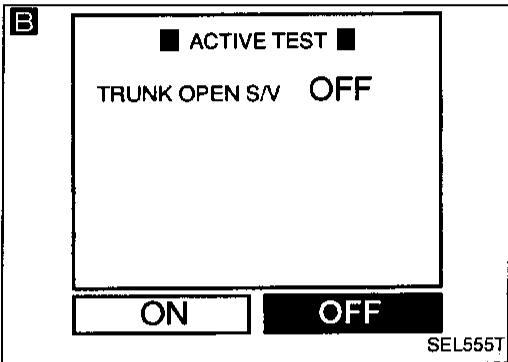
DIAGNOSTIC PROCEDURE 4



**CHECK MULTI-REMOTE CONTROLLER OPERATION**

**A** CONSULT  
See "TRUNK BTN-CON" in DATA MONITOR mode.  
"TRUNK BTN-CON" should be "ON" when trunk lid opener button on multi-remote controller is continuously pressed for more than 1 second.

NG → Replace multi-remote controller.

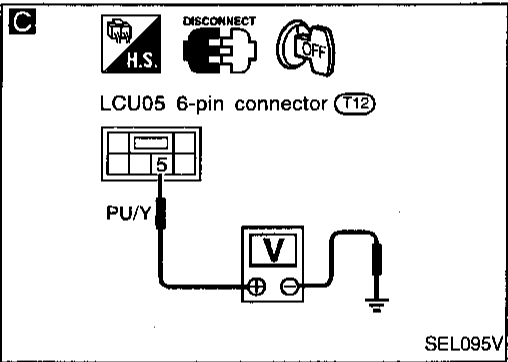


OR  
**ON BOARD**   
Check trunk open signal from multi-remote controller in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-178.)

**CHECK TRUNK LID OPENER CIRCUIT**

**B** CONSULT  
See "TRUNK OPEN S/V" in ACTIVE TEST mode.  
Perform operation shown on display. Trunk lid opener should operate.

OK → Replace LCU05.



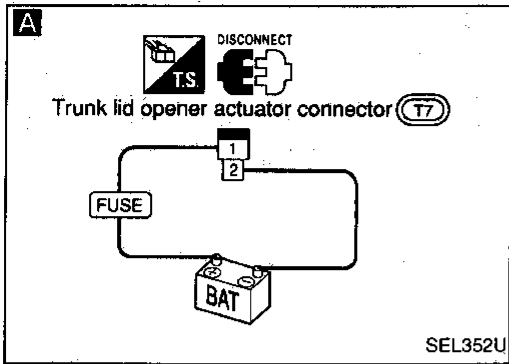
OR  
**C** TESTER  
Check voltage between LCU05 6-pin connector terminal ⑤ and ground.  
Battery voltage should exist.  
Refer to wiring diagram in EL-239.

NG  
Check harness for open or short between LCU05 and trunk lid opener actuator.



Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5



**A**

**CHECK TRUNK LID OPENER ACTUATOR**

1. Disconnect trunk lid opener actuator connector.
2. Check to see if trunk lid opens when 12V DC is applied across trunk lid opener actuator connector terminals ① and ②.

Refer to wiring diagram in EL-239.

NG → Replace trunk lid opener actuator.

OK ↓

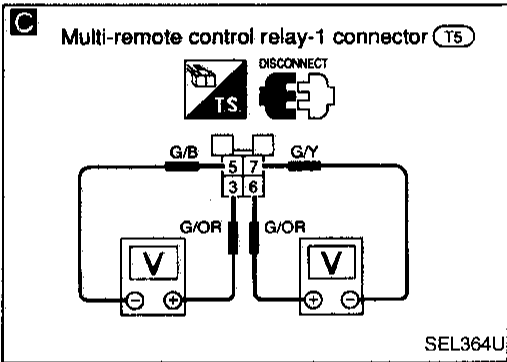
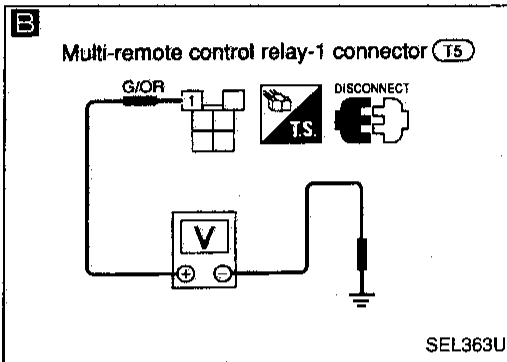
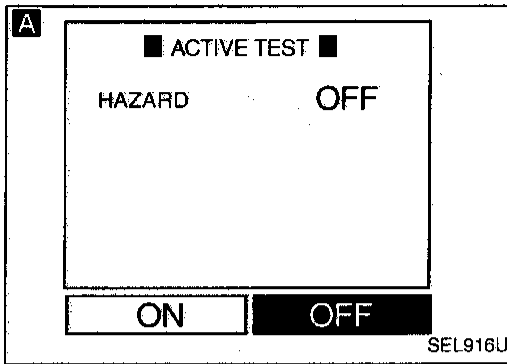
Check the following.

- 15A fuse [No. 37], located in the fuse block (J/B)
- Harness for open or short between fuse and trunk lid actuator
- Harness for open or short between trunk lid actuator and LCU05

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 6



**A**

Perform "HAZARD" in ACTIVE TEST mode.  
Check operation of hazard lamps.  
If CONSULT is not available, skip this procedure and go to the next procedure below.

OK → Hazard reminder is OK.

NG

Check multi-remote control relay-1.

NG → Replace.

OK

**B**

**CHECK POWER SUPPLY FOR MULTI-REMOTE CONTROL RELAY-1**

1. Disconnect multi-remote control relay-1 connector.
2. Check voltage between terminal ① and body ground.  
**Battery voltage should exist.**

Refer to wiring diagram in EL-235.

NG → Check the following.

- 10A fuse (No. 11, located in the fuse block)
- Harness for open or short between fuse and multi-remote control relay-1

OK

**C**

**CHECK THEFT WARNING RELAY-1 CIRCUIT**

1. Disconnect theft warning relay-1 connector.
2. Measure voltage between terminals ③ and ⑤.  
**Battery voltage should exist.**
3. Measure voltage between terminals ⑥ and ⑦.  
**Battery voltage should exist.**

NG → Check harness for open or short.

OK

Check harness for open or short between multi-remote control relay and BCM.

**ID Code Entry Procedure**

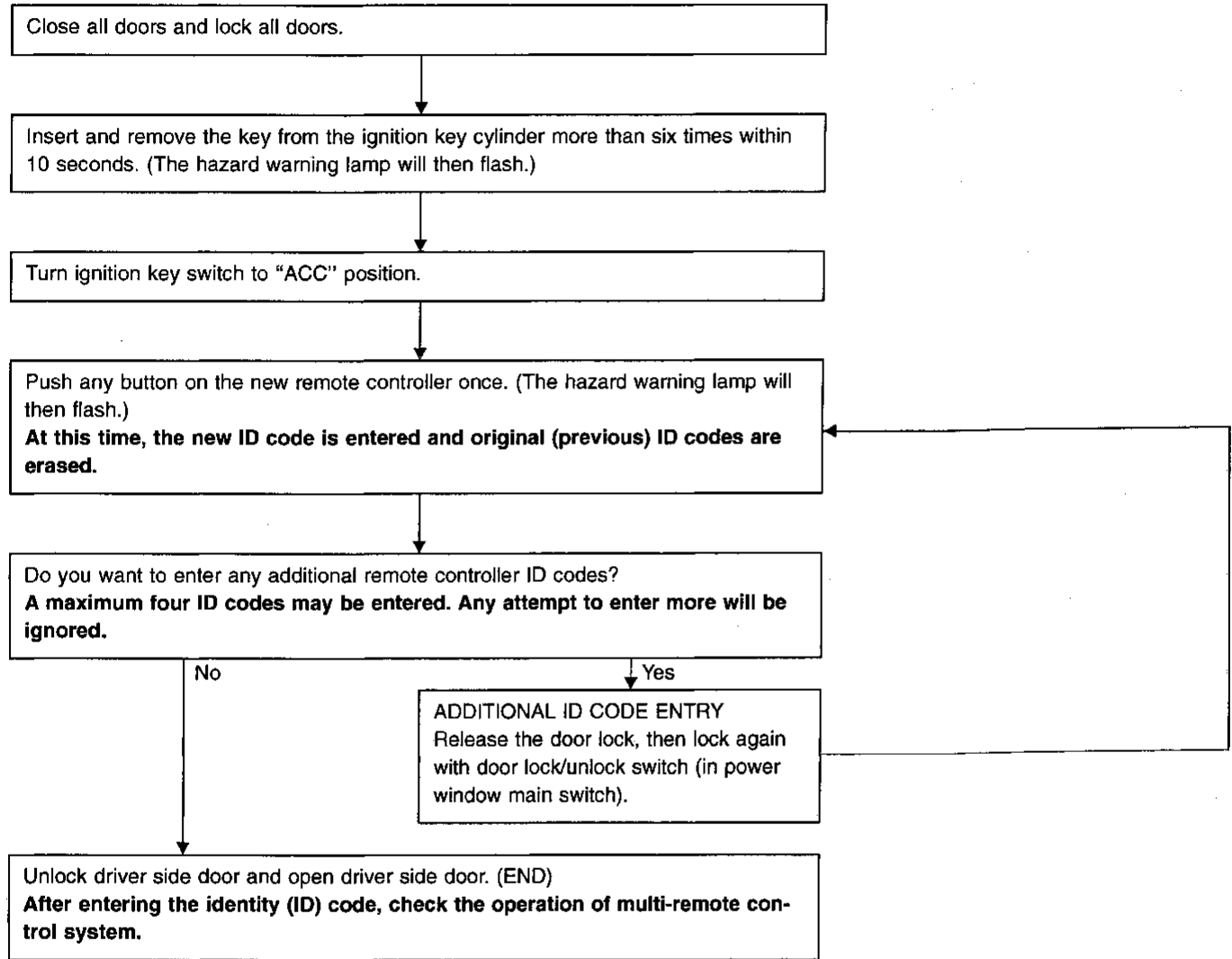
Enter the identity (ID) code manually when:

- remote controller or control unit (LCU05) is replaced.
- an additional remote controller is activated.

**ID Code Entry Procedure**

To enter the ID code, follow the procedures below.

**PROCEDURE**

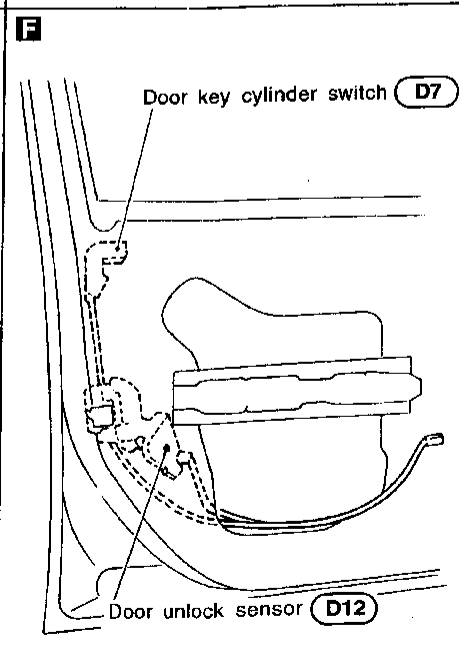
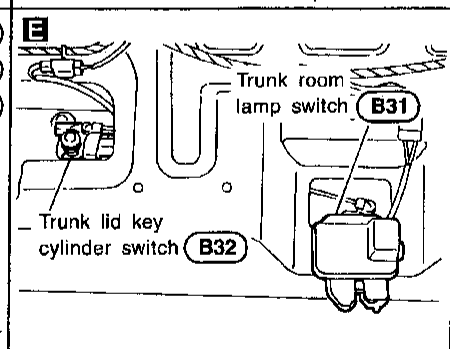
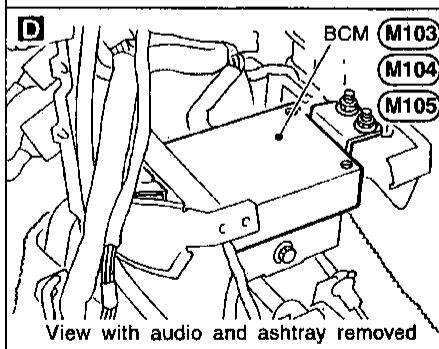
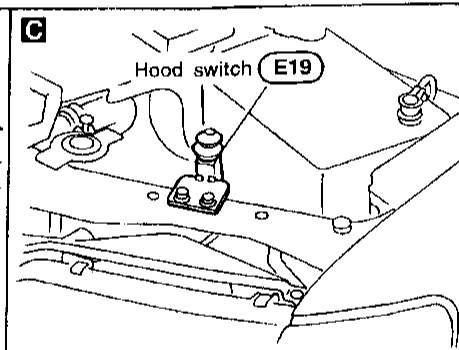
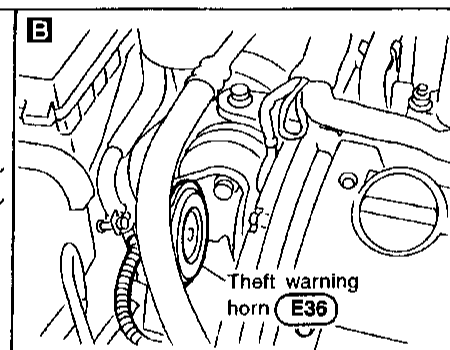
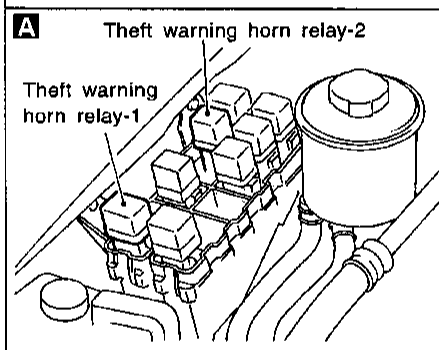
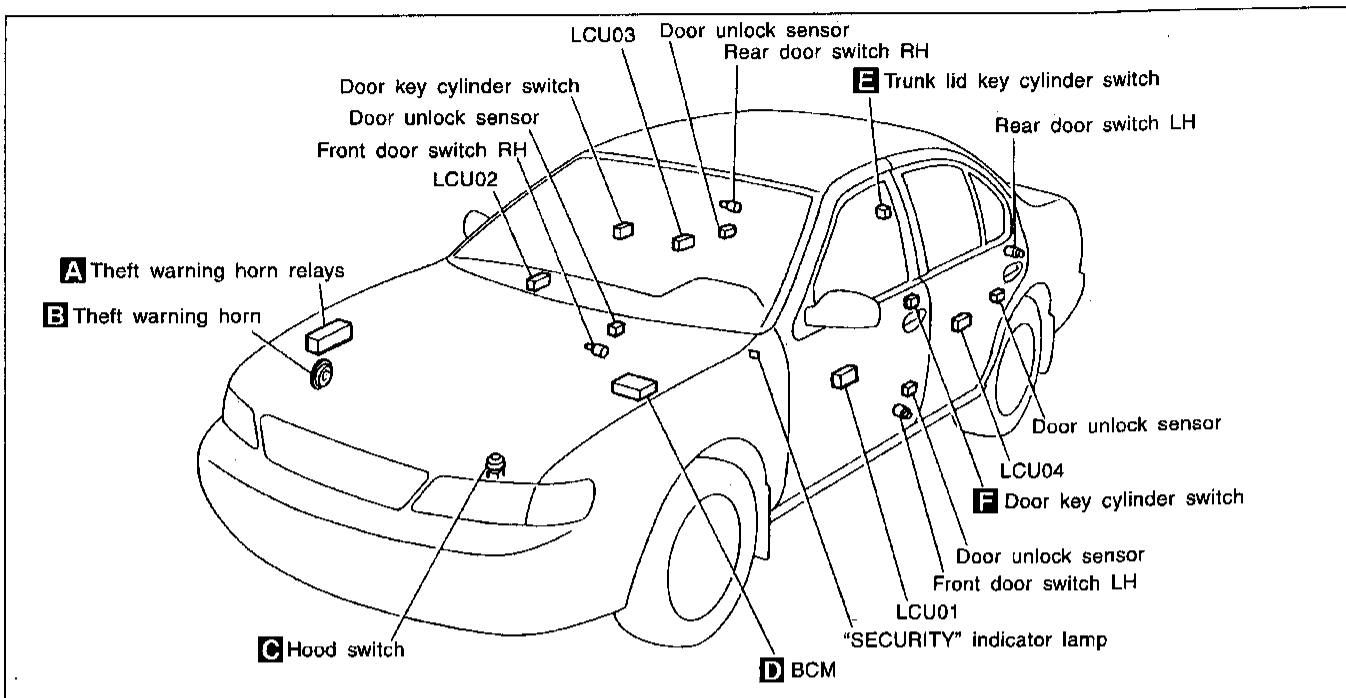


**NOTE**

- If you need to activate more than two additional new remote controllers, repeat the procedure "Additional ID code entry" for each new remote controller.
- If the same ID code that exists in the memory is input, the entry will be ignored.
- Entry of maximum four ID codes is allowed and any attempt to enter more will be ignored.

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

Component Parts and Harness Connector Location



## System Description

### DESCRIPTION

#### 1. Setting the theft warning system

##### Disarmed phase

The theft warning system is in the disarmed phase, the security indicator lamp blinks every second. (This operation is controlled by NATS IMMU.)

##### Pre-armed phase and armed phase

The theft warning system turns into the "pre-armed" phase when hood, trunk lid and all doors are closed and locked by key or multi-remote controller. (The security indicator lamp illuminates.)

After about 30 seconds, the system automatically shifts into the "armed" phase (the system is set).

#### 2. Canceling the set theft warning system

When the following (a) or (b) operation is performed, the armed phase is canceled.

(a) Unlock the doors with the key or multi-remote controller.

(b) Open the trunk lid with the key. When the trunk lid is closed after opening the trunk lid with the key, the system returns to the armed phase.

#### 3. Activating the alarm operation of the theft warning system

Make sure the system is in the armed phase. (The security indicator lamp blinks every 2.4 seconds.)

When the following operation (a), (b) or (c) is performed, the system sounds the horns and flashes the head-lamps for about 2.5 minutes. (At the same time, the system disconnects the starting system circuit.)

(a) Engine hood, trunk lid or any door is opened before unlocking door with key or multi remote controller.

(b) Door is unlocked without using key or multi remote controller.

(c) Front LH or RH door key cylinder is removed, by being punched, for example.

Refer to Owner's Manual for theft warning system operating instructions.

Power is supplied at all times

- through 7.5A fuse [No. 40], located in the fuse block (J/B)
- to security indicator lamp terminal ②.

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

- through 7.5A fuse [No. 19], located in the fuse block (J/B)
- to BCM terminal ②.

BCM is connected to LCU01, LCU02, LCU03, LCU04 and LCU05 as DATA LINES A-1 or A-2.

#### INITIAL CONDITION TO ACTIVATE THE SYSTEM

The operation of the theft warning system is controlled by the doors, hood and trunk lid.

To activate the theft warning system, the BCM must receive signals indicating the doors, hood and trunk lid are closed and the doors are locked.

When a door is open, BCM terminal ③⑤ receives a ground signal from each door switch.

When a front door is unlocked, door LCU01 or 02 terminal ④ receives a ground signal from terminal ② of the door unlock sensor.

When a rear door is unlocked, door LCU03 or 04 terminal ⑤ receives a ground signal from terminal ② of the door unlock sensor.

When the hood is open, BCM terminal ③⑥ receives a ground signal

- from terminal ① of the hood switch
- through body grounds ⑤ and ③⑩.

When the trunk lid is open, BCM terminal ③⑦ receives a ground signal

- from terminal ① of the trunk room lamp switch
- through body grounds ⑥①⑥ and ⑥①⑨.

When the front LH or RH door key cylinder is removed by being punched, for example, BCM terminal ②⑥ receives a ground signal from terminal ③ of key cylinder tamper switch.

When the doors are locked with key or multi-remote controller and none of the described conditions exist, the theft warning system will automatically shift to armed phase.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

EL

IDX

# THEFT WARNING SYSTEM — IVMS

## System Description (Cont'd)

### THEFT WARNING SYSTEM ACTIVATION (With key or remote controller used to lock doors)

If the key is used to lock doors, LCU01/02 terminal ⑥ receives a ground signal

- from terminal ① of the door key cylinder switch
- through body grounds (M13), (M73) and (M11).

If this signal or lock signal from remote controller is received by the LCU01/02 or LCU05, the theft warning system will activate automatically.

Once the theft warning system has been activated, BCM terminal ② supplies ground to terminal ① of the security indicator lamp.

The security lamp will illuminate for approximately 30 seconds and then blink.

Now the theft warning system is in armed phase.

### THEFT WARNING SYSTEM ALARM OPERATION

The theft warning system is triggered by

- opening a door
- opening the trunk lid
- opening the hood
- removing a door key cylinder
- unlocking door without using the key or multi-remote controller.

Once the theft warning system is in armed phase, if BCM or LCU receives one of the following ground signals, the theft warning system will be triggered. The headlamps flash and the horn sounds intermittently, and the starting system is interrupted.

- door switch open signal at BCM terminal ③⑤
- trunk room lamp switch open signal at BCM terminal ③⑦
- hood switch open signal at BCM terminal ③⑥
- front door unlock signal at LCU01/02 terminal ④
- rear door unlock signal at LCU03/04 terminal ⑤
- front door key cylinder removed signal at BCM terminal ②⑥

Power is supplied at all times

- through 7.5A fuse (No. 65), located in fuse and fusible link box)
- to theft warning lamp relay terminal ①
- to theft warning horn relay terminal ①.

When the theft warning system is triggered, ground is supplied intermittently

- from terminal ②① of the BCM
- to theft warning lamp relay terminal ② and
- to theft warning horn relay terminal ②.

The headlamps flash and the horn sounds intermittently.

The alarm automatically turns off after 2 or 3 minutes but will reactivate if the vehicle is tampered with again.

### THEFT WARNING SYSTEM DEACTIVATION

To deactivate the theft warning system, a door or the trunk lid must be unlocked with the key or remote controller.

When the key is used to unlock a door, LCU01/02 terminal ⑤ receives a ground signal

- from terminal ② of the door key cylinder switch.

When the key is used to unlock the trunk lid, BCM terminal ⑩ receives a ground signal from terminal ① of the trunk lid key cylinder switch.

When the BCM/LCUs receives either one of these signals or unlock signal from remote controller, the theft warning system is deactivated. (Disarmed phase)

### PANIC ALARM OPERATION

Multi-remote control system may or may not operate theft warning system (horn and headlamps) as required.

When the multi-remote control system is triggered, ground is supplied intermittently.

- from BCM terminal ②①
- to theft warning lamp relay terminal ② and
- to theft warning horn relay terminal ②.

The headlamp flashes and the horn sounds intermittently.

The alarm automatically turns off after 30 seconds or when LCU05 (multi-remote control unit) receives any signal from multi-remote controller.

# THEFT WARNING SYSTEM — IVMS

---

NOTE

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

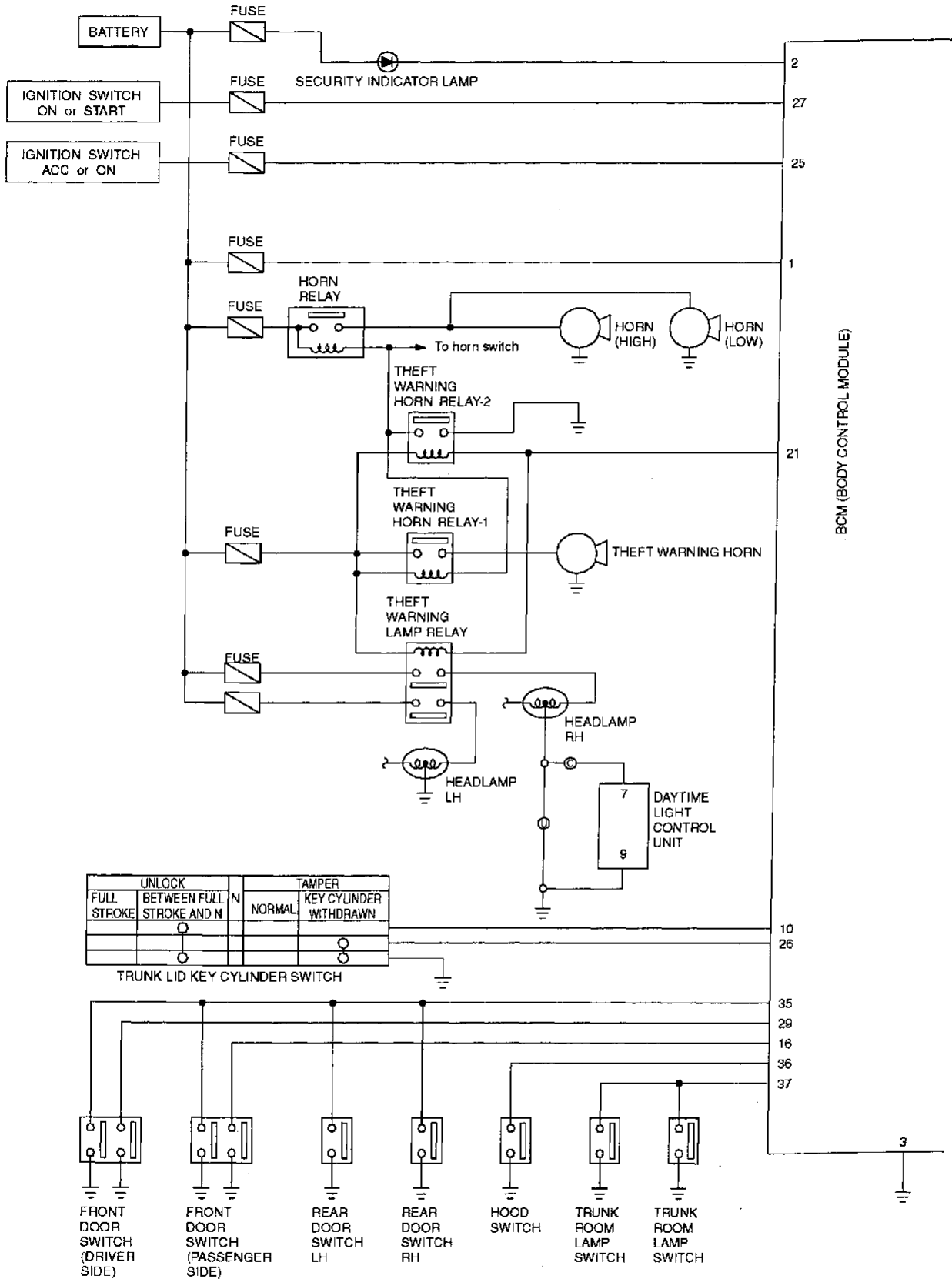
HA

**EL**

IDX

# THEFT WARNING SYSTEM — IVMS

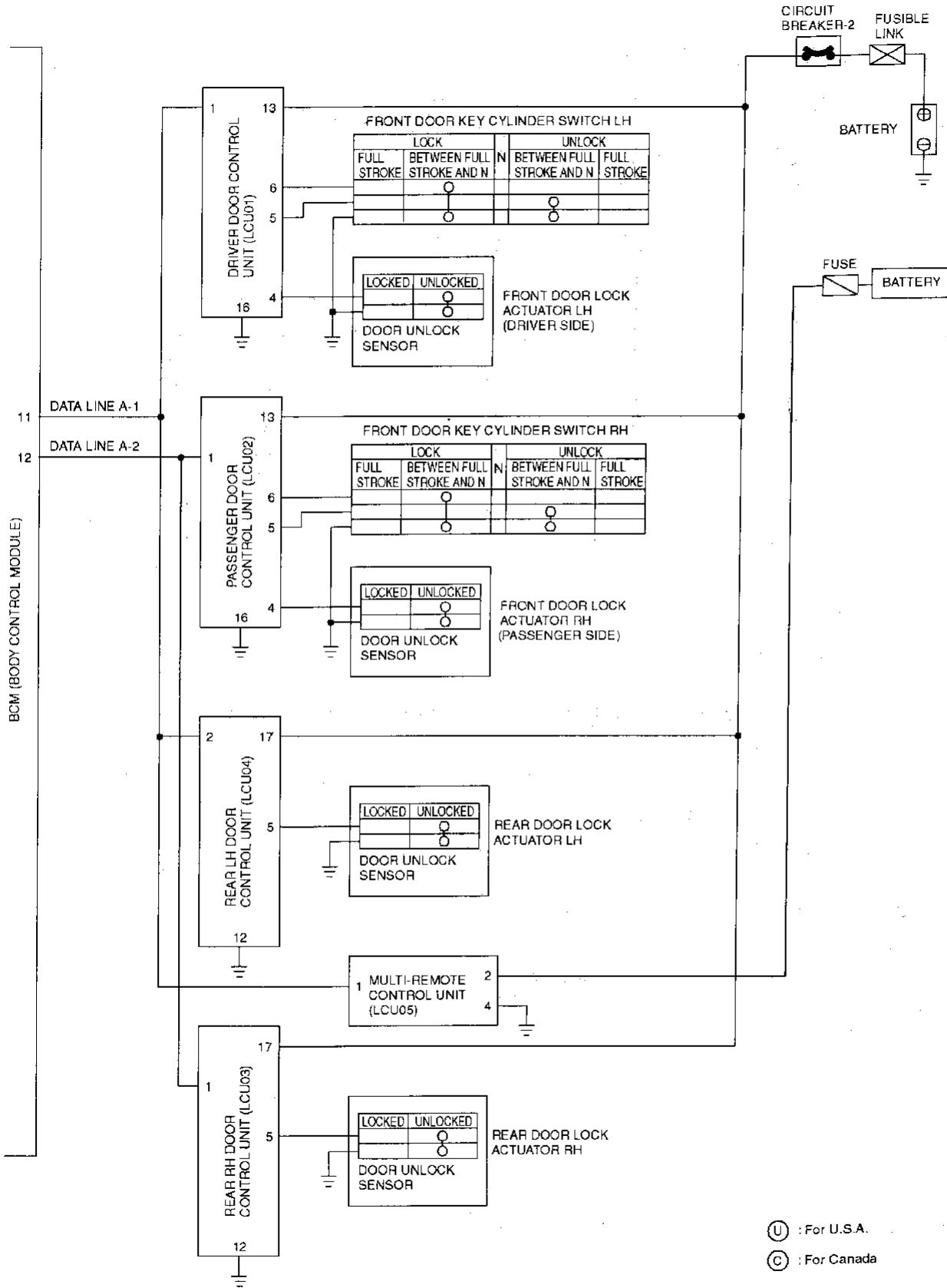
## Schematic





# THEFT WARNING SYSTEM — IVMS

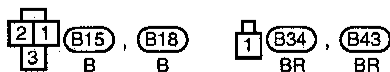
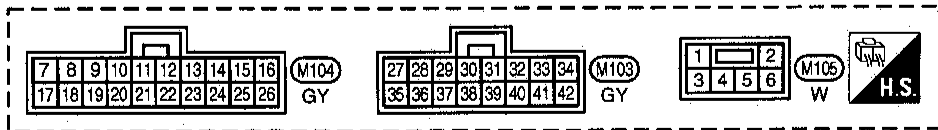
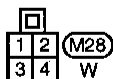
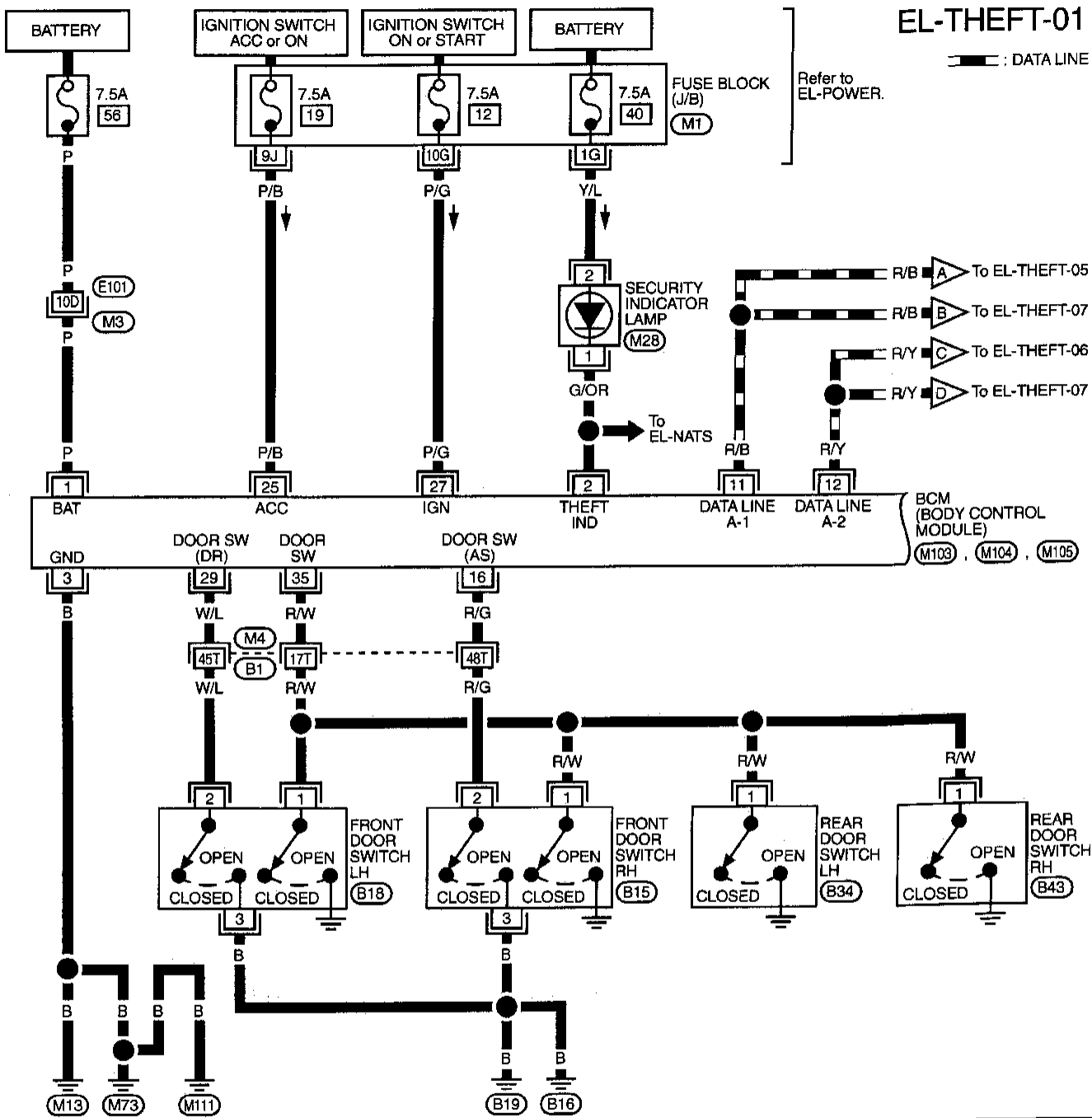
## Schematic (Cont'd)



GI  
 MA  
 EM  
 LC  
 EC  
 FE  
 CL  
 MT  
 AT  
 FA  
 RA  
 BR  
 ST  
 RS  
 BT  
 HA  
**EL**  
 IDX

Wiring Diagram — THEFT —

FIG. 1



Refer to last page (Foldout page).

- (M3), (E101)
- (M4), (B1)
- (M1)

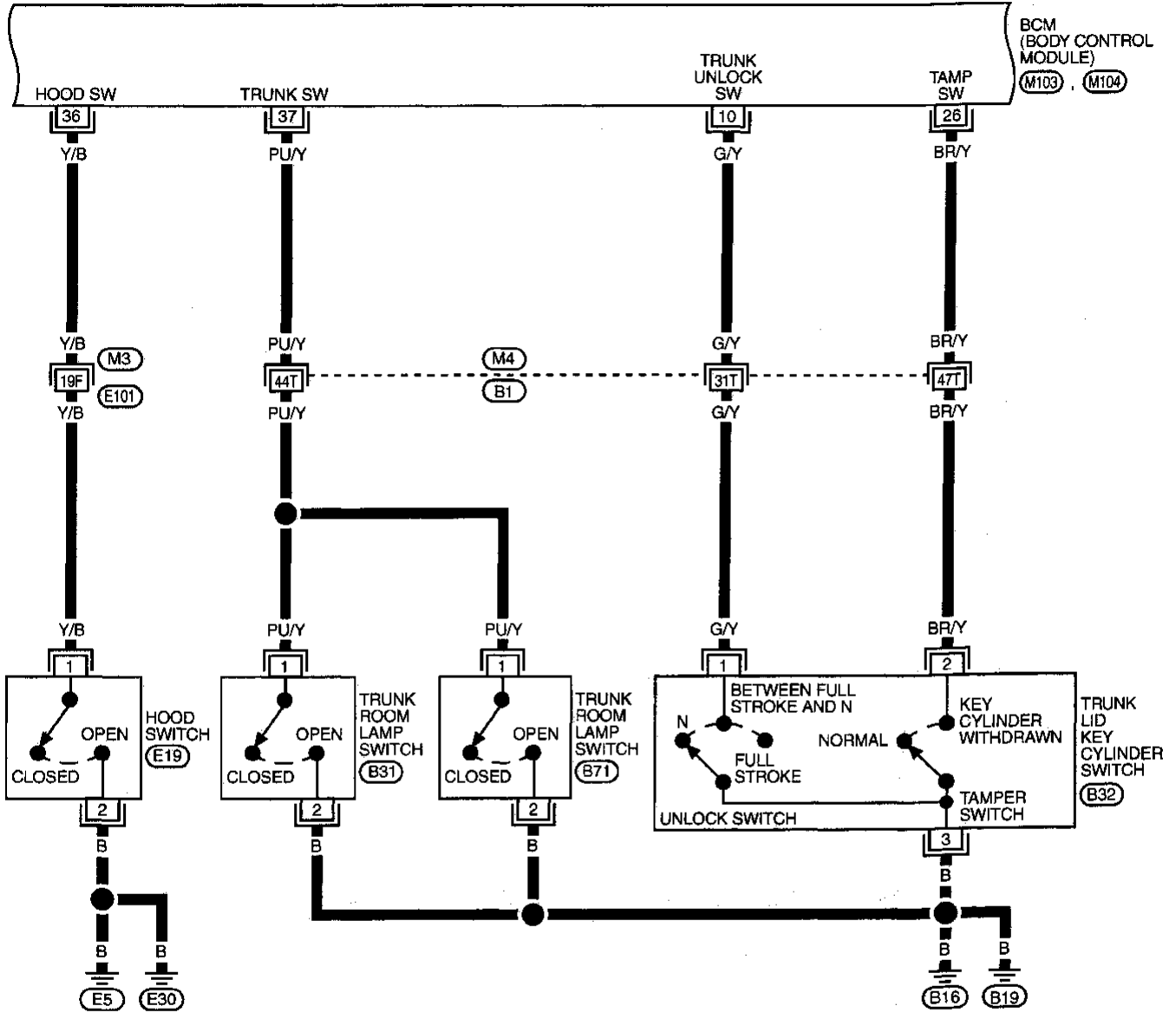
# THEFT WARNING SYSTEM — IVMS

## Wiring Diagram — THEFT — (Cont'd)

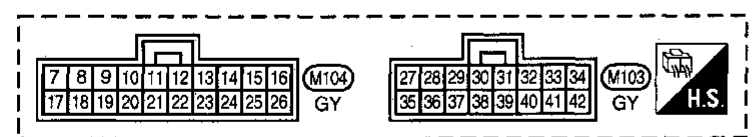
FIG. 2

EL-THEFT-02

Ⓐ : With A/T  
 Ⓜ : With M/T

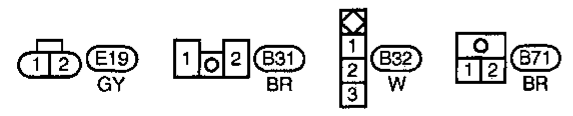


GI  
 MA  
 EM  
 LC  
 EC  
 FE  
 CL  
 MT  
 AT  
 FA  
 RA  
 BR  
 ST  
 RS  
 BT  
 HA  
 EL  
 IDX



Refer to last page (Foldout page).

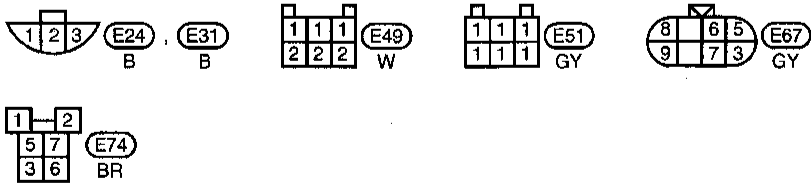
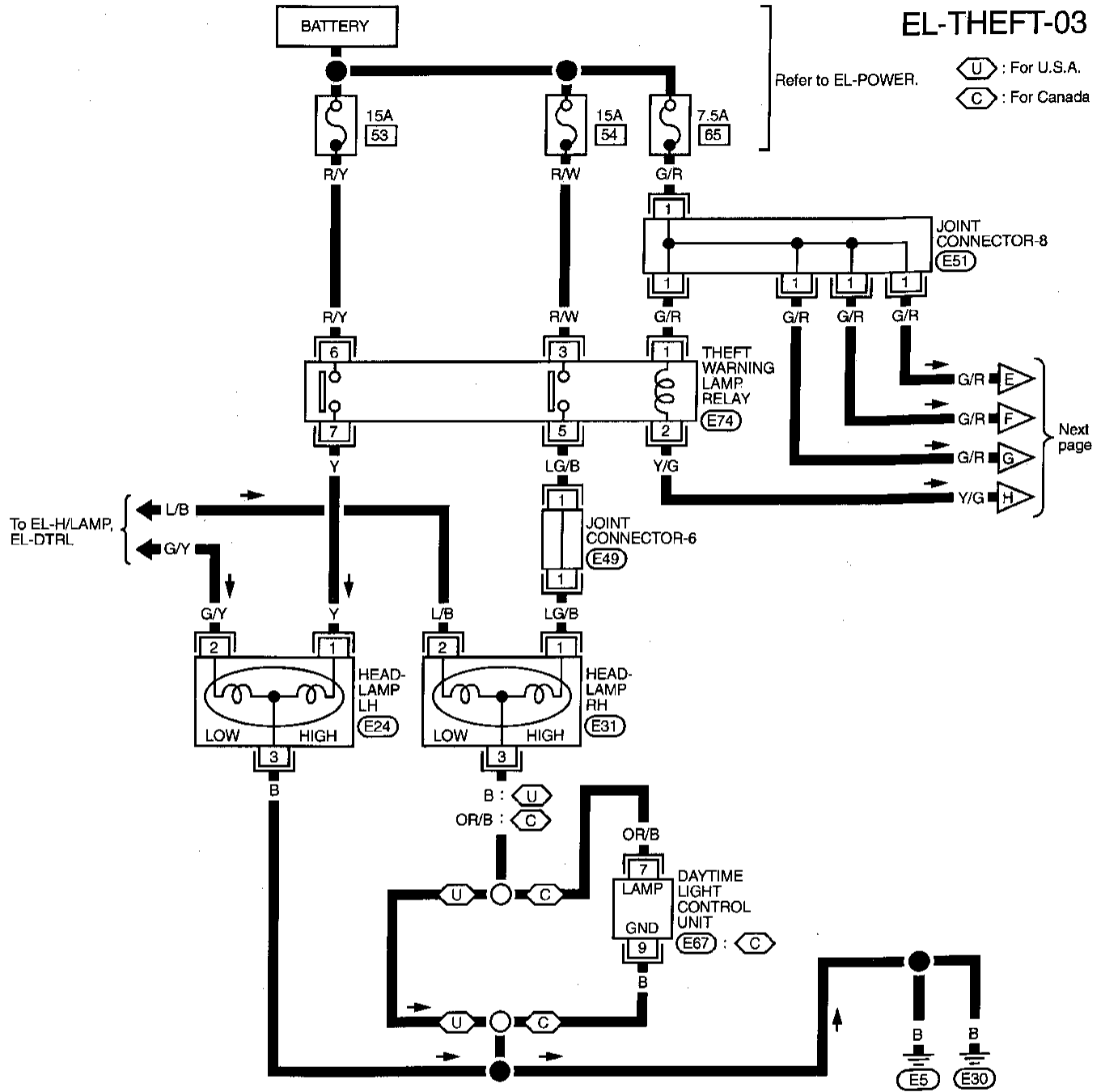
Ⓜ3 , Ⓔ101  
 Ⓜ4 , Ⓔ1



# THEFT WARNING SYSTEM — IVMS

## Wiring Diagram — THEFT — (Cont'd)

FIG. 3

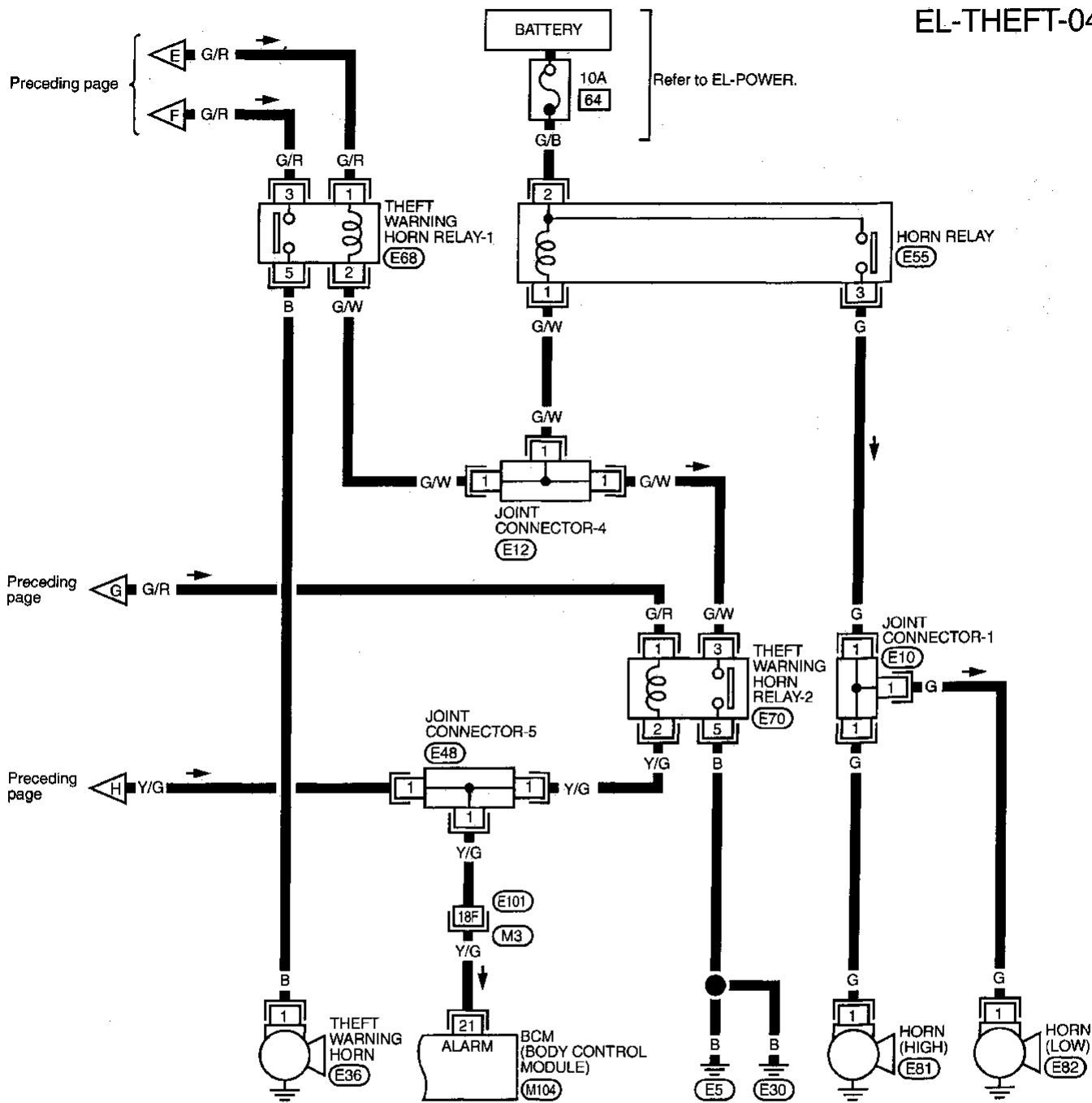


# THEFT WARNING SYSTEM — IVMS

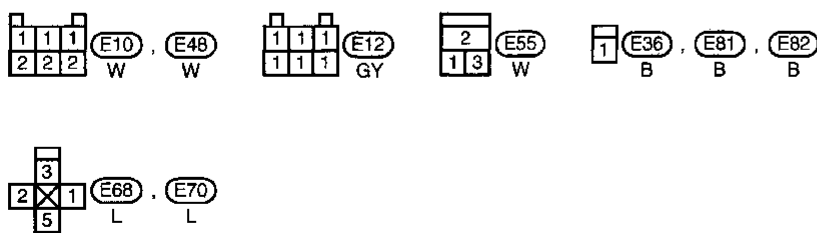
## Wiring Diagram — THEFT — (Cont'd)

FIG. 4

EL-THEFT-04



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX



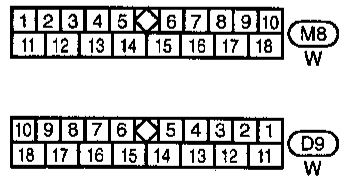
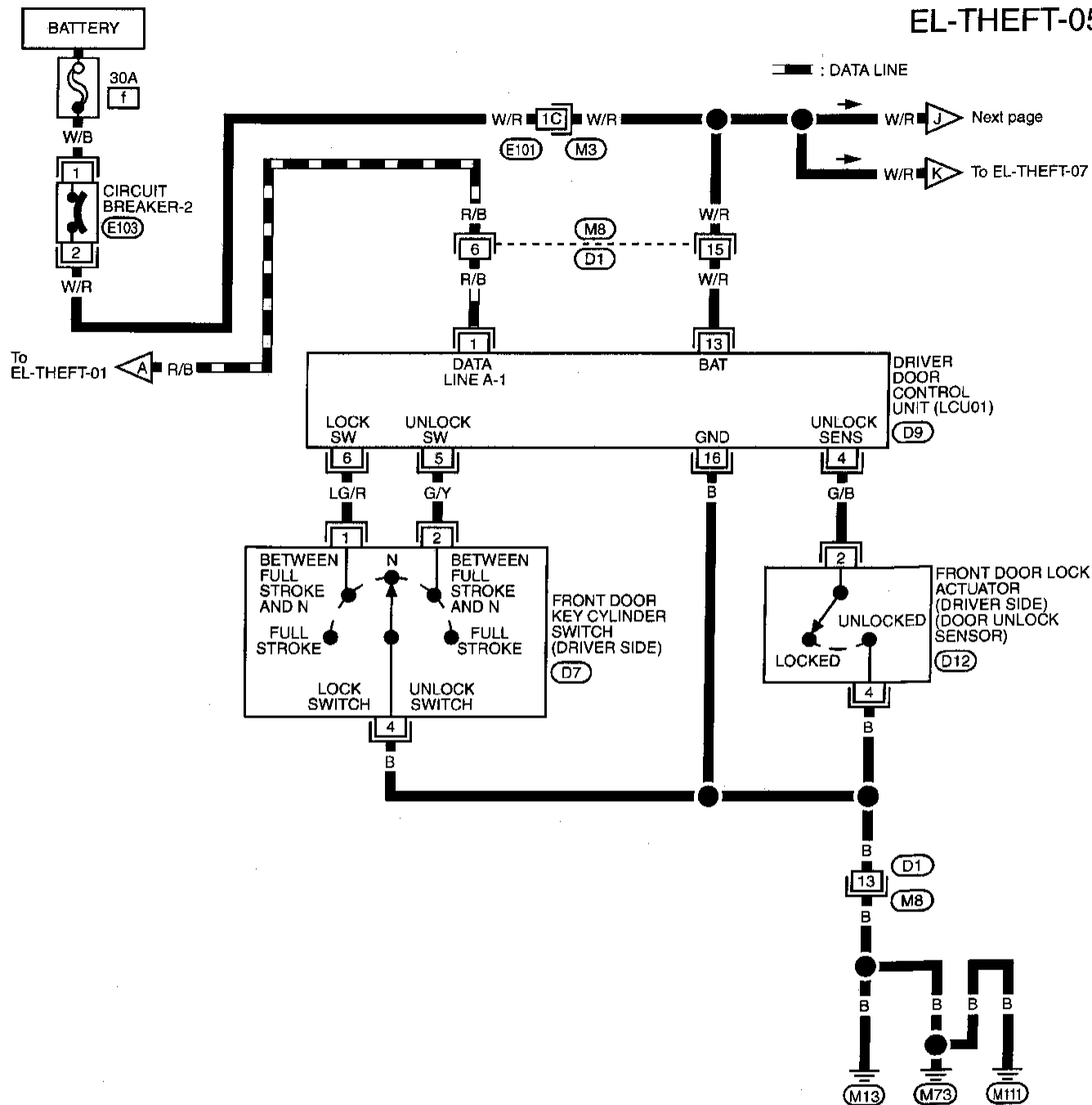
Refer to last page (Foldout page).  
M3, E101  
M104

# THEFT WARNING SYSTEM — IVMS

## Wiring Diagram — THEFT — (Cont'd)

FIG. 5

EL-THEFT-05



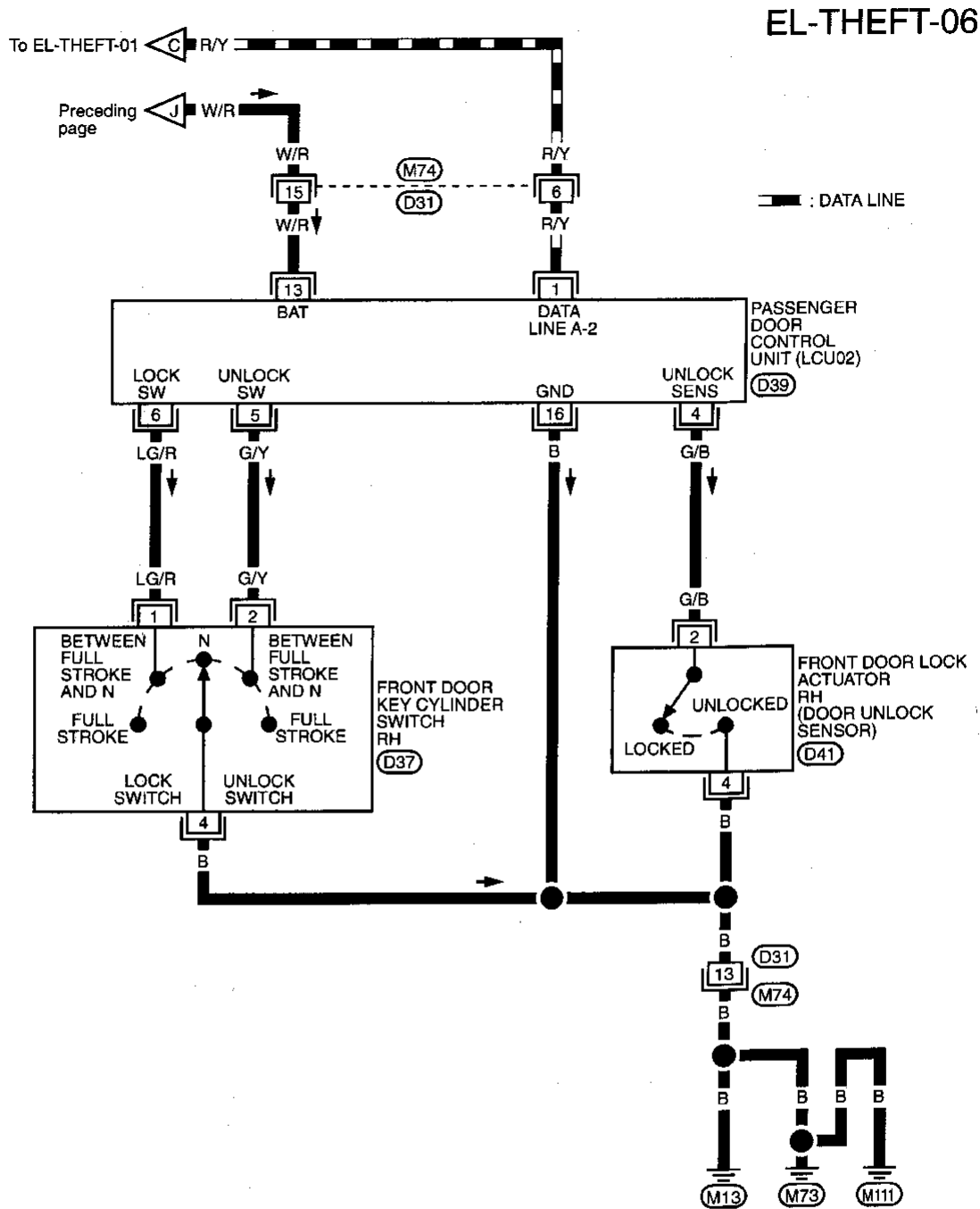
Refer to last page (Foldout page).

M3, E101

# THEFT WARNING SYSTEM — IVMS

## Wiring Diagram — THEFT — (Cont'd)

FIG. 6

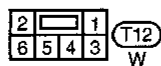
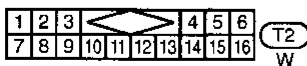
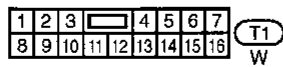
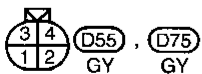
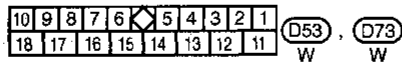
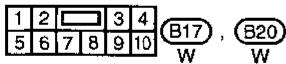
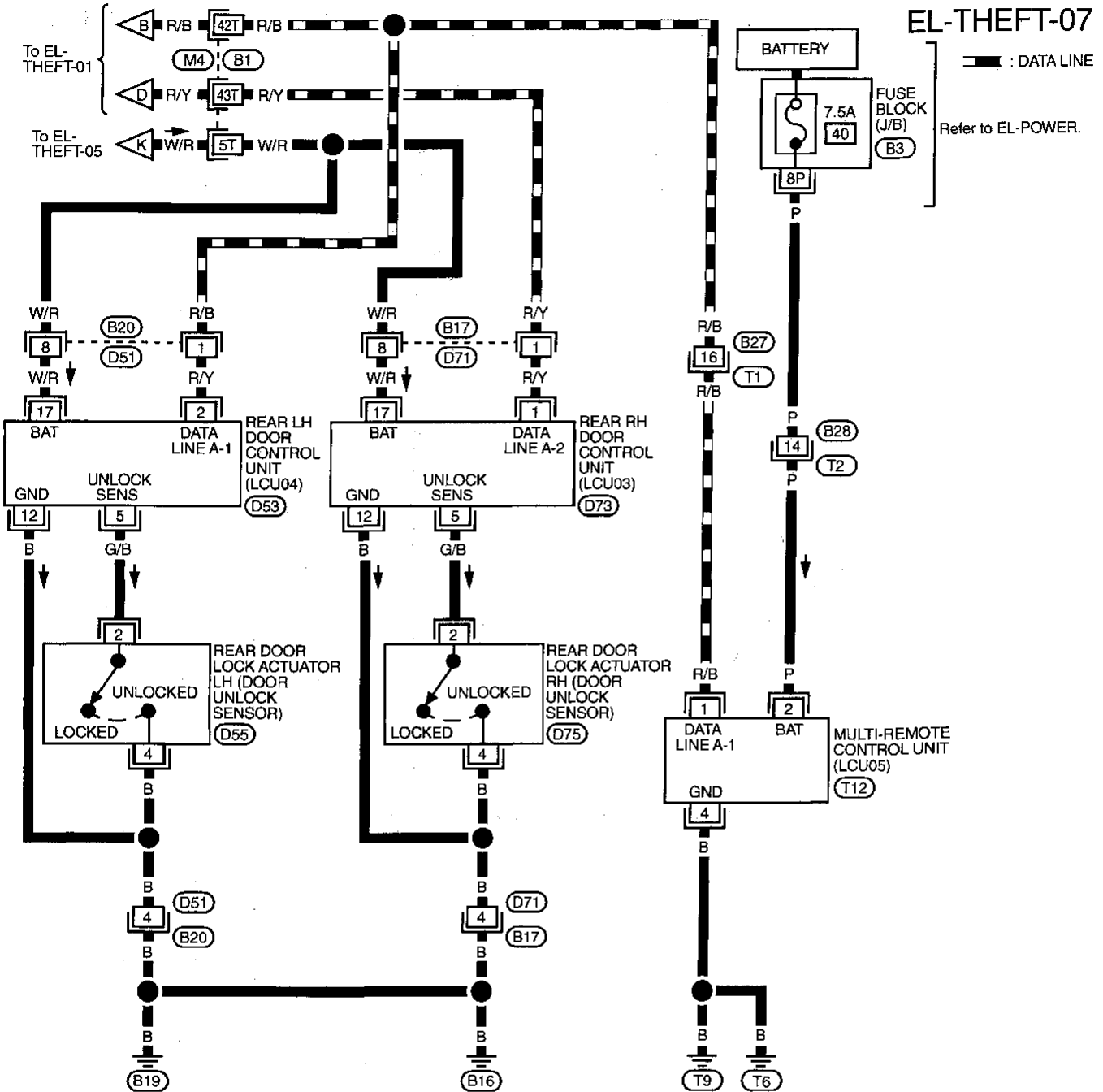


GI  
 MA  
 EM  
 LC  
 EC  
 FE  
 CL  
 MT  
 AT  
 FA  
 RA  
 BR  
 ST  
 RS  
 BT  
 HA  
**EL**  
 IDX

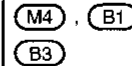
# THEFT WARNING SYSTEM — IVMS

## Wiring Diagram — THEFT — (Cont'd)

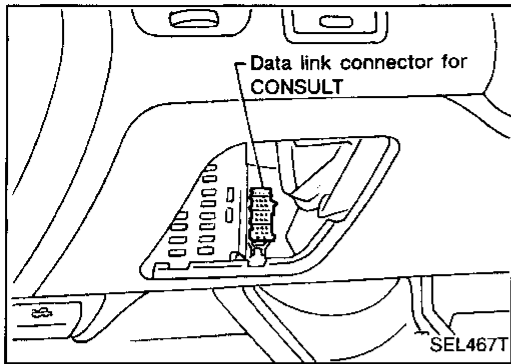
FIG. 7



Refer to last page (Foldout page).



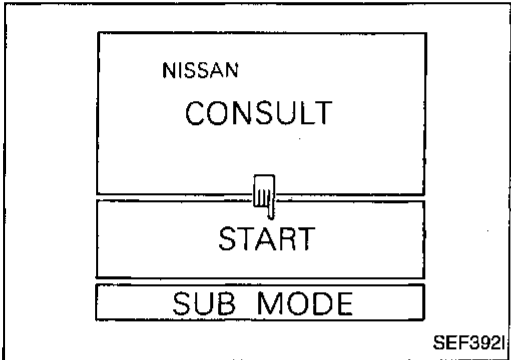




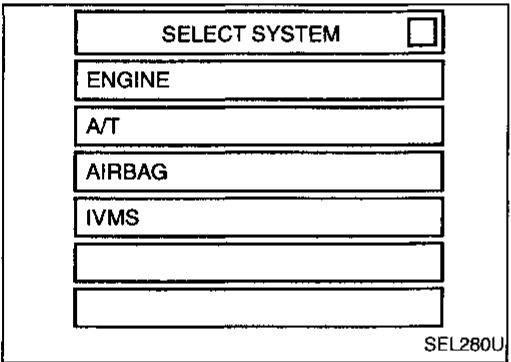
## CONSULT

### CONSULT INSPECTION PROCEDURE

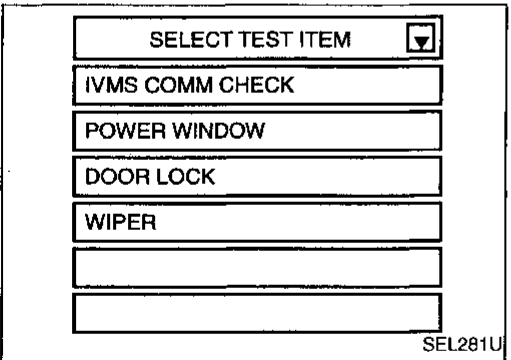
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



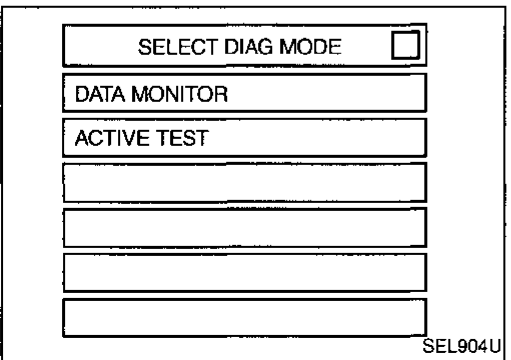
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



6. Touch "THEFT WARNING SYSTEM".



- DATA MONITOR and ACTIVE TEST are available for the theft warning system.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

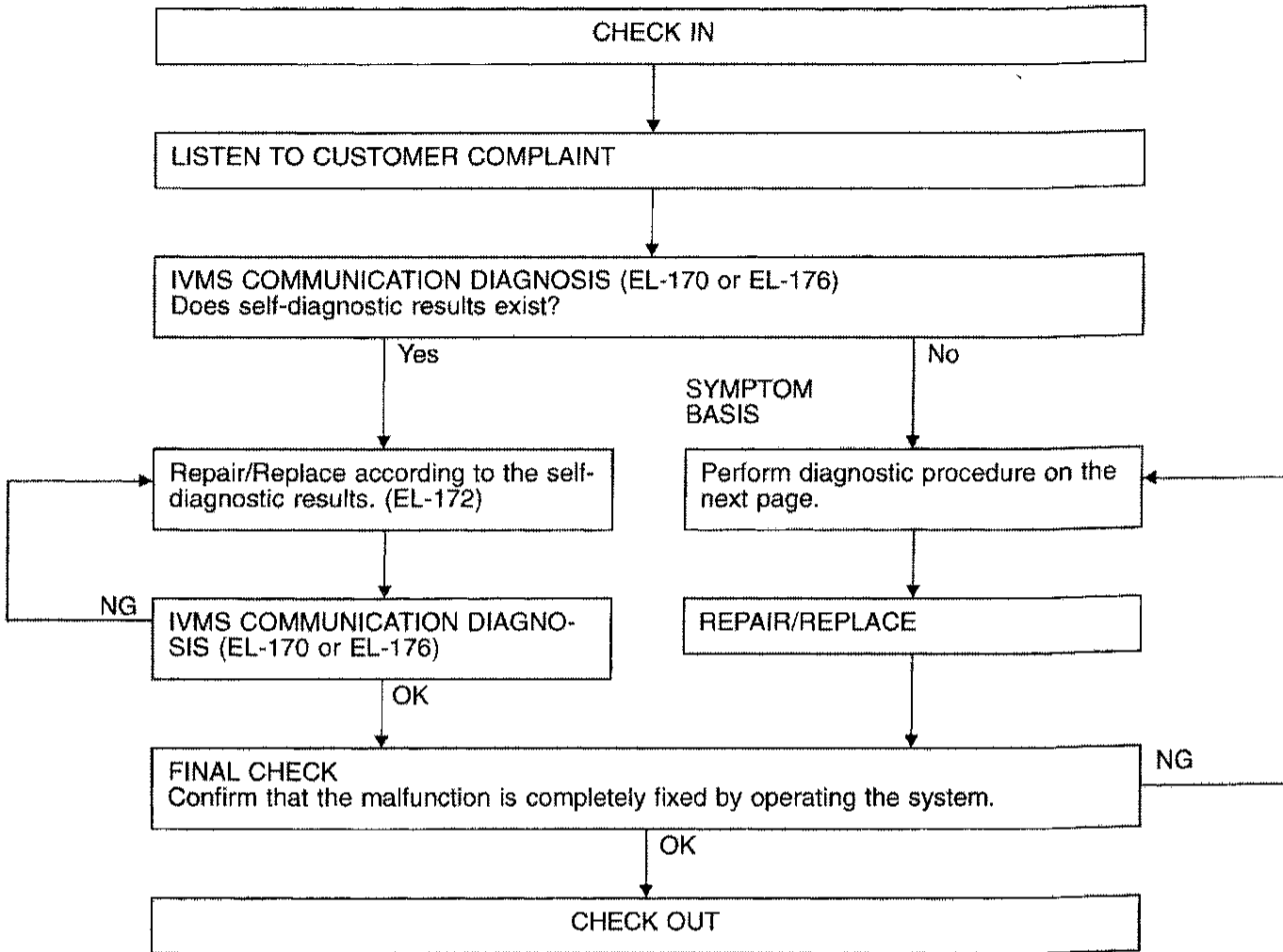
HA

EL

IDX

**Trouble Diagnoses**

**WORK FLOW**



**NOTICE:**

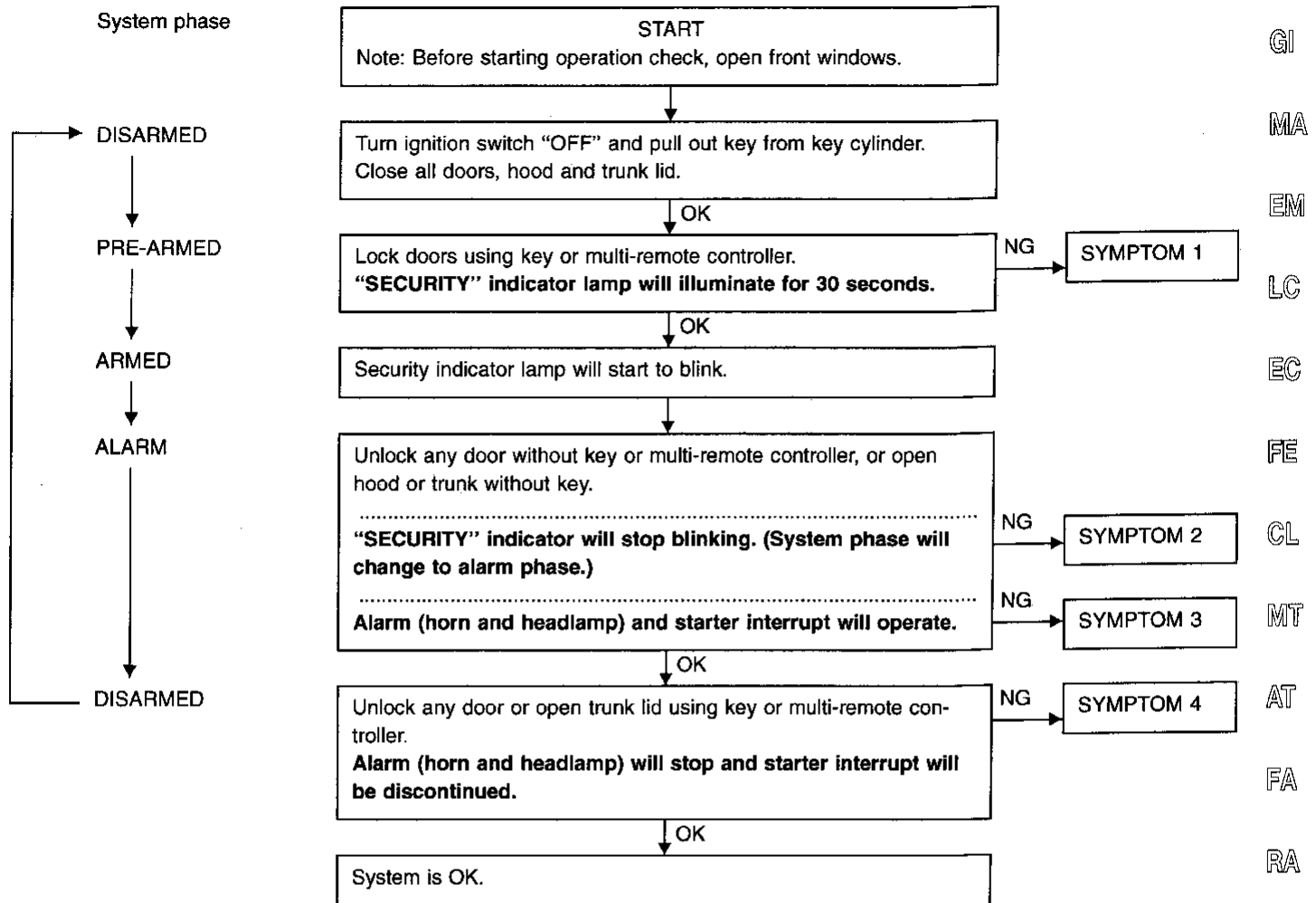
- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.  
Erase the memory with CONSULT (refer to EL-170) or turn the ignition switch to “OFF” position and remove 7.5A fuse (No. 56, located in the fuse and fusible link box).

# THEFT WARNING SYSTEM — IVMS

## Trouble Diagnoses (Cont'd)

### PRELIMINARY CHECK

The system operation is canceled by turning ignition switch to "ACC" at any step between START and ARMED in the following flow chart.



After performing preliminary check, go to symptom chart on next page.

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# THEFT WARNING SYSTEM — IVMS

## Trouble Diagnoses (Cont'd)

Before starting trouble diagnoses below, perform preliminary check, EL-265.

Symptom numbers in the symptom chart correspond with those of preliminary check.

### SYMPTOM CHART

PROCEDURE		—	Diagnostic procedure							—	
REFERENCE PAGE		EL-265	EL-267	EL-271	EL-272	EL-273	EL-274	EL-0	EL-0	EL-241	EL-171
SYMPTOM		Preliminary check	Diagnostic Procedure 1 (Door, hood, trunk room lamp and trunk lid key cylinder tamper switch check)	Diagnostic Procedure 2 (Security indicator lamp check)	Diagnostic Procedure 3 (Door unlock sensor check)	Diagnostic Procedure 4 (Door key cylinder switch check)	Diagnostic Procedure 5 (Trunk lid key cylinder switch check)	Diagnostic Procedure 6 (Theft warning horn and headlamp alarm check)	Diagnostic Procedure 7 (Starter interrupt system check)	Check "MULTI-REMOTE CONTROL" system.	WAKE-UP DIAGNOSES
1	Theft warning system cannot be set by ...	All items	X	X		X					
		Door outside key	X				X				X (LCU01, LCU02)
		Multi-remote control	X							X	
	Theft warning indicator does not turn "ON".		X		X						
2	*1 Theft warning system does not alarm when ...	Any door is opened.	X	X							
		Any door is unlocked without using key or multi-remote controller	X			X					X (LCU01, 02, 03, 04)
3	Theft warning alarm does not activate.	All function	X	X		X					
		Horn alarm	X					X			
		Headlamp alarm	X						X		
		Starter interrupt	X							X	
4	Theft warning system cannot be canceled by ...	Door outside key	X				X				X (LCU01, LCU02)
		Trunk lid key	X					X			
		Multi-remote control	X							X	

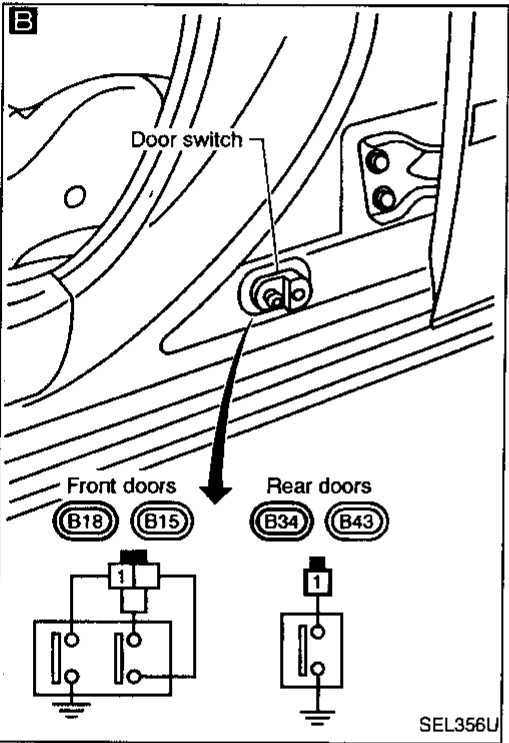
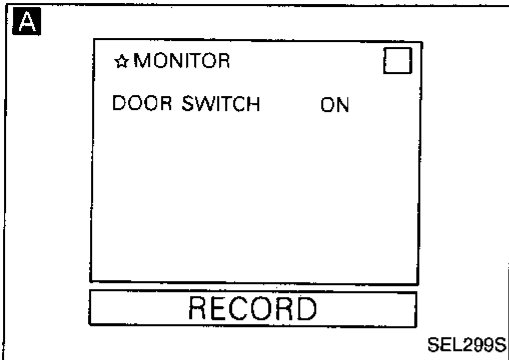
X : Applicable

\*1: Make sure the system is in the armed phase.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1-(1)

(Door switch check)



**CHECK DOOR SWITCH INPUT SIGNAL** OK → Door switch is OK.

**A** CONSULT  
See "DOOR SWITCH" in DATA MONITOR mode.  
When door is open:  
**DOOR SW ON**  
When door is closed:  
**DOOR SW OFF**

OR  
**ON BOARD**  
Check all doors switches in Switch monitor (Mode II) mode.  
(Refer to On board Diagnosis, EL-178.)  
Refer to wiring diagram in EL-256.

**B** NG → Replace door switch.

**CHECK DOOR SWITCH**  
1. Disconnect door switch connector.  
2. Check continuity between terminals or switch body ground.

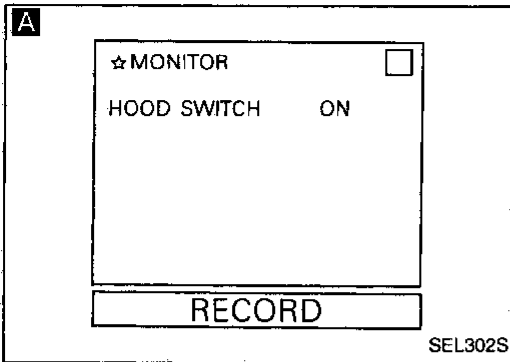
Terminals	Condition	Continuity
① - Ground	Pressed	No
	Released	Yes

OK →  
Check the following.  
● Door switch ground condition  
● Harness for open or short between door switch and BCM

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

**Trouble Diagnoses (Cont'd)**

**DIAGNOSTIC PROCEDURE 1-(2)  
(Hood switch check)**



**CHECK HOOD SWITCH INPUT SIGNAL**

**A** CONSULT

See "HOOD SWITCH" in DATA MONITOR mode.

When hood is open:

**HOOD SWITCH ON**

When hood is closed:

**HOOD SWITCH OFF**

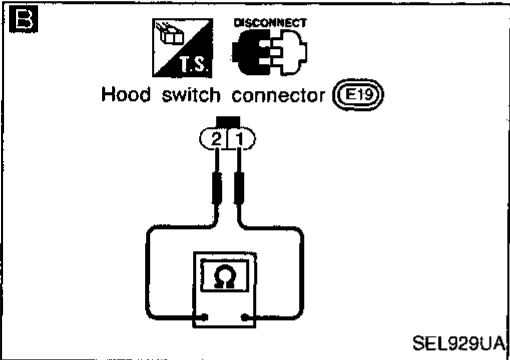
OR

ON BOARD

Check hood switch in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-178.)

Refer to wiring diagram in EL-257.

OK → Hood switch is OK.



NG

Check hood switch and hood fitting condition.

NG → Adjust installation of hood switch or hood.

OK

**B**

**CHECK HOOD SWITCH**

1. Disconnect hood switch connector.
2. Check continuity between hood switch terminals.

Terminals	Condition	Continuity
① - ②	Pushed	No
	Released	Yes

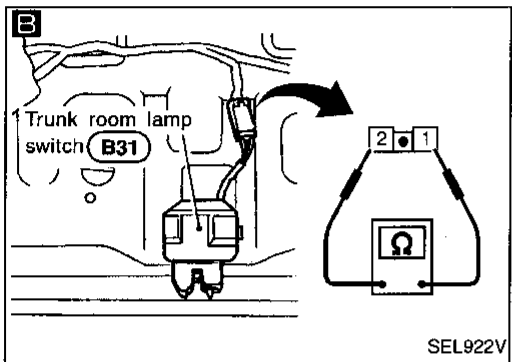
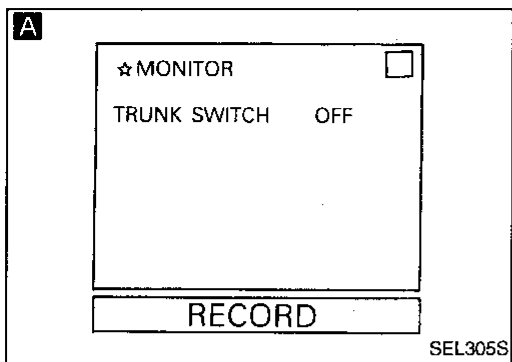
NG → Replace hood switch.

OK

- Check the following.
- Hood switch ground circuit
  - Harness for open or short between BCM and hood switch

**Trouble Diagnoses (Cont'd)**

**DIAGNOSTIC PROCEDURE 1-(3)  
(Trunk room lamp switch check)**



**CHECK TRUNK ROOM LAMP SWITCH INPUT SIGNAL**

**A** CONSULT

See "TRUNK SWITCH" in DATA MONITOR mode.

When trunk lid is open:

**TRUNK SWITCH ON**

When trunk lid is closed:

**TRUNK SWITCH OFF**

OR

ON BOARD

Check trunk room lamp switch in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-178.)

Refer to wiring diagram in EL-257.

OK → Trunk room lamp switch is OK.

NG ↓

**B** **CHECK TRUNK ROOM LAMP SWITCH**

1. Disconnect trunk room lamp switch connector.
2. Check continuity between trunk room lamp switch terminals.

Terminals	Condition	Continuity
① - ②	Closed	No
	Open	Yes

NG → Replace trunk room lamp switch.

OK ↓

- Check the following.
- Trunk room lamp switch ground circuit
  - Harness for open or short between control unit and trunk room lamp switch

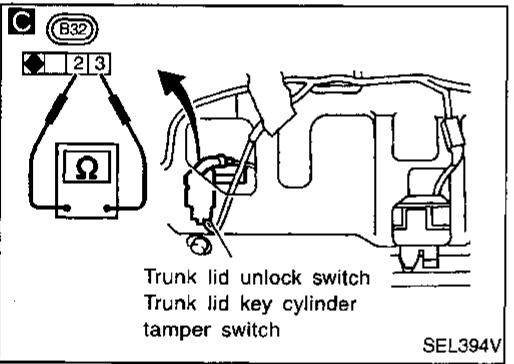
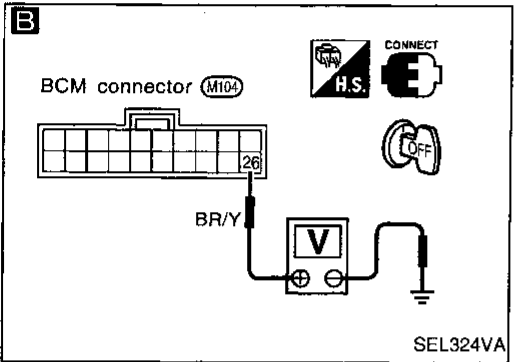
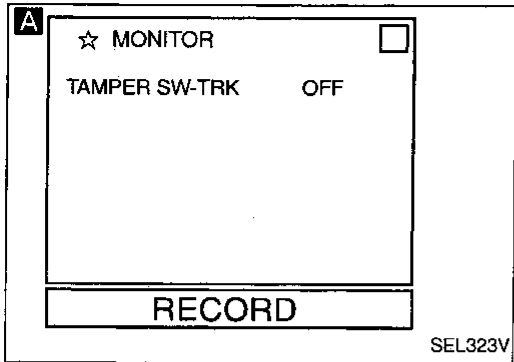
GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# THEFT WARNING SYSTEM — IVMS

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 1-(4)

#### (Trunk lid key cylinder tamper switch check)



#### CHECK TRUNK LID KEY CYLINDER TAMPER SWITCH INPUT SIGNAL

##### A CONSULT

See "TAMPER SW-TRK" in DATA MONITOR mode.

When trunk lid key cylinder is installed:

**TAMPER SW-TRK OFF**

When one of trunk lid key cylinder is removed:

**TAMPER SW-TRK ON**

Trunk lid terminal key cylinders are connected to "TAMPER SW-TRK" terminal of BCM. "TAMPER SW-DR or AS" in CONSULT data screen is not used for inspection.

##### B TESTER

Check voltage between BCM terminal 26 and ground.

When trunk lid key cylinder is installed:

**Approx. 5V**

When trunk lid key cylinder is removed:

**Approx. 0V**

Refer to wiring diagram in EL-257.

OK → Trunk lid key cylinder tamper switch is OK.

NG → Check installation of trunk lid key cylinders.

NG → Reinstall trunk lid key cylinder correctly.

#### C CHECK TRUNK LID KEY TAMPER SWITCH

1. Disconnect trunk lid key cylinder (tamper) switch connector.
2. Check continuity between trunk lid key cylinder (tamper) switch terminals.

NG → Replace trunk lid key cylinder switch.

OK → Check the following.

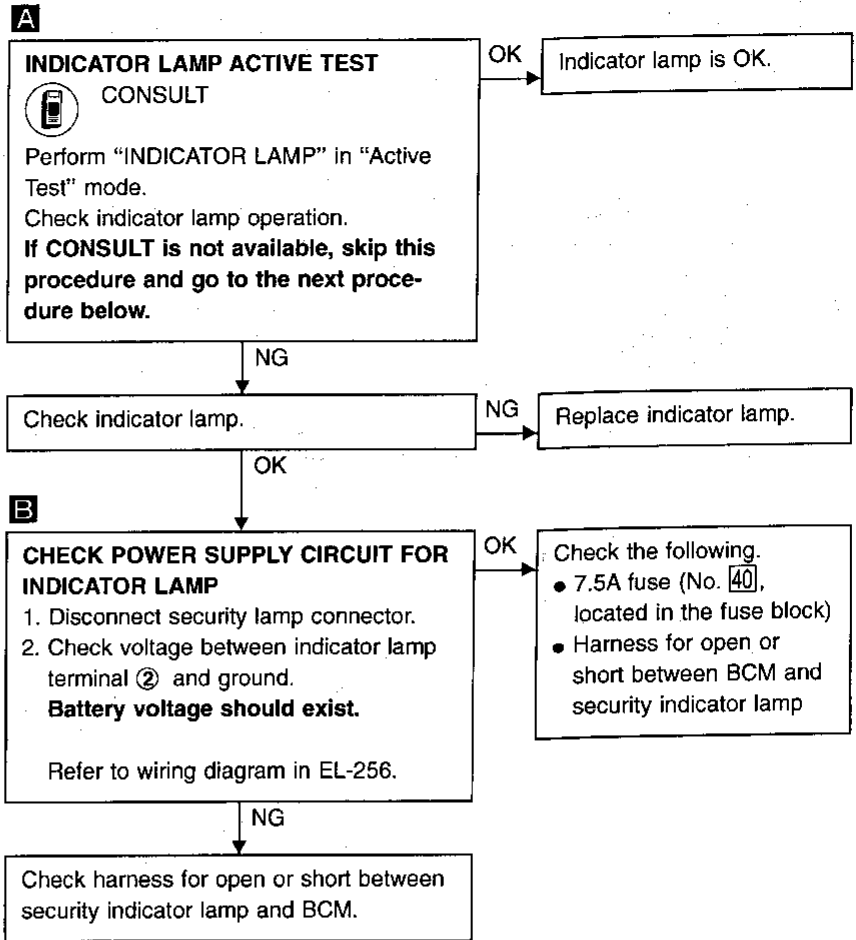
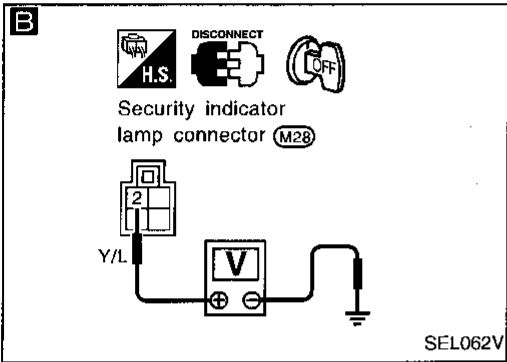
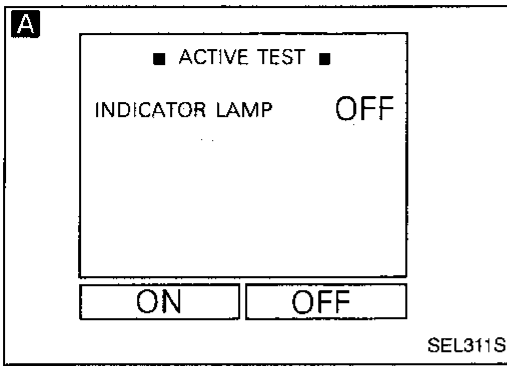
- Harness for open or short between BCM and tamper switch
- Tamper switch ground circuit



Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

(Security indicator lamp check)



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

**Trouble Diagnoses (Cont'd)**

**DIAGNOSTIC PROCEDURE 3**

**(Door unlock sensor check)**

**A**

☆ MONITOR	
LOCK SIG-DR	UNLK
LOCK SIG-AS	LOCK
LOCK SG-RR/RH	UNLK
LOCK SG-RR/LH	UNLK

**RECORD**

SEL457S

**CHECK DOOR LOCK KNOB SWITCH CIRCUITS**

**A** **CONSULT**

See "LOCK SIG SW" in DATA MONITOR mode.

When door is locked:  
**LOCK SIG LOCK**

When door is unlocked:  
**LOCK SIG UNLK**

---

**OR**

**ON BOARD**

Check front door lock knob operation in Switch monitor (Mode II) mode.  
(Refer to On board Diagnosis, EL-178.)

Refer to wiring diagram in EL-259, 260 and 261.

OK → Door unlock sensor is OK.

**B**

**DISCONNECT**

Door lock actuator connector

Front LH: (D12)    Rear LH: (D55)

Front RH: (D41)    Rear RH: (D75)

SEL390V

NG ↓

**B**

**CHECK DOOR UNLOCK SENSOR**

1. Disconnect door unlock sensor connector.
2. Check continuity between door unlock sensor terminals.

Terminals	Condition	Continuity
② - ④	Locked	No
	Unlocked	Yes

NG → Replace door unlock sensor.

OK ↓

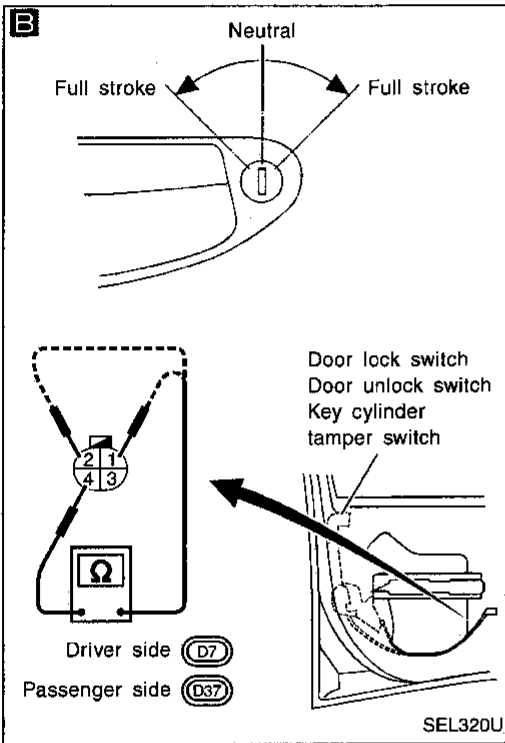
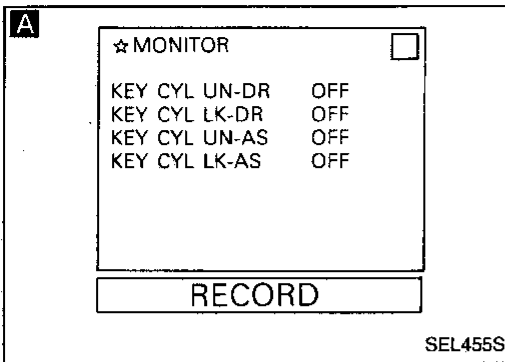
Check the following.

- Door unlock sensor ground circuit
- Harness for open or short between LCU and door unlock sensor

**Trouble Diagnoses (Cont'd)**

**DIAGNOSTIC PROCEDURE 4**

**(Door key cylinder switch check)**



**CHECK DOOR KEY CYLINDER SIGNAL**

**A** **CONSULT**

See "KEY CYL DR or AS" in DATA MONITOR mode.

These signals should be "ON" when ignition key inserted in the door key cylinder was turned to lock or unlock.

**If signals turn from "OFF" to "ON" too quickly on CONSULT display when key cylinder is turned, check these signals in the graphic mode.**

(Refer to CONSULT OPERATION MANUAL.)

**OR**

**ON BOARD**

Check front LH or RH door lock key cylinder lock and unlock switch in Switch monitor (Mode II) mode.

(Refer to On board Diagnosis, EL-178.)

Refer to wiring diagram in EL-260 or 261.

OK → Door key cylinder switch is OK.

**B**

**CHECK DOOR KEY CYLINDER SWITCH**

1. Disconnect door key cylinder switch connector.
2. Check continuity between door key cylinder switch terminals.

Terminals	Condition	Continuity
① - ④	Neutral	No
	Between full stroke and Neutral	Yes
	Full stroke (Lock)	No
② - ④	Neutral	No
	Between full stroke and Neutral	Yes
	Full stroke (Unlock)	No

NG → Replace door key cylinder switch.

- OK →
- Check the following.
- Door key cylinder switch ground circuit
  - Harness for open or short between door key cylinder switch and LCU01/02

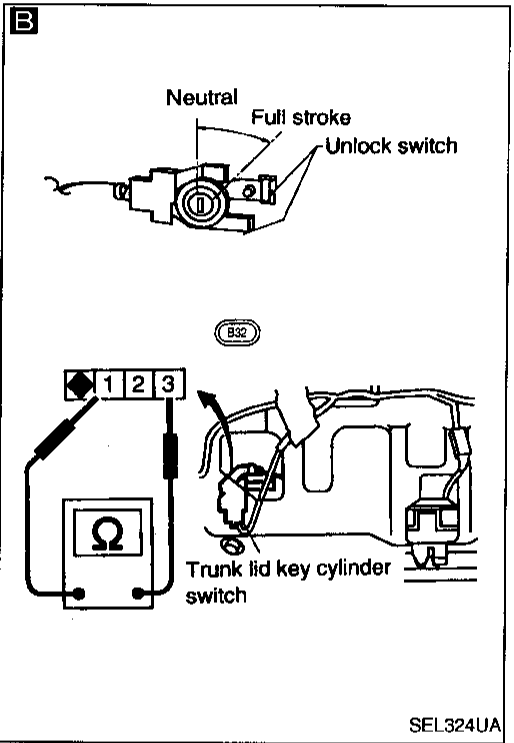
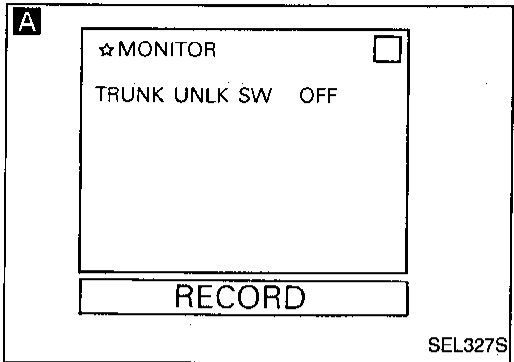
GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# THEFT WARNING SYSTEM — IVMS

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 5

#### (Trunk lid key cylinder switch check)



**A**

#### CHECK TRUNK LID KEY CYLINDER INPUT SIGNAL



CONSULT

See "TRUNK UNLK SW" in DATA MONITOR mode.

When key in key cylinder is at "NEUTRAL" or "UNLOCK" (full stroke) position,

**TRUNK UNLK SW OFF**

When key is between "NEUTRAL" and "UNLOCK" position,

**TRUNK UNLK SW ON**

OR



ON BOARD

Check trunk lid key cylinder switch in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-178.)

Refer to wiring diagram in EL-257.

OK

Trunk lid key cylinder switch is OK.

NG

**B**

#### CHECK TRUNK LID KEY CYLINDER SWITCH (UNLOCK SWITCH)

1. Disconnect trunk lid key cylinder switch connector.
2. Check continuity between trunk lid key cylinder switch terminals.

Terminals	Condition	Continuity
① - ③	Neutral	No
	Between unlocked and neutral	Yes
	Unlocked	No

NG

Replace trunk lid key cylinder switch.

OK

Check the following.

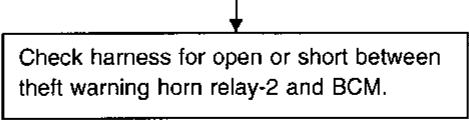
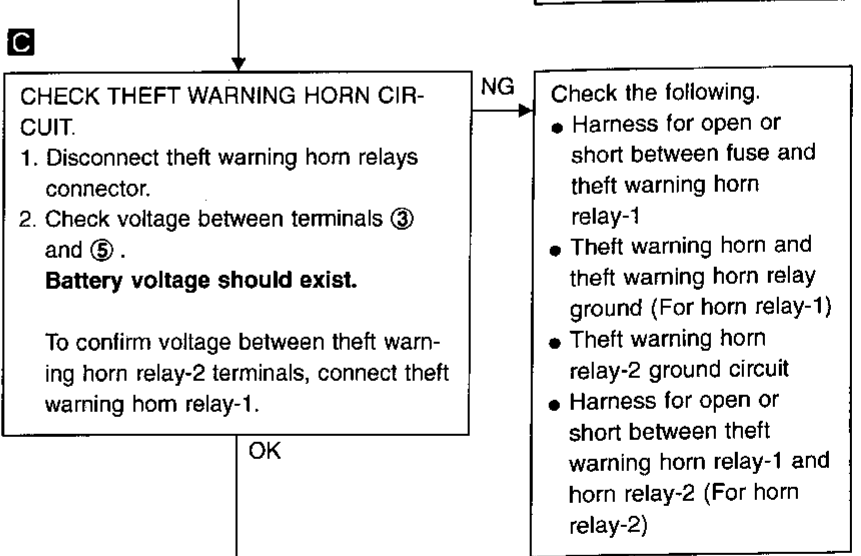
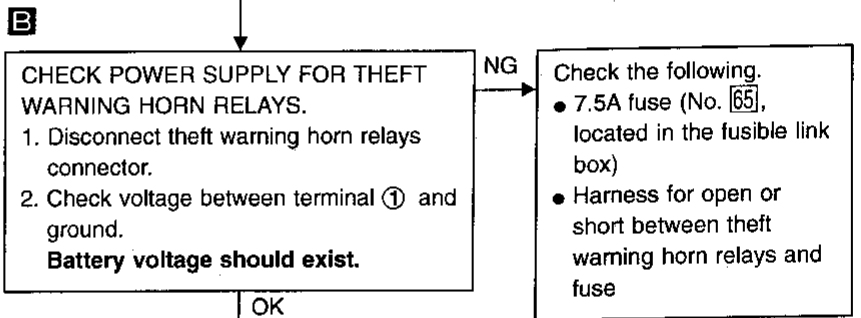
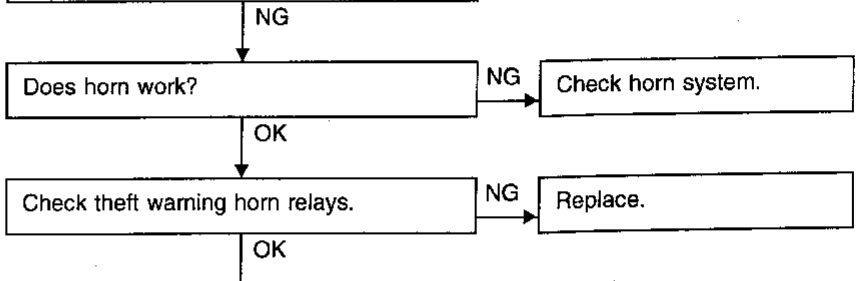
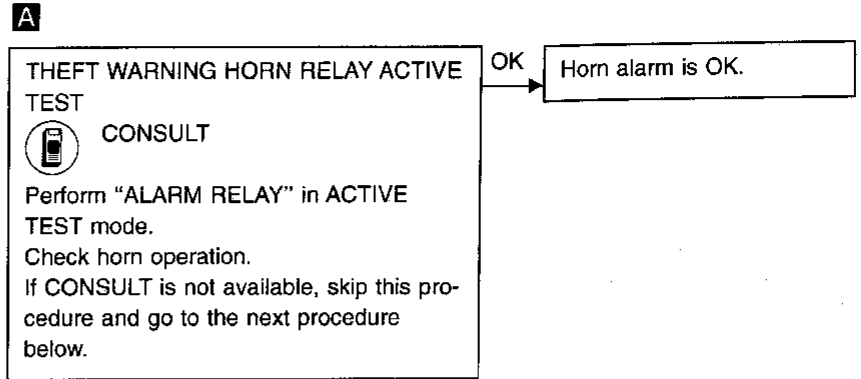
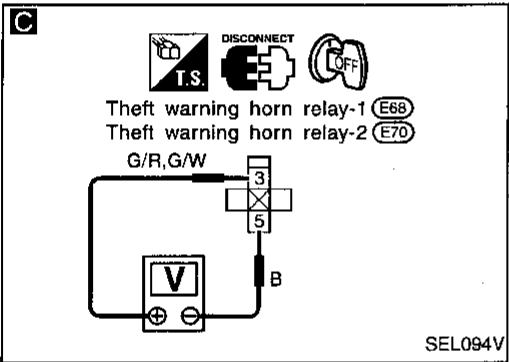
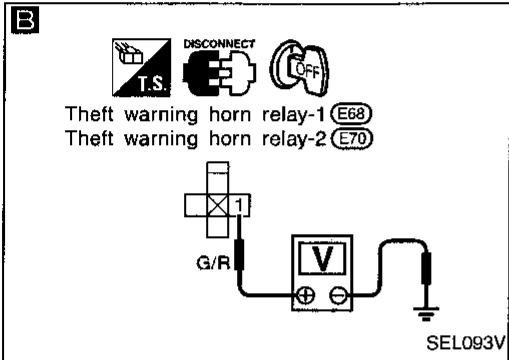
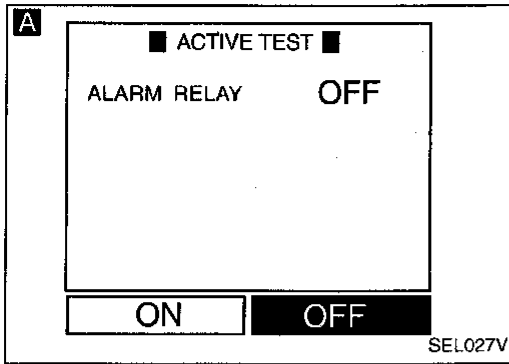
- Trunk lid key cylinder switch ground circuit
- Harness for open or short between trunk lid key cylinder switch and BCM

# THEFT WARNING SYSTEM — IVMS

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 6

#### (Theft warning horn alarm check)



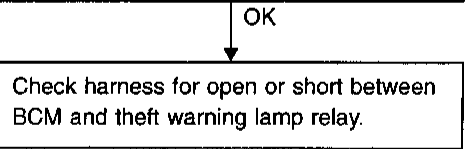
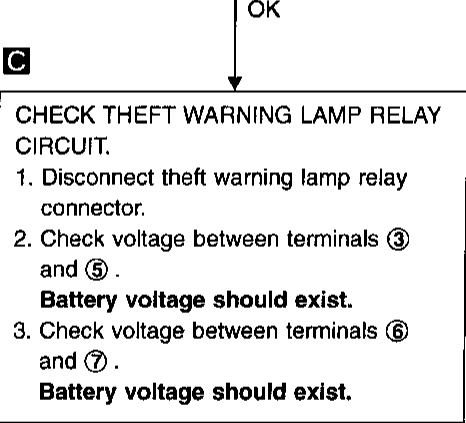
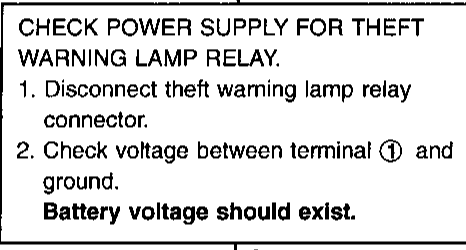
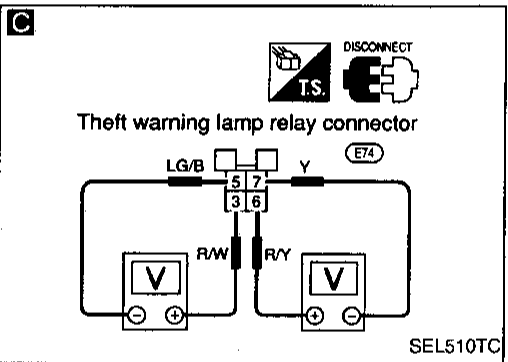
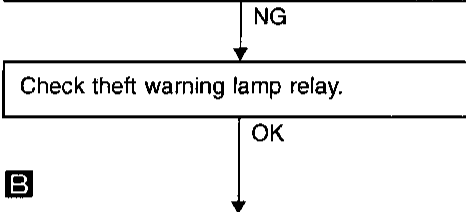
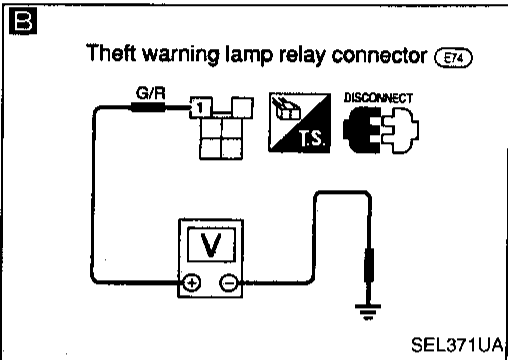
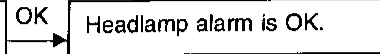
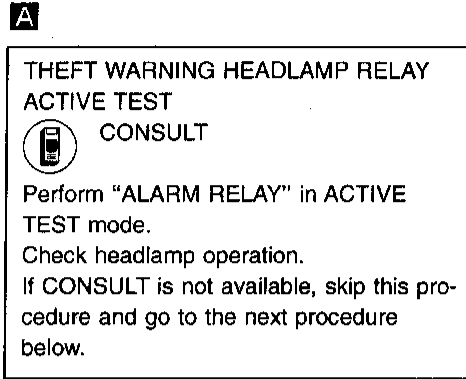
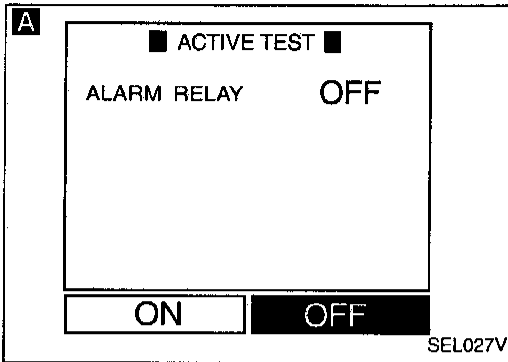
GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# THEFT WARNING SYSTEM — IVMS

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 7

#### (Headlamp alarm check)



## System Description

Power is supplied at all times

- to lighting switch terminal ⑪
- through 15A fuse (No. 66), located in the fuse and fusible link box).

With the lighting switch in the 1ST or 2ND position, power is supplied

- to BCM terminal ⑫
- through lighting switch terminal ⑬ and
- 7.5A fuse [No. 5], located in the fuse block (J/B).

BCM is connected to LCU03 and LCU04 as DATA LINES A-1 or A-2.

When power is supplied to BCM, BCM sends a signal to rear LH and RH door control units to turn on power window switch illumination. Power and ground are supplied to power window switch illumination, then power window switch illumination turns on.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

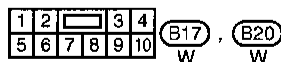
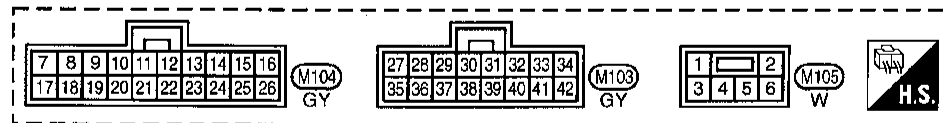
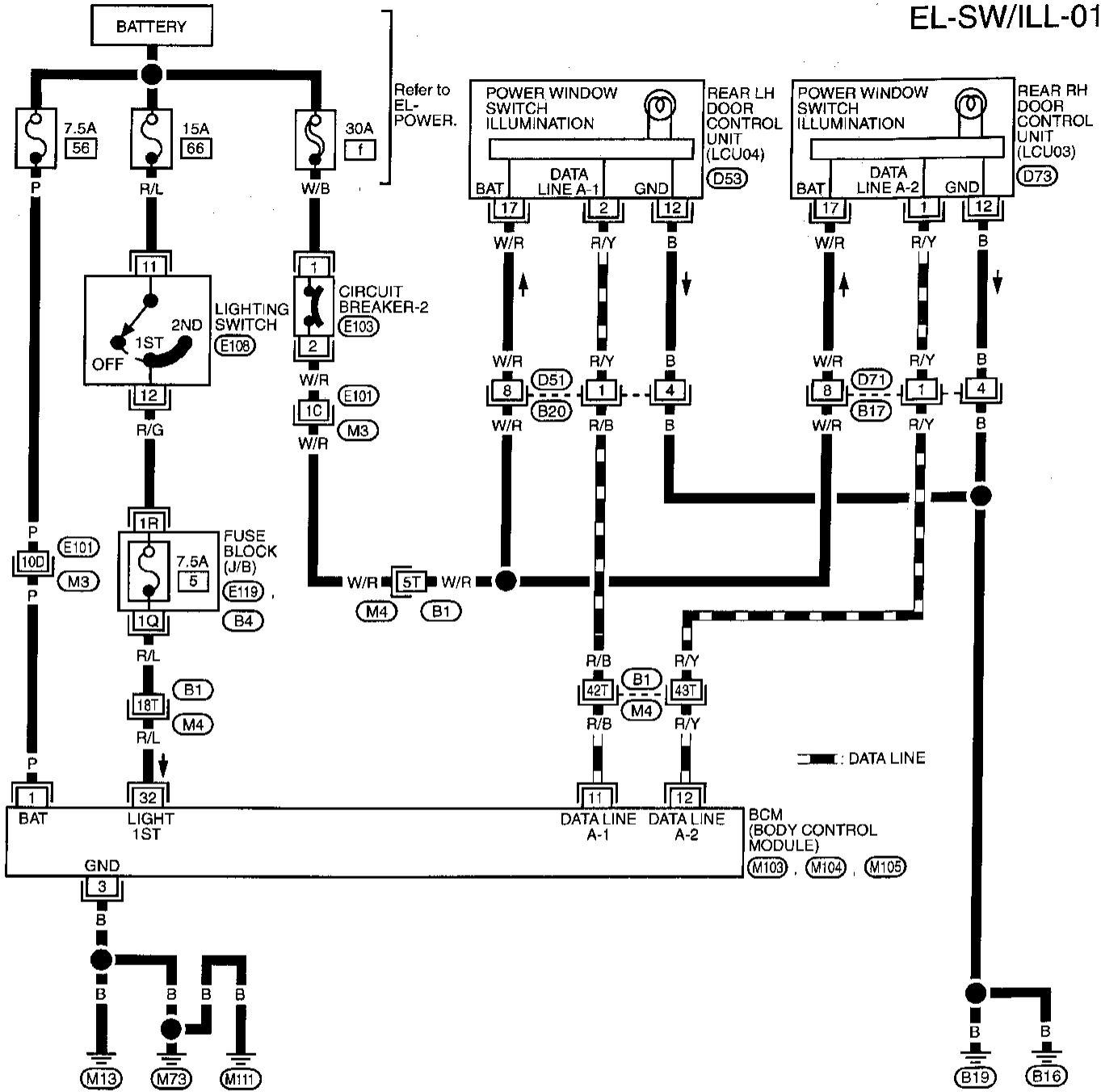
HA

EL

IDX

Wiring Diagram — SW/ILL —

EL-SW/ILL-01

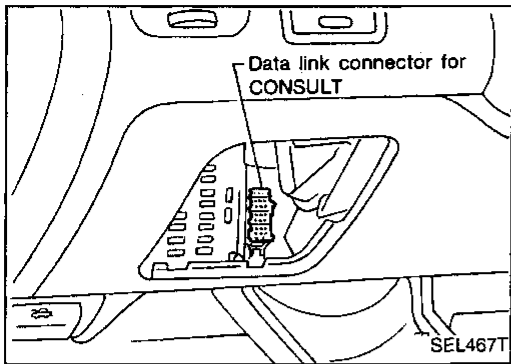


Refer to last page (Foldout page).

- (M3), (E101)
- (M4), (B1)
- (E119)
- (B4)



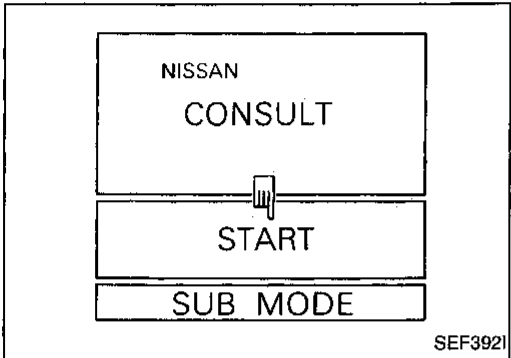
# REAR POWER WINDOW SWITCH ILLUMINATION — IVMS



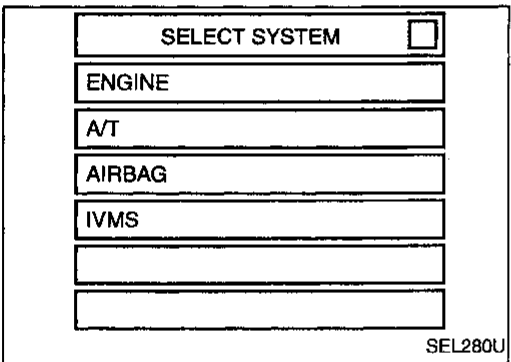
## CONSULT

### CONSULT INSPECTION PROCEDURE

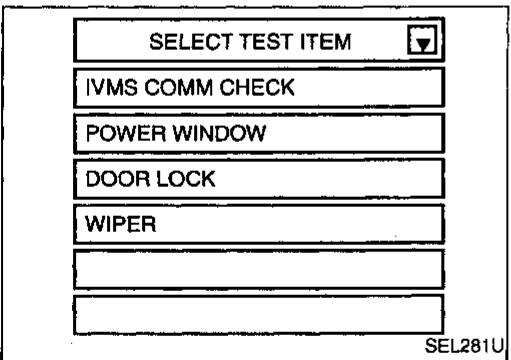
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



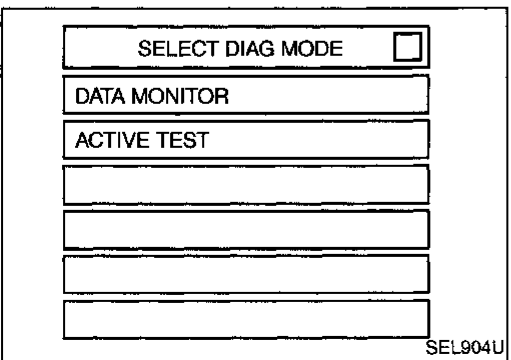
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



6. Touch "ROOM LAMP".



- DATA MONITOR and ACTIVE TEST are available for the illumination.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

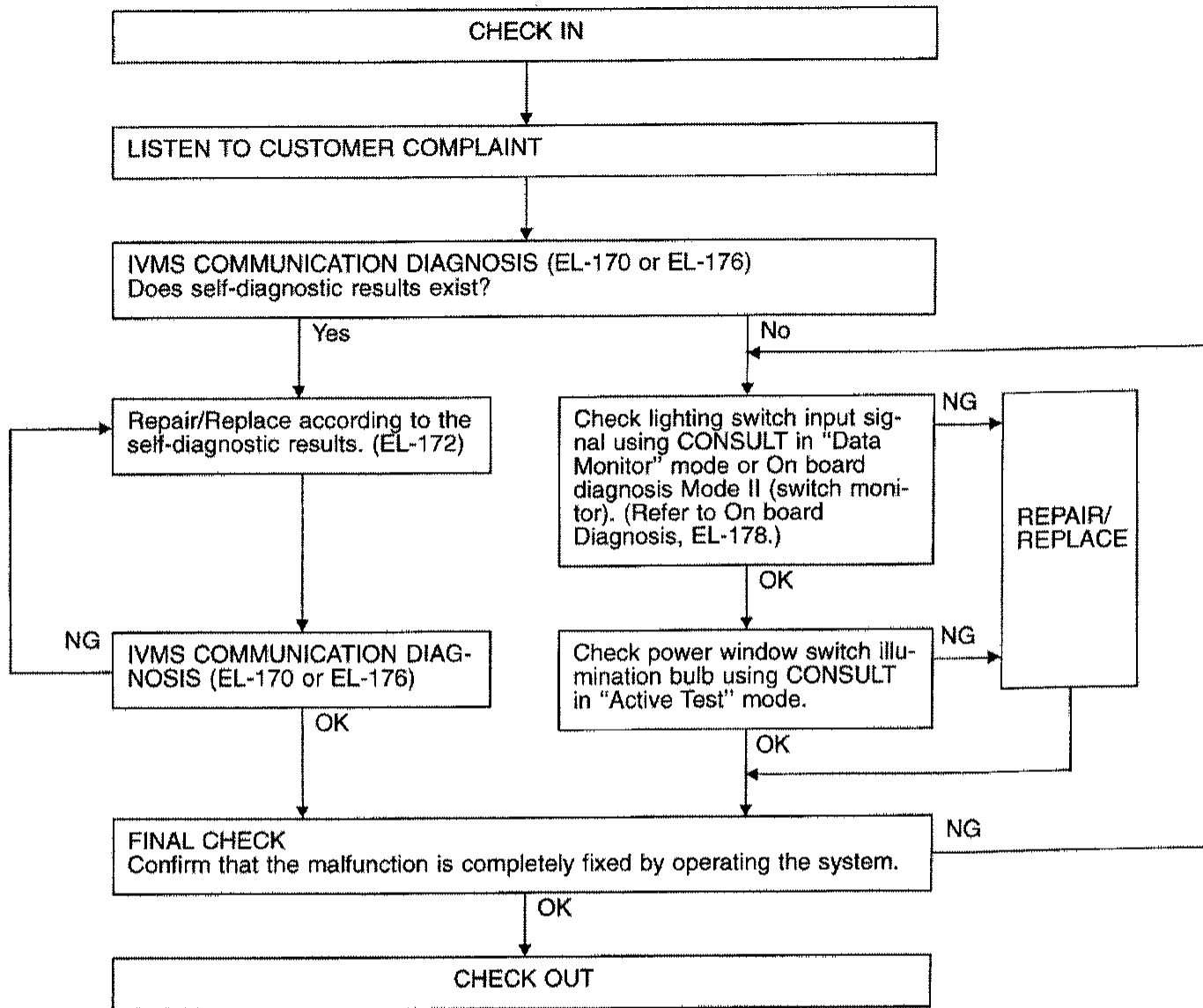
HA

EL

IDX

## Trouble Diagnoses

### WORK FLOW



### NOTICE:

- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.  
Erase the memory with CONSULT (refer to EL-170) or remove turn the ignition switch to “OFF” position and remove 7.5A fuse (No. 56, located in the fuse and fusible link box).

**System Description**

**INTERIOR LAMP, IGNITION KEYHOLE ILLUMINATION**

**Power supply and ground**

Power is supplied at all times

- through 7.5A fuse [No. 26], located in the fuse block (J/B)
- to interior lamp terminal ①,
- to ignition keyhole illumination terminal ①.

Power is also supplied at all times

- through 7.5A fuse [No. 40], located in the fuse block (J/B)
- to key switch terminal ①.

With the ignition switch in the ON or START position, power is supplied

- through 7.5A fuse [No. 12], located in the fuse block (J/B)
- to BCM terminal ⑦.

Driver door control unit (LCU01) terminal ① is connected to BCM terminal ⑩ by DATA LINE A-1.

Ground is supplied to driver door control unit terminal ④

- through front driver side door lock actuator (unlock sensor) terminals ② and ④ when front door lock actuator is in UNLOCK position
- through body grounds M13, M73 and M111.

**Switch operation**

When interior lamp switch is in the ON position, ground is supplied

- to interior lamp
- through case ground of interior lamp.

When power and ground is supplied, the interior lamp turns ON.

**Interior lamp timer operation**

When interior lamp switch is in the "DOOR" position, BCM keeps interior lamp and ignition keyhole illumination turning on for about 30 seconds when:

- driver's door is unlocked while key is out of the ignition key cylinder,
- unlock signal is supplied from multi-remote controller,
- key is withdrawn from ignition key cylinder while driver's door is closed,
- driver's door is opened and then closed while ignition switch is not in the "ON" position.

The timer is canceled, and interior lamp and ignition keyhole illumination turn off when:

- driver's door is locked, or
- ignition switch is turned "ON".

**ON-OFF control**

When driver side door, front passenger door, rear LH or RH door is opened, interior lamp and ignition keyhole illumination turn on while interior lamp switch is in the "DOOR" position.

When driver side door is opened and then closed while ignition switch is not in the ON position, interior lamp timer operates. (Timer does not operate when doors other than the driver side door is opened and closed.)

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

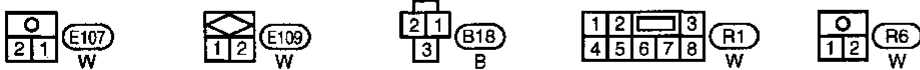
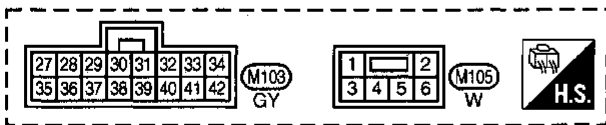
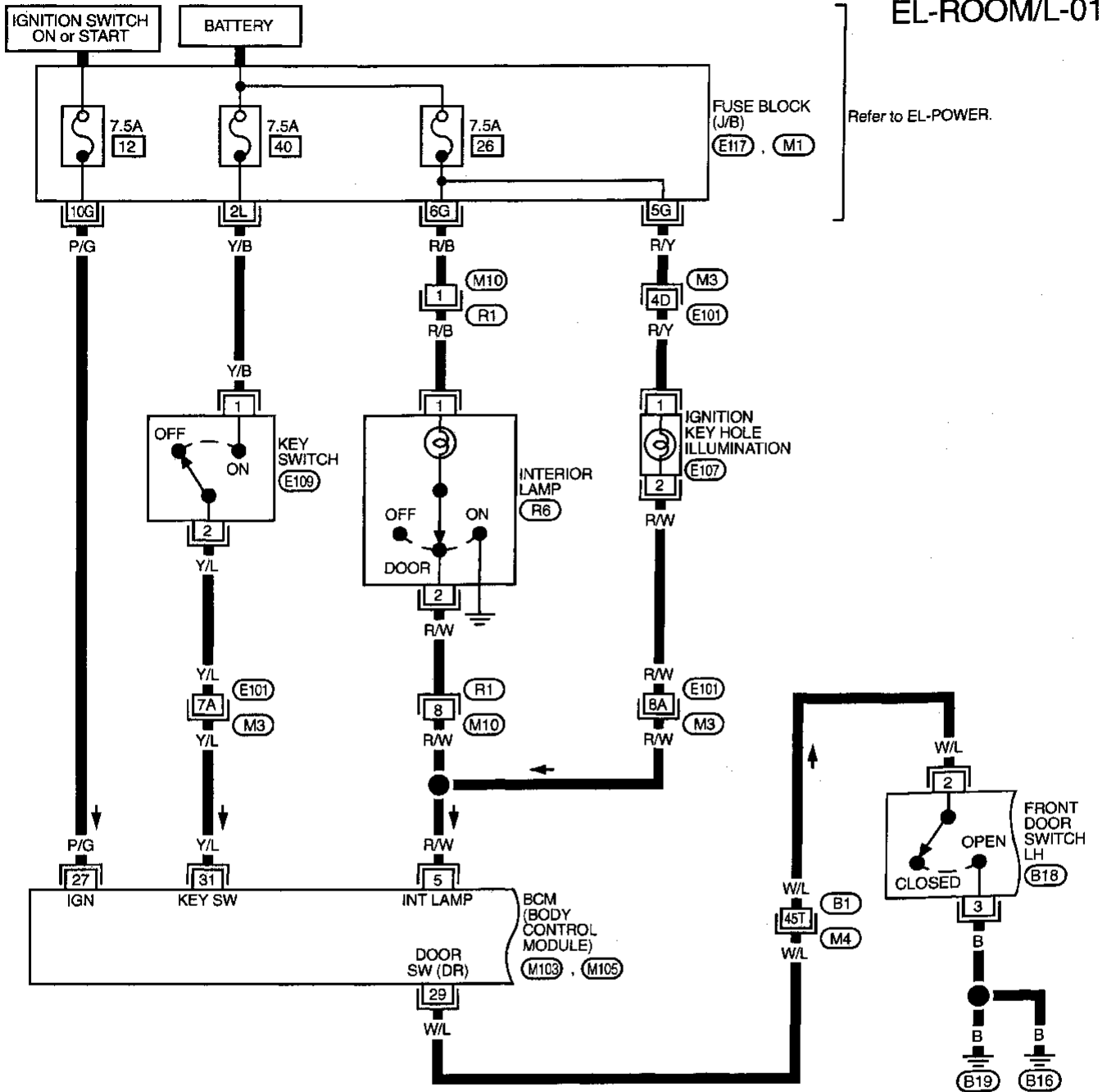
HA

EL

IDX

# INTERIOR LAMP CONTROL — IVMS

## Wiring Diagram — ROOM/L —

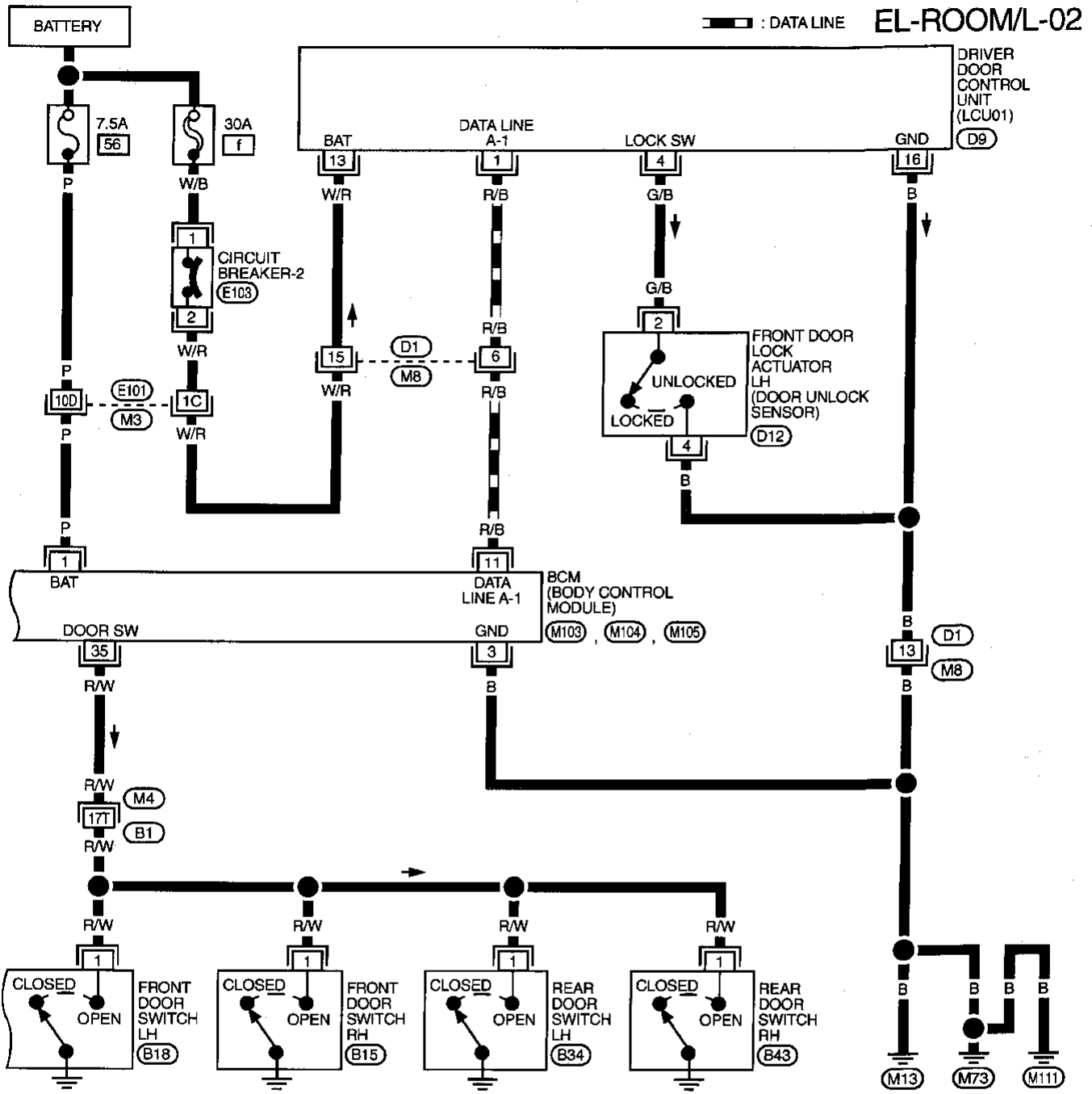


Refer to last page (Foldout page).

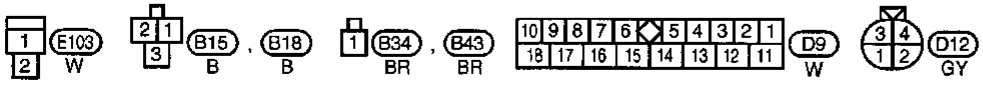
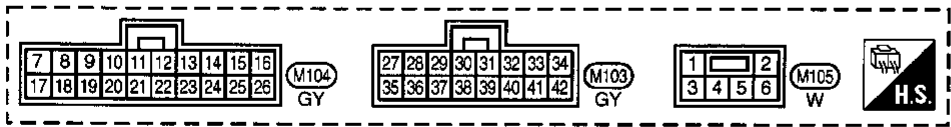
- (M1)
- (M3), (E101)
- (M4), (B1)
- (E117)

# INTERIOR LAMP CONTROL — IVMS

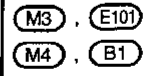
## Wiring Diagram — ROOM/L — (Cont'd)

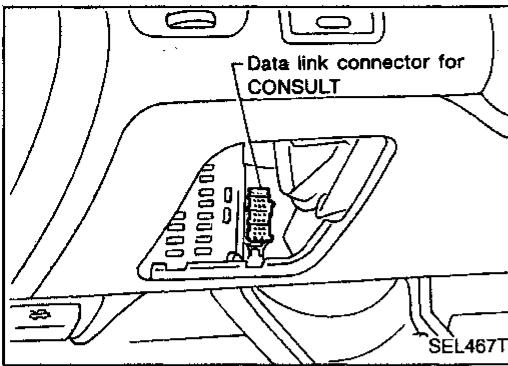


GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX



Refer to last page (Foldout page).

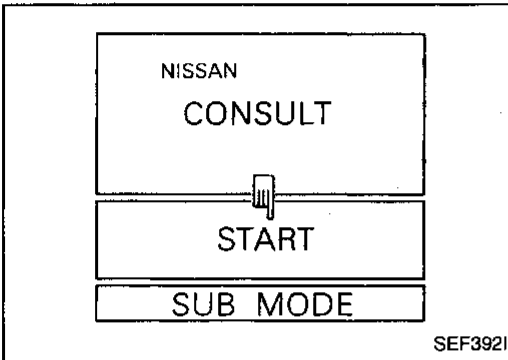




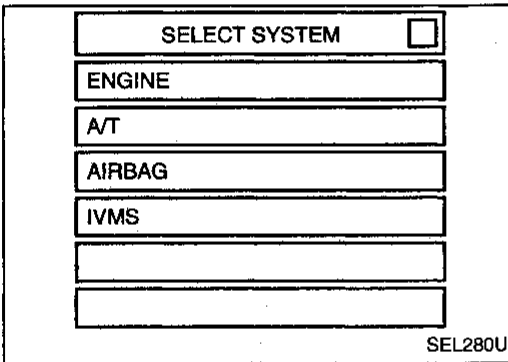
## CONSULT

### CONSULT INSPECTION PROCEDURE

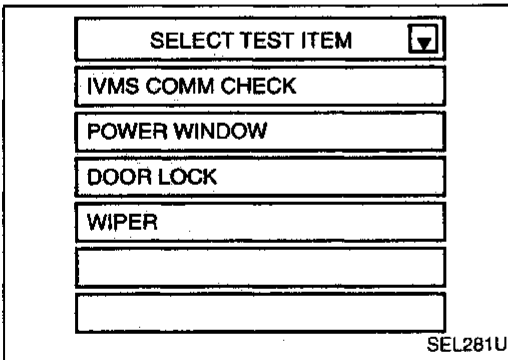
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



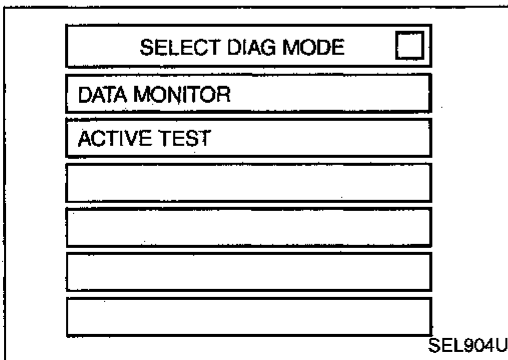
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



6. Touch "ROOM LAMP TIMER".

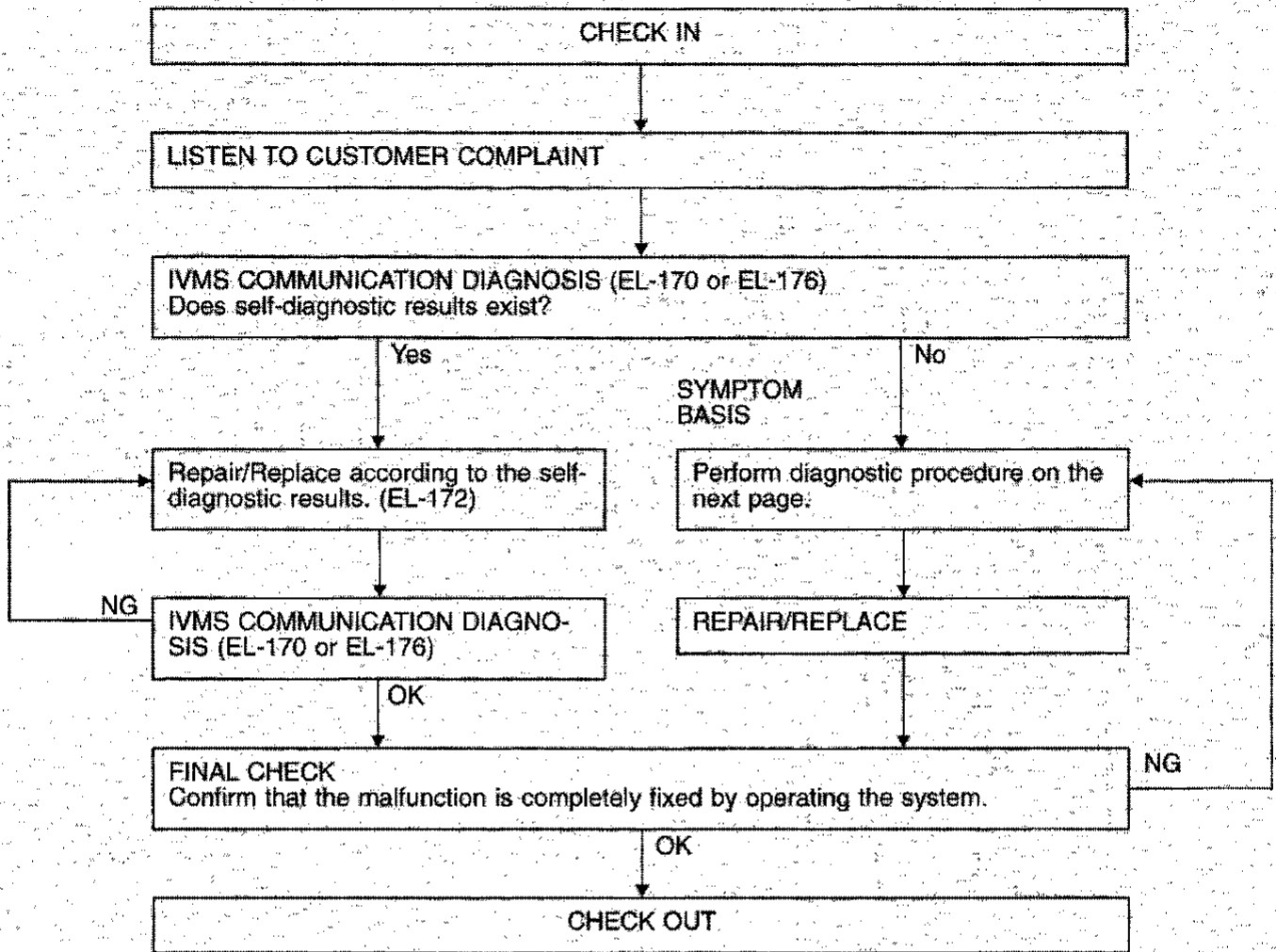


- DATA MONITOR and ACTIVE TEST are available for the interior lamp control.

# INTERIOR LAMP CONTROL — IVMS

## Trouble Diagnoses

### WORK FLOW



### NOTICE:

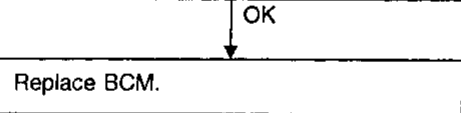
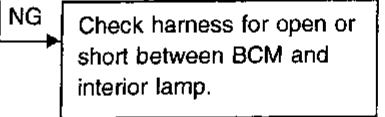
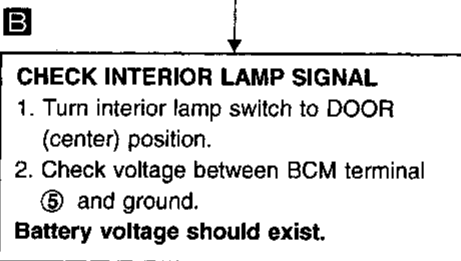
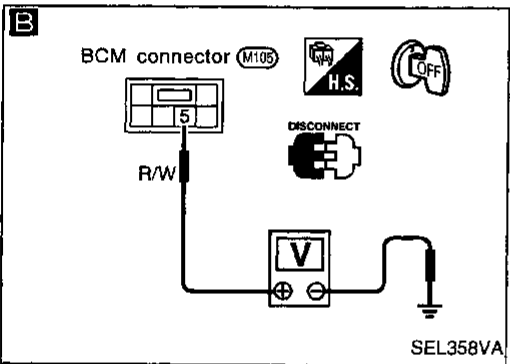
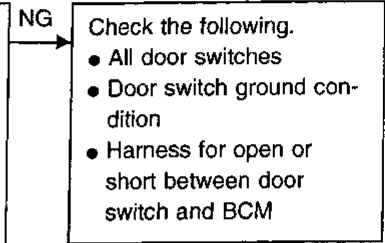
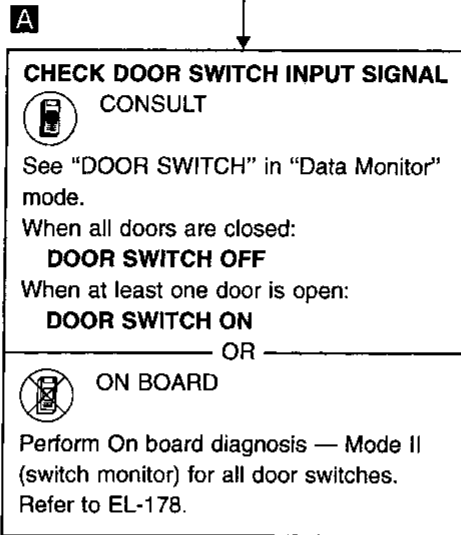
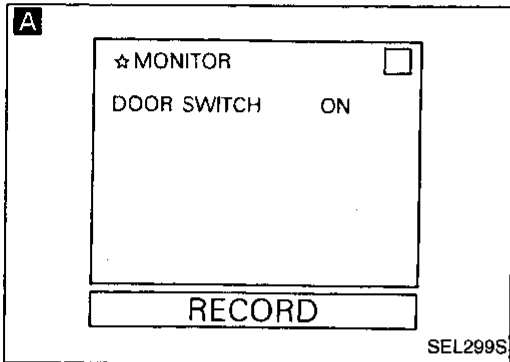
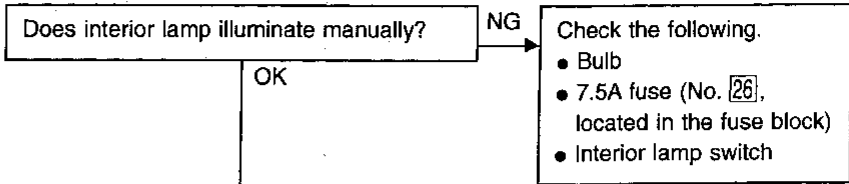
- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.  
Erase the memory with CONSULT (refer to EL-170) or turn the ignition switch to "OFF" position and remove 7.5A fuse (No. 56), located in the fuse and fusible link box).

# INTERIOR LAMP CONTROL — IVMS

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 1

**SYMPTOM: Interior lamp does not illuminate/does not turn off when door is opened/closed.**



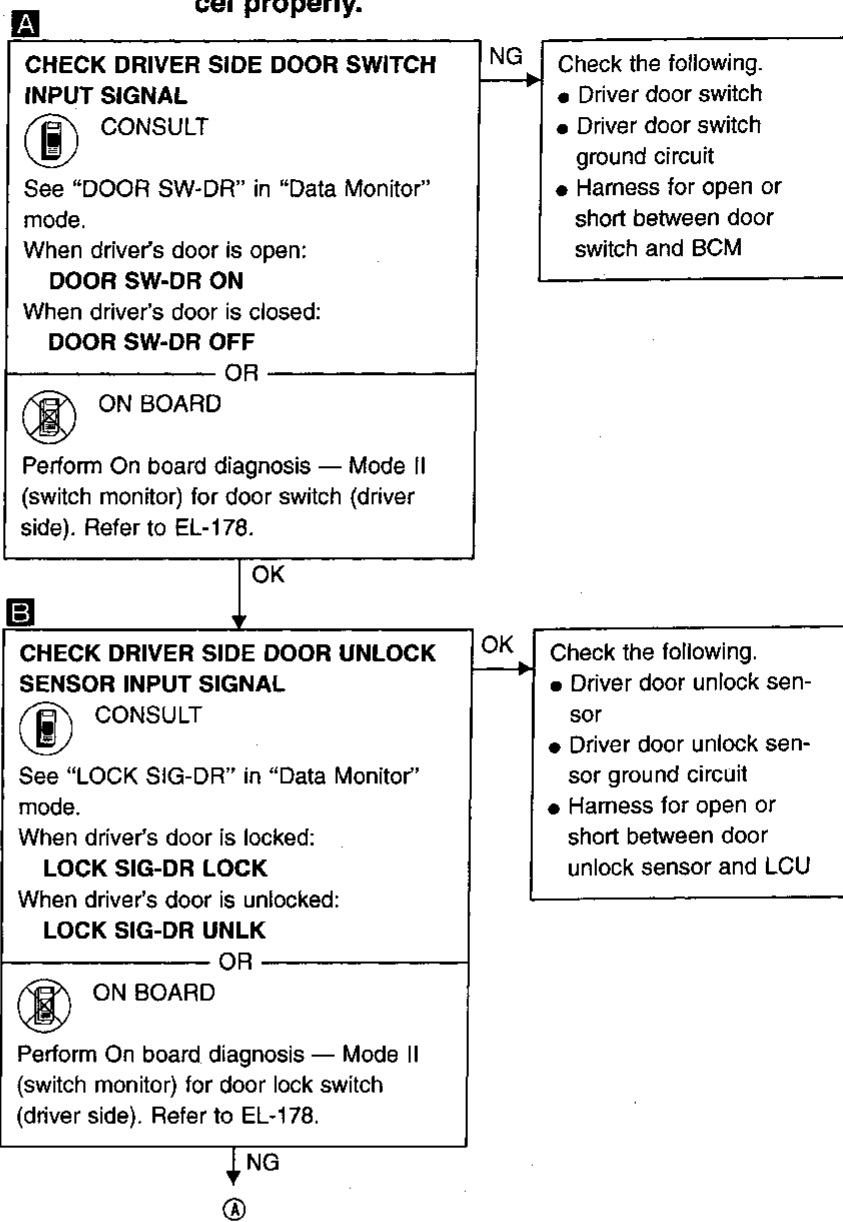
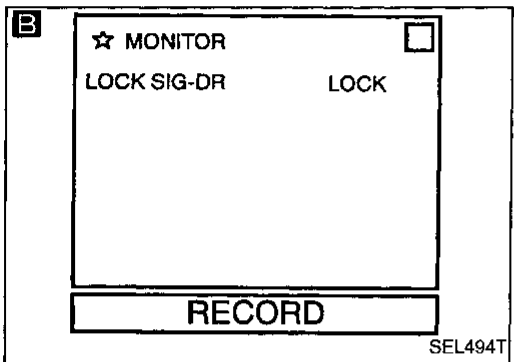
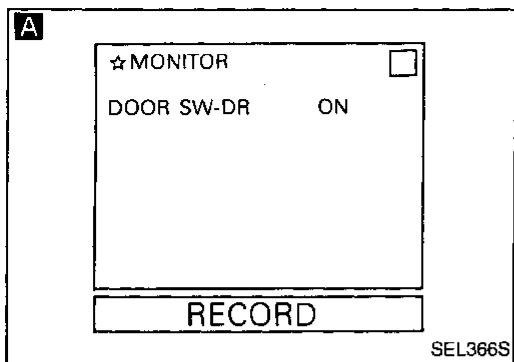


# INTERIOR LAMP CONTROL — IVMS

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 2

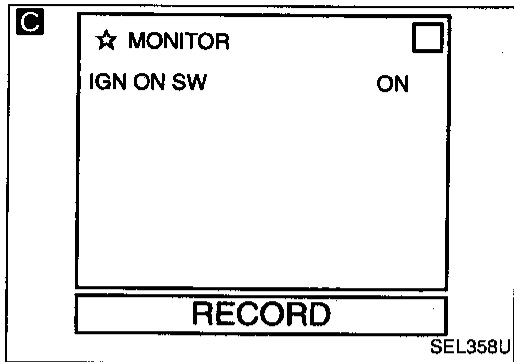
**SYMPTOM:** Interior lamp timer does not operate/does not cancel properly.



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
**EL**  
IDX

# INTERIOR LAMP CONTROL — IVMS

## Trouble Diagnoses (Cont'd)



**A**

**CHECK IGNITION ON INPUT SIGNAL**

**C** **CONSULT**

See "IGN ON SW" in "Data Monitor" mode.

When ignition switch is ON:  
**IGN ON SW ON**

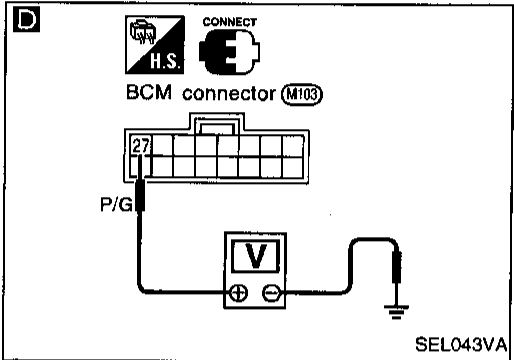
When ignition switch is ACC or OFF:  
**IGN ON SW OFF**

OR

NG

Check the following.

- 7.5A fuse (No. **12**), located in the fuse block
- Harness for open or short between fuse and BCM

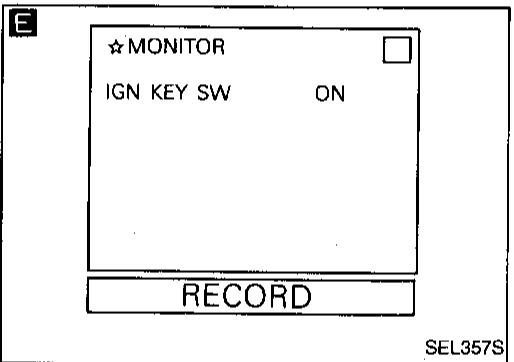


**D** **TESTER**

Check voltage between BCM terminal **27** and ground.

Condition of ignition switch	Voltage [V]
ON	Approx. 12
ACC or OFF	0

OK



**CHECK KEY SWITCH INPUT SIGNAL**

**E** **CONSULT**

See "IGN KEY SW" in "Data Monitor" mode.

When key is in ignition:  
**IGN KEY SW ON**

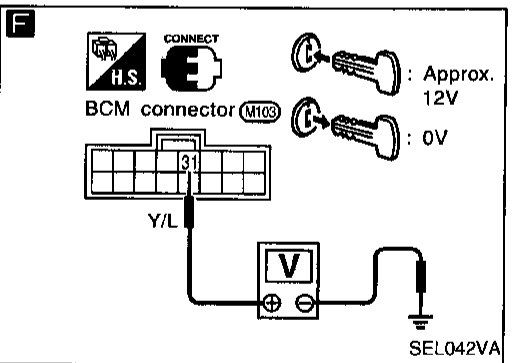
When key is out of ignition:  
**IGN KEY SW OFF**

OR

NG

Check the following.

- 7.5A fuse [No. **40**], located in the fuse block (J/B)
- Key switch (insert)
- Harness for open or short between key switch and fuse
- Harness for open or short between BCM and key switch



**F** **TESTER**

Check voltage between BCM terminal **31** and ground.

Condition of key switch	Voltage [V]
Key is inserted	Approx. 12
Key is withdrawn	0

OK

Replace BCM.

System Description

Power is supplied at all times

- to BCM terminal ①
- through 7.5A fuse (No. 56), located in the fuse and fusible link box).

Power is supplied at all times

- to front step lamp LH and RH terminals ①
- through 7.5A fuse [No. 26], located in the fuse block (J/B)].

Ground is supplied to terminal ⑩ of LCU01 and LCU02 through body grounds M13, M73 and M111.

BCM is connected to LCU01 and LCU02 as DATA LINE A-1 or A-2.

BCM terminal ③ is grounded when any door switch is in OPEN position.

When the driver door switch, passenger door switch, rear RH door switch, or rear LH door switch is in OPEN position, BCM sends a signal to driver and passenger door control units to turn on front LH and RH step lamps.

With power and ground supplied, front step lamps turn on.

GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

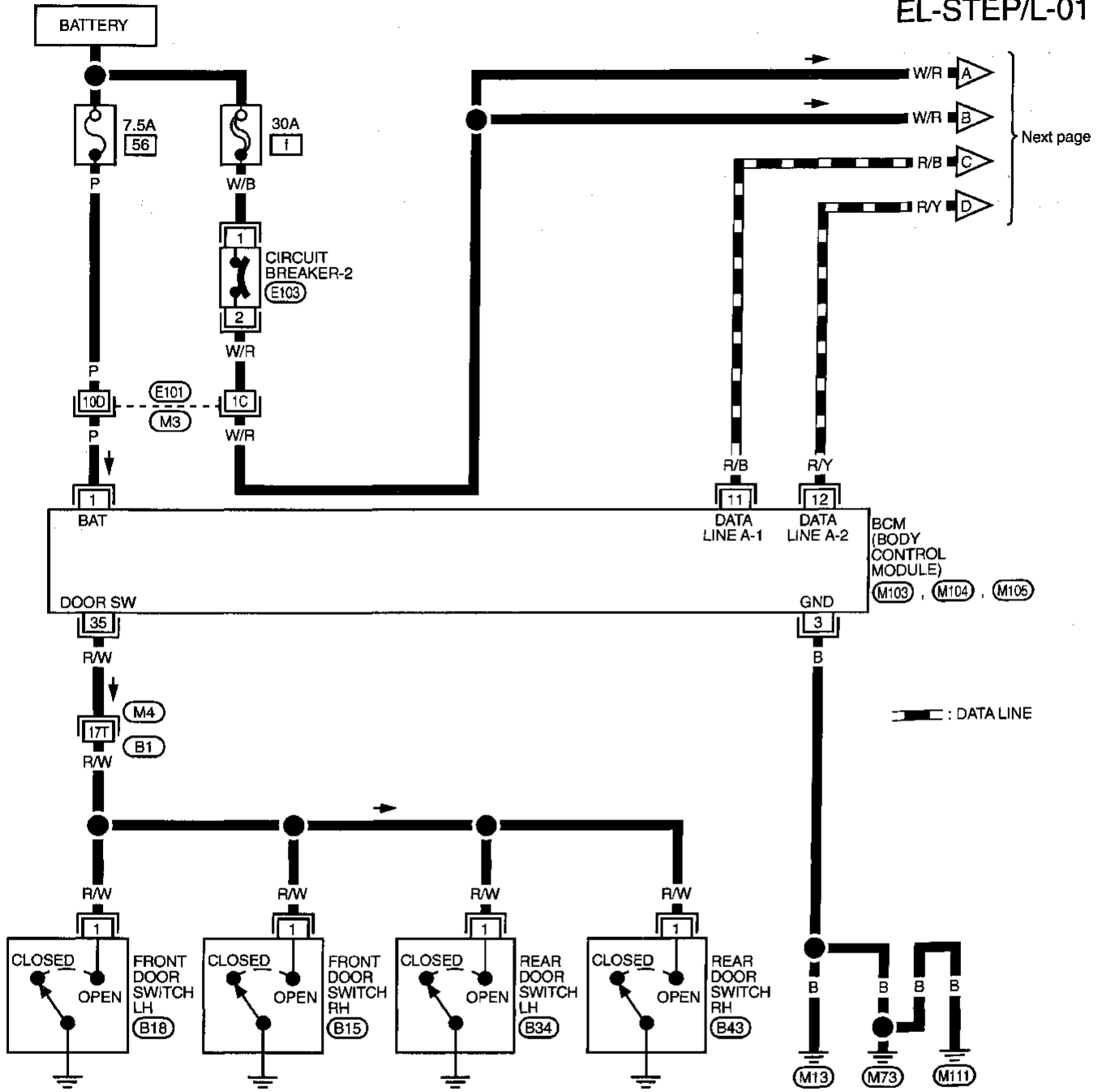
HA

EL

IDX

Wiring Diagram — STEP/L —

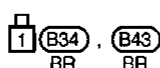
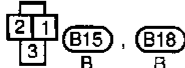
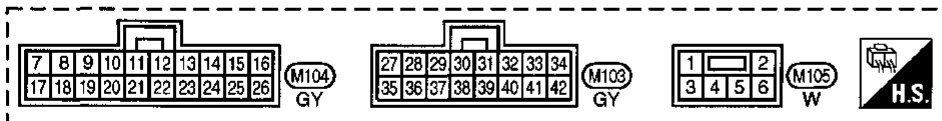
EL-STEP/L-01



Refer to last page (Foldout page).

M3 , E101

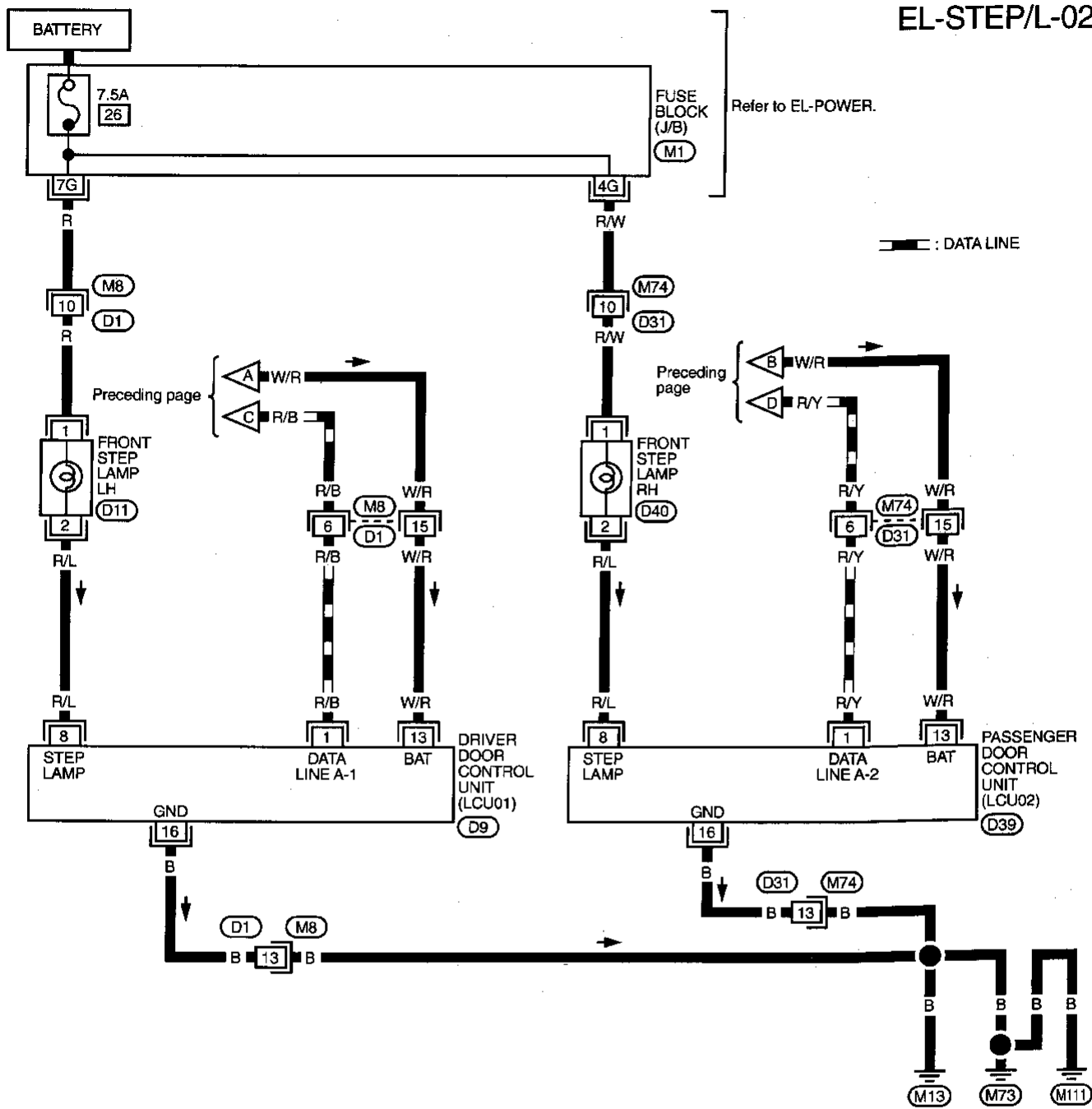
M4 , B1



# STEP LAMP — IVMS

## Wiring Diagram — STEP/L — (Cont'd)

EL-STEP/L-02



Refer to EL-POWER.

— : DATA LINE

Preceding page

Preceding page

Refer to last page (Foldout page).

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18		

(M8), (M74)  
W W

10	9	8	7	6	5	4	3	2	1
18	17	16	15	14	13	12	11		

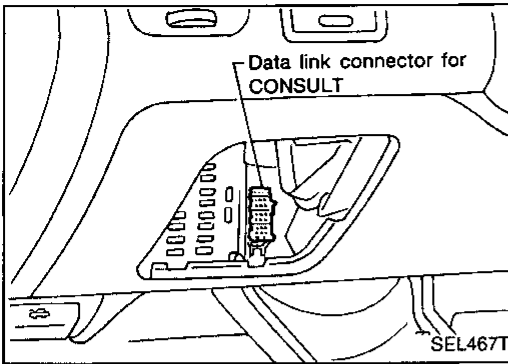
(D9), (D39)  
W W

0	1	2

(D11), (D40)  
W W

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

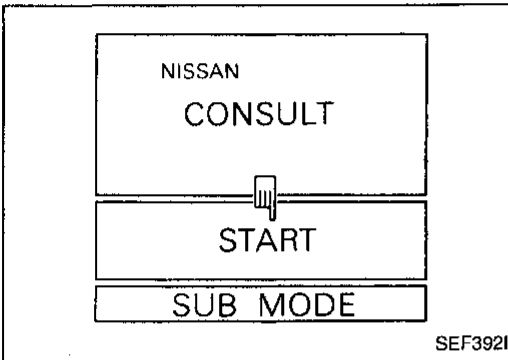
# STEP LAMP — IVMS



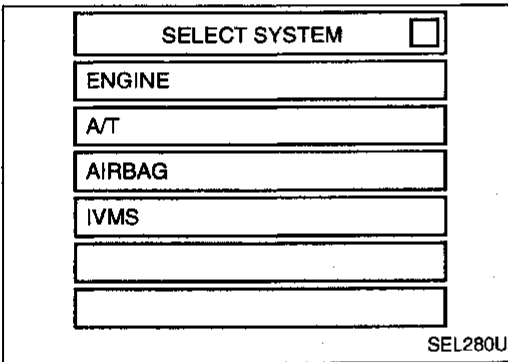
## CONSULT

### CONSULT INSPECTION PROCEDURE

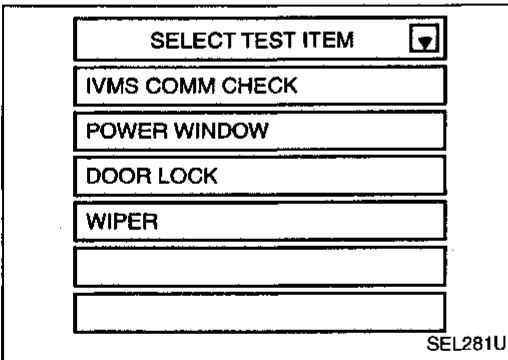
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



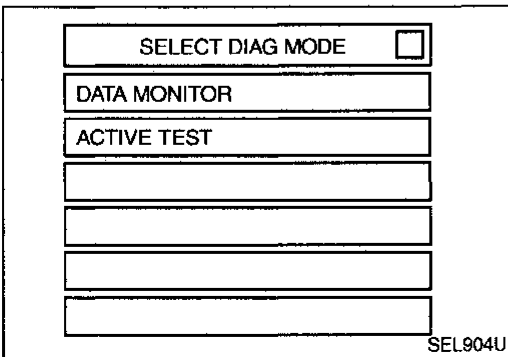
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



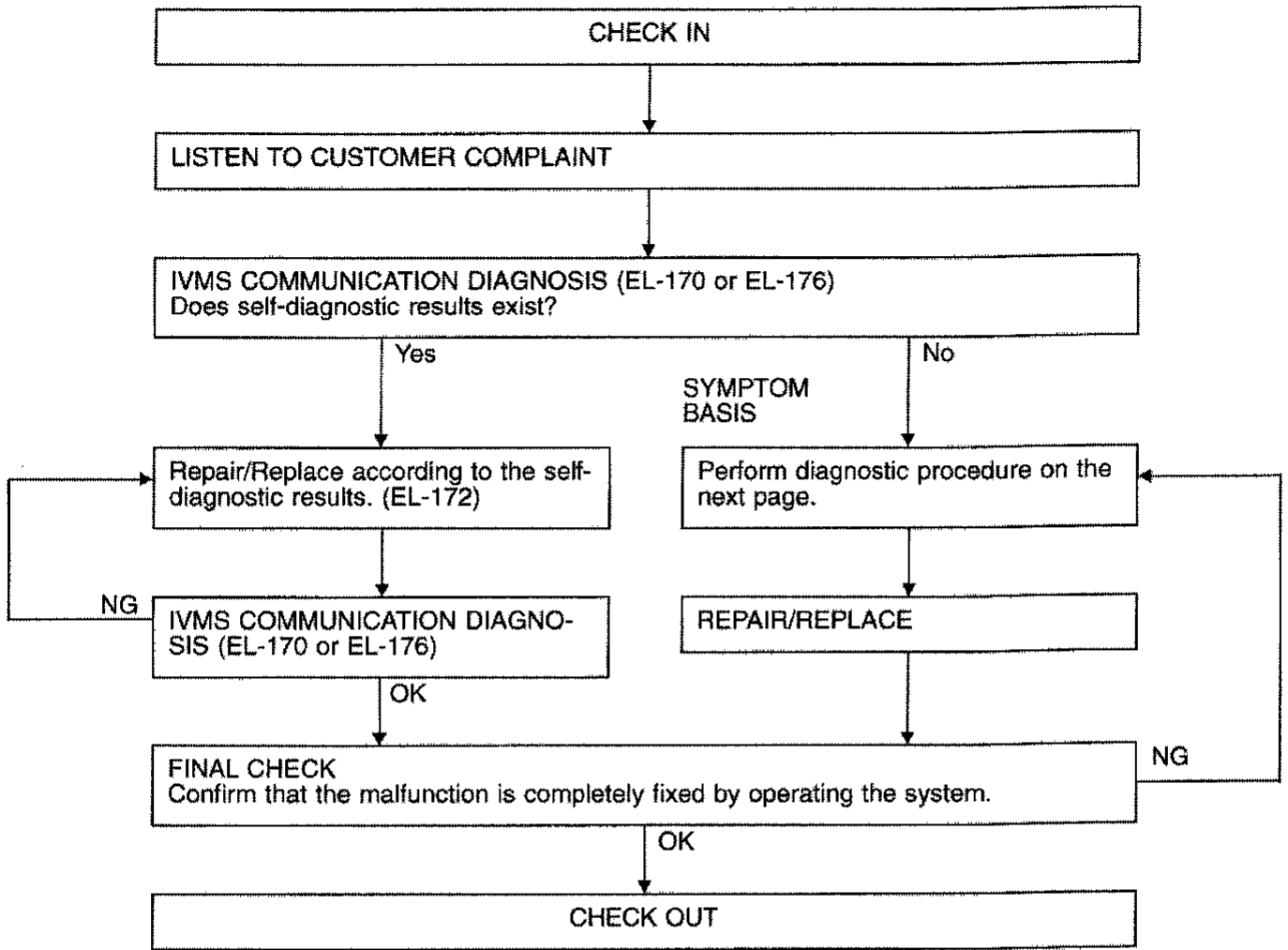
6. Touch "STEP LAMP".



- DATA MONITOR and ACTIVE TEST are available for the step lamp.

Trouble Diagnoses

WORK FLOW



GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

NOTICE:

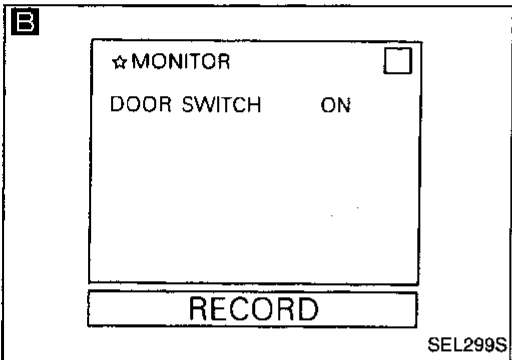
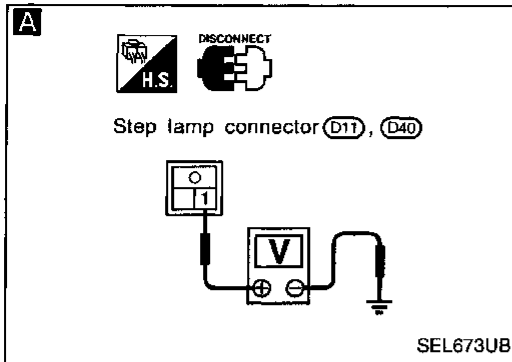
- When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the “disconnected” data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.
- To erase the memory, perform the procedure below.  
Erase the memory with CONSULT (refer to EL-170) or turn the ignition switch to “OFF” position and remove 7.5A fuse (No. 56, located in the fuse and fusible link box).

# STEP LAMP — IVMS

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE

**SYMPTOM: Step lamp does not illuminate/does not go off when door is opened/closed.**



Check step lamp bulb. NG → Replace bulb.

**A**

**POWER SUPPLY CIRCUIT CHECK**

1. Disconnect step lamp connector.
2. Check voltage between step lamp terminal ① and ground.

**Battery voltage should exist.**

NG → Check the following.

- 7.5A fuse [No. 20, located in the fuse block (J/B)]
- Harness for open or short between fuse and step lamp

**B**

**DOOR SWITCH INPUT SIGNAL CHECK**

**CONSULT**

See "DOOR SWITCH" in "Data Monitor" mode.

When all doors are closed:  
**DOOR SWITCH OFF**

When at least one door is open:  
**DOOR SWITCH ON**

OR

**ON BOARD**

Perform On board diagnosis — Mode II (switch monitor) for all door switches. Refer to EL-178.

NG → Check the following.

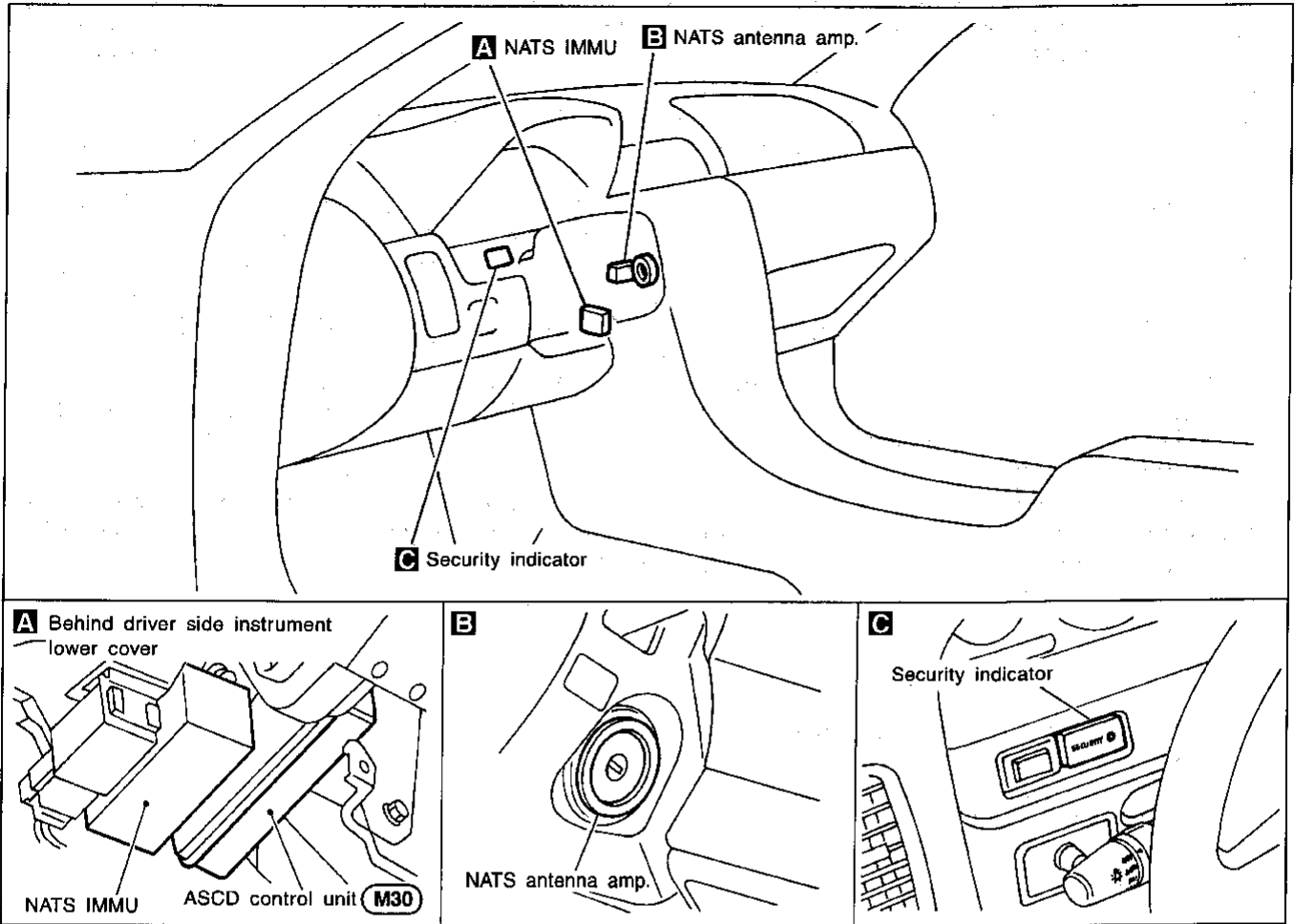
- Door switch
- Door switch ground condition
- Harness for open or short between door switch and BCM

OK ↓

Check harness for open or short between step lamp and LCU.



Component Parts and Harness Connector Location



SEL923V

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

## System Description

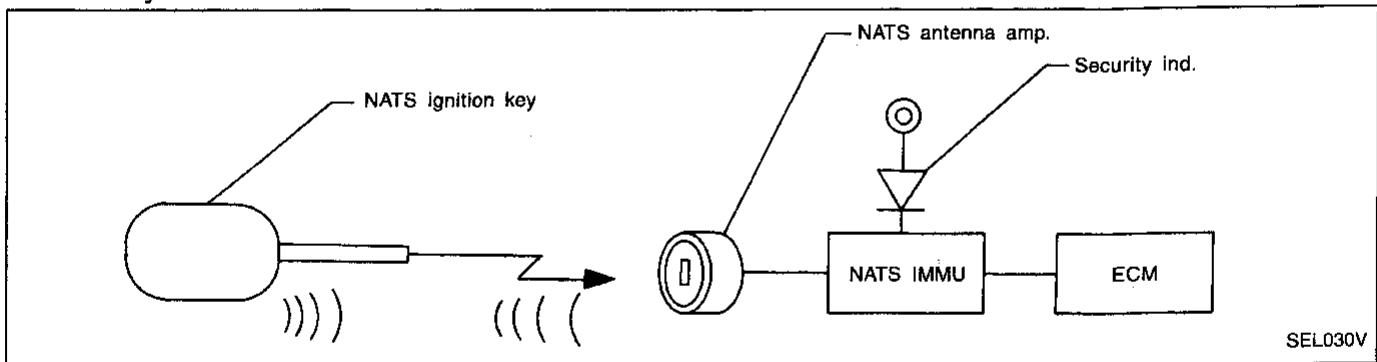
NATS (Nissan Anti-Theft system) has the following immobiliser functions:

- Since only NATS ignition keys, whose ID nos. have been registered into the ECM and IMMU of NATS, allow the engine to run, operation of a stolen vehicle without a NATS registered key is prevented by NATS. That is to say, NATS will immobilise the engine if someone tries to start it without the registered key of NATS.
- Both of the originally supplied ignition key IDs have been NATS registered. If requested by the vehicle owner, a maximum of five key IDs can be registered into the NATS components.
- The security indicator (Security ind.) blinks when the ignition switch is in “OFF” or “ACC” position. Therefore, NATS warns outsiders that the vehicle is equipped with the anti-theft system.
- When NATS detects trouble, the security indicator lamp lights up while ignition key is in the “ON” position.
- NATS trouble diagnoses, system initialization and additional registration of other NATS ignition key IDs must be carried out using CONSULT hardware and CONSULT NATS software. When NATS initialization has been completed, the ID of the inserted ignition key is automatically NATS registered. Then, if necessary, additional registration of other NATS ignition key IDs can be carried out. Regarding the procedures of NATS initialization and NATS ignition key ID registration, refer to CONSULT operation manual, NATS.
- **When servicing a malfunction of the NATS (indicated by lighting up of Security Indicator Lamp) or registering another NATS ignition key ID no., it may be necessary to re-register original key identification. Therefore, be sure to receive all keys from vehicle owner.**

## System Composition

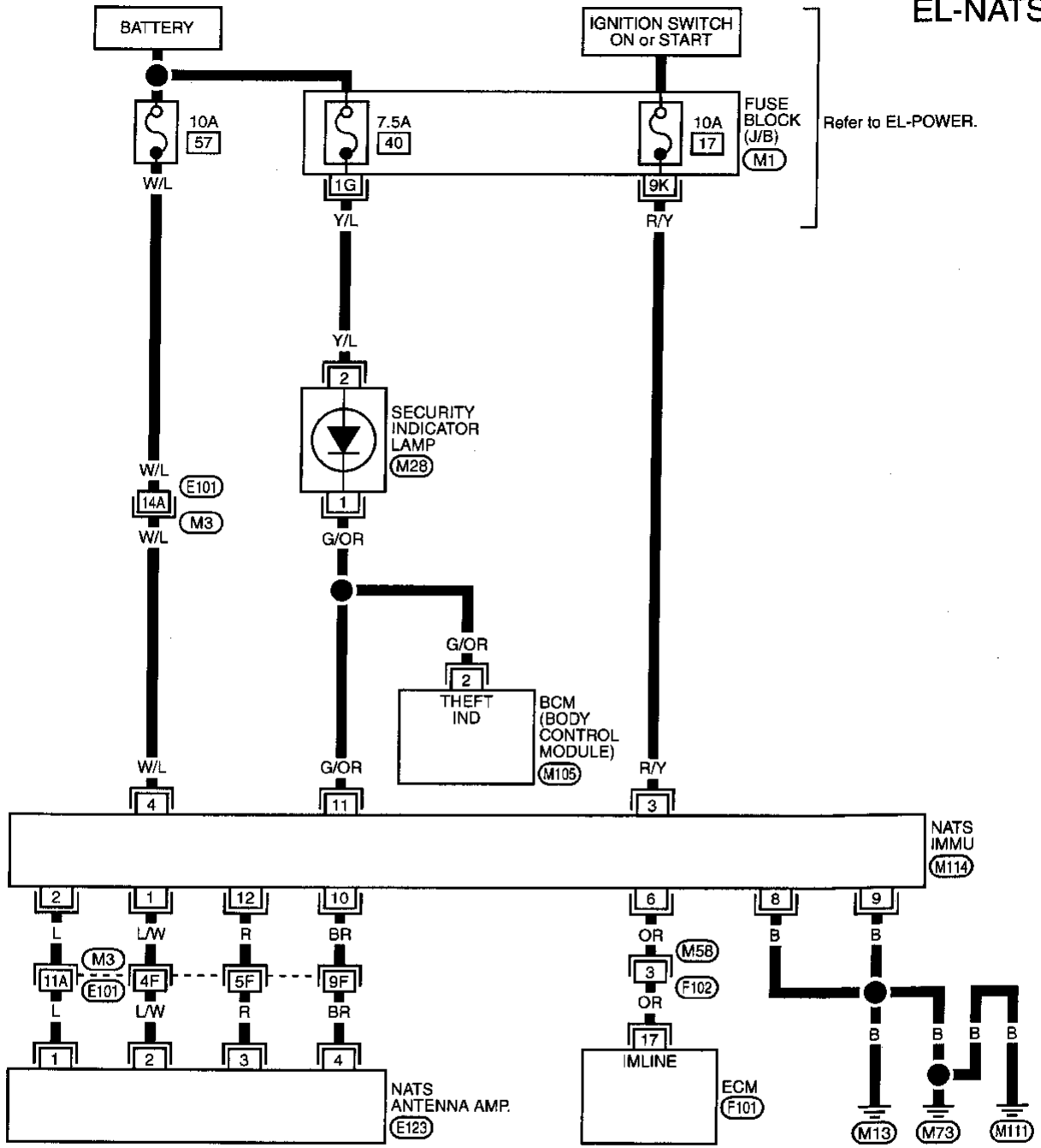
The immobiliser function of the NATS consists of the following:

- NATS ignition key
- NATS antenna amp. located in the ignition key cylinder
- NATS immobiliser control unit (NATS IMMU)
- Engine control module (ECM)
- Security indicator



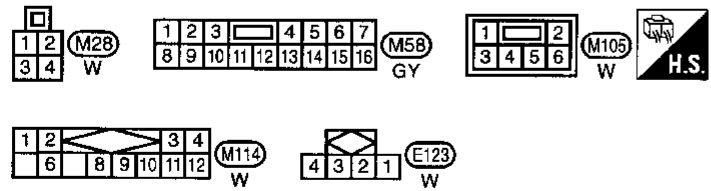
Wiring Diagram — NATS —

EL-NATS-01



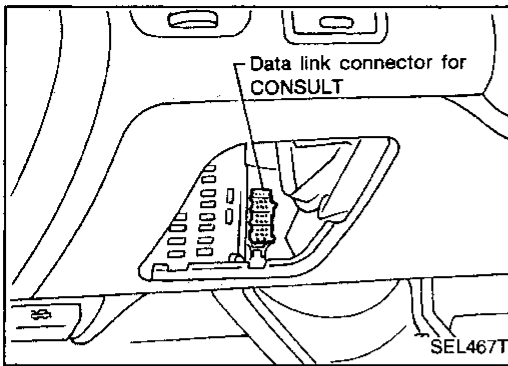
Refer to EL-POWER.

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX



Refer to last page (Foldout page).

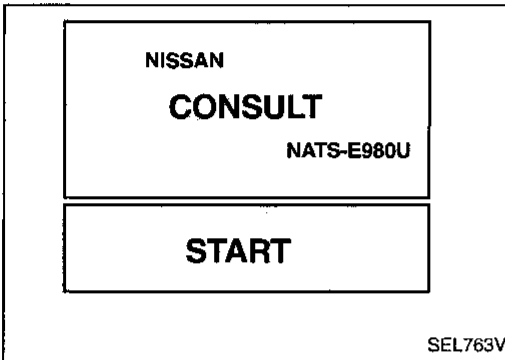
- M1
- M3, E101
- F101



## CONSULT

### CONSULT INSPECTION PROCEDURE

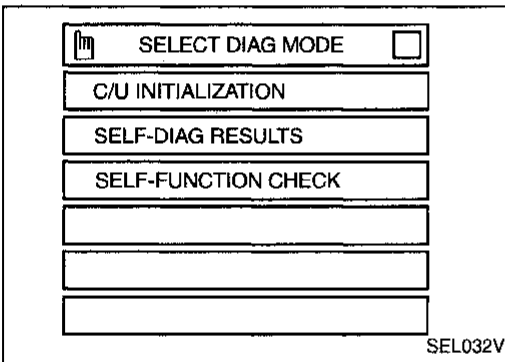
1. Turn ignition switch OFF.
2. Connect "CONSULT" to Data link connector for CONSULT. (Data link connector for CONSULT is located behind the fuse box cover.)



3. Insert NATS program card into CONSULT.

◆: Program card  
NATS-E980U

4. Turn ignition switch ON.
5. Touch "START".



6. Perform each diagnostic test mode according to each service procedure.

**For further information, see the CONSULT Operation Manual, NATS.**

# NVIS (Nissan Vehicle Immobiliser System — NATS)

## CONSULT (Cont'd)

### CONSULT DIAGNOSTIC TEST MODE FUNCTION

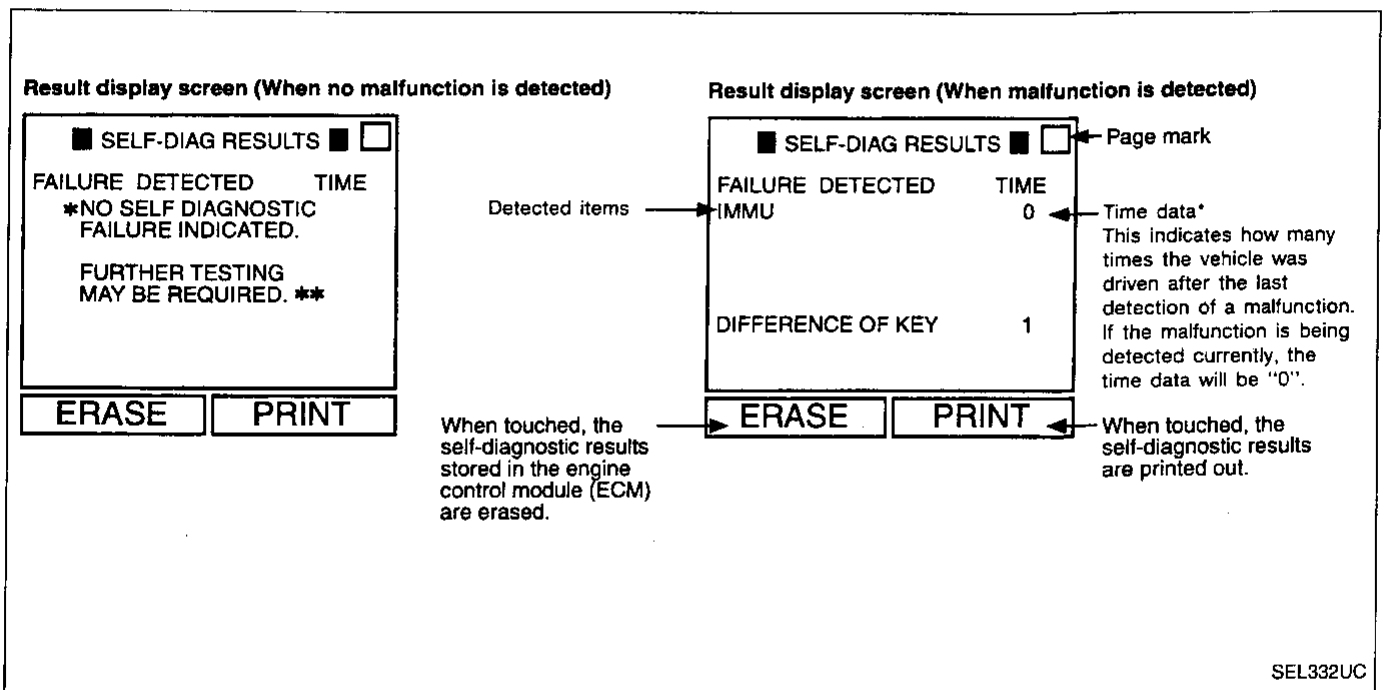
CONSULT DIAGNOSTIC TEST MODE	Description
C/U INITIALIZATION	When replacing any of the following three components, C/U initialization is necessary. [NATS ignition key/IMMU/ECM]
SELF-FUNCTION CHECK	ECM checks its own NATS communication interface by itself.
SELF-DIAGNOSTIC RESULTS	Detected items (screen terms) are as shown in the chart below.

#### NOTE:

When any initialization is performed, all ID previously registered will be erased. So all NATS ignition keys must be registered again.

The engine cannot be started with an unregistered key. In this case, the system may show "DIFFERENCE OF KEY" or "LOCK MODE" as a self-diagnostic result on the CONSULT screen.

#### HOW TO READ SELF-DIAGNOSTIC RESULTS



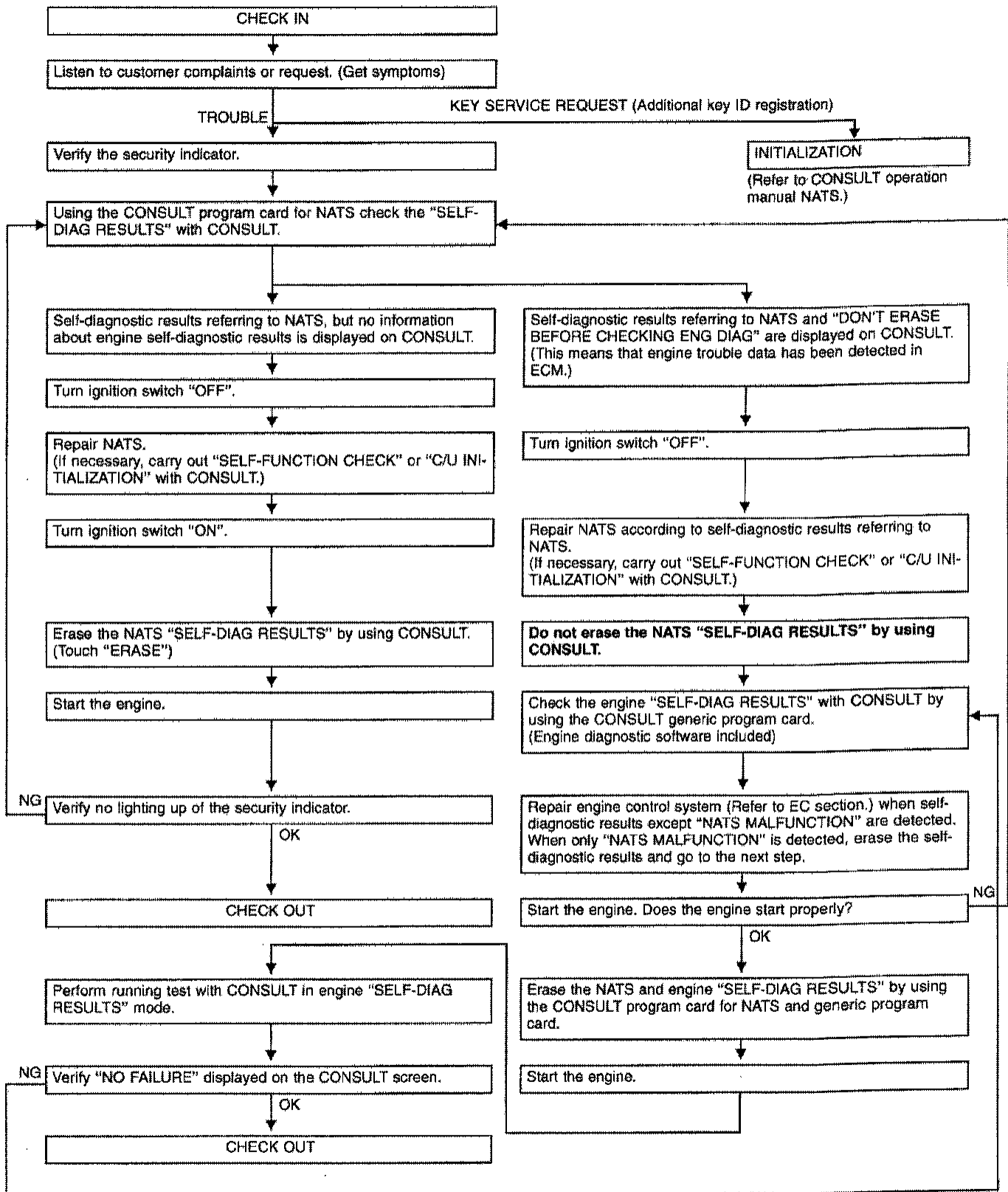
\* If trip number is more than 1, security indicator lamp does not light up.

#### SELF-DIAGNOSTIC RESULTS ITEM CHART

Detected items (Screen terms)	Description	Reference page
IMMU	ECM received the signal from IMMU that IMMU is malfunctioning.	EL-302
ECM	ECM is malfunctioning.	EL-302
CHAIN OF ECM-IMMU	Communication impossible between ECM and IMMU.	EL-303
DIFFERENCE OF KEY	IMMU can receive the key ID signal but the result of ID verification between key ID and IMMU is NG.	EL-305
CHAIN OF IMMU-KEY	IMMU cannot receive the key ID signal.	EL-306
ID DISCORD, IMM-ECM	The result of ID verification between IMMU and ECM is NG. System initialization is required.	EL-307
ELECTRONIC NOISE	Noise (interference) interfered into NATS communication lines during communicating.	EL-308
DON'T ERASE BEFORE CHECKING ENG DIAG	Engine trouble data and NATS trouble data have been detected in ECM.	EL-300
LOCK MODE	When an unregistered ignition key is used, or if the starting operation is carried out two or more times consecutively with the ignition key, IMMU or ECM malfunctioning, NATS will shift the mode to one which prevents the engine from being started.	EL-309

## Trouble Diagnoses

### WORK FLOW



# NVIS (Nissan Vehicle Immobiliser System — NATS)

## Trouble Diagnoses (Cont'd)

### SYMPTOM CHART

SYMPTOM	Displayed "SELF-DIAG RESULTS" on CONSULT screen.	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)	
<ul style="list-style-type: none"> <li>Security indicator lighting up</li> <li>Engine can start.</li> </ul>	IMMU	PROCEDURE 1 (EL-302)	IMMU	GI
	ECM	PROCEDURE 2 (EL-302)	ECM	MA
<ul style="list-style-type: none"> <li>Security indicator lighting up</li> <li>Engine hard to start</li> </ul>	CHAIN OF ECM-IMMU	PROCEDURE 3 (EL-303)	Open circuit in battery voltage line of IMMU circuit	EM
			Open circuit in ignition line of IMMU circuit	EM
			Open circuit in ground line of IMMU circuit	EM
			Open or short circuit in communication line between IMMU and ECM	LC
			Open circuit in power source line of ANT/AMP circuit	EC
			ECM	FE
	DIFFERENCE OF KEY	PROCEDURE 4 (EL-305)	Unregistered key	FE
			IMMU	CL
	CHAIN OF IMMU-KEY	PROCEDURE 5 (EL-306)	Open or short circuit in communication line between ANT/AMP and IMMU	CL
			Open circuit in power source line of ANT/AMP circuit	MT
			Open circuit in ground line of ANT/AMP circuit	AT
			Malfunction of key ID chip	AT
			IMMU	FA
	ID DISCORD, IMM-ECM	PROCEDURE 6 (EL-307)	System initialization has not yet been completed.	RA
			ECM	RA
ELECTRONIC NOISE	PROCEDURE 7 (EL-308)	Noise interference in communication line		
<ul style="list-style-type: none"> <li>Security indicator lighting up</li> <li>Engine hard to start</li> </ul>	LOCK MODE	PROCEDURE 9 (EL-309)	LOCK MODE	BR
<ul style="list-style-type: none"> <li>MIL staying ON</li> <li>Security indicator lighting up</li> </ul>	DON'T ERASE BEFORE CHECKING ENG DIAG	WORK FLOW (EL-300)	Engine trouble data and NATS trouble data have been detected in ECM	ST
<ul style="list-style-type: none"> <li>Security ind. does not blink and/or light up.</li> <li>Engine can start.</li> </ul>	—	PROCEDURE 8 (EL-308)	NATS security ind.	BT
			Open circuit between Fuse and NATS IMMU	RS
			Continuation of initialization mode	
			NATS IMMU	

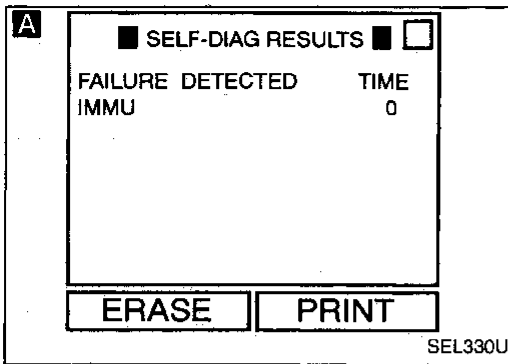
\*Lighting-up mode of MIL (Malfunction Indicator Lamp)  
 For single malfunction of NATS: Blinking  
 For dual malfunctions of NATS and an engine-related part: Stays ON  
 For single malfunction of an engine-related part: Stays ON

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 1

Self-diagnostic results:  
"IMMU" displayed on CONSULT screen

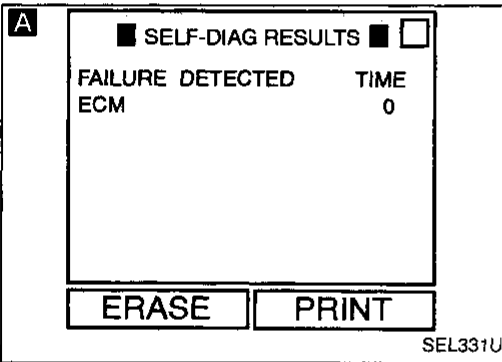


**A**



Confirm SELF-DIAGNOSTIC RESULTS "IMMU" displayed on CONSULT screen.

- IMMU is malfunctioning.
  1. Replace IMMU.
  2. Perform initialization with CONSULT.  
For the initialization procedure, refer to "CONSULT operation manual NATS".



### DIAGNOSTIC PROCEDURE 2

Self-diagnostic results:  
"ECM" displayed on CONSULT screen

**A**



Confirm SELF-DIAGNOSTIC RESULTS "ECM" displayed on CONSULT screen.

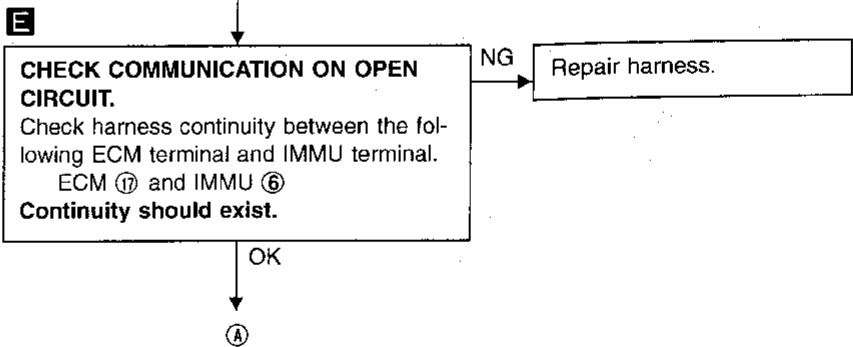
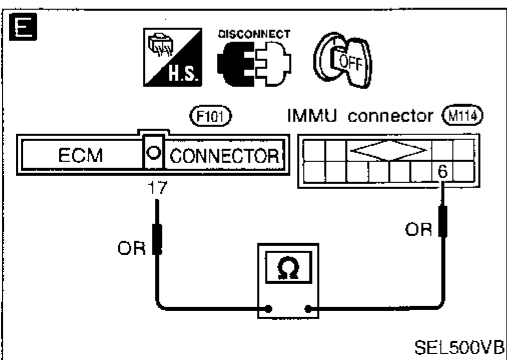
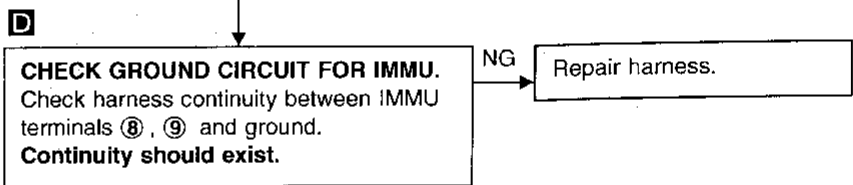
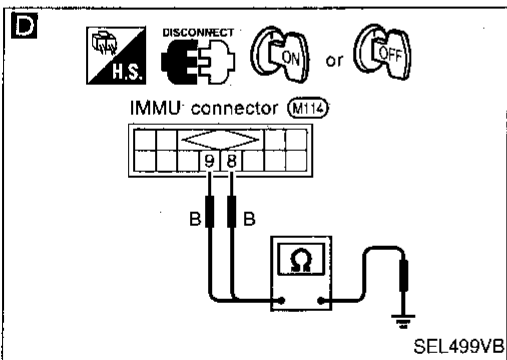
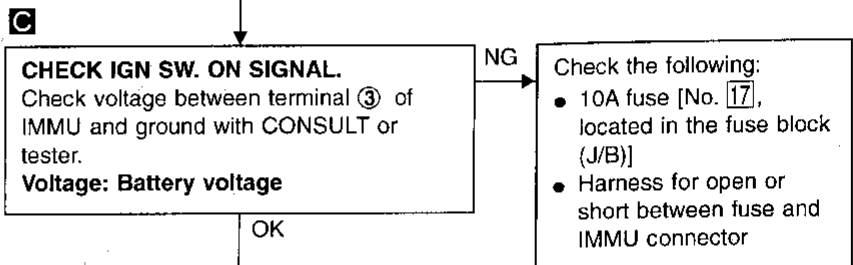
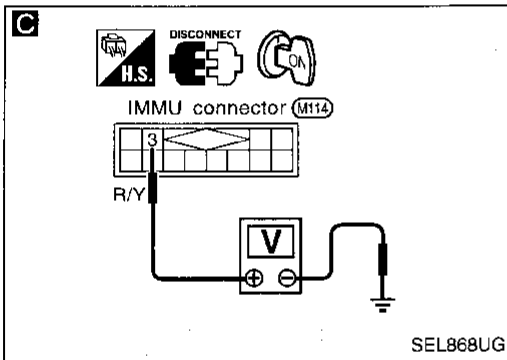
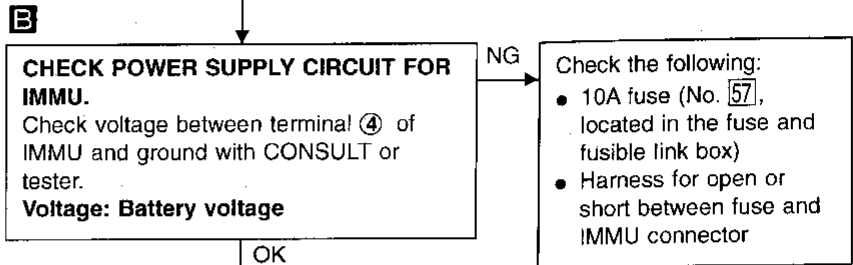
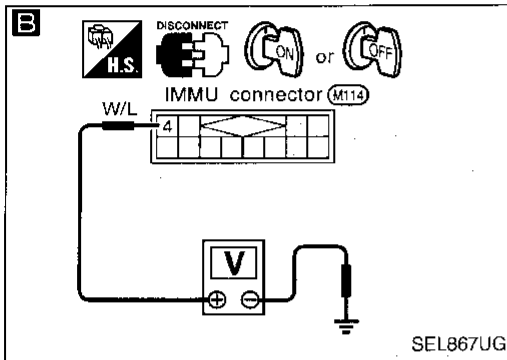
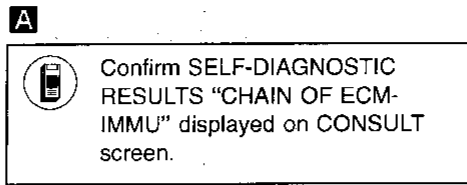
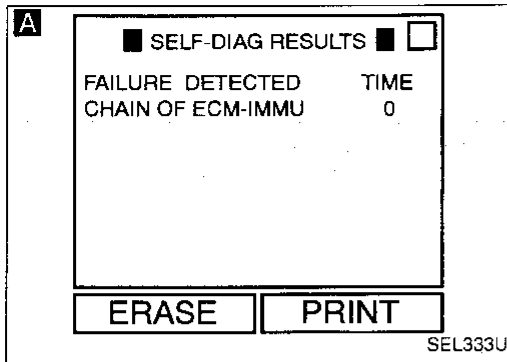
- ECM is malfunctioning.
  1. Replace ECM.
  2. Perform initialization with CONSULT.  
For the initialization procedure, refer to "CONSULT operation manual NATS".



## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 3

Self-diagnostic results:  
 "CHAIN OF ECM-IMMU" displayed on CONSULT screen



GI  
 MA  
 EM  
 LC  
 EC  
 FE  
 CL  
 MT  
 AT  
 FA  
 RA  
 BR  
 ST  
 RS  
 BT  
 HA  
 EL  
 IDX

## Trouble Diagnoses (Cont'd)

**F**

IMMU connector (M14)

Short to ground check

IMMU connector (M14)

Short to power circuit check

SEL501VB

**F**

**CHECK COMMUNICATION LINE SHORT CIRCUIT.**

1. Disconnect ECM connector and IMMU connector.
2. Check continuity between IMMU terminal ⑥ and ground.  
**Continuity should not exist.**
3. Turn ignition switch to ON.
4. Check voltage between IMMU terminal ⑥ and ground.  
**No voltage should exist.**

NG → Repair harness.

OK →

**G**

**CHECK NATS ANTENNA AMP. CIRCUIT.**

1. Disconnect NATS antenna amp. connector.
2. Turn ignition switch "ON".
3. Check voltage between antenna amp. terminal ① and ground. (Signal from NATS IMMU terminal ②)  
**Voltage: More than 4.7V**

NG → Repair harness.

OK →

**G**

NATS antenna amp. connector (E123)

SEL764VA

**H**

**SELF-FUNCTION CHECK**

1. Connect ECM connector and disconnect IMMU connector.
2. Turn ignition switch "ON".
3. Touch "SELF-FUNCTION CHECK" on CONSULT "SELECT DIAG MODE" screen.

OK →

**H**

SELECT DIAG MODE

C/U INITIALISATION

SELF-DIAG RESULTS

SELF-FUNCTION CHECK

SEL340U

**I**

Touch "START". ECM will then check its communication interface by itself.

NG →

OK →

**J** (See next page.)

- ECM is malfunctioning.
  1. Replace ECM.
  2. Perform initialization with CONSULT. For the initialization procedure, refer to "CONSULT operation manual NATS".

**I**

**SELF-FUNCTION CHECK**

TOUCH START, THEN ECM CHECK THE IMMU COMMUNICATION INTERFACE BY ITSELF.

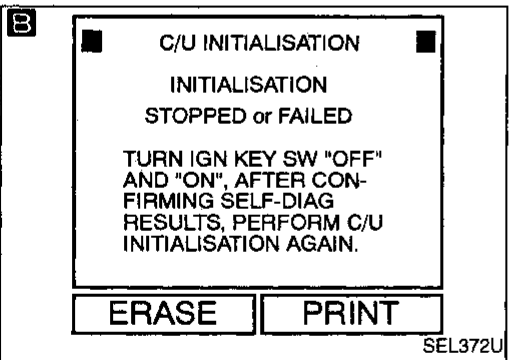
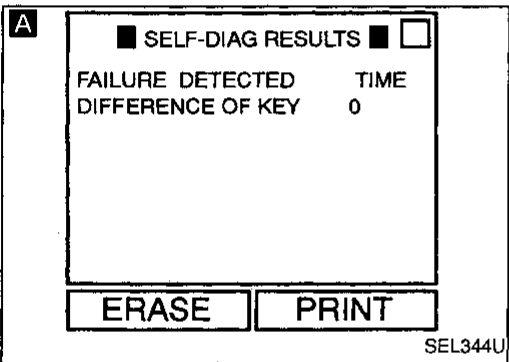
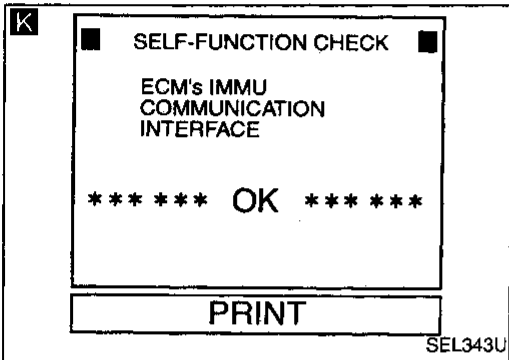
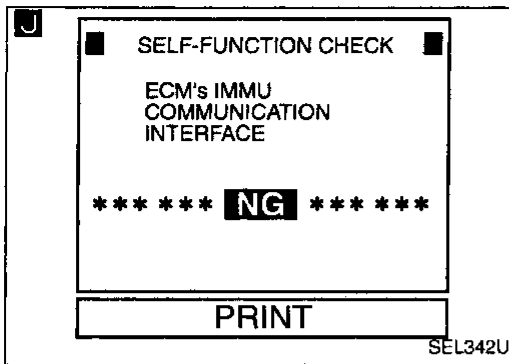
START

SEL341U

**K** (See next page.)

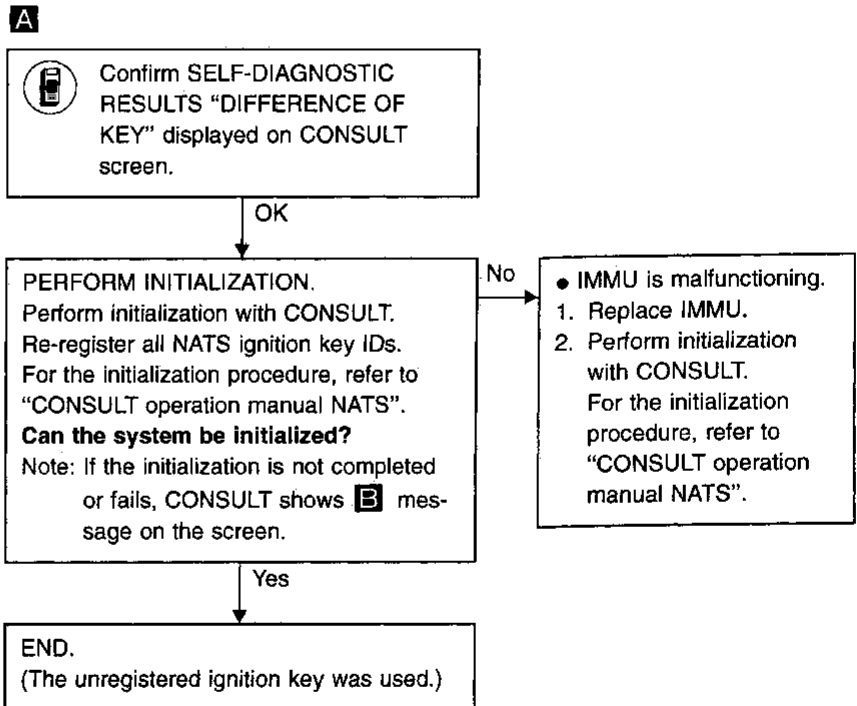
- IMMU is malfunctioning.
  1. Replace IMMU.
  2. Perform initialization with CONSULT. For the initialization procedure, refer to "CONSULT operation manual NATS".

## Trouble Diagnoses (Cont'd)



### DIAGNOSTIC PROCEDURE 4

Self-diagnostic results:  
"DIFFERENCE OF KEY" displayed on CONSULT screen



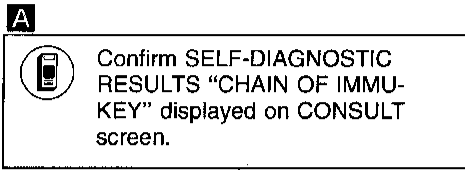
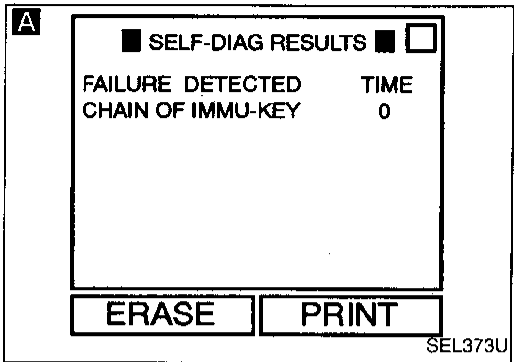
GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

## Trouble Diagnoses (Cont'd)

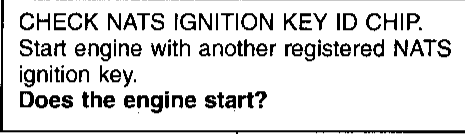
### DIAGNOSTIC PROCEDURE 5

Self-diagnostic results:

“CHAIN OF IMMU-KEY” displayed on CONSULT screen



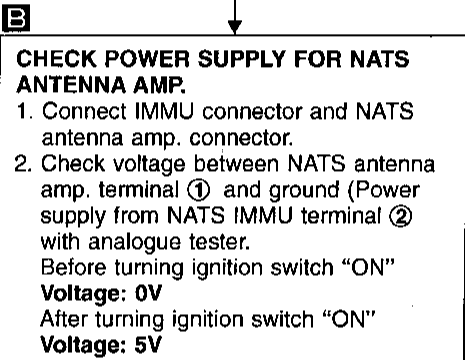
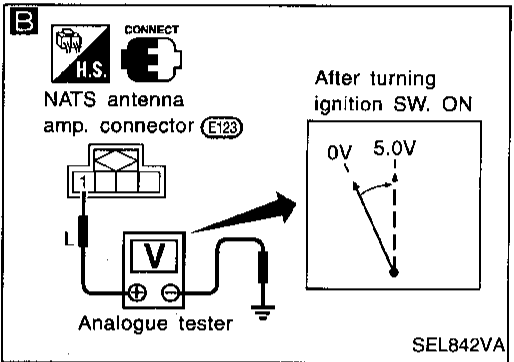
OK



Yes

- Ignition key ID chip is malfunctioning.
- 1. Replace the ignition key.
- 2. Perform initialization with CONSULT. For the initialization procedure, refer to “CONSULT operation manual NATS”.

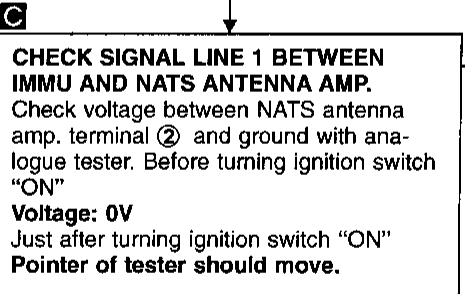
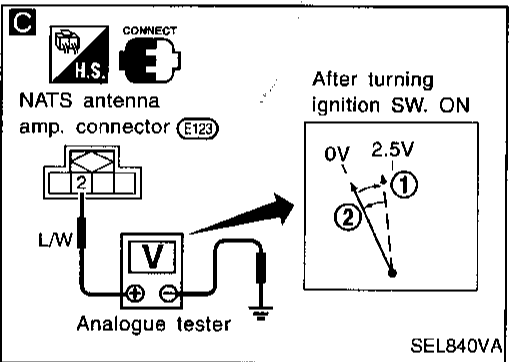
No



NG

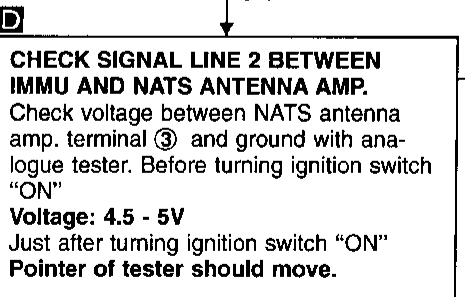
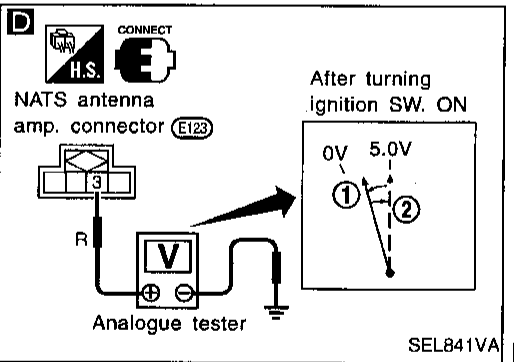
- Check harness for open or short between for open or short between IMMU and NATS antenna amp. If harness is OK, replace IMMU, perform initialisation with CONSULT. For the initialisation procedure, refer to “CONSULT operation manual NATS”.

OK



NG

OK

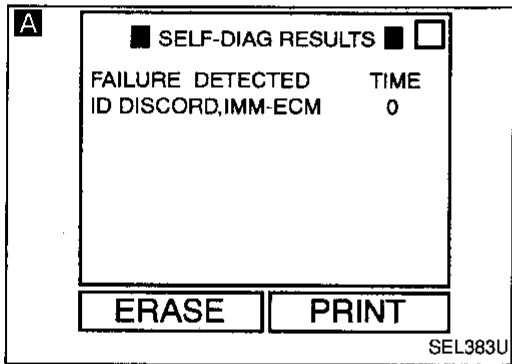
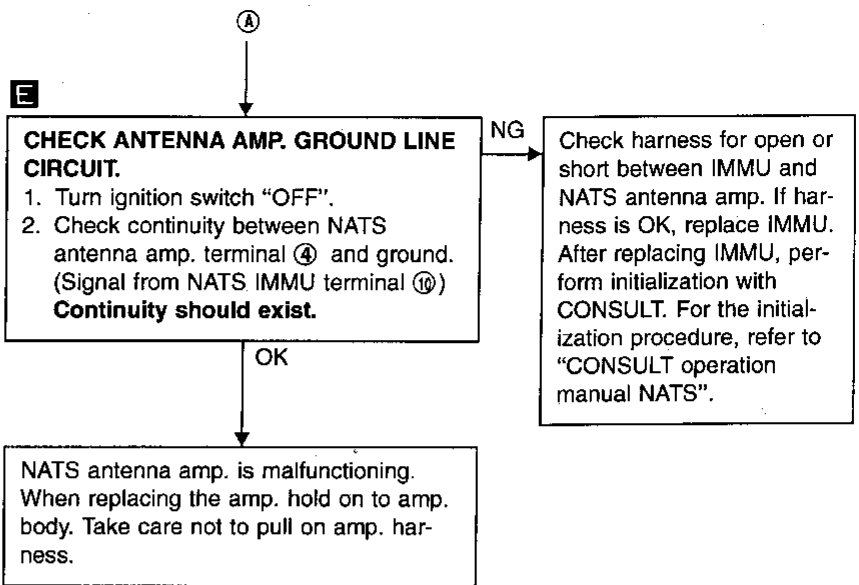
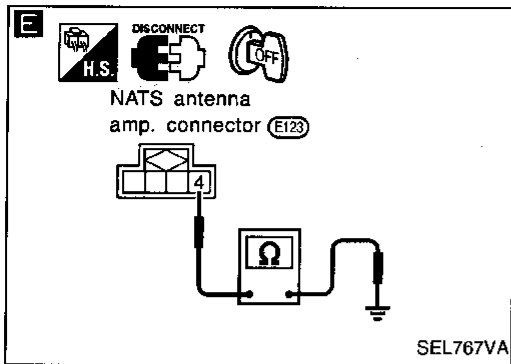


NG

OK

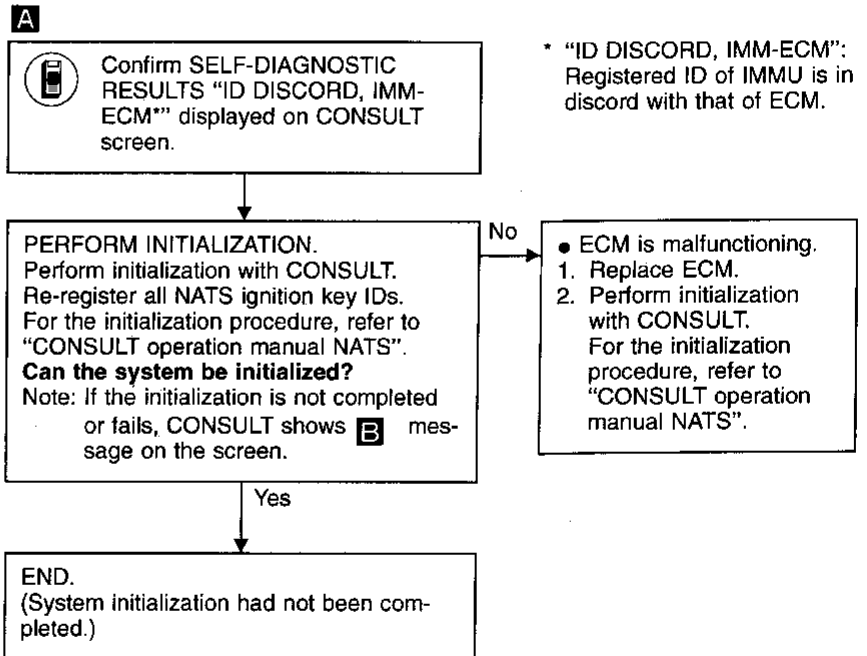
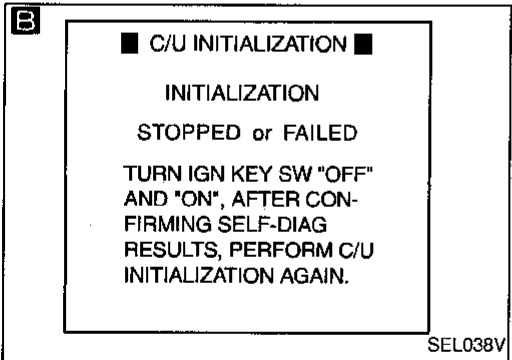
Ⓐ

## Trouble Diagnoses (Cont'd)



### DIAGNOSTIC PROCEDURE 6

**Self-diagnostic results:**  
"ID DISCORD, IMM-ECM" displayed on CONSULT screen

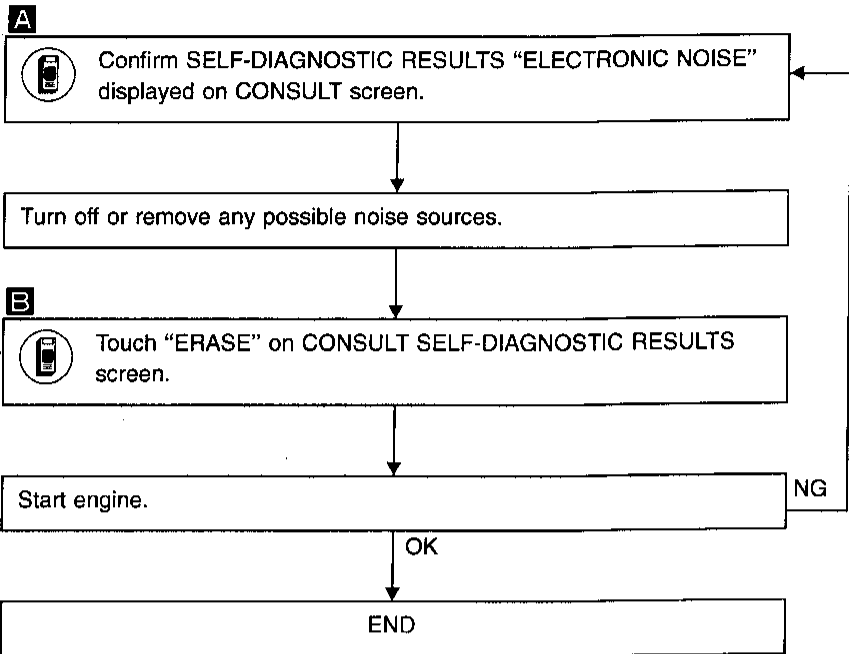
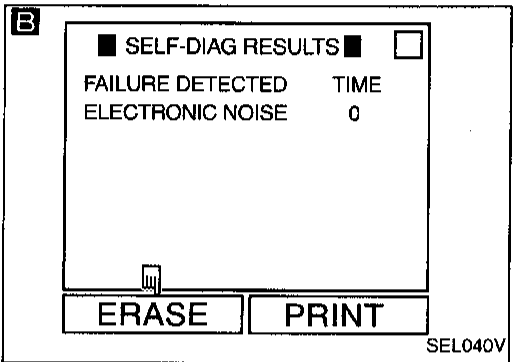
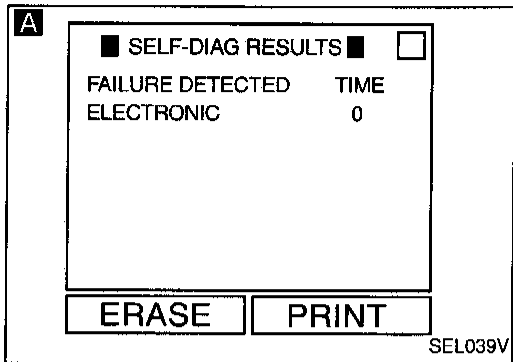


GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

## Trouble Diagnoses (Cont'd)

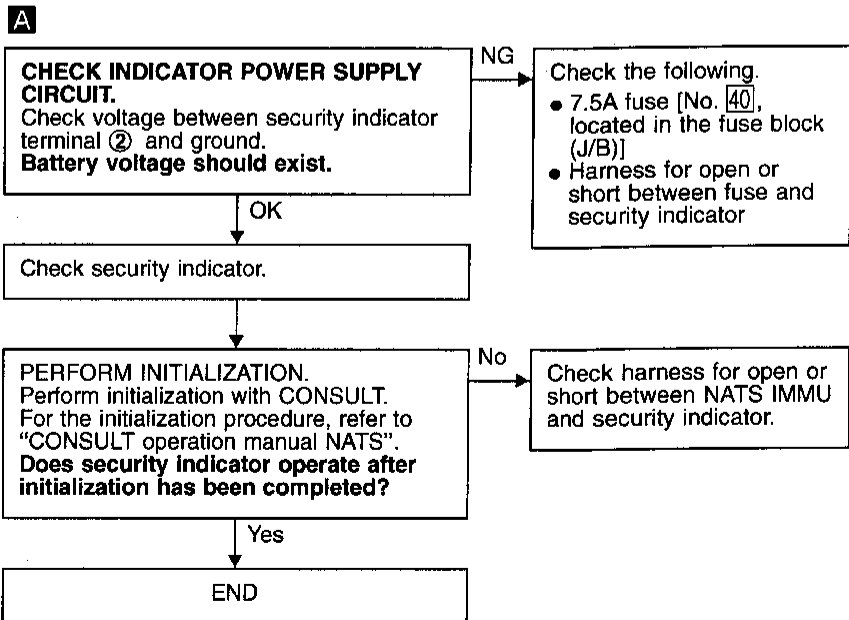
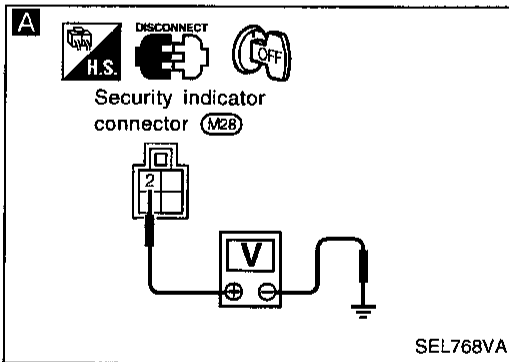
### DIAGNOSTIC PROCEDURE 7

Self-diagnostic results:  
 "ELECTRONIC NOISE" displayed on CONSULT screen



### DIAGNOSTIC PROCEDURE 8

"SECURITY IND. DOES NOT BLINK AND/OR LIGHT UP"



## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 9

**Self-diagnostic results:**  
**"LOCK MODE" displayed on CONSULT screen**

**A**

■ SELF-DIAG RESULTS ■ □

FAILURE DETECTED      TIME  
 LOCK MODE              0

DIFFERENCE OF KEY

ERASE      PRINT

SEL790U

**B**

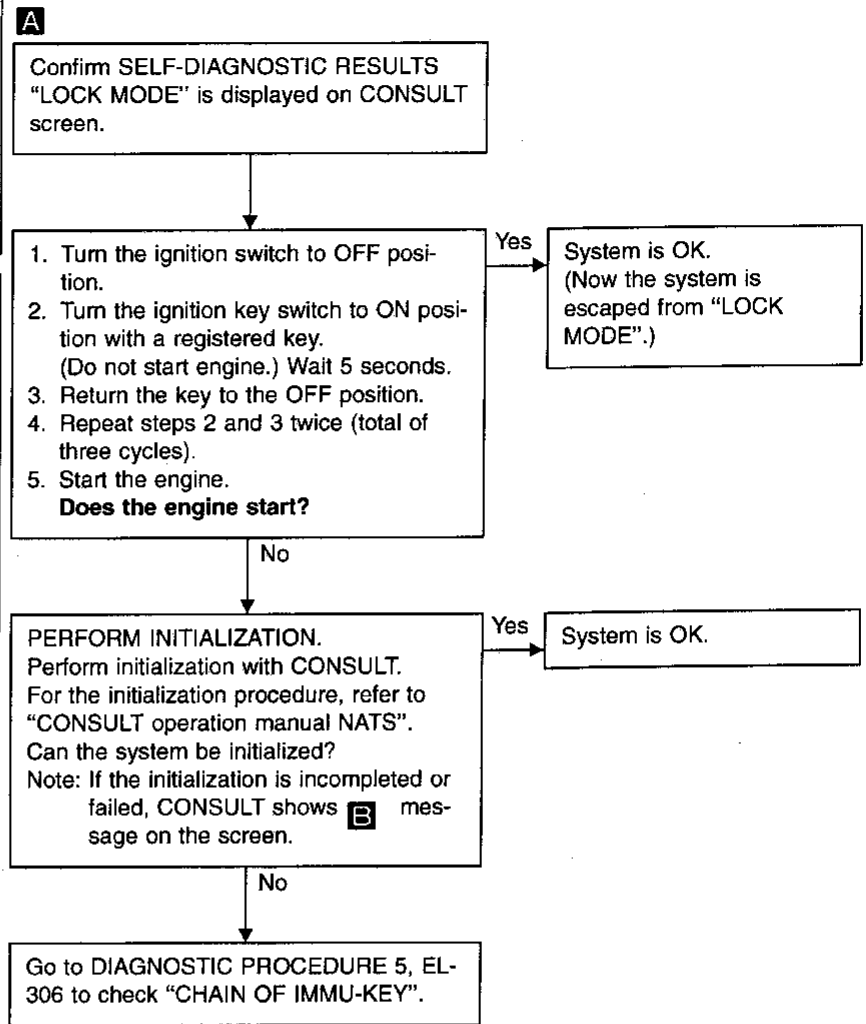
■ C/U INITIALIZATION ■

INITIALIZATION

STOPPED or FAILED

TURN IGN KEY SW "OFF" AND "ON", AFTER CONFIRMING SELF-DIAG RESULTS, PERFORM C/U INITIALIZATION AGAIN.

SEL038V

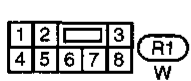
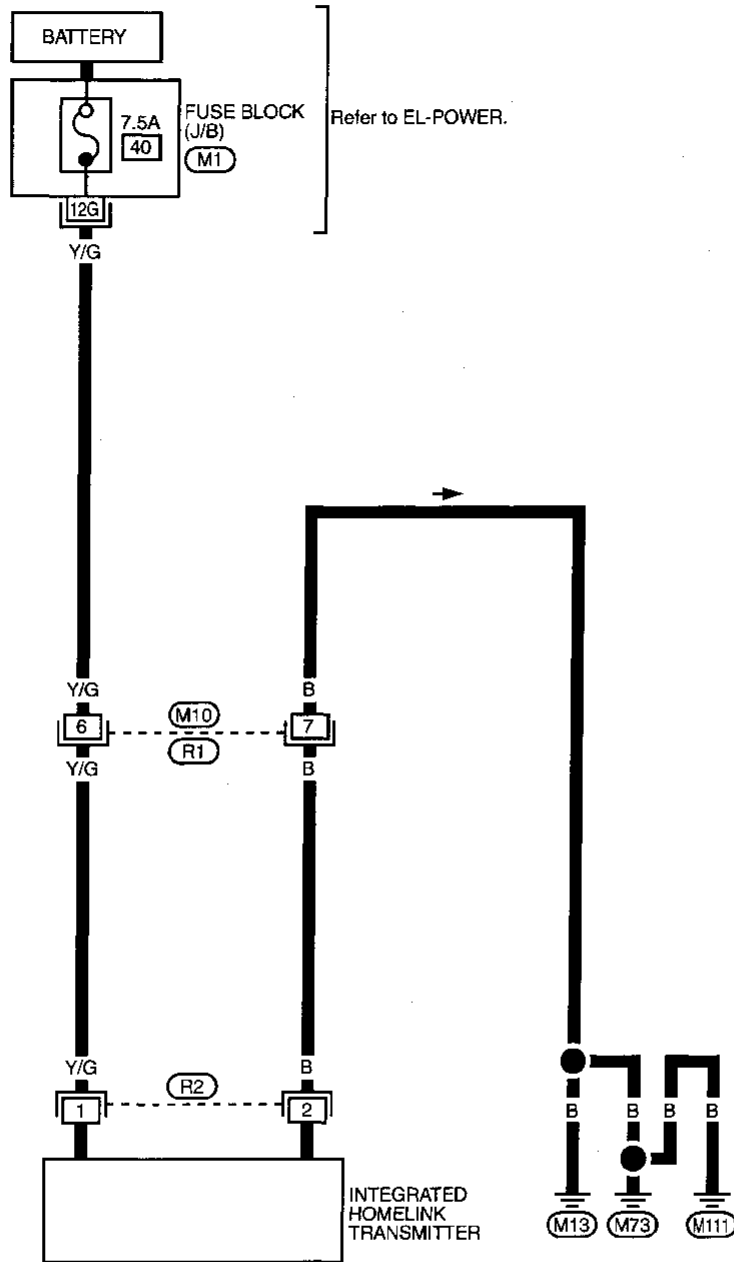


GI  
 MA  
 EM  
 LC  
 EC  
 FE  
 CL  
 MT  
 AT  
 FA  
 RA  
 BR  
 ST  
 RS  
 BT  
 HA  
**EL**  
 IDX

# INTEGRATED HOMELINK TRANSMITTER

## Wiring Diagram — TRNSMT —

EL-TRNSMT-01

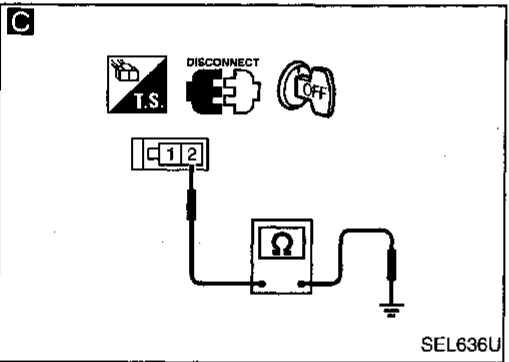
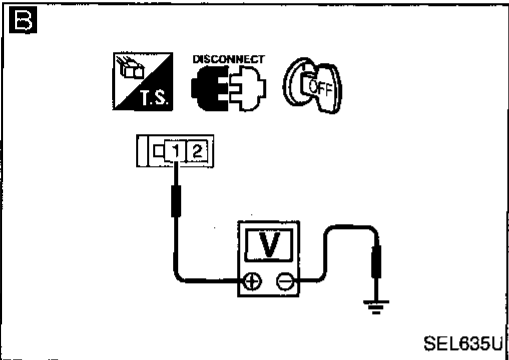
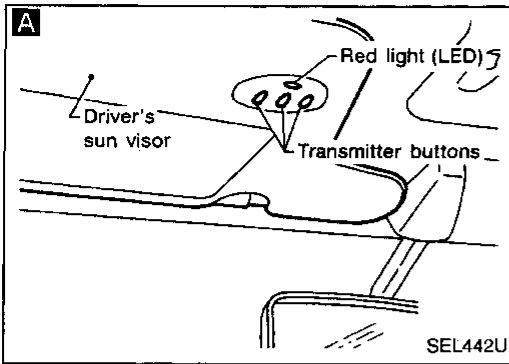


Refer to last page (Foldout page).

M1



# INTEGRATED HOMELINK TRANSMITTER

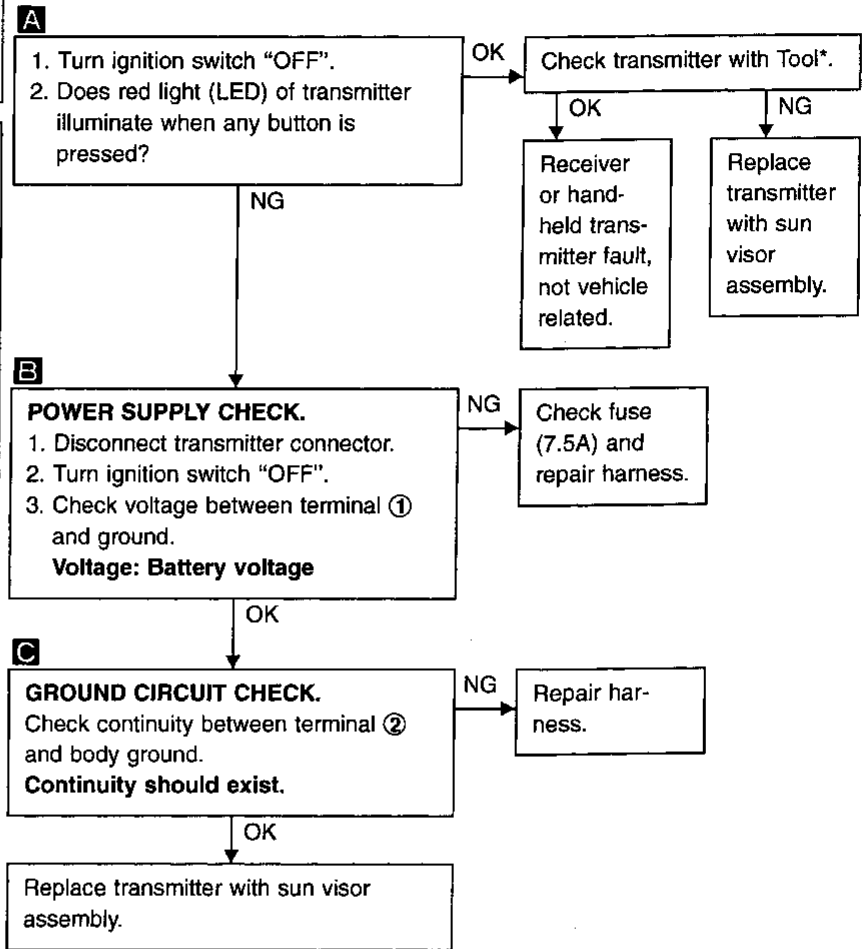


## Trouble Diagnoses

### DIAGNOSTIC PROCEDURE

**SYMPTOM: Transmitter does not activate receiver.**

Before conducting the procedure given below, make sure that system receiver (garage door opener, etc.) operates with original, hand-held transmitter. If NG, receiver or hand-held transmitter is at fault, not vehicle related.

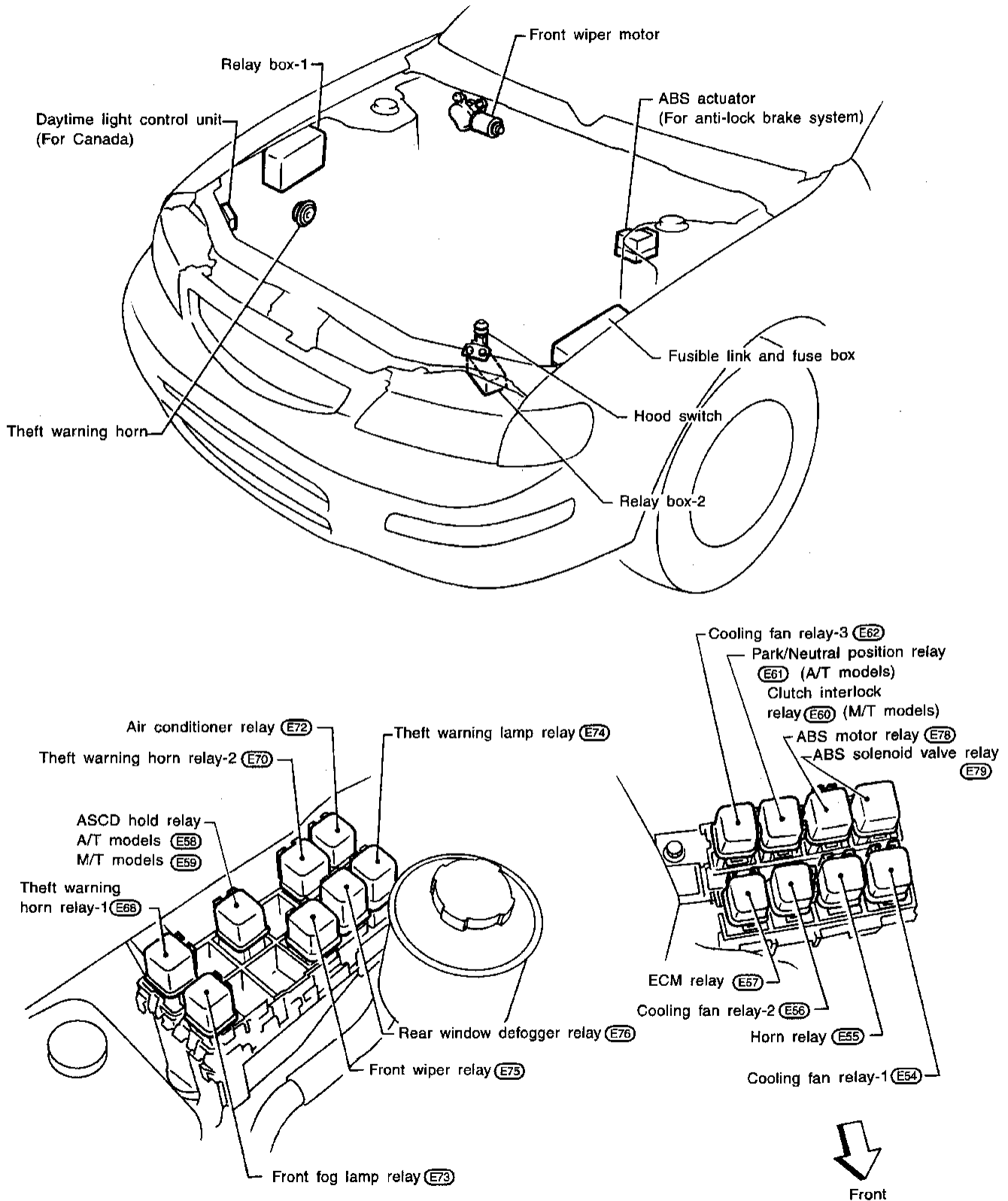


\*For details, refer to Technical Service Bulletin.

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

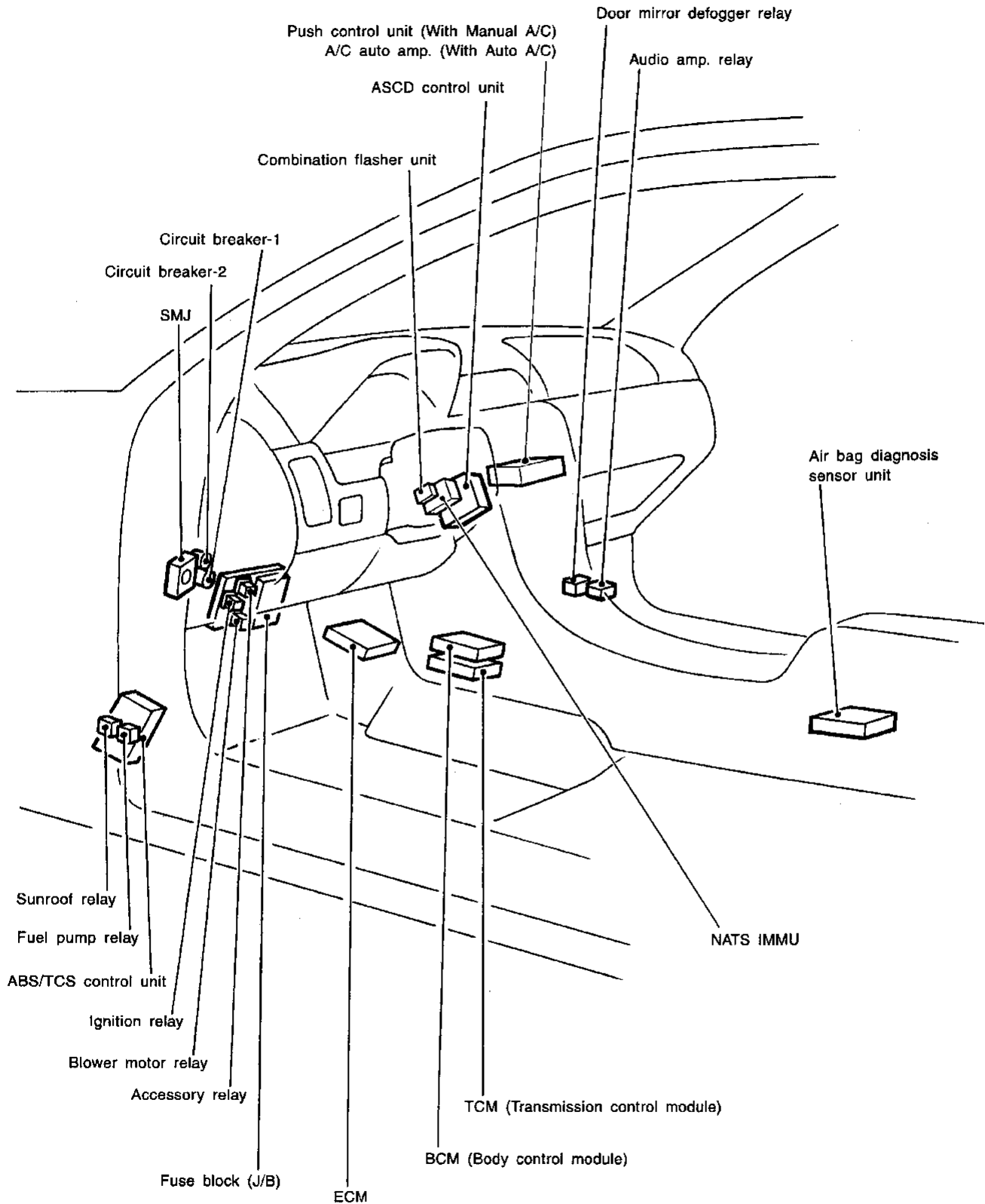
# LOCATION OF ELECTRICAL UNITS

## Engine Compartment



# LOCATION OF ELECTRICAL UNITS

## Passenger Compartment



GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

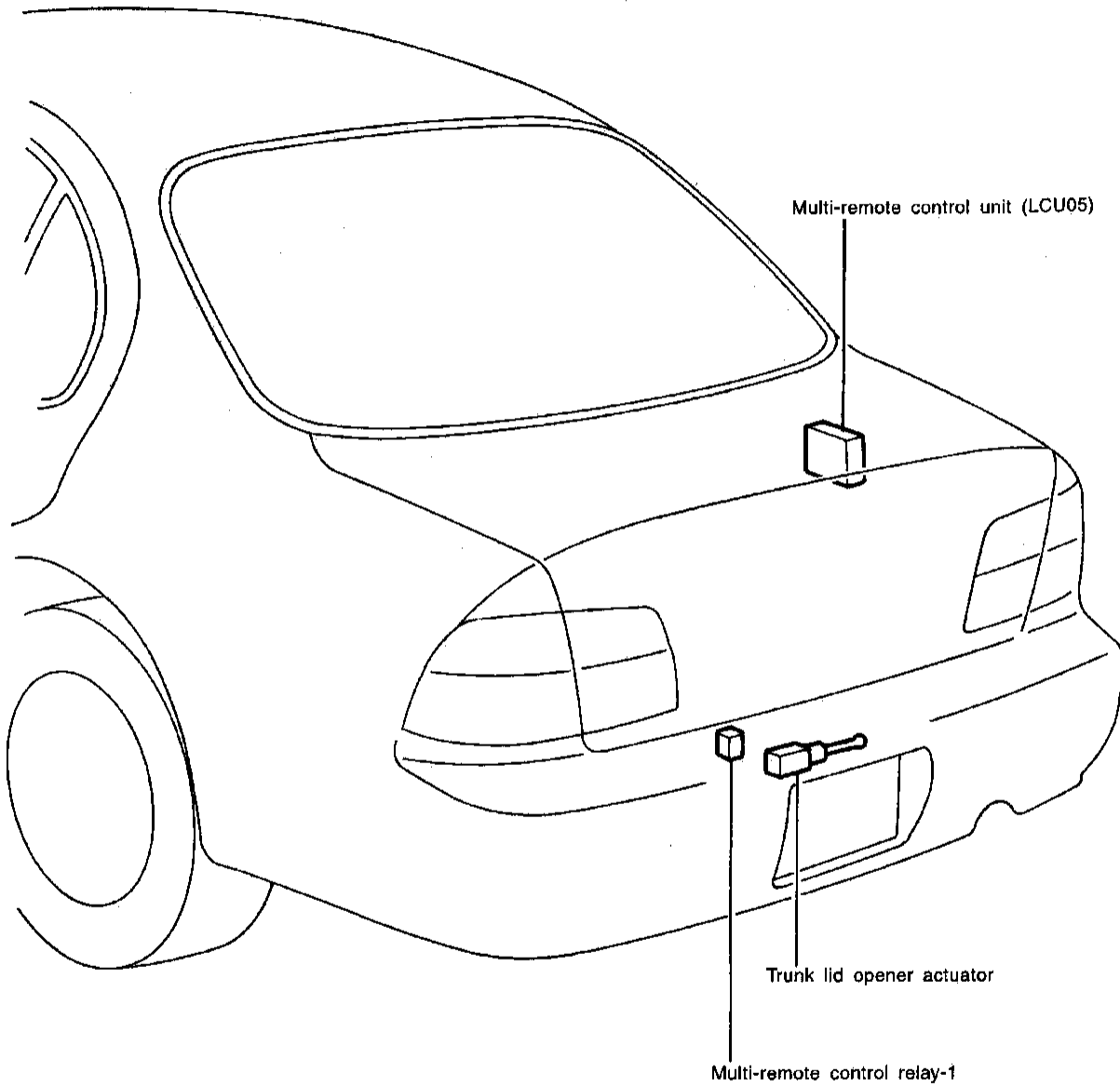
HA

**EL**

IDX

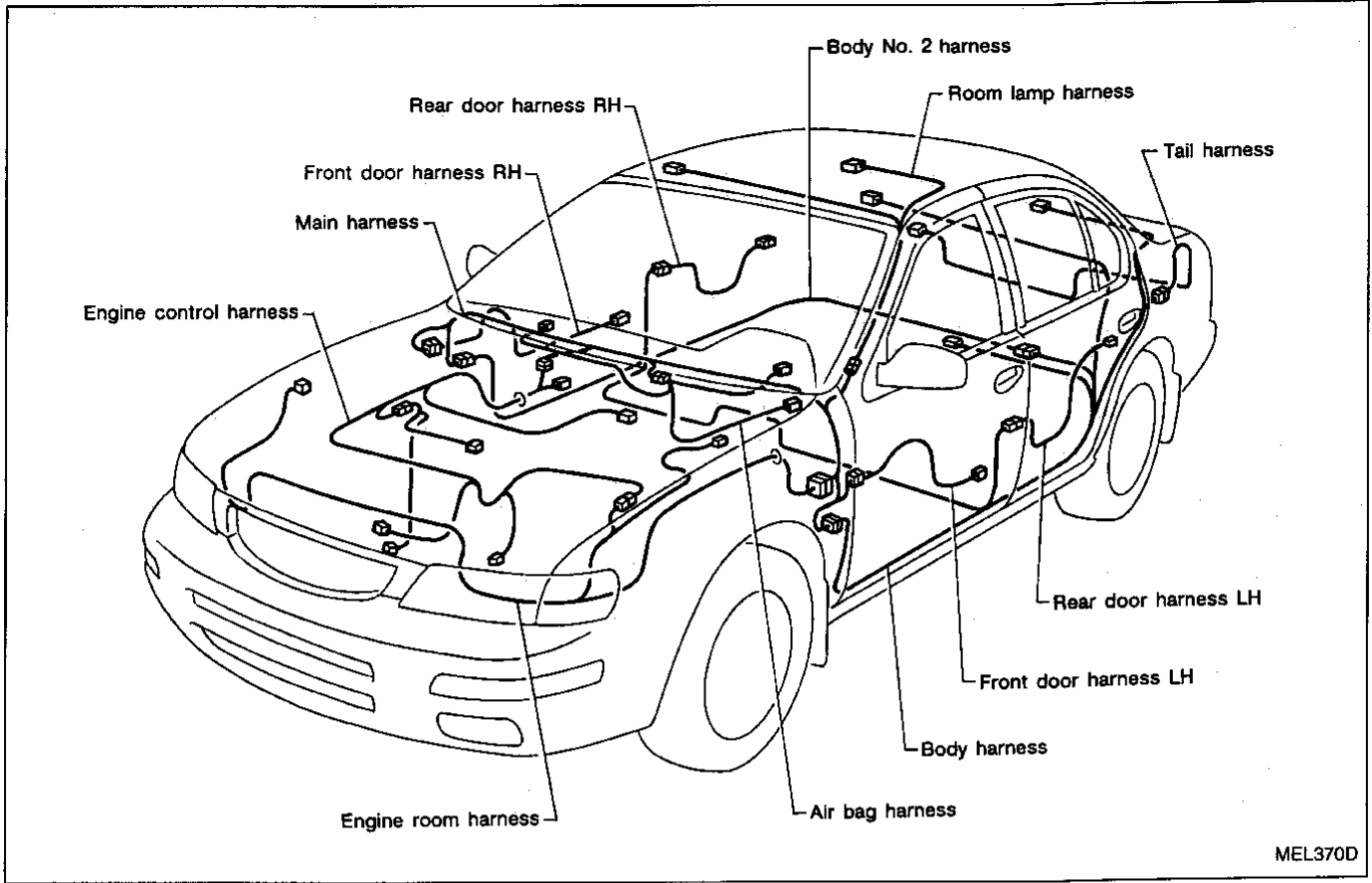
# LOCATION OF ELECTRICAL UNITS

## Luggage Compartment



# HARNES LAYOUT

## Outline



GI

MA

EM

LC

EC

FE

CL

MT

AT

FA

RA

BR

ST

RS

BT

HA

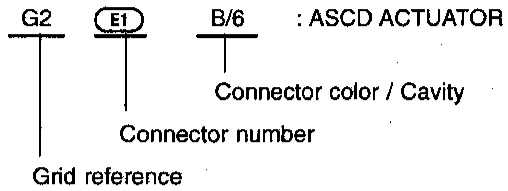
EL

IDX

# HARNES LAYOUT

## How to Read Harness Layout

Example:



The following Harness Layouts use a map style grid to help locate connectors on the drawings:

- Engine Room Harness (Engine Compartment)
- Main Harness
- Engine Control Harness
- Body Harness

### To use the grid reference

- 1) Find the desired connector number on the connector list.
- 2) Find the grid reference.
- 3) On the drawing, find the crossing of the grid reference letter column and number row.
- 4) Find the connector number in the crossing zone.
- 5) Follow the line (if used) to the connector.

### CONNECTOR SYMBOL

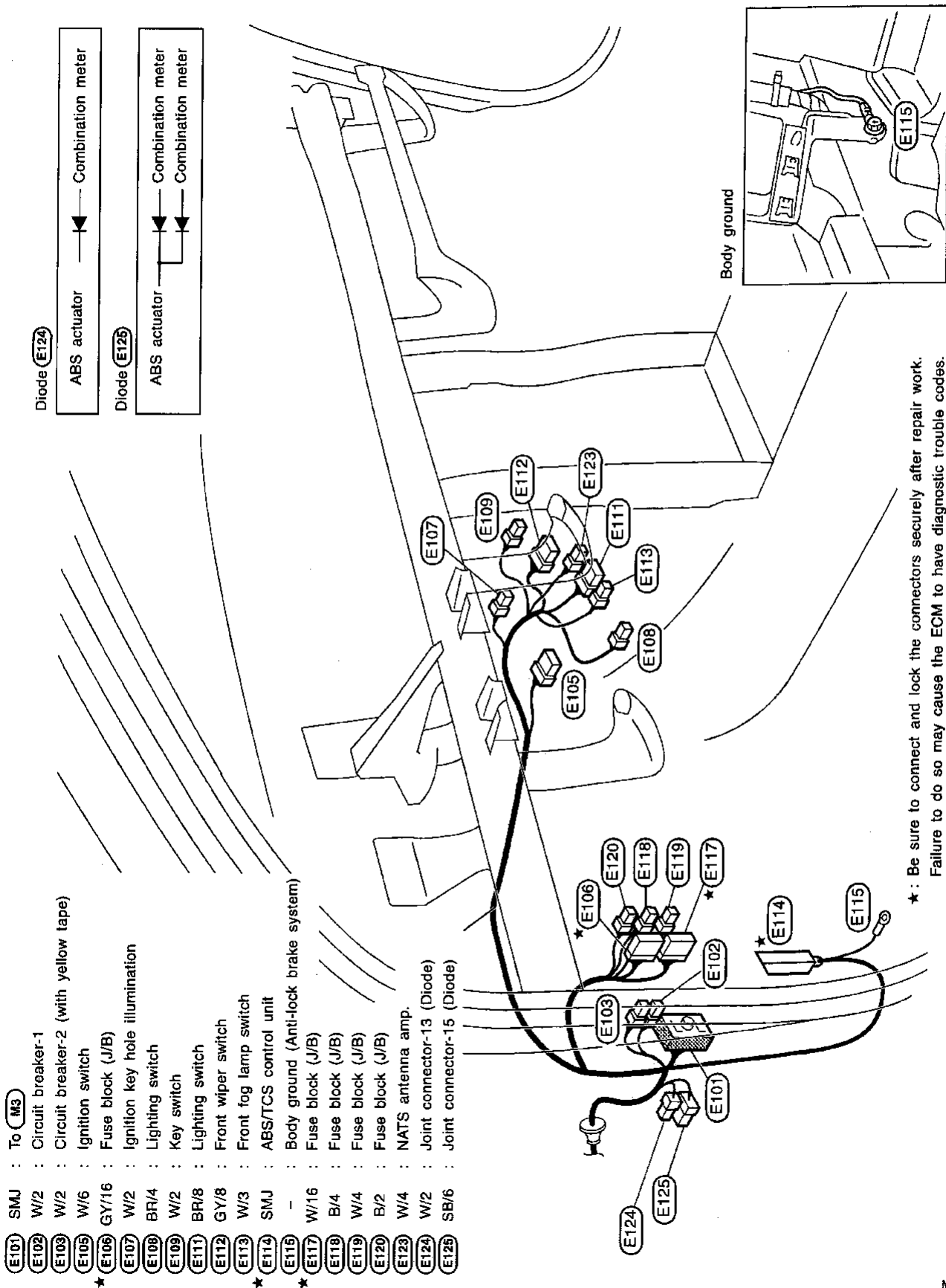
Main symbols of connector (in Harness Layout) are indicated in the below.

Connector type	Water proof type		Standard type	
	Male	Female	Male	Female
<ul style="list-style-type: none"> <li>● Cavity: Less than 4</li> <li>● Relay connector</li> </ul>				
<ul style="list-style-type: none"> <li>● Cavity: From 5 to 8</li> </ul>				
<ul style="list-style-type: none"> <li>● Cavity: More than 9</li> </ul>	—	—		
<ul style="list-style-type: none"> <li>● Ground terminal etc.</li> </ul>	—			

# HARNES LAYOUT

## Engine Room Harness

### PASSENGER COMPARTMENT



- E101 SMJ : To M3
- E102 W/2 : Circuit breaker-1
- E103 W/2 : Circuit breaker-2 (with yellow tape)
- E105 W/6 : Ignition switch
- ★ E106 GY/16 : Fuse block (J/B)
- E107 W/2 : Ignition key hole illumination
- E108 BR/4 : Lighting switch
- E109 W/2 : Key switch
- E111 BR/8 : Lighting switch
- E112 GY/8 : Front wiper switch
- E113 W/3 : Front fog lamp switch
- ★ E114 SMJ : ABS/TCS control unit
- E116 - : Body ground (Anti-lock brake system)
- ★ E117 W/16 : Fuse block (J/B)
- E118 B/4 : Fuse block (J/B)
- E119 W/4 : Fuse block (J/B)
- E120 B/2 : Fuse block (J/B)
- E123 W/4 : NATS antenna amp.
- E124 W/2 : Joint connector-13 (Diode)
- E125 SB/6 : Joint connector-15 (Diode)

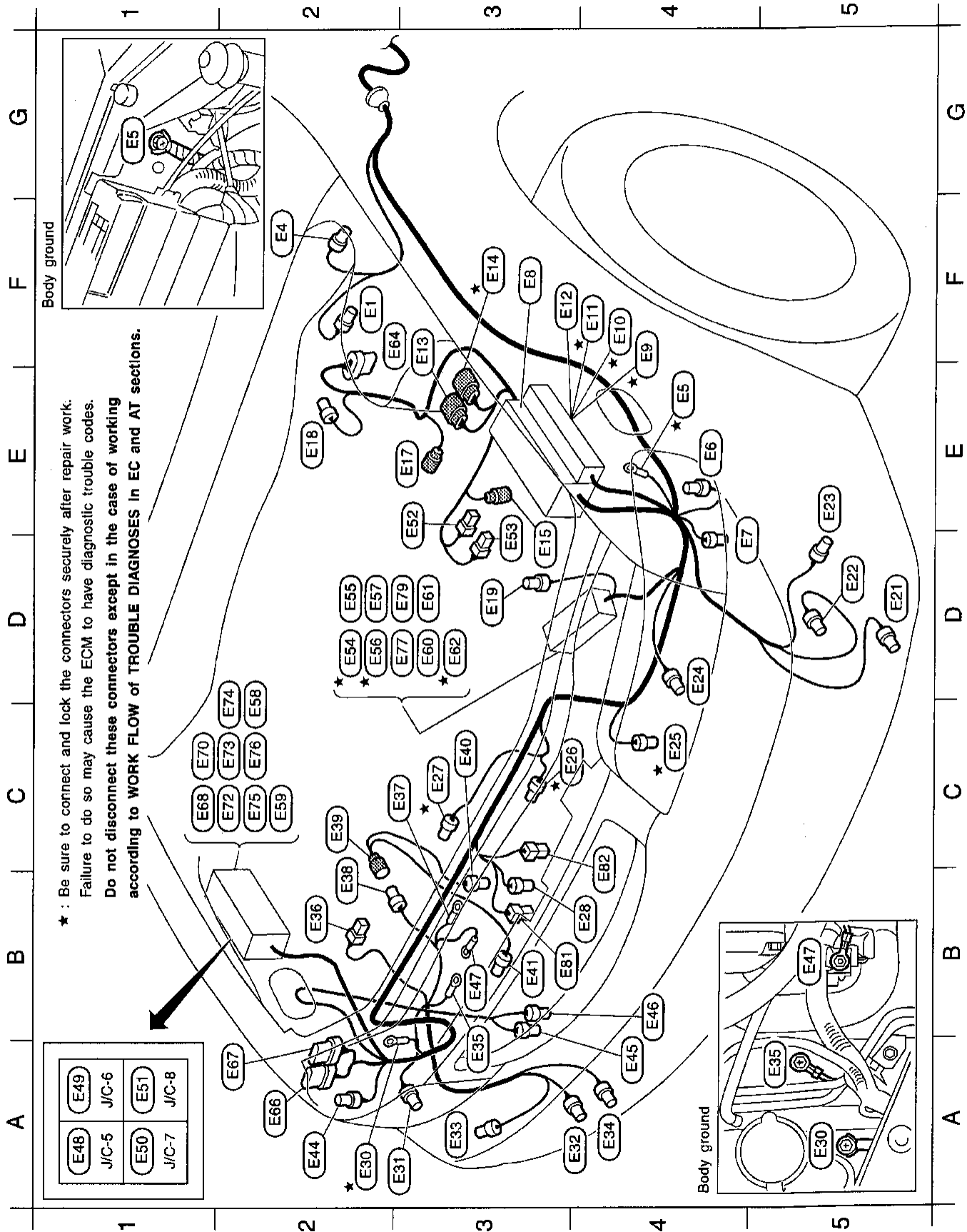
★: Be sure to connect and lock the connectors securely after repair work.  
 Failure to do so may cause the ECM to have diagnostic trouble codes.  
 Do not disconnect these connectors except in the case of working  
 according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

GI  
 MA  
 EM  
 LC  
 EC  
 FE  
 CL  
 MT  
 AT  
 FA  
 RA  
 BR  
 ST  
 RS  
 BT  
 HA  
**EL**  
 IDX

# HARNESS LAYOUT

## Engine Room Harness (Cont'd)

### ENGINE COMPARTMENT



★ : Be sure to connect and lock the connectors securely after repair work.  
 Failure to do so may cause the ECM to have diagnostic trouble codes.  
 Do not disconnect these connectors except in the case of working  
 according to **WORK FLOW of TROUBLE DIAGNOSES** in EC and AT sections.

E48	E49
J/C-5	J/C-6
E50	E51
J/C-7	J/C-8



# HARNES LAYOUT

## Engine Room Harness (Cont'd)

F2	(E1)	GY/2	: Brake fluid level switch	E3	(E52)	B/1	: Battery
F2	(E4)	GY/4	: ASCD pump	D3	(E53)	B/1	: Battery
E4*	(E5)	-	: Body ground	D2*	(E54)	L/4	: Cooling fan relay-1
E4	(E6)	GY/2	: Parking lamp LH	D2	(E55)	W/3	: Horn relay
D4	(E7)	GY/3	: To front fog lamp harness (For optional)	D2*	(E56)	BR/6	: Cooling fan relay-2
F3	(E8)	-	: Fuse and fusible link box	D2	(E57)	BR/6	: ECM relay
E4*	(E9)	W/6	: Joint connector-1	D3	(E58)	BR/6	: ASCD hold relay (A/T models)
F4*	(E10)	W/6	: Joint connector-2	D3	(E59)	L/4	: ASCD hold relay (M/T models)
F4*	(E11)	GY/6	: Joint connector-3	D3	(E60)	L/4	: Clutch interlock relay (M/T models)
F3	(E12)	GY/6	: Joint connector-4	D3	(E61)	GY/8	: Park/Neutral position relay (A/T models)
F3	(E13)	BR/8	: To (F36)	D3*	(E62)	BR/6	: Cooling fan relay-3
F3*	(E14)	B/8	: To (F37)	F2	(E64)	GY/8	: ABS actuator
D3	(E15)	GY/1	: Starter motor	A2	(E66)	GY/6	: Daytime light control unit (For Canada)
E3	(E17)	BR/2	: Front wheel sensor LH (Anti-lock brake system)	A2	(E67)	GY/8	: Daytime light control unit (For Canada)
E2	(E18)	GY/2	: ABS actuator	C1	(E68)	L/4	: Theft warning horn relay-1
D3	(E19)	GY/2	: Hood switch (Theft warning system)	C1	(E70)	L/4	: Theft warning horn relay-2
D5	(E21)	GY/2	: Front fog lamp LH	C2	(E72)	L/4	: Air conditioner relay
D5	(E22)	BR/2	: Front turn signal lamp LH	C2	(E73)	L/4	: Front fog lamp relay
E5	(E23)	GY/2	: Front side marker lamp LH	C2	(E74)	BR/6	: Theft warning lamp relay
D4	(E24)	B/3	: Headlamp LH	C2	(E75)	B/5	: Front wiper relay
C4*	(E25)	B/4	: Triple-pressure switch	C2	(E76)	BR/6	: Rear window defogger relay
C4*	(E26)	GY/4	: Cooling fan motor-1	D3	(E77)	B/5	: ABS motor relay
C3*	(E27)	GY/4	: Cooling fan motor-2	D3	(E79)	B/5	: ABS solenoid valve relay
B4	(E28)	B/2	: Ambient sensor	B3	(E81)	B/1	: Horn (High)
A2*	(E30)	-	: Body ground	C4	(E82)	B/1	: Horn (Low)
A3	(E31)	B/3	: Headlamp RH				
A4	(E32)	BR/2	: Front turn signal lamp RH				
A3	(E33)	GY/2	: Front side marker lamp RH				
A4	(E34)	GY/2	: Front fog lamp RH				
A3	(E35)	-	: Body ground				
B2	(E36)	B/1	: Theft warning horn				
C3	(E37)	-	: Alternator				
B2	(E38)	GY/4	: To (E39)				
C2	(E39)	GY/4	: To (E38)				
C3	(E40)	GY/4	: Alternator				
B3	(E41)	B/1	: Compressor				
A2	(E44)	GY/2	: Parking lamp RH				
A4	(E45)	BR/2	: Washer level switch				
B4	(E46)	GY/2	: Front washer motor				
B3	(E47)	-	: Alternator				
A1	(E48)	W/6	: Joint connector-5				
A1	(E49)	W/6	: Joint connector-6				
A1	(E50)	W/6	: Joint connector-7				
A1	(E51)	GY/6	: Joint connector-8				

★ : Be sure to connect and lock the connectors securely after repair work.

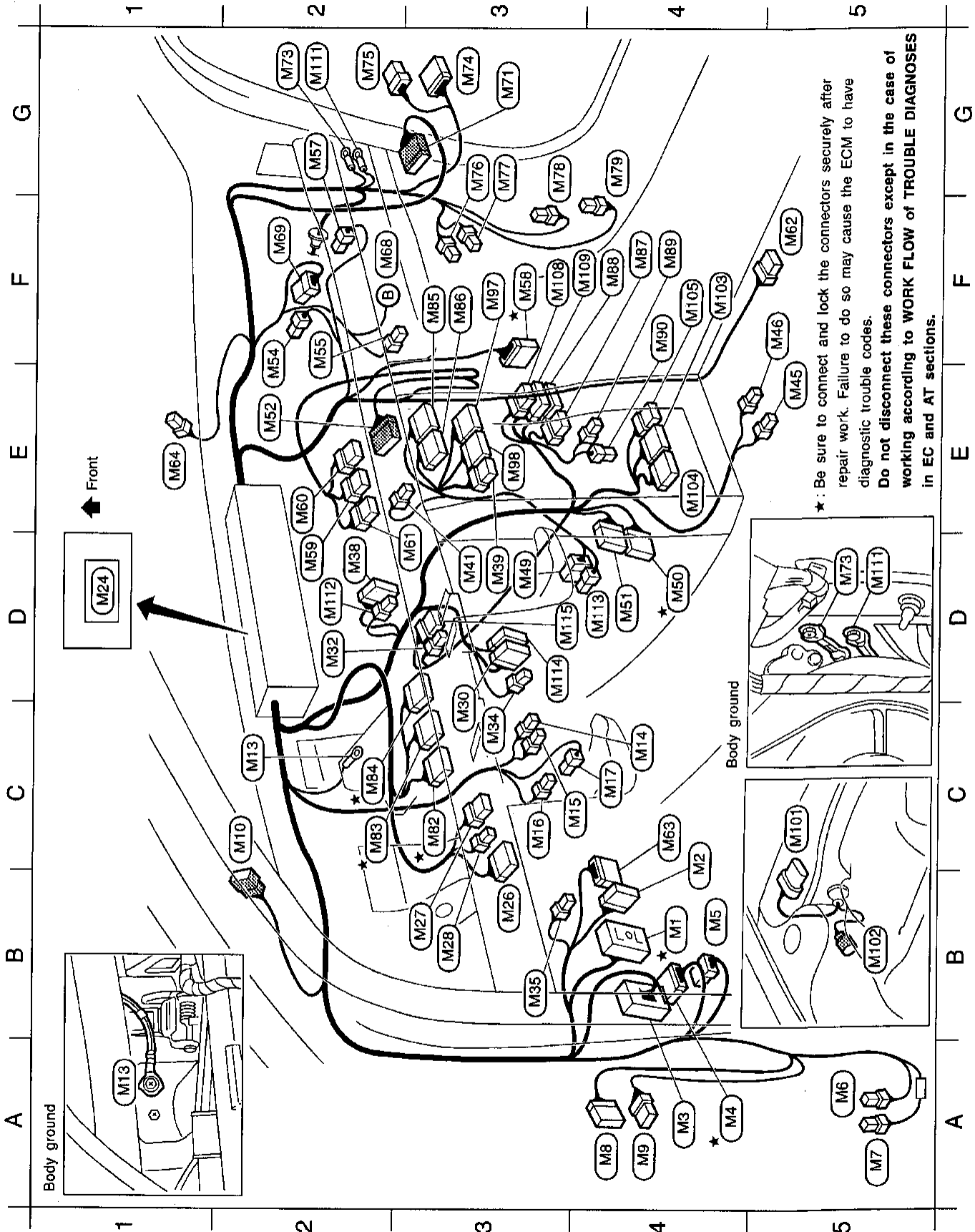
Failure to do so may cause the ECM to have diagnostic trouble codes.

Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# HARNESS LAYOUT

## Main Harness



\*: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.  
 Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

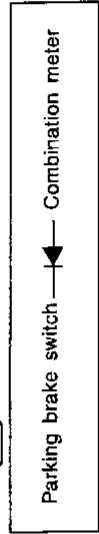
# HARNES LAYOUT

## Main Harness (Cont'd)

B4★	M1	SMJ	: Fuse block (J/B)
C4	M2	GY/14	: Data link connector for CONSULT
A4	M3	SMJ	: To (E1D)
A4★	M4	W/48	: To (B1)
B4	M5	GY/6	: To (B2)
A5	M6	L/4	: Fuel pump relay
A5	M7	L/4	: Sunroof relay (with yellow tape) (With sunroof)
A4	M8	W/18	: To (D1)
A4	M9	GY/6	: To (D2) (BOSE system)
C2	M10	W/8	: To (R1)
C2	M13	-	: Body ground
C4	M14	L/2	: ASCD brake switch
C4	M15	B/2	: Stop lamp switch
C3	M16	L/2	: Clutch interlock switch (M/T models)
C4	M17	L/2	: ASCD clutch switch (A/T models)
D1	M24	SB/4	: Joint connector-16 (Sky blue-Diode)
B3	M26	GY/12	: Door mirror remote control switch
B3	M27	W/6	: ASCD main switch
B3	M28	W/4	: Security indicator lamp
D3	M30	B/20	: ASCD control unit
D2	M32	W/3	: Illumination control switch
C3	M34	B/3	: Combination flasher unit
B3	M35	W/3	: Warning buzzer
D2	M38	BR/10	: Mode door motor (Manual A/C)
D3	M39	W/6	: Fan switch (Manual A/C)
D3	M41	W/2	: In-vehicle sensor (Auto A/C)
E5	M45	B/2	: Cigarette lighter socket
F5	M46	W/2	: Ashtray illumination
D3	M49	B/6	: Air mix door motor (Manual A/C)
D4★	M50	W/20	: To (F105)
D4	M51	W/12	: To (F104)
E2	M52	W/20	: To (Z1)
F2	M54	W/3	: Intake sensor (Auto A/C)
F2	M55	BR/2	: Glove box lamp switch
G2	M57	W/4	: Fan control amp. (Auto A/C)
F3★	M58	GY/16	: To (F102)
D2	M59	BR/6	: Clock
E2	M60	W/6	: Rear window defogger switch
D3	M61	W/8	: Hazard switch
F5	M62	W/6	: A/T device (A/T models)
C4	M63	W/16	: Data link connector for GST

E1	M64	B/2	: Sunload sensor (Auto A/C)
F2	M68	Bulb	: Glove box lamp
F2	M69	W/8	: Intake door motor
G3	M71	GY/16	: To (B102)
G2	M73	-	: Body ground
G3	M74	W/18	: To (D31)
G3	M75	GY/6	: To (D32) (BOSE system)
G3	M76	W/2	: Blower motor
G3	M77	BR/4	: Fan resistor (Manual A/C)
G3	M78	L/4	: Door mirror defogger relay
G4	M79	L/4	: Audio amp. relay (BOSE system)
C3★	M82	W/14	: Combination meter
C2★	M83	W/10	: Combination meter
C2★	M84	W/16	: Combination meter
F3	M85	B/16	: Push control unit (Manual A/C)
F3	M86	B/12	: Push control unit (Manual A/C)
F4	M87	W/6	: Audio (Except for BOSE system)
F4	M88	W/10	: Audio (Except for BOSE system)
F4	M89	W/4	: Radio and CD player (Except for BOSE system)
F4	M90	B/2	: Radio and CD player (Except for BOSE system)
F3	M97	GY/16	: A/C auto amp. (Auto A/C)
E3	M98	GY/20	: A/C auto amp. (Auto A/C)
C5	M101	GY/6	: Front wiper motor
B5	M102	GY/2	: Front wheel sensor RH (Anti-lock brake system)
F4	M103	GY/16	: BCM (Body control module)
E4	M104	GY/20	: BCM (Body control module)
F4	M105	W/6	: BCM (Body control module)
F3	M109	W/6	: Audio (BOSE system)
F4	M109	W/10	: Audio (BOSE system)
G2	M111	-	: Body ground
D2	M112	W/3	: Mode door motor (Auto A/C)
D4	M113	W/3	: Air mix door motor (Auto A/C)
D3	M114	W/12	: NATS immu
D3	M115	L/6	: TCS on/off switch (With TCS)

Diode (M24)



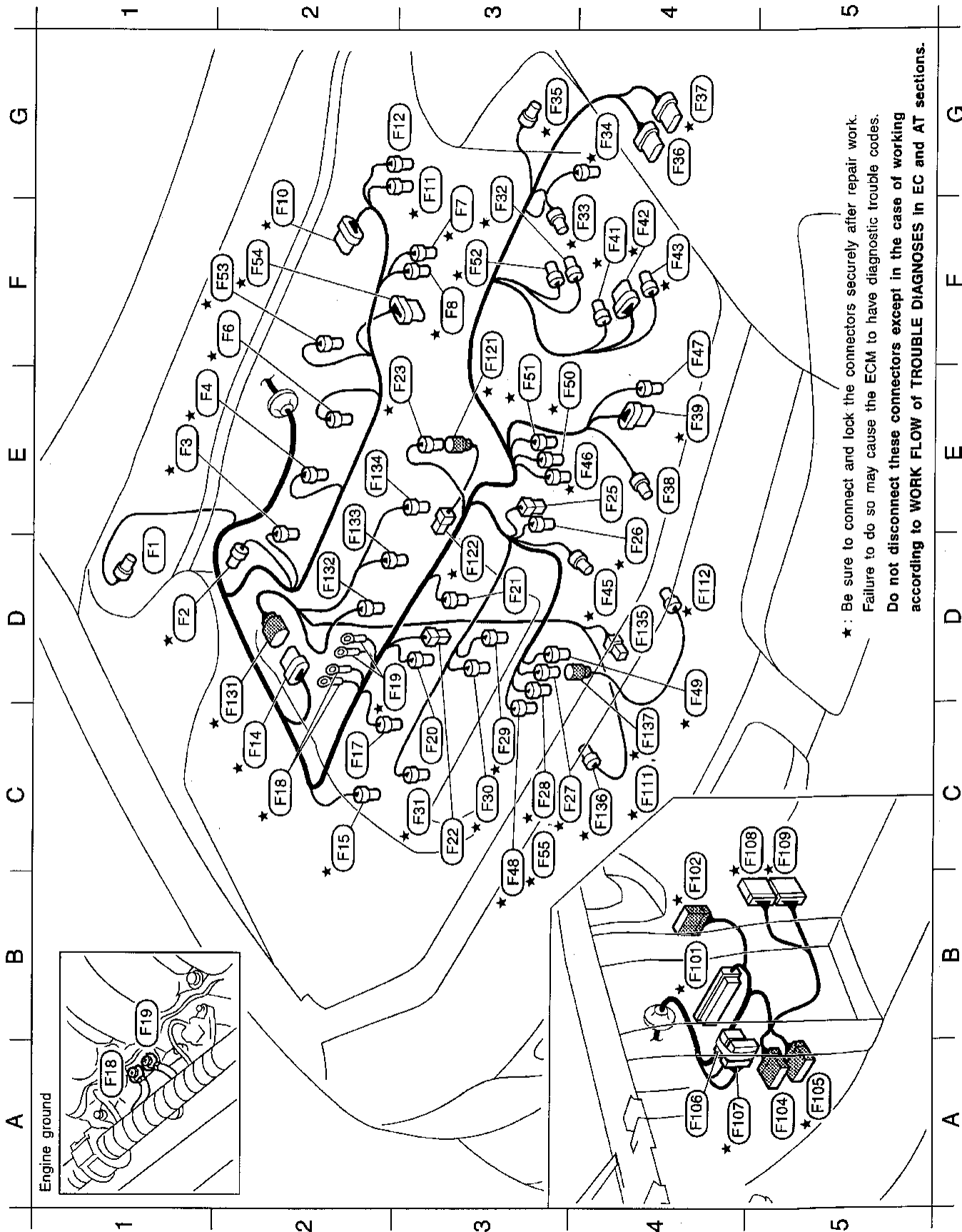
★ : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.

Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# HARNESS LAYOUT

## Engine Control Harness



# HARNES LAYOUT

## Engine Control Harness (Cont'd)

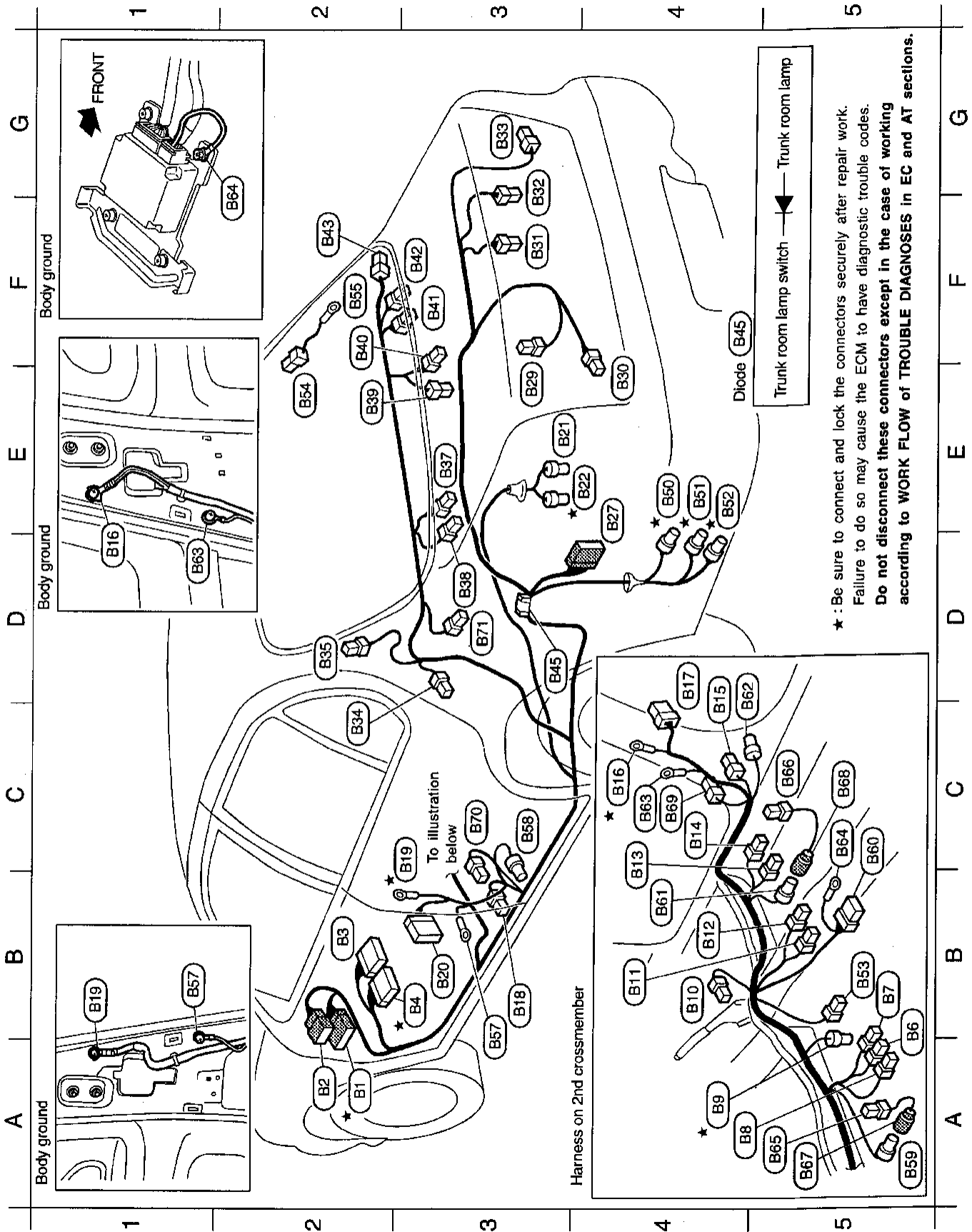
D1	(F1)	GY/2	: Power steering oil pressure switch	E3	(F51)	B/2	: Swirl control valve control vacuum check switch (For California)
D1	(F2)	GY/3	: Front heated oxygen sensor RH	F3	(F52)	GY/2	: Vehicle speed sensor (M/T models)
E1	(F3)	GY/3	: Ignition coil No. 1	F2	(F53)	L/2	: EVAP canister purge volume control solenoid valve
E1	(F4)	GY/3	: Ignition coil No. 3	F3	(F54)	GY/6	: EGR volume control valve
F2	(F6)	GY/3	: Ignition coil No. 5	C3	(F55)	B/4	: To (F111) (Except for California)
F3	(F7)	GY/3	: Throttle position switch	B4	(F101)	SMJ	: ECM
F3	(F8)	BR/3	: Throttle position sensor	C4	(F102)	GY/16	: To (M58)
F2	(F10)	GY/6	: IACV-AAC valve	A5	(F104)	W/12	: To (M51)
G3	(F11)	GY/2	: EGR temperature sensor	A5	(F105)	W/20	: To (M50)
G2	(F12)	PU/2	: IACV-FICD solenoid valve-2	A4	(F106)	GY/6	: Joint connector-24 (Gray)
C2	(F14)	GY/8	: To (F131)	A4	(F107)	L/12	: Joint connector-25 (Blue)
C2	(F15)	GY/2	: Camshaft position sensor (PHASE)	B5	(F108)	GY/24	: TCM (Transmission control module)
C2	(F17)	B/2	: Injector No. 2	B5	(F109)	W/24	: TCM (Transmission control module)
C2	(F18)	-	: Engine ground	C4	(F111)	B/4	: To (F55) (Except for California)
D2	(F19)	-	: Engine ground	D4	(F112)	GY/3	: Crankshaft position sensor (POS)
C3	(F20)	B/2	: Injector No. 4	F3	(F121)	B/2	: To (F23)
D3	(F21)	B/2	: Injector No. 6	D3	(F122)	B/2	: Knock sensor
C3	(F22)	W/2	: Condenser	D2	(F131)	GY/8	: To (F14)
E3	(F23)	B/2	: To (F121)	D2	(F132)	B/2	: Injector No. 1
E4	(F25)	B/1	: Thermal transmitter	E2	(F133)	B/2	: Injector No. 3
D4	(F26)	GY/2	: Engine coolant temperature sensor	E2	(F134)	B/2	: Injector No. 5
C3	(F27)	G/4	: To (F137) (For California)	D4	(F135)	B/1	: Oil pressure switch
C3	(F28)	GY/3	: Front heated oxygen sensor LH	C4	(F136)	GY/2	: Crankshaft position sensor (REF)
C3	(F29)	GY/3	: Ignition coil No. 6	C4	(F137)	G/4	: To (F27) (For California)
C3	(F30)	GY/3	: Ignition coil No. 4				
C3	(F31)	GY/3	: Ignition coil No. 2				
F3	(F32)	GY/4	: Park/Neutral position switch				
			(Reverse position switch) (M/T models)				
F4	(F33)	GY/3	: Mass air flow sensor				
G4	(F34)	GY/2	: Intake air temperature sensor				
G3	(F35)	GY/2	: Dropping resistor (A/T models)				
G4	(F36)	BR/8	: To (E13)				
G4	(F37)	B/8	: To (E14)				
E4	(F38)	BR/3	: Front engine mounting (A/T models)				
E4	(F39)	GY/8	: Park/Neutral position switch (A/T models)				
F4	(F41)	GY/3	: Revolution sensor (A/T models)				
F4	(F42)	BR/8	: Terminal cord assembly (A/T models)				
F4	(F43)	GY/2	: Vehicle speed sensor (A/T models)				
D4	(F45)	GY/3	: Absolute pressure sensor				
E4	(F46)	BR/2	: MAP/BARO switch solenoid valve				
F4	(F47)	GY/2	: Park/Neutral position switch (A/T models)				
C3	(F48)	GY/4	: Rear heated oxygen sensor LH (For California)				
D3	(F49)	B/4	: Rear heated oxygen sensor RH (For California)				
E3	(F50)	G/2	: Swirl control valve control solenoid valve (For California)				

★: Be sure to connect and lock the connectors securely after repair work.  
Failure to do so may cause the ECM to have diagnostic trouble codes.

Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

# HARNESS LAYOUT

## Body Harness



★: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

# HARNES LAYOUT

## Body Harness (Cont'd)

A2★	W/48	To (M4)	W/2	F3	(B29)	To high-mounted stop lamp sub-harness (Models equipped with rear air spoiler)
A2	GY/6	To (M5)		E4	(B30)	Trunk lid combination lamp LH
B2	W/12	Fuse block (J/B)	W/4	F3	(B31)	Trunk room lamp switch
B3★	BR/16	Fuse block (J/B)	B/2	G3	(B32)	Trunk lid key cylinder switch
B5	W/2	Power seat LH	W/3	G3	(B33)	Trunk lid combination lamp RH
B5	W/3	Seat belt buckle switch LH	W/4	C2	(B34)	Rear door switch LH
A4	W/3	Heated seat LH	BR/1	D2	(B35)	Rear window defogger
A4★	GY/4	Rear heated oxygen sensor	B/1	E3	(B37)	Rear speaker LH (For BOSE system)
B4	B/1	Parking brake switch	W/4	D3	(B38)	Rear speaker LH (Except for BOSE system)
B4	L/4	Heated seat switch LH	BR/2	E2	(B39)	Trunk room lamp
B4	W/4	Heated seat switch RH	W/2	F2	(B40)	High-mounted stop lamp
C4	W/3	Heated seat RH	W/2	F3	(B41)	(Models without rear air spoiler)
C4	W/2	Power seat RH	W/4	F3	(B42)	Rear speaker RH (For BOSE system)
D4	B/3	Front door switch RH	BR/2	F2	(B43)	Rear speaker RH (Except for BOSE system)
C4★	-	Body ground	BR/1	D3	(B45)	Rear door switch RH
D4	W/10	To (D71)	W/2	E4★	(B50)	Diode
B3	B/3	Front door switch LH	B/2	E4★	(B51)	EVAP canister vent control valve
C3★	-	Body ground	G/2	E4★	(B52)	Vacuum cut valve bypass valve
B3	W/10	To (D51)	GY/3	B5	(B53)	EVAP control system pressure sensor
E3	GY/2	Fuel pump	W/4	E2	(B54)	Telephone
E4★	GY/4	Fuel tank gauge unit	B/1	F2	(B55)	Rear window defogger
E4	W/16	To (T1)	-	B3	(B57)	Body ground
			-	C3	(B58)	Body ground
			GY/2	A5	(B59)	Satellite sensor LH
			W/2	C5	(B60)	To (B57) (With side air bag)
			Y/10	B4	(B61)	Air bag diagnosis sensor unit
			W/2	D4	(B62)	To (B58) (With side air bag)
			GY/2	C4	(B63)	Satellite sensor RH
			-	C5	(B64)	Body ground
			-	A5	(B65)	Body ground
			Y/2	C5	(B66)	Side air bag module LH (With side air bag)
			Y/2	A5	(B67)	Side air bag module RH (With side air bag)
			W/2	C5	(B68)	To (B59)
			W/2	C4	(B69)	To (B61)
			W/4	C3	(B70)	Seat belt pre-tensioner RH
			W/4	D3	(B71)	Seat belt pre-tensioner LH
			BR/2			Trunk room lamp switch

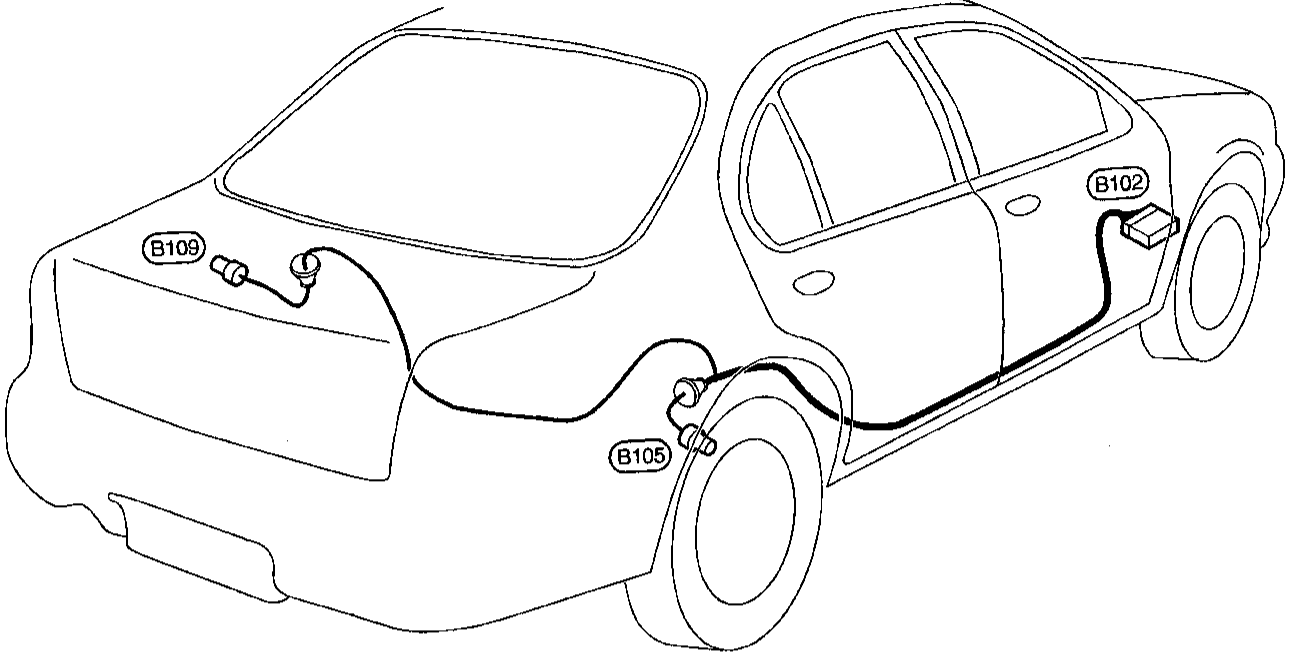
★ : Be sure to connect and lock the connectors securely after repair work.  
 Failure to do so may cause the ECM to have diagnostic trouble codes.  
 Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# HARNESS LAYOUT

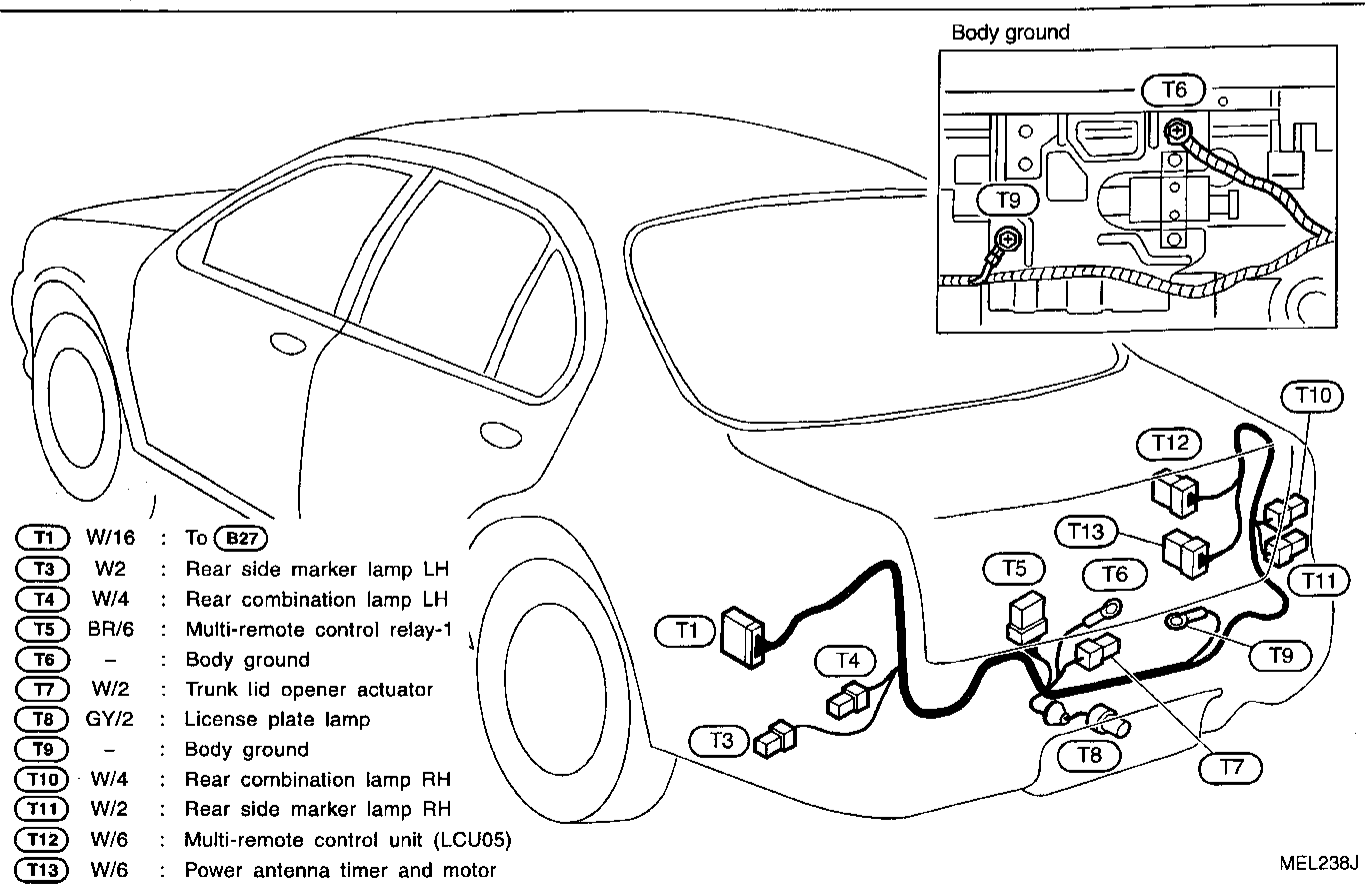
## Body No. 2 Harness

- (B102) GY/16 : To (M71)
- (B105) GY/2 : Rear wheel sensor RH (Anti-lock brake system)
- (B109) BR/2 : Rear wheel sensor LH (Anti-lock brake system)



MEL237J

## Tail Harness



- (T1) W/16 : To (B27)
- (T3) W/2 : Rear side marker lamp LH
- (T4) W/4 : Rear combination lamp LH
- (T5) BR/6 : Multi-remote control relay-1
- (T6) - : Body ground
- (T7) W/2 : Trunk lid opener actuator
- (T8) GY/2 : License plate lamp
- (T9) - : Body ground
- (T10) W/4 : Rear combination lamp RH
- (T11) W/2 : Rear side marker lamp RH
- (T12) W/6 : Multi-remote control unit (LCU05)
- (T13) W/6 : Power antenna timer and motor

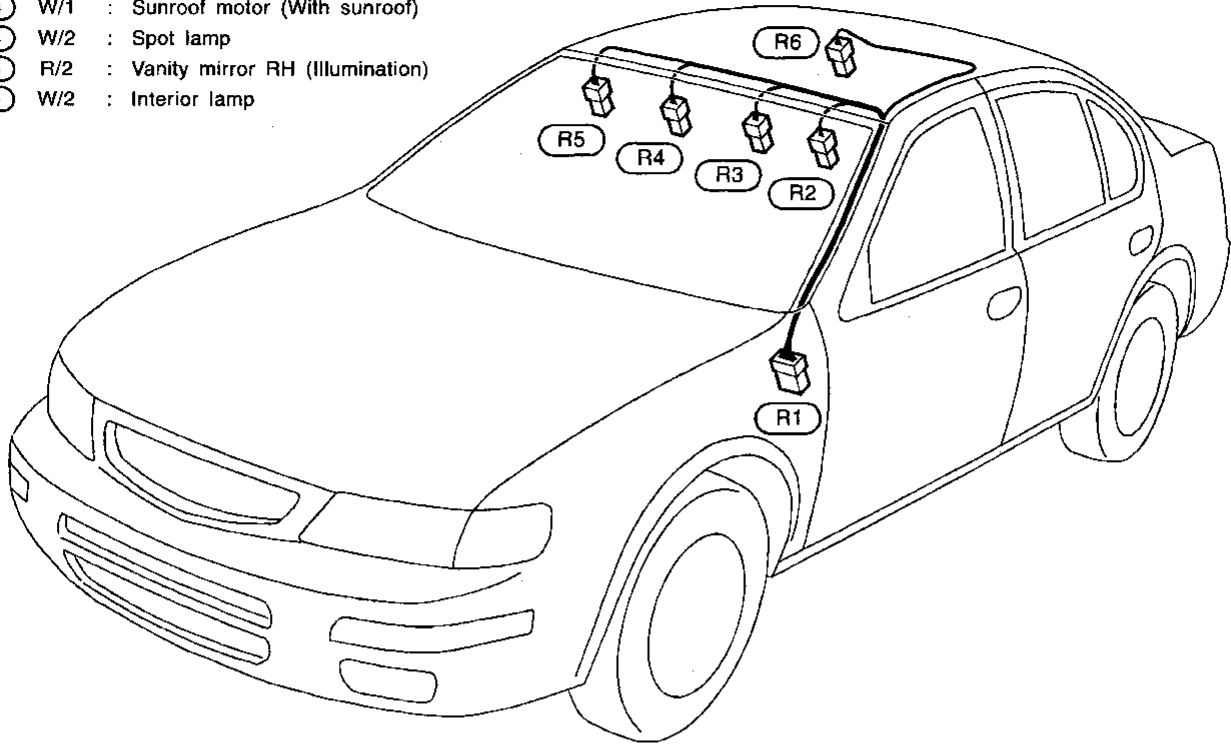
MEL238J



# HARNESS LAYOUT

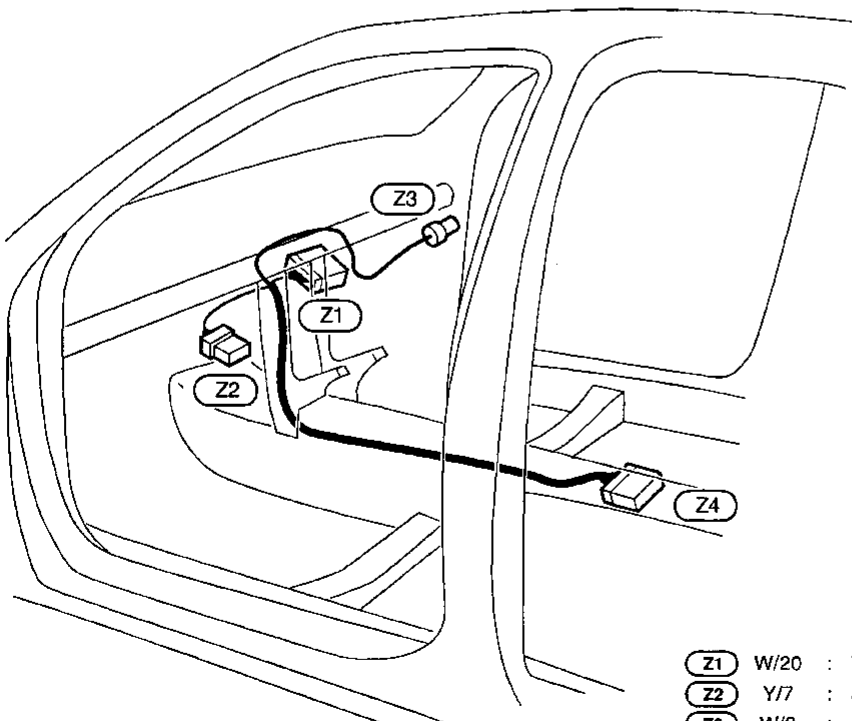
## Room Lamp Harness

- R1** W/8 : To **M10**
- R2** R/2 : Vanity mirror LH (Illumination)
- R3** W/1 : Sunroof motor (With sunroof)
- R4** W/2 : Spot lamp
- R5** R/2 : Vanity mirror RH (Illumination)
- R6** W/2 : Interior lamp



MEL239J

## Air Bag Harness



- Z1** W/20 : To **M52**
- Z2** Y/7 : Spiral cable
- Z3** W/2 : Air bag module RH
- Z4** Y/22 : Air bag diagnosis sensor unit

MEL240J

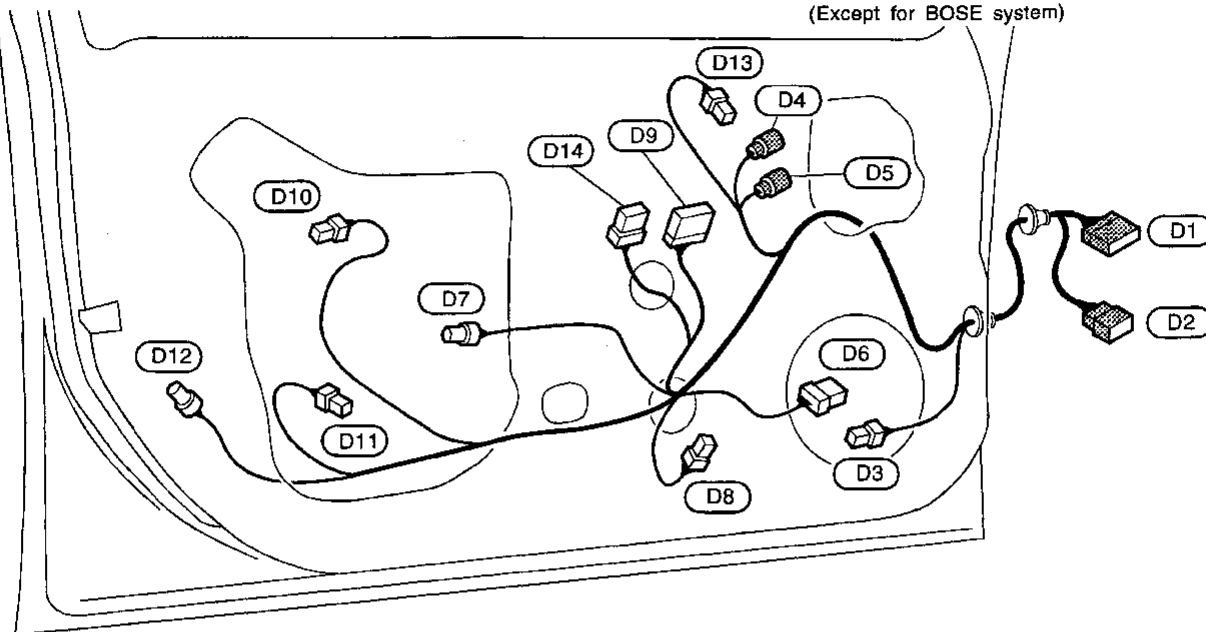
GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# HARNESS LAYOUT

## FRONT

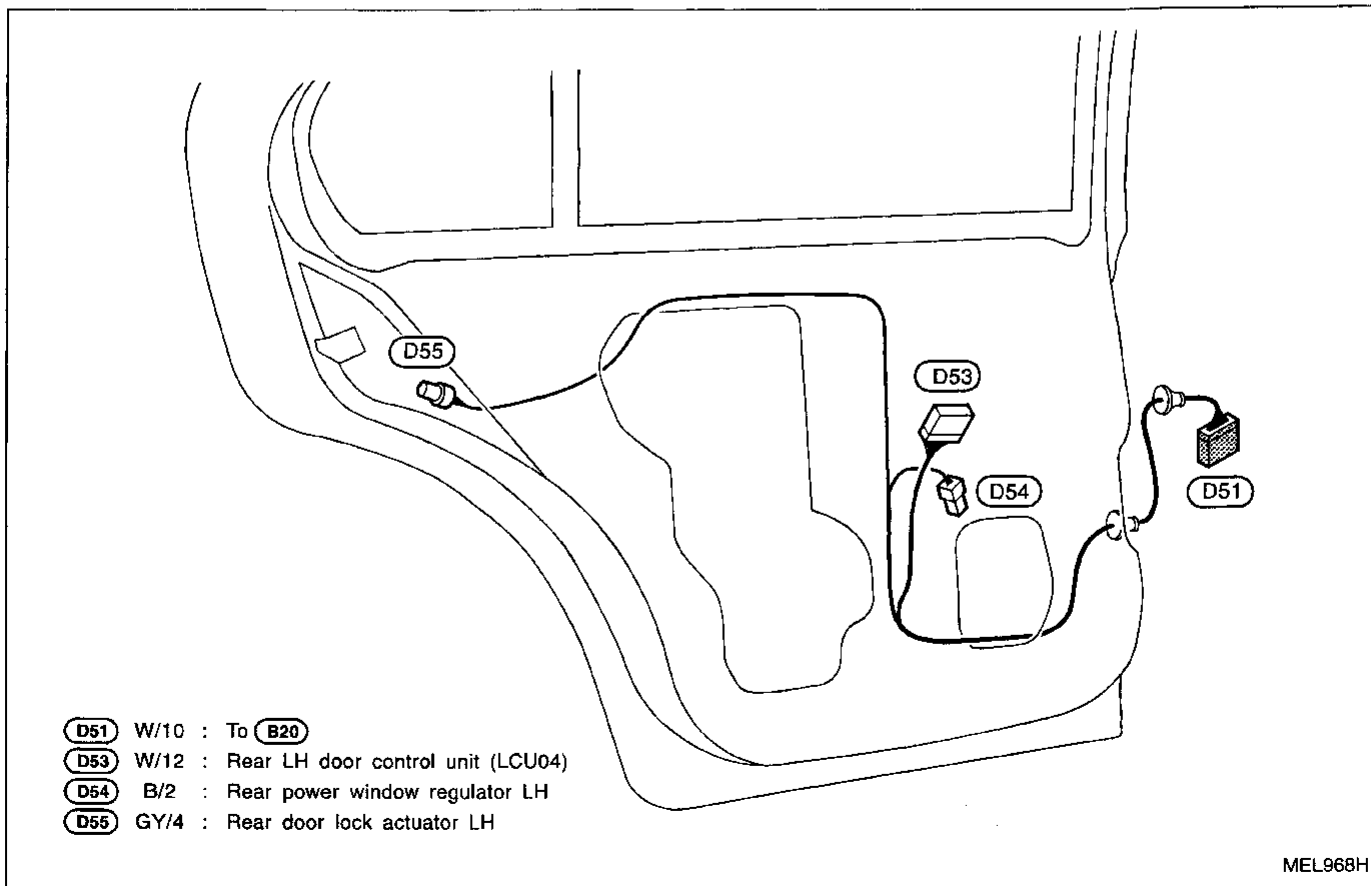
### Door Harness (LH side)

- |   |   |
|---|---|
| <b>D1</b> W/18 : To <b>M8</b>                                   | <b>D8</b> B/2 : Front power window regulator LH                 |
| <b>D2</b> GY/6 : To <b>M9</b> (BOSE system)                     | <b>D9</b> W/18 : Driver door control unit (LCU01)               |
| <b>D3</b> BR/2 : Front door speaker LH (Except for BOSE system) | <b>D10</b> W/2 : Trunk lid opener switch                        |
| <b>D4</b> BR/3 : Door mirror LH                                 | <b>D11</b> W/2 : Front step lamp LH                             |
| <b>D5</b> GY/2 : Door mirror defogger (Driver side)             | <b>D12</b> GY/4 : Front door lock actuator LH                   |
| <b>D6</b> W/6 : Front door speaker LH (For BOSE system)         | <b>D13</b> BR/2 : Tweeter LH                                    |
| <b>D7</b> B/4 : Front door key cylinder switch LH               | <b>D14</b> W/6 : Joint connector-29<br>(Except for BOSE system) |



MEL241J

## REAR



- |   |
|---|
| <b>D51</b> W/10 : To <b>B20</b>                     |
| <b>D53</b> W/12 : Rear LH door control unit (LCU04) |
| <b>D54</b> B/2 : Rear power window regulator LH     |
| <b>D55</b> GY/4 : Rear door lock actuator LH        |

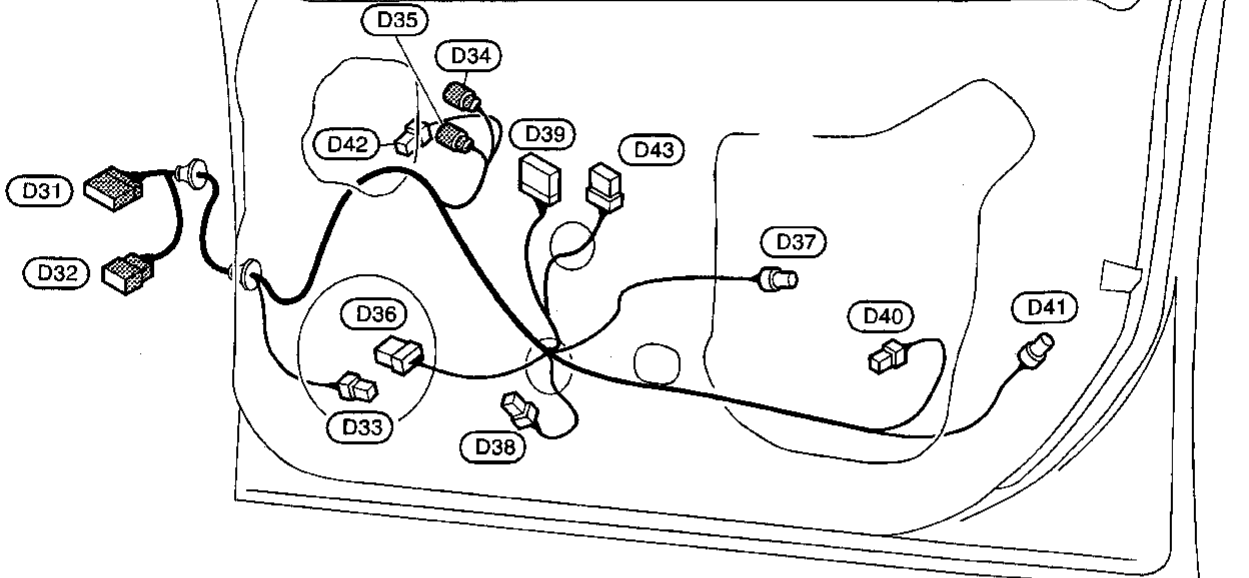
MEL968H

# HARNESS LAYOUT

## FRONT

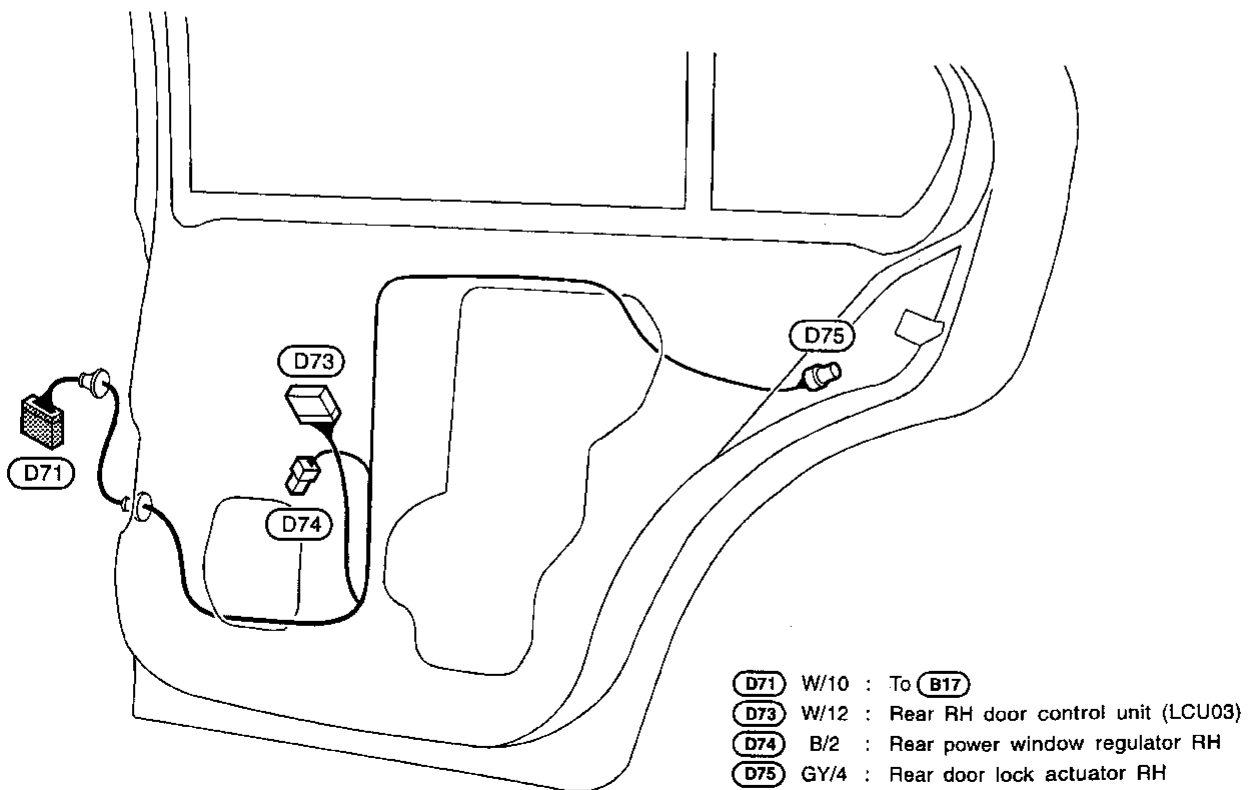
### Door Harness (RH side)

- |  |  |
|--|--|
| <b>(D31)</b> W/18 : To <b>(M74)</b>                                | <b>(D38)</b> B/2 : Front power window regulator RH             |
| <b>(D32)</b> GY/6 : To <b>(M75)</b> (BOSE system)                  | <b>(D39)</b> W/18 : Passenger door control unit (LCU02)        |
| <b>(D33)</b> BR/2 : Front door speaker RH (Except for BOSE system) | <b>(D40)</b> W/2 : Front step lamp RH                          |
| <b>(D34)</b> BR/3 : Door mirror RH                                 | <b>(D41)</b> GY/4 : Front door lock actuator RH                |
| <b>(D35)</b> GY/2 : Door mirror defogger (Passenger side)          | <b>(D42)</b> BR/2 : Tweeter RH                                 |
| <b>(D36)</b> W/6 : Front door speaker RH (For BOSE system)         | <b>(D43)</b> W/6 : Joint connector-30 (Except for BOSE system) |
| <b>(D37)</b> B/4 : Front door key cylinder switch RH               |  |



MEL242J

## REAR



- |   |
|---|
| <b>(D71)</b> W/10 : To <b>(B17)</b>                   |
| <b>(D73)</b> W/12 : Rear RH door control unit (LCU03) |
| <b>(D74)</b> B/2 : Rear power window regulator RH     |
| <b>(D75)</b> GY/4 : Rear door lock actuator RH        |

MEL970H

GI  
MA  
EM  
LC  
EC  
FE  
CL  
MT  
AT  
FA  
RA  
BR  
ST  
RS  
BT  
HA  
EL  
IDX

# BULB SPECIFICATIONS

## Headlamp

Item	Wattage (W)
High/Low (Semi-sealed beam)	60/45 (HB1)

## Exterior Lamp

Item	Wattage (W)	
Front fog lamp	55	
Front turn signal lamp	27	
Parking lamp	8	
Rear combination lamp	Turn signal lamp	27
	Stop/Tail lamp	27/8
Back-up lamp	27	
License plate lamp	5	
High-mounted stop lamp (BULB/LED)	18/3.6	

## Interior Lamp

Item	Wattage (W)
Interior lamp	10
Spot lamp	10
Step lamp	2.7
Luggage room lamp	3.4

## WIRING DIAGRAM CODES (Cell codes)

Use the chart below to find out what each wiring diagram code stands for.

Refer to the wiring diagram code in the alphabetical index to find the location (page number) of each wiring diagram.

Code	Section	Wiring Diagram Name
AAC/V	EC	IACV-AAC Valve
A/C, A	HA	Auto Air Conditioner
A/C, M	HA	Manual Air Conditioner
AP/SEN	EC	Absolute Pressure Sensor
ASCD	EL	Automatic Speed Control Device (ASCD)
A/T	AT	A/T
ATDIAG	EC	A/T Diagnosis Communication Line
AUDIO	EL	Audio
BACK/L	EL	Back-up Lamp
BUZZER	EL	Warning Buzzer
BYPS/V	EC	Vacuum Cut Valve Bypass Valve
CHARGE	EL	Charging System
CIGAR	EL	Cigarette Lighter
CLOCK	EL	Clock
COMM	EL	IVMS — Communication Check, Power Supply & Ground
COOL/F	EC	Cooling Fan Control
DEF	EL	Rear Window Defogger
D/LOCK	EL	Power Door Lock — IVMS
DTRL	EL	Headlamp - With Daytime Light System
ECTS	EC	Engine Coolant Temperature Sensor
EGR	EC	EGR Function
EGVC/V	EC	EGR Volume Control Valve
EGR/TS	EC	EGR Temperature Sensor
EMNT	EC	Engine Mount
F/FOG	EL	Front Fog Lamp
FO2H-L	EC	Front Heated Oxygen Sensor Heater (Left Bank)
FO2H-R	EC	Front Heated Oxygen Sensor Heater (Right Bank)
F/PUMP	EC	Fuel Pump
FRO2LH	EC	Front Heated Oxygen Sensor (Front HO2S) (Left Bank)
FRO2RH	EC	Front Heated Oxygen Sensor (Front HO2S) (Right Bank)
FUELLH	EC	Fuel Injection System Function (Left Bank)

Code	Section	Wiring Diagram Name	
FUELRH	EC	Fuel Injection System Function (Right Bank)	
H/LAMP	EL	Headlamp	GI
HORN	EL	Horn	
HSEAT	EL	Heated Seat	MA
IATS	EC	Intake Air Temperature Sensor	
IGN/SG	EC	Ignition Signal	EM
ILL	EL	Illumination	
INJECT	EC	Injector	LC
INT/L	EL	Spot, Vanity Mirror and Trunk Room Lamps	
KS	EC	Knock Sensor	EC
LD/SIG	EC	Electrical Load Signal	
MAFS	EC	Mass Air Flow Sensor	FE
MAIN	EC	Main Power Supply and Ground Circuit	CL
METER	EL	Speedometer, Tachometer, Temp., Oil and Fuel Gauges	
MIL/DL	EC	MIL & Data Link Connector	MT
MIRROR	EL	Power Door Mirror	
MULTI	EL	Multi-remote Control System — IVMS	AT
NATS	EL	Nissan Anti-theft System	FA
P/ANT	EL	Power Antenna	
PHONE	EL	Telephone (Pre-wire)	RA
PGC/V	EC	EVAP Canister Purge Volume Control Valve	
PHASE	EC	Camshaft Position Sensor (PHASE)	BR
PNP/SW	EC	Park/Neutral Position Switch	
POS	EC	Crankshaft Position Sensor (CKPS) (POS)	ST
POWER	EL	Power Supply Routing	RS
PRE/SE	EC	EVAP Control System Pressure Sensor	
PST/SW	EC	Power Steering Oil Pressure Switch	BT
REF	EC	Crankshaft Position Sensor (CKPS) (REF)	HA
R02H-L	EC	Rear Heated Oxygen Sensor Heater LH	
R02H-R	EC	Rear Heated Oxygen Sensor Heater RH	EL
ROOM/L	EL	Interior Room Lamp	
RRO2	EC	Rear Heated Oxygen Sensor	IDX
RR02LH	EC	Rear Heated Oxygen Sensor LH	
RR02RH	EC	Rear Heated Oxygen Sensor RH	
RRO2/H	EC	Rear Heated Oxygen Sensor Heater	

## WIRING DIAGRAM CODES (Cell codes)

Code	Section	Wiring Diagram Name
SEAT	EL	Power Seat
SHIFT	AT	A/T Shift Lock System
SROOF	EL	Sunroof
SRS	RS	Supplemental Restraint System
S/SIG	EC	Start Signal
START	EL	Starting System
STEP/L	EL	Step Lamp — IVMS
STOP/L	EL	Stop lamp
S/VCSW	EC	Swirl Control Valve Control Vacuum Check Switch
SW/ILL	EL	Power Window Switch Illumination — IVMS
SW/V	EC	MAP/BARO Switch Solenoid Valve
SWL/V	EC	Swirl Control Valve Control Solenoid Valve
TAIL/L	EL	Parking, License, Tail and Stop Lamps

Code	Section	Wiring Diagram Name
TCS	EC	ABS/TCS Communication Line
TCS	BR	Traction Control System
TFTS	EC	Tank Fuel Temperature Sensor
TLID	EL	Trunk Lid Opener
THEFT	EL	Theft Warning System — IVMS
TPS	EC	Throttle Position Sensor
TP/SW	EC	Closed Throttle Position Switch
TRANSMT	EL	Integrated HOMELINK (TM) Transmitter
TURN	EL	Turn Signal and Hazard Warning Lamps
VENT/V	EC	EVAP Canister Vent Control Valve
VSS	EC	Vehicle Speed Sensor
WARN	EL	Warning Lamps
WINDOW	EL	Power Window — IVMS
WIPER	EL	Front Wiper and Washer