ELECTRICAL SYSTEM

SECTION EL

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.**

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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 INFINITI 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).**

Description

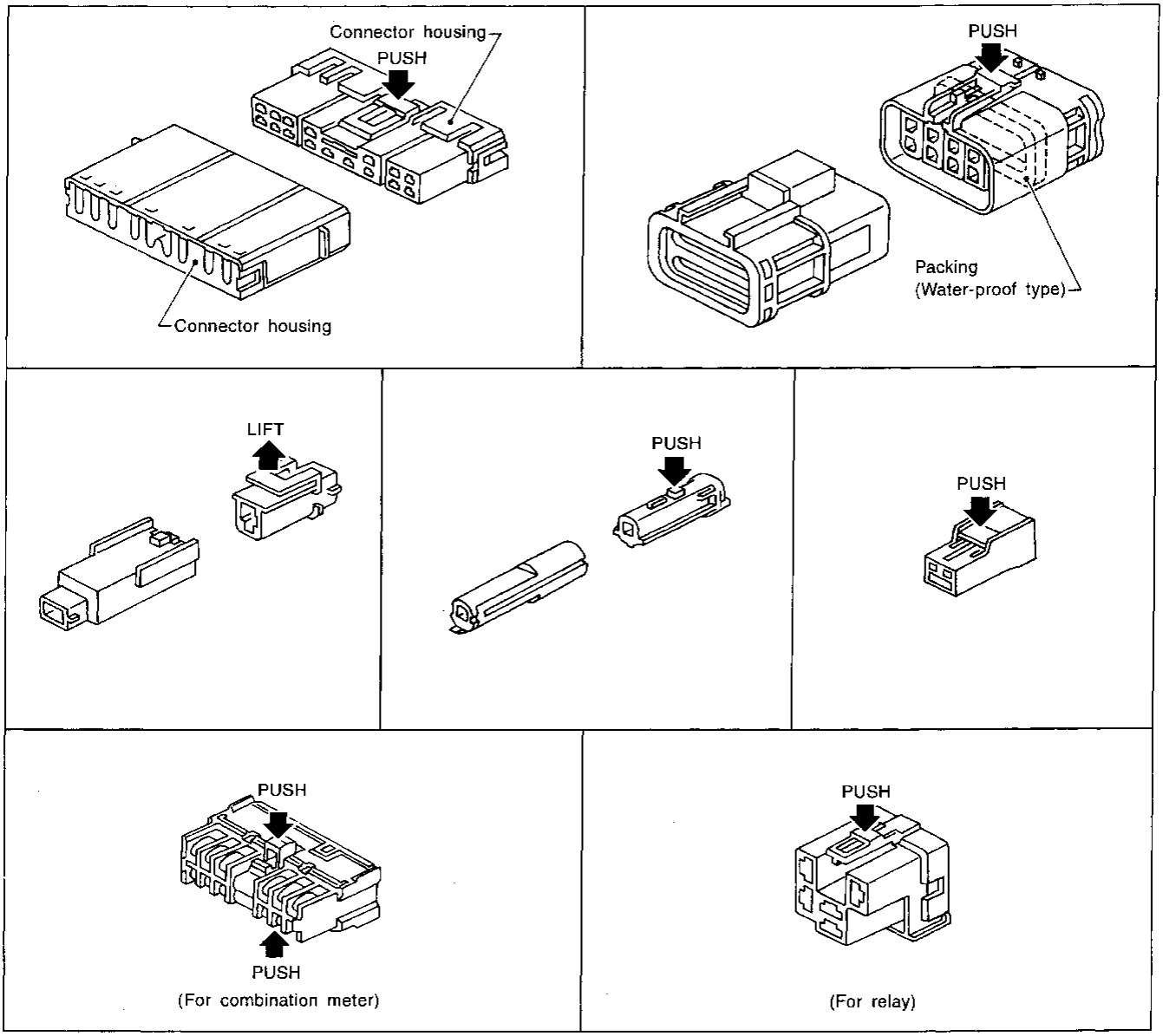
HRNESS CONNECTOR (TAB-LOCKING TYPE)

- 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]



SEL769DA

Description (Cont'd)

HARNESS CONNECTOR (SLIDE-LOCKING TYPE)

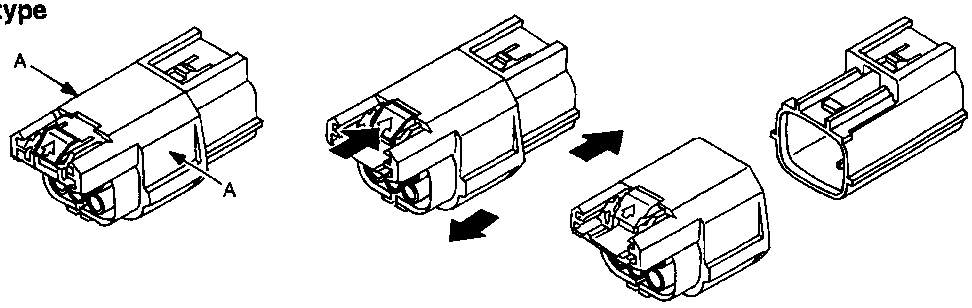
- A new style slide-locking type connector is used on certain systems and components, especially those related to OBD.
- The slide-locking type connectors help prevent incomplete locking and accidental looseness or disconnection.
- The slide-locking type connectors are disconnected by pushing or pulling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

Waterproof type

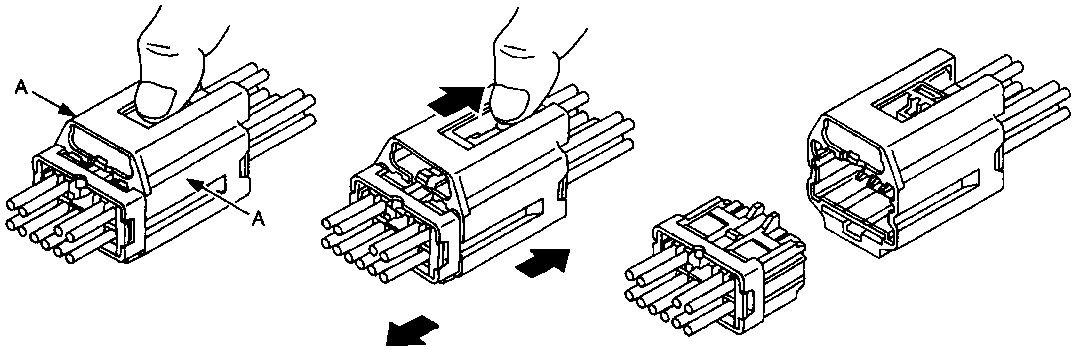


① Firmly grasp shell of connector housing at A.

② Push slider until connector pops or snaps apart.

③ Disconnect harness connector.

Non-waterproof type



① Firmly grasp shell of connector housing at A.

② Pull back on the slider while pulling apart male and famale halves of connector.

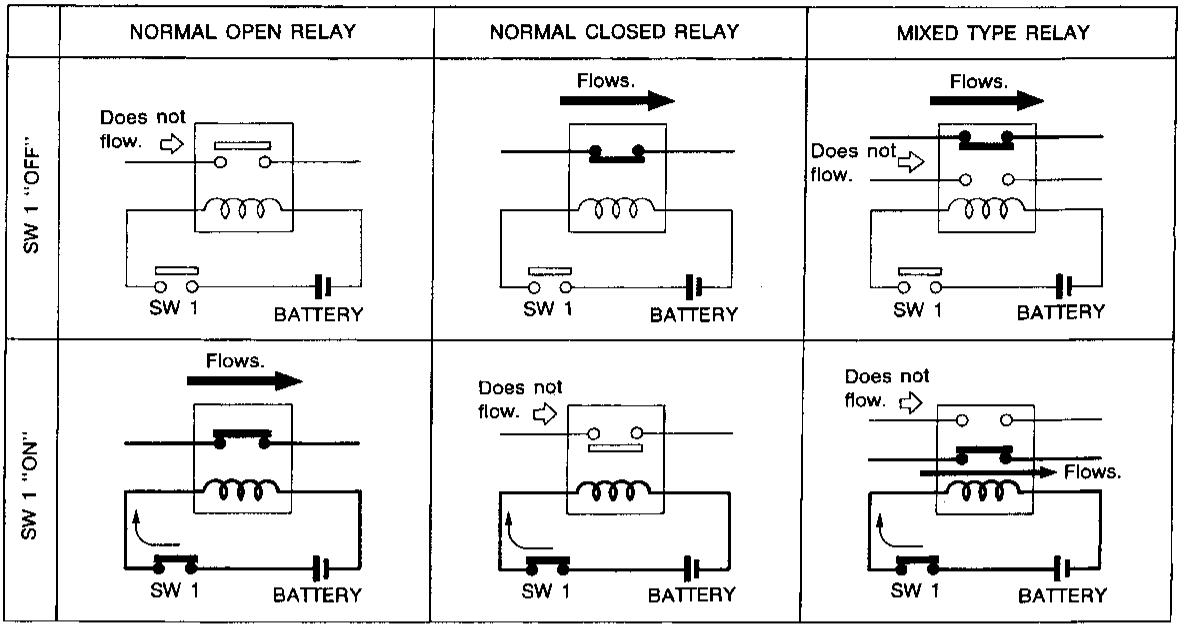
③ Disconnect harness connector.

SEL769V

Description

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

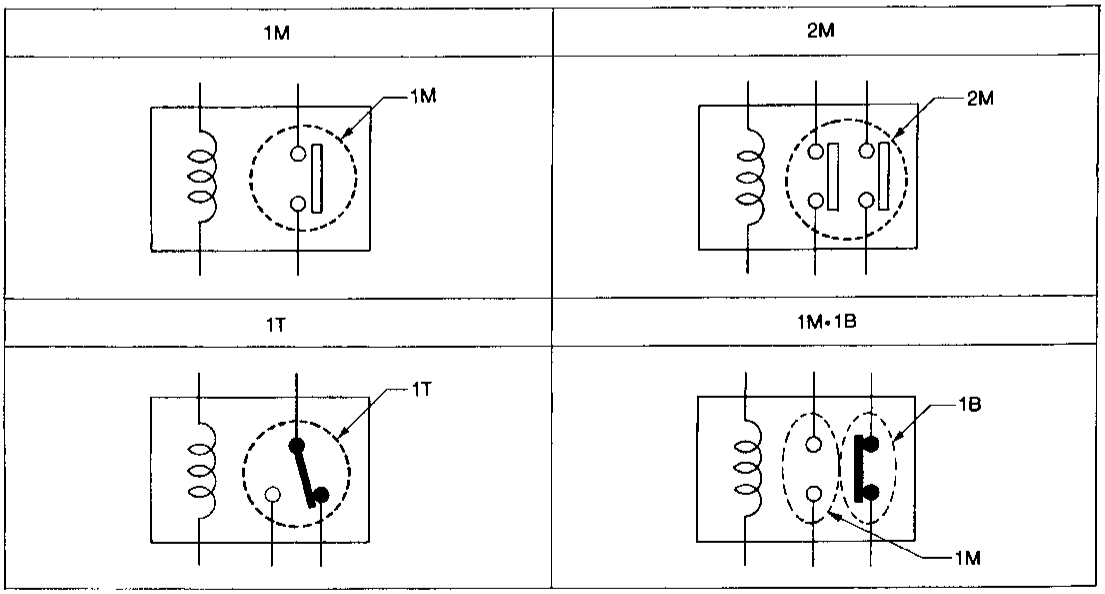
Relays can mainly be divided into three types: normal open, normal closed and mixed type relays.



SEL881H

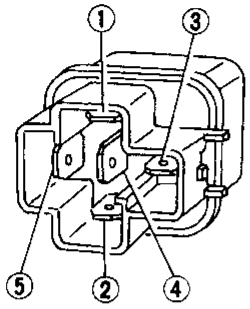
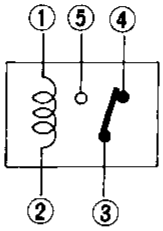
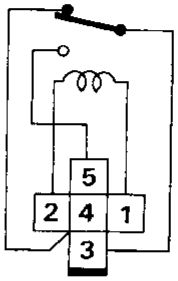
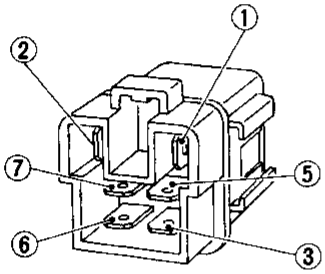
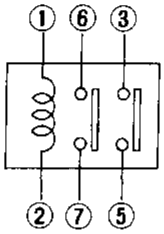
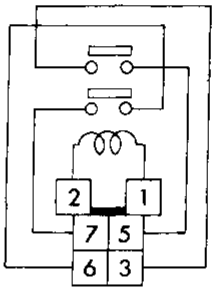
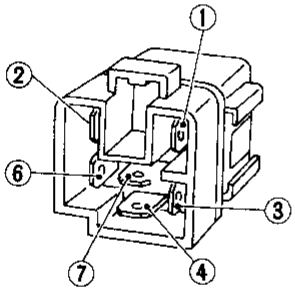
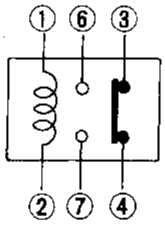
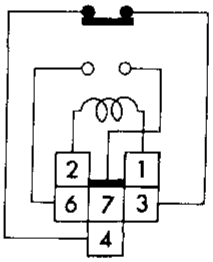
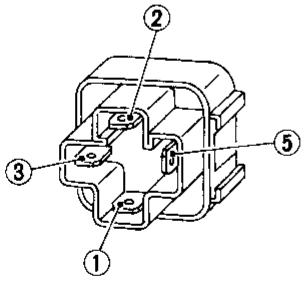
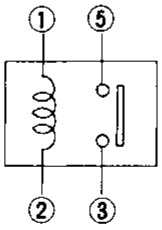
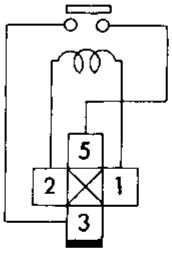
TYPE OF STANDARDIZED RELAYS

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



SEL882H

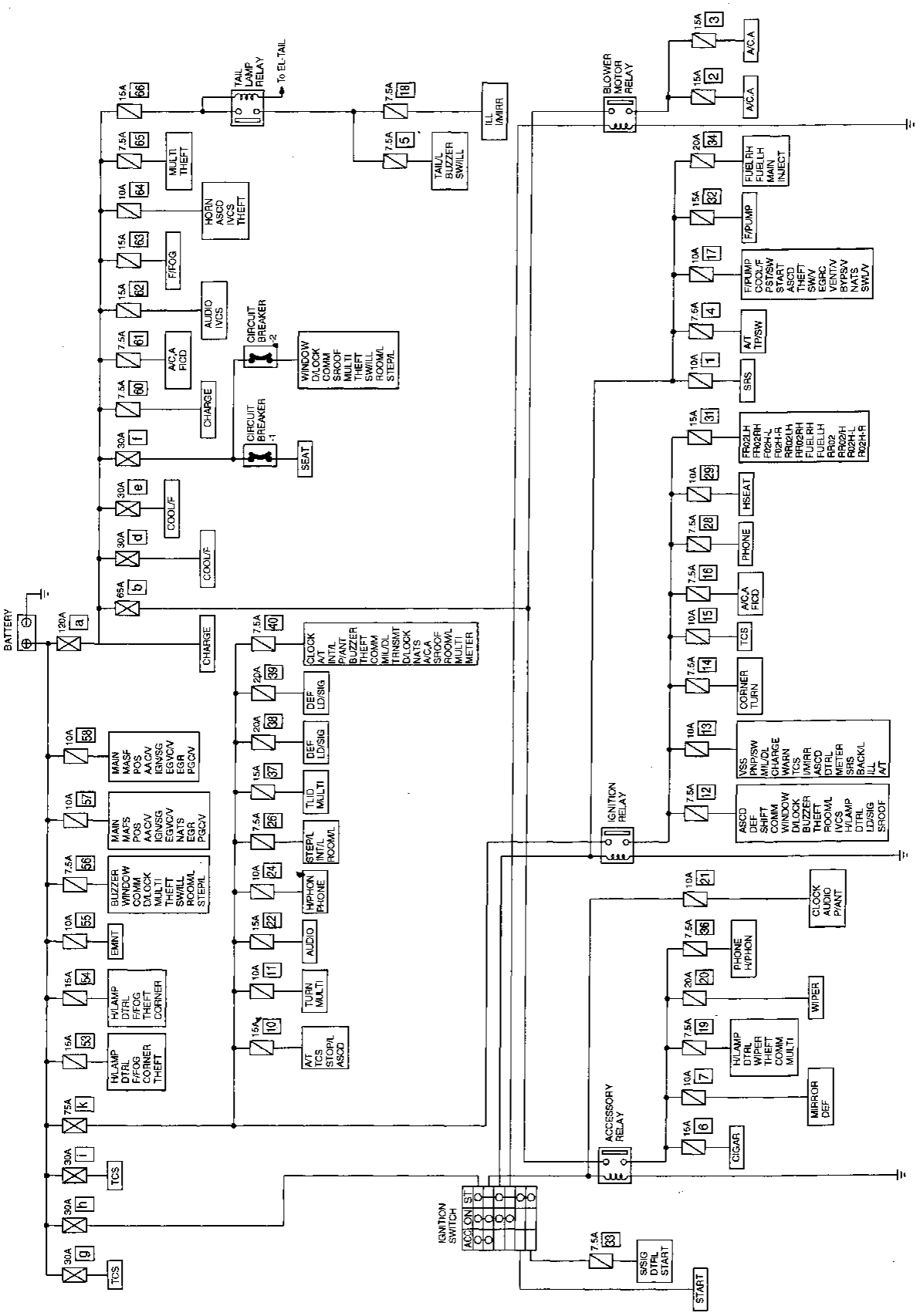
Description (Cont'd)

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.

SEL661TA

Schematic

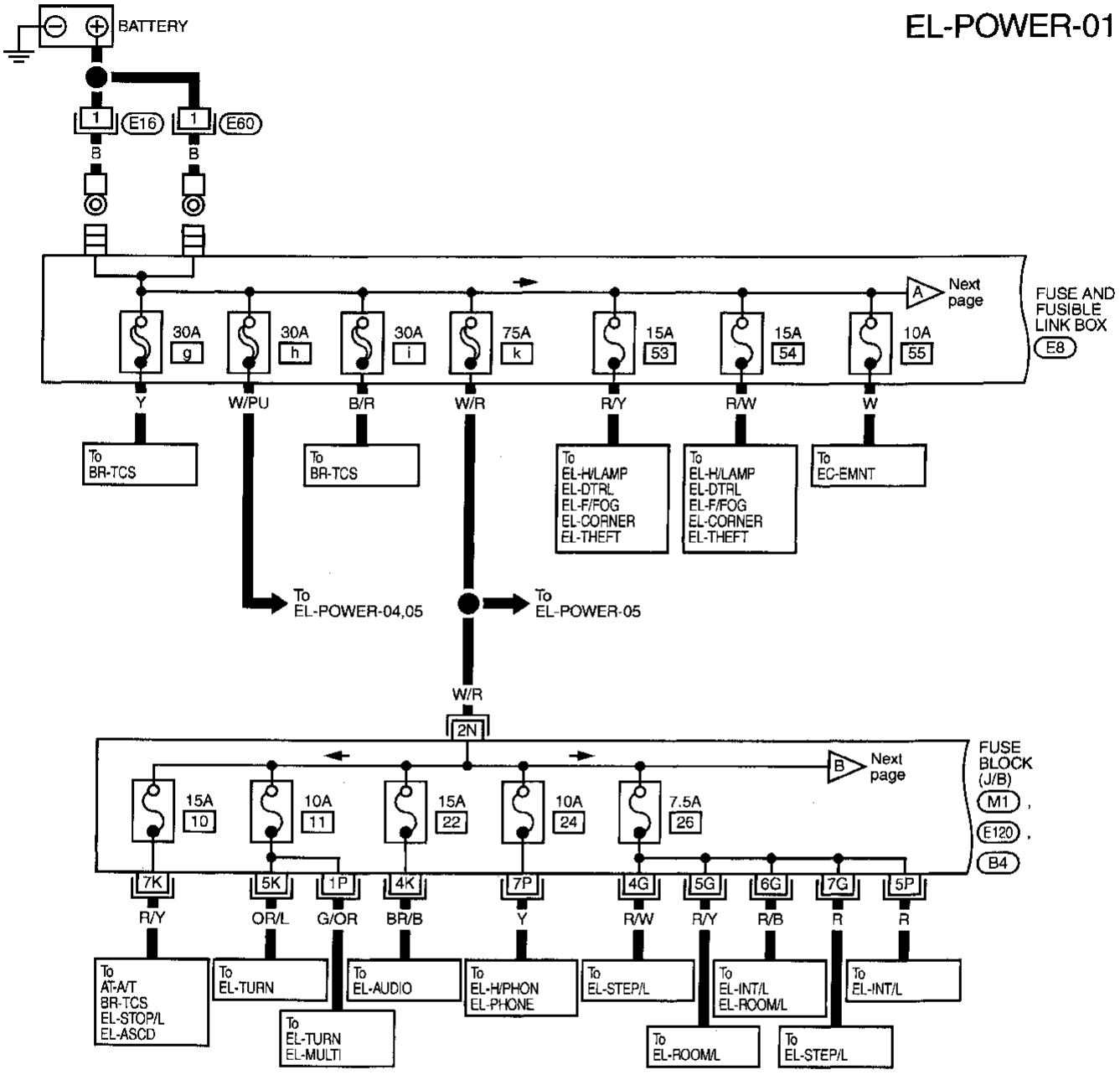


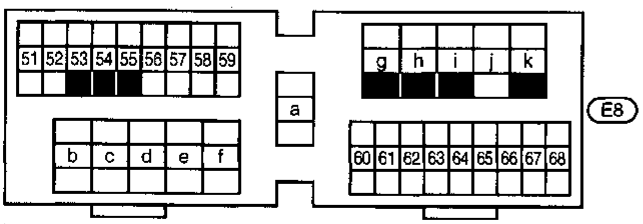
MEL053J

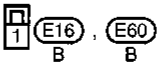
Wiring Diagram — POWER —

BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION

EL-POWER-01







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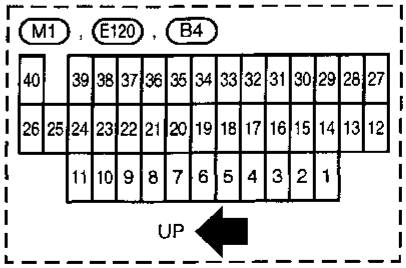
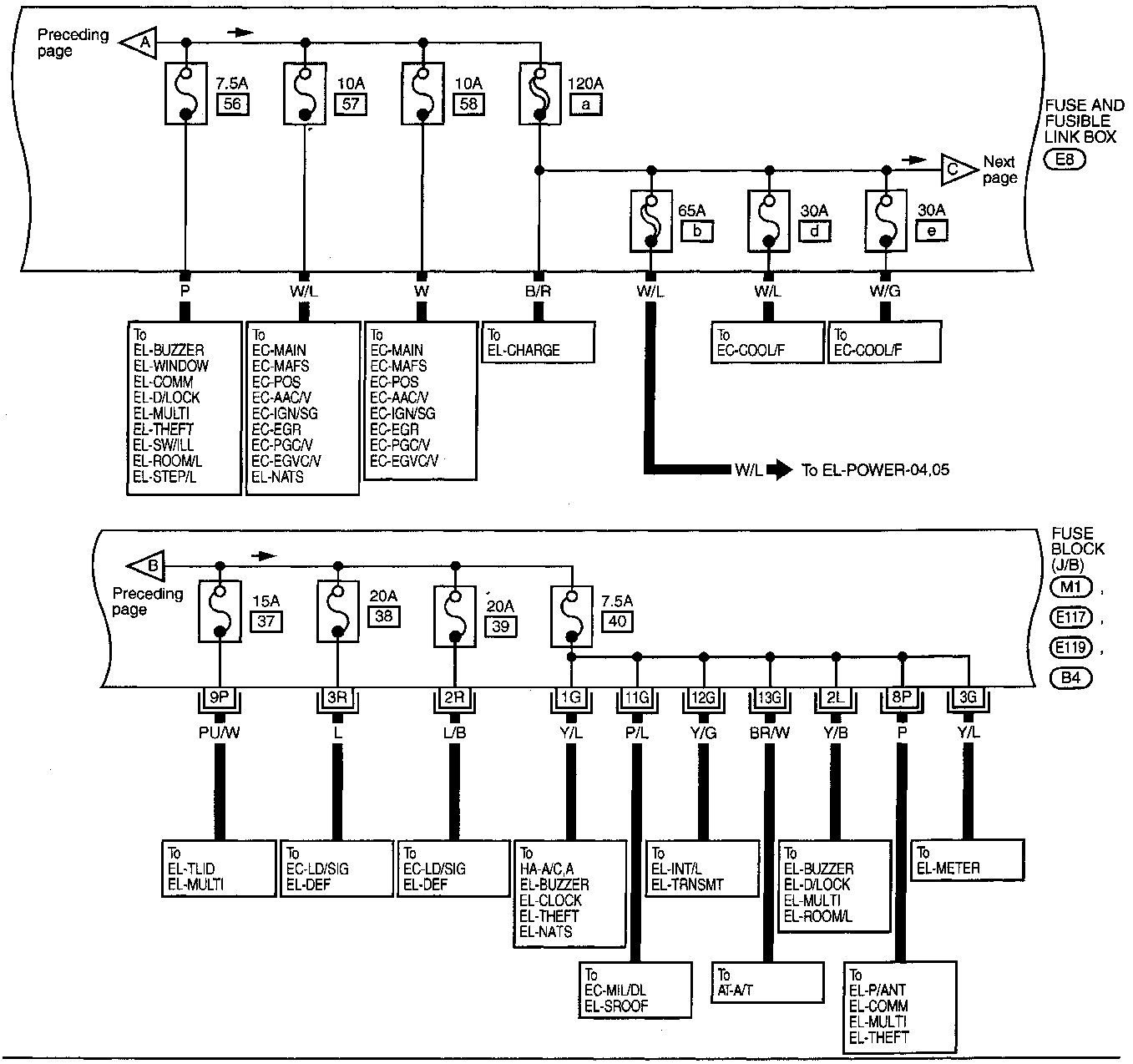
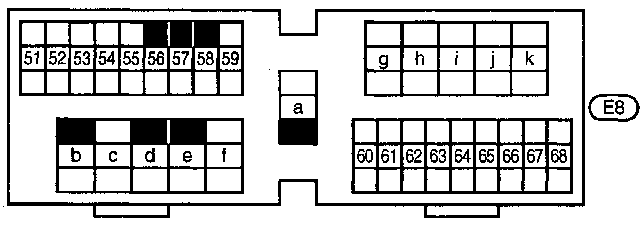


MEL054J

Wiring Diagram — POWER — (Cont'd)

EL-POWER-02





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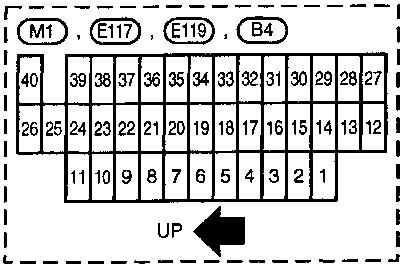
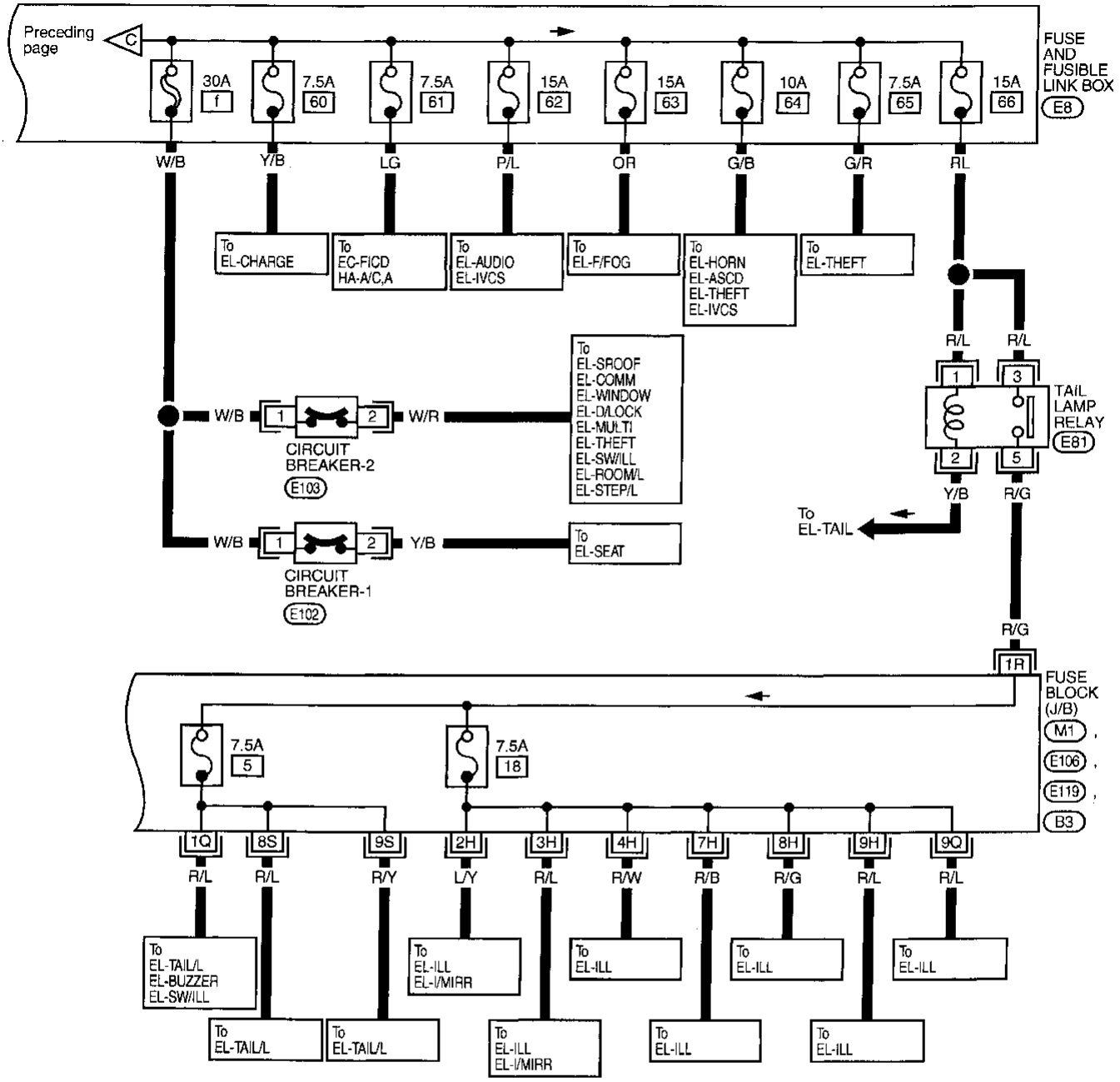
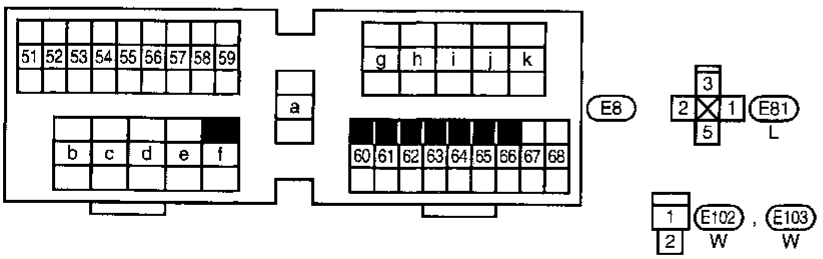


MEL055J

Wiring Diagram — POWER — (Cont'd)

EL-POWER-03





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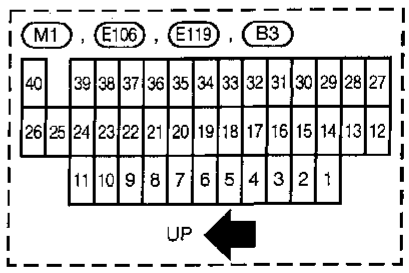
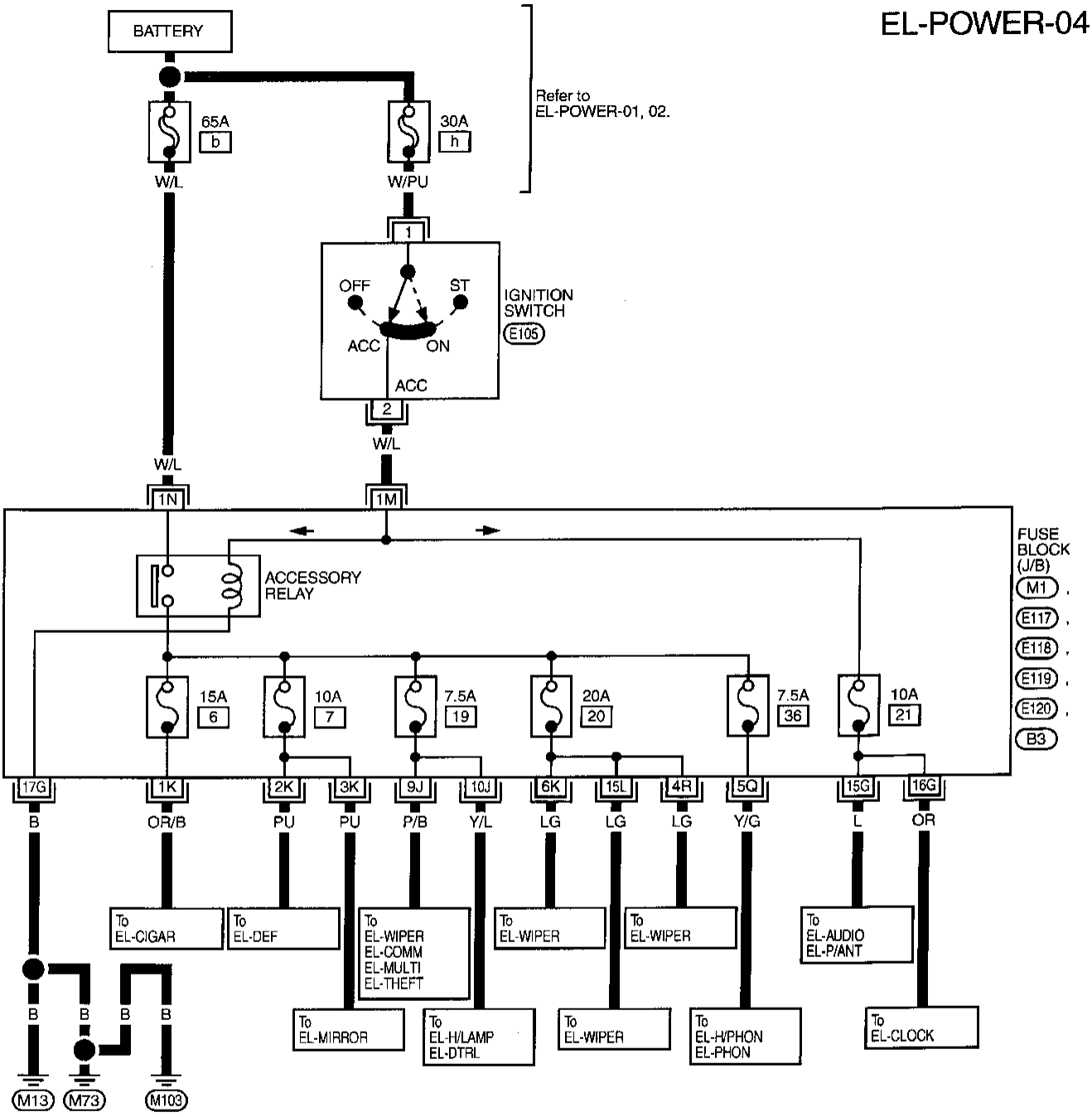


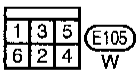
MEL056J

Wiring Diagram — POWER — (Cont'd)

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

EL-POWER-04





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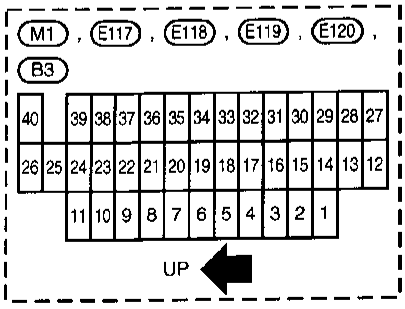
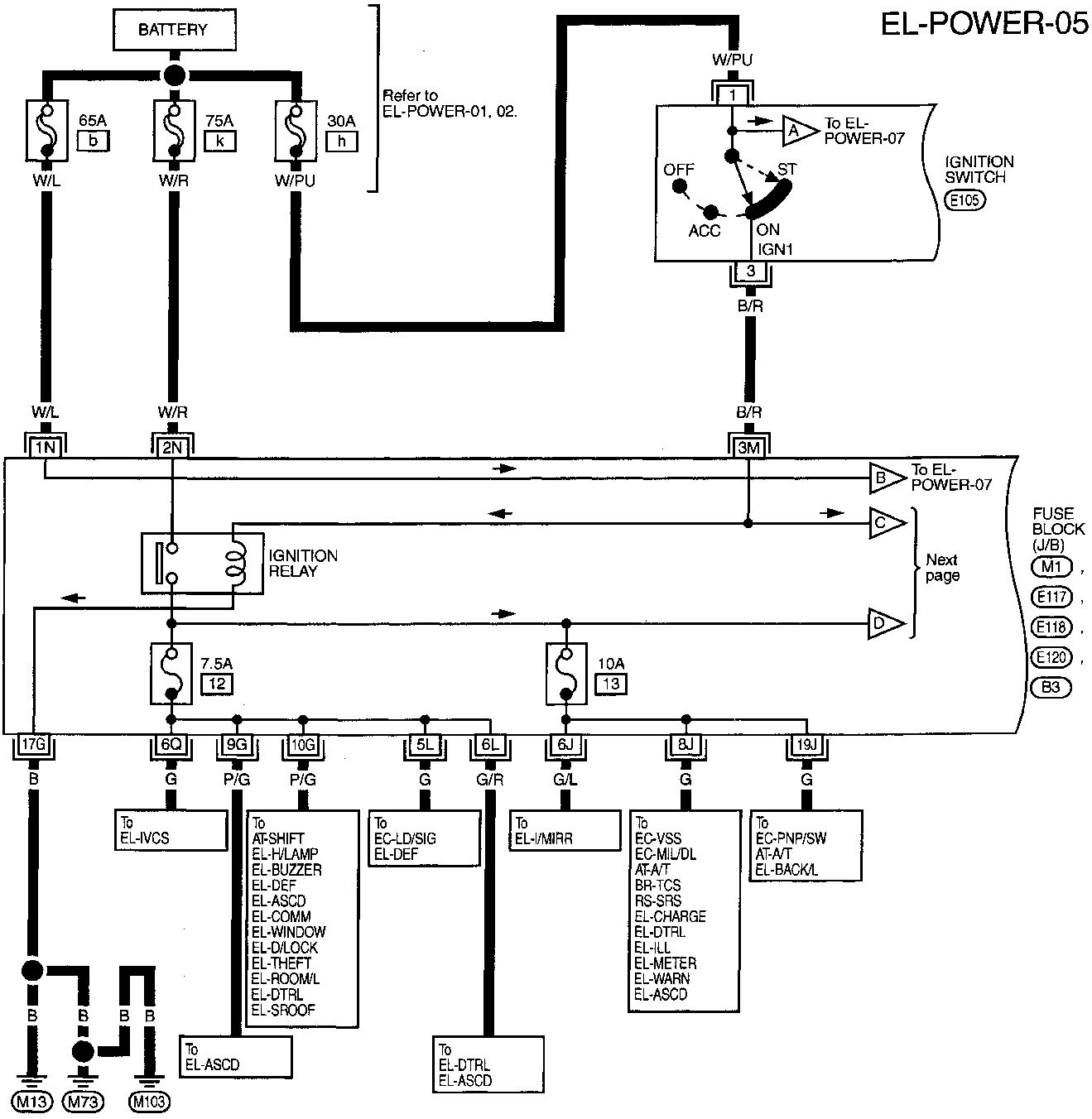
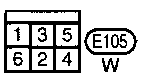


MEL057J

Wiring Diagram — POWER — (Cont'd)

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





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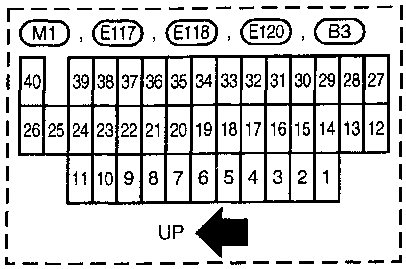
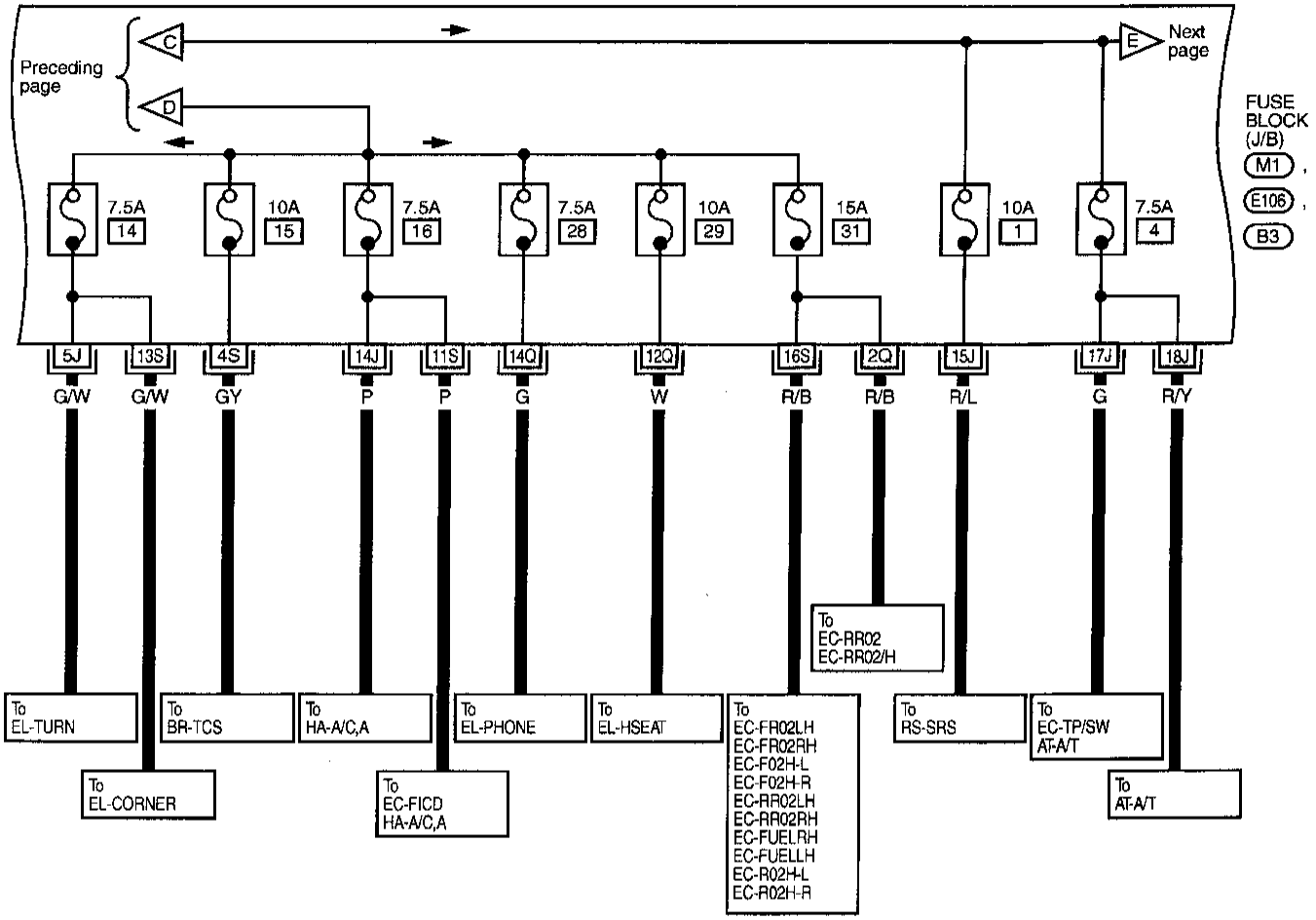


MEL058J

EL-POWER-06



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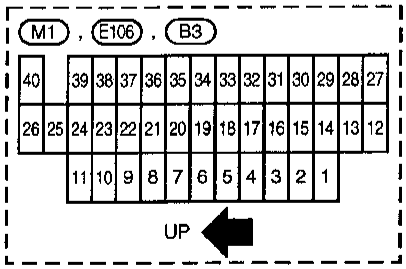
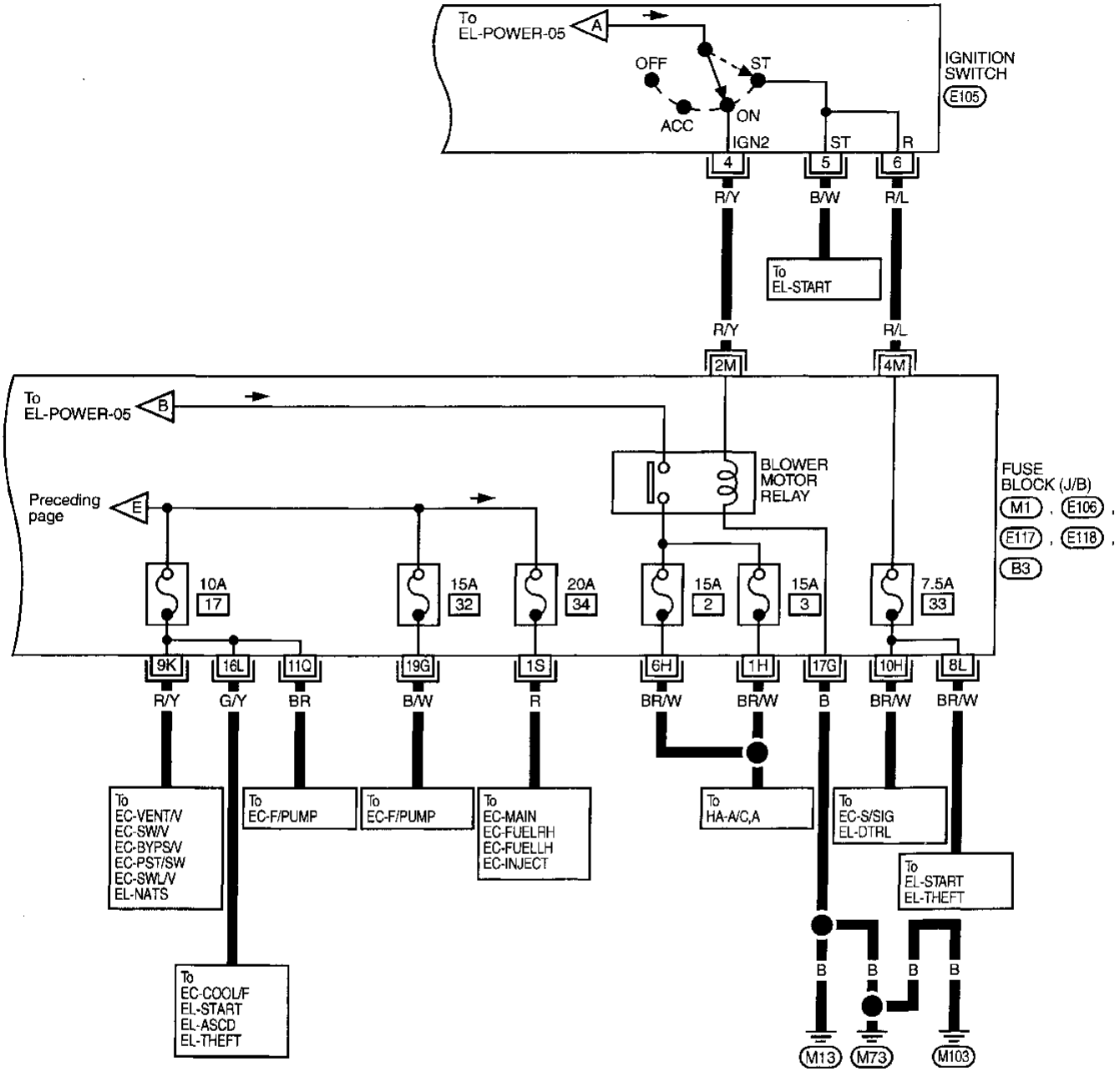
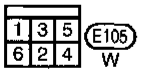


MEL059J

Wiring Diagram — POWER — (Cont'd)

EL-POWER-07





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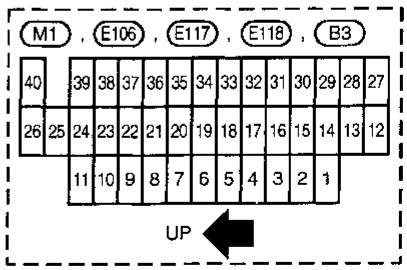
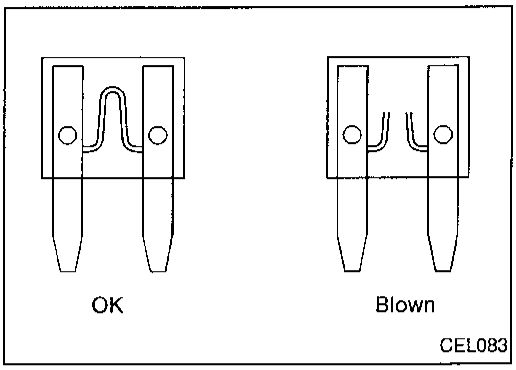
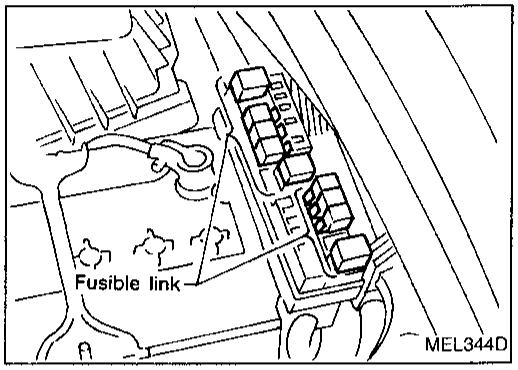


MEL060J



Fuse

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



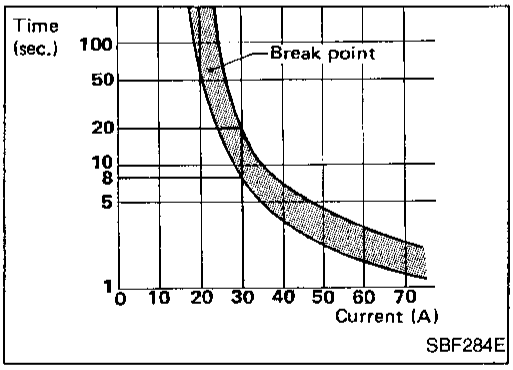
Fusible Link

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.



Circuit Breaker Inspection

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

EARTH	CONNECT TO	CONN. NO.	CELL CODE
E5/E30	DAYTIME LIGHT CONTROL UNIT	E42	EL-DTRL
	PARKING LAMP LH	E6	EL-TAIL/L
	PARKING LAMP RH	E44	EL-TAIL/L
	FRONT TURN SIGNAL LAMP LH	E6	EL-TURN
	FRONT TURN SIGNAL LAMP RH	E44	EL-TURN
	FRONT FOG LAMP LH	E21	EL-F/FOG
	FRONT FOG LAMP RH	E34	EL-F/FOG
	CORNERING LAMP RELAY	E64	EL-CORNER
	CORNERING LAMP LH	E22	EL-CORNER
	CORNERING LAMP RH	E32	EL-CORNER
	WASHER LEVEL SWITCH	E45	EL-WARN
	BRAKE FLUID LEVEL SWITCH	E1	EL-WARN
	FRONT WIPER RELAY	E69	EL-WIPER
	FRONT WIPER SWITCH	E112	EL-WIPER
	ASCD HOLD RELAY (With A/T)	E73	EL-ASCD
	ASCD HOLD RELAY (With M/T)	E57	EL-ASCD
	HOOD SWITCH	E19	EL-THEFT
	THEFT WARNING HORN RELAY	E63	EL-THEFT
	TRIPLE-PRESSURE SWITCH	E25	EC-COOL/F
	COOLING FAN MOTOR-1	E26	EC-COOL/F
	COOLING FAN MOTOR-2	E27	EC-COOL/F
	COOLING FAN RELAY-2	E55	EC-COOL/F
	COOLING FAN RELAY-3	E59	EC-COOL/F
	A/C AUTO AMP.	M91	HA-A/C, A
	ABS SOLENOID VALVE RELAY	E76	BR-TCS
	COMBINATION SWITCH (LIGHTING SWITCH)	E108	EL-H/LAMP EL-DTRL EL-TAIL/L EL-ILL EL-BUZZER EL-I/MIRR EL-SW/ILL EL-F/FOG
	CONBINATION SWITCH (LIGHTING SWITCH)	E111	EL-H/LAMP EL-DTRL EL-F/FOG
E35	ALTERNATOR	E37	EL-CHARGE
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/ M103	CLUTCH INTERLOCK SWITCH	M16	EL-START
	COMBINATION FLASHER UNIT	M34	EL-TURN
	COMBINATION METER (TURN)	M29	EL-TURN
	ILLUMINATION CONTROL SWITCH	M32	EL-ILL EL-I/MIRR
	CLOCK (ILLUMINATION)	M59	EL-ILL
	ASHTRAY (ILLUMINATION)	M46	EL-ILL

EARTH	CONNECT TO	CONN. NO.	CELL CODE
M13/M73/ M103	SPOT LAMP	R4	EL-INT/L
	VANITY MIRROR LH (ILLUMINATION)	R2	EL-INT/L
	VANITY MIRROR RH (ILLUMINATION)	R5	EL-INT/L
	COMBINATION METER (AIR BAG WARNING LAMP)	M88	RS-SRS EL-WARN
	BCM (BODY CONTROL MODULE)	M93	EL-ROOM/L EL-D/LOCK EL-COMM EL-WINDOW EL-STEP/L EL-MULTI EL-THEFT EL-SW/ILL EL-BUZZER EL-SROOF
	CLOCK	M59	EL-CLOCK
	CIGARETTE LIGHTER SOCKET	M45	EL-CIGAR
	REAR WINDOW DEFOGGER SWITCH	M60	EL-DEF
	DOOR MIRROR DEFOGGER (DRIVER SIDE)	D5	EL-DEF
	DOOR MIRROR DEFOGGER (PASSENGER SIDE)	D34	EL-DEF
	FRONT DOOR SPEAKER LH	D6	EL-AUDIO
	FRONT DOOR SPEAKER RH	D36	EL-AUDIO
	AUDIO AMP. RELAY	M79	EL-AUDIO
	FRONT WIPER MOTOR	M101	EL-WIPER
	DOOR MIRROR REMOTE CONTROL SWITCH	M26	EL-MIRROR
	INSIDE MIRROR	R8	EL-I/MIRR
	TRUNK LID OPENER SWITCH	D10	EL-TLID EL-MULTI
	FUEL LID OPENER SWITCH	M86	EL-TLID
	ASCD MAIN SWITCH	M27	EL-ASCD
	ASCD CONTROL UNIT	M30	EL-ASCD
	COMBINATION METER (CRUISE INDICATOR)	M29	EL-ASCD
	COMBINATION METER (UNIFIED METER CONTROL UNIT)	M88	EC-VSS AT-A/T EL-METER EL-ASCD
	DRIVER DOOR CONTROL UNIT (LCU01)	D9	EL-ROOM/L EL-MULTI EL-THEFT EL-STEP/L EL-COMM EL-WINDOW EL-D/LOCK
	PASSENGER DOOR CONTROL UNIT (LCU02)	D39	EL-STEP/L EL-MULTI EL-THEFT EL-COMM EL-WINDOW EL-D/LOCK
	ACCESSORY RELAY	M1	EL-POWER
	IGNITION RELAY	M1	EL-POWER
	FRONT DOOR KEY CYLINDER SWITCH LH [WITHOUT INFINITI COMMUNICATOR (IVCS)]	D7	EL-D/LOCK EL-THEFT
	FRONT DOOR KEY CYLINDER SWITCH LH [WITH INFINITI COMMUNICATOR (IVCS)]	D14	EL-D/LOCK EL-THEFT
	FRONT DOOR LOCK ACTUATOR LH	D12	EL-ROOM/L EL-THEFT EL-D/LOCK EL-MULTI
	FRONT DOOR KEY CYLINDER SWITCH RH	D37	EL-D/LOCK EL-THEFT
	FRONT DOOR LOCK ACTUATOR RH	D41	EL-THEFT EL-D/LOCK EL-MULTI
	INTEGRATED HOMELINK TRANSMITTER	R2	EL-TRNSMT
	DATA LINK CONNECTOR FOR CONSULT	M2	EC-MIL/DL AT-A/T
	DATA LINK CONNECTOR FOR GST	M81	EC-MIL/DL
	MODE DOOR MOTOR	M38	HA-A/C, A

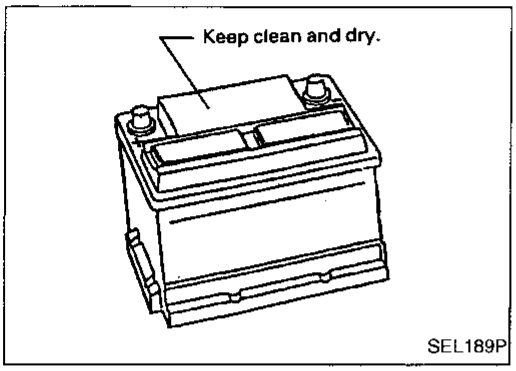
EARTH	CONNECT TO	CONN. NO.	CELL CODE
M13/M73/ M103	AIR MIX DOOR MOTOR	M49	HA-A/C, A
	INTAKE DOOR MOTOR	M69	HA-A/C, A
	FAN CONTROL AMP.	M57	HA-A/C, A
	AIR BAG DIAGNOSIS SENSOR UNIT	Z4	RS-SRS
	ABS/TCS CONTROL UNIT	E114	BR-TCS
	A/T DEVICE (OVER DRIVE CONTROL SWITCH)	M62	AT-A/T
	A/T DEVICE (PARK POSITION SWITCH)	M62	AT-SHIFT
	BLOWER MOTOR RELAY	M1	EL-POWER
	TCS ON/OFF SWITCH	M106	BR-TCS
	A/C AUTO AMP.	M47	HA-A/C, A
	AUTO LIGHT CONTROL UNIT	M104	EL-H/LAMP EL-DTRL
	NATS IMMU	M105	EL-NATS
	DRIVER SIDE KEY CYLINDER SWITCH	D14	EL-IVCS
	IVCS SWITCH	R10	EL-IVCS
	DOOR MIRROR DEFOGGER RELAY	M85	EL-DEF
	GLOVE BOX LAMP SWITCH	M55	EL-ILL
F18/F19	PARK/NEUTRAL POSITION SWITCH	F47	EL-START EL-ASCD AT-A/T
	SHIELD WIRE (MASS AIR FLOW SENSOR)	F33	EC-MAFS
	SHIELD WIRE (ABSOLUTE PRESSURE SENSOR)	F45	EC-AP/SEN
	SHIELD WIRE (THROTTLE POSITION SENSOR)	F8	EC-TPS AT-A/T
	SHIELD WIRE (FRONT HEATED OXYGEN SENSOR LH)	F28	EC-FRO2LH EC-FO2H-L EC-FUELLH
	SHIELD WIRE (FRONT HEATED OXYGEN SENSOR RH)	F2	EC-FRO2RH EC-FO2H-R EC-FUELRH
	SHIELD WIRE (REAR HEATED OXYGEN SENSOR)	B9	EC-RRO2 EC-RRO2/H
	SHIELD WIRE (REAR HEATED OXYGEN SENSOR LH)	F48	EC-RRO2LH EC-RO2H-L
	SHIELD WIRE (REAR HEATED OXYGEN SENSOR RH)	F49	EC-RRO2RH EC-RO2H-R
	REAR HEATED OXYGEN SENSOR	B9	EC-RRO2 EC-RRO2/H
	REAR HEATED OXYGEN SENSOR LH	F48	EC-RRO2LH EC-RO2H-L
	REAR HEATED OXYGEN SENSOR RH	F49	EC-RRO2RH EC-RO2H-R
	CRANKSHAFT POSITION SENSOR (POS)	F112	EC-POS
	CRANKSHAFT POSITION SENSOR (REF)	F136	EC-REF
	SHIELD WIRE (KNOCK SENSOR)	F122	EC-KS
	SHIELD WIRE [CRANKSHAFT POSITION SENSOR (POS)]	F112	EC-POS
	SHIELD WIRE [CAMSHAFT POSITION SENSOR (PHASE)]	F15	EC-PHASE
	SHIELD WIRE (EVAP CONTROL SYSTEM PRESSURE SENSOR)	B52	EC-PRE/SE
	PARK/NEUTRAL POSITION SWITCH	F32	EC-PNP/SW
	CAMSHAFT POSITION SENSOR (PHASE)	F15	EC-PHASE
	CONDENSER	F22	EC-IGN/SG
	IGNITION COIL NO. 1	F3	EC-IGN/SG

EARTH	CONNECT TO	CONN. NO.	CELL CODE
F18/F19	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
	SHIELD WIRE [CRANKSHAFT POSITION SENSOR (REF)]	F136	EC-REF
	POWER STEERING OIL PRESSURE SWITCH	F1	EC-PST/SW
	DATA LINK CONNECTOR FOR GST	M81	EC-MIL/DL
	ECM	F101	EC-MAIN
	SWIRL CONTROL VALVE CONTROL VACUUM CHECK SWITCH	F51	EC-S/VCSW
	TCM (TRANSMISSION CONTROL MODULE)	F109	AT-A/T
B16/B19	TRUNK LID COMBINATION LAMP LH	B30	EL-TAIL/L EL-STOP/L EL-BACK/L
	TRUNK LID COMBINATION LAMP RH	B33	EL-TAIL/L EL-STOP/L EL-BACK/L
	HIGH-MOUNTED STOP LAMP (Without rear spoiler)	B40	EL-STOP/L
	HIGH-MOUNTED STOP LAMP (With rear spoiler)	H1	EL-STOP/L
	IVCS UNIT	B72	EL-IVCS
	TRUNK ROOM LAMP SWITCH	B49	EL-INT/L EL-THEFT
	FUEL TANK GAUGE UNIT	B22	EC-TFTS EL-METER EL-WARN
	SEAT BELT BUCKLE SWITCH LH	B7	EL-WARN EL-BUZZER RS-SRS
	FRONT DOOR SWITCH LH	B18	EL-ROOM/L EL-BUZZER EL-SROOF EL-WINDOW EL-D/LOCK RS-SRS EL-MULTI EL-THEFT
	REAR SPEAKER LH	B37	EL-AUDIO
	REAR SPEAKER RH	B41	EL-AUDIO
	TELEPHONE	B53	EL-PHONE
	TRANSCEIVER	B54	EL-H/PHON
	HANDSET	B47	EL-H/PHON
	POWER SEAT (DRIVER SIDE)	B6	EL-SEAT
	POWER SEAT (PASSENGER SIDE)	B14	EL-SEAT
	HEATED SEAT SWITCH LH	B11	EL-HSEAT
	HEATED SEAT SWITCH RH	B12	EL-HSEAT
	HEATED SEAT LH	B8	EL-HSEAT
	HEATED SEAT RH	B13	EL-HSEAT
	FRONT DOOR SWITCH RH	B15	EL-SROOF EL-WINDOW EL-D/LOCK EL-MULTI EL-THEFT
	REAR DOOR CONTROL UNIT (LCU04)	D53	EL-THEFT EL-SW/ILL EL-MULTI EL-COMM EL-WINDOW EL-D/LOCK
	REAR DOOR CONTROL UNIT (LCU03)	D73	EL-THEFT EL-SW/ILL EL-MULTI EL-COMM EL-WINDOW EL-D/LOCK
	REAR DOOR LOCK ACTUATOR LH (DOOR UNLOCK SENSOR)	D55	EL-MULTI EL-THEFT
	REAR DOOR LOCK ACTUATOR RH (DOOR UNLOCK SENSOR)	D75	EL-MULTI EL-THEFT
	FUEL PUMP	B21	EC-F/PUMP
	TRUNK LID KEY CYLINDER SWITCH	B32	EL-THEFT

EARTH	CONNECT TO	CONN. NO.	CELL CODE
B56	REAR WINDOW DEFOGGER	B55	EL-DEF
B57	SHIELD WIRE (SATELLITE SENSOR LH)	B58	RS-SRS
B63	SHIELD WIRE (SATELLITE SENSOR LH)	B58	RS-SRS
	SHIELD WIRE (SATELLITE SENSOR RH)	B62	RS-SRS
B64	SHIELD WIRE (SATELLITE SENSOR RH)	B62	RS-SRS
T6/T9	LICENSE PLATE LAMP	T8	EL-TAIL/L
	REAR COMBINATION LAMP LH	T4	EL-STOP/L EL-TAIL/L EL-TURN
	REAR COMBINATION LAMP RH	T10	EL-STOP/L EL-TAIL/L EL-TURN
	POWER ANTENNA TIMER	T13	EL-P/ANT
	MULTI-REMOTE CONTROL UNIT (LCU05)	T12	EL-COMM EL-MULTI EL-THEFT

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.**

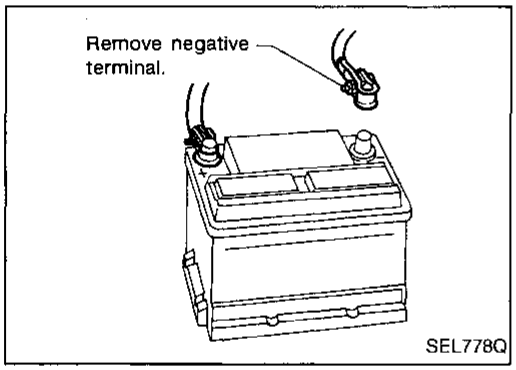


How to Handle Battery

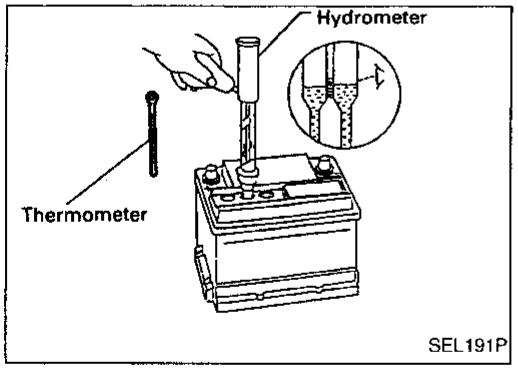
METHODS OF PREVENTING OVER-DISCHARGE

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.

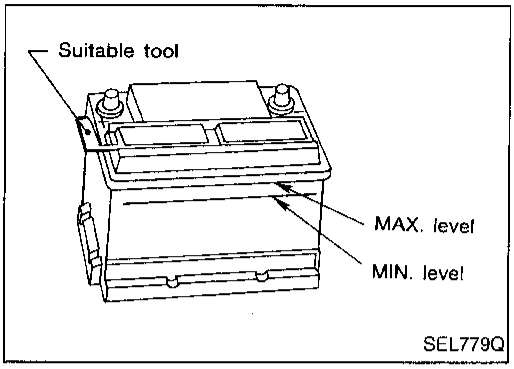
CHECKING ELECTROLYTE LEVEL

WARNING:

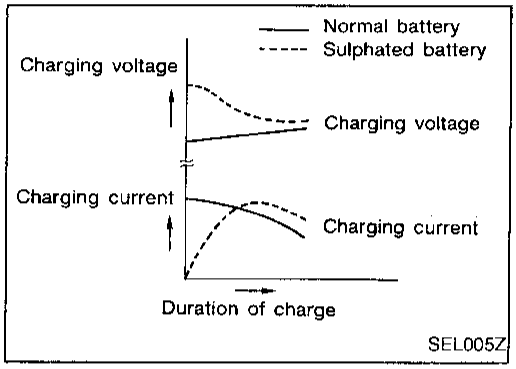
Do not allow battery fluid to come in contact with skin, eyes, fabrics, or painted surfaces. After touching a battery, do not touch or rub your eyes until you have thoroughly washed your hands. If the acid contacts the eyes, skin or clothing, immediately flush with water for 15 minutes and seek medical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

How to Handle Battery (Cont'd)



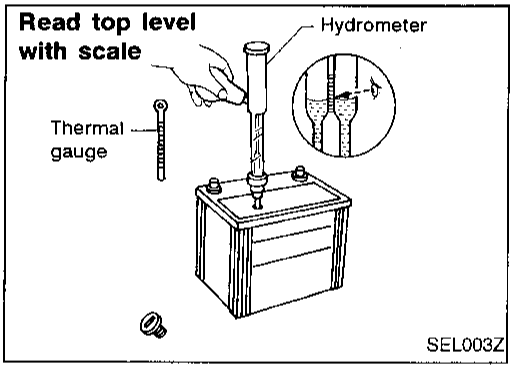
- Remove the cell plug using a suitable tool.
- Add distilled water up to the MAX level.



SULPHATION

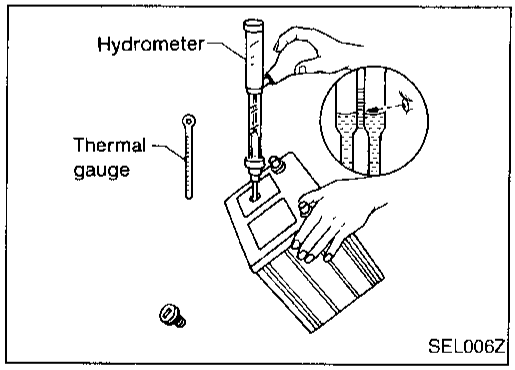
A battery will be completely discharged if it is left unattended for a long time and the specific gravity becomes less than 1.100. This may result in sulphation on the cell plates.

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.

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
66 (150)	0.028
60 (140)	0.024
54 (130)	0.020
49 (120)	0.016
43 (110)	0.012
38 (100)	0.008
32 (90)	0.004
27 (80)	0
21 (70)	−0.004
16 (60)	−0.008
10 (50)	−0.012
4 (40)	−0.016
−1 (30)	−0.020
−7 (20)	−0.024
−12 (10)	−0.028
−18 (0)	−0.032

Corrected specific gravity	Approximate charge condition
1.260 - 1.280	Fully charged
1.230 - 1.250	3/4 charged
1.200 - 1.220	1/2 charged
1.170 - 1.190	1/4 charged
1.140 - 1.160	Almost discharged
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.

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	

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 (M103).
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 .

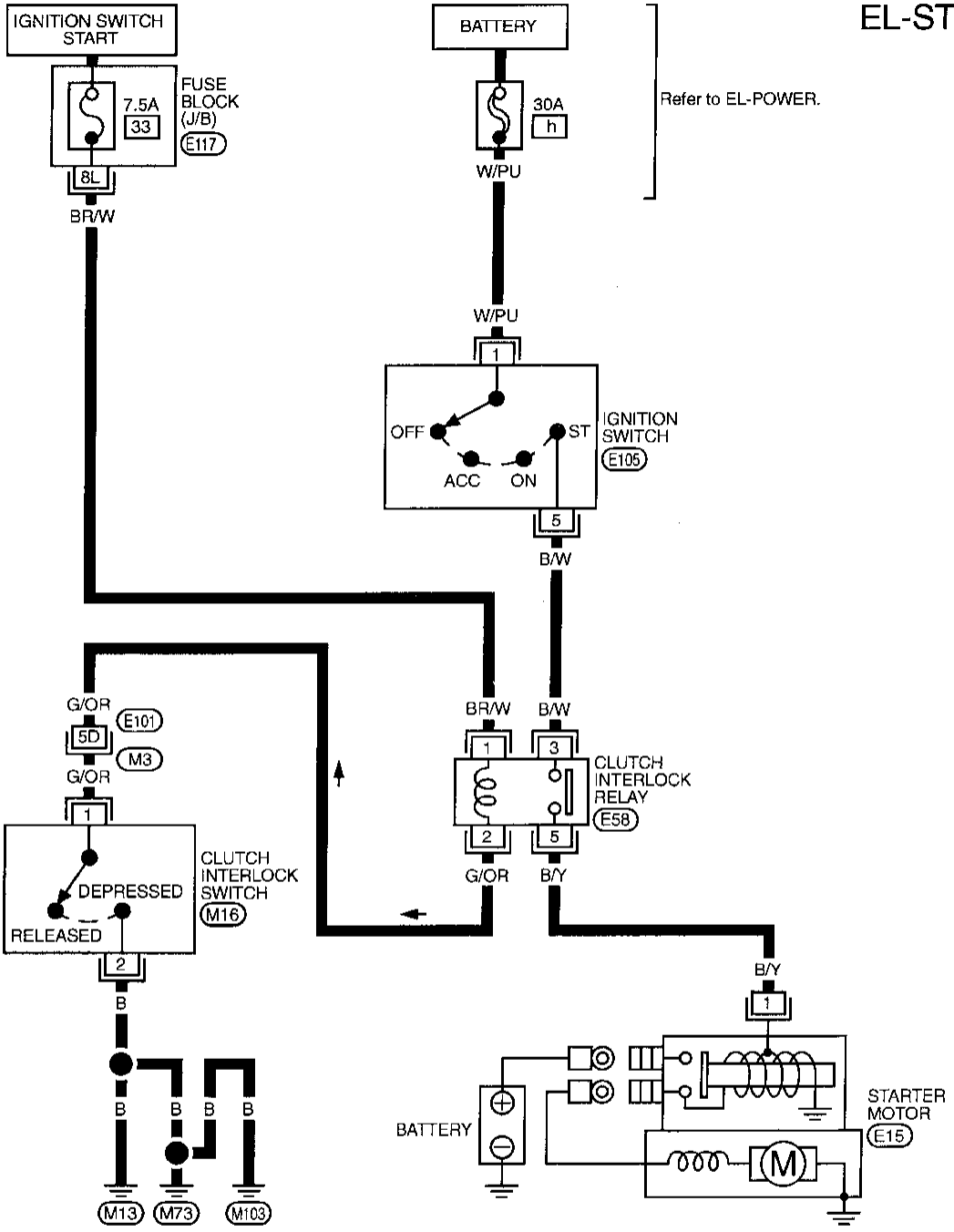
Also, with the ignition switch in the START position, power is supplied
- from ignition switch terminal ⑤
- to park/neutral position relay terminal ⑥ .

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.

The park/neutral position relay is energized and power is supplied
- from ignition switch 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.

Wiring Diagram — START —/M/T Models



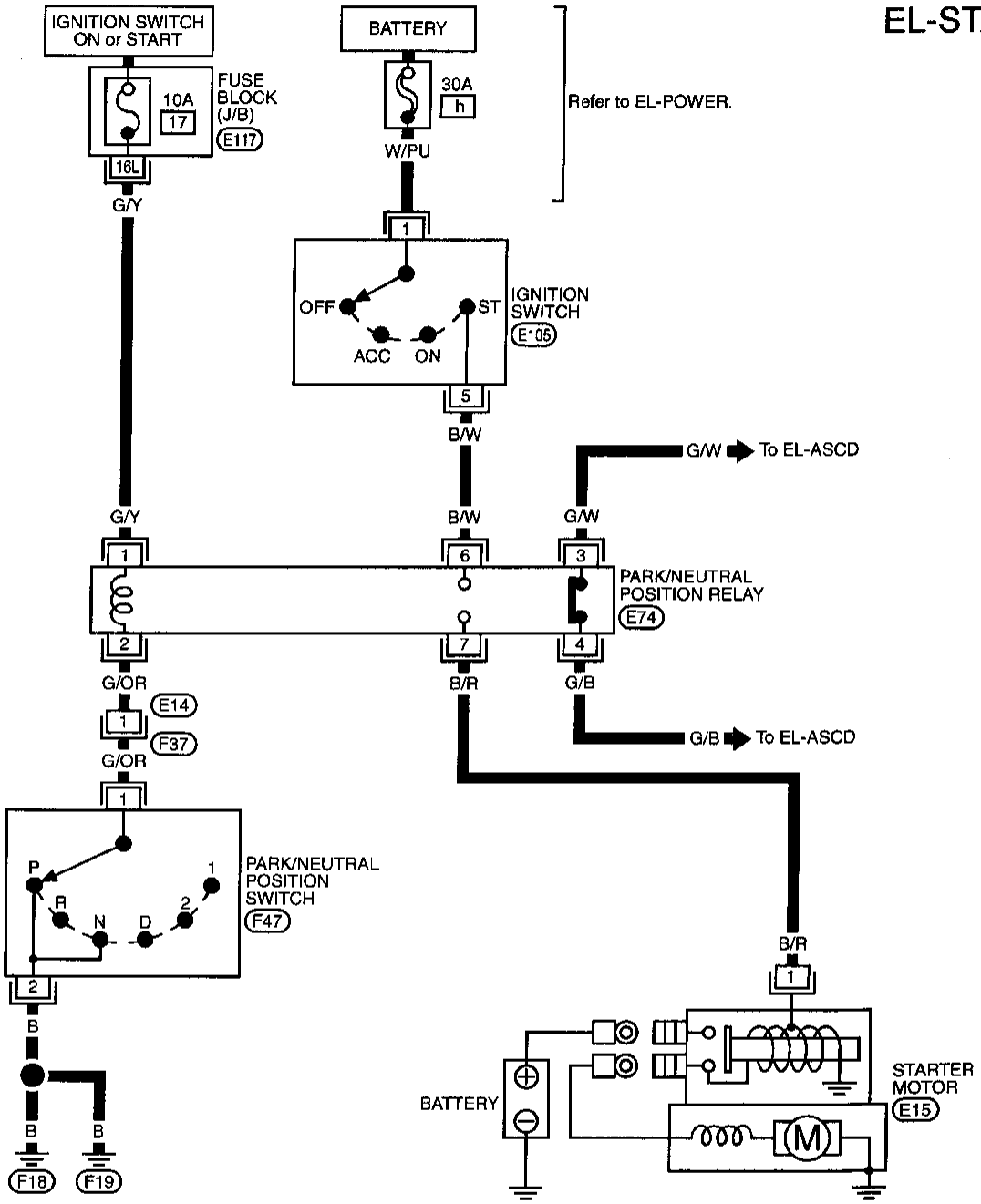
M16 L
E15 GY
E58 L
E105 W

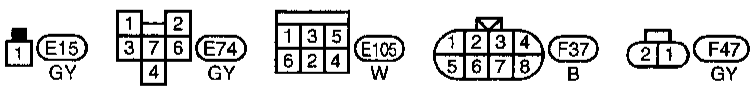
Refer to last page (Foldout page).
M3 , E101
E117

MEL061J

Wiring Diagram — START —/A/T Models

EL-START-02

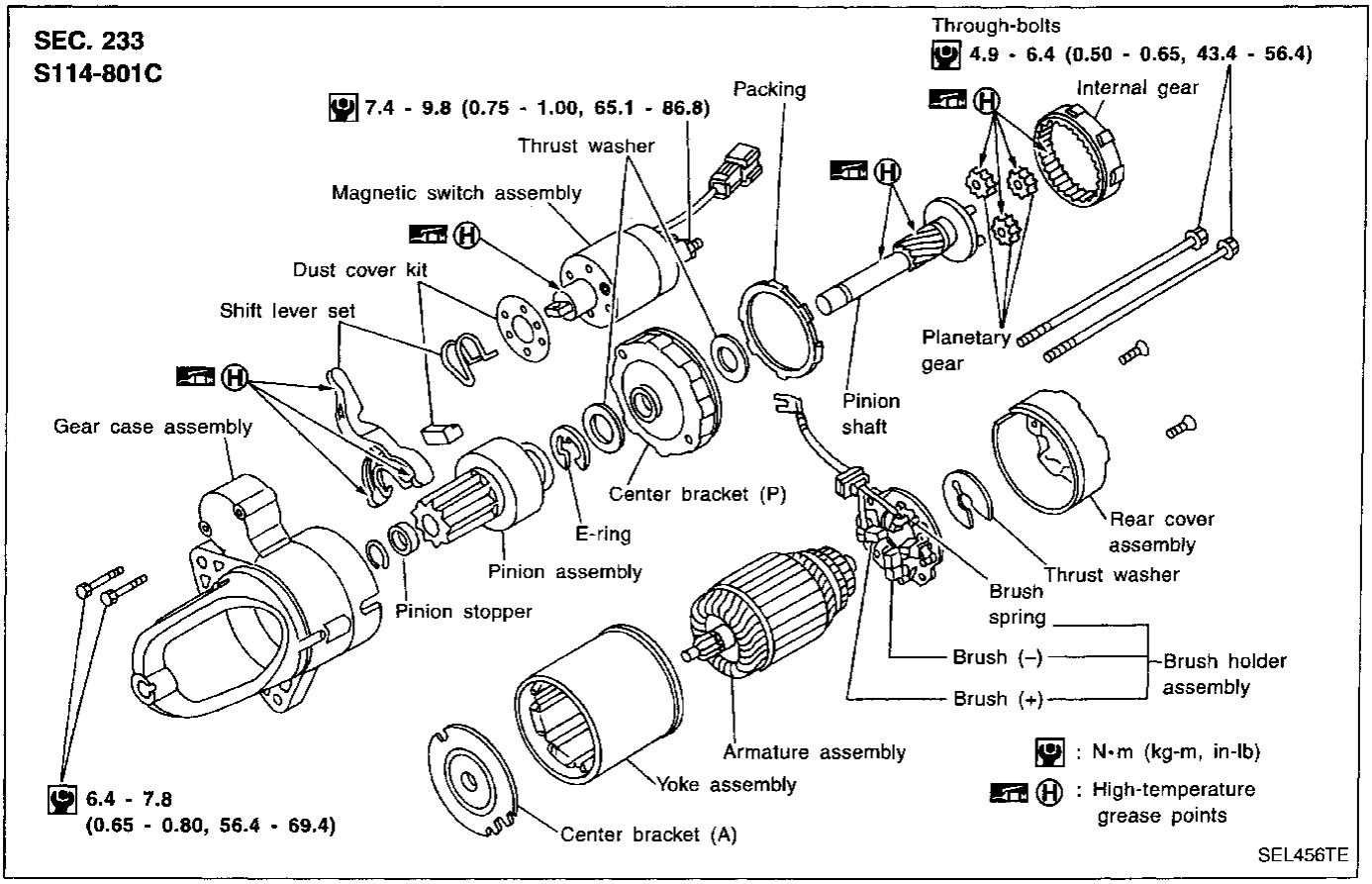


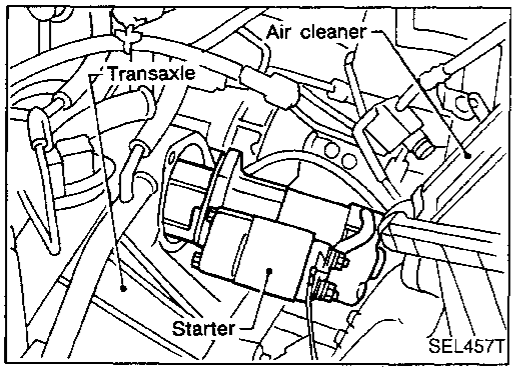


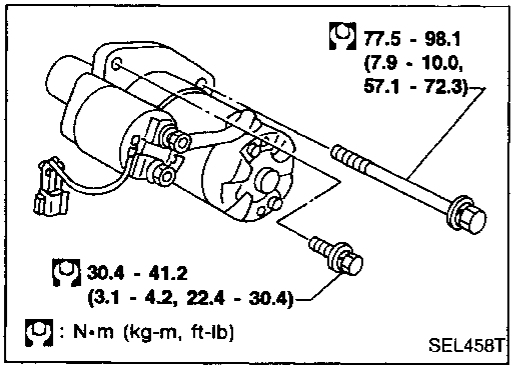
Refer to last page (Foldout page).
E117

MEL062J

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.

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.

Service Data and Specifications (SDS)

STARTER

Type		S114-801C HITACHI make Reduction gear type
System voltage	V	12
No-load		
Terminal voltage	V	11.0
Current	A	Less than 90
Revolution	rpm	More than 2,700
Minimum diameter of commutator	mm (in)	28 (1.10)
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)
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)

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 Ⓢ through:

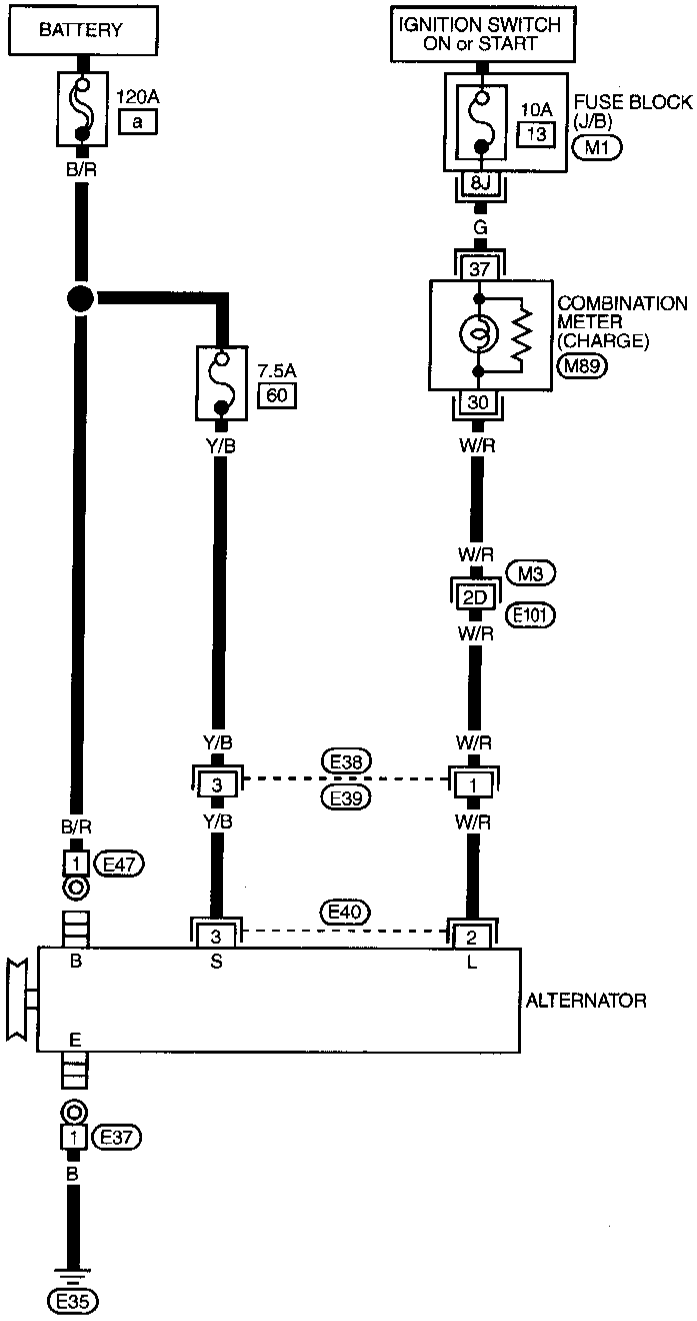
- 120A fusible link (letter [a], located in the fuse and fusible link box), and
- 7.5A fuse (No. [60], located in the fuse and fusible link box).

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

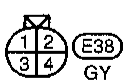
Ground is supplied to terminal ㉚ of the combination meter through terminal Ⓛ of the alternator. With power and ground supplied, the charge warning indicator will illuminate. When the alternator is providing sufficient voltage, the ground is opened and the charge warning indicator will go off.
If the charge warning indicator illuminates with the engine running, a malfunction is indicated. Refer to "Trouble Diagnoses" (EL-32).

Wiring Diagram — CHARGE —



EL-CHARGE-01

Refer to EL-POWER.



Refer to last page (Foldout page).

M1

M3 , E101

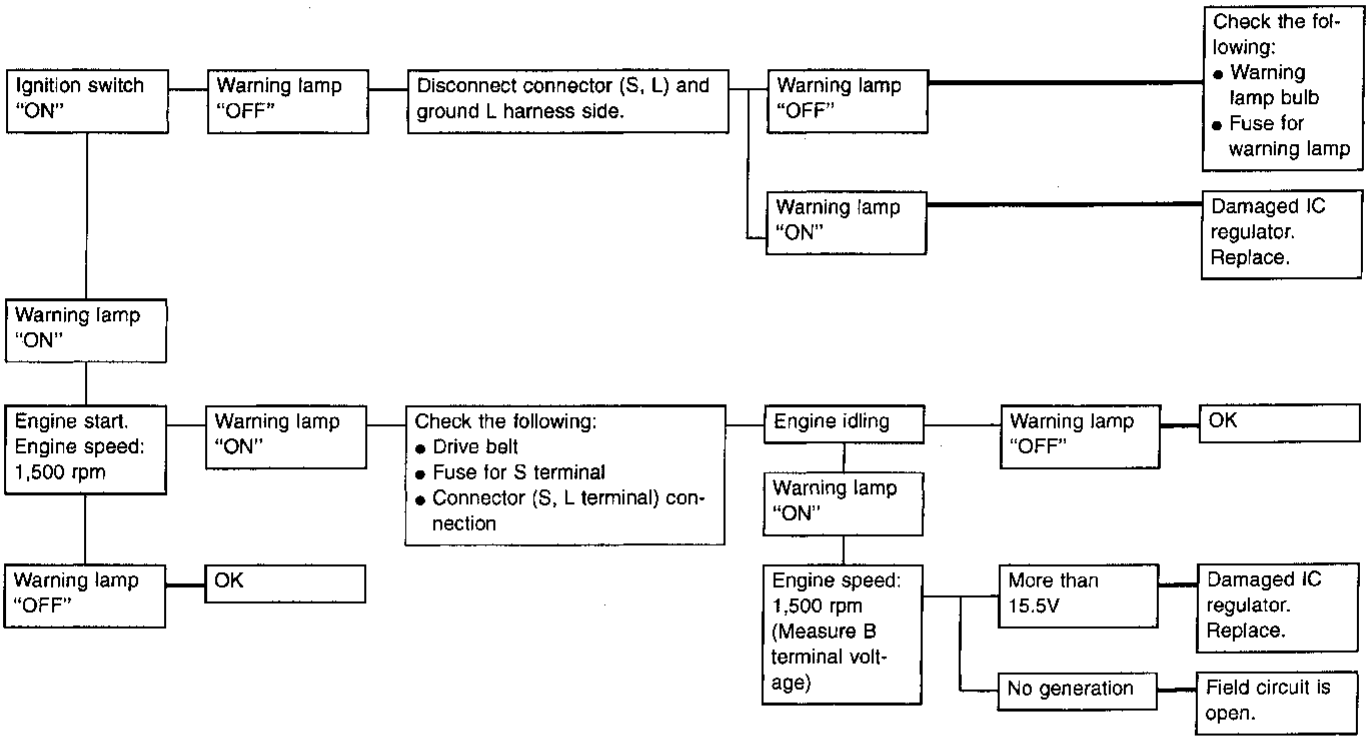
MEL063J

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:

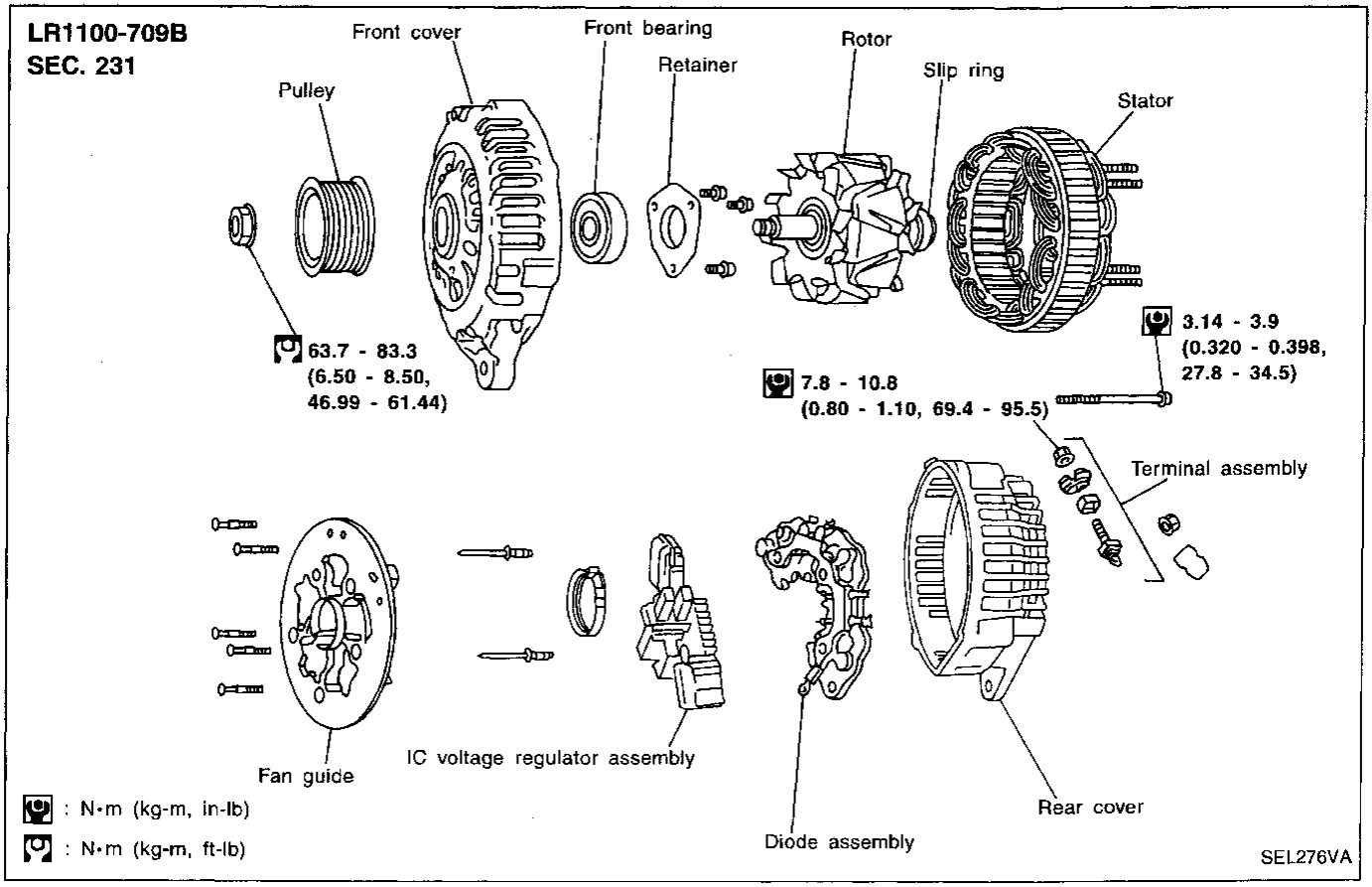
- **If the inspection result is OK even though the charging system is malfunctioning, check the B terminal connection. (Check the tightening torque.)**
- **When field circuit is open, check condition of rotor coil, rotor slip ring and brush. If necessary, replace faulty parts with new ones.**

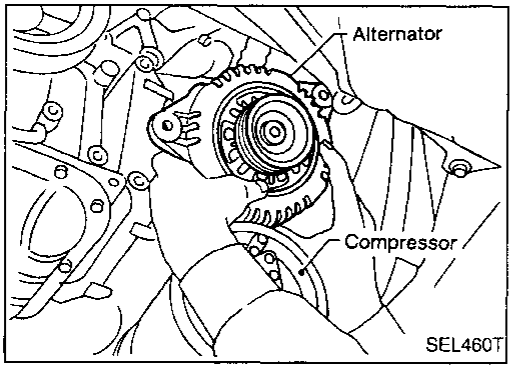
MALFUNCTION INDICATOR

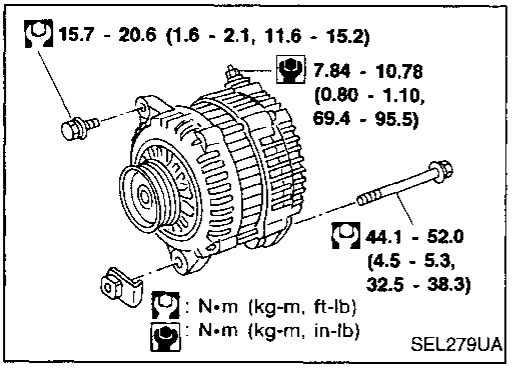
The IC regulator warning function activates to illuminate "CHARGE" warning lamp, if any of the following symptoms occur while alternator is operating:

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

Construction







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

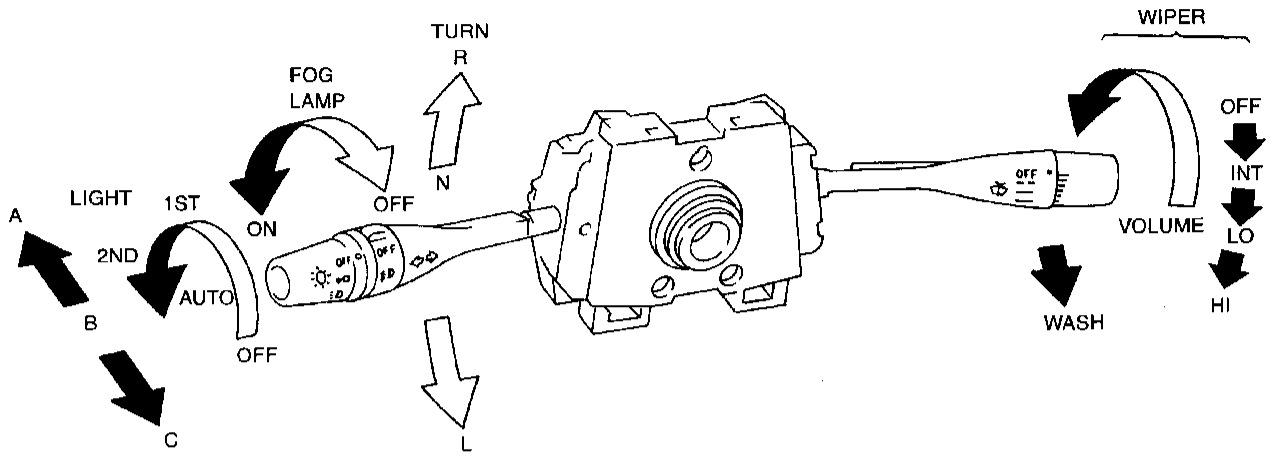
To install, reverse the removal procedure.

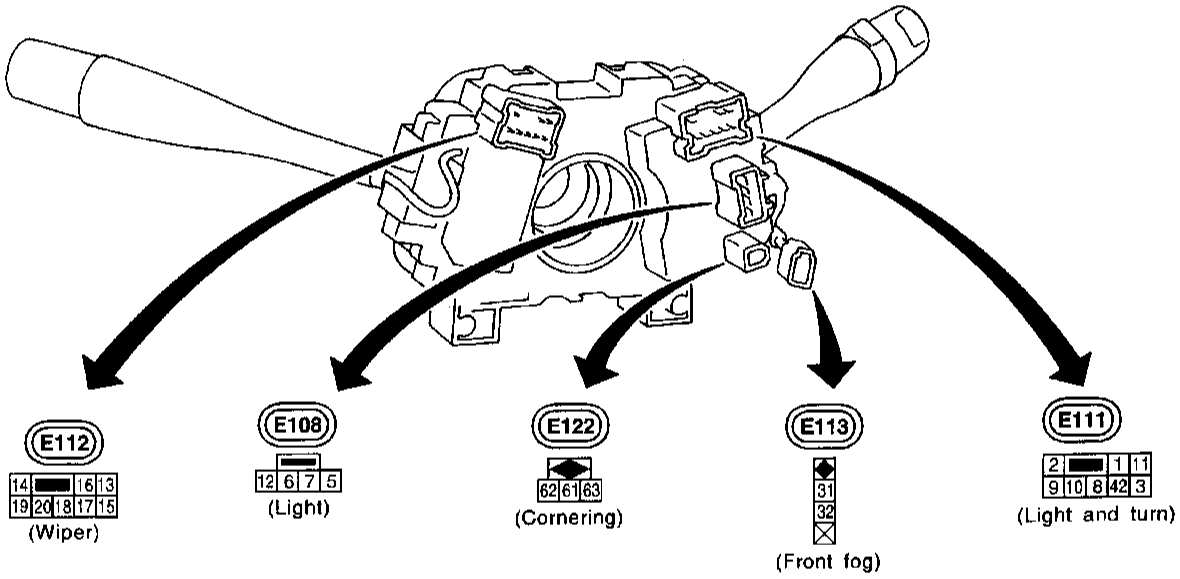
Service Data and Specifications (SDS)

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	Ω	2.31

Check





LIGHTING SWITCH

	OFF	AUTO	1ST	2ND
5			○	○
11			○	○
8				○
12				○
42		○		
(8)		○		

	A	B	C
(5)	○	○	○
7		○	
6	○		○
(8)	○	○	○
10		○	
9	○		○
(12)			○

FRONT WIPER SWITCH

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

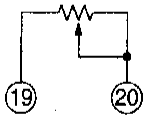
TURN SIGNAL LAMP SWITCH

	L	N	R
1	○		○
2			○
3	○		

CORNERING LAMP SWITCH

	L	N	R
61	○		○
62			○
63	○		

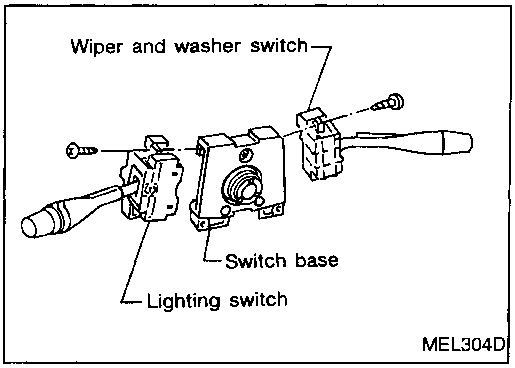
INTERMITTENT WIPER VOLUME



FRONT FOG LAMP SWITCH

	OFF	ON
31		○
32		○

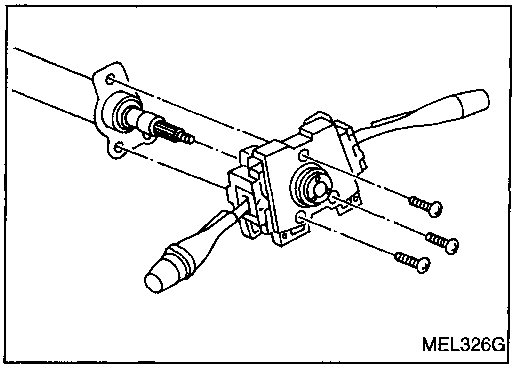
MEL050J



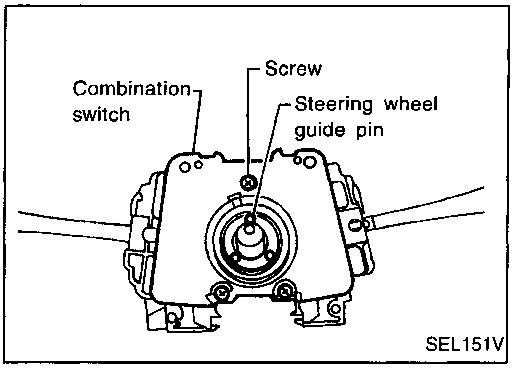
Replacement

For removal and installation of air bag module and 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.

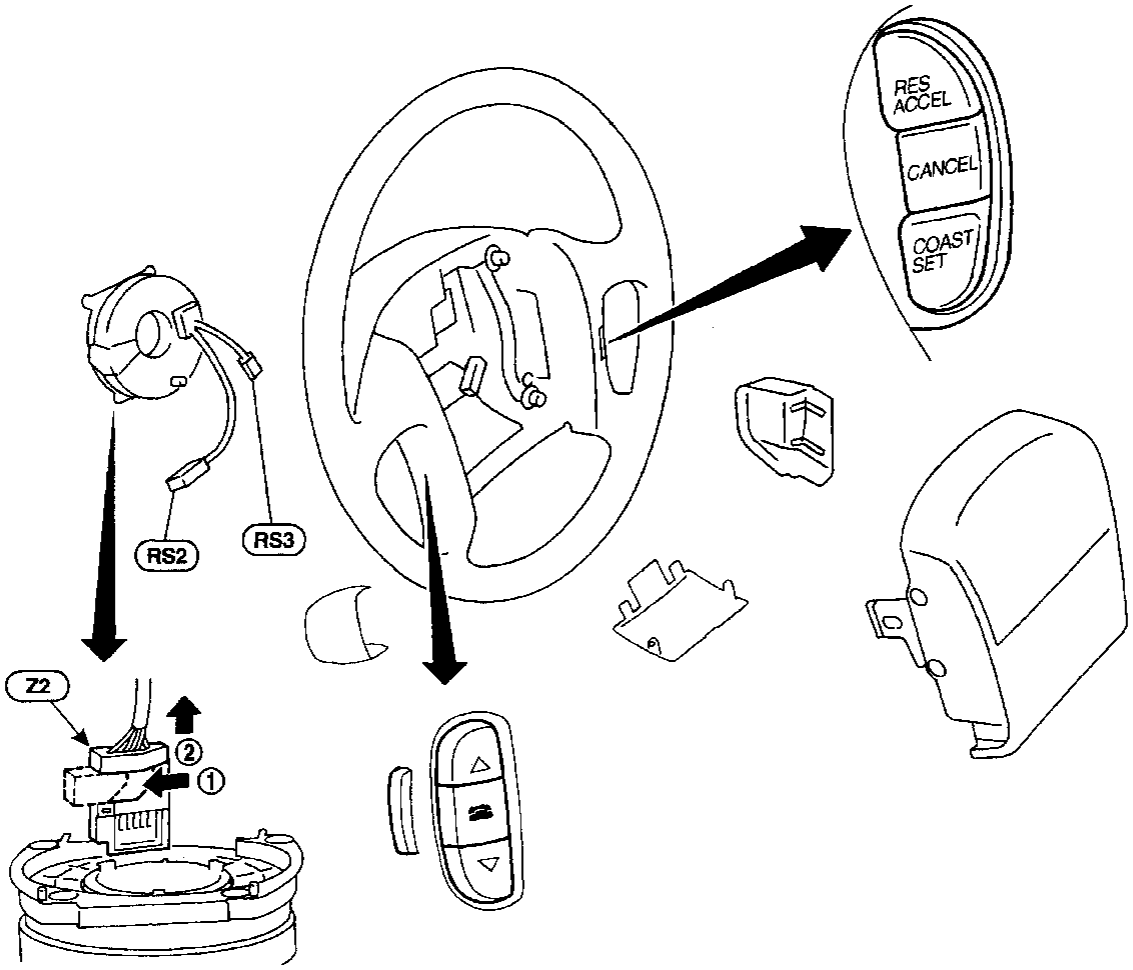


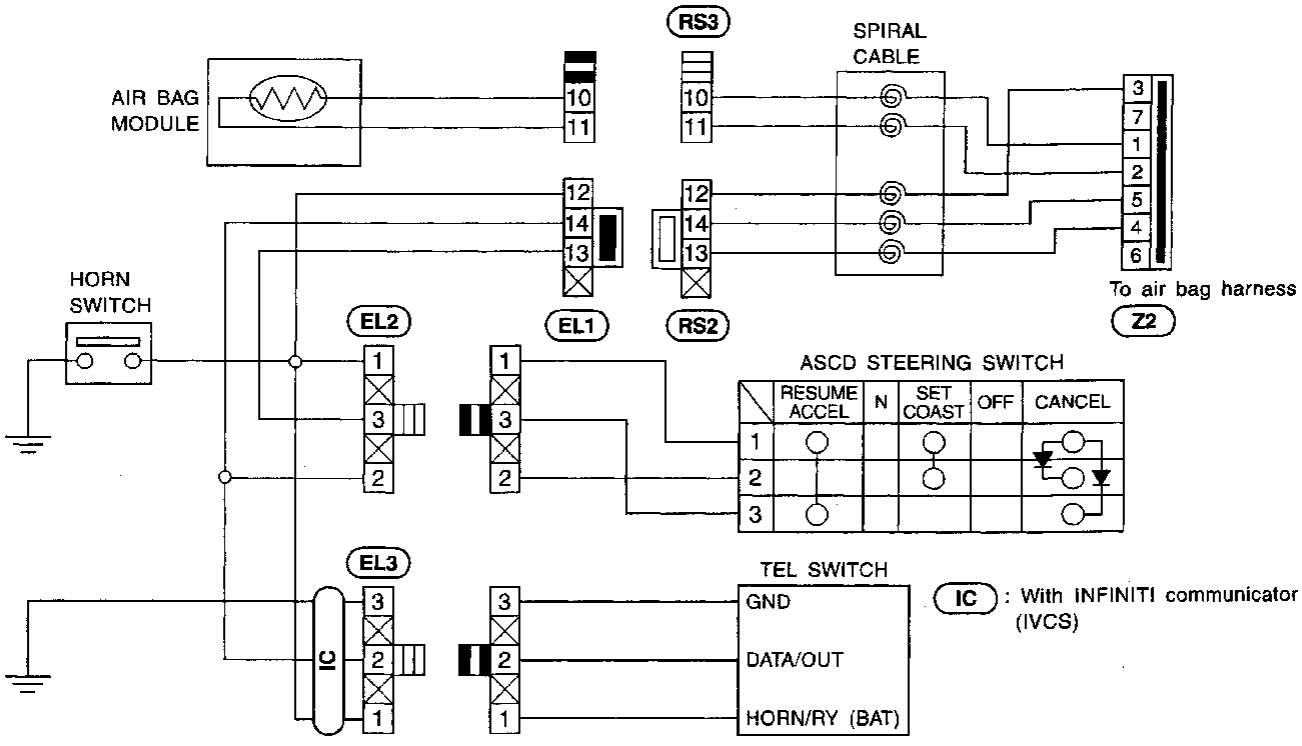
- To remove combination switch base, remove base attaching screw.



- 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.

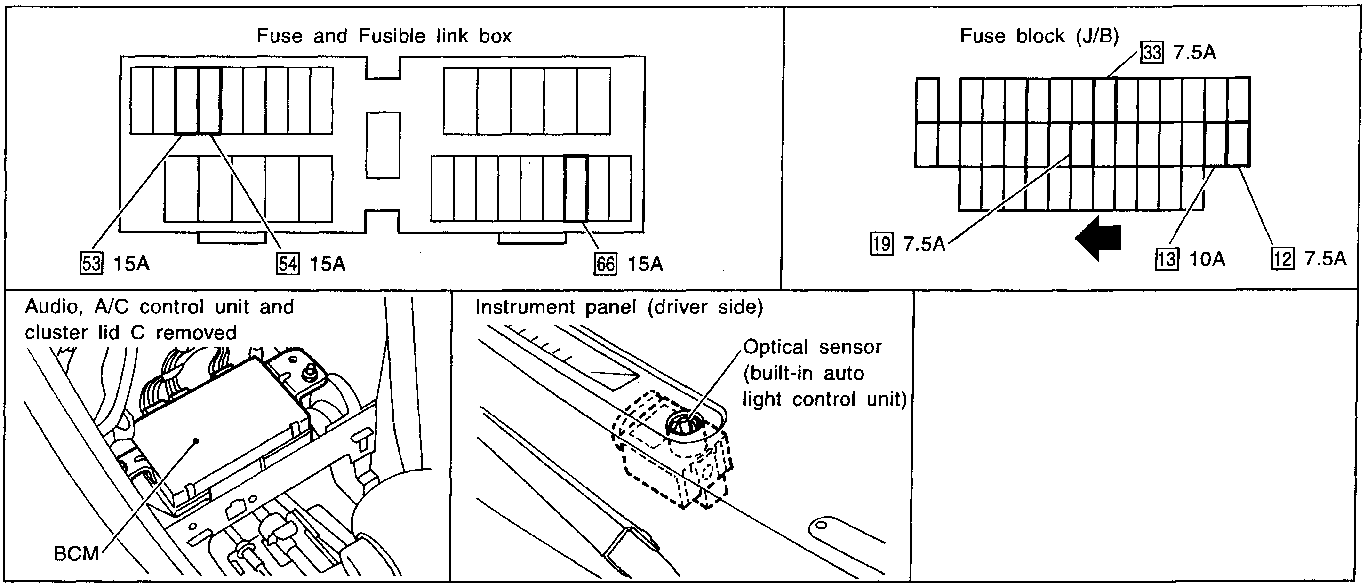
Check





MEL051J

Component Parts and Harness Connector Location



SEL761V

System Description (For U.S.A.)

Power is supplied at all times
- through 15A fuse (No. 53, located in the fuse and fusible link box)
- to headlamp relay LH terminals ① and ③,
- through 15A fuse (No. 54, located in the fuse and fusible link box)
- to headlamp relay RH terminals ① and ③,
- through 15A fuse (No. 66, located in the fuse and fusible link box)
- to tail lamp relay terminals ① and ③.

When the 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 auto light control unit terminal ②.

Ground is supplied
- to auto light control unit terminal ⑤
- through body grounds (M73), (M103) and (M13), and
- to the lighting switch terminals ⑧ and ⑤
- through body grounds (E5) and (E30).

HEADLAMP SWITCH OPERATION

Low beam operation

When the lighting switch is turned to 2ND and "LOW BEAM" (B) positions, ground is supplied
- to headlamp relay LH and RH terminals ②
- from the lighting switch terminal ⑫.

Headlamp relay is then energized, and power is supplied
- from headlamp relay LH terminal ⑤
- to terminal ③ of the LH headlamp, and
- from headlamp relay RH terminal ⑤
- to terminal ③ of the RH headlamp.

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

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

System Description (For U.S.A.) (Cont'd)

High beam operation/flash-to-pass operation

When the lighting switch is turned to 2ND and HIGH ("A") or PASS ("C") positions, ground is supplied
- to headlamp relay LH and RH terminals ②
- from the lighting switch terminal ⑫.

Headlamp relays are then energized, and power is supplied
- from headlamp relay LH terminal ⑤
- to terminal ③ of the LH headlamp, and
- to combination meter terminal ㉑ for the HIGH BEAM indicator
- from headlamp relay RH terminal ⑤
- to terminal ③ of the RH headlamp.

Ground is supplied
- to terminal ① of the LH headlamp, and
- to combination meter terminal ⑳
- from the lighting switch terminal ⑥
- to terminal ① of the RH headlamp
- from the lighting switch terminal ⑨.

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

AUTO LIGHT OPERATION

The auto light control unit has an optical sensor inside it that detects outside brightness.
When lighting switch is in "AUTO" position, ground is supplied
- to auto light control unit terminal ⑩
- from lighting switch terminal ㊷.

When ignition switch is turn to "ON" or "START" position and
- Outside brightness is darker than prescribed level or
- After 20 seconds delay, outside brightness becomes darker than prescribed level

Ground is supplied
- to headlamp relay LH and RH terminals ②
- from auto light control unit terminal ⑥ and
- to tail lamp relay terminal ②
- from auto light control unit terminal ⑦.

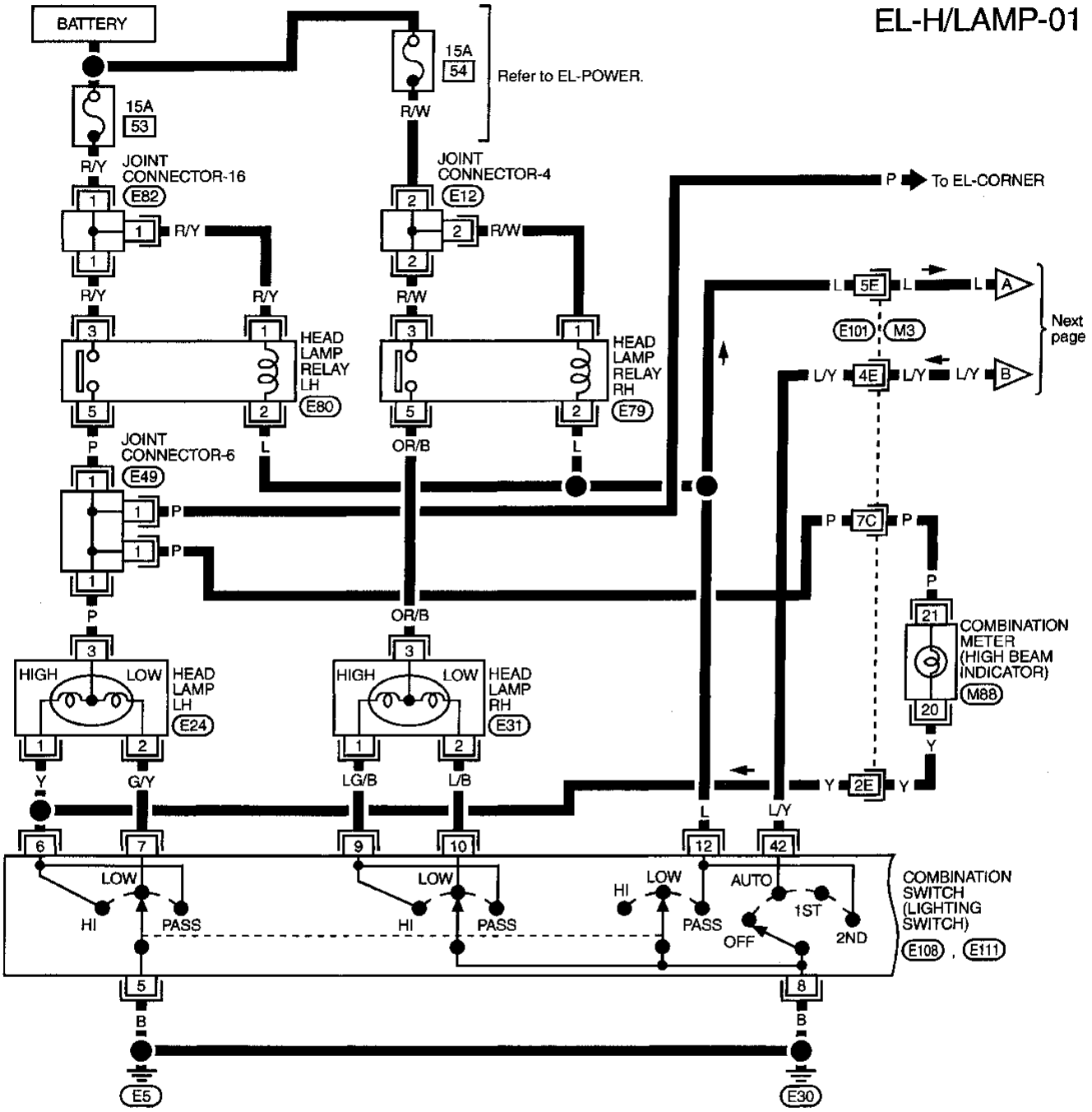
Then both headlamp relays and tail lamp relay are energized, headlamps (low or high) and tail lamps are illuminate according to switch position.
Auto light operation allows headlamps and tail lamps to go off when
- Ignition switch is turned to "OFF" position or
- Outside brightness is brighter than prescribed level or
- After 20 seconds delay, outside brightness becomes brighter than the prescribed level.

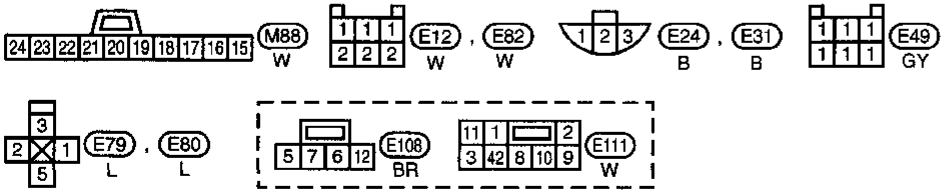
For parking license and tail lamp auto operation, refer to "PARKING, LICENSE AND TAIL LAMPS".

THEFT WARNING SYSTEM

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

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

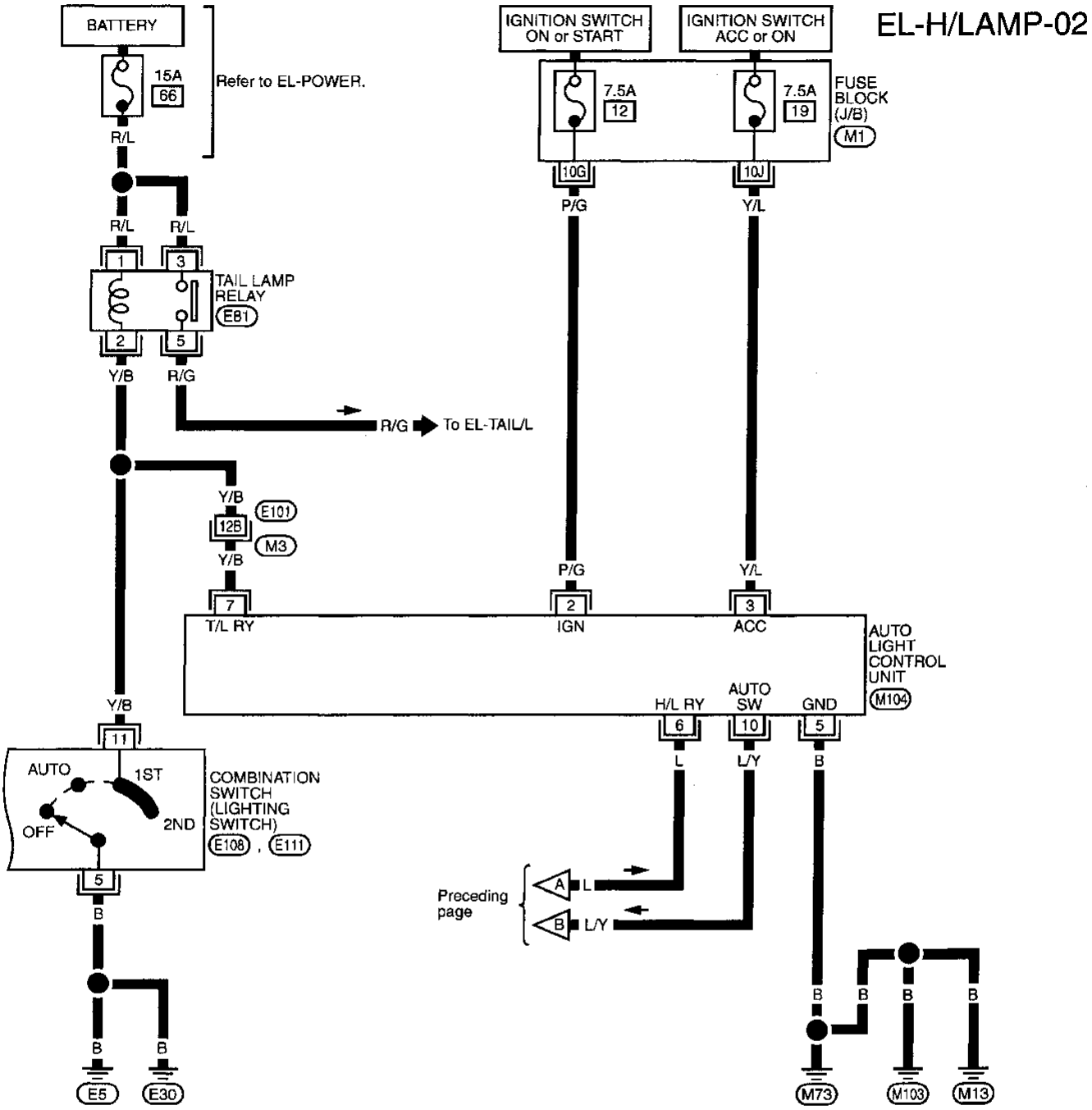


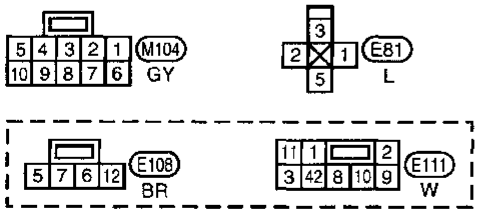


Refer to last page (Foldout page).
M3, E101

MEL064J

Wiring Diagram (For U.S.A.) — H/LAMP — (Cont'd)





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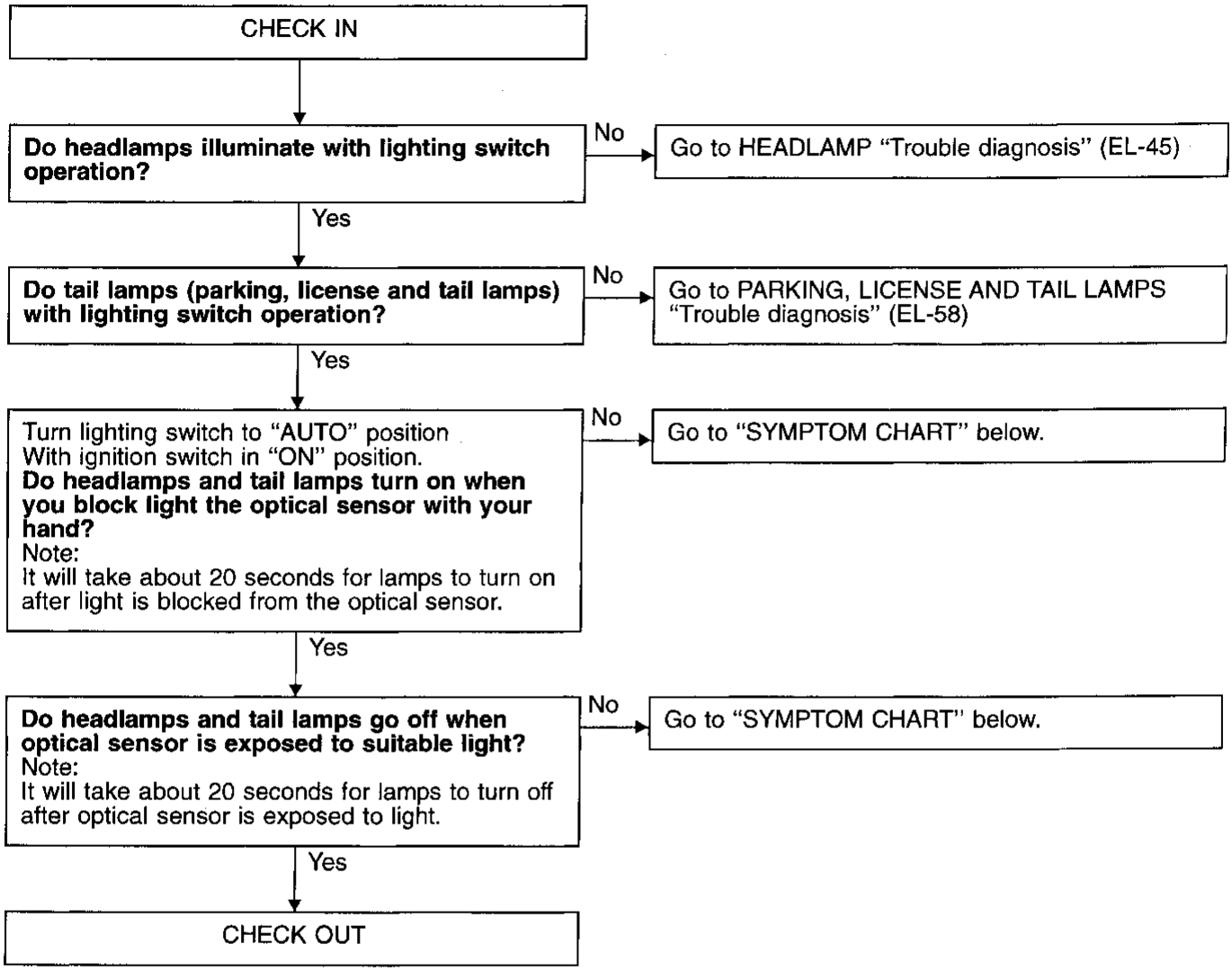
M1

M3 , E101

MEL065J

Trouble Diagnoses/Auto Light Operation

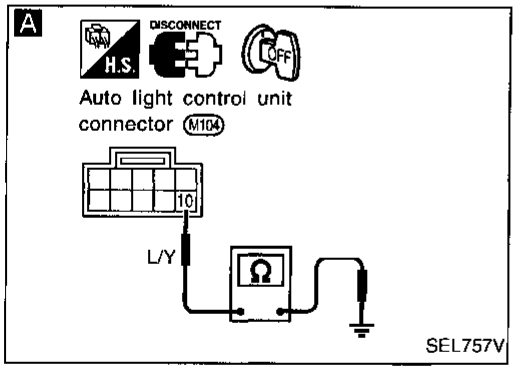
PRELIMINARY CHECK



Trouble Diagnoses/Auto Light Operation (Cont'd)

SYMPTOM CHART

PROCEDURE	DIAGNOSTIC PROCEDURE		
REFERENCE PAGE	EL-43	EL-43	EL-44
SYMPTOM	DIAGNOSTIC PROCEDURE 1 (Lighting switch "AUTO" check)	DIAGNOSTIC PROCEDURE 2 (Auto light output check)	DIAGNOSTIC PROCEDURE 3 (ACC and IGN input signal check)
When outside is dark, neither tail lamps nor headlamps turn on by auto light operation.	X		X
When outside is dark, tail lamps turn on but headlamps do not turn on by auto light operation.		X	
When outside is dark, headlamps turn on but tail lamps do not turn on by auto light operation.		X	
Light does not turn off when ignition key switch is turned to "OFF".			X
When outside is bright, neither tail lamps nor headlamps turn off by auto light operation.		X	



DIAGNOSTIC PROCEDURE 1

[Lighting switch (AUTO) check]

A

CHECK LIGHTING SWITCH (AUTO) INPUT SIGNAL CIRCUIT.

1. Turn ignition switch "OFF".
2. Disconnect auto light control unit harness connector.
3. Check continuity between auto light control unit terminal ⑩ and ground.

Lighting switch	Continuity
"AUTO" position	Yes
Other position	No

NG → Check the following.
- Lighting switch
- Harness for open or short between auto light control unit and lighting switch
- Ground circuit for lighting switch

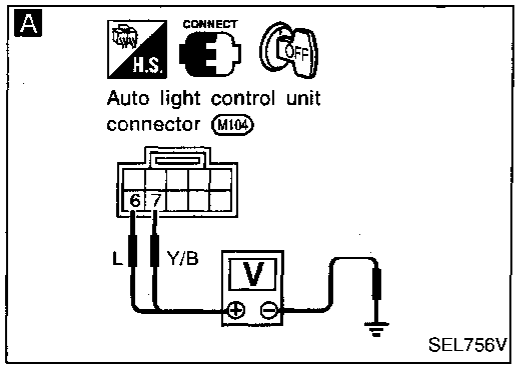
OK ↓

Lighting switch (AUTO) is OK.

Trouble Diagnoses/Auto Light Operation (Cont'd)

DIAGNOSTIC PROCEDURE 2

(Auto light output check)



A

CHECK AUTO LIGHT OUTPUT SIGNAL/ CIRCUIT.

1. Turn the ignition switch to ON position and lighting switch to AUTO position.
2. Check voltage between auto light control unit terminal ⑥ or ⑦ and ground.

Output condition	Voltage [V]
Sensor not struck by light (Determined to be "dark" by sensor)	0
Sensor struck by light	Approx. 12

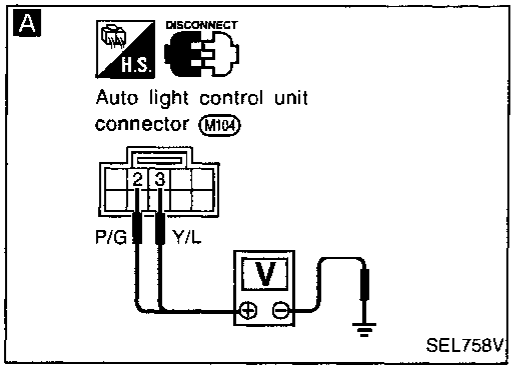
NG → Check harness for open or short between auto light control unit and headlamp relay or tail lamp relay.

OK ↓

Auto light output is OK.

DIAGNOSTIC PROCEDURE 3

(ACC and IGN input signal check)



A

CHECK ACC AND IGN INPUT SIGNAL.

Check voltage between auto light control unit terminal ② or ③ and ground.

Terminals	Ignition switch position			
	OFF	ACC	ON	START
③ - Ground	Approx. 0V	Battery voltage		Approx. 0V
② - Ground	Approx. 0V		Battery voltage	

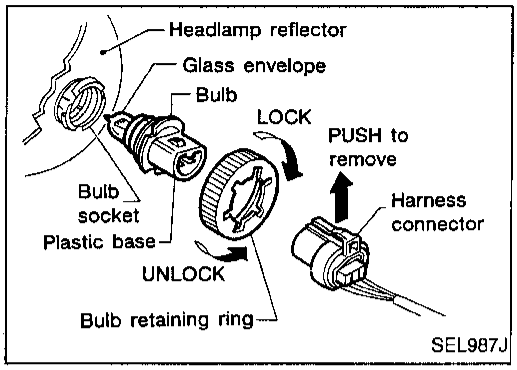
NG → Check the following.
- 7.5A fuse [No. 12], located in the fuse block (J/B)]
- 7.5A fuse [No. 19], located in the fuse block (J/B)]
- Harness for open or short between fuse and auto light control unit

OK ↓

ACC and IGN input signal is OK.

Trouble Diagnoses/Headlamp

Symptom	Possible cause	Repair order
LH headlamps do not operate.	1. Bulb 2. 15A fuse 3. Lighting switch 4. Headlamp relay LH	1. Check bulb. 2. Check 15A fuse (No. 53, located in fusible link). 3. Check lighting switch. 4. Check headlamp relay LH.
RH headlamps do not operate.	1. Bulb 2. 15A fuse 3. Lighting switch 4. Headlamp relay RH	1. Check bulb. 2. Check 15A fuse (No. 54, located in fusible link). 3. Check lighting switch. 4. Check headlamp relay RH.
Neither headlamp illuminates.	1. Headlamp relay LH and RH 2. Lighting switch 3. Lighting switch ground circuit 4. Open in headlamp relay circuit	1. Check headlamp relay LH and RH. 2. Check lighting switch. 3. Check lighting switch ground circuit. 4. Check harness between each headlamp relay terminal ② and lighting switch terminal ⑫ for an open circuit.
LH high beam does not operate, but LH low beam operates.	1. Bulb 2. Open in LH high beam circuit 3. Lighting switch	1. Check bulb. 2. Check harness between lighting switch terminal ⑥ and LH headlamp for an open circuit. 3. Check lighting switch.
LH low beam does not operate, but LH high beam operates.	1. Bulb 2. Open in LH low beam circuit 3. Lighting switch	1. Check bulb. 2. Check harness between lighting switch terminal ⑦ and LH headlamp for an open circuit. 3. Check lighting switch.
RH high beam does not operate, but RH low beam operates.	1. Bulb 2. Open in RH high beam circuit 3. Lighting switch	1. Check bulb. 2. Check harness between lighting switch terminal ⑨ and RH headlamp for an open circuit. 3. Check lighting switch.
RH low beam does not operate, but RH high beam operates.	1. Bulb 2. Open in RH low beam circuit 3. Lighting switch	1. Check bulb. 2. Check harness between lighting switch terminal ⑩ and RH headlamp for an open circuit. 3. Check lighting switch.
High beam indicator does not work.	1. Bulb 2. Open in high beam circuit	1. Check bulb in combination meter. 2-1. Check harness between lighting switch and combination meter for an open circuit. 2-2. Verify battery positive voltage is present at terminal ㉑ of combination meter, when high beam illuminates.



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

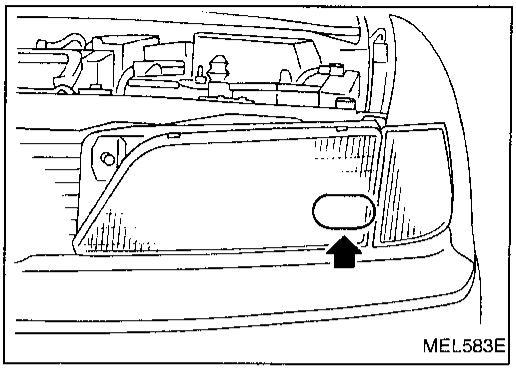
When performing headlamp aiming adjustment, use an aiming machine, aiming wall screen or headlamp tester. For operating instructions of any aimer, it should be in good repair, calibrated and used according to respective operation manuals supplied with the unit.

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).**

Aiming Adjustment (Cont'd)

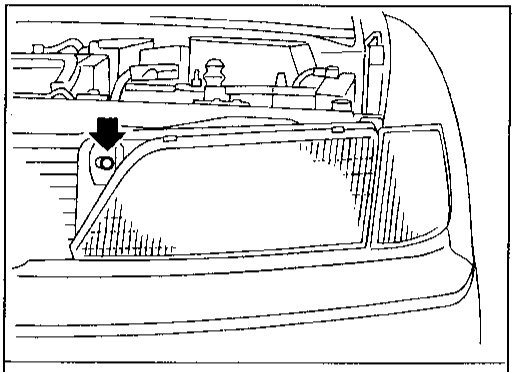

MEL583E

AIMER ADJUSTMENT MARK

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

Example:

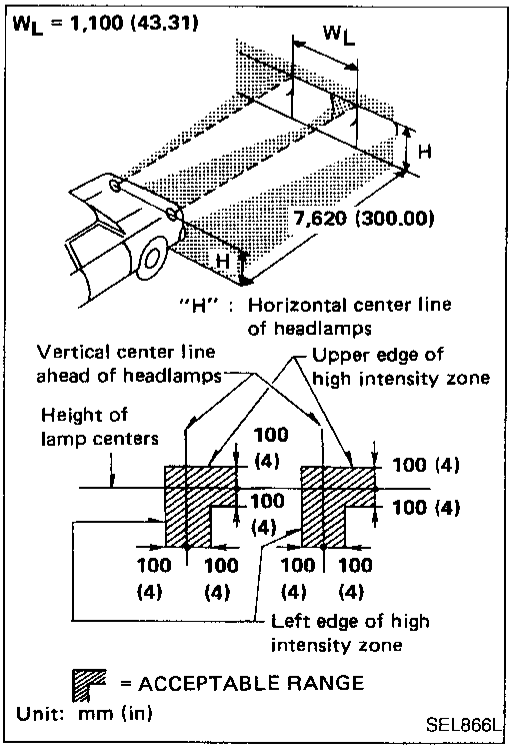
4H 2V
- Vertical side: 2
- Horizontal side: 4


MEL584E

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.**



- **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_L": Distance between each headlamp center

System Description (For Canada)

The headlamp system for Canada vehicles contains a daytime light control unit that 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. Thereafter, the daytime lights will continue to operate 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 headlamp relay LH terminals ① and ③
- through 15A fuse (No. 54 , located in the fuse and fusible link box)
- to headlamp relay RH terminals ① and ③.
- through 15A fuse (No. 66 , located in the fuse and fusible link box)
- to tail lamp relay terminals ① and ③.

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 ③, and

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 daytime light control unit terminal ②.

Ground is supplied to daytime light control unit terminal ⑯ through body grounds E5 and E30.

HEADLAMP SWITCH OPERATION

When the lighting switch is turned to 2ND or PASS ("C") positions, ground is supplied
- to headlamp relay LH and RH terminals ②
- from the lighting switch terminal ⑫.

Headlamp relay is then energized, and power is supplied
- from headlamp relay LH terminal ⑤
- to combination meter terminal ㉑ for the HIGH BEAM indicator and
- through daytime light control unit terminals ⑤ and ⑥
- to terminal ③ of the headlamp LH.

Power is also supplied
- from headlamp relay RH terminal ⑤
- through daytime light control unit terminals ④ and ⑦
- to terminal ③ of the headlamp RH.

Low beam operation

When the lighting switch is turned to 2ND and LOW ("B") positions, ground is supplied
- to terminal ② of the headlamp LH
- through daytime light control unit terminals ⑪ and ⑫
- through lighting switch terminals ⑩ and ⑧
- through body grounds E5 and E30.

Ground is also supplied
- to terminal ② of the headlamp RH
- through daytime light control unit terminals ⑧ and ⑮
- through lighting switch terminals ⑦ and ⑤
- through body grounds E5 and E30.

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

High beam operation/flash-to-pass operation

When the lighting switch is turned to 2ND and HIGH ("A") or PASS ("C") positions, ground is supplied
- to terminal ① of LH headlamp and combination meter terminal ⑳ for the HIGH BEAM indicator
- through daytime light control unit terminals ⑩ and ⑬
- through lighting switch terminals ⑨ and ⑧
- through body grounds E5 and E30.

Ground is also supplied
- to terminal ① of RH headlamp
- through daytime light control unit terminals ⑨ and ⑭
- through lighting switch terminals ⑥ and ⑤
- through body grounds E5 and E30.

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

System Description (For Canada) (Cont'd)

AUTO LIGHT OPERATION

For auto light operation, refer to "HEADLAMP" (EL-39).

DAYTIME LIGHT OPERATION

With the engine running, the lighting switch in the OFF or 1ST position and parking brake released, power is supplied

- through daytime light control unit terminal ⑦
- to terminal ③ of RH headlamp
- through terminal ① of RH headlamp
- to daytime light control unit terminal ⑨
- through daytime light control unit terminal ⑥
- to terminal ③ of LH headlamp.

Ground is supplied to terminal ① of LH headlamp.

- through daytime light control unit terminals ⑩ and ⑯
- through body grounds (E5) and (E30).

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

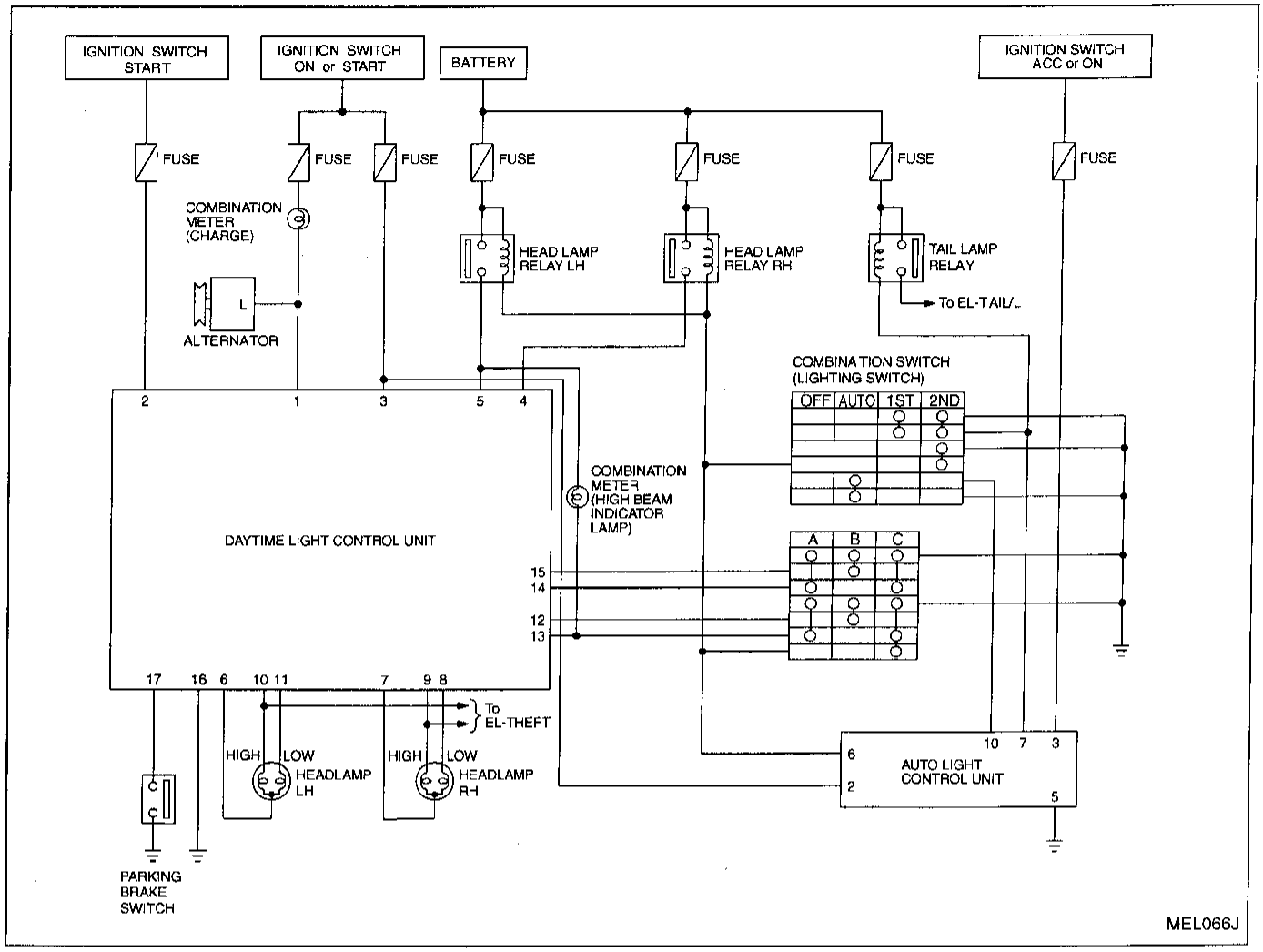
Operation (For Canada)

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.

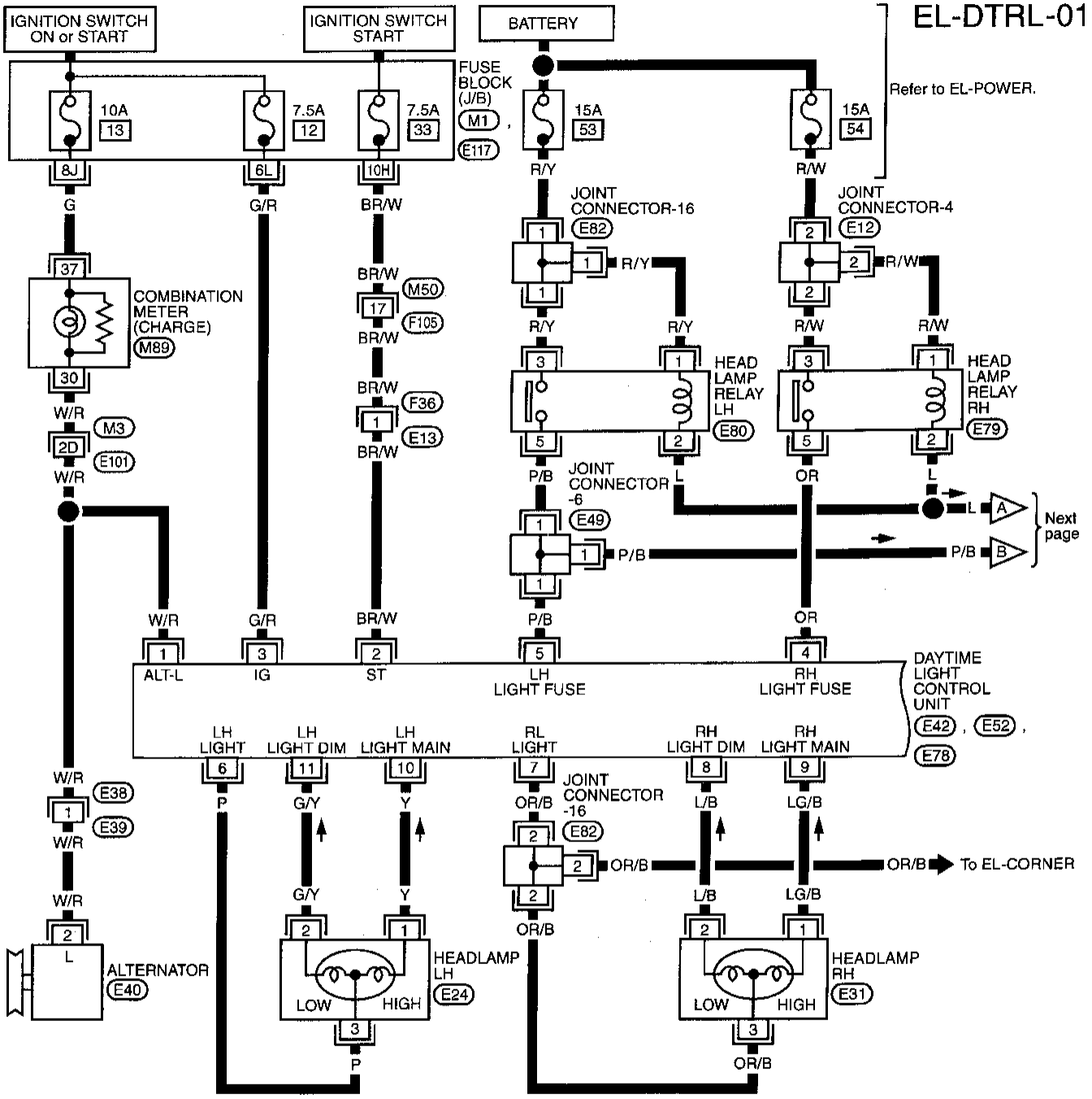
Engine		With engine stopped									With engine running								
Lighting switch		OFF			1ST			2ND			OFF			1ST			2ND		
		A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Headlamp	High beam	X	X	O	X	X	O	O	X	O	△*	△*	O	△*	△*	O	O	X	O
	Low beam	X	X	X	X	X	X	X	O	X	X	X	X	X	X	X	X	O	X
Clearance and tail lamp		X	X	X	O	O	O	O	O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

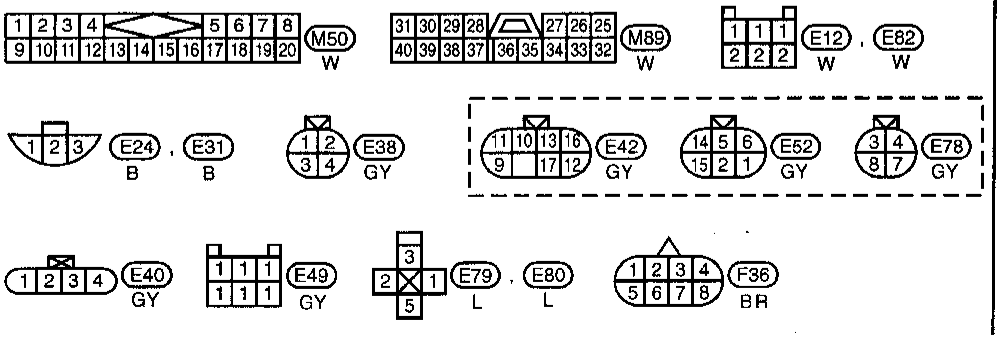
A : "HIGH BEAM" position
B : "LOW BEAM" position
C : "FLASH TO PASS" position
O : Lamp "ON"
X : Lamp "OFF"
△ : Lamp dims.
* : When starting the engine with the parking brake released, the daytime lamp will come ON.
When starting the engine with the parking brake pulled, the daytime lamp will not come ON.

Schematic (For Canada)



Wiring Diagram (For CANADA) — DTRL —



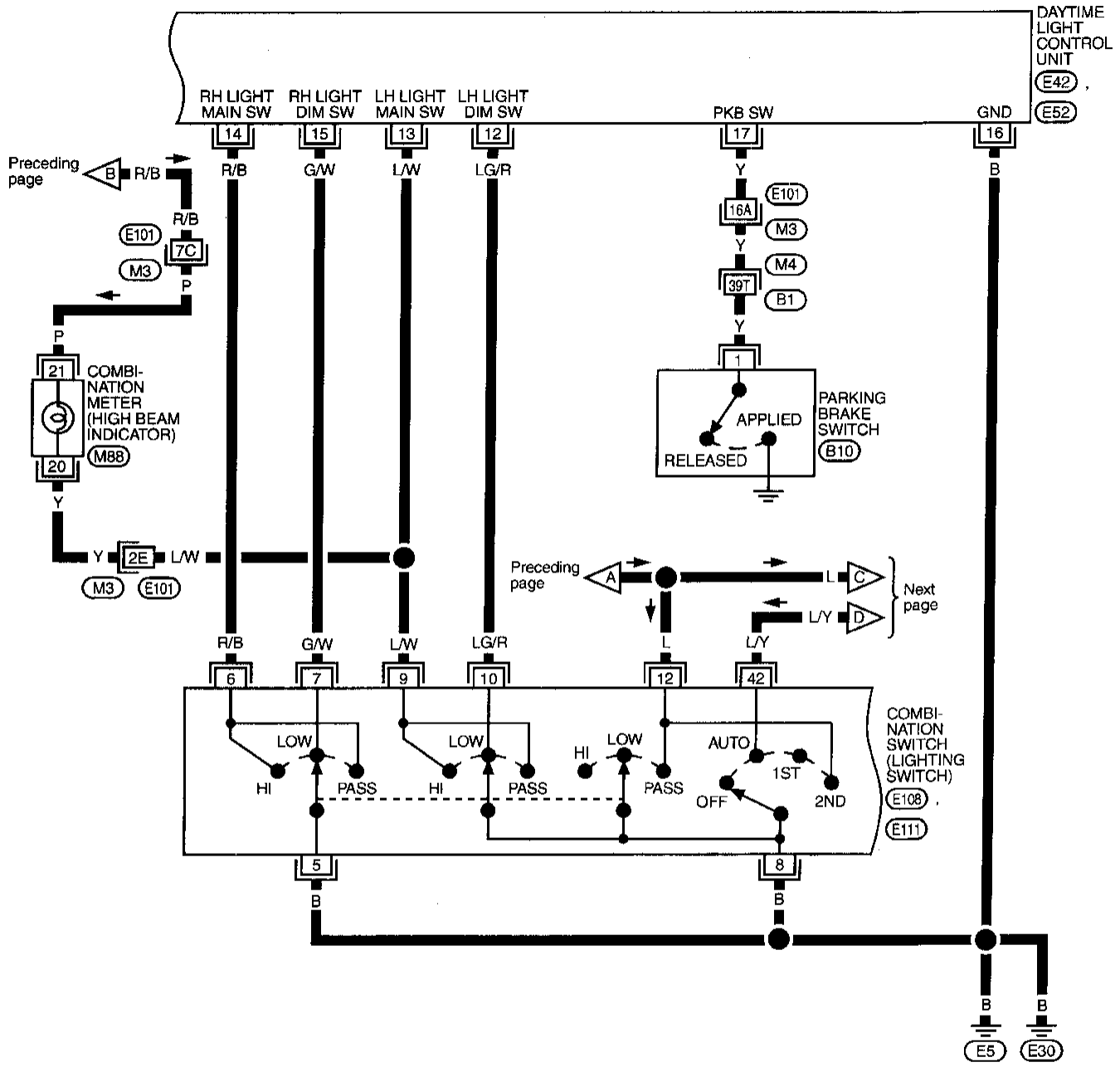


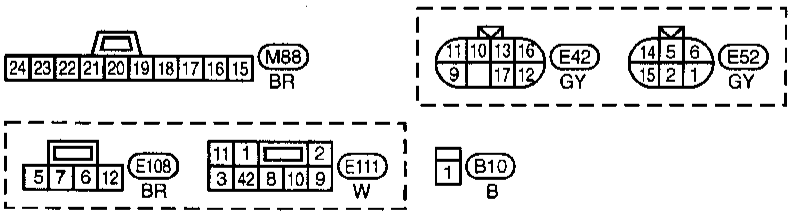
Refer to last page (Foldout page).
M1
M3, E101
E117

MEL067J

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

EL-DTRL-02

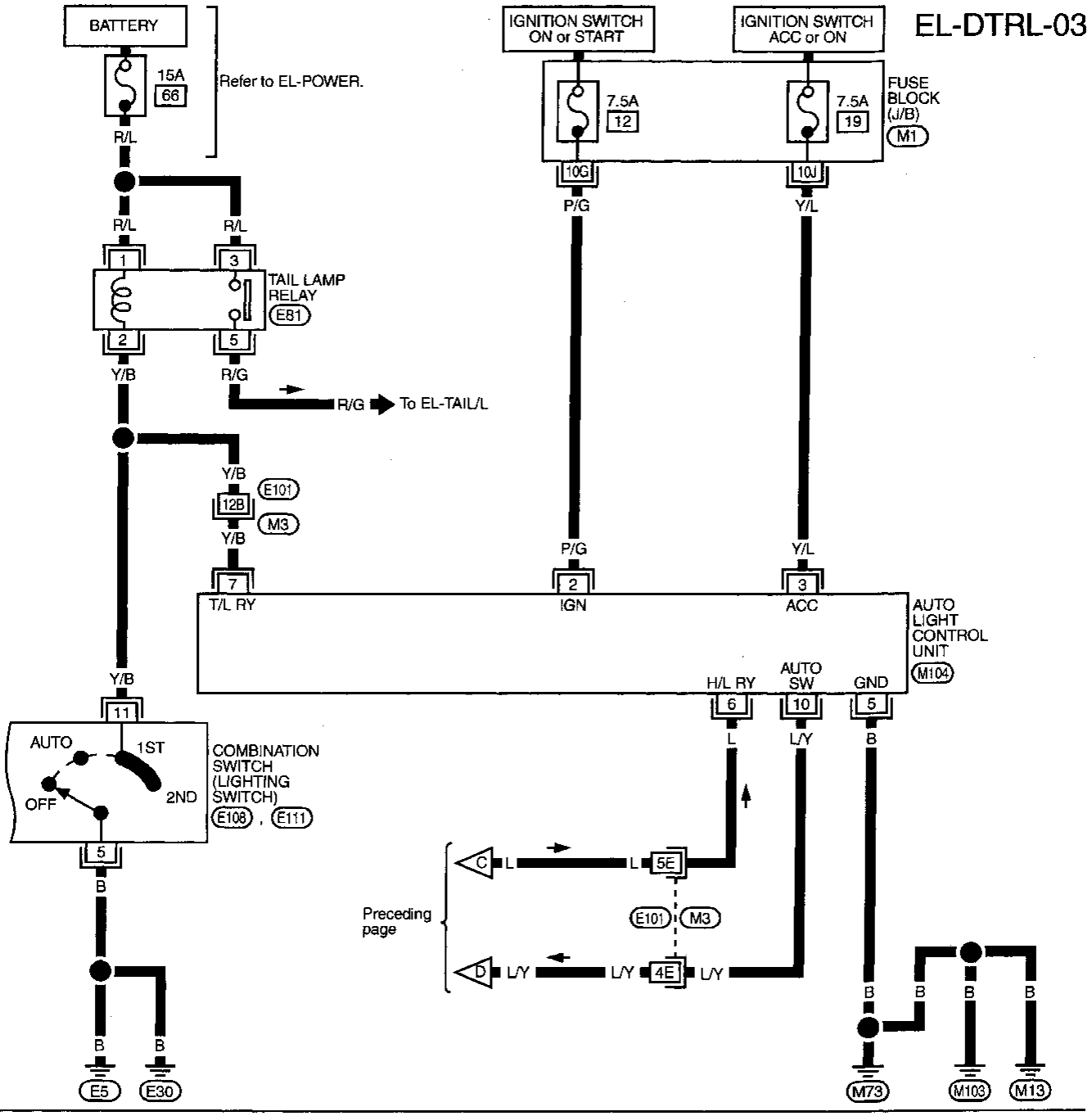


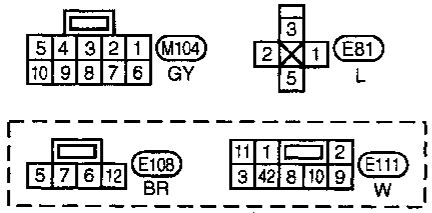


Refer to last page (Foldout page).
M3 , E101
M4 , B1

MEL068J

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





Refer to last page (Foldout page).

M1

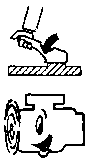
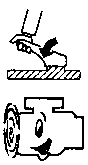
M3 , E101

MEL069J

Trouble Diagnoses (For Canada)

DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

(Data are reference values.)

Terminal No.	Wire color	Item	Condition		Judgement standard
1	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
2	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
3	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
4	OR	Power source		When lighting switch is turned to "2ND" or PASS ("C") position	Battery voltage
				Except the above	1V or less
5	P/B	Power source		When lighting switch is turned to "2ND" or PASS ("C") position	Battery voltage
				Except the above	Less than 1V
6	P	LH headlamp control (ground)		When lighting switch is turned to "2ND" or PASS ("C") position	Battery voltage
				When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) **CAUTION: Block wheels and ensure selector lever is in N or P position.**	Approx. half battery voltage
				Except the above	Less than 1V
7	OR/B	RH headlamp control (ground)		When lighting switch is turned to "2ND" or PASS ("C") position	Battery voltage
				When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) **CAUTION: Block wheels and ensure selector lever is in N or P position.**	Battery voltage
				Except the above	Less than 1V

Trouble Diagnoses (For Canada) (Cont'd)

Terminal No.	Wire color	Item	Condition		Judgement standard
8	L/B	RH low beam		When turning lighting switch "2ND" and LOW ("B") position	Less than 1V
9	LG/B	RH high beam		When turning lighting switch to "2ND" and HIGH ("A") or PASS ("C") positions	Less than 1V
				When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) **CAUTION: Block wheels and ensure selector lever is in N or P position.**	Approx. half battery voltage
10	Y	LH high beam		When turning lighting switch to "2ND" and HIGH ("A") or PASS ("C") positions	Less than 1V
				When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) **CAUTION: Block wheels and ensure selector lever is in N or P position.**	Less than 1V
11	G/Y	LH low beam		When turning lighting switch "2ND" and LOW ("B") position	Less than 1V
12	LG/R	Lighting switch (LH low beam)		When turning lighting switch "2ND" and LOW ("B") position	Less than 1V
13	L/W	Lighting switch (LH high beam)		When turning lighting switch "2ND" and HIGH ("A") or PASS ("C") position	Less than 1V
14	R/B	Lighting switch (RH high beam)		When turning lighting switch "2ND" and HIGH ("A") or PASS ("C") position	Less than 1V
15	G/W	Lighting switch (RH low beam)		When turning lighting switch "2ND" and LOW ("B") position	Less than 1V
16	B	Ground		—	—
17	Y	Parking brake switch		When parking brake is released	Battery voltage
				When parking brake is set	Less than 1.5V

Bulb Replacement

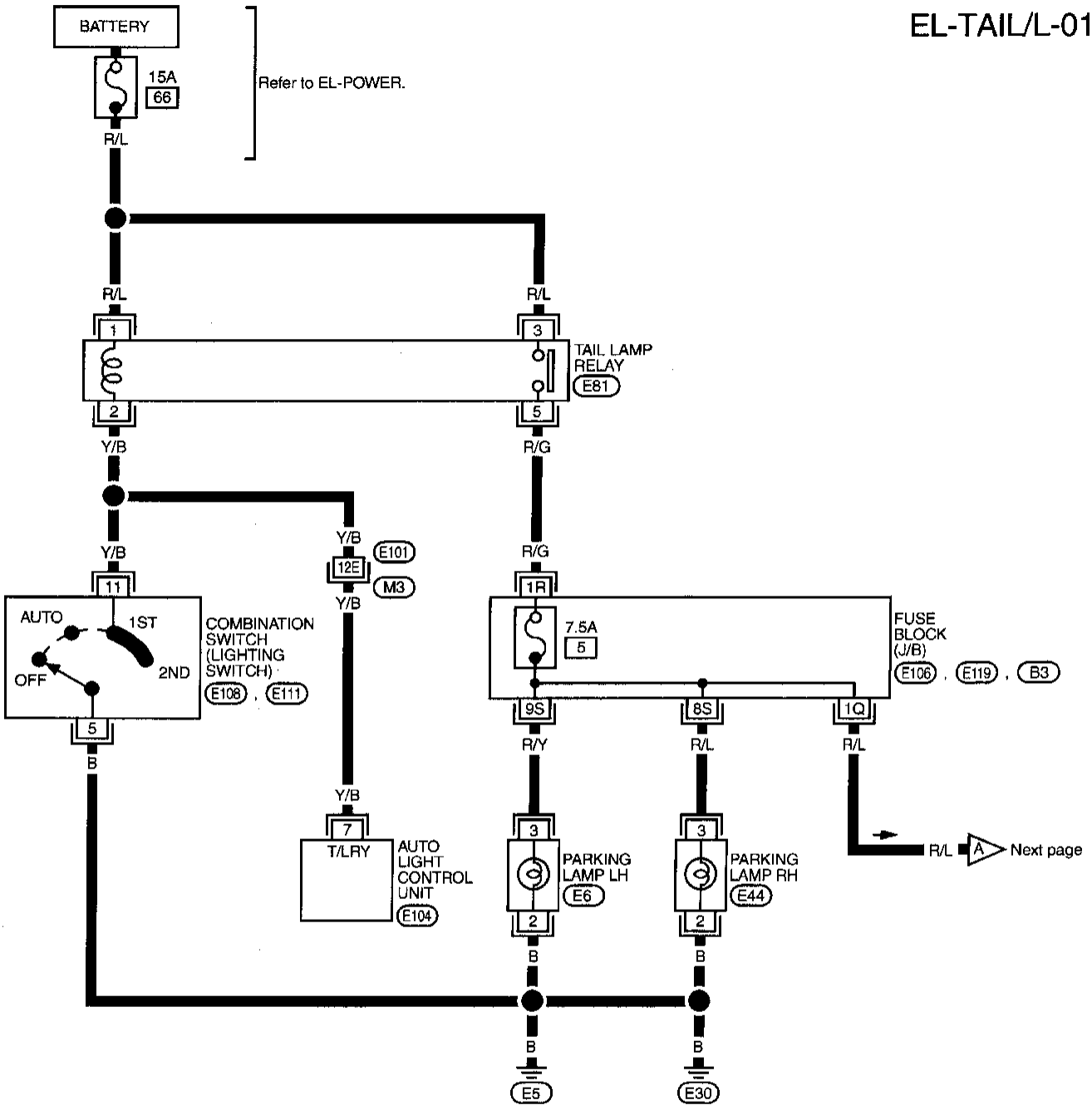
Refer to "HEADLAMP" (EL-46).

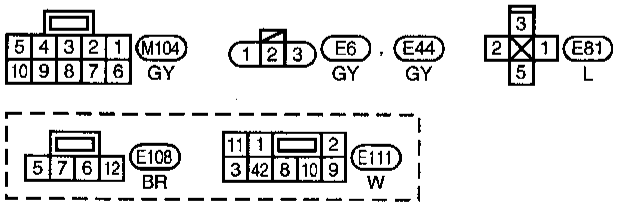
Aiming Adjustment

Refer to "HEADLAMP" (EL-46).

Wiring Diagram — TAIL/L —

EL-TAIL/L-01





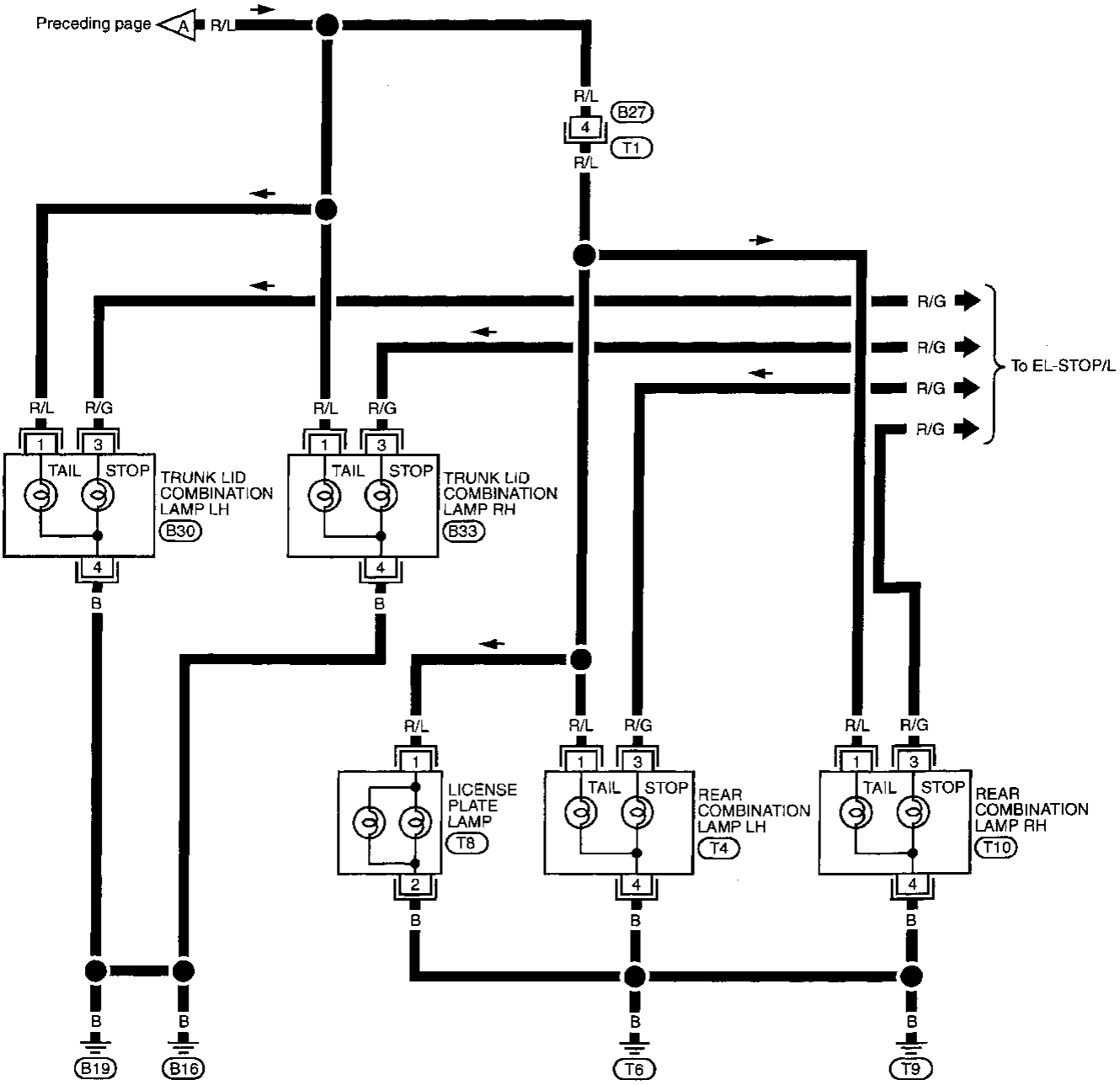
Refer to last page (Foldout page).

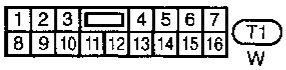
M3 , E101
E106
E119
B3

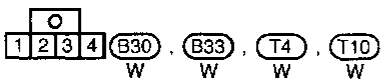
MEL070J

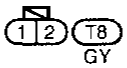
Wiring Diagram — TAIL/L — (Cont'd)

EL-TAIL/L-02









MEL384I

Trouble Diagnoses

Symptom	Possible cause	Repair order
Parking, license and tail lamps do not operate.	1. 15A fuse 2. Tail lamp relay 3. Lighting switch 4. Open in tail lamp relay circuit	1. Check 15A fuse (No. 66, located in fuse, fusible link and relay box). 2. Check tail lamp relay. 3. Check lighting switch. 4. Check harness between tail lamp relay terminal ② and lighting switch terminal ⑪ for an open circuit.
Individual parking or license lamps do not operate.	1. Bulb 2. Lamp ground 3. Open circuit	1. Check bulb. 2. Check lamp ground circuit. 3. Check harness between power supply terminal of lamp and tail lamp relay terminal ⑦ for an open circuit.
Tail lamps do not operate.	1. Bulb 2. Lamp ground	1. Check bulb. 2. Check lamp ground circuit.
Auto light malfunctioning.	—	Refer to trouble diagnoses/auto light operation in "HEADLAMP" (EL-42).

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 M103.

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 ㉓ [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 M103.
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 ㉒ [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 M103.
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 M103.
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

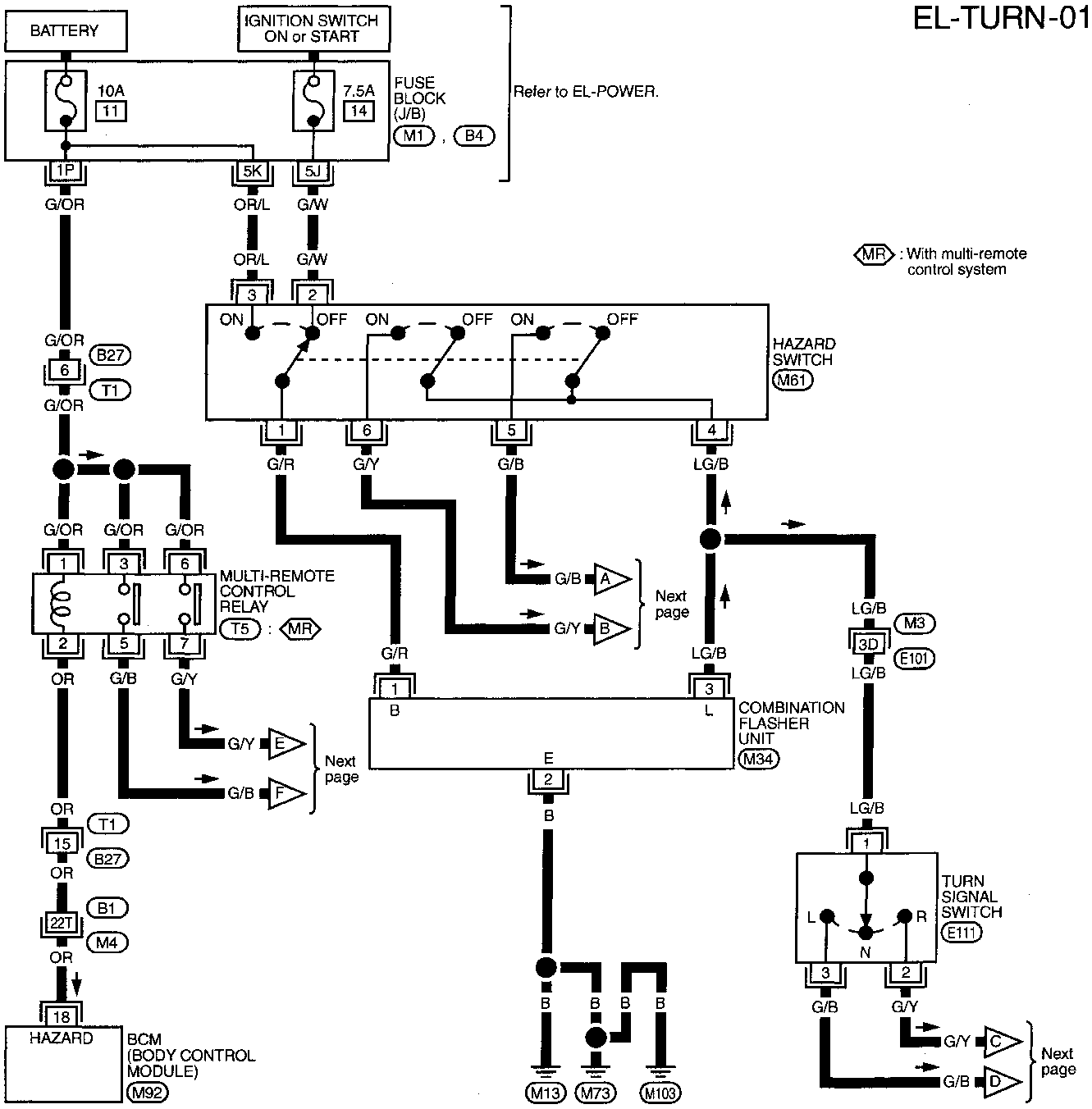
- through 10A fuse [No. 11, located in the fuse block (J/B)]
- to multi-remote control relay terminals ①, ③ and ⑥.

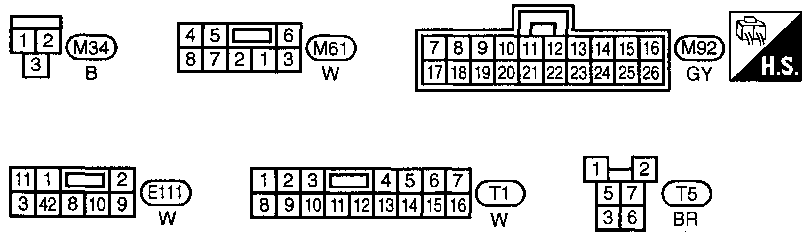
When the multi-remote control system receives a LOCK signal from the remote controller, intermittent ground signal is supplied twice

- 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-339.

Wiring Diagram — TURN —





Refer to last page (Foldout page).

M1

M3, E101

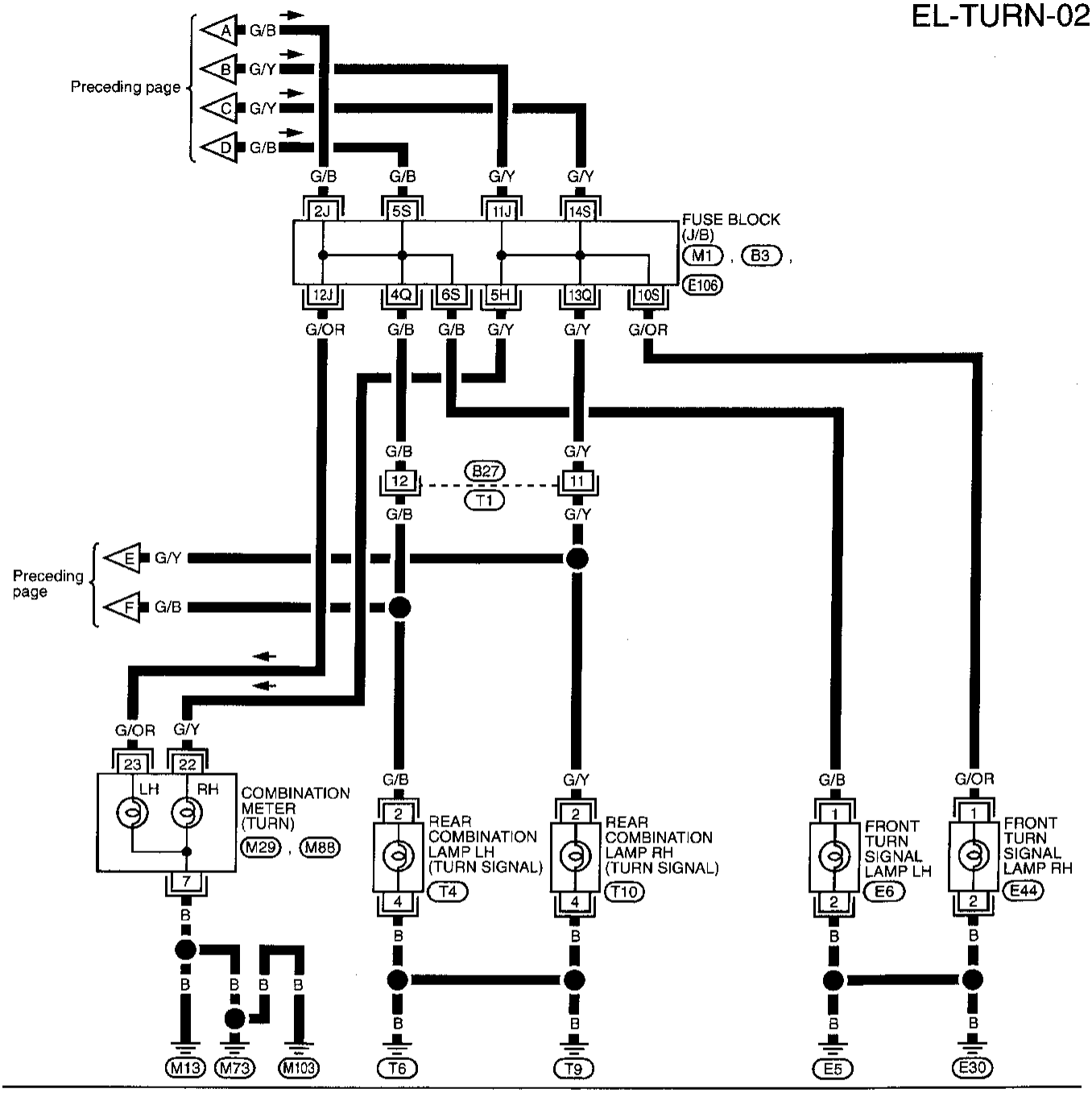
M4, B1

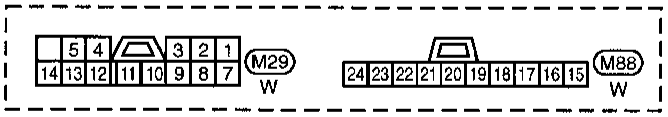
B4

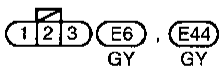
MEL071J

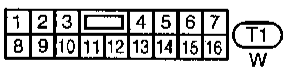
Wiring Diagram — TURN — (Cont'd)

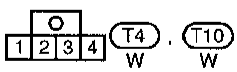
EL-TURN-02











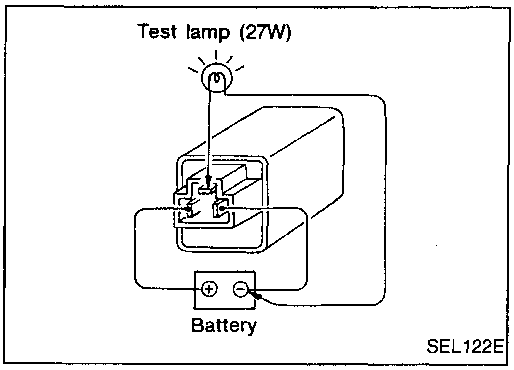
Refer to last page (Foldout page).

M1
E106
B3

MEL682H

Trouble Diagnoses

Symptom	Possible cause	Repair order
Turn signal and hazard warning lamps do not operate.	1. Hazard switch 2. Combination flasher unit 3. Open in combination flasher unit circuit	1. Check hazard switch. 2. Refer to combination flasher unit check. 3. Check wiring to combination flasher unit for open circuit.
Turn signal lamps do not operate but hazard warning lamps operate.	1. 7.5A fuse 2. Hazard switch 3. Turn signal switch 4. Open in turn signal switch circuit	1. Check 7.5A fuse (No. 14, located in fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal ② of hazard switch. 2. Check hazard switch. 3. Check turn signal switch. 4. Check harness between combination flasher unit terminal ③ and turn signal switch terminal ① for open circuit.
Hazard warning lamps do not operate but turn signal lamps operate.	1. 10A fuse 2. Hazard switch 3. Open in hazard switch circuit	1. Check 10A fuse (No. 11, located in fuse block). Verify battery positive voltage is present at terminal ③ of hazard switch. 2. Check hazard switch. 3. Check harness between combination flasher unit terminal ③ and hazard switch terminal ④ for open circuit.
Individual turn signal lamp or turn indicators do not operate.	1. Bulb 2. Grounds	1. Check bulb. 2. Check ground circuit for the bulb.



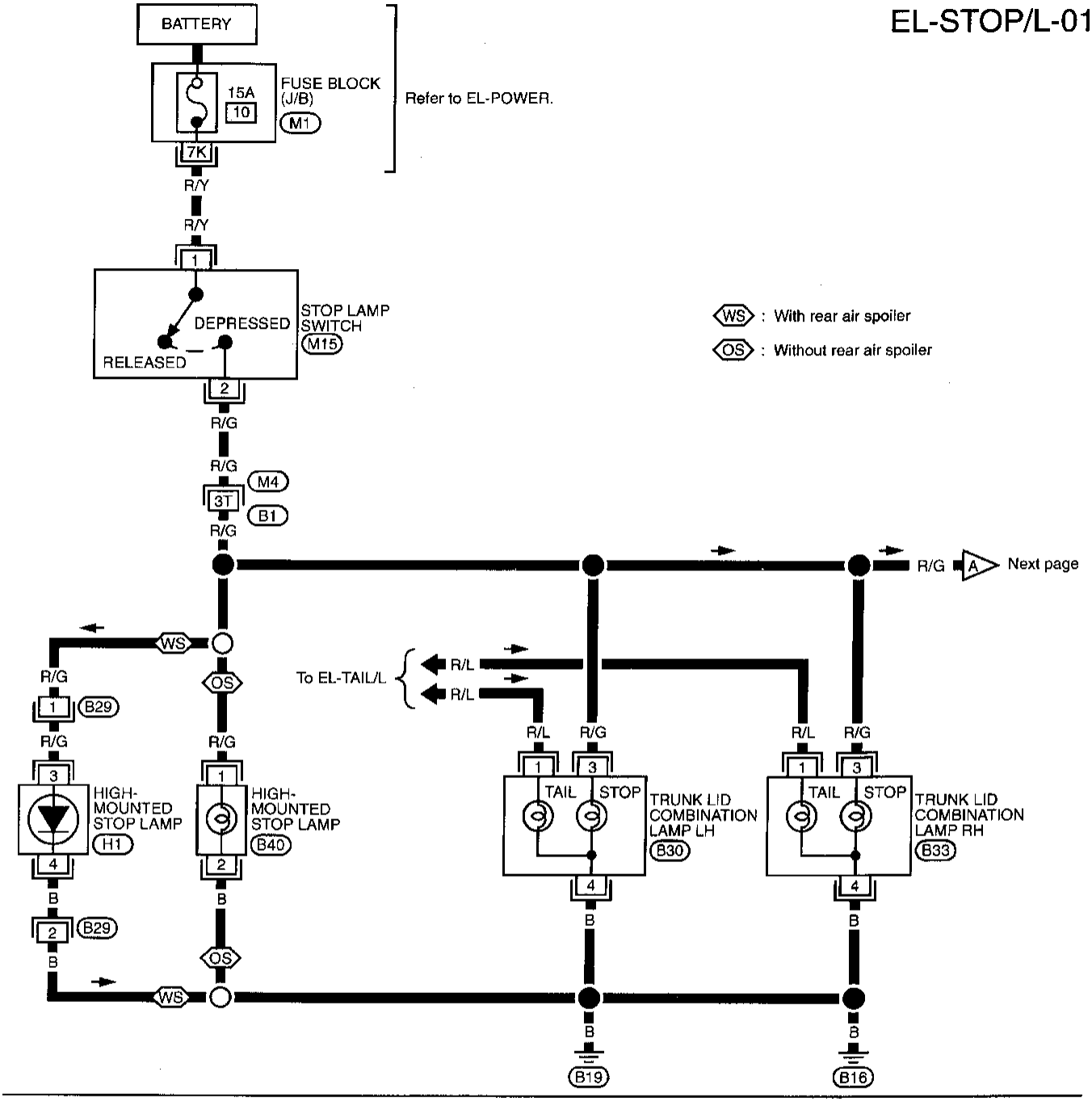
Electrical Components Inspection

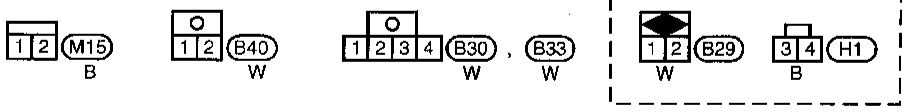
COMBINATION FLASHER UNIT CHECK

- 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.

Wiring Diagram — STOP/L —

EL-STOP/L-01



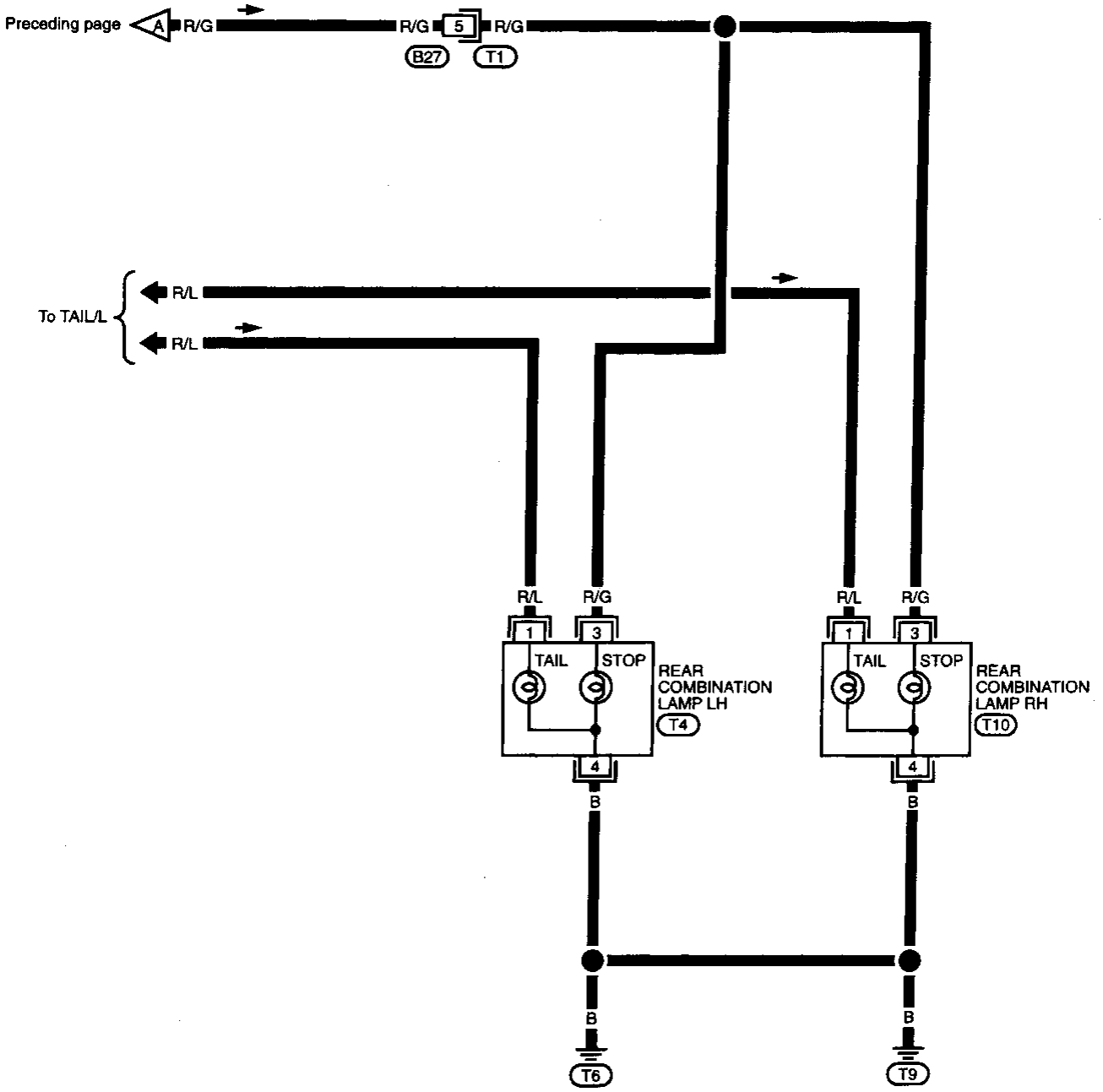


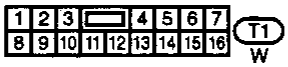
Refer to last page (Foldout page).
M4 , B1
M1

MEL620G

Wiring Diagram — STOP/L — (Cont'd)

EL-STOP/L-02

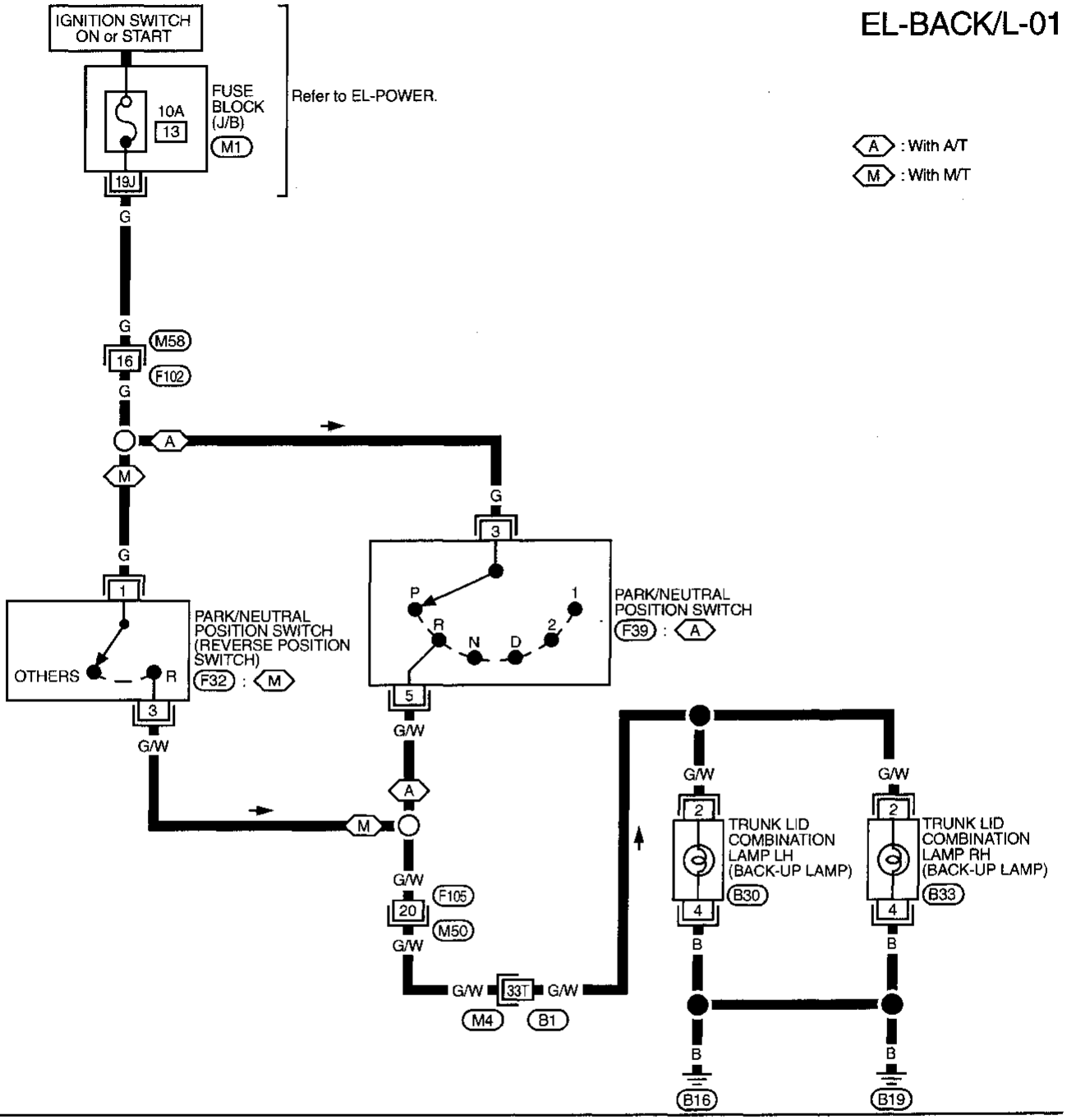


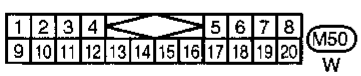


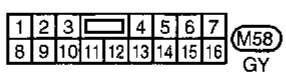
MEL494E

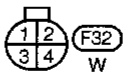
Wiring Diagram — BACK/L —

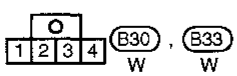
EL-BACK/L-01











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

MEL072J

1497

System Description

Power is supplied at all times
- through 15A fuse (No. 63, located in the fuse and fusible link box)
- to front fog lamp relay terminal ③
- through 15A fuse (No. 53, located in the fuse and fusible link box)
- to headlamp relay LH terminals ① and ③.

When lighting switch is in 2ND position, power is supplied.
- From headlamp relay LH terminal ⑤
- to front fog lamp relay terminal ①.

Ground is supplied to front fog lamp relay terminal ② through fog lamp switch and lighting switch when both of the following condition exist.
- Fog lamp switch is in ON position.
- Lighting switch is in "LOW BEAM" (B) position.

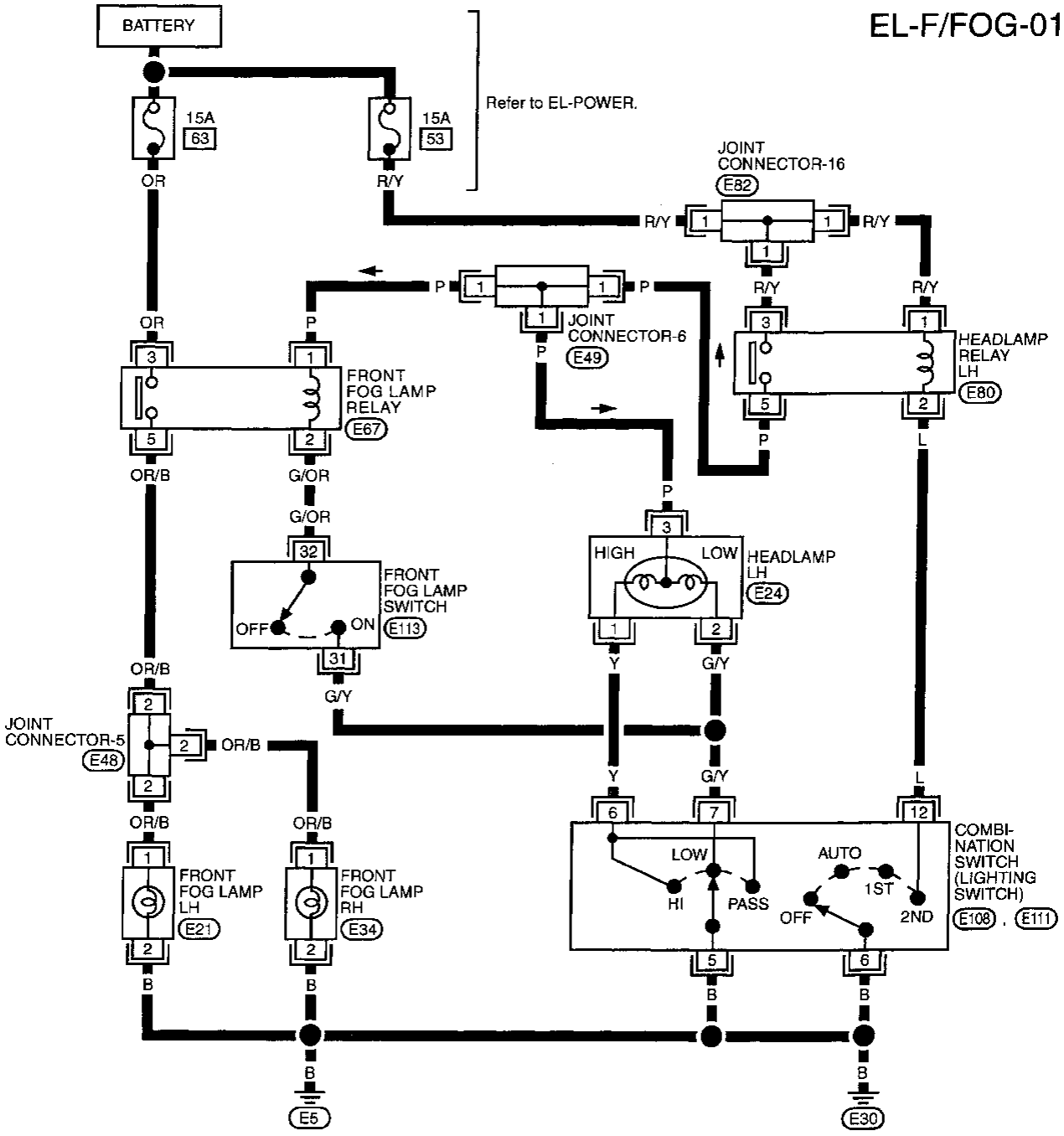
Front fog lamp operation

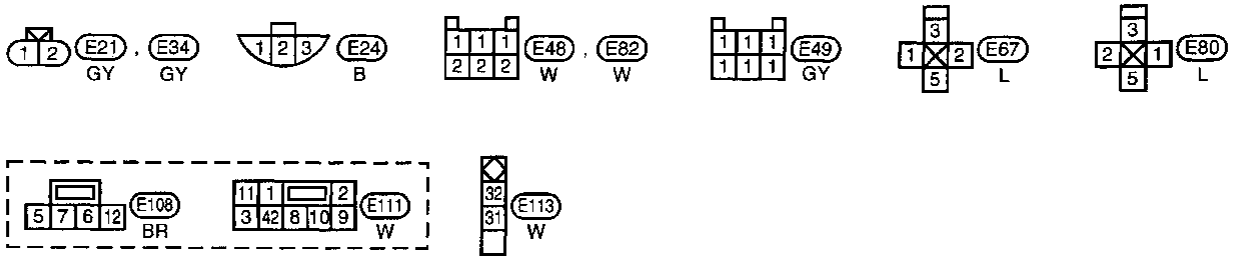
The lighting switch must be in the 2ND and "LOW BEAM" (B) position for front fog lamp operation.
With the front fog lamp switch in the ON position
- ground is supplied to front fog lamp relay terminal ② through the front fog lamp switch, lighting switch and body grounds (E5) and (E30).

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.

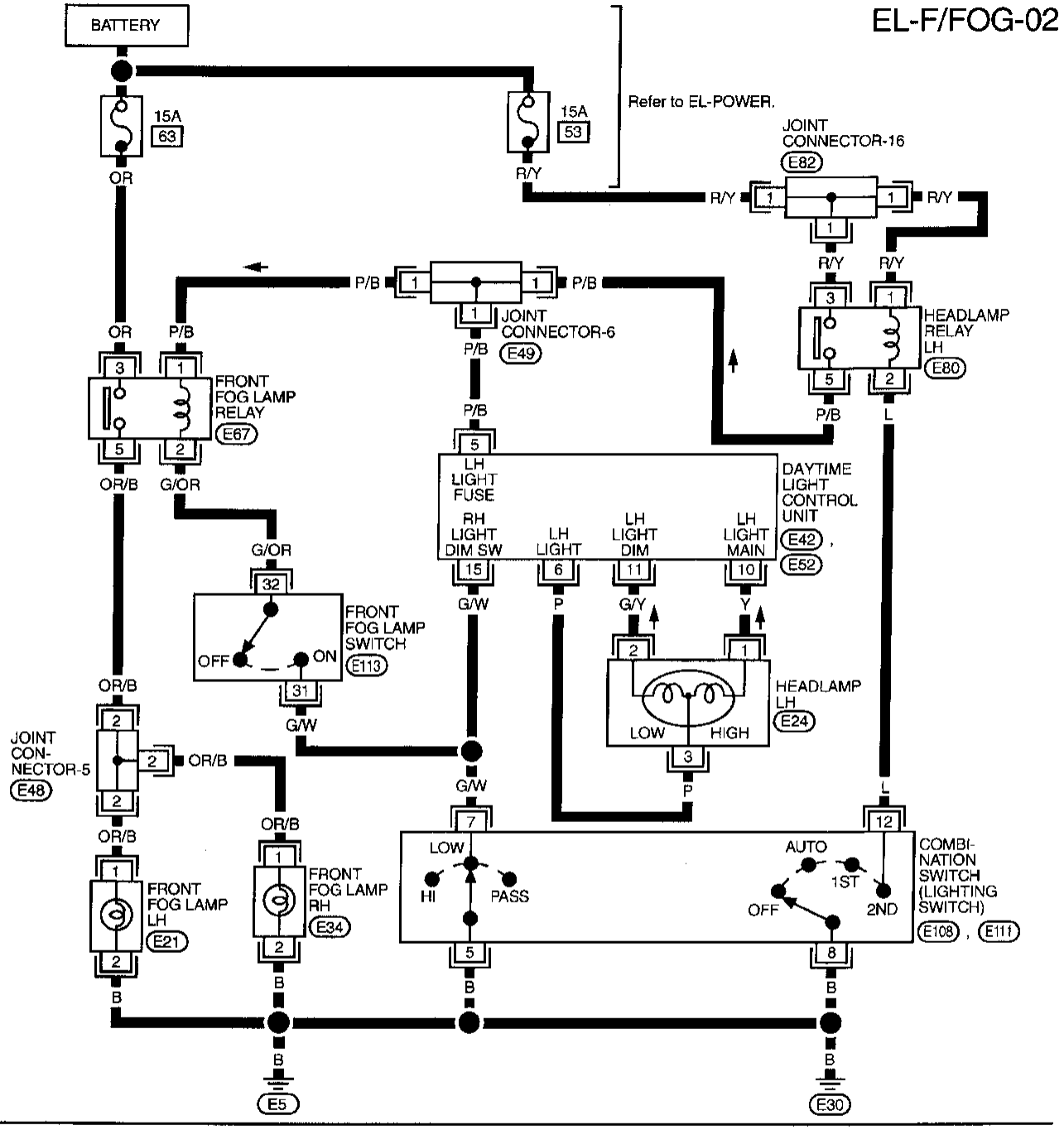
Wiring Diagram — F/FOG —/FOR U.S.A.

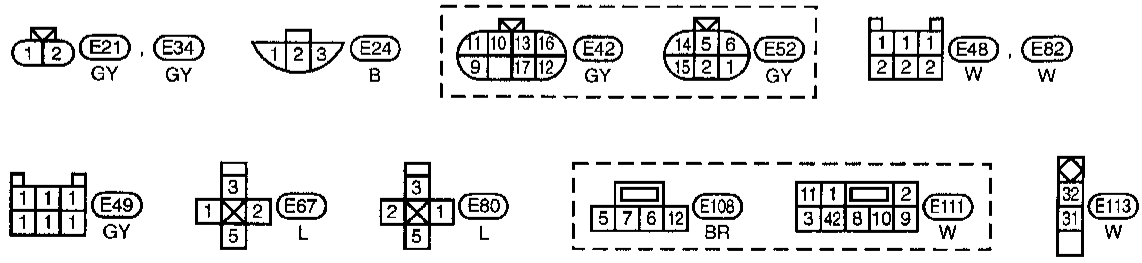




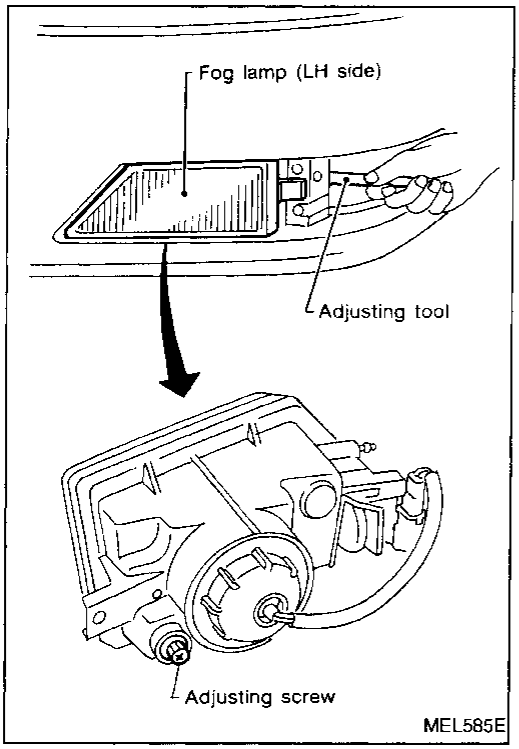
MEL073J

Wiring Diagram — F/FOG —/FOR CANADA





MEL168J

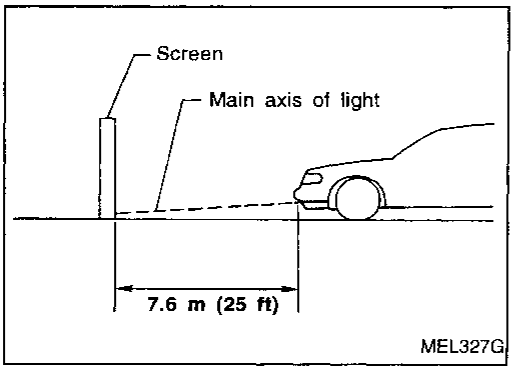


Aiming Adjustment

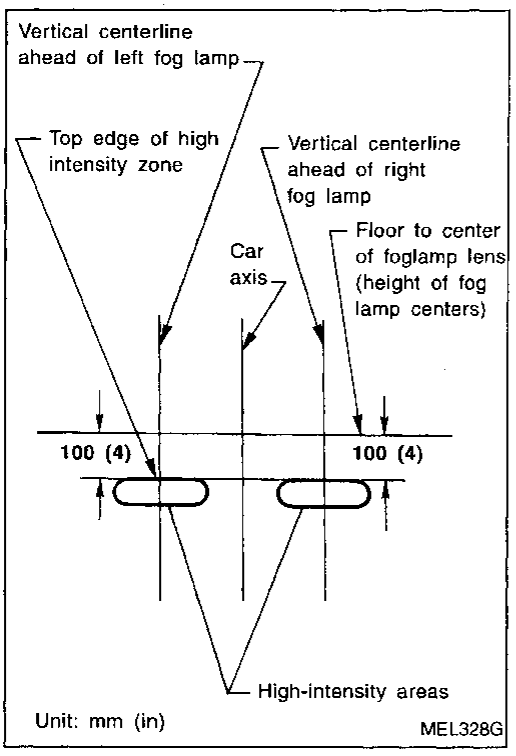
Before performing aiming adjustment, make sure of the following.

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

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



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



3. Adjust front fog lamps 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

System Description

The lighting switch must be in the 2ND and "LOW BEAM" (B) or "HIGH BEAM" (A) position for the cornering lamps to operate.
With the ignition switch in the ON or START position, power is supplied to cornering lamp relay terminal ③
- through 7.5A fuse [No. 14, located in the fuse block (J/B)].

Power is supplied to cornering lamp relay terminal ①
- through headlamp RH terminal ⑤, when the lighting switch in the 2ND position.

Ground is supplied to cornering lamp relay terminal ② through body grounds E5 and E30.
With power and ground supplied, the cornering lamp relay is energized.
Power is supplied
- from terminal ⑤ of the cornering lamp relay
- to cornering lamp switch terminal 61.

RH turn

When the turn signal lever is moved to the RH position, power is supplied
- from terminal 61 of the cornering lamp switch
- through terminal 62 of the cornering lamp switch
- to cornering lamp RH terminal ①.

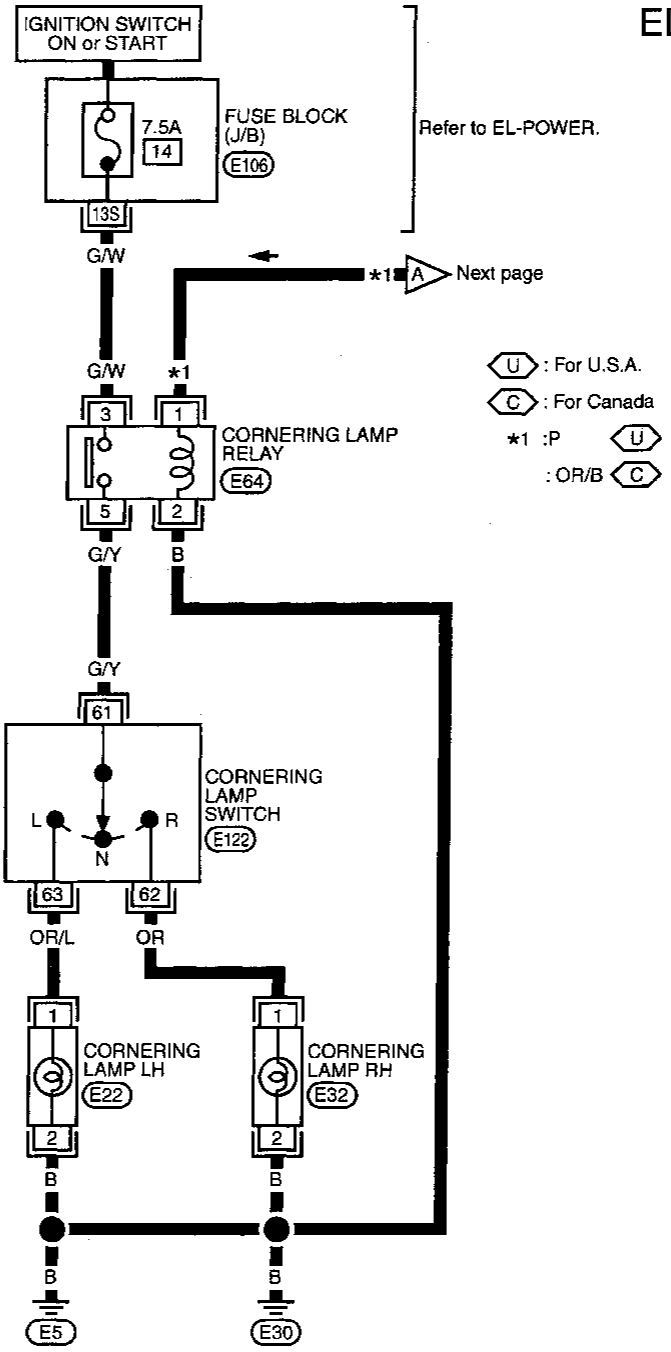
Ground is supplied to terminal ② of cornering lamp RH through body grounds E5 and E30.
The RH cornering lamp illuminates until the turn signal lever returns to NEUTRAL position.

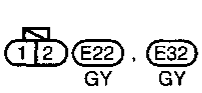
LH turn

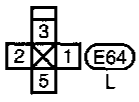
When the turn signal lever is moved to the LH position, power is supplied
- from terminal 61 of the cornering lamp switch
- through terminal 63 of the cornering lamp switch
- to cornering lamp LH terminal ①.

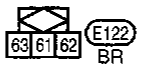
Ground is supplied to terminal ② of cornering lamp LH through body grounds E5 and E30.
The LH cornering lamp illuminates until the turn signal lever returns to NEUTRAL position.

Wiring Diagram — CORNER —





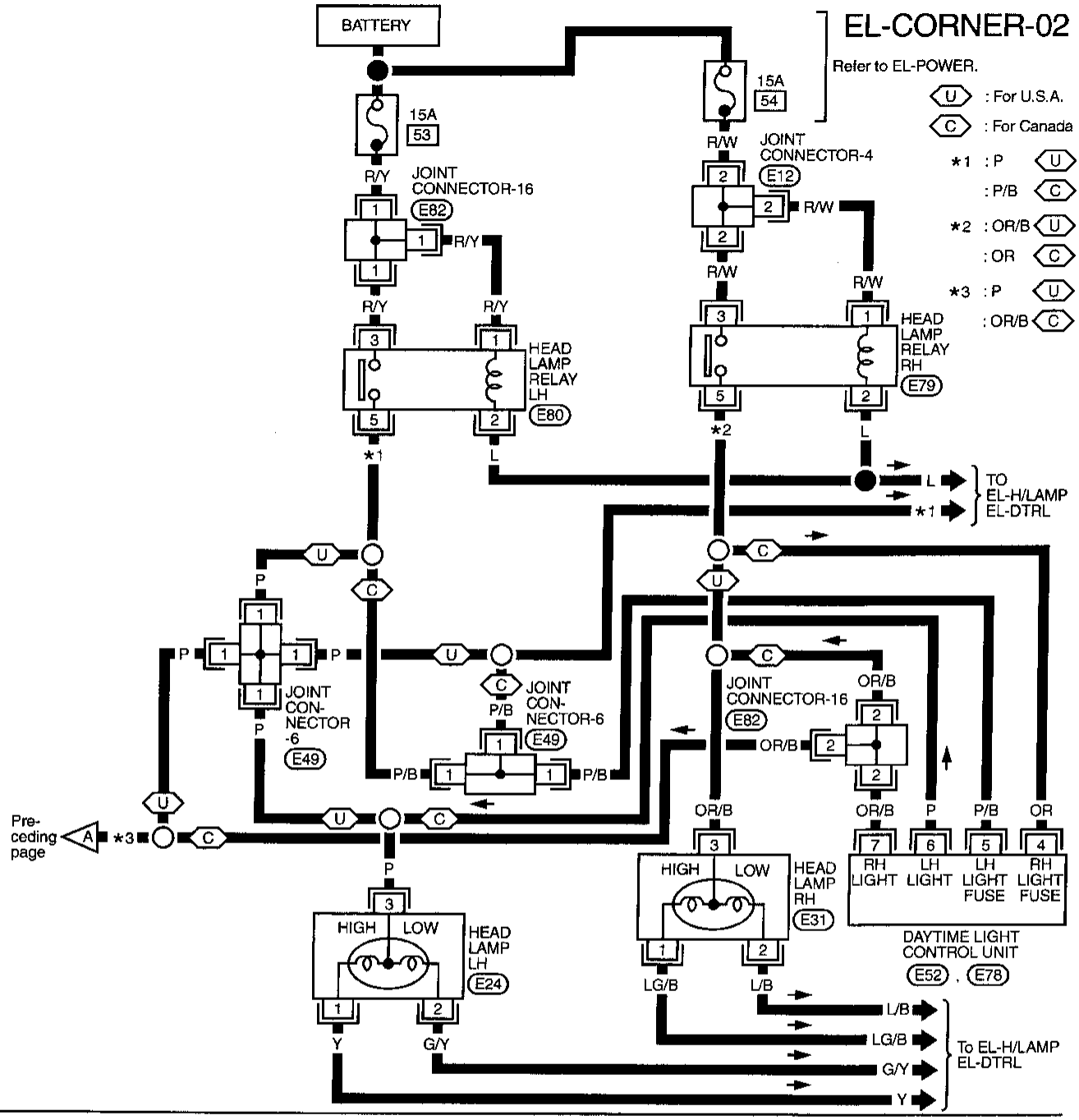


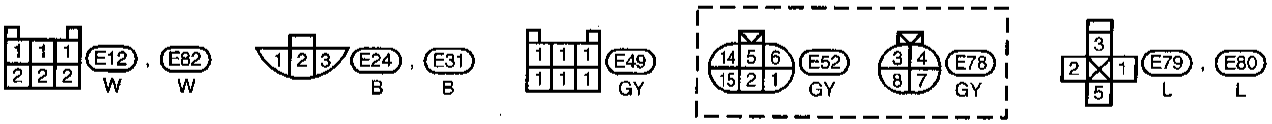


Refer to last page (Foldout page).
E106

MEL258J

Wiring Diagram — CORNER — (Cont'd)





MEL128J

System Description

Power is supplied at all times
- through 15A fuse (No. 66, located in the fuse and fusible link box)
- to terminals ① and ③ of tail lamp relay.

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.

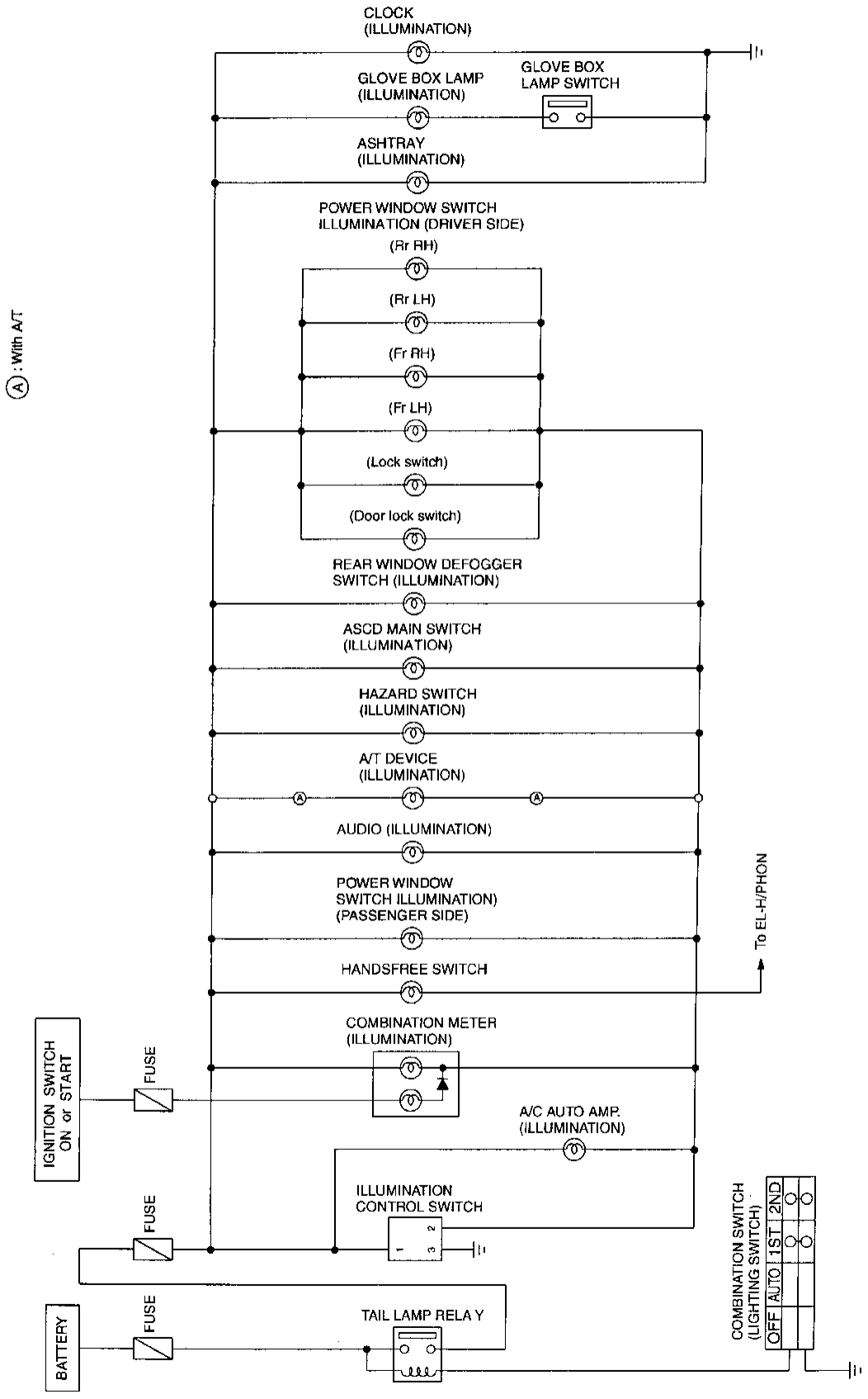
Then the illumination of odo/trip meter in combination meter turns on.
With the lighting switch is in the 1ST or 2ND position,
ground is supplied to tail lamp relay terminal ② though lighting switch. Then tail lamp relay is energized to supply power.
- through 7.5A fuse [No. 18, located in the fuse block (J/B)]
- to each power supply terminal.

A variable resistor is built in the illumination control switch to control the amount of current to the illumination system.
The handsfree switch, ashtray illumination, clock illumination 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	㉘	㉙
Combination meter (Odo/trip meter)	㊲	㉙
Handsfree switch	Ⓛ	㉓
Power window switch (Front RH)	⑭	⑩
Audio	⑧	⑦
A/T device	④	③
Hazard switch	⑦	⑧
ASCD main switch	⑤	⑥
Rear window defogger switch	⑤	⑥
Power window switch (Front LH)	⑦	⑩
Ashtray	①	②
Glove box lamp	①	②
Clock	②	①
A/C auto AMP.	㉔	㉕

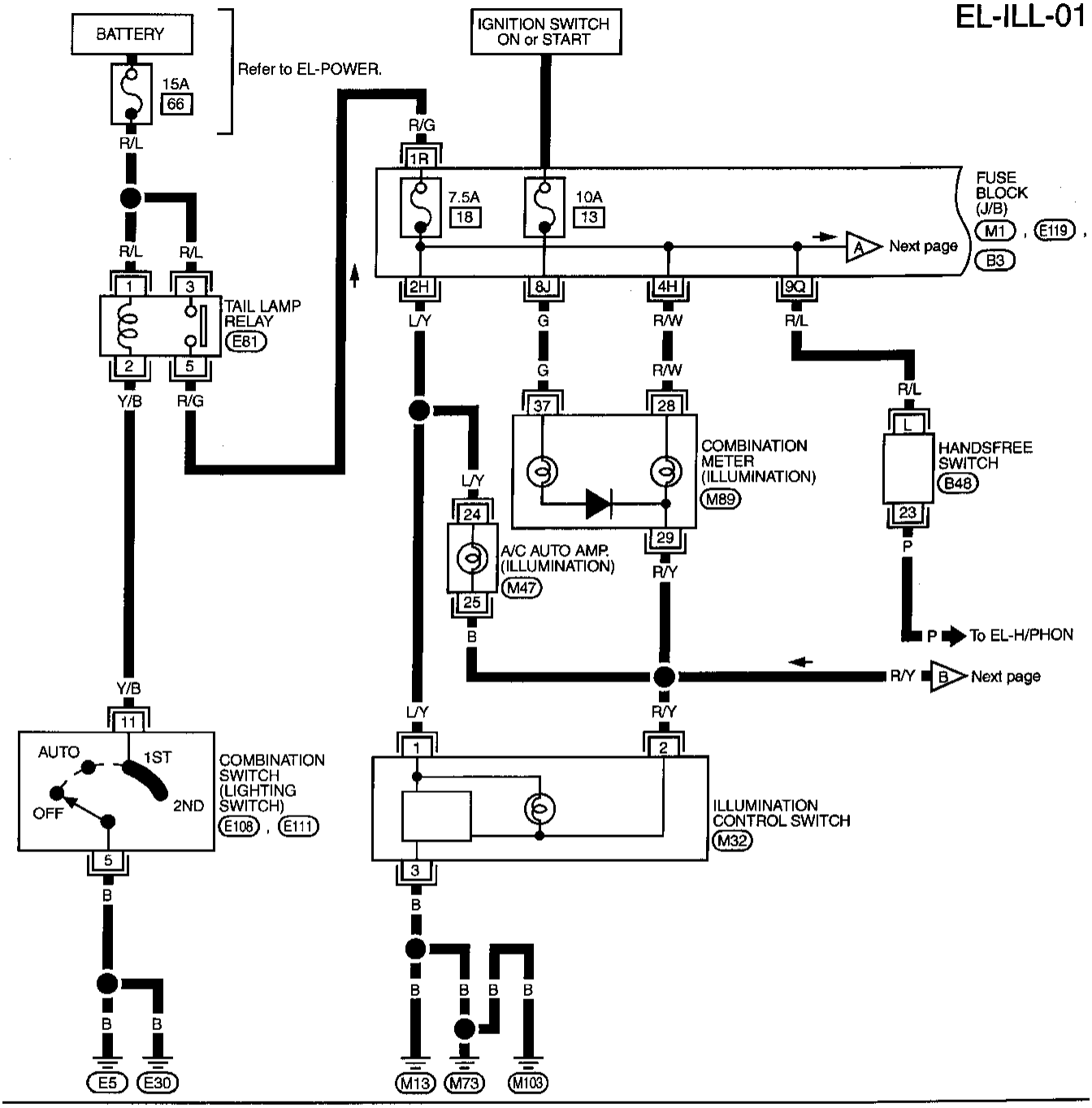
With the exception of the handsfree switch, glove box lamp, clock illumination and the ashtray illumination, the ground for all of the components are controlled through terminals ② and ③ of the illumination control switch and body grounds (M13), (M73) and (M103).

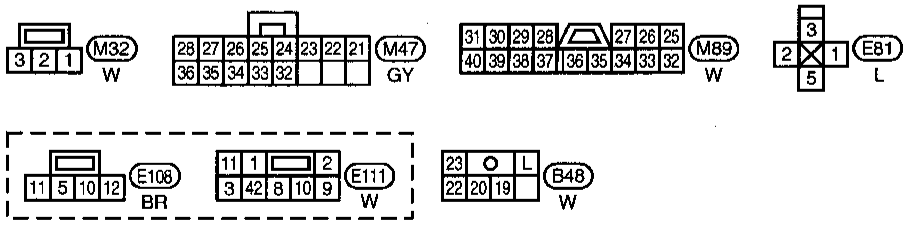
Schematic



MEL074J

Wiring Diagram — ILL —





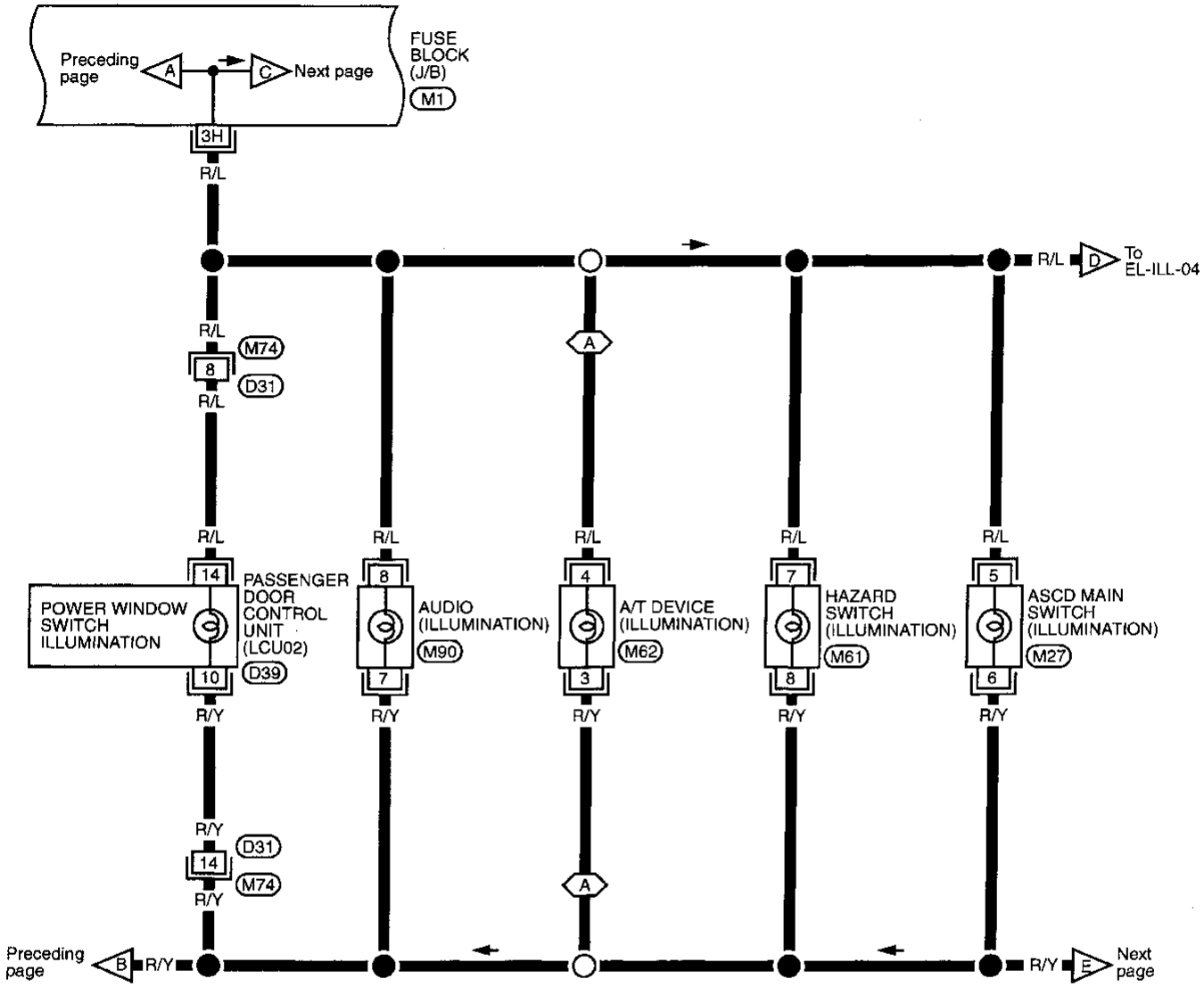
Refer to last page (Foldout page).

M1
E119
B3

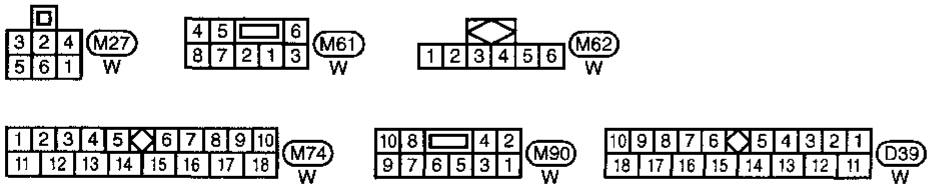
MEL075J

Wiring Diagram — ILL — (Cont'd)

EL-ILL-02



A : With A/T



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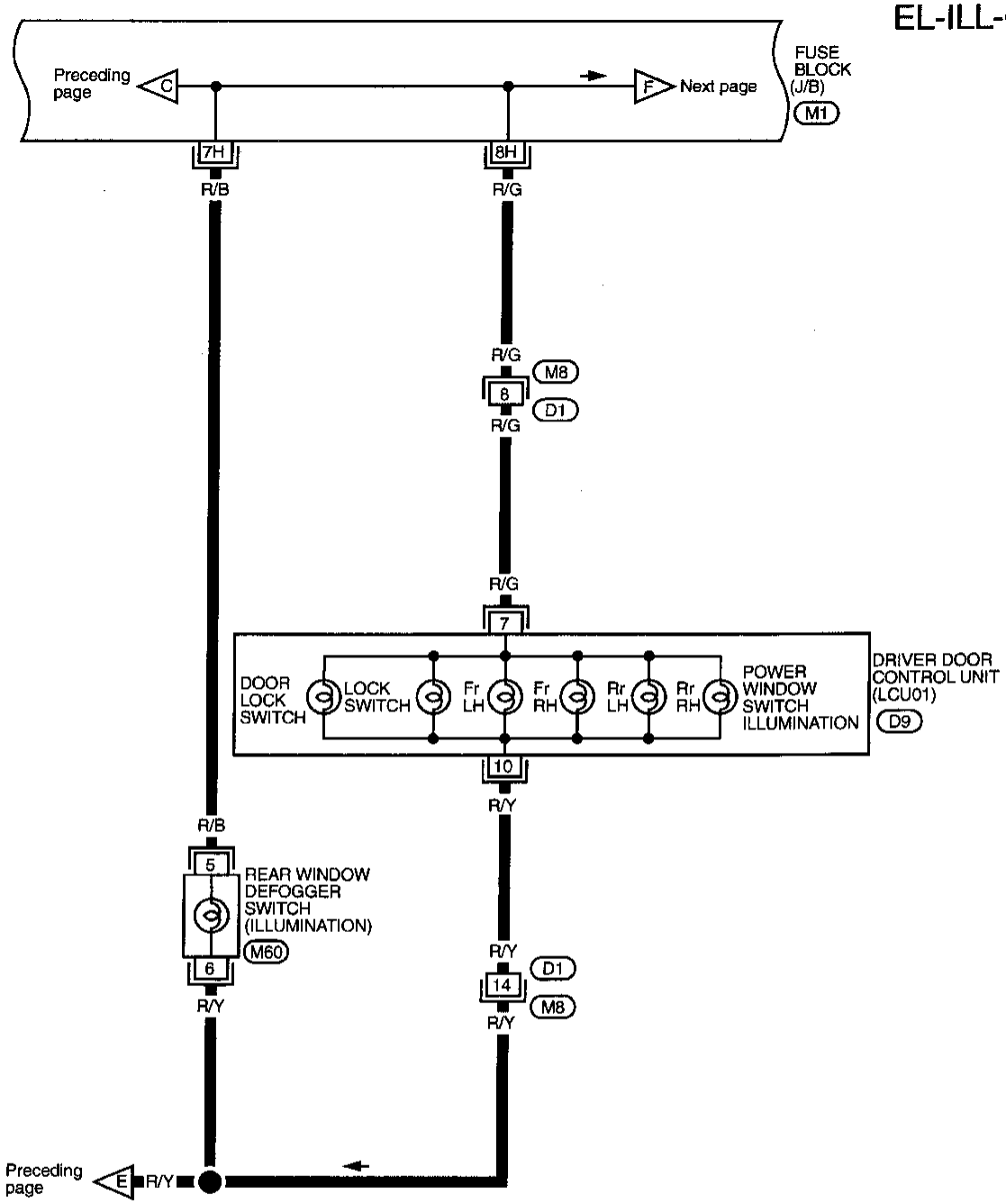
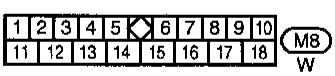
M1

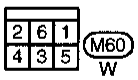
MEL689H

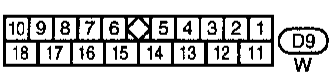
Wiring Diagram — ILL — (Cont'd)

EL-ILL-03







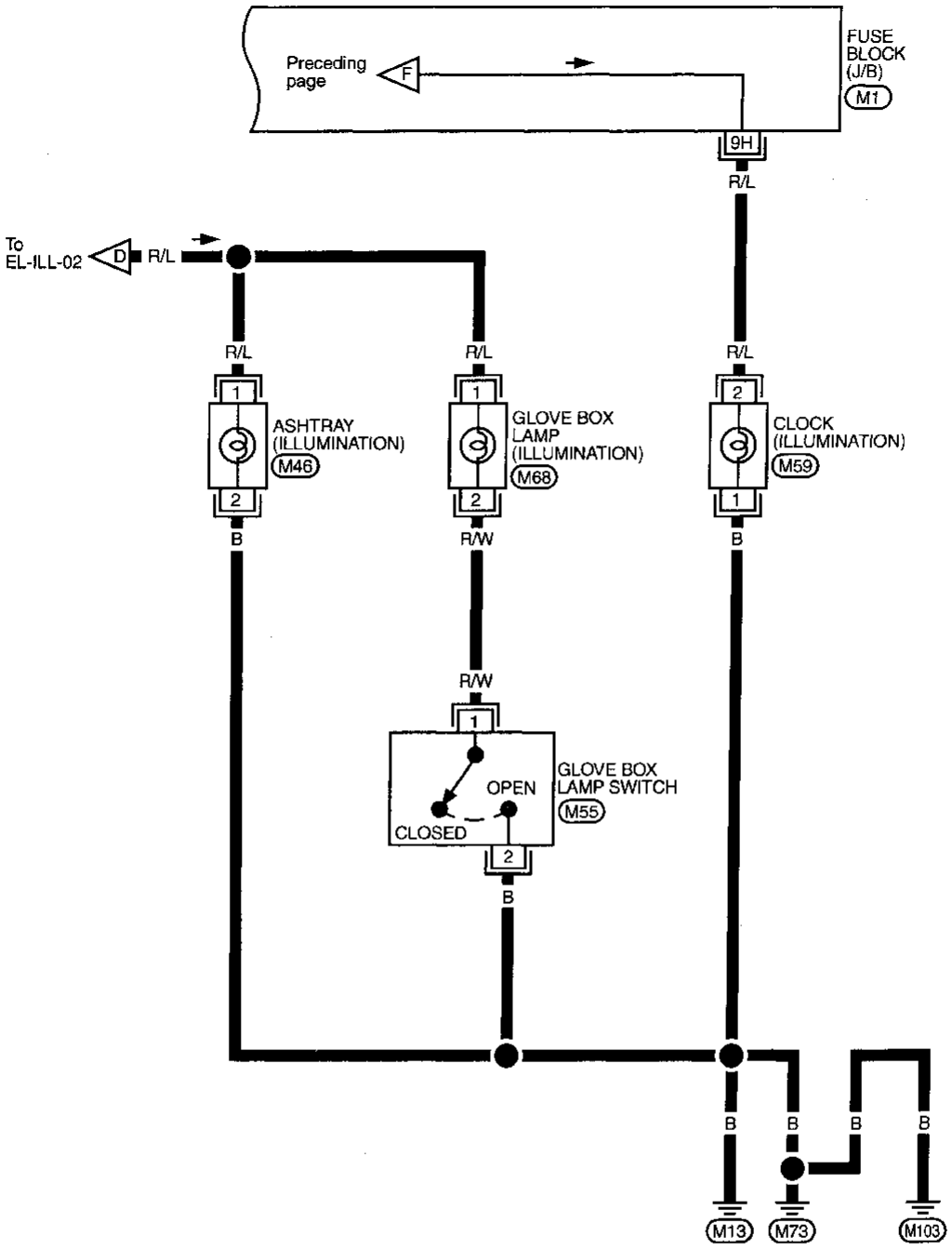


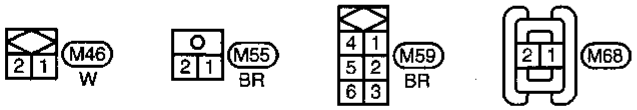
Refer to last page (Foldout page).
M1

MEL259J

Wiring Diagram — ILL — (Cont'd)

EL-ILL-04

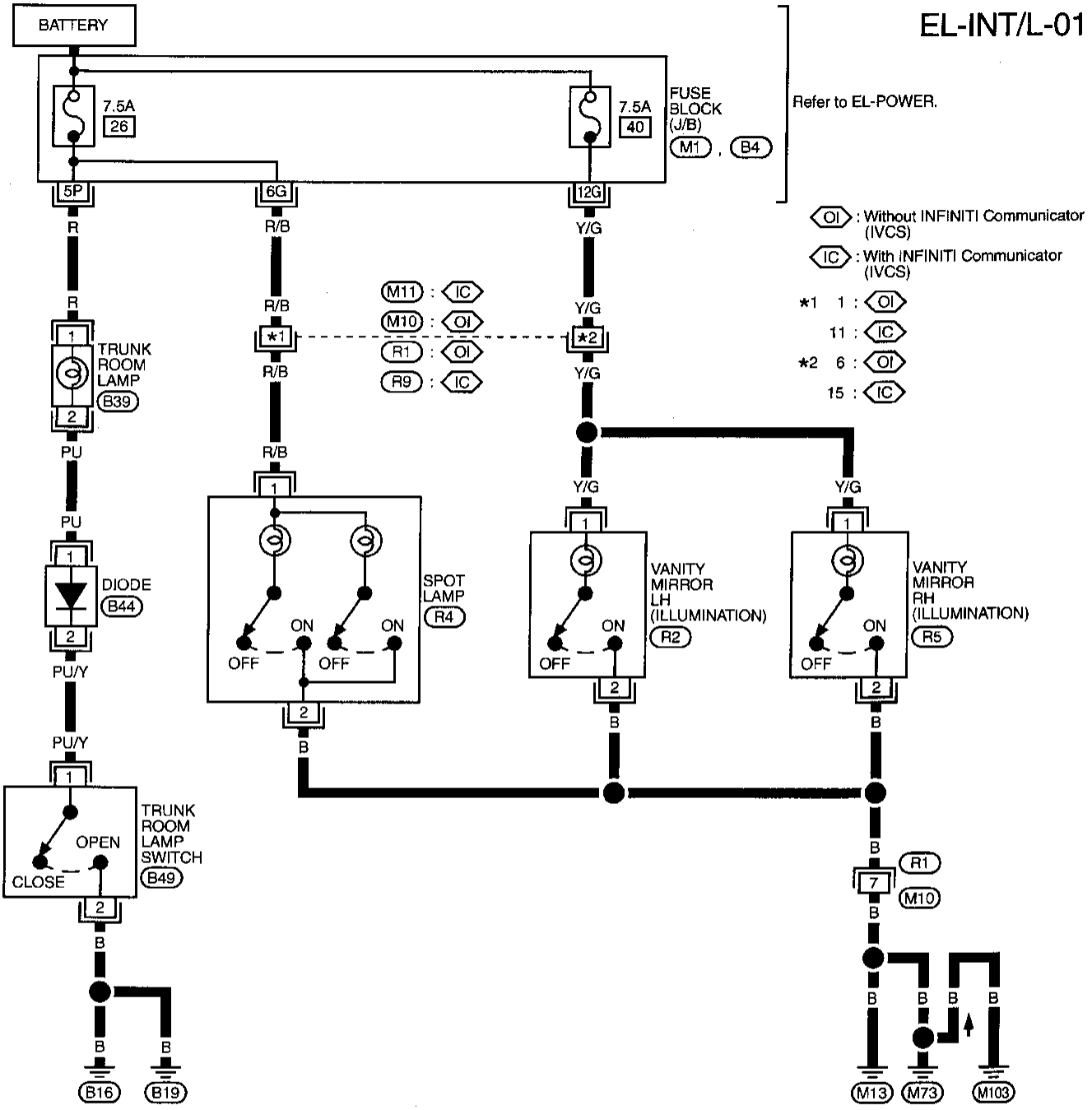


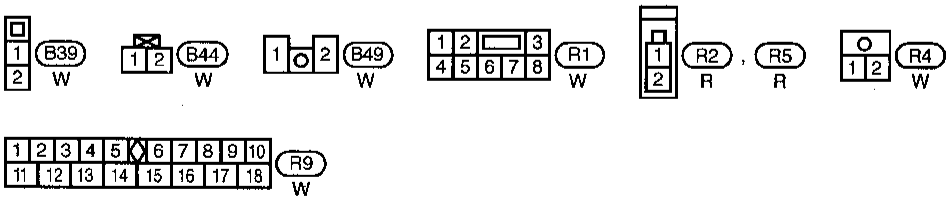


Refer to last page (Foldout page).
M1

MEL076J

Wiring Diagram — INT/L —





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M1
B4

MEL077J

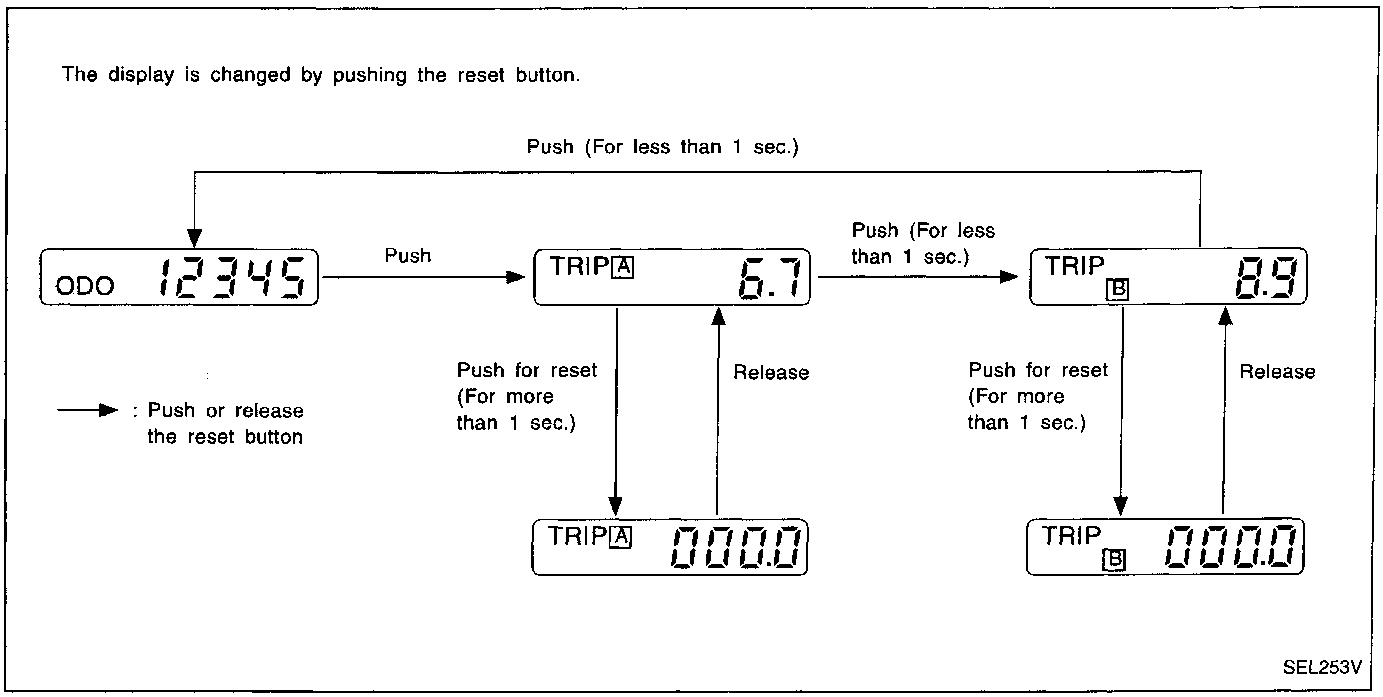
1511

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 (M103).

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).

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.

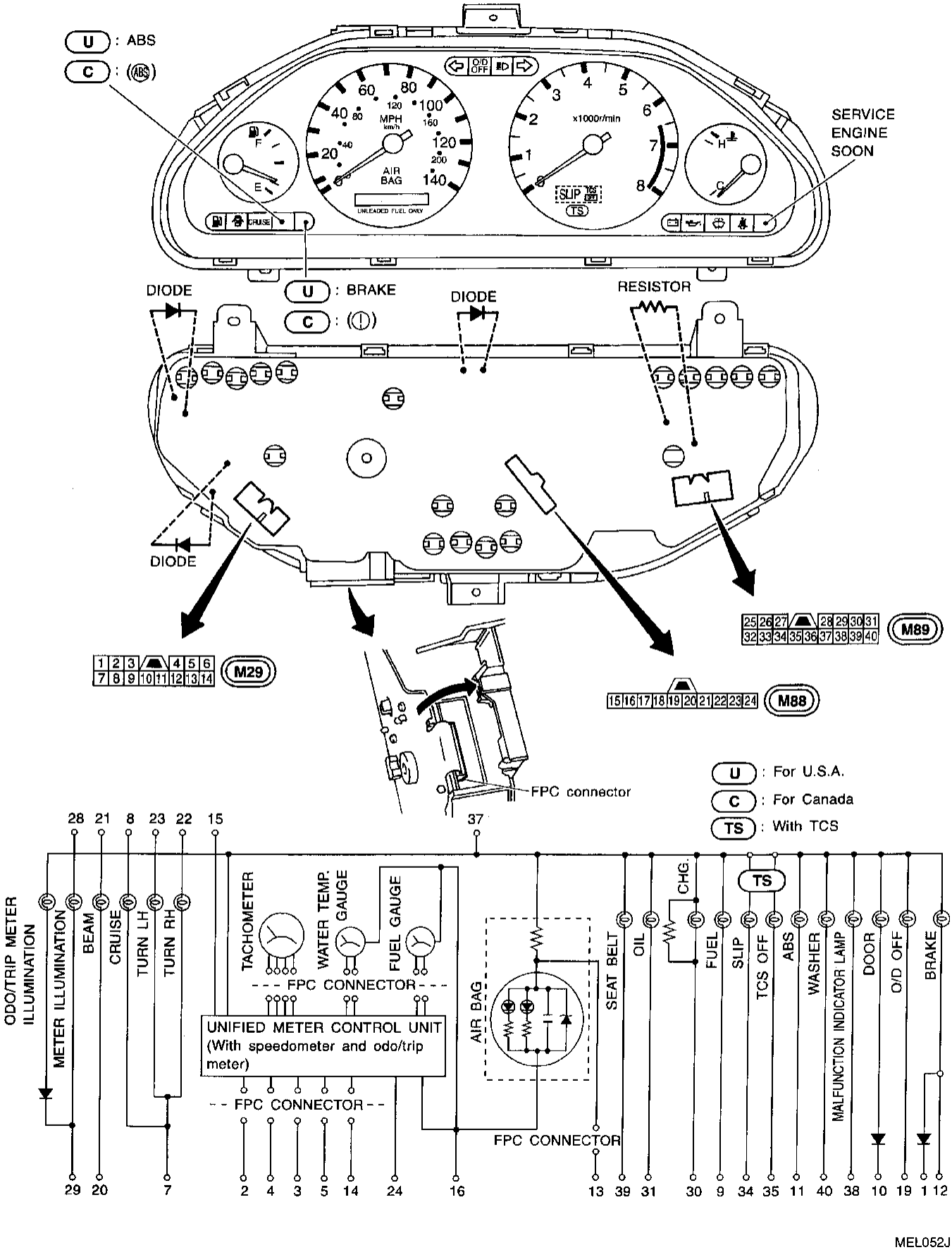
SPEEDOMETER

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.

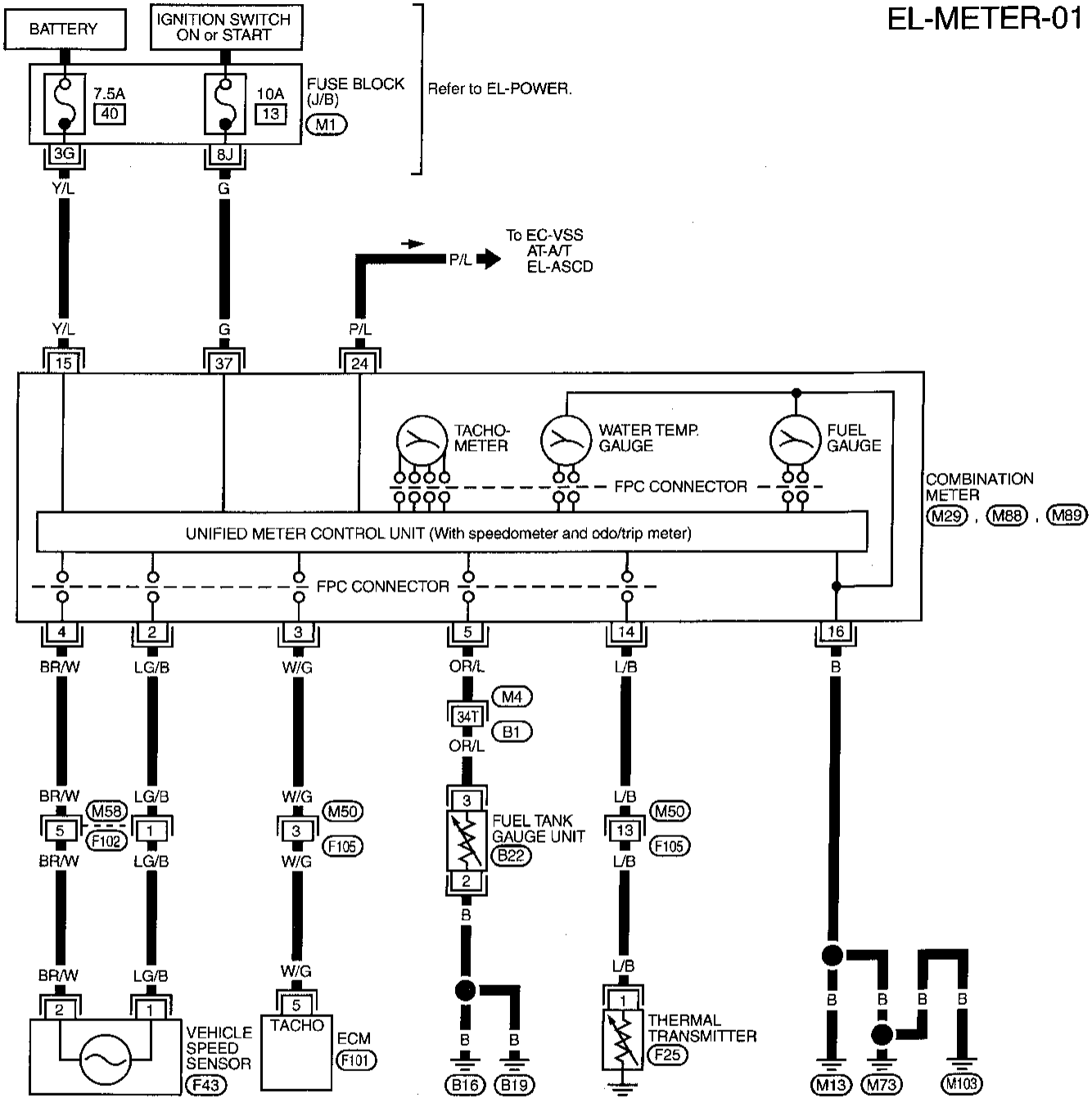
The speedometer converts the voltage into the vehicle speed displayed.

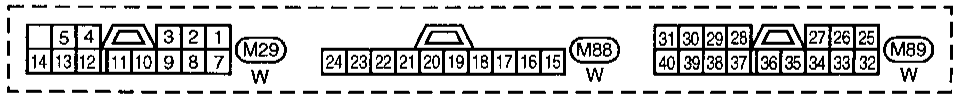
Combination Meter

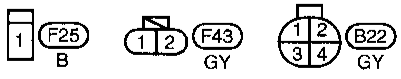


MEL052J

Wiring Diagram — METER —







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M1

M4, B1

F101

MEL078J

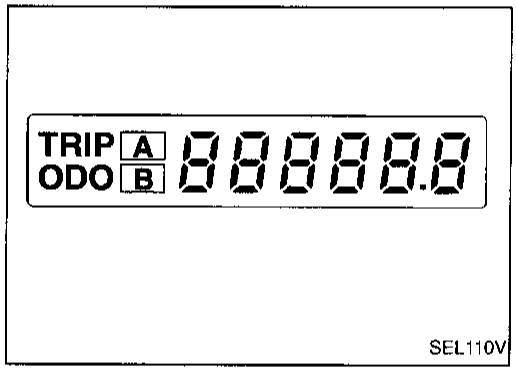
Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode

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

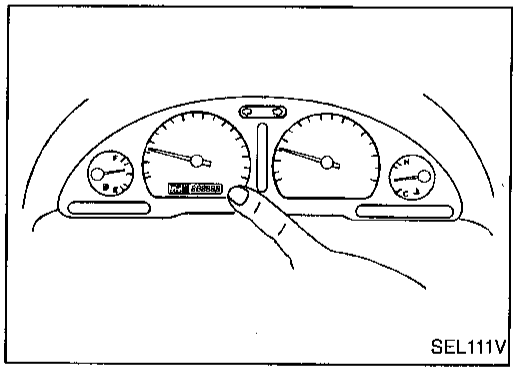
1. Turn ignition switch to ON and change odo/trip meter to "TRIP A" or "TRIP B".
2. Turn ignition switch to OFF.
3. Turn ignition switch to ON when pushing odo/trip meter switch.
4. Confirm that trip meter indicates "000.0".
5. Push odo/trip meter switch more than three times within 5 seconds.



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.

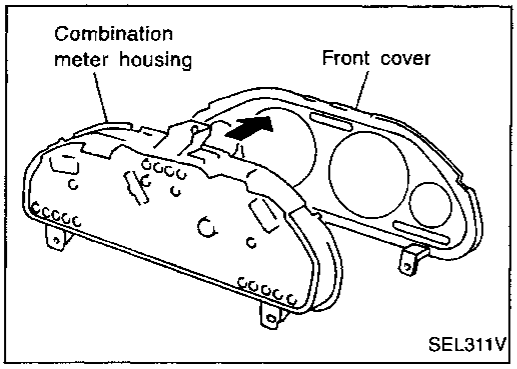


7. Push odo/trip meter switch. Indication of each meter/gauge should be as shown left during pushing odo/trip meter switch if it is no malfunctioning.

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

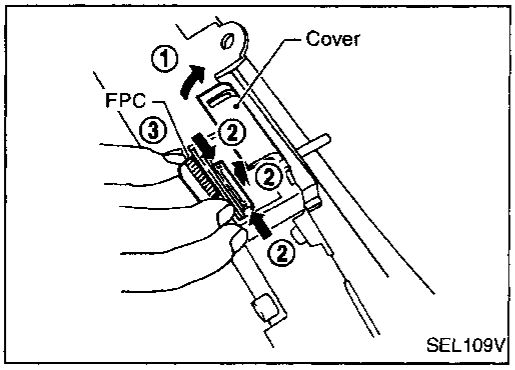
Flexible Print Circuit (FPC)

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.

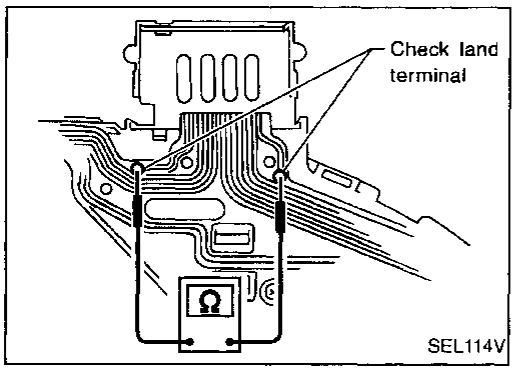


DISCONNECT

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.

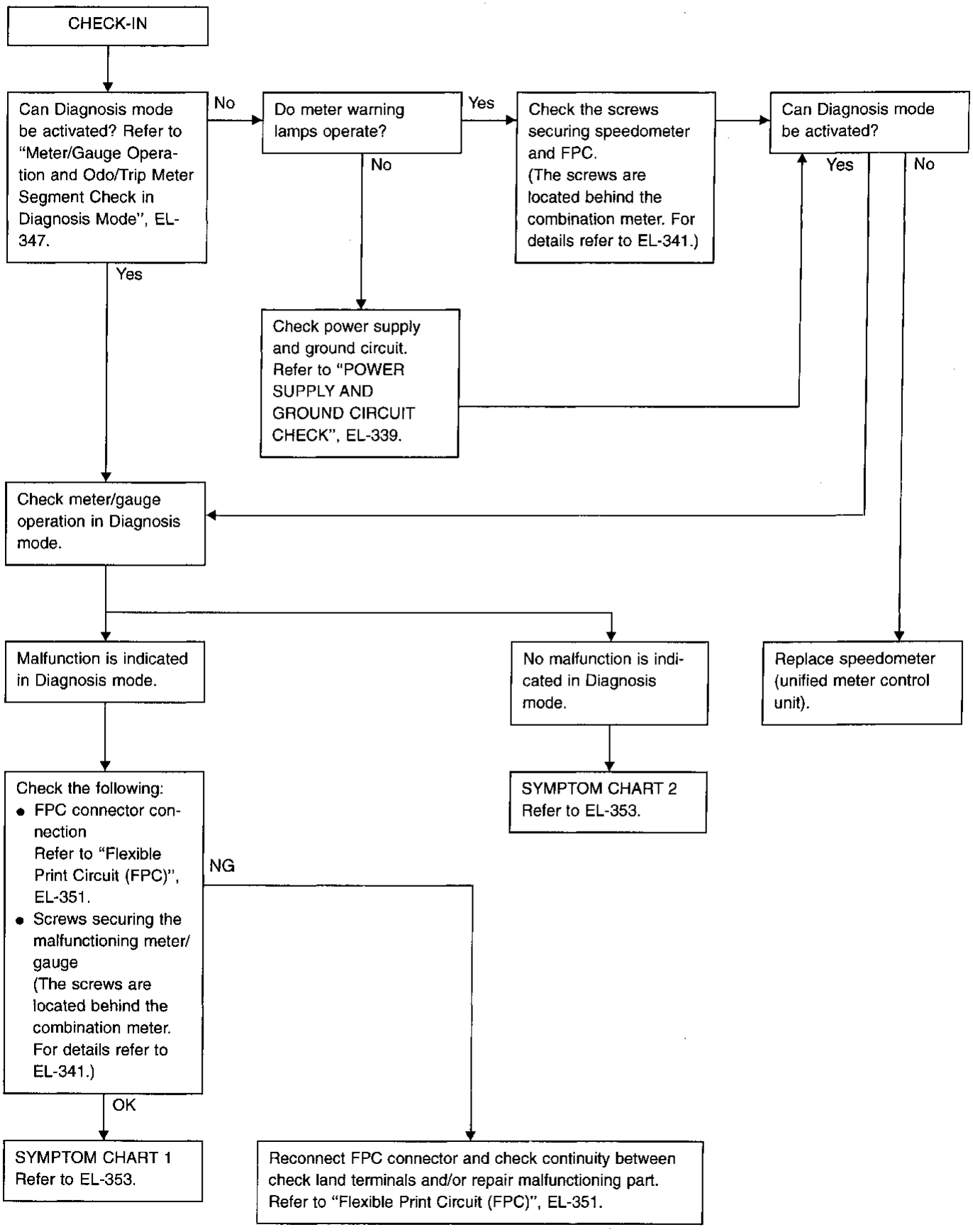


CONNECT

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



Trouble Diagnoses (Cont'd)

SYMPTOM CHART

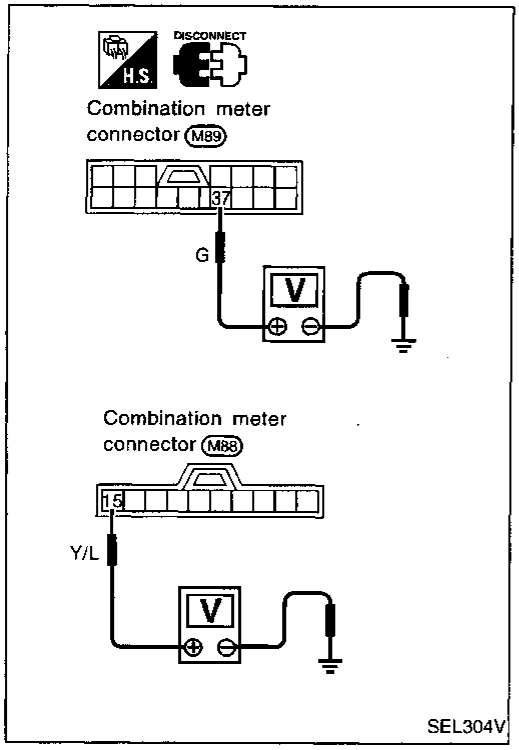
Symptom chart 1 (Malfunction is indicated in Diagnosis mode)

Symptom	Possible causes	Repair order
Speedometer and/or odo/trip meter indicate(s) malfunction in Diagnosis mode.	• Speedometer (Unified meter control unit)	• Replace speedometer (unified meter control unit).
Multiple meter/gauge indicate malfunction in Diagnosis mode.		
One of tachometer/fuel gauge/ water temp. gauge indicates malfunction in Diagnosis mode.	• Meter/Gauge • Speedometer (Unified meter control unit)	1. Check resistance of meter/gauge indicating malfunction. If the resistance is NG, replace the meter/gauge. Refer to "METER/GAUGE RESISTANCE CHECK", EL-341. 2. If the resistance is OK, replace speedometer (unified meter control unit).

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

Symptom	Possible causes	Repair order
Speedometer and odo/trip meter are malfunctioning.	1. Sensor - Speedometer, Odo/Trip meter 2. FPC connector 3. Speedometer (Unified meter control unit)	1. Check vehicle speed sensor. INSPECTION/VEHICLE SPEED SENSOR (Refer to EL-341.) 2. Check FPC connector. Refer to "Flexible Print Circuit (FPC)", EL-351. 3. Replace speedometer (unified meter control unit).
Multiple meter/gauge are malfunctioning. (except speedometer, odo/trip meter)	1. FPC connector 2. Speedometer (Unified meter control unit)	1. Check FPC connector. Refer to "Flexible Print Circuit (FPC)", EL-351. 2. Replace speedometer (unified meter control unit).
One of tachometer/fuel gauge/ water temp. gauge is malfunctioning.	1. Sensor/Engine revolution signal - Tachometer - Fuel gauge - Water temp. gauge 2. FPC connector 3. Speedometer (Unified meter control unit)	1. Check the sensor for malfunctioning meter/gauge. INSPECTION/ENGINE REVOLUTION SIGNAL (Refer to EL-342.) INSPECTION/FUEL TANK GAUGE (Refer to EL-89.) INSPECTION/THERMAL TRANSMITTER (Refer to EL-343.) 2. Check FPC connector. Refer to "Flexible Print Circuit (FPC)", EL-351. 3. Replace speedometer (unified meter control unit).

Before starting trouble diagnoses above, perform PRELIMINARY CHECK, EL-86.



POWER SUPPLY AND GROUND CIRCUIT CHECK

Power supply circuit check

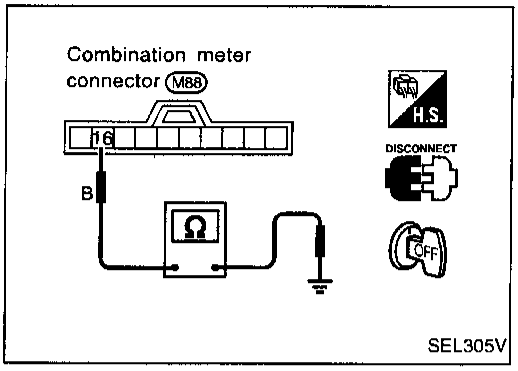
Terminals		Ignition switch position		
⊕	⊖	OFF	ACC	ON
⑮	Ground	Battery voltage	Battery voltage	Battery voltage
㊲	Ground	0V	0V	Battery voltage

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

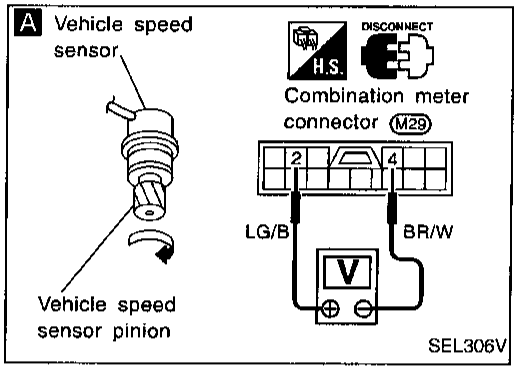
Trouble Diagnoses (Cont'd)

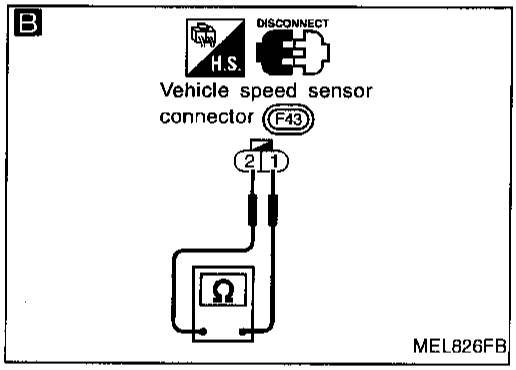
Ground circuit check



Terminals	Continuity
⑯ - Ground	Yes

INSPECTION/VEHICLE SPEED SENSOR





A

CHECK VEHICLE SPEED SENSOR OUTPUT.

1. Remove vehicle speed sensor from transmission.
2. Check voltage between combination meter terminals ② and ④ while quickly turning speed sensor pinion.
   Voltage: Approx. 0.5V

OK → Vehicle speed sensor is OK.

NG ↓

B

CHECK VEHICLE SPEED SENSOR.
Check resistance between vehicle speed sensor terminals ① and ②.
Resistance: Approx. 250Ω

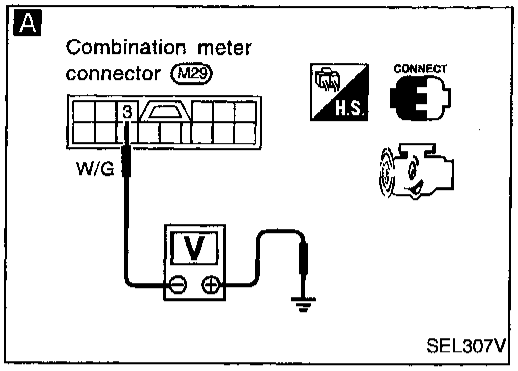
NG → Replace vehicle speed sensor.

OK ↓

Check harness for open or short between speedometer and vehicle speed sensor.

Trouble Diagnoses (Cont'd)

INSPECTION/ENGINE REVOLUTION SIGNAL



A

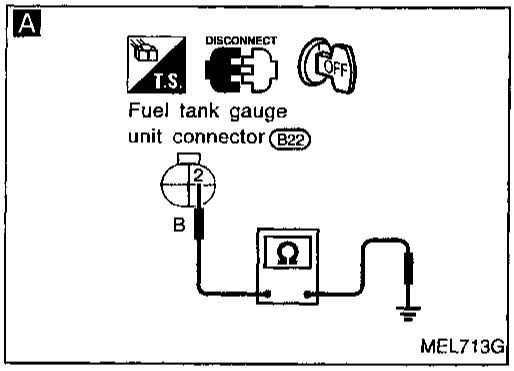
CHECK ECM OUTPUT.
1. Start engine.
2. Check voltage between combination meter terminal ③ and ground at idle and 2,000 rpm.
   Higher rpm = Higher voltage
   Lower rpm = Lower voltage
   Voltage should change with rpm.

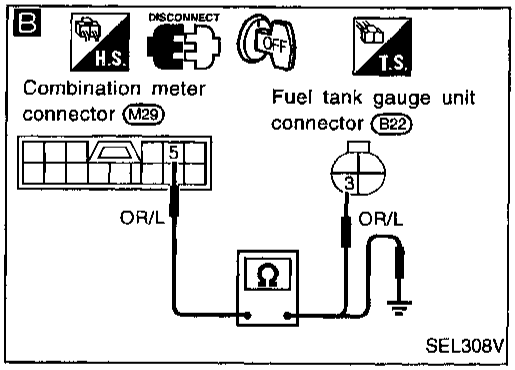
OK → Engine revolution signal is OK.

NG ↓

Check the following.
- Harness for open or short between ECM and combination meter

INSPECTION/FUEL TANK GAUGE





A

CHECK GROUND CIRCUIT FOR FUEL TANK GAUGE UNIT.
Check harness continuity between fuel tank gauge unit terminal ② and ground.
Continuity should exist.

NG → Repair harness or connector.

OK ↓

CHECK GAUGE UNITS.
Refer to "FUEL TANK GAUGE UNIT CHECK" (EL-344).

NG → Repair or replace.
Refer to FE section.

OK ↓

B

CHECK HARNESS FOR OPEN OR SHORT.
1. Disconnect combination connector and fuel tank gauge unit connector.
2. Check continuity between combination meter terminal ⑤ and fuel tank gauge unit terminal ③.
   Continuity should exist.
3. Check continuity between combination meter terminal ⑤ and ground.
   Continuity should not exist.

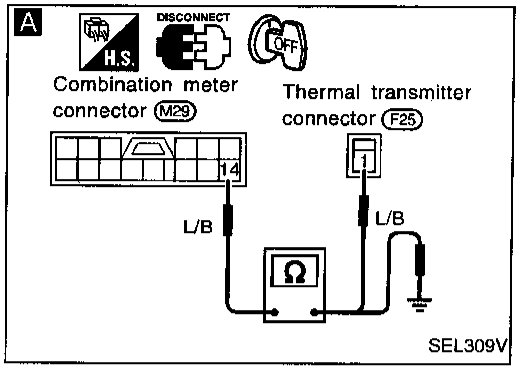
NG → Repair harness or connector.

OK ↓

Fuel tank gauge is OK.

Trouble Diagnoses (Cont'd)

INSPECTION/THERMAL TRANSMITTER



CHECK THERMAL TRANSMITTER.
Refer to "THERMAL TRANSMITTER CHECK" (EL-345).

NG → Repair or replace.

OK ↓

A

CHECK HARNESS FOR OPEN OR SHORT.

1. Disconnect combination connector and thermal transmitter connector.
2. Check continuity between combination meter terminal ⑭ and thermal transmitter terminal ①.

Continuity should exist.

3. Check continuity between combination meter terminal ⑭ and ground.

Continuity should not exist.

NG → Repair harness or connector.

OK ↓

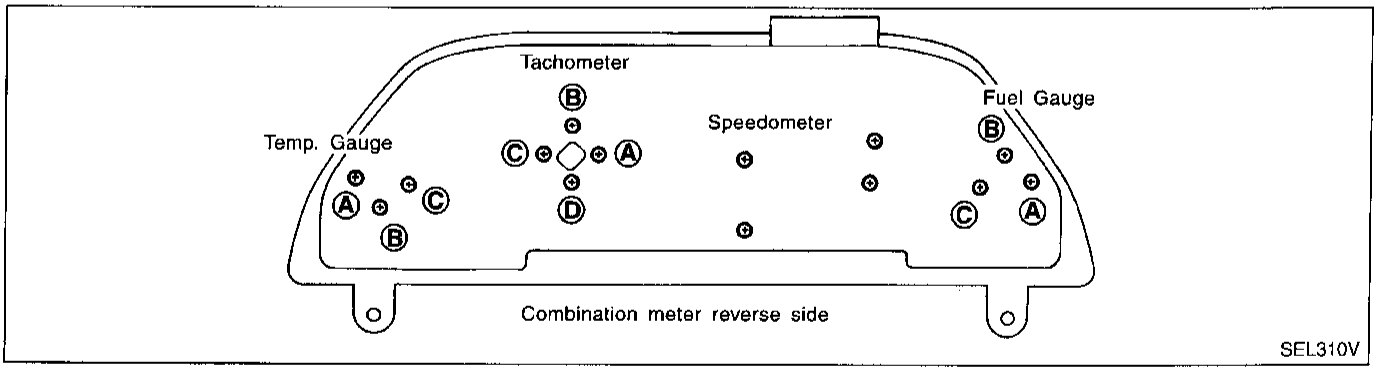
Thermal transmitter is OK.

Electrical Components Inspection

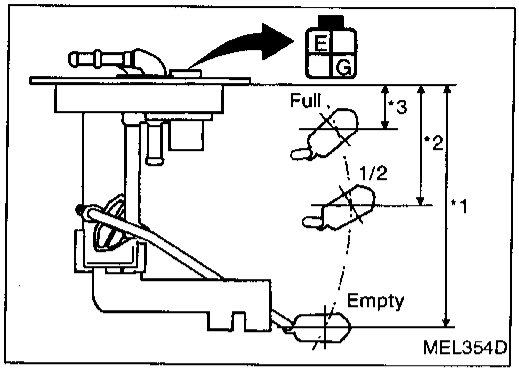
METER/GAUGE RESISTANCE CHECK

1. Disconnect FPC connector. Refer to "Flexible Print Circuit (FPC)" (EL-351).
2. Check resistance between installation screws of meter/gauge.

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



Electrical Components Inspection (Cont'd)



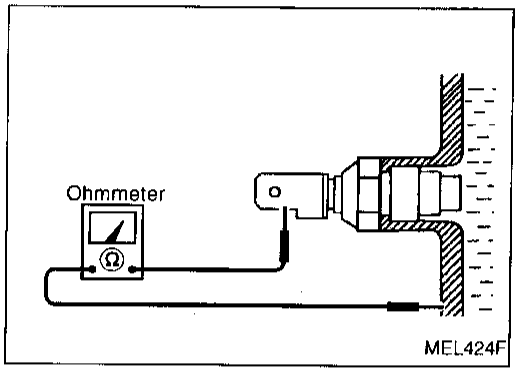
FUEL TANK GAUGE UNIT CHECK

- For removal, refer to FE section.

Check the resistance between terminals Ⓖ and Ⓔ.

Ohmmeter (+)	Ohmmeter (−)	Float position	mm (in)		Resistance value (Ω)
E	G	*1	Full	32 (1.26)	Approx. 5 - 8
		*2	1/2	93 (3.66)	32 - 34
		*3	Empty	157 (6.18)	80 - 81

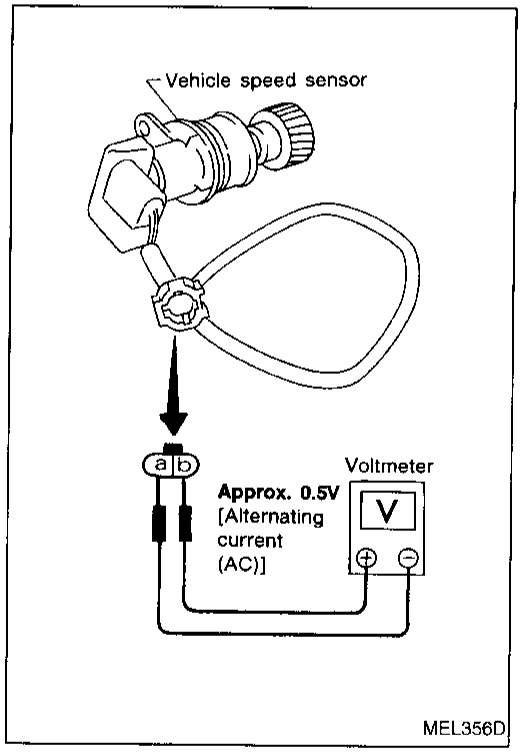
*1 and *3: When float rod is in contact with stopper.



THERMAL TRANSMITTER CHECK

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

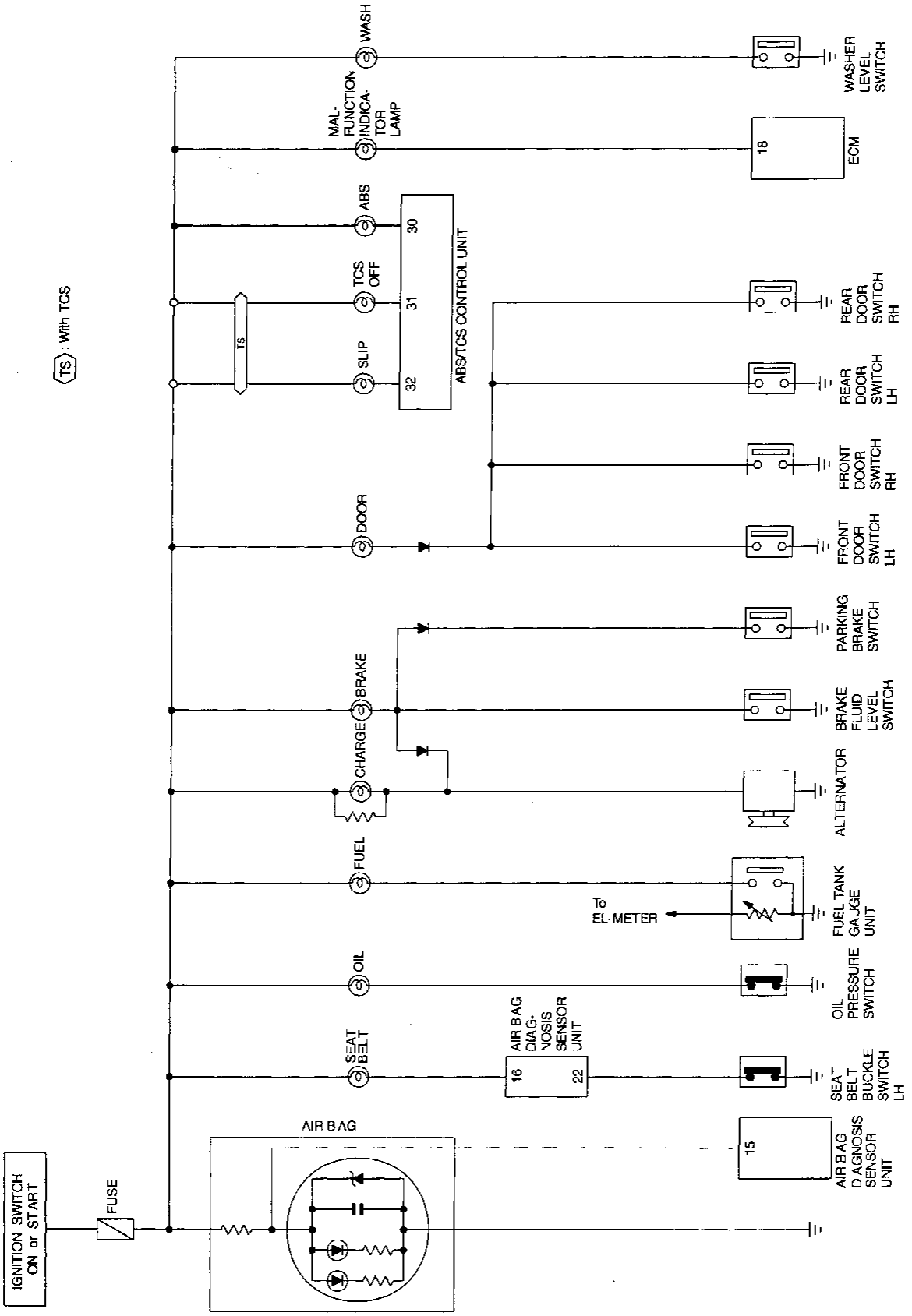
Water temperature	Resistance (Ω)
60°C (140°F)	Approx. 170 - 210
100°C (212°F)	Approx. 47 - 53



VEHICLE SPEED SENSOR CHECK

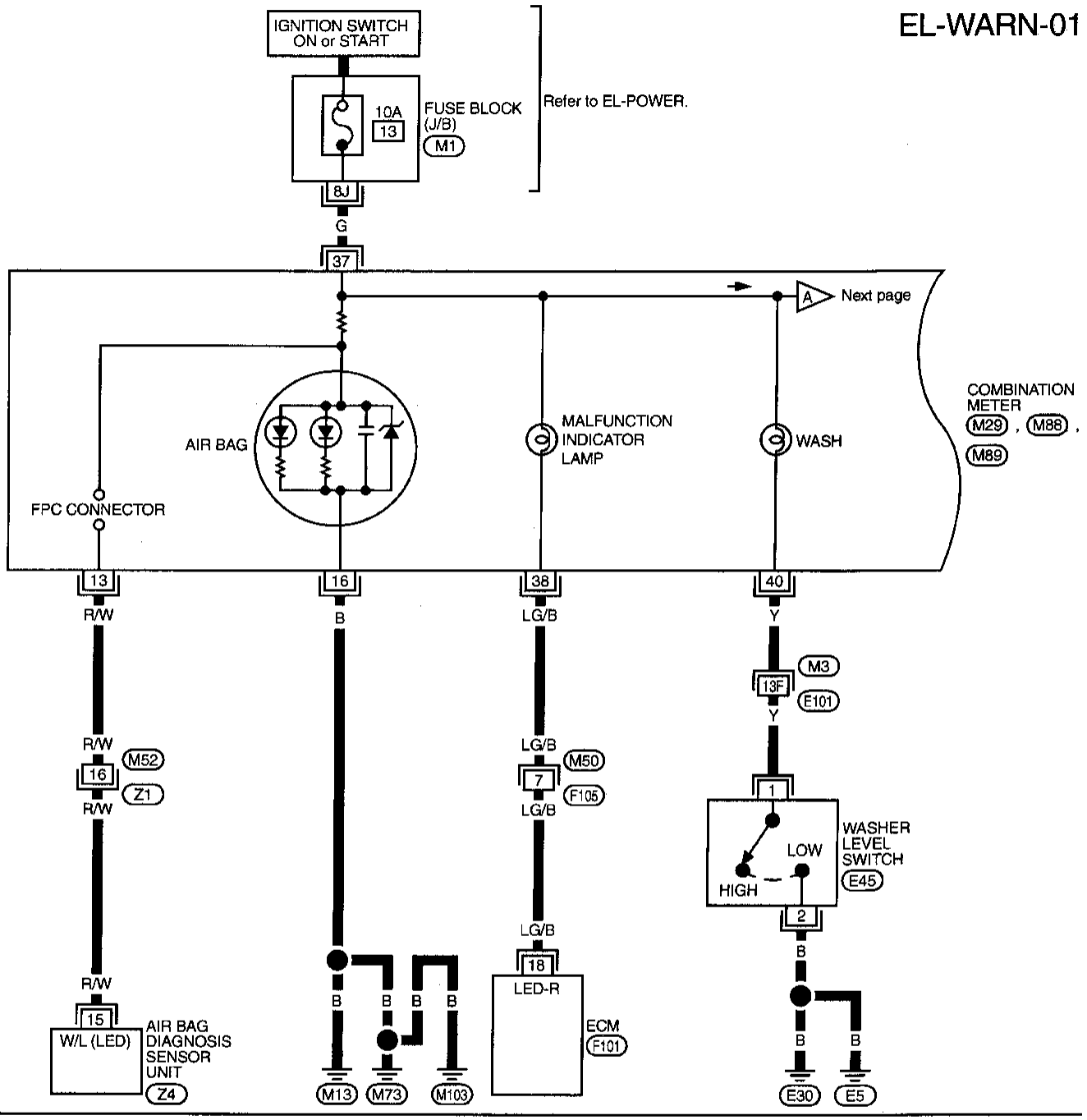
1. Remove vehicle speed sensor from transmission.
2. Turn vehicle speed sensor pinion quickly and measure voltage between terminals Ⓐ and Ⓑ.

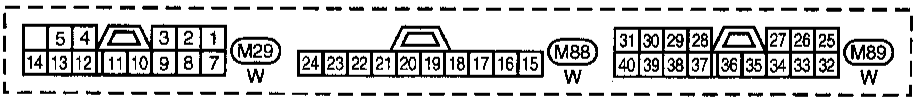
Schematic



MEL079J

Wiring Diagram — WARN —





Refer to last page (Foldout page).

M1

M3 , E101

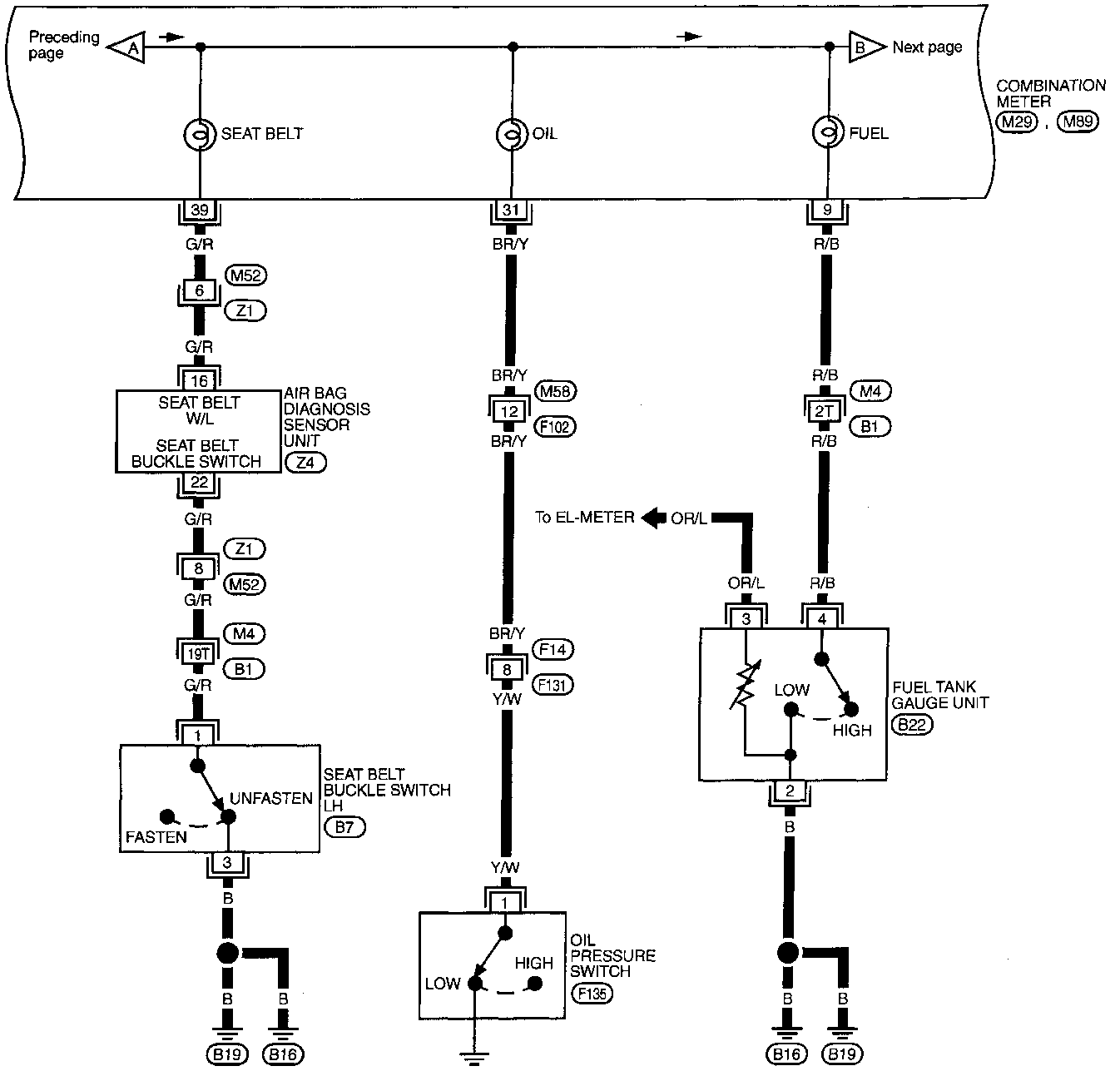
F101

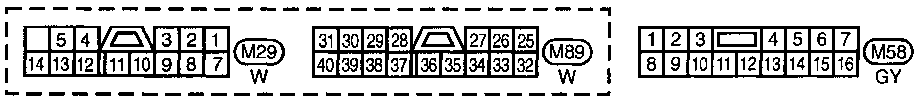
Z4

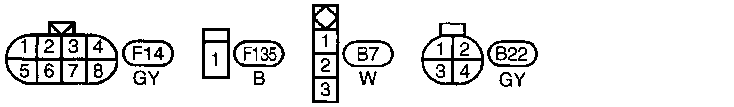
MEL080J

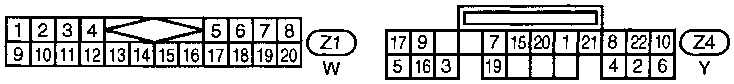
Wiring Diagram — WARN — (Cont'd)

EL-WARN-02







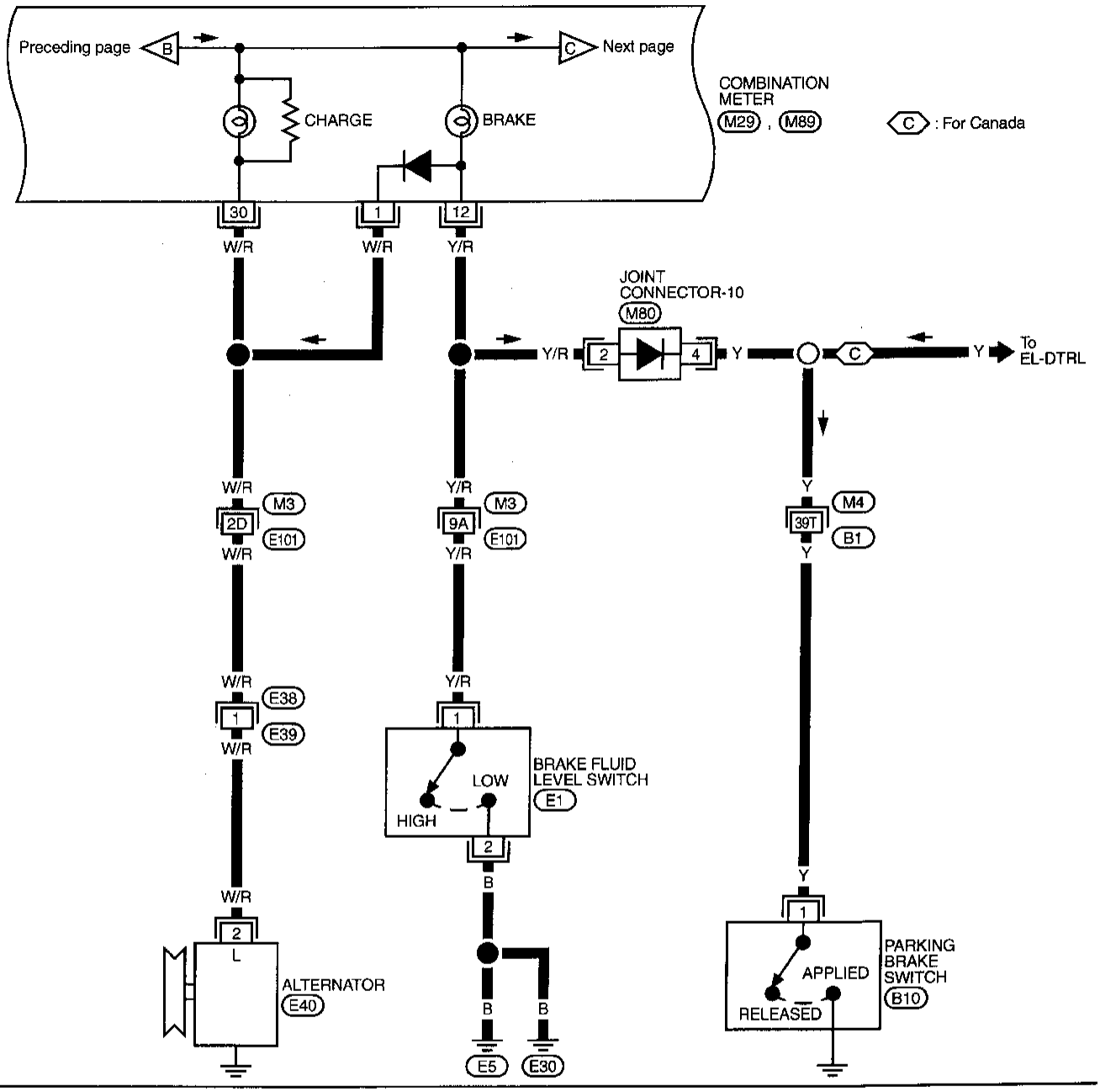


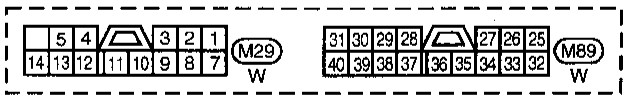
Refer to last page (Foldout page).
M4 , B1

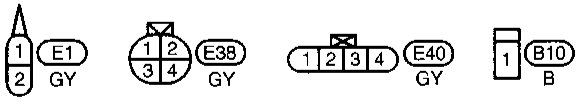
MEL081J

Wiring Diagram — WARN — (Cont'd)

EL-WARN-03





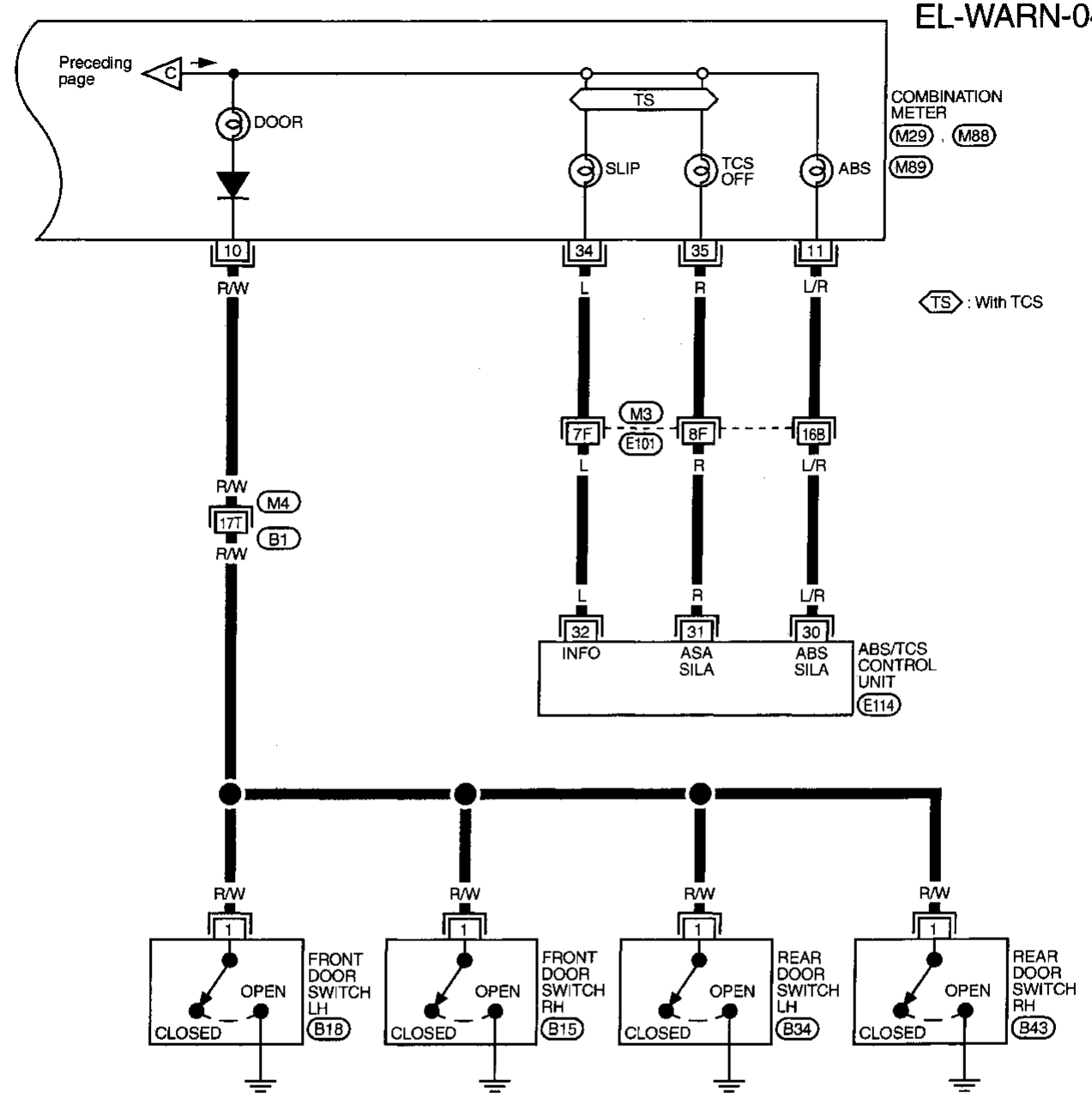


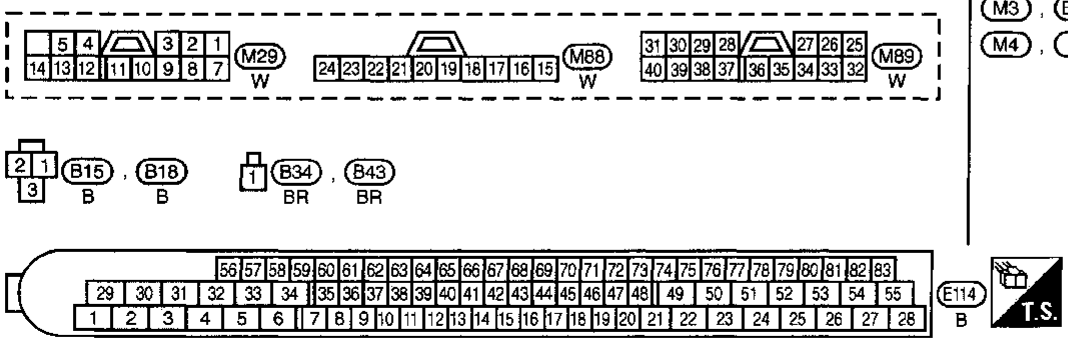
Refer to last page (Foldout page).
M3 , E101
M4 , B1

MEL082J

Wiring Diagram — WARN — (Cont'd)

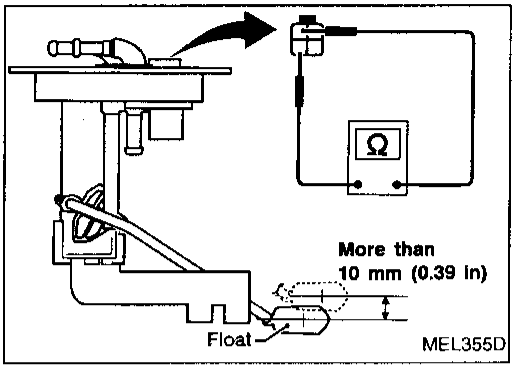
EL-WARN-04





Refer to last page (Foldout page).
M3 , E101
M4 , B1

MEL083J

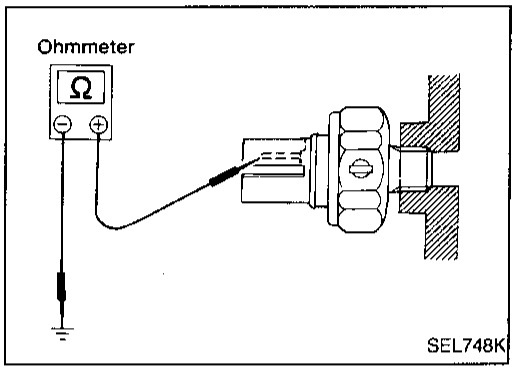


Electrical Components Inspection

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.

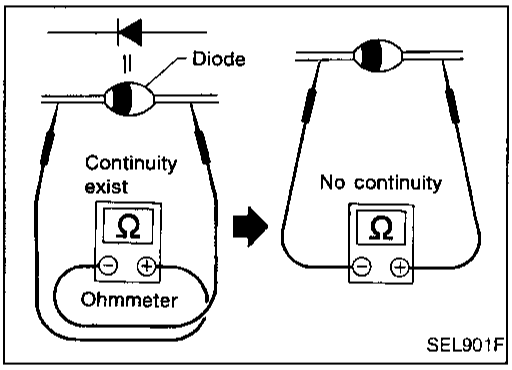
CAUTION:
Do not move the float beyond its mobile range.



OIL PRESSURE SWITCH CHECK

	Oil pressure kPa (kg/cm^2, 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

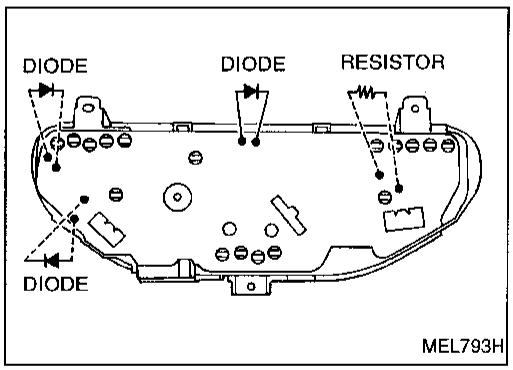
Check the continuity between the terminals of oil pressure switch and body ground.



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 terminals ① and ③ of tail lamp relay.

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 ㉗.

Ground is supplied to BCM terminal ③ through body grounds M13, M73 and M103.
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 ㉛.

Ground is supplied
- from front door switch LH terminal ②
- to BCM terminal ㉙.

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 ㉜.

Ground is supplied
- from front door switch LH terminal ②
- to BCM terminal ㉙.

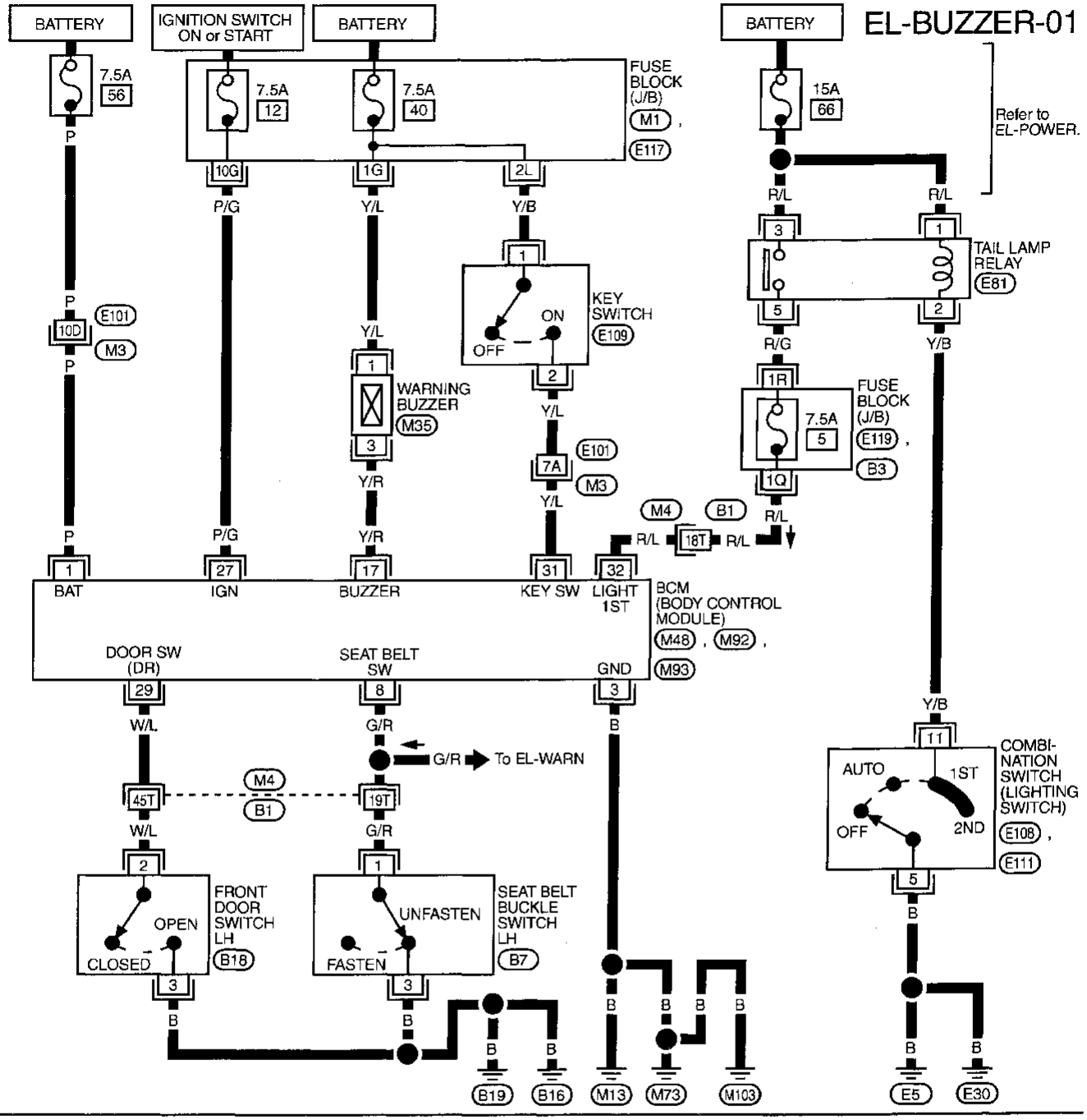
Front door switch LH terminal ③ is grounded through body grounds B16 and B19.

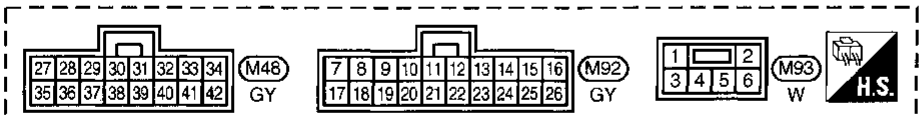
Seat belt warning buzzer

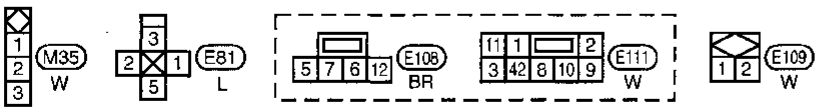
With ignition switch turned ON and seat belt unfastened (seat belt switch ON), warning buzzer will sound for approximately 6 seconds.
Ground is supplied
- from seat belt switch terminal ①
- to BCM terminal ⑧.

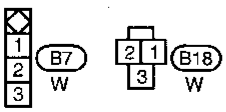
Seat belt switch terminal ③ is grounded through body grounds B16 and B19.

Wiring Diagram — BUZZER —





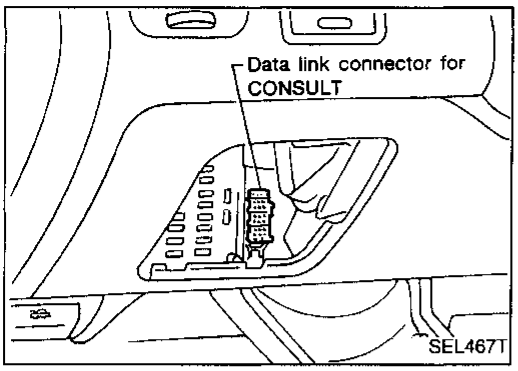




Refer to last page (Foldout page).

M1
M3, E101
M4, B1
E117
E119
B3

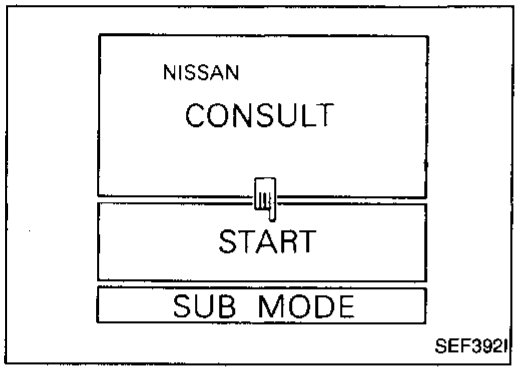
MEL084J



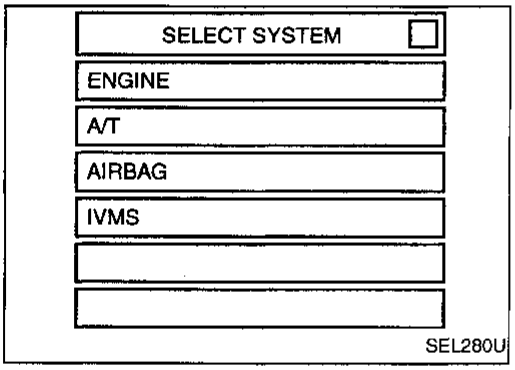
CONSULT

CONSULT INSPECTION PROCEDURE

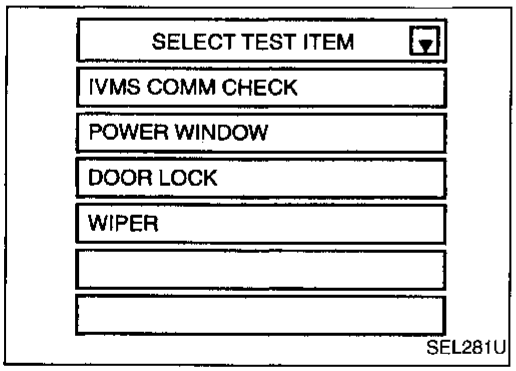
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



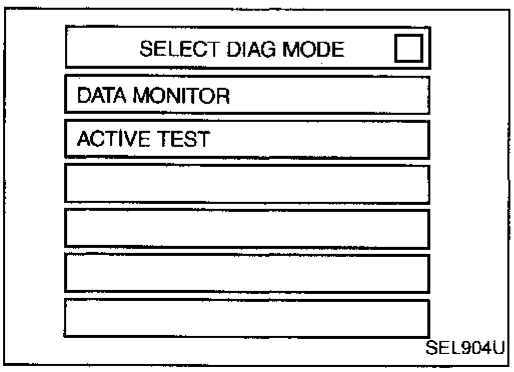
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



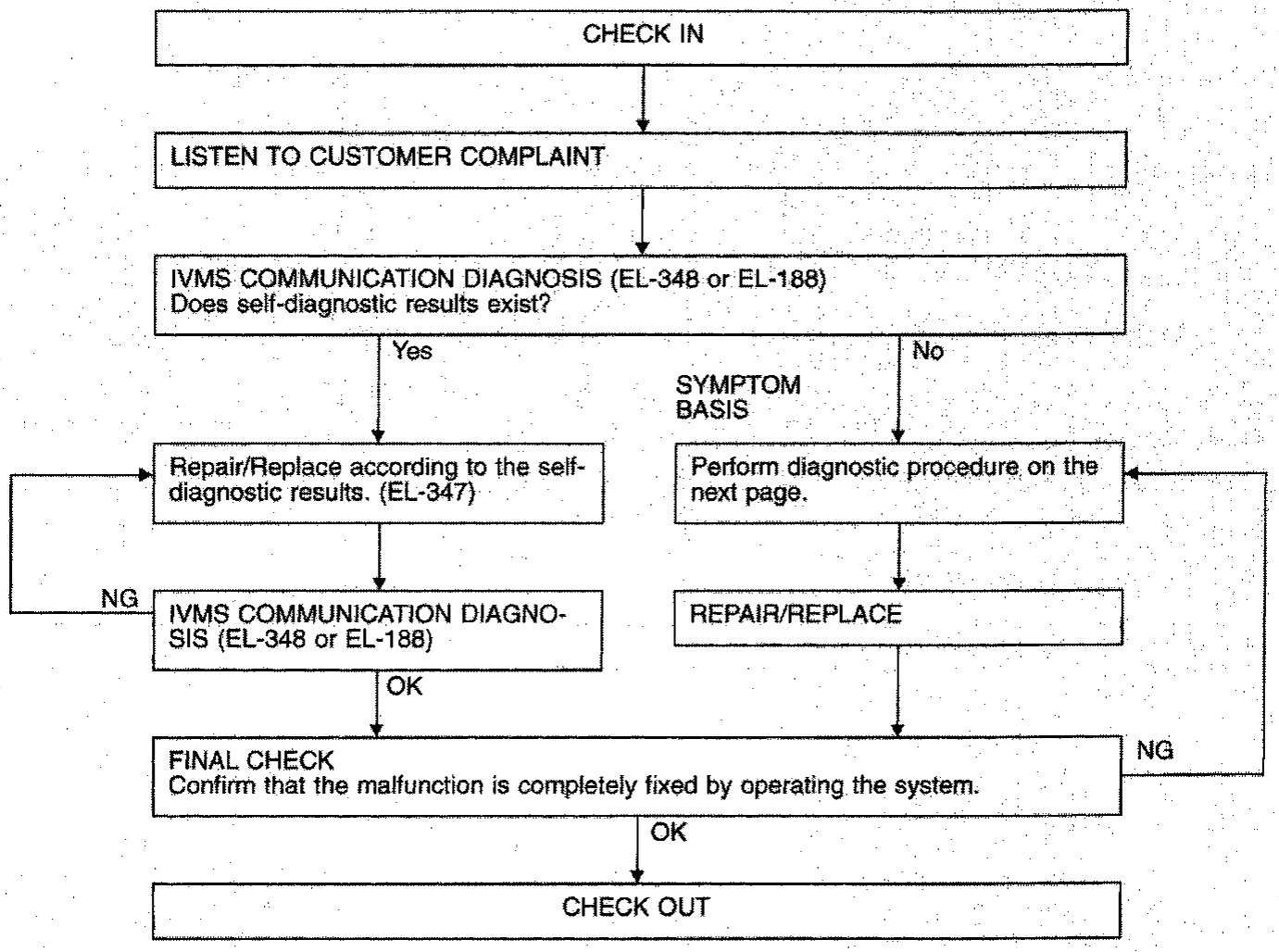
6. Touch "IGN KEY WARN ALM", "LIGHT WARN ALM" or "SEAT BELT TIMER".



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

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-348) 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)

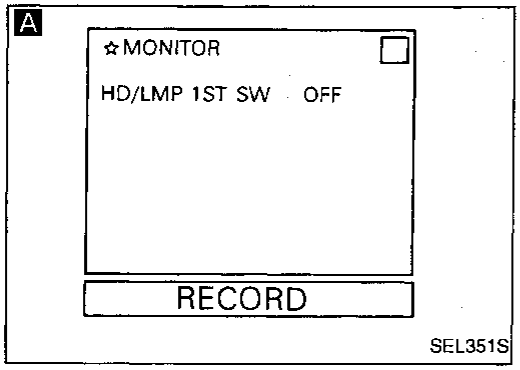
SYMPTOM CHART

REFERENCE PAGE	EL-103	EL-103	EL-104	EL-104
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

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-190.

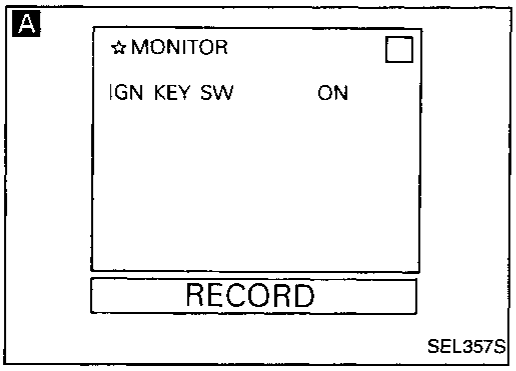
NG → Check the following.
- 7.5A fuse (No. 5, located in the fuse block)
- Harness for open or short between fuse and BCM

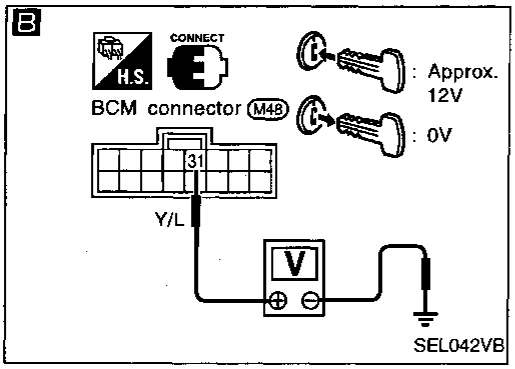
OK ↓

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

B TESTER

Check voltage between BCM terminal ㉛ 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

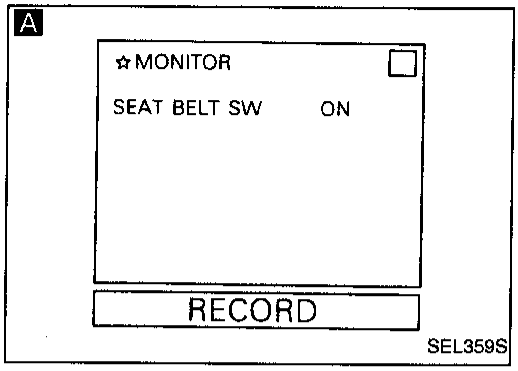
OK ↓

Go to Procedure 4.

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

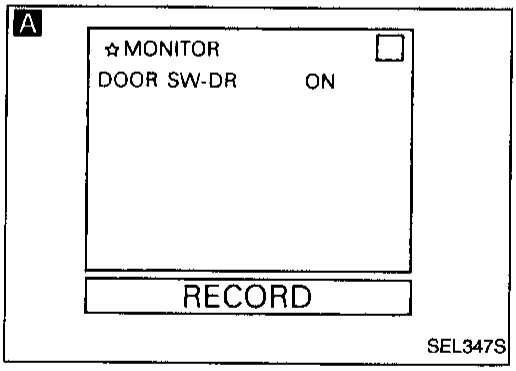
ON BOARD

Perform On board diagnosis — Mode II (switch monitor) for seat belt buckle switch. Refer to EL-190.

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-190.

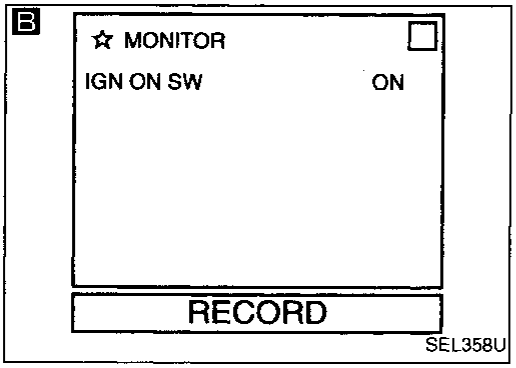
NG → Check the following.
- Driver door switch
- Driver door switch ground circuit
- Harness for open or short between driver door switch and BCM

OK ↓

Ⓐ

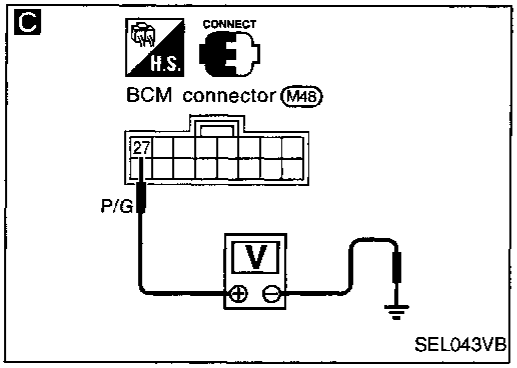
Trouble Diagnoses (Cont'd)

B



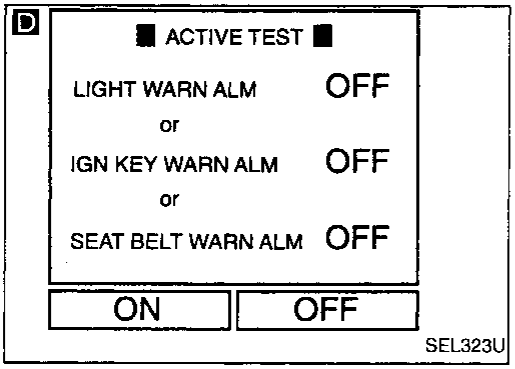
SEL358U

C



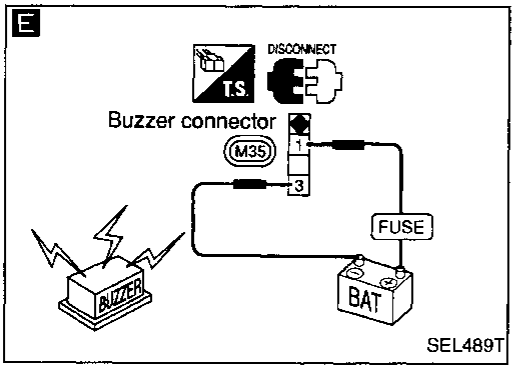
SEL043VB

D



SEL323U

E



SEL489T

Ⓐ

CHECK IGNITION ON INPUT 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

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

OR

C TESTER

Check voltage between BCM terminal ㉗ and ground.

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

OK ↓

D

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 ↓

E

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 M103.

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 ⑲.

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

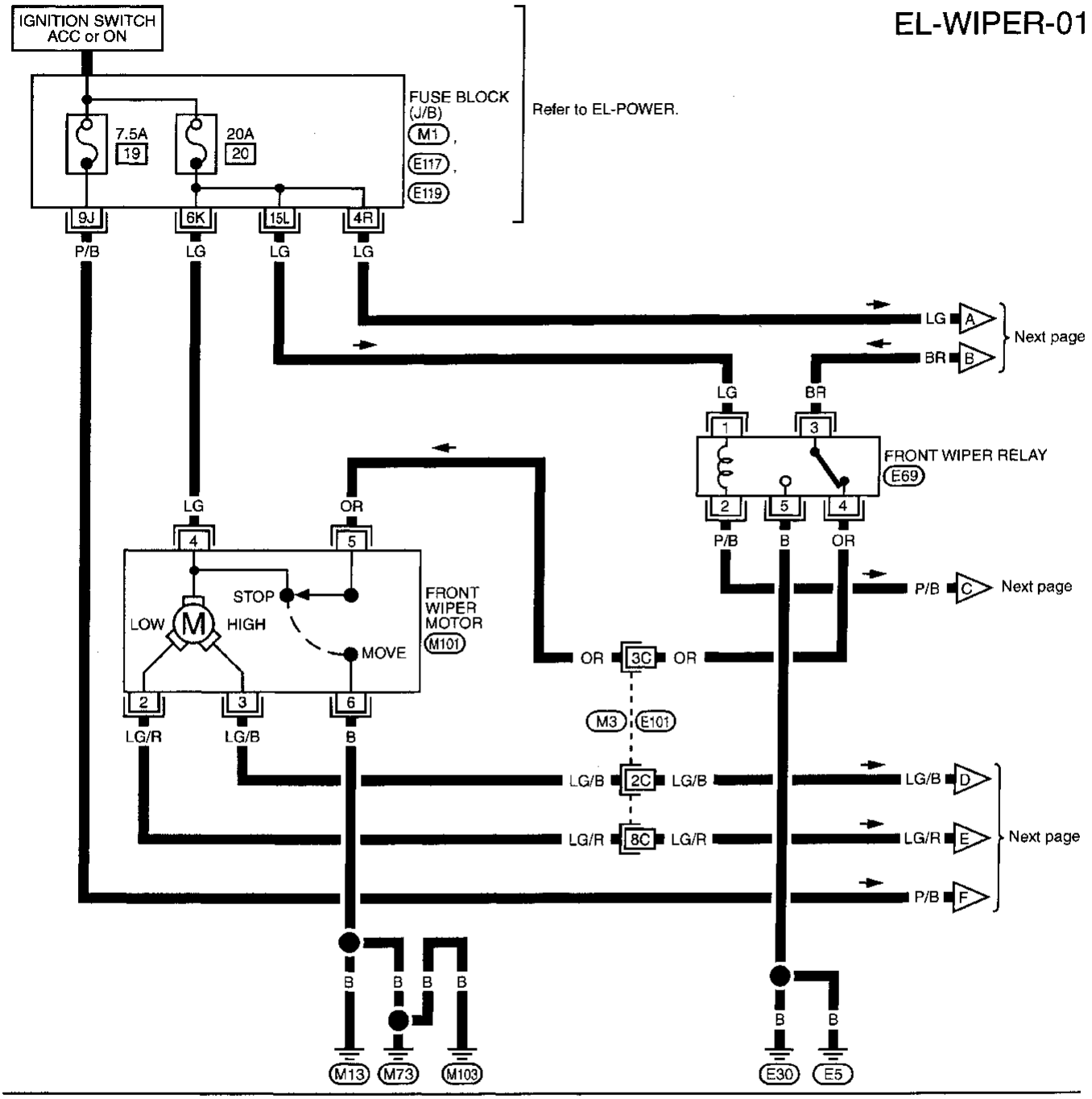
System Description (Cont'd)

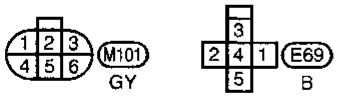
- to BCM terminal ㉞
- from terminal ⑱ of the front wiper switch
- through terminal ⑰ of the front wiper switch, and
- through body grounds E5 and E30.

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.

Wiring Diagram — WIPER —





Refer to last page (Foldout page).

M1

M3, E101

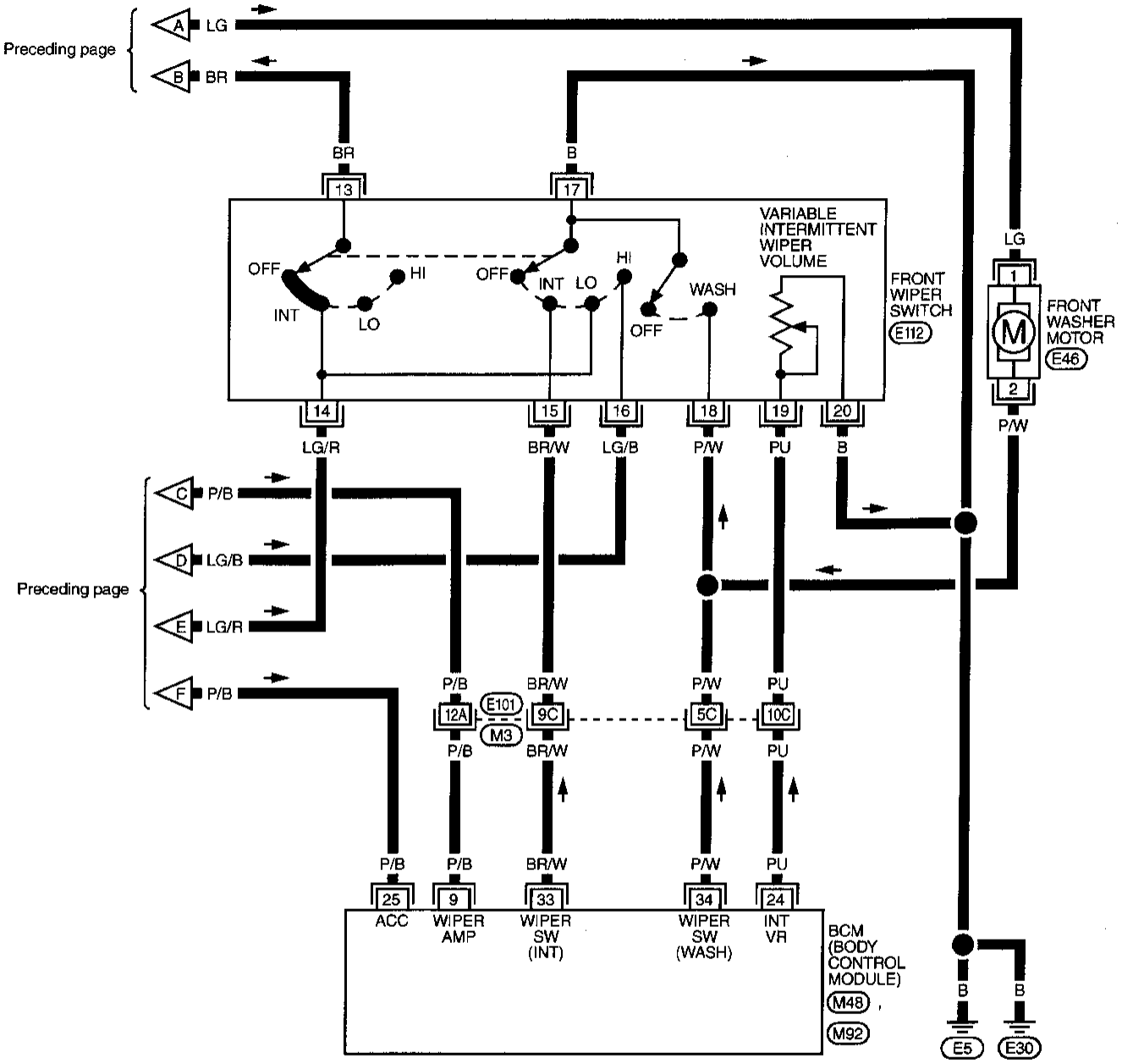
E117

E119

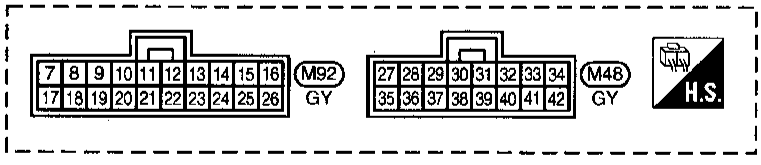
MEL701H

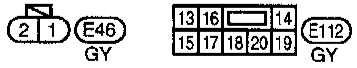
Wiring Diagram — WIPER — (Cont'd)

EL-WIPER-02

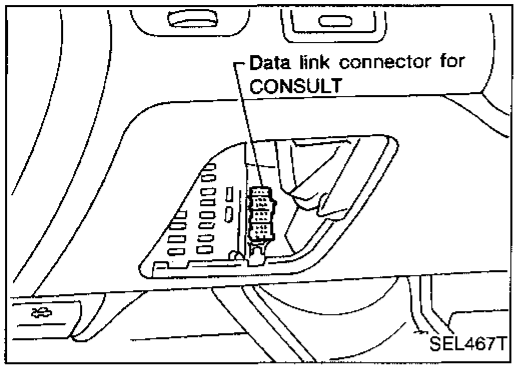


Refer to last page (Foldout page).
M3 , E101





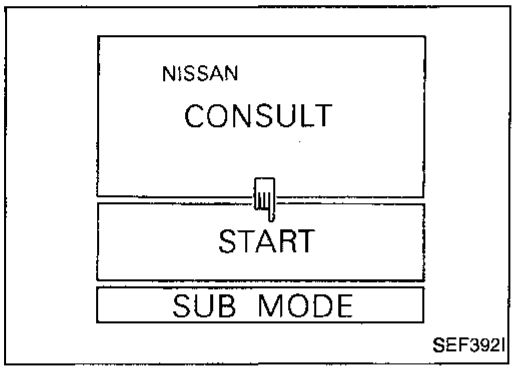
MEL702H



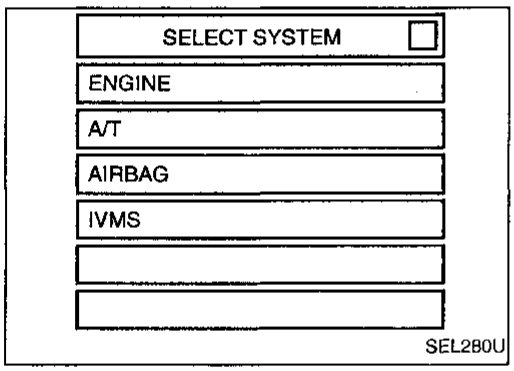
CONSULT

CONSULT INSPECTION PROCEDURE

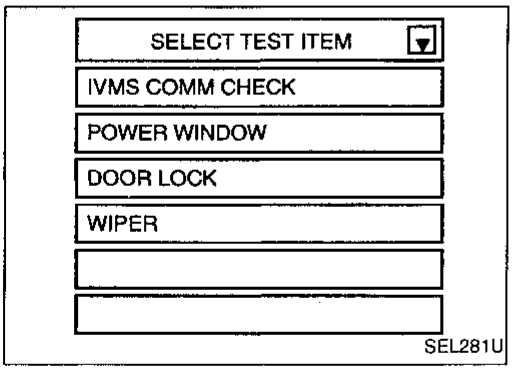
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



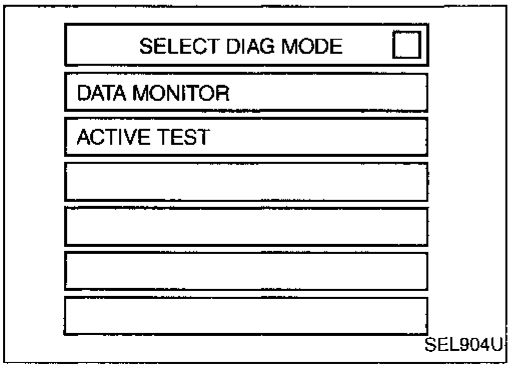
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



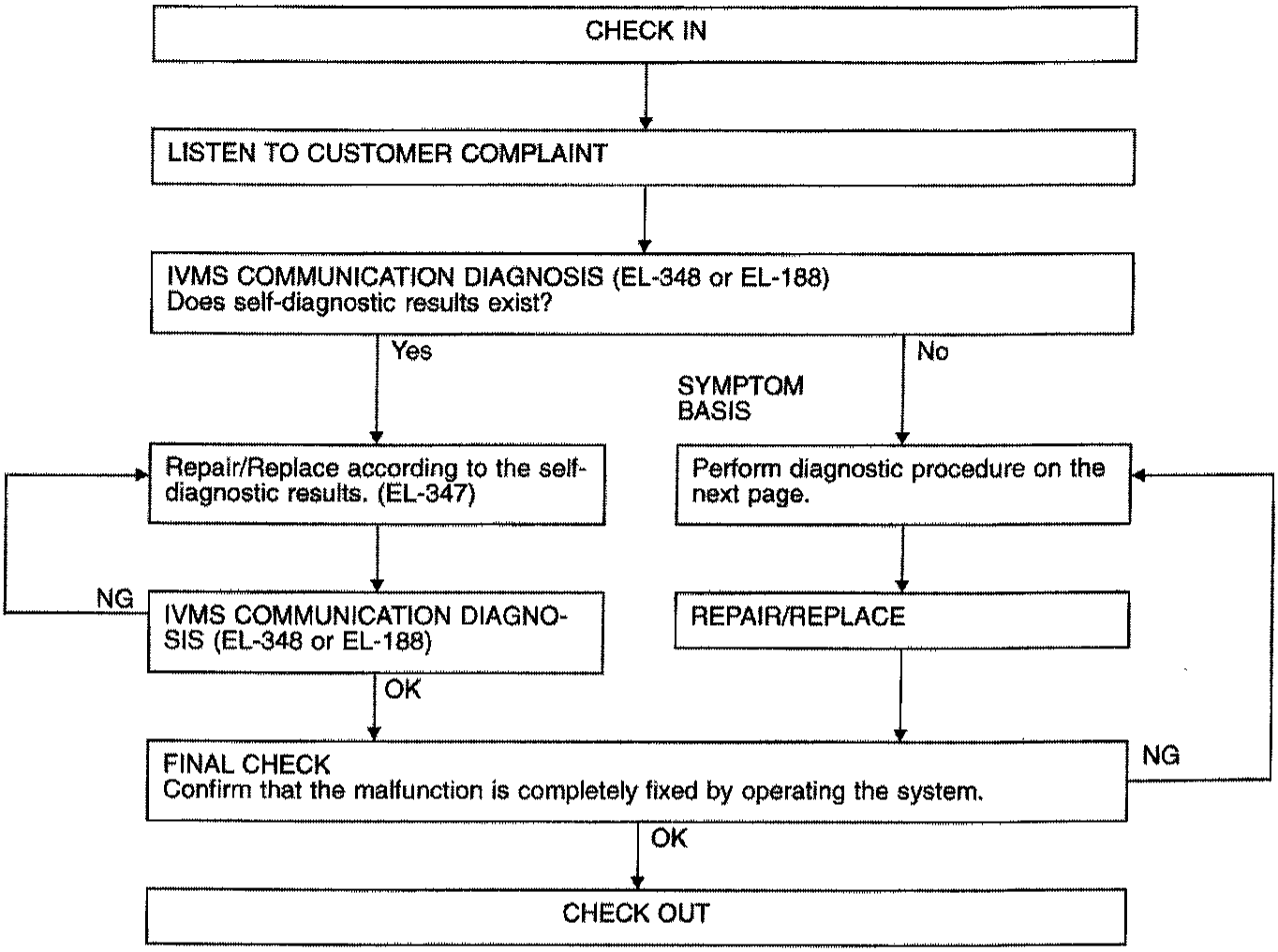
6. Touch "WIPER".



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

Trouble Diagnoses

WORK FLOW



NOTICE:

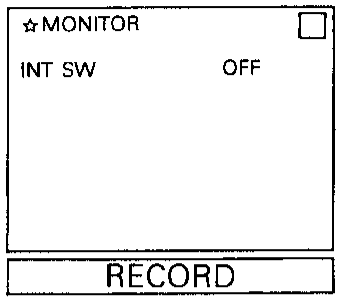
- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT (refer to EL-348) 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)

DIAGNOSTIC PROCEDURE 1

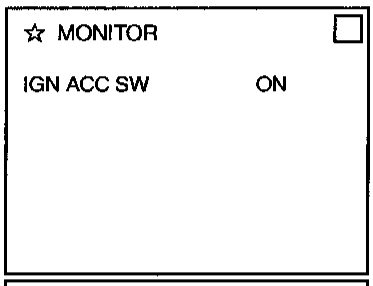
SYMPTOM: Intermittent wiper does not operate.

A



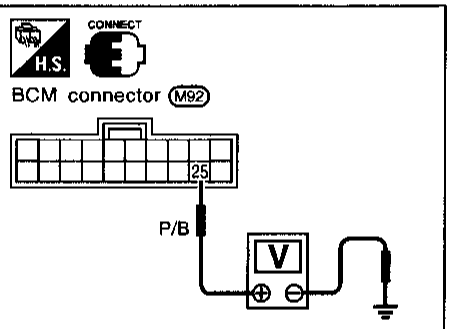
SEL340S

B



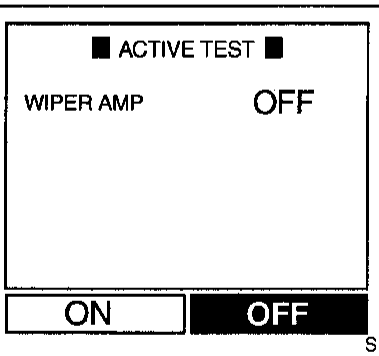
SEL919U

C



SEL052VB

D



SEL649U

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-190.

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.

OK ↓

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.

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

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

OK ↓

D

CHECK WIPER OPERATION

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.

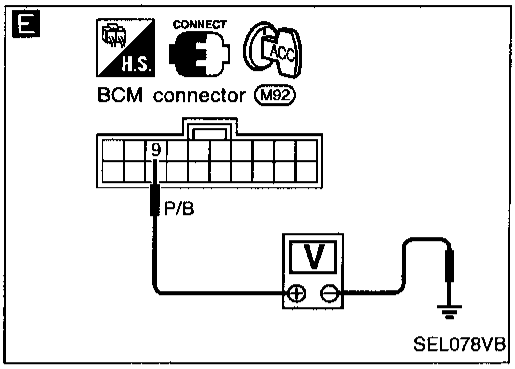
NG ↓

Check wiper relay. → NG → Replace wiper relay.

OK ↓

Ⓐ

Trouble Diagnoses (Cont'd)



Ⓐ

E

INTERMITTENT OPERATION CHECK

1. Turn ignition switch to "ACC".
2. Measure voltage between BCM terminal ⑨ and ground under the following condition.

Condition of wiper switch	Voltage [V]
OFF	Approx. 12
INT	Pointer swings from 0V to battery voltage every 2 to 21 seconds depending on intermittent wiper volume setting.

NG → Replace BCM.

OK ↓

Check the following.

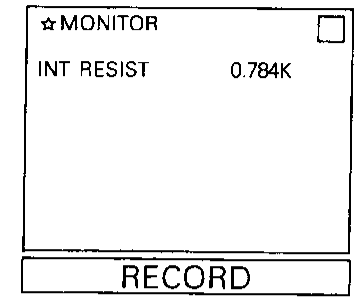
- 20A fuse [No. 20, located in the fuse block (J/B)]
- Harness for open or short between fuse and wiper relay
- Harness for open or short between wiper relay and BCM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

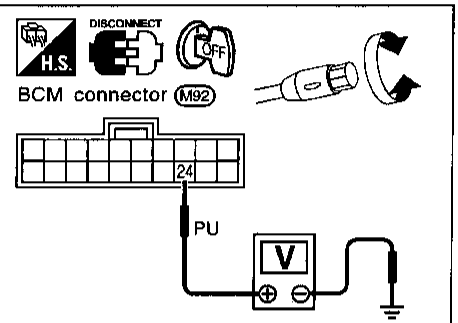
SYMPTOM: Intermittent time of wiper cannot be adjusted.

A



SEL342S

B



SEL079VB

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

OK → Replace BCM.

OR

B TESTER

Measure resistance between BCM terminal ㉔ and ground while turning intermittent wiper volume.

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

NG ↓

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

NG → Replace intermittent wiper volume.

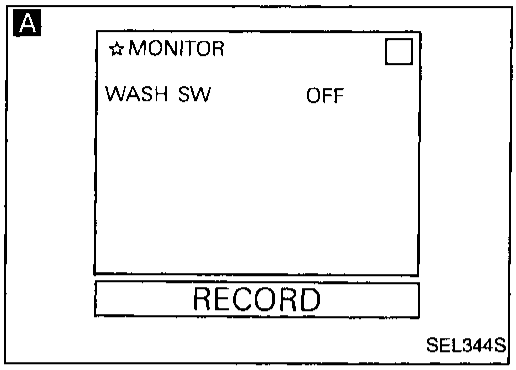
OK ↓

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

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

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

OR

ON BOARD

Perform On board diagnosis — Mode II (switch monitor) for wiper switch (WASH). Refer to EL-190.

OK ↓

Replace BCM.

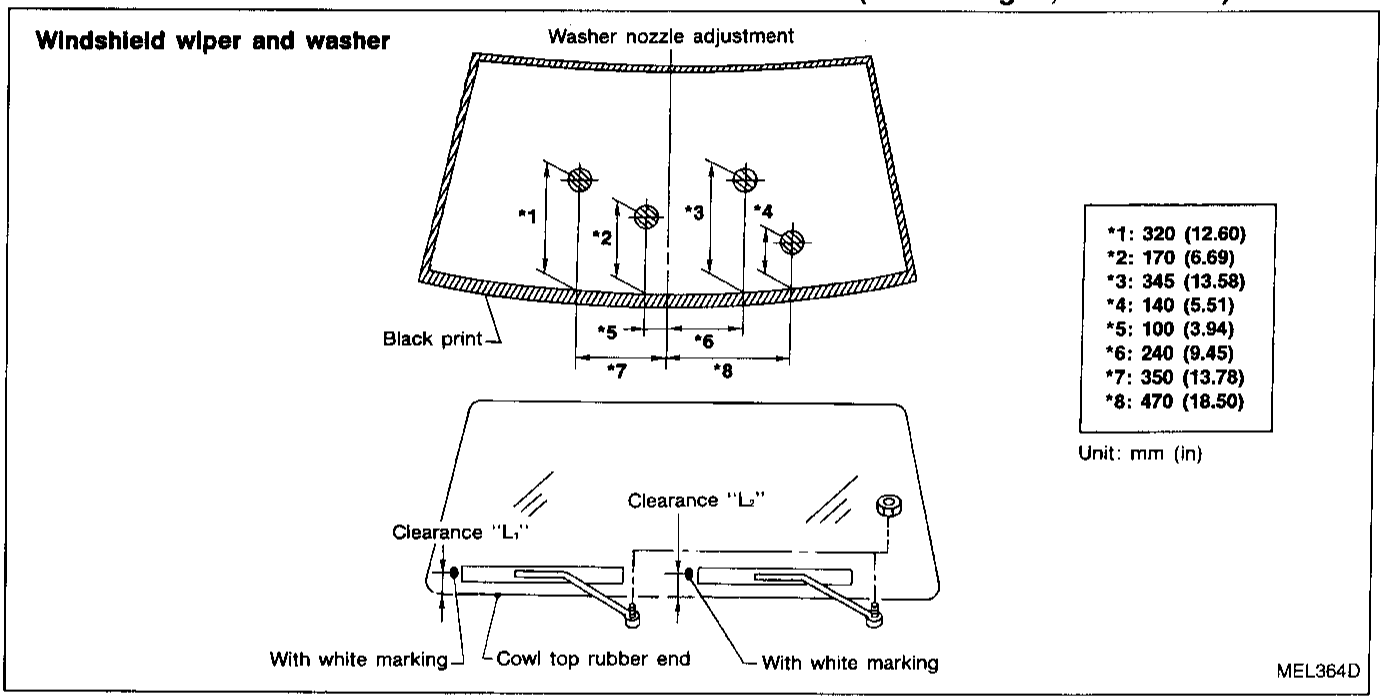
Removal and Installation

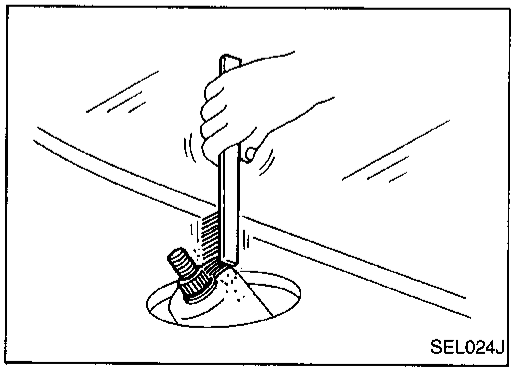
WIPER ARMS

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_1" or "L_2" 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_1" & "L_2".
   Clearance "L_1": 40 - 56 mm (1.57 - 2.20 in)
   Clearance "L_2": 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)

Windshield wiper and washer

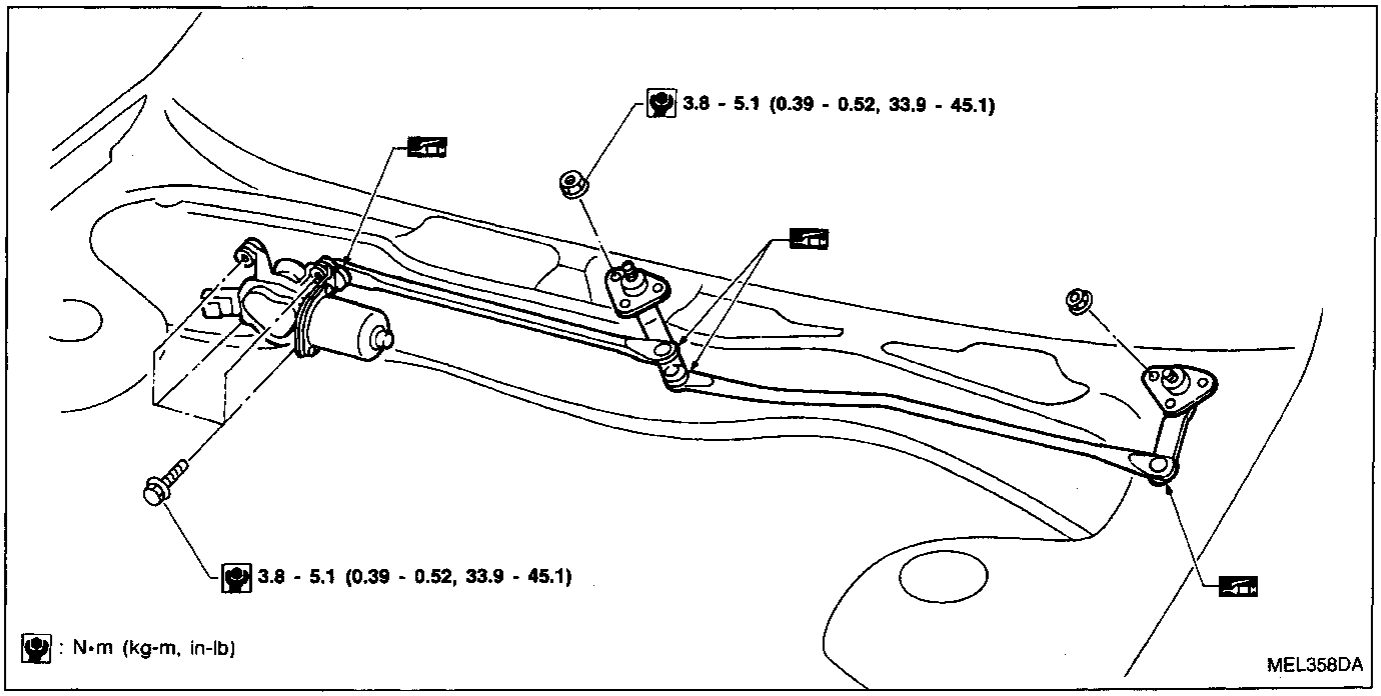




- **Before reinstalling wiper arm, clean up the pivot area as illustrated. This will reduce possibility of wiper arm looseness.**

Removal and Installation (Cont'd)

WIPER LINKAGE



Removal

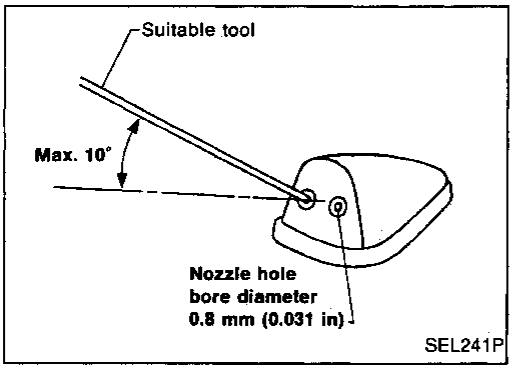
1. Remove 4 bolts that secure wiper motor.
2. Detach wiper motor from wiper linkage at ball joint.
3. Remove wiper linkage.

Be careful not to break ball joint rubber boot.

Installation

- Grease ball joint portion before installation.

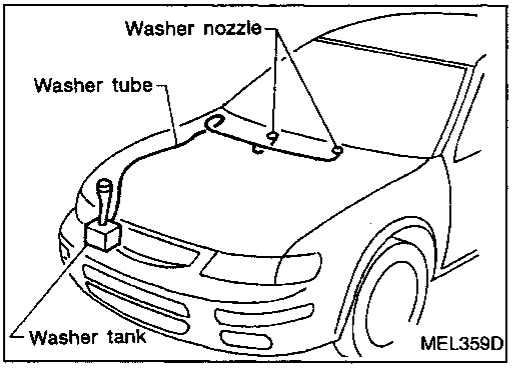
Installation is in reverse order of removal.



Washer Nozzle Adjustment

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

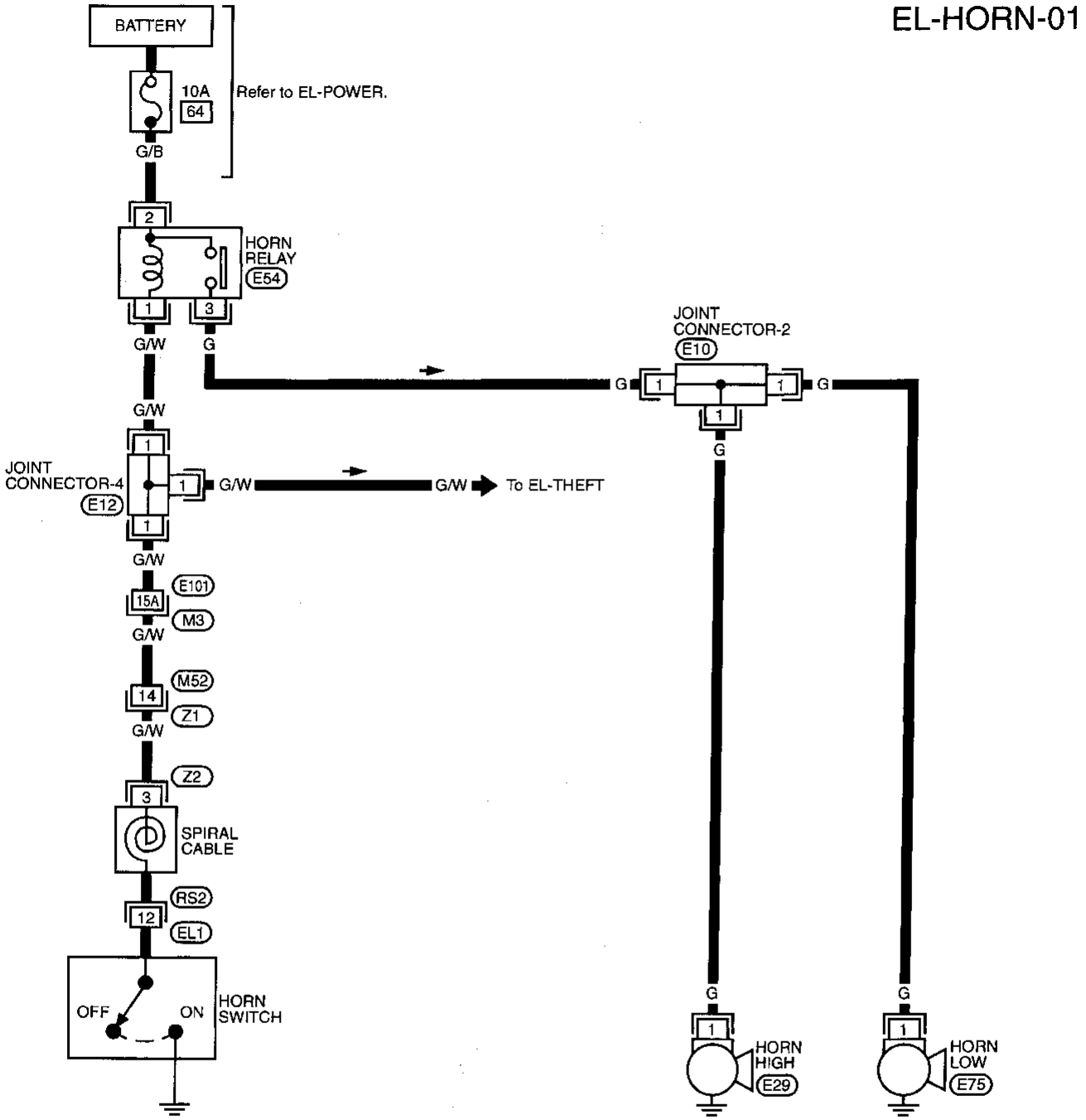
  Adjustable range: ±10°

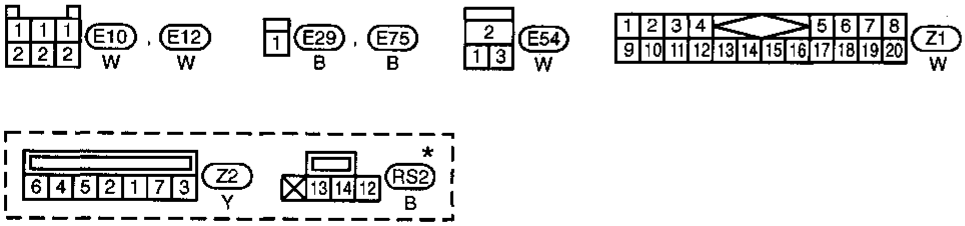


Check Valve (Built in washer nozzles)

Wiring Diagram — HORN —

EL-HORN-01





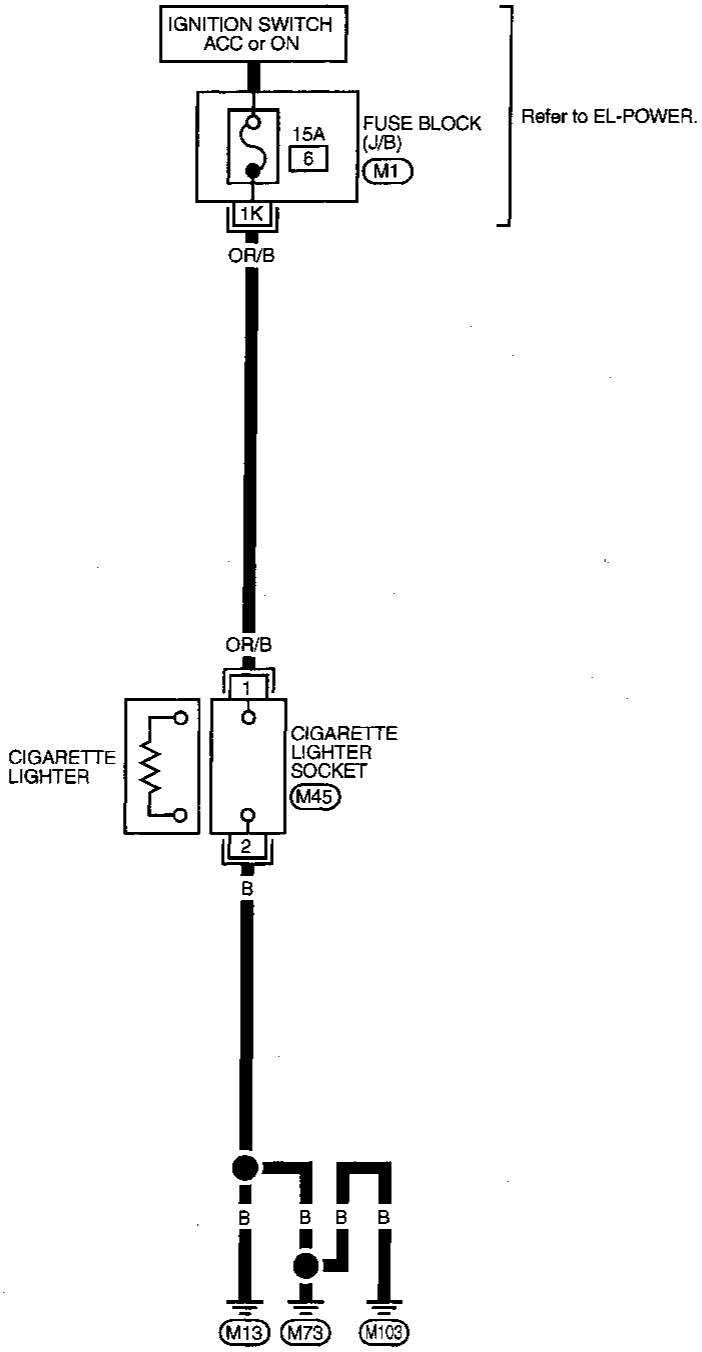
* : This connector is not shown in "HARNESS LAYOUT" of EL section.

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

MEL086J

Wiring Diagram — CIGAR —

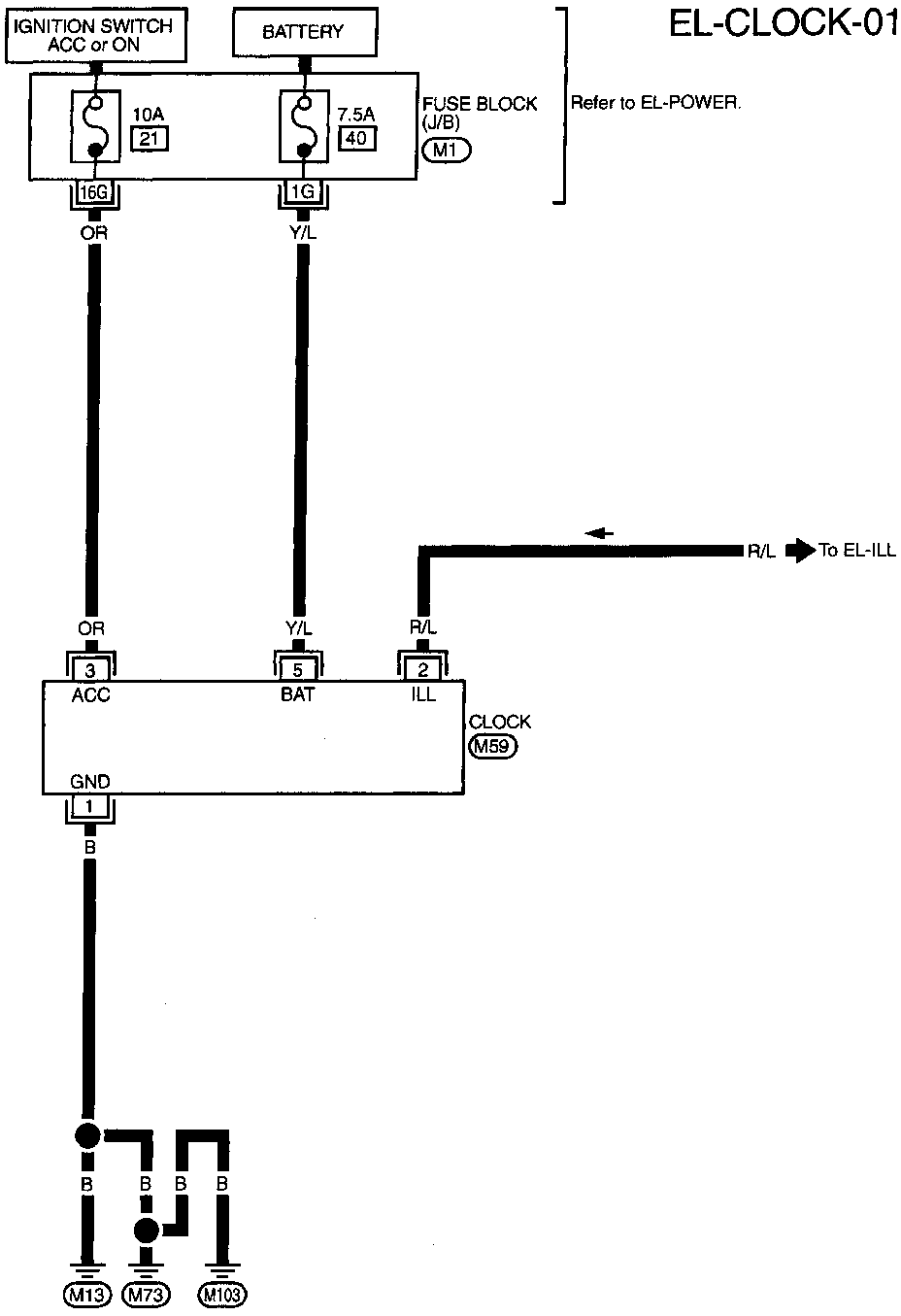
EL-CIGAR-01

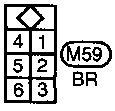


Refer to last page (Foldout page).
M1

MEL705H

Wiring Diagram — CLOCK —





Refer to last page (Foldout page).
M1

MEL704H

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

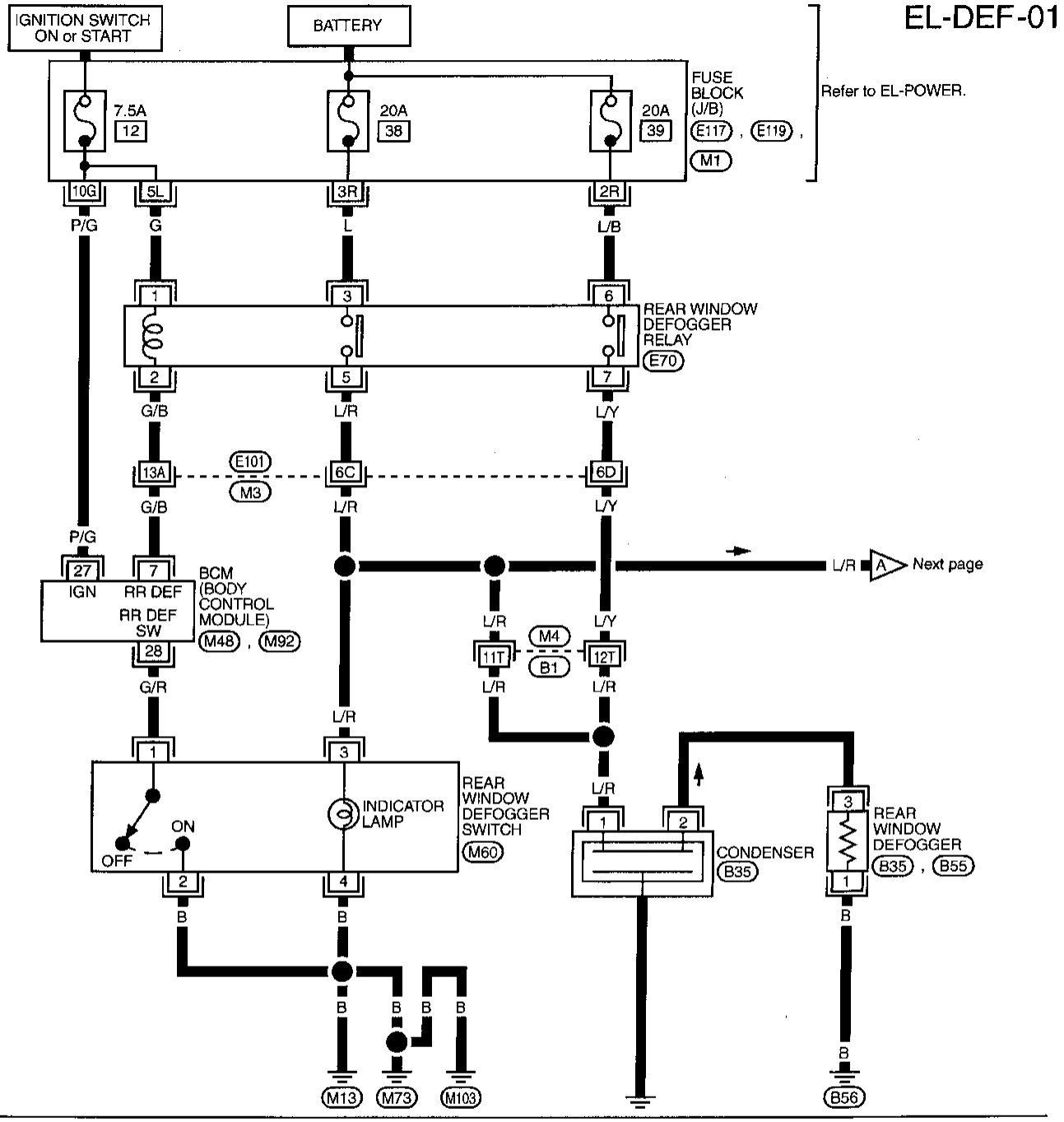
- through 7.5A fuse [No. 12, located in the fuse block (J/B)]
- to the rear window defogger relay terminal ① and,
- to BCM terminal ㉗.

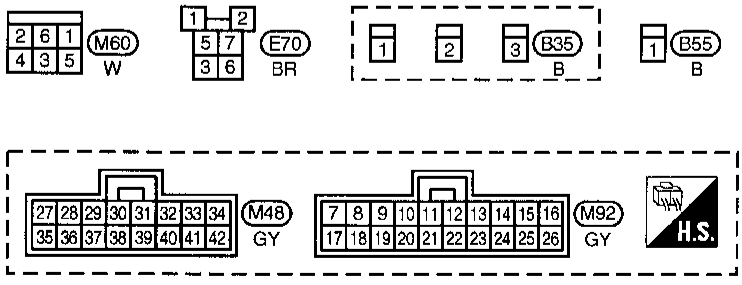
When the rear window defogger switch is ON, ground is supplied

- 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.

Wiring Diagram — DEF —





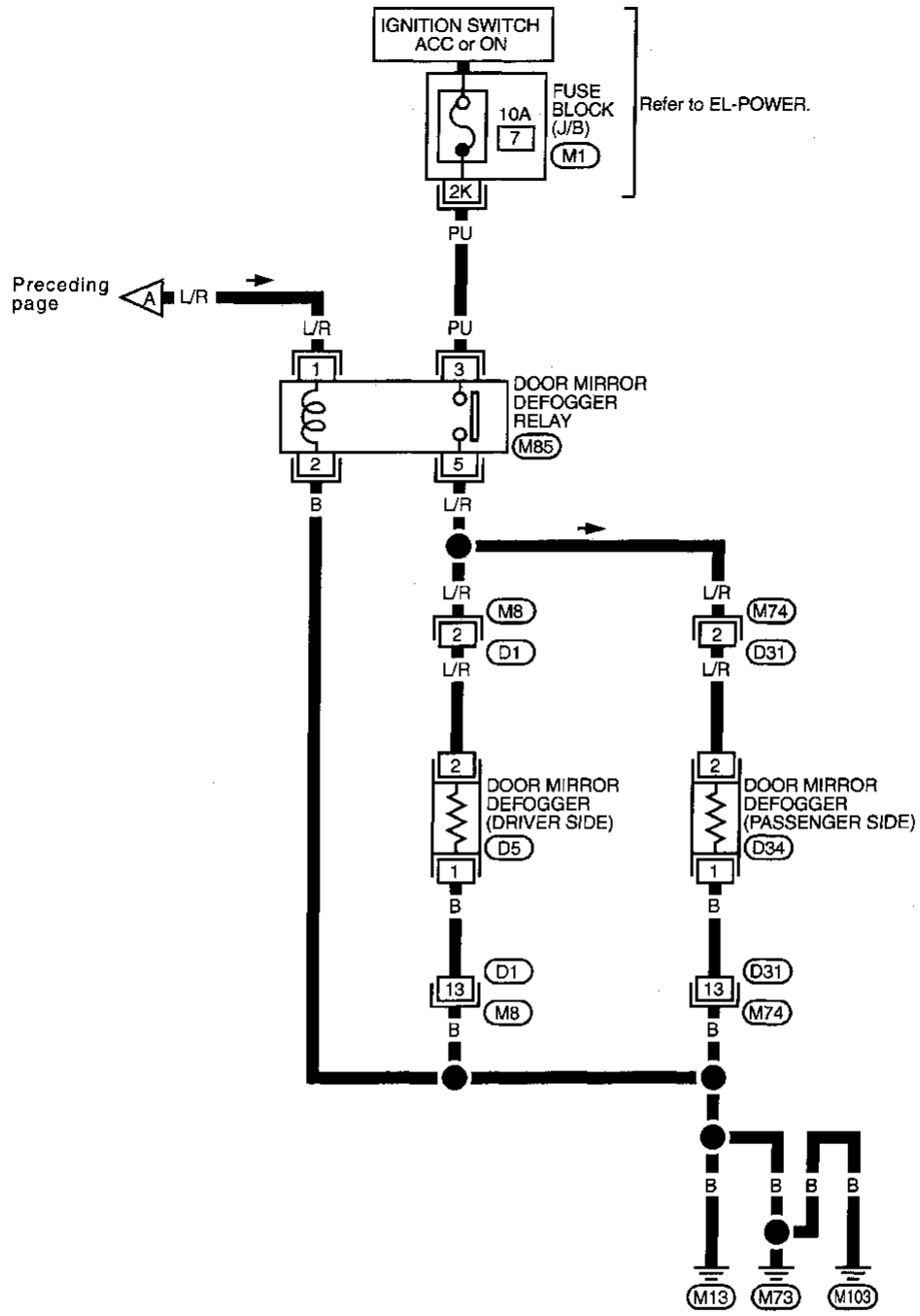
Refer to last page (Foldout page).

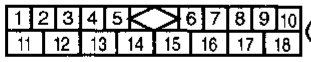
M1
M3, E101
M4, B1
E117
E119

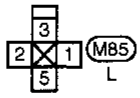
MEL087J

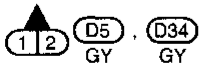
Wiring Diagram — DEF — (Cont'd)

EL-DEF-02





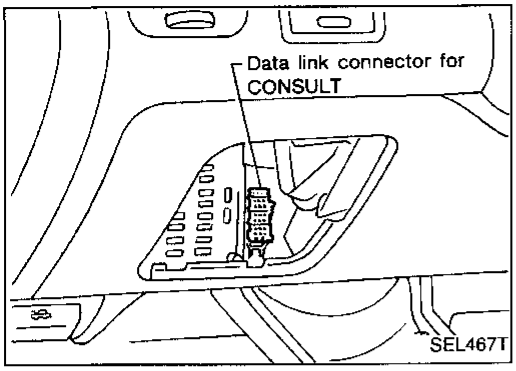




Refer to last page (Foldout page).

M1

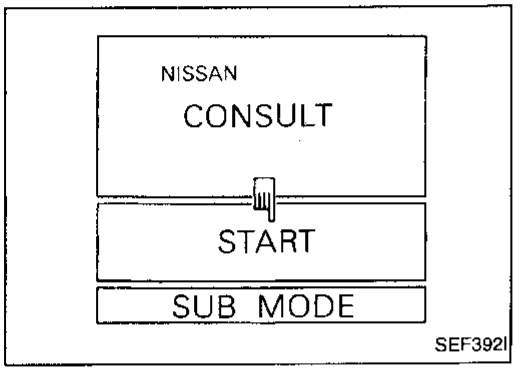
MEL088J



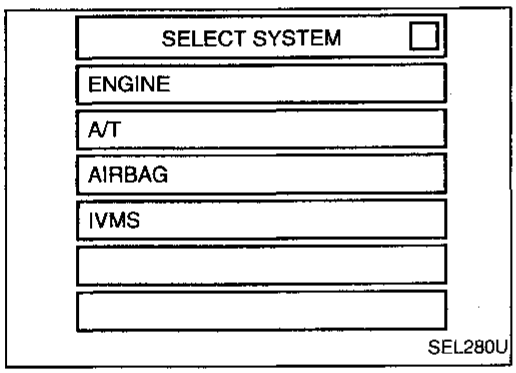
CONSULT

CONSULT INSPECTION PROCEDURE

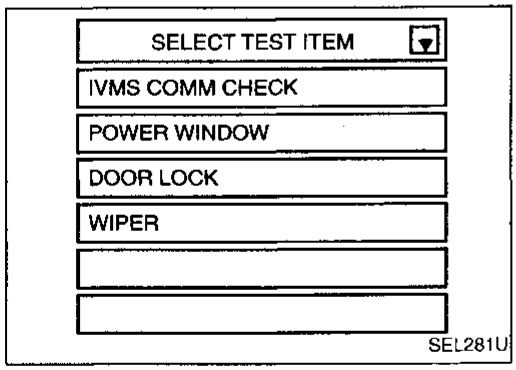
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



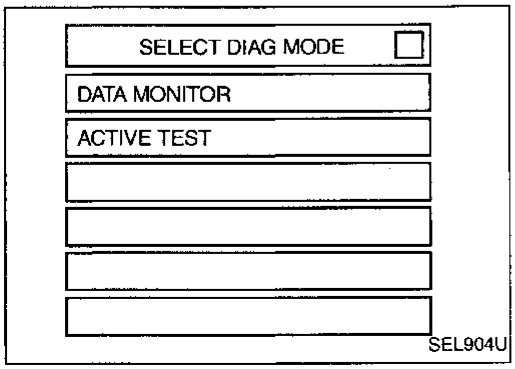
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



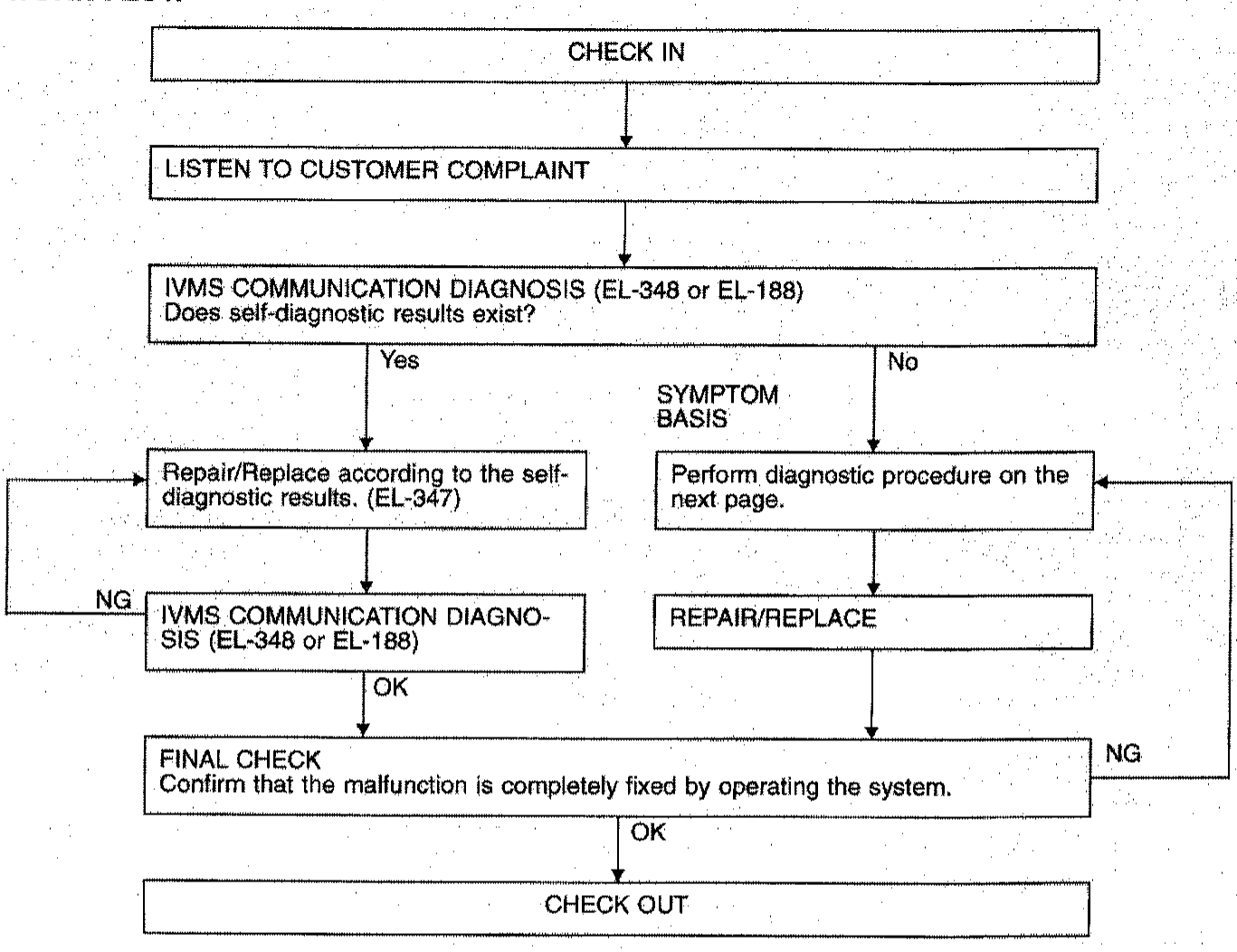
6. Touch "REAR DEFOGGER".



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

Trouble Diagnoses

WORK FLOW



NOTICE:

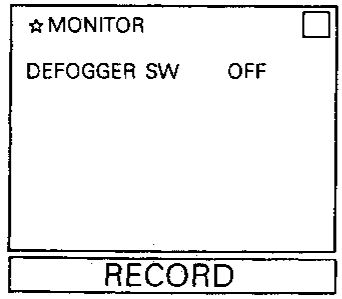
- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT (refer to EL-348) 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)

DIAGNOSTIC PROCEDURE

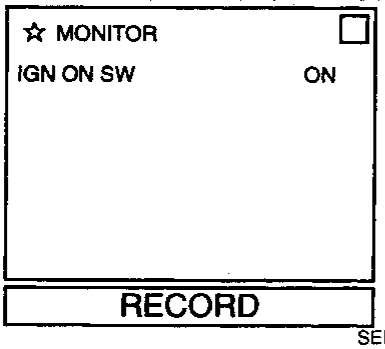
SYMPTOM: Rear window defogger does not activate or does not turn off after activating.

A



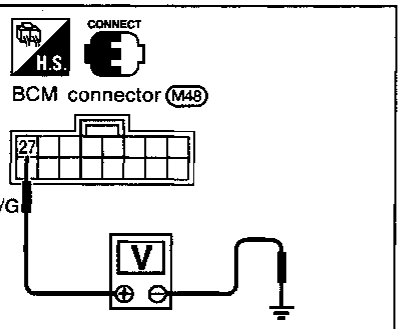
SEL364S

B



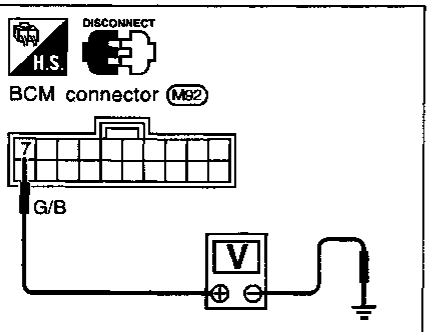
SEL358U

C



SEL043VB

D



SEL076VB

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

OR

ON BOARD

Check rear window defogger switch in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-190.)

NG → Check rear window defogger switch.

OK → Check the following.
- Harness for open or short between BCM and rear window defogger switch
- Rear window defogger switch ground circuit

NG → Replace rear window defogger switch.

OK ↓

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

OR

C TESTER

Check voltage between BCM terminal ㉗ and ground.

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

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 ↓

D

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

NG → Check rear window defogger relay.

OK → 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

NG → Replace relay.

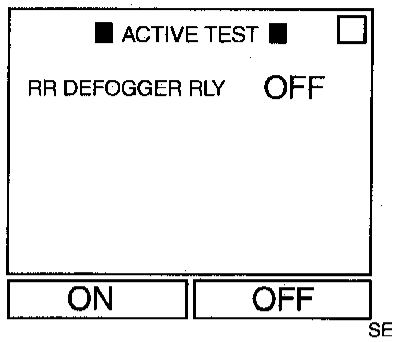
OK ↓

Connect BCM connector.

Ⓐ

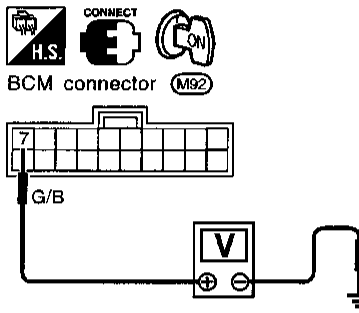
Trouble Diagnoses (Cont'd)

E



SEL667U

F



SEL077VB

Ⓐ

REAR WINDOW DEFOGGER ACTIVE TEST

E CONSULT

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

NG → Replace BCM.

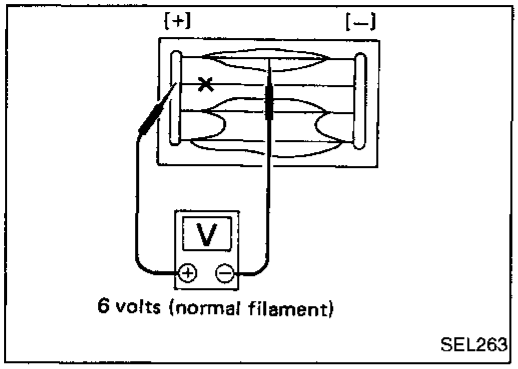
OR

F TESTER

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

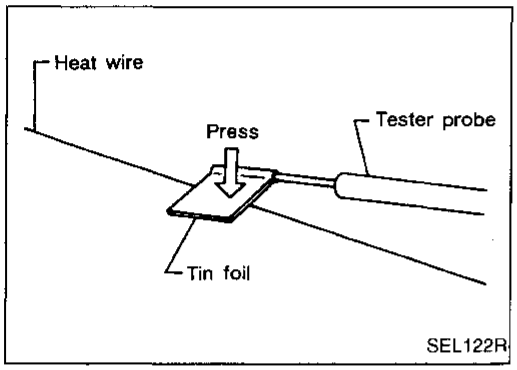
Condition of rear defogger switch	Voltage [V]
ON	0
OFF	Approx. 12

OK → Check rear window defogger circuit.

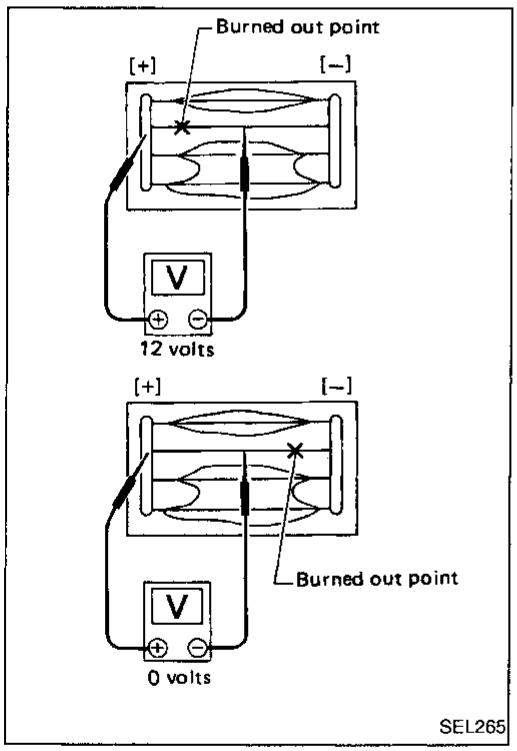


Filament Check

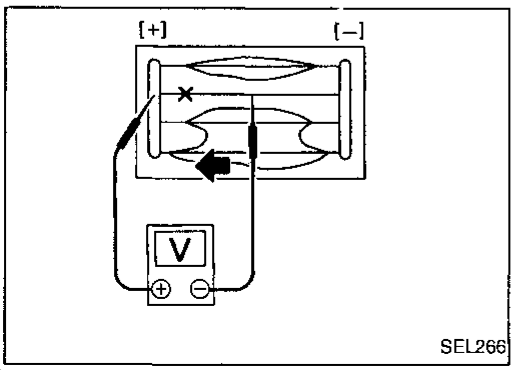
1. Attach probe circuit tester (in volt range) to middle portion of each filament.



- **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.

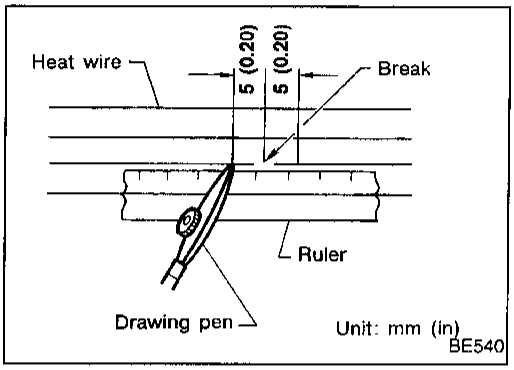


3. To locate burned out point, move probe along filament. Tester needle will swing abruptly when probe passes the point.

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



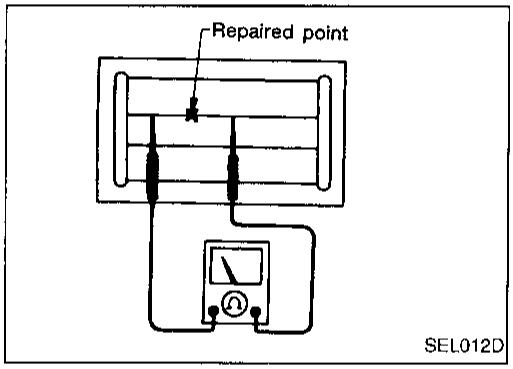
REPAIRING PROCEDURE

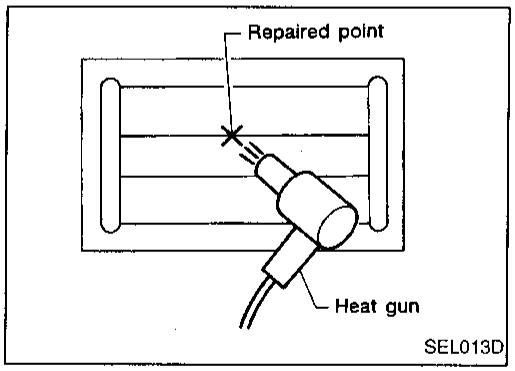
1. Wipe broken heat wire and its surrounding area clean with a cloth dampened in alcohol.
2. Apply a small amount of conductive silver composition to tip of drawing pen.

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.

Power is supplied at all times
- through 15A fuse (No. 62, located in the fuse and fusible link box)
- to radio and CD player 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.

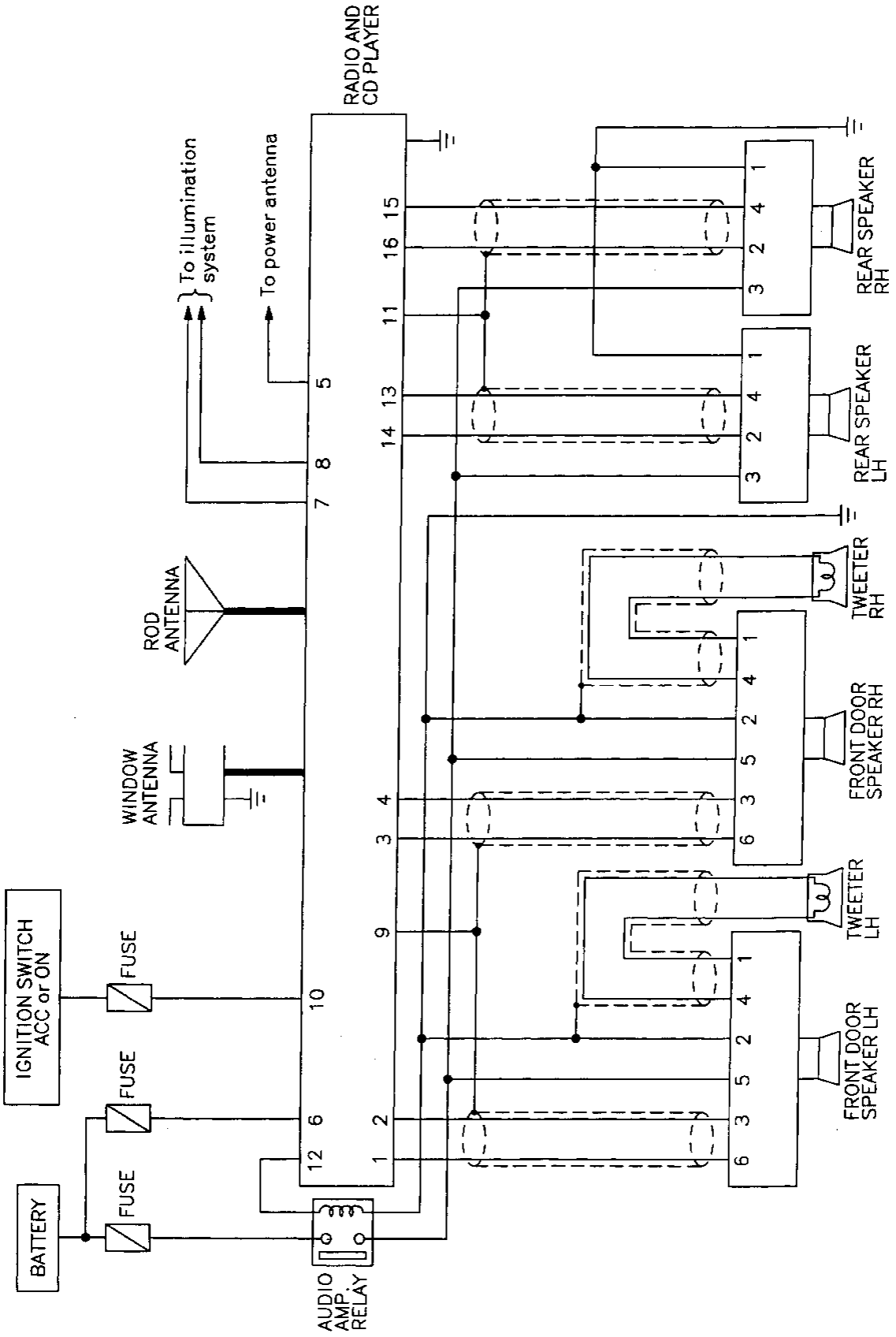
With the ignition switch in the ACC or ON position, power is supplied
- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to radio and CD player terminal ⑩.

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 (M103)
- to rear speaker LH terminal ① and
- to rear speaker RH terminal ①
- through body grounds (B16) and (B19).

When the radio POWER button is pressed, power is supplied to audio amp. relay ① from radio and CD player 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.

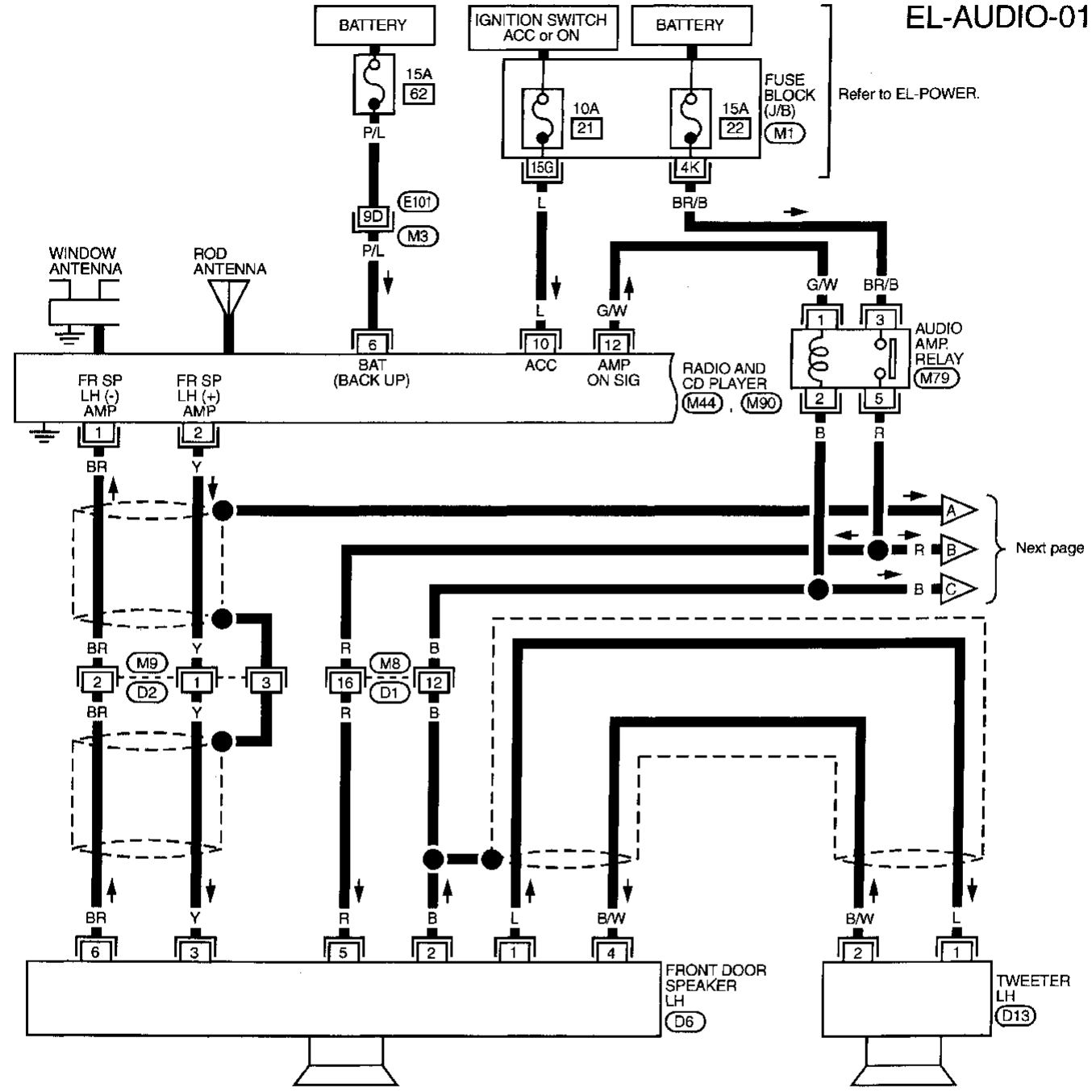
Audio signals are supplied
- through radio and CD player terminals ①, ②, ③, ④, ⑬, ⑭, ⑮ and ⑯
- to terminals ③ and ⑥ of the LH and RH front speakers and terminals ② and ④ of the LH and RH rear speakers
- to LH and RH tweeters through terminals ① and ④ of the front speakers.

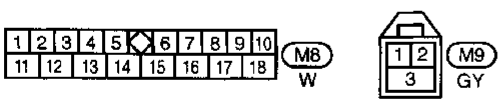
Schematic

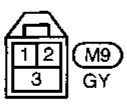


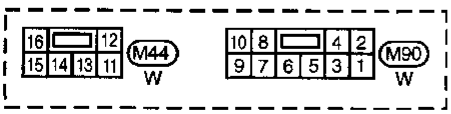
MEL802H

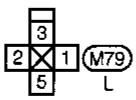
Wiring Diagram — AUDIO —

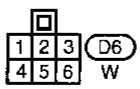


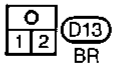










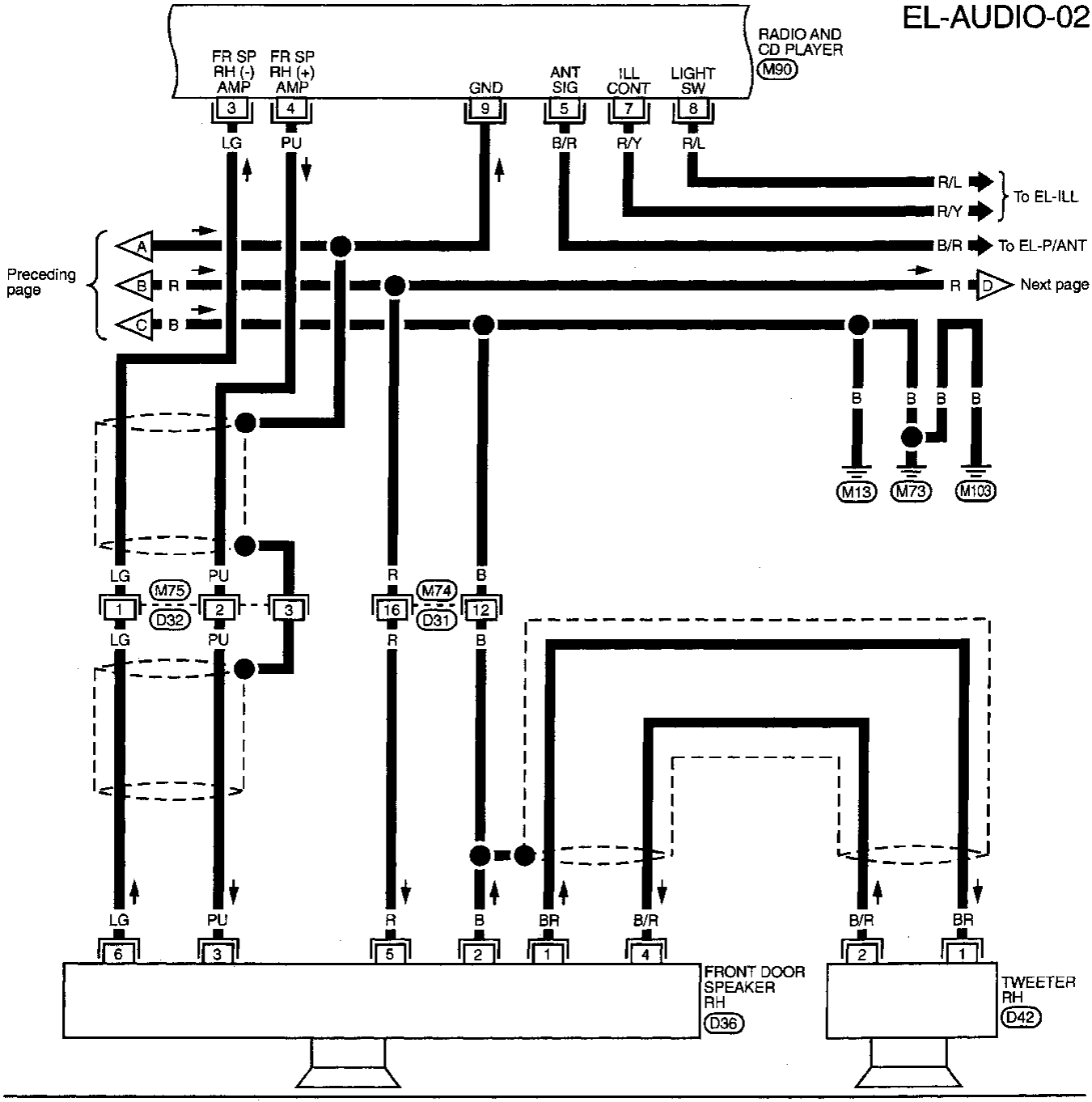


Refer to last page (Foldout page).
M1
M3, E101

MEL708H

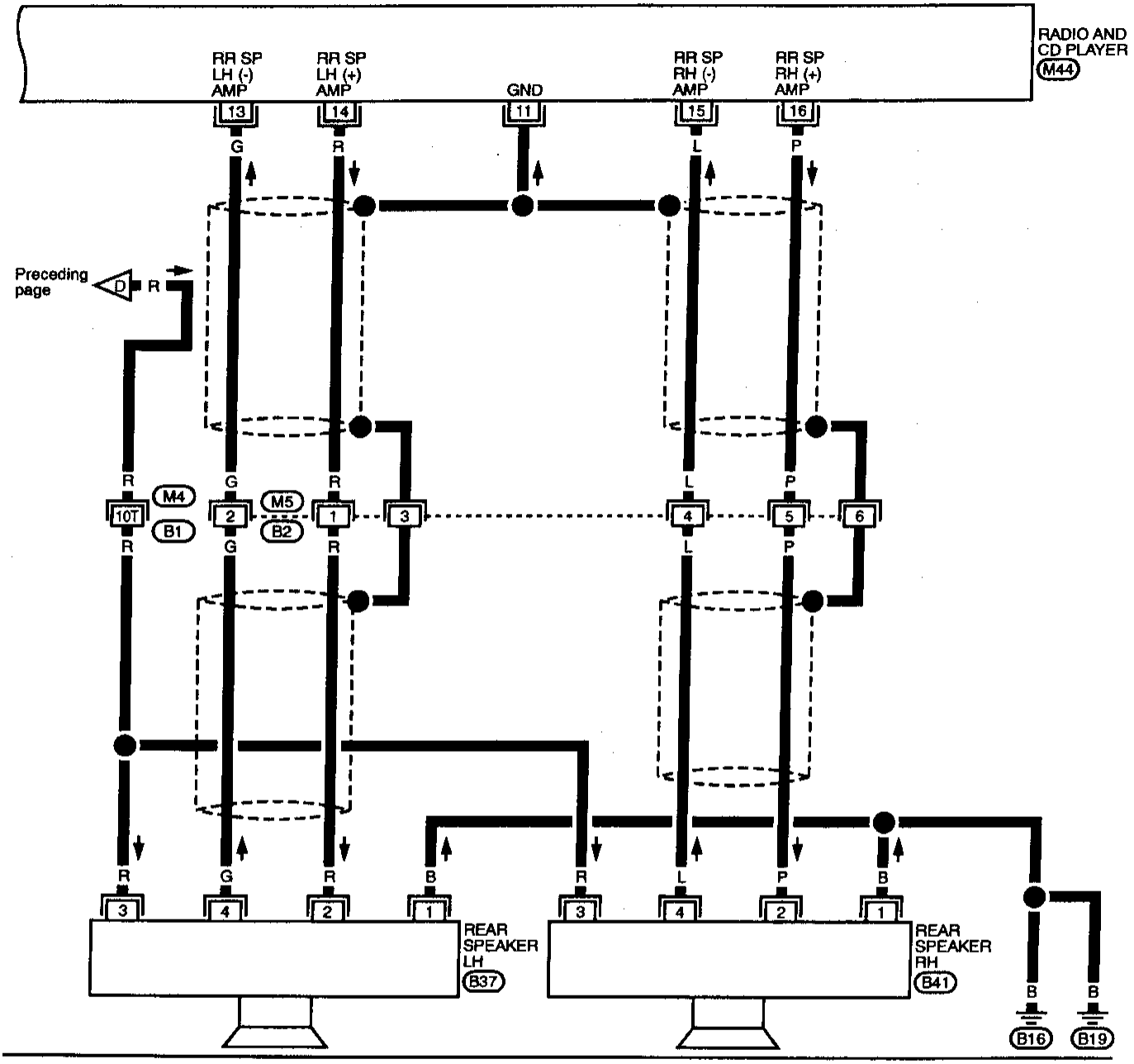
Wiring Diagram — AUDIO — (Cont'd)

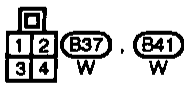
EL-AUDIO-02



Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-03





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

MEL522E

Trouble Diagnoses

Symptom	Possible causes	Repair order
Radio inoperative (no digital display and no sound from speakers).	1. 10A fuse 2. Poor radio case ground 3. Radio	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. 2. Check radio case ground. 3. Remove radio for repair.
Radio controls are operational, but no sound is heard from any speaker.	1. 15A fuse 2. Audio amp. relay 3. Audio amp. relay ground 4. Amp. ON signal 5. Radio output 6. Radio	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. 2. Check audio amp. relay. 3. Check audio amp. relay ground (Terminal ②). 4. Turn ignition switch ACC and radio ON. Verify battery positive voltage is present at terminal ① of audio amp. relay. 5. Check radio output voltage. 6. Remove radio for repair.
Radio presets are lost when ignition switch is turned OFF.	1. 7.5A fuse 2. Radio	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. 2. Remove radio for repair.
Individual speaker is noisy or inoperative.	1. Speaker ground 2. Power supply 3. Radio output 4. Speaker	1. Check speaker ground (Terminal ②: FR LH/RH, ①: RR LH/RH). 2. Check power supply for speaker (Terminal ⑤: FR LH/RH, ③: RR LH/RH). 3. Check radio output voltage for speaker. 4. Replace speaker.
AM stations are weak or noisy (FM stations OK).	1. Antenna 2. Poor radio ground 3. Radio	1. Check antenna. 2. Check radio ground. 3. Remove radio for repair.
FM stations are weak or noisy (AM stations OK).	1. Window antenna 2. Radio	1. Check window antenna. 2. Remove radio for repair.
Radio generates noise in AM and FM modes with engine running.	1. Poor radio ground 2. Loose or missing ground bonding straps 3. Ignition condenser or rear window defogger noise suppressor condenser 4. Alternator 5. Ignition coil or secondary wiring 6. Radio	1. Check radio ground. 2. Check ground bonding straps. 3. Replace ignition condenser or rear window defogger noise suppressor condenser. 4. Check alternator. 5. Check ignition coil and secondary wiring. 6. Remove radio for repair.
Radio generates noise in AM and FM modes with accessories on (switch pops and motor noise).	1. Poor radio ground 2. Antenna 3. Accessory ground 4. Faulty accessory	1. Check radio ground. 2. Check antenna. 3. Check accessory ground. 4. Replace accessory.

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.)

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.

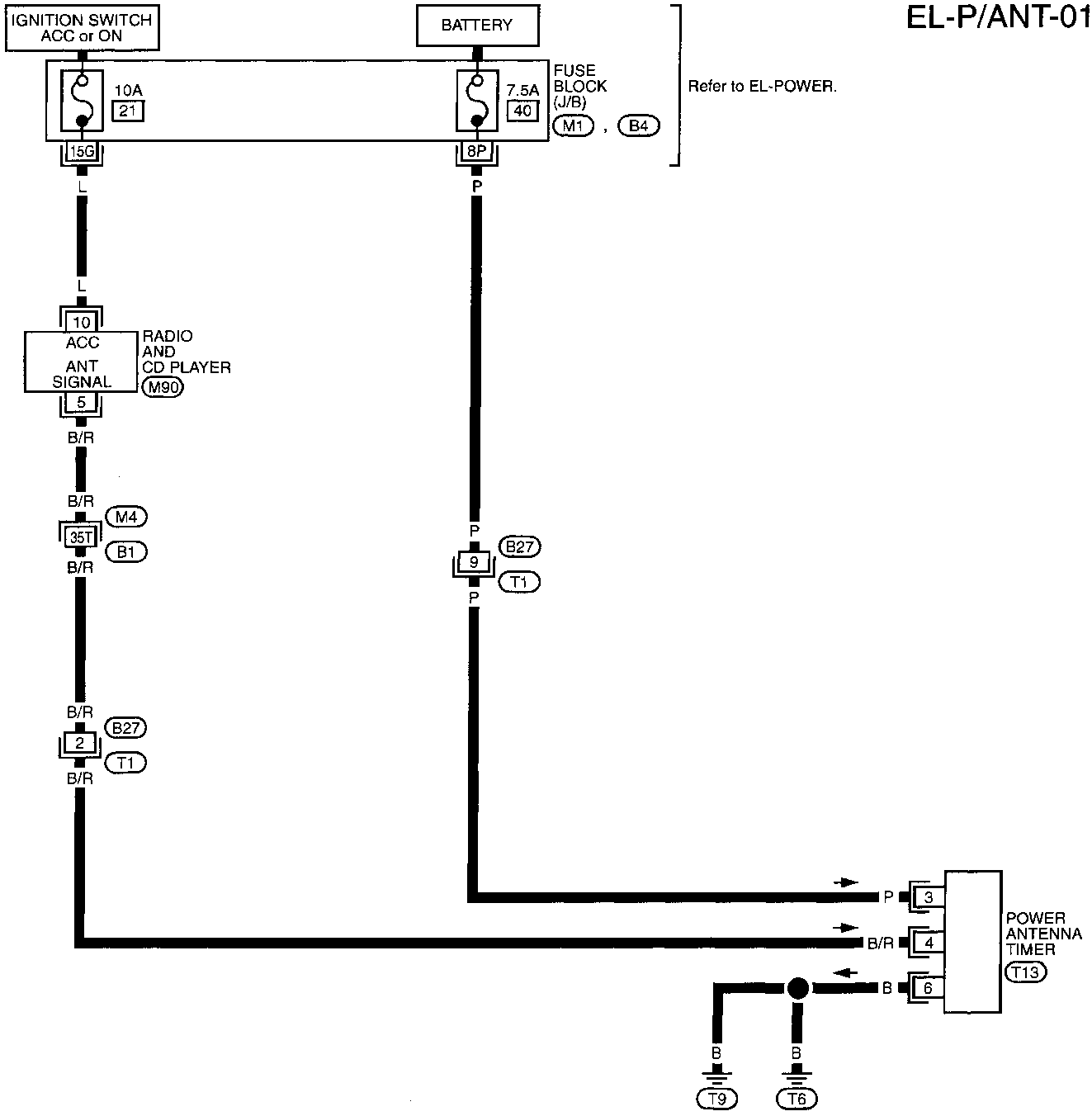
Ground is supplied to the power antenna timer and motor terminal ⑥ through body grounds T6 and T9.
When the radio is turned to the ON position, battery voltage is supplied
- through radio and CD player terminal ⑤
- to power antenna timer and motor terminal ④.

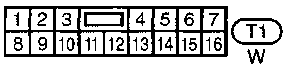
The antenna rises and is held in the extended position.
When the radio is turned to the OFF position, battery voltage is interrupted
- from radio and CD player terminal ⑤
- to power antenna terminal ④.

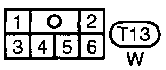
The antenna retracts.

Wiring Diagram — P/ANT —

EL-P/ANT-01







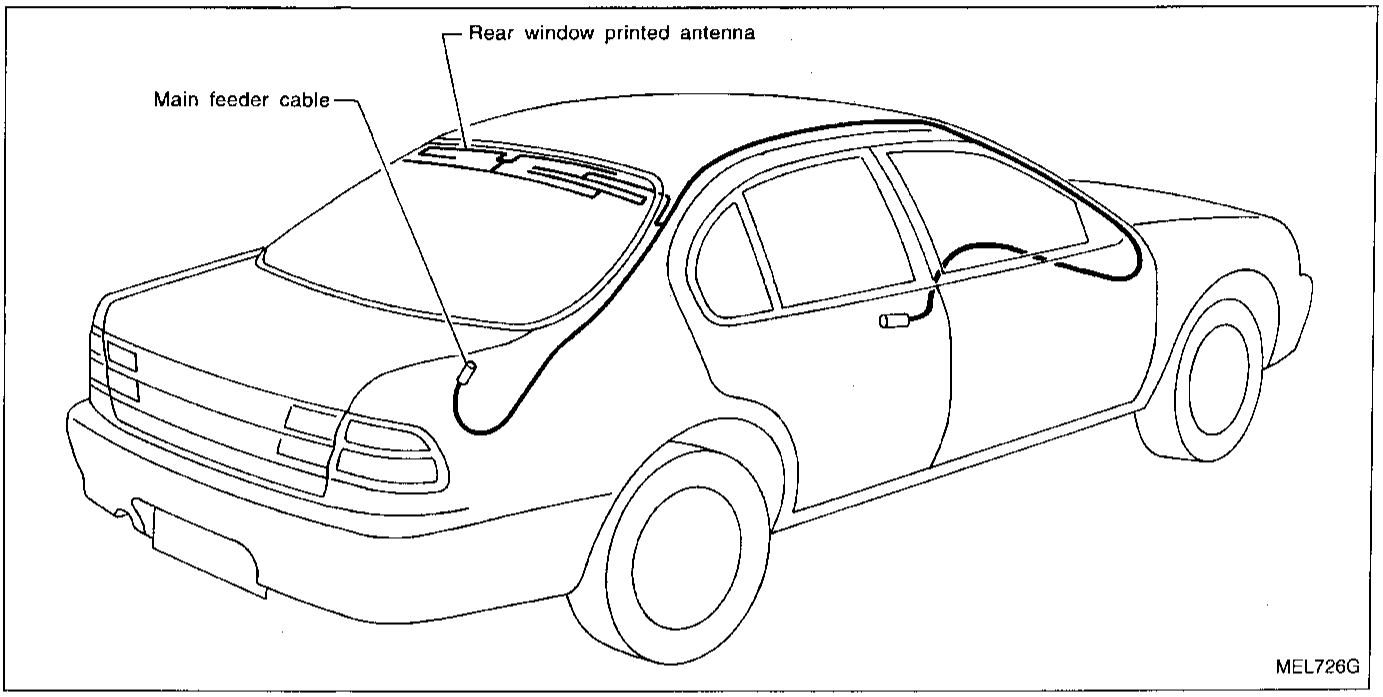
Refer to last page (Foldout page).
M4 , B1
M1
B4

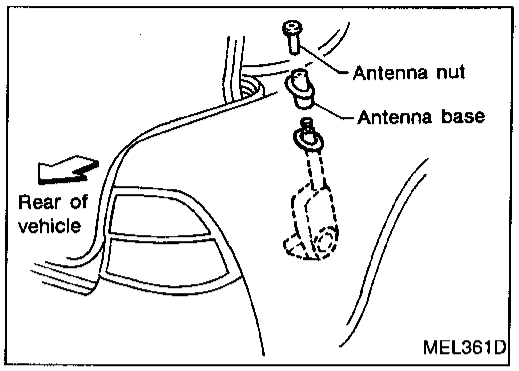
MEL385I

Trouble Diagnoses

Symptom	Possible causes	Repair order
Power antenna does not operate.	1. 7.5A fuse 2. Radio signal 3. Grounds (T6) and (T9)	1. Check 7.5A fuse [No. 40], located in fuse block (J/B)]. Verify that battery positive voltage is present at terminal ③ of power antenna. 2. Turn ignition switch and radio ON. Verify that battery positive voltage is present at terminal ④ of power antenna. 3. Check grounds (T6) and (T9).

Location of Antenna

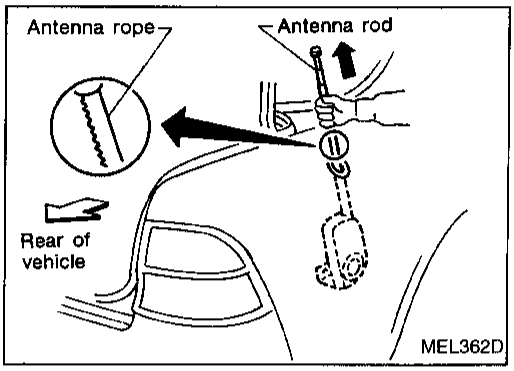




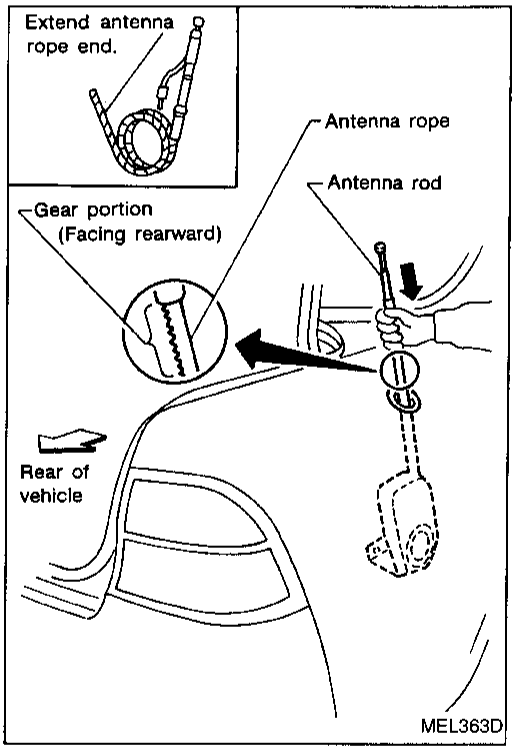
Antenna Rod Replacement

REMOVAL

1. Remove antenna nut and antenna base.

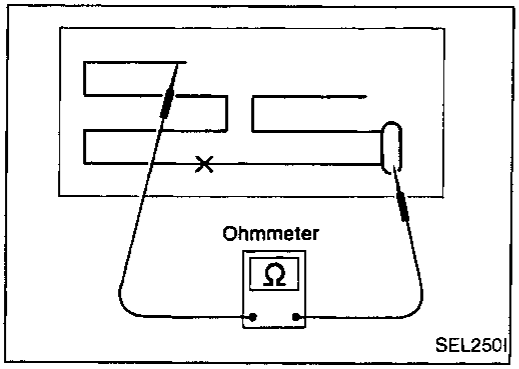


2. Withdraw antenna rod while raising it by operating antenna motor.



INSTALLATION

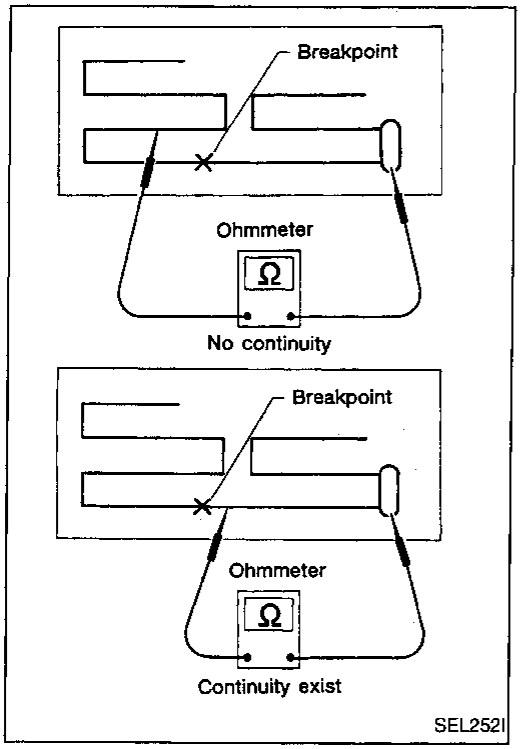
1. Lower antenna rod by operating antenna motor.
2. Insert gear section of antenna rope into place with it facing toward antenna motor.
3. As soon as antenna rope is wound on antenna motor, stop antenna motor. Insert antenna rod lower end into antenna motor pipe.
4. Retract antenna rod completely by 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.



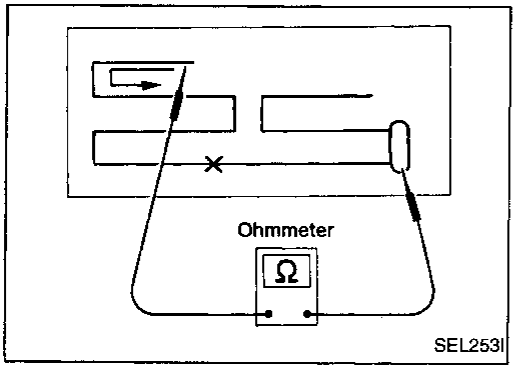
Window Antenna Repair

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.



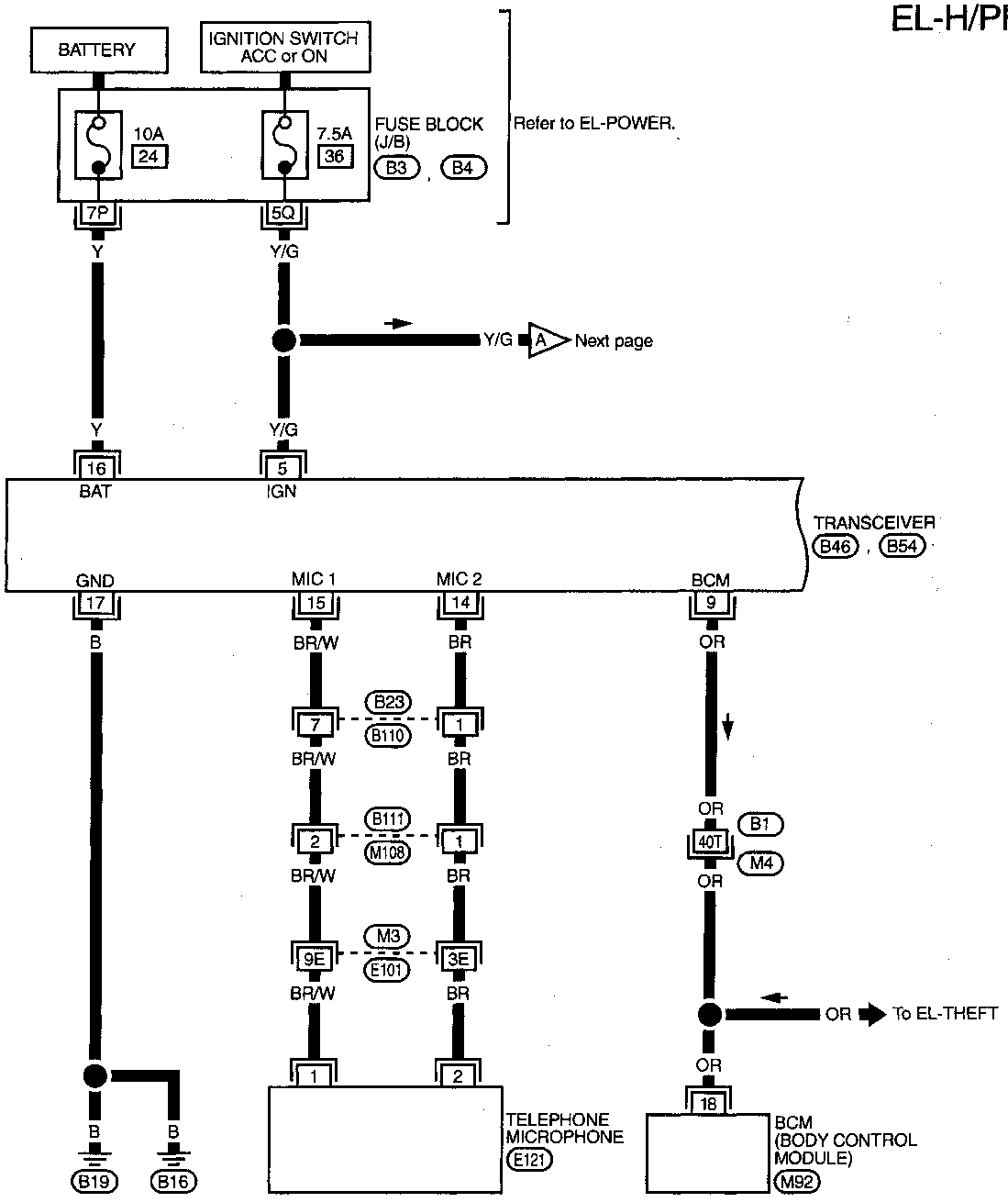
3. To locate broken point, move probe along element. Tester needle will swing abruptly when probe passes the point.

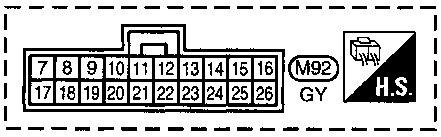
ELEMENT REPAIR

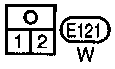
Refer to "Filament Repair", "REAR WINDOW DEFOGGER" (EL-129).

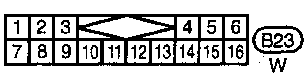
Wiring Diagram — H/PHON —

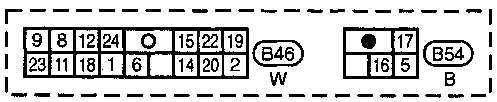
EL-H/PHON-01









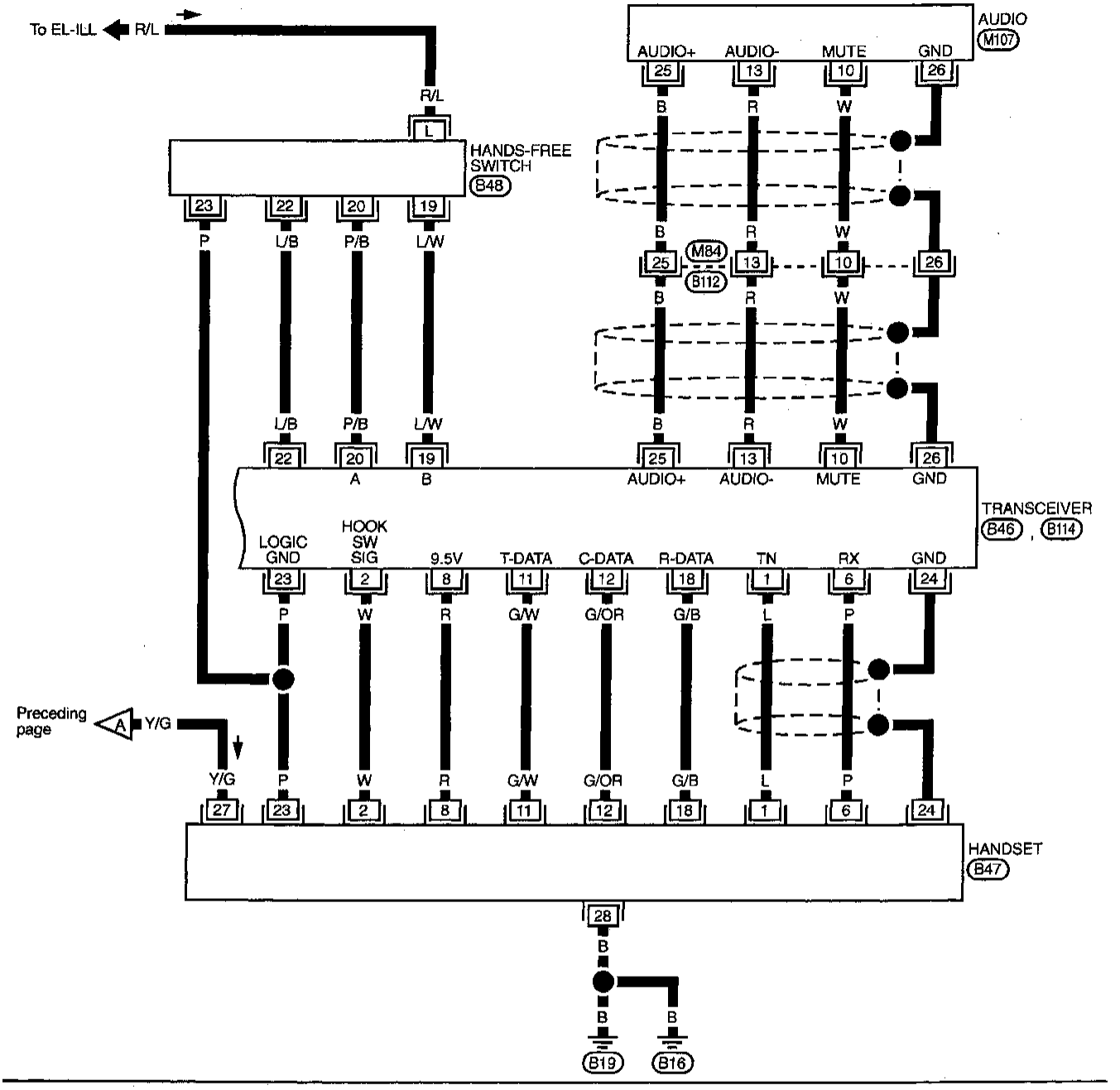


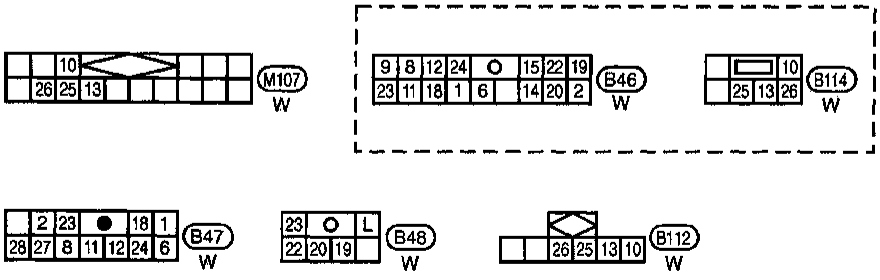
Refer to last page (Foldout page).
M3 , E101
M4 , B1
B3
B4

MEL089J

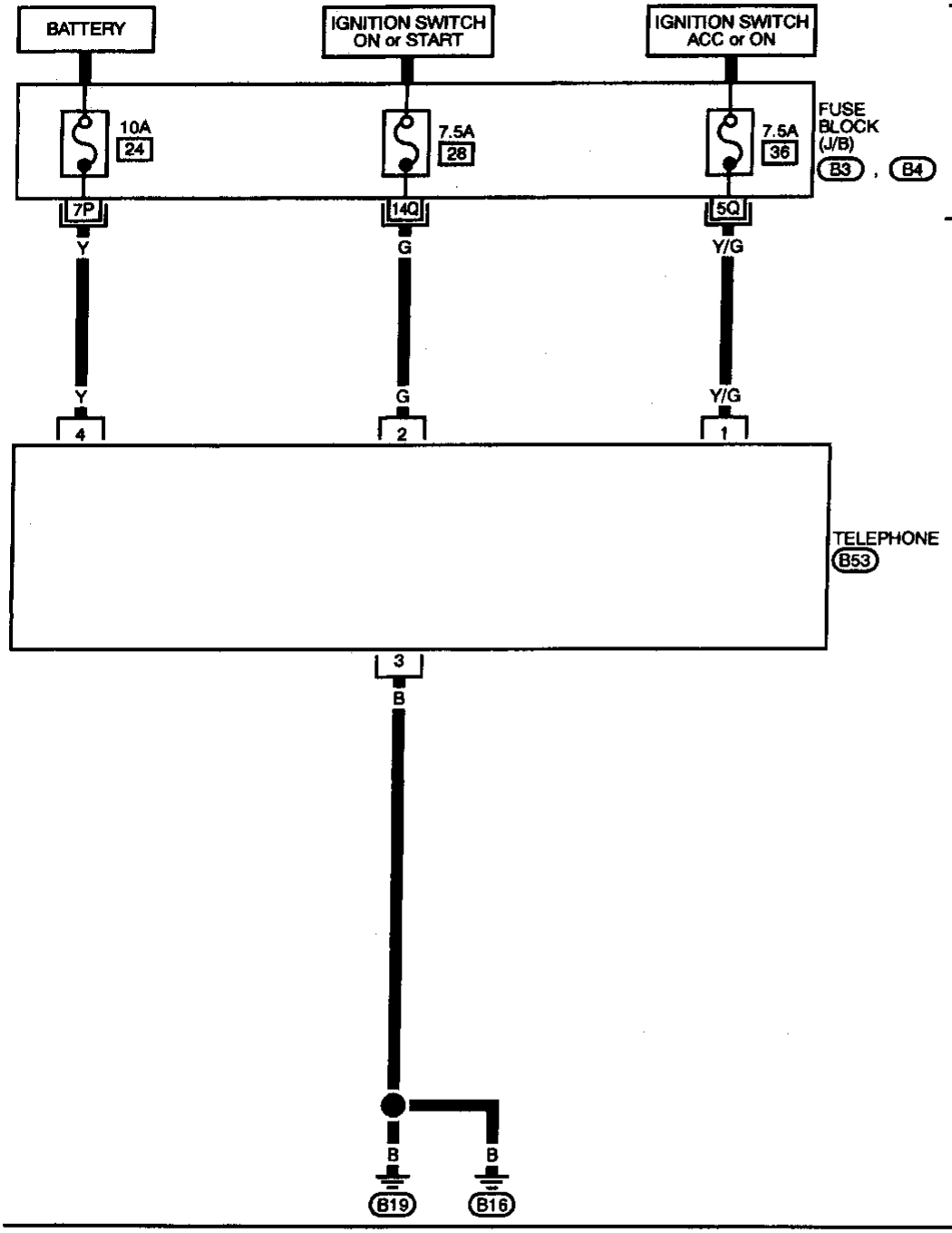
Wiring Diagram — H/PHON — (Cont'd)

EL-H/PHON-02





Wiring Diagram — PHONE —



Refer to last page (Foldout page).
B3 , B4

MEL525E

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 by BCM. The power circuit is protected by the circuit breaker-2. The sunroof motor assembly is grounded through case grounds.

Delayed power operation

When the ignitions switch is turned to the OFF position, the sunroof will still operate for up to approximately 45 seconds unless the driver side or passenger side door is opened. (Sunroof timer)

TILT AND SLIDE OPERATION

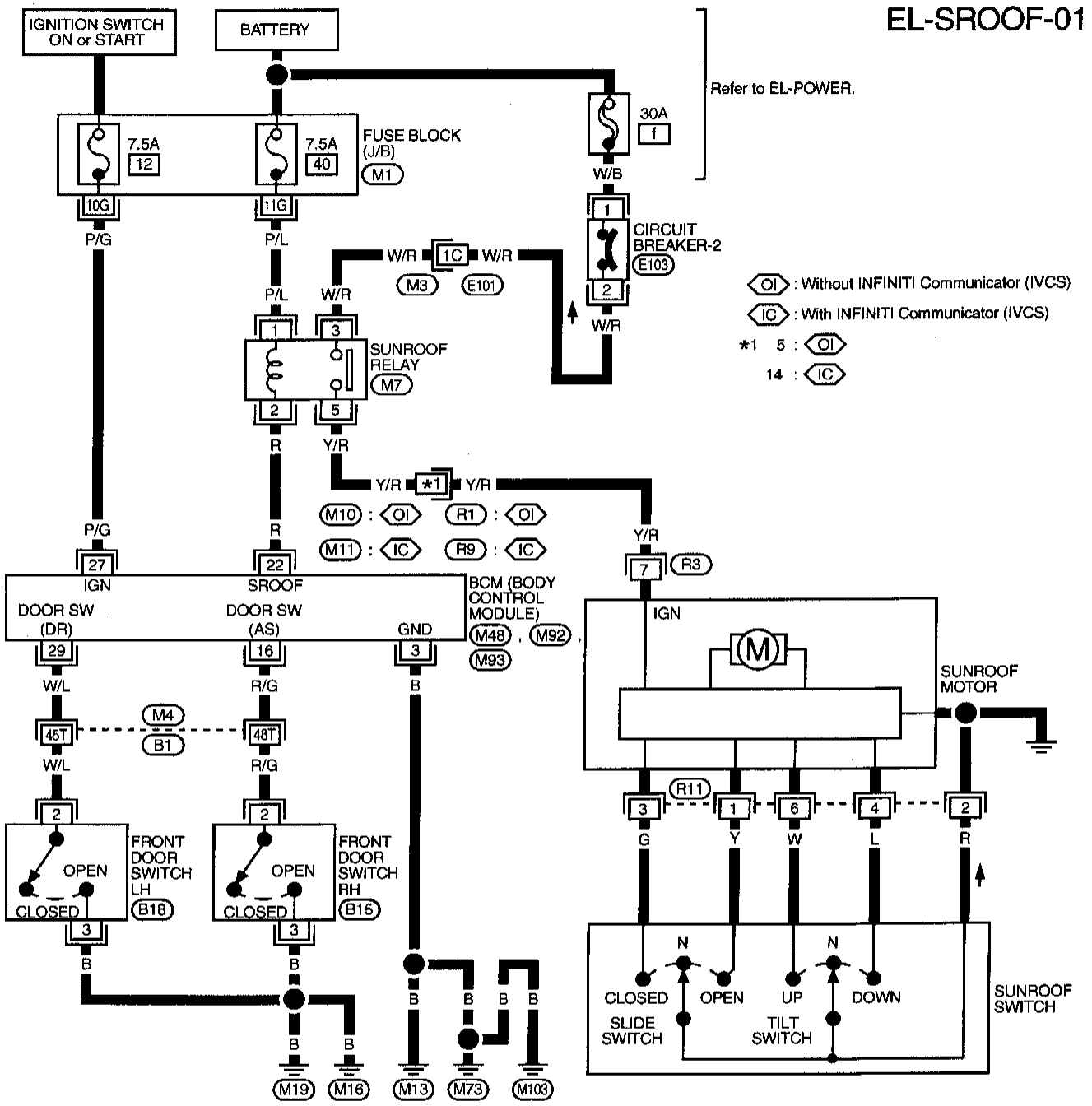
The sunroof is controlled by the sunroof switch. When sunroof in closed position, depressing UP/CLOSE switch will tilt rear of sunroof up. The sunroof will stop when the switch is released, or when the sunroof reaches its maximum tilt position.

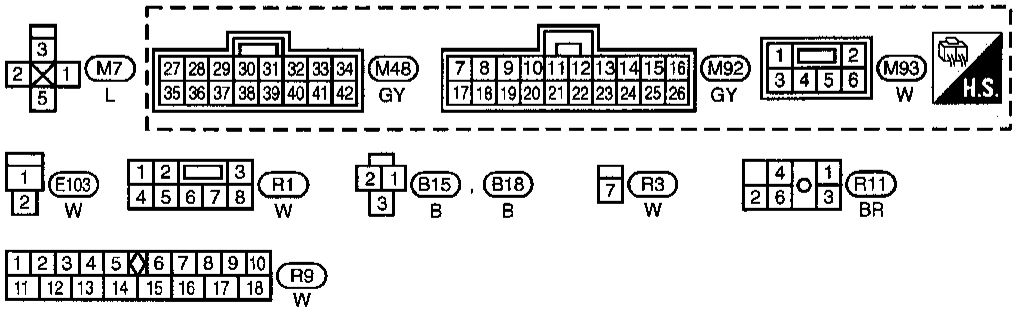
The sunroof will tilt down when in tilt up position and DOWN/OPEN switch is depressed. The sunroof will stop when switch is released, or when sunroof is fully closed.

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.

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

Wiring Diagram — SROOF —





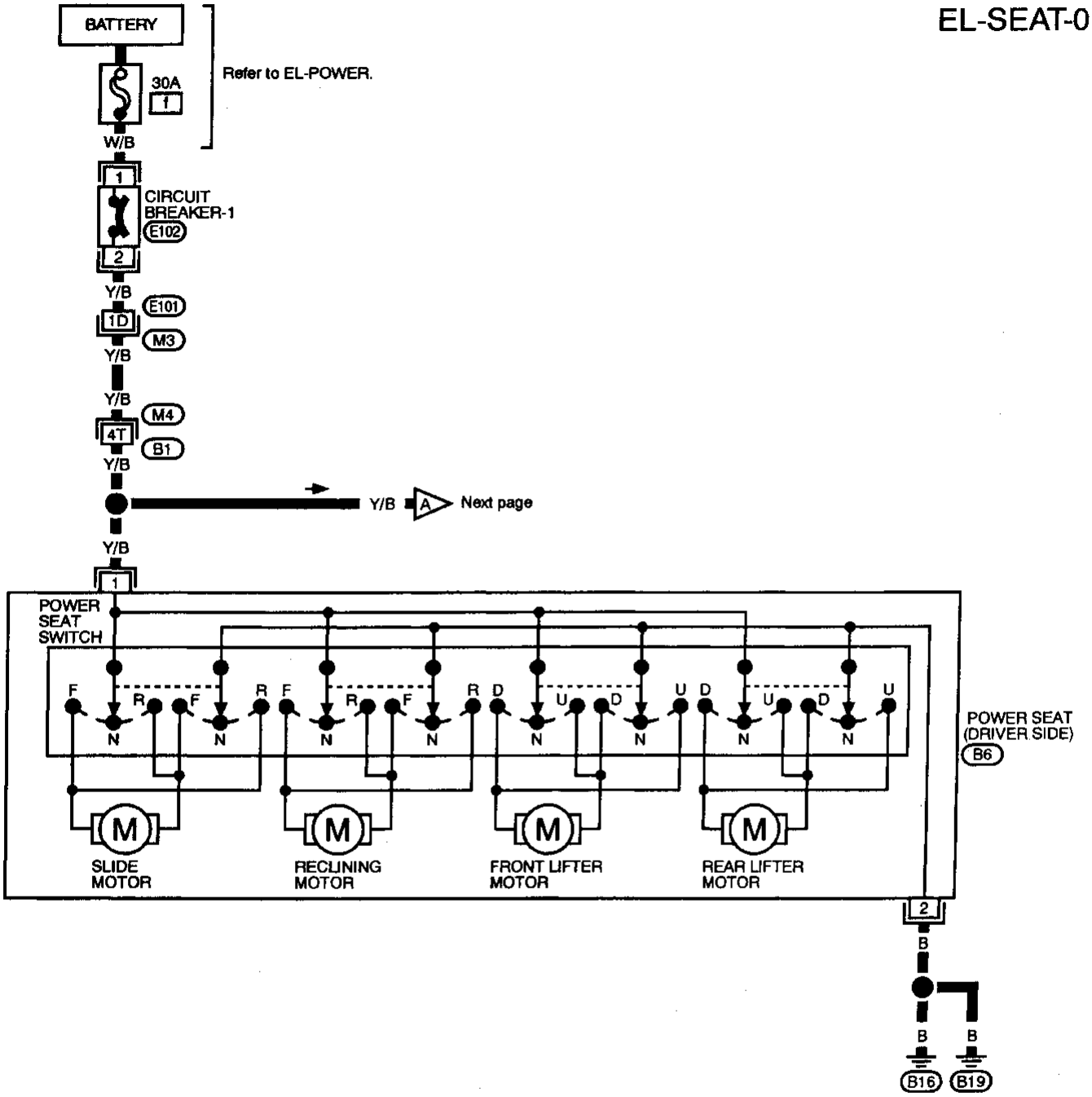
Refer to last page (Foldout page).
M1
M3 , E101
M4 , B1

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

MEL091J

Wiring Diagram — SEAT —

EL-SEAT-01



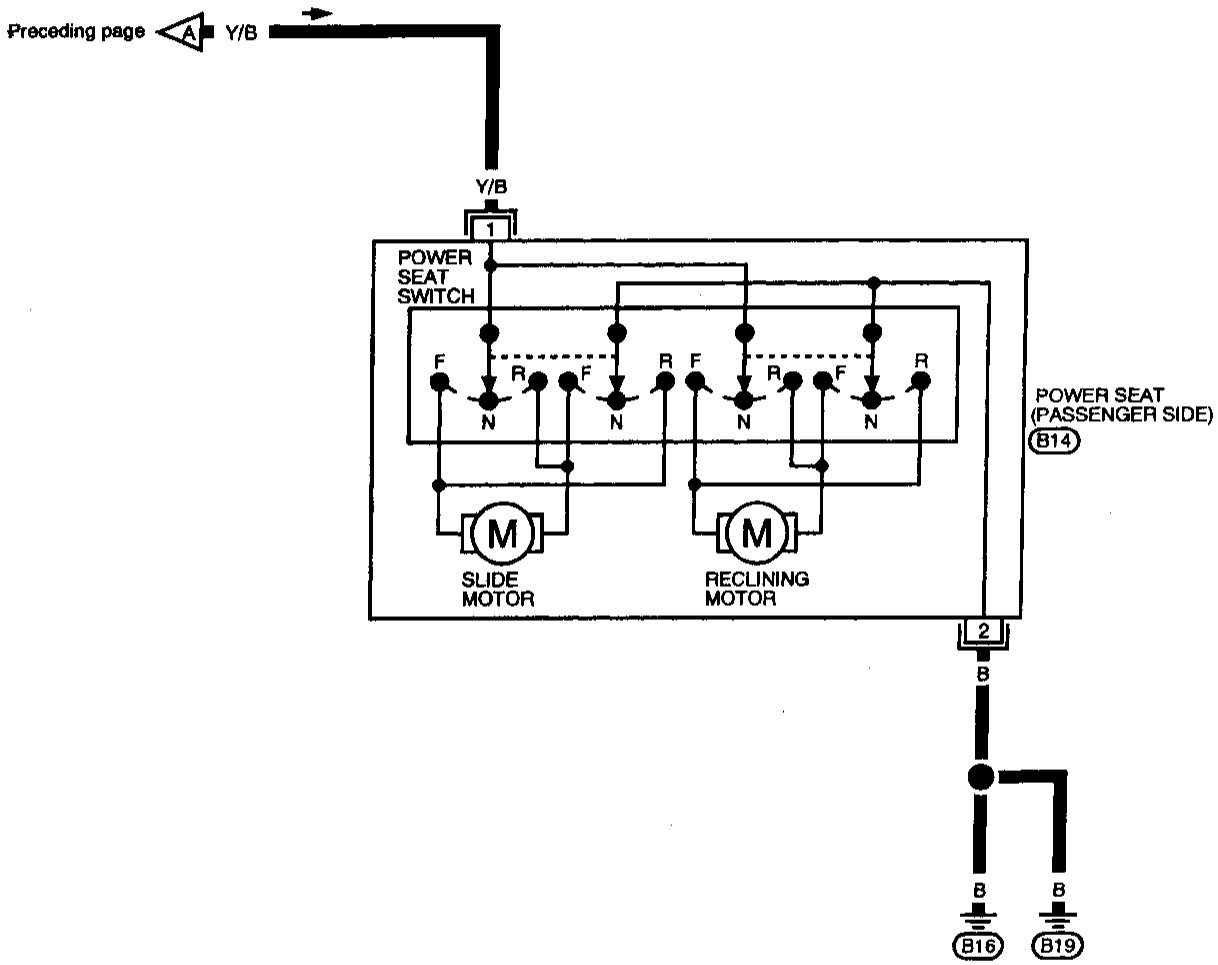
1 2 E102 W , B6 W

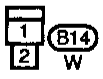
Refer to last page (Foldout page).
M3 , M101
M4 , B1

MEL529E

Wiring Diagram — SEAT — (Cont'd)

EL-SEAT-02

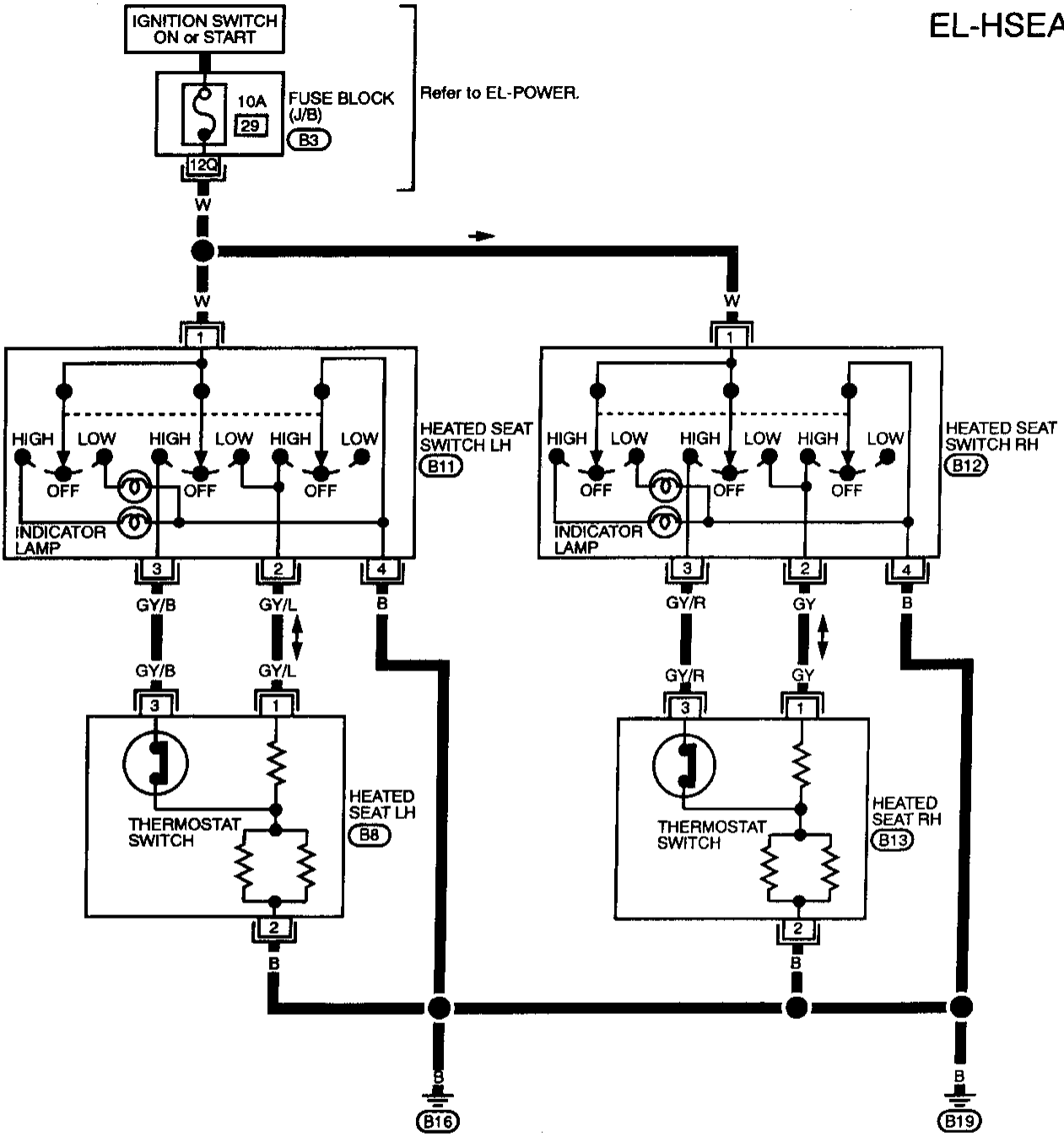


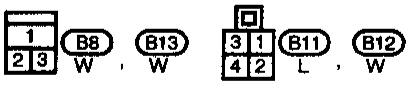


MEL530E

Wiring Diagram — HSEAT —

EL-HSEAT-01



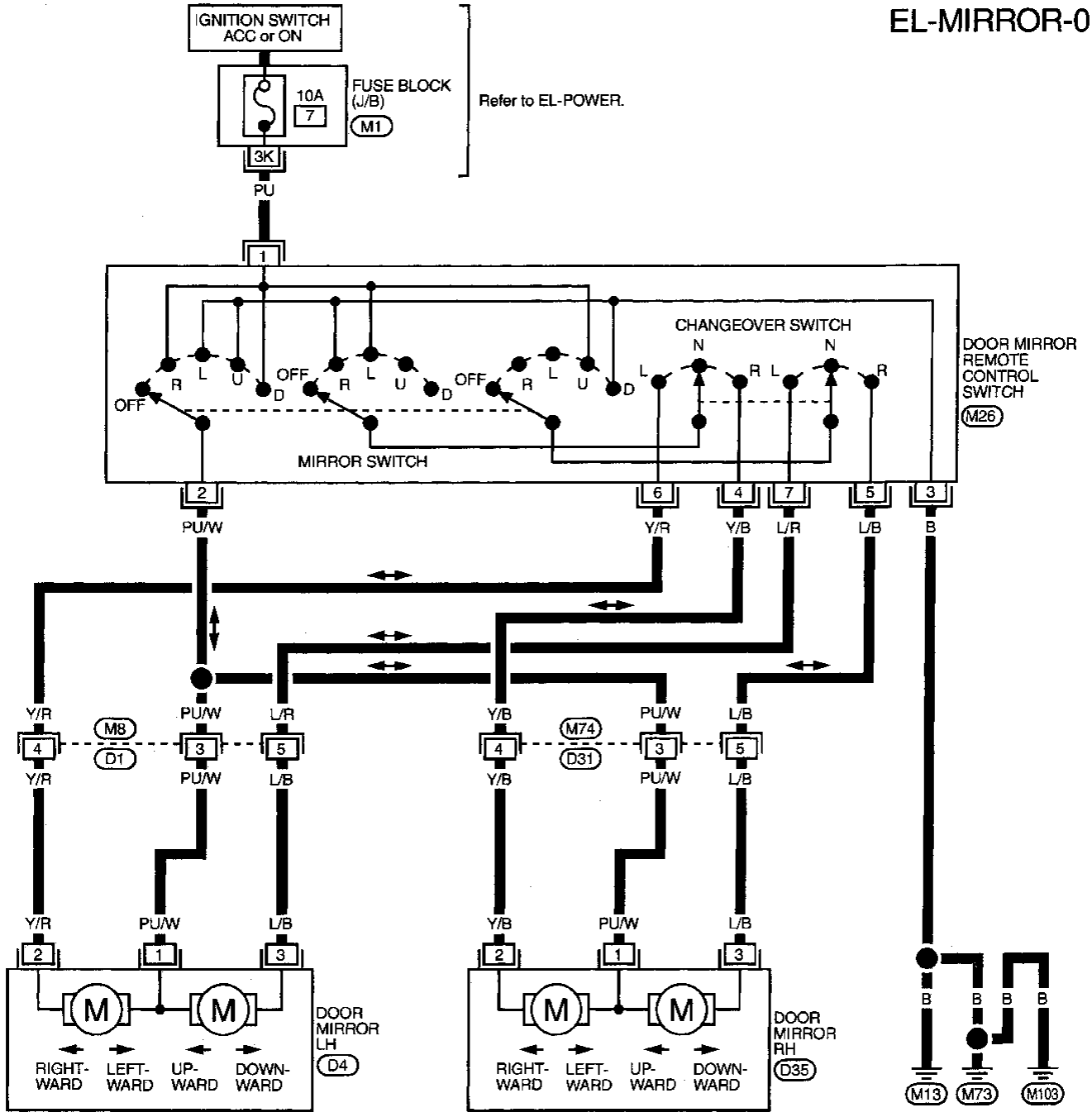


Refer to last page (Foldout page).
B3

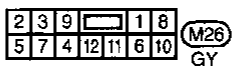
MEL531E

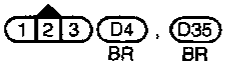
Wiring Diagram — MIRROR —

EL-MIRROR-01



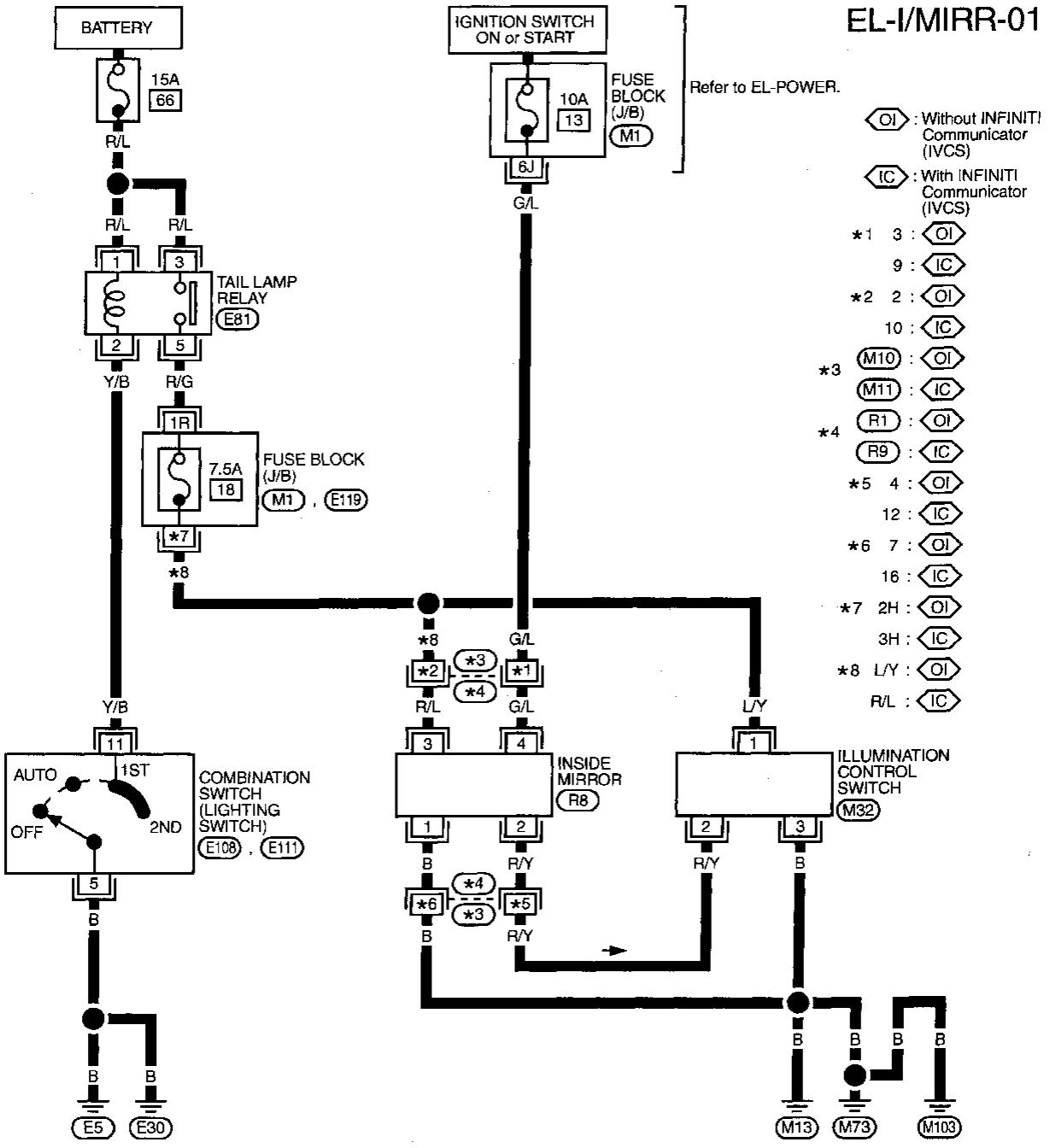
Refer to last page (Foldout page).
M1

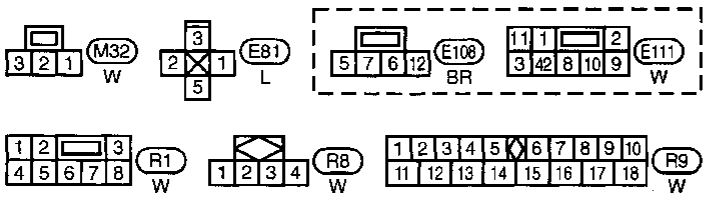




MEL711H

Wiring Diagram — I/MIRR —





Refer to last page (Foldout page).

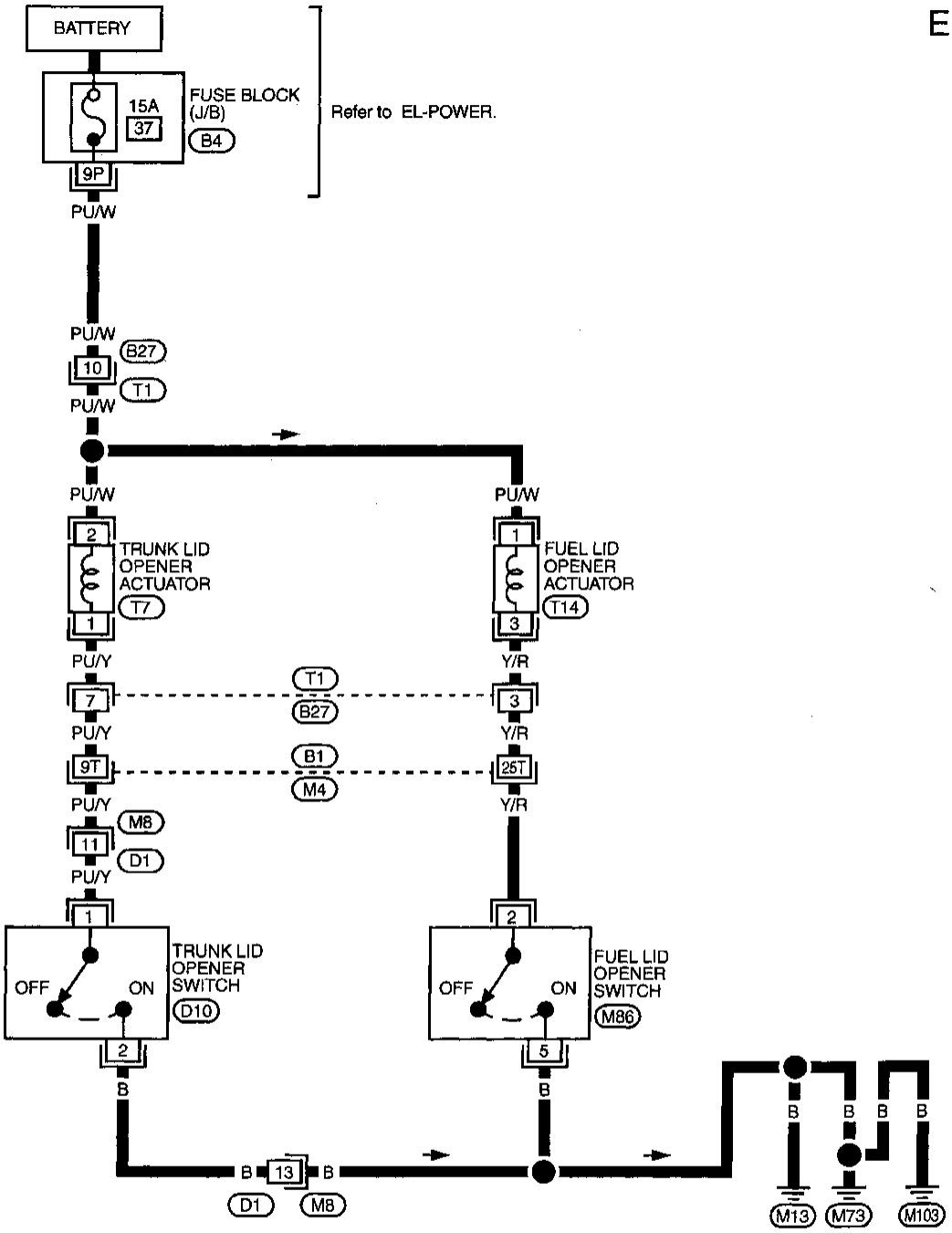
M1

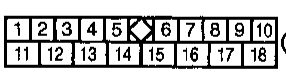
E119

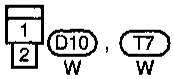
MEL092J

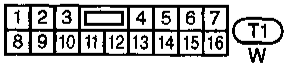
Wiring Diagram — TLID —

EL-TLID-01





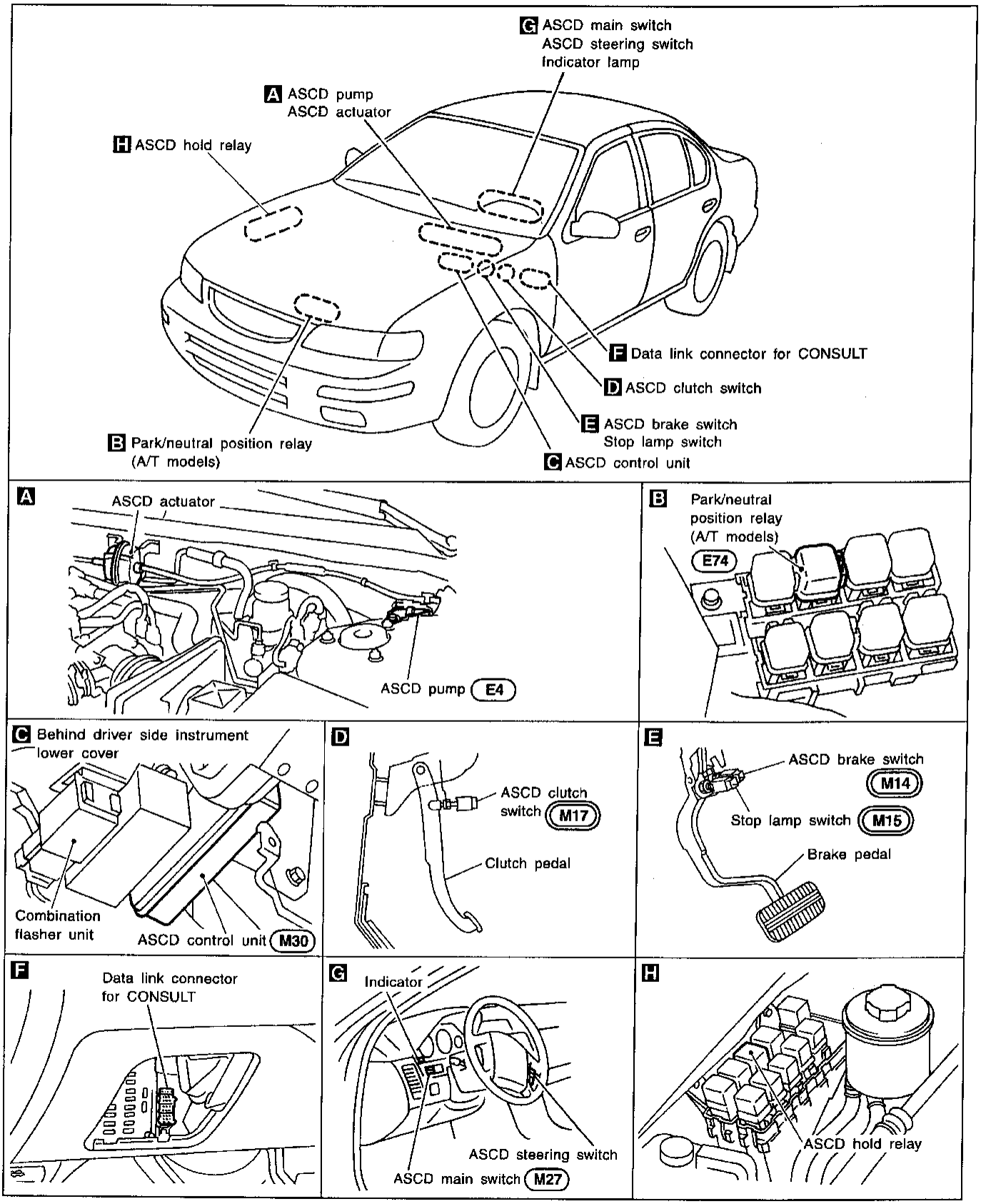




Refer to last page (Foldout page).
M4 , B1
B4

MEL260J

Component Parts and Harness Connector Location



SEL793V

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 M103.

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 ㉔.

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.

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 ⑪ 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.

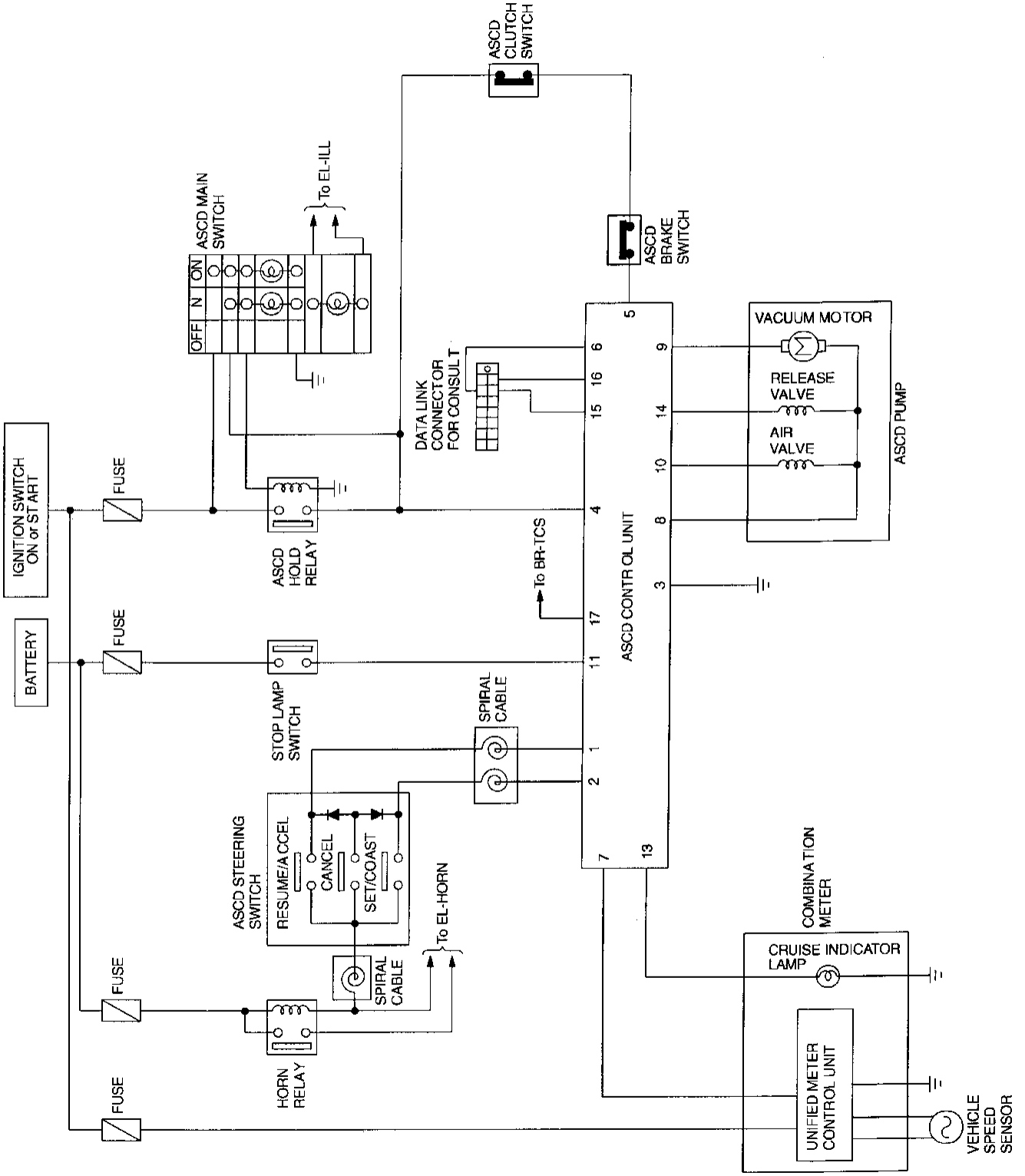
The pump is connected to ASCD actuator by vacuum hose. When the ASCD pump is activated, the ASCD pump vacuum the diaphragm of ASCD actuator to control throttle cable.

		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.

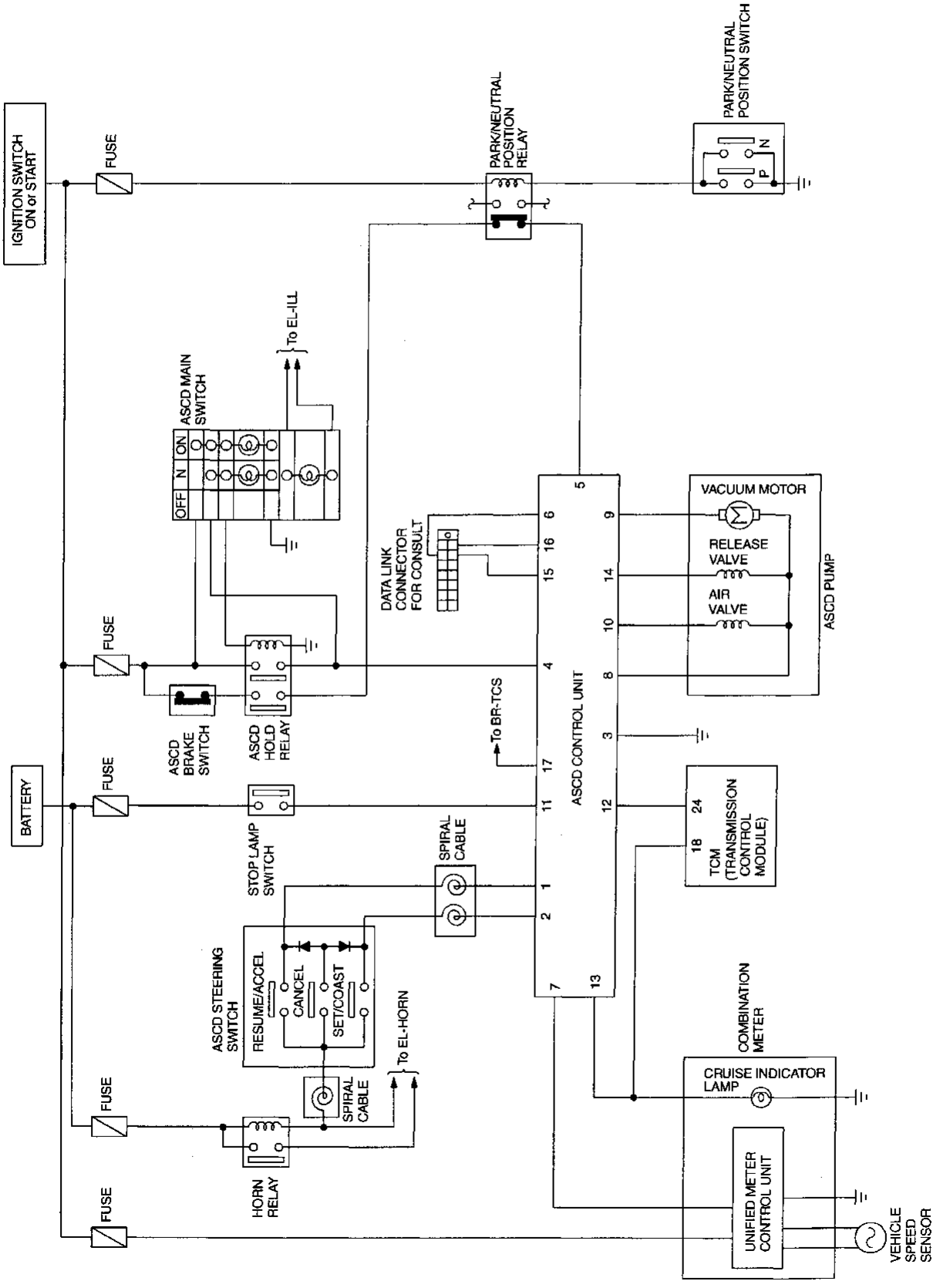
*2: Set position held.

Schematic/M/T Models



MEL093J

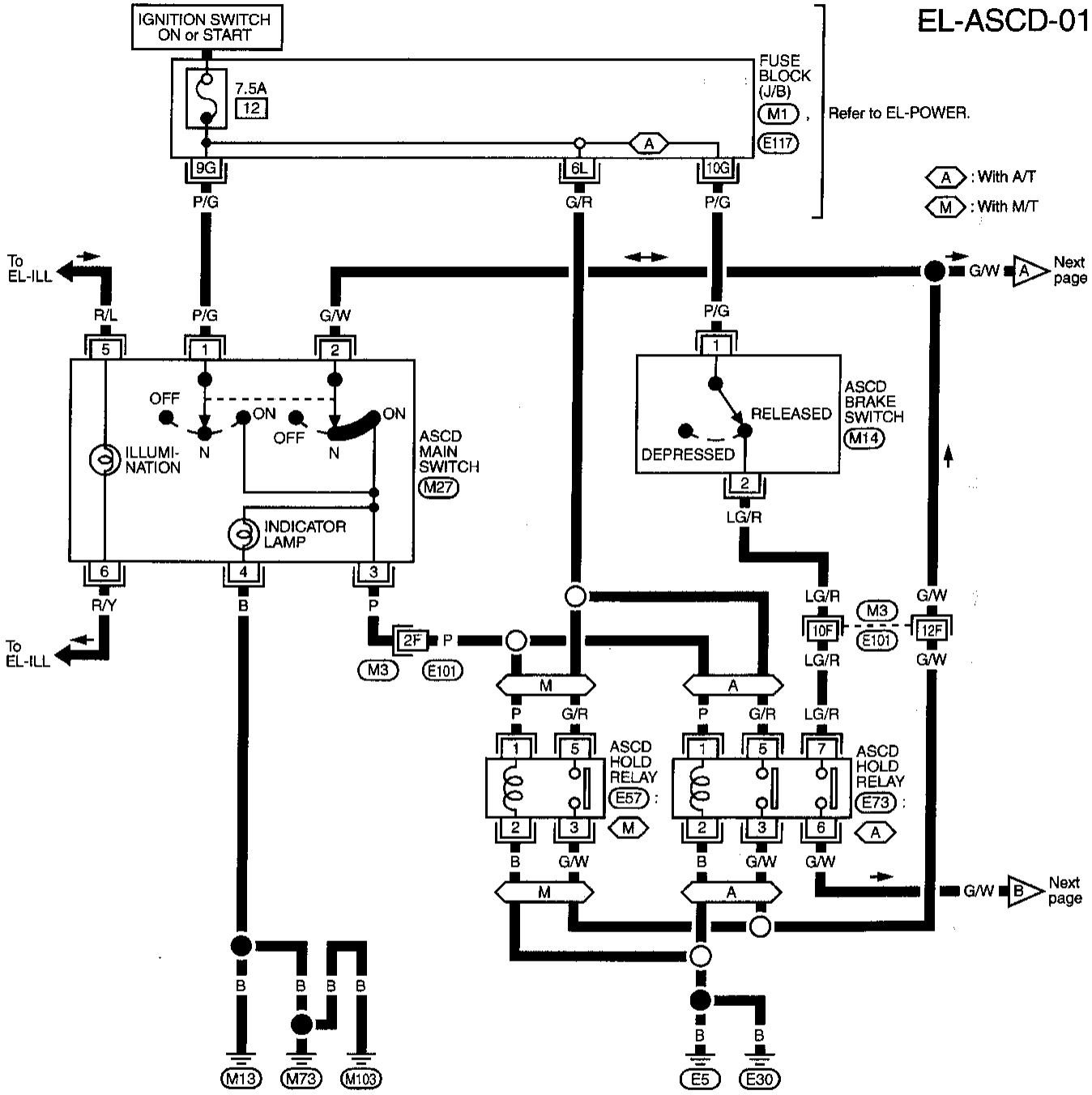
Schematic/A/T Models



MEL094J

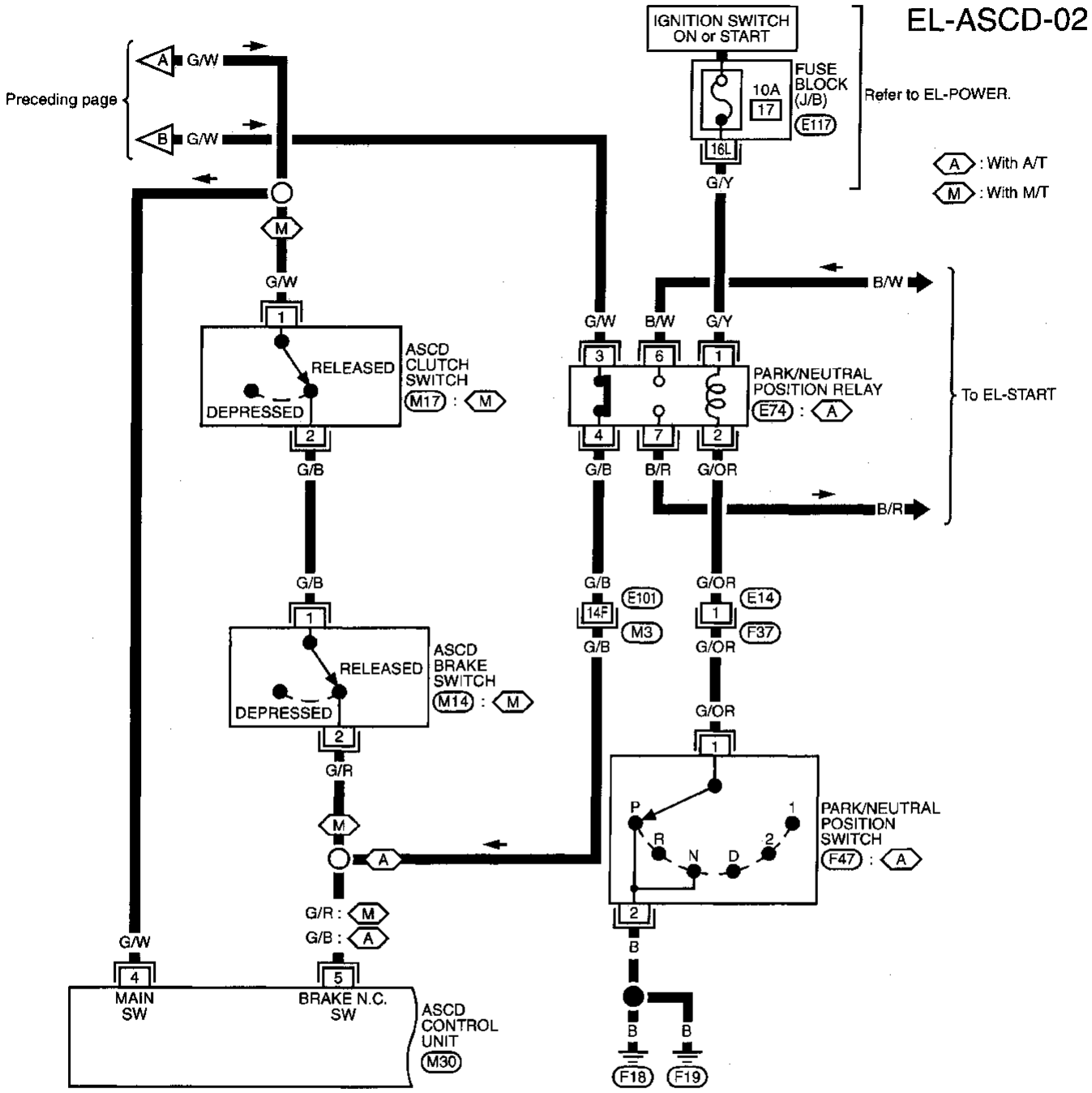
Wiring Diagram — ASCD —

FIG. 1



Wiring Diagram — ASCD — (Cont'd)

FIG. 2



M14, M17 — L, L

M30 — B

E74 — GY

F37 — B

F47 — GY

Refer to last page (Foldout page).

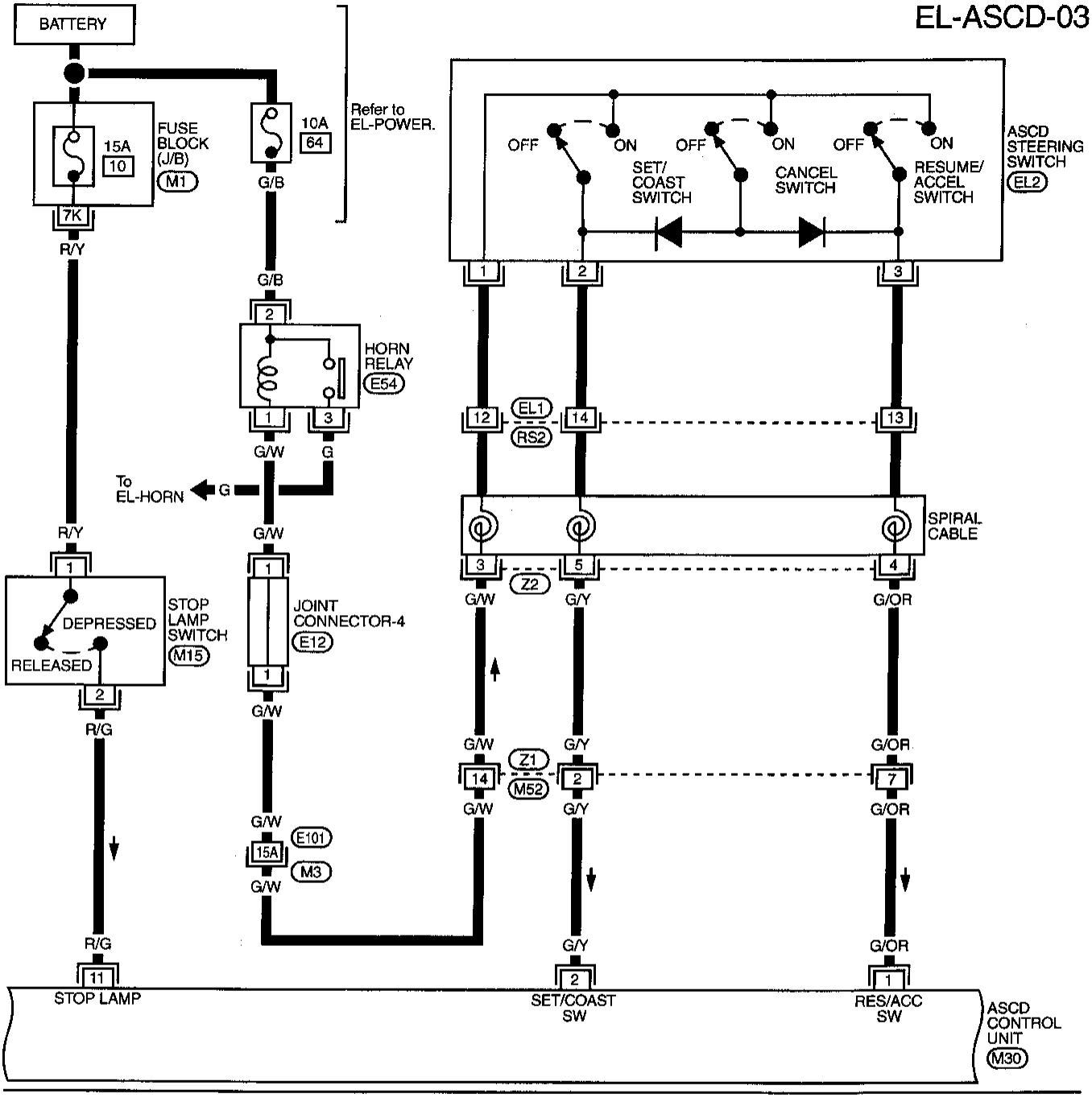
M3, E101

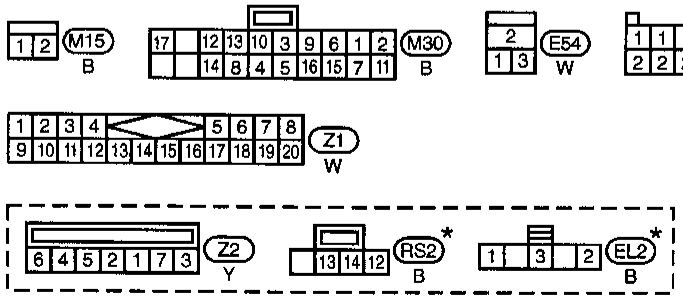
E117

MEL096J

Wiring Diagram — ASCD — (Cont'd)

FIG. 3





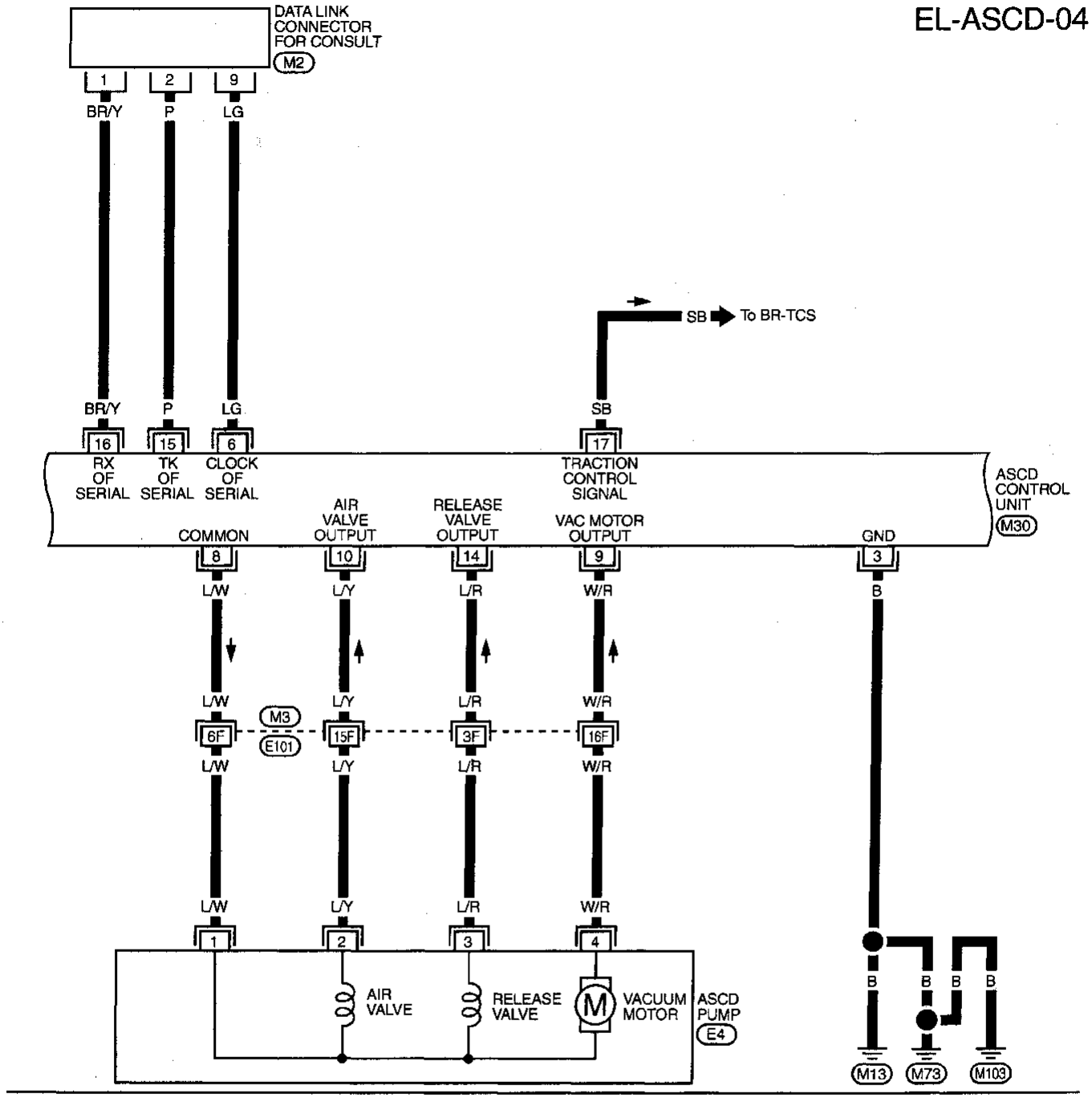
*: This connector is not shown in "HARNESS LAYOUT" of EL section.

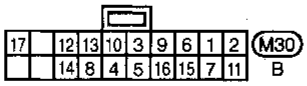
Refer to last page (Foldout page).
M1
M3 , E101

MEL097J

Wiring Diagram — ASCD — (Cont'd)

FIG. 4



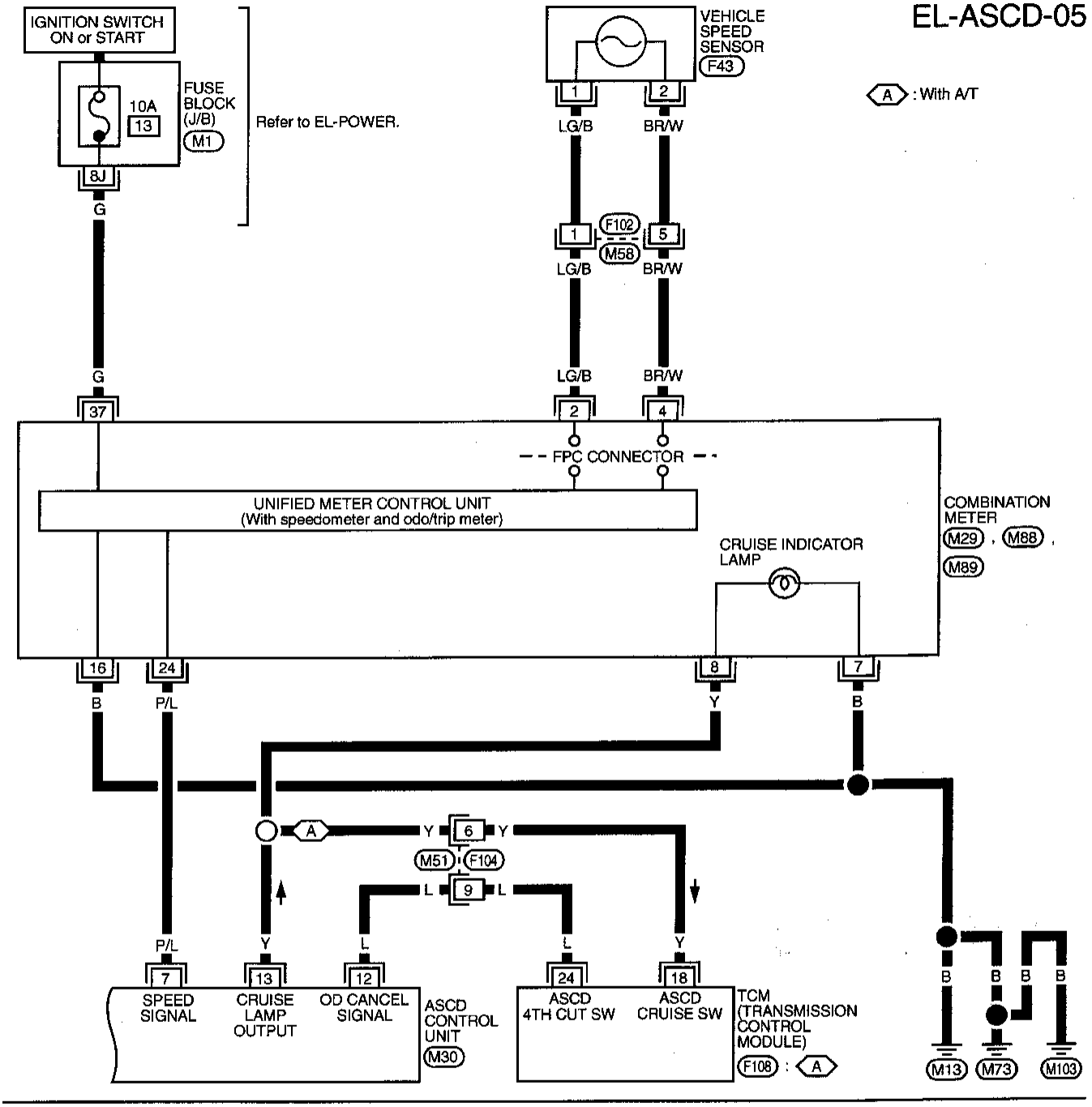


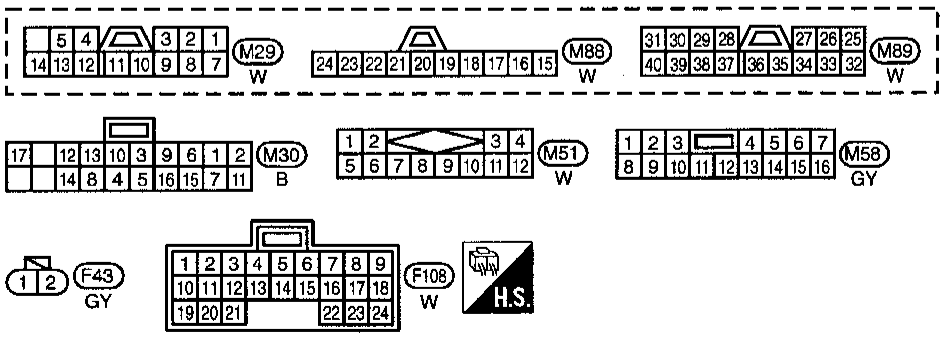
Refer to last page (Foldout page).
M3 , E101

MEL098J

Wiring Diagram — ASCD — (Cont'd)

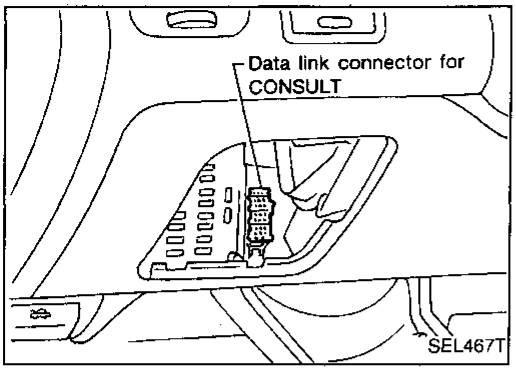
FIG. 5





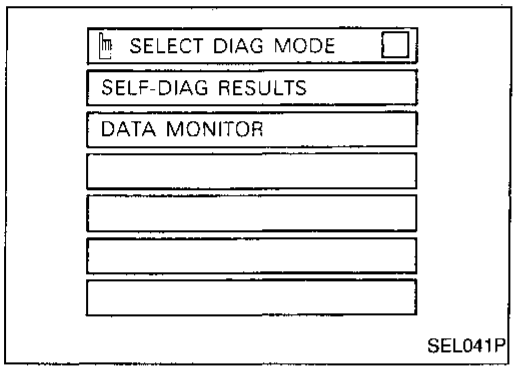
Refer to last page (Foldout page).
M1

MEL099J

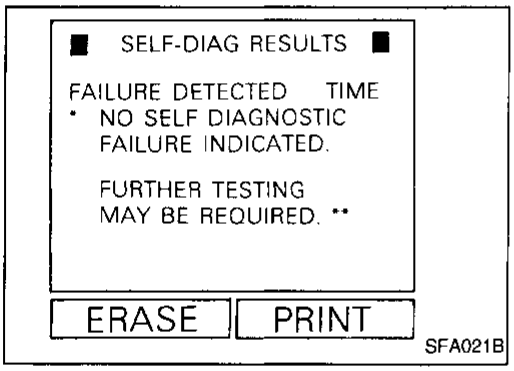


CONSULT

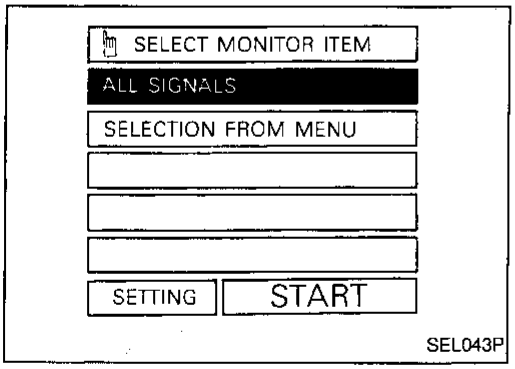
1. Turn ignition switch OFF.
2. Connect "CONSULT" to Data link connector.



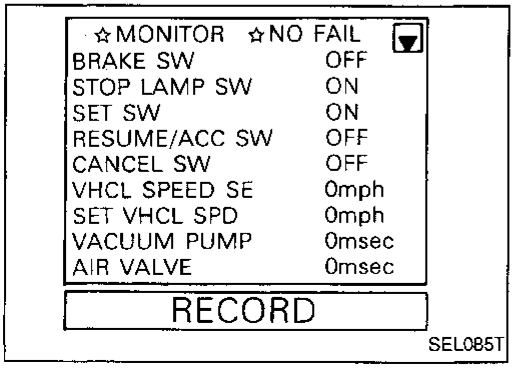
3. Turn ignition switch ON.
4. Turn ASCD main switch ON.
5. Touch START (on CONSULT display).
6. Touch ASCD.
7. Touch SELF-DIAG RESULTS.



- 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.

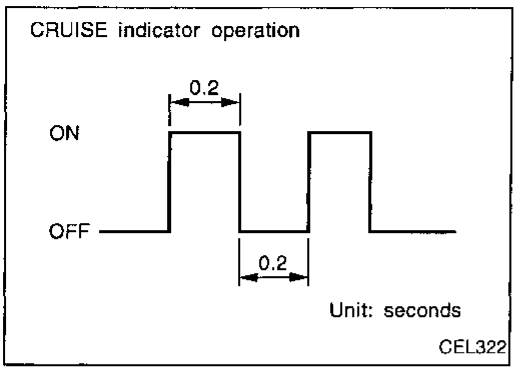
CONSULT (Cont'd)

SELF-DIAGNOSTIC RESULTS

Diagnostic item	Description	Repair/Check order
* NO SELF DIAGNOSTIC FAILURE INDICATED. FURTHER TESTING MAY BE REQUIRED.**	• Even if no self diagnostic failure is indicated, further testing may be required as far as the customer complains.	—
POWER SUPPLY-VALVE	• The power supply circuit for the valves is open. (An abnormally high voltage is entered.)	Diagnostic procedure 7 (EL-172)
VACUUM PUMP	• The vacuum pump circuit is open or shorted. (An abnormally high or low voltage is entered.)	Diagnostic procedure 7 (EL-172)
AIR VALVE	• The air valve circuit is open or shorted. (An abnormally high or low voltage is entered.)	Diagnostic procedure 7 (EL-172)
RELEASE VALVE	• The release valve circuit is open or shorted. (An abnormally high or low voltage is entered.)	Diagnostic procedure 7 (EL-172)
VHCL SP·S/FAILSAFE	• The vehicle speed sensor or the fail-safe circuit is malfunctioning.	Diagnostic procedure 6 (EL-171)
CONTROL UNIT	• The ASCD control unit is malfunctioning.	Replace ASCD control unit.
BRAKE SW/STOP/L SW	• The brake switch or stop lamp switch is malfunctioning.	Diagnostic procedure 4 (EL-169)

DATA MONITOR

Monitored item	Description
BRAKE SW	• Indicates [ON/OFF] condition of the brake switch circuit.
STOP LAMP SW	• Indicates [ON/OFF] condition of the stop lamp switch circuit.
SET SW	• Indicates [ON/OFF] condition of the set switch circuit.
RESUME/ACC SW	• Indicates [ON/OFF] condition of the resume/accelerate switch circuit.
CANCEL SW	• Indicates [ON/OFF] condition of the cancel circuit.
VHCL SPEED SE	• The present vehicle speed computed from the vehicle speed sensor signal is displayed.
SET VHCL SPD	• The preset vehicle speed is displayed.
VACUUM PUMP	• The operation time of the vacuum pump is displayed.
AIR VALVE	• The operation time of the air valve is displayed.
PW SUP·VALVE	• Indicates [ON/OFF] condition of the circuit for the air valve and the release valve.
CRUISE LAMP	• Indicates [ON/OFF] condition of the cruise lamp circuit.
A/T·OD CANCEL	• Indicates [ON/OFF] condition of the OD cancel circuit.
FAIL SAFE·LOW	• The fail-safe (LOW) circuit function is displayed.
FAIL SAFE·SPD	• The fail-safe (SPEED) circuit function is displayed.

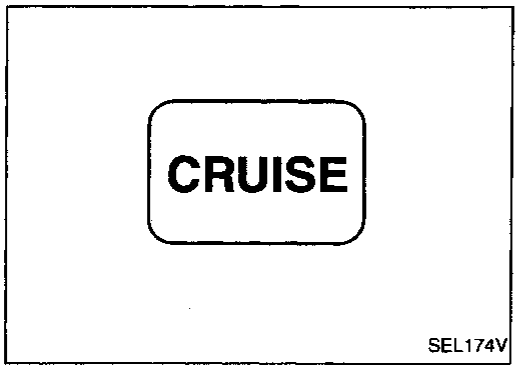


Fail-safe System Description

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
• ASCD steering (RESUME/ACCEL, CANCEL, SET/COAST) switch is stuck. • Vacuum motor ground circuit or power circuit is open or shorted. • Air valve ground circuit or power circuit is open or shorted. • Release valve ground circuit or power circuit is open or shorted. • Vehicle speed sensor is faulty. • ASCD control unit internal circuit is malfunctioning.	• ASCD is deactivated. • Vehicle speed memory is canceled.
• ASCD brake switch or stop lamp switch is faulty.	• ASCD is deactivated. • Vehicle speed memory is not canceled.



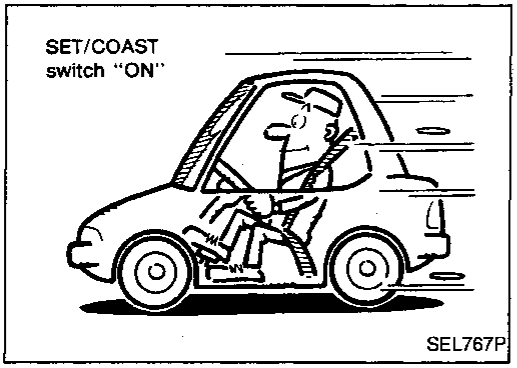
SEL174V

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-170).

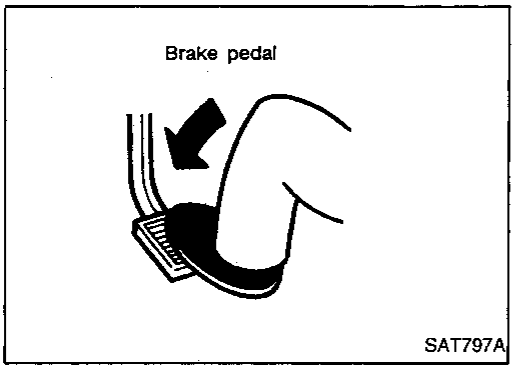


SEL767P

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-171).
- ASCD pump circuit. Refer to "DIAGNOSTIC PROCEDURE 7" (EL-172).
- Replace control unit.



SAT797A

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-169).

5. END. (System is OK.)

Trouble Diagnoses

SYMPTOM CHART

PROCEDURE	—		Diagnostic procedure							
REFERENCE PAGE	EL-162	EL-165	EL-167	EL-167	EL-168	EL-169	EL-170	EL-171	EL-172	EL-173
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 CANCEL 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-165) to verify repairs.

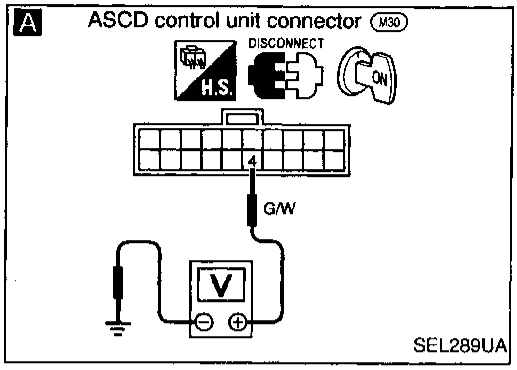
★2: If vehicle speed is greater than 48 km/h (30 MPH) after system has been released, pressing RESUME/ACCEL switch returns vehicle speed to the set speed previously achieved. However, doing so when the ASCD main switch is turned to "OFF", vehicle speed will not return to the set speed since the memory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

Trouble Diagnoses (Cont'd)

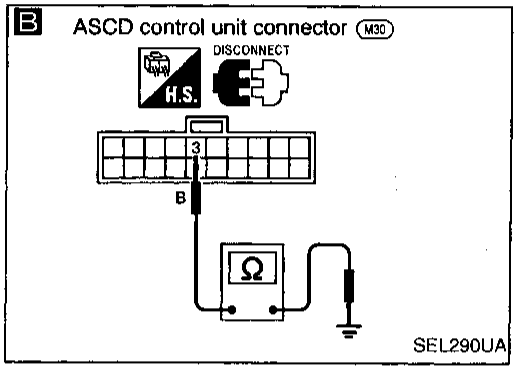
DIAGNOSTIC PROCEDURE 1

(POWER SUPPLY AND GROUND CIRCUIT CHECK)

A



B



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).

OK ↓

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-158.

NG → Go to DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CHECK). Refer to EL-168.

OK ↓

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-160.

NG → Repair harness.

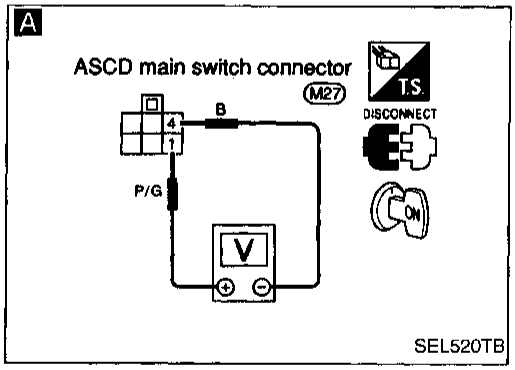
OK ↓

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-157.

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-174).

NG → Replace ASCD main switch.

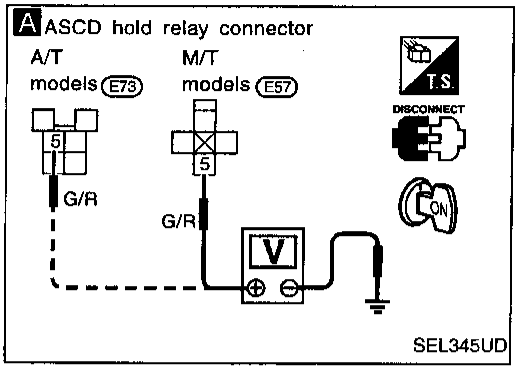
OK ↓

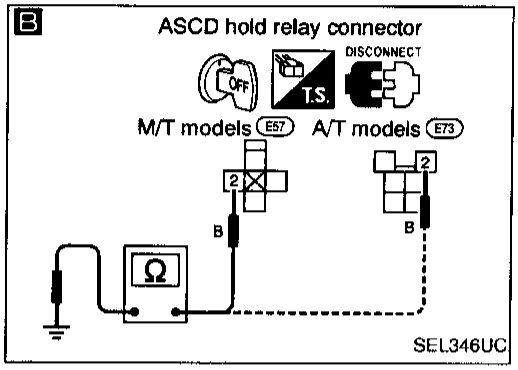
Go to DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CHECK). Refer to EL-168.

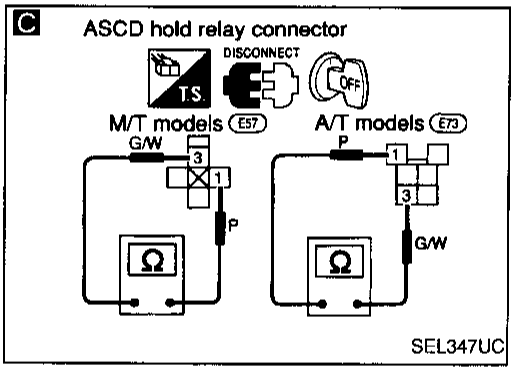
Trouble Diagnoses (Cont'd)

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?

Refer to wiring diagram in EL-157.

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

Yes ↓

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.

Yes ↓

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-174).

NG → Replace ASCD main switch.

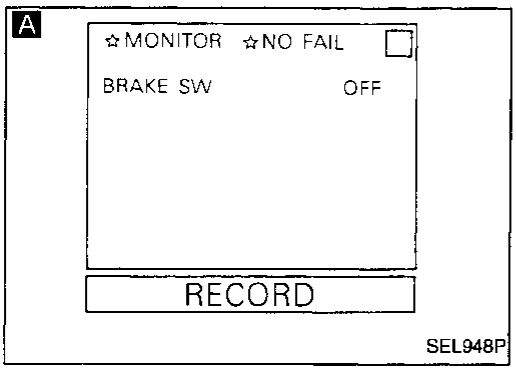
OK ↓

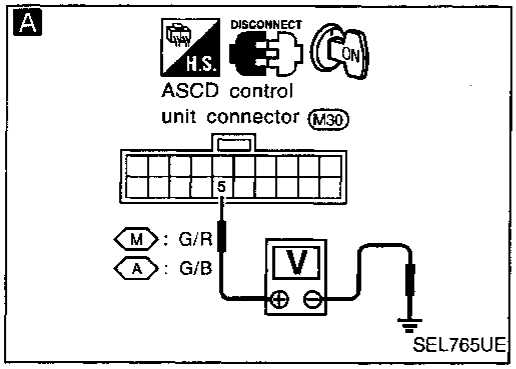
ASCD hold relay is OK.

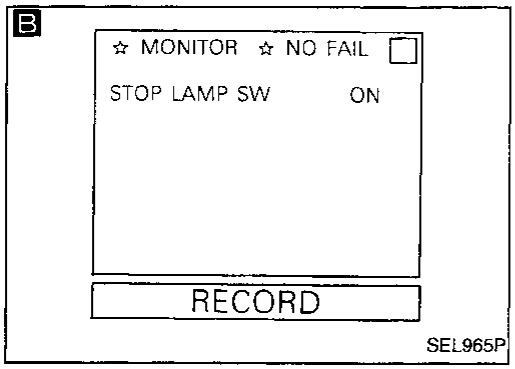
Trouble Diagnoses (Cont'd)

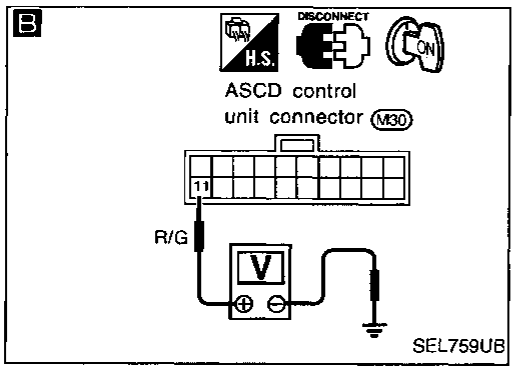
DIAGNOSTIC PROCEDURE 4

(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

NG → Check the following.
- ASCD brake switch
  Refer to "Electrical Components Inspection" (EL-174).
- ASCD clutch switch (M/T model)
  Refer to "Electrical Components Inspection" (EL-174).
- Park/neutral position switch (A/T model)
  Refer to "Electrical Components Inspection" (EL-174).
- ASCD hold relay
- Harness for open or short

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-158.

OK ↓

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

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-174).

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-159.

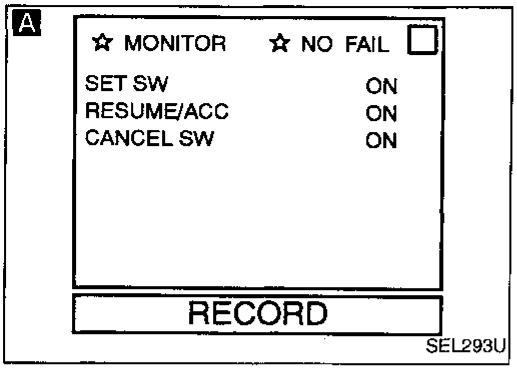
OK ↓

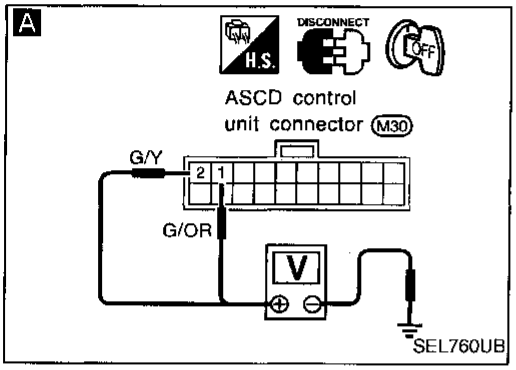
ASCD brake/stop lamp switch is OK.

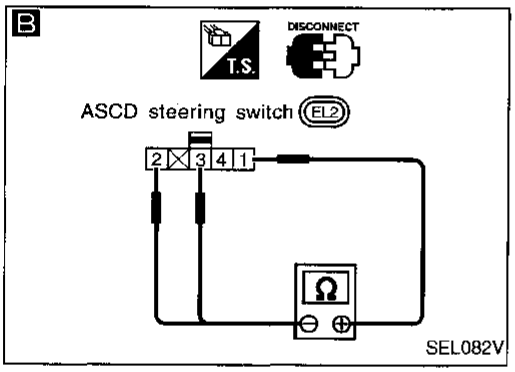
Trouble Diagnoses (Cont'd)

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-159.

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.

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

NG → Replace ASCD steering switch.

OK ↓

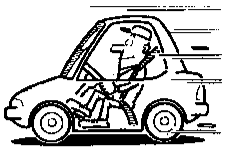
Check harness for open or short between ASCD steering switch and ASCD control unit.

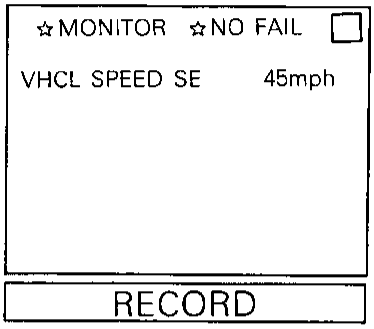
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

(VEHICLE SPEED SENSOR CHECK)

A

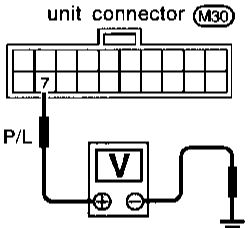




SEL084T

A

ASCD control unit connector (M30)



SEL761UB

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-161.

OK → Vehicle speed sensor is OK.

NG

Does speedometer operate normally?

No → Check speedometer and vehicle speed sensor circuit. Refer to EL-86.

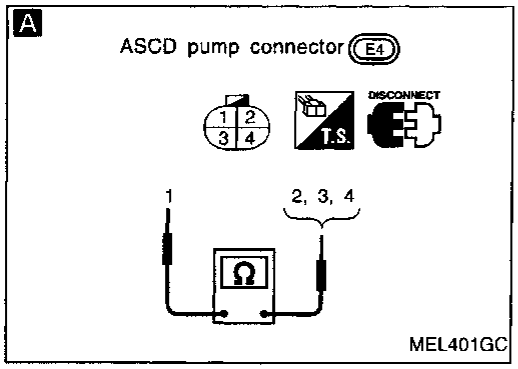
Yes

Check harness for open or short between ASCD control unit terminal ⑦ and combination meter terminal ㉔.

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-160.

NG → Replace ASCD pump.

OK ↓

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

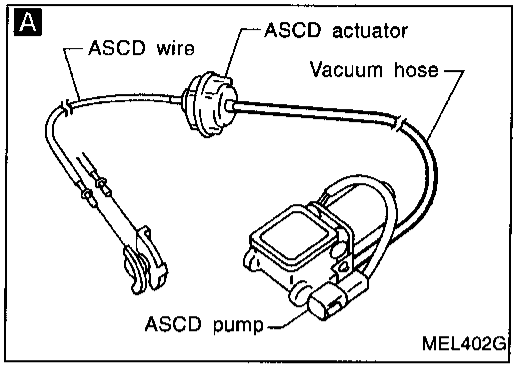
If a self-diagnostic result has already been accomplished, check using the following table.

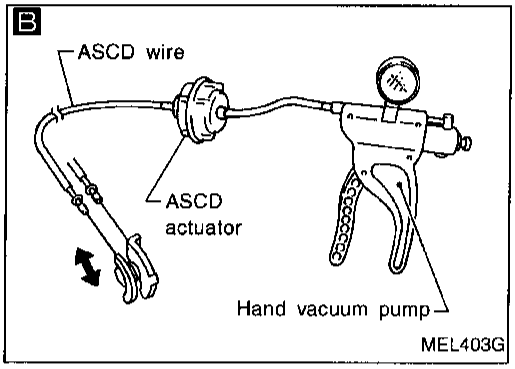
CONSULT self-diagnostic result	Check circuit	
	ASCD control unit terminal	ASCD pump terminal
POWER SUPPLY-VALVE	⑧	①
VACUUM PUMP	⑨	④
AIR VALVE	⑩	②
RELEASE VALVE	⑭	③

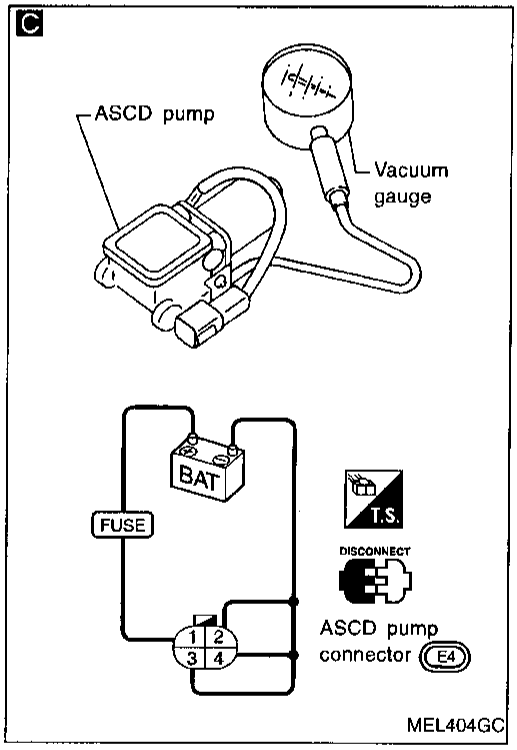
Trouble Diagnoses (Cont'd)

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-175).

OK ↓

B

CHECK ASCD ACTUATOR
1. Disconnect vacuum hose from ASCD actuator.
2. Apply –40 kPa (–0.41 kg/cm^2, –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^2, 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.

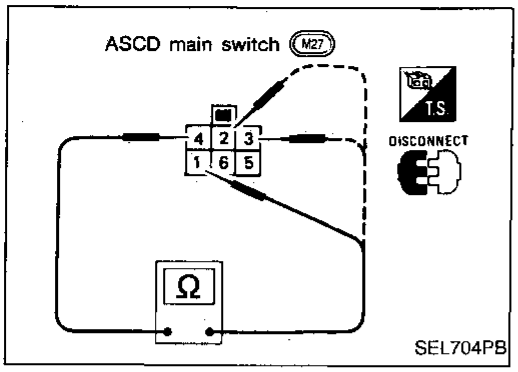
	12V direct current supply terminals		Operation
	⊕	⊖	
Air valve	①	②	Close
Release valve		③	Close
Vacuum motor		④	Operate

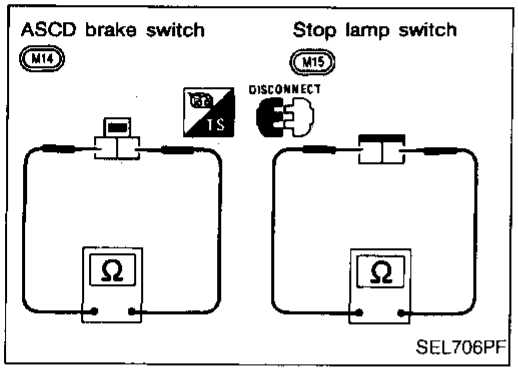
A vacuum pressure of at least –35 kPa (–0.36 kg/cm^2, –5.1 psi) should be generated.

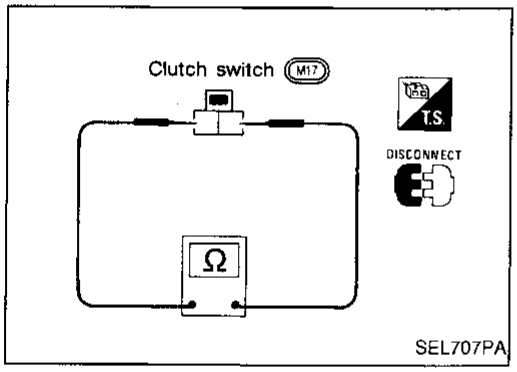
NG → Replace ASCD pump.

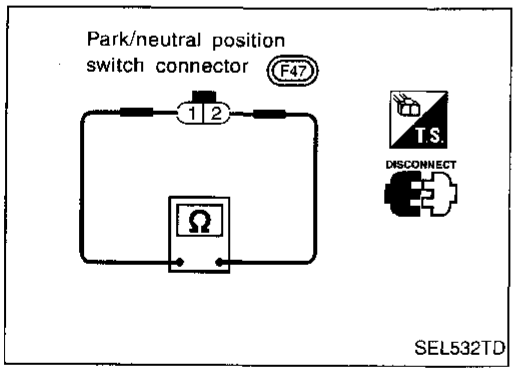
OK ↓

ASCD actuator/pump is OK.









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.

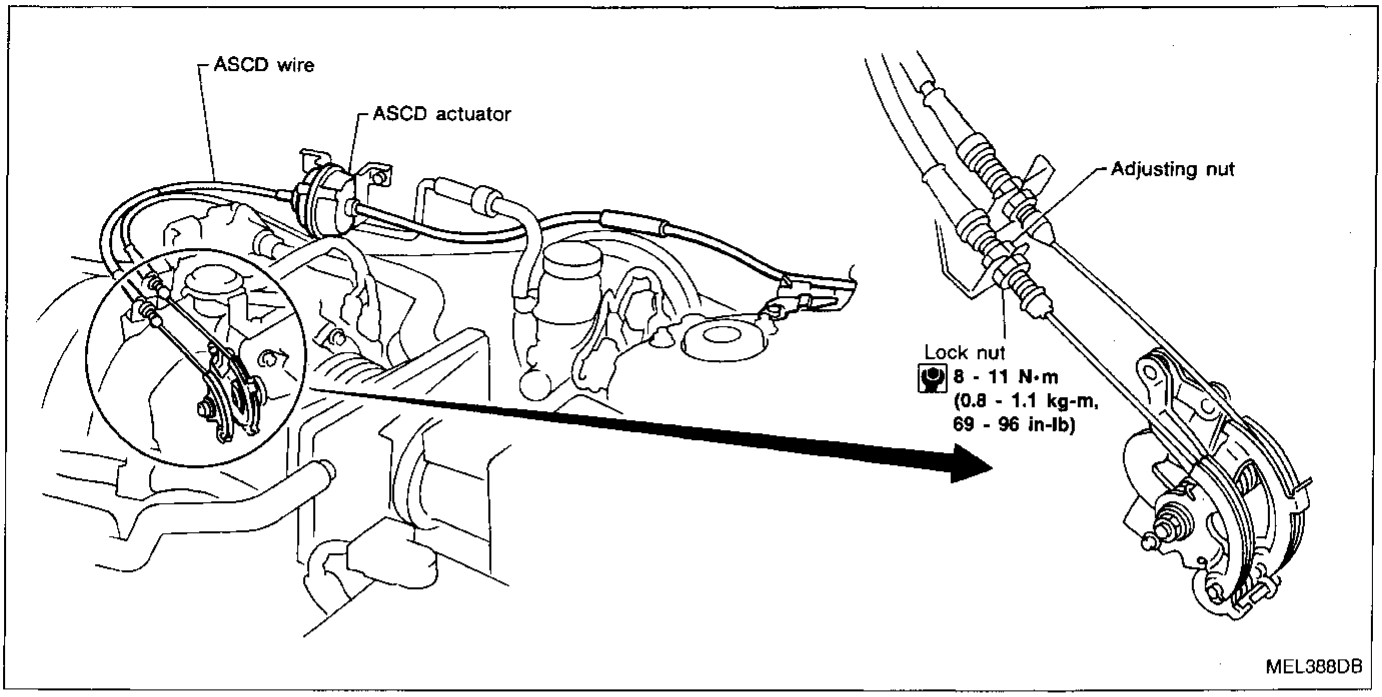
CLUTCH SWITCH (For M/T models)

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.

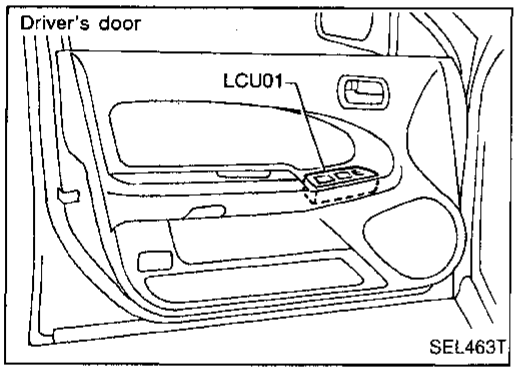
Overall Description

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.

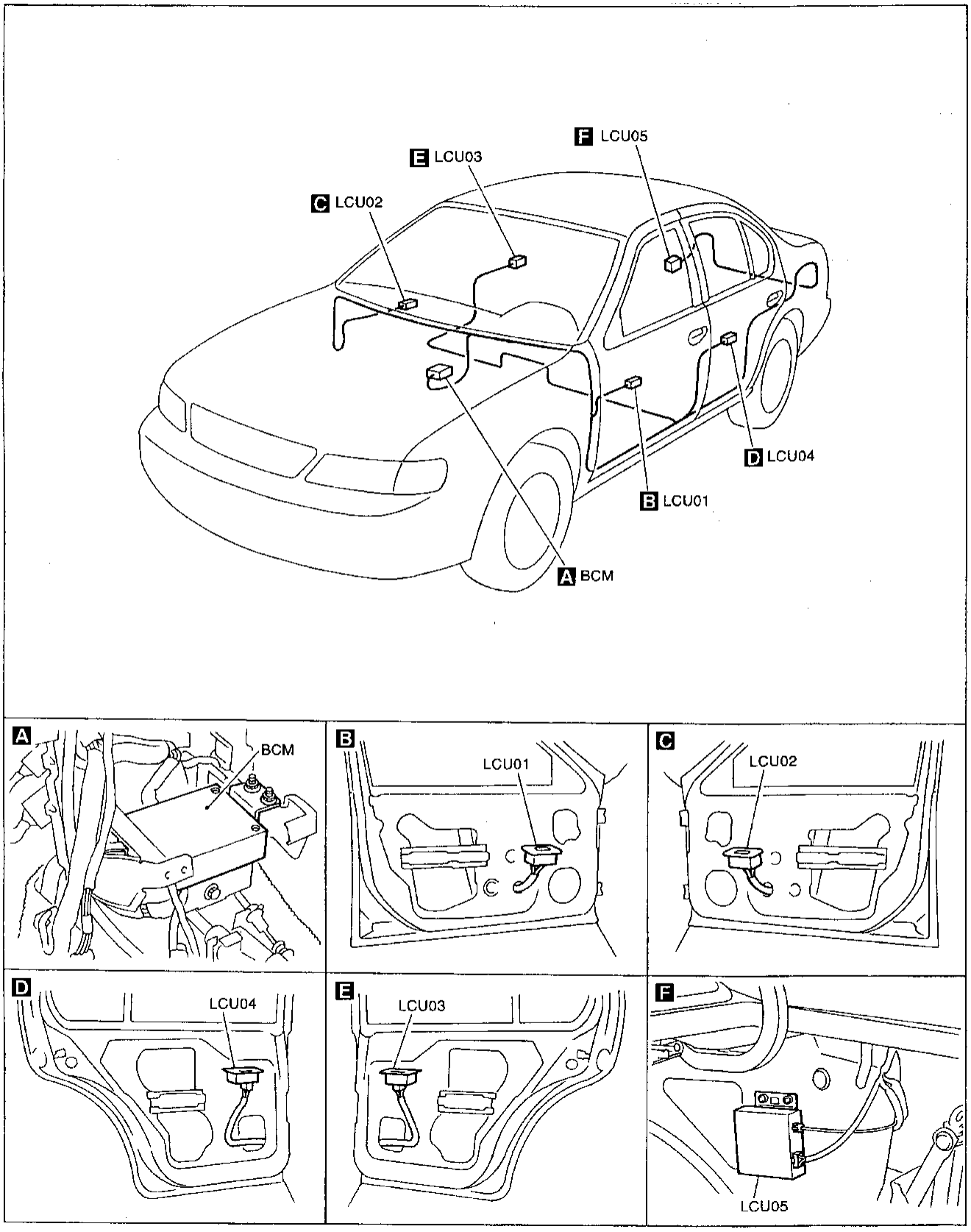
CONTROLLED SYSTEMS

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 & sunroof timer (Refer to "ELECTRICAL SUNROOF" and "POWER WINDOW — IVMS".)
- Trouble-diagnosing system
  — with CONSULT
  — ON BOARD

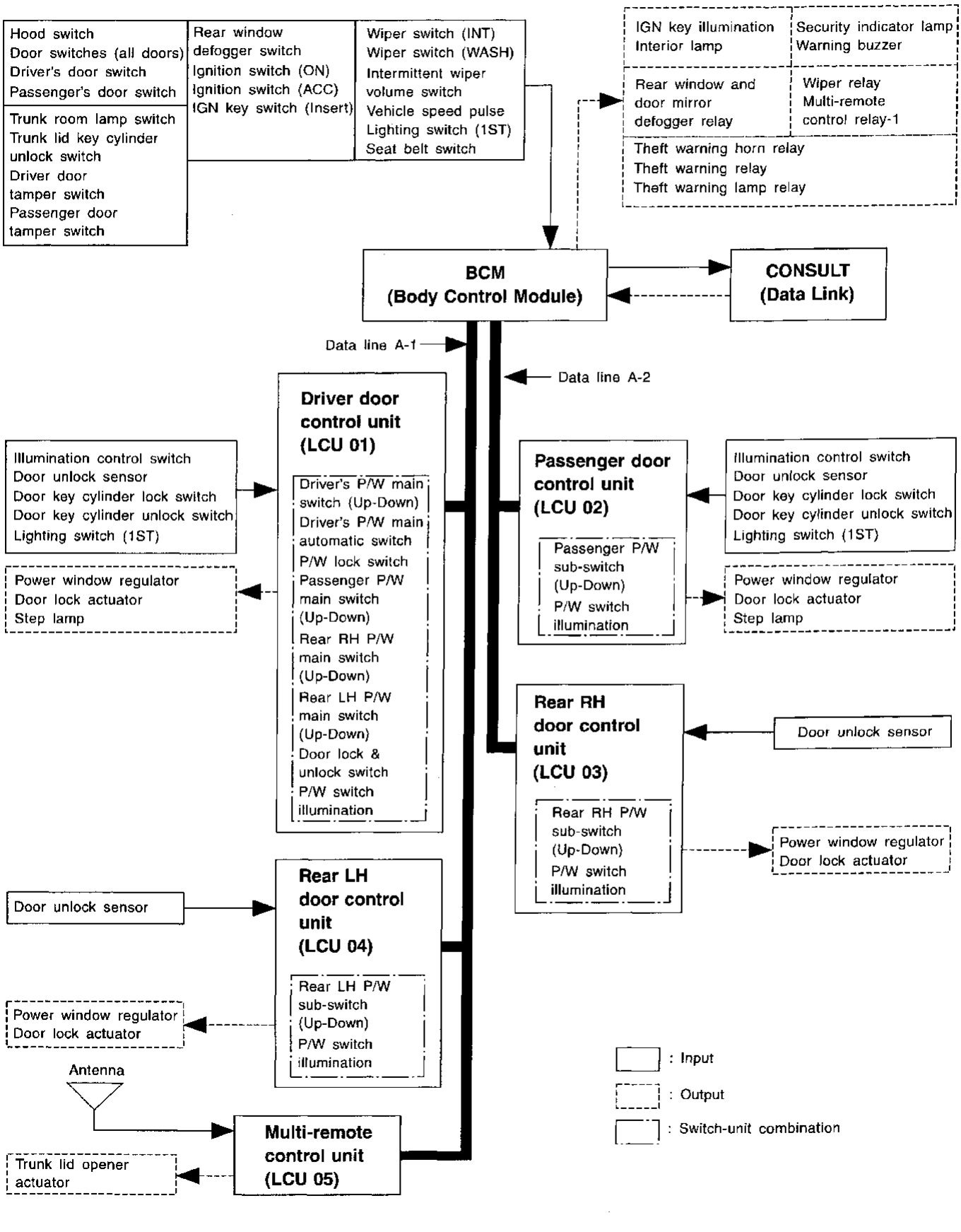
Also, IVMS has the "sleep/wake-up control" function. IVMS puts itself (the whole IVMS system) to sleep under certain conditions to prevent unnecessary power consumption. Then, when a certain input is detected, the system wakes itself up. For more detailed information, refer to "Sleep/Wake-up Control".

Component Parts Location



MEL795H

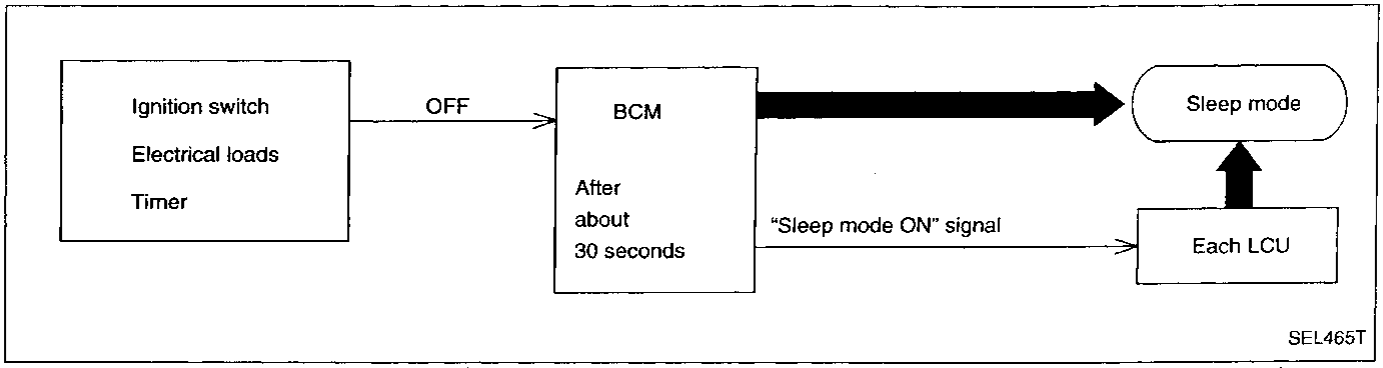
System Diagram



SEL312V

Sleep/Wake-up Control

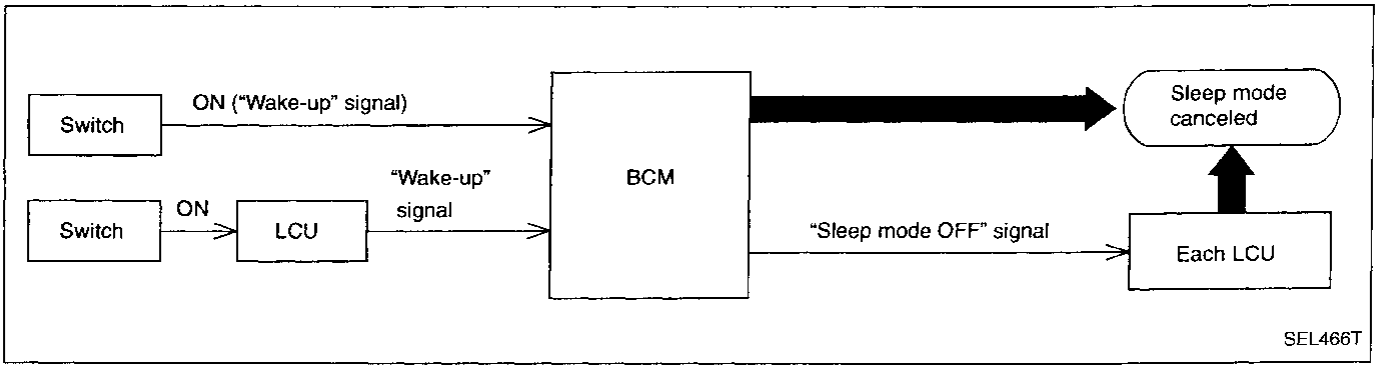
SLEEP CONTROL



"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.

CONSULT

DIAGNOSTIC ITEMS APPLICATION

Test item	Diagnosed system	MODE				
		IVMS COMM DIAGNOSIS	WAKE-UP DIAGNOSIS	SELF-DIAGNOSTIC RESULTS	DATA MONITOR	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 SYSTEM	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.

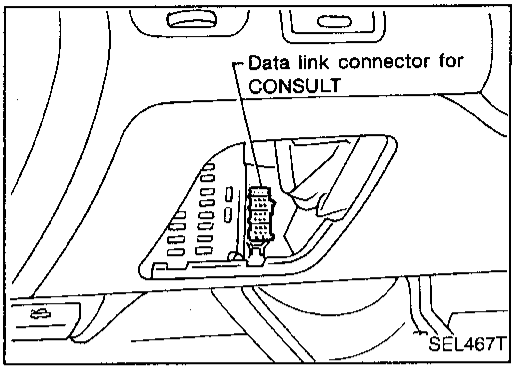
DIAGNOSTIC ITEMS DESCRIPTION

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.

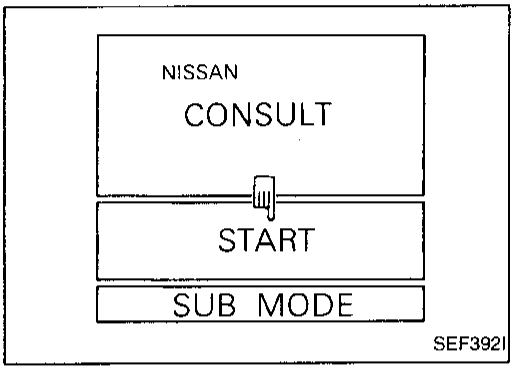
NOTE: When CONSULT diagnosis is operating, some systems under IVMS control do not operate.

CONSULT (Cont'd)

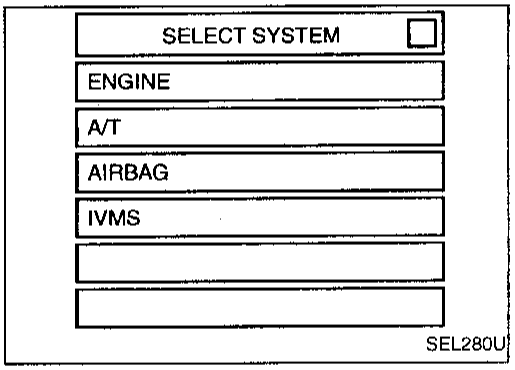
CONSULT INSPECTION PROCEDURE



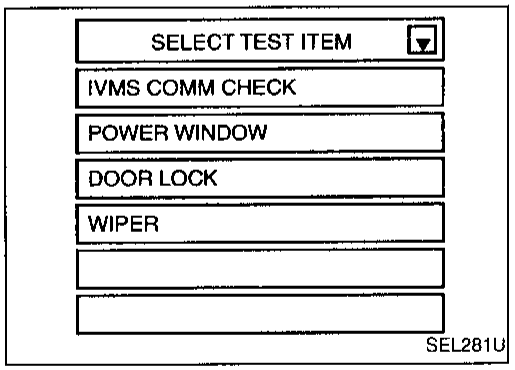
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



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



5. Touch "IVMS".

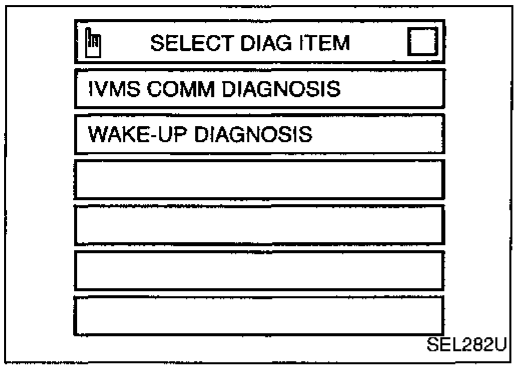


6. Perform each diagnostic item according to the item application chart as follows:

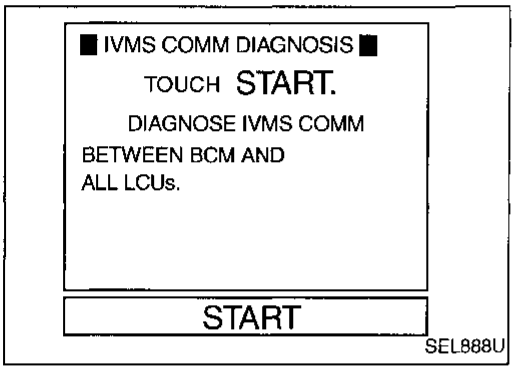
For further information, read the CONSULT Operation Manual.

CONSULT (Cont'd)

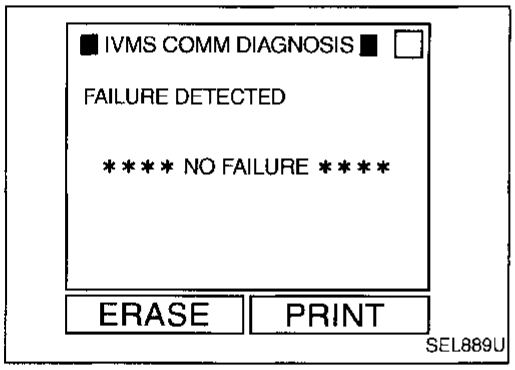
IVMS COMMUNICATION DIAGNOSIS



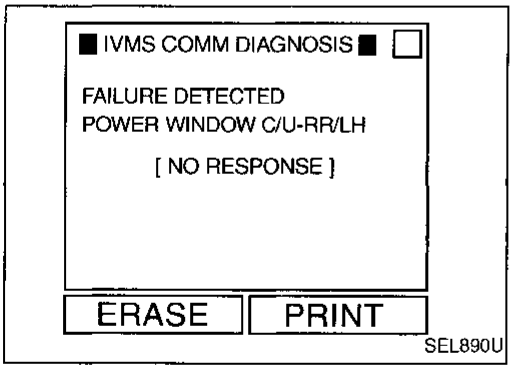
1. Touch "IVMS COMM DIAGNOSIS" in "IVMS-COMM CHECK".



2. Touch "START".



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



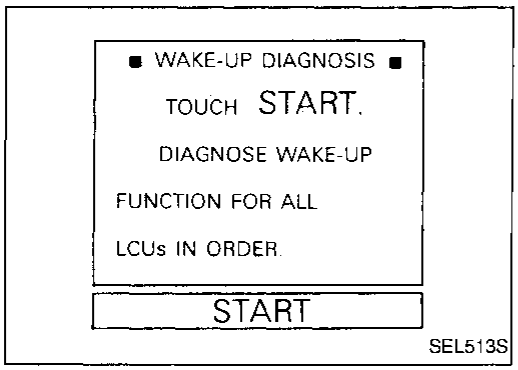
If any problem code is displayed, repair/replace the system according to the IVMS communication diagnosis results. (Refer to EL-347.)

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".

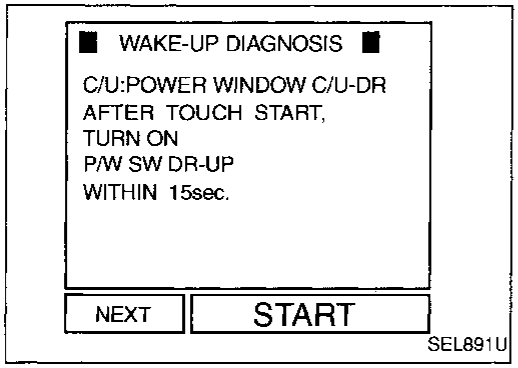
CONSULT (Cont'd)

WAKE-UP DIAGNOSIS

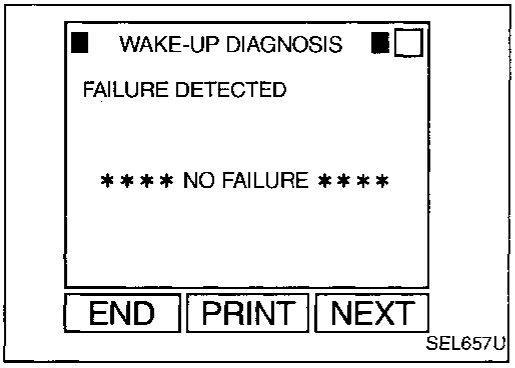
1. Touch "WAKE-UP DIAGNOSIS" in "IVMS-COMM CHECK".
2. Touch "START" for "WAKE-UP DIAGNOSIS".



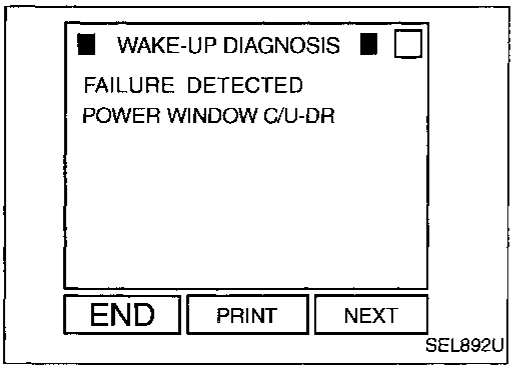
3. After touching "START", turn ON switch designated on CONSULT display within 15 seconds.



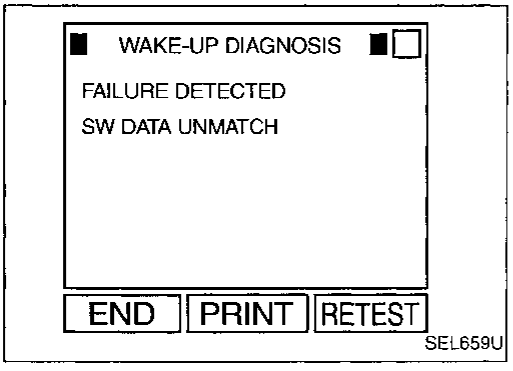
4. If no failure is detected, touch "NEXT" and perform wake-up diagnosis for next LCU or touch "END". (INSPECTION END)



If any problem is displayed, replace the LCU.



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



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-348) or turn the ignition to "OFF" position and remove 7.5A fuse (No. 56, located in the fuse and fusible link box).

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 2. Poor connection at LCU connector 3. Ground circuit of the LCU 4. Open circuit in the data line 5. Malfunctioning LCU	1. Check power supply circuit of the LCU in question. (EL-349) 2. Check connector connection of LCU in question. 3. Check ground circuit of the LCU in question. (EL-328) 4. Check open circuit in the data line between BCM and LCU in question. (EL-198) 5. Replace LCU.*
		POWER WINDOW C/U-AS [NO RESPONSE]	35		
		POWER WINDOW C/U-RR [NO RESPONSE]	42		
		POWER WINDOW C/U-RL [NO RESPONSE]	45		
		MULTI-REMOTE [NO RESPONSE]	55		
	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-349) 2. Check connector connection of LCU in question. 3. Check open circuit in the data line between BCM and LCU in question. (EL-198)
	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-198) 2. Check connector connection of BCM. 3. Check open circuit in the data line between BCM and all LCUs. (EL-198) 4. Replace BCM.* 5. Disconnect each LCUs one by one to check whether the other LCUs operate properly.

*: 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-348) or turn the ignition to "OFF" position and remove 7.5A fuse (No. 56, located in the fuse and fusible link box).

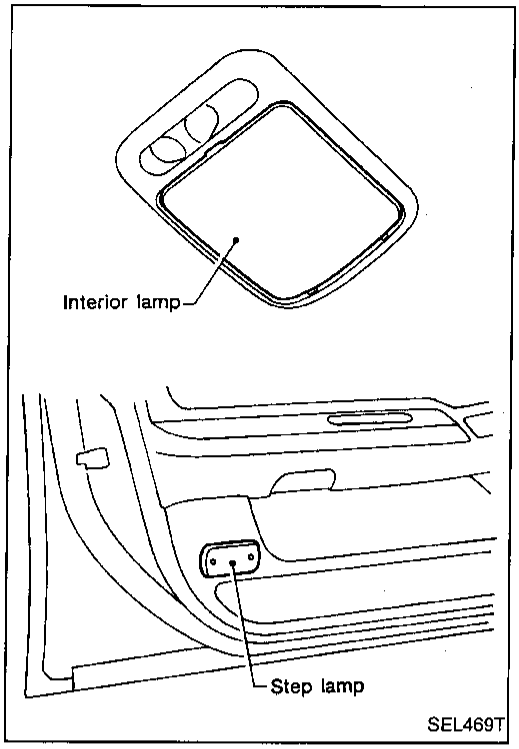
CONSULT (Cont'd)

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.
	Two or more	Combination of above results	—	1. Malfunctioning LCU	1. Replace LCU.
		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-348) 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

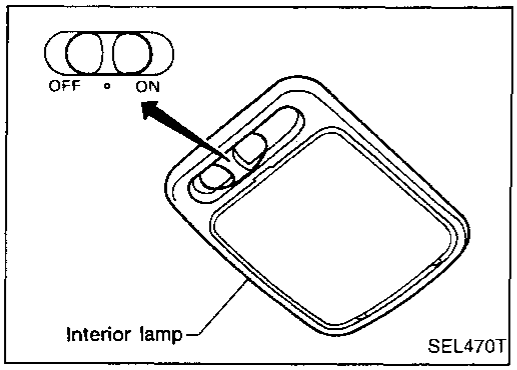
ON BOARD DIAGNOSTIC RESULTS INDICATOR LAMP

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-188
Mode II	Switch monitor	Monitoring conditions of switches connected to BCM and LCUs.	EL-190
Mode III	Power door lock self-diagnosis	—	EL-235
Mode IV	Power window operation	Operation of driver side window	EL-217

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



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

↓

Turn ignition switch "ON".

↓

Return ignition switch to "OFF" and press rear window defogger switch more than 10 times during 10 seconds.

↓

Self-diagnostic results indicator lamps should turn on.

↓

Rear window defogger switch stays OFF.

↓

Turn ignition switch "ON" within 5 seconds after the indicator lamps turn on.

↓

Indicator lamp turn off.

↓ After a second

Mode I is performed.

↓

Turn ignition switch "OFF".

↓

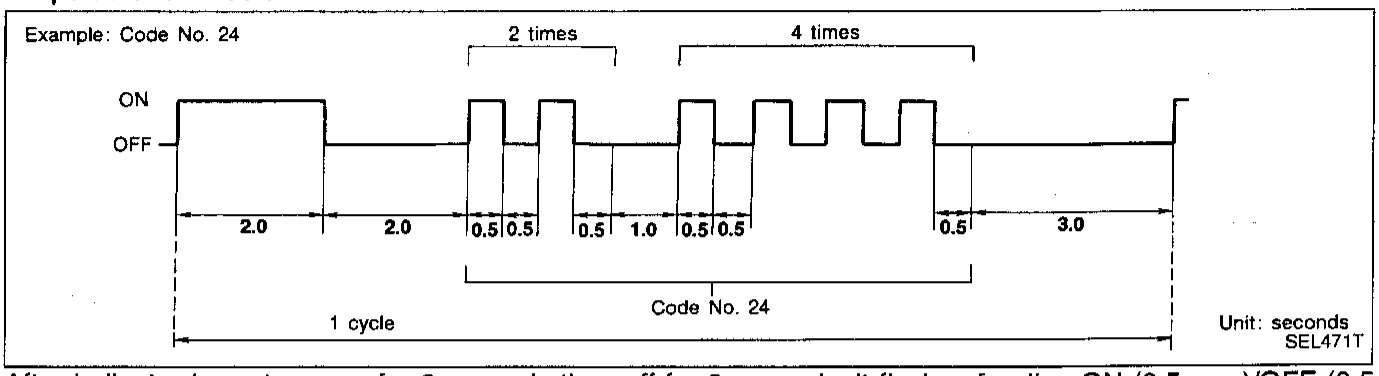
DIAGNOSIS END*

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

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

DESCRIPTION

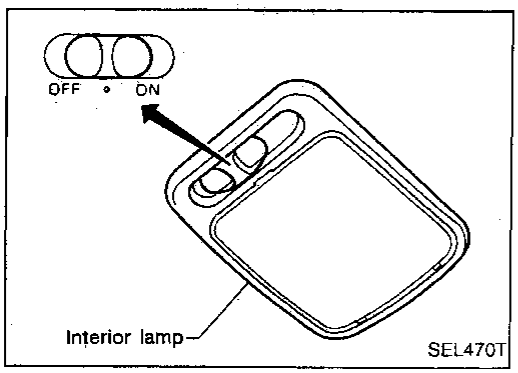
In this mode, a malfunction code is indicated by the number of flashes from the front map lamps and step lamps as shown below:



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-347).
25		No response from data line A-1	Refer to CONSULT DIAGNOSTIC CHART, "NO RESPONSE" (EL-348).
34	Passenger door control unit (LCU02)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-347).
35		No response from data line A-2	Refer to CONSULT DIAGNOSTIC CHART, "NO RESPONSE" (EL-348).
41	Rear RH door control unit (LCU03)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-347).
42		No response from data line A-2	Refer to CONSULT DIAGNOSTIC CHART, "NO RESPONSE" (EL-348).
44	Rear LH door control unit (LCU04)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-347).
45		No response from data line A-1	Refer to CONSULT DIAGNOSTIC CHART, "NO RESPONSE" (EL-348).
54	Multi-remote control unit (LCU05)	Malfunctioning communication	Refer to CONSULT DIAGNOSTIC CHART, "COMM FAIL" (EL-347).
55		No response from data line A-1	Refer to CONSULT DIAGNOSTIC CHART, "NO RESPONSE" (EL-348).
11	No malfunction		—



On board Diagnosis — Mode II (Switch monitor)

HOW TO PERFORM MODE II

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

↓

Turn ignition switch "ON".

↓

Return ignition switch to "OFF" and press rear window defogger switch more than 10 times during 10 seconds.

↓

Self-diagnostic results indicator lamps should turn on.

↓

Keep rear window defogger switch pressed ON, and turn ignition switch "ON" within 5 seconds after the indicator lamps turn on.

↓

Indicator lamps turn off.

↓ After a second

Mode II is performed.

↓

Turn each switch ON and OFF. Note that the indicator lamp and/or buzzer goes on or off in response to switch position.

↓

Turn ignition switch "OFF".

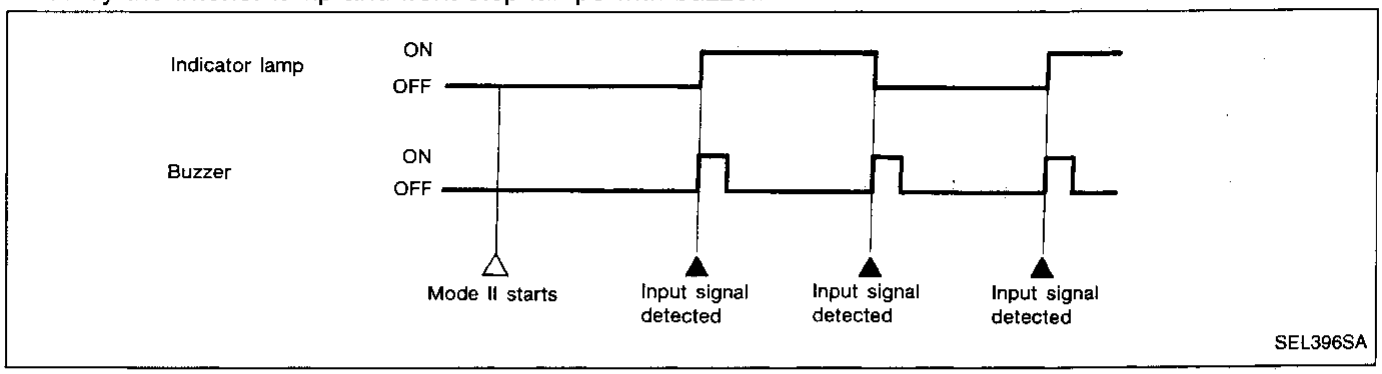
↓

DIAGNOSIS END

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

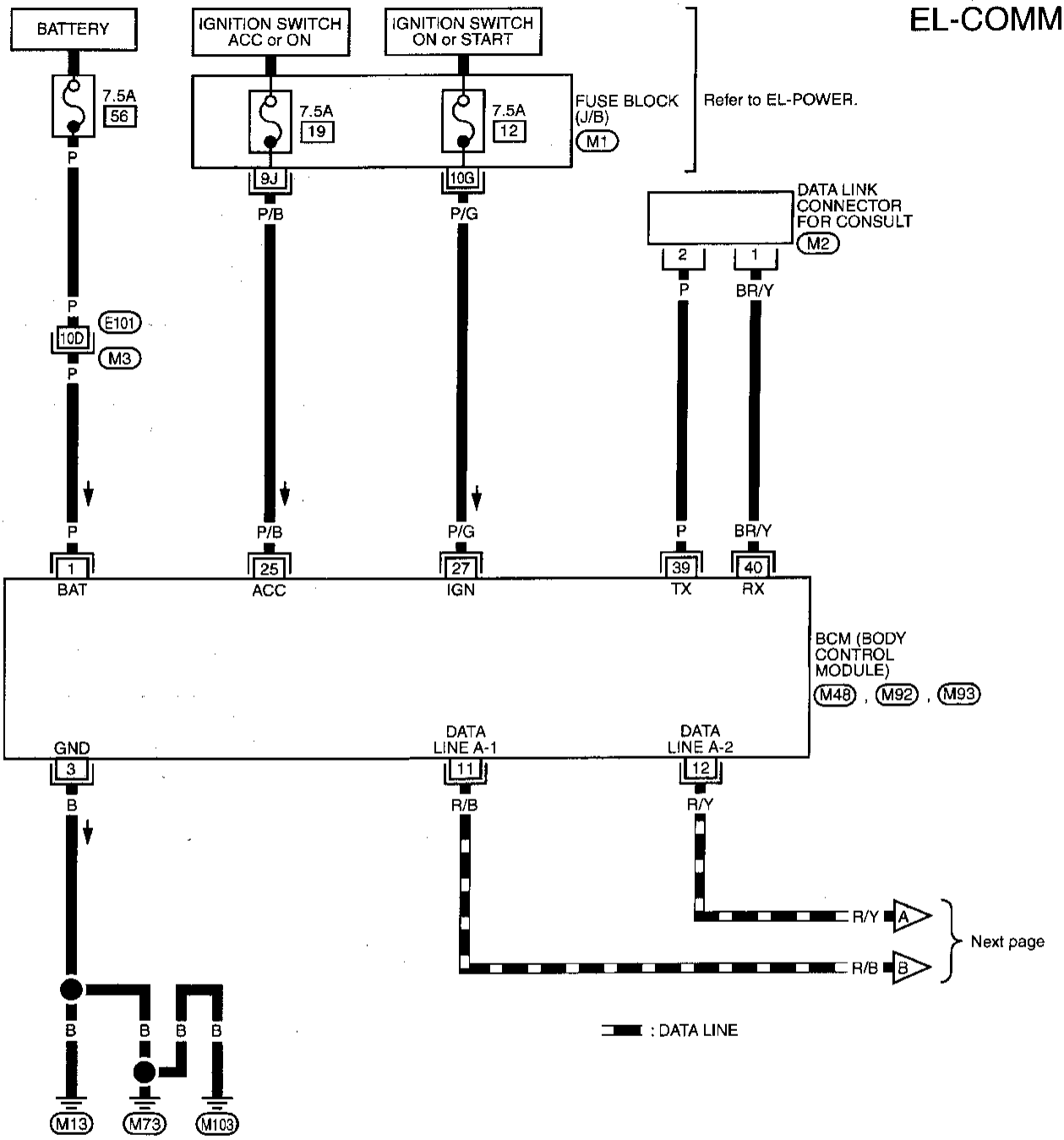
BCM	• Hood switch • Trunk room lamp switch • Trunk lid key cylinder switch (UNLOCK) • Lighting switch (1st) • Rear window defogger switch • Wiper switch (INT) • Wiper switch (WASH) • Door switch (driver side) • Door switch (passenger side) • Door switches (all doors) • Seat belt buckle switch • Front door key cylinder tamper switches
LCU 01	• Power window lock switch • Power window main switches (UP/DOWN) • Power window automatic switch • Door lock & unlock switch (LOCK/UNLOCK) • Door unlock sensor • Door key cylinder switch (LOCK/UNLOCK)

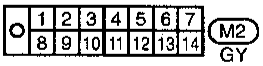
LCU 02	• Door key cylinder switch (LOCK/UNLOCK) • Door unlock sensor • Passenger power window sub-switch (UP/DOWN)	
LCU 03	• Door unlock sensor • Power window sub-switch (Rear RH) (UP/DOWN)	
LCU 04	• Door unlock sensor • Power window sub-switch (Rear LH) (UP/DOWN)	
LCU 05	• Door lock button • Door unlock button • Panic alarm button • Trunk lid opener button	Operated by multi-remote controller

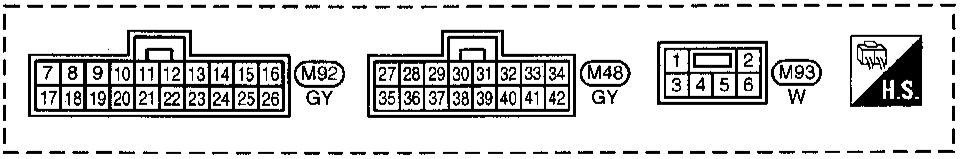
Wiring Diagram — COMM —

POWER SUPPLY, GROUND AND COMMUNICATION CIRCUITS

EL-COMM-01







Refer to last page (Foldout page).

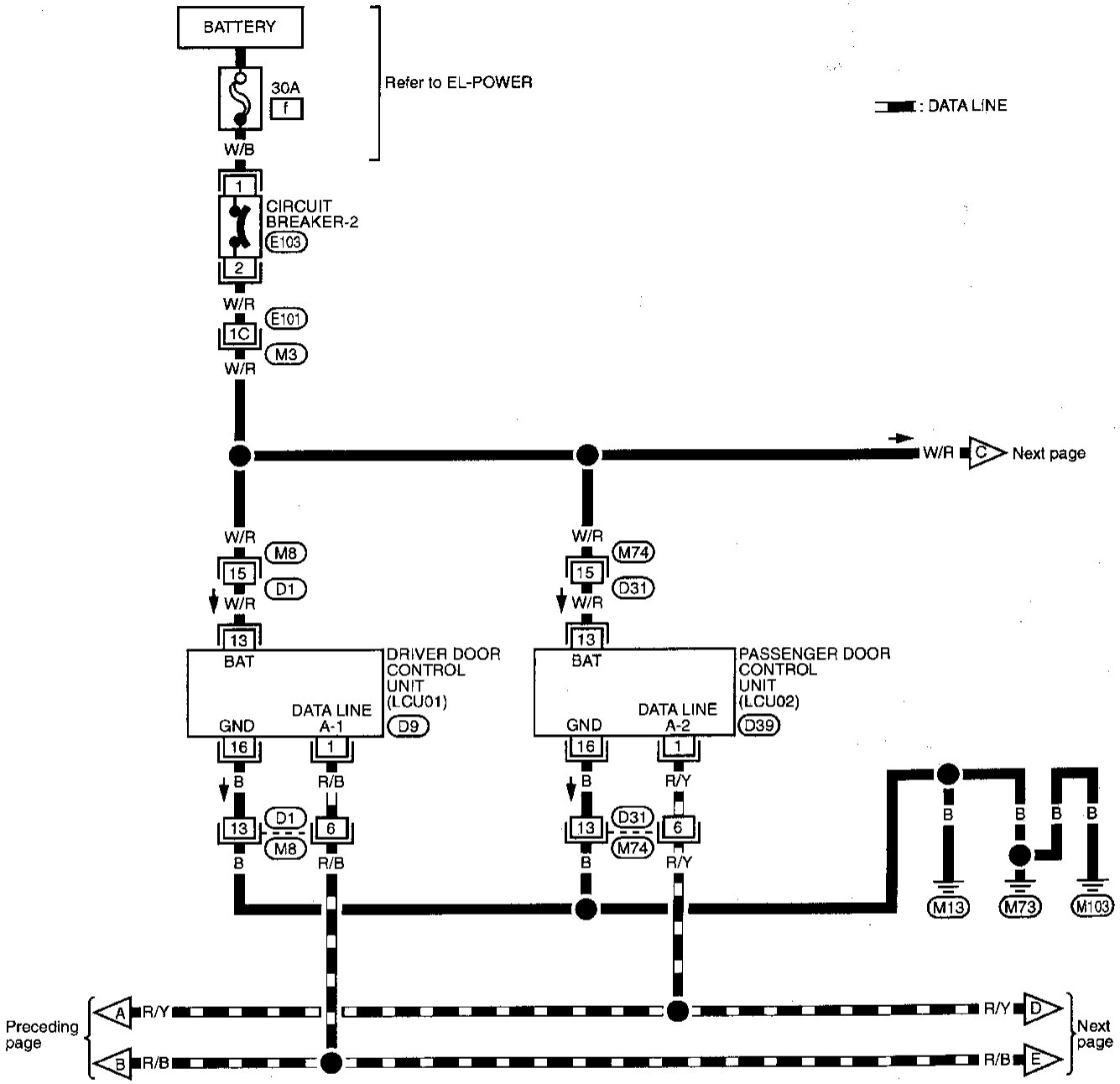
M1

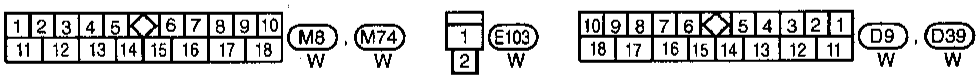
M3 , E101

MEL726H

Wiring Diagram — COMM — (Cont'd)

EL-COMM-02





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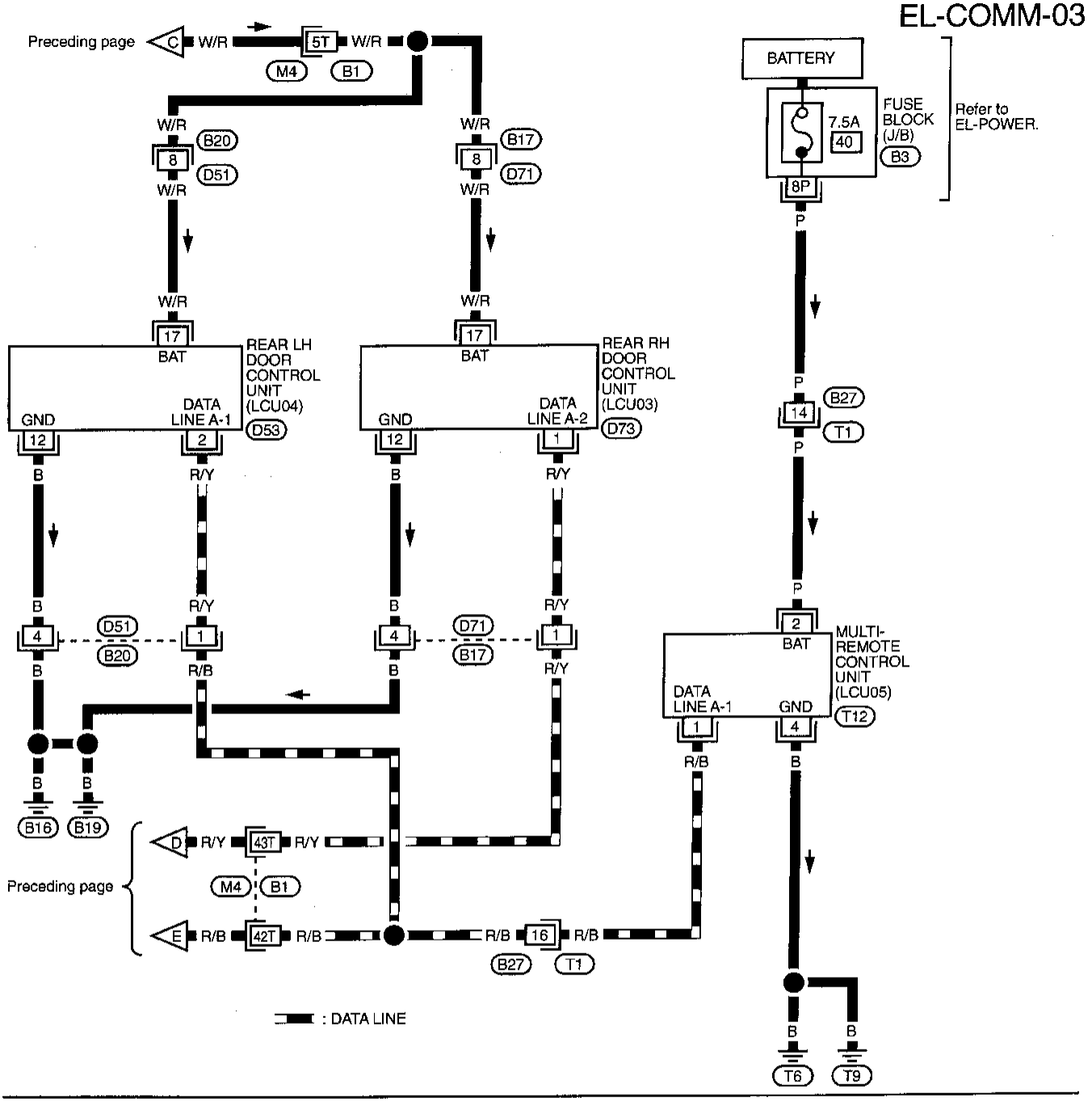
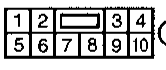
M3 , E101

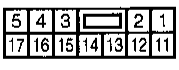
MEL727H

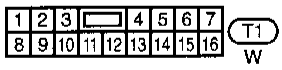
Wiring Diagram — COMM — (Cont'd)

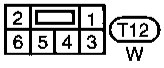
EL-COMM-03











Refer to last page (Foldout page).

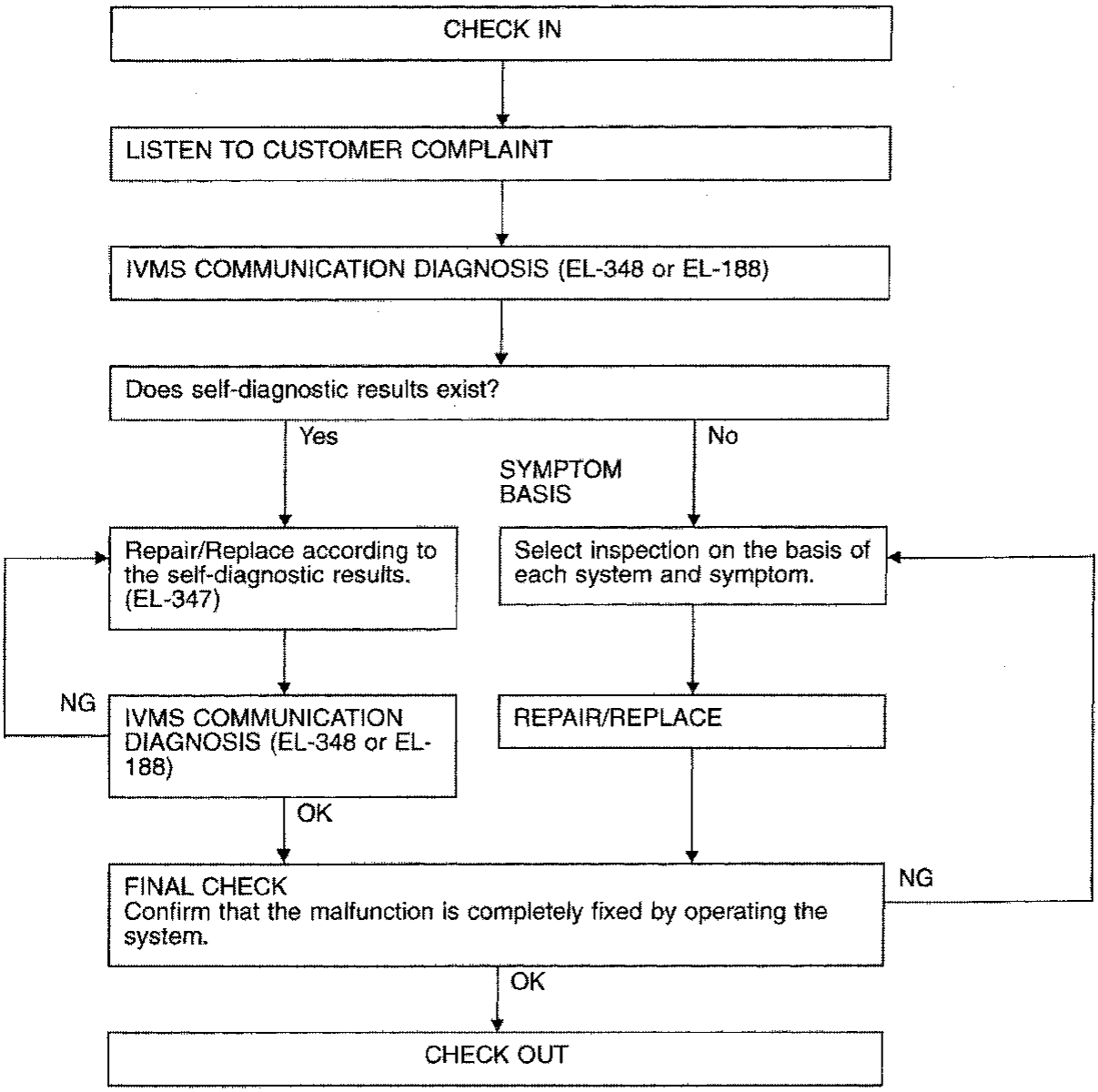
M4 , B1

B3

MEL100J

Trouble Diagnoses

WORK FLOW

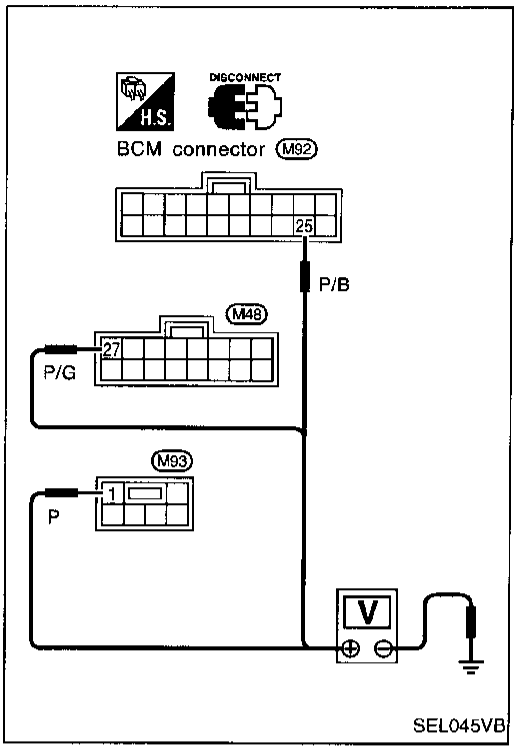


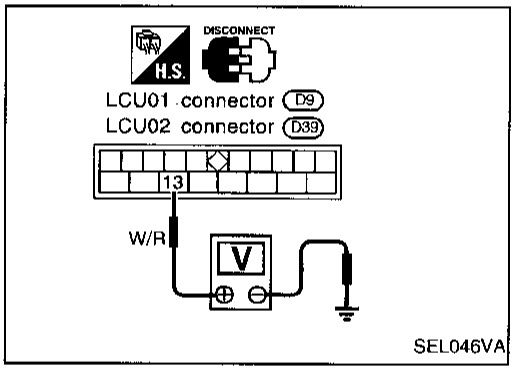
NOTICE:

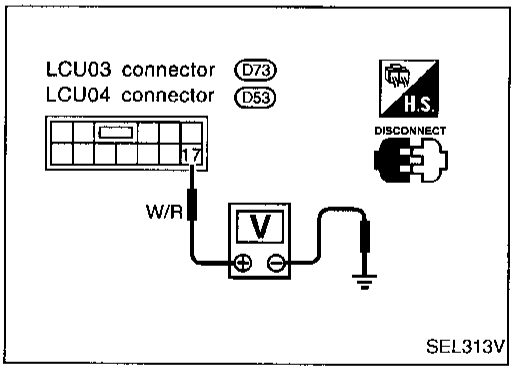
- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with CONSULT (refer to EL-348) or turn the ignition switch to "OFF" position and remove 7.5A fuse (No. 56, located in the fuse and fusible link box).

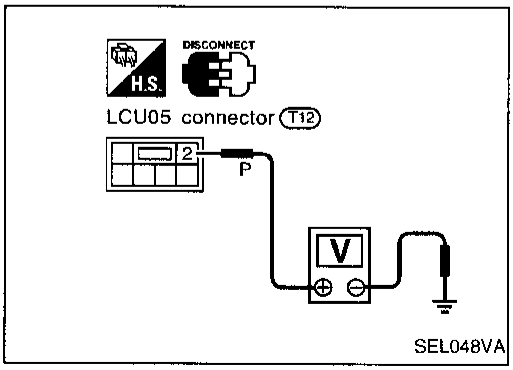
Trouble Diagnoses (Cont'd)

POWER SUPPLY CIRCUIT CHECK







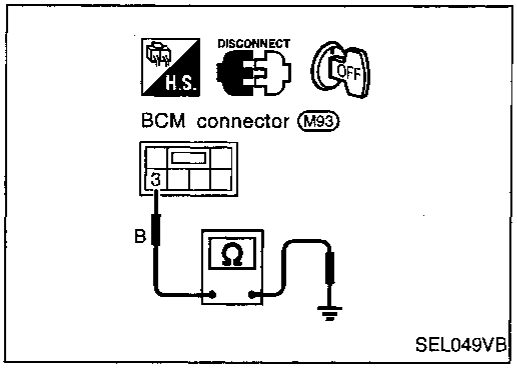


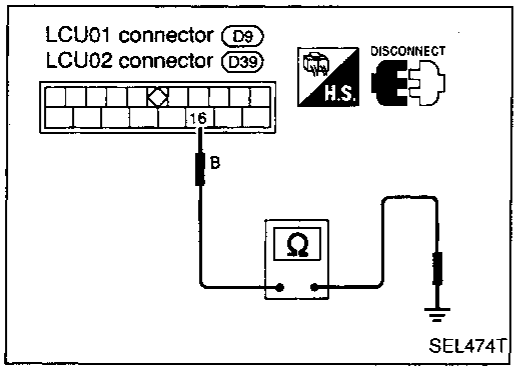
Control unit	Terminals		Ignition switch position		
	⊕	⊖	OFF	ACC	ON
BCM	①	Ground	Battery voltage		
	㉕	Ground	Approx. 0V	Battery voltage	
	㉗	Ground	Approx. 0V		Battery voltage
LCU01 and LCU02	⑬	Ground	Battery voltage		
LCU03 and LCU04	⑰	Ground	Battery voltage		
LCU05	②	Ground	Battery voltage		

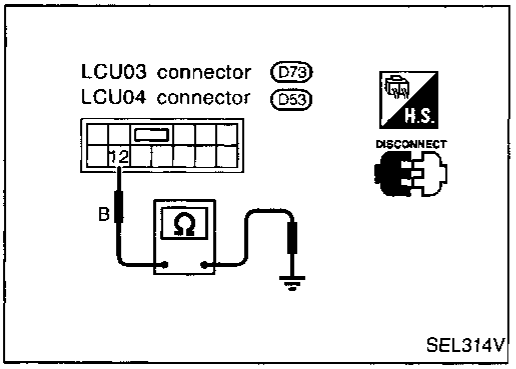
*CONSULT (data monitor) may be used to check for the ignition switch input (ACC, ON).

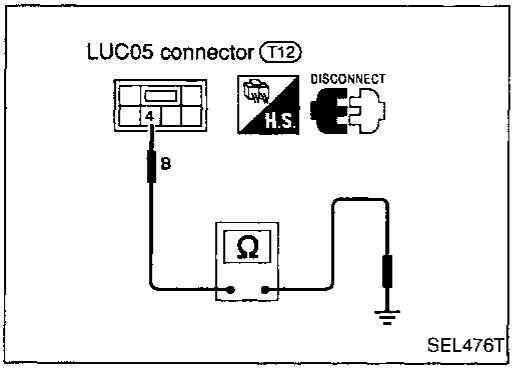
Trouble Diagnoses (Cont'd)

GROUND CIRCUIT CHECK









Control unit	Terminals	Continuity
BCM	③ - Ground	Yes
LCU01	⑯ - Ground	
LCU02		
LCU03	⑫ - Ground	
LCU04		
LCU05	④ - Ground	

Trouble Diagnoses (Cont'd)

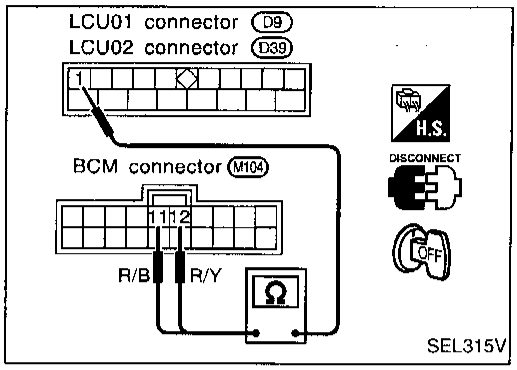
DATA LINES CIRCUIT CHECK

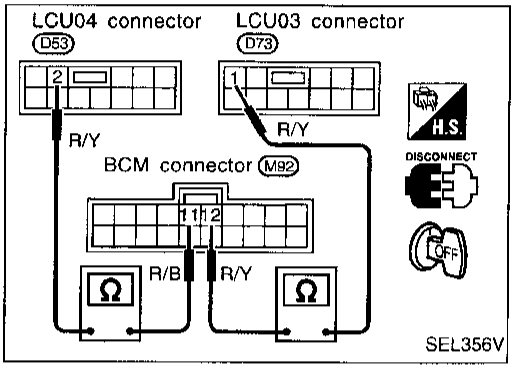
Data lines open circuit check

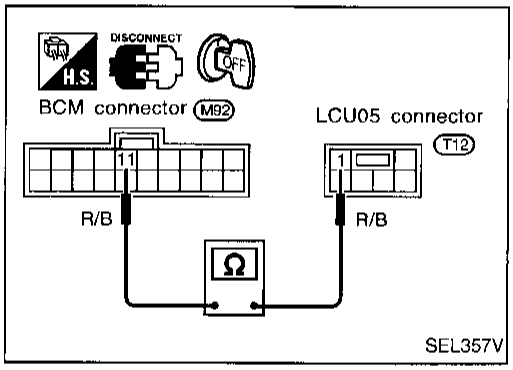
NOTE: When checking data line circuit, disconnect BCM and all LCU connectors.

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	



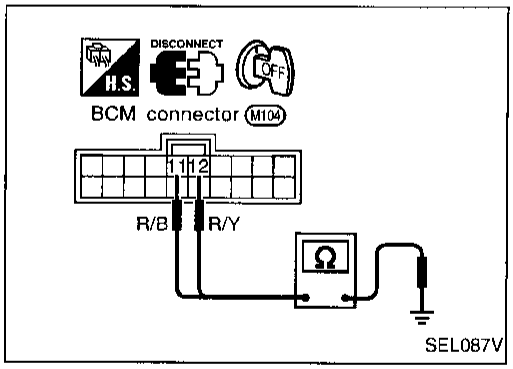




Data lines short circuit check

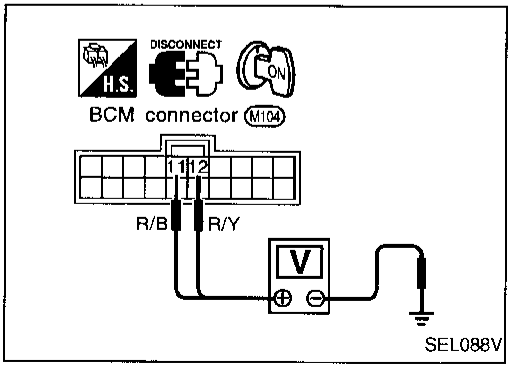
1. Disconnect BCM and all LCU connectors.
2. Check continuity between BCM terminal and body ground.

Terminals	Continuity
⑪ - Ground	No
⑫ - Ground	

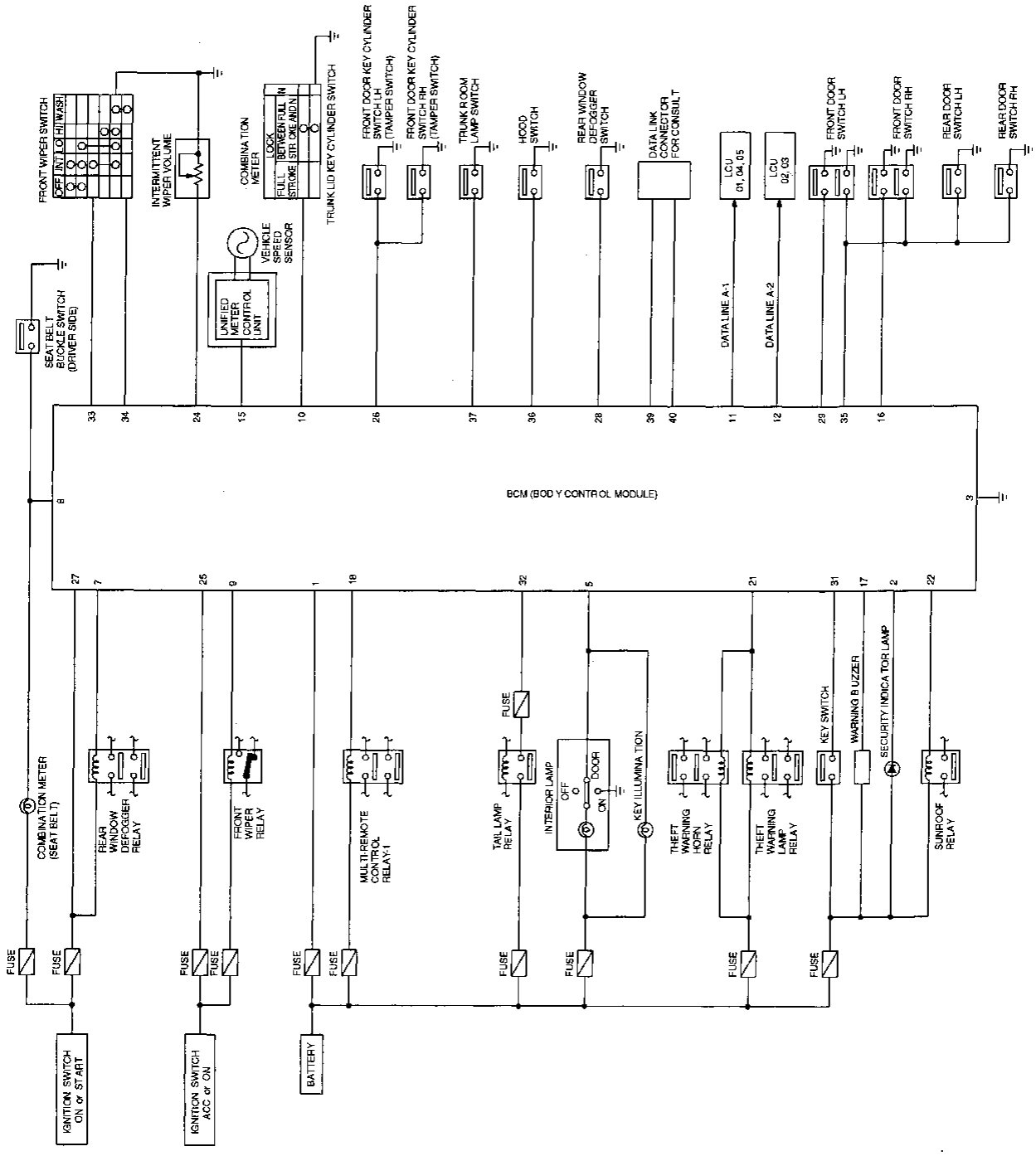


3. Check voltage between BCM terminal and body ground.

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



Schematic



MEL101J

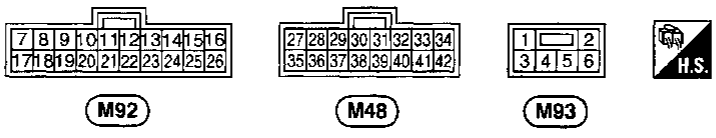
Input/Output Operation Signal

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
22	R	Sunroof relay	O	Ignition switch "ON" and timer is operated.		0
				Other than above		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

Input/Output Operation Signal (Cont'd)

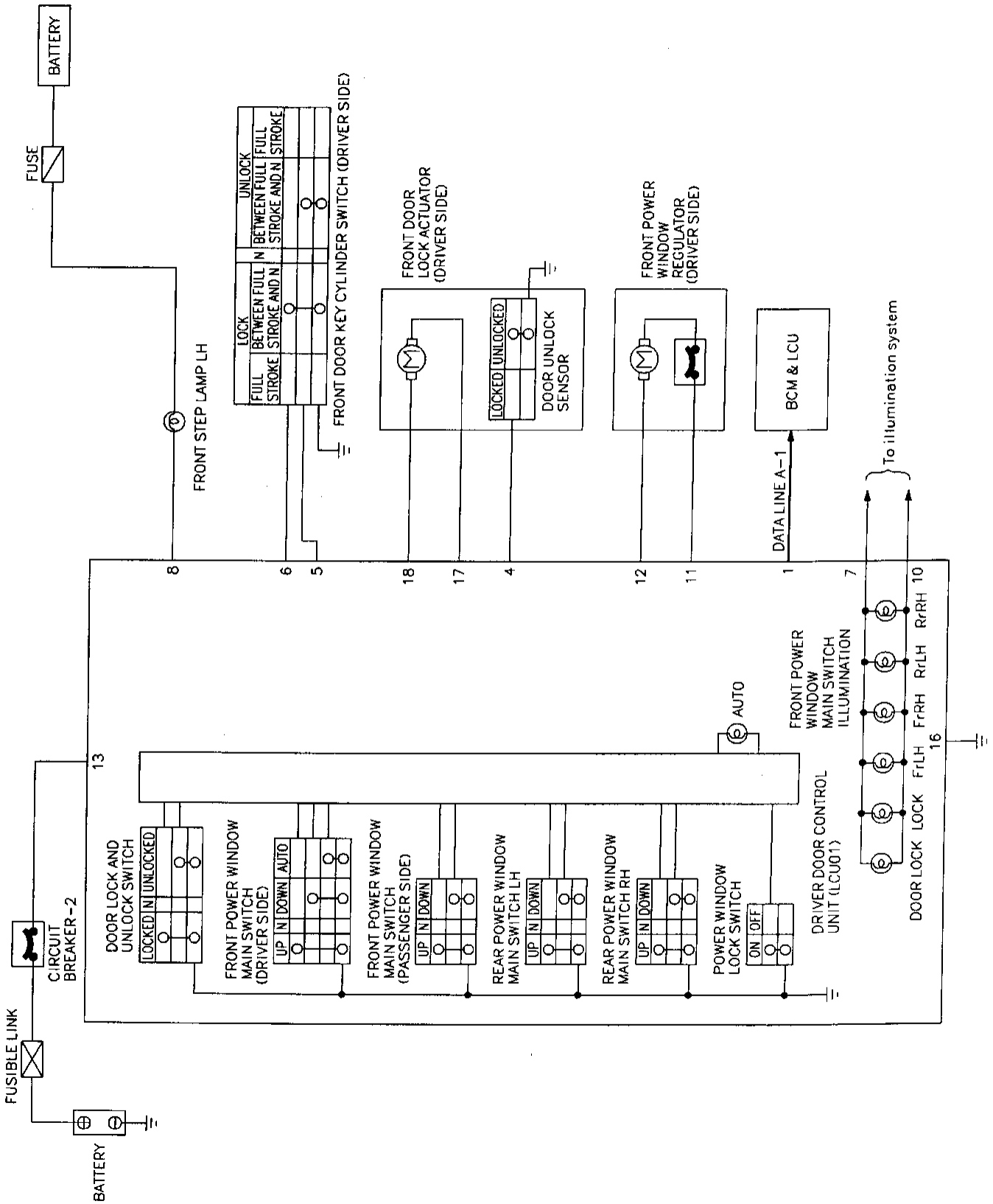
Terminal No.	Wire color	Connections	INPUT (I)/ OUTPUT (O)	Operated condition		Voltage (V) (Approximate values)
25	P/B	Ignition switch (ACC)	I	Ignition switch "ACC"		12
26	BR/Y	Key cylinder tamper switches (Driver/passenger side)	I	Both front door key cylinders installed		12
				One of front door key 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	—	—	—

BCM (BODY CONTROL MODULE)



MEL003HA

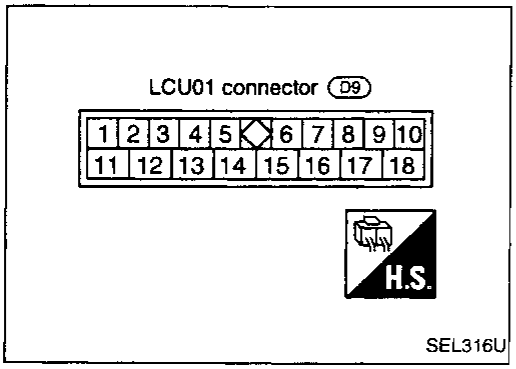
Schematic



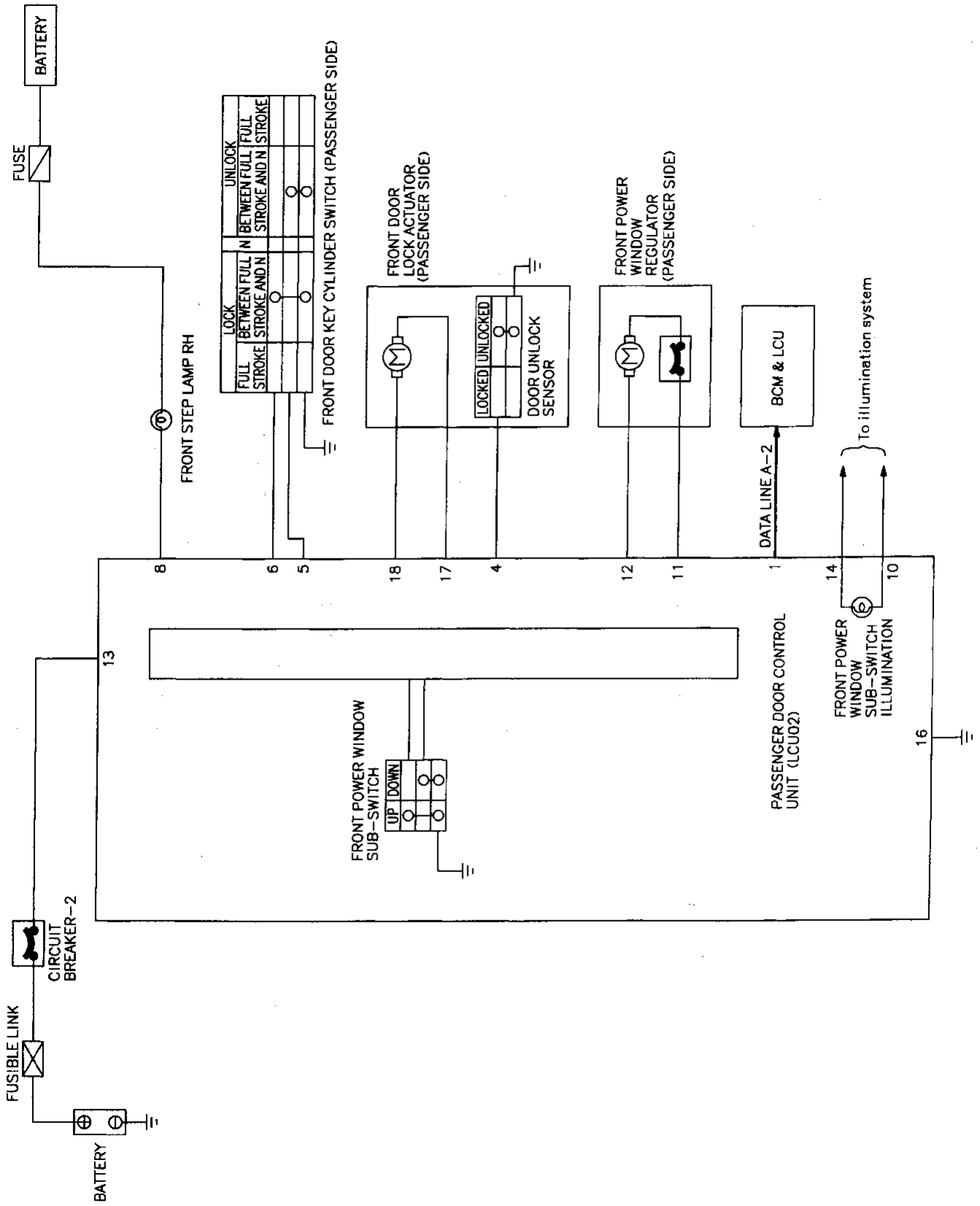
MEL721H

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



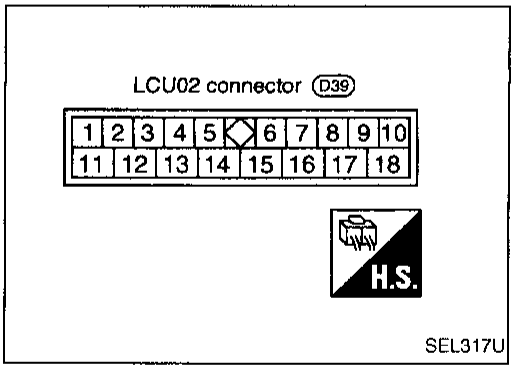
Schematic



MEL912G

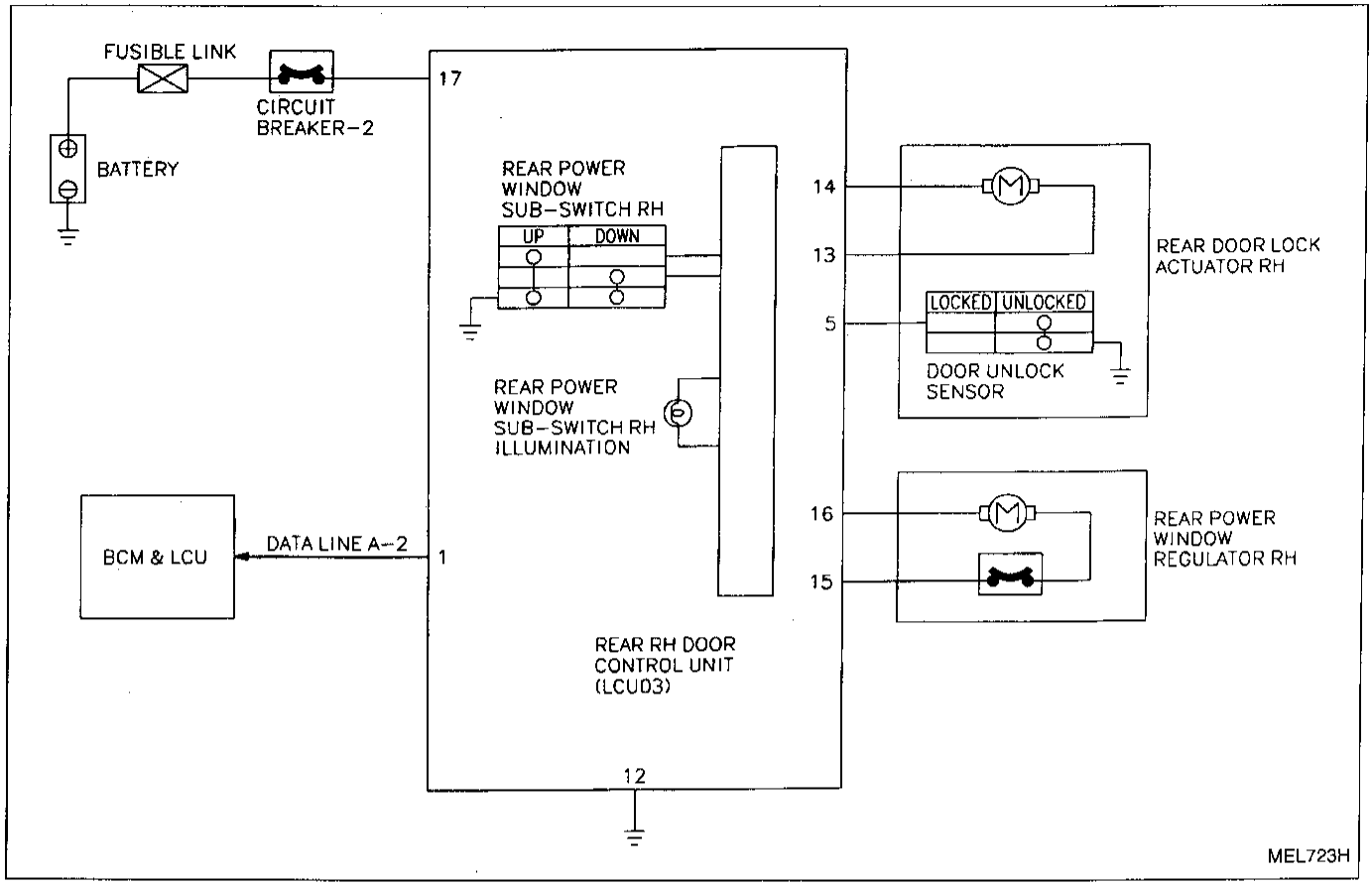
Input/Output Operation Signal

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/Y	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



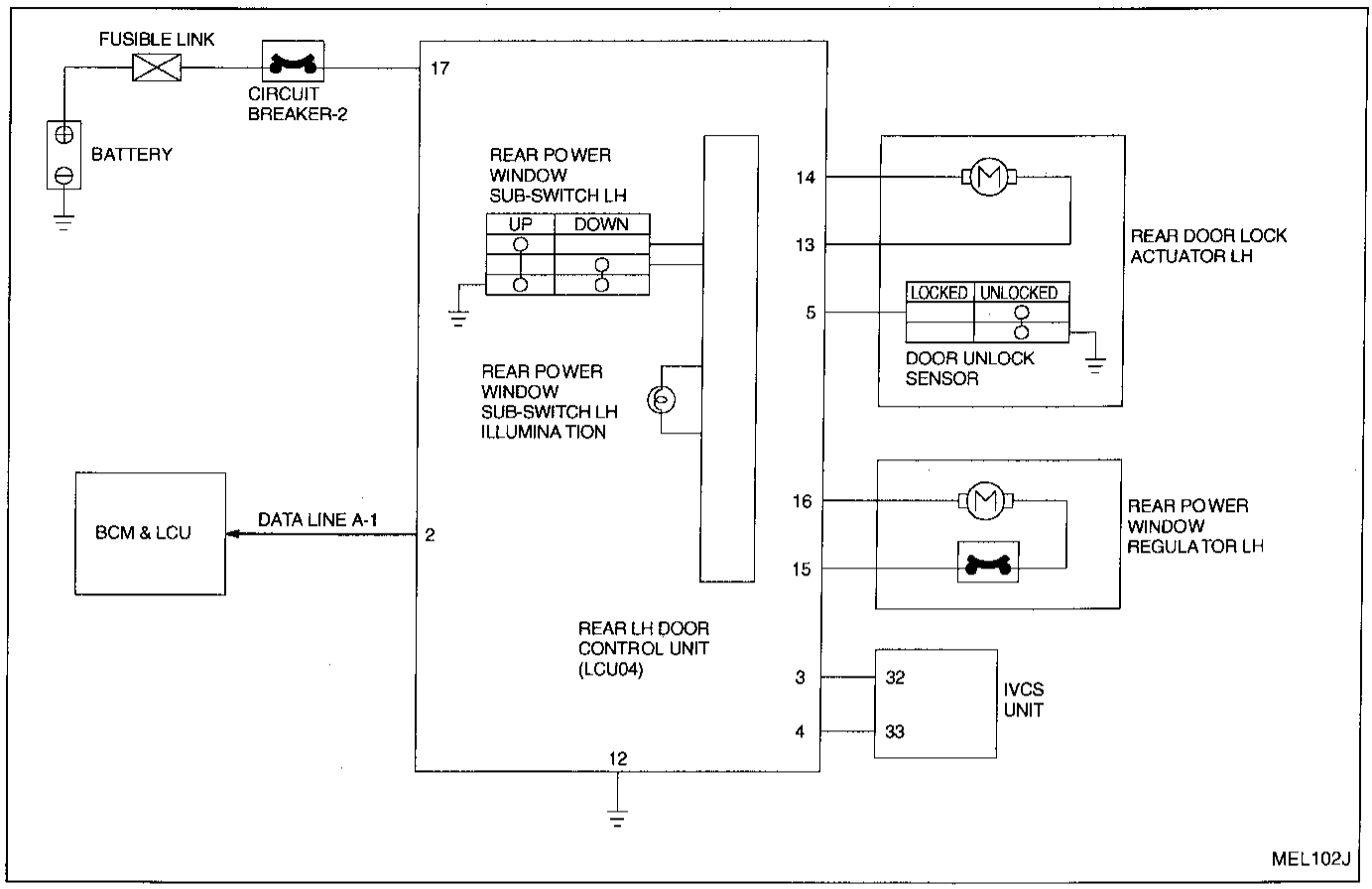
Schematic

REAR RH DOOR CONTROL UNIT (LCU03)



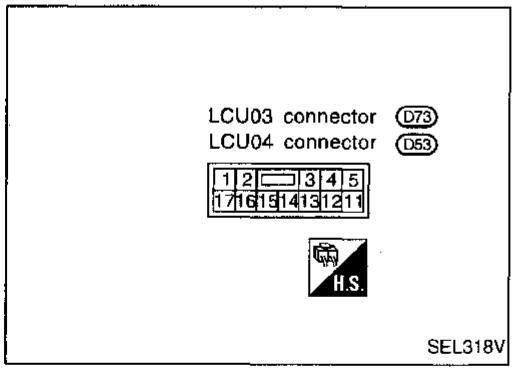
Schematic (Cont'd)

REAR LH DOOR CONTROL UNIT (LCU04)

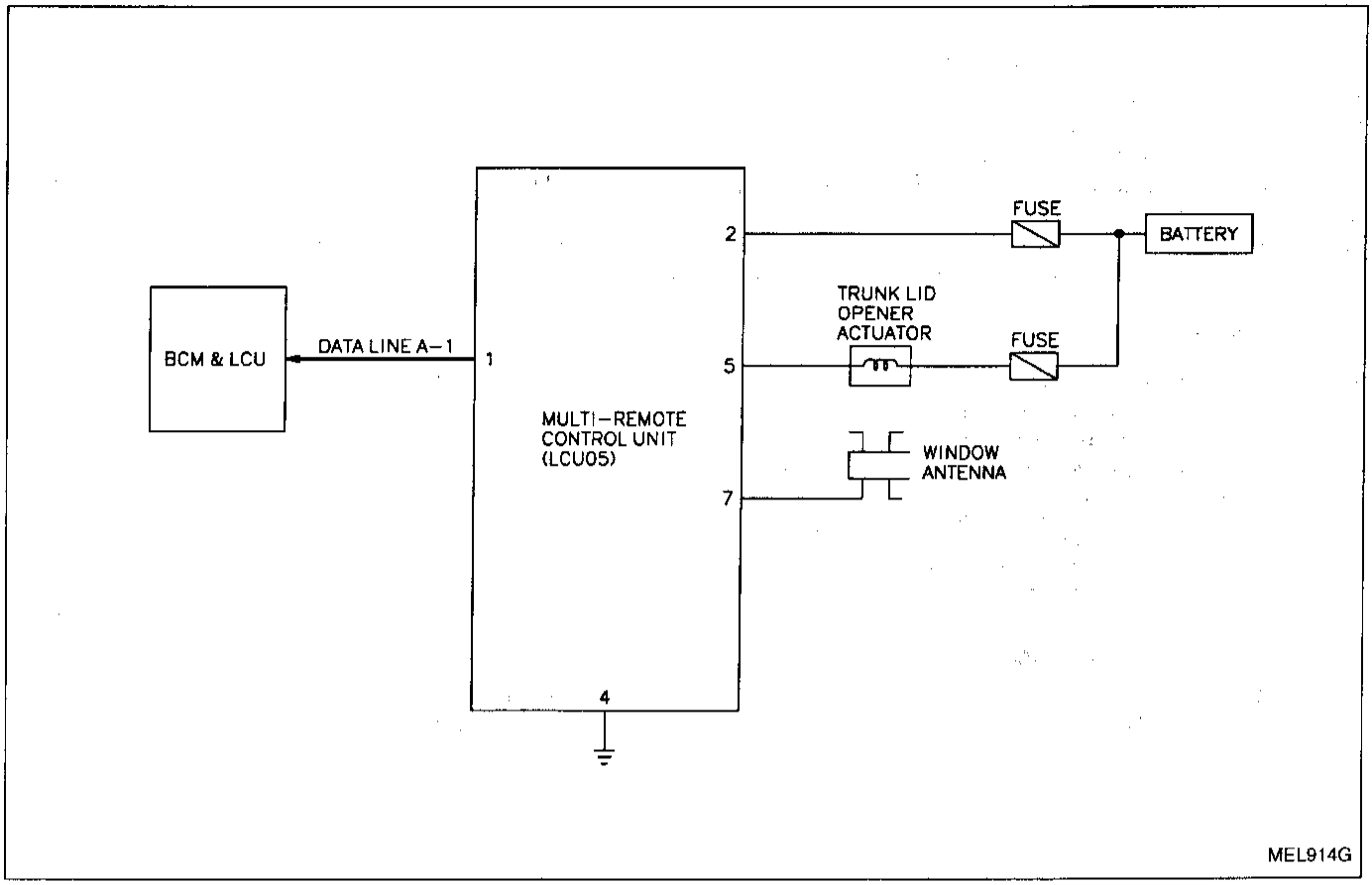


Input/Output Operation Signal

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 regulator (P/W) — Up	O	Rear P/W switch	Up	12
					Free	0
16	L/B	Power window regulator (P/W) — Down	O	Rear P/W switch	Down	12
					Free	0
17	W/R	Power source (C/B)	—	—		12

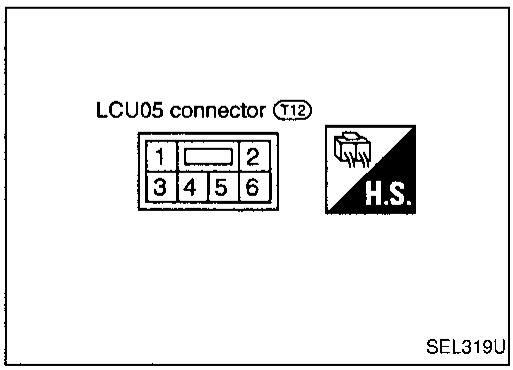


Schematic



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



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.

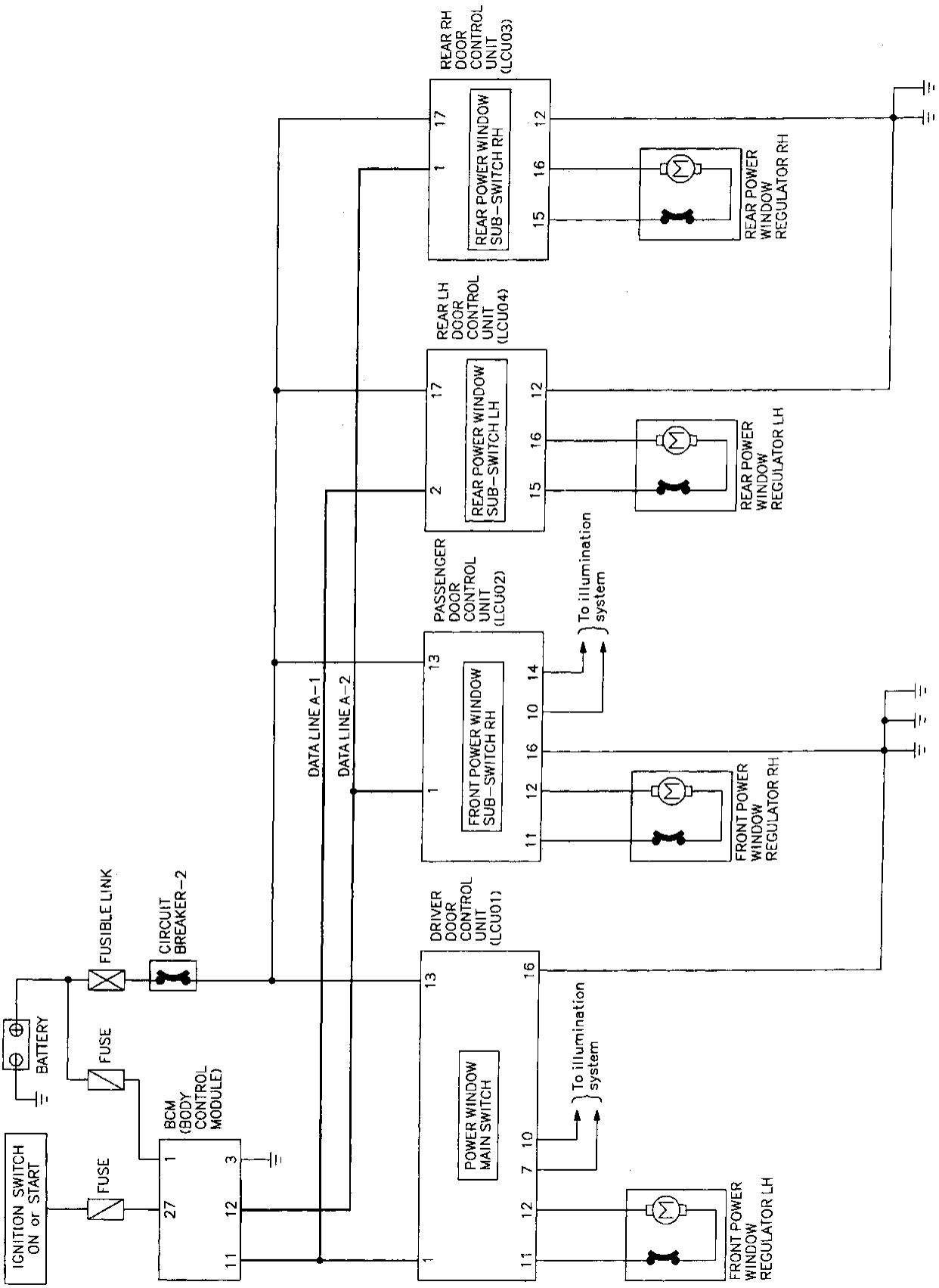
OPERATION

- 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 down then release the switch.

Delayed power operation

When the ignition switch is turned to the "OFF" position, the power window will still operate for up to approximately 45 seconds unless the driver side or passenger side door is opened.
(Power window timer)

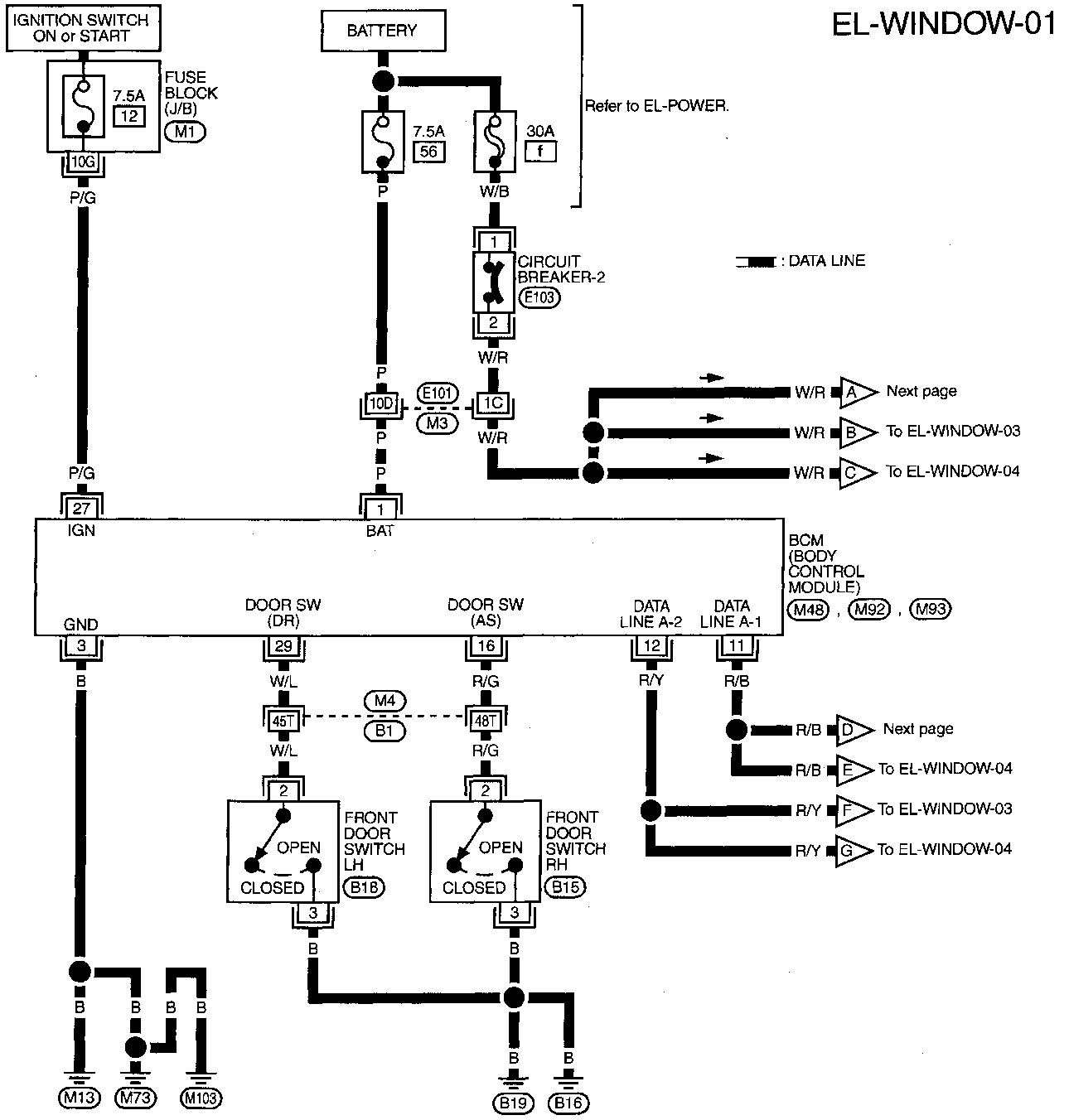
Schematic

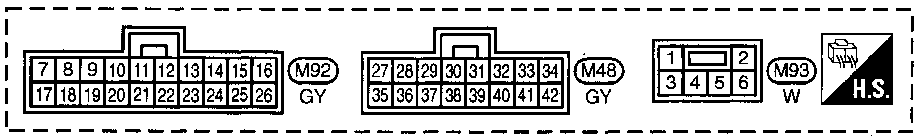


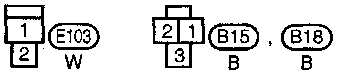
MEL729H

Wiring Diagram — WINDOW —

FIG. 1







Refer to last page (Foldout page).

M1

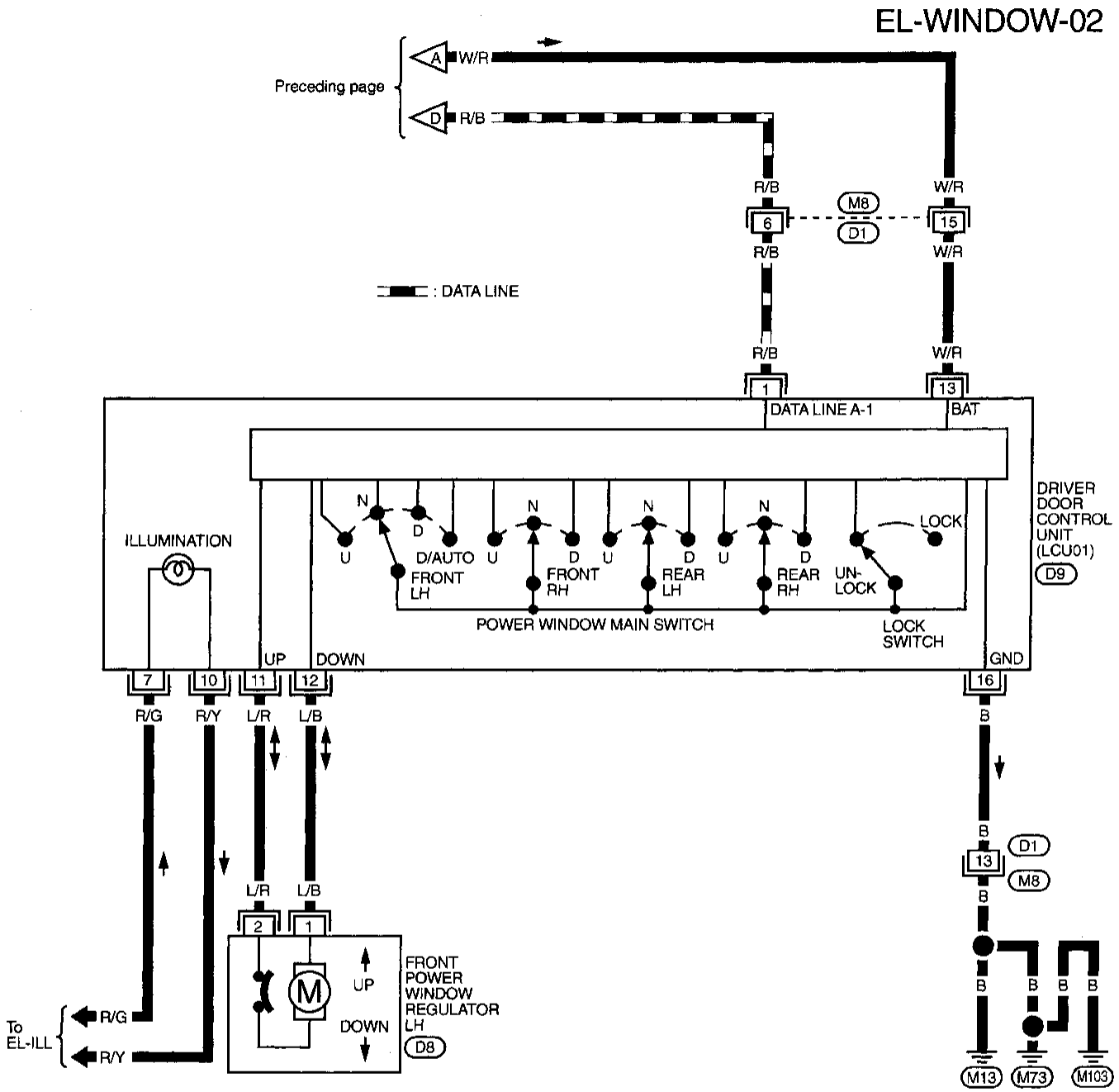
M3 , E101

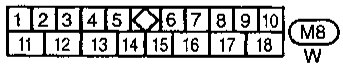
M4 , B1

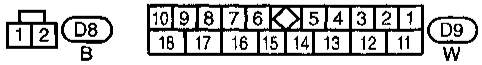
MEL103J

Wiring Diagram — WINDOW — (Cont'd)

FIG. 2





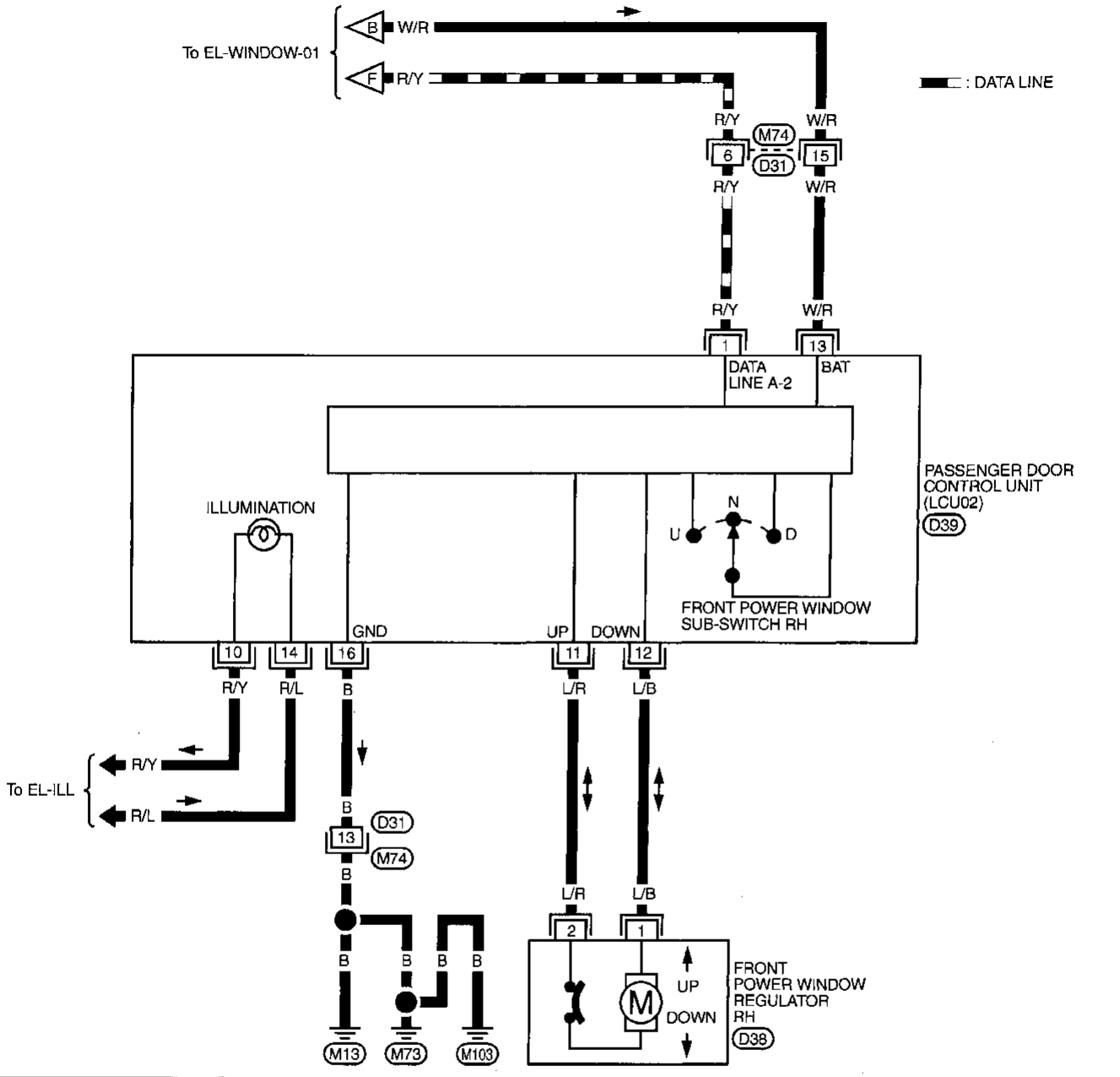


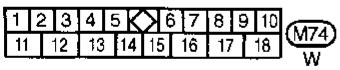
MEL731H

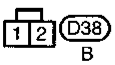
Wiring Diagram — WINDOW — (Cont'd)

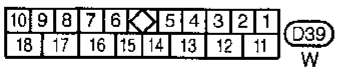
FIG. 3

EL-WINDOW-03





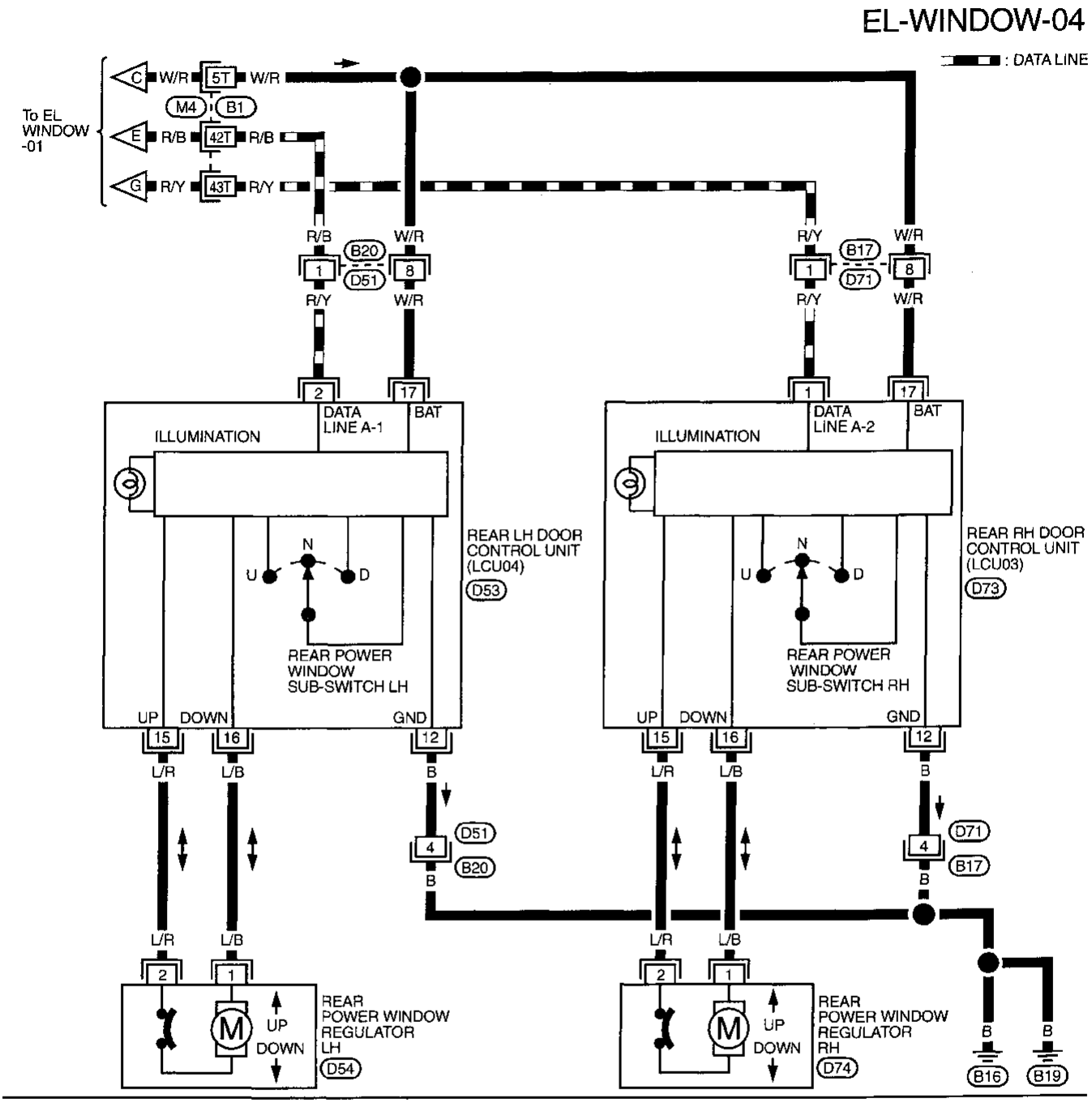




MEL104J

Wiring Diagram — WINDOW — (Cont'd)

FIG. 4

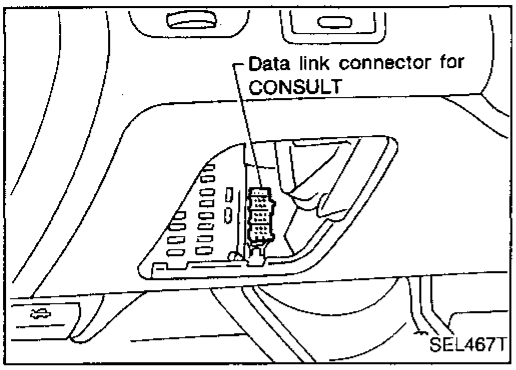


Refer to last page (Foldout page).
(M4), (B1)

(B17) W, (B20) W, (D53) W, (D73) W, (D54) B, (D74) B

MEL105J

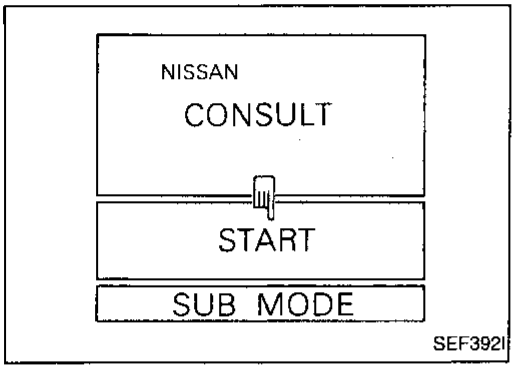
1647



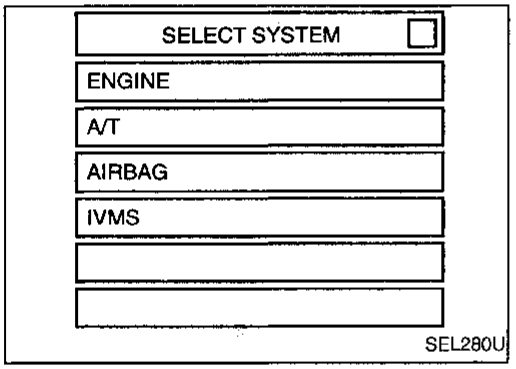
CONSULT

CONSULT INSPECTION PROCEDURE

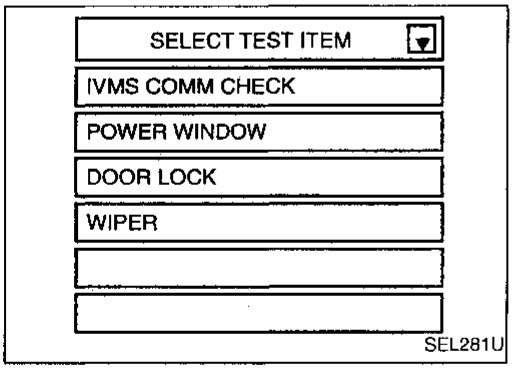
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



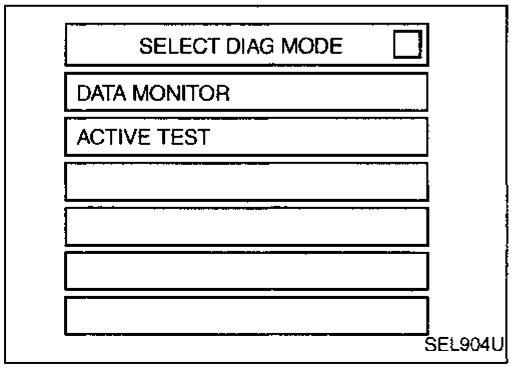
3. Turn ignition switch "ON".
4. Touch "START".



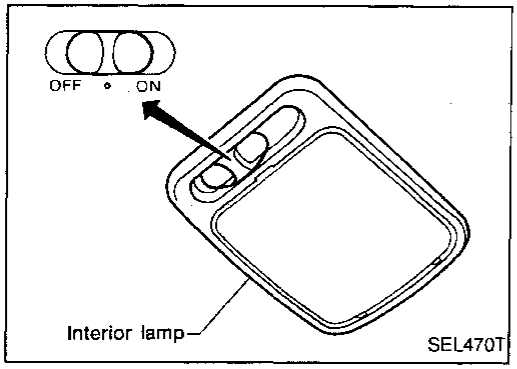
5. Touch "IVMS".



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 "○" position

↓

Turn ignition switch "ON".

↓

Return ignition switch to "OFF" and press rear window defogger switch more than 10 times during 10 seconds.

↓

Self-diagnostic results indicator lamps should turn on.

↓

Keep rear window defogger switch pressed ON, and turn ignition switch "ON" within 5 seconds after the indicator lamps turn on.

↓

Indicator lamps turn off.

↓ After a second

Mode IV is performed.

↓

Turn ignition switch "OFF".

↓

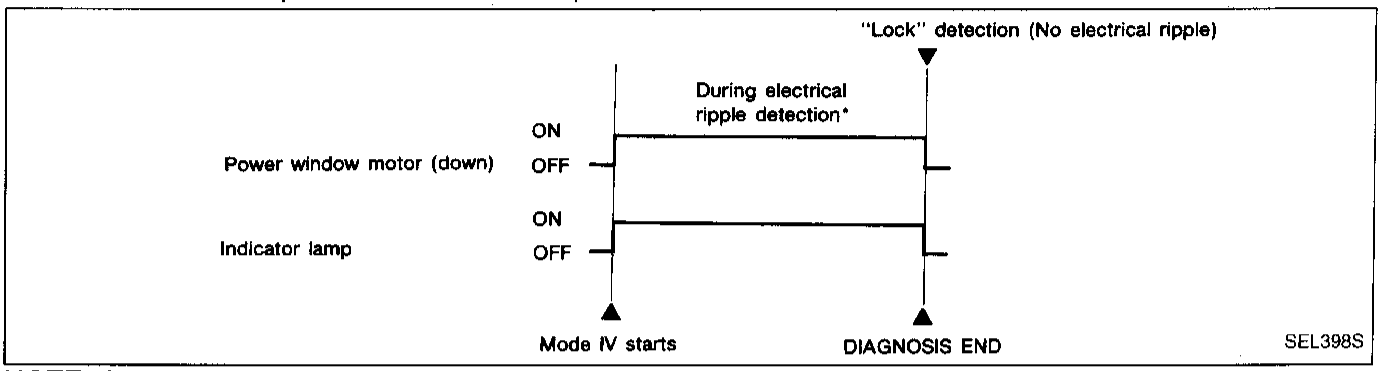
DIAGNOSIS END* (**Be sure to turn off the lighting switch.**)

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

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.

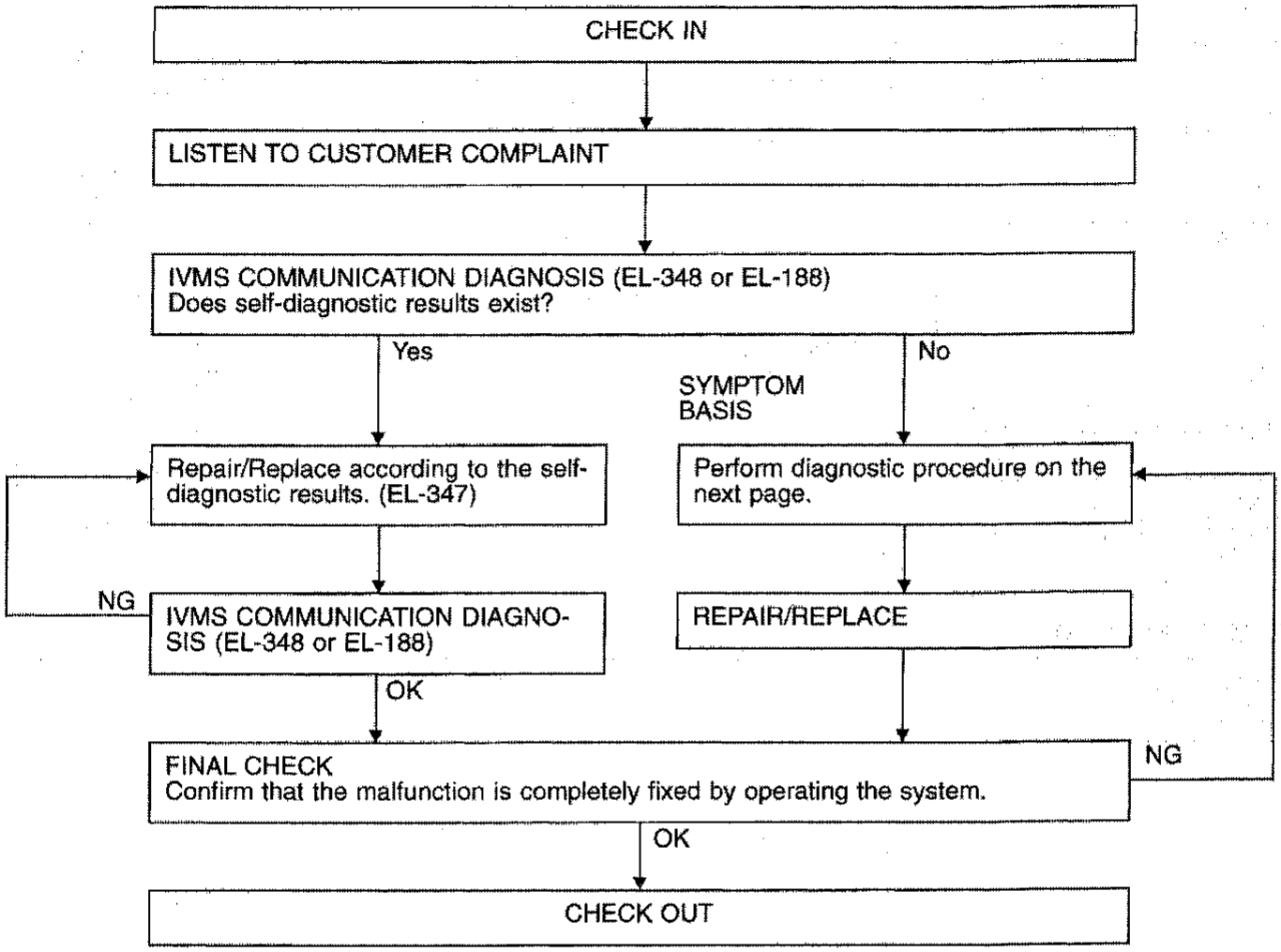


NOTE: As soon as manual switches (each seat's power window switch) turn ON, driver power window motor (DOWN) stops and diagnosis ends.

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

Trouble Diagnoses

WORK FLOW

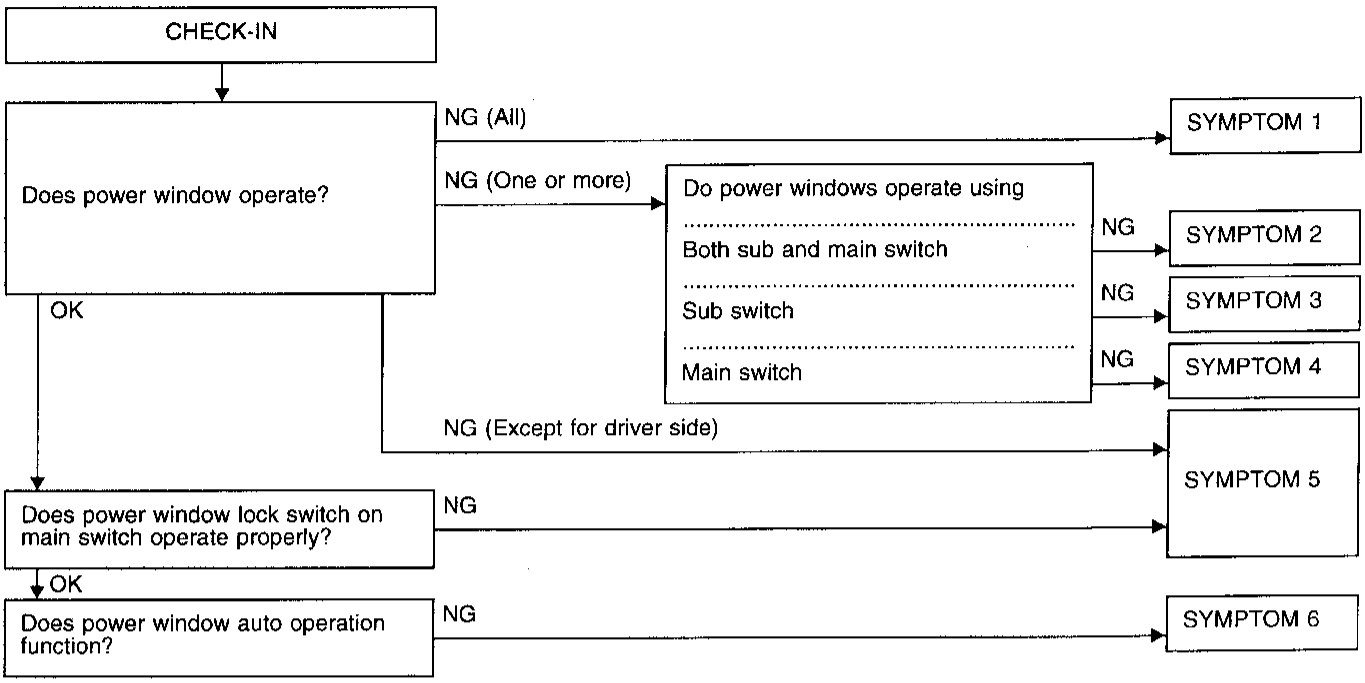


NOTICE:

- **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-348) 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)

PRELIMINARY CHECK



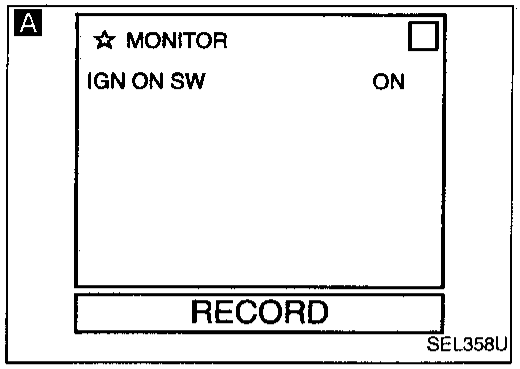
SYMPTOM CHART

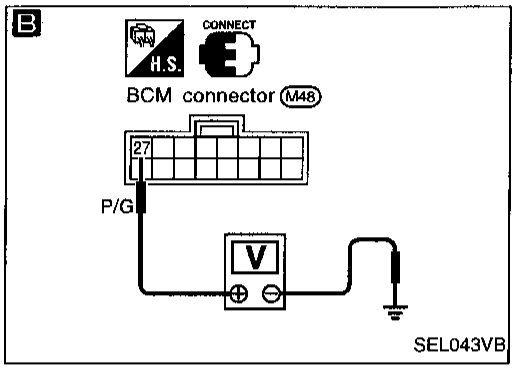
PROCEDURE		Diagnostic procedure						
REFERENCE PAGE		EL-221	EL-221	EL-222	EL-222	EL-223	EL-224	EL-225
SYMPTOM		Procedure 1 (Ignition switch ON signal check)	Procedure 2 (Power window lock switch check)	Procedure 3 (Power window main switch check)	Procedure 4 (Power window sub-switch check)	Procedure 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 ㉗ and ground.

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

Refer to wiring diagram in EL-212.

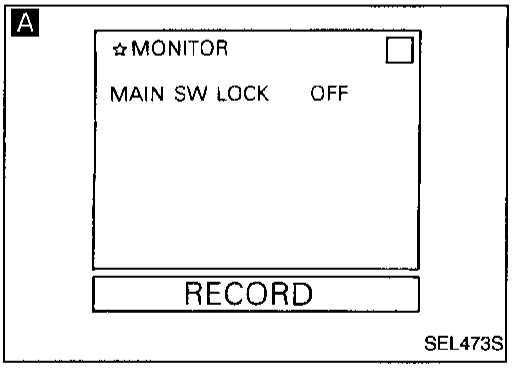
NG → Check the following.
- 7.5A fuse [No. 12, located in the fuse block (J/B)]
- Harness for open or short between fuse and BCM

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-190.)

NG → Replace LCU01.

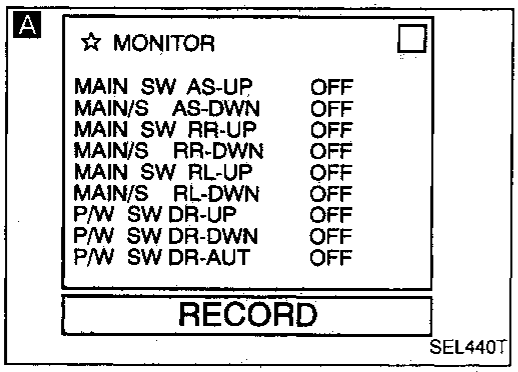
OK ↓

Power window lock switch is OK.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

(Power window main switch)



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.

NG → Replace LCU01.

OR

ON BOARD

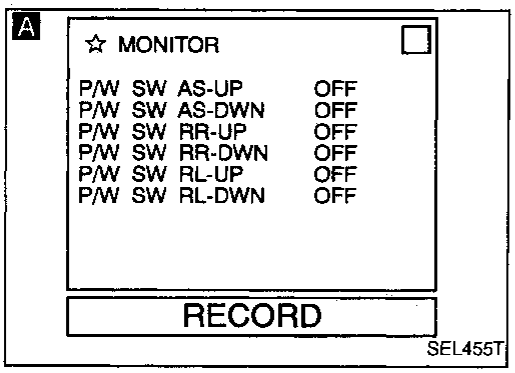
Check power window main switch operation in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-190.)

OK ↓

Power window main switch is OK.

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.

NG → Replace LCU for malfunctioning portion.

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

OR

ON BOARD

Check power window sub-switch operation in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-190.)

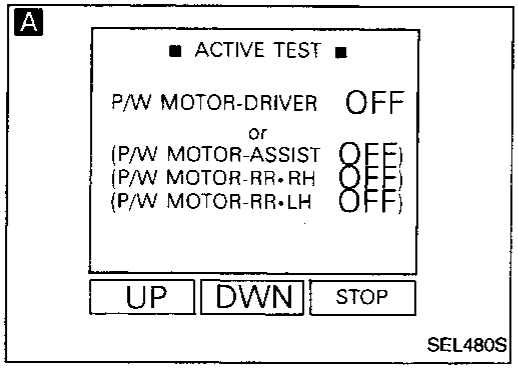
OK ↓

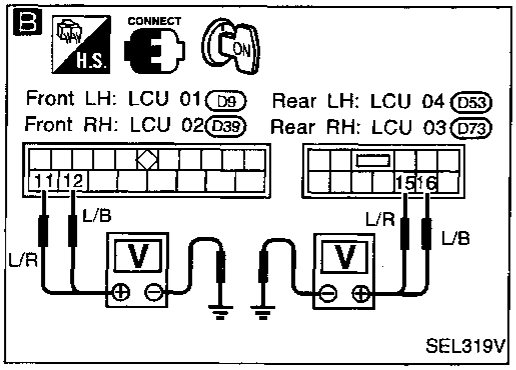
Power window sub-switch is OK.

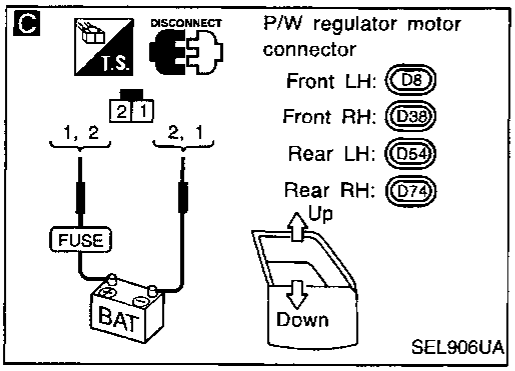
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

(Power window regulator check)







A

POWER WINDOW REGULATOR ACTIVE TEST

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 .

OK → Power window regulator is OK.

NG ↓

B

CHECK LCU OUTPUT SIGNAL TO POWER WINDOW REGULATOR

Check voltage between LCU connector terminals and ground.

Operation		Terminals ⊕	Terminals ⊖	Voltage
Front (LCU01, LCU02)	Down	⑫	Ground	Battery voltage
	Up	⑪	Ground	
Rear (LCU03, LCU04)	Down	⑮	Ground	
	Up	⑬	Ground	

Refer to wiring diagram in EL-213, 214 or 215.

NG → Replace LCU for malfunctioning portion.

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 ⊕	Terminals ⊖	Operation
①	②	Downward
②	①	Upward

NG → Replace power window regulator motor.

OK ↓

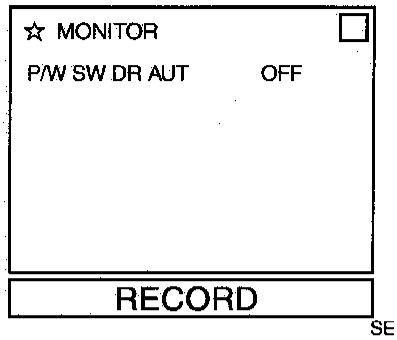
Check harness for open or short between power window switch, and power window regulator motor.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

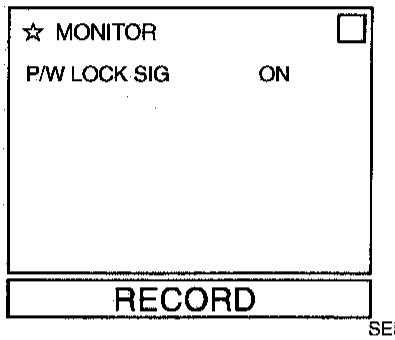
(Power window automatic switch check)

A



SEL569U

B



SEL570U

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-190.)

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-217.)
Electrical ripple should occur, when the window is moving.

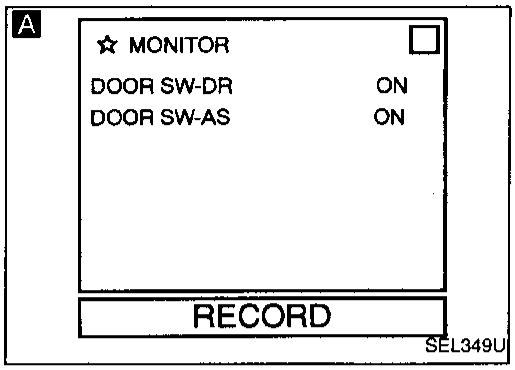
OK ↓

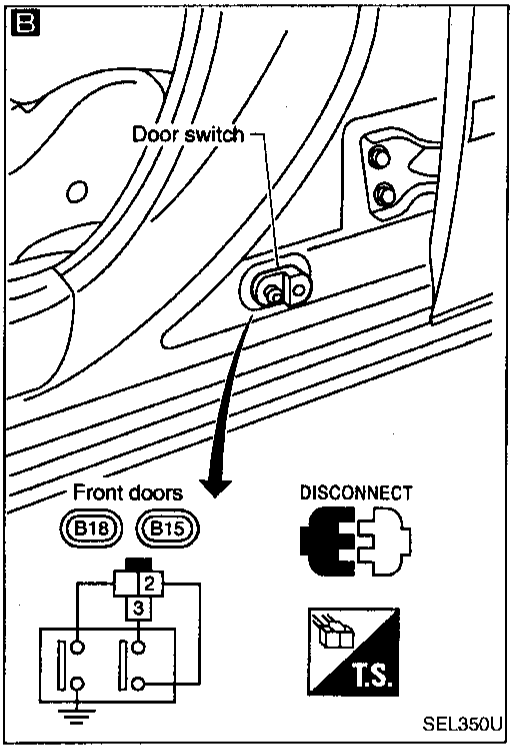
Check the system again.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

(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-190.)

Refer to wiring diagram in EL-212.

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

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 ㉛ 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 ㉙ or ⑯
- 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 (M103).

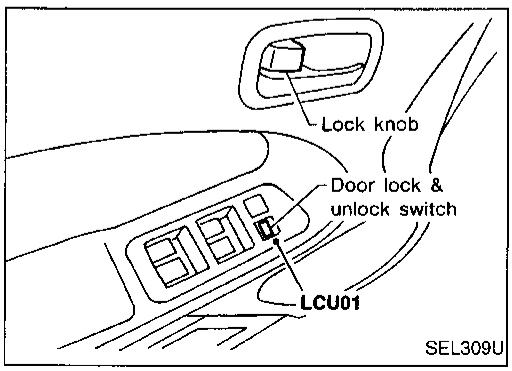
Front RH door key cylinder switch will supply ground to passenger door control unit (LCU02) in the same manner as driver side.
Ground is supplied
- to driver door control unit (LCU01) terminal ④
- from door unlock sensor (in the front LH door lock actuator) terminal ② when door lock is in UNLOCKED position
- through front LH door lock actuator terminal ④ and
- through body grounds (M13), (M73) and (M103).

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.

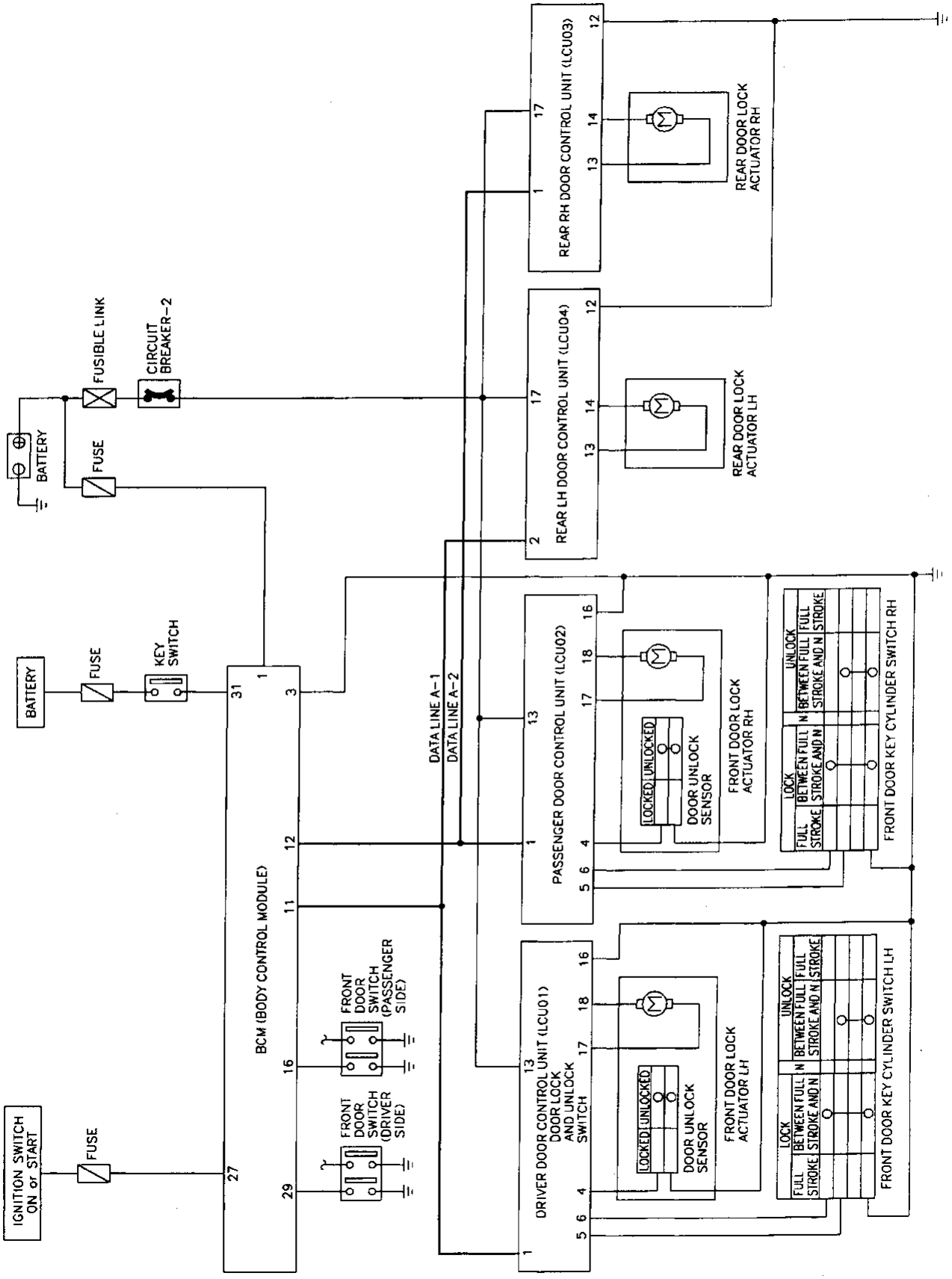
OPERATION

- 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)



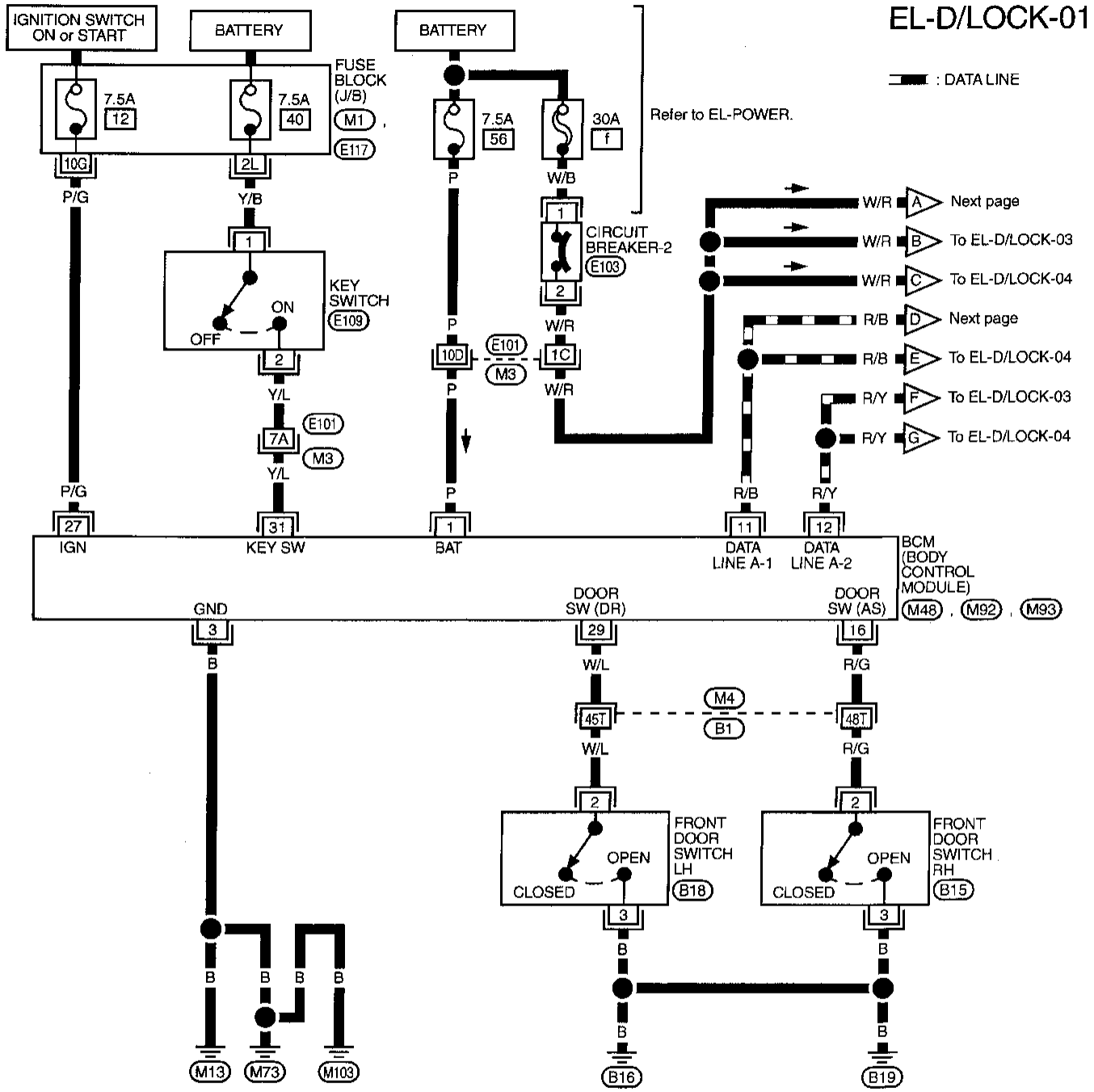
Schematic

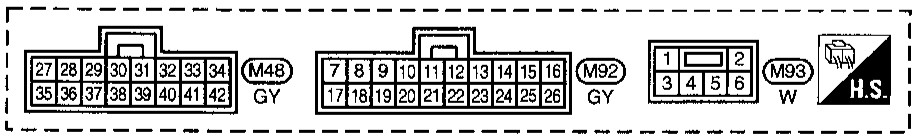


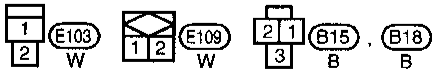
MEL734H

Wiring Diagram — D/LOCK —

FIG. 1







Refer to last page (Foldout page).

M1

M3 , E101

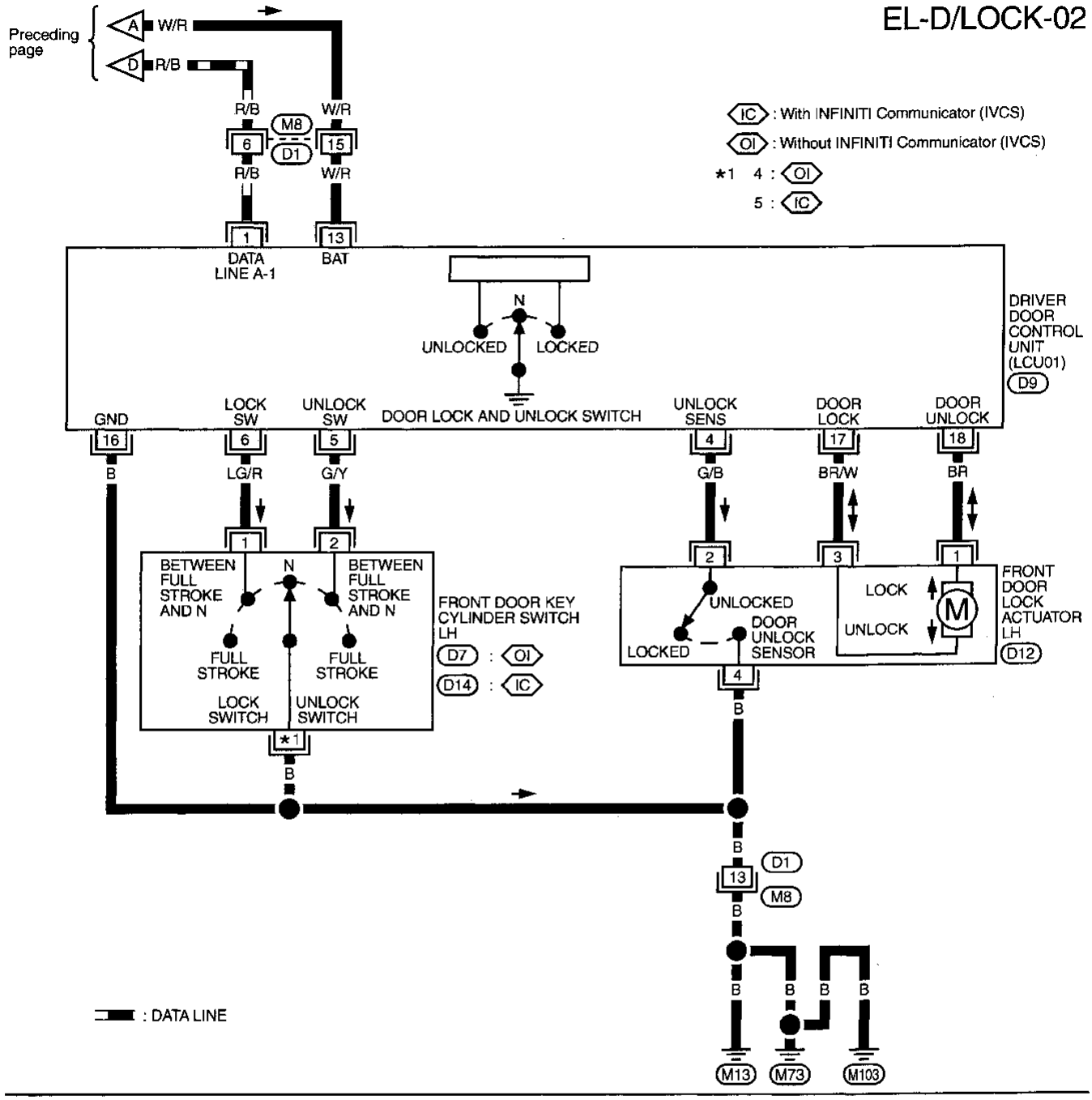
M4 , B1

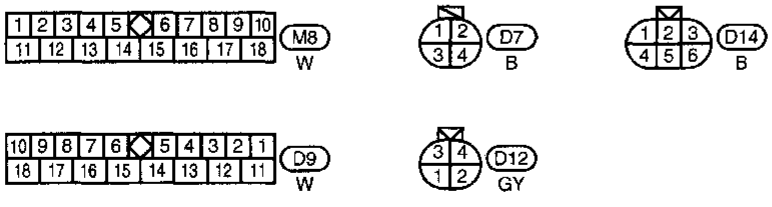
E117

MEL106J

Wiring Diagram — D/LOCK — (Cont'd)

FIG. 2

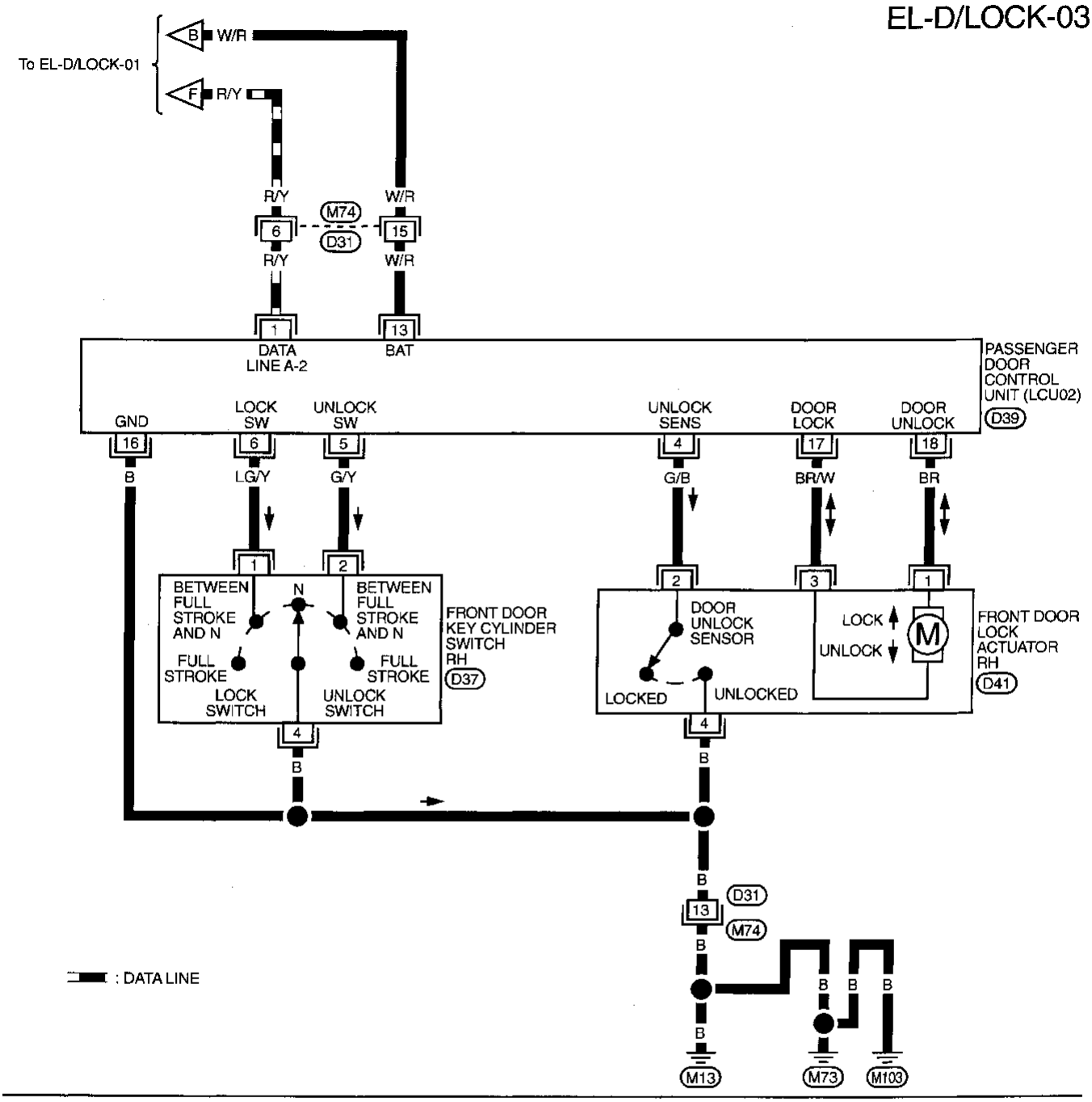


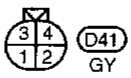


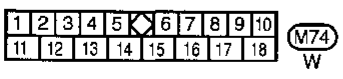
MEL107J

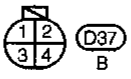
Wiring Diagram — D/LOCK — (Cont'd)

FIG. 3





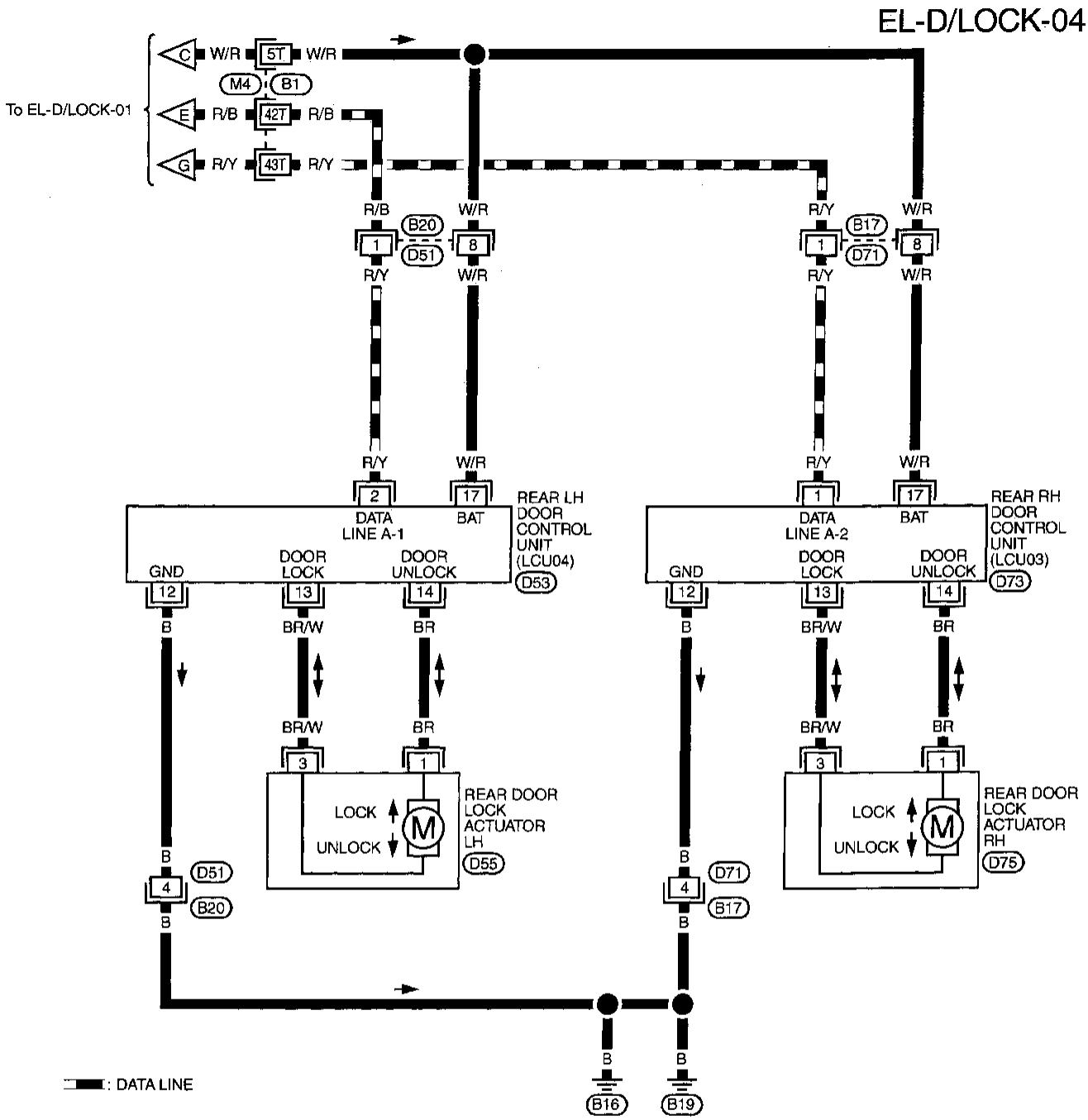




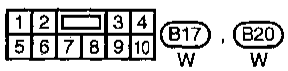
MEL737H

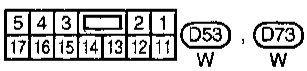
Wiring Diagram — D/LOCK — (Cont'd)

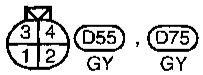
FIG. 4



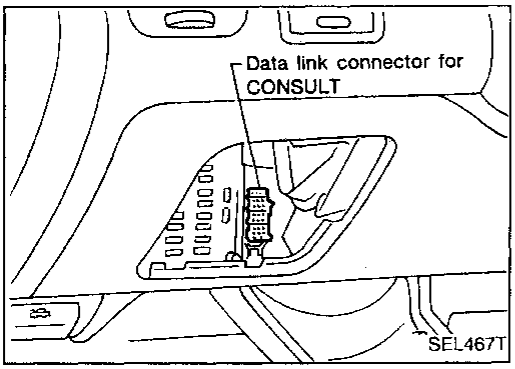
Refer to last page (Foldout page).
(M4), (B1)







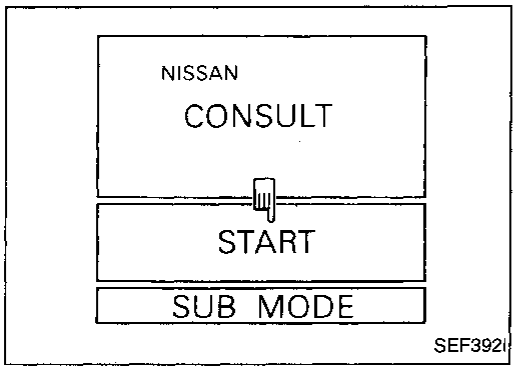
MEL129J



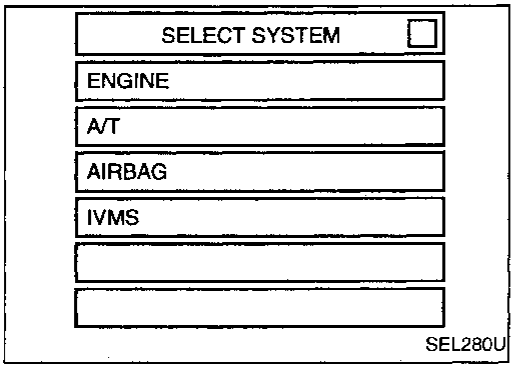
CONSULT

CONSULT INSPECTION PROCEDURE

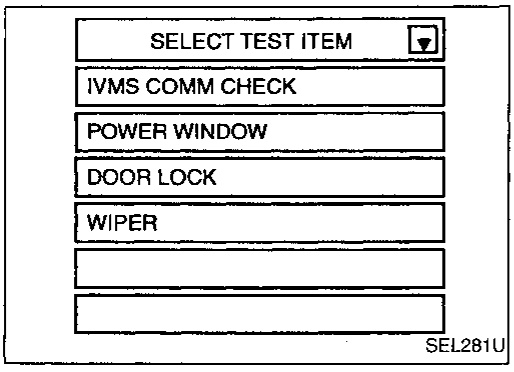
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to Data link connector.



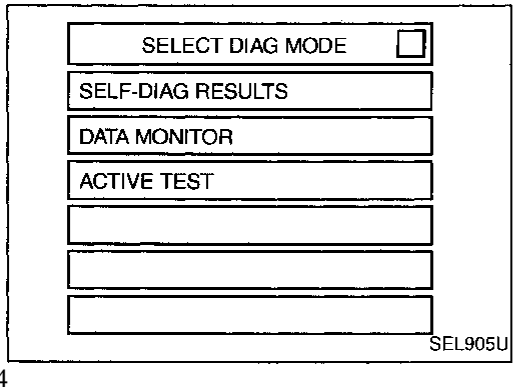
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



6. Touch "DOOR LOCK".

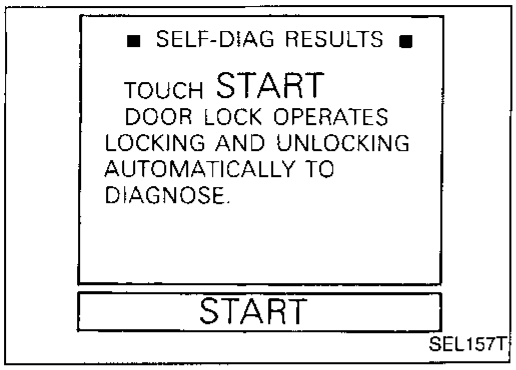


- DATA MONITOR, ACTIVE TEST and SELF-DIAGNOSIS are available for the power door lock.

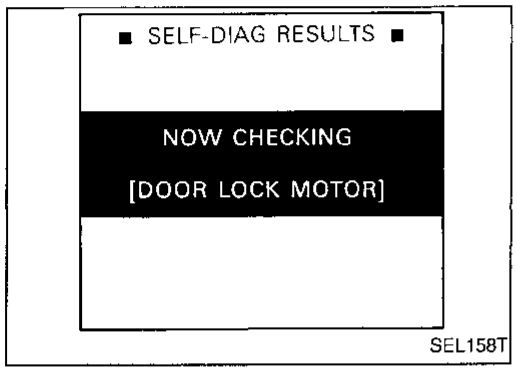
CONSULT (Cont'd)

HOW TO PERFORM SELF-DIAGNOSIS

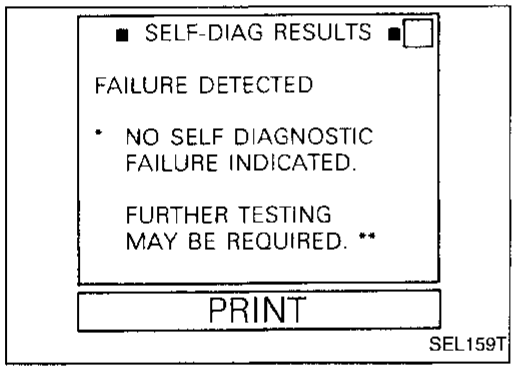
1. Choose "DOOR LOCK" in SELECT TEST ITEM.
2. Touch "SELF-DIAG RESULTS" of SELECT DIAG mode.
3. Touch "START".



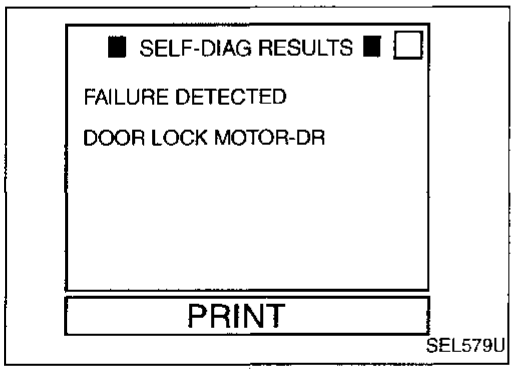
4. Start self-diagnosis on all door motors. Lock and unlock all doors by operating door motors automatically.



- When no malfunction is detected



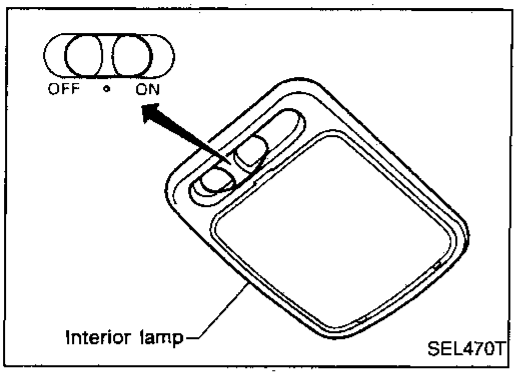
- When malfunction is detected
  A summary of diagnostic results is given in the following chart.



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)	EL-243
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.	Procedure 6 (Door lock actuator check)	EL-244
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.	—	—



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

↓

Turn ignition switch "ON".

↓

Return ignition switch to "OFF" and press rear window defogger switch more than 10 times during 10 seconds.

↓

Self-diagnostic results indicator lamps should turn on.

↓

Rear window defogger switch stays OFF.

↓

Turn ignition switch "ON" within 5 seconds after the indicator lamps turn on.

↓

Indicator lamps turn off.

↓ After a second

Mode III is performed.

↓

Turn ignition switch "OFF".

↓

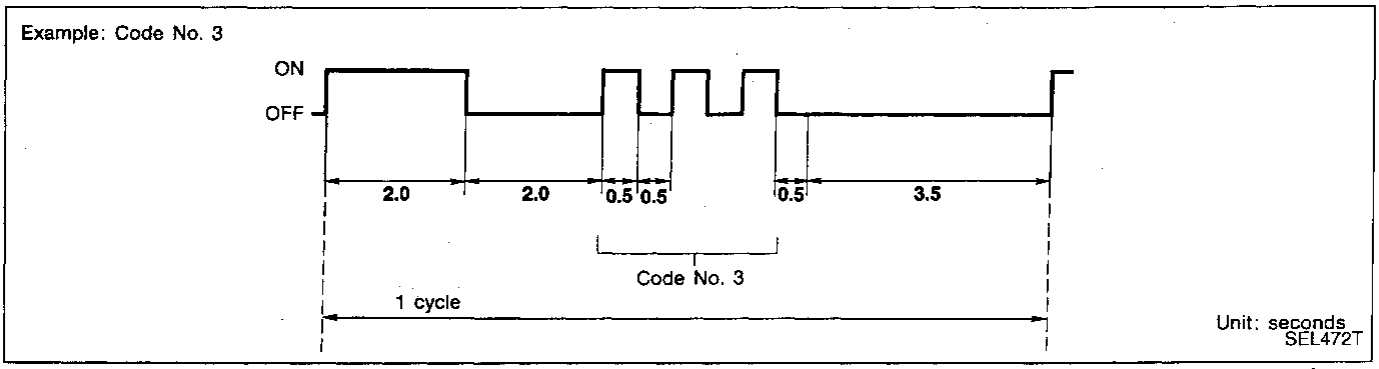
DIAGNOSIS END* (**Be sure to turn off the lighting switch.**)

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

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".

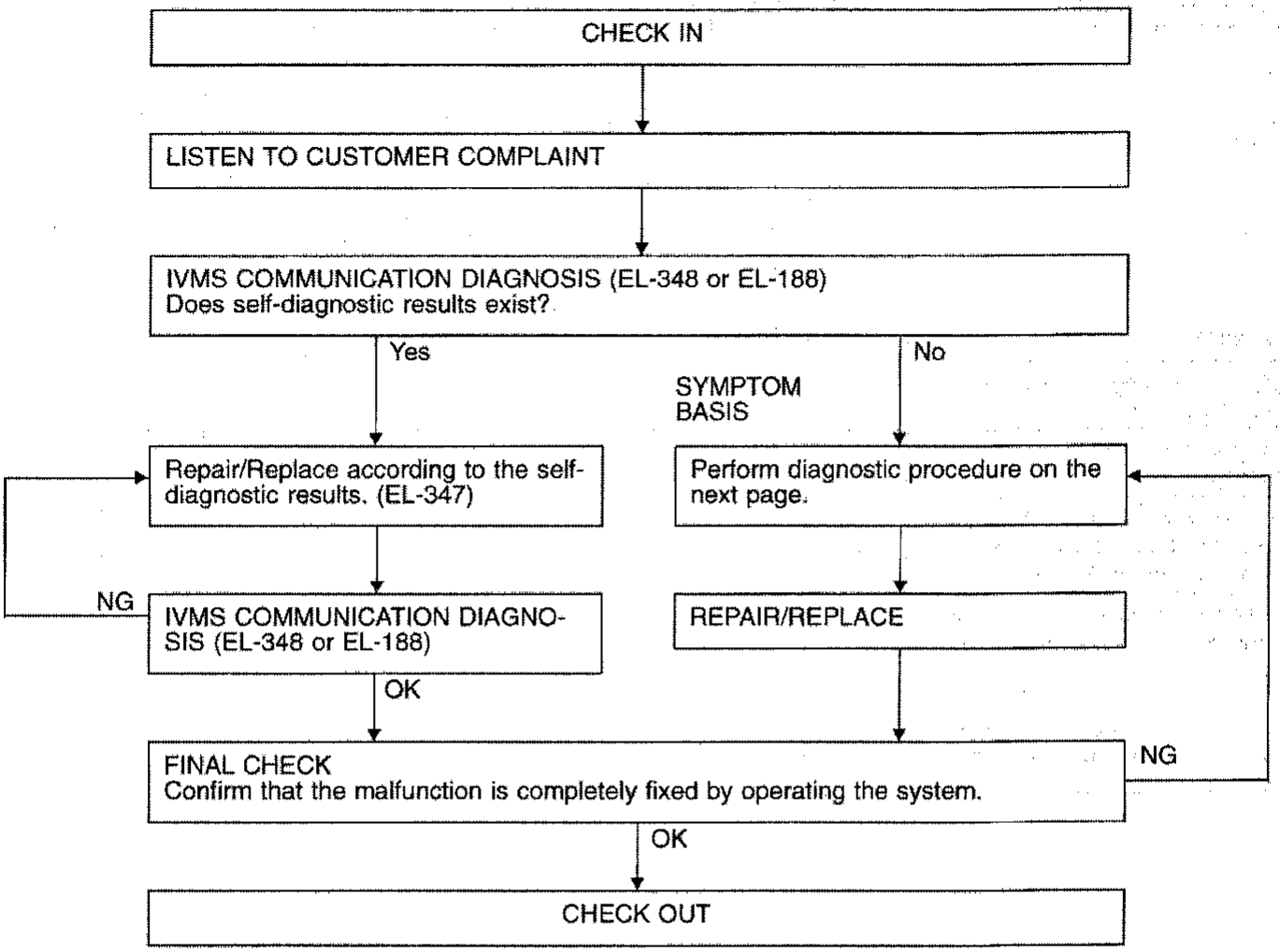
The self-diagnostic results will remain in the BCM memory.

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-243
2	Passenger door lock actuator/unlock sensor		
3	Rear RH door lock actuator/unlock sensor	Procedure 6 (Door lock actuator check)	EL-244
4	Rear LH door lock actuator/unlock sensor		
9	No malfunction in the above items	—	—

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-348) or turn the ignition switch to "OFF" position and remove 7.5A fuse (No. 56, located in the fuse block and fusible link box).

Trouble Diagnoses (Cont'd)

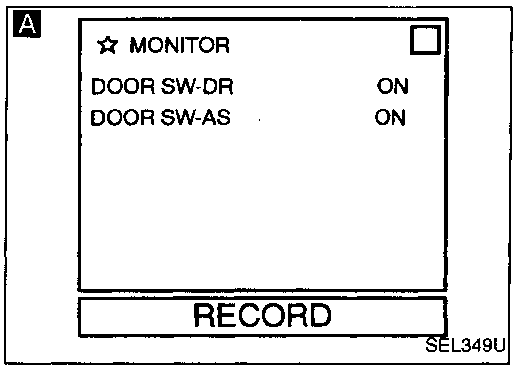
SYMPTOM CHART

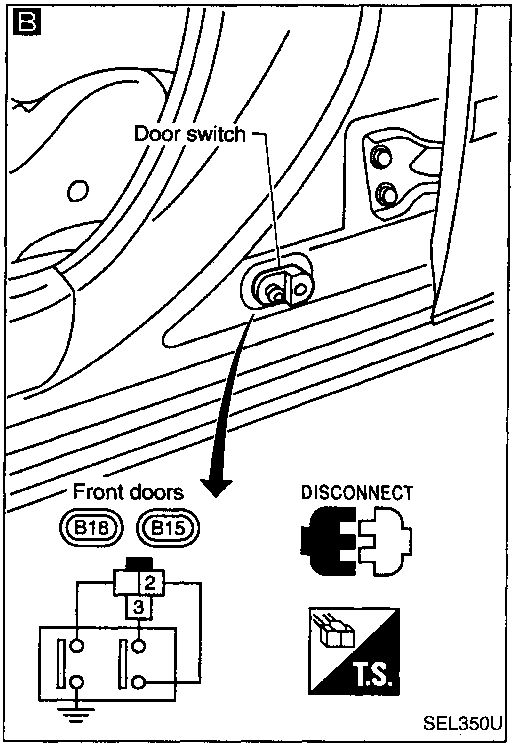
PROCEDURE	Self-diagnosis		Diagnostic procedure						—
REFERENCE PAGE	EL-233	EL-235	EL-239	EL-354	EL-355	EL-242	EL-243	EL-244	EL-349
SYMPTOM	CONSULT	On board diagnosis (Mode III)	Procedure 1 (Front door switch check)	Procedure 2 (Key switch check)	Procedure 3 (Lock & unlock switch check)	Procedure 4 (Door 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)

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-190.)

Refer to wiring diagram in EL-228.

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

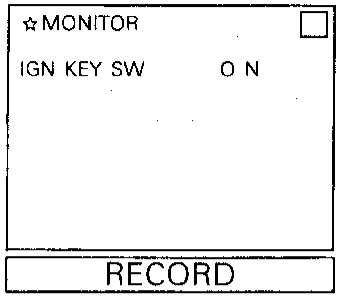
Check the following.
- Door switch ground circuit
- Harness for open or short between door switch and BCM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

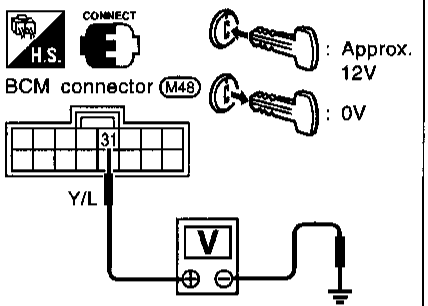
[Key switch (Insert) check]

A



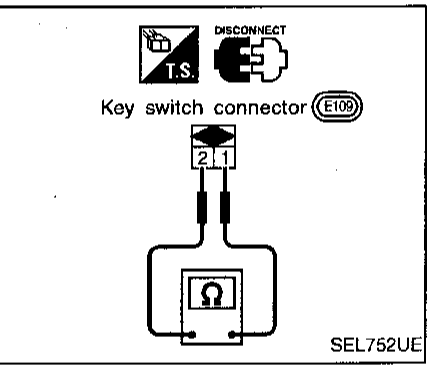
SEL451S

B



SEL042VB

C



SEL752UE

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-228.

OK → Ignition key switch is OK.

NG ↓

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).

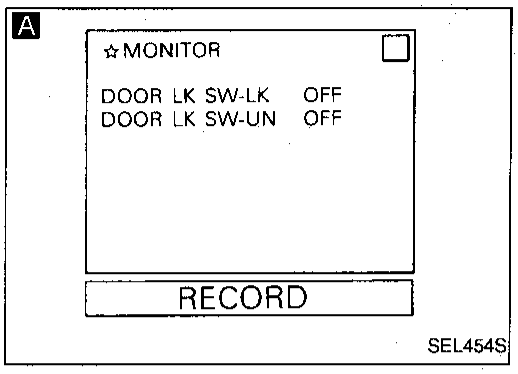
OK ↓

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

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

OK → Lock & unlock switch is OK.

OR

ON BOARD

Check door lock & unlock switch operation in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-190.)

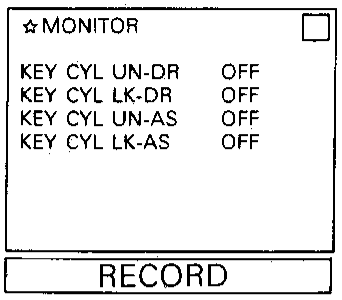
NG → Replace driver door control unit (LCU01).

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

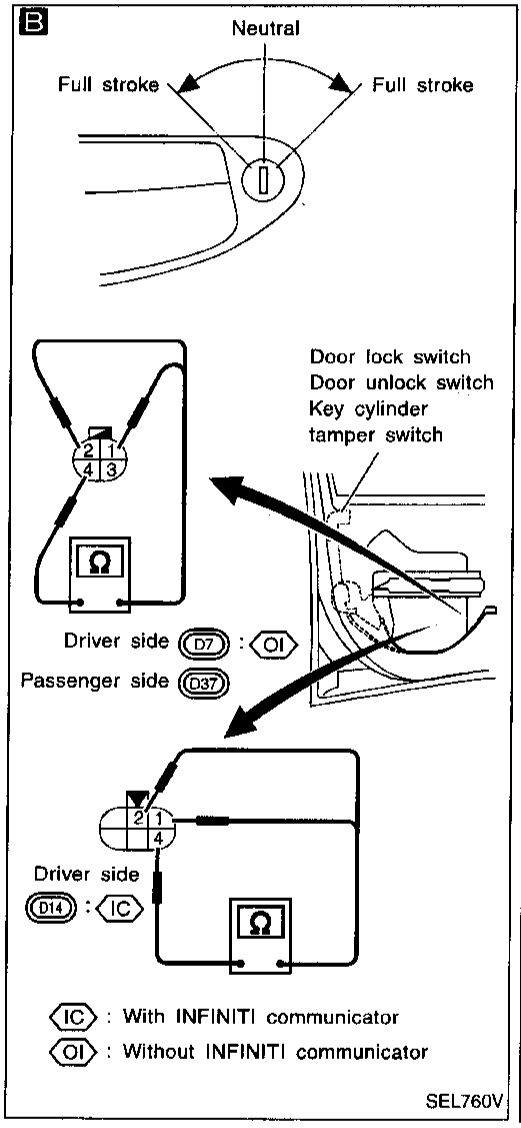
(Door key cylinder switch check)

A



SEL455S

B



SEL760V

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-190.)

Refer to wiring diagram in EL-229 or 230.

NG ↓

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 ↓

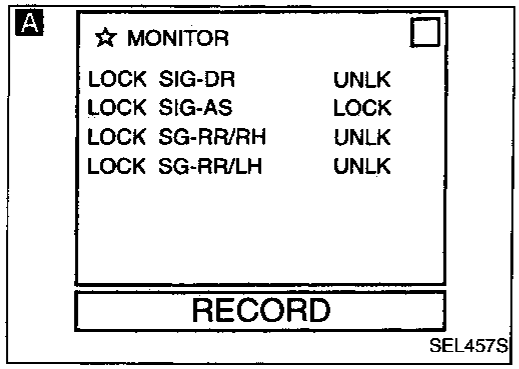
Check the following.
- Door key cylinder switch ground circuit
- Harness for open or short between door key cylinder switch and LCU01/02

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

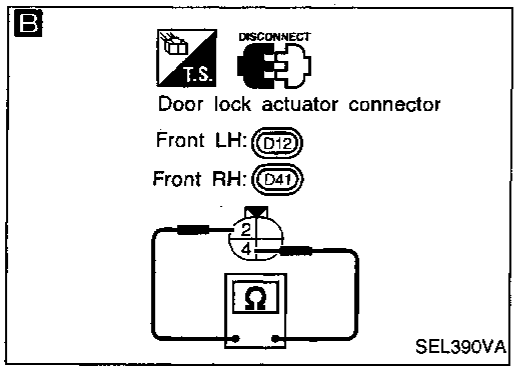
(Door unlock sensor check)

A



SEL457S

B



SEL390VA

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-190.)

Refer to wiring diagram in EL-229 or 230.

OK → Door unlock sensor is OK.

NG ↓

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.

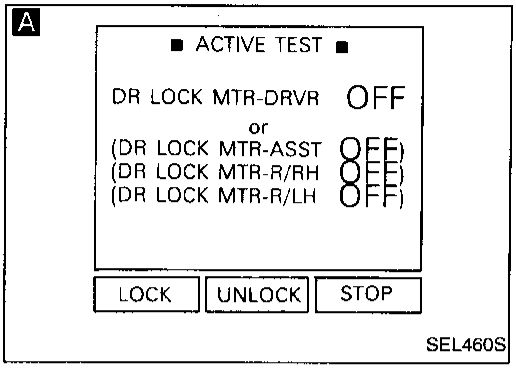
OK ↓

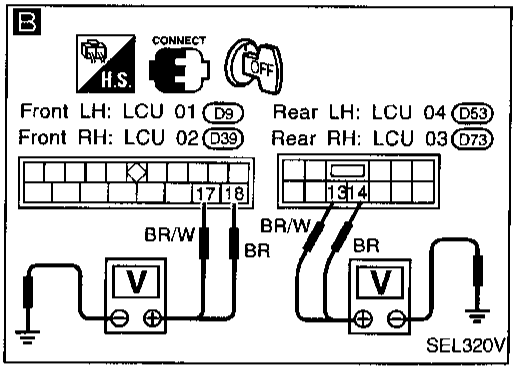
Check the following.
- Harness for open or short between LCU and door unlock sensor
- Ground circuit for door unlock sensor

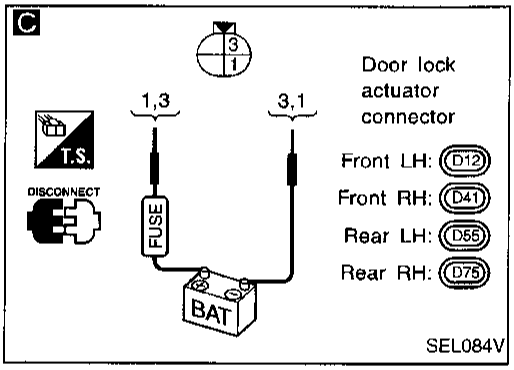
Trouble Diagnoses (Cont'd)

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-235.)
Door lock motor should operate.

OK → Door lock actuator is OK.

NG ↓

B

Check voltage between LCU connector terminals and body ground.

Door lock operation		Terminals ⊕	Terminals ⊖	Voltage
Front (LCU01, LCU02)	Lock	⑰	Ground	Battery voltage
	Unlock	⑱	Ground	
Rear (LCU03, LCU04)	Lock	⑬	Ground	
	Unlock	⑭	Ground	

Refer to wiring diagram in EL-229, 230 or 231.

NG → Replace LCU for malfunctioning portion.

OK ↓

C

CHECK DOOR LOCK ACTUATOR

1. Disconnect door lock actuator.
2. Apply 12V DC direct current to door lock actuator and check operation.

Door lock operation	Terminals ⊕	Terminals ⊖
Lock	③	①
Unlock	①	③

NG → Replace door lock actuator.

OK ↓

Check harness for open or short between door lock actuator and LCU.

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 ㉛.

When any of the four door switches is in OPEN position, ground is supplied

- to BCM terminal ㉟
- 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 (M13), (M73) and (M103).

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 (M13), (M73) and (M103).

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 (B16) and (B19).

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-226).

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.

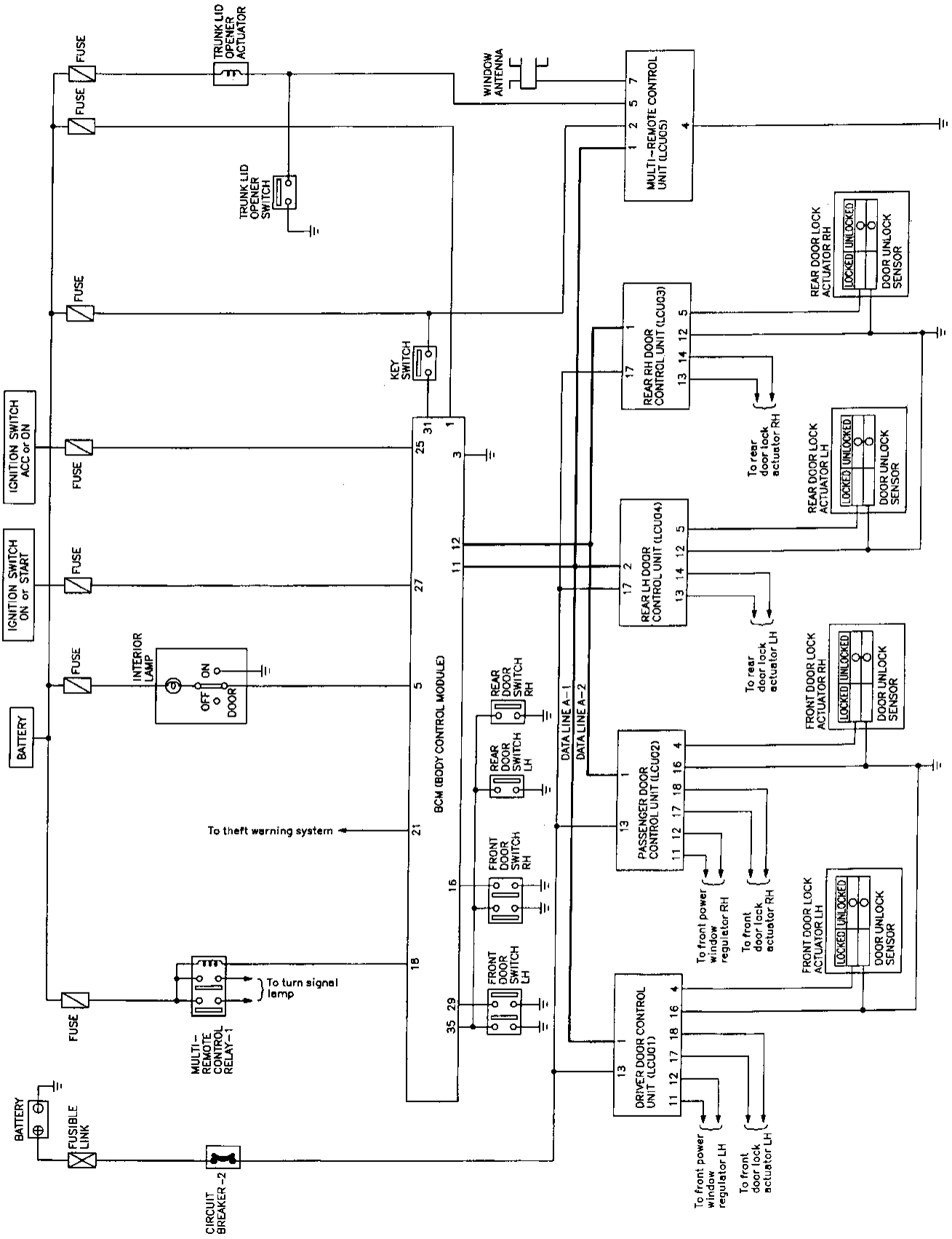
When a TRUNK OPEN signal is sent from multi-remote controller, ground is supplied
- to trunk lid opener actuator terminal ①
- through multi-remote control unit (LCU05) terminal ⑤.

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-338).

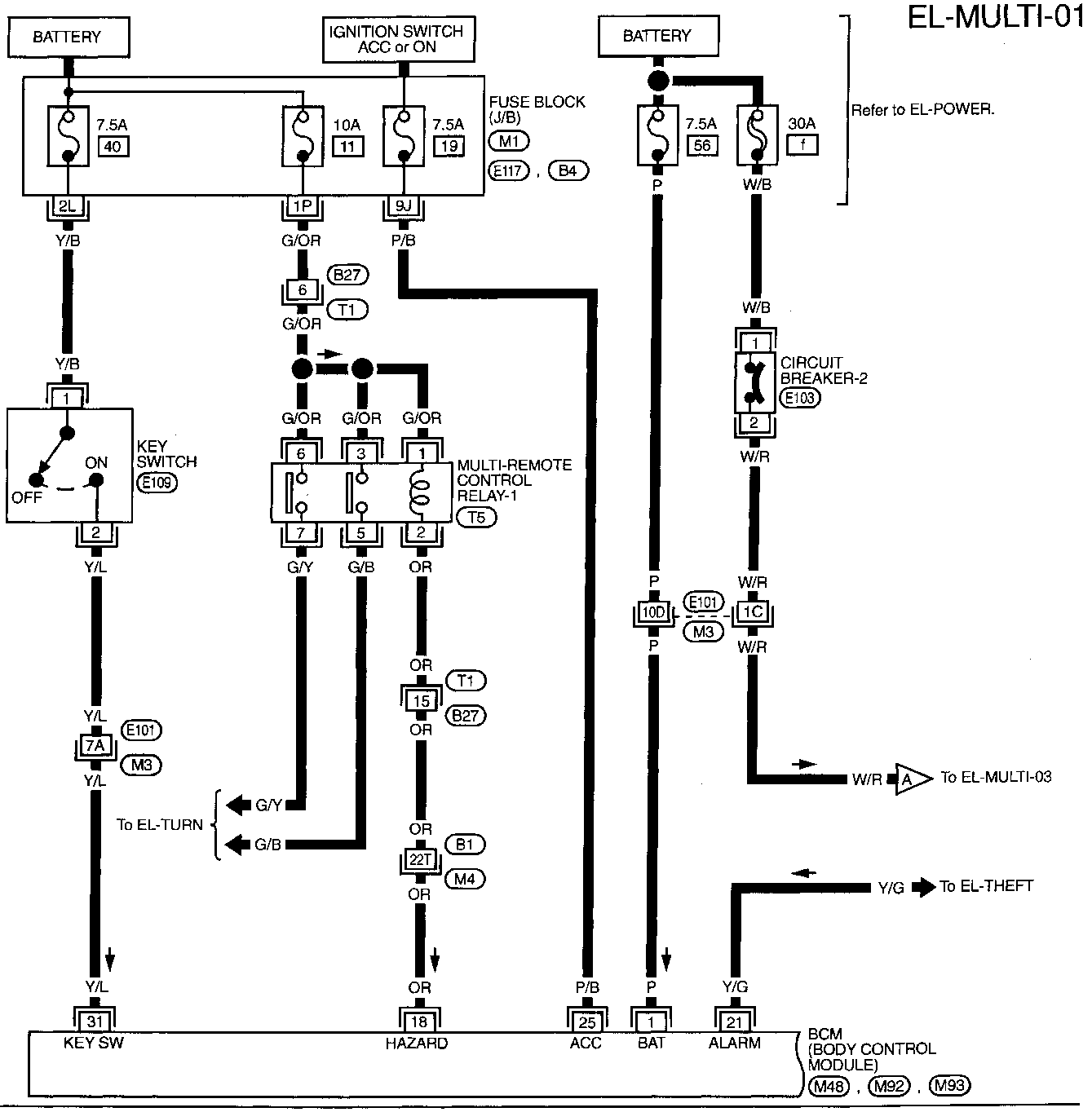
Schematic



MEL739H

Wiring Diagram — MULTI —

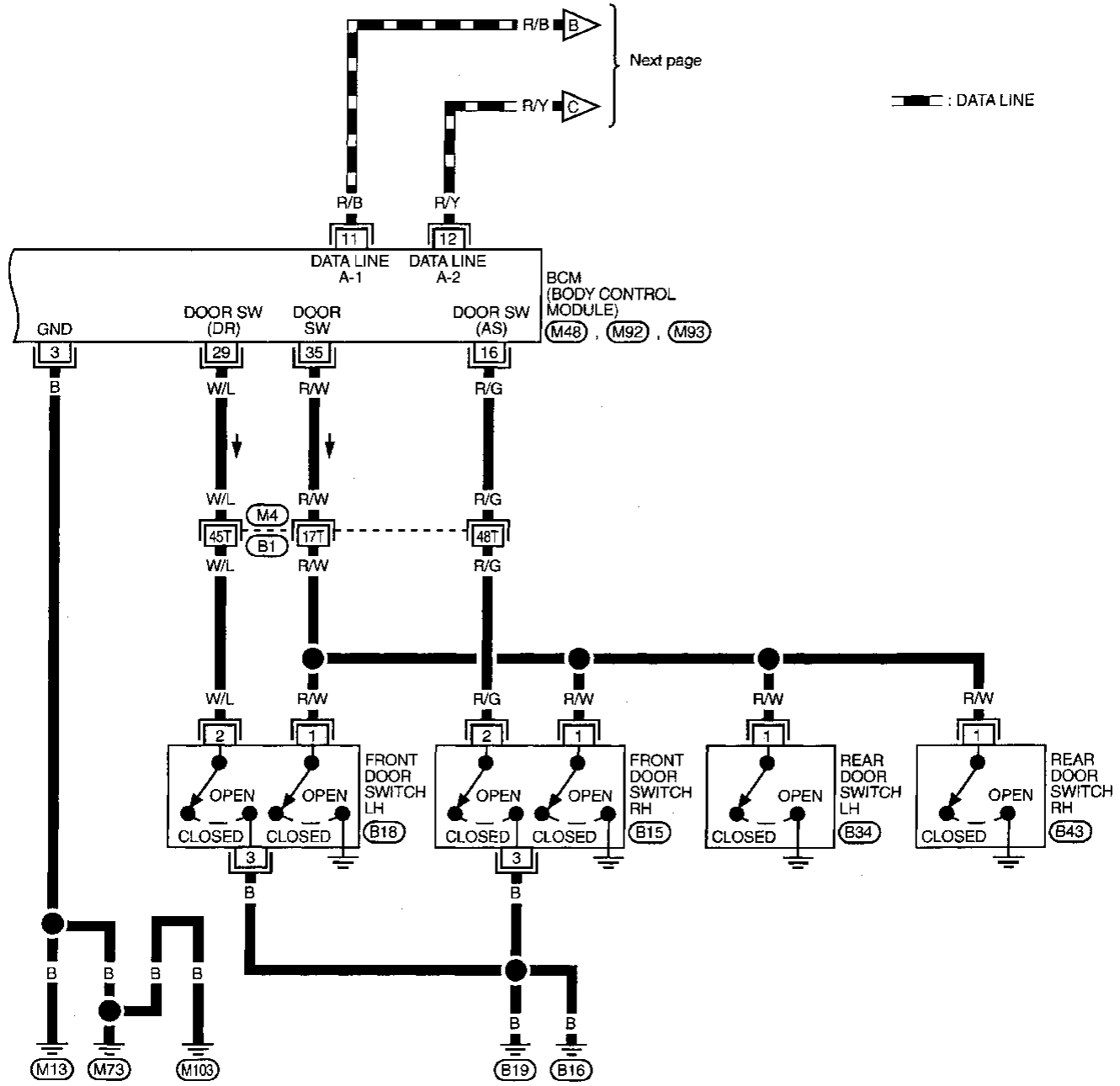
FIG. 1

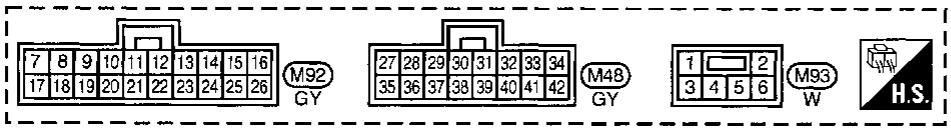


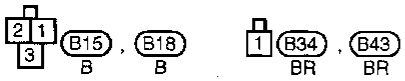
Wiring Diagram — MULTI — (Cont'd)

FIG. 2

EL-MULTI-02







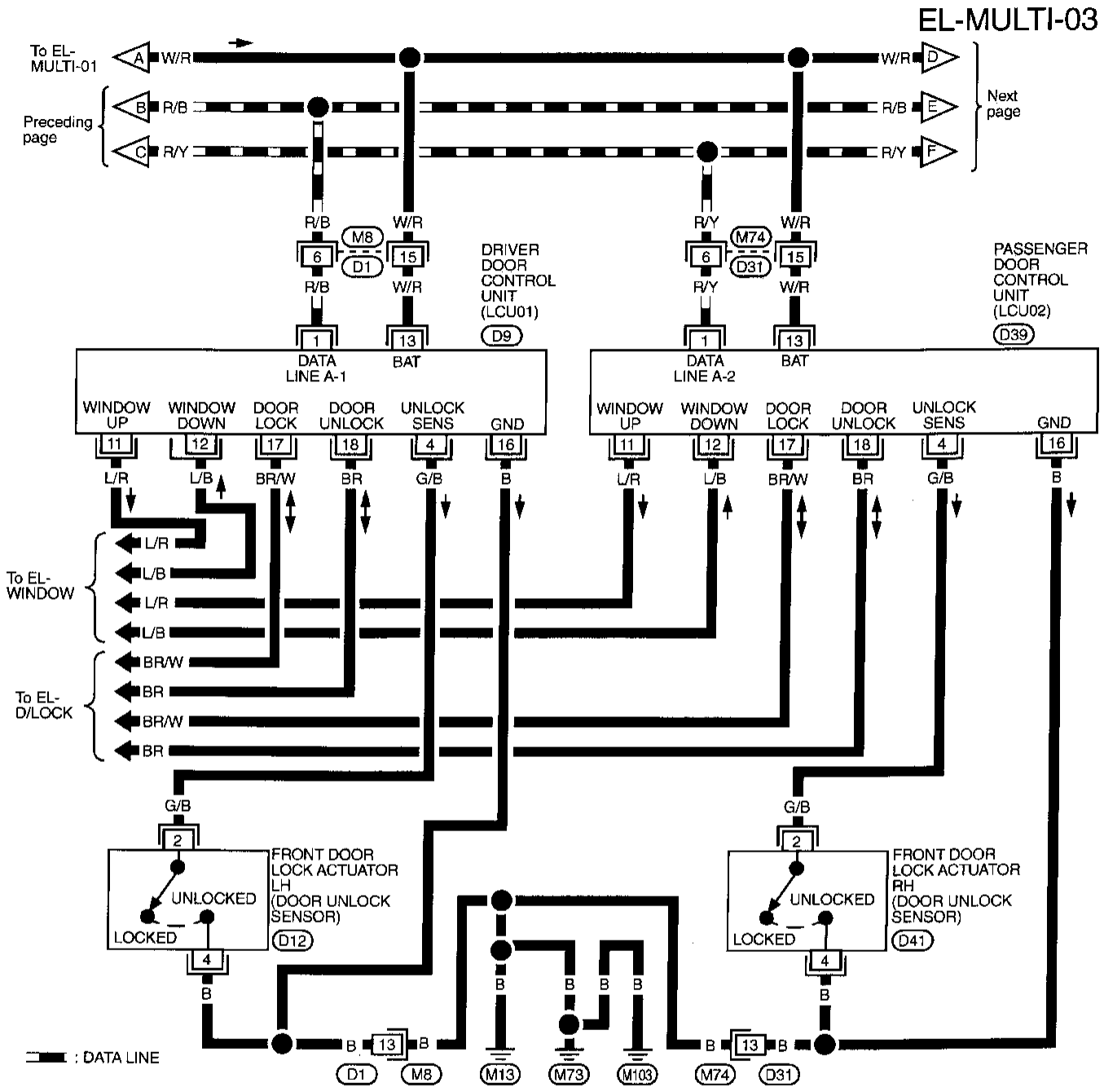
Refer to last page (Foldout page).
M4 , B1

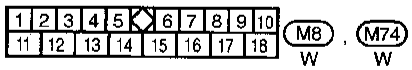
MEL741H

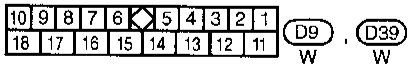
1681

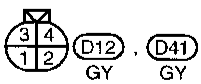
Wiring Diagram — MULTI — (Cont'd)

FIG. 3







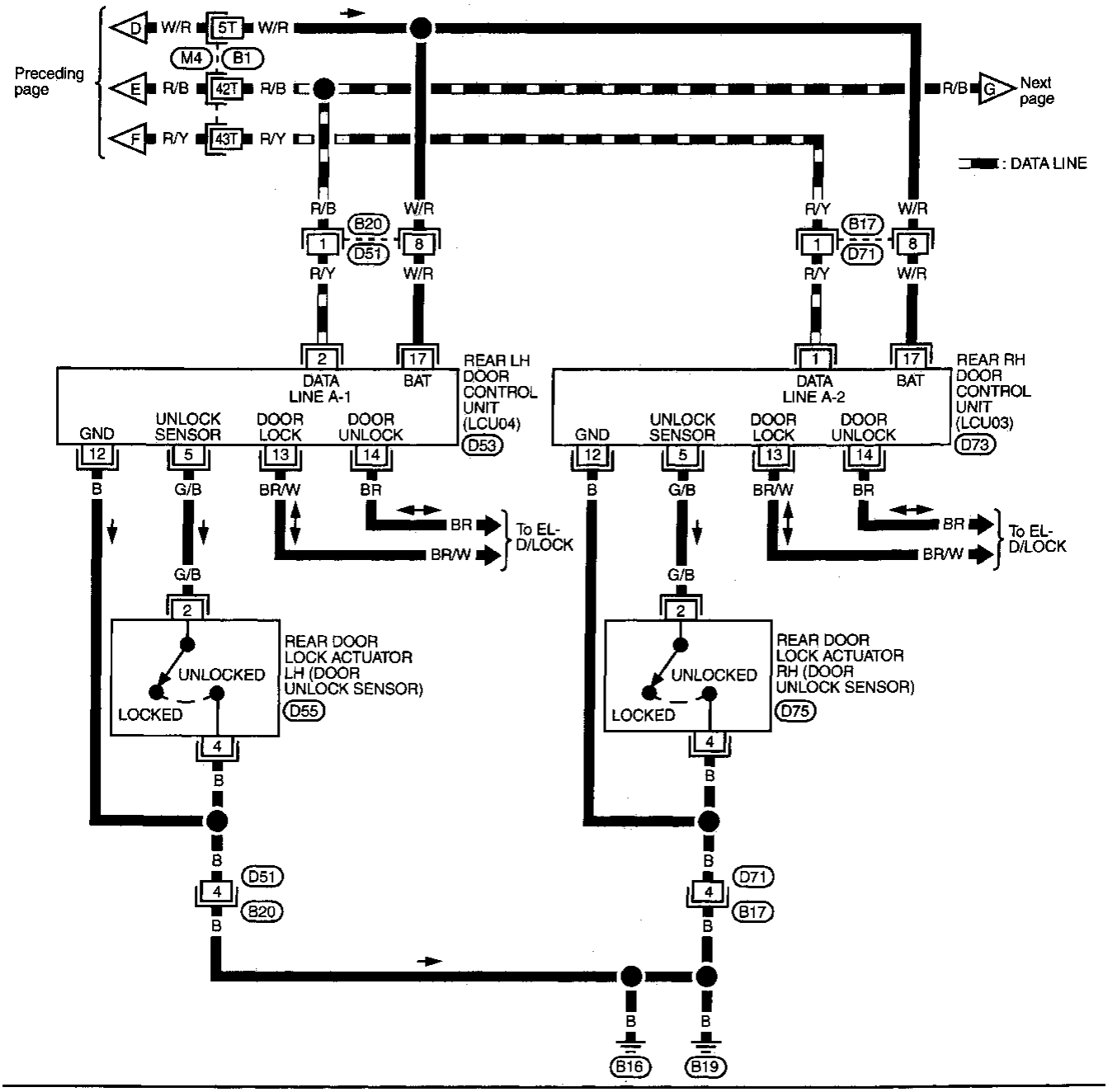


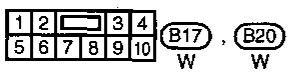
MEL742H

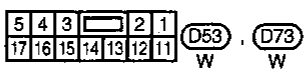
Wiring Diagram — MULTI — (Cont'd)

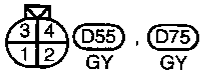
FIG. 4

EL-MULTI-04







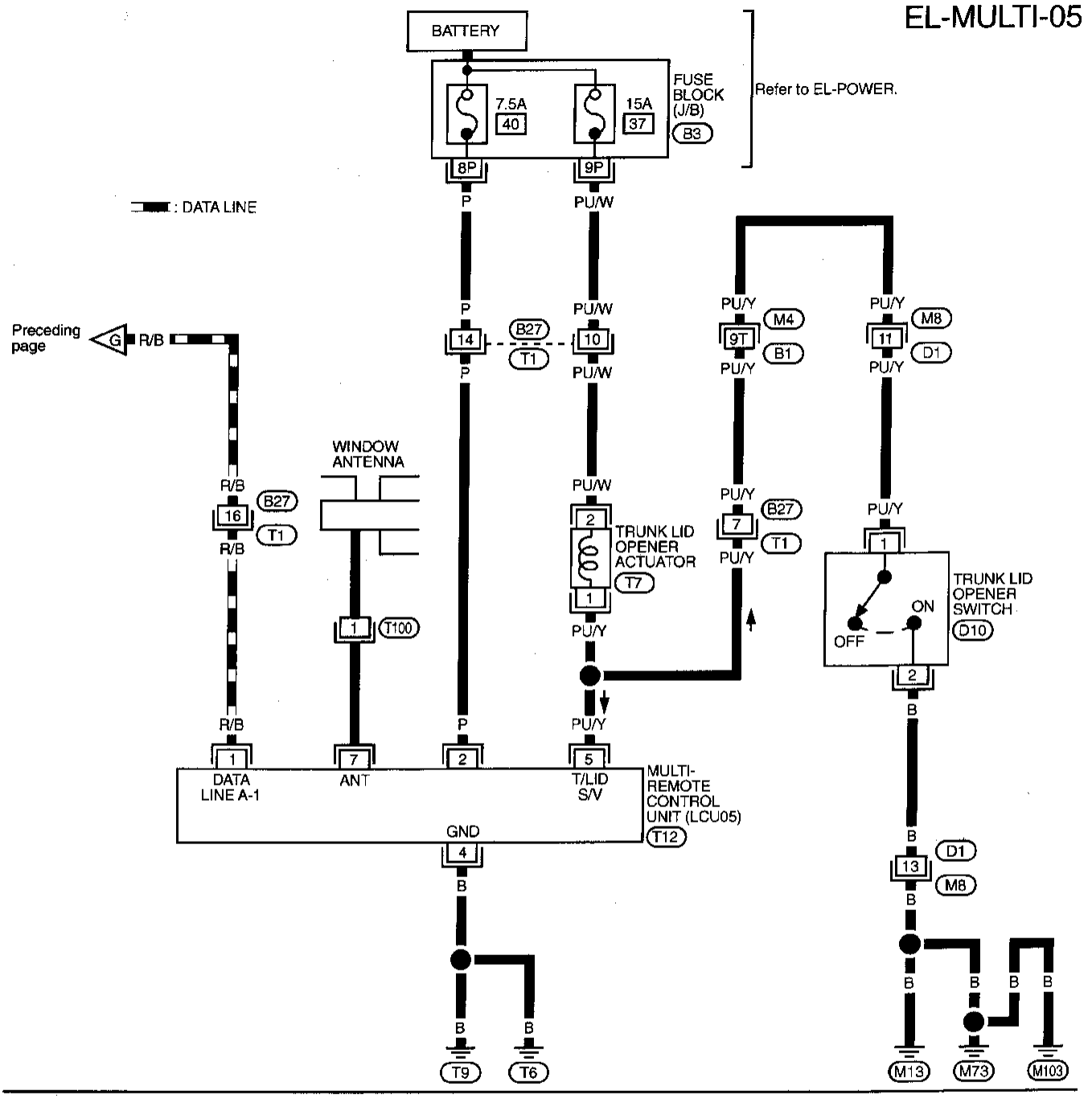


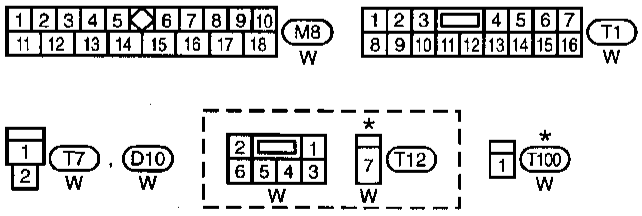
Refer to last page (Foldout page).
M4 , B1

MEL109J

Wiring Diagram — MULTI — (Cont'd)

FIG. 5

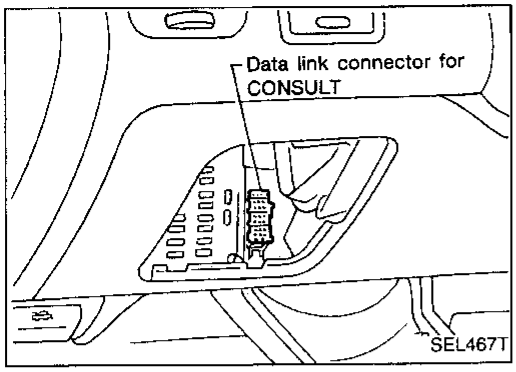




Refer to last page (Foldout page).
M4 , B1
B3

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

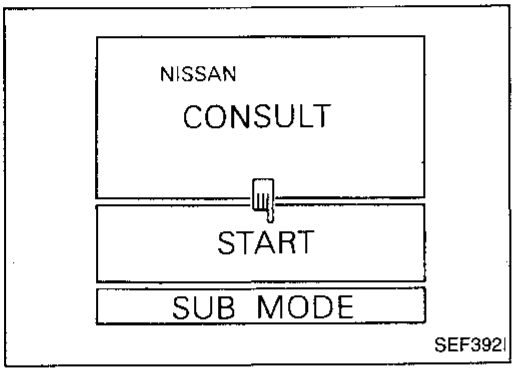
MEL110J



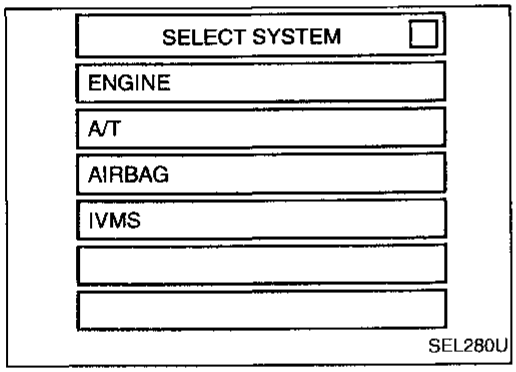
CONSULT

CONSULT INSPECTION PROCEDURE

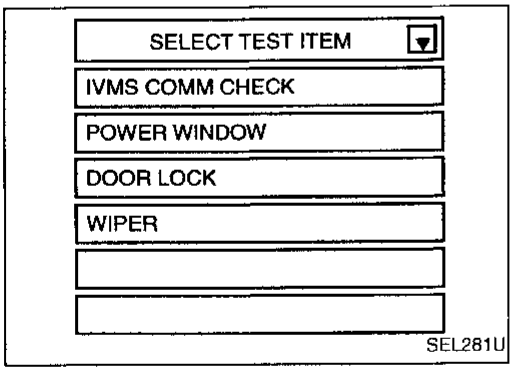
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



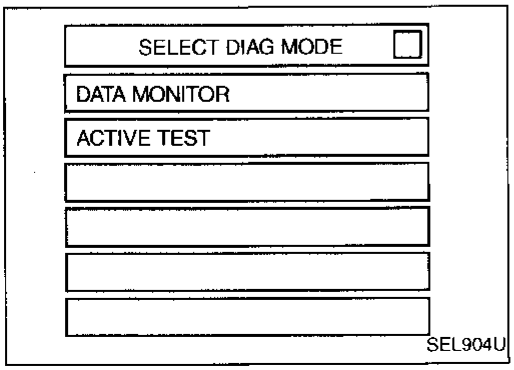
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



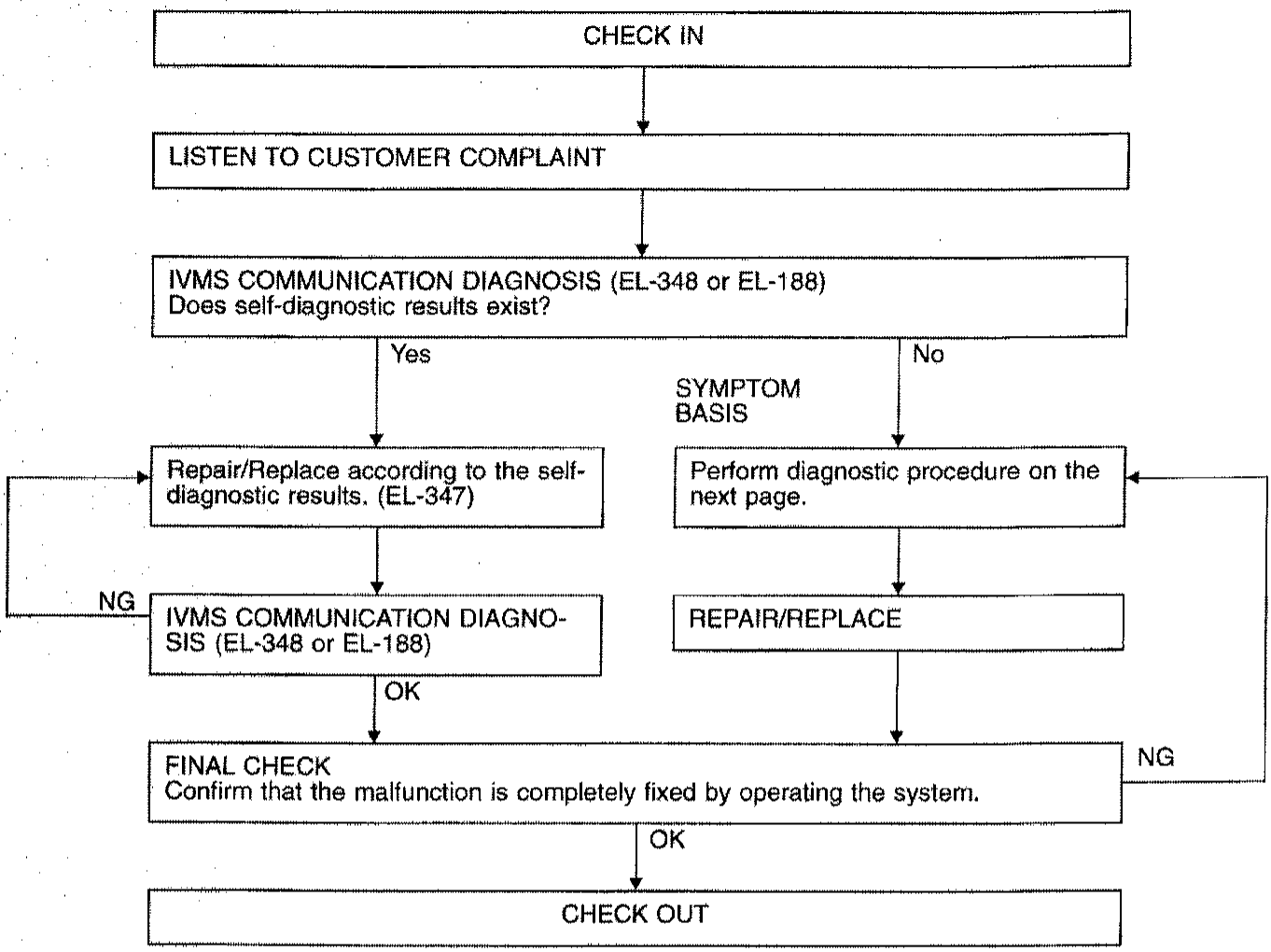
6. Touch "MULTI-REMOTE CONT SYS".



- DATA MONITOR and ACTIVE TEST are available for the multi-remote control system.

Trouble Diagnoses

WORK FLOW



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-348) 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)

TROUBLE SYMPTOM

- All functions of remote control system do not operate.

CHECK REMOTE CONTROLLER BATTERY.
Refer to DIAGNOSTIC PROCEDURE 1, EL-256.
NG → Replace battery.
OK ↓
Enter the Identity (ID) code of different or new remote controller. Refer to EL-262.
OK ↓
Can the new ID code be entered?
No → Go to DIAGNOSTIC PROCEDURE 2, EL-256 and DIAGNOSTIC PROCEDURE 3, EL-257.
Yes ↓
Replace with the originally used multi-remote controller.

- Some functions of multi-remote controller do not operate.

CHECK REMOTE CONTROLLER INPUT SIGNAL.
• Check remote controller input signal using CONSULT (DATA MONITOR) or On board Diagnosis (Mode II, refer to EL-190).
No → Replace the multi-remote controller.
Yes ↓

① DOOR LOCK OR UNLOCK DOES NOT FUNCTION.
(Pressing lock or unlock button of remote controller normally locks or unlocks all doors.)
• Check if power door lock system functions with door lock & unlock switch.
No → Check "POWER DOOR LOCK" system and door switch input signal. (Refer to DIAGNOSTIC PROCEDURE 3, EL-257.)

OR

② FRONT POWER WINDOW DOES NOT LOWER WHEN DOOR UNLOCK BUTTON IS CONTINUOUSLY PRESSED FOR MORE THAN 1.5 SECONDS.
No → Check "POWER WINDOW" system.

OR

③ INTERIOR LAMP DOES NOT TURN ON FOR 30 SECONDS WHEN PRESSING UNLOCK BUTTON OF REMOTE CONTROLLER.
No → Check "Interior lamp" circuit.

OR

④ HAZARD INDICATOR DOES NOT FLASH TWICE WHEN PRESSING LOCK BUTTON OF REMOTE CONTROLLER.
• Check if hazard indicator flashes with hazard switch.
If check is OK, Go to DIAGNOSTIC PROCEDURE 6, EL-261.
No → Check "Hazard indicator lamp" circuit.

OR

⑤ PANIC ALARM (HORN AND HEADLAMP) DOES NOT ACTIVATE WHEN PANIC ALARM BUTTON IS CONTINUOUSLY PRESSED FOR MORE THAN 1.5 SECONDS.
• Check if horn and headlamps activate when test is conducted as follows:
1. Open the driver's window.
2. Close all doors, hood and trunk lid.
3. Lock doors with the key.
4. Wait for about 30 seconds to make sure that the lighted "SECURITY" warning lamp begins to blink.
5. Open the hood with hood lock opener, then panic alarm should activate. (The alarm will stop when door is unlocked with the key.)
No → Check "THEFT WARNING" system.

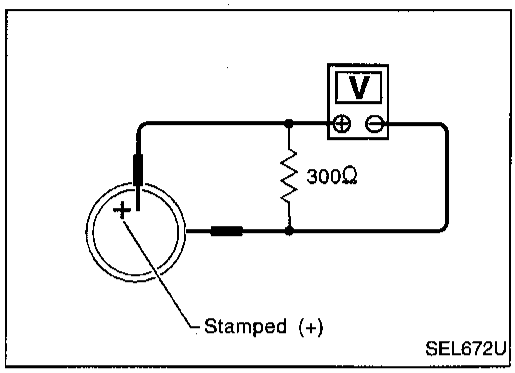
OR

⑥ TRUNK LID DOES NOT OPEN WHEN TRUNK OPENER BUTTON IS PRESSED.
• Check if trunk lid opens with trunk lid opener switch.
No → Go to DIAGNOSTIC PROCEDURE 5 (EL-260).
Yes ↓
Go to DIAGNOSTIC PROCEDURE 4 (EL-259).

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

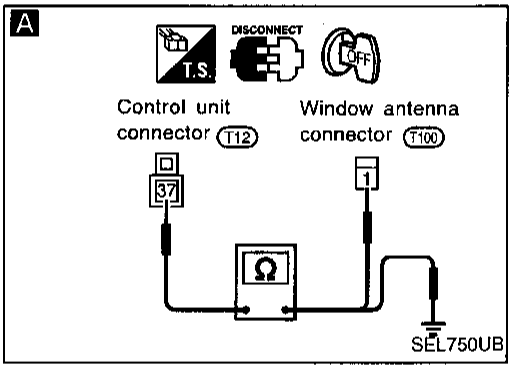


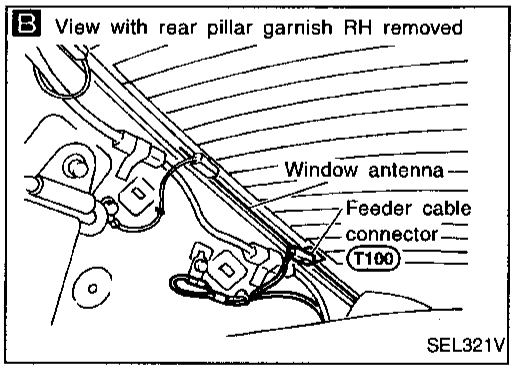
CHECK REMOTE CONTROLLER BATTERY.
Remove battery and measure voltage across battery positive and negative terminals, ⊕ and ⊖.

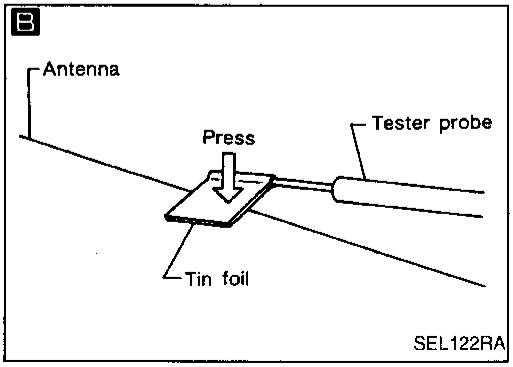
Measuring terminal		Standard value
⊕	⊖	
Battery positive terminal ⊕	Battery negative terminal ⊖	2.5 - 3.0V

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-252.

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-129).

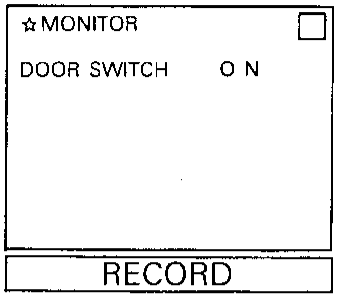
OK ↓

Antenna of multi-remote control is OK.

Trouble Diagnoses (Cont'd)

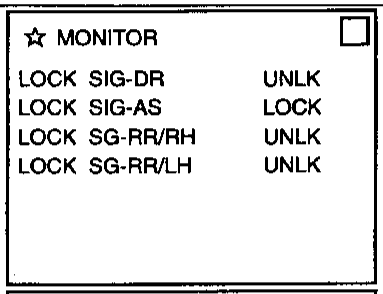
DIAGNOSTIC PROCEDURE 3

A



SEL470S

B



SEL457S

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

ON BOARD

Check all doors switches in Switch monitor (Mode II) mode.
(Refer to On board Diagnosis, EL-190.)

Refer to wiring diagram in EL-249.

NG → Check the following.
- Door switch
- Door switch ground condition
- Harness for open or short between BCM and door switch

OK ↓

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

ON BOARD

Check front door lock knob operation in Switch monitor (Mode II) mode.
(Refer to On board Diagnosis, EL-190.)

Refer to wiring diagram in EL-250 or 251.

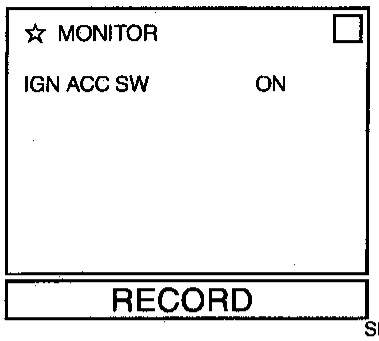
NG → Check the following.
- Door unlock sensor
- Door unlock sensor ground circuit
- Harness for open or short between LCU and unlock sensor

OK ↓

Ⓐ

Trouble Diagnoses (Cont'd)

C



Ⓐ

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

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

OR

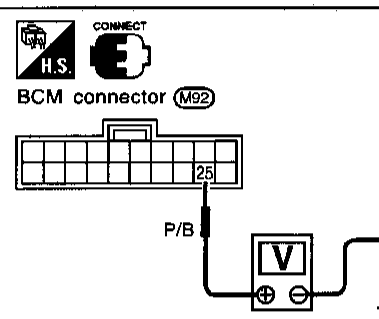
D TESTER

Check voltage between BCM terminal ㉕ and ground.

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

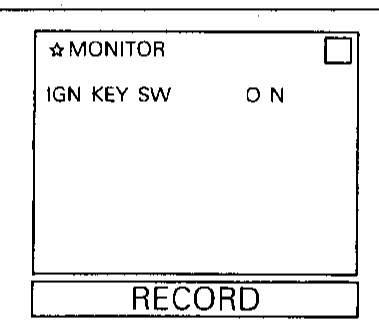
Refer to wiring diagram in EL-248.

D



OK

E



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

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

OR

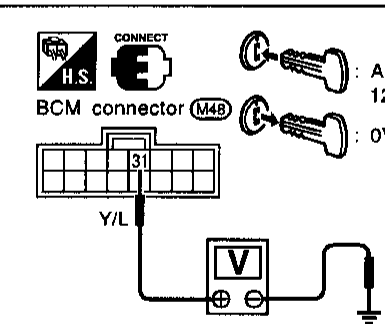
F TESTER

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-248.

F

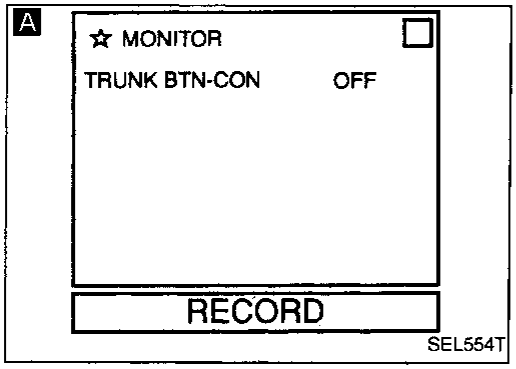


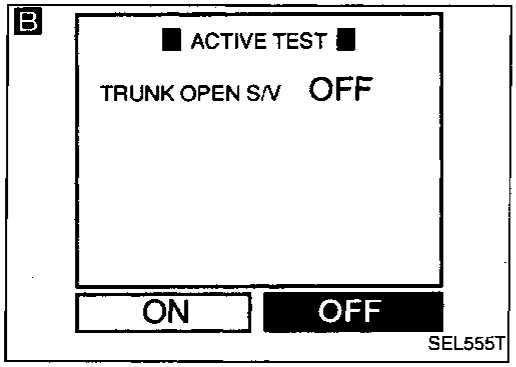
OK

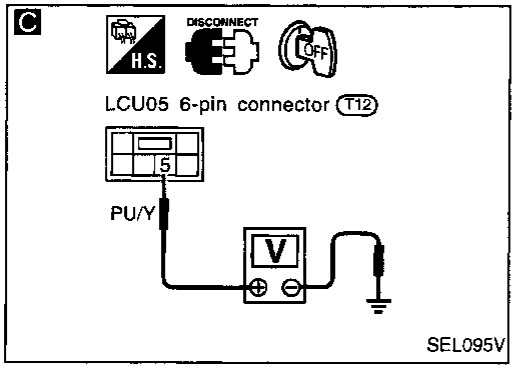
Check operation parts in multi-remote control system for function.

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-190.)

OK ↓

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-252.

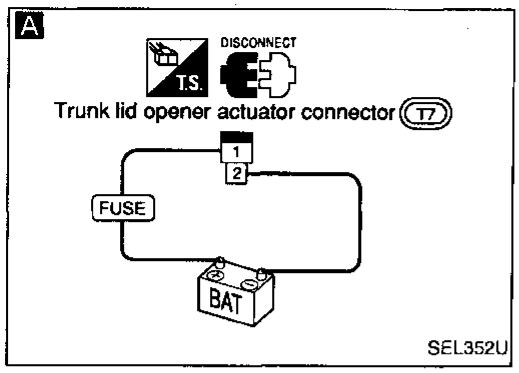
NG ↓

Check harness for open or short between LCU05 and trunk lid opener actuator.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

A



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-252.

NG → Replace trunk lid opener actuator.

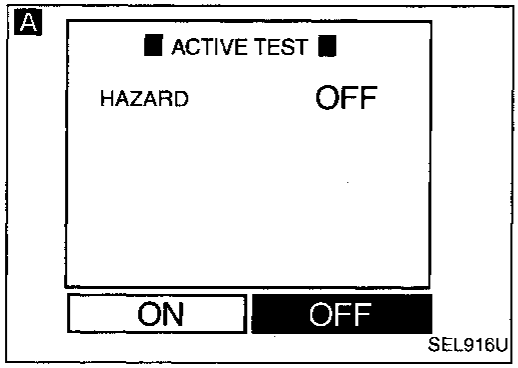
OK ↓

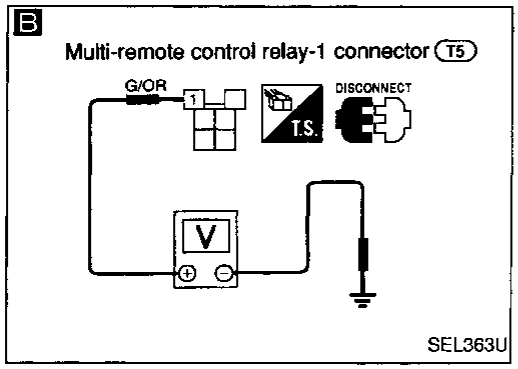
Check the following.

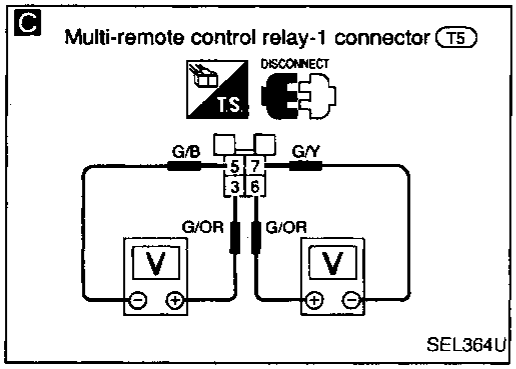
- 15A fuse [No. 37, located in the fuse block (J/B)]
- Harness for open or short between fuse and trunk lid actuator
- Harness for open or short between trunk lid actuator and LCU05

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-248.

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

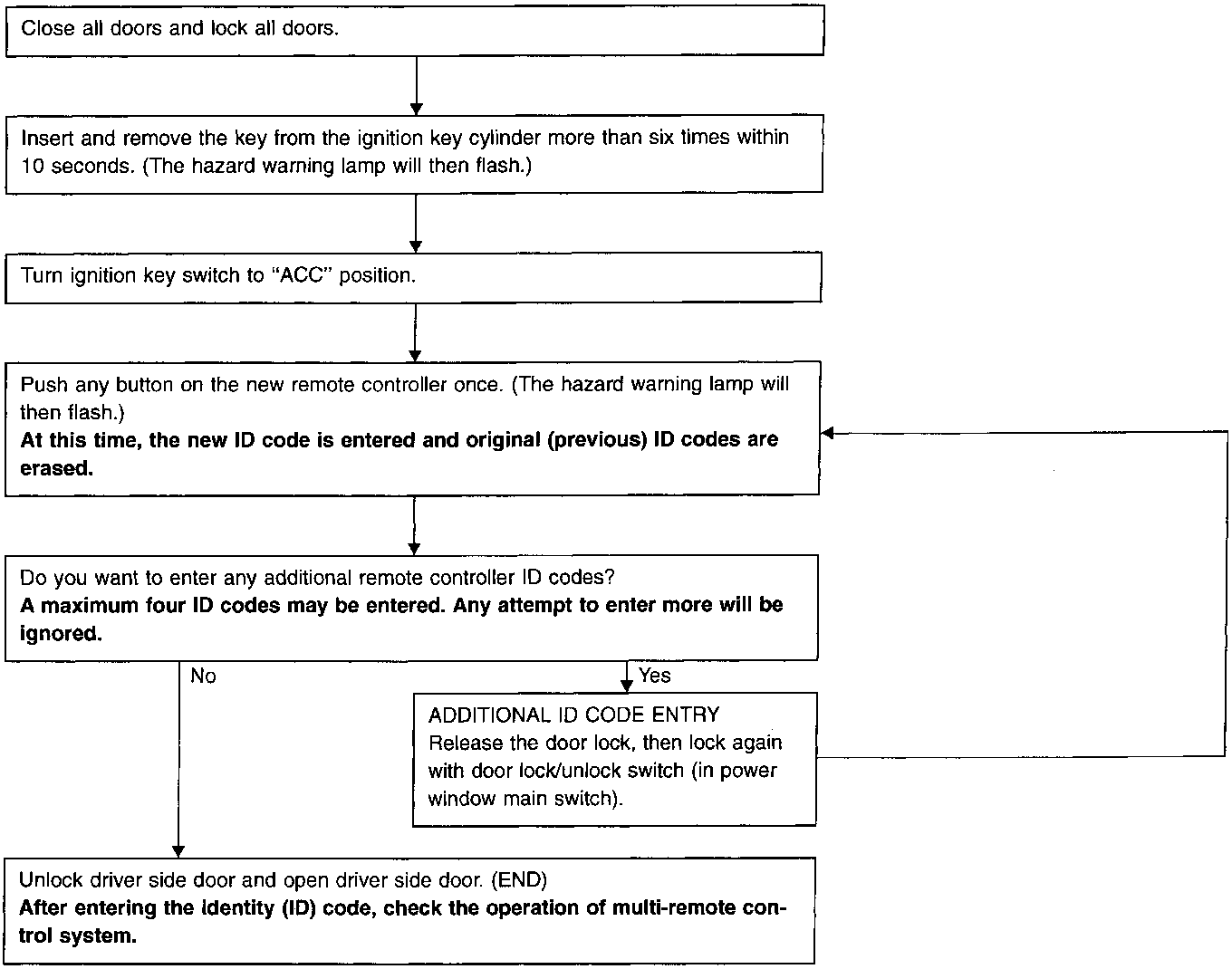
Enter the identity (ID) code manually when:

- **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.

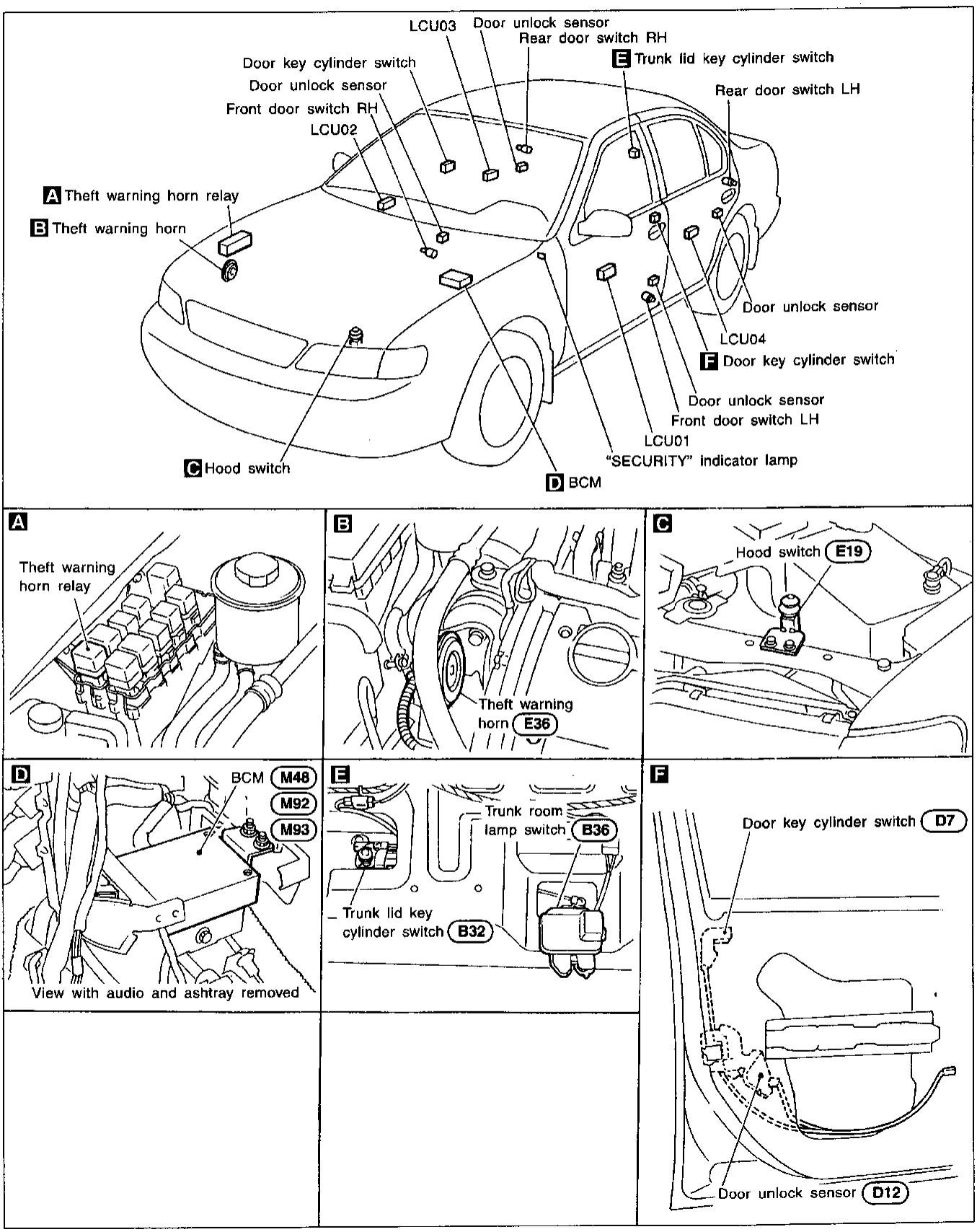
PROCEDURE



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.**

Component Parts and Harness Connector Location



SEL794V

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 headlamps 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 ㉕.

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 E5 and E30.

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 B16 and B19.

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.

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 (M103).

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.

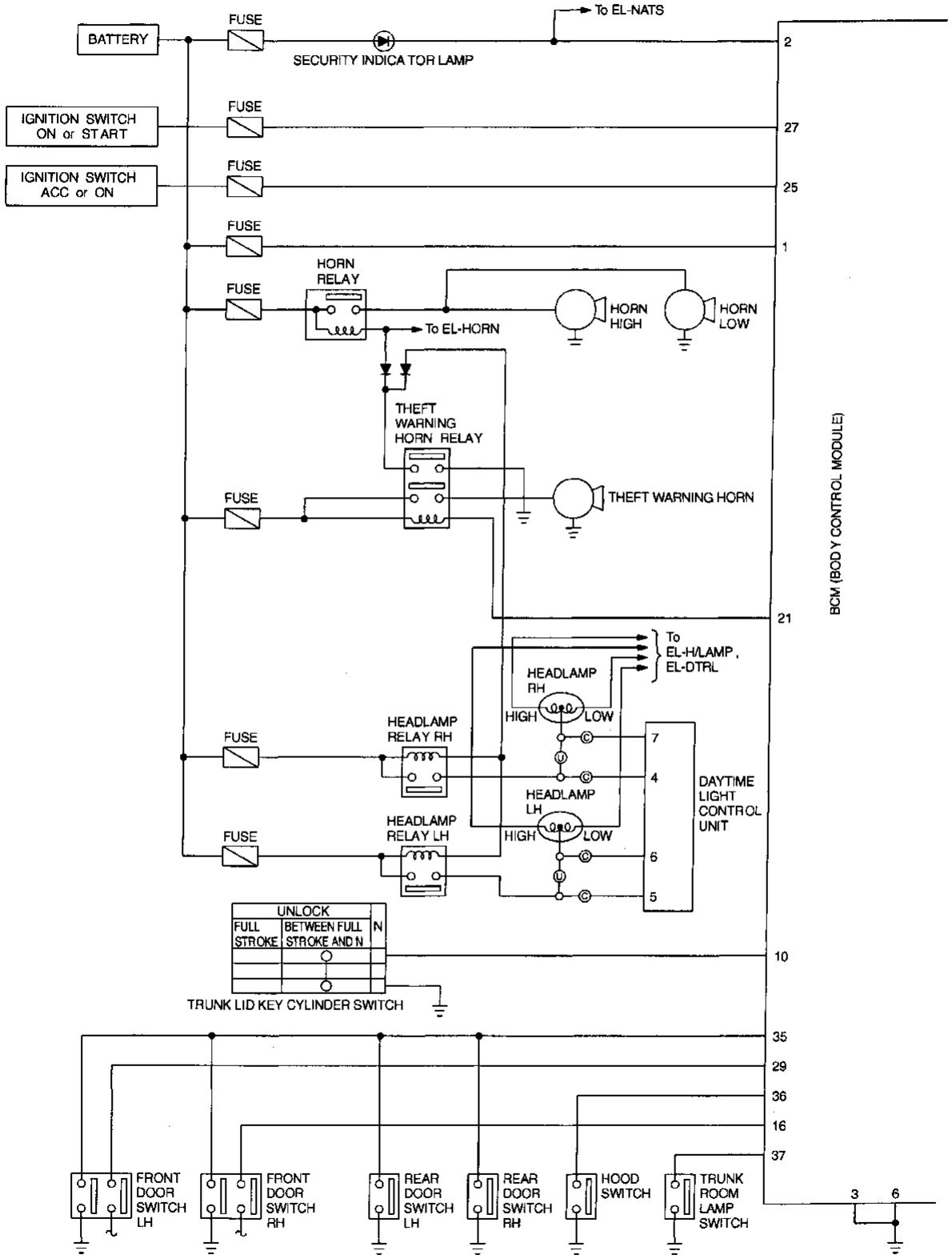
When the key is used to unlock the trunk lid, BCM terminal ⑩ receives a ground signal from terminal ① of the trunk lid key cylinder switch.
When the BCM/LCUs receives either one of these signals or unlock signal from remote controller, the theft warning system is deactivated. (Disarmed phase)

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.

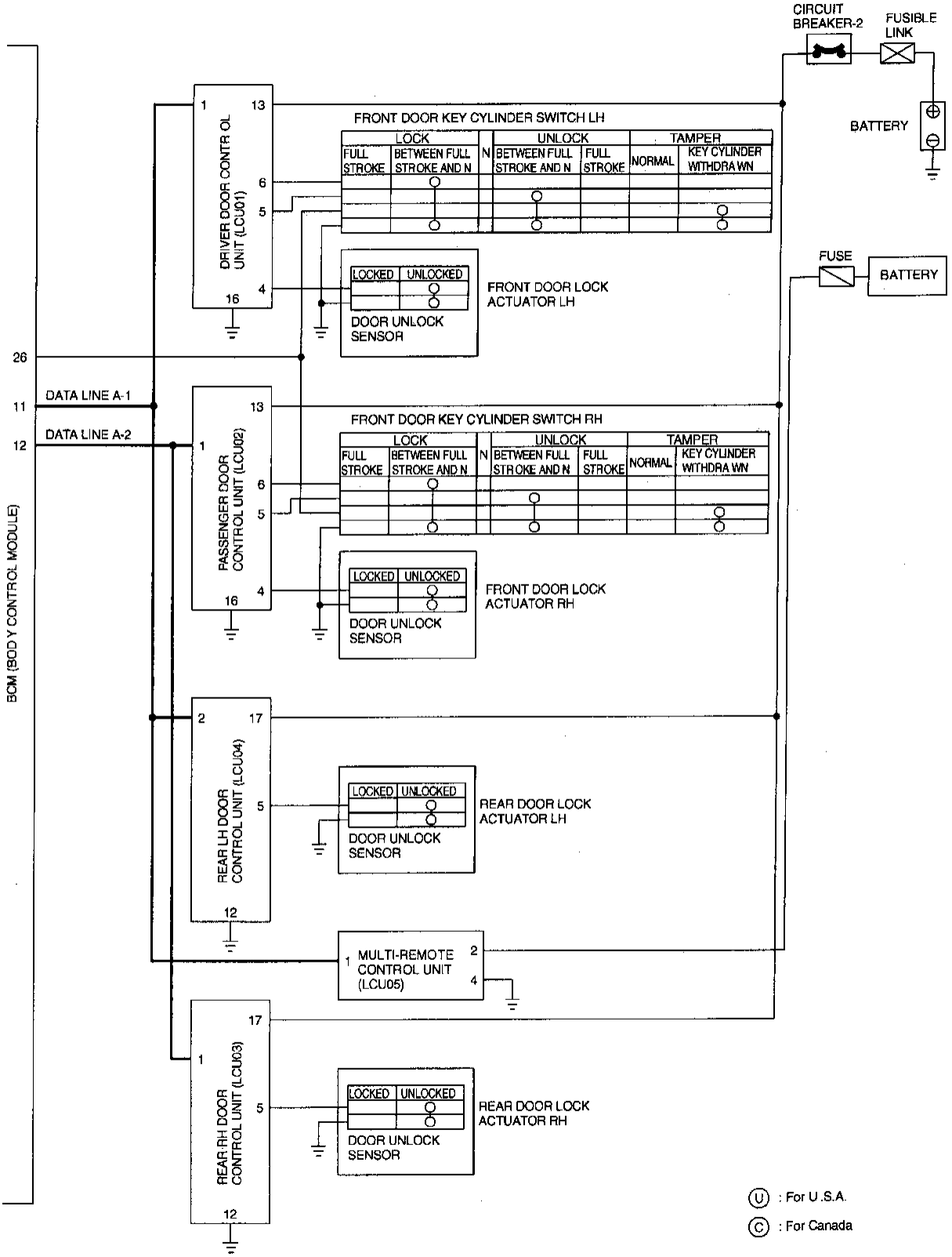
The headlamp flashes and the horn sounds intermittently.
The alarm automatically turns off after 30 seconds or when LCU05 (multi-remote control unit) receives any signal from multi-remote controller.

Schematic



MEL111J

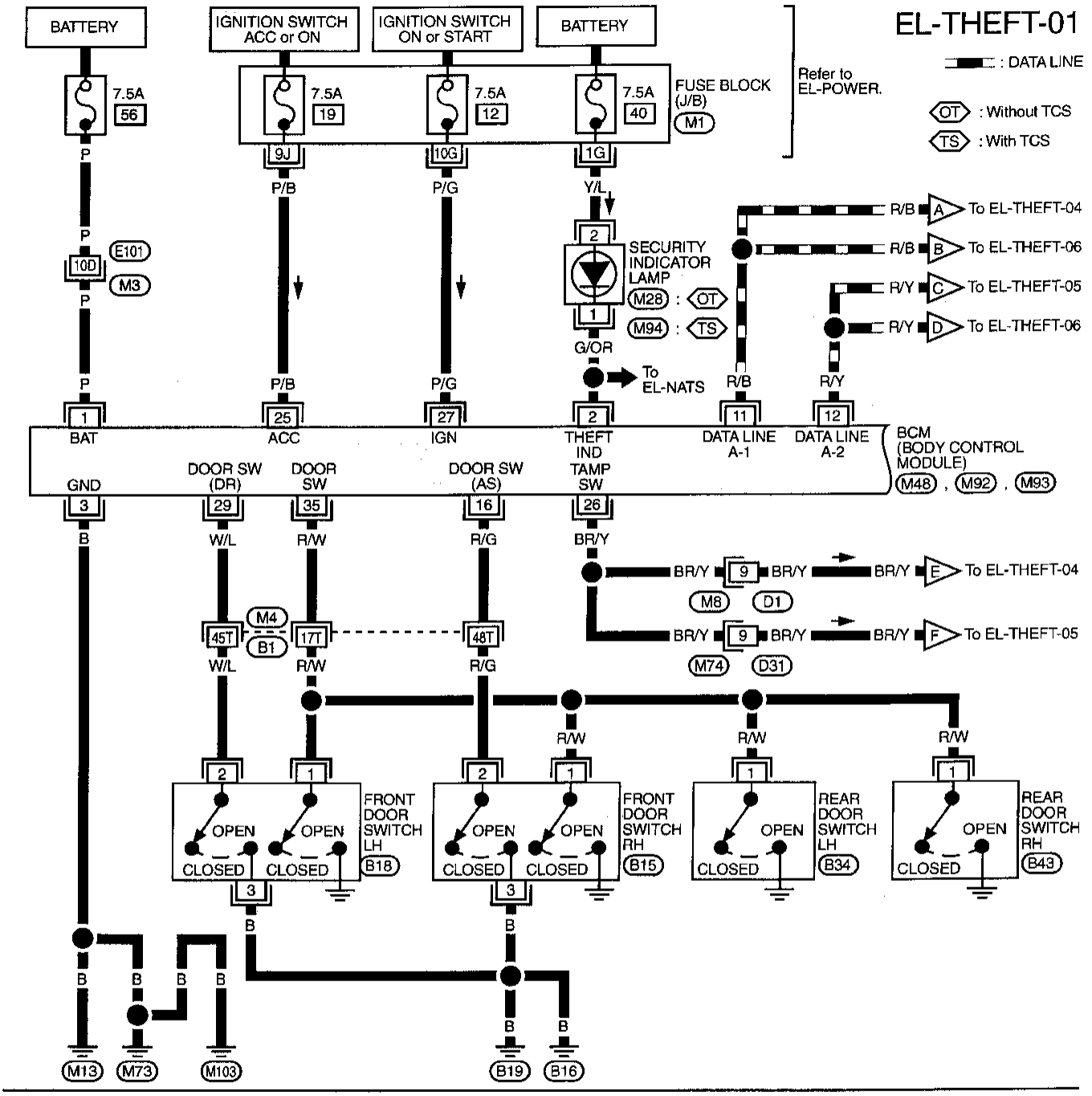
Schematic (Cont'd)

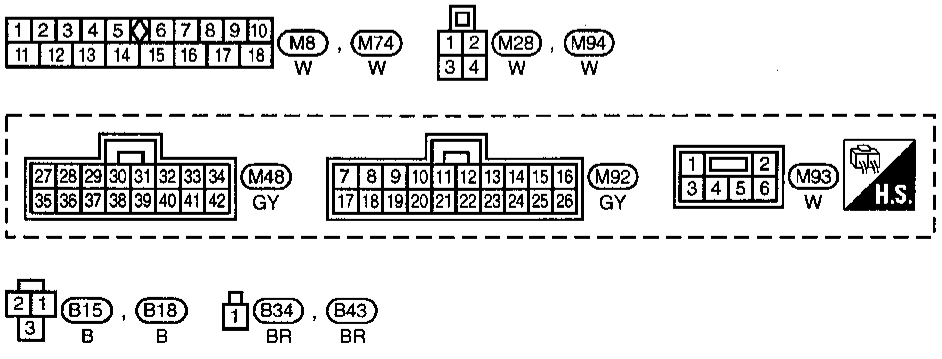


MEL112J

Wiring Diagram — THEFT —

FIG. 1





Refer to last page (Foldout page).

M1

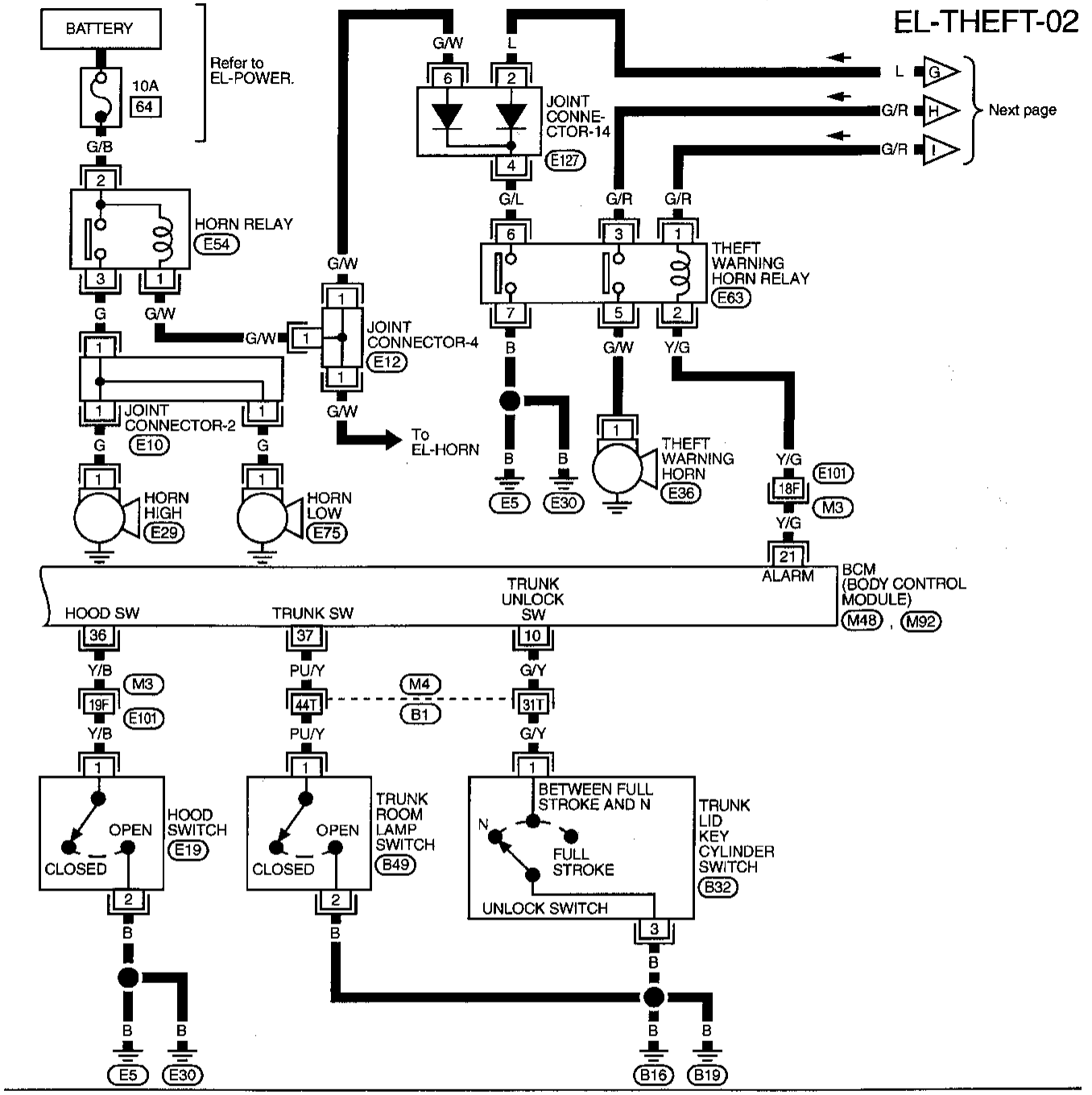
M3 , E101

M4 , B1

MEL113J

Wiring Diagram — THEFT — (Cont'd)

FIG. 2

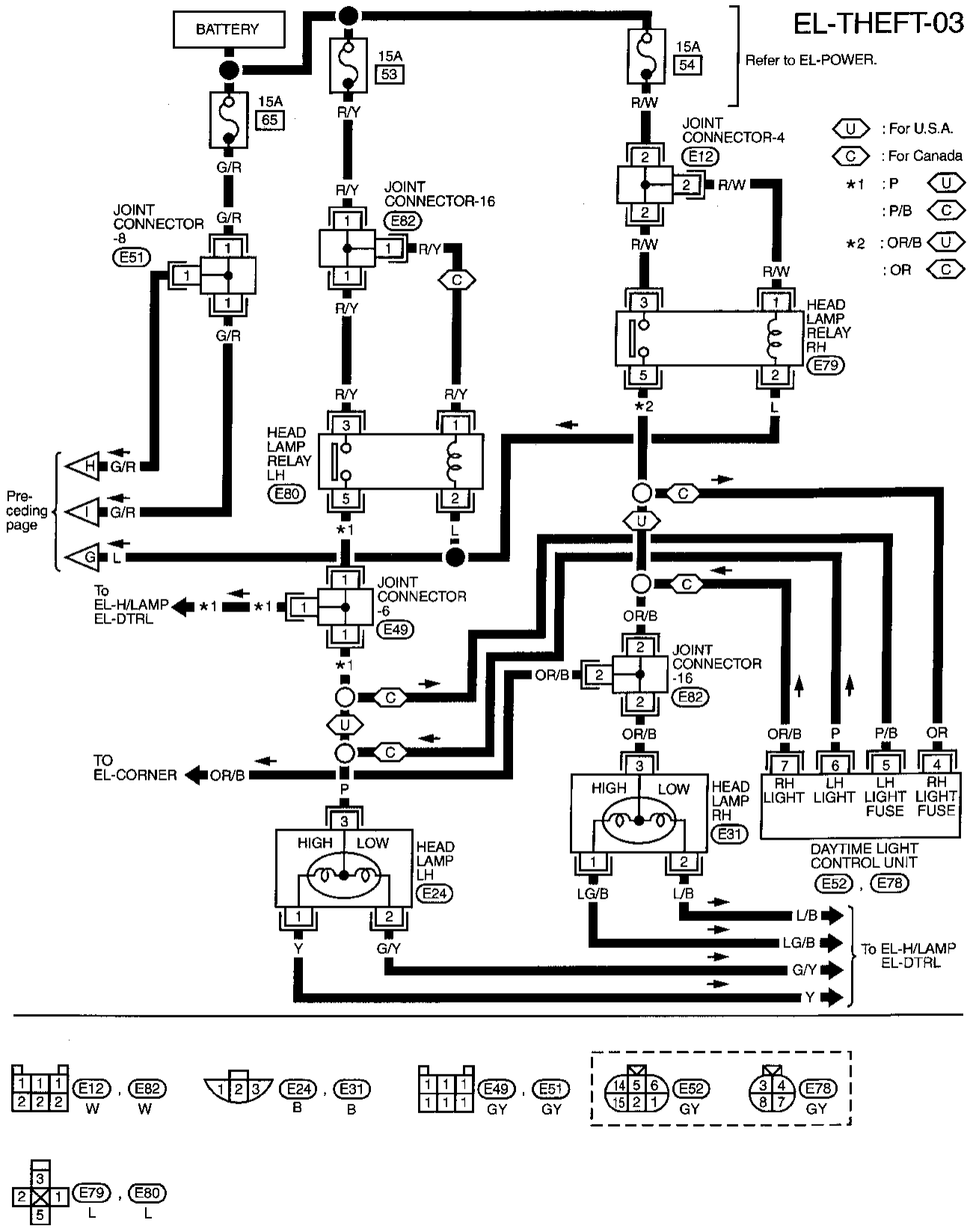


Refer to last page (Foldout page).
M3 , E101
M4 , B1

MEL114J

Wiring Diagram — THEFT — (Cont'd)

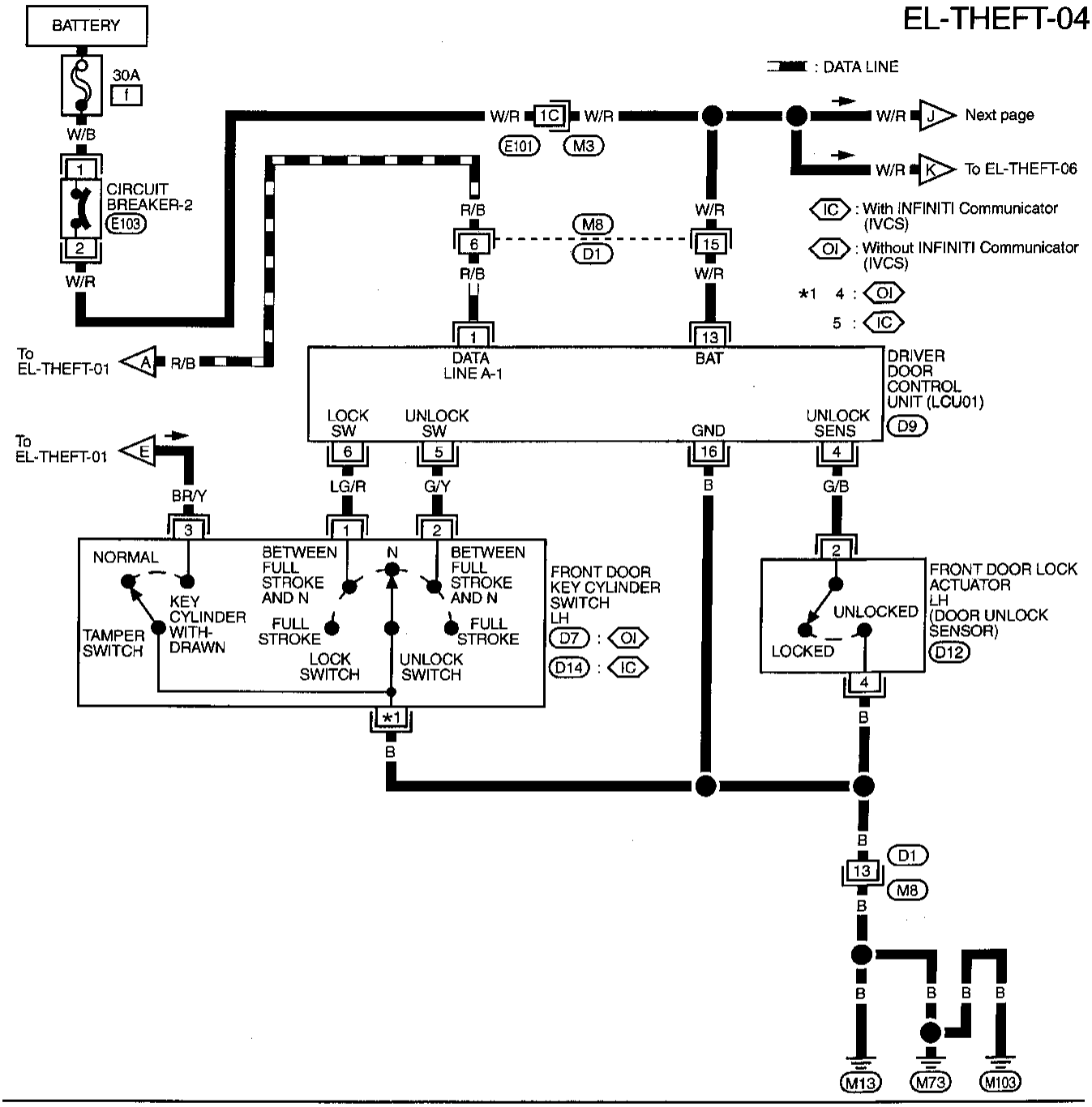
FIG. 3

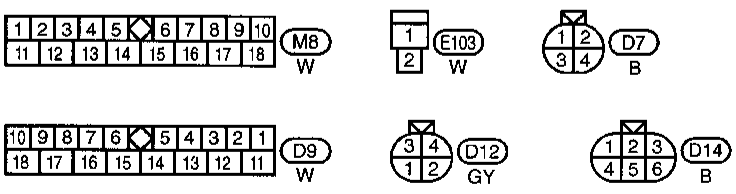


MEL115J

Wiring Diagram — THEFT — (Cont'd)

FIG. 4





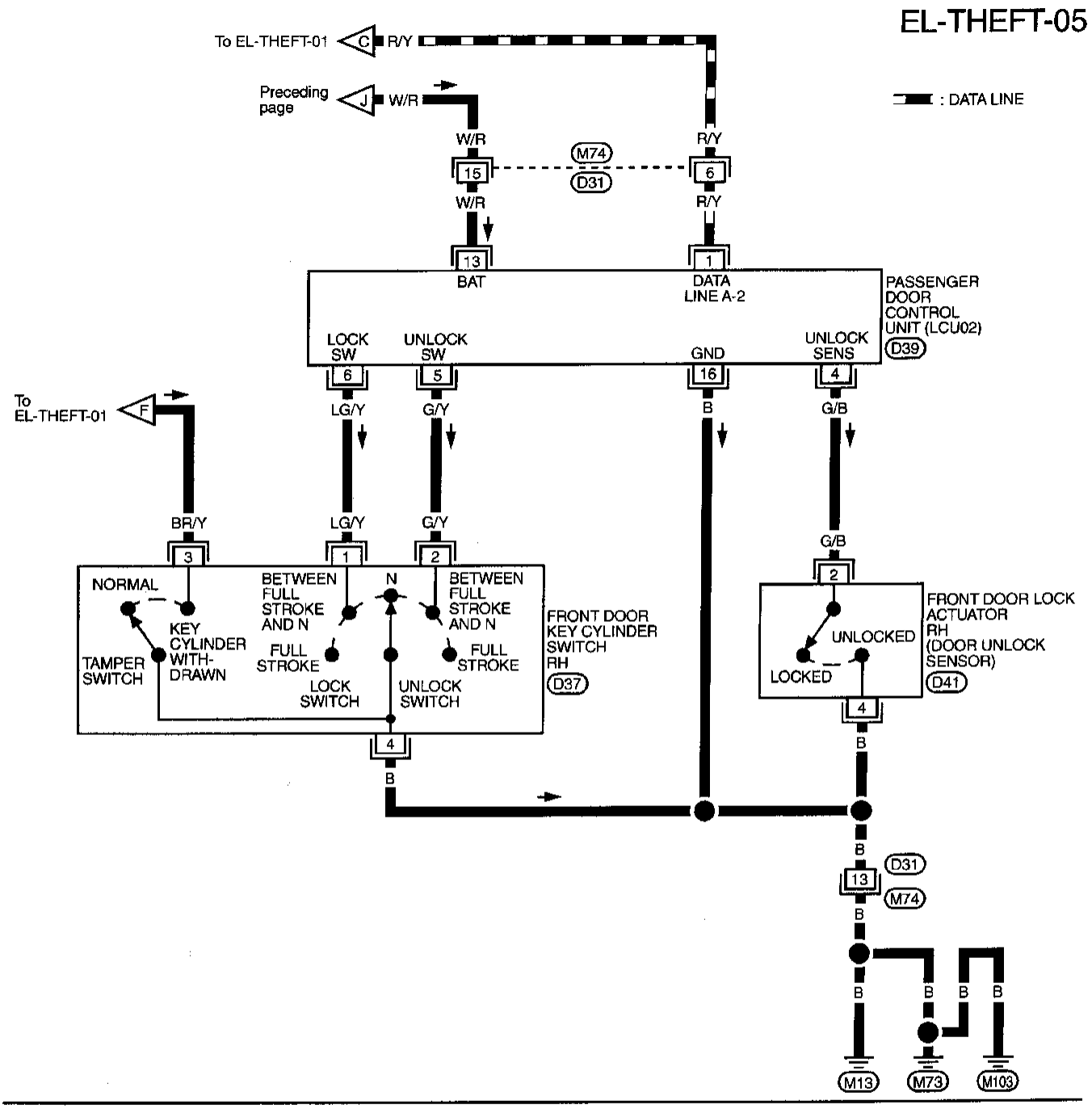
Refer to last page (Foldout page).
M3 , E101

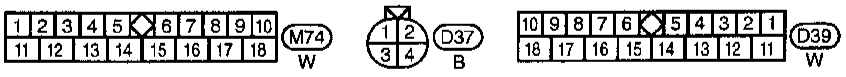
MEL116J

1703

Wiring Diagram — THEFT — (Cont'd)

FIG. 5

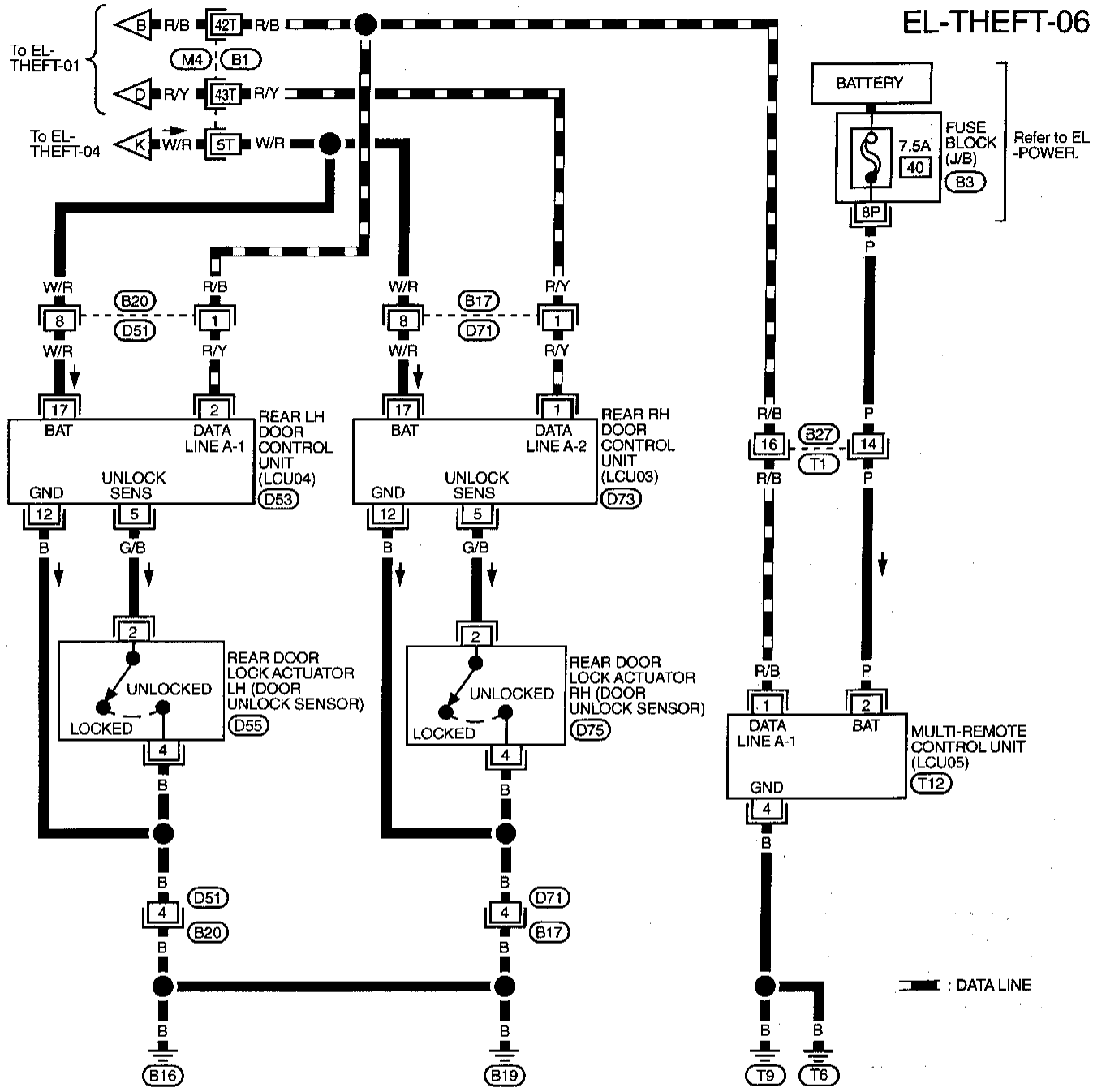


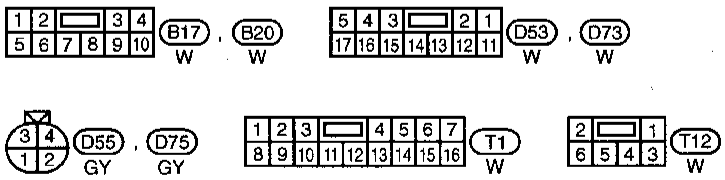


MEL117J

Wiring Diagram — THEFT — (Cont'd)

FIG. 6

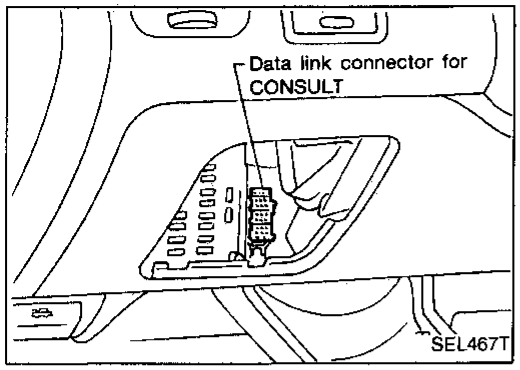




Refer to last page (Foldout page).
M4, B1
B3

MEL118J

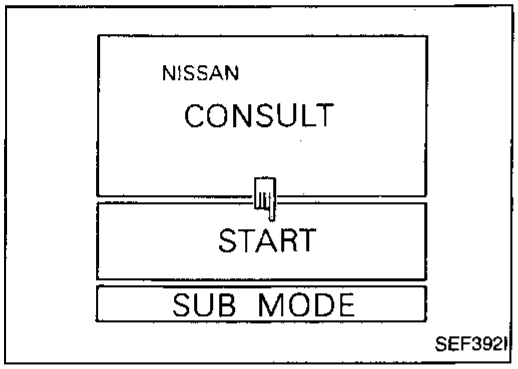
1705



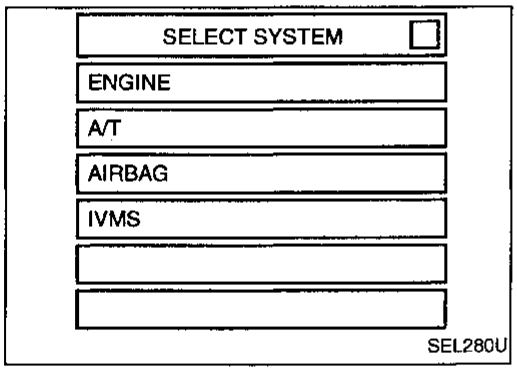
CONSULT

CONSULT INSPECTION PROCEDURE

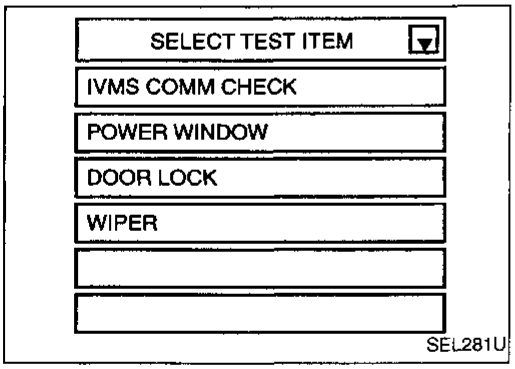
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



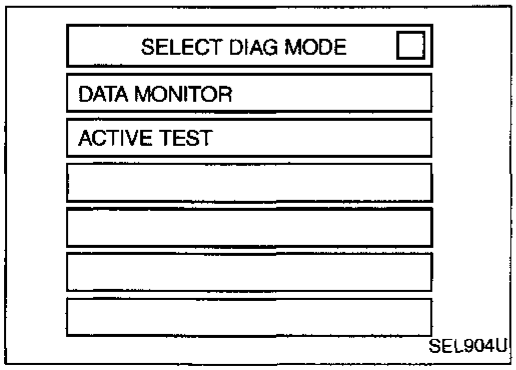
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



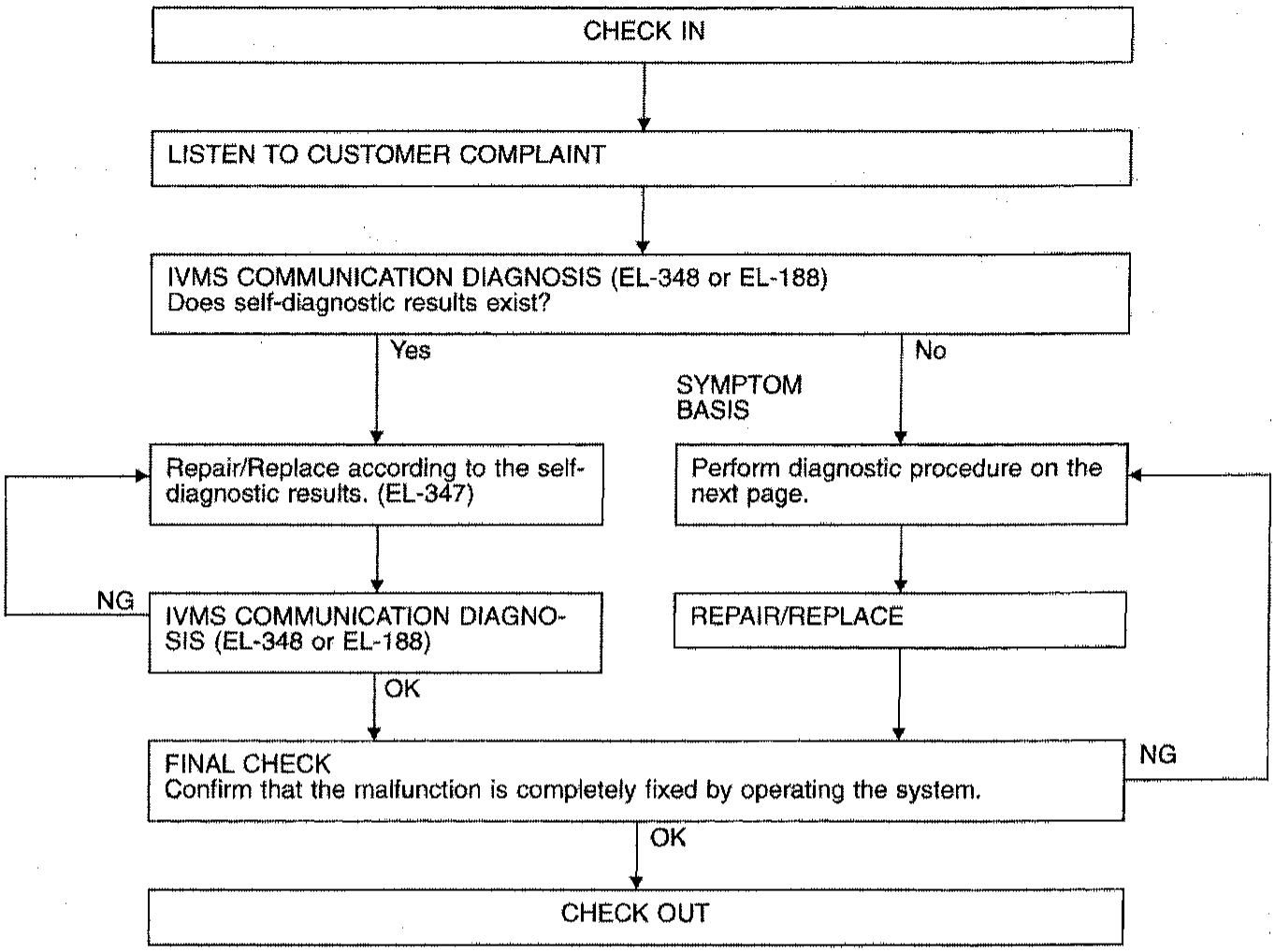
6. Touch "THEFT WARNING SYSTEM".



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

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-348) 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)

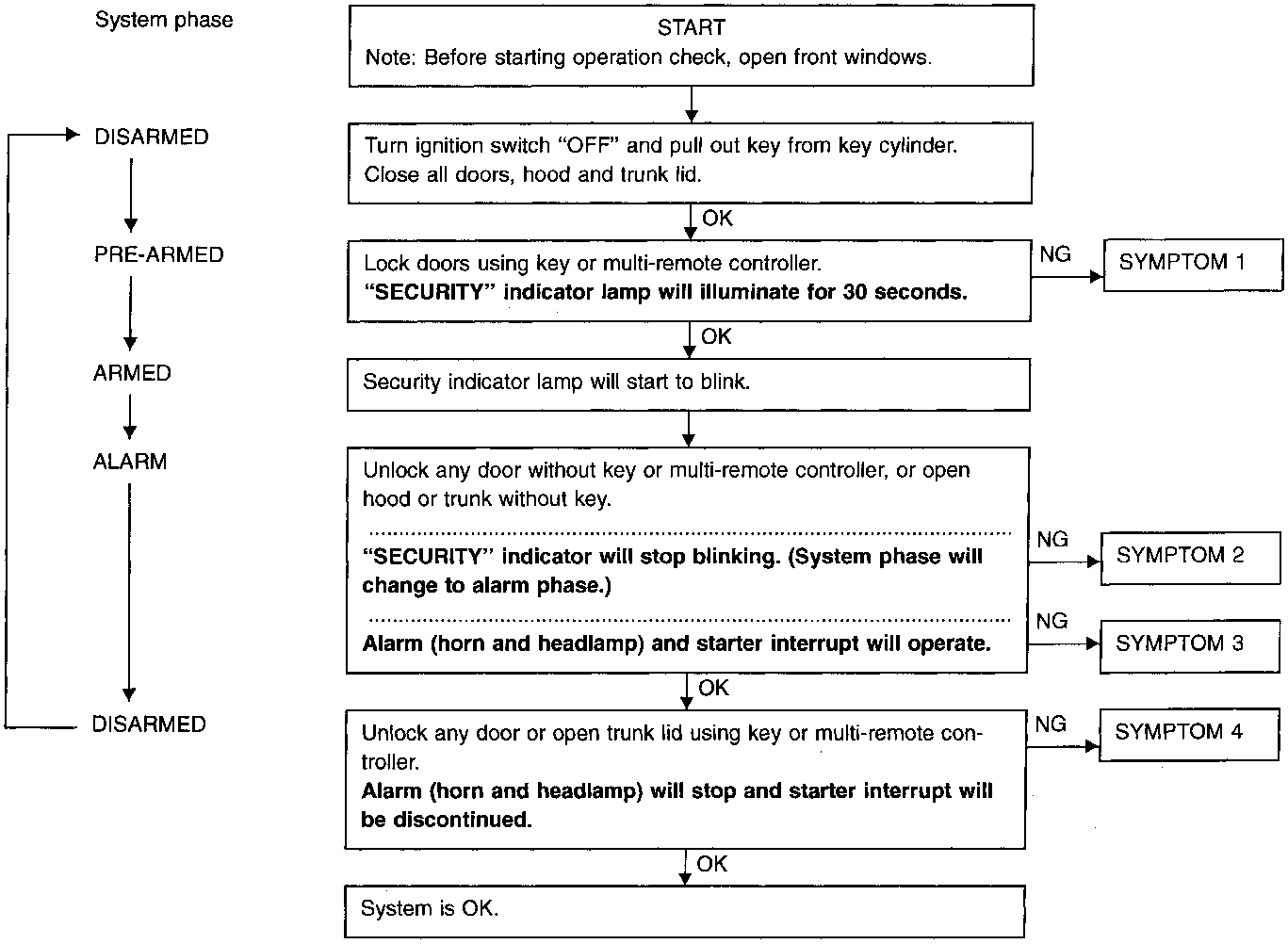
PRECAUTIONS FOR INFINITI COMMUNICATOR (IVCS)

The purpose of INFINITI Communicator is to increase security for the vehicle owner by providing a convenient way to contact the most appropriate emergency assistance provider during an emergency.
Improper operation of the system may result in a police response.
The theft warning system also activates INFINITI Communicator. For details, refer to INFINITI Communicator (IVCS), EL-323.

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.

NOTE: Before performing PRELIMINARY CHECK, disconnect IVCS unit connectors not to operate INFINITI communicator.



After performing preliminary check, go to symptom chart on next page.

Trouble Diagnoses (Cont'd)

Before starting trouble diagnoses below, perform preliminary check, EL-276.

Symptom numbers in the symptom chart correspond with those of preliminary check.

SYMPTOM CHART

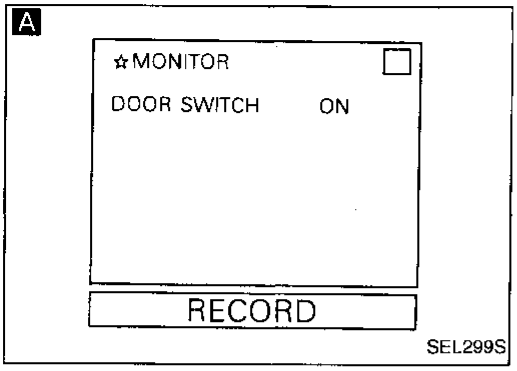
SYMPTOM			Preliminary check	Diagnostic Procedure 1 (Door, hood, trunk room lamp and door key cylinder tamper switch check)	Diagnostic Procedure 2 (Security indicator lamp check)	Diagnostic Procedure 3 (Door unlock sensor check)	Diagnostic Procedure 4 (Door key cylinder switch check)	Diagnostic Procedure 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
PROCEDURE			—	Diagnostic procedure							—	
REFERENCE PAGE			EL-276	EL-278	EL-282	EL-283	EL-284	EL-285	EL-286	EL-289	EL-254	EL-349
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

A CONSULT

See "DOOR SWITCH" in DATA MONITOR mode.
When door is open:
DOOR SW ON
When door is closed:
DOOR SW OFF

OK → Door switch is OK.

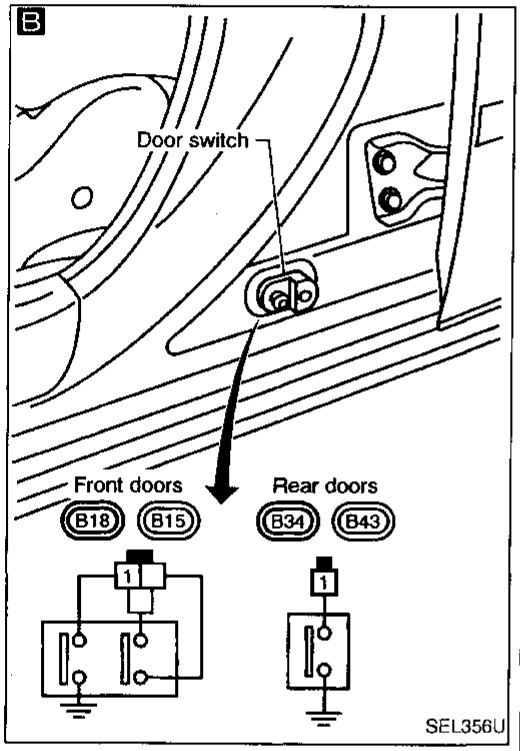
OR

ON BOARD

Check all doors switches in Switch monitor (Mode II) mode.
(Refer to On board Diagnosis, EL-190.)

Refer to wiring diagram in EL-268.

NG ↓



B

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

NG → Replace door switch.

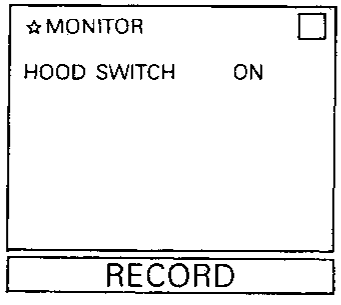
OK ↓

Check the following.
- Door switch ground condition
- Harness for open or short between door switch and BCM

Trouble Diagnoses (Cont'd)

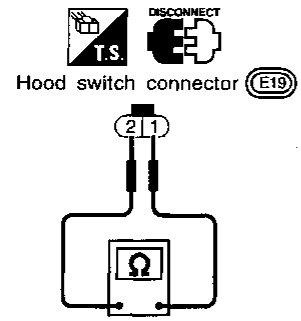
DIAGNOSTIC PROCEDURE 1-(2)
(Hood switch check)

A



SEL302S

B



SEL929UA

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

OK → Hood switch is OK.

OR

ON BOARD

Check hood switch in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-190.)

Refer to wiring diagram in EL-269.

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

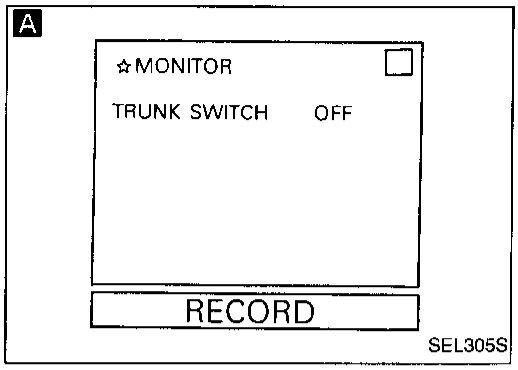
NG → Replace hood switch.

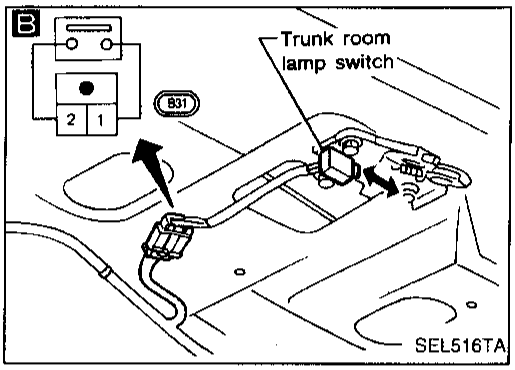
OK ↓

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

OK → Trunk room lamp switch is OK.

OR

ON BOARD

Check trunk room lamp switch in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-190.)

Refer to wiring diagram in EL-269.

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 ↓

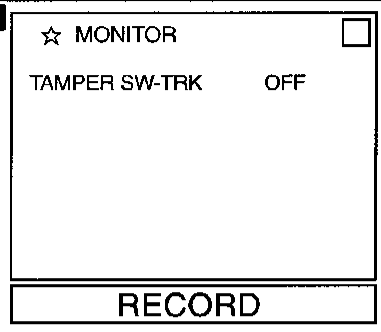
Check the following.
- Trunk room lamp switch ground circuit
- Harness for open or short between control unit and trunk room lamp switch

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1-(4)

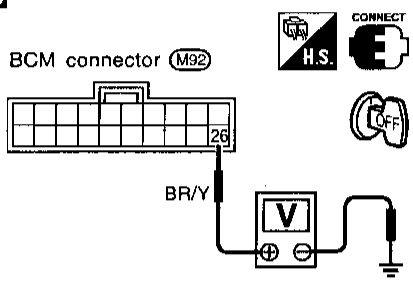
(Door key cylinder tamper switch check)

A



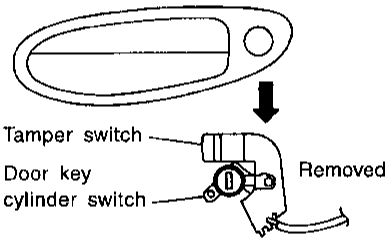
SEL323V

B

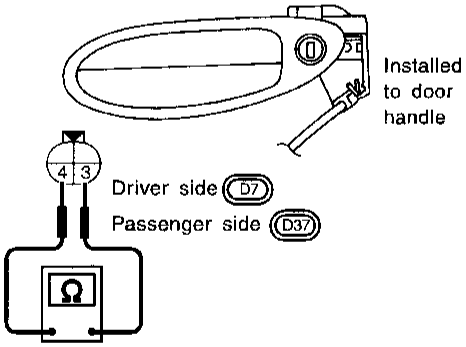


SEL324V

C CONTINUITY: YES



CONTINUITY: NO



SEL322V

CHECK DOOR KEY CYLINDER TAMPER SWITCH INPUT SIGNAL

A CONSULT

See "TAMPER SW-TRK" in DATA MONITOR mode.
When both door key cylinders are installed:
TAMPER SW-TRK OFF
When one of door key cylinders is removed:
TAMPER SW-TRK ON
Door 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.

OR

B TESTER

Check voltage between BCM terminal 26 and ground.
When both door key cylinders are installed:
Approx. 5V
When one of door key cylinders is removed:
Approx. 0V

Refer to wiring diagram in EL-269.

OK → Door key cylinder tamper switch is OK.

NG → Check installation of both door key cylinders.

NG → Reinstall door key cylinder correctly.

OK →

C

CHECK DOOR KEY TAMPER SWITCH
1. Disconnect door key cylinder (tamper) switch connector.
2. Check continuity between door key cylinder (tamper) switch terminals.

NG → Replace door key cylinder switch.

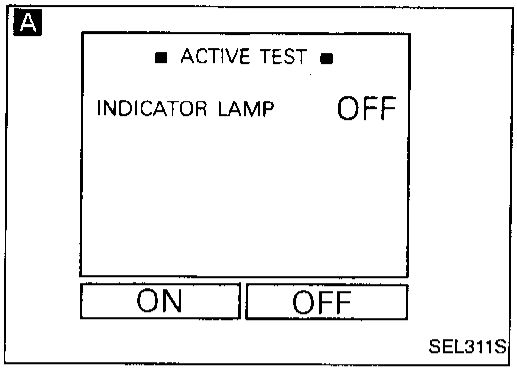
OK →

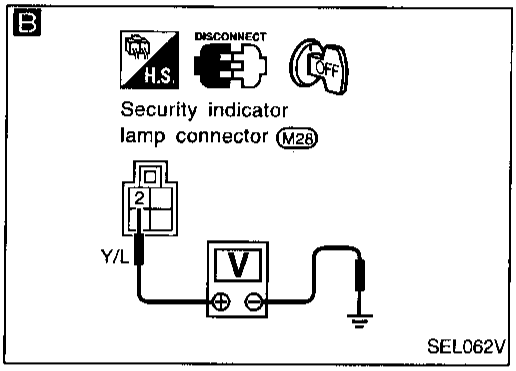
Check the following.
- Harness for open or short between BCM and tamper switch
- Tamper switch ground circuit

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

(Security indicator lamp check)





A

INDICATOR LAMP ACTIVE TEST

CONSULT

Perform "INDICATOR LAMP" in "Active Test" mode.

Check indicator lamp operation.

If CONSULT is not available, skip this procedure and go to the next procedure below.

OK → Indicator lamp is OK.

NG ↓

Check indicator lamp. NG → Replace indicator lamp.

OK ↓

B

CHECK POWER SUPPLY CIRCUIT FOR INDICATOR LAMP

1. Disconnect security lamp connector.
2. Check voltage between indicator lamp terminal ② and ground.
   Battery voltage should exist.

   Refer to wiring diagram in EL-268.

OK → Check the following.
- 7.5A fuse (No. 40, located in the fuse block)
- Harness for open or short between BCM and security indicator lamp

NG ↓

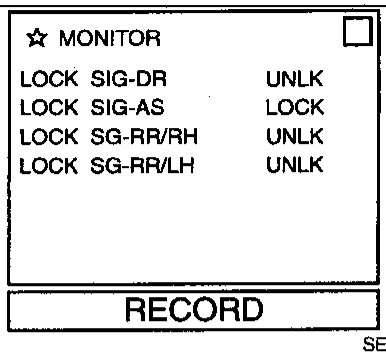
Check harness for open or short between security indicator lamp and BCM.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

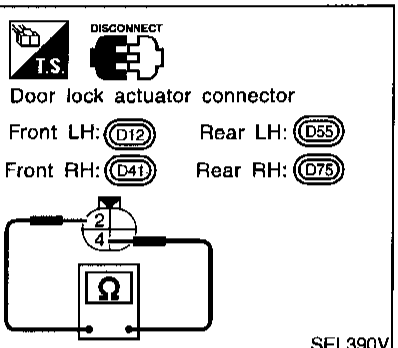
(Door unlock sensor check)

A



SEL457S

B



SEL390V

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

OK → Door unlock sensor is OK.

OR

ON BOARD

Check front door lock knob operation in Switch monitor (Mode II) mode.
(Refer to On board Diagnosis, EL-190.)

Refer to wiring diagram in EL-271, 272 and 273.

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 ↓

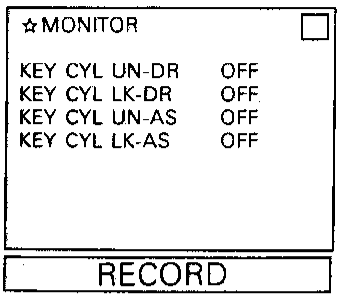
Check the following.
- Door unlock sensor ground circuit
- Harness for open or short between LCU and door unlock sensor

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

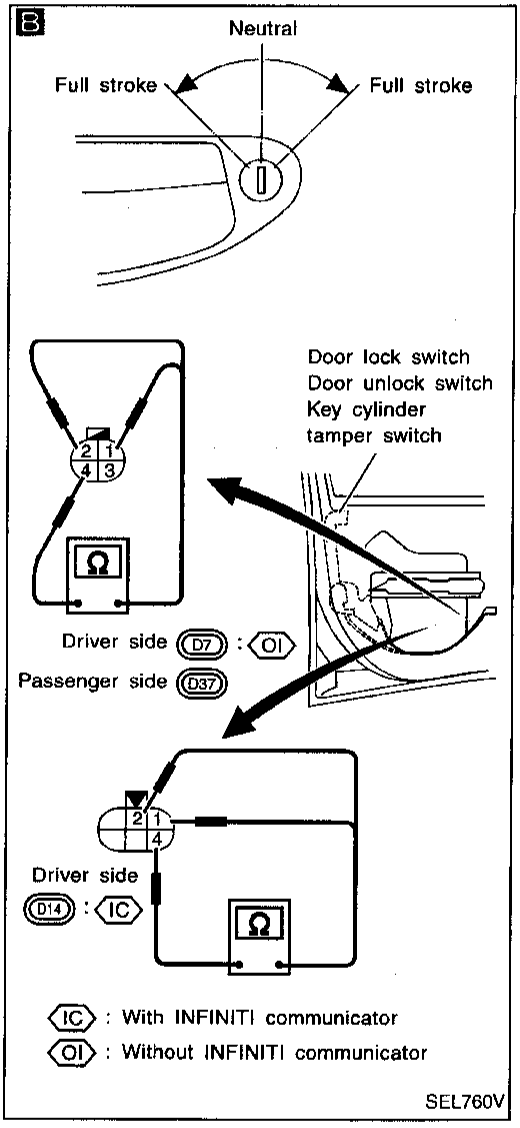
(Door key cylinder switch check)

A



SEL455S

B



SEL760V

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-190.)

Refer to wiring diagram in EL-272 or 273.

OK → Door key cylinder switch is OK.

NG ↓

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 ↓

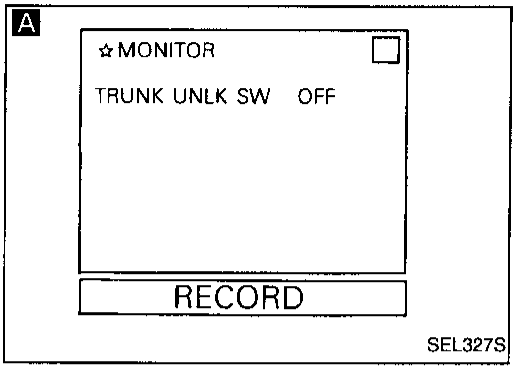
Check the following.
- Door key cylinder switch ground circuit
- Harness for open or short between door key cylinder switch and LCU01/02

Trouble Diagnoses (Cont'd)

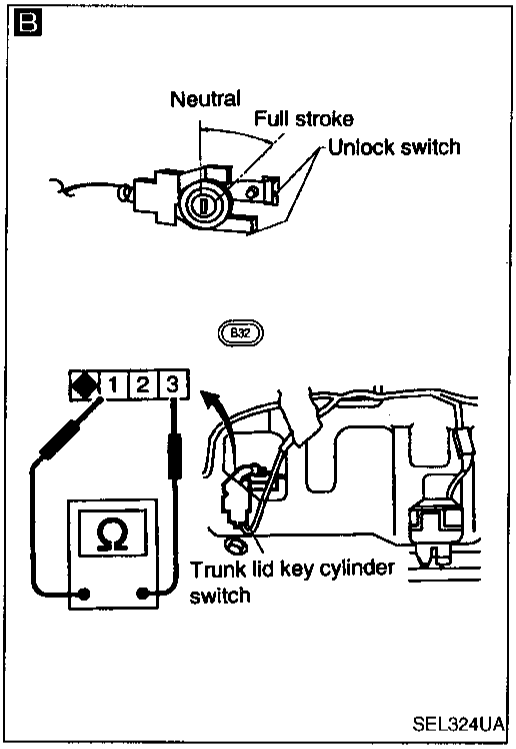
DIAGNOSTIC PROCEDURE 5

(Trunk lid key cylinder switch check)

A



B



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

OK → Trunk lid key cylinder switch is OK.

OR

ON BOARD

Check trunk lid key cylinder switch in Switch monitor (Mode II) mode. (Refer to On board Diagnosis, EL-190.)

Refer to wiring diagram in EL-269.

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.

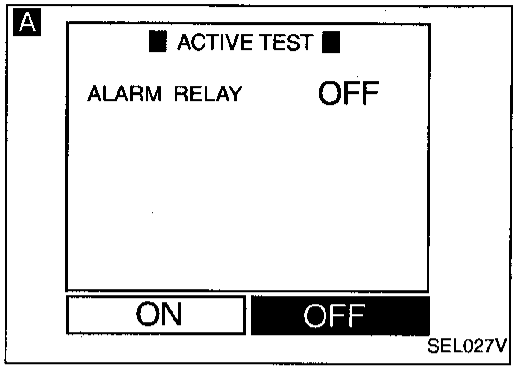
- Trunk lid key cylinder switch ground circuit
- Harness for open or short between trunk lid key cylinder switch and BCM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

(Theft warning horn and headlamp alarm check)

A



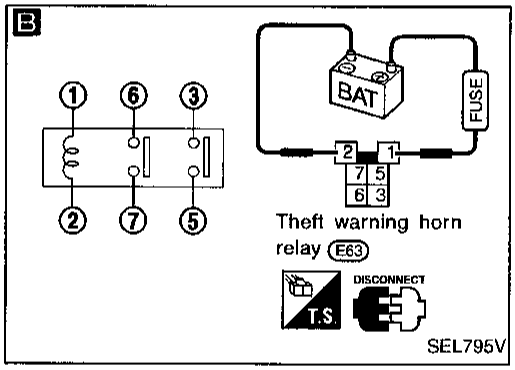
THEFT WARNING HORN RELAY ACTIVE TEST

CONSULT

Perform "ALARM RELAY" in ACTIVE TEST mode.
Check horn and headlamp operation.
When both theft warning horn and headlamp alarm do not work, go to Ⓐ
When only theft warning horn alarm does not work, go to Ⓑ
When only theft warning headlamp alarm does not work, go to Ⓒ
If CONSULT is not available, skip this procedure and conduct the following procedures below.

OK → Horn and headlamp alarm are OK.

B



Ⓐ

CHECK THEFT WARNING HORN RELAY

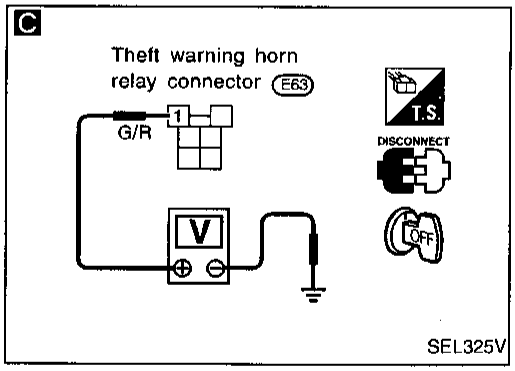
1. Disconnect theft warning horn relay.
2. Apply battery voltage between theft warning horn relay terminals ① and ②.
3. Check continuity between theft warning horn relay terminals ③ and ⑤, ⑥ and ⑦.

Continuity should exist.

NG → Replace theft warning horn relay.

OK

C



CHECK POWER SUPPLY FOR THEFT WARNING HORN RELAY

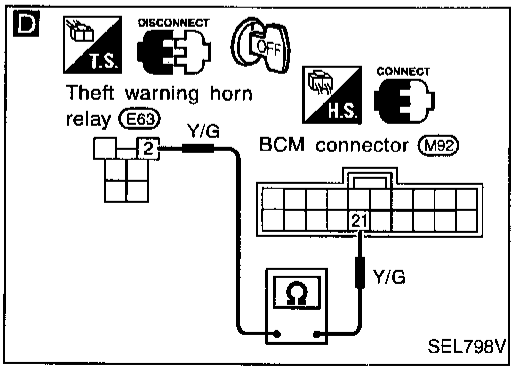
1. Disconnect theft warning horn relay connector.
2. Check voltage between terminal ① and ground.

Battery voltage should exist.

NG → Check the following.
- 7.5A fuse (No. 65, located in the fusible link box)
- Harness for open or short between theft warning horn relays and fuse

OK

D



CHECK THEFT WARNING HORN RELAY CIRCUIT

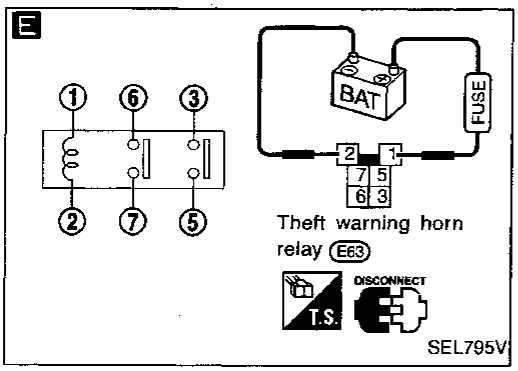
1. Disconnect theft warning horn relay connector and BCM connector (M92).
2. Check harness continuity between theft warning horn relay terminal ② and BCM terminal ㉑.

Continuity should exist.

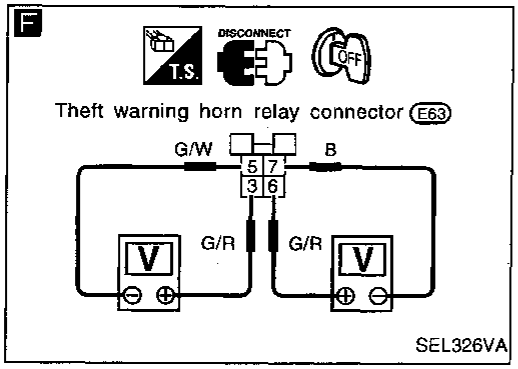
NG → Check the following.
- 7.5A fuse (No. 65, located in the fusible link box
- Joint connectors
- Harness for open or short

Trouble Diagnoses (Cont'd)

E



F



Ⓑ

Does horn work normally?

NG → Check horn system.

OK

E

CHECK THEFT WARNING HORN RELAY

1. Disconnect theft warning horn relay.
2. Apply battery voltage between theft warning horn relay terminals ① and ②.
3. Check continuity between theft warning horn relay terminals ③ and ⑤.

Continuity should exist.

NG → Replace theft warning horn relay.

OK

F

CHECK THEFT WARNING HORN CIRCUIT

1. Disconnect headlamp relay LH and RH.
2. Check voltage between theft warning horn relay terminals ③ and ⑤, ⑥ and ⑦.

Battery voltage should exist.

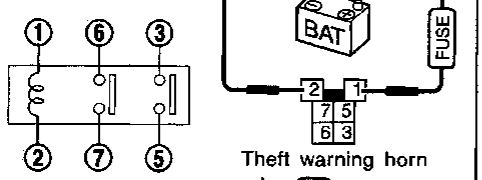
NG → Check the following.
- 7.5A fuse (No. 65, located in the fusible link box)
- Joint connectors
- Harness for open or short

OK

Check harness for open or short between theft warning horn relay and BCM.

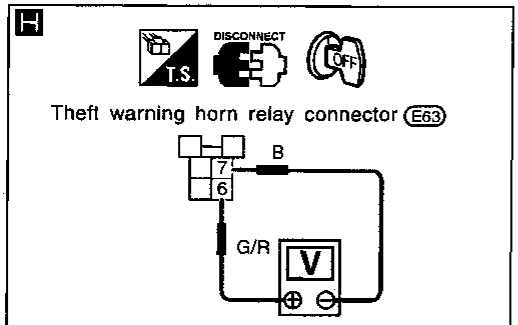
Trouble Diagnoses (Cont'd)

G



SEL795V

H



SEL797V

Ⓒ

Do headlamp operate normally?

NG → Check headlamp system

OK

G

CHECK THEFT WARNING HORN RELAY

1. Disconnect theft warning horn relay.
2. Apply battery voltage between theft warning horn relay terminals ① and ②.
3. Check continuity between theft warning horn relay terminals ⑥ and ⑦.
   Continuity should exist.

NG → Replace theft warning horn relay.

OK

H

CHECK THEFT WARNING HEADLAMP CIRCUIT

1. Disconnect horn relay.
2. Check voltage between theft warning horn relay ⑥ and ⑦.
   Battery voltage should exist.

NG → Check harness for open or short.

OK

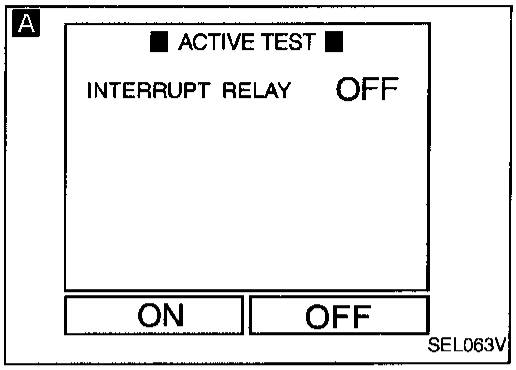
Check harness for open or short between theft warning horn relay and BCM.

Trouble Diagnoses (Cont'd)

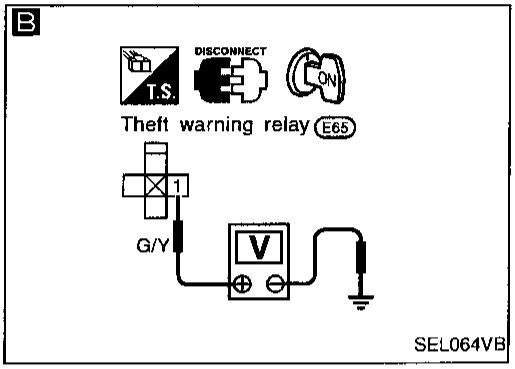
DIAGNOSTIC PROCEDURE 7

(Starter interrupt system check)

A



B



A

Perform "INTERRUPT RELAY" in ACTIVE TEST mode.
Check theft warning relay operation. (Listen for relay operating sound.)
If CONSULT is not available, skip this procedure and go to the next procedure below.

OK → Starter interrupt system is OK.

NG ↓

Check theft warning relay. NG → Replace.

OK ↓

B

CHECK POWER SUPPLY FOR STARTER INTERRUPT RELAY

1. Disconnect theft warning relay connector.
2. Check voltage between theft warning relay terminal ① and ground.
   Battery voltage should exist.

   Refer to wiring diagram in EL-269.

NG → Check the following.
- 10A fuse (No. 17, located in fuse block)
- Harness for open or short between theft warning relay and fuse

OK ↓

Check harness for open or short between theft warning relay and BCM.

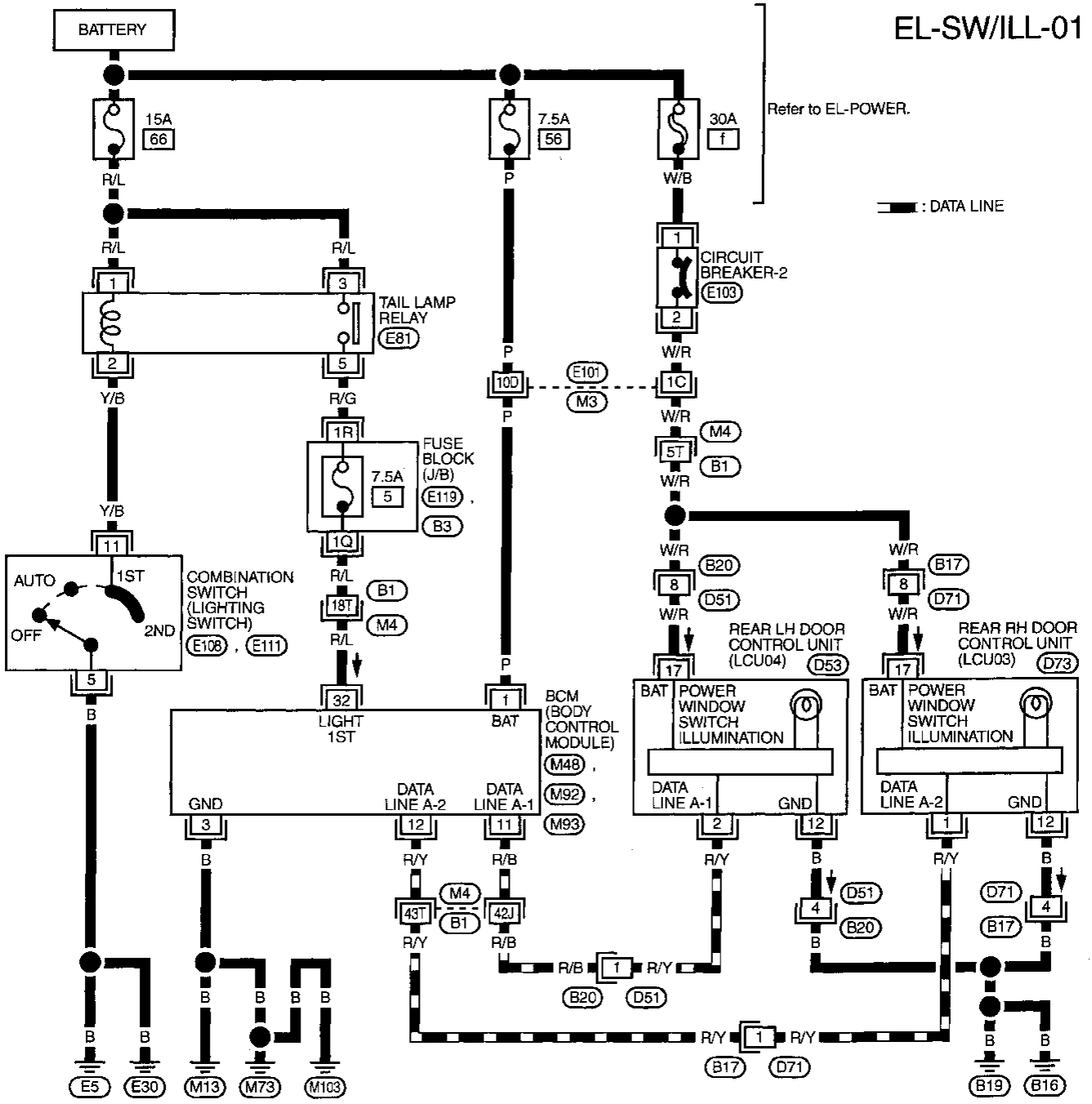
System Description

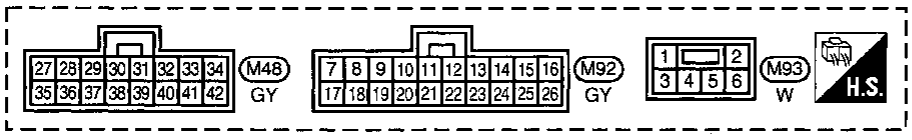
Rear power window switch illumination is controlled by IVMS.
With the lighting switch in the 1ST or 2ND position, power is supplied

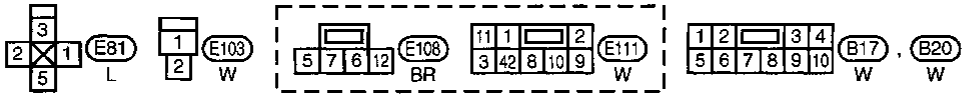
- to BCM terminal ㉜
- through tail lamp relay terminal ⑤ and
- 7.5A fuse [No. 5], located in the fuse block (J/B)].

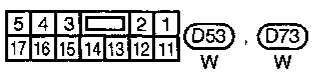
BCM is connected to LCU03 and LCU04 as DATA LINES A-1 or A-2.
When power is supplied to BCM, BCM sends a signal to rear LH and RH door control units to turn on power window switch illumination. Power and ground are supplied to power window switch illumination, then power window switch illumination turns on.

Wiring Diagram — SW/ILL —



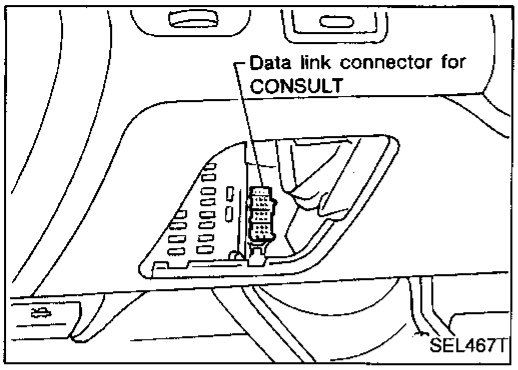






Refer to last page (Foldout page).
M4, B1
M3, E101
E119
B3

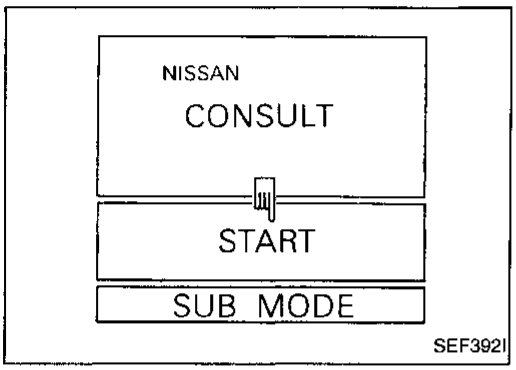
MEL119J



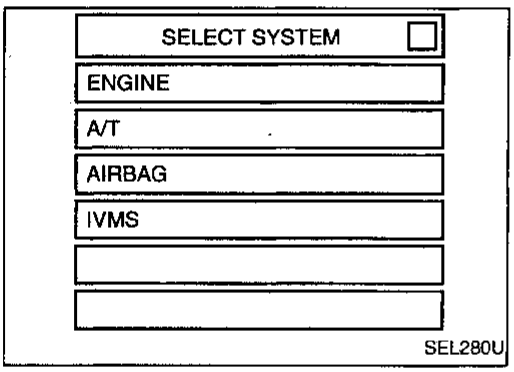
CONSULT

CONSULT INSPECTION PROCEDURE

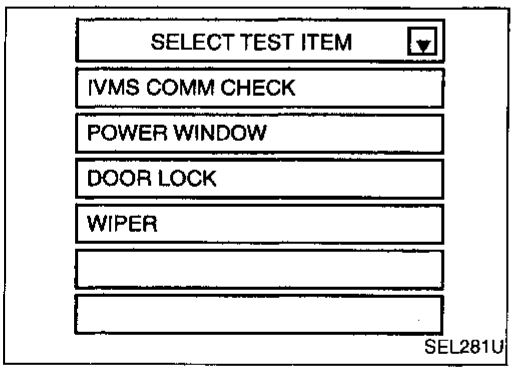
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



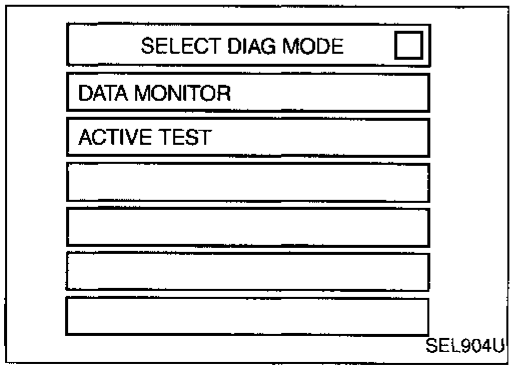
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



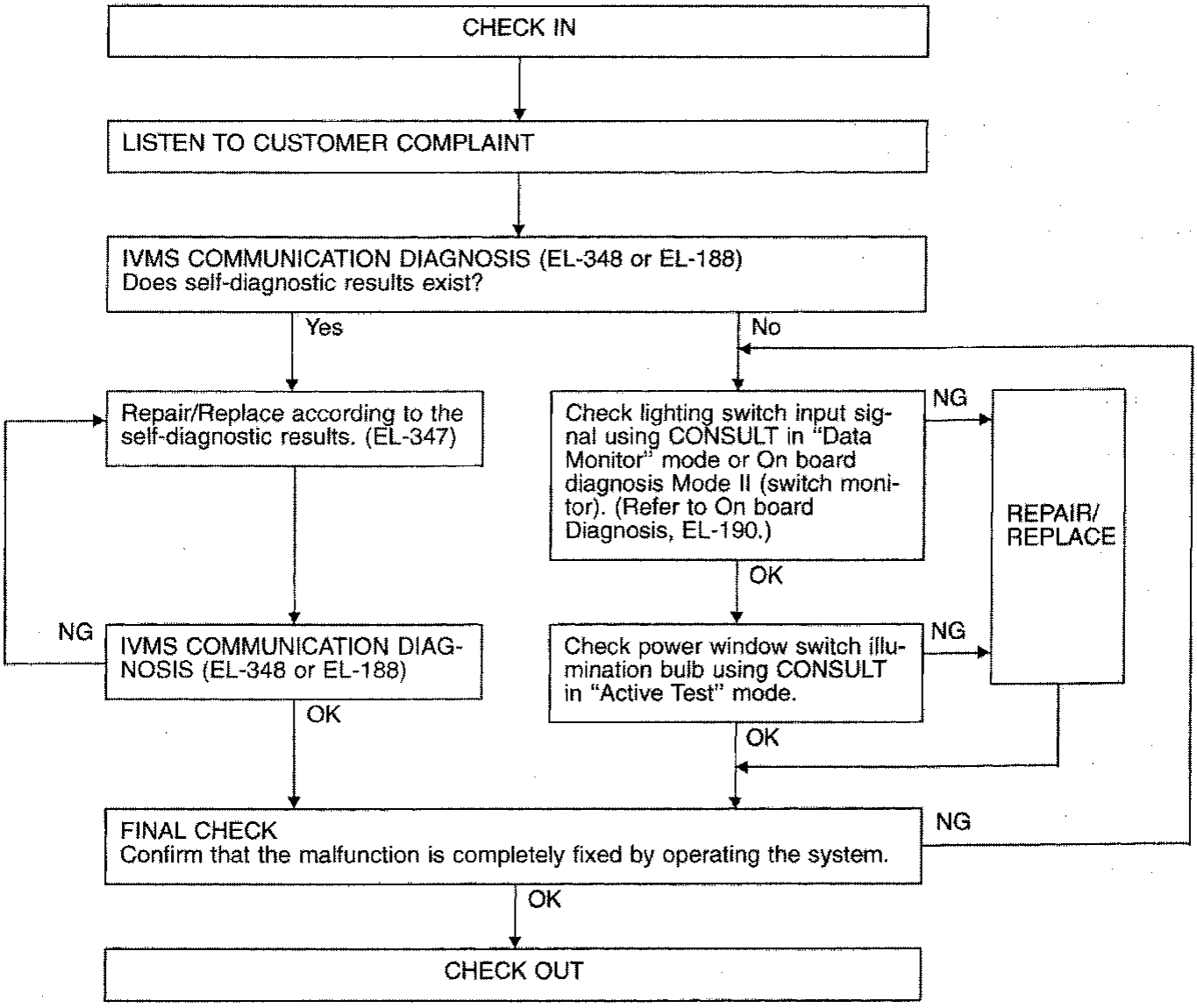
6. Touch "ROOM LAMP".



- DATA MONITOR and ACTIVE TEST are available for the illumination.

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-348) 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 ㉗.

Driver door control unit (LCU01) terminal ① is connected to BCM terminal ⑪ 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 (M103).

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

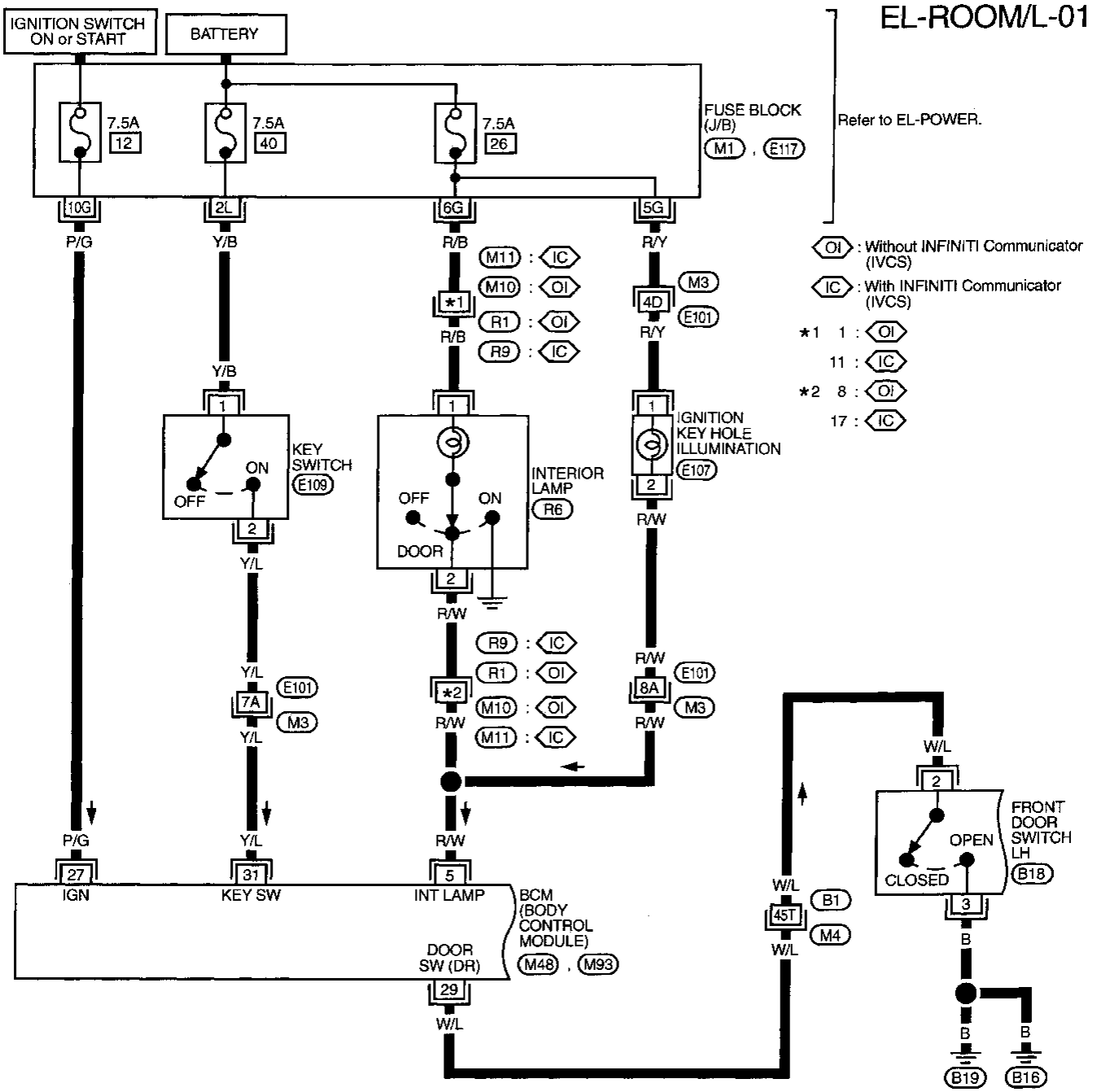
When interior lamp switch is in the "DOOR" position, BCM keeps interior lamp and ignition keyhole illumination turning on for about 30 seconds when:
- driver's door is unlocked while key is out of the ignition key cylinder,
- unlock signal is supplied from multi-remote controller,
- key is withdrawn 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.

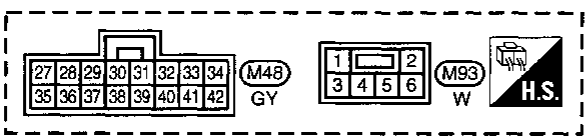
The timer is canceled, and interior lamp and ignition keyhole illumination turn off when:
- driver's door is locked, or
- ignition switch is turned "ON".

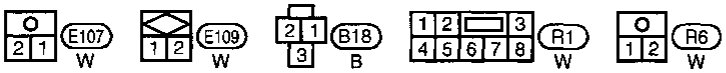
ON-OFF control

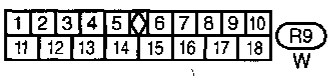
When driver side door, front passenger door, rear LH or RH door is opened, interior lamp and ignition keyhole illumination turn on while interior lamp switch is in the "DOOR" position.
When driver side door is opened and then closed while ignition switch is not in the ON position, interior lamp timer operates. (Timer does not operate when doors other than the driver side door is opened and closed.)

Wiring Diagram — ROOM/L —









Refer to last page (Foldout page).

M1

M3 , E101

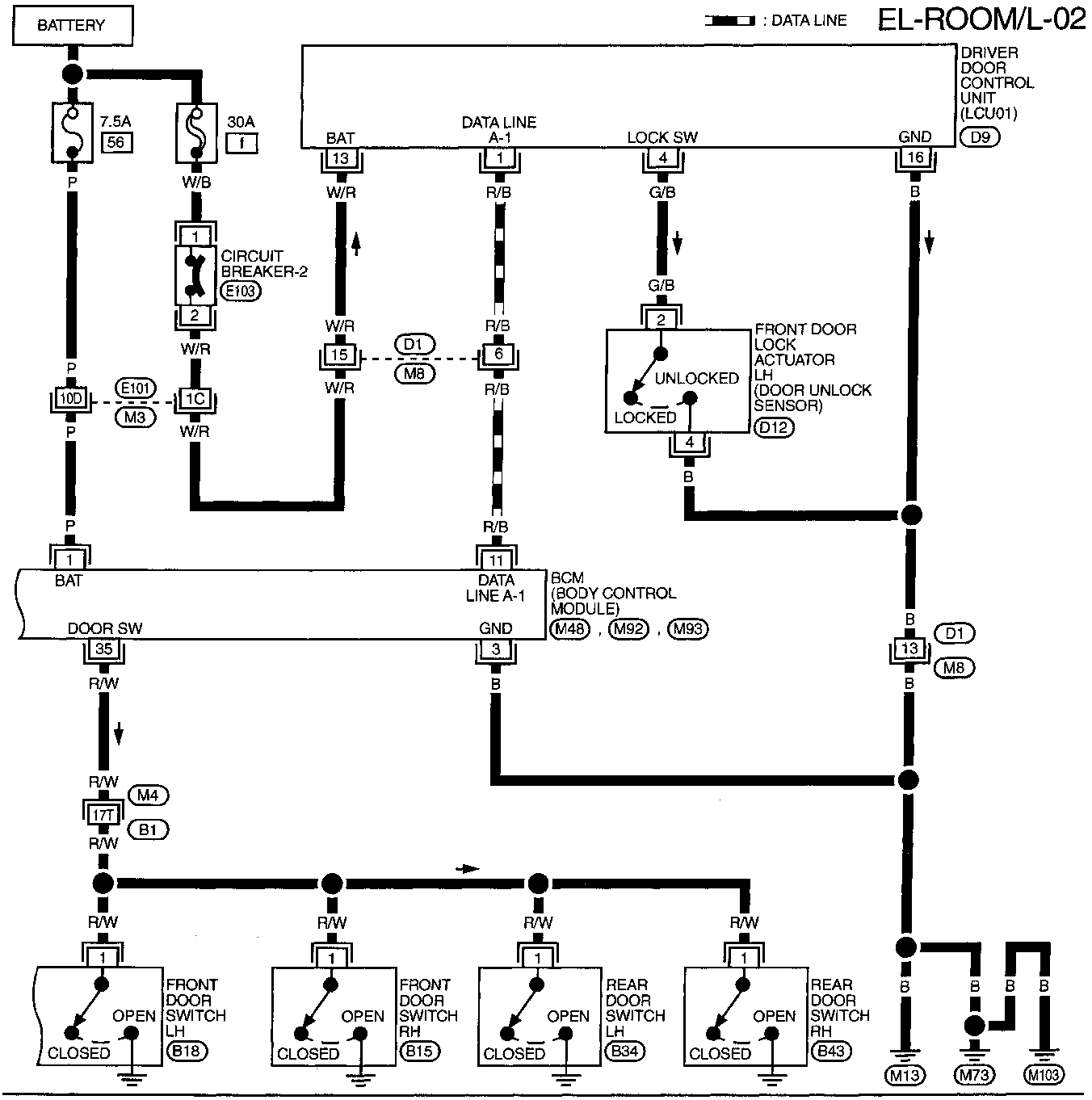
M4 , B1

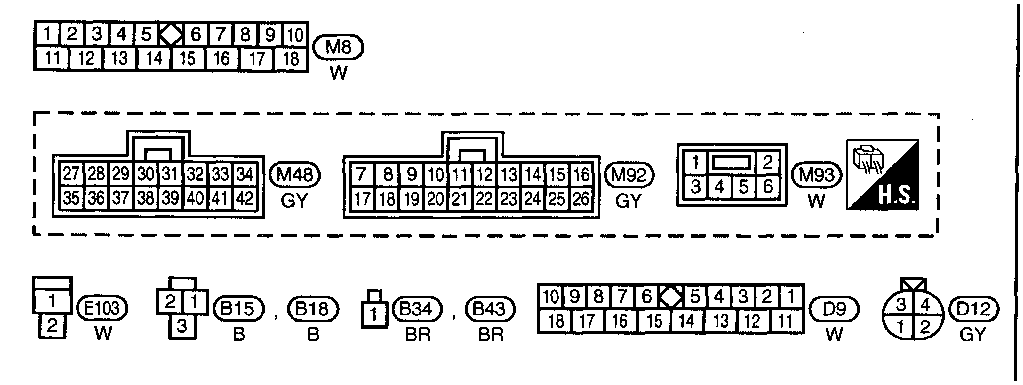
E117

MEL120J

1727

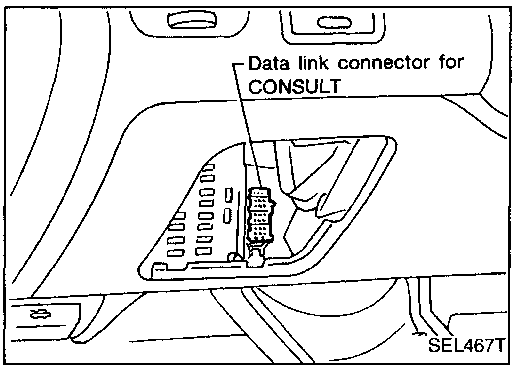
Wiring Diagram — ROOM/L — (Cont'd)





Refer to last page (Foldout page).
M3, E101
M4, B1

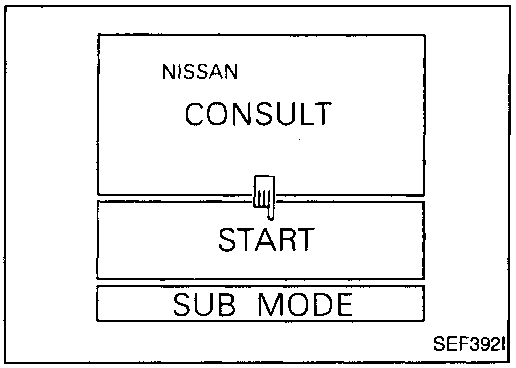
MEL121J



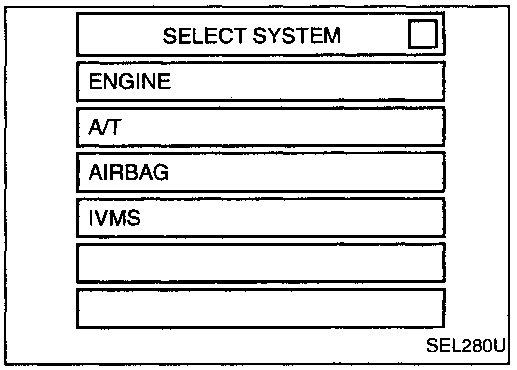
CONSULT

CONSULT INSPECTION PROCEDURE

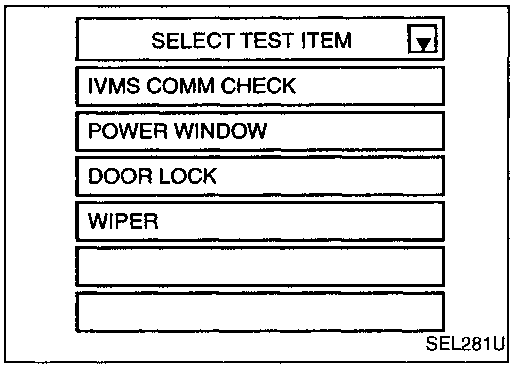
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



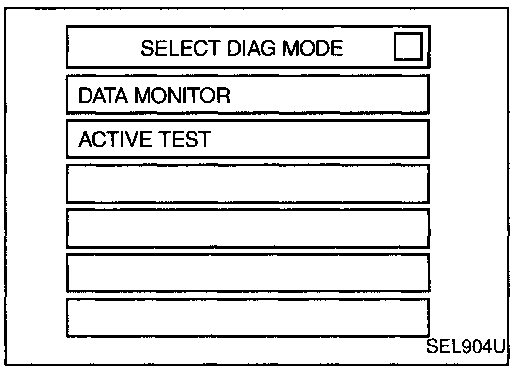
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



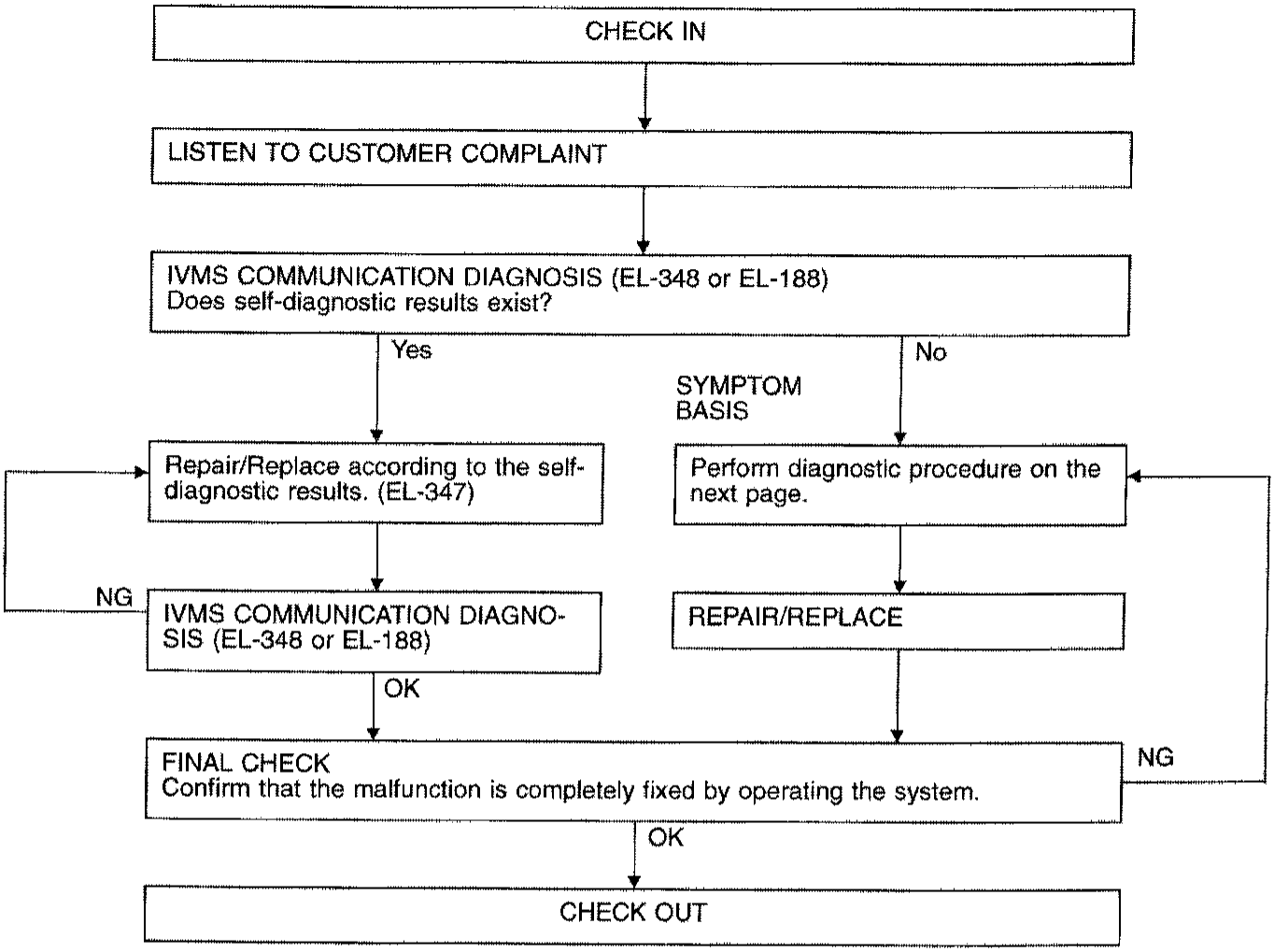
6. Touch "ROOM LAMP TIMER".



- DATA MONITOR and ACTIVE TEST are available for the interior lamp control.

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-348) 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)

DIAGNOSTIC PROCEDURE 1

SYMPTOM: Interior lamp does not illuminate/does not turn off when door is opened/closed.

Does interior lamp illuminate manually?

NG → Check the following.
- Bulb
- 7.5A fuse (No. 26, located in the fuse block)
- Interior lamp switch

OK ↓

A

CHECK DOOR SWITCH INPUT SIGNAL

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

NG → Check the following.
- All door switches
- Door switch ground condition
- Harness for open or short between door switch and BCM

OR

ON BOARD

Perform On board diagnosis — Mode II (switch monitor) for all door switches. Refer to EL-190.

OK ↓

B

CHECK INTERIOR LAMP SIGNAL

1. Turn interior lamp switch to DOOR (center) position.
2. Check voltage between BCM terminal ⑤ and ground.

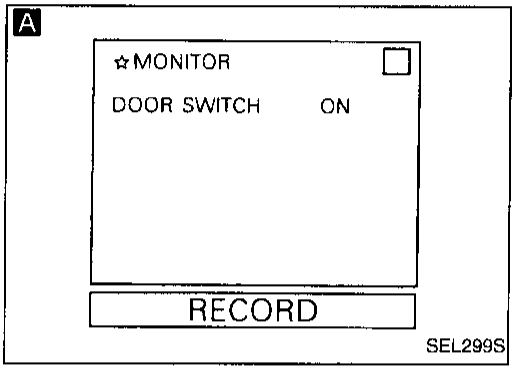
Battery voltage should exist.

NG → Check harness for open or short between BCM and interior lamp.

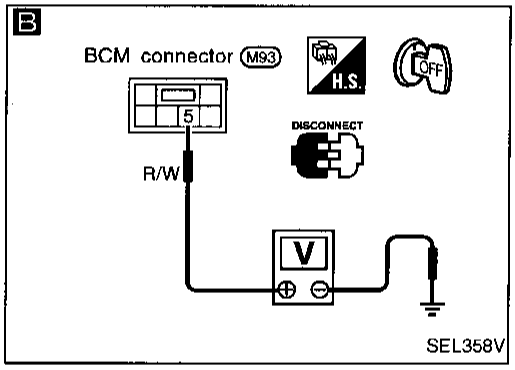
OK ↓

Replace BCM.

A



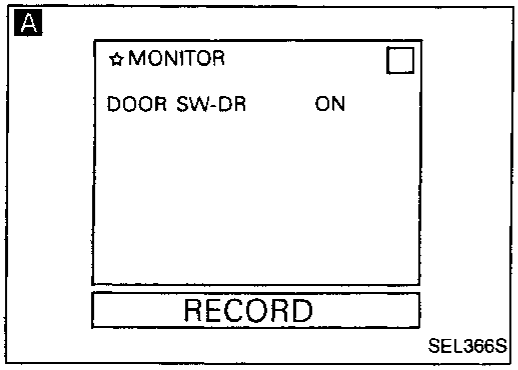
B

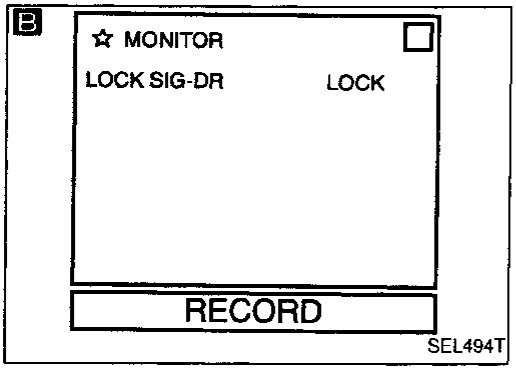


Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

SYMPTOM: Interior lamp timer does not operate/does not cancel properly.





A

CHECK DRIVER SIDE DOOR SWITCH INPUT SIGNAL

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

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

OR

ON BOARD

Perform On board diagnosis — Mode II (switch monitor) for door switch (driver side). Refer to EL-190.

OK ↓

B

CHECK DRIVER SIDE DOOR UNLOCK SENSOR INPUT SIGNAL

CONSULT

See "LOCK SIG-DR" in "Data Monitor" mode.

When driver's door is locked:
LOCK SIG-DR LOCK

When driver's door is unlocked:
LOCK SIG-DR UNLK

OK → Check the following.
- Driver door unlock sensor
- Driver door unlock sensor ground circuit
- Harness for open or short between door unlock sensor and LCU

OR

ON BOARD

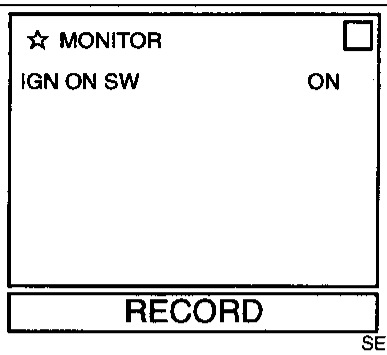
Perform On board diagnosis — Mode II (switch monitor) for door lock switch (driver side). Refer to EL-190.

NG ↓

Ⓐ

Trouble Diagnoses (Cont'd)

C



SEL358U

Ⓐ

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

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

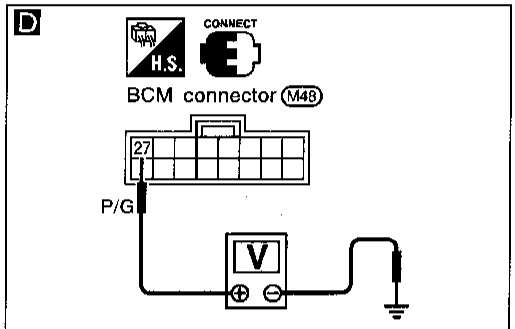
OR

D TESTER

Check voltage between BCM terminal ㉗ and ground.

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

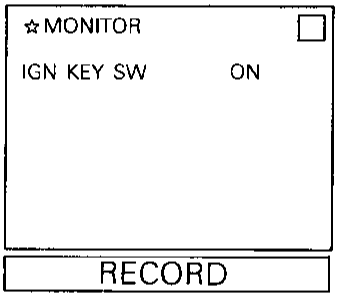
D



SEL043VB

OK

E



SEL357S

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

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

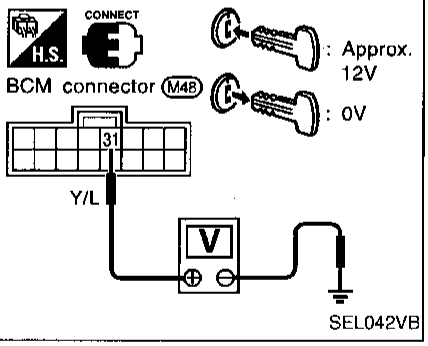
OR

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

F



SEL042VB

OK

Replace BCM.

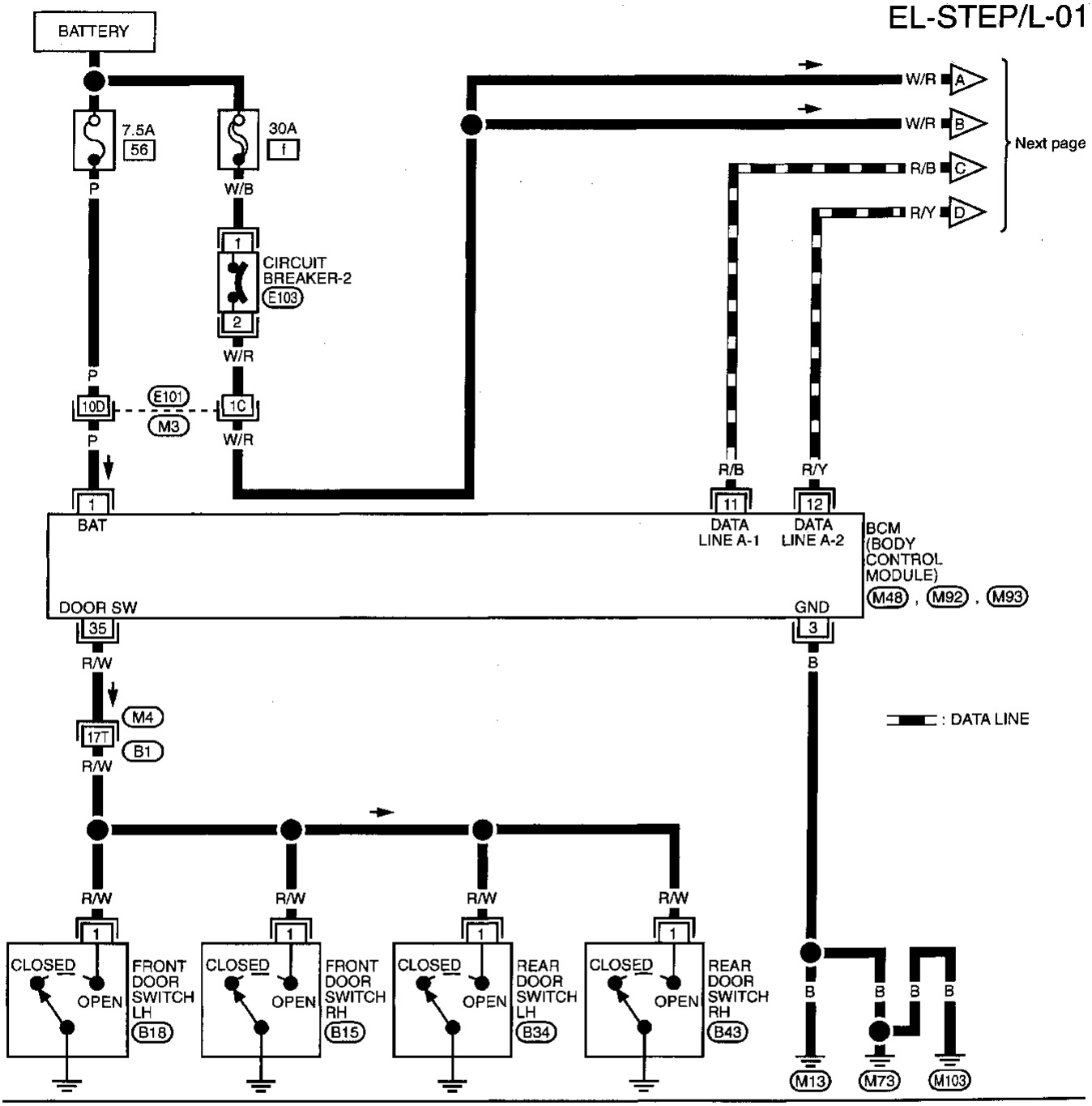
System Description

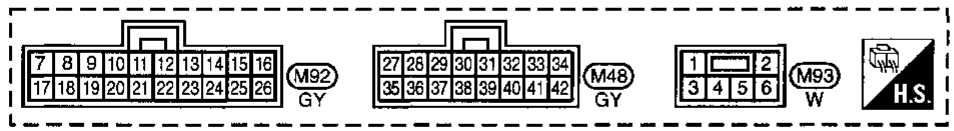
Power is supplied at all times
- to BCM terminal ①
- through 7.5A fuse (No. 56, located in the fuse and fusible link box).

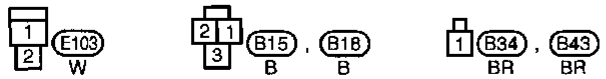
Power is supplied at all times
- to front step lamp LH and RH terminals ①
- through 7.5A fuse [No. 26, located in the fuse block (J/B)].

Ground is supplied to terminal ⑯ of LCU01 and LCU02 through body grounds (M13), (M73) and (M103).
BCM is connected to LCU01 and LCU02 as DATA LINE A-1 or A-2.
BCM terminal ㉟ 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.

Wiring Diagram — STEP/L —







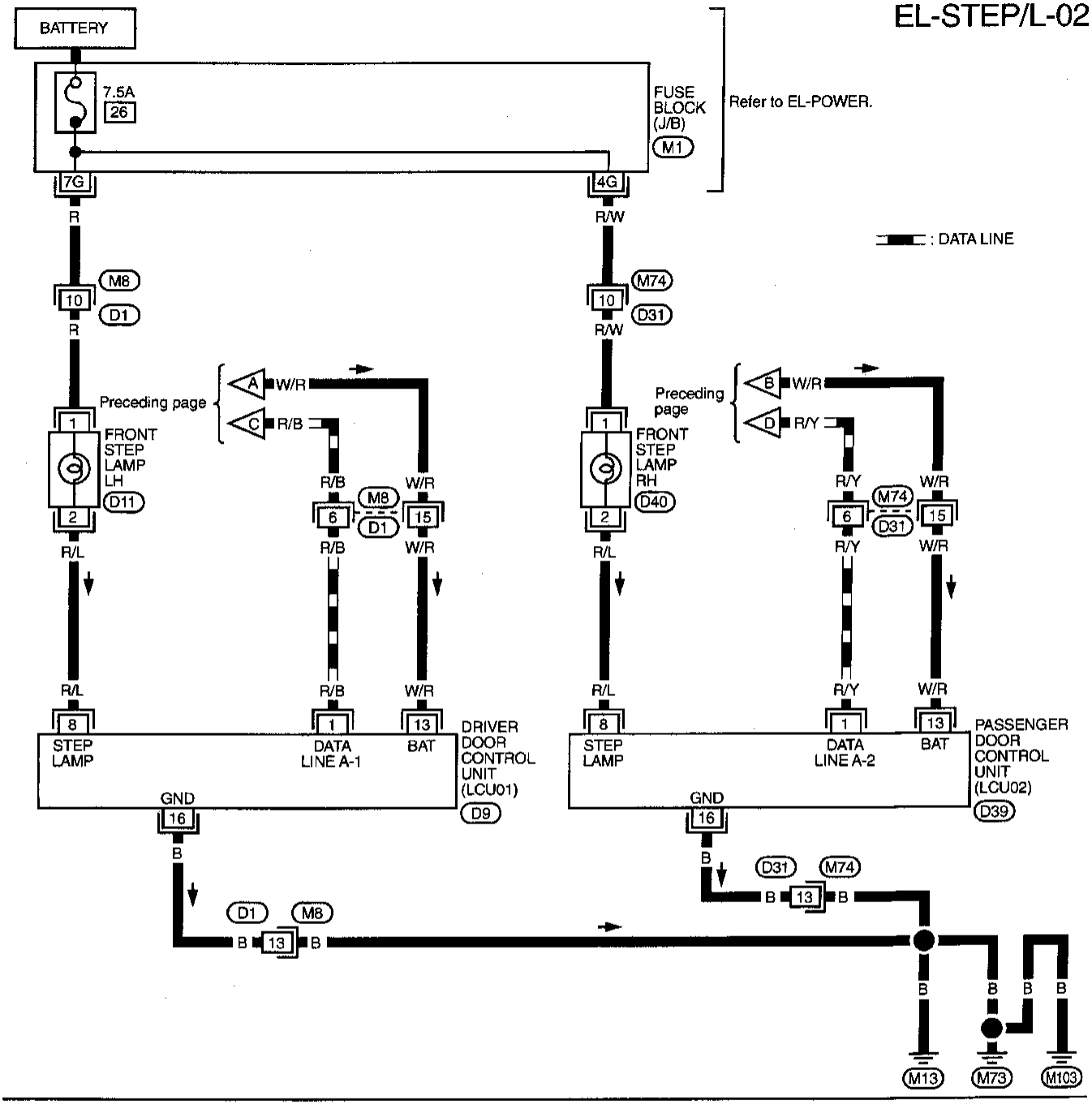
Refer to last page (Foldout page).
M3 , E101
M4 , B1

MEL757H

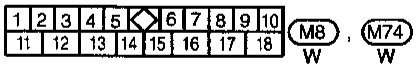
1735

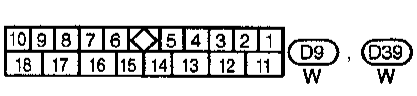
Wiring Diagram — STEP/L — (Cont'd)

EL-STEP/L-02

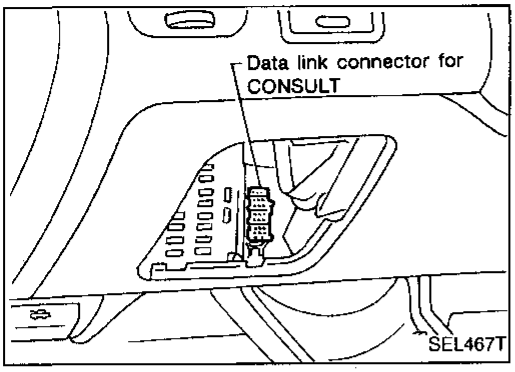


Refer to last page (Foldout page).
M1





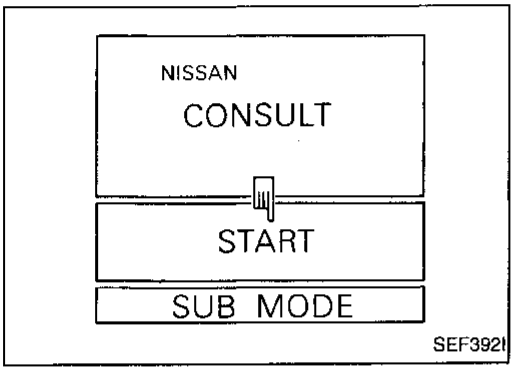
MEL758H



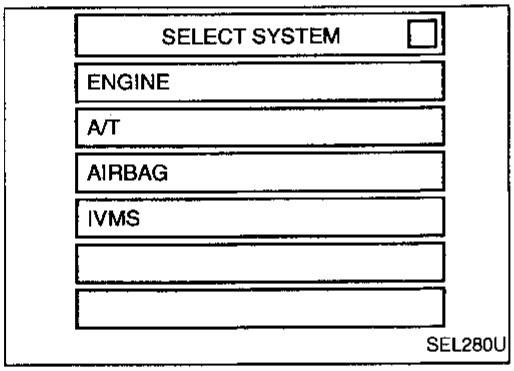
CONSULT

CONSULT INSPECTION PROCEDURE

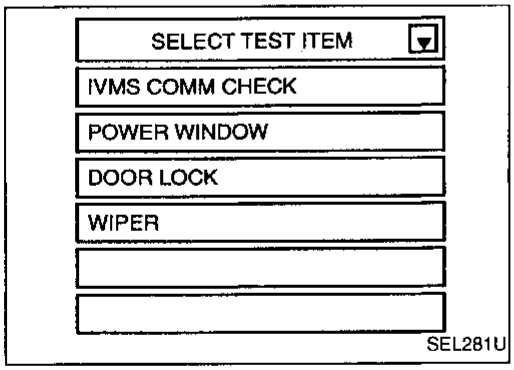
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



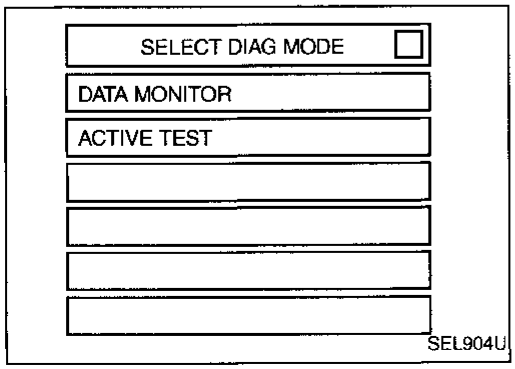
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



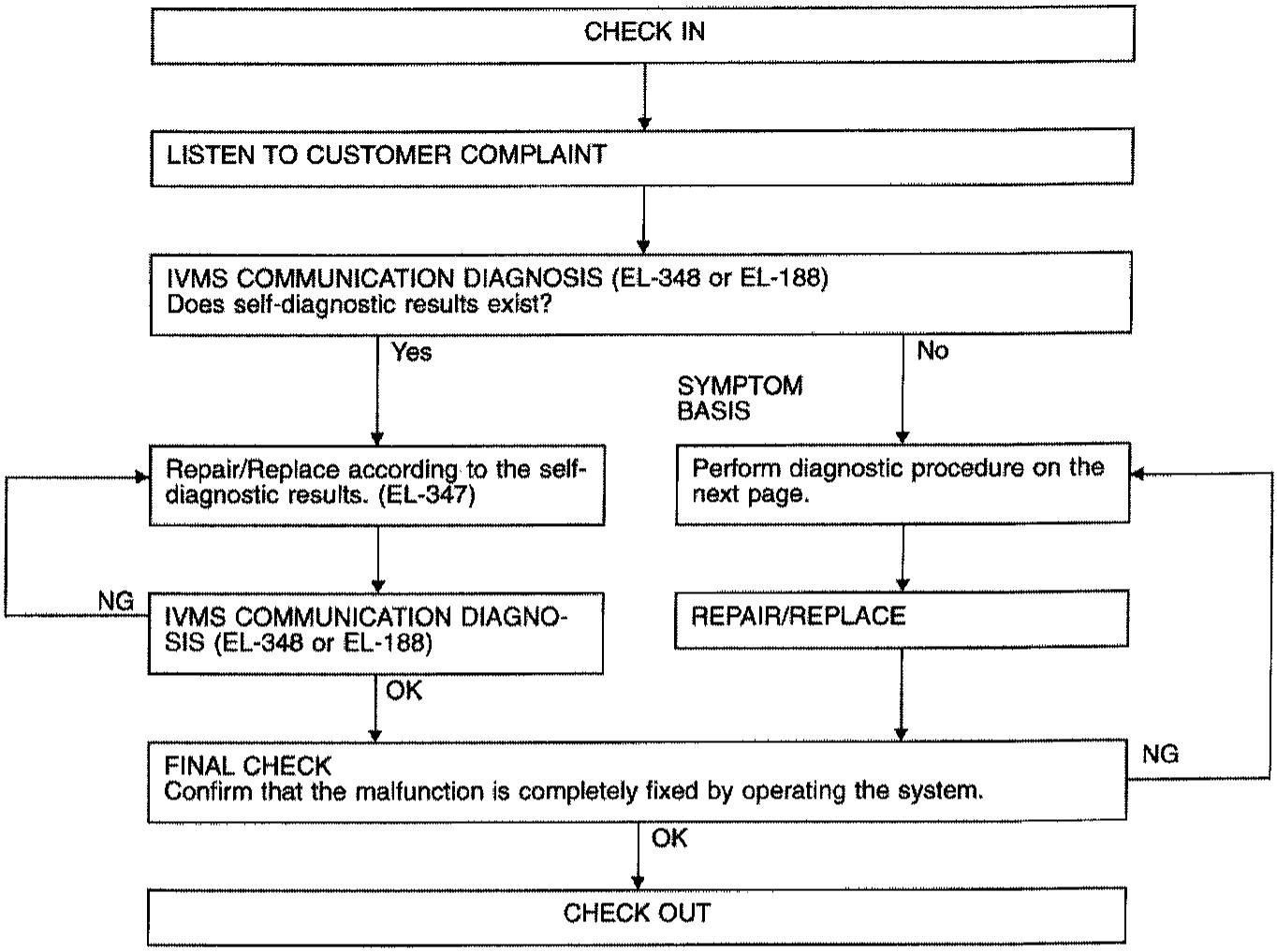
6. Touch "STEP LAMP".



- DATA MONITOR and ACTIVE TEST are available for the step lamp.

Trouble Diagnoses

WORK FLOW



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-348) or turn the ignition switch to "OFF" position and remove 7.5A fuse (No. 56, located in the fuse and fusible link box).

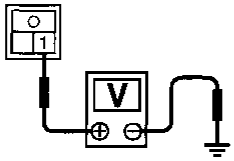
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE

SYMPTOM: Step lamp does not illuminate/does not go off when door is opened/closed.

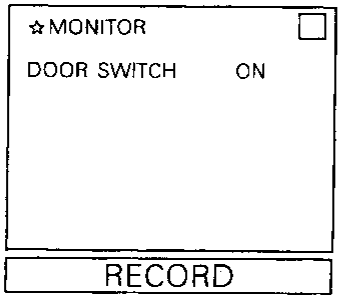
A

Step lamp connector (D11), (D40)



SEL673UB

B



SEL299S

Check step lamp bulb. → NG → Replace bulb.

OK ↓

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. 26], located in the fuse block (J/B)]
- Harness for open or short between fuse and step lamp

OK ↓

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

NG → Check the following.
- Door switch
- Door switch ground condition
- Harness for open or short between door switch and BCM

OR

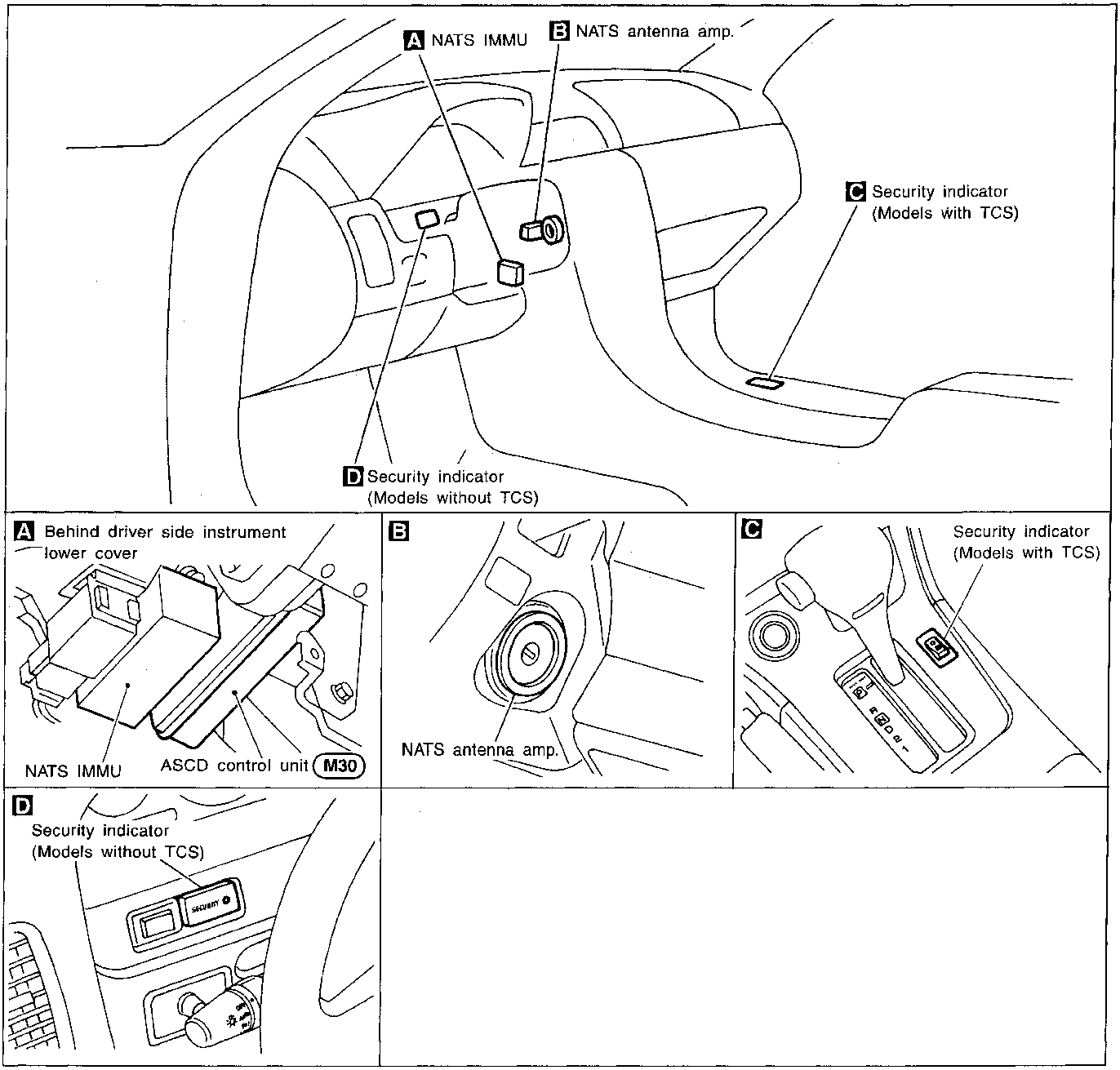
ON BOARD

Perform On board diagnosis — Mode II (switch monitor) for all door switches.
Refer to EL-190.

OK ↓

Check harness for open or short between step lamp and LCU.

Component Parts and Harness Connector Location



SEL762V

System Description

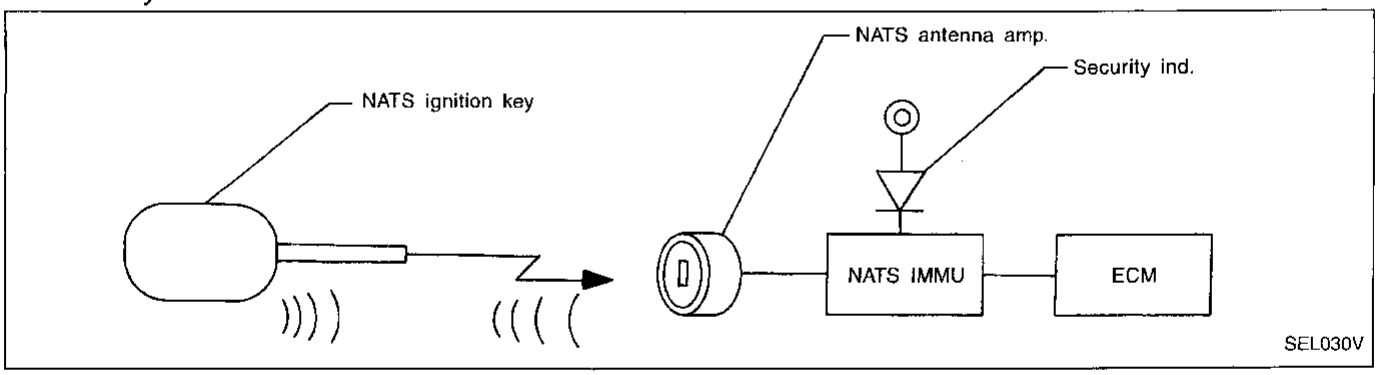
NATS (Nissan Anti-Theft system) has the following immobiliser functions:

- 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.**

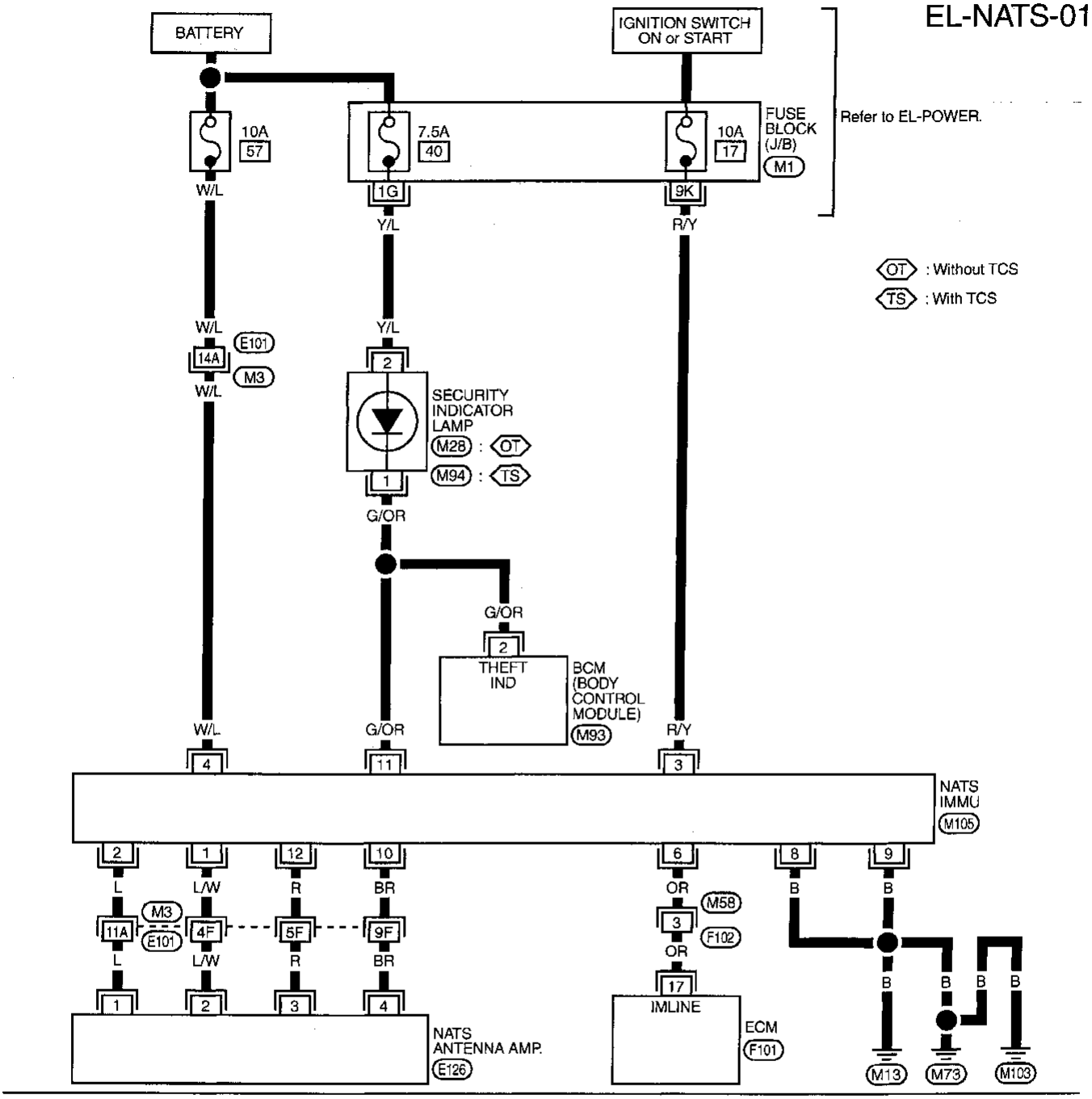
System Composition

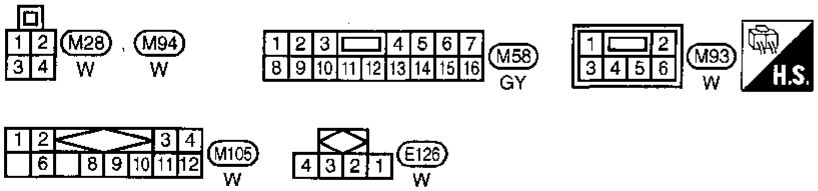
The immobiliser function of the NATS consists of the following:

- 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 —





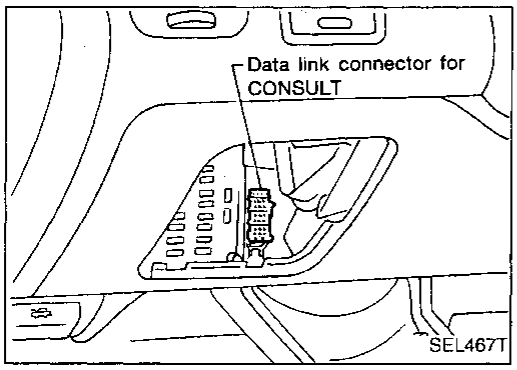
Refer to last page (Foldout page).

M1

M3 , E101

F101

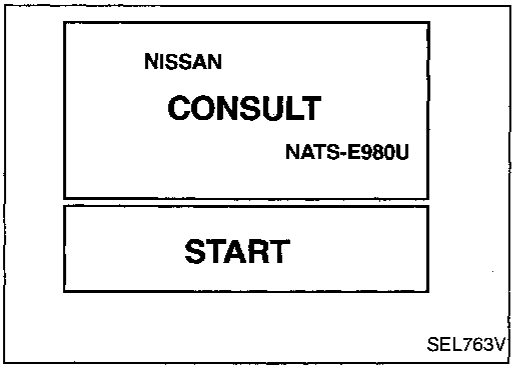
MEL122J



CONSULT

CONSULT INSPECTION PROCEDURE

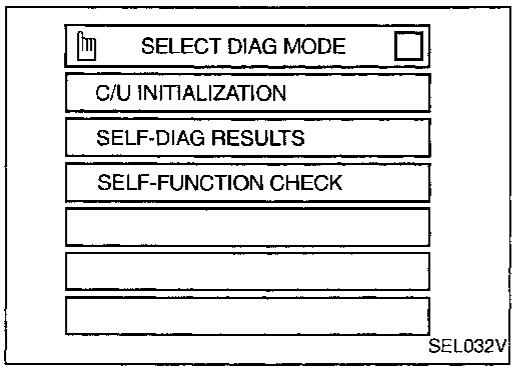
1. Turn ignition switch OFF.
2. Connect "CONSULT" to Data link connector for CONSULT. (Data link connector for CONSULT is located behind the fuse box cover.)



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.

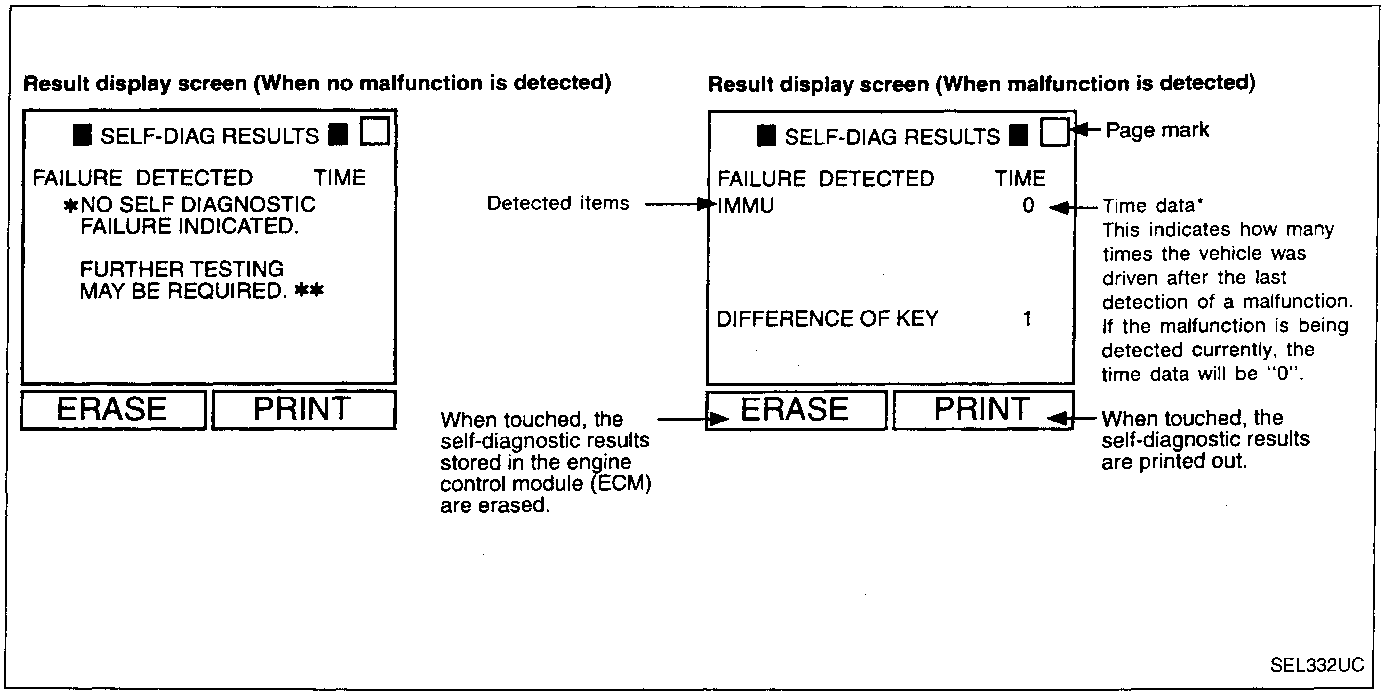
CONSULT (Cont'd)

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



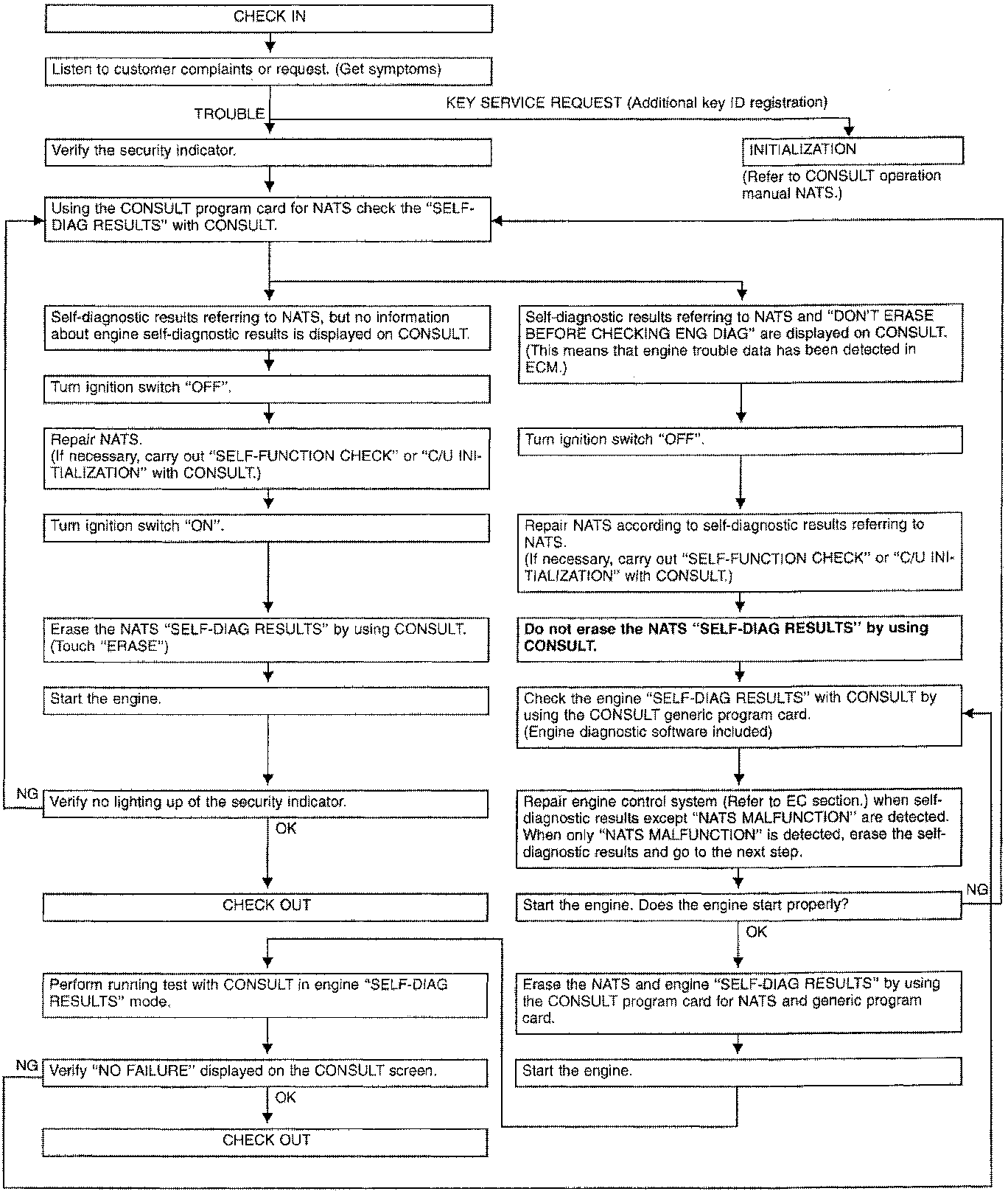
* If trip number is more than 1, security indicator lamp does not light up.

SELF-DIAGNOSTIC RESULTS ITEM CHART

Detected items (Screen terms)	Description	Reference page
IMMU	ECM received the signal from IMMU that IMMU is malfunctioning.	EL-315
ECM	ECM is malfunctioning.	EL-315
CHAIN OF ECM-IMMU	Communication impossible between ECM and IMMU.	EL-316
DIFFERENCE OF KEY	IMMU can receive the key ID signal but the result of ID verification between key ID and IMMU is NG.	EL-318
CHAIN OF IMMU-KEY	IMMU cannot receive the key ID signal.	EL-319
ID DISCORD, IMM-ECM	The result of ID verification between IMMU and ECM is NG. System initialization is required.	EL-320
ELECTRONIC NOISE	Noise (interference) interfered into NATS communication lines during communicating.	EL-321
DON'T ERASE BEFORE CHECKING ENG DIAG	Engine trouble data and NATS trouble data have been detected in ECM.	EL-313
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-322

Trouble Diagnoses

WORK FLOW



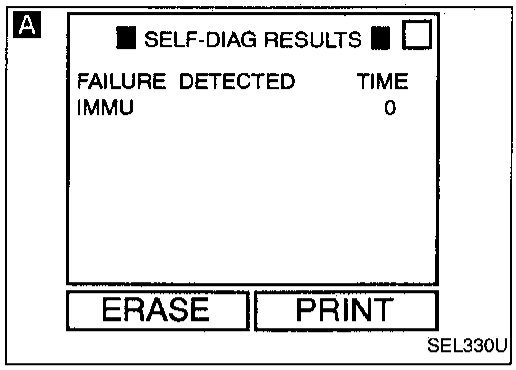
Trouble Diagnoses (Cont'd)

SYMPTOM CHART

SYMPTOM	Displayed "SELF-DIAG RESULTS" on CONSULT screen.	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)
• Security indicator lighting up • Engine can start.	IMMU	PROCEDURE 1 (EL-315)	IMMU
	ECM	PROCEDURE 2 (EL-315)	ECM
• Security indicator lighting up • Engine hard to start	CHAIN OF ECM-IMMU	PROCEDURE 3 (EL-316)	Open circuit in battery voltage line of IMMU circuit
			Open circuit in ignition line of IMMU circuit
			Open circuit in ground line of IMMU circuit
			Open or short circuit in communication line between IMMU and ECM
			Open circuit in power source line of ANT/AMP circuit
			ECM
			IMMU
	DIFFERENCE OF KEY	PROCEDURE 4 (EL-318)	Unregistered key
			IMMU
	CHAIN OF IMMU-KEY	PROCEDURE 5 (EL-319)	Open or short circuit in communication line between ANT/AMP and IMMU
			Open circuit in power source line of ANT/AMP circuit
			Open circuit in ground line of ANT/AMP circuit
			Malfunction of key ID chip
			IMMU
			Antenna amp.
	ID DISCORD, IMM-ECM	PROCEDURE 6 (EL-320)	System initialization has not yet been completed.
			ECM
	ELECTRONIC NOISE	PROCEDURE 7 (EL-321)	Noise interference in communication line
• Security indicator lighting up • Engine hard to start	LOCK MODE	PROCEDURE 9 (EL-322)	LOCK MODE
• MIL staying ON • Security indicator lighting up	DON'T ERASE BEFORE CHECKING ENG DIAG	WORK FLOW (EL-313)	Engine trouble data and NATS trouble data have been detected in ECM
• Security ind. does not blink and/or light up. • Engine can start.	—	PROCEDURE 8 (EL-321)	NATS security ind.
			Open circuit between Fuse and NATS IMMU
			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

Trouble Diagnoses (Cont'd)



DIAGNOSTIC PROCEDURE 1

Self-diagnostic results:
"IMMU" displayed on CONSULT screen

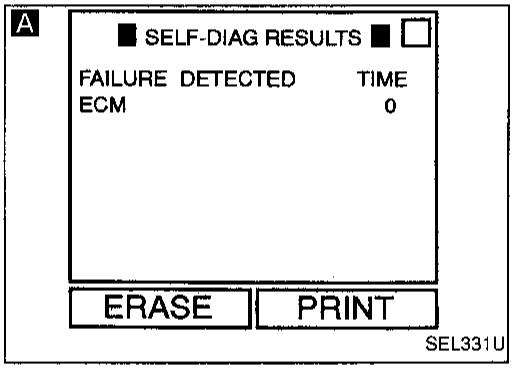
A

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.

↓

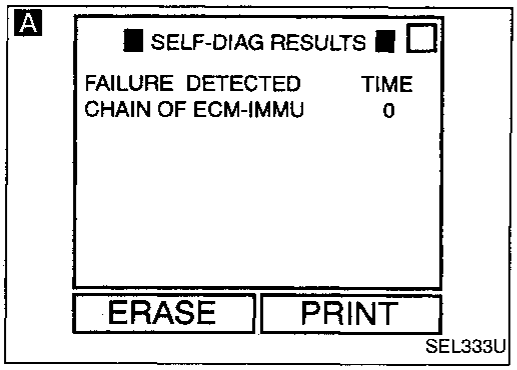
- ECM is malfunctioning.

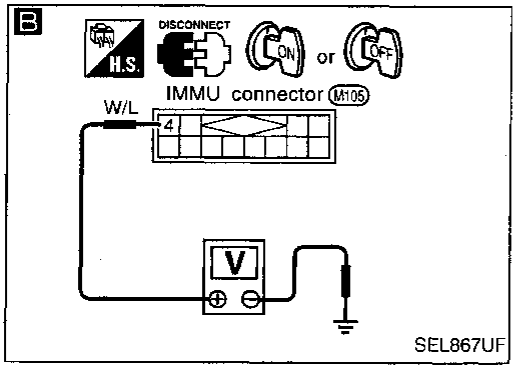
1. Replace ECM.
2. Perform initialization with CONSULT.
   For the initialization procedure, refer to "CONSULT operation manual NATS".

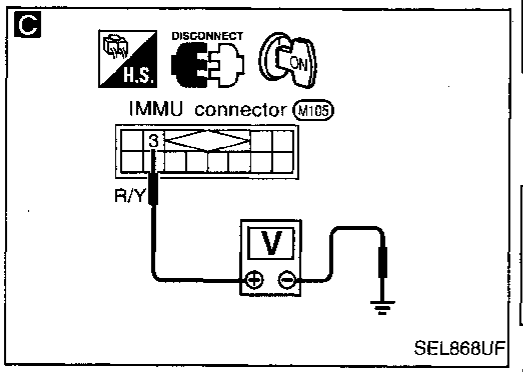
Trouble Diagnoses (Cont'd)

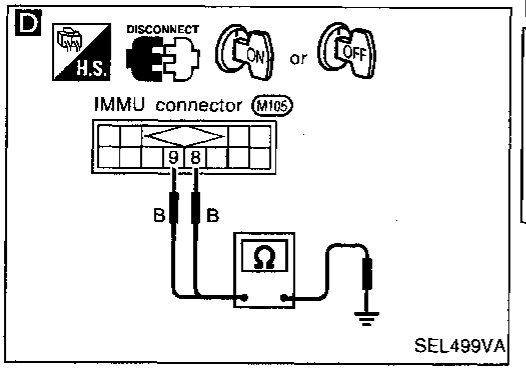
DIAGNOSTIC PROCEDURE 3

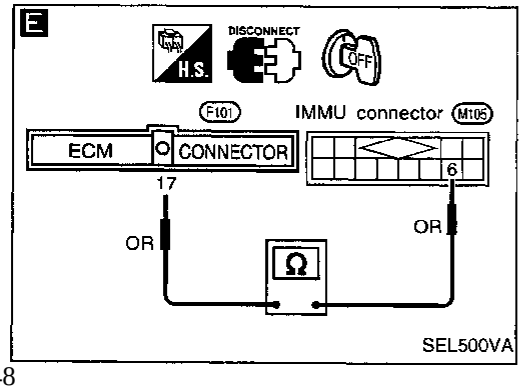
Self-diagnostic results:
"CHAIN OF ECM-IMMU" displayed on CONSULT screen











A

Confirm SELF-DIAGNOSTIC RESULTS "CHAIN OF ECM-IMMU" displayed on CONSULT screen.

OK

B

CHECK POWER SUPPLY CIRCUIT FOR IMMU.
Check voltage between terminal ④ of IMMU and ground with CONSULT or tester.
Voltage: Battery voltage

NG → Check the following:
- 10A fuse (No. 57, located in the fuse and fusible link box)
- Harness for open or short between fuse and IMMU connector

OK

C

CHECK IGN SW. ON SIGNAL.
Check voltage between terminal ③ of IMMU and ground with CONSULT or tester.
Voltage: Battery voltage

NG → Check the following:
- 10A fuse [No. 17, located in the fuse block (J/B)]
- Harness for open or short between fuse and IMMU connector

OK

D

CHECK GROUND CIRCUIT FOR IMMU.
Check harness continuity between IMMU terminals ⑧, ⑨ and ground.
Continuity should exist.

NG → Repair harness.

OK

E

CHECK COMMUNICATION ON OPEN CIRCUIT.
Check harness continuity between the following ECM terminal and IMMU terminal.
ECM ⑰ and IMMU ⑥
Continuity should exist.

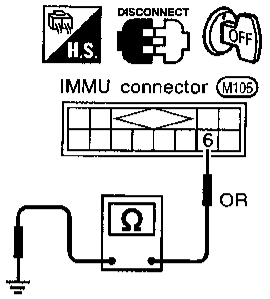
NG → Repair harness.

OK

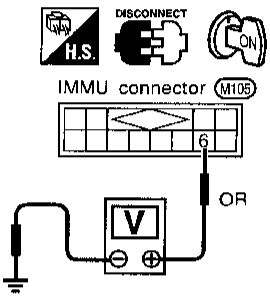
Ⓐ

Trouble Diagnoses (Cont'd)

F



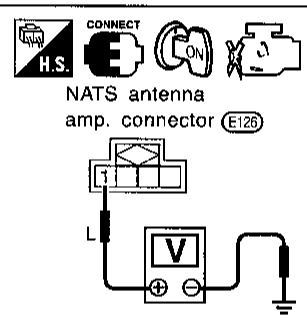
Short to ground check



Short to power circuit check

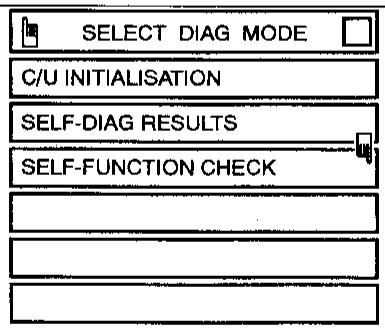
SEL501VA

G



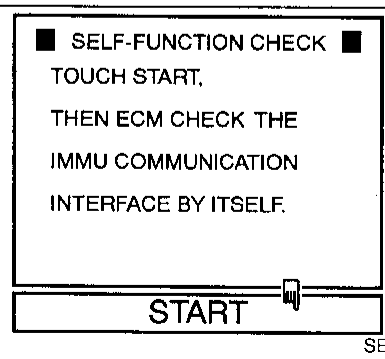
SEL764V

H



SEL340U

I



SEL341U

Ⓐ

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

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.

I

Touch "START". ECM will then check its communication interface by itself.

NG → J (See next page.)

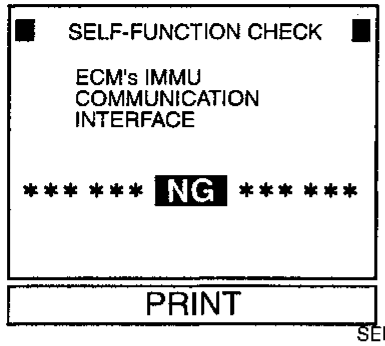
- ECM is malfunctioning.
1. Replace ECM.
2. Perform initialization with CONSULT. For the initialization procedure, refer to "CONSULT operation manual NATS".

OK

K (See next page.)

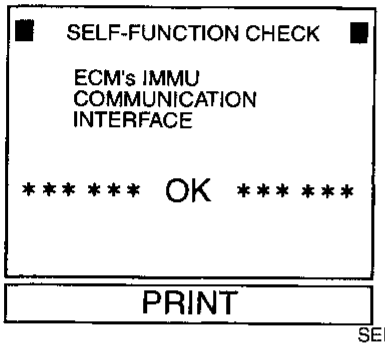
- IMMU is malfunctioning.
1. Replace IMMU.
2. Perform initialization with CONSULT. For the initialization procedure, refer to "CONSULT operation manual NATS".

J



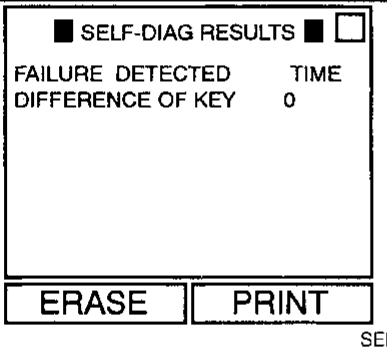
SEL342U

K



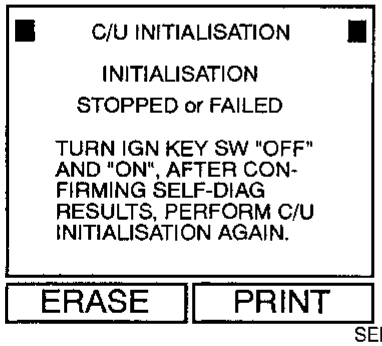
SEL343U

A



SEL344U

B



SEL372U

DIAGNOSTIC PROCEDURE 4

Self-diagnostic results:
"DIFFERENCE OF KEY" displayed on CONSULT screen

A

Confirm SELF-DIAGNOSTIC RESULTS "DIFFERENCE OF KEY" displayed on CONSULT screen.

OK

PERFORM INITIALIZATION.
Perform initialization with CONSULT.
Re-register all NATS ignition key IDs.
For the initialization procedure, refer to "CONSULT operation manual NATS".
Can the system be initialized?
Note: If the initialization is not completed or fails, CONSULT shows B message on the screen.

No →
- IMMU is malfunctioning.
1. Replace IMMU.
2. Perform initialization with CONSULT.
   For the initialization procedure, refer to "CONSULT operation manual NATS".

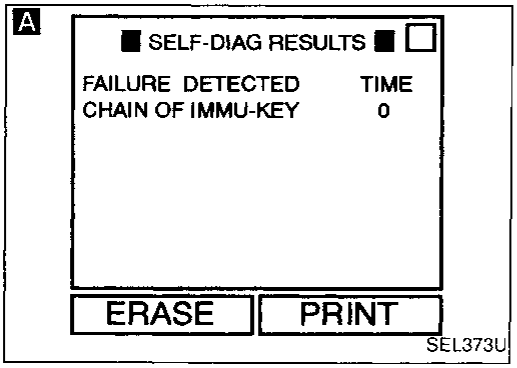
Yes

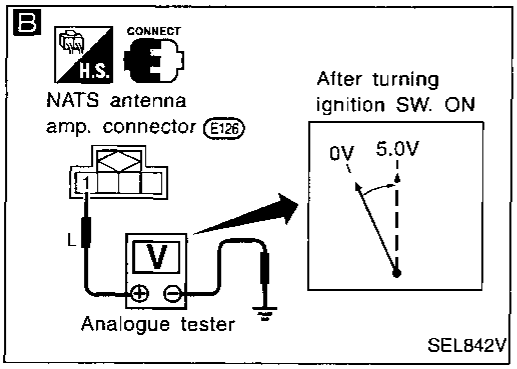
END.
(The unregistered ignition key was used.)

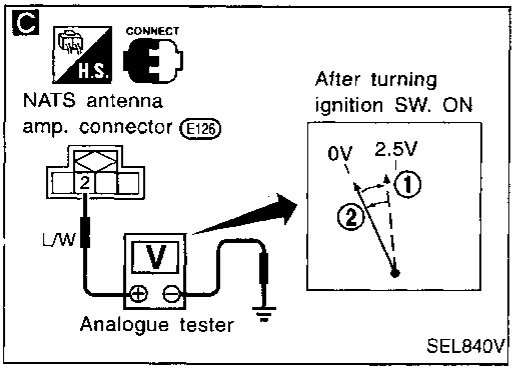
Trouble Diagnoses (Cont'd)

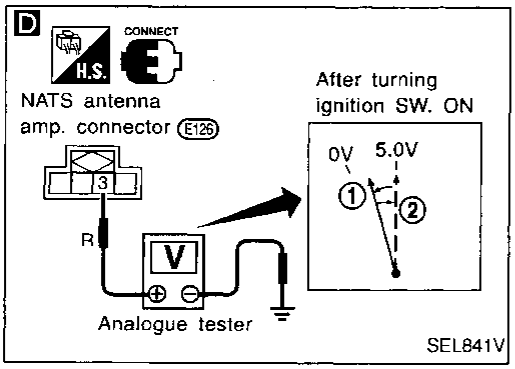
DIAGNOSTIC PROCEDURE 5

Self-diagnostic results:
"CHAIN OF IMMU-KEY" displayed on CONSULT screen









A

Confirm SELF-DIAGNOSTIC RESULTS "CHAIN OF IMMU-KEY" displayed on CONSULT screen.

OK ↓

CHECK NATS IGNITION KEY ID CHIP.
Start engine with another registered NATS ignition key.
Does the engine start?

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 ↓

B

CHECK POWER SUPPLY FOR NATS ANTENNA AMP.
1. Connect IMMU connector and NATS antenna amp. connector.
2. Check voltage between NATS antenna amp. terminal ① and ground (Power supply from NATS IMMU terminal ②) with analogue tester.
Before turning ignition switch "ON"
Voltage: 0V
After turning ignition switch "ON"
Voltage: 5V

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 ↓

C

CHECK SIGNAL LINE 1 BETWEEN IMMU AND NATS ANTENNA AMP.
Check voltage between NATS antenna amp. terminal ② and ground with analogue tester. Before turning ignition switch "ON"
Voltage: 0V
Just after turning ignition switch "ON"
Pointer of tester should move.

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 ↓

D

CHECK SIGNAL LINE 2 BETWEEN IMMU AND NATS ANTENNA AMP.
Check voltage between NATS antenna amp. terminal ③ and ground with analogue tester. Before turning ignition switch "ON"
Voltage: 4.5 - 5V
Just after turning ignition switch "ON"
Pointer of tester should move.

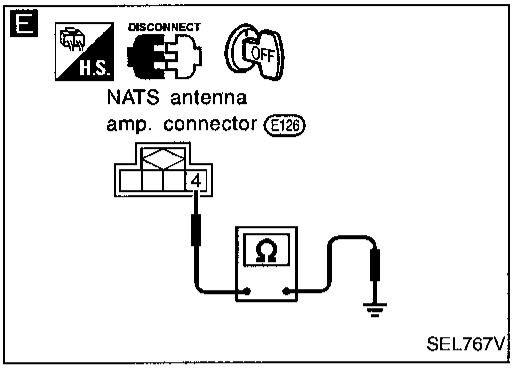
NG → (Check harness for open or short between for open or short between IMMU and NATS antenna amp. If harness is OK, replace IMMU, perform initialisation with CONSULT. For the initialisation procedure, refer to "CONSULT operation manual NATS".)

OK ↓

Ⓐ

Trouble Diagnoses (Cont'd)

E



Ⓐ

E

CHECK ANTENNA AMP. GROUND LINE CIRCUIT.
1. Turn ignition switch "OFF".
2. Check continuity between NATS antenna amp. terminal ④ and ground. (Signal from NATS IMMU terminal ⑩)
Continuity should exist.

NG → Check harness for open or short between IMMU and NATS antenna amp. If harness is OK, replace IMMU. After replacing IMMU, perform initialization with CONSULT. For the initialization procedure, refer to "CONSULT operation manual NATS".

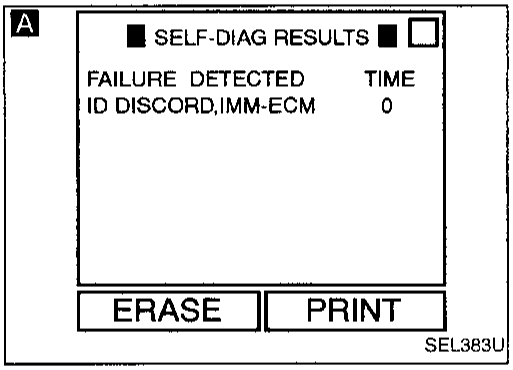
OK ↓

NATS antenna amp. is malfunctioning. When replacing the amp. hold on to amp. body. Take care not to pull on amp. harness.

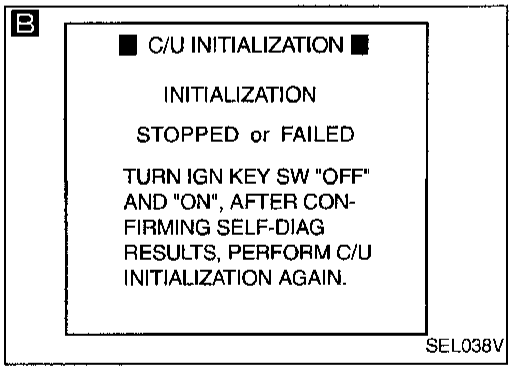
DIAGNOSTIC PROCEDURE 6

Self-diagnostic results:
"ID DISCORD, IMM-ECM" displayed on CONSULT screen

A



B



A

Confirm SELF-DIAGNOSTIC RESULTS "ID DISCORD, IMM-ECM*" displayed on CONSULT screen.

* "ID DISCORD, IMM-ECM": Registered ID of IMMU is in discord with that of ECM.

PERFORM INITIALIZATION.
Perform initialization with CONSULT.
Re-register all NATS ignition key IDs.
For the initialization procedure, refer to "CONSULT operation manual NATS".
Can the system be initialized?
Note: If the initialization is not completed or fails, CONSULT shows B message on the screen.

No → • ECM is malfunctioning.
1. Replace ECM.
2. Perform initialization with CONSULT.
For the initialization procedure, refer to "CONSULT operation manual NATS".

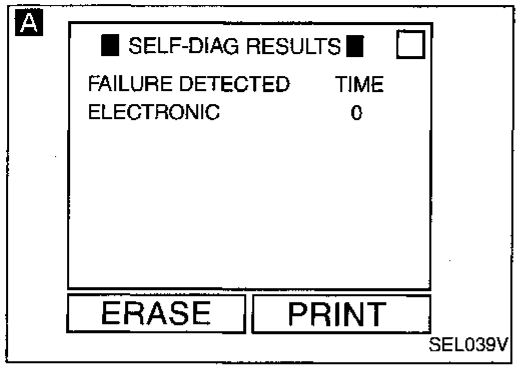
Yes ↓

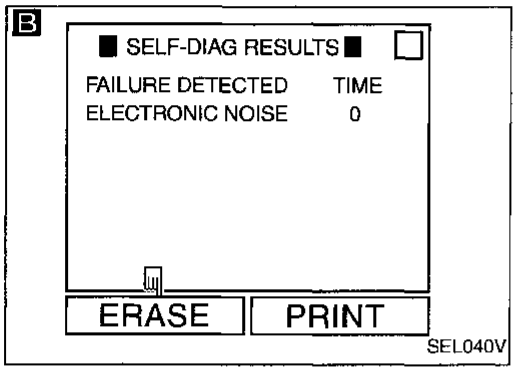
END.
(System initialization had not been completed.)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

Self-diagnostic results:
"ELECTRONIC NOISE" displayed on CONSULT screen





A

Confirm SELF-DIAGNOSTIC RESULTS "ELECTRONIC NOISE" displayed on CONSULT screen.

↓

Turn off or remove any possible noise sources.

↓

B

Touch "ERASE" on CONSULT SELF-DIAGNOSTIC RESULTS screen.

↓

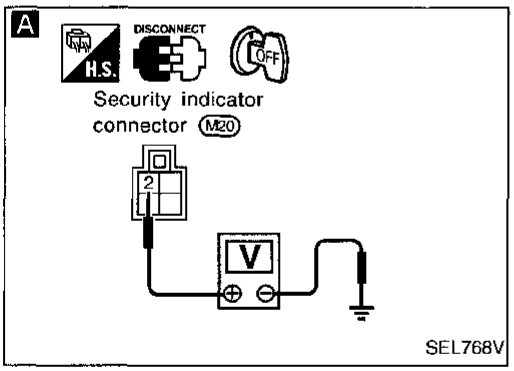
Start engine. — NG → (back to A)

OK ↓

END

DIAGNOSTIC PROCEDURE 8

"SECURITY IND. DOES NOT BLINK AND/OR LIGHT UP"



A

CHECK INDICATOR POWER SUPPLY CIRCUIT.
Check voltage between security indicator terminal ② and ground.
Battery voltage should exist.

NG → Check the following.
- 7.5A fuse [No. 40, located in the fuse block (J/B)]
- Harness for open or short between fuse and security indicator

OK ↓

Check security indicator.

↓

PERFORM INITIALIZATION.
Perform initialization with CONSULT.
For the initialization procedure, refer to "CONSULT operation manual NATS".
Does security indicator operate after initialization has been completed?

No → Check harness for open or short between NATS IMMU and security indicator.

Yes ↓

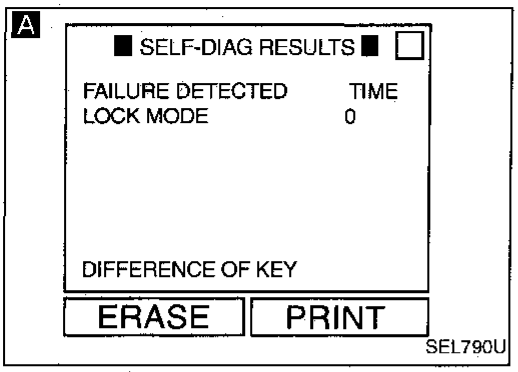
END

Trouble Diagnoses (Cont'd)

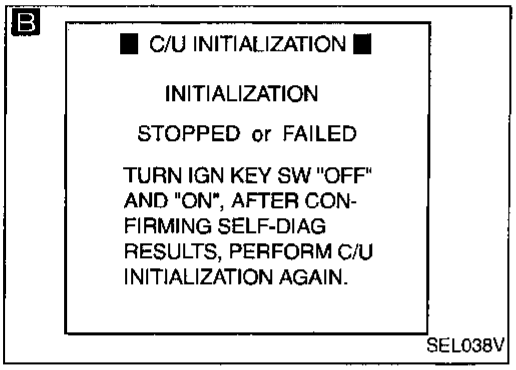
DIAGNOSTIC PROCEDURE 9

Self-diagnostic results: "LOCK MODE" displayed on CONSULT screen

A



B



A

Confirm SELF-DIAGNOSTIC RESULTS "LOCK MODE" is displayed on CONSULT screen.

↓

1. Turn the ignition switch to OFF position.
2. Turn the ignition key switch to ON position with a registered key. (Do not start engine.) Wait 5 seconds.
3. Return the key to the OFF position.
4. Repeat steps 2 and 3 twice (total of three cycles).
5. Start the engine.

Does the engine start?

Yes → System is OK. (Now the system is escaped from "LOCK MODE".)

No ↓

PERFORM INITIALIZATION.
Perform initialization with CONSULT.
For the initialization procedure, refer to "CONSULT operation manual NATS".
Can the system be initialized?
Note: If the initialization is incompleted or failed, CONSULT shows B message on the screen.

Yes → System is OK.

No ↓

Go to DIAGNOSTIC PROCEDURE 5, EL-319 to check "CHAIN OF IMMU-KEY".

Precaution

CAUTION:

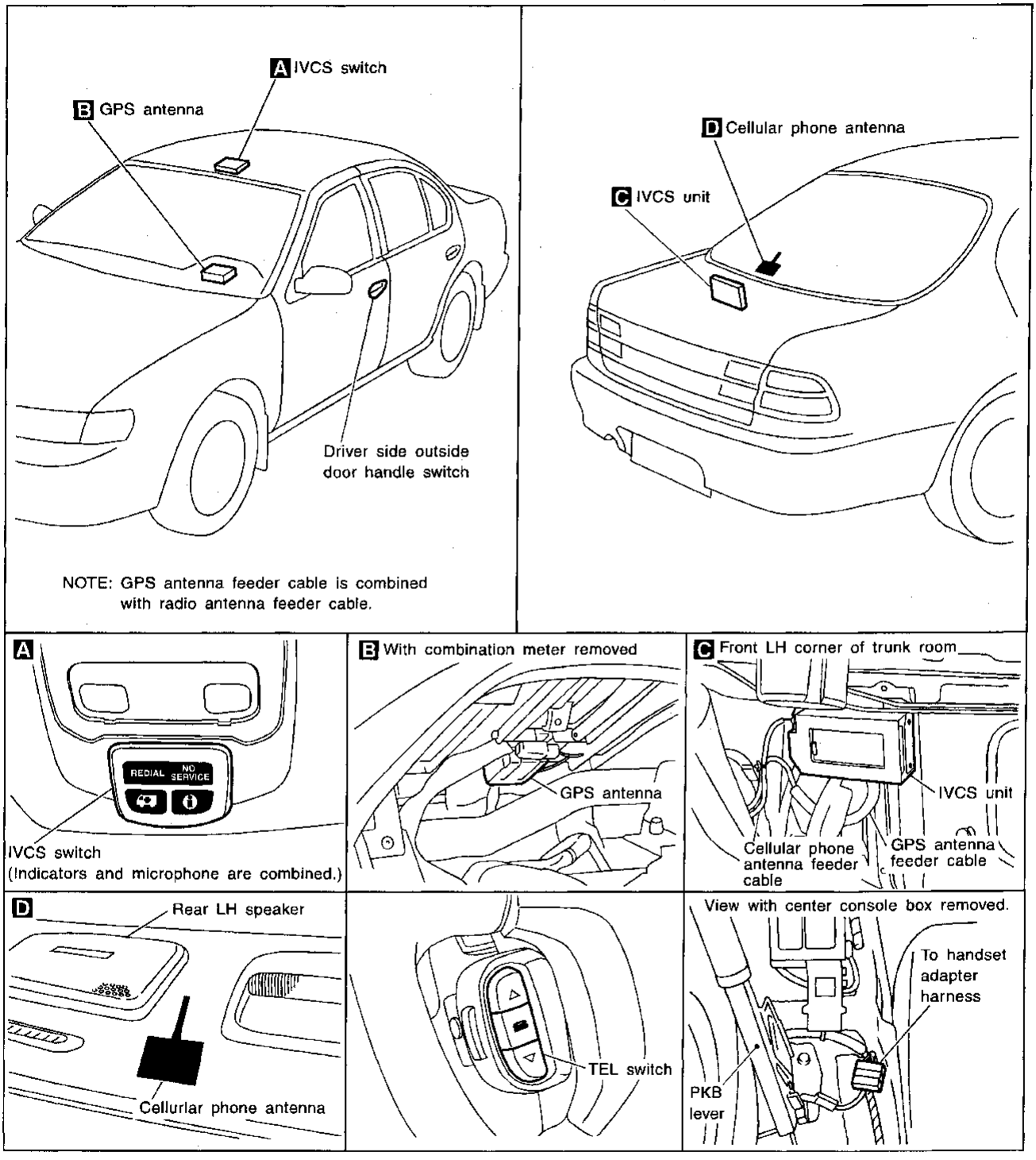
- **Use CONSULT to set the system "Demonstration mode" if INFINITI Communicator needs to be activated during service procedures. (For details of the demonstration mode, refer to EL-351.)**
- **Make sure to turn the demonstration mode OFF before returning the vehicle to the owner.**
- **In the demonstration mode, no service from the Communicator Response Center is available. Therefore, even if the customer encounters an emergency, no service will be dispatched.**
- **If the theft warning system is activated for more than 7 seconds, INFINITI Communicator will dial to the Communicator Response Center automatically. The operator will contact the customer to confirm whether the vehicle has been stolen or not.**
- **When "Mayday" emergency dialing is activated (if the system is not in the demonstration mode), the Communicator Response Center operator will come online. If there is no emergency, the operator will ask the occupant for the user password (option). Failure to provide the correct password results in a police response.**
- **IVCS unit memory includes VIN (Vehicle Identification Number) and other such vehicle specific data. Therefore, the IVCS unit cannot be transferred to another vehicle. When the IVCS unit is replaced, the new unit must be set up and programmed. The INFINITI Communicator system automatically contacts the Communicator Response Center the first time the vehicle is started after a phone number has been changed or a module (IVCS unit) is replaced. The VIN will be written in the memory of the new unit by transmitting data from the Communicator Response Center. For details, refer to "System Setting", EL-353.**
- **Before servicing the vehicle, confirm that the VIN memorized by the IVCS unit is the same as the VIN on the vehicle's identification plate.**

Communicator Response Center Telephone Number for Technicians

The Communicator Response Center telephone number for technicians is **1-888-427-4812.**
Whenever an INFINITI dealer technician dials the above number, the following information will be required by the Communicator Response Center operator.

- Customer name
- Unit ID number of old IVCS unit (for details, refer to EL-339.)
- Unit ID number of new IVCS unit
- VIN
- Dealer name and code (for security purposes)
- Dealer contact person
- Dealer phone and fax numbers

Component Parts and Harness Connector Location



SEL587V

System Description

OUTLINE

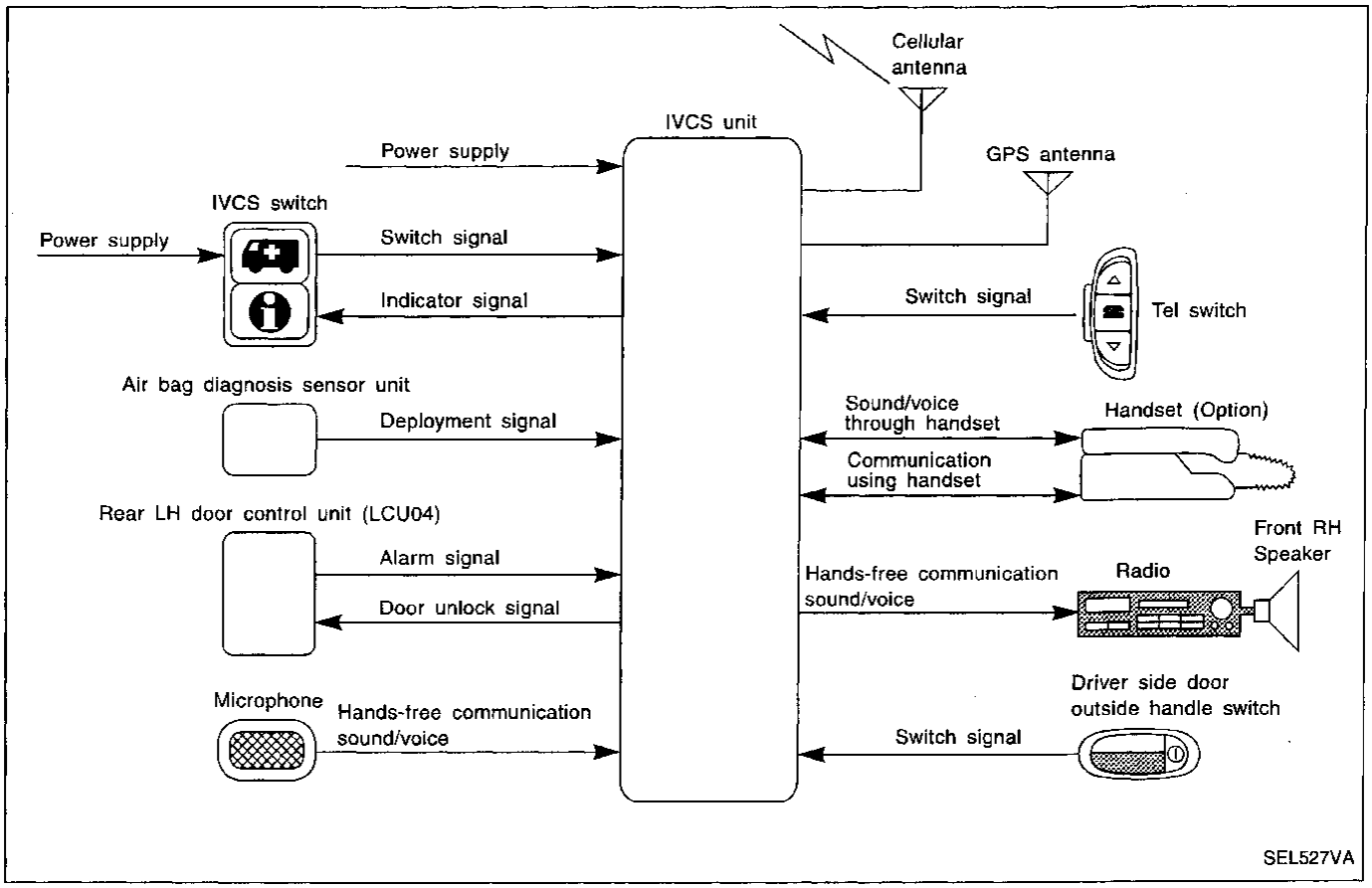
INFINITI Communicator system uses the Global Positioning System (GPS), cellular phone technology and the Communicator Response Center to provide the following functions.

- One touch "Information" dialing
- One touch "Mayday" emergency dialing
- Automatic air bag inflation notification
- Stolen vehicle tracking
- Alarm notification
- Remote door unlock

There are limitations to the INFINITI Communicator system. To understand the system, read SYSTEM LIMITATIONS (EL-326) thoroughly.

SYSTEM COMPOSITION

- The INFINITI Communicator system is controlled by the IVCS (In Vehicle Communication System) unit. System status ("Mayday"-emergency dialing, or re-dialing, etc.) is displayed by the indicators in the IVCS switch.
- The INFINITI Communicator system can only make calls to the Communicator Response Center and receive calls from the center, unless the customer chooses to have the optional handset install.



SYSTEM LIMITATIONS

Service area

Depending on the cellular provider chosen, service is provided in the 48 contiguous states. Service is not available in Alaska, Hawaii, Canada, or Mexico. The Communicator Response Center will not be able to locate the customer's vehicle outside of the continental United States.

Inoperative if cellular phone is inactive or inoperative

INFINITI Communicator will be inoperative if the customer does not have an active account with cellular provider, since INFINITI Communicator relies on the cellular network. When the INFINITI Communicator system is outside of cellular service, the "NO SERVICE" indicator will illuminate. If you try to activate INFINITI Communicator, the REQUEST will be cancelled. Cellular phone transmission may become temporarily disabled, or interrupted by environmental factors like tunnels, bridges, or tall buildings. In such cases, INFINITI Communicator will re-dial up to four times. After several failed attempts, the system will quit dialing and return to normal mode.

Inoperative if the system is in the demonstration mode

The INFINITI Communicator system remains in the demonstration mode until the setup procedures are completed. If the system is activated in this mode, the Communicator Response Center will recognize this operation as a demonstration and will not provide any service. The system can be changed to the demonstration mode by using CONSULT to check the system operation. Do not forget to turn off the demonstration mode after confirmation.

Battery

Since INFINITI Communicator is powered by the vehicle's battery, if the battery is removed, damaged or discharged, the system will not work.

Inoperative if cellular system is busy

When INFINITI Communicator tries to contact the Communicator Response Center, but the cellular network is busy, the system attempts to re-dial for up to two hours. This time varies greatly depending on the cellular network and cellular signal strength. The system resets to ready when the system completes the dialing attempts.

Roaming

If the customer's cellular provider does not have a roaming agreement with the provider where the vehicle locates, it may not be possible to use the lines of a different cellular provider. Therefore, it is impossible that INFINITI Communicator will contact the Communicator Response Center.

Special cellular features

Some cellular carriers offer custom phone numbers that are assigned a Personal Identification Number (PIN). The cellular phone user is required to enter the PIN anytime a phone call is made. The INFINITI Communicator system is not compatible with the PIN feature. A PIN requirement on the cellular phone will cause the INFINITI Communicator system to be inoperative.
Other special features such as call waiting, voice mail, call forwarding, etc. can interfere with INFINITI Communicator system operation.

Cellular airwave interference

At times someone other than the Communicator Response Center operator may be heard. This is caused by Cellular Airwave Interference and is not caused by an INFINITI Communicator system malfunction.

Possibility of positioning capability degraded

Vehicle positioning is accomplished using the GPS (Global Positioning System). If the signal from the GPS satellite is obstructed by a tunnel or building, positioning capability may be degraded or lost. In this case, the last valid position obtained before the obstruction is transmitted to the Communicator Response Center. The precision is also influenced by the location of GPS satellites.
Once the battery cable is disconnected, it will take about 5 minutes to determine the vehicle location. This is because the memory related to GPS is lost when the battery cable is disconnected.

OPERATION

One touch "Information" dialing

- If the vehicle becomes disabled due to problems such as engine trouble, press the "Information" switch to connect to the Communicator Response Center and receive the desired service.
- When the indicator lamp on the switch lights up, it means that the system has started to contact the Communicator Response Center. (Voice communication with Communicator Response Center operator is not available while DATA is being transmitted even if the indicator lamp is lit.)
- When the indicator lamp blinks, it means that the system is preparing for cellular connection or attempting to re-dial.

System Description (Cont'd)

One touch "Mayday" emergency dialing

- When an emergency occurs, press the "Mayday" emergency switch to connect to the Communicator Response Center. With this report, the Communicator Response Center recognizes that an emergency has occurred and provides necessary service.
- The operator will request a password (if the customer chooses to establish a password). If the wrong password or if no password is provided, the Communicator Response Center will assume the customer is in a duress situation and dispatch police.
- When no voice reply is heard from the vehicle or the sound heard indicates an emergency situation, the Communicator Response Center will have the police rush to the scene.
- Other operations are the same as service dialing.

Automatic air bag inflation notification

- When an air bag inflates, the air bag diagnosis sensor unit sends the air bag inflation signal to the IVCS unit, and the system automatically dials the Communicator Response Center to report the occurrence of an accident.

Stolen vehicle tracking

- When a vehicle is stolen, the owner can contact the Communicator Response Center to attempt to locate the stolen vehicle. The Communicator Response Center will activate the stolen vehicle tracking to locate the vehicle. If the Communicator Response Center successfully locates the vehicle, they will contact the police to provide the location.
- The vehicle location data is calculated using GPS.
- The vehicle ignition switch must be turned to the ON position to obtain the vehicle location. (This is because the system is in the sleep mode when the ignition switch is OFF.)
- Once this function starts up, regardless of the ignition switch position, the system keeps transmitting the vehicle location until the cancel signal is transmitted from the Communicator Response Center.
- While this function is operating, the operator can covertly monitor what is happening inside the vehicle through the hands-free microphone.

Alarm notification

- When theft warning system sounds an alarm for more than 7 seconds because of improper access, the alarm signal is transmitted from the rear LH passenger door control unit (LCU04) to the IVCS unit, and the system executes automatic dialing to the Communicator Response Center.
  If the alarm is reset before 7 seconds has elapsed, the INFINITI Communicator will not place a call to the Communicator Response Center.
- This function operates regardless of ignition switch position.
- While this function is operating, the operator can covertly monitor what is happening inside the vehicle through the hands-free microphone.

Remote door unlock

- When the door is locked with the key inside the vehicle, the door can be unlocked by contacting the Communicator Response Center (Proof that the person calling is the owner must be received by the Communicator Response Center.)
- When the ignition key is in the "OFF" position, the system is in the sleep mode. Therefore, driver's outside handle must be pulled to wake up the system.
- To perform remote door unlock, call the Communicator Response Center and follow the operator's instructions.

NOTE:

- **When the system contacts the Communicator Response Center, data including the vehicle location is transmitted to the Communicator Response Center.**
- **Communication with the Communicator Response Center is not completed until the completion signal is transmitted from the Communicator Response Center. (Any calls to the Communicator Response Center can only be terminated by Communicator Response Center.)**
- **Functions other than alarm notification and remote door unlock operate while the ignition switch is ON and only for three minutes after the switch is turned OFF.**
- **Once a call to the Communicator Response Center is made, the communication continues regardless of the ignition key switch position.**
- **All the voice communication with the Communicator Response Center is made through the hands-free telephone.**
- **When the INFINITI Communicator system is activated, the handset does not function.**

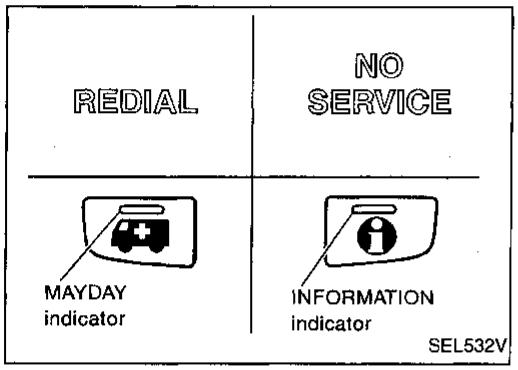
DATA TRANSMITTING

When contact to the Communicator Response Center is made, vehicle sends electrical data including type of activation (i.e., emergency call or alarm notification), vehicle location, time, etc.

SLEEP/WAKE UP CONTROL

3 minutes after the ignition switch is turned OFF, the system goes into the SLEEP MODE to save battery power supply. Communication with Communicator Response Center is not available in the SLEEP MODE.
To wake up the system, perform either of the following operations.

- Turn Ignition switch ON.
- Pull driver side outside door handle for more than 10 seconds. (Operation for door unlock function)



INDICATOR LAMPS OPERATION

The system status is displayed as below by the indicator lamps.

Indicator	Condition	Description
MAYDAY	Blinks.	System is trying to acquire an available cellular channel by "Mayday" switch operation.
	Lights up. (See NOTE.)	System is connected to a cellular channel and is communicating information to the Communicator Response Center.
INFORMATION	Blinks.	System is trying to acquire an available cellular channel by "Information" switch operation.
	Lights up. (See NOTE.)	System is connected to a cellular channel and is communicating information to the Communicator Response Center.
REDIAL	Lights up.	Re-dialing
	Blinks.	Waiting for re-dial
NO SERVICE	Lights up.	Out of CELLULAR PHONE service area or signal is too weak. If a contract with telephone carrier has not been made, the indicator lamp remains illuminated.

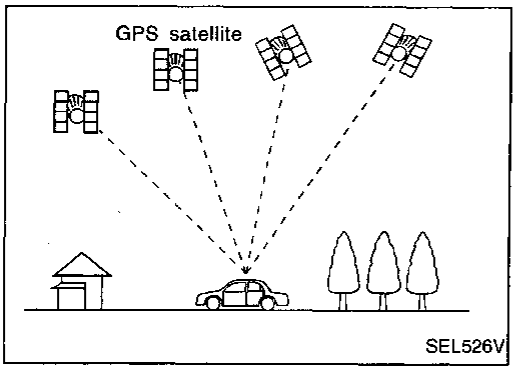
NOTE:

- **When connection to Communicator Response Center by re-dial ends in failure, all the indicators are turned off.**
- **All indicators illuminate for up to 30 seconds or more when ignition switch is turned from OFF to ON and the system performs a self check.**
- **If both of MAYDAY and INFORMATION indicators do not turn off 30 seconds or more after the ignition switch is turned to ON, the system is malfunctioning.**

AUTOMATIC RE-DIAL/AUTO RESET TO READY

- When INFINITI Communicator tries to contact the Communicator Response Center, but the cellular network is busy, the system attempts to dial for up to 2 hours. This time varies greatly depending on the cellular network and cellular signal strength. The system resets to ready when the system completes the dialing attempts. The vehicle owner can press the button again if he or she still needs to contact the Communicator Response Center.
- INFINITI Communicator automatically redials if communication between the vehicle owner and Communicator Response Center is lost for some reason.
- The only way for a transmission to be officially terminated is for the Communicator Response Center to send an end transmission signal, which turns off the indicator in the switch. (Communication with Communicator Response Center can not be terminated by the occupant.)
- If the vehicle owner start the engine during a call, the conversation may be interrupted. When this happens the system may try to resume transmission once after the engine has been started.

System Description (Cont'd)



GPS (Global Positioning System)

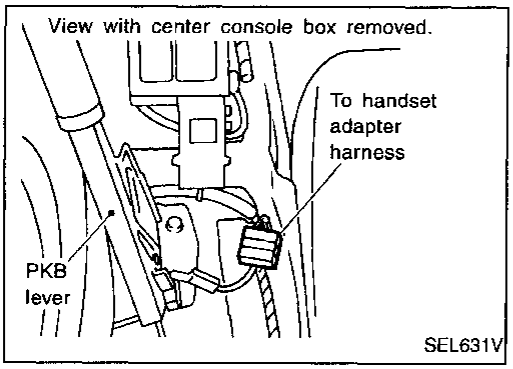
GPS is the global positioning system developed and operated by the US Department of Defense. GPS satellites (NAVSTAR) transmit radio waves and orbit around the earth at an altitude of approximately 21,000 km (13,000 miles).

GPS receiver calculates the three-dimensional position of the vehicle (latitude, longitude, and altitude from the sea level) by the time difference of the radio wave arriving from more than four GPS satellites (three-dimensional positioning).

When the radio wave is received from only three GPS satellites, the two-dimensional position (latitude and longitude) is calculated, using the altitude from the sea level data calculated by using four GPS satellites (two-dimensional positioning).

Positioning capability is degraded in the following cases.

- In two-dimensional positioning, when the vehicle's altitude from the sea level changes, the precision becomes lower.
- The location detection performance can have an error of about 100 m (300 ft) even in three-dimensional positioning with high precision. Because the precision is influenced by the location of GPS satellites used for positioning, the location detection performance may drop depending on the location of GPS satellites.
- When the radio wave from GPS satellites cannot be received, for example, when the vehicle is in a tunnel, in a parking lot inside building, under an elevated superhighway or near strong power lines, the location may not be detected. Turbulent/electric weather conditions may also affect positioning performance. If something is placed on the antenna, the radio wave from GPS satellites may not be received.

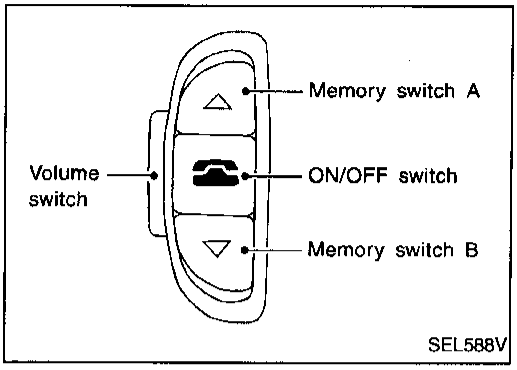


HANDSET (OPTION)

NOTE:

- If an optional handset is installed, INFINITI Communicator can be used as a normal cellular phone.
- If INFINITI Communicator is activated when INFINITI Communicator system's cellular phone is in use, the current phone transmission will be cut and INFINITI Communicator will dial the Communicator Response Center. The cellular handset will be disabled, and communication with the Communicator Response Center operator will be carried out through the hands-free microphone.
- After communication with Communicator Response Center is finished, the handset last number memory will be erased.
- While INFINITI Communicator is activated, the handset becomes inoperative and all communication with the operator is accomplished via the hands-free phone. When an activation is terminated, the handset will be unlocked.

System Description (Cont'd)



TEL SWITCH

When any of the TEL switches is pressed, the TEL switch which is combined with the multiplex transmitting unit sends operational commands to the IVCS unit. TEL switch has following three functions.

- Volume adjust
- Placing re-dial call
- Placing memorized call (The telephone numbers are stored in the handset. A maximum of 6 memories are operative.)

SEND/END switch operation

- When a call is received, press SEND/END switch to permit conversation.
- At the completion of the conversation, press the SEND/END switch to terminate the call.
- To re-dial the last phone number, press SEND/END switch.

MEMORY switch operation

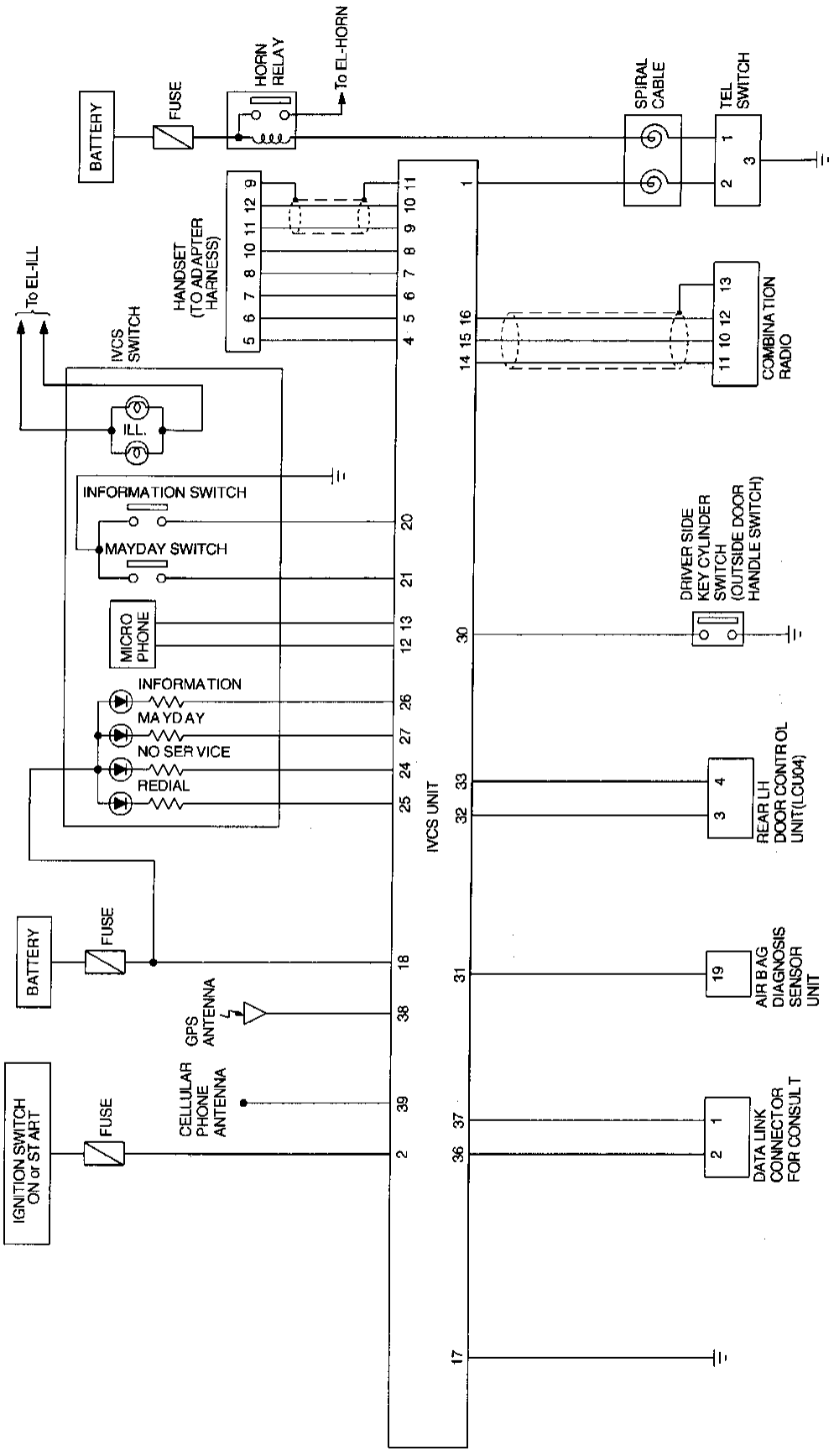
- A maximum of 6 telephone numbers which stored in the memory of the handset can be dialed by MEMORY switch operation.
- The last phone number is erased if the ignition switch is turned off or if the INFINITI Communicator system has been activated.
- For the procedure to input telephone numbers, refer to the handset operation manual.
- To select memory 1 to 6, push MEMORY switch A or B. Every push on the switch changes the memory as follows.
  SWITCH A: Memory 1 → 2 → 3 → OFF
  SWITCH B: Memory 4 → 5 → 6 → OFF
  After selecting memory, push SEND/END switch to make a call.

VOLUME switch

Voice volume from the front RH speaker can be adjusted by using the VOLUME switch.

NOTE:
Memory switches are not functional unless handset is installed.

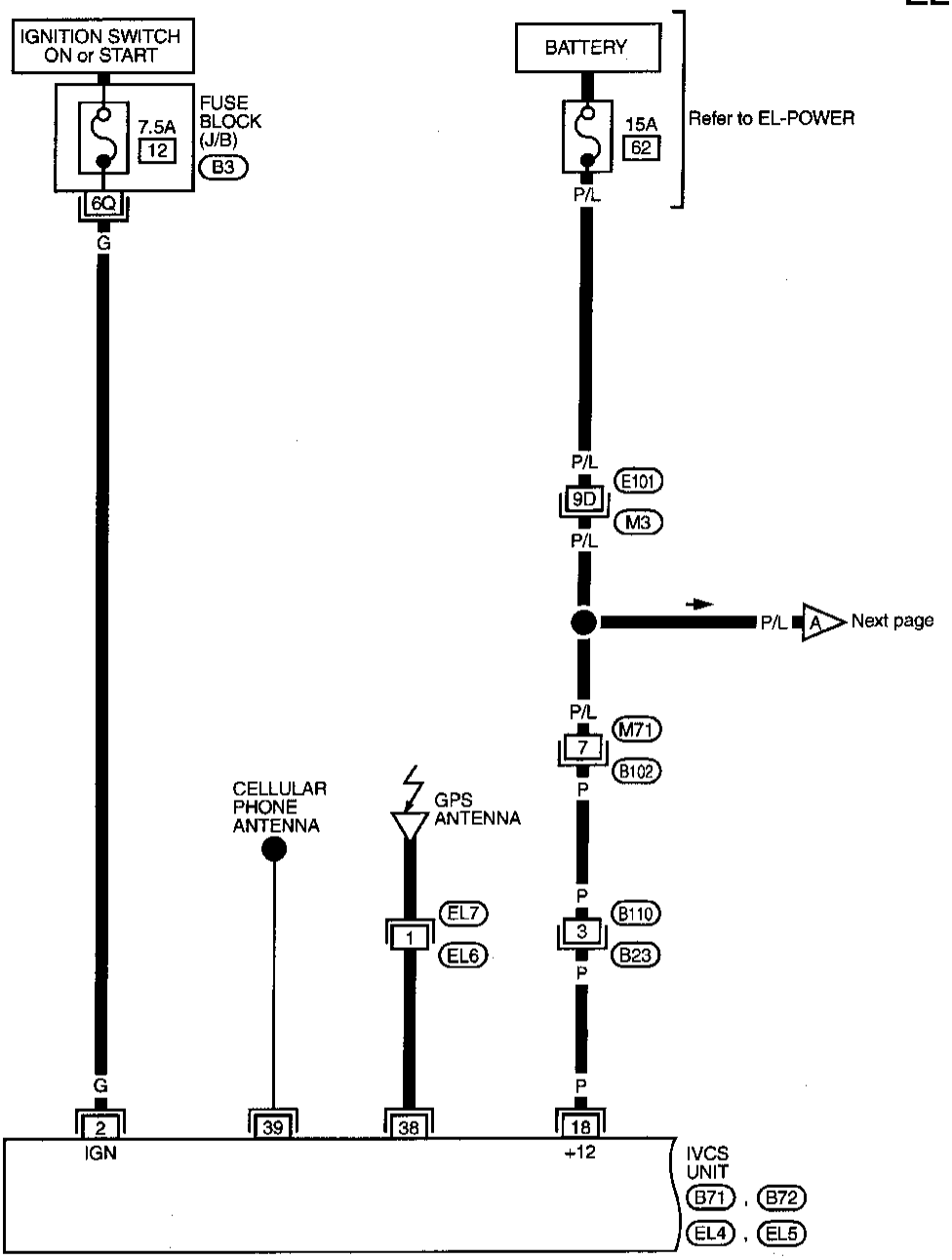
Schematic

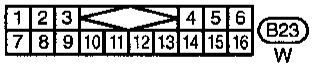


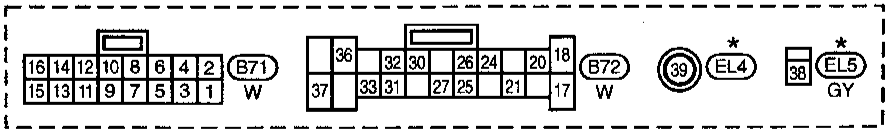
MEL123J

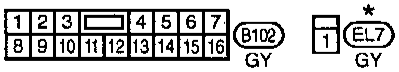
Wiring Diagram — IVCS —

EL-IVCS-01









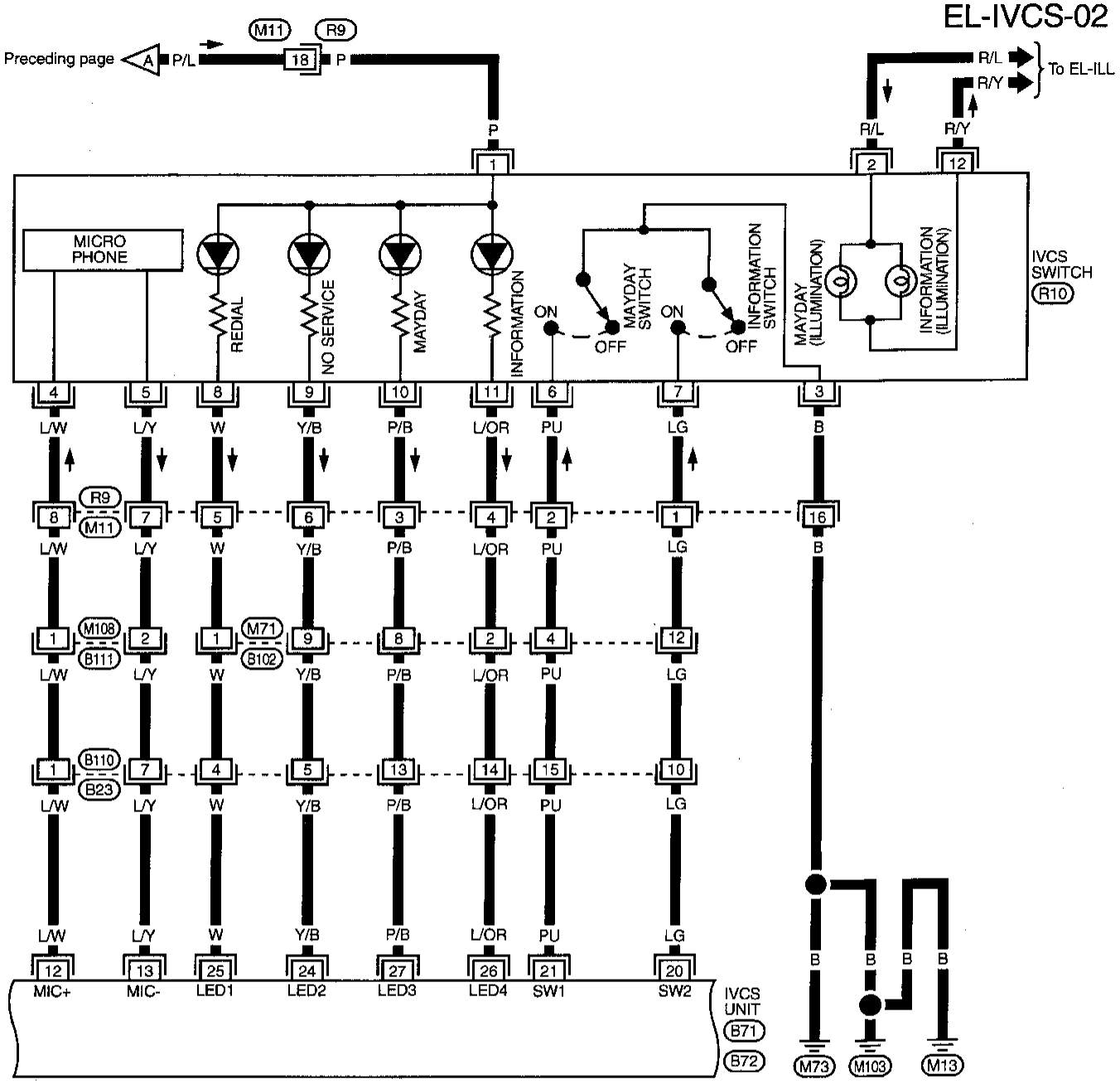
★ : This connector is not shown in "HARNESS LAYOUT" of EL section.

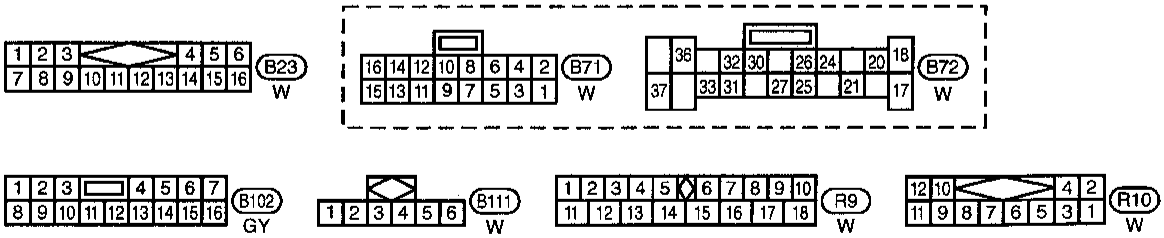
Refer to last page (Foldout page).
M3 , E101
B3

MEL124J

Wiring Diagram — IVCS — (Cont'd)

EL-IVCS-02

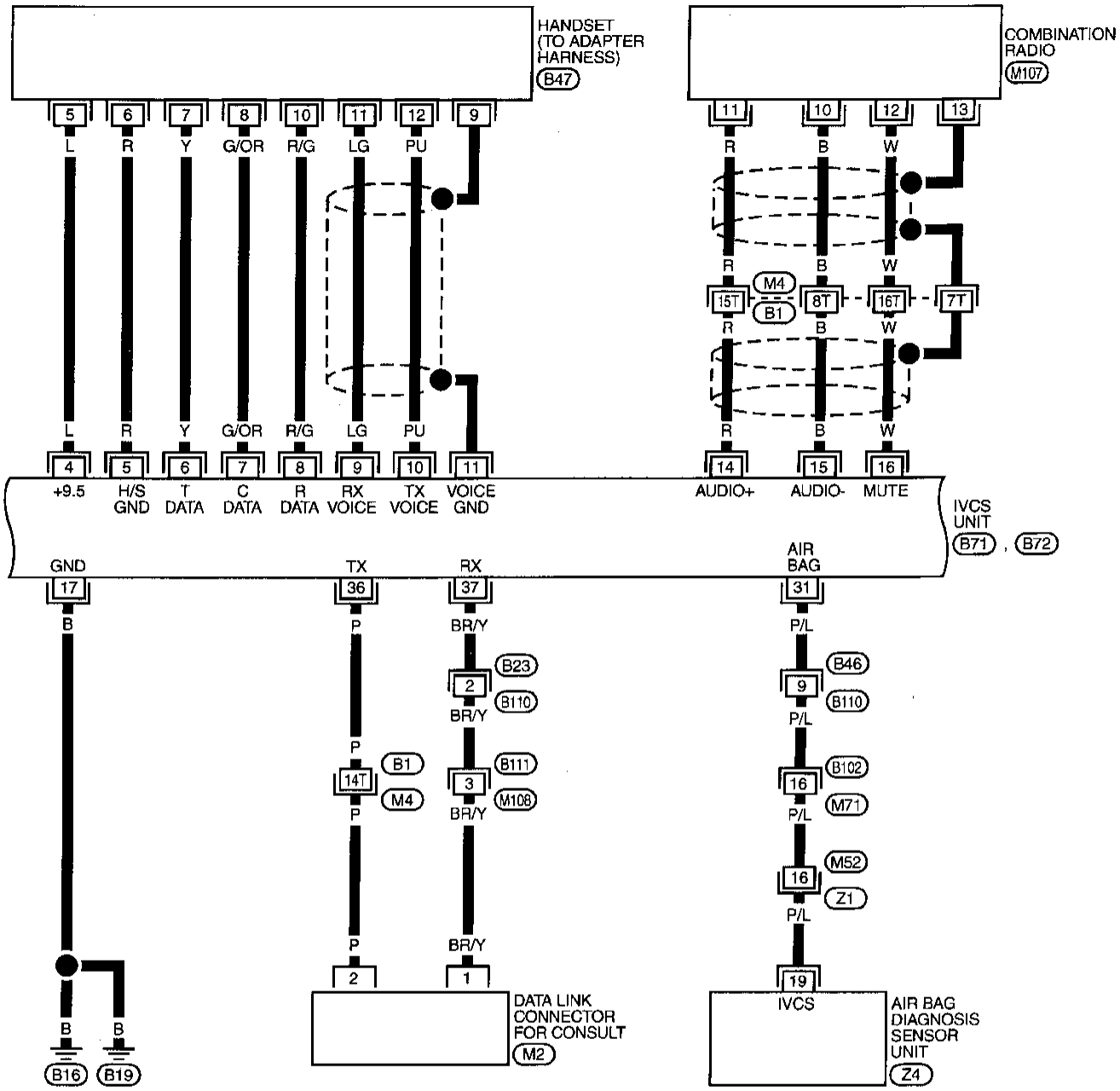


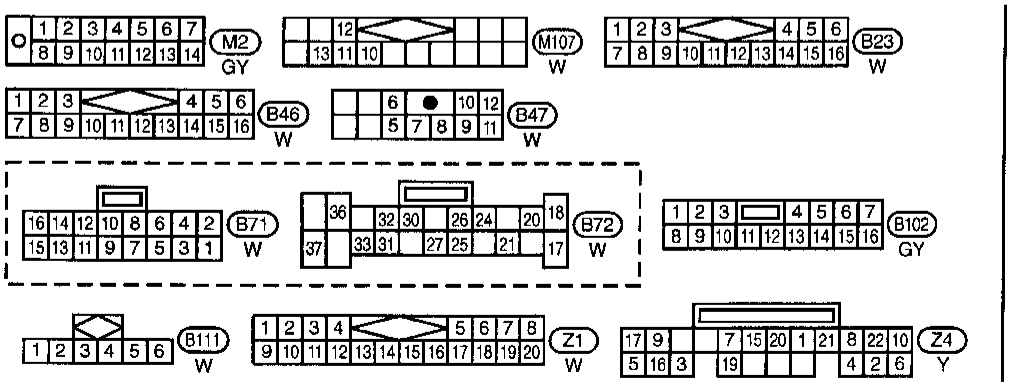


MEL125J

Wiring Diagram — IVCS — (Cont'd)

EL-IVCS-03



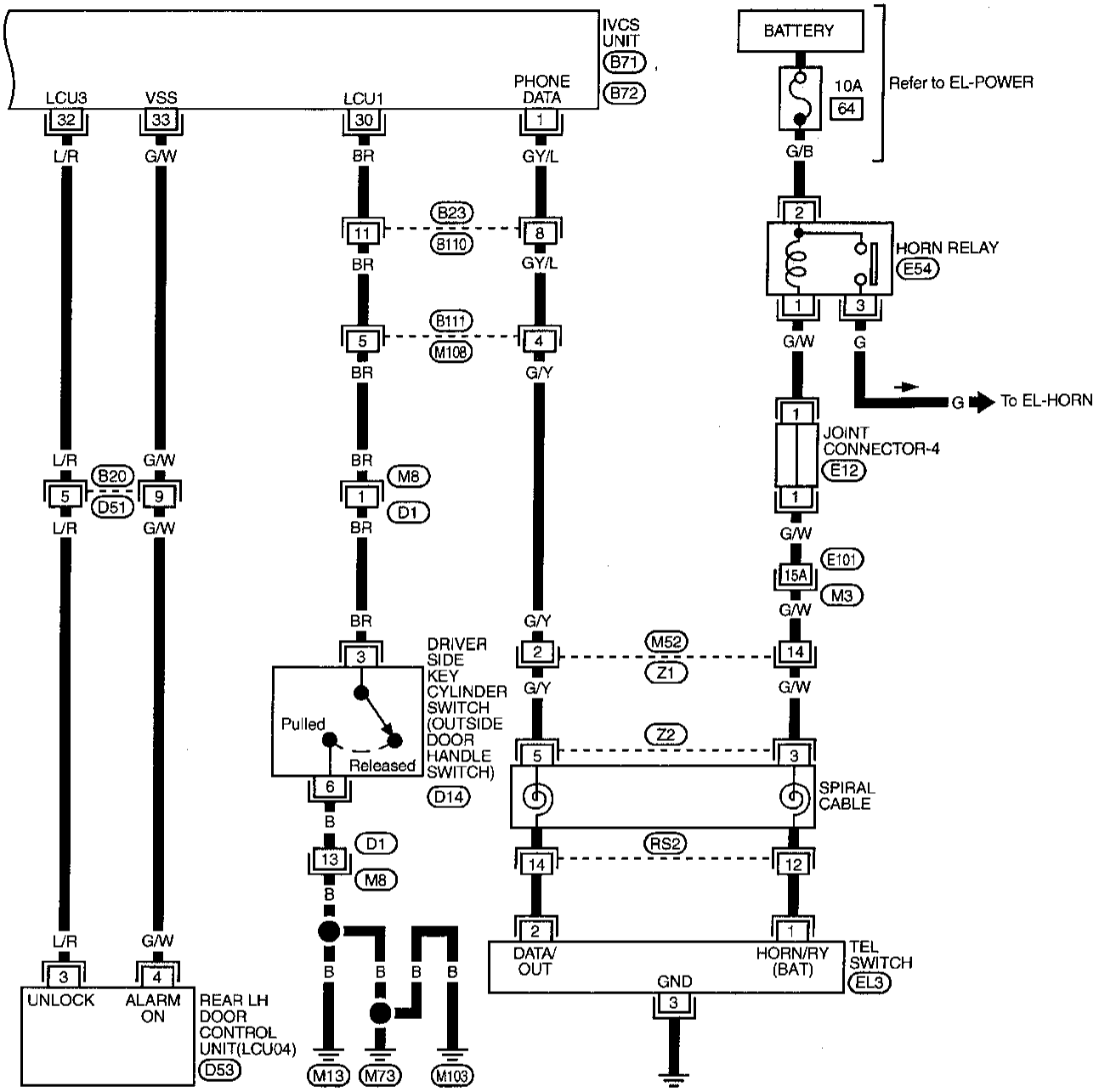


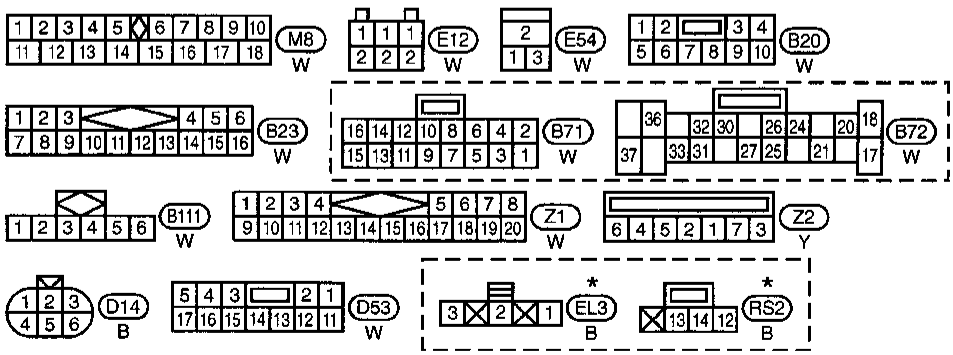
Refer to last page (Foldout page).
M4, B1

MEL126J

Wiring Diagram — IVCS — (Cont'd)

EL-IVCS-04



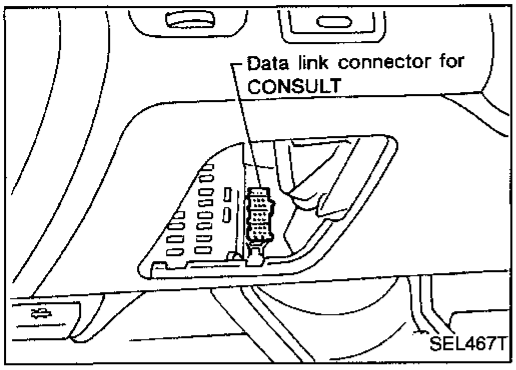


* : This connector is not shown in "HARNESS LAYOUT" of EL section.

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

MEL127J

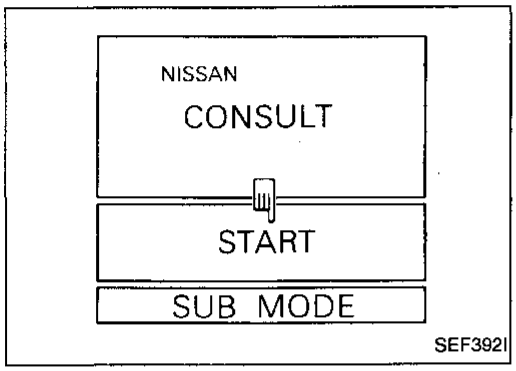
1767



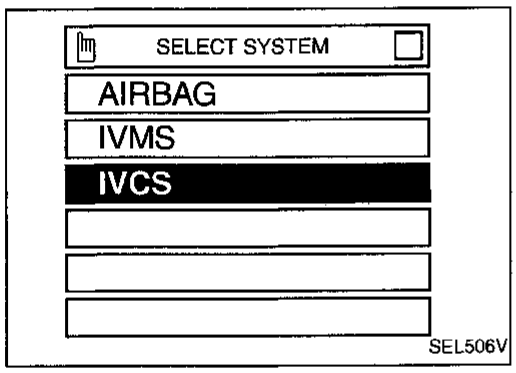
CONSULT

CONSULT INSPECTION PROCEDURE

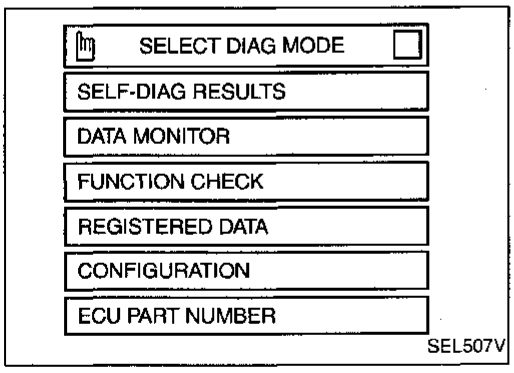
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



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



5. Touch "IVCS".



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

7. When CONSULT inspection is terminated, follow the procedure shown below.

a. Touch "BACK" key of CONSULT until "SELECT SYSTEM" appears, then turn off CONSULT.
b. Turn ignition switch to OFF position.
c. Disconnect CONSULT DDL connector.

NOTE: If the DDL connector is disconnected before turning ignition switch to "OFF" position, INFINITI communicator may not operate properly.

CONSULT (Cont'd)

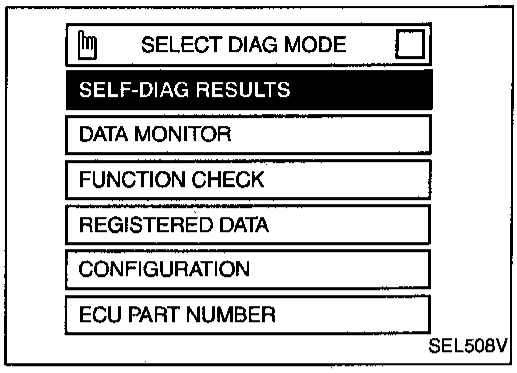
APPLICATION ITEMS

Mode	Description	Reference page
SELF DIAG RESULTS	Displays the result of self-diagnosis.	EL-338
DATA MONITOR	Two modes, "GPS MONITOR" and "SWITCH MONITOR" can be selected in this mode. • Displays current data related to GPS in "GPS MONITOR" mode. • Displays IVCS switch and outside door handle switch condition in "SWITCH MONITOR" mode.	EL-339
FUNCTION CHECK	In this mode, "Remote door unlock function" can be checked using CONSULT. Door can be unlocked according to the commands to the door LCU by the IVCS unit. This check verifies communication circuit between LCU and IVCS unit.	EL-347
REGISTERED DATA	Displays the following data registered in the IVCS unit. In this mode the data cannot be re-written. • Unit ID • Cellular phone number • VIN (Vehicle Identification Number)	EL-339
CONFIGURATION (See Note.)	In this mode, the system can be set up in the demonstration mode to confirm system operation.	EL-351
	Various data related to both the Communicator Response Center contract and cellular provider can be written/re-written in this mode. • Phone number • NAM (Number Assignment Module) • Stolen vehicle tracking setting (Default should always be on.) • Alarm notification setting (Default should always be on.)	EL-353
ECU PART NUMBER	Displays the part number of the IVCS unit.	—

Note: Data must not be rewritten without prior approval from the customer.

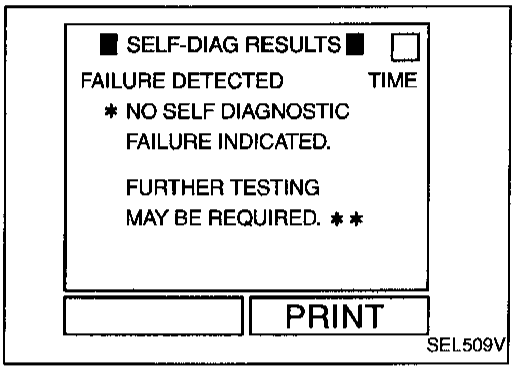
CONSULT (Cont'd)

"SELF-DIAG RESULTS" MODE

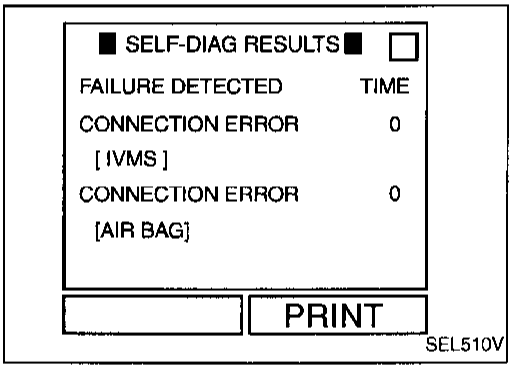


How to perform self-diagnosis

1. Touch "SELF-DIAG RESULTS".
2. Touch "START".

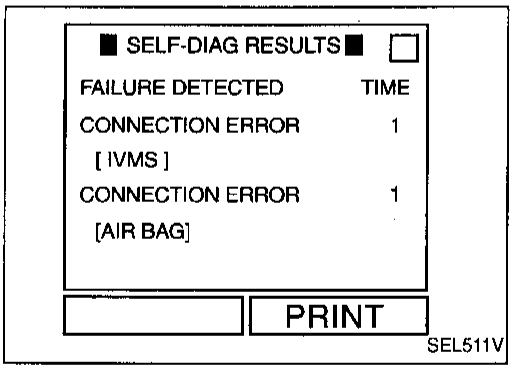


3. If no failure is detected, CONSULT will show "NO FAILURE".



- If trouble codes are displayed with "TIME = 0", repair/replace the system according to "SYMPTOM CHART 1 (SELF-DIAGNOSIS ITEM)", EL-341.
- In this case, both "MAYDAY" and "INFORMATION" indicator lamps illuminate continuously while the ignition switch is in the ON position.

Note:
The time data in CONSULT "SELF-DIAG RESULTS" mode displays the number of ignition switch cycles without the same malfunctioning occurring.



- If trouble codes are displayed with "TIME = 1 or greater", it means that the trouble code is historical data. So no further diagnosis is required.

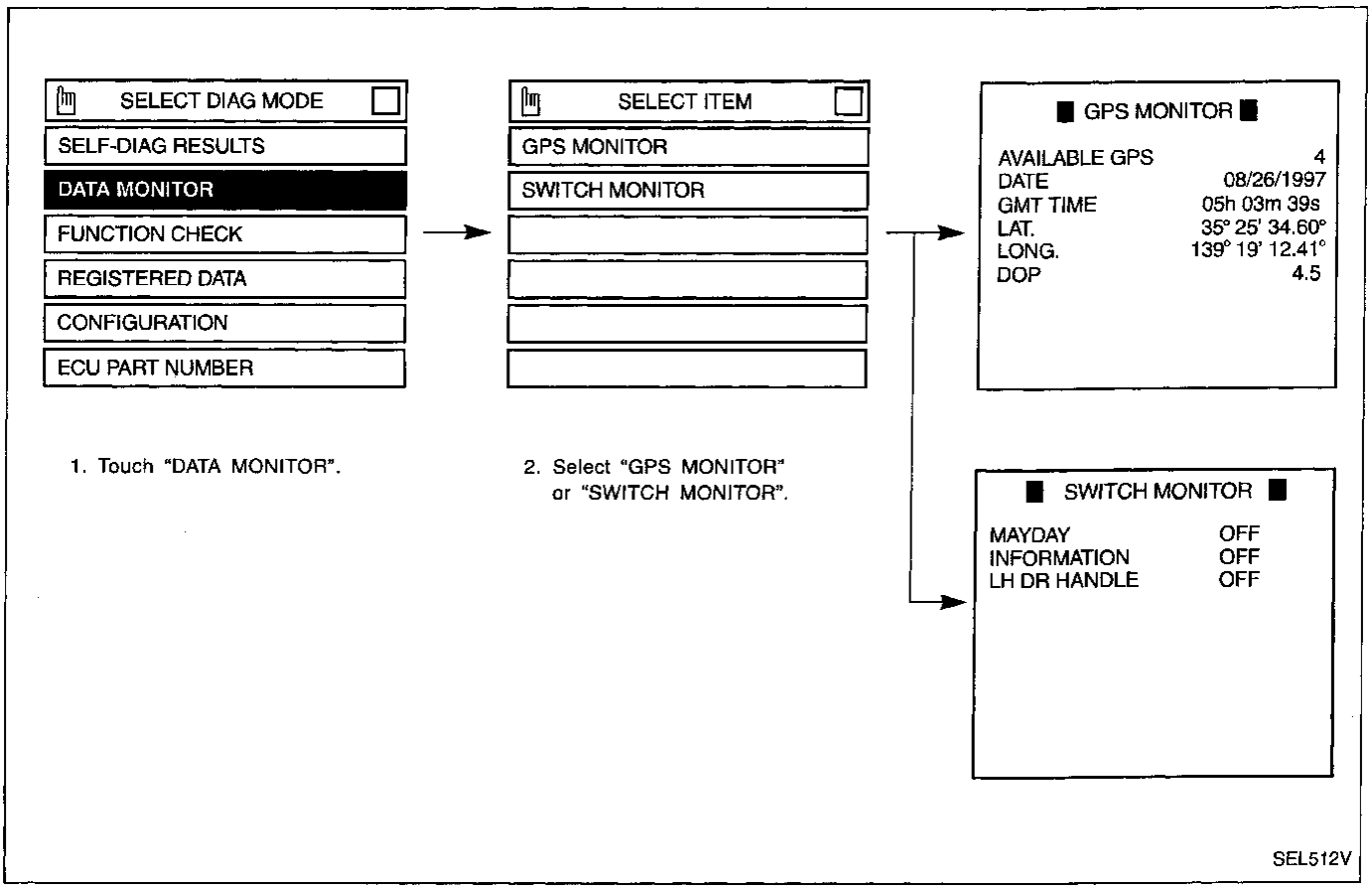
Note:
If trouble codes are displayed with "TIME = 1 or greater" even though the INFINITI Communicator has never been serviced. Intermittent incidents may occur. Check the system, refer to "Trouble Diagnoses for Intermittent Incident", EL-350.

- If the system does not detect any trouble, the IVCS indicators will turn off after bulb check (self-diagnosis) is completed while the ignition switch is in the ON position.

Note:
- **The trouble codes cannot be erased by CONSULT.**
- **After 50 ignition cycles, the trouble codes are no longer displayed in the CONSULT "SELF-DIAG RESULTS" mode.**
- **The IVCS unit does not count the ignition switch cycles unless the ignition switch is OFF for more than 3 minutes between each ignition switch cycle.**

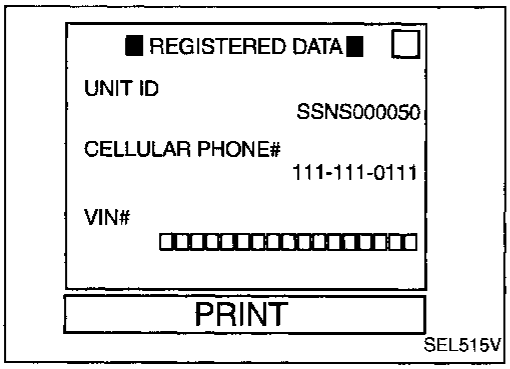
"DATA MONITOR" MODE

How to perform data monitor



Data monitor item chart

Mode	Monitor item	Description
GPS MONITOR	AVAILABLE GPS	The number of GPS satellites captured by GPS antenna
	DATE	Date of Greenwich mean time
	GMT TIME	Greenwich mean time (Different from local time)
	LAT.	Latitude
	LONG.	Longitude
	DOP	Index of precision (an index of location status of GPS satellites. The smaller the value is, the higher the positioning precision is.)
SWITCH MONITOR	MAYDAY	"MAYDAY" emergency switch condition
	INFORMATION	"INFORMATION" switch condition
	LH DR HANDLE	Driver side outside door handle switch condition



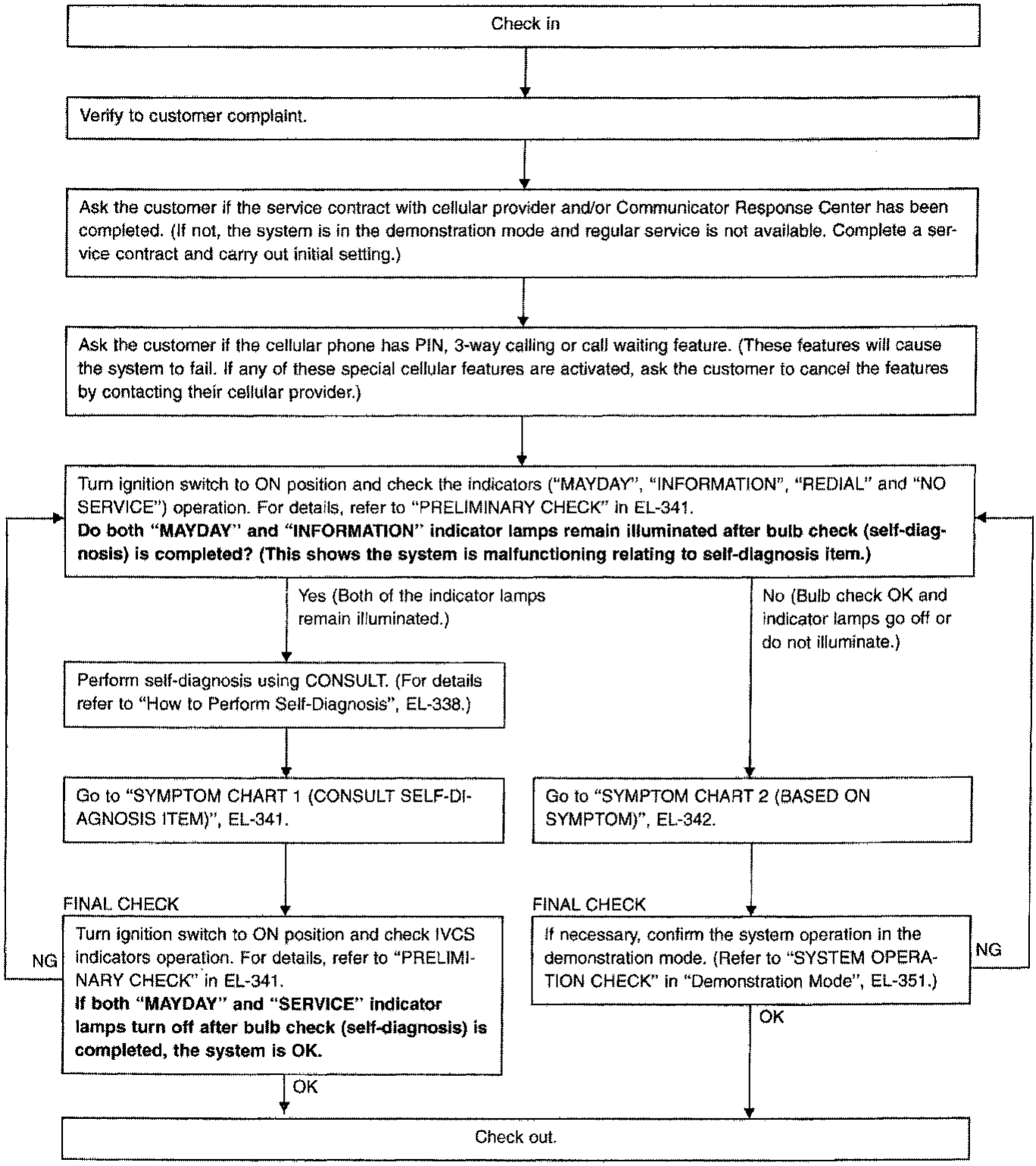
"REGISTERED DATA" MODE

Item	Description
UNIT ID	ID number of the IVCS unit. ID number is unique to each unit and differs for each unit.
CELLULAR PHONE #	—
VIN #	Vehicle Identification Number. When the IVCS unit is replaced, VIN # is written in the memory of the replaced unit by transmitting data from the Communicator Response Center.

Note: No data can be changed in this CONSULT mode.

Trouble Diagnoses

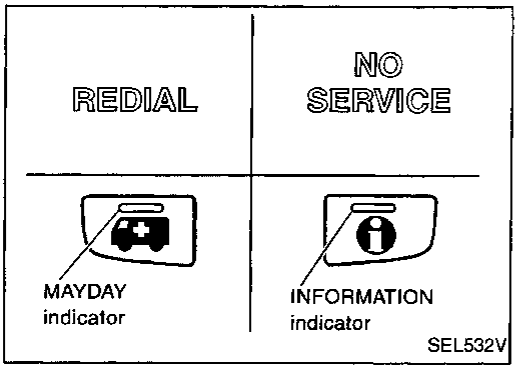
WORK FLOW



WARNING:

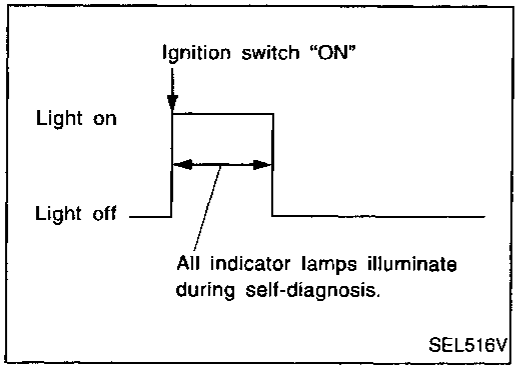
- **Whenever possible, set the system to "Demonstration mode" if INFINITI Communicator system needs to be activated during service procedures. (For details of the demonstration mode, refer to EL-351.)**
- **If you activate the INFINITI Communicator system (when the system is not in the demonstration mode), the Communicator Response Center operator may dispatch police.**

Trouble Diagnoses (Cont'd)



PRELIMINARY CHECK

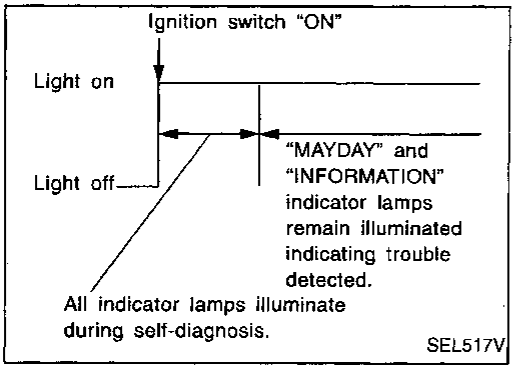
1. Turn ignition switch ON.
2. Check "MAYDAY", "INFORMATION", "REDIAL" and "NO SERVICE" indicator lamps operation.



- If no failure is detected, indicator lamps will turn off after the bulb check (self-diagnosis) is terminated for about 30 seconds or more.

NOTE:

- Bulb check (self-diagnosis) is not performed unless the ignition switch has been turned off for at least 3 minutes.
- Bulb check is not performed during contact with Communicator Response Center.



- If the system detects problems, both "MAYDAY" and "INFORMATION" indicator lamps remain illuminated. Perform self-diagnosis using CONSULT and repair or replace the system. Refer to "How to Perform Self-diagnosis", EL-338.

NOTE:
For details of indicator lamps operation, refer to "INDICATOR LAMPS OPERATION", EL-328.

SYMPTOM CHART 1 (CONSULT SELF-DIAGNOSIS ITEM)

Detected items (Screen items)	Description	Service procedure
CONNECTION ERROR [GPS ANTENNA]	Connection error between GPS antenna and IVCS unit.	Go to GPS ANTENNA CHECK, EL-348.
CELLULAR PHONE [TWB ERROR]	Communication error between CPU in the IVCS unit and transceiver	Replace IVCS unit.
MEMORY ERROR	Inner memory error of the IVCS unit	Replace IVCS unit.
CONNECTION ERROR [AIR BAG]	Connection error between air bag diagnosis sensor unit and IVCS unit.	Go to AIR BAG DIAGNOSIS SENSOR COMMUNICATION CHECK, EL-348.
CONNECTION ERROR [IVMS]	Connection error between door switch control unit (LCU04) and IVCS unit. If this error occurs, alarm notification and auto door unlock may not operate.	Go to IVMS (LAN) COMMUNICATION CHECK, EL-349.

NOTE: After replacing IVCS unit, set up the replaced IVCS unit. Refer to "System Setting (When IVCS Unit is Replaced.)" in EL-353.

Trouble Diagnoses (Cont'd)

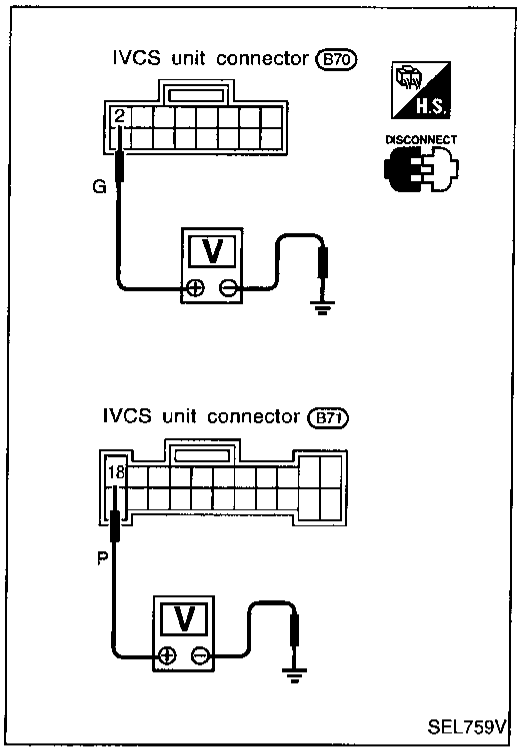
SYMPTOM CHART 2 (BASED ON SYMPTOM)

Before referencing this chart, confirm the operation of the indicator lamps. Refer to "PRELIMINARY CHECK" in EL-341. If the indicators show the system is malfunctioning, perform the self-diagnosis using CONSULT.

Symptom	Diagnoses/service procedure	Reference page
"MAYDAY", "INFORMATION", "RE-DIAL", "NO SERVICE" indicator lamps do not illuminate when ignition switch is turned to ON position. (Bulb check is NG.)	1. Power supply and ground circuit for IVCS unit check	EL-343
	2. Indicator lamps check	EL-344
Mayday/Information call does not operate.	1. IVCS switch check	EL-345
	2. INFINITI Communicator operation check in demonstration mode	EL-351
Remote door unlocking function does not operate.	1. Driver's outside door handle switch check	EL-346
	2. Remote door unlock function check	EL-347
	3. INFINITI Communicator operation check in demonstration mode	EL-351
Stolen vehicle tracking function does not operate.	1. Stolen vehicle tracking setting check (Check whether the function is disabled or not.)	EL-347
	2. INFINITI Communicator operation check in demonstration mode	EL-351
Alarm notification function does not operate.	1. Alarm notification setting check (Check whether the function is disabled or not.)	EL-347
	2. INFINITI Communicator operation check in demonstration mode	EL-351
Hands free telephone cannot be operated by using steering switch. (Cellular phone operates properly by using optional handset.)	1. Telephone steering switch check	EL-349
No sounds related to the telephone are heard from Front RH speaker. (If the audio does not operate properly, check the audio system.)	1. Check harness for open or short between IVCS unit and radio.	—
The "NO SERVICE" indicator lamp is not turned off. (If a contract with telephone carrier has not been made, the indicator lamp remains illuminated.)	1. Make sure the vehicle is in an area with cellular service.	—
	2. Check cellular phone antenna feeder cable connection.	—
Cellular phone does not operate properly.	1. Check hand set connector connection.	—
	2. Check hand set.	—
No sound is transmitted to the other party by hands free telephone.	1. Check harness for open or short between IVCS unit and microphone.	—
	2. Replace microphone. (IVCS switch assembly)	—

Trouble Diagnoses (Cont'd)

POWER SUPPLY AND GROUND CIRCUIT FOR IVCS UNIT CHECK

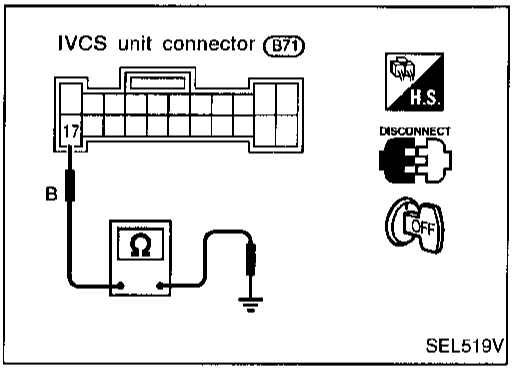


Main power supply circuit check

Terminal		Ignition switch		
(+)	(−)	OFF	ACC	ON
⑱	Ground	Battery voltage	Battery voltage	Battery voltage
②	Ground	0V	0V	Battery voltage

If NG, check the following:

- 15A fuse [No. 62, located in fuse and fusible link box]
- 7.5A fuse [No. 12, located in fuse block (J/B)]
- Harness for open or short between fuse and IVCS unit



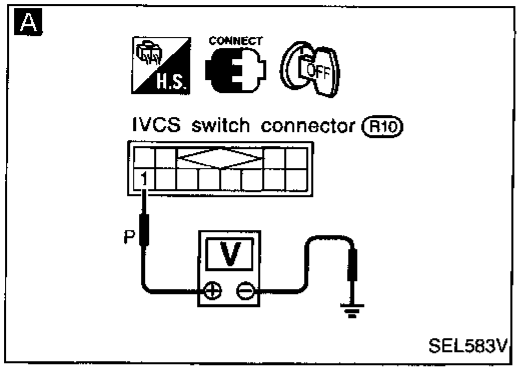
Ground circuit check

Terminals	Continuity
⑰ - Ground	Yes

Trouble Diagnoses (Cont'd)

INDICATOR LAMPS CHECK

A

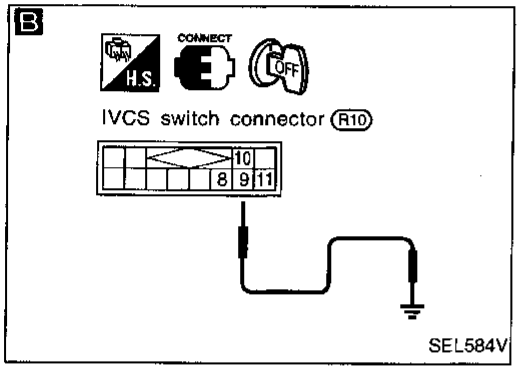


CHECK POWER SUPPLY FOR INDICATOR LAMPS.
Check voltage between IVCS switch terminal ① and ground.
Does battery voltage exist?

No → Check the following.
- 15A fuse (No. 62, located in fuse and fusible link box)
- Harness for open or short between fuse and IVCS switch

Yes ↓

B



CHECK INDICATOR LAMPS.
1. Disconnect IVCS unit connector (Control unit connector).
2. Apply ground to IVCS switch each terminal and check illumination.

Indicator	Terminal
Redial	⑧
No service	⑨
Mayday	⑩
Information	⑪

NG → Replace IVCS switch assembly.

OK ↓

Check harness for open or short between indicators and IVCS unit.

Trouble Diagnoses (Cont'd)

IVCS SWITCH CHECK

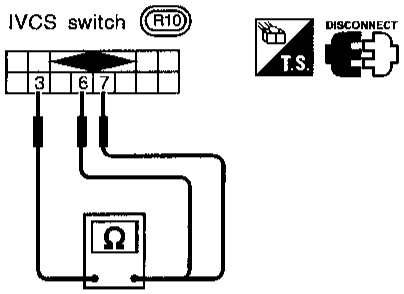
A

■ SWITCH MONITOR ■

MAYDAY	OFF
INFORMATION	OFF
LH DR HANDLE	OFF

SEL520V

B



SEL521V

A

CHECK IVCS SWITCH INPUT SIGNAL.

1. Turn ignition switch "ON".
2. Select "SWITCH MONITOR" in "DATA MONITOR" mode.
3. Check each switch signal.
   When MAYDAY/INFORMATION switch is pushed:
   MAYDAY/INFORMATION ON
   When MAYDAY/INFORMATION switch is released:
   MAYDAY/INFORMATION OFF

NOTE:
When CONSULT "Data mode" is operating, INFINITI Communicator does not dial to Communicator Response Center when the switches are operated.

OK → IVCS switch is OK.

NG ↓

B

CHECK IVCS SWITCH.

1. Disconnect IVCS switch.
2. Check continuity between IVCS switch terminals.

Terminals	Condition	Continuity
⑥ - ③	Mayday switch is turned ON.	Yes
	Mayday switch is OFF.	No
⑦ - ③	Information switch is turned ON.	Yes
	Information switch is OFF.	No

OK → Check the following:
- IVCS switch ground circuit
- Harness for open or short between IVCS switch and IVCS unit.

NG ↓

Replace IVCS switch assembly.

Trouble Diagnoses (Cont'd)

DRIVER'S OUTSIDE DOOR HANDLE SWITCH CHECK

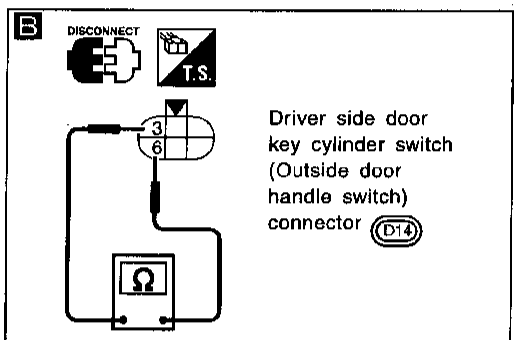
A

■ SWITCH MONITOR ■

MAYDAY	OFF
INFORMATION	OFF
LH DR HANDLE	OFF

SEL520V

B



Driver side door key cylinder switch (Outside door handle switch) connector D14

SEL522V

A

CHECK OUTSIDE DOOR HANDLE SWITCH INPUT SIGNAL.

1. Turn ignition switch "ON".
2. Select "SWITCH MONITOR" in "DATA MONITOR" mode.
3. Check the switch operation.
   When driver side outside door handle is pulled:
   LH DR HANDLE ON
   When driver side outside door handle is released:
   LH DR HANDLE OFF

NOTE:
When CONSULT "Data mode" is operating, INFINITI Communicator do not dial to Communicator Response Center when the switches are operated.

OK → Driver's door outside handle switch is OK.

NG ↓

B

CHECK OUTSIDE DOOR HANDLE SWITCH.

1. Disconnect driver side door key cylinder switch connector. (outside door handle switch connector is combined with the key cylinder switch.)
2. Check continuity between the door key cylinder switch terminal ③ and ⑥.

Outside door handle switch condition	Continuity
Pulled	Yes
Released	No

OK → Check the following.
- Outside door handle switch ground circuit
- Harness for open or short between outside door handle switch and IVCS unit.

NG ↓

Replace outside door handle switch.

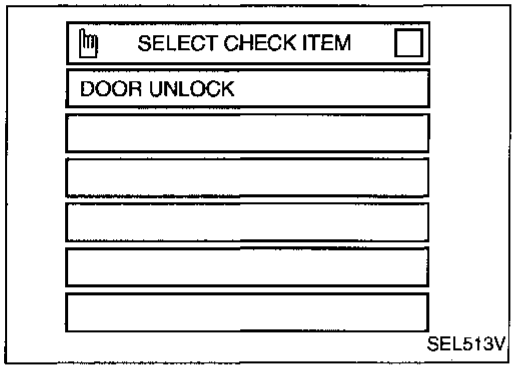
Trouble Diagnoses (Cont'd)

REMOTE DOOR UNLOCK FUNCTION CHECK (CONSULT "FUNCTION CHECK" MODE)

Description

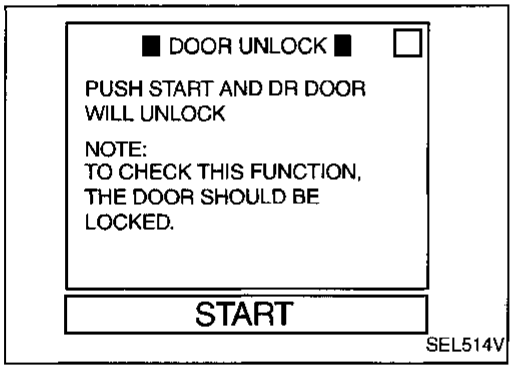
"Remote door unlock function" can be checked using CONSULT. Driver side door can be unlocked according to the commands to the door LCU by the IVCS unit.

Note:
Before performing the function check, confirm that power door lock system operates properly.



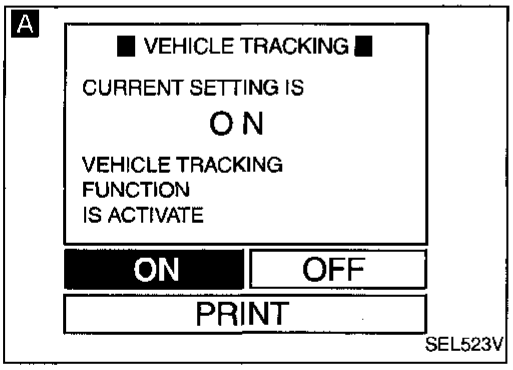
How to perform function check.

1. Lock the doors with door lock/unlock switch on driver's door trim.
2. Touch "FUNCTION CHECK".
3. Touch "DOOR UNLOCK".



4. Touch "START". Then driver side door will be unlocked.

- If the door cannot be unlocked using CONSULT, check harness for open or short between rear LH door control unit (LCU04) terminal ③ and IVCS unit terminal ㉜.



STOLEN VEHICLE TRACKING/ALARM NOTIFICATION SETTING CHECK (CONSULT "CONFIGURATION" MODE)

A

CHECK SYSTEM SETTING.

1. Turn ignition switch "ON".
2. Select "VHCL TRACKING" or "ALARM NOTIFICATION" in "CONFIGURATION" mode.
3. Check the function setting.

- "ON" shows the function is activated.
- "OFF" shows the function is deactivated.

Does the system setting comply with the customer's contract?

NOTE:
Setting of "VEHICLE TRACKING" must be ON at any time.

NG → If either setting is "OFF", contact the Communicator Response Center at 1-888-427-4812 to verify the system setting.
NOTE:
Whenever dialing the above number, some information about the vehicle is required by the operator. For details, refer to EL-323.

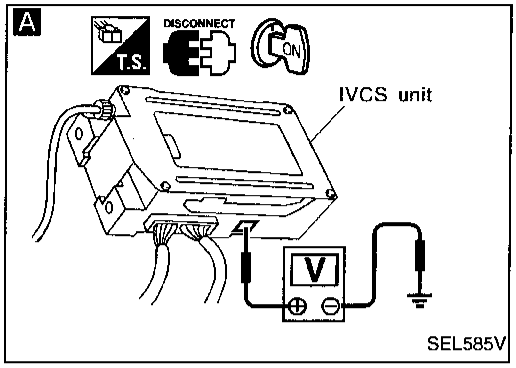
OK ↓

System setting is OK.

Trouble Diagnoses (Cont'd)

GPS ANTENNA CHECK

A



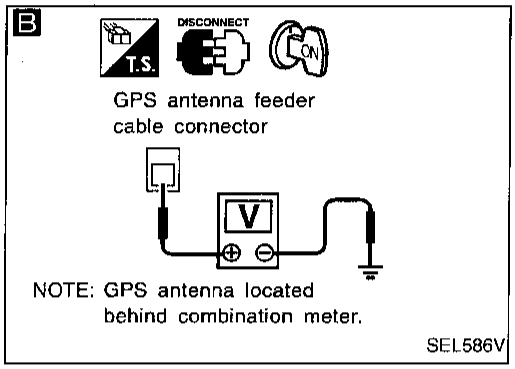
CHECK VOLTAGE FOR GPS ANTENNA.
1. Disconnect GPS feeder cable connector from IVCS unit.
2. Turn ignition switch ON.
3. Check voltage at IVCS unit GPS feeder cable terminal.

Does approx. 5V exist?

No → Replace IVCS unit.

Yes ↓

B



CHECK GPS FEEDER CABLE.
1. Connect GPS feeder cable connector to IVCS unit.
2. Disconnect GPS feeder cable connector from GPS antenna.
3. Turn ignition switch ON.
4. Check voltage at GPS feeder cable terminal.

Does approx. 5V exist?

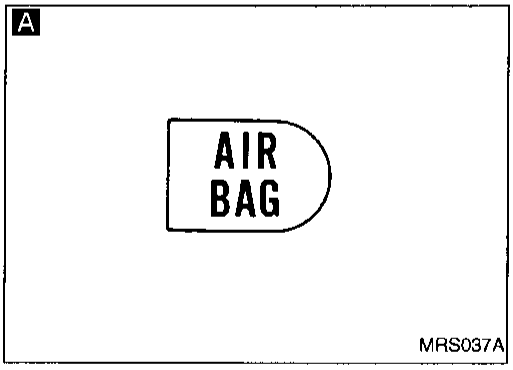
No → Replace GPS antenna feeder cable.

Yes ↓

Replace GPS antenna.

AIR BAG DIAGNOSES SENSOR UNIT COMMUNICATION CHECK

A



AIR BAG OPERATION CHECK

Turn ignition switch ON and check air bag warning lamp operation. (For details, refer to RS section.)

Does air bag warning lamp operate properly?

No → Check supplemental restraint system. Refer to RS section in the Service manual.

Yes ↓

Check harness connector connection between air bag diagnosis sensor unit and IVCS unit.

Trouble Diagnoses (Cont'd)

IVMS (LAN) COMMUNICATION CHECK

CHECK IVMS OPERATION.
Check the system related rear LH door control unit (LCU04) operation (e.g.: power door lock, power window).
Do the systems operate properly?

No → Check IVMS (LAN), refer to "IVMS (LAN)" in the Service manual.

Yes ↓

Check harness for open or short between rear LH door control unit (LCU04) terminal ④ and IVCS unit terminal ㉝.

TELEPHONE STEERING SWITCH CHECK

CHECK POWER SUPPLY FOR STEERING SWITCH.
Does horn work?

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

Yes ↓

CHECK STEERING SWITCH SUB HARNESS.
1. Remove driver's air bag module. For removal procedure, refer to RS section.
2. Check steering switch sub-harness for open or short and ground screw.
   For details of the harness circuit, refer to "STEERING SWITCH", EL-37.

NG → Replace or repair the harness.

OK ↓

Check harness for open or short between telephone steering switch and IVCS unit.
If the circuit is OK, replace telephone steering switch.

Trouble Diagnoses for Intermittent Incident

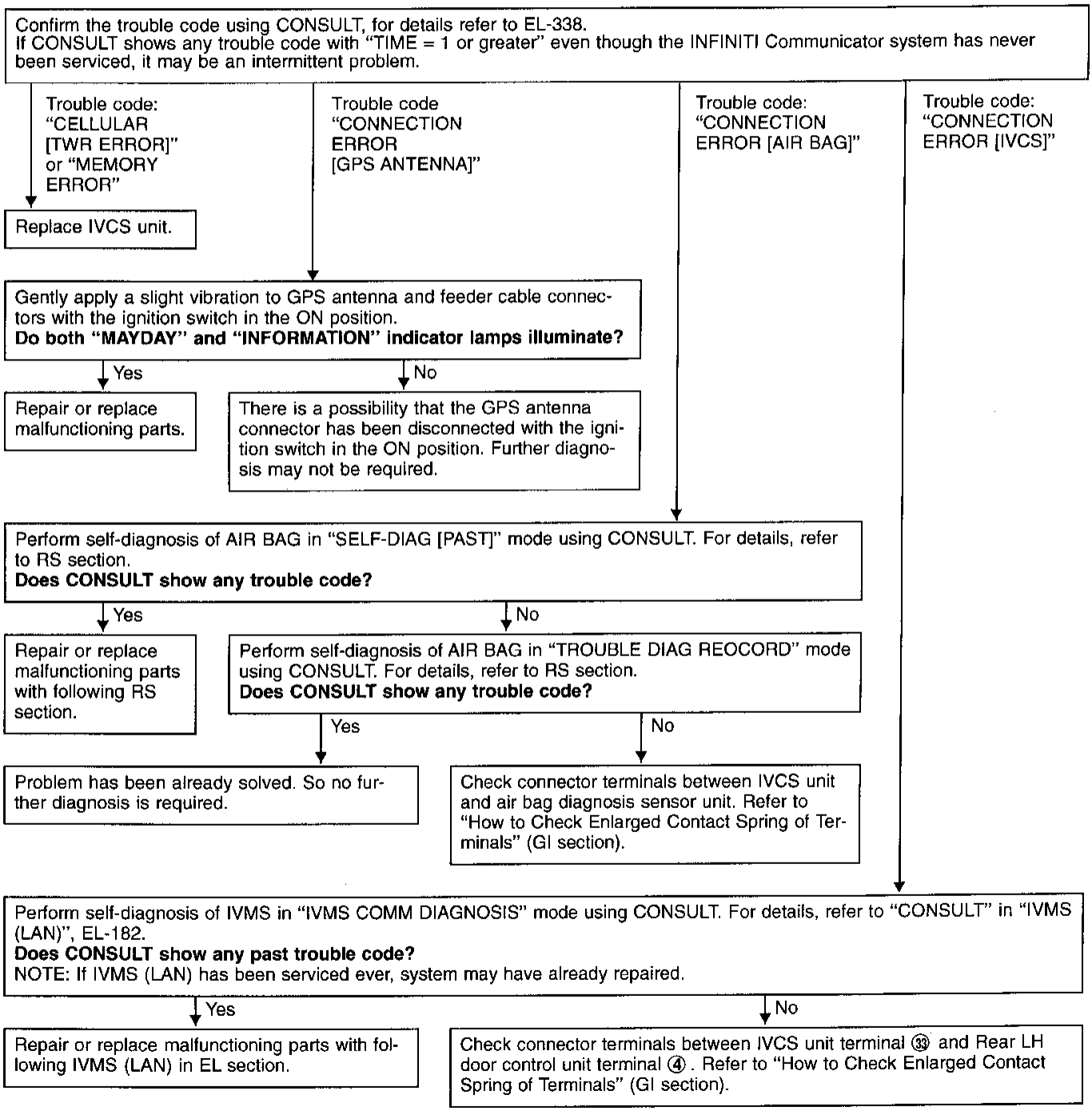
DESCRIPTION

An intermittent incident may be occurring if all of the following conditions exist.

- Both "MAYDAY" emergency and "INFORMATION" indicators have shown that the system is malfunctioning.
- CONSULT self-diagnosis result screen indicates a trouble code with "TIME = 1 or greater".
- The INFINITI Communicator system has not been previously serviced.

To find out the cause of a problem, follow the procedures shown below.

DIAGNOSTIC PROCEDURE



NOTE:
Enlarged spring contact of terminals may be cause of intermittent problem for "CONNECTION ERROR [AIR BAG]/[IVMS]". When you inspect terminals for enlarged contact, refer to "How to Check Enlarged Contact Spring of Terminals" in GI section.

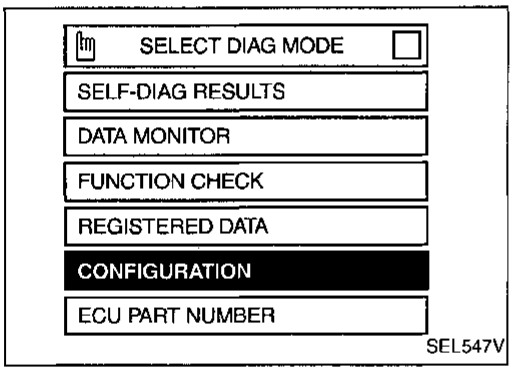
Demonstration Mode

DESCRIPTION

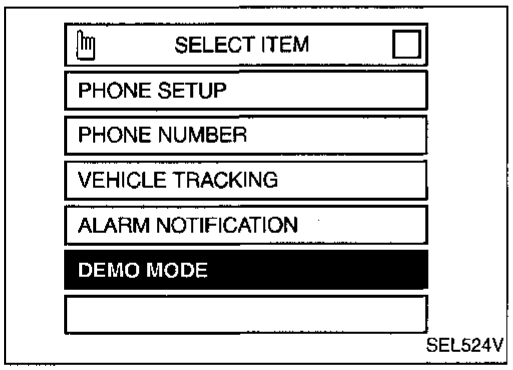
By setting up the system in the demonstration mode, automatic dialing operation can be confirmed by "MAYDAY" emergency and "INFORMATION" switch operation.
Automatic dialing in this mode is connected to the demonstration center of Communicator Response Center, and is different from the normal service.
When the contract with Communicator Response Center is not concluded, all the INFINITI Communicator operations are connected to the demonstration center.
Connection to Communicator Response Center in this mode will not be charged by Communicator Response Center nor will the call be handled as an emergency.

SYSTEM OPERATION CHECK

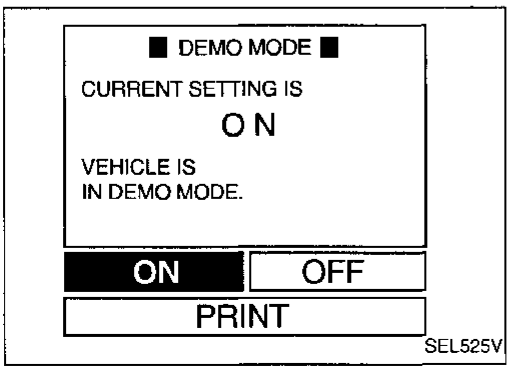
1. Touch "CONFIGURATION".



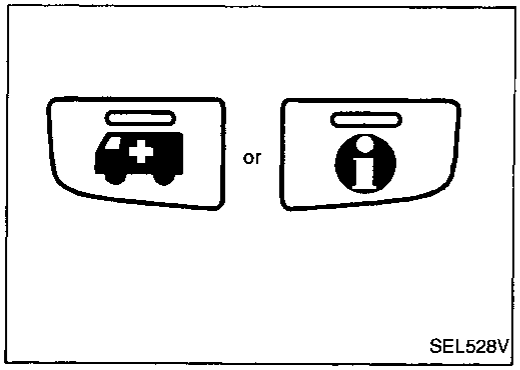
2. Touch "DEMO MODE".



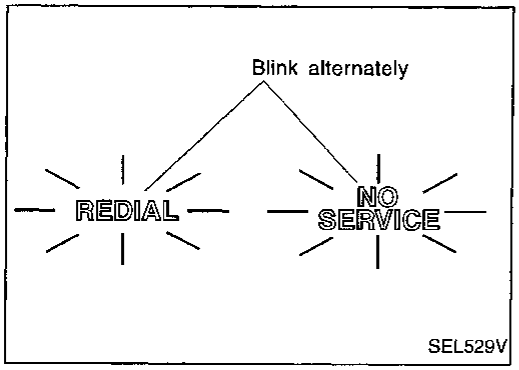
3. Touch "ON". Now, the system is in demonstration mode. (To return to normal mode, touch "OFF".)



Demonstration Mode (Cont'd)



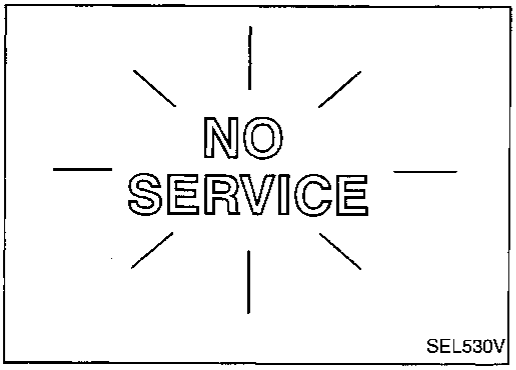
4. Touch "BACK" key of CONSULT until "SELECT SYSTEM" appears, then turn off CONSULT.
5. Turn ignition switch to the OFF position.
6. Disconnect CONSULT DDL connector.
7. Start the engine.
8. Touch the "MAYDAY" or "INFORMATION" switches. Then the system will call the demonstration center.



9. Check INFINITI Communicator operation.

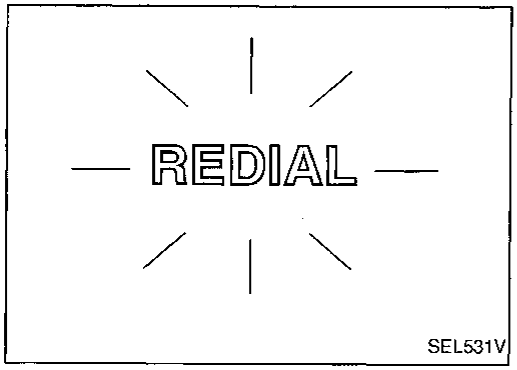
- If contact with Communicator Response Center is successful, system is OK.

NOTE:
During the system contact to Communicator Response Center in demonstration mode, "REDIAL" and "NO SERVICE" indicators blink alternately.



- If "NO SERVICE" indicator illuminates and the contact to Communicator Response Center is unsuccessful, retry from other location where the cellular connection seems good. (e.g.; move the vehicle outside of the workshop and retry.)

NOTE:
If "NO SERVICE" indicator frequently illuminates from a location where the cellular connection seems good, check the connection of the feeder cable for the cellular phone antenna.



- If "REDIAL" indicator lamp illuminates and the contact to Communicator Response Center is unsuccessful, the cellular network is busy or there are no open cellular channels. The system will redial automatically.

NOTE:
If redial fails several times, confirm whether the roaming agreement of customer's cellular provider at the vehicle location is available or not.

Warning:

- **Make sure to turn the demonstration mode OFF before returning the vehicle to the owner.**
- **In the demonstration mode, any service from Communicator Response Center is not available. Therefore, even if the customer encounters an emergency, no service will be dispatched.**

System Setting (When IVCS unit is replaced)

DESCRIPTION

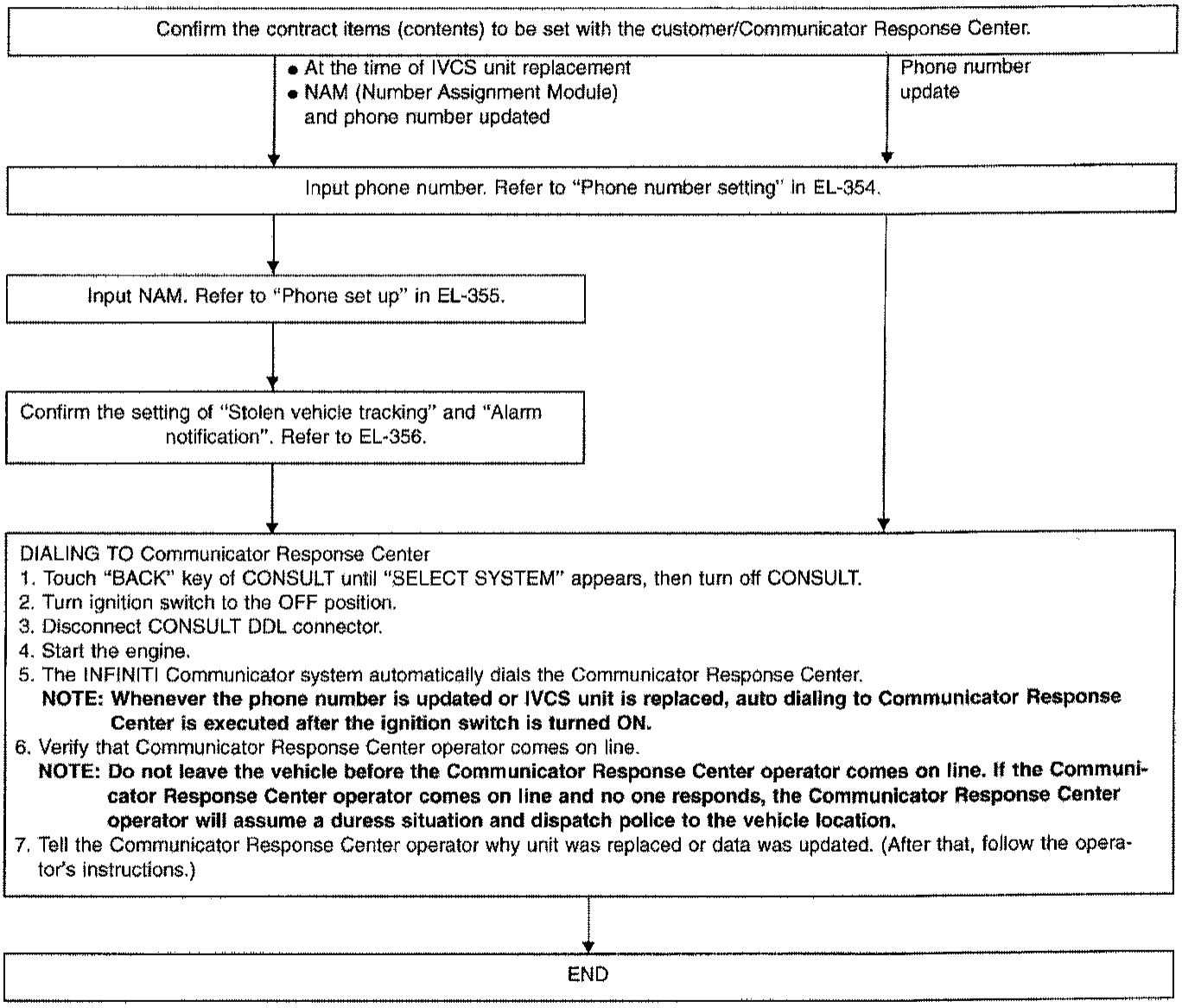
When the IVCS unit is replaced, carry out the following data settings.

- Phone setup — Data setting regarding NAM (Number Assignment Module)
- Phone number — Phone number setting

NOTE:

- **Data must not be updated without prior approval from the customer.**
- **NAM and phone number can program by using optional handset. For details, refer to the handset operation manual.**
- **The IVCS unit does not permit updating of NAM more than 15 times.**

WORK FLOW



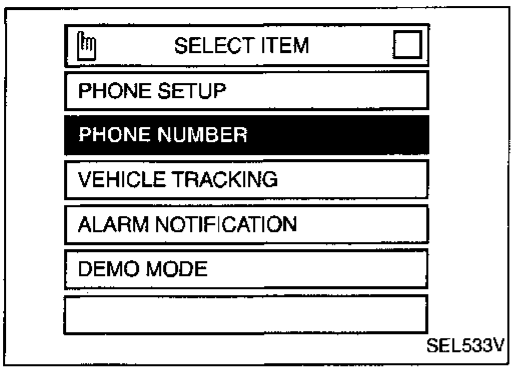
NOTE:

- **If a Communicator Response Center operator does not come on line even though the system activates, the system may not be properly configured. Call the Communicator Response Center at 1-888-427-4812 to verify the configuration information.**
- **Whenever dialing the above number, information about the vehicle is required by the operator. For details, refer to EL-323.**
- **Never release the vehicle to the customer unless INFINITI Communicator system operation is verified by a Communicator Response Center operator coming on line.**

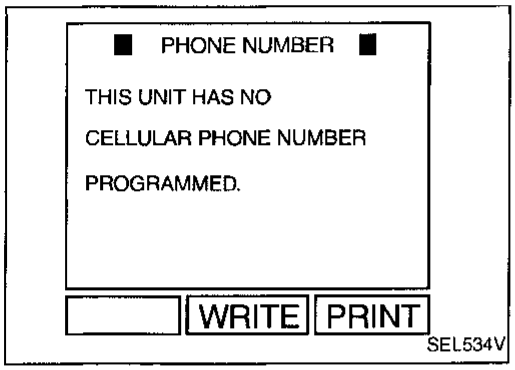
System Setting (When IVCS unit is replaced) (Cont'd)

PHONE NUMBER SETTING

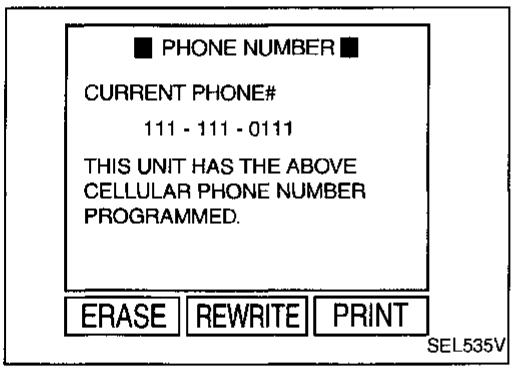
1. Touch "CONFIGURATION".
2. Touch "PHONE NUMBER".



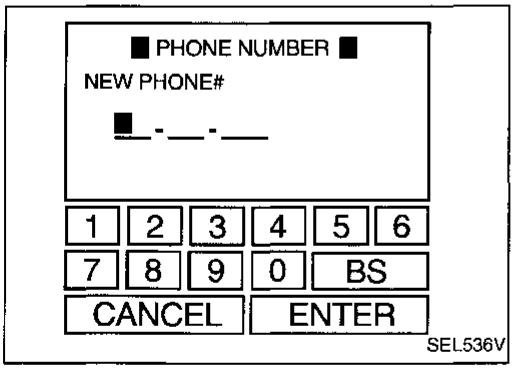
3. Touch "WRITE" or "REWRITE".
- If no phone number is previously memorized, the display shows "This unit has no cellular phone number programmed".



- If the phone number is previously memorized, the display shows the current phone number.
- To erase the phone number, touch "ERASE".

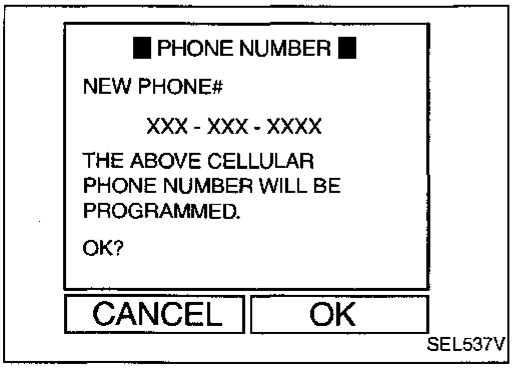


4. Input new phone number.
5. Touch "ENTER".

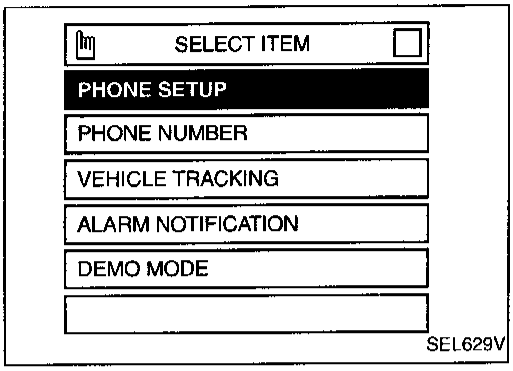


6. Touch "OK".
7. Carry out the next system setting or contact Communicator Response Center and inform them that data has been updated or the IVCS unit has been replaced. For details, refer to EL-353.

NOTE: Whenever the phone number is updated or the IVCS unit is replaced, the INFINITI Communicator system automatically contacts the Communicator Response Center the first time the vehicle is started.

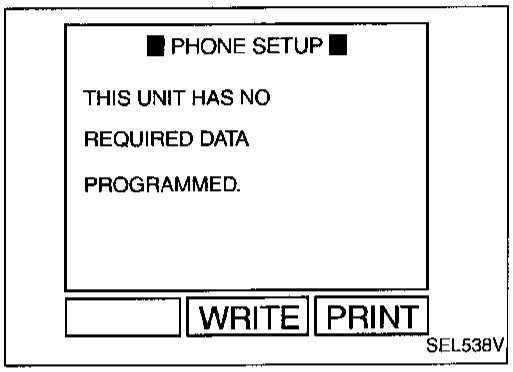


System Setting (When IVCS unit is replaced) (Cont'd)

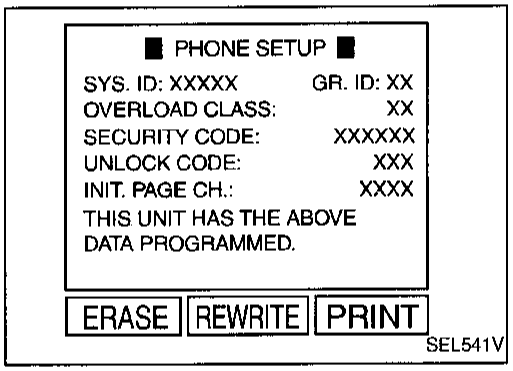


PHONE SET UP

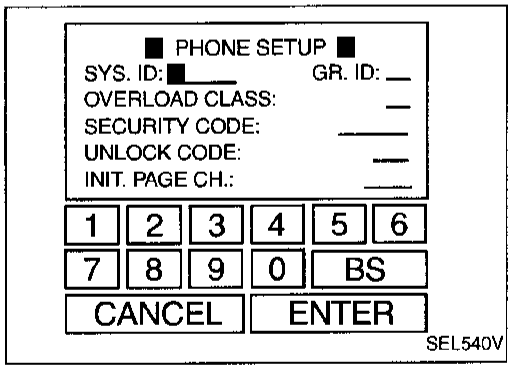
1. Touch "CONFIGURATION".
2. Touch "PHONE SET UP".



3. Touch "WRITE" or "REWRITE".
- If no data is previously memorized, the display shows "This unit has no required data programmed".



- If NAM (Number Assignment Module) data is previously memorized, the display shows the current NAM data.
- To erase the NAM, touch "ERASE".

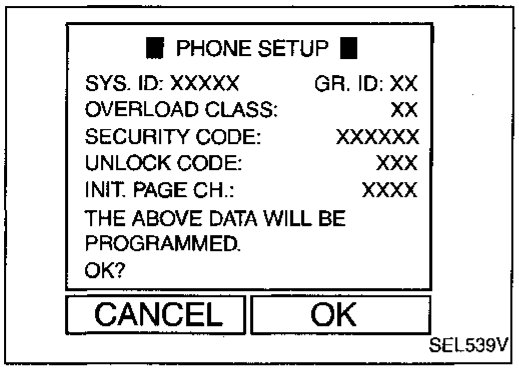


4. Input new NAM data.
- SYS ID (Carrier system ID number) — Available number: 0 to 32765
- GR ID (Group ID mark) — Available number: 0 to 15
- OVERLOAD CLASS (Access overload class) — Available number: 0 to 15
- SECURITY CODE (User security code)
- UNLOCK CODE
- INIT PAGE CH (Initial paging channel)

NOTE: If an unavailable number is input as "SYS ID", "GR ID" or "OVERLOAD CLASS", CONSULT may be locked. In such cases, disconnect the vehicle battery cable and setup the system again.

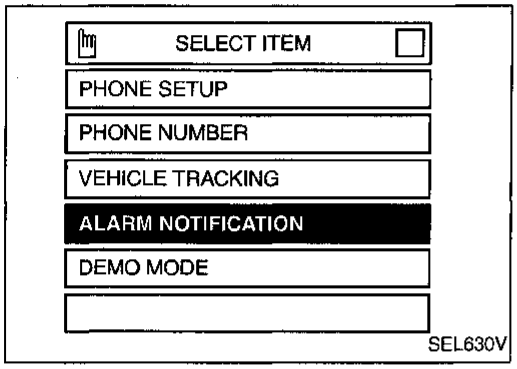
5. Touch "ENTER".

System Setting (When IVCS unit is replaced) (Cont'd)



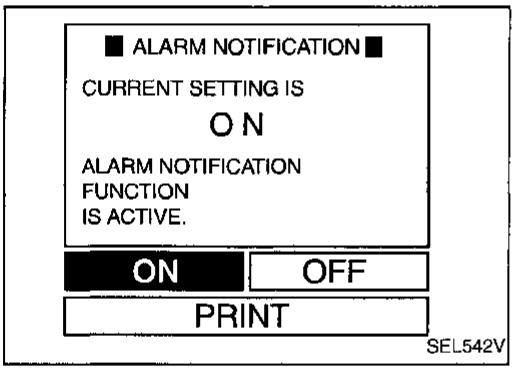
6. Touch "OK".
7. Carry out the next system setting or contact Communicator Response Center and inform them that data has been updated or IVCS unit has been replaced. For details, refer to EL-353.

NOTE: Whenever the phone number is updated or the IVCS unit is replaced, the INFINITI Communicator system automatically contacts the Communicator Response Center the first time the vehicle is stared.



STOLEN VEHICLE TRACKING/ALARM NOTIFICATION SETTING CHECK

1. Touch "CONFIGURATION".
2. Touch "VEHICLE TRACKING" or "ALARM NOTIFICATION".



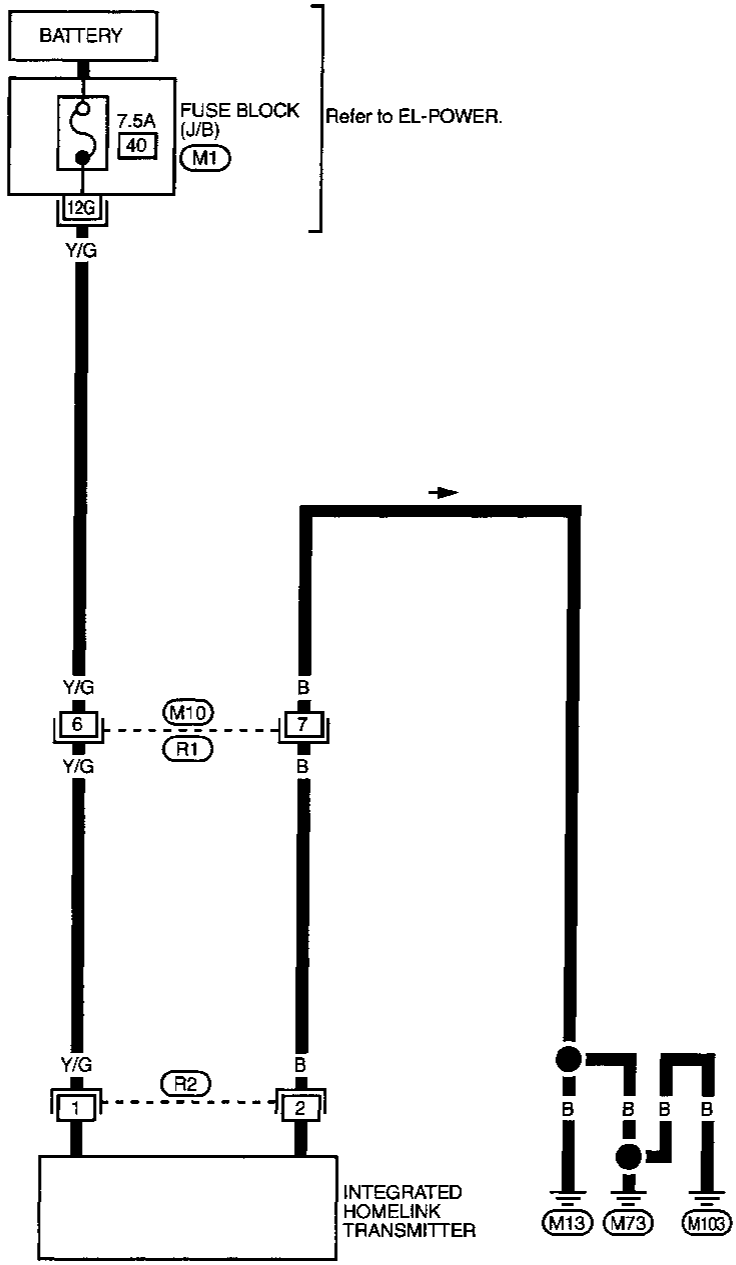
3. This function should always be "ON" (function activate.)

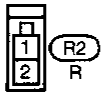
NOTE:

- **If either setting is "OFF", contact the Communicator Response Center at 1-888-427-4812 to verify the system setting.**
- **Whenever dialing the above number, information about the vehicle is required by the operator. For details, refer to EL-323.**

Wiring Diagram — TRNSMT —

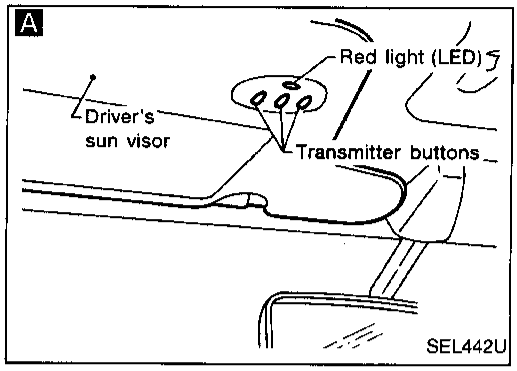
EL-TRNSMT-01

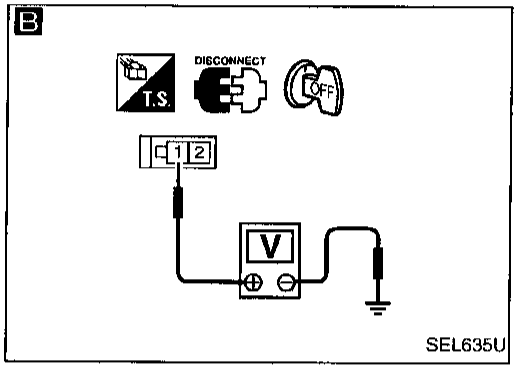


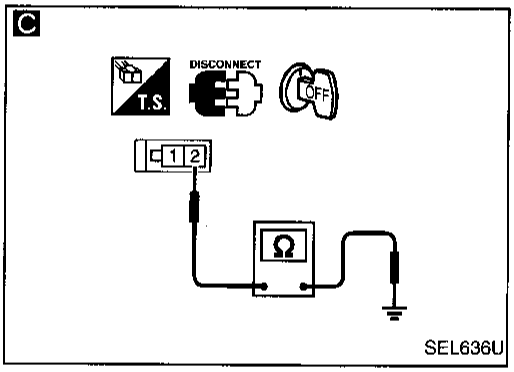


Refer to last page (Foldout page).
M1

MEL759H







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.

A

1. Turn ignition switch "OFF".
2. Does red light (LED) of transmitter illuminate when any button is pressed?

OK → Check transmitter with Tool*.

- OK → Receiver or hand-held transmitter fault, not vehicle related.
- NG → Replace transmitter with sun visor assembly.

NG ↓

B

POWER SUPPLY CHECK.

1. Disconnect transmitter connector.
2. Turn ignition switch "OFF".
3. Check voltage between terminal ① and ground.

Voltage: Battery voltage

NG → Check fuse (7.5A) and repair harness.

OK ↓

C

GROUND CIRCUIT CHECK.

Check continuity between terminal ② and body ground.

Continuity should exist.

NG → Repair harness.

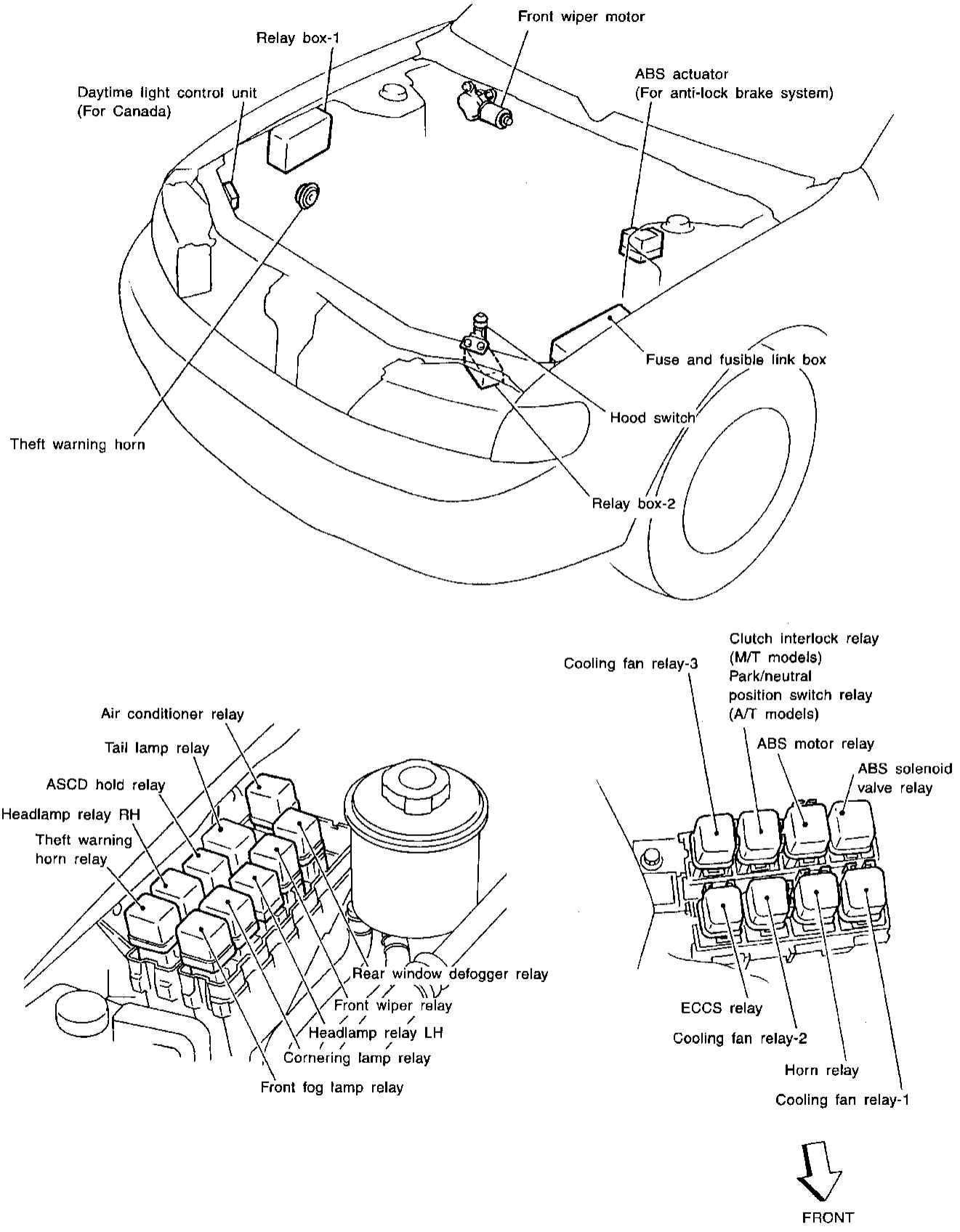
OK ↓

Replace transmitter with sun visor assembly.

*For details, refer to Technical Service Bulletin.

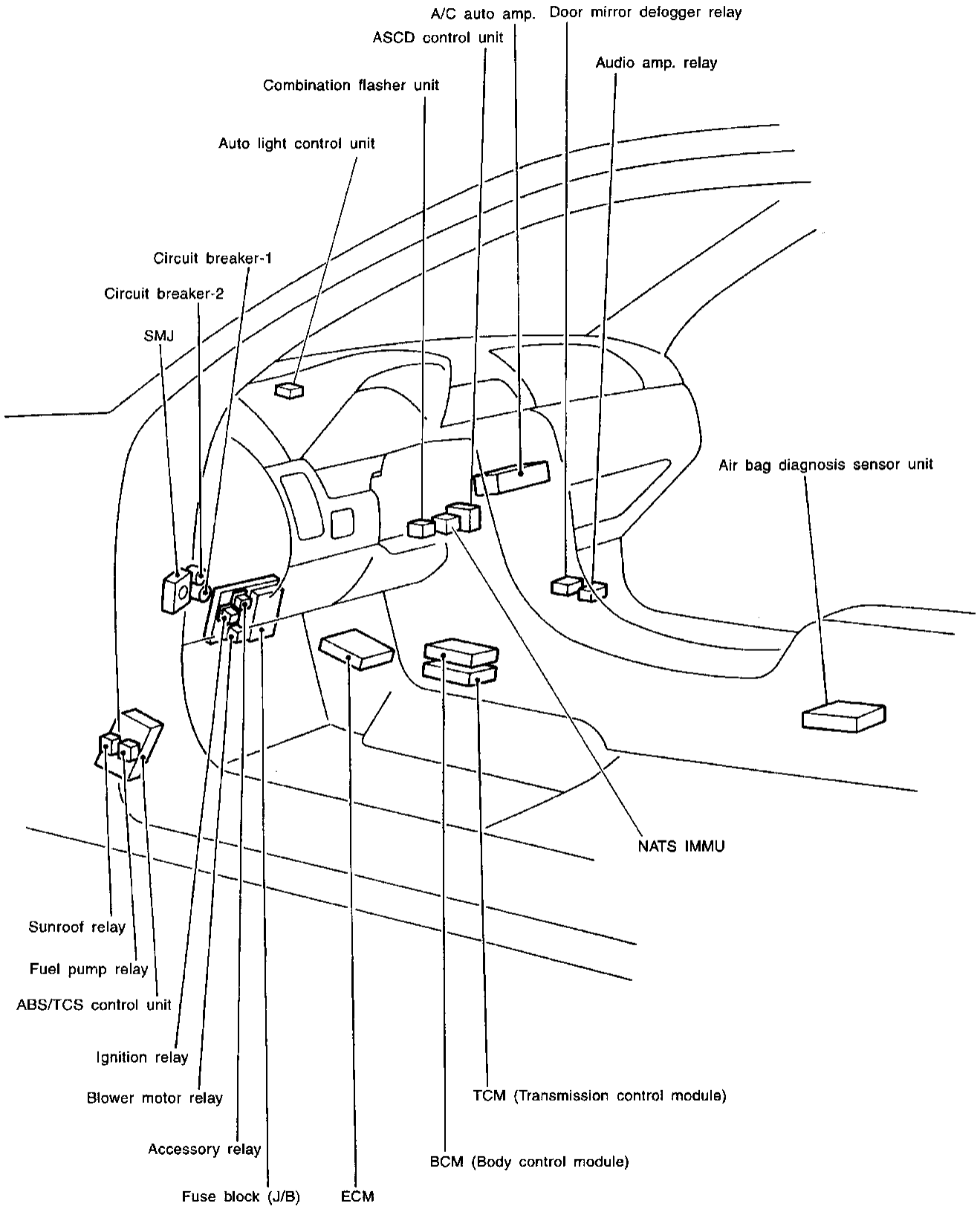
NOTE

Engine Compartment



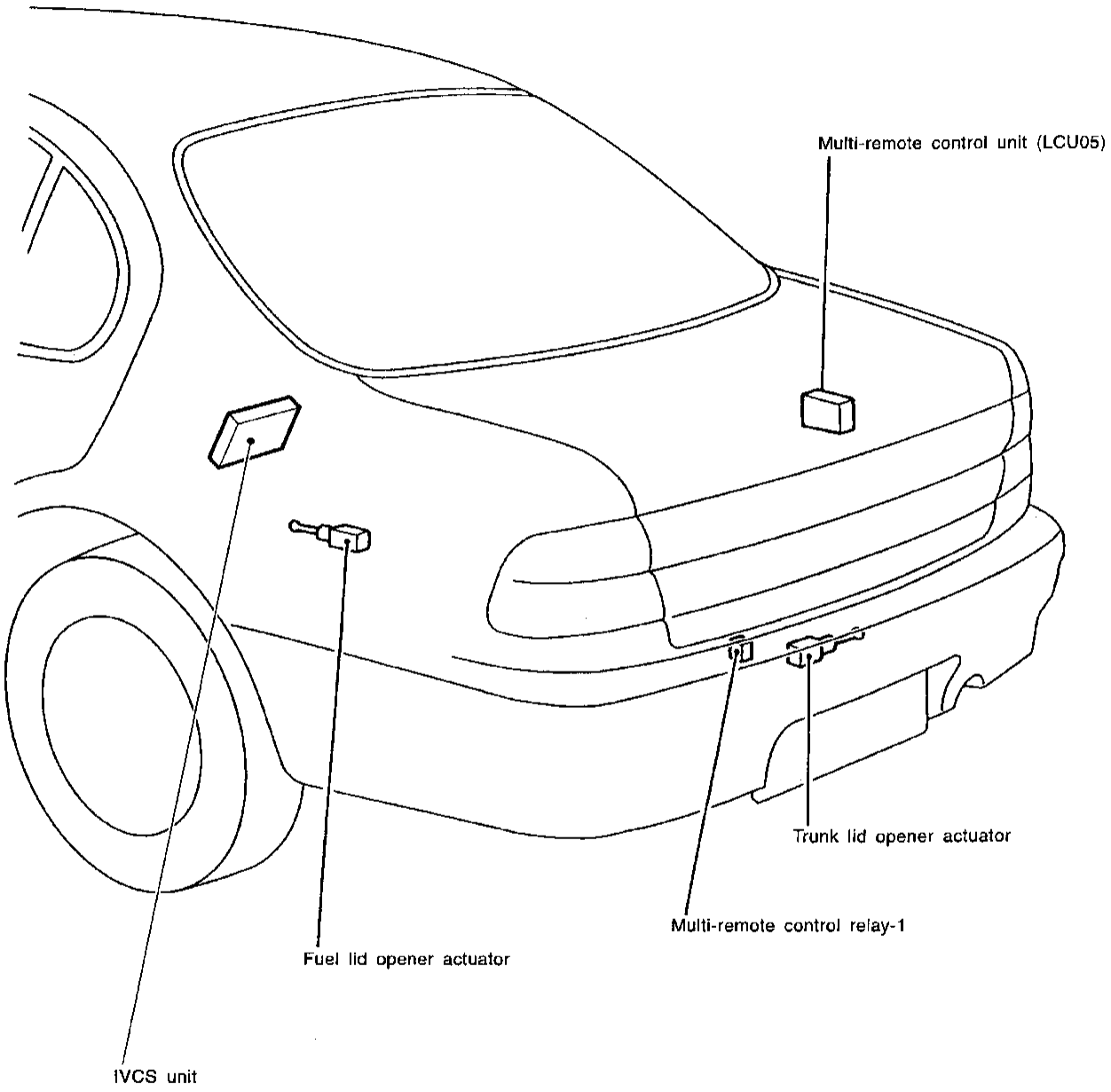
MEL047J

Passenger Compartment



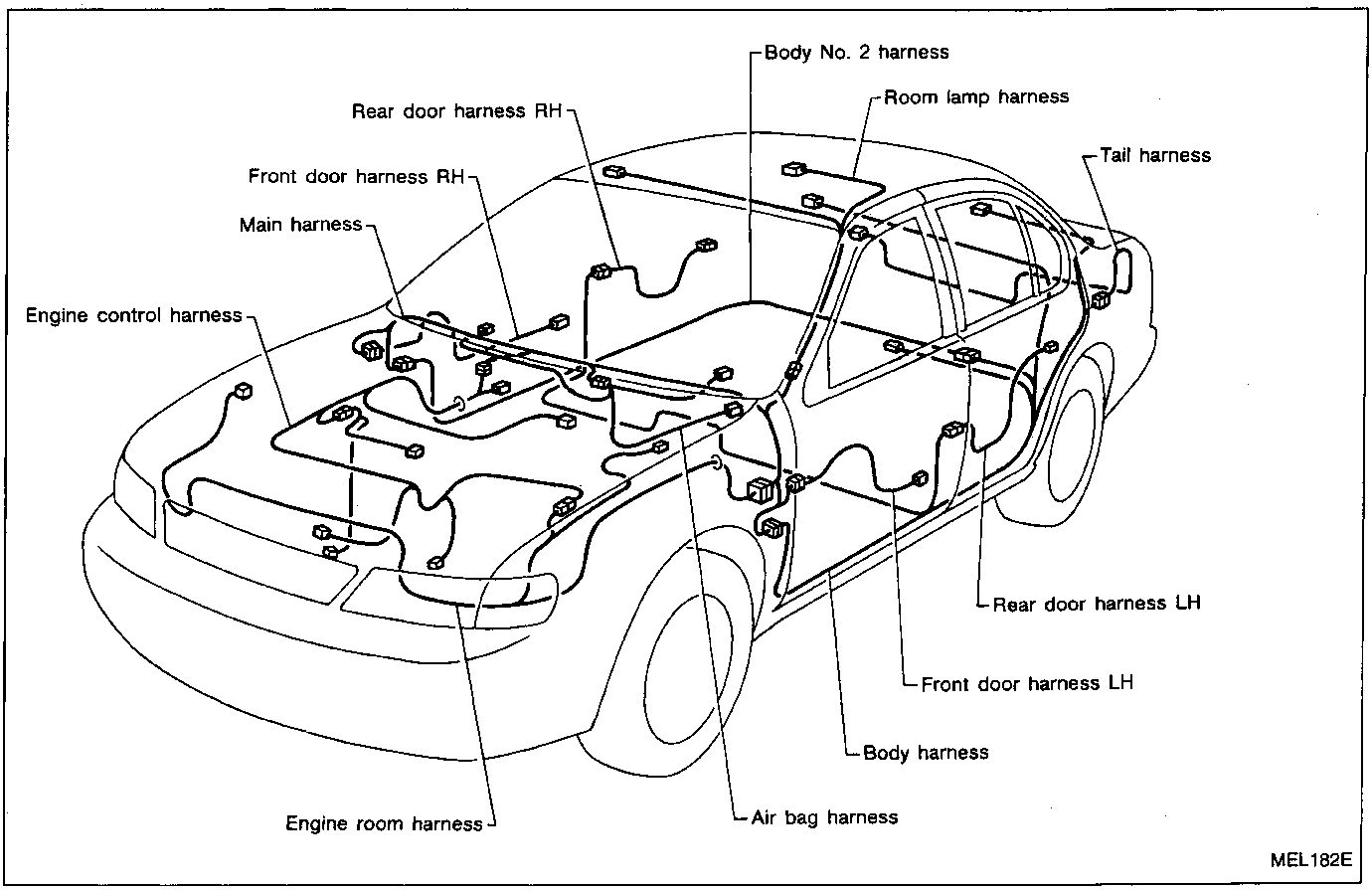
MEL048J

Luggage Compartment



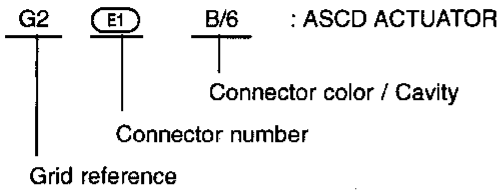
MEL049J

Outline


Body No. 2 harness
Room lamp harness
Rear door harness RH
Tail harness
Front door harness RH
Main harness
Engine control harness
Rear door harness LH
Front door harness LH
Body harness
Air bag harness
Engine room harness
MEL182E

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.

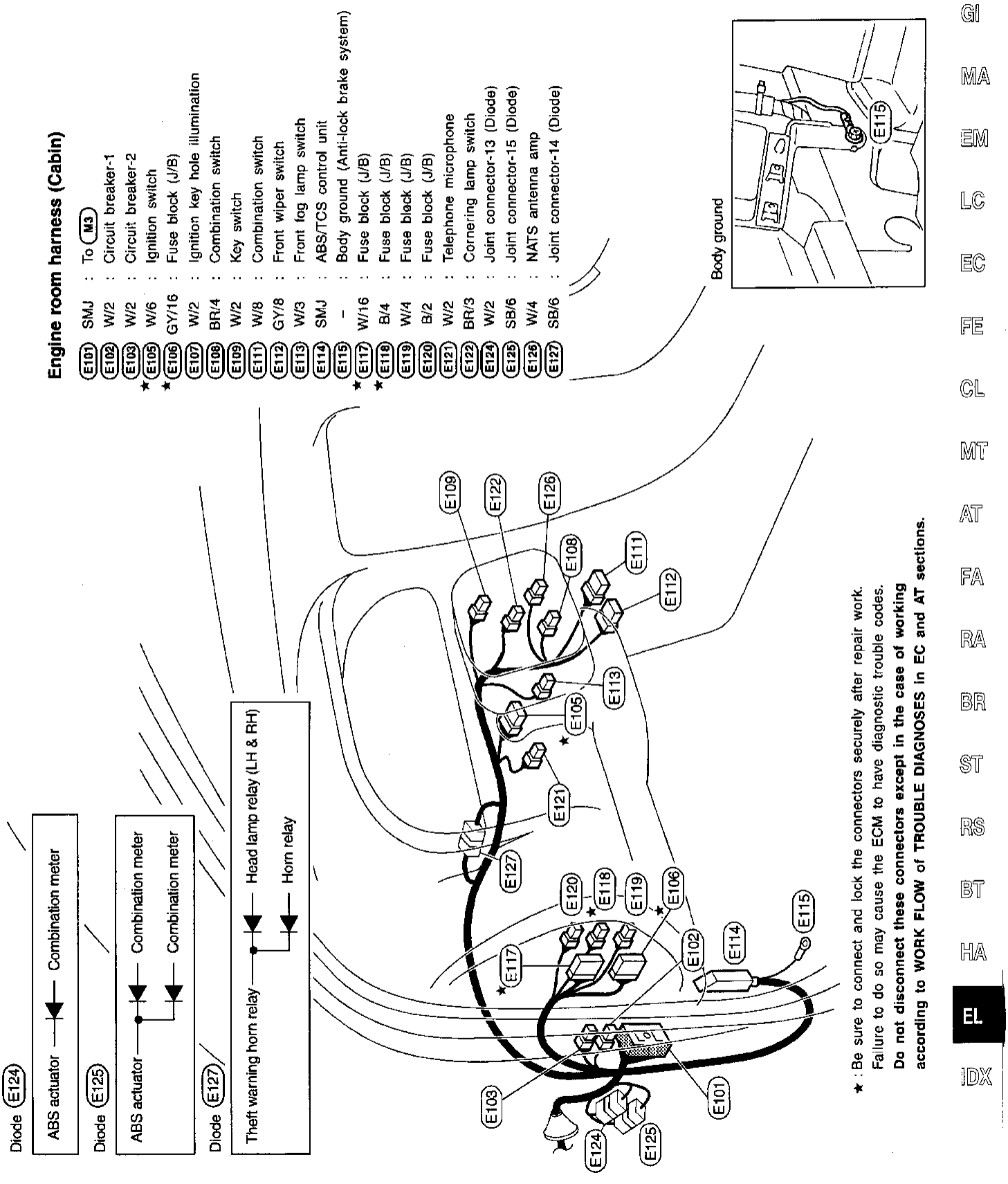
CONNECTOR SYMBOL

Main symbols of connector (in Harness Layout) are indicated in the below.

Connector type	Water proof type		Standard type	
	Male	Female	Male	Female
• Cavity: Less than 4 • Relay connector				
• Cavity: From 5 to 8				
• Cavity: More than 9	—	—		
• Ground terminal etc.	—			

Engine Room Harness

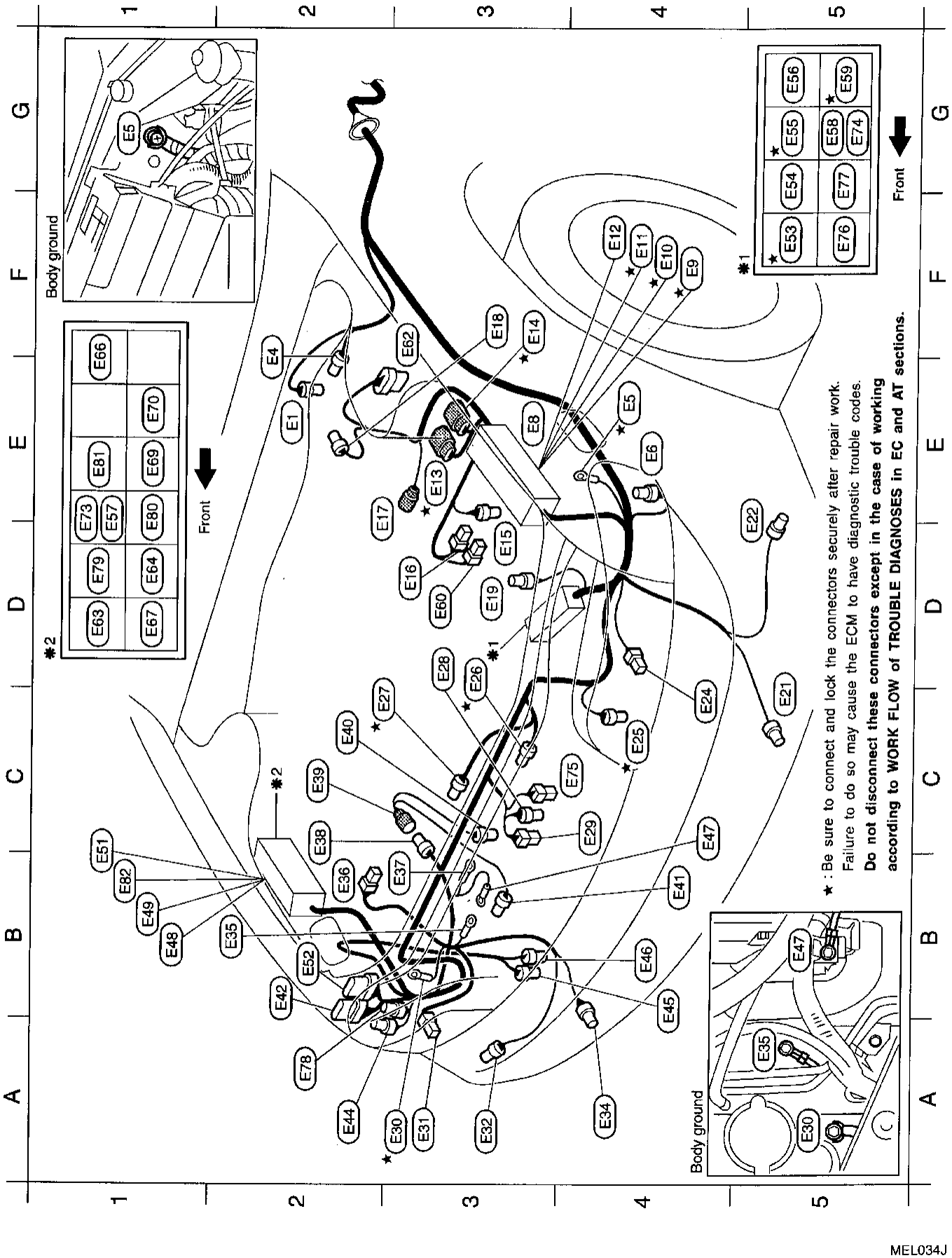
PASSENGER COMPARTMENT



MEL033J

Engine Room Harness (Cont'd)

ENGINE COMPARTMENT



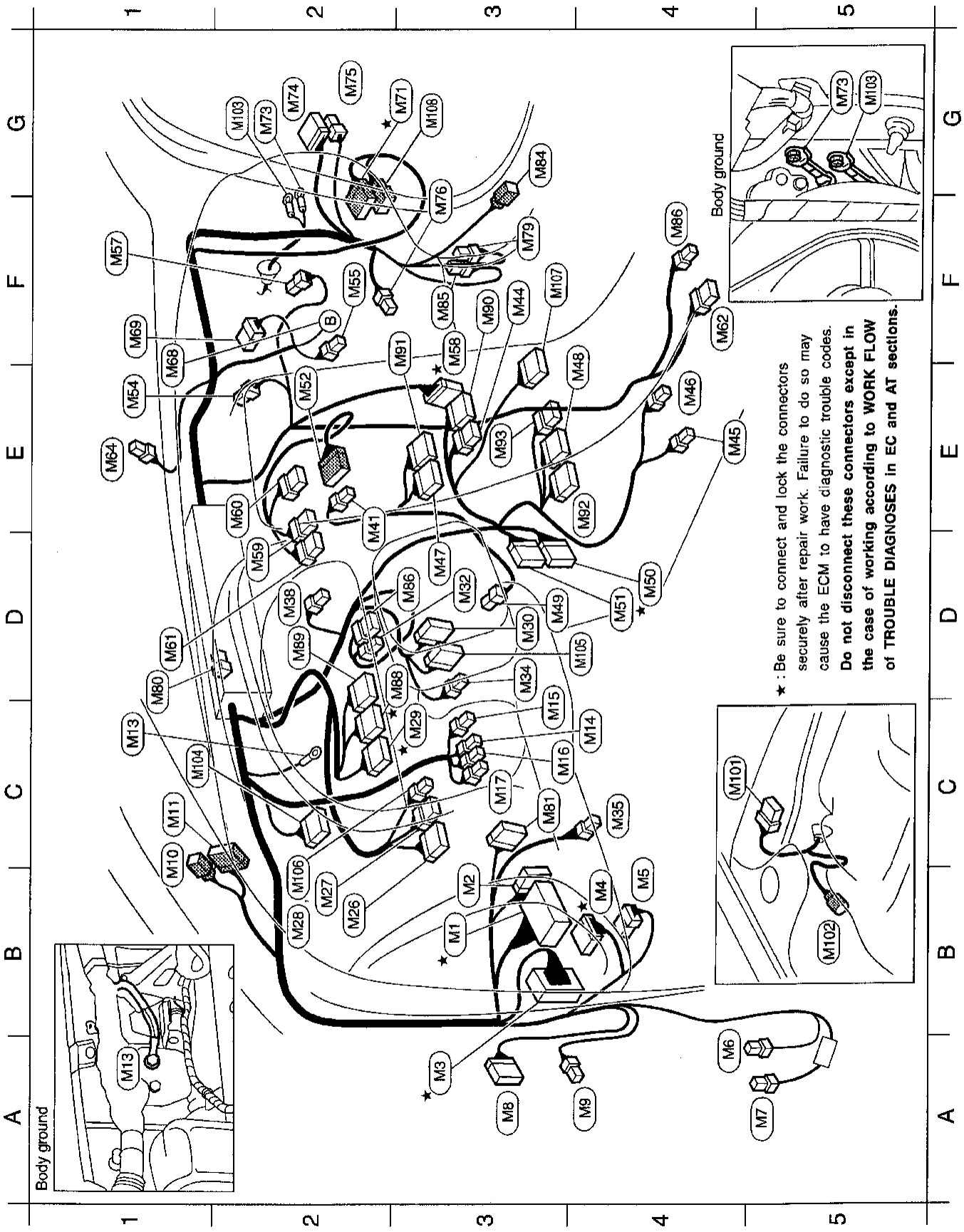
MEL034J

Engine room harness (Engine room)

E2	E1	GY/2	:	Brake fluid level switch
E2	E4	GY/4	:	ASCD pump
E4★	E5	–	:	Body ground
E4	E6	GY/3	:	Parking lamp and Front turn signal lamp LH
E3	E8	–	:	Fuse and fusible link box
F4★	E9	W/6	:	Joint connector-1
F4★	E10	W/6	:	Joint connector-2
F4★	E11	GY/6	:	Joint connector-3
F4	E12	W/6	:	Joint connector-4
E3★	E13	BR/8	:	To F36
F3★	E14	B/8	:	To F37
D3	E15	GY/1	:	Starter motor
D3	E16	B/1	:	Battery
E2	E17	BR/2	:	Front wheel sensor LH (Anti-lock brake system)
F3	E18	GY/2	:	ABS actuator
D3	E19	GY/2	:	Hood switch (Theft warning system)
C5	E21	GY/2	:	Front fog lamp LH
E5	E22	GY/2	:	Cornering lamp LH
C4	E24	B/3	:	Headlamp LH
C4★	E25	B/4	:	Triple-pressure switch
D3★	E26	GY/4	:	Cooling fan motor-1
C2★	E27	GY/4	:	Cooling fan motor-2
D3	E28	B/2	:	Ambient sensor
C4	E29	B/1	:	Horn high
A3★	E30	–	:	Body ground
A3	E31	B/3	:	Headlamp RH
A3	E32	GY/2	:	Cornering lamp RH
A4	E34	GY/2	:	Front fog lamp RH
B2	E35	–	:	Body ground
B2	E36	B/1	:	Theft warning horn
B3	E37	–	:	Alternator
C2	E38	GY/4	:	To E39
C2	E39	GY/4	:	To E38
C2	E40	GY/4	:	Alternator
B4	E41	B/1	:	Compressor
B2	E42	GY/8	:	Daytime light control unit (For Canada)
A2	E44	GY/3	:	Parking lamp and Front turn signal lamp RH
B4	E45	BR/2	:	Washer level switch (For Canada)
B4	E46	GY/2	:	Front washer motor
C4	E47	–	:	Alternator
B1	E48	W/6	:	Joint connector-5
B1	E49	GY/6	:	Joint connector-6
C1	E51	GY/6	:	Joint connector-8
B2	E52	GY/6	:	Daytime light control unit (For Canada)
F5★	E53	L/4	:	Cooling fan relay-1
G5	E54	W/3	:	Horn relay
G5★	E55	BR/6	:	Cooling fan relay-2
G5	E56	BR/6	:	ECCS relay
E1	E57	L/4	:	ASCD hold relay (M/T models)
G5	E58	L/4	:	Clutch interlock relay (M/T models)
G5★	E59	BR/6	:	Cooling fan relay-3
D3	E60	B/1	:	Battery
F3	E62	GY/8	:	ABS control actuator
D1	E63	BR/6	:	Theft warning horn relay
D1	E64	L/4	:	Cornering lamp relay
F1	E66	L/4	:	Air conditioner relay
D1	E67	L/4	:	Front fog lamp relay
E1	E69	B/5	:	Front wiper relay
E1	E70	BR/6	:	Rear window defogger relay
E1	E73	BR/6	:	ASCD hold relay (A/T models)
G5	E74	GY/6	:	Park/Neutral position relay (A/T models)
C3	E75	B/1	:	Horn low
F5	E76	B/5	:	ABS solenoid valve relay
G5	E77	B/5	:	ABS motor relay
B2	E78	GY/4	:	Daytime light control unit (For canada)
D1	E79	L/4	:	Head lamp relay RH
E1	E80	L/4	:	Head lamp relay LH
E1	E81	L/4	:	Tail lamp relay
B1	E82	W/6	:	Joint connector-16

★ : 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.**

Main Harness



MEL036J

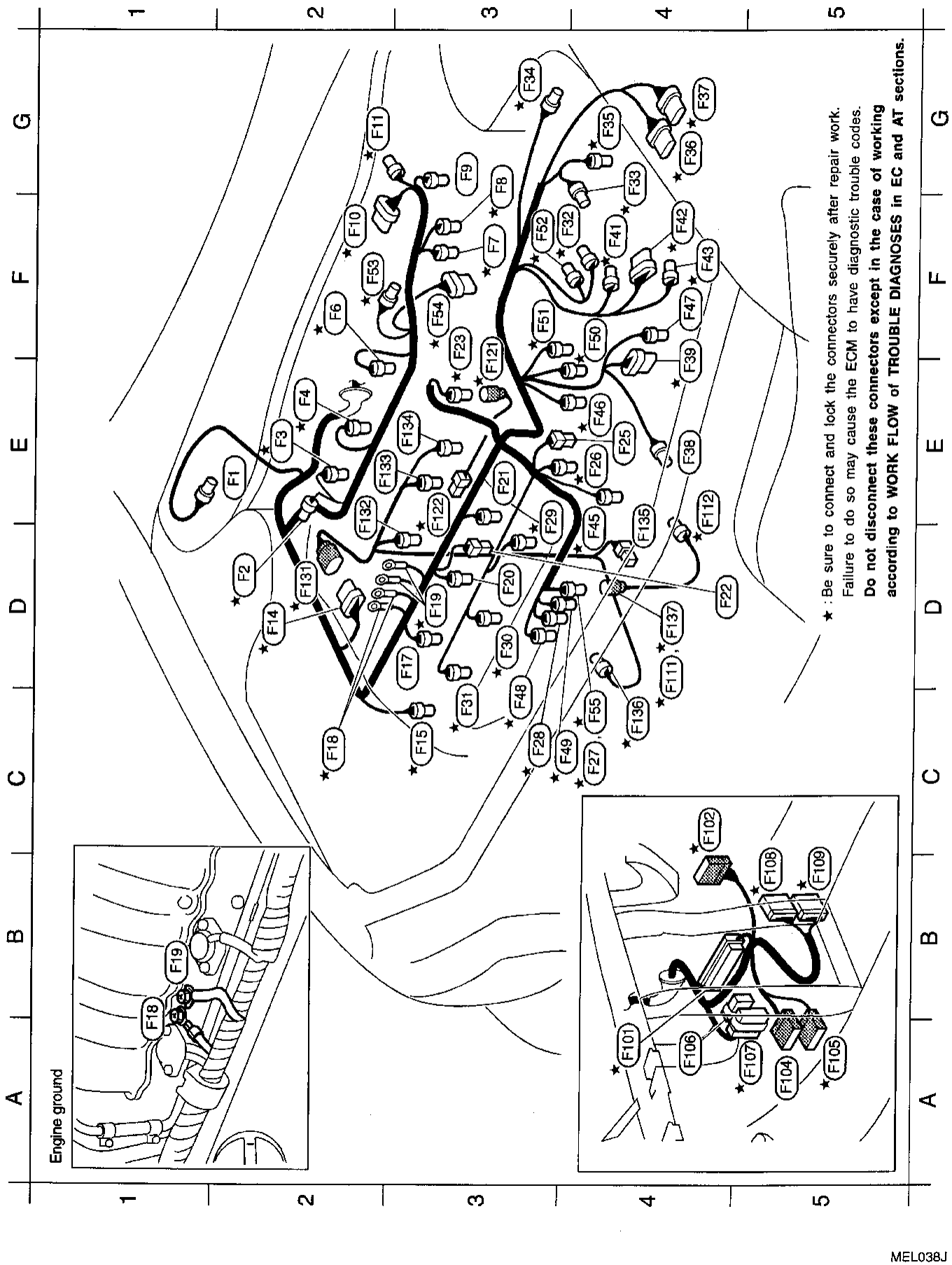
B3★	M1	–	:	Fuse block (J/B)
B3	M2	GY/14	:	Data link connector for CONSULT
A3★	M3	SMJ	:	To E101
B4★	M4	W/48	:	To B1
B4	M5	GY/6	:	To B2
A4	M6	L/4	:	Fuel pump relay
A5	M7	L/4	:	Sunroof relay (With yellow tape)
A3	M8	W/18	:	To D1
A4	M9	GY/3	:	To D2
C1	M10	W/8	:	To R1
C1	M11	W/18	:	To R9
C1	M13	–	:	Body ground
C4	M14	L/2	:	ASCD brake switch
C3	M15	B/2	:	Stop lamp switch
C3	M16	L/2	:	Clutch interlock switch
C3	M17	L/2	:	ASCD clutch switch (For M/T models)
B2	M26	GY/12	:	Door mirror remote control switch
B2	M27	W/6	:	ASCD main switch
B2	M28	W/4	:	Security indicator lamp (Without TCS)
C3★	M29	W/14	:	Combination meter
D3	M30	B/20	:	ASCD control unit
D3	M32	W/3	:	Illumination control switch
D3	M34	B/3	:	Combination flasher unit
C4	M35	W/3	:	Warning buzzer
D2	M38	W/3	:	Mode door motor
D2	M41	W/2	:	In-vehicle sensor
F3	M44	W/6	:	Radio and CD player
E4	M45	B/2	:	Cigarette lighter socket
E4	M46	W/2	:	Ashtray illumination
D3	M47	GY/16	:	A/C auto amp.
E4	M48	GY/16	:	BCM (Body control module)
D3	M49	W/3	:	Air mix door motor
D4★	M50	W/20	:	To F105
D4	M51	W/12	:	To F104
E2	M52	W/20	:	To Z1
E1	M54	W/3	:	Intake sensor
F2	M55	BR/2	:	Glove box lamp switch
F1	M57	W/4	:	Fan control amp.
F3★	M58	GY/16	:	To F102
D2	M59	BR/6	:	Clock
E2	M60	W/6	:	Rear window defogger switch
D1	M61	W/8	:	Hazard switch
F4	M62	W/6	:	A/T device
E1	M64	B/2	:	Sunload sensor
F1	M68	Bulb	:	Glove box lamp
F1	M69	W/8	:	Intake door motor
G3★	M71	GY/16	:	To B102
G2	M73	–	:	Body ground
G2	M74	W/18	:	To D31
G2	M75	GY/3	:	To D32
F3	M76	W/2	:	Blower motor
F3	M79	L/4	:	Audio amp. relay
D1	M80	SB/4	:	Joint connector-10 (Diode)
C3	M81	W/16	:	Data link connector for GST
F3	M84	W/6	:	To B112
F3	M85	L/4	:	Door mirror defogger relay
F4	M86	W/6	:	Fuel lid opener switch (For A/T models)
D3★	M88	W/10	:	Combination meter
D2	M89	W/16	:	Combination meter
F3	M90	W/10	:	Radio and CD player
F3	M91	GY/20	:	A/C auto amp.
E4	M92	GY/20	:	BCM (Body control module)
E3	M93	W/6	:	BCM (Body control module)
D3	M94	W/4	:	Security indicator lamp (With TCS)
C4	M101	W/6	:	Front wiper motor
B5	M102	GY/2	:	Front wheel sensor RH (Anti-lock brake system)
G2	M103	–	:	Body ground
C2	M104	GY/10	:	Auto light control unit
D3	M105	W/12	:	NATS IMMU
B2	M106	L/6	:	TCS on/off switch
E3	M107	W/16	:	Audio
G2	M108	W/6	:	To B111

★ : 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.**

Diode M80

Parking brake switch ⊣◀ Combination meter

Engine Control Harness

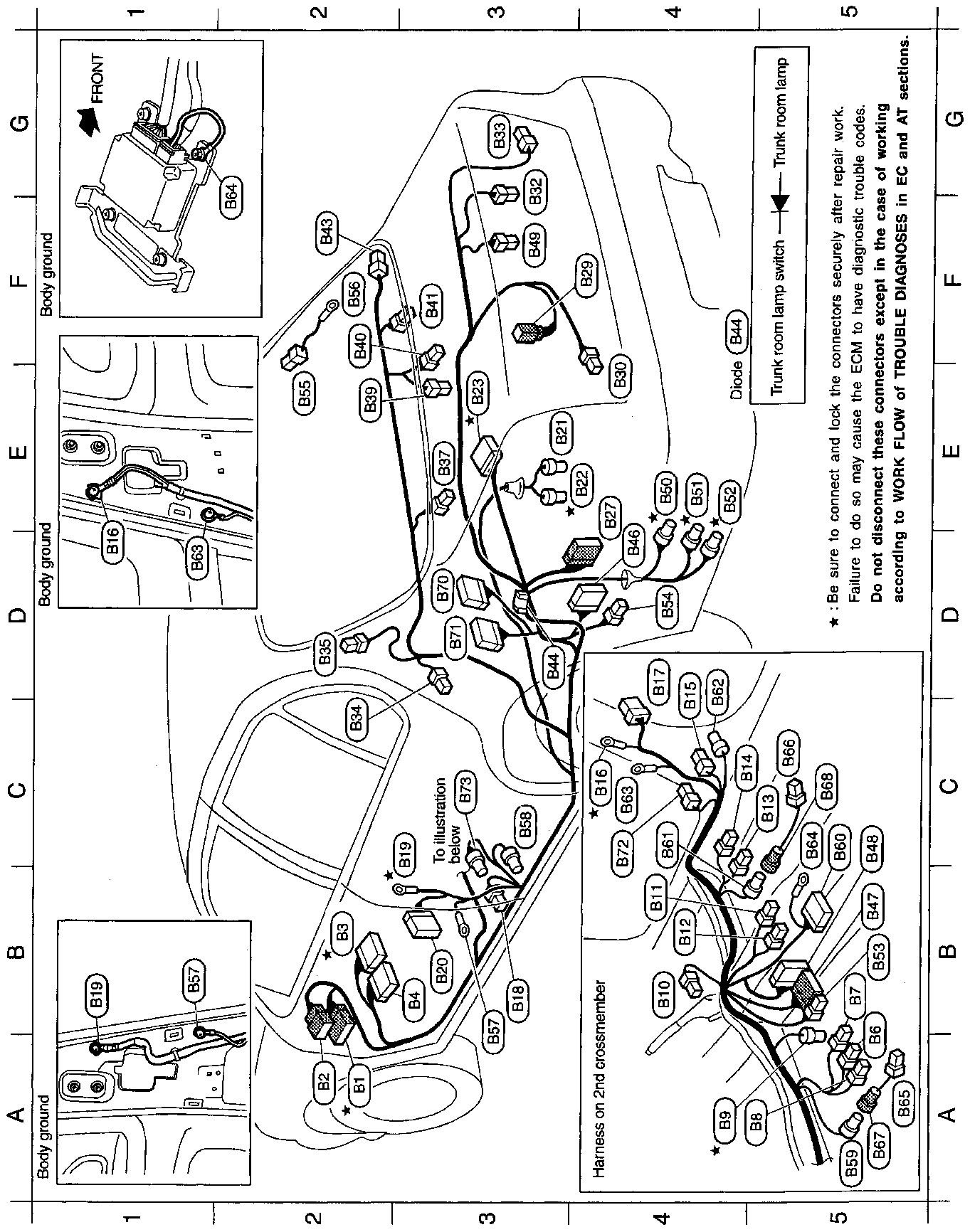


MEL038J

E2 (F1) GY/2 : Power steering oil pressure switch
D2★(F2) GY/3 : Front heated oxygen sensor RH
E2★(F3) GY/3 : Ignition coil No. 1
E2★(F4) GY/3 : Ignition coil No. 3
F2★(F6) GY/3 : Ignition coil No. 5
F3★(F7) GY/3 : Throttle position switch
G3★(F8) GY/3 : Throttle position sensor
G3 (F9) R/2 : IACV-FICD solenoid valve-2
F2★(F10) W/6 : IACV-AAC valve
G2★(F11) GY/2 : EGR temperature sensor
D2★(F14) GY/8 : To (F131)
C3★(F15) GY/2 : Camshaft position sensor (PHASE)
D3 (F17) B/2 : Injector No. 2
C2★(F18) – : Engine ground
D3★(F19) – : Engine ground
D3 (F20) B/2 : Injector No. 4
E3 (F21) B/2 : Injector No. 6
D3 (F22) W/2 : Condenser
F3★(F23) B/2 : To (F121)
E4 (F25) B/1 : Thermal transmitter
E4★(F26) GY/2 : Engine coolant temperature sensor
C4★(F27) G/4 : To (F137) (For California)
D3★(F28) GY/3 : Front heated oxygen sensor LH
E3★(F29) GY/3 : Ignition coil No. 6
D3★(F30) GY/3 : Ignition coil No. 4
C3★(F31) GY/3 : Ignition coil No. 2
F4★(F32) GY/4 : Park/Neutral position switch (For M/T models)
G4★(F33) GY/3 : Mass air flow sensor
G3★(F34) GY/2 : Intake air temperature sensor
G4★(F35) GY/2 : Dropping resistor (For A/T models)
G4★(F36) BR/8 : To (E13)
G4★(F37) B/8 : To (E14)
E4 (F38) BR/3 : Front engine mounting (For A/T models)
F4★(F39) GY/8 : Park/Neutral position switch (For A/T models)
F4★(F41) GY/3 : Revolution sensor (For A/T models)
F4★(F42) BR/8 : Terminal cord assembly (For A/T models)
F4★(F43) GY/2 : Vehicle speed sensor (For A/T models)
D4★(F45) BR/3 : Absolute pressure sensor
E4★(F46) BR/2 : MAP/BARO switch solenoid valve
F4 (F47) GY/2 : Park/Neutral position switch (For A/T models)
D3★(F48) GY/4 : Rear heated oxygen sensor LH (For California)
D4★(F49) B/4 : Rear heated oxygen sensor RH (For California)
E4★(F50) G/2 : Swirl control valve control solenoid valve (For California)
F4★(F51) B/2 : Swirl control valve control vacuum check switch (For California)
F4★(F52) GY/2 : Vehicle speed sensor (For M/T models)
F3★(F53) L/2 : EVAP canister purge volume control solenoid valve
F3★(F54) B/6 : EGR Volume control valve
C4★(F55) B/4 : To (F111) (Except for California)
A4★(F101) SMJ : ECM
C4★(F102) GY/16 : To (M58)
A5 (F104) W/12 : To (M51)
A5★(F105) W/20 : To (M50)
A4 (F106) GY/6 : Joint connector-11
A5★(F107) L/12 : Joint connector-12
B5★(F108) W/24 : TCM (Transmission control module)
B5★(F109) GY/24 : TCM (Transmission control module)
D4★(F111) B/4 : To (F55) (Except for California)
E4★(F112) GY/3 : Crankshaft position sensor (POS)
F3★(F121) B/2 : To (F23)
E3★(F122) B/2 : Knock sensor
D2★(F131) GY/8 : To (F14)
E2 (F132) B/2 : Injector No. 1
E2 (F133) B/2 : Injector No. 3
E3 (F134) B/2 : Injector No. 5
D4 (F135) B/1 : Oil pressure switch
C4★(F136) GY/2 : Crankshaft position sensor (REF)
D4★(F137) G/4 : To (F27) (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.

Body Harness

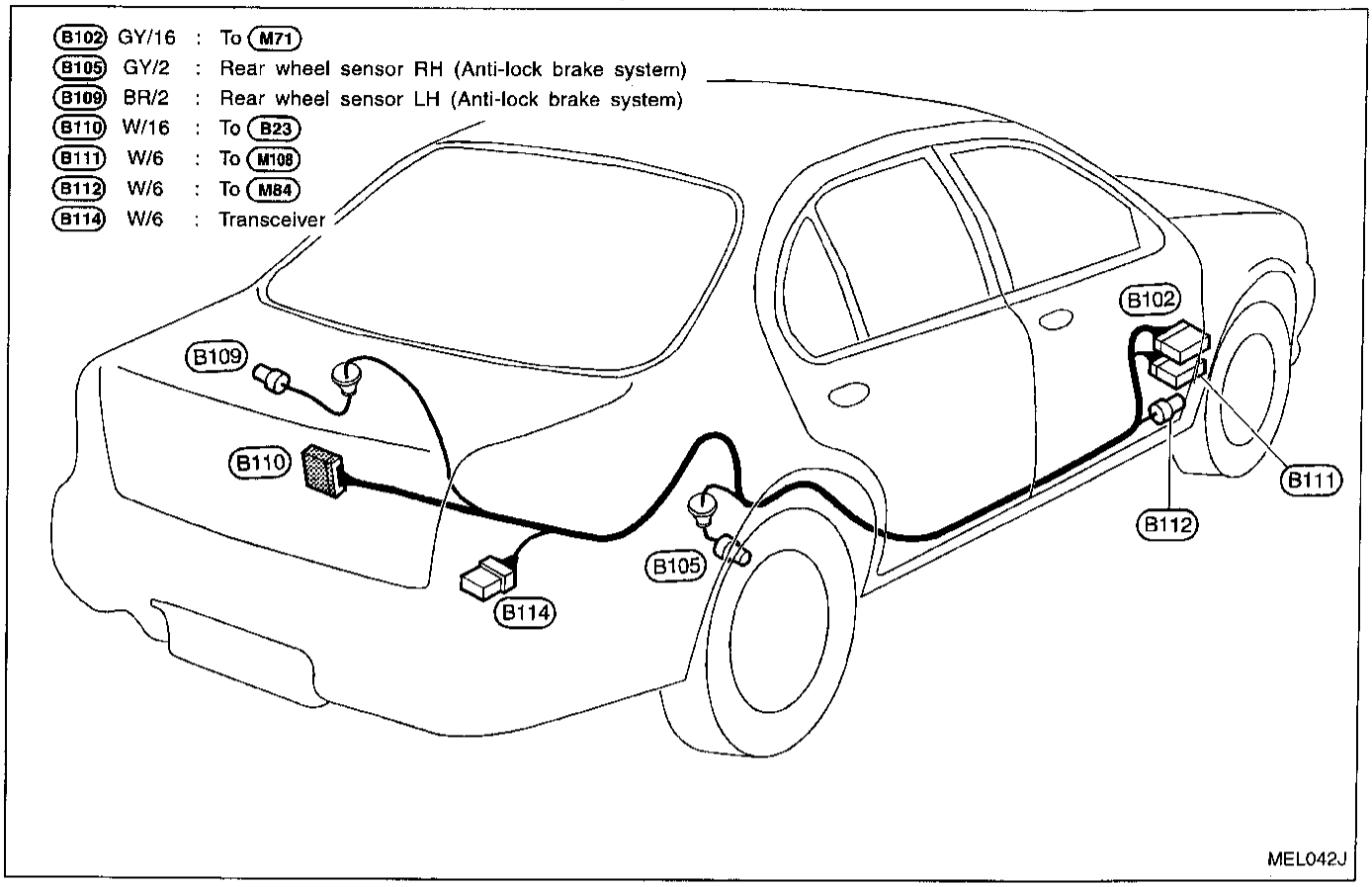


MEL040J

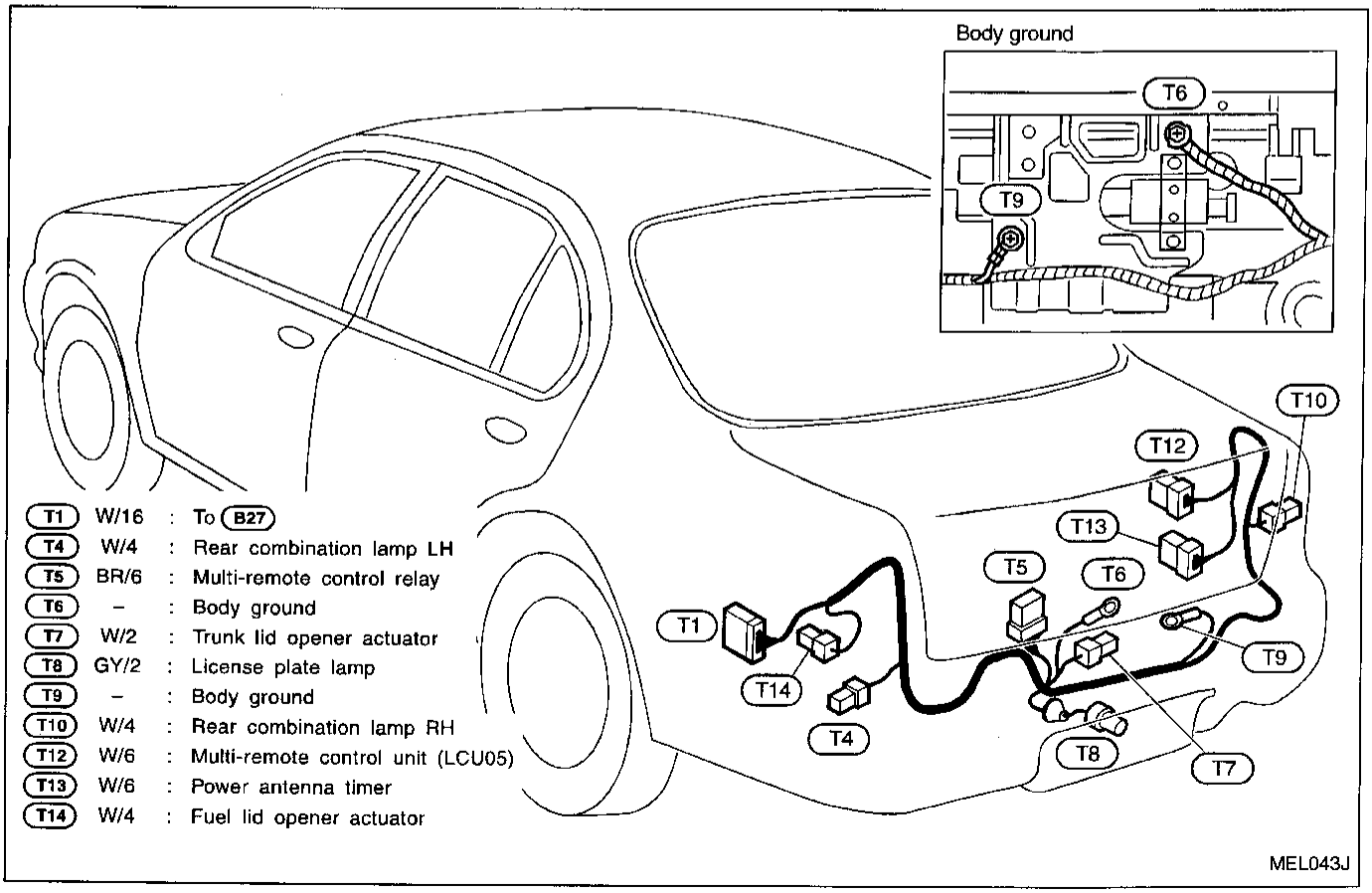
B2★	B1	W/48	:	To M4
B2	B2	GY/6	:	To M5
B2★	B3	BR/16	:	Fuse block (J/B)
A2	B4	W/12	:	Fuse block (J/B)
A5	B6	W/2	:	Power seat (Driver side)
A5	B7	W/3	:	Seat belt buckle switch LH
A5	B8	W/3	:	Heated seat LH
B5★	B9	GY/4	:	Rear heated oxygen sensor
B4	B10	B/1	:	Parking brake switch
B5	B11	L/4	:	Heated seat switch LH
B5	B12	W/4	:	Heated seat switch RH
B5	B13	W/3	:	Heated seat RH
C5	B14	W/2	:	Power seat (Passenger side)
C4	B15	B/3	:	Front door switch RH
C4★	B16	–	:	Body ground
C4	B17	W/10	:	To D71
B3	B18	B/3	:	Front door switch LH
B2★	B19	–	:	Body ground
B3	B20	W/10	:	To D51
E3	B21	GY/2	:	Fuel pump
E4★	B22	GY/4	:	Fuel tank gauge unit
E3★	B23	W/16	:	To B110
E4	B27	W/16	:	To T1
F4	B29	W/2	:	To high-mounted stop lamp sub-harness (Models equipped with rear air spoiler)
E4	B30	W/4	:	Trunk lid combination lamp LH
G3	B32	W/3	:	Trunk lid key cylinder switch
G3	B33	W/4	:	Trunk lid combination lamp RH
C2	B34	BR/1	:	Rear door switch LH
D2	B35	B/1	:	Condenser
E3	B37	W/4	:	Rear speaker LH
E2	B39	W/2	:	Trunk room lamp
F2	B40	W/2	:	High-mounted stop lamp (Models without rear air spoiler)
F3	B41	W/4	:	Rear speaker RH
F2	B43	BR/1	:	Rear door switch RH
D3	B44	W/2	:	Diode
D4	B46	W/16	:	Transceiver
C4	B47	W/12	:	Handset
C3	B48	W/6	:	Handsfree switch
F3	B49	B/2	:	Trunk room lamp switch
E4★	B50	B/2	:	EVAP canister vent control valve
E4★	B51	G/2	:	Vacuum cut valve bypass valve
E4★	B52	GY/3	:	EVAP control system pressure sensor
B5	B53	W/4	:	Telephone
D4	B54	B/4	:	Transceiver
E2	B55	B/1	:	Rear window defogger
E2	B56	–	:	Body ground
B3	B57	–	:	Body ground
C3	B58	GY/2	:	Satellite sensor LH
A5	B59	W/2	:	To B67
C5	B60	Y/10	:	Air bag diagnosis sensor unit
C5	B61	W/2	:	To B68
D4	B62	GY/2	:	Satellite sensor RH
C4	B63	–	:	Body ground
C5	B64	–	:	Body ground
A5	B65	Y/2	:	Side air bag module LH
C5	B66	Y/2	:	Side air bag module RH
A5	B67	W/2	:	To B59
C5	B68	W/2	:	To B61
D3	B70	W/16	:	IVCS unit
D3	B71	W/22	:	IVCS unit
C4	B72	W/4	:	Seat belt pre-tensioner RH
B3	B73	W/4	:	Seat belt pre-tensioner LH

★ : 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.**

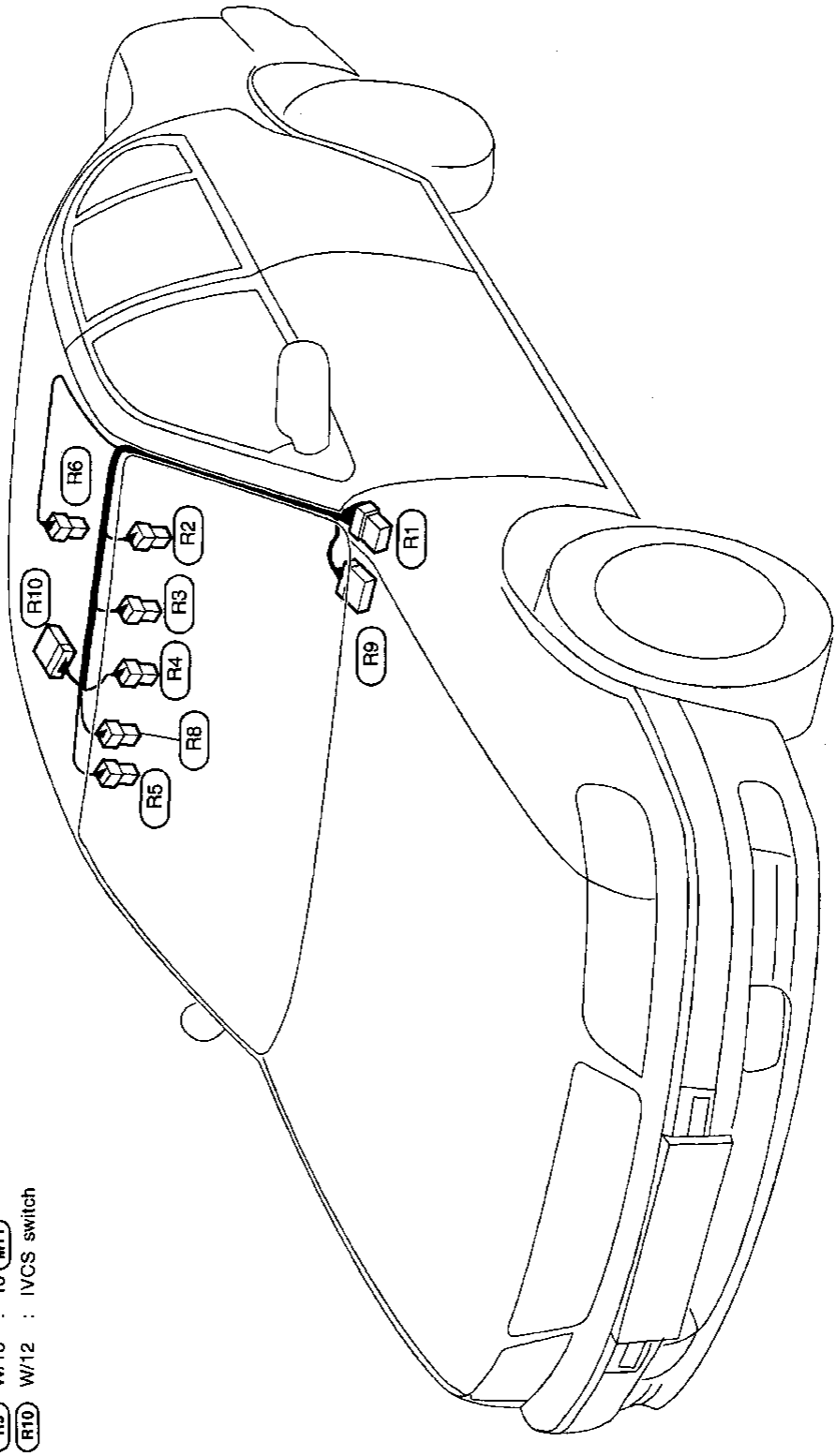
Body No. 2 Harness



Tail Harness



Room Lamp Harness



R1	W/8	To M10
R2	R/2	Vanity mirror illumination LH
R3	W/1	Sunroof motor
R4	W/2	Spot lamp
R5	R/2	Vanity mirror illumination RH
R6	W/2	Interior lamp
R8	W/4	Inside mirror
R9	W/18	To M11
R10	W/12	IVCS switch

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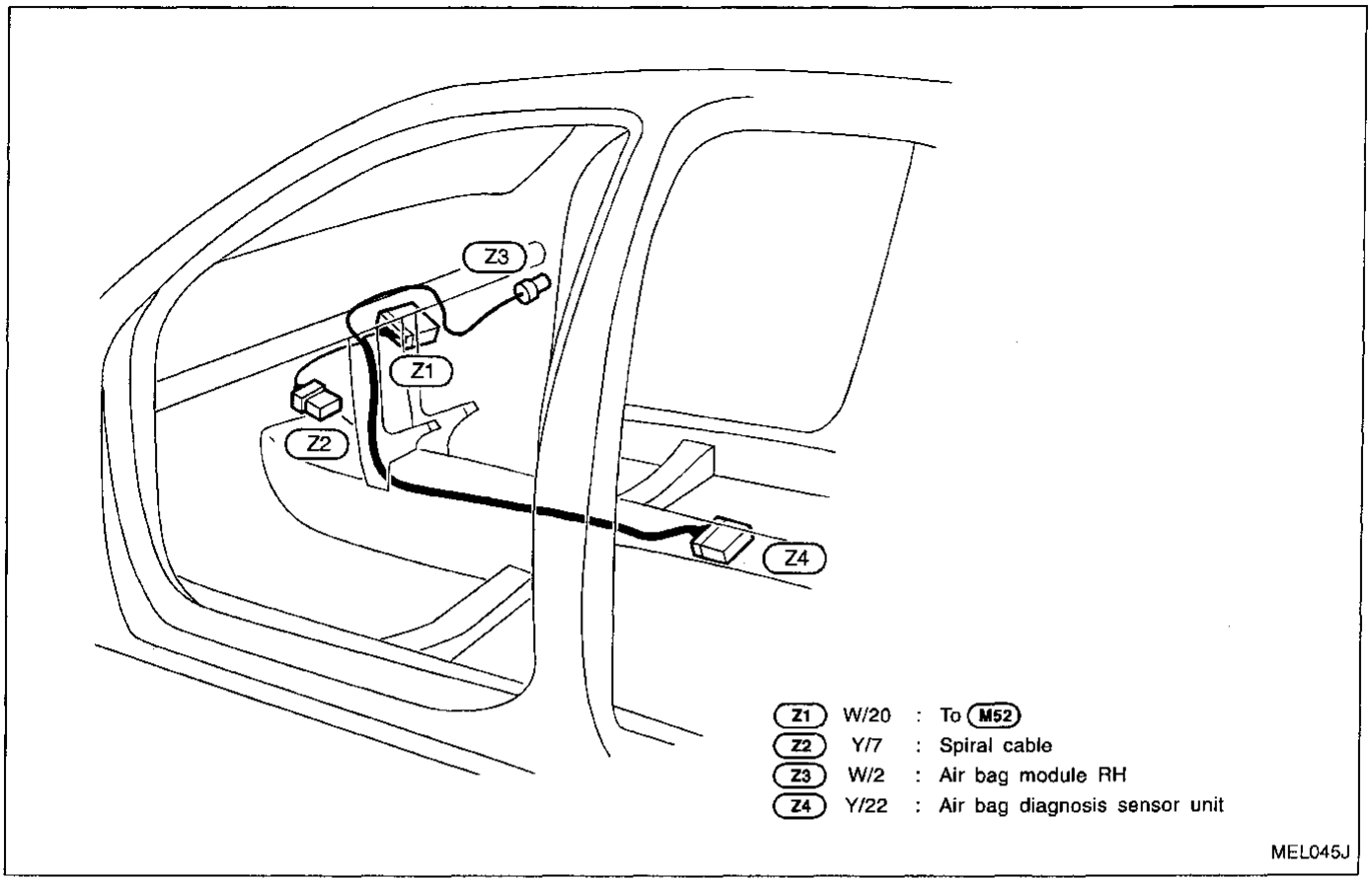
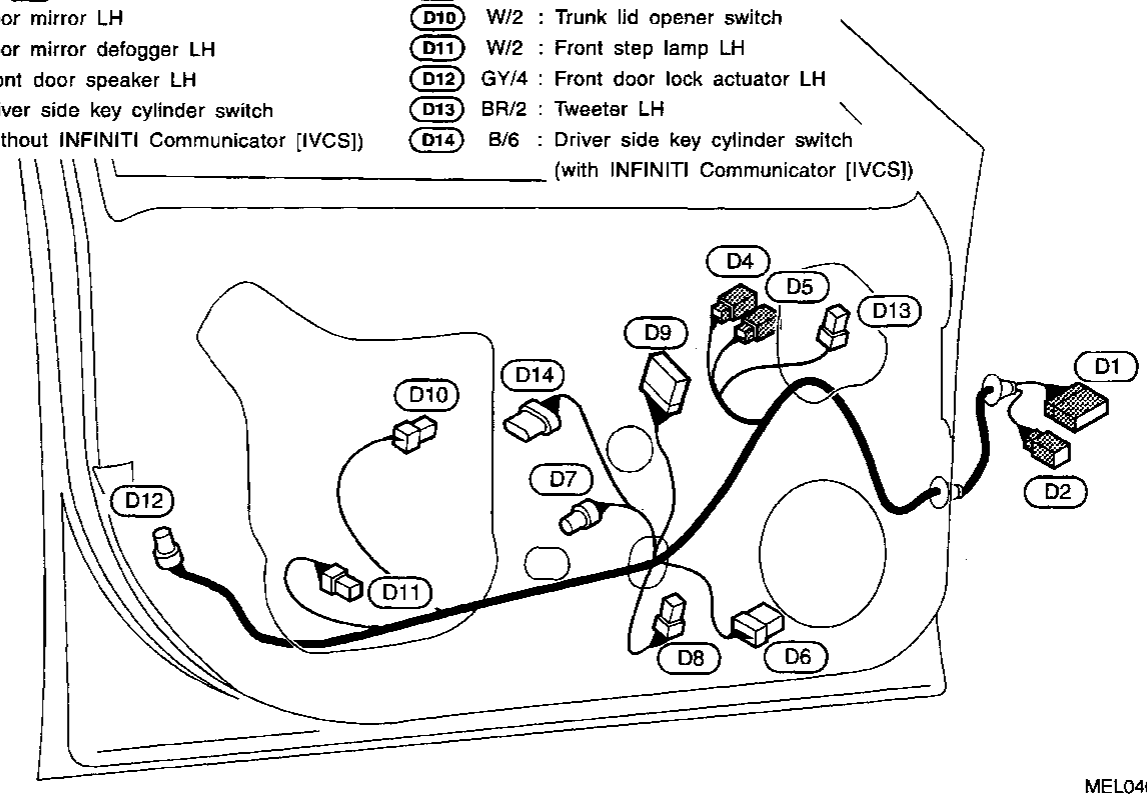
Air Bag Harness



FRONT

Door Harness (LH side)

(D1) W/18 : To (M8)
(D2) GY/3 : To (M9)
(D4) BR/3 : Door mirror LH
(D5) GY/2 : Door mirror defogger LH
(D6) W/6 : Front door speaker LH
(D7) B/4 : Driver side key cylinder switch (without INFINITI Communicator [IVCS])
(D8) B/2 : Power window regulator LH
(D9) W/18 : Driver door control unit (LCU01)
(D10) W/2 : Trunk lid opener switch
(D11) W/2 : Front step lamp LH
(D12) GY/4 : Front door lock actuator LH
(D13) BR/2 : Tweeter LH
(D14) B/6 : Driver side key cylinder switch (with INFINITI Communicator [IVCS])



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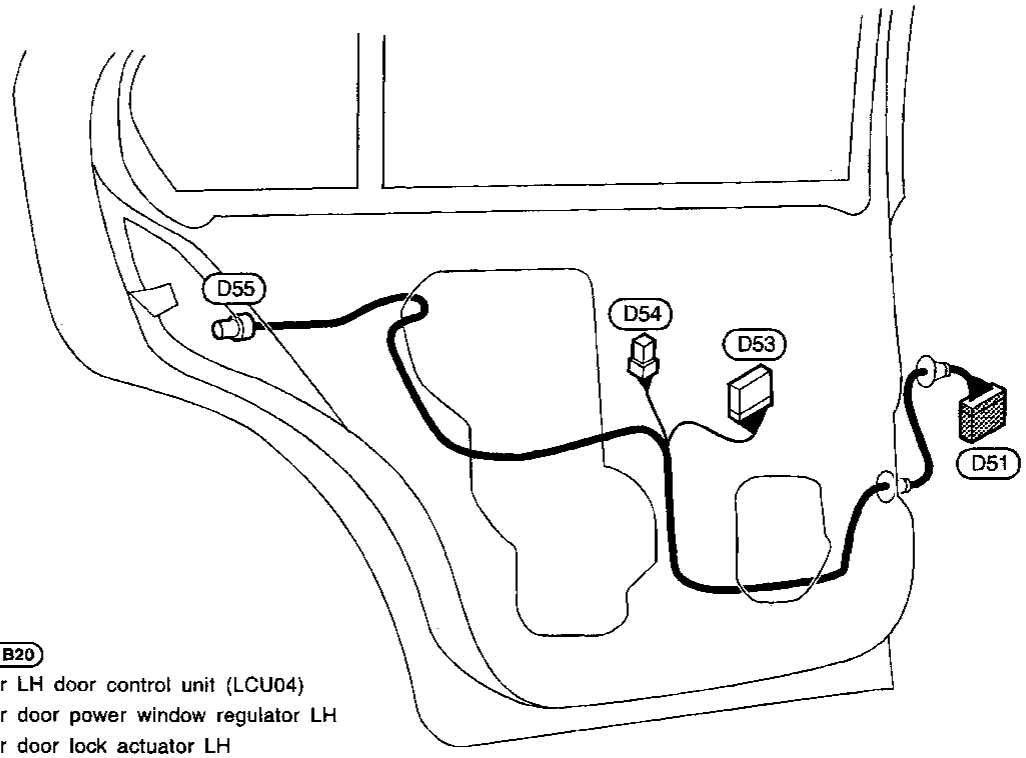
REAR



(D51) W/10 : To (B20)
(D53) W/12 : Rear LH door control unit (LCU04)
(D54) B/2 : Rear door power window regulator LH
(D55) GY/4 : Rear door lock actuator LH

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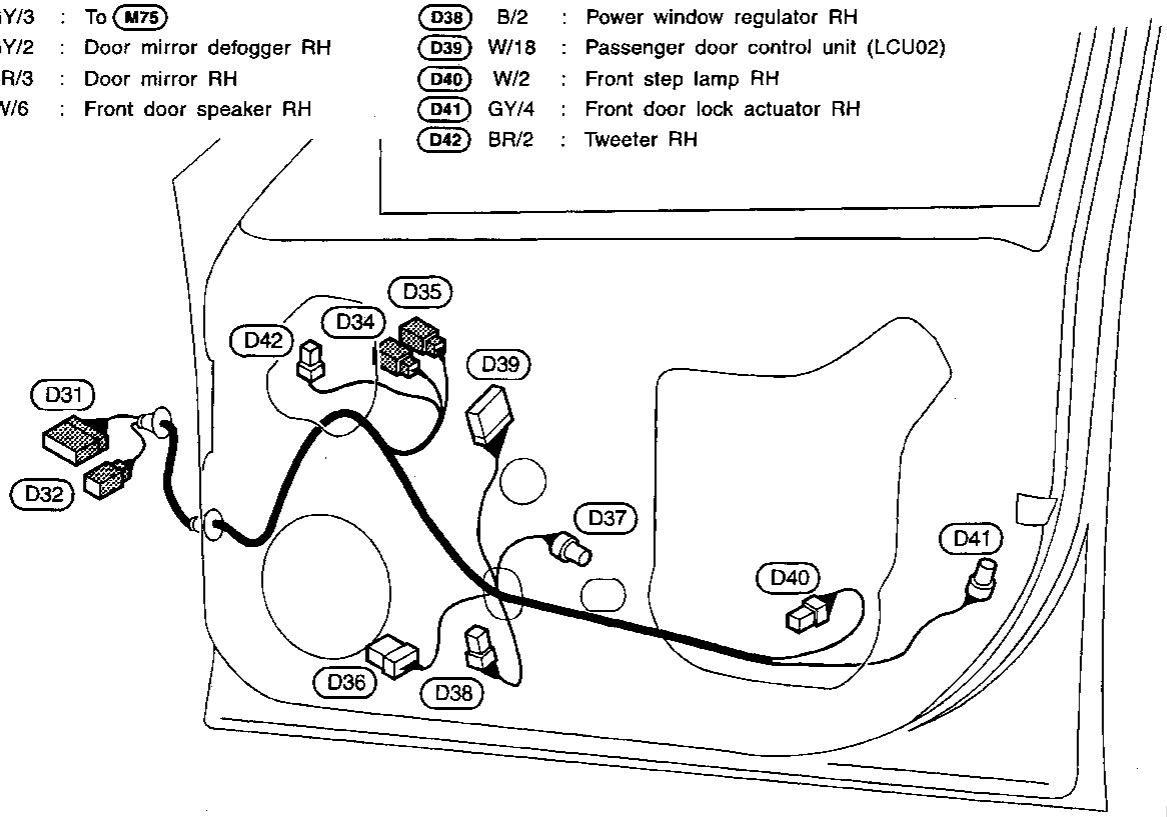
FRONT

Door Harness (RH side)

(D31) W/18 : To (M74)
(D32) GY/3 : To (M75)
(D34) GY/2 : Door mirror defogger RH
(D35) BR/3 : Door mirror RH
(D36) W/6 : Front door speaker RH
(D37) B/4 : Passenger side key cylinder switch
(D38) B/2 : Power window regulator RH
(D39) W/18 : Passenger door control unit (LCU02)
(D40) W/2 : Front step lamp RH
(D41) GY/4 : Front door lock actuator RH
(D42) BR/2 : Tweeter RH



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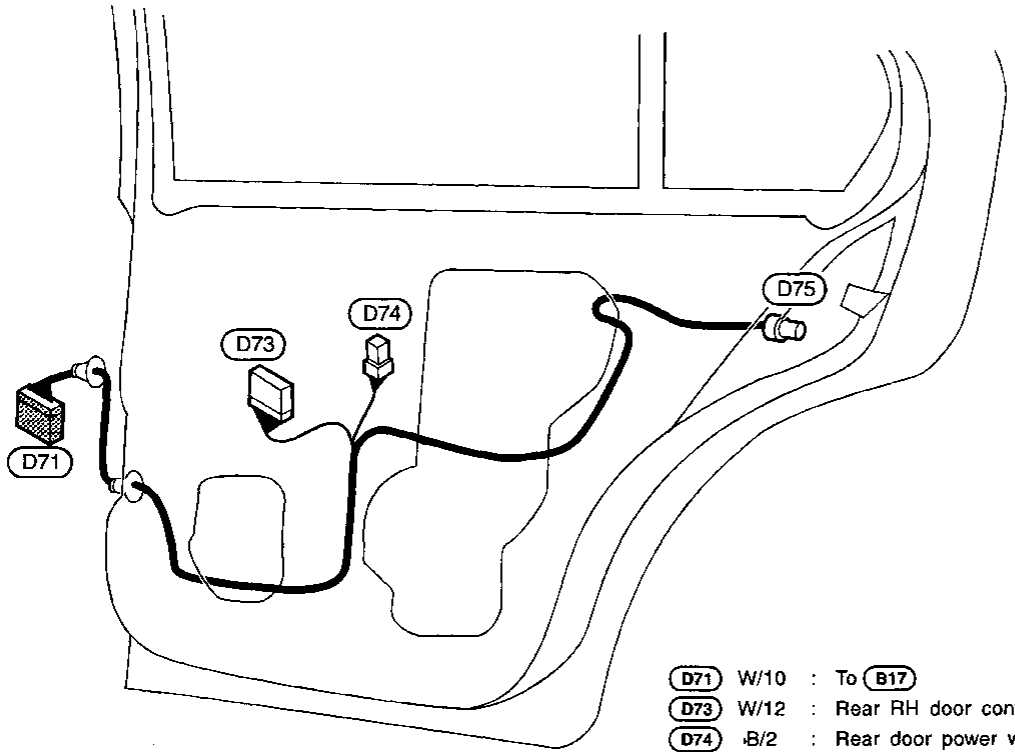
REAR



(D71) W/10 : To (B17)
(D73) W/12 : Rear RH door control unit (LCU03)
(D74) B/2 : Rear door power window regulator RH
(D75) GY/4 : Rear door lock actuator RH

MEL778H

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

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
AP/SEN	EC	Absolute Pressure Sensor
ASCD	EL	Automatic Speed Control Device (ASCD)
A/T	AT	Automatic Transaxle
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
PGC/V	EC	EVAP Canister Purge Volume Control Solenoid Valve
CHARGE	EL	Charging System
CIGAR	EL	CIGAR
CLOCK	EL	CLOCK
COMM	EL	Power Supply, Ground and Communication Circuits — IVMS (LAN)
COOL/F	EC	Overheat
CORNER	EL	Cornering Lamp
DEF	EL	Rear Window Defogger
D/LOCK	EL	Power Door Lock — IVMS
DTRL	EL	Headlamp - 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	Front Engine Mounting Control
F/FOG	EL	Front Fog Lamp
FICD	EC	IACV-FICD Solenoid Valve
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 Control
FRO2LH	EC	Front Heated Oxygen Sensor (Left Bank)
FRO2RH	EC	Front Heated Oxygen Sensor (Right Bank)
FUELLH	EC	Fuel Injection System Function (Left Bank)
FUELRH	EC	Fuel Injection System Function (Right Bank)
H/LAMP	EL	Headlamp
HORN	EL	Horn
H/PHON	EL	Handsfree Telephone (Pre wire)
HSEAT	EL	Heated Seat
IATS	EC	Intake Air Temperature Sensor
IGN/SG	EC	Ignition Signal
ILL	EL	Illumination
I/MIRR	EL	Auto Anti-dazzling Inside Mirror
INJECT	EC	Injector
INT/L	EL	Spot, Vanity Mirror and Trunk Room Lamps
IVCS	EL	INFINITI Communicator
KS	EC	Knock Sensor (KS)
LD/SIG	EC	Electrical Load Signal
MAFS	EC	Mass Air Flow Sensor (MAFS)
MAIN	EC	Main Power Supply and Ground Circuit
METER	EL	Meter and Gauges
MIL/DL	EC	MIL & Data Link Connectors
MIRROR	EL	Power Door Mirror
MULTI	EL	Multi-remote Control System — IVMS
NATS	EL	IPPS (Infiniti Personal Protection System — NATS)
P/ANT	EL	Audio Antenna
PHONE	EL	Telephone (Pre wire)
PHASE	EC	Camshaft Position Sensor (PHASE)
PNP/SW	EC	Park/Neutral Position Switch
POS	EC	Crankshaft Position Sensor (POS)
POWER	EL	Power Supply Routing
PRE/SE	EC	EVAP Control System Pressure Sensor
PST/SW	EC	Power Steering Oil Pressure Switch
REF	EC	Crankshaft Position Sensor (REF)
ROOM/L	EL	Interior Lamp Control — IVMS

Code	Section	Wiring Diagram Name
RRO2	EC	Rear Heated Oxygen Sensor
RRO2LH	EC	Rear Heated Oxygen Sensor LH
RRO2RH	EC	Rear heated Oxygen Sensor RH
RRO2/H	EC	Rear Heated Oxygen Sensor Heater
RO2H-L	EC	Rear Heated Oxygen Sensor Heater LH
RO2H-R	EC	Rear Heated Oxygen Sensor Heater RH
SEAT	EL	Power Seat
SHIFT	AT	A/T Shift Lock System
SROOF	EL	Electric 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
SWL/V	EC	Swirl Control Valve Control Solenoid Valve
SW/ILL	EL	Illumination — IVMS

Code	Section	Wiring Diagram Name
SW/V	EC	MAP/BARO Switch Solenoid Valve
S/VCSW	EC	Swirl Control Valve Control Vacuum Check Switch
TAIL/L	EL	Parking, License and Tail Lamps
TCS	EC	ABS/TCS Communication Line
TCS	BR	Traction Control System
TFTS	EC	Tank Fuel Temperature Sensor
THEFT	EL	Theft Warning System — IVMS
TLID	EL	Trunk Lid and Fuel Lid Opener
TPS	EC	Throttle Position Sensor
TP/SW	EC	Closed Throttle Position Switch
TRNSMT	EL	Integrated HomeLink Transmitter
TURN	EL	Turn Signal and Hazard Warning Lamps
VENT/V	EC	EVAP Canister Vent Control Valve
VSS	EC	Vehicle Speed Sensor (VSS)
WARN	EL	Warning Lamps
WINDOW	EL	Power Window — IVMS
WIPER	EL	Wiper and Washer