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 any service bulletins before servicing the vehicle.**

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Terminal Arrangement ..... Foldout

WIRING DIAGRAM REFERENCE CHART

ECCS (Ignition system) ..... EC SECTION
AUTOMATIC TRANSMISSION CONTROL SYSTEM, SHIFT LOCK SYSTEM ..... AT SECTION
ANTI-LOCK BRAKE SYSTEM ..... BR SECTION
SRS "AIR BAG" ..... RS SECTION
HEATER AND AIR CONDITIONER ..... HA SECTION

Supplemental Restraint System (SRS) "AIR BAG"

The Supplemental Restraint System "AIR BAG", used along with a seat belt, helps 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), a diagnosis sensor unit, warning lamp, wiring harness and spiral cable. If the vehicle is equipped with side air bag as the Supplemental Restraint System, 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** in this Service Manual.

WARNING:

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

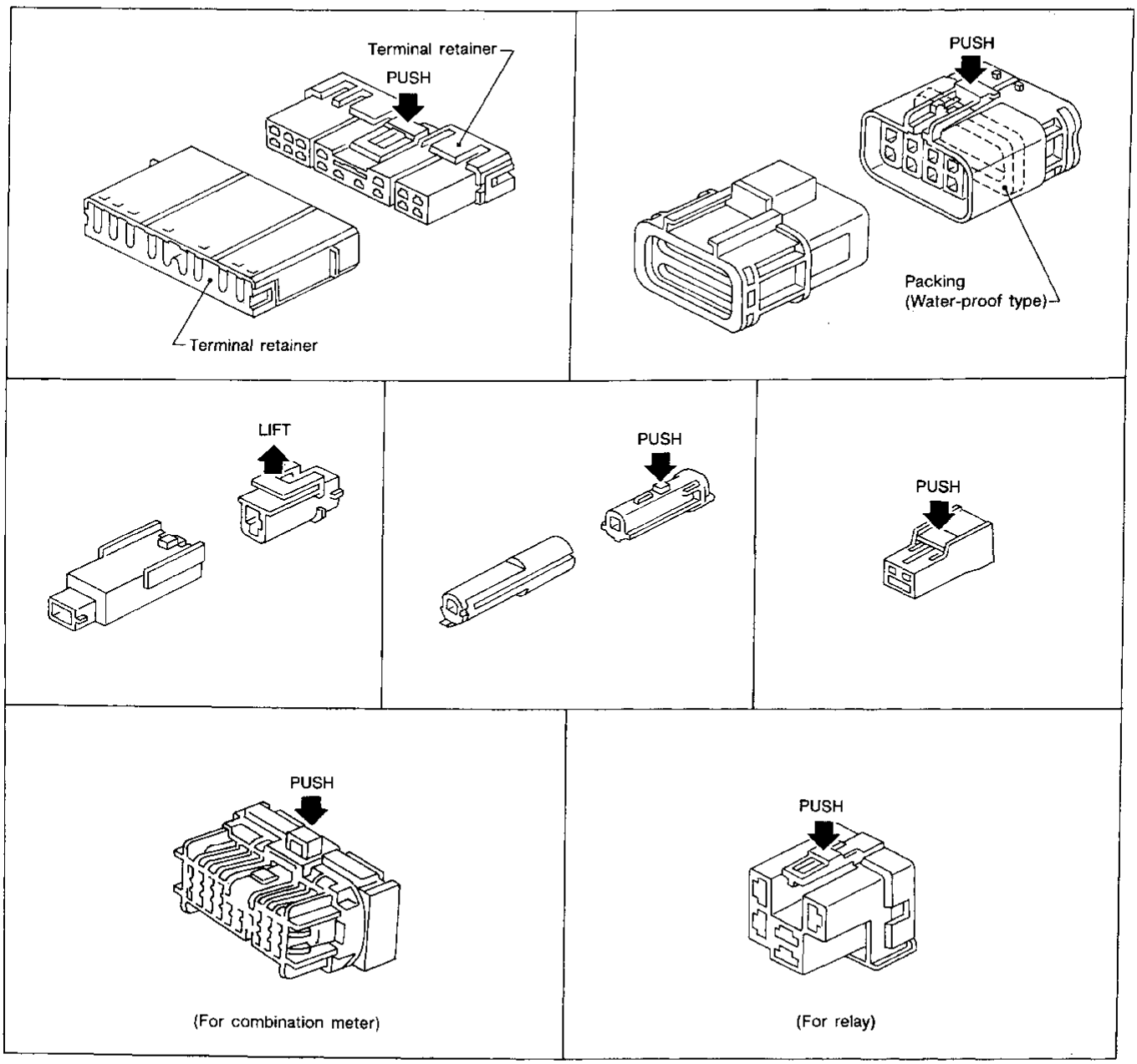
Description

HARNESS CONNECTOR

- All harness connectors have been modified to prevent accidental loosing or disconnection.
- The connector can be disconnected by pushing or lifting the locking section.

CAUTION:
Do not pull the harness when disconnecting the connector.

[Example]

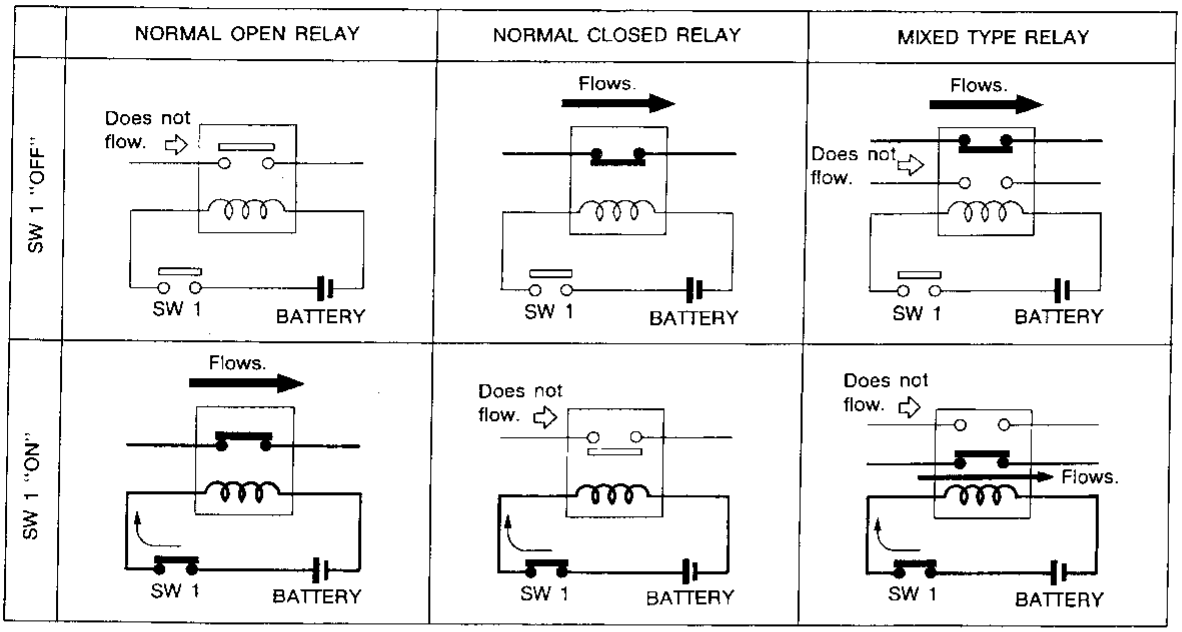


MEL343D

Description

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

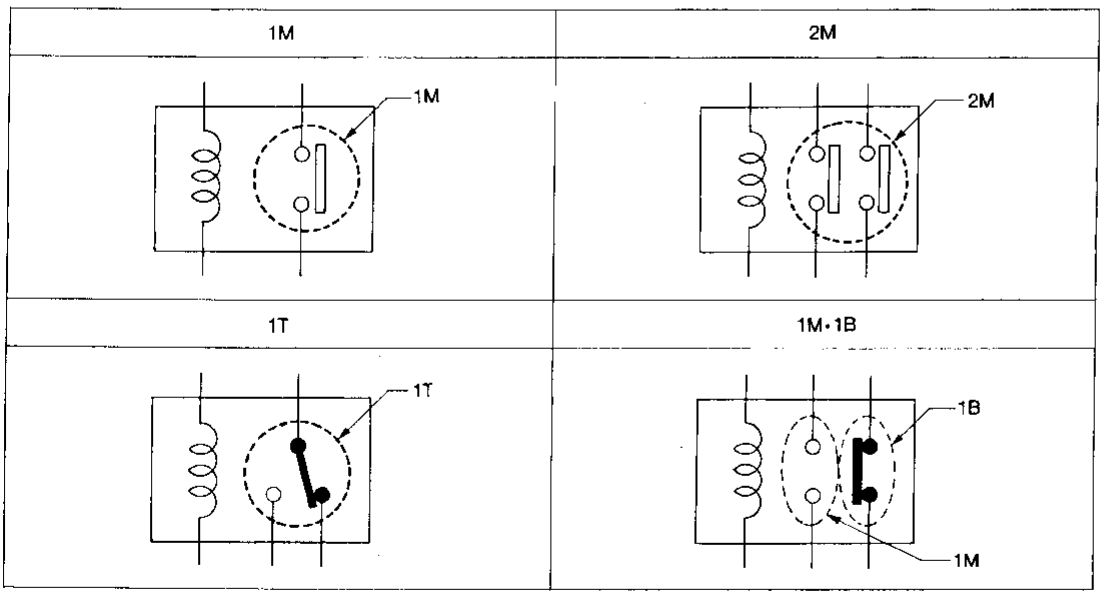
Relays can mainly be divided into three types: normal open, normal closed and mixed type relays.



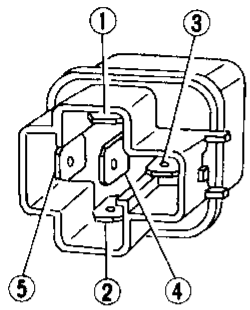
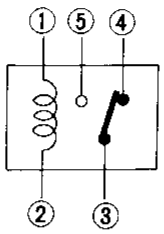
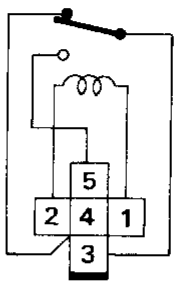
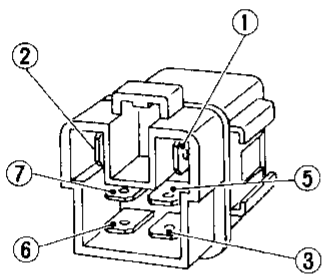
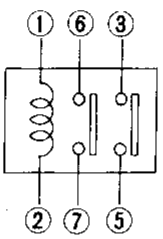
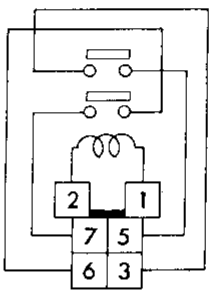
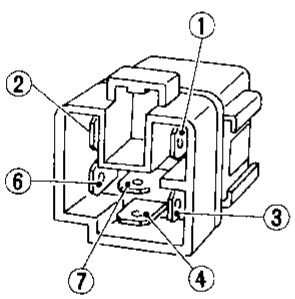
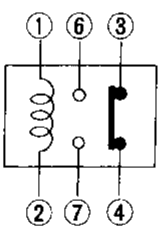
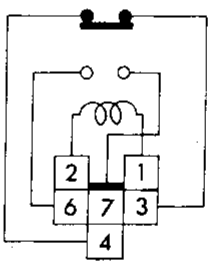
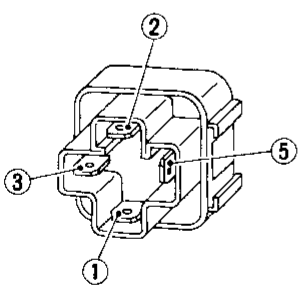
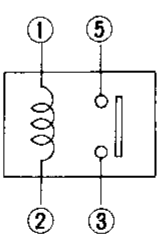
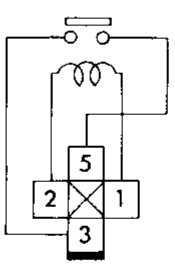
SEL881H

TYPE OF STANDARDIZED RELAYS

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



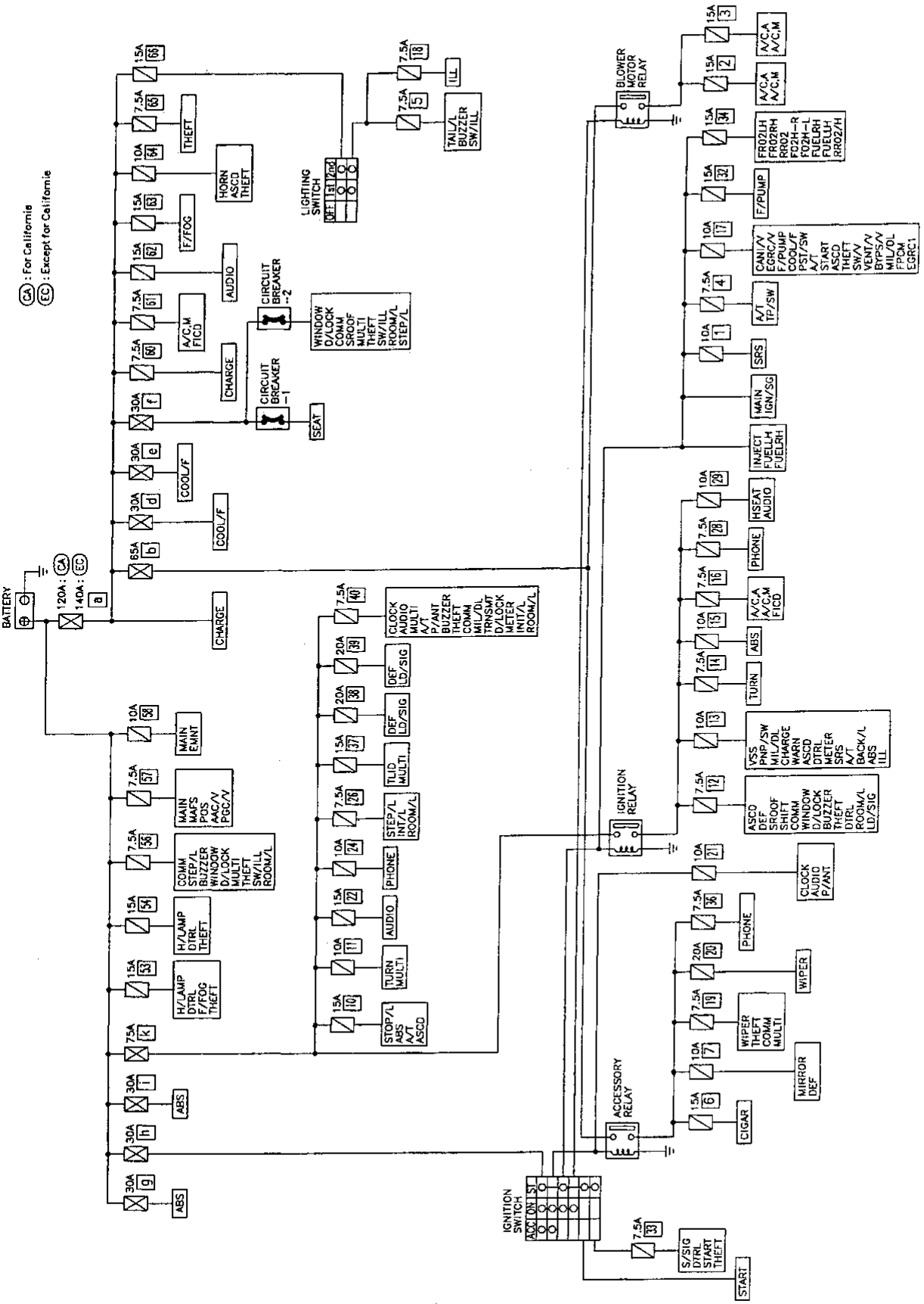
SEL882H

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

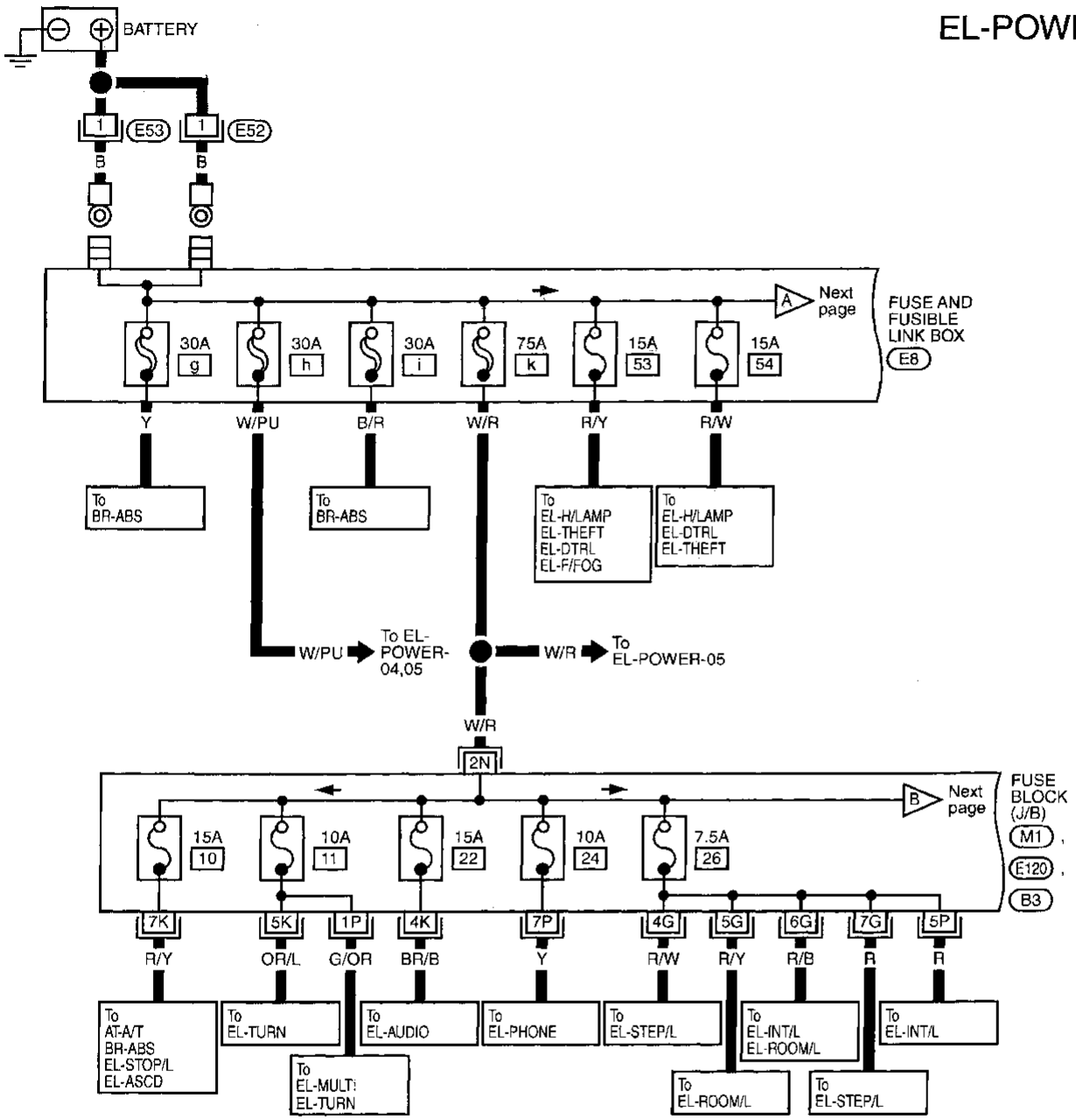


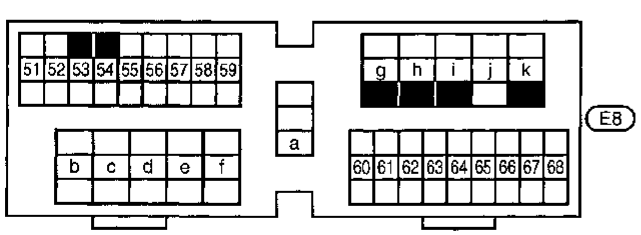
MEL089I

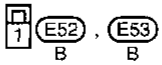
Wiring Diagram — POWER —

BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION

EL-POWER-01







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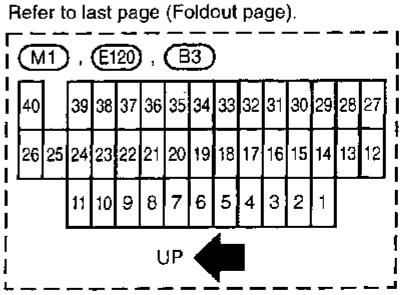


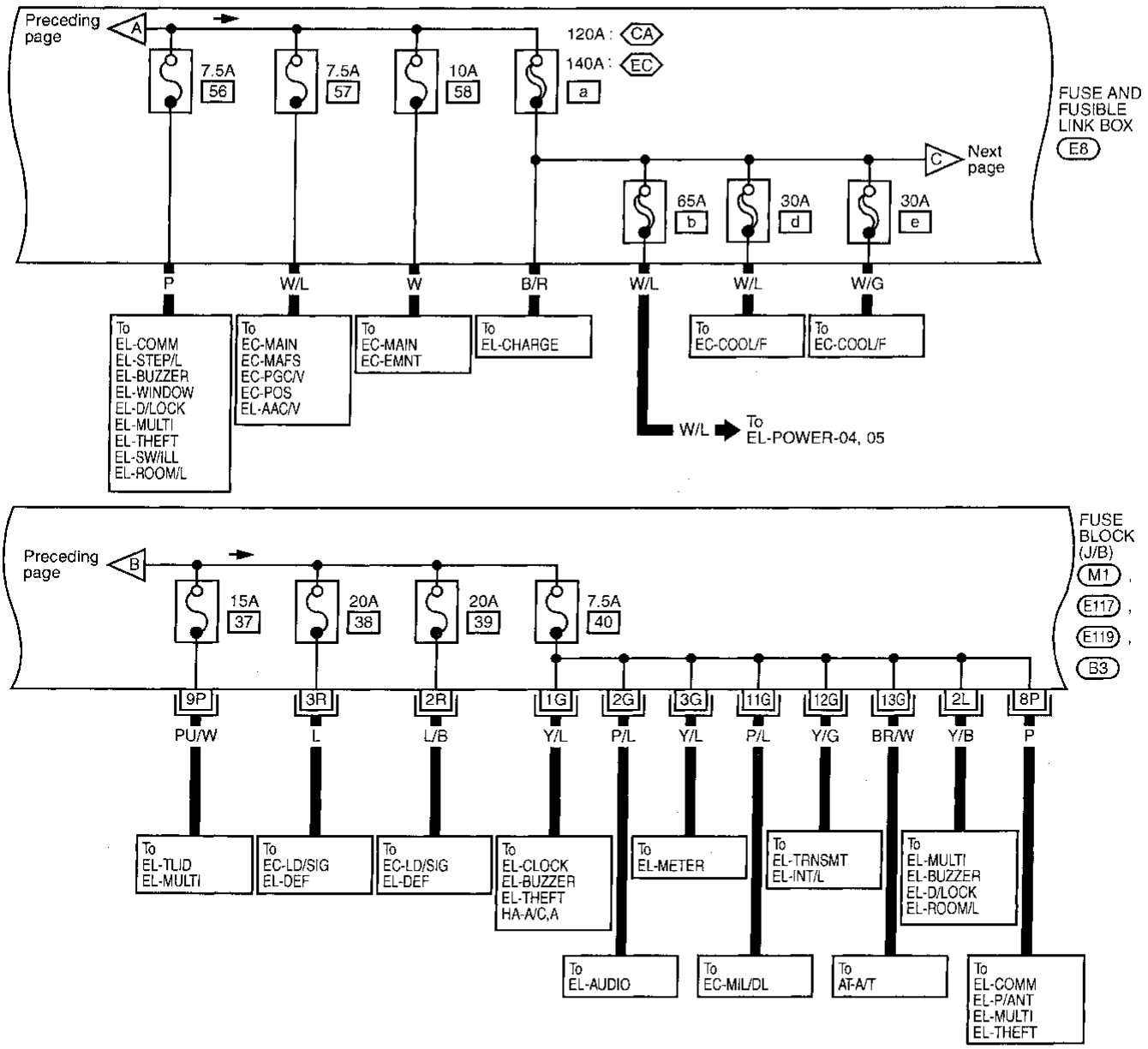
MEL090I

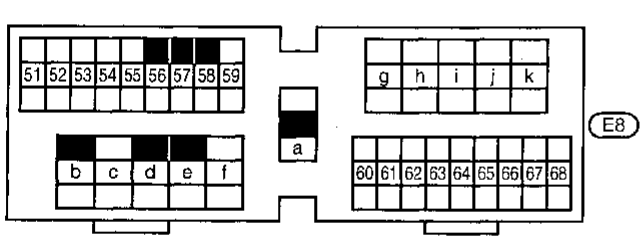
Wiring Diagram — POWER — (Cont'd)

EL-POWER-02

CA : For California

EC : Except for California





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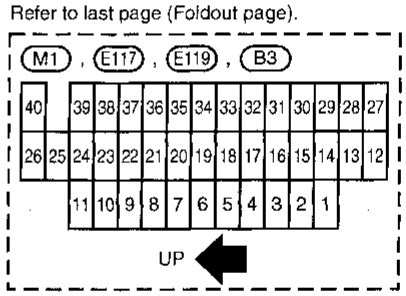
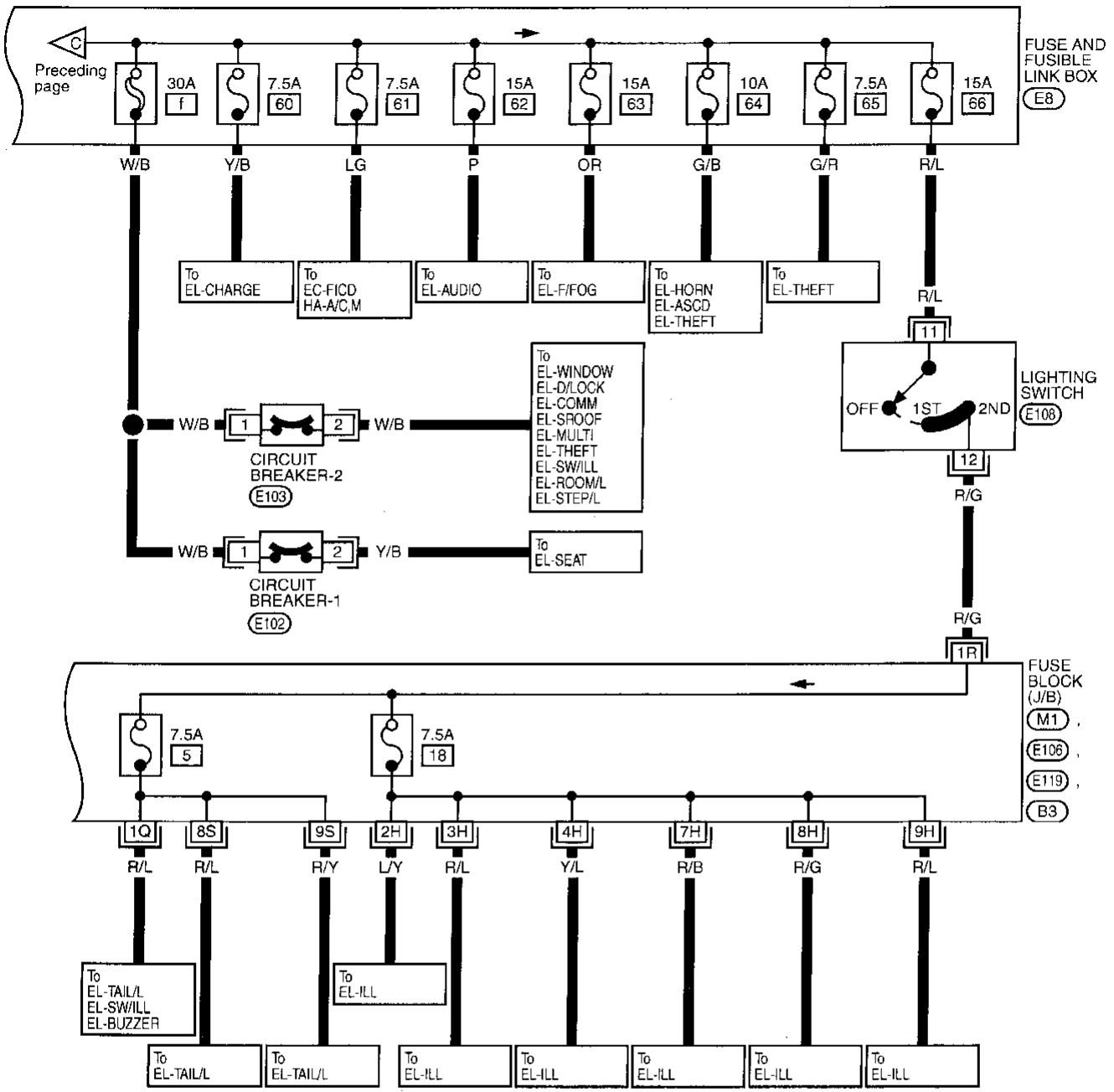
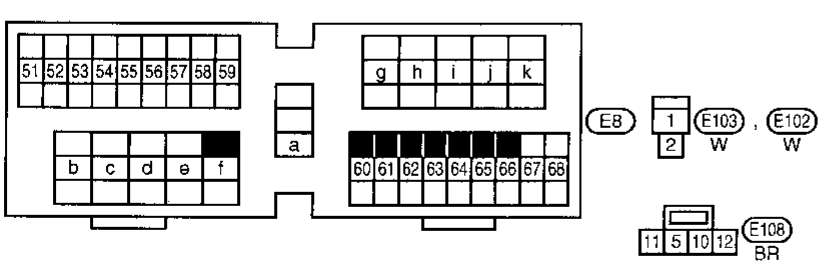


MEL091I

Wiring Diagram — POWER — (Cont'd)

EL-POWER-03





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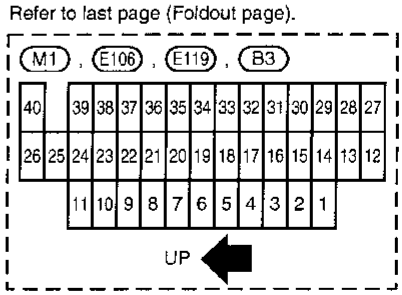
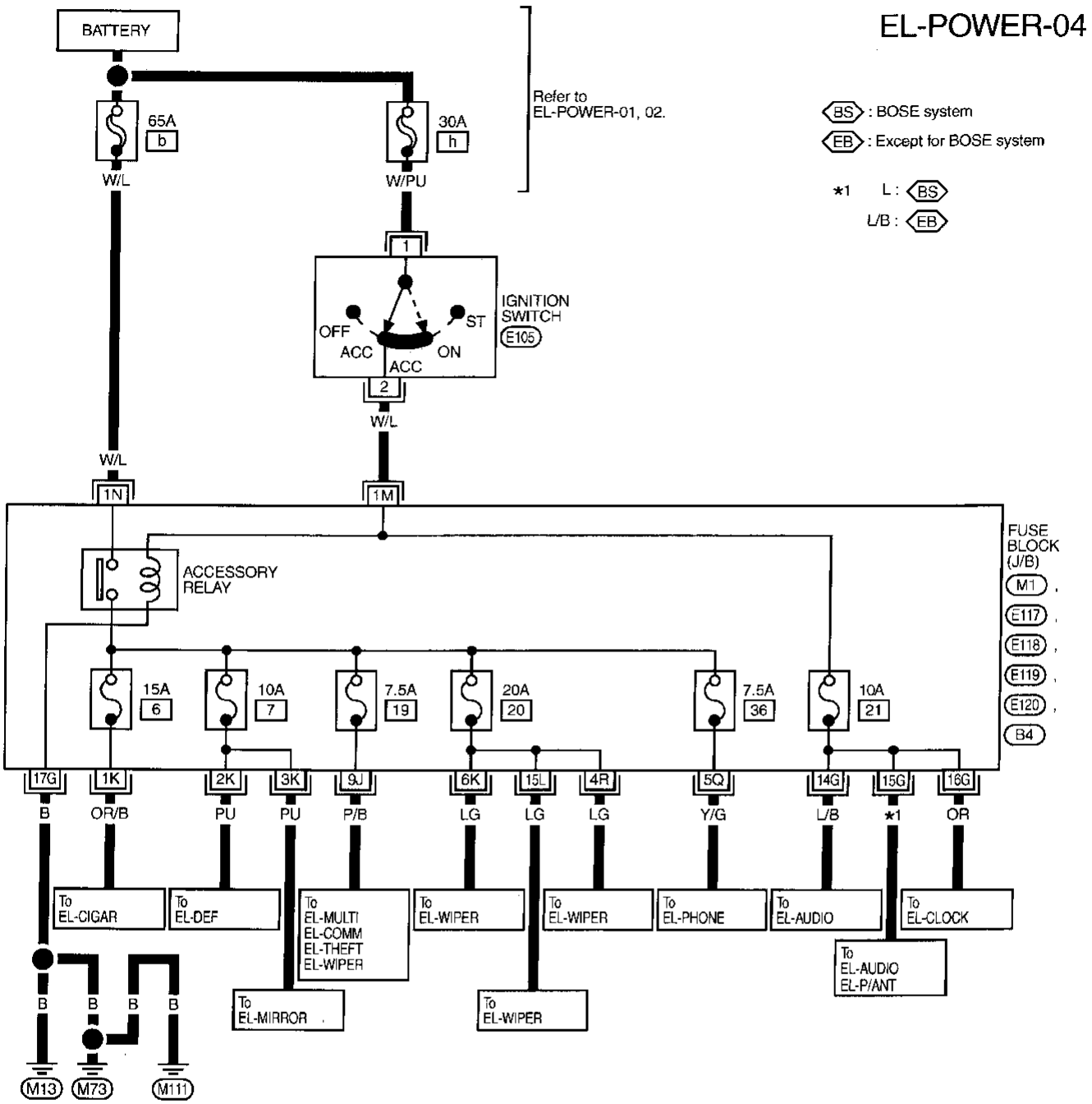
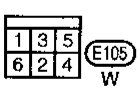


MEL092I

Wiring Diagram — POWER — (Cont'd)

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





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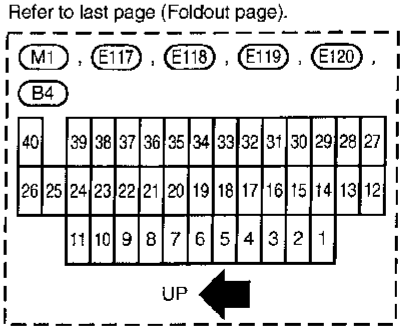
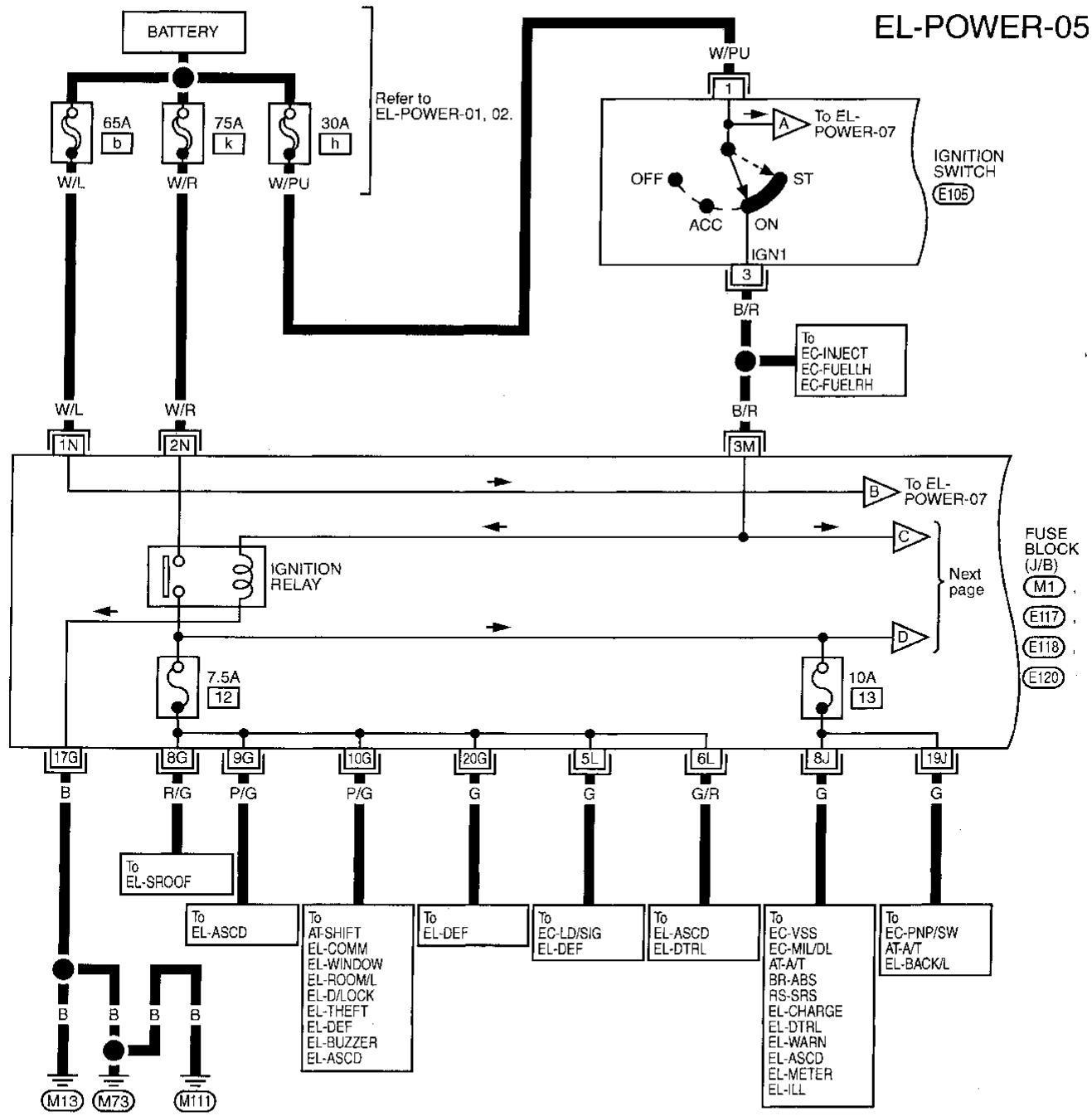
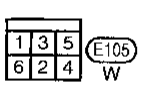


MEL093I

Wiring Diagram — POWER — (Cont'd)

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





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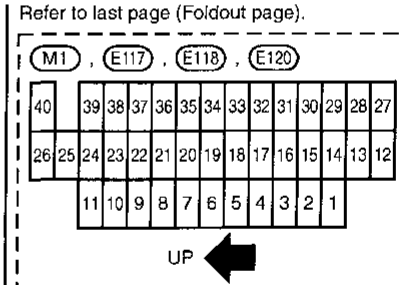
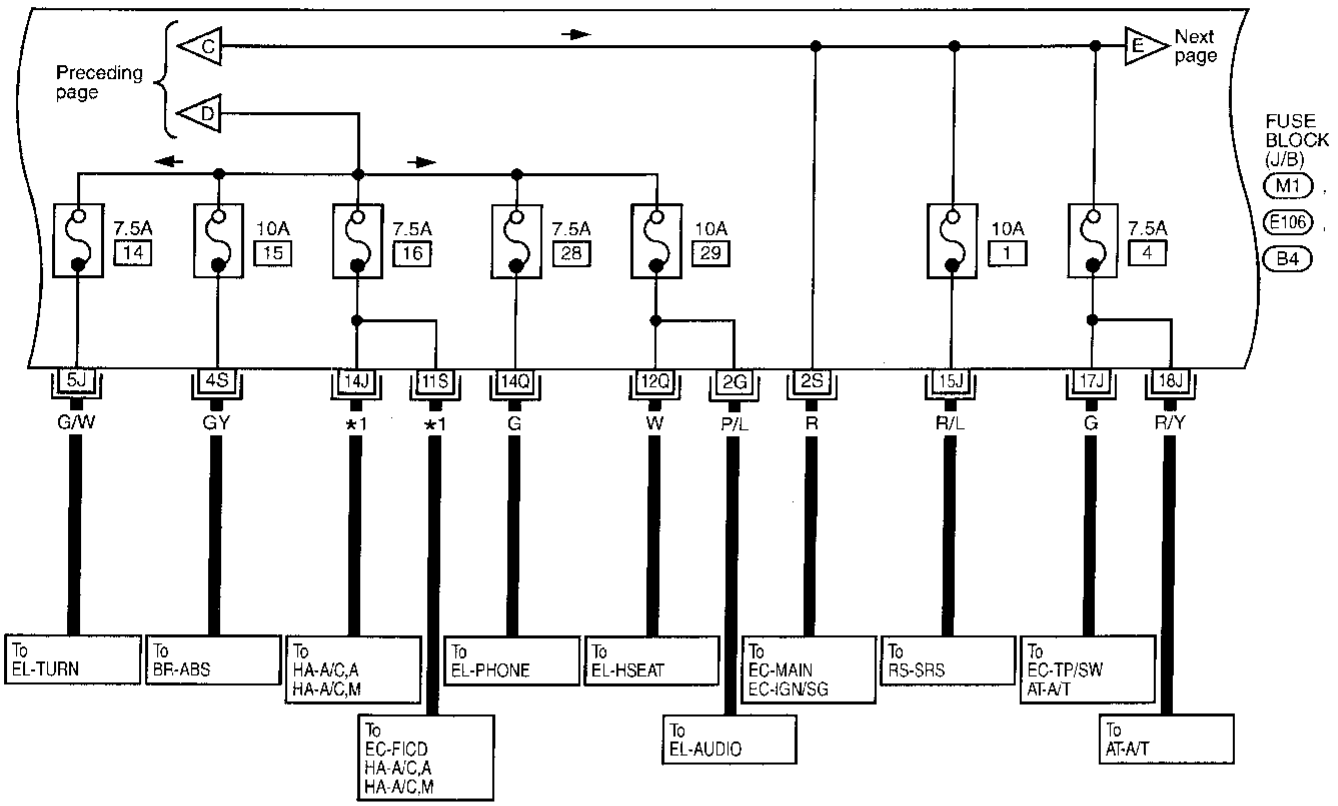


MEL094I

Wiring Diagram — POWER — (Cont'd)

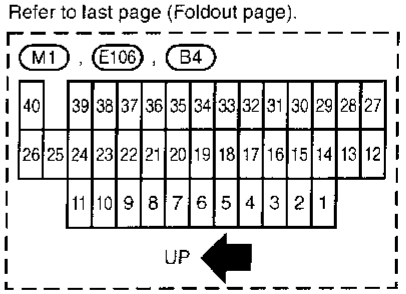
EL-POWER-06



AA : With auto A/C
MA : With manual A/C

*1 P : AA
LG/B : MA

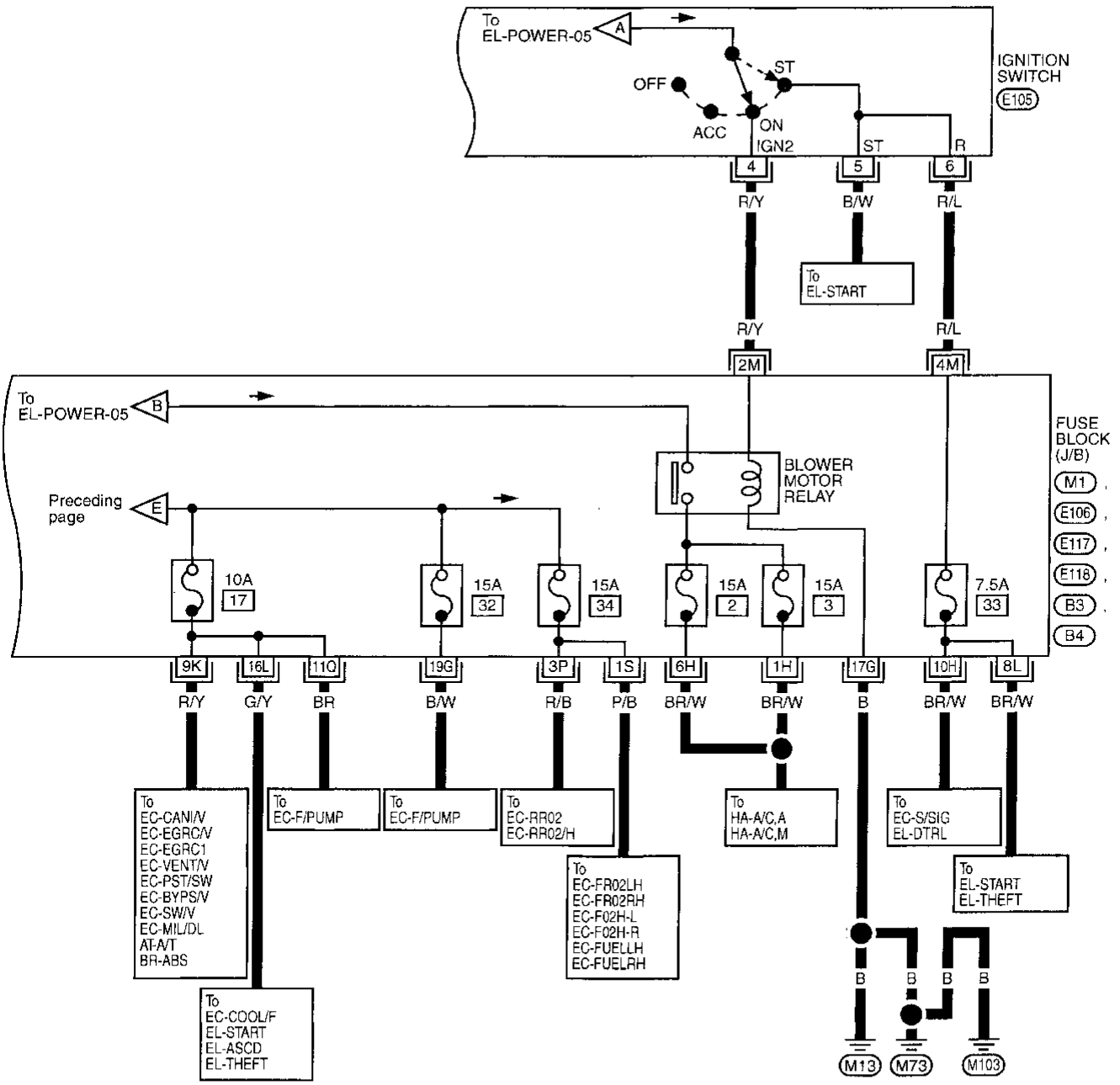
Refer to last page (Foldout page).

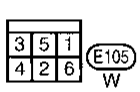


MEL095I

Wiring Diagram — POWER — (Cont'd)

EL-POWER-07





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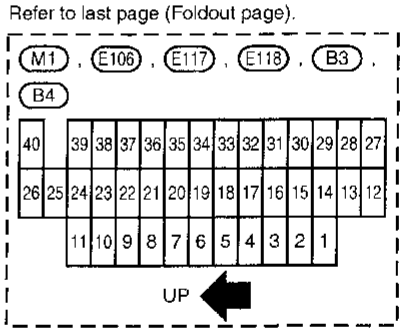

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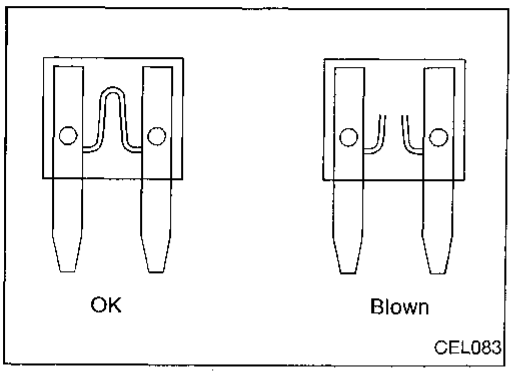
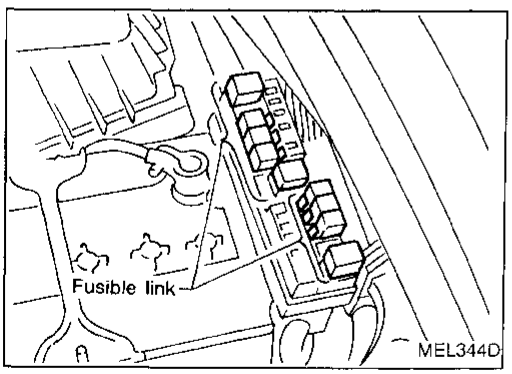


Fuse

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.**



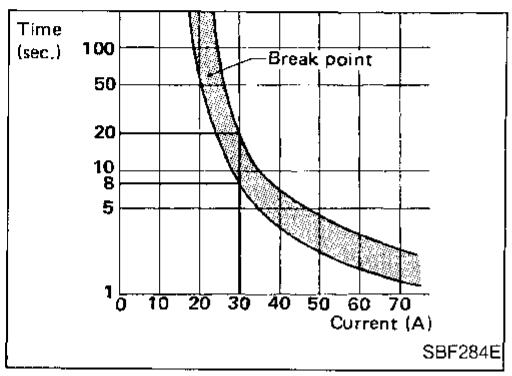
Fusible Link

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.

Circuit breakers are used in the following systems.

- Power seat
- Power window
- Power door lock
- IVMS
- Electric sunroof

EARTH	CONNECT TO	CONN. NO.	CELL CODE
E5/E30	AMBIENT AIR TEMPERATURE SWITCH	E80	HA-A/C, A HA-A/C, M
	ABS SOLENOID VALVE RELAY	E79	BR-ABS
	ASCD HOLD RELAY	E58, E59	EL-ASCD
	BRAKE FLUID LEVEL SWITCH	E1	EL-WARN
	COOLING FAN MOTOR-1	E26	EC-COOL/F
	COOLING FAN MOTOR-2	E27	EC-COOL/F
	COOLING FAN RELAY-2	E56	EC-COOL/F
	COOLING FAN RELAY-3	E62	EC-COOL/F
	DAYTIME LIGHT CONTROL UNIT	E66	EL-DTRL EL-THEFT
	FRONT FOG LAMP LH	E21	EL-F/FOG
	FRONT FOG LAMP RH	E34	EL-F/FOG
	FRONT FOG LAMP SWITCH	E113	EL-F/FOG
	FRONT SIDE MARKER LAMP LH	E23	EL-TAIL/L
	FRONT SIDE MARKER LAMP RH	E33	EL-TAIL/L
	FRONT TURN SIGNAL LAMP LH	E22	EL-TURN
	FRONT TURN SIGNAL LAMP RH	E32	EL-TURN
	FRONT WIPER RELAY	E75	EL-WIPER
	FRONT WIPER SWITCH	E112	EL-WIPER
	HEADLAMP LH	E24	EL-H/LAMP EL-DTRL EL-THEFT
	HEADLAMP RH	E31	EL-H/LAMP EL-THEFT
	HOOD SWITCH	E19	EL-THEFT
	PARKING LAMP LH	E6	EL-TAIL/L
	PARKING LAMP RH	E44	EL-TAIL/L
	THEFT WARNING HORN RELAY-2	E70	EL-THEFT
	TRIPLE-PRESSURE SWITCH	E25	EC-COOL/F HA-A/C, A HA-A/C, M
	WASHER LEVEL SWITCH	E45	EL-WARN
	A/C AUTO AMP.	M98	HA-A/C, A
E35	ALTERNATOR	E37	EL-CHARGE
E115	SHIELD WIRE (FRONT LH WHEEL SENSOR)	E17	BR-ABS
	SHIELD WIRE (FRONT RH WHEEL SENSOR)	M102	BR-ABS
	SHIELD WIRE (REAR LH WHEEL SENSOR)	B109	BR-ABS
	SHIELD WIRE (REAR RH WHEEL SENSOR)	B105	BR-ABS
M13/M73/ M111	ABS CONTROL UNIT	E114	BR-ABS
	A/T DEVICE (OD CONTROL SWITCH)	M62	AT-A/T
	A/T DEVICE (PARK POSITION SWITCH)	M62	AT-SHIFT
	ACCESSORY RELAY	M1	EL-POWER
	AIR MIX DOOR MOTOR	M49	HA-A/C, M
	ASCD CONTROL UNIT	M30	EL-ASCD
	ASCD MAIN SWITCH	M27	EL-ASCD
	ASHTRAY ILLUMINATION	M46	EL-ILL
	AUDIO AMP. RELAY	M79	EL-AUDIO
	BCM (BODY CONTROL MODULE)	M105	EL-BUZZER EL-COMM EL-WINDOW EL-ROOM/L EL-D/LOCK EL-MULTI EL-THEFT EL-STEP/L EL-WIPER EL-SW/ILL

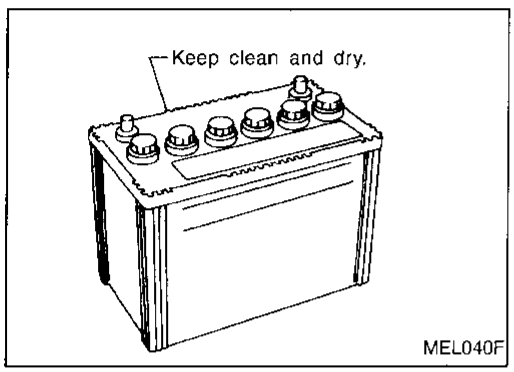
EARTH	CONNECT TO	CONN. NO.	CELL CODE
M13/M73/ M111	BLOWER MOTOR RELAY	M1	EL-POWER
	CIGARETTE LIGHTER SOCKET	M45	EL-CIGAR
	CLOCK	M59	EL-CLOCK
	CLOCK (ILLUMINATION)	M59	EL-ILL
	CLUTCH INTERLOCK SWITCH	M16	EL-START
	COMBINATION FLASHER UNIT	M34	EL-TURN
	COMBINATION METER (AIR BAG)	M83	RS-SRS EL-WARN
	COMBINATION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

EARTH	CONNECT TO	CONN. NO.	CELL CODE
M13/M73/ M111	SHIELD WIRE (FRONT DOOR SPEAKER AND TWEETER LH)	D6, D13	EL-AUDIO
	SHIELD WIRE (FRONT DOOR SPEAKER AND TWEETER RH)	D36, D42	EL-AUDIO
	TRUNK LID OPENER SWITCH	D10	EL-TLID EL-MULTI EL-MULTI
	INTEGRATED HOMELINK TRANSMITTER	R2	EL-TRNSMT
	SPOT LAMP	R4	EL-INT/L
	VANITY MIRROR ILLUMINATION LH	R2	EL-INT/L
	VANITY MIRROR ILLUMINATION RH	R5	EL-INT/L
	AIR BAG DIAGNOSIS SENSOR UNIT	Z4	RS-SRS
F18/F19	TCM (TRANSMISSION CONTROL MODULE)	F103	AT-A/T
	CONDENSER	F22	EC-IGN/SG
	ECM (ECCS CONTROL MODULE)	F101	EC-MAIN AT-A/T
	IACV-FICD SOLENOID VALVE-1	F12	EC-FICD HA-A/C, M HA-A/C, A
	IGNITION COIL NO. 1	F3	EC-IGN/SG
	IGNITION COIL NO. 2	F31	EC-IGN/SG
	IGNITION COIL NO. 3	F4	EC-IGN/SG
	IGNITION COIL NO. 4	F30	EC-IGN/SG
	IGNITION COIL NO. 5	F6	EC-IGN/SG
	IGNITION COIL NO. 6	F29	EC-IGN/SG
	INHIBITOR SWITCH	F51	AT-A/T EL-START EL-ASCD
	NEUTRAL AND REVERSE POSITION SWITCH	F32	EC-PNP/SW
	POWER STEERING OIL PRESSURE SWITCH	F1	EC-PST/SW
	SHIELD WIRE [CAMSHAFT POSITION SENSOR (PHASE)]	F15	EC-PHASE
	SHIELD WIRE [CRANKSHAFT POSITION SENSOR (POS)]	F112	EC-POS
	SHIELD WIRE [CRANKSHAFT POSITION SENSOR (REF)]	F136	EC-REF
	SHIELD WIRE [FRONT HEATED OXYGEN SENSOR (Left bank)]	F28	EC-FRO2LH EC-FUELLH EC-FO2H-L
	SHIELD WIRE [FRONT HEATED OXYGEN SENSOR (Right bank)]	F2	EC-FRO2RH EC-FUELRH EC-FO2H-R
	SHIELD WIRE (KNOCK SENSOR)	F122	EC-KS
	SHIELD WIRE (MASS AIR FLOW SENSOR)	F33	EC-MAFS
	SHIELD WIRE (THROTTLE POSITION SENSOR)	F8	EC-TPS AT-A/T
	SHIELD WIRE (ABSOLUTE PRESSURE SENSOR)	F45	EC-AP/SEN
	DATA LINK CONNECTOR FOR GST	M63	EC-MIL/DL
	SHIELD WIRE (EVAP CONTROL SYSTEM PRESSURE SENSOR)	B52	EC-PRE/SE
	REAR HEATED OXYGEN SENSOR	B9	EC-RRO2 EC-RRO2/H
	SHIELD WIRE (REAR HEATED OXYGEN SENSOR)	B9	EC-RRO2 EC-RRO2/H
	CRANKSHAFT POSITION SENSOR (POS)	F112	EC-POS
	CAMSHAFT POSITION SENSOR (PHASE)	F15	EC-PHASE

EARTH	CONNECT TO	CONN. NO.	CELL CODE
B16/B19	FRONT DOOR SWITCH LH	B18	EL-BUZZER EL-MULTI RS-SRS EL-ROOM/L EL-D/LOCK EL-THEFT
	FRONT DOOR SWITCH RH	B15	EL-D/LOCK EL-THEFT EL-MULTI
	FUEL TANK GAUGE UNIT	B22	EL-METER EL-WARN EC-TFTS
	FUEL PUMP	B21	EC-FPCM EC-F/PUMP
	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
	REAR SPEAKER LH	B37	EL-AUDIO
	REAR SPEAKER RH	B41	EL-AUDIO
	SEAT BELT BUCKLE SWITCH	B7	EL-WARN EL-BUZZER
	TELEPHONE	B53	EL-PHONE
	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
	REAR DOOR LOCK ACTUATOR LH	D55	EL-D/LOCK EL-MULTI EL-THEFT
	REAR DOOR LOCK ACTUATOR RH	D75	EL-D/LOCK EL-MULTI EL-THEFT
	REAR LH DOOR CONTROL UNIT (LCU04)	D53	EL-COMM EL-WINDOW EL-D/LOCK EL-MULTI EL-SW/ILL EL-THEFT
	REAR RH DOOR CONTROL UNIT (LCU03)	D73	EL-COMM EL-WINDOW EL-D/LOCK EL-MULTI EL-SW/ILL EL-THEFT
	HIGH-MOUNTED STOP LAMP (With rear air spoiler)	H1	EL-STOP/L
	HIGH-MOUNTED STOP LAMP (Without rear air spoiler)	B40	EL-STOP/L
	POWER SEAT LH	B6	EL-SEAT
	POWER SEAT RH	B14	EL-SEAT
	TRUNK LID KEY CYLINDER SWITCH	B32	EL-THEFT
	TRUNK ROOM LAMP SWITCH	B31	EL-INT/L EL-THEFT
B55	REAR WINDOW DEFOGGER	B54	EL-DEF
B57	SHIELD WIRE (SATELLITE SENSOR LH)	B58	RS-SRS
B63	SHIELD WIRE (SATELLITE SENSOR LH, SATELLITE SENSOR RH)	B58, B62	RS-SRS
B64	SHIELD WIRE (SATELLITE SENSOR RH)	B62	RS-SRS
T6/T9	LICENSE PLATE LAMP	T8	EL-TAIL/L
	MULTI-REMOTE CONTROL UNIT (LCU05)	T12	EL-COMM EL-MULTI EL-THEFT
	POWER ANTENNA TIMER AND MOTOR	T13	EL-P/ANT
	REAR COMBINATION LAMP LH	T4	EL-TAIL/L EL-STOP/L EL-TURN
	REAR COMBINATION LAMP RH	T10	EL-TAIL/L EL-STOP/L EL-TURN
	REAR SIDE MARKER LAMP LH	T3	EL-TAIL/L
	REAR SIDE MARKER LAMP RH	T11	EL-TAIL/L

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.**

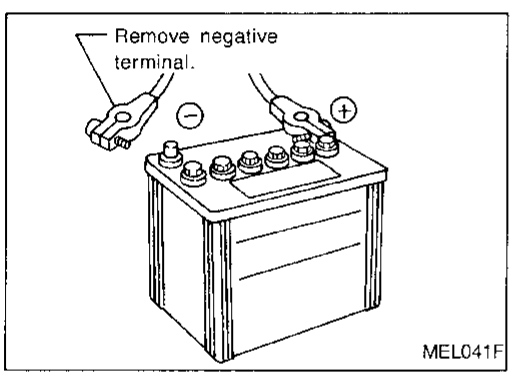


How to Handle Battery

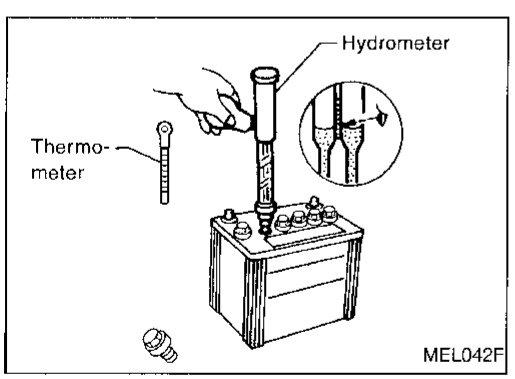
METHODS OF PREVENTING OVER-DISCHARGE

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.

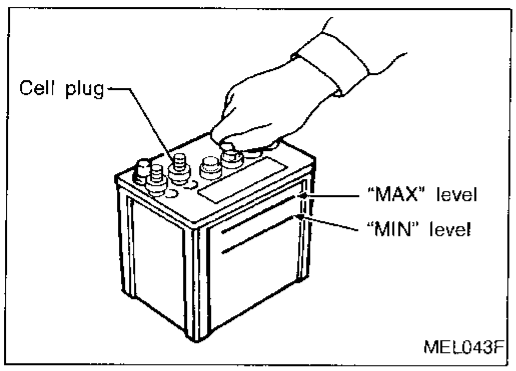
CHECKING ELECTROLYTE LEVEL

WARNING:

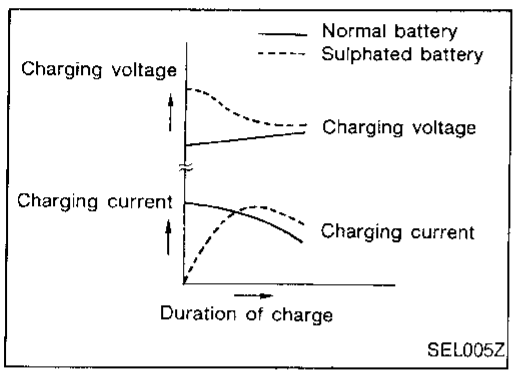
Do not allow battery fluid to come in contact with skin, eyes, fabrics, or painted surfaces. After touching a battery, do not touch or rub your eyes until you have thoroughly washed your hands. If the acid contacts the eyes, skin or clothing, immediately flush with water for 15 minutes and seek medical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



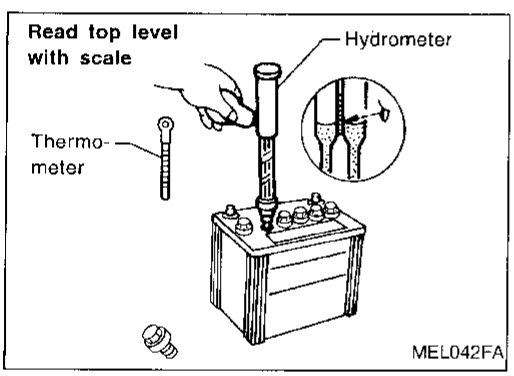
- Remove the cell plug using a suitable tool.
- Add distilled water up to the MAX level.



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.

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 (129)	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 (39)	−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

For models with theft warning system

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 ON or START position, power is supplied
- through 10A fuse [No. [17], located in the fuse block (J/B)]
- to theft warning relay terminal ① .

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 theft warning relay terminal ③ .

If the theft warning system is not triggered, power is supplied
- through theft warning relay terminal ④
- to clutch interlock relay terminal ① .

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

The clutch interlock relay is energized and power is supplied
- from terminal ⑤ of the clutch interlock relay
- to terminal ① of the starter motor windings.

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

If the theft warning system is triggered, terminal ② of the theft warning relay is grounded and power to the clutch interlock relay is interrupted.

For models without theft warning system

Theft warning relay acts just as a path circuit between 7.5A fuse [No. [33], located in the fuse block (J/B)] and clutch interlock relay.

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 theft warning system

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 theft warning relay terminals ① and ③ .

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

If the theft warning system is not triggered, power is supplied
- through theft warning relay terminal ④
- to inhibitor relay terminal ① .

Without theft warning system

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 inhibitor relay terminal ① .

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

With the selector lever in the P or N position, ground is supplied
- to inhibitor relay terminal ② through the inhibitor switch and body grounds (F18) and (F19).

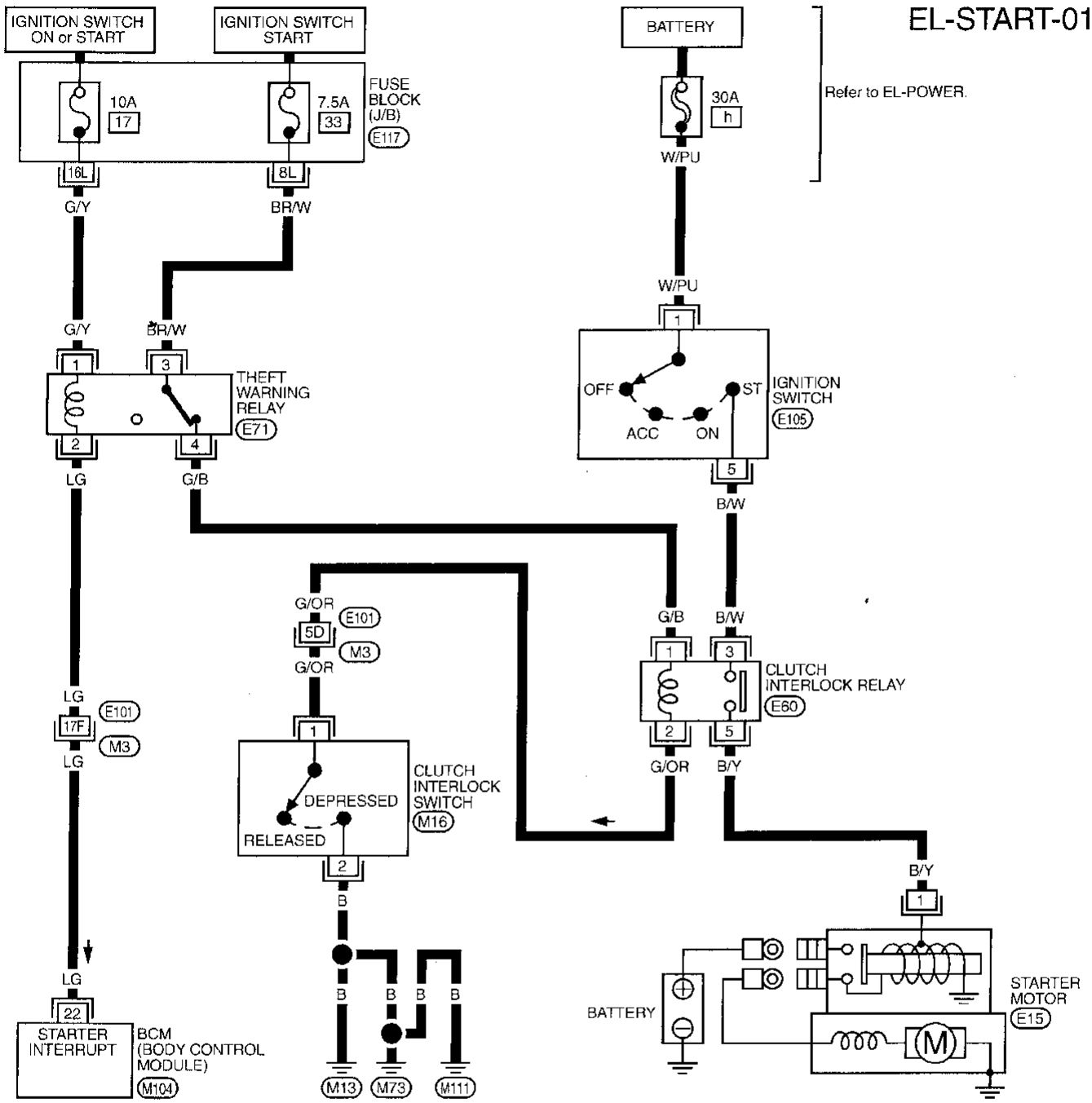
Then inhibitor relay is energized and power is supplied
- from ignition switch terminal ⑤
- through inhibitor relay terminals ⑥ and ⑦

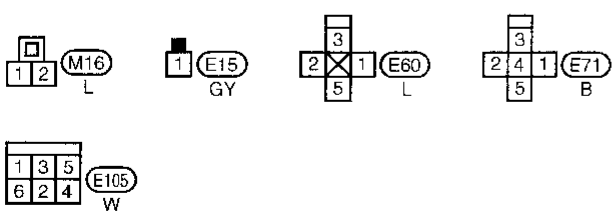
System Description (Cont'd)

- 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. If the theft warning system is triggered, terminal ② of the theft warning relay is grounded and power to the inhibitor relay terminal ① is interrupted.

Wiring Diagram — START —/M/T Models

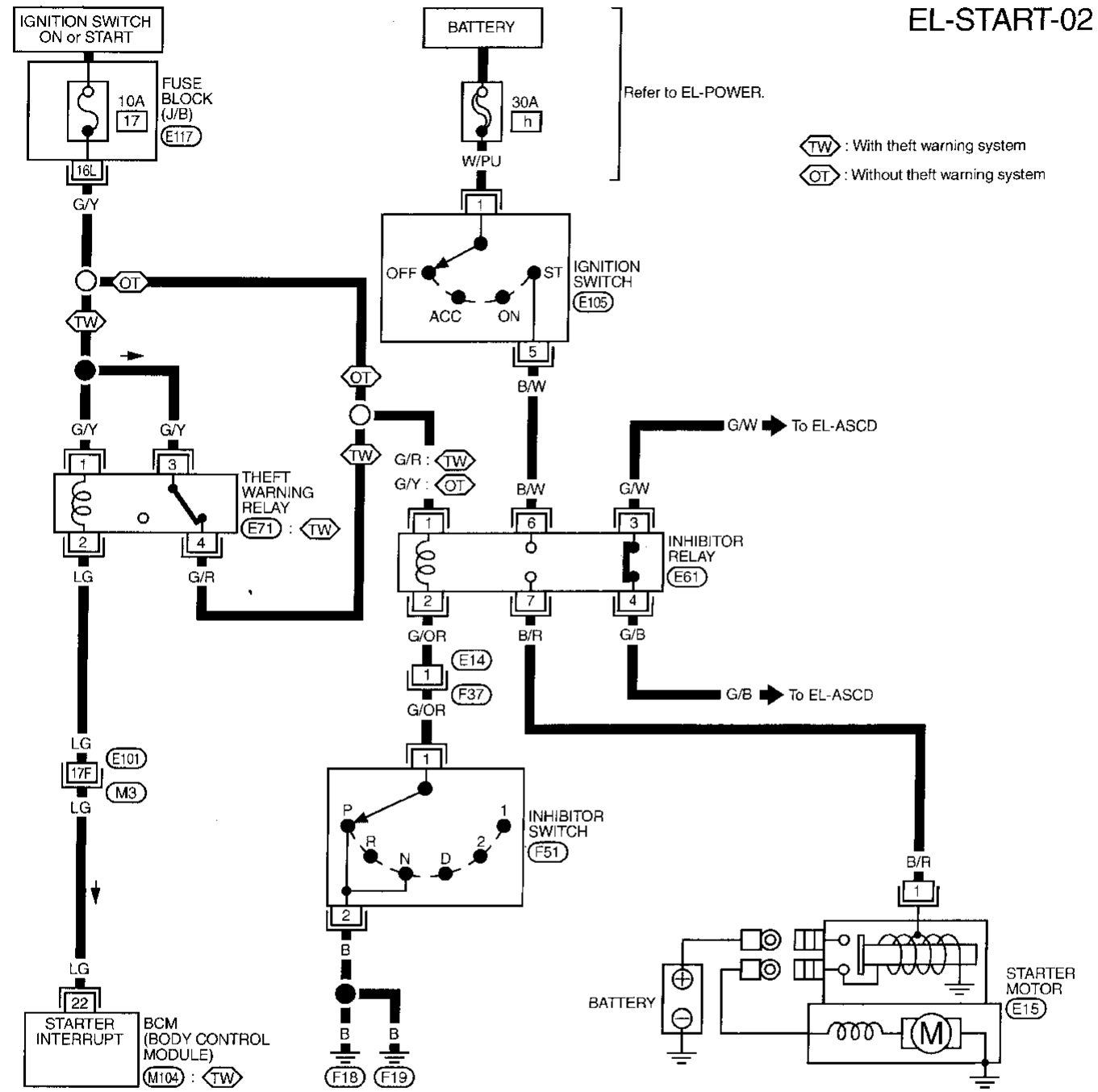


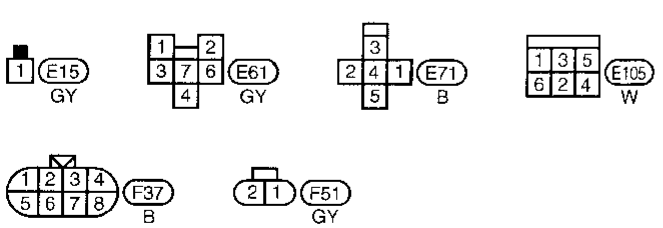


Refer to last page (Foldout page).
M3 , E101
E117
M104

MEL097I

Wiring Diagram — START —/A/T Models

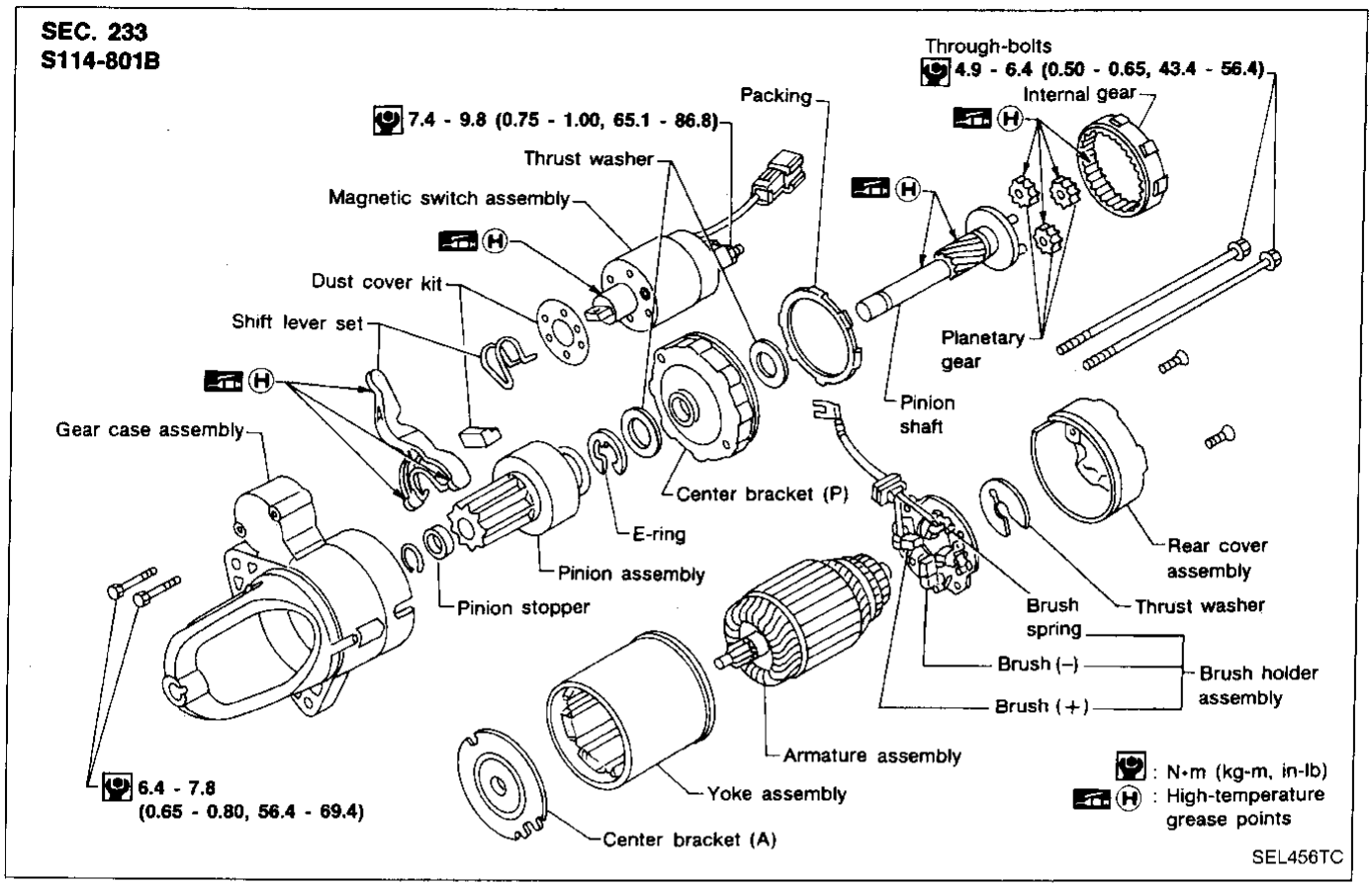


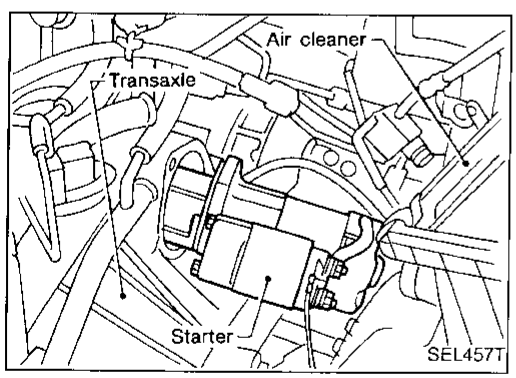


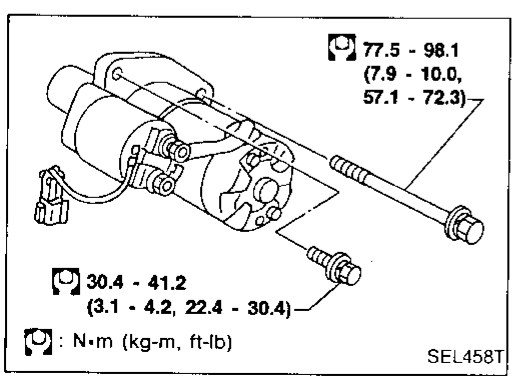
Refer to last page (Foldout page).
M3 , E101
E117
M104

MEL098I

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		S114-801B
		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:

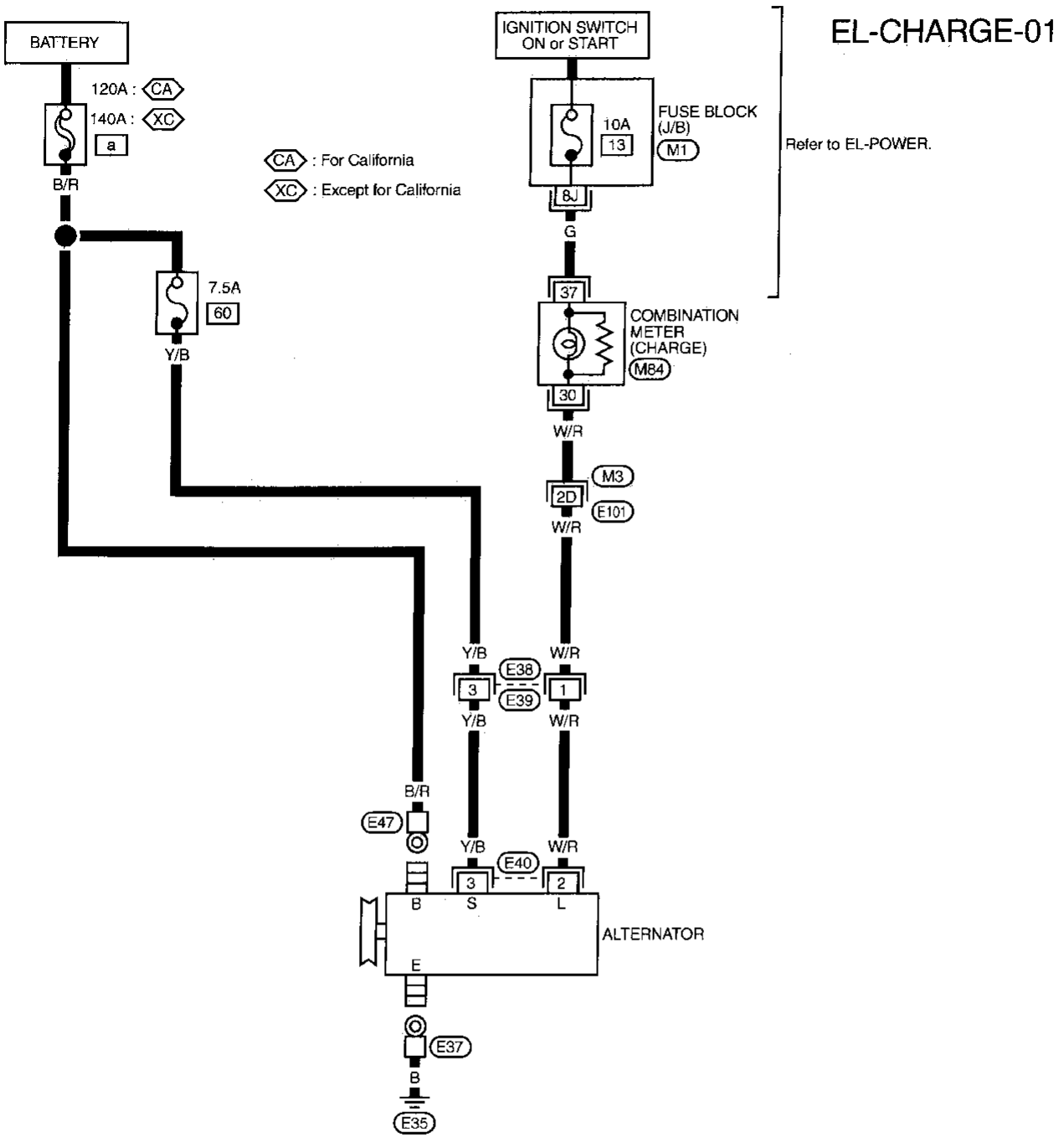
- 120A (For California) or 140A (Except for California) fusible link (letter [a], located in the fuse and fusible link box), and
- 7.5A fuse (No. [60], located in the fuse and fusible link box).

Voltage output through alternator terminal Ⓑ, is controlled by the IC regulator at terminal Ⓢ. The charging circuit is protected by the 120A or 140A 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-31).

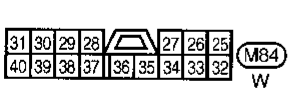
Wiring Diagram — CHARGE —

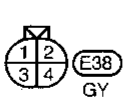


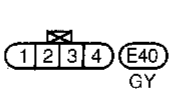
Refer to last page (Foldout page).

M1

M3 , E101







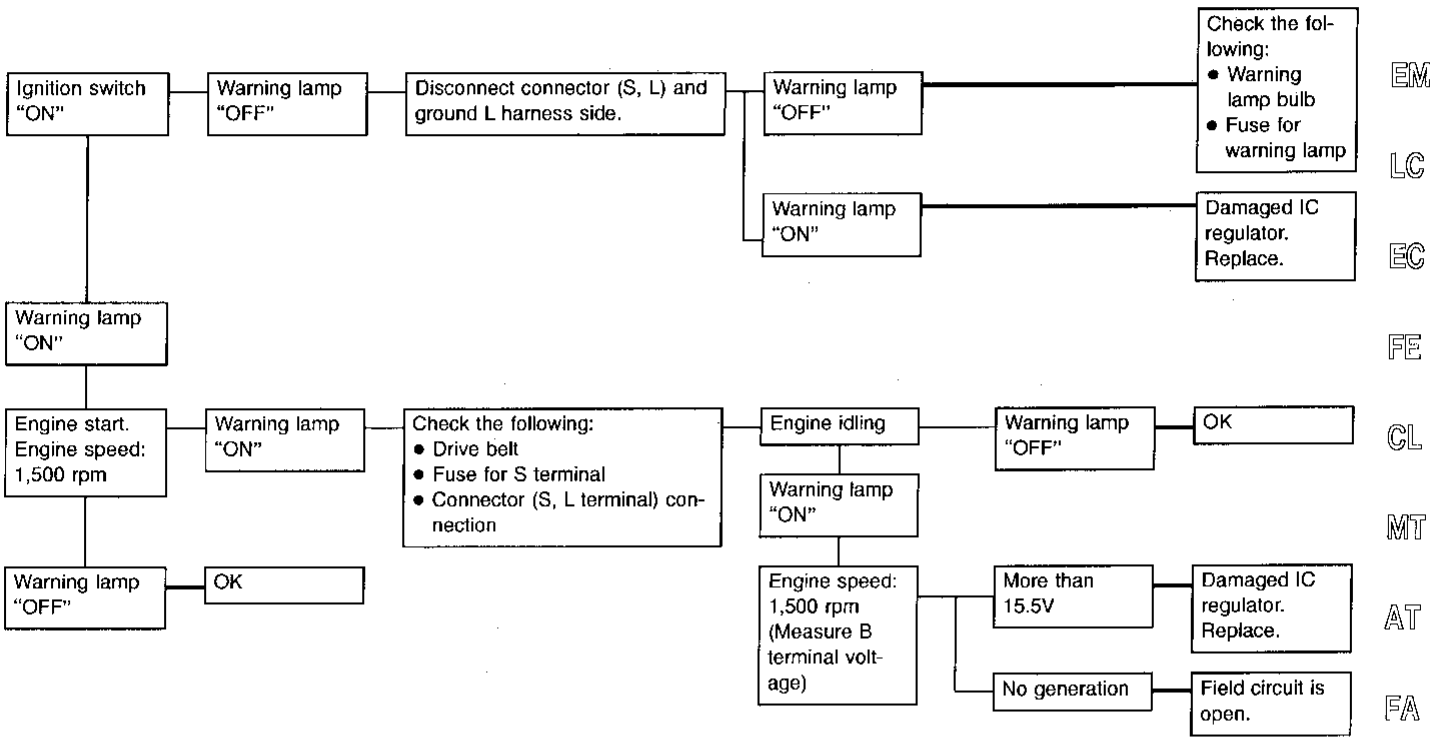
MEL099I

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:

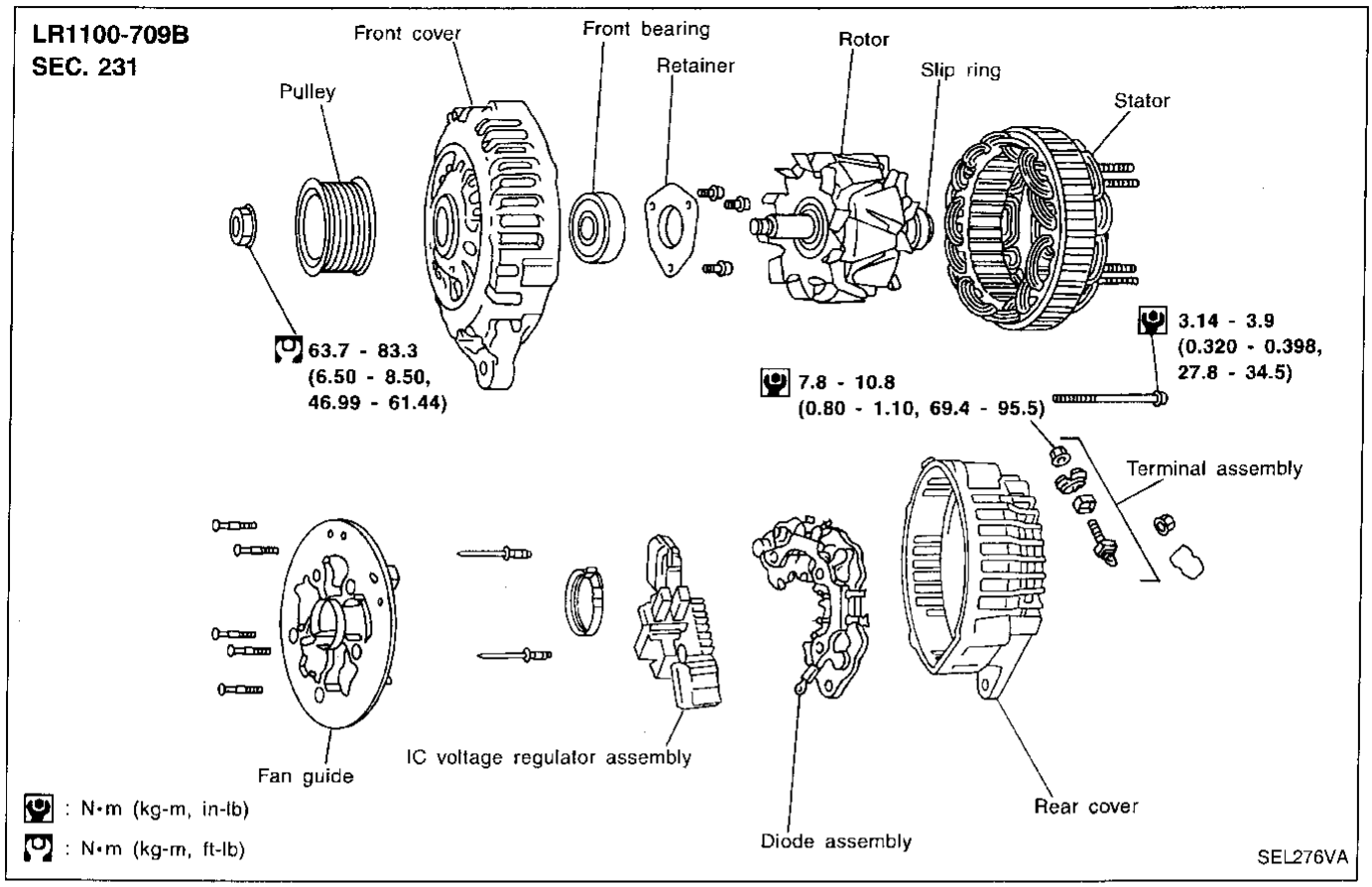
- **If the inspection result is OK even though the charging system is malfunctioning, check the B terminal connection. (Check the tightening torque.)**
- **When field circuit is open, check condition of rotor coil, rotor slip ring and brush. If necessary, replace faulty parts with new ones.**

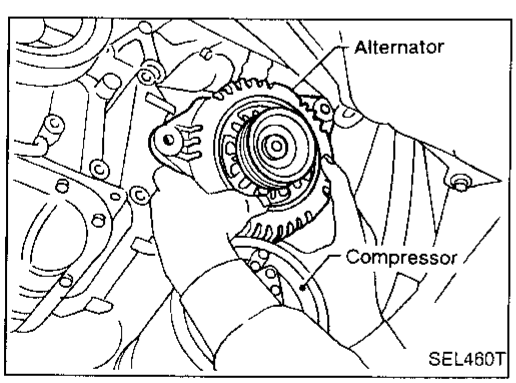
MALFUNCTION INDICATOR

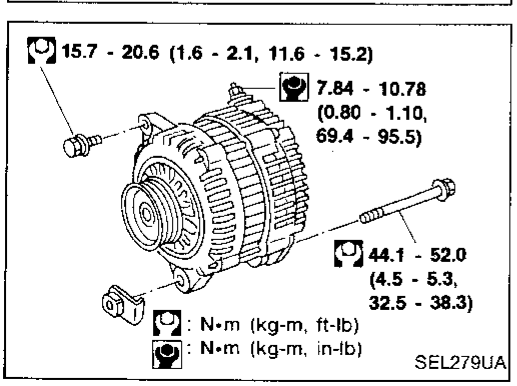
The IC regulator warning function activates to illuminate "CHARGE" warning lamp, if any of the following symptoms occur while alternator is operating:

- 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

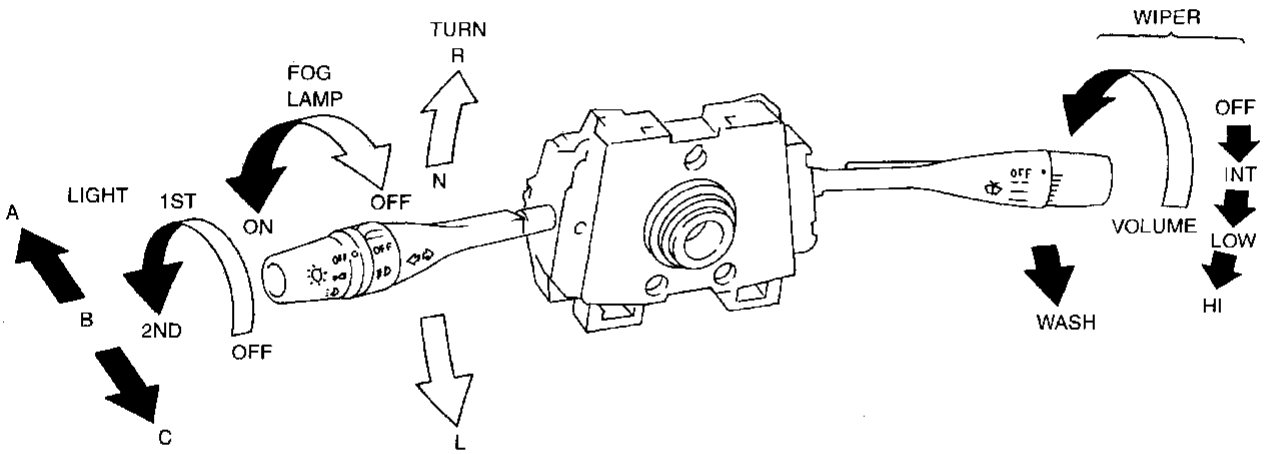
To install, reverse the removal procedure.

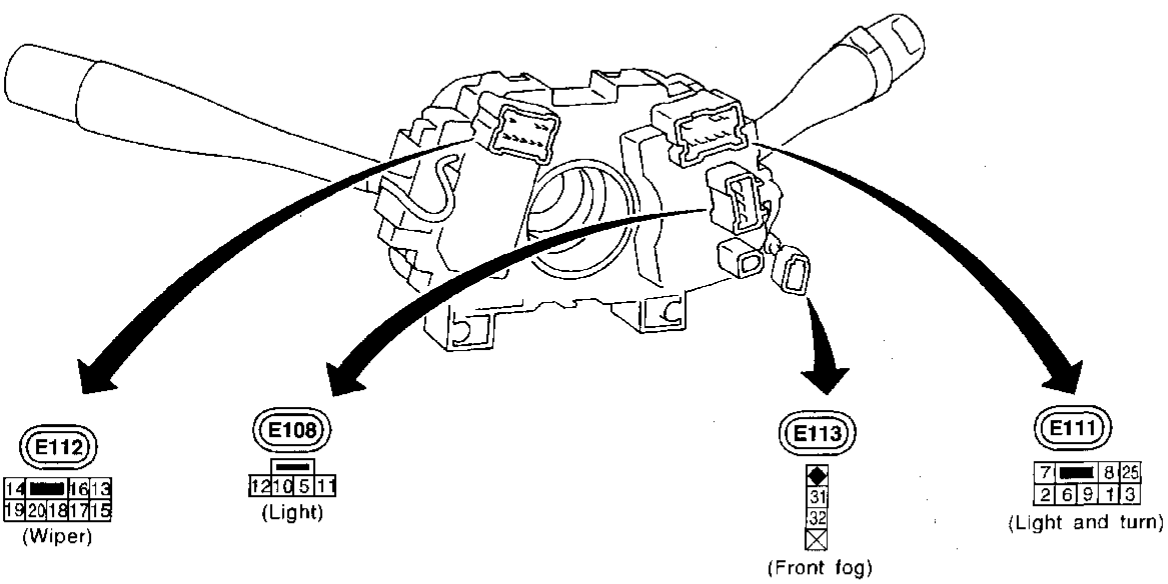
Service Data and Specifications (SDS)

ALTERNATOR

Type		LR1110-709B 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 110/5,000
Regulated output voltage	V	14.1 - 14.7
Minimum length of brush	mm (in)	6.0 (0.236)
Brush spring pressure	N (g, oz)	1.000 - 3.432 (102 - 350, 3.60 - 12.34)
Slip ring minimum outer diameter	mm (in)	26.0 (1.024)
Rotor (Field coil) resistance	Ω	2.31

Check





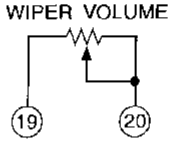
LIGHTING SWITCH

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

WIPER SWITCH

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

VARIABLE INTERMITTENT WIPER VOLUME



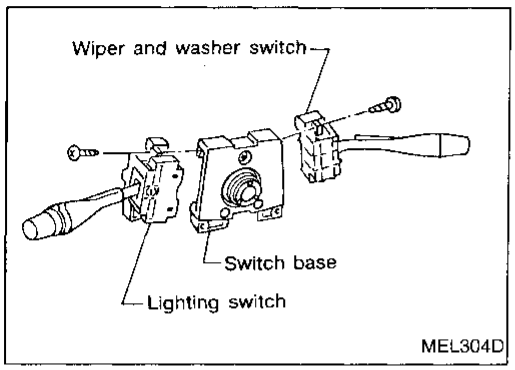
FRONT FOG LAMP SWITCH

	OFF	ON
31		○
32		○

TURN SIGNAL LAMP SWITCH

	L	N	R
1	○		○
2			○
3	○		

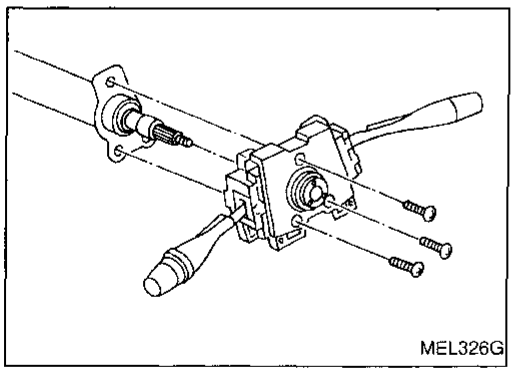
MEL459I



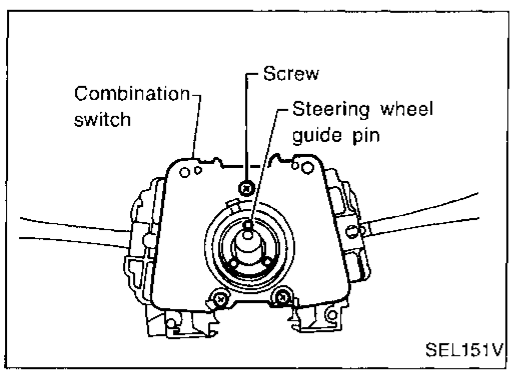
Replacement

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

- Each switch can be replaced without removing combination switch base.

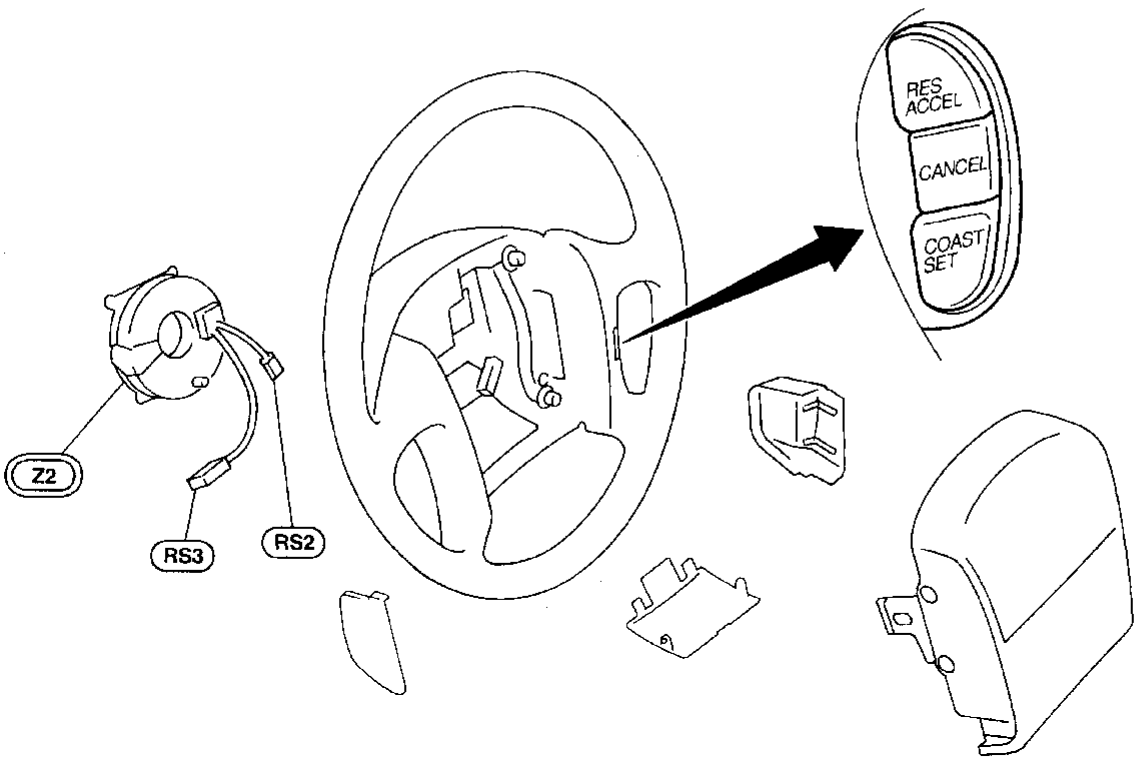


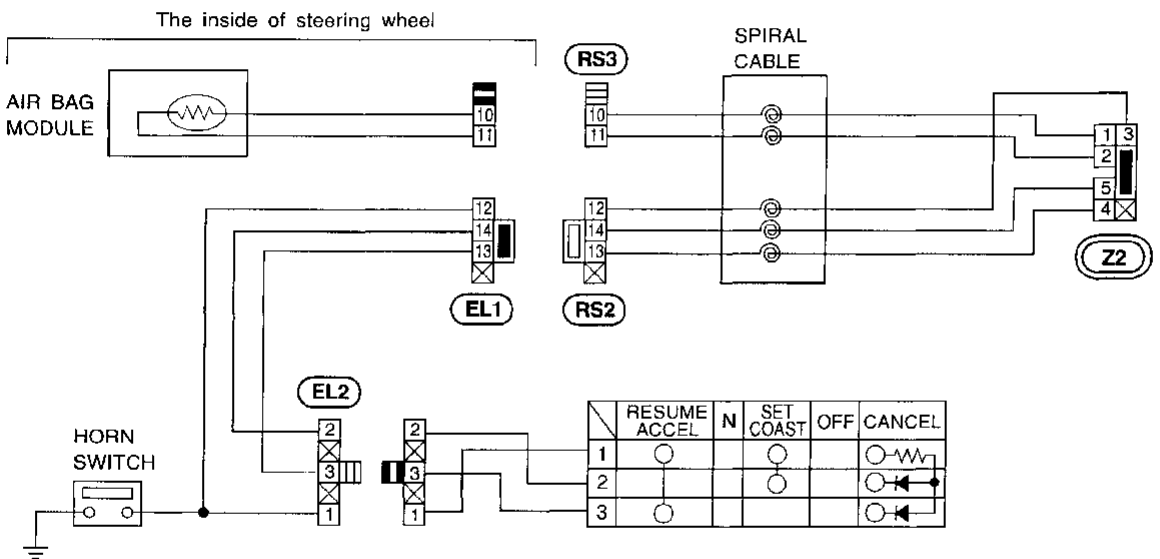
- To remove combination switch base, remove base attaching screw.



- Before installing the steering wheel, align the steering wheel guide pins with the screws which secure the combination switch as shown in the left figure.

Check





MEL461I

System Description (For USA)

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

When the lighting switch is turned to the 2ND and LOW ("B") position, power is supplied
- from lighting switch terminal ⑩
- to terminal ② of the LH headlamp, and
- from lighting switch terminal ⑦
- to terminal ② of the RH headlamp.

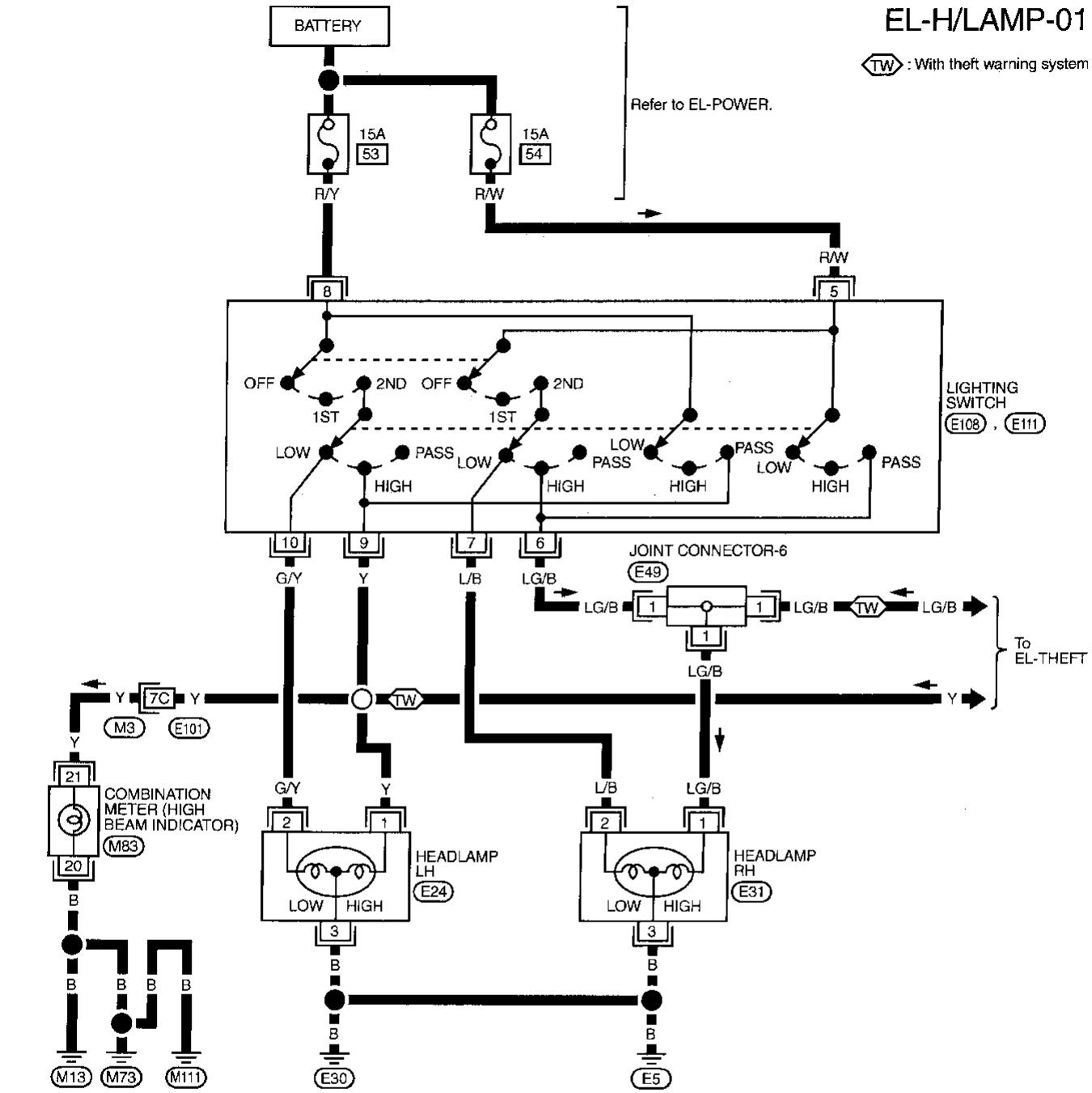
Terminal ③ of each headlamp supplies ground through body grounds E5 and E30.
With power and ground supplied, the headlamps will illuminate.
When the lighting switch is placed in the 2ND and HIGH ("A") or PASS ("C") position, power is supplied
- from lighting switch terminal ⑨
- to terminal ① of the LH headlamp, and
- to combination meter terminal ㉑ for the HIGH BEAM indicator, and
- from lighting switch terminal ⑥
- to terminal ① of the RH headlamp.

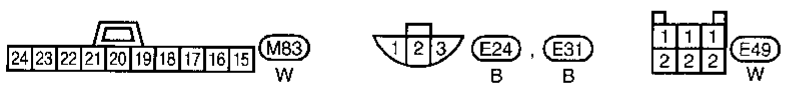
Ground is supplied to terminal ⑳ of the combination meter through body grounds M13, M73 and M111.
With power and ground supplied, the high beams and the HIGH BEAM indicator illuminate.

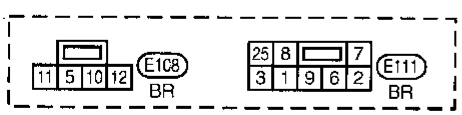
With theft warning system

The theft warning system will flash the high beams if the system is triggered. Refer to "THEFT WARNING SYSTEM — IVMS" (EL-251).

Wiring Diagram — H/LAMP —





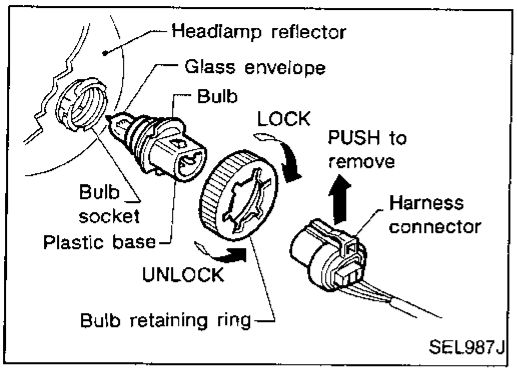


Refer to last page (Foldout page).
M3 , E101

MEL100I

Trouble Diagnoses

Symptom	Possible cause	Repair order
LH headlamps do not operate.	1. Bulb 2. Grounds (E5) and (E30) 3. 15A fuse 4. Lighting switch	1. Check bulb. 2. Check grounds (E5) and (E30). 3. Check 15A fuse (No. 53, located in fuse and fusible link box). Verify battery positive voltage is present at terminal ⑧ of lighting switch. 4. Check lighting switch.
RH headlamps do not operate.	1. Bulb 2. Grounds (E5) and (E30) 3. 15A fuse 4. Lighting switch	1. Check bulb. 2. Check grounds (E5) and (E30). 3. Check 15A fuse (No. 54, located in fuse and fusible link box). Verify battery positive voltage is present at terminal ⑤ of lighting switch. 4. Check lighting switch.
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 Y wire between lighting switch 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 G/Y wire between lighting switch 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 LG/B wire between lighting switch 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 L/B wire between lighting switch and RH headlamp for an open circuit. 3. Check lighting switch.
High beam indicator does not work.	1. Bulb 2. Grounds (M13) and (M73) 3. Open in high beam circuit	1. Check bulb in combination meter. 2. Check grounds (M13), (M73) and (M111). 3. Check Y wire between lighting switch and combination meter for an open circuit.



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. Dust, moisture, smoke, etc. entering headlamp may affect the performance of the headlamp. Remove headlamp bulb from the headlamp reflector just before a replacement bulb is installed.

Bulb Specifications

Item	Wattage (W)
Semi-sealed beam High/Low	60/55

Aiming Adjustment

When performing headlamp aiming adjustment, use an aiming machine, aiming wall screen or headlamp tester. Aimers should be in good repair, calibrated and operated in accordance with respective operation manuals.

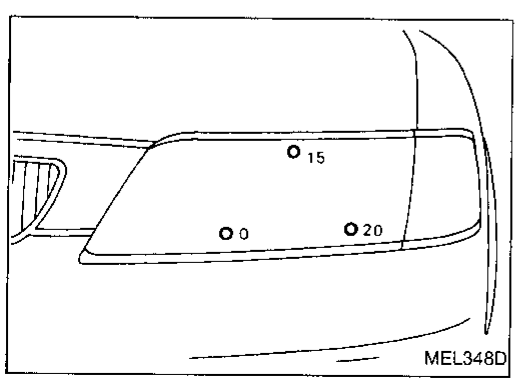
If any aimer is not available, aiming adjustment can be done as follows:

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).



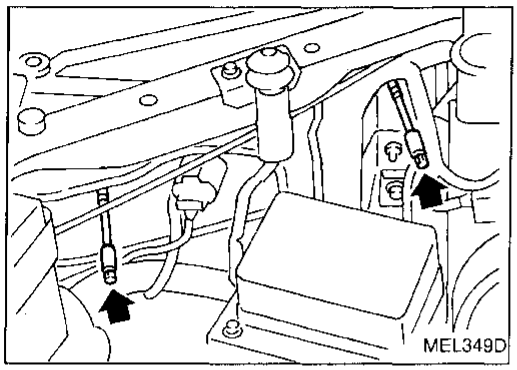
AIMER ADJUSTMENT MARK

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

Adjustment value for mechanical aimer

	Mechanical aimer level
Horizontal side	–4 to 4
Vertical side	–4 to 4

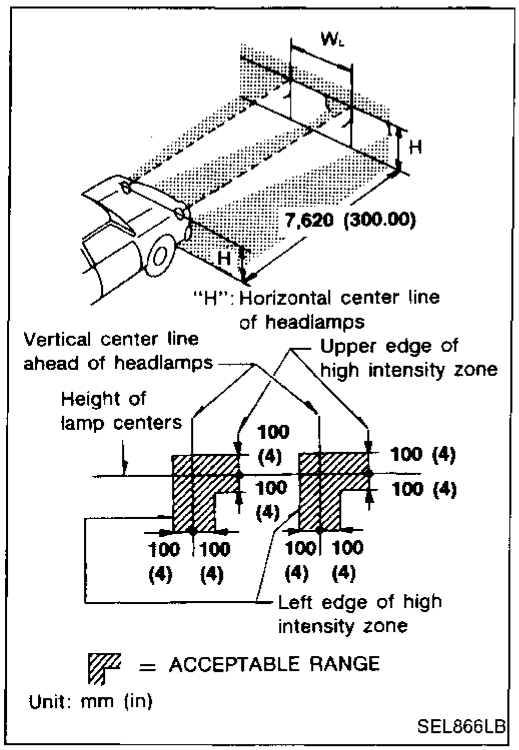
Aiming Adjustment (Cont'd)



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.**



If the vehicle front body has been repaired and/or the headlamp assembly has been replaced, check aiming. Use the aiming chart shown in the figure.

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

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

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

With the ignition switch in the ON or START position, power is supplied
- through 7.5A fuse [No. 12, located in the fuse block (J/B)]
- to daytime light control unit terminal ⑫.

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

HEADLAMP OPERATION

Low beam operation

When the lighting switch is moved to the 2ND and LOW ("B") position, power is supplied
- from lighting switch terminal ⑩
- to LH headlamp terminal ②.

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

Also, when the lighting switch is moved to the 2ND and LOW ("B") position, power is supplied
- from lighting switch terminal ⑦
- to RH headlamp terminal ②.

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

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

High beam operation

When the lighting switch is moved to the 2ND and HIGH ("A") or PASS ("C") position, power is supplied
- from lighting switch terminal ⑨
- to LH headlamp terminal ①.

Also, when the lighting switch is moved to the 2ND and HIGH ("A") or PASS ("C") position, power is supplied
- from lighting switch terminal ⑥
- to daytime light control unit terminal ⑤
- to combination meter terminal ㉑ for the high beam indicator
- through daytime light control unit terminal ⑥
- to RH headlamp terminal ①.

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

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

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

DAYTIME LIGHT OPERATION

With the engine running and the lighting switch in the OFF position, power is supplied
- to daytime light control unit terminal ③
- through daytime light control unit terminal ⑥
- to headlamp RH terminal ①
- through headlamp RH terminal ③
- to daytime light control unit terminal ⑦
- through daytime light control unit terminal ⑧
- to headlamp LH terminal ①.

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

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

Operation (For Canada)

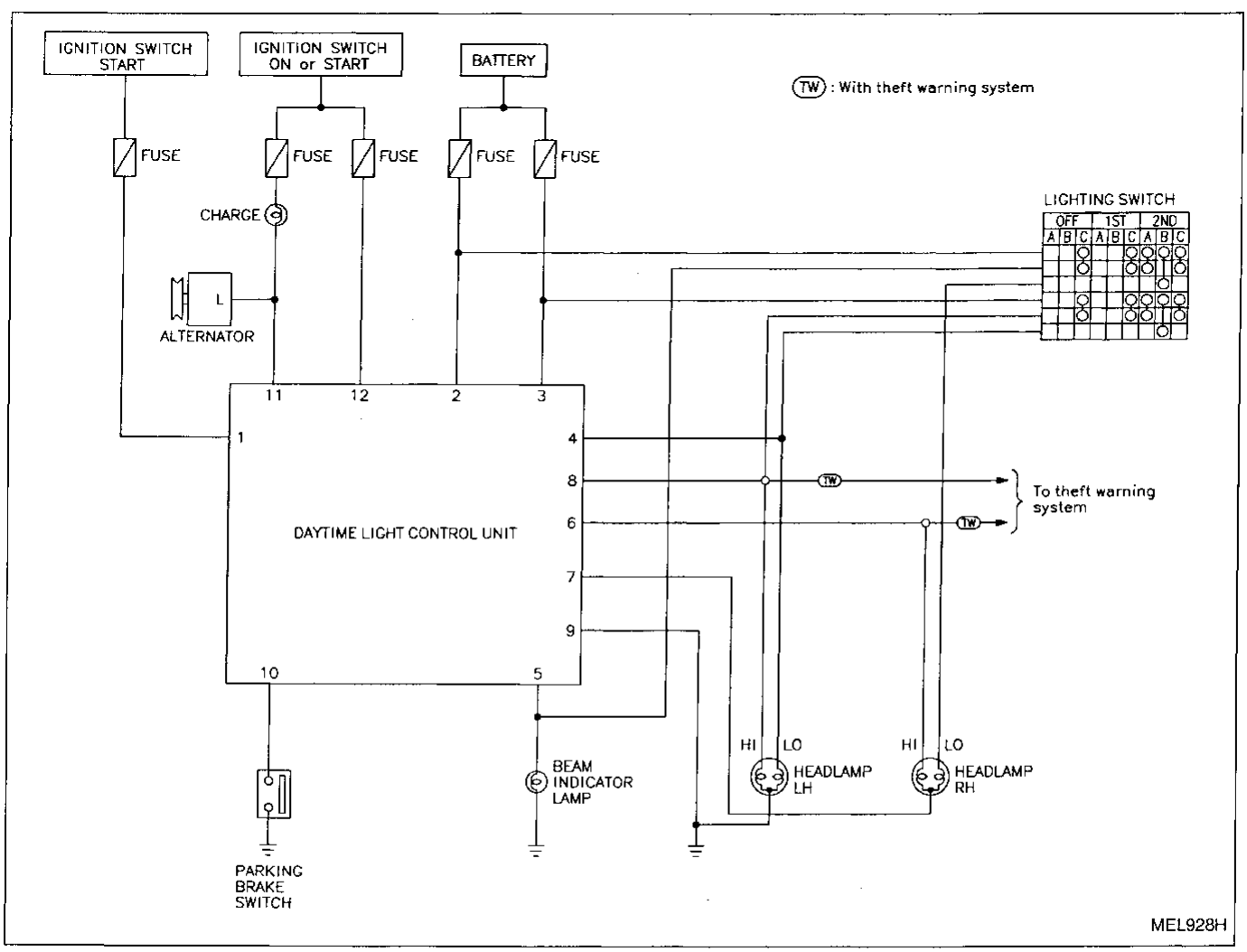
After starting the engine with the lighting switch in the "OFF" position or "1ST" position, the headlamp high beam automatically turns on. Lighting switch operations other than the above are the same as conventional light systems.

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

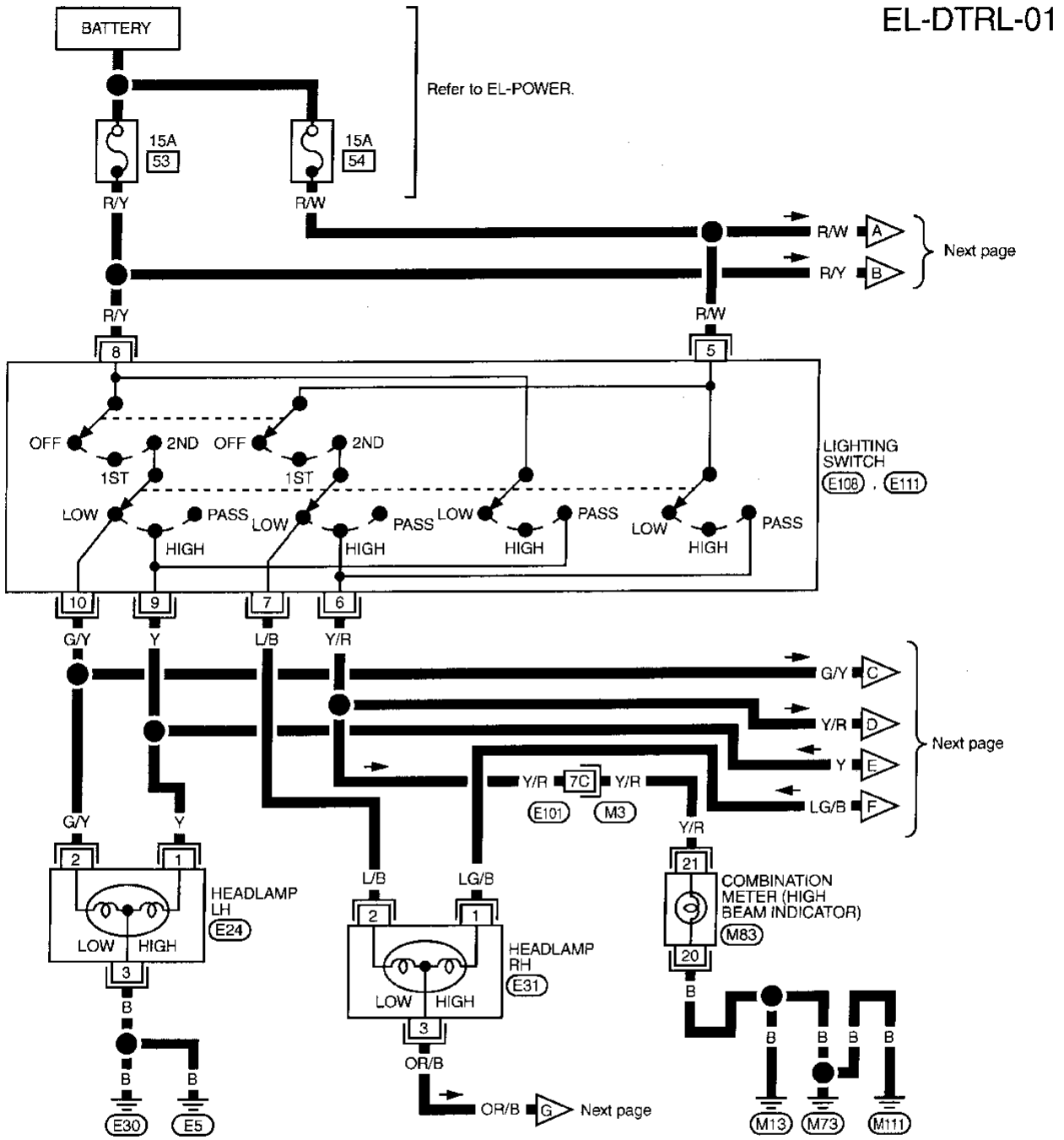
A: HIGH
B: LOW
C: PASS
O : Lamp "ON"
X : Lamp "OFF"
△ : Lamp dims.
* : When starting the engine with the parking brake released, the daytime lamp will come ON.
When starting the engine with the parking brake pulled, the daytime lamp won't come ON.

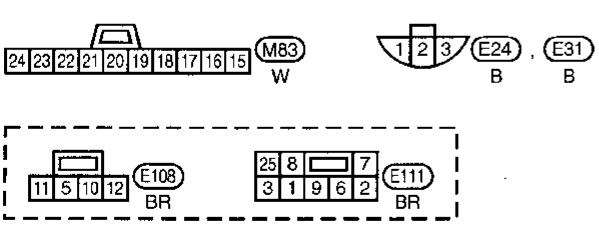
Schematic

FOR CANADA



Wiring Diagram — DTRL —

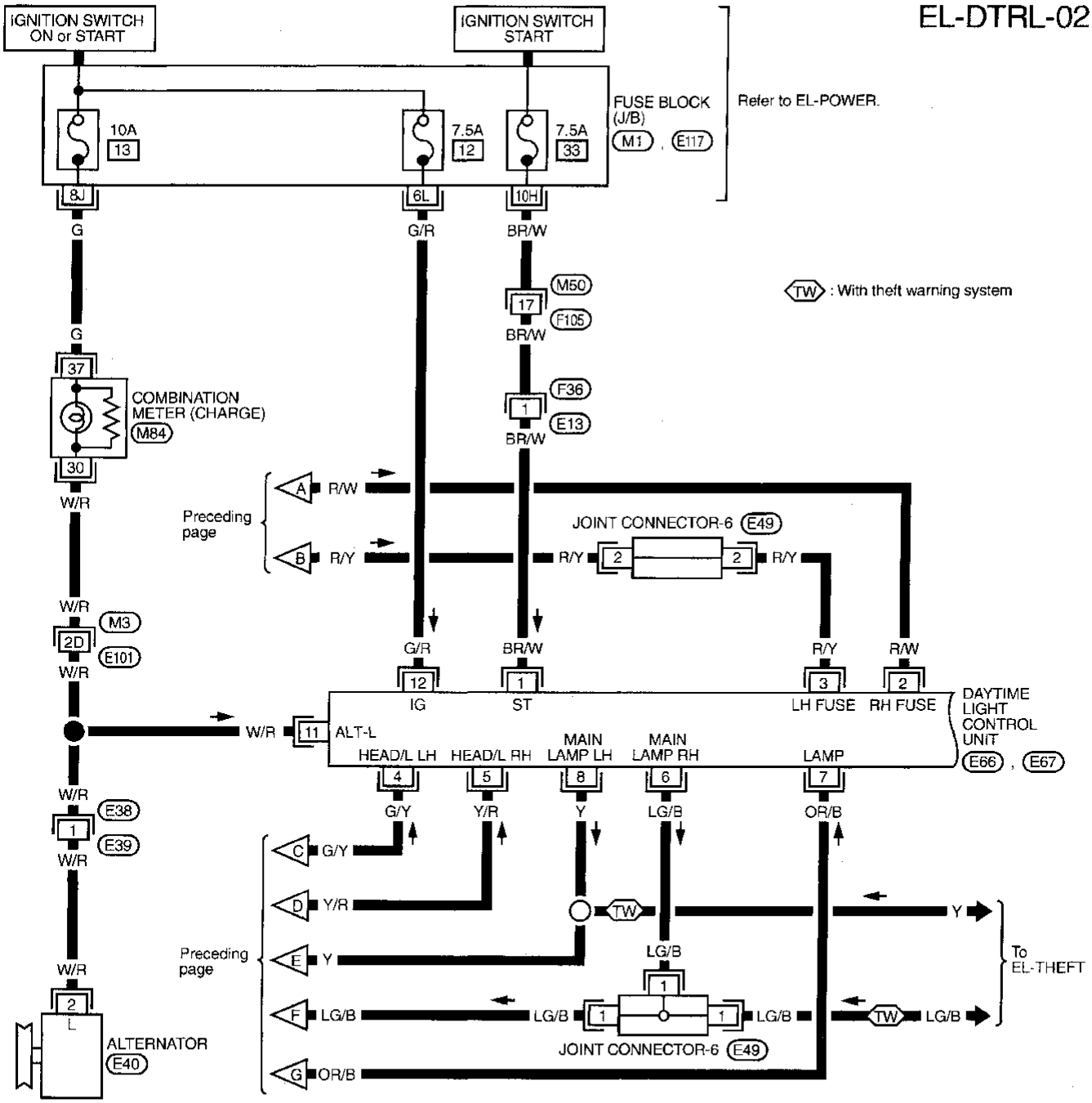


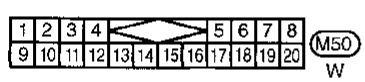


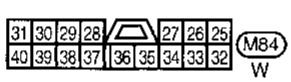
Refer to last page (Foldout page).
M3, E101

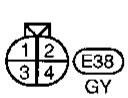
Wiring Diagram — DTRL — (Cont'd)

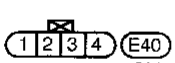
EL-DTRL-02



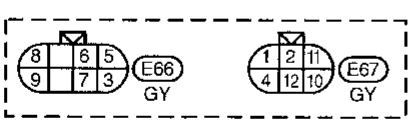

M50 W

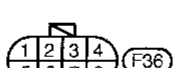

M84 W


E38 GY


E40 GY


E49 W


E66 GY
E67 GY

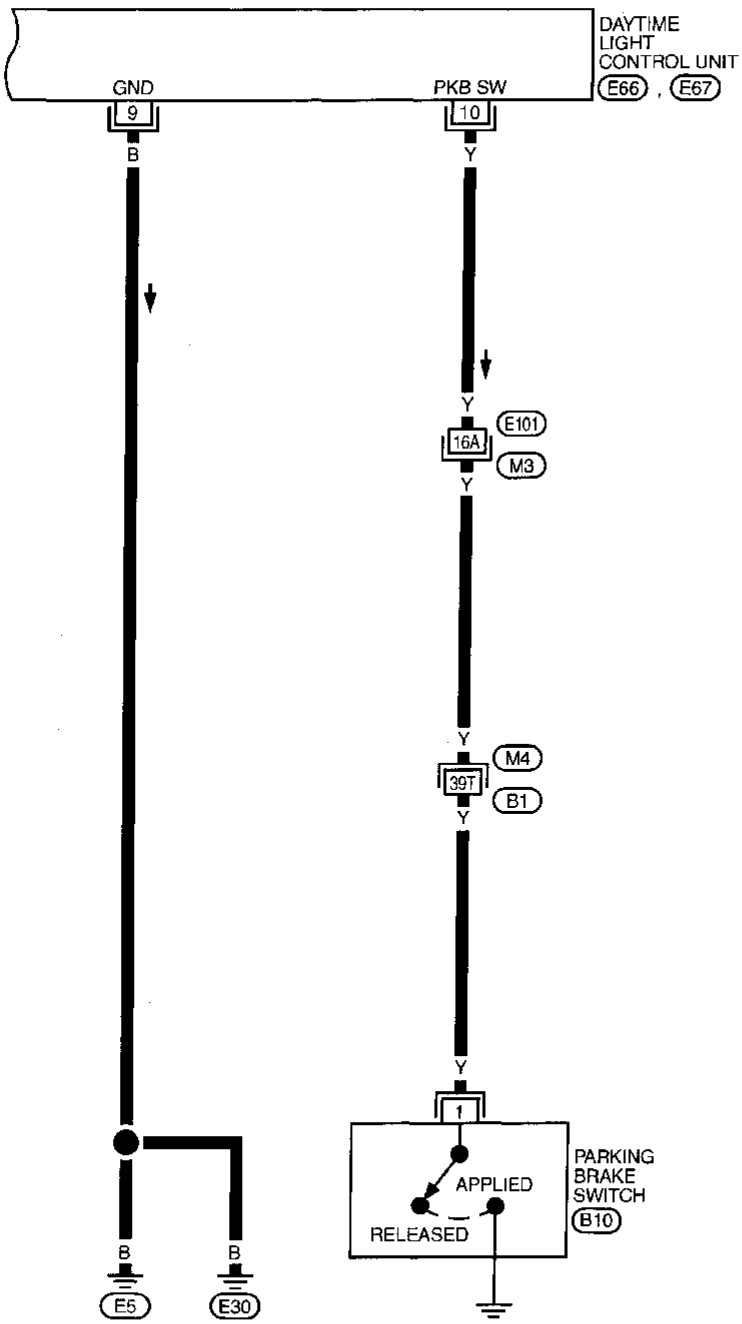

F36 BR

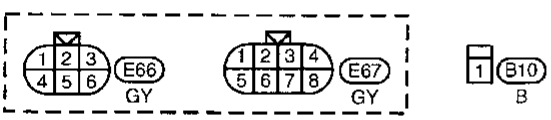
Refer to last page (Foldout page).
M1
M3, E101
E117
E49

MEL102I

Wiring Diagram — DTRL — (Cont'd)

EL-DTRL-03





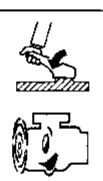
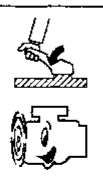
Refer to last page (Foldout page).
M3 , E101
M4 , B1

MEL103I

Trouble Diagnoses

DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

(Data are reference values.)

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

Trouble Diagnoses (Cont'd)

Terminal No.	Item	Condition		Judgement standard
9	Ground		—	—
10	Parking brake switch		When parking brake is released	Battery voltage
			When parking brake is set	Less than 1.5V
11	Alternator		When turning ignition switch to "ON"	Less than 1V
			When engine is running	Battery voltage
			When turning ignition switch to "OFF"	Less than 1V
12	Power source		When turning ignition switch to "ON"	Battery voltage
			When turning ignition switch to "ST"	Battery voltage
			When turning ignition switch to "OFF"	Less than 1V

Bulb Replacement

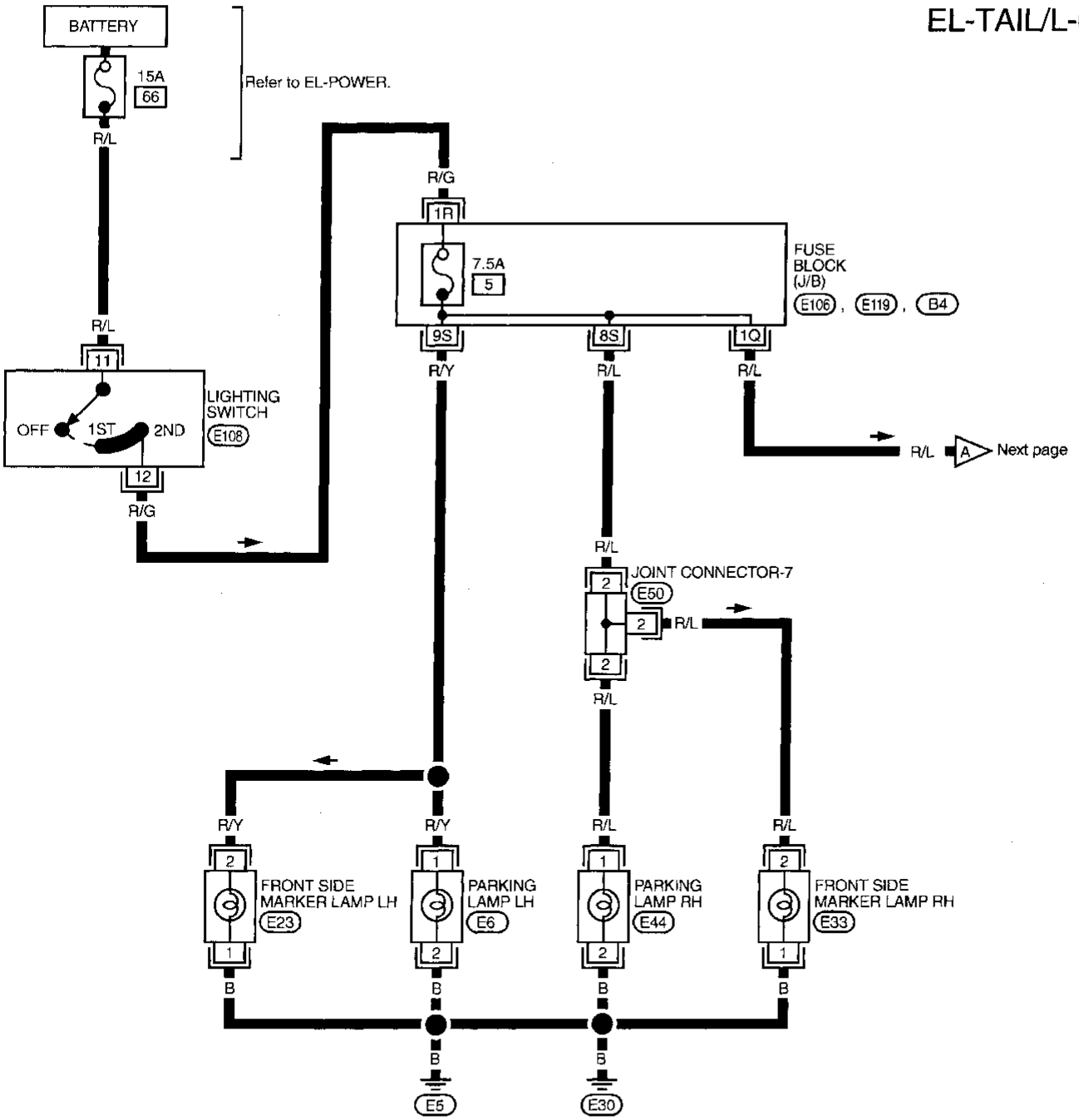
Refer to "HEADLAMP" (EL-40).

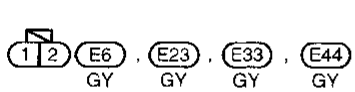
Aiming Adjustment

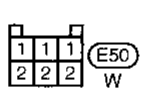
Refer to "HEADLAMP" (EL-40).

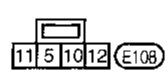
Wiring Diagram — TAIL/L —

EL-TAIL/L-01









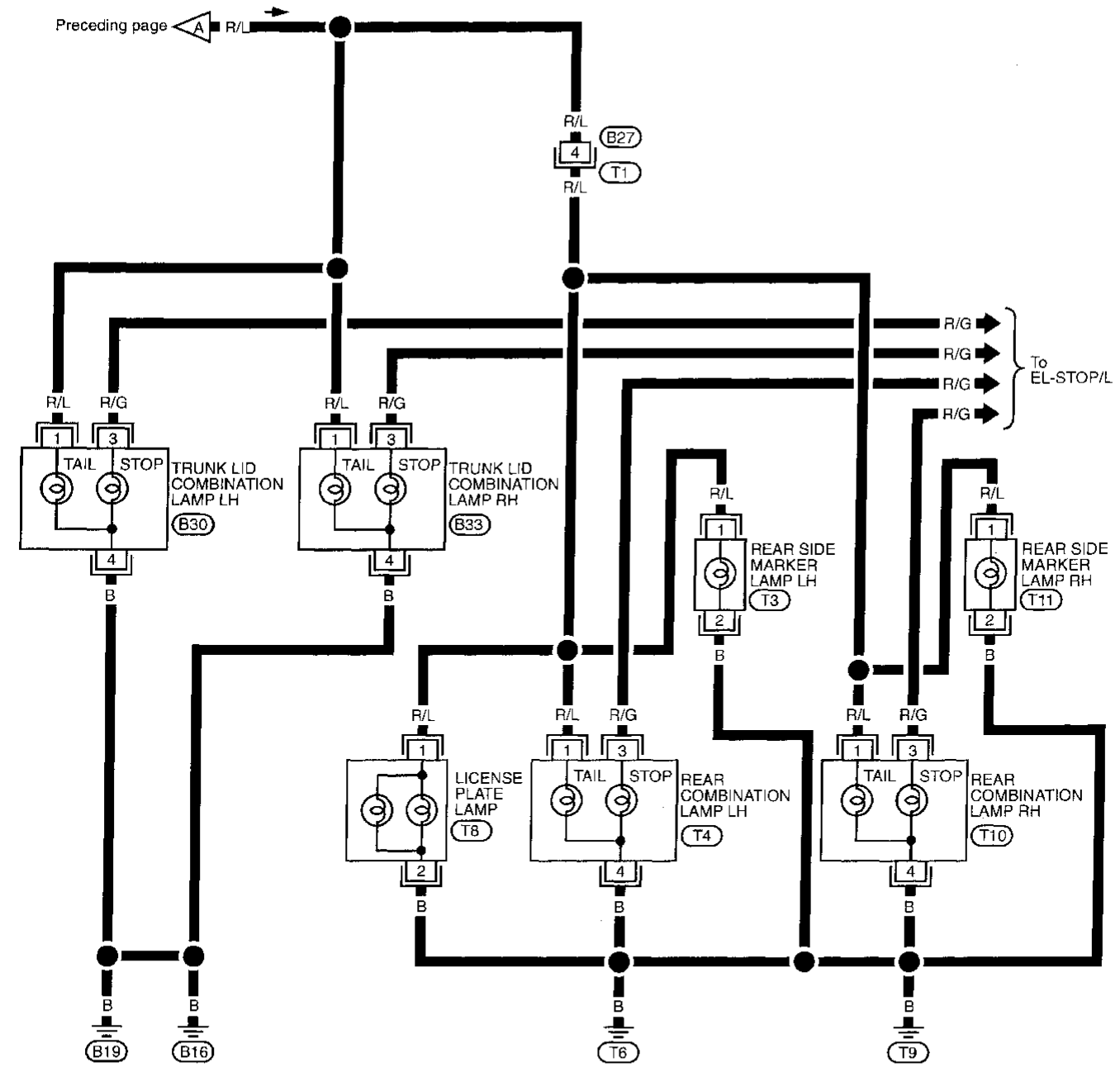
Refer to last page (Foldout page).

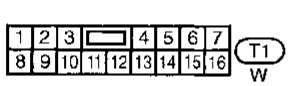
- B4
- E106
- E119
- E50

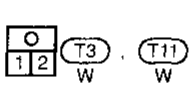
MEL873G

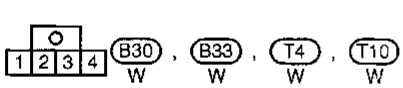
Wiring Diagram — TAIL/L — (Cont'd)

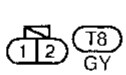
EL-TAIL/L-02







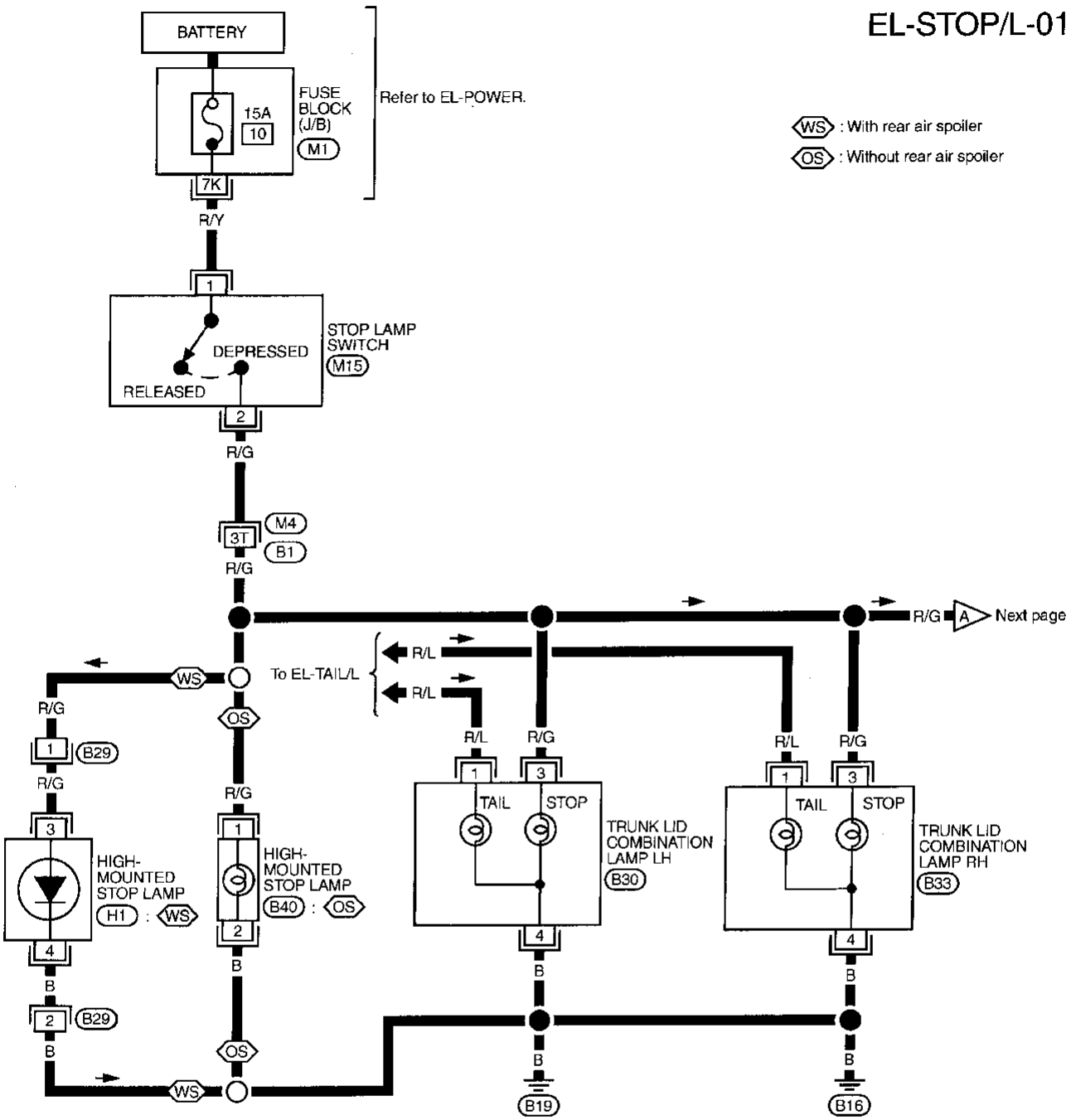


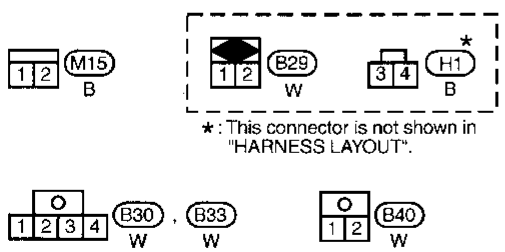


MEL473I

Wiring Diagram — STOP/L —

EL-STOP/L-01





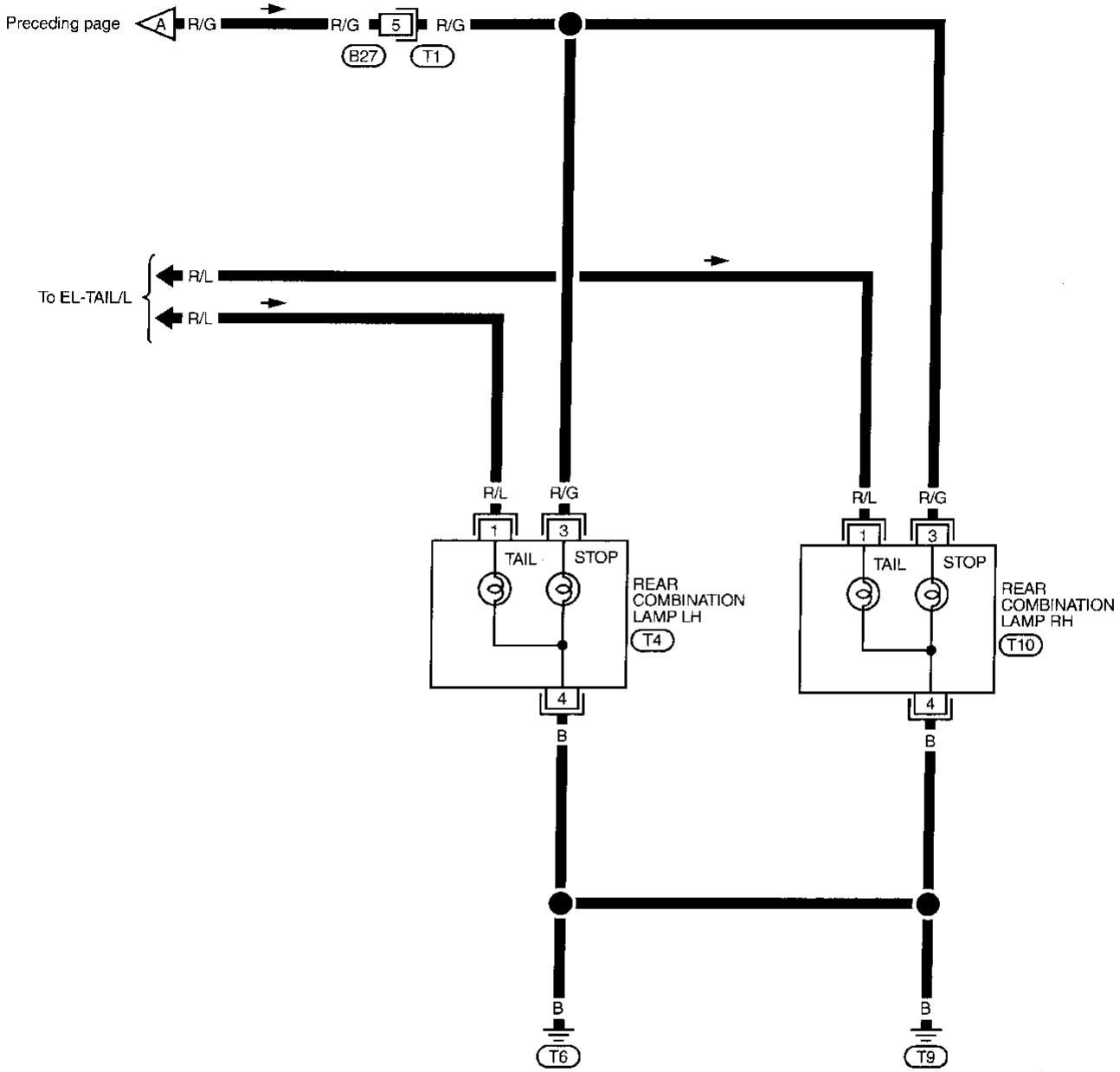
Refer to last page (Foldout page).
M1
M4 , B1

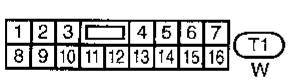
MEL106I

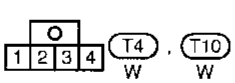
1417

Wiring Diagram — STOP/L — (Cont'd)

EL-STOP/L-02



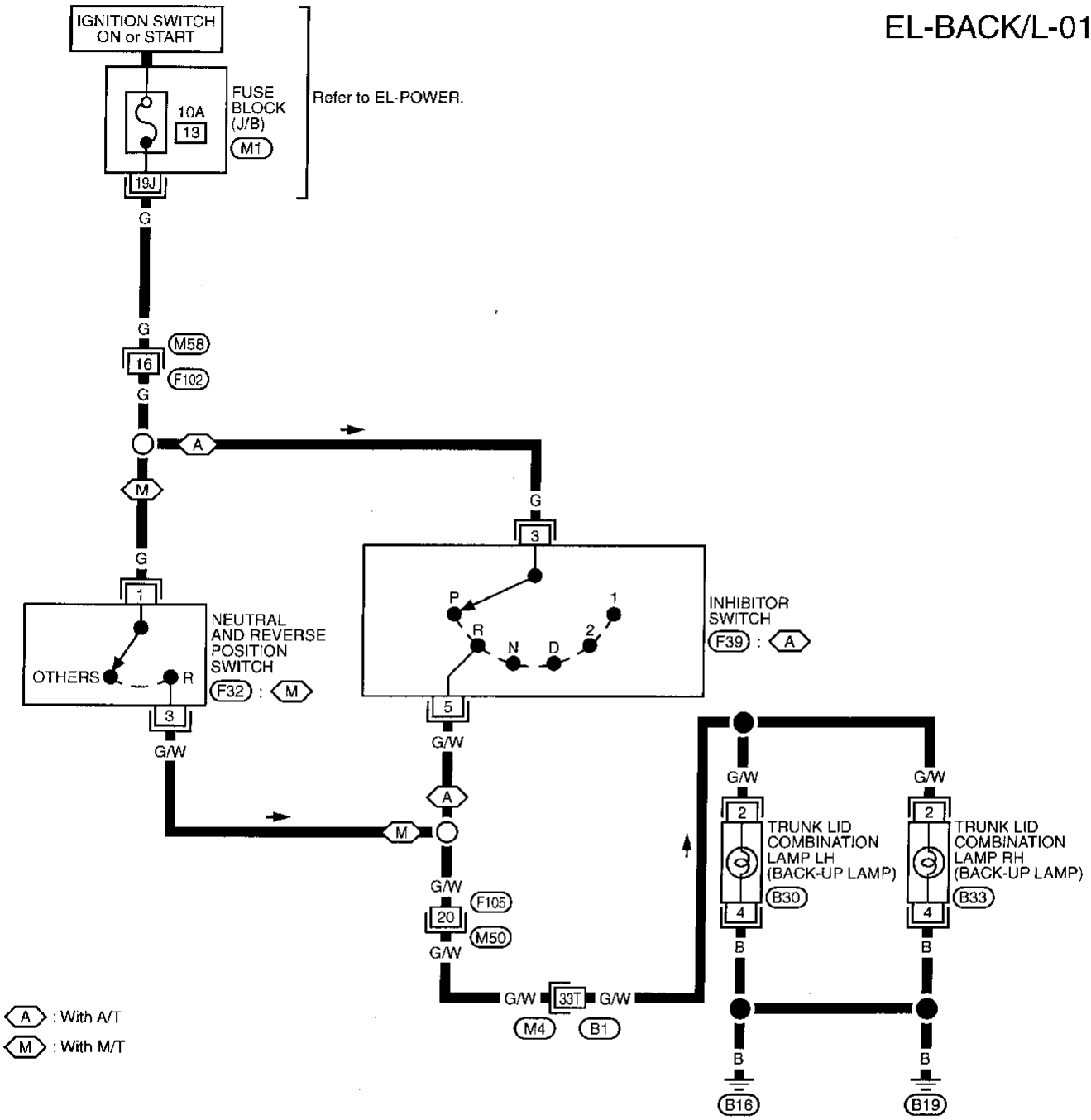


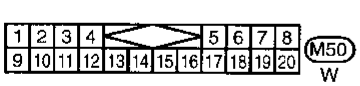


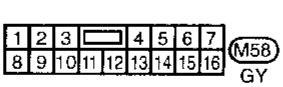
MEL929H

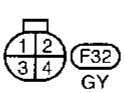
Wiring Diagram — BACK/L —

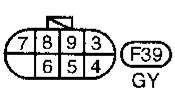
EL-BACK/L-01

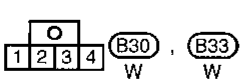












Refer to last page (Foldout page).

M1

M4 , B1

MEL107I

System Description

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

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

Front fog lamp operation

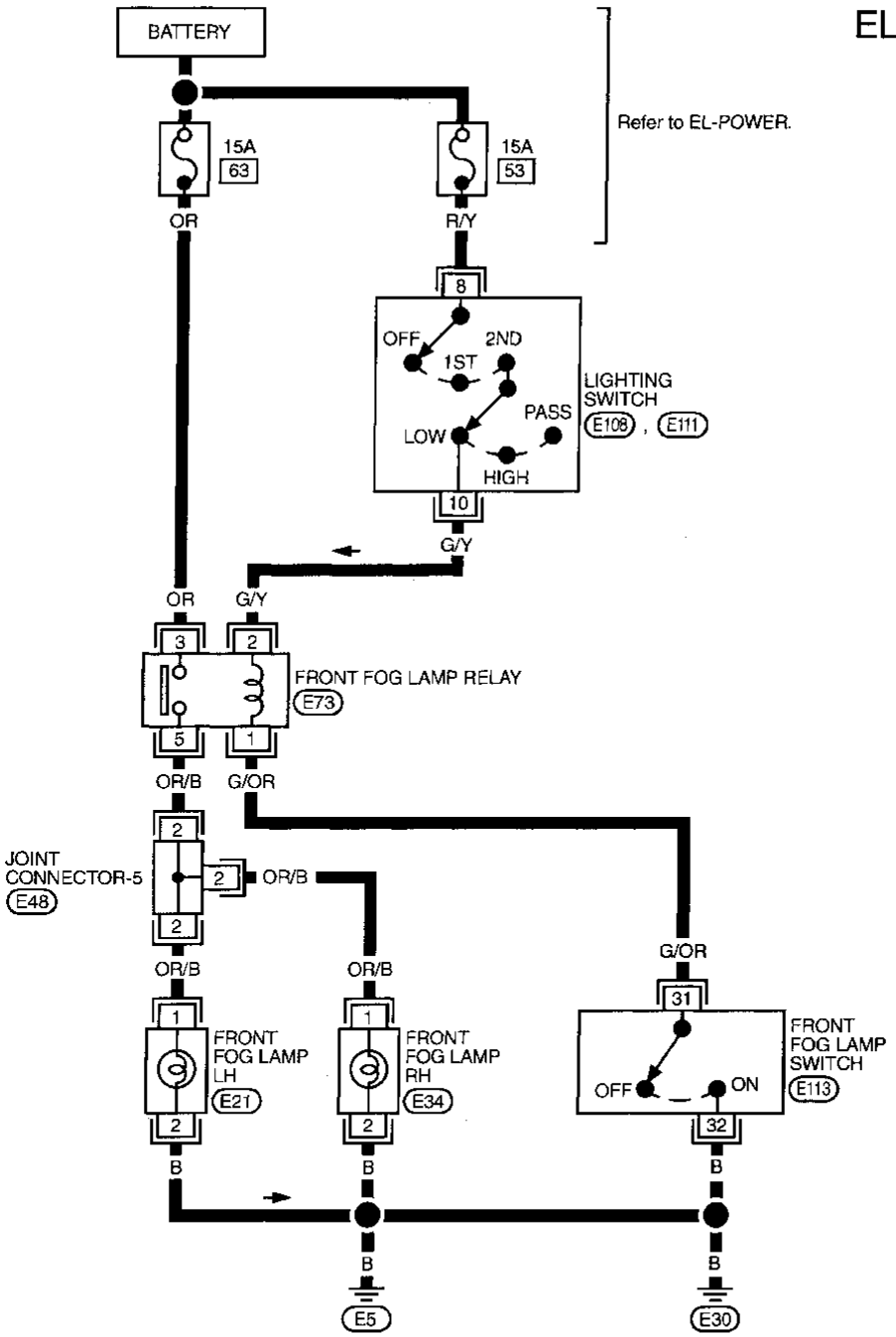
The lighting switch must be in the 2ND and LOW ("B") position for front fog lamp operation.
With the front fog lamp switch in the ON position
- ground is supplied to front fog lamp relay terminal ① through the front fog lamp switch and body grounds E5 and E30.

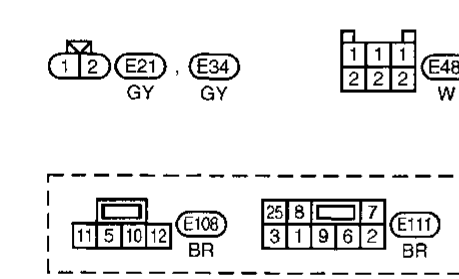
The front fog lamp relay is energized and power is supplied
- from front fog lamp relay terminal ⑤
- to terminal ① of each front fog lamp.

Ground is supplied to terminal ② of each front fog lamp through body grounds E5 and E30.
With power and ground supplied, the front fog lamps illuminate.

Wiring Diagram — F/FOG —

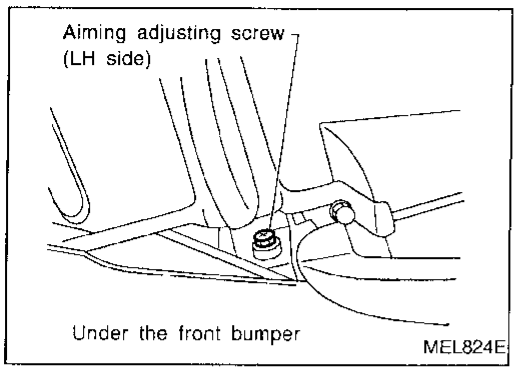
EL-F/FOG-01

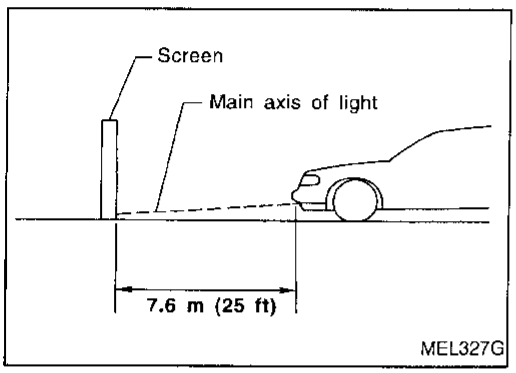


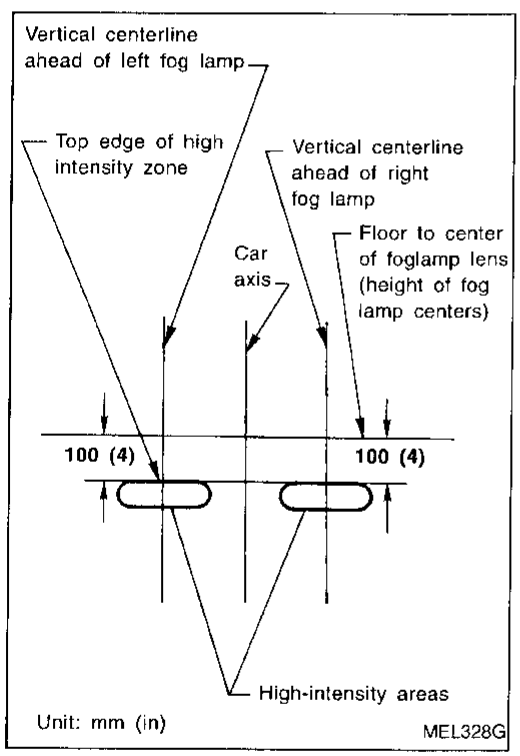


MEL108I

1421







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

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 ⑧
- through terminal ⑥ of the combination flasher unit
- to turn signal switch terminal ①.

Ground is supplied to combination flasher unit terminal ⑤ through body grounds M13, M73 and M111.

LH turn

When the turn signal switch is moved to the LH position, power is supplied from turn signal switch terminal ③ to
- front turn signal lamp LH terminal ① (through fuse block (J/B) terminals 5S and 6S)
- rear combination lamp LH terminal ② (through fuse block (J/B) terminals 5S and 4Q) and
- combination meter terminal 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 M111.
With power and grounds supplied, the combination flasher unit controls the flashing interval of the LH turn signal lamps.

RH turn

When the turn signal switch is moved to the RH position, power is supplied from turn signal switch terminal ② to
- front turn signal lamp RH terminal ① (through fuse block (J/B) terminals 14S and 10S)
- rear combination lamp RH terminal ② (through fuse block (J/B) terminals 14S and 13Q) and
- combination meter terminal 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 M111.
With power and ground supplied, the combination flasher unit controls the flashing interval of the RH turn signal lamps.

HAZARD LAMP OPERATION

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

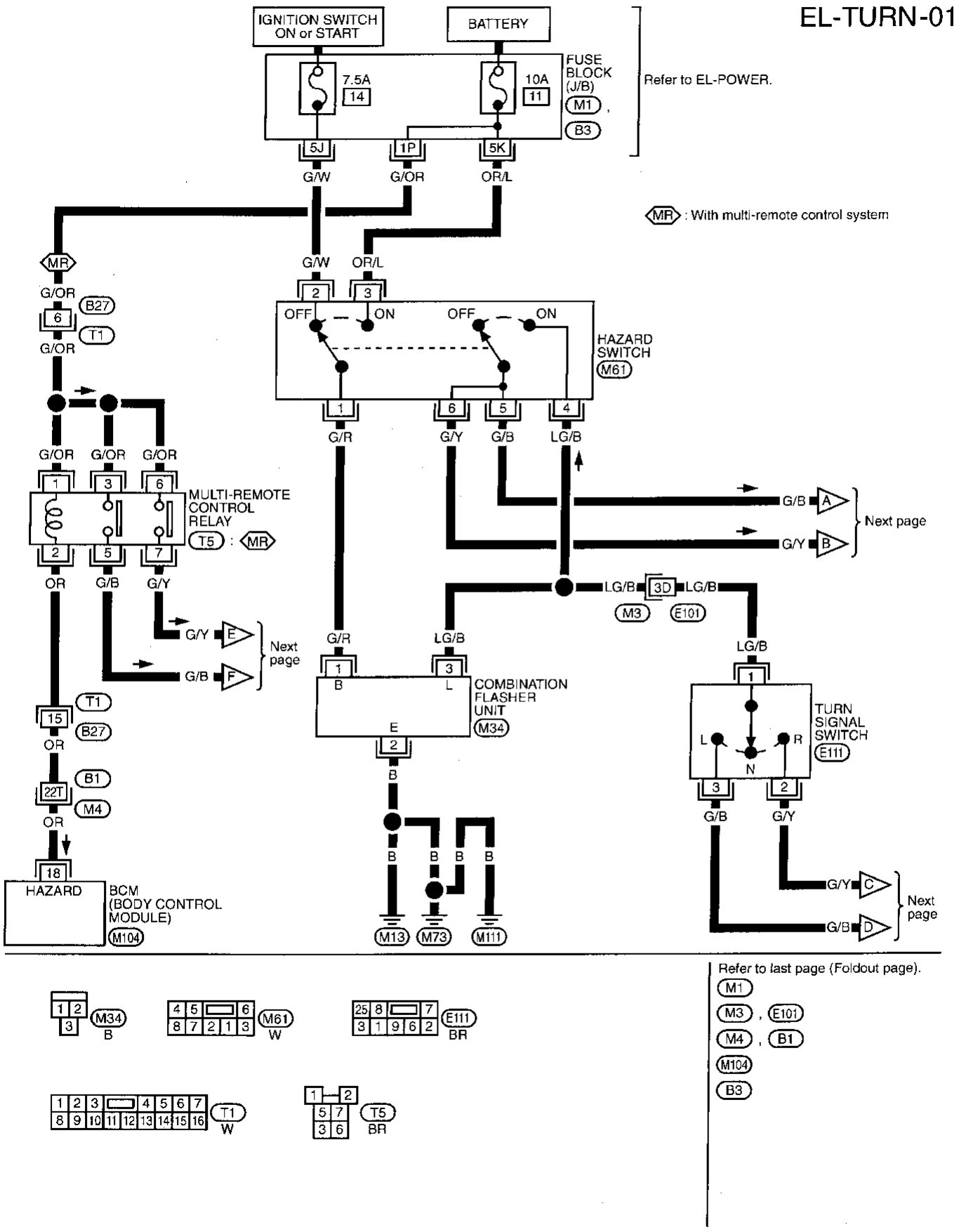
With the hazard switch in the ON position, power is supplied
- through terminal ① of the hazard switch
- to combination flasher unit terminal ⑧
- through terminal ⑥ of the combination flasher unit
- to hazard switch terminal ④.

Ground is supplied to the combination flasher unit terminal ⑤ through body grounds M13, M73 and M111.
Power is supplied through terminal ⑤ of the hazard switch to
- front turn signal lamp LH terminal ① (through fuse block (J/B) terminals 2J and 6S)
- rear combination lamp LH terminal ② (through fuse block (J/B) terminals 2J and 4Q) and
- combination meter terminal ㉓ (through fuse block (J/B) terminals 2J and 12J).

Power is also supplied through terminal ⑥ of the hazard switch to
- front turn signal lamp RH terminal ① (through fuse block (J/B) terminals 11J and 10S)
- rear combination lamp RH terminal ② (through fuse block (J/B) terminals 11J and 13Q) and
- combination meter terminal ㉒ (through fuse block (J/B) terminals 11J and 5H).

Ground is supplied to terminal ② of the front turn signal lamps through body grounds E5 and E30.
Ground is supplied to terminal ④ of the rear combination lamps through body grounds T6 and T9.
Ground is supplied to combination meter terminal ⑦ through body grounds M13, M73 and M111.
With power and ground supplied, the combination flasher unit controls the flashing interval of the hazard warning lamps.

Wiring Diagram — TURN —



Refer to last page (Foldout page).

M1

M3, E101

M4, B1

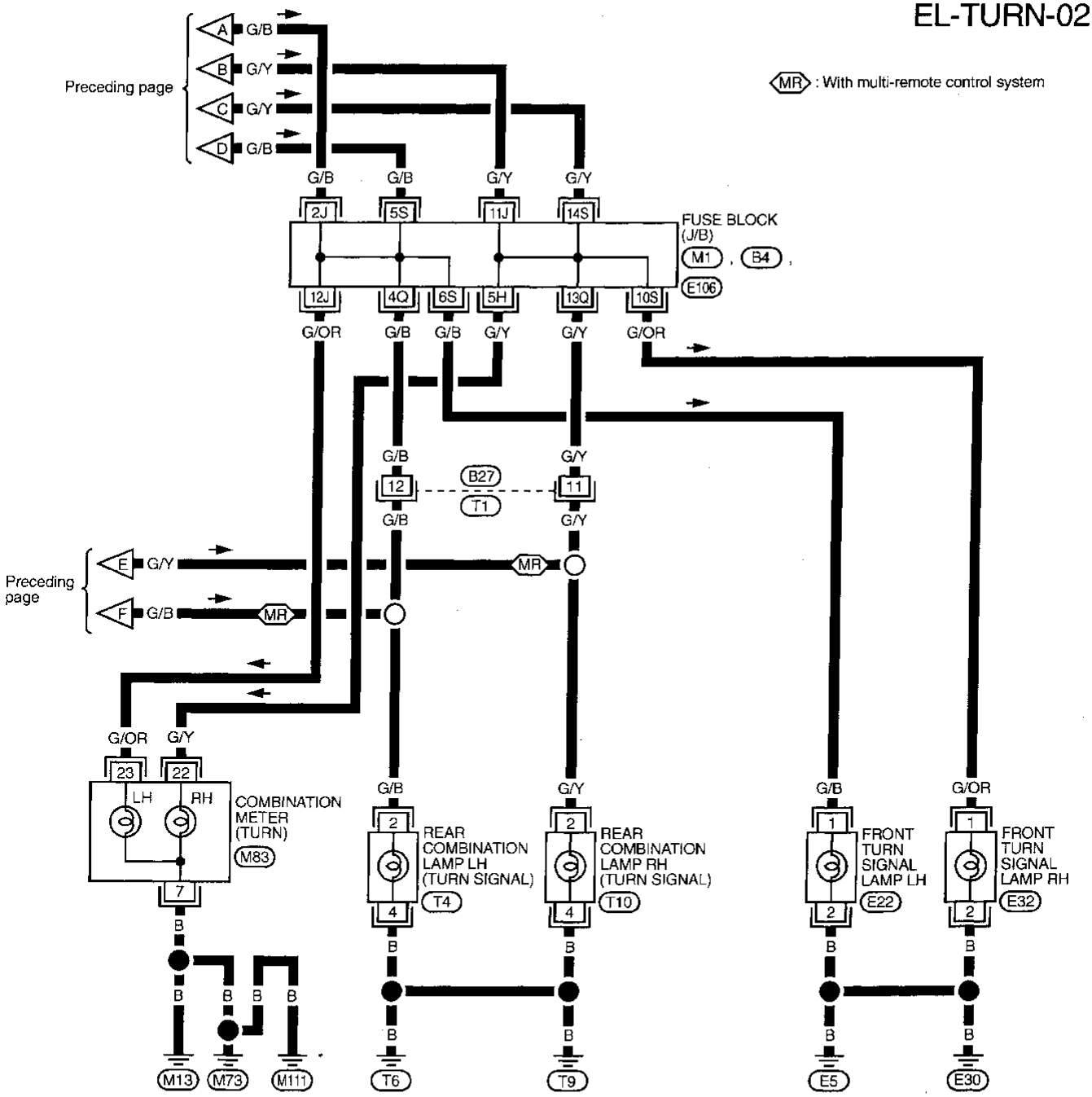
M104

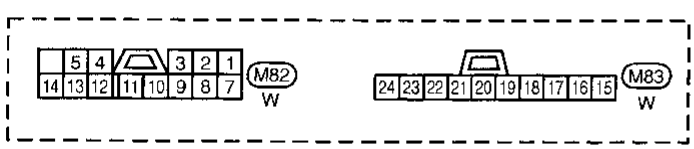
B3

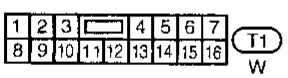
MEL104I

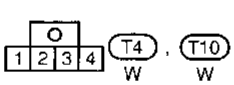
Wiring Diagram — TURN — (Cont'd)

EL-TURN-02









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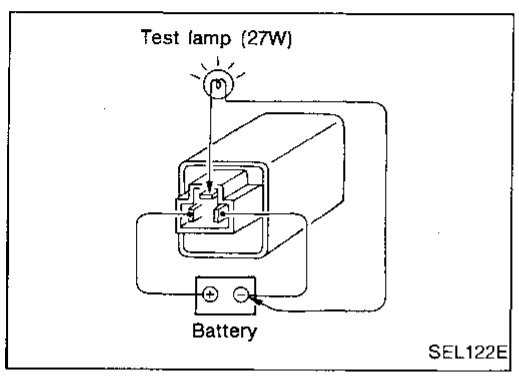
M1
E106
B4

MEL105I

1425

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 LG/B wire between combination flasher unit and turn signal switch 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 LG/B wire between combination flasher unit and hazard switch for open circuit.
Front turn signal lamp LH or RH does not operate.	1. Bulb 2. Grounds (E5) and (E30)	1. Check bulb. 2. Check grounds (E5) and (E30).
Rear turn signal lamp LH or RH does not operate.	1. Bulb 2. Grounds (T6) and (T9)	1. Check bulb. 2. Check grounds (T6) and (T9).
LH and RH turn indicators do not operate.	1. Ground	1. Check grounds (M13), (M73) and (M111).
LH or RH turn indicator does not operate.	1. Bulb	1. Check bulb in combination meter.



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.

System Description

Power is supplied at all times
- through 15A fuse (No. 66, located in the fuse and fusible link box)
- to lighting switch terminal ⑪.

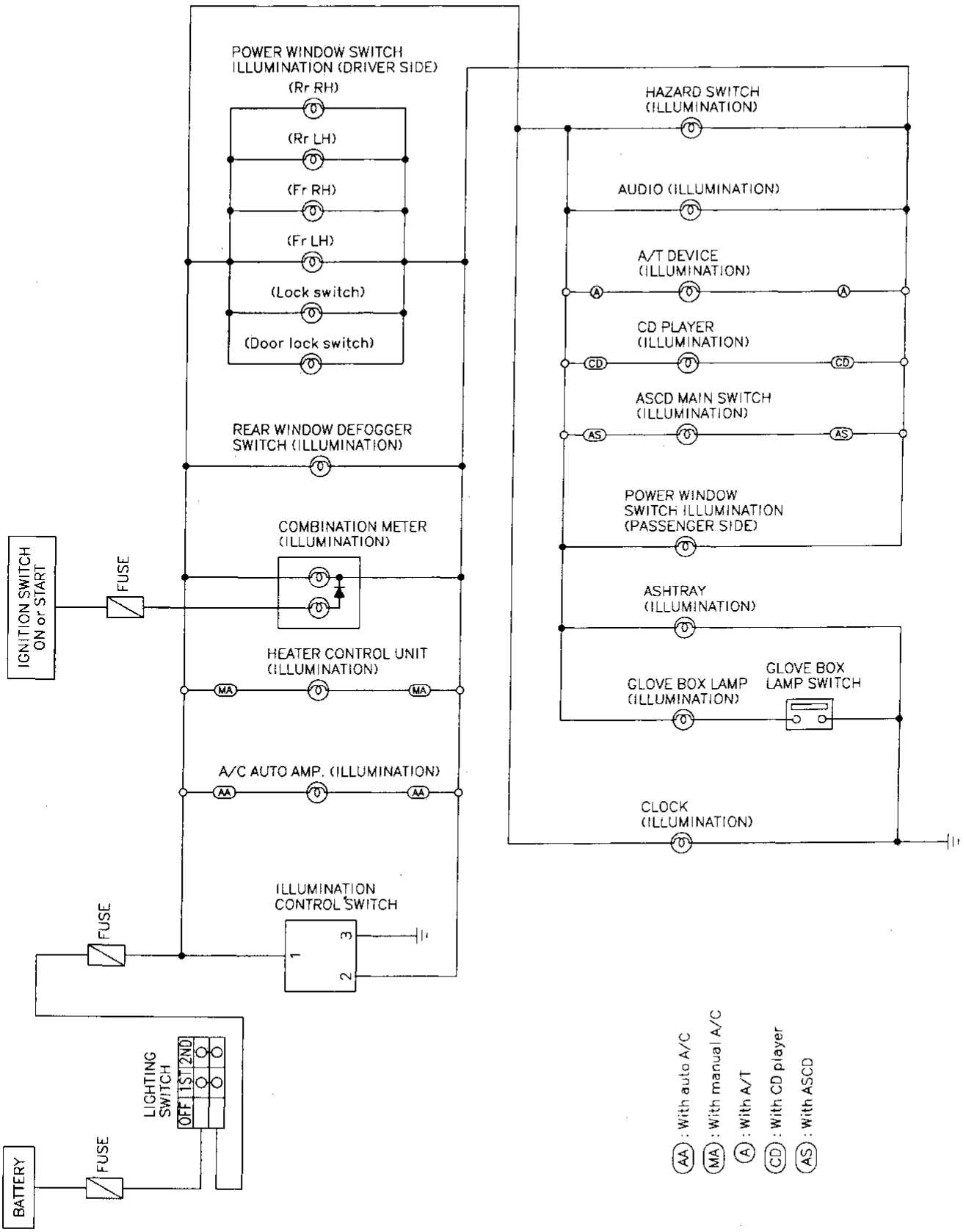
With the ignition switch in the ON or START position, power is supplied
- through 10A fuse [No. 13, located in the fuse block (J/B)]
- to combination meter terminal ㊲.

Then the illumination of odo/trip meter in combination meter turns on.
The lighting switch must be in the 1ST or 2ND position for illumination.
A variable resistor is built in the illumination control switch to control the amount of current to the illumination system.
The ashtray, clock and the glove box lamp are not controlled by the illumination control switch. The brightness of these lamps does not change.
The following chart shows the power and ground connector terminals for the components included in the illumination system.

Component	Power terminal	Ground terminal
Illumination control switch	①	② and ③
Combination meter	㉘	㉙
Combination meter (Odo/trip meter)	㊲	㉙
A/C auto amp. (With auto A/C)	㉔	㉕
Heater control unit (With manual A/C)	⑮	⑯
Rear window defogger switch	⑤	⑥
Power window switch LH	⑦	⑩
Hazard switch	⑦	⑧
Audio	⑧	⑦
A/T device	④	③
CD player	㉓	㉒
ASCD main switch	⑤	⑥
Power window switch RH	⑭	⑩
Ashtray	①	②
Glove box lamp	①	②
Clock	②	①

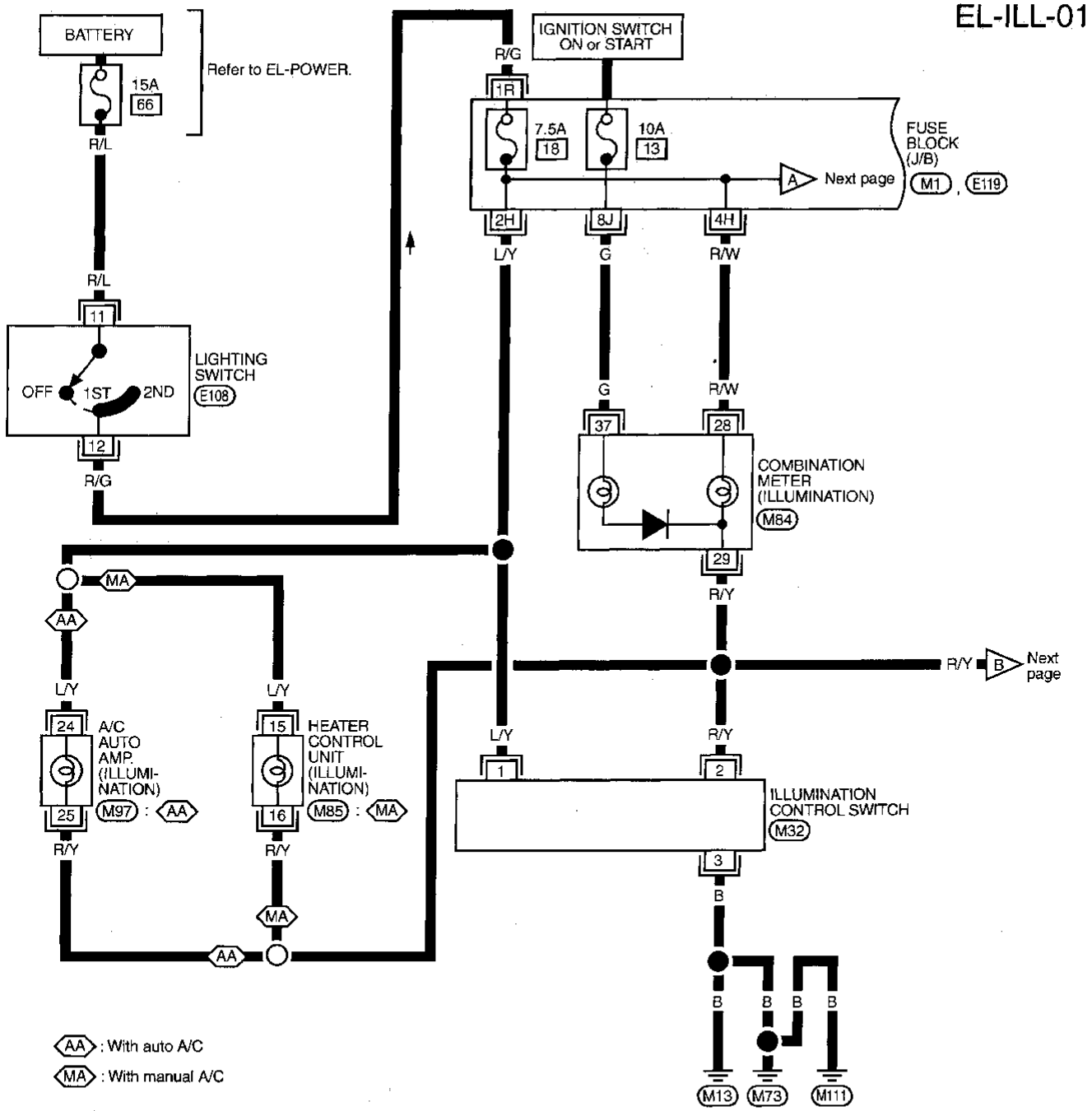
With the exception of the glove box lamp, clock illumination and the ashtray illumination, the ground for all of the components are controlled through terminals ② and ③ of the illumination control switch and body grounds (M13), (M73) and (M111).
When the glove box is open, glove box lamp terminal ② is grounded through the glove box lamp switch terminal ① and body grounds (M13), (M73) and (M111).
The ashtray illumination terminal ② and clock illumination terminal ① are grounded directly through body grounds (M13), (M73) and (M111).

Schematic



MEL109I

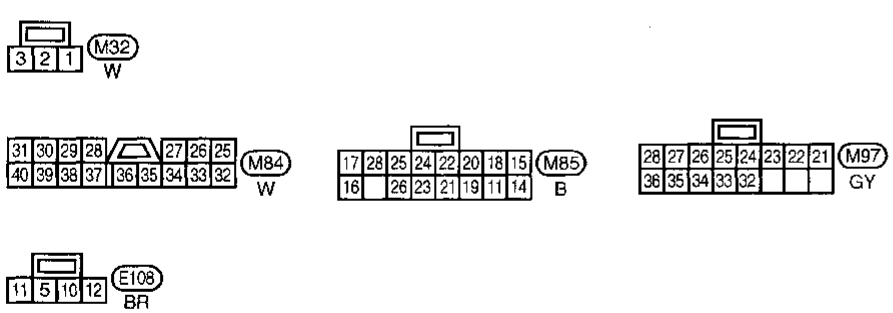
Wiring Diagram — ILL —



Refer to last page (Foldout page).

M1

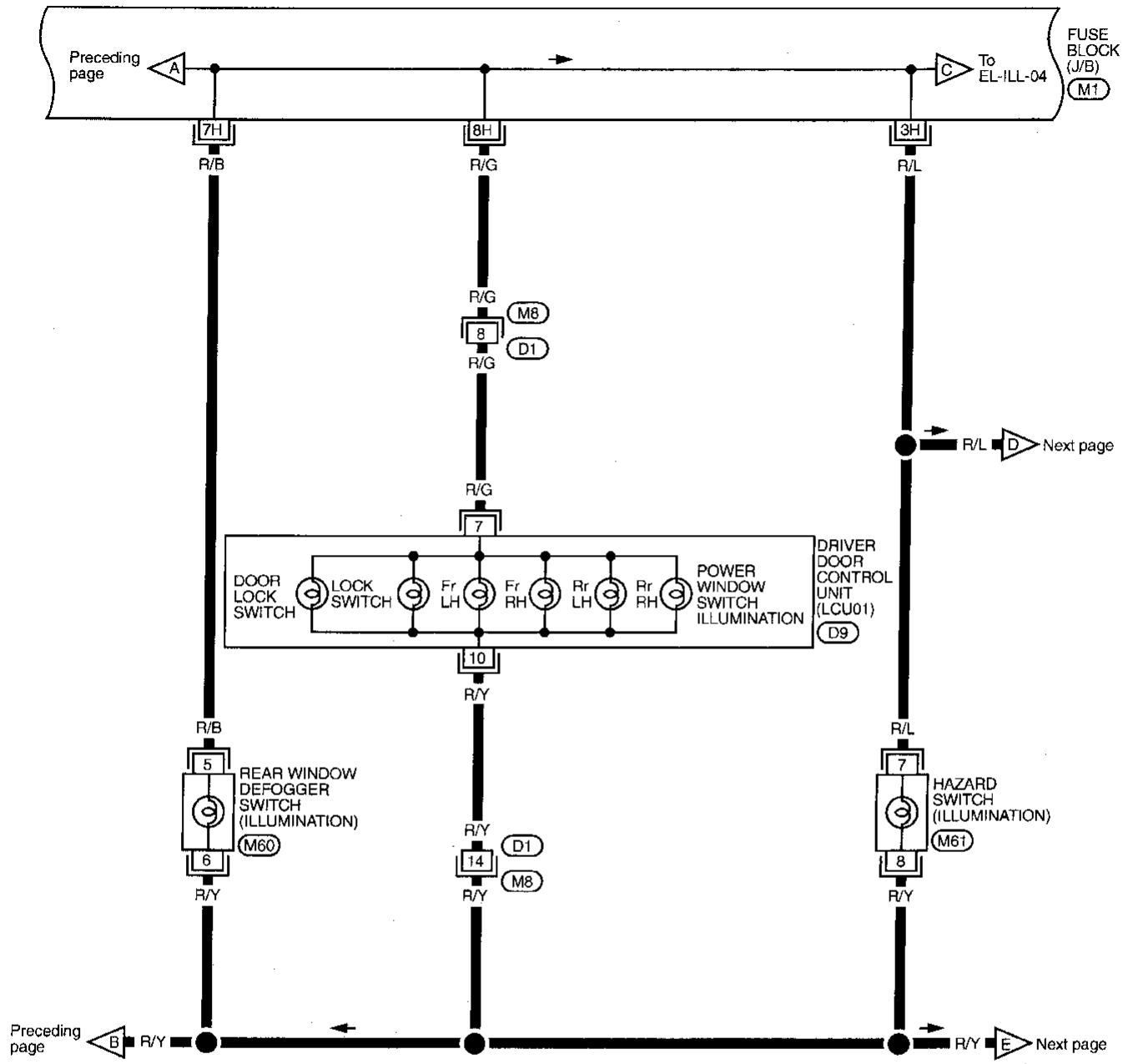
E119



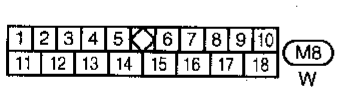
MEL110I

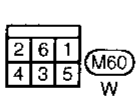
Wiring Diagram — ILL — (Cont'd)

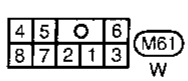
EL-ILL-02

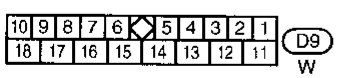


Refer to last page (Foldout page).
M1





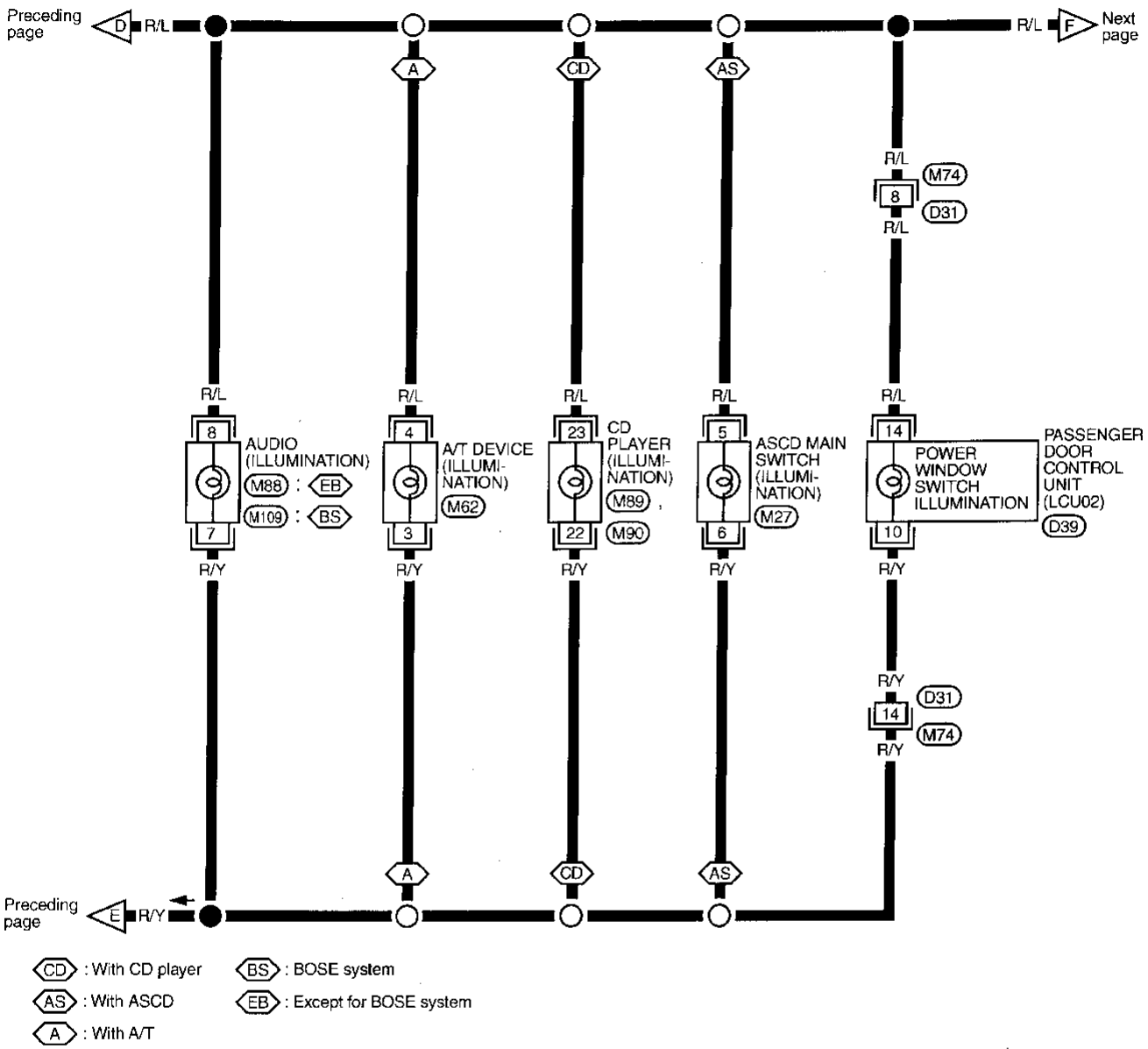


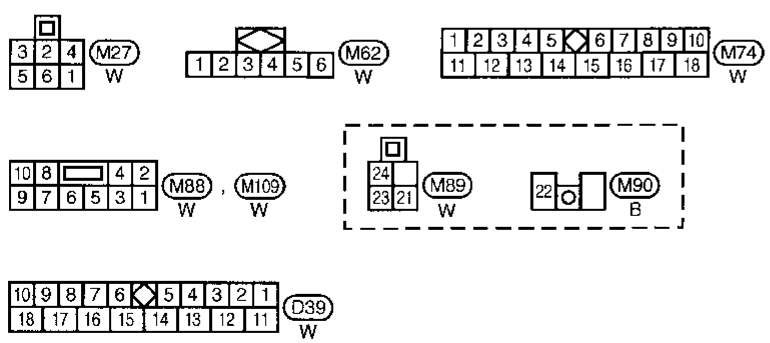


MEL111I

Wiring Diagram — ILL — (Cont'd)

EL-ILL-03

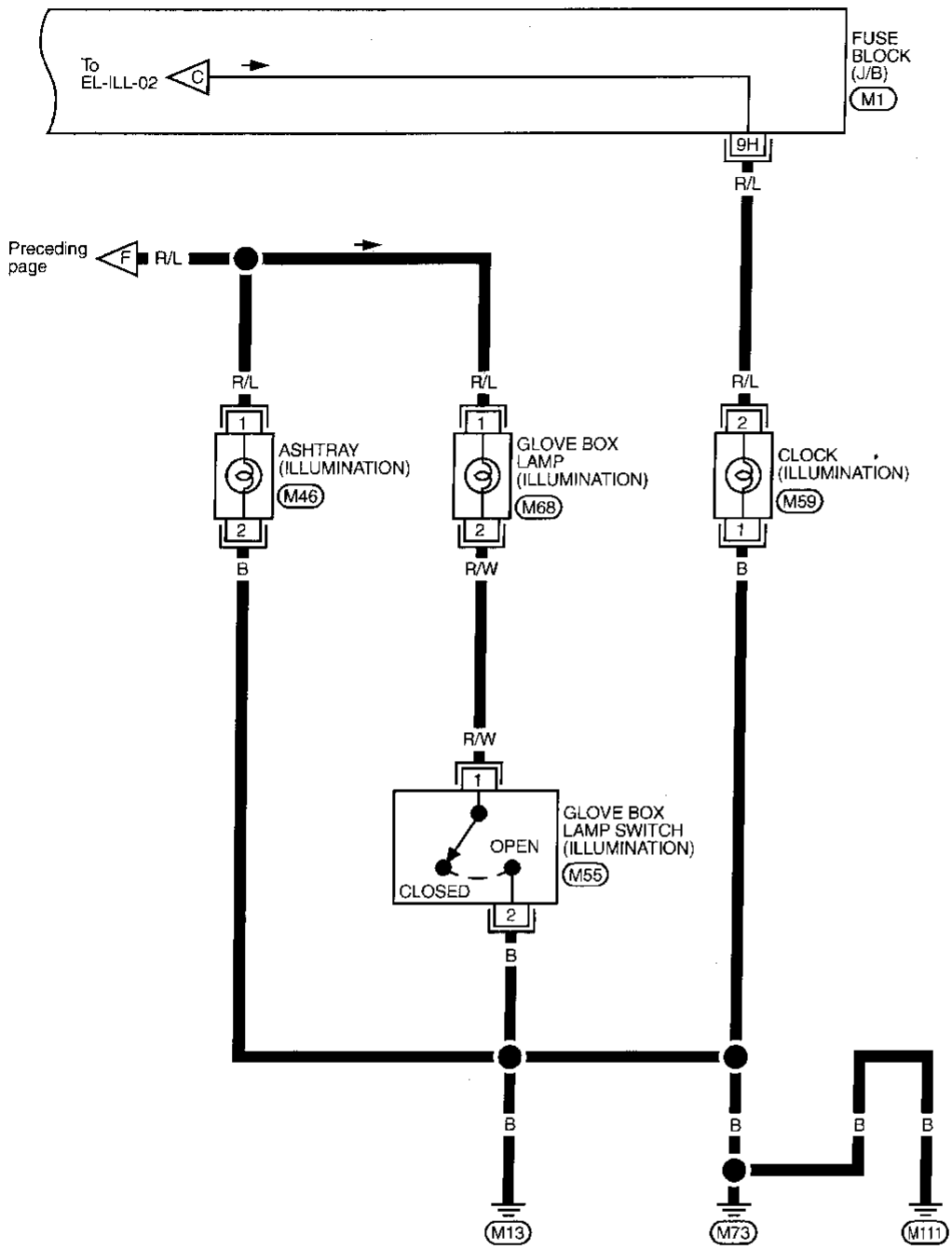


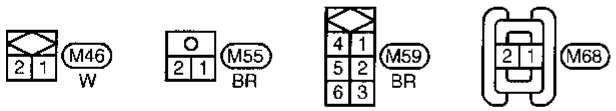


MEL112I

Wiring Diagram — ILL — (Cont'd)

EL-ILL-04

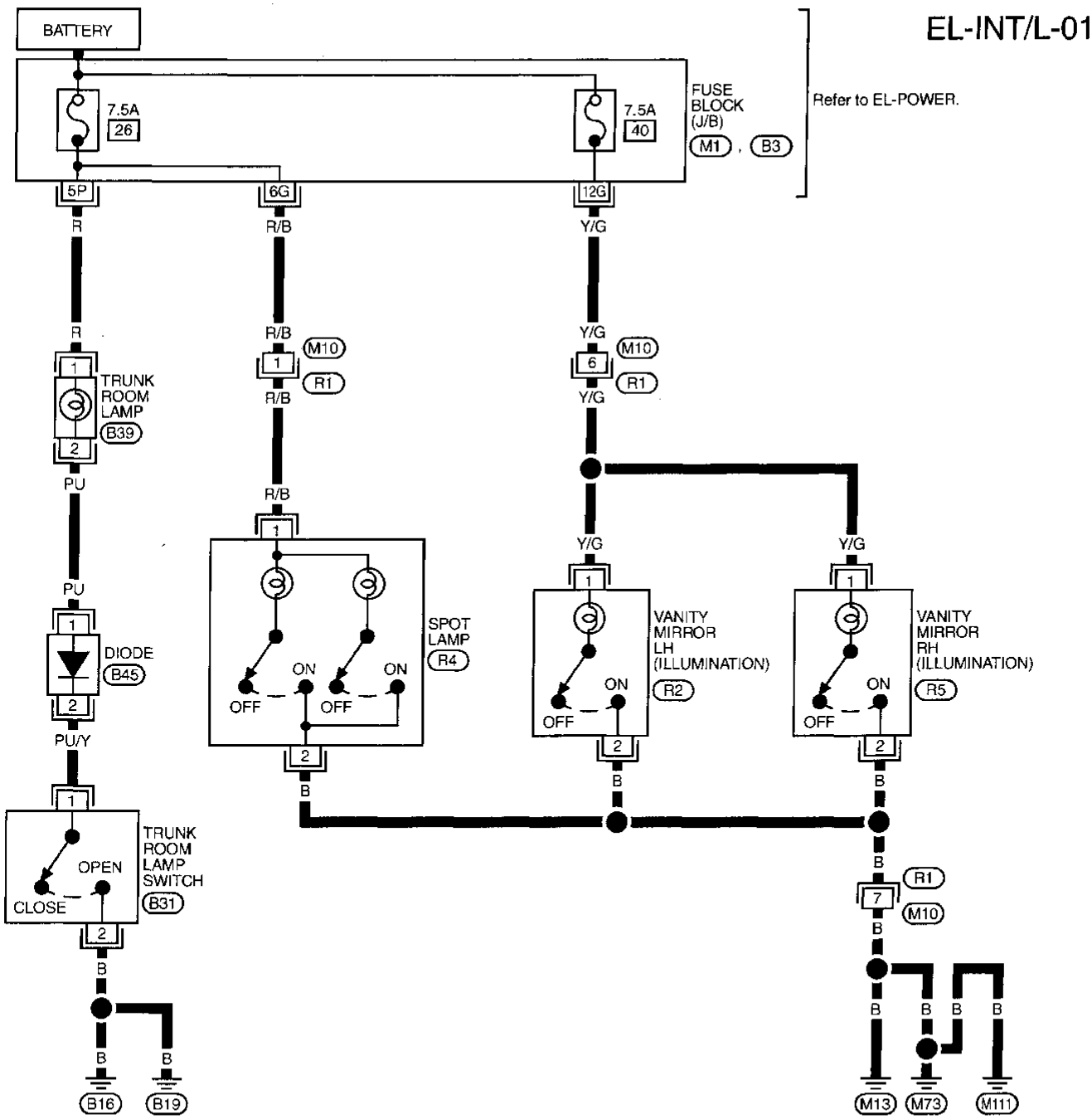




Refer to last page (Foldout page).
M1

MEL113I

Wiring Diagram — INT/L —



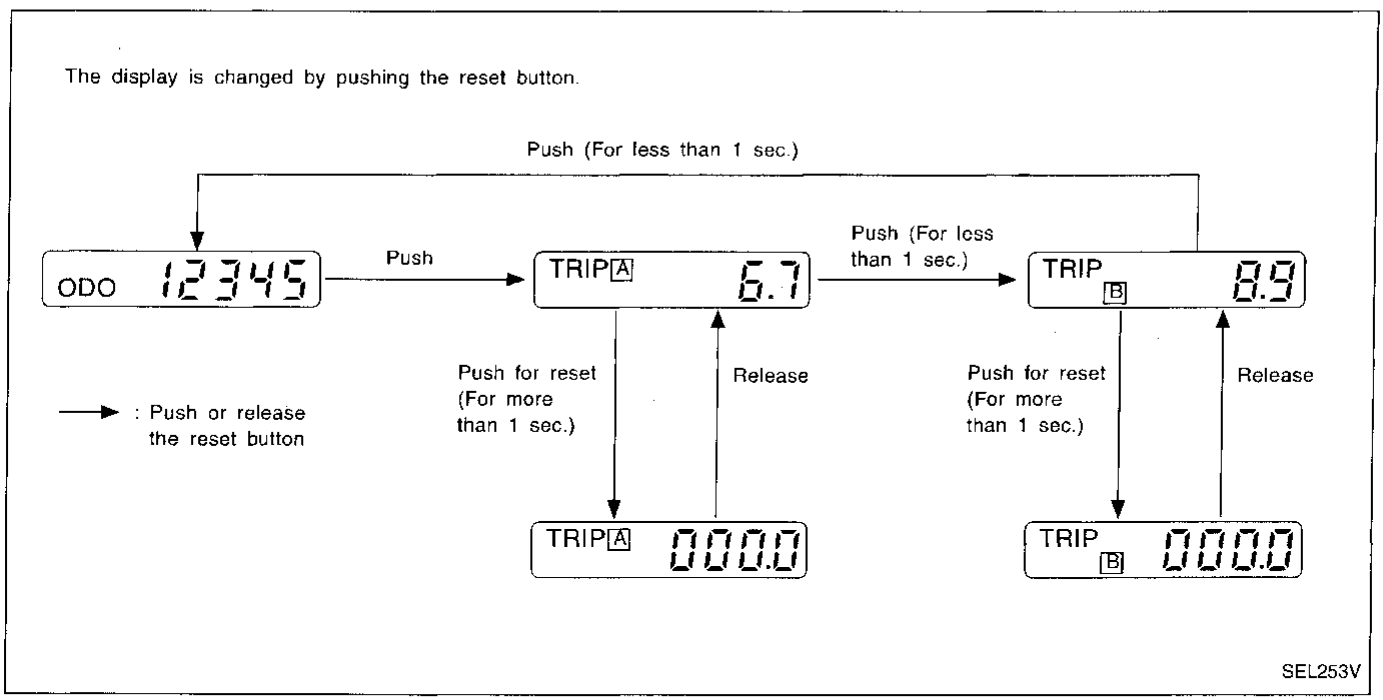
MEL114I

System Description

UNIFIED CONTROL METER

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

HOW TO CHANGE THE DISPLAY FOR ODO/TRIP METER



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

POWER SUPPLY AND GROUND CIRCUIT

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

With the ignition switch in the ON or START position, power is supplied
- through 10A fuse [No. 13, located in the fuse block (J/B)]
- to combination meter terminal ㊲.

Ground is supplied
- to combination meter terminal ⑯
- through body grounds (M13), (M73) and (M111).

FUEL GAUGE

The fuel gauge indicates the approximate fuel level in the fuel tank.
The fuel gauge is regulated by a variable ground signal supplied
- to combination meter terminal ⑤ for the fuel gauge
- from terminal ③ of the fuel tank gauge unit
- through terminal ② of the fuel tank gauge unit and
- through body grounds (B16) and (B19).

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 (ECCS control module)
- to combination meter terminal ③ for the tachometer.

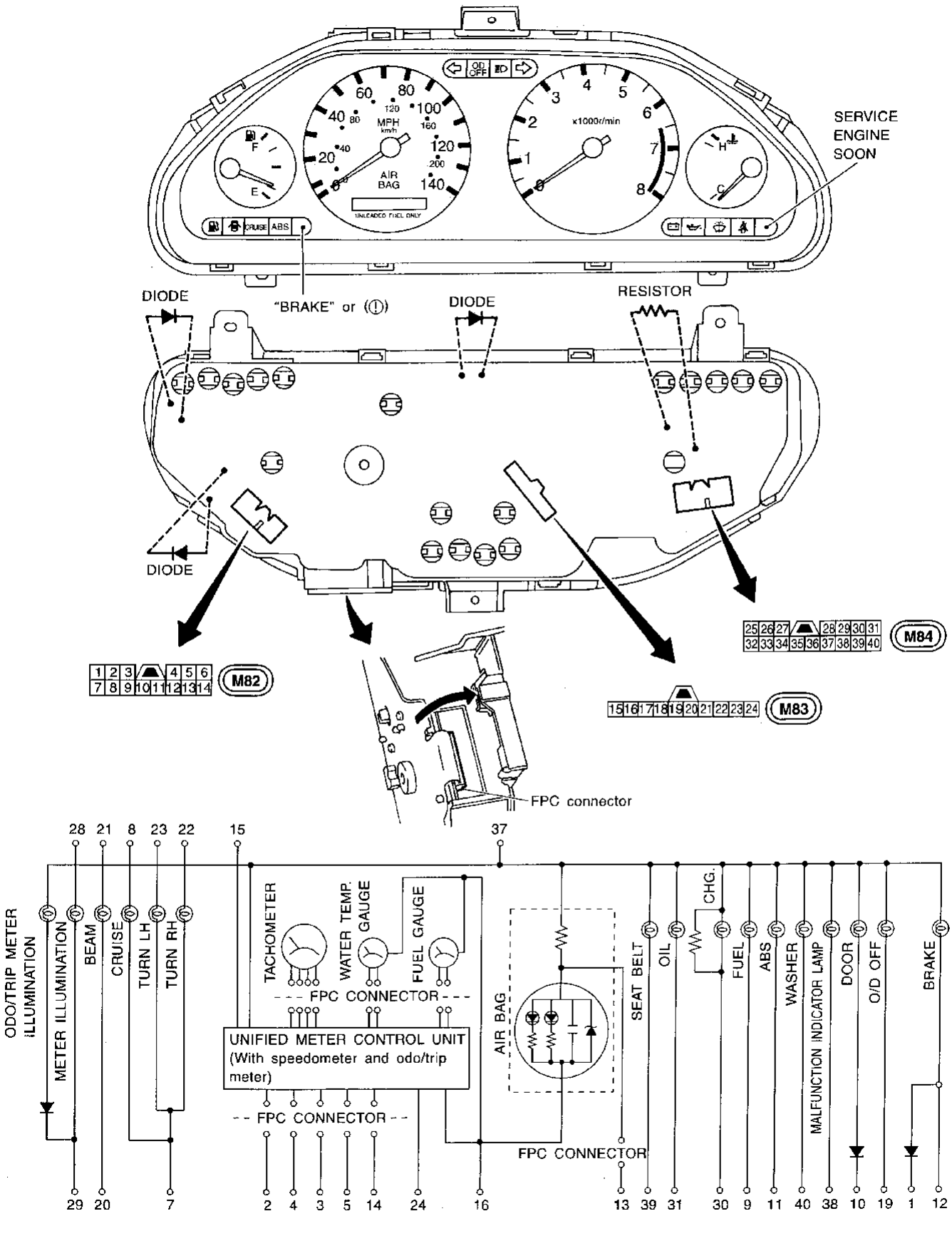
SPEEDOMETER

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

- 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.

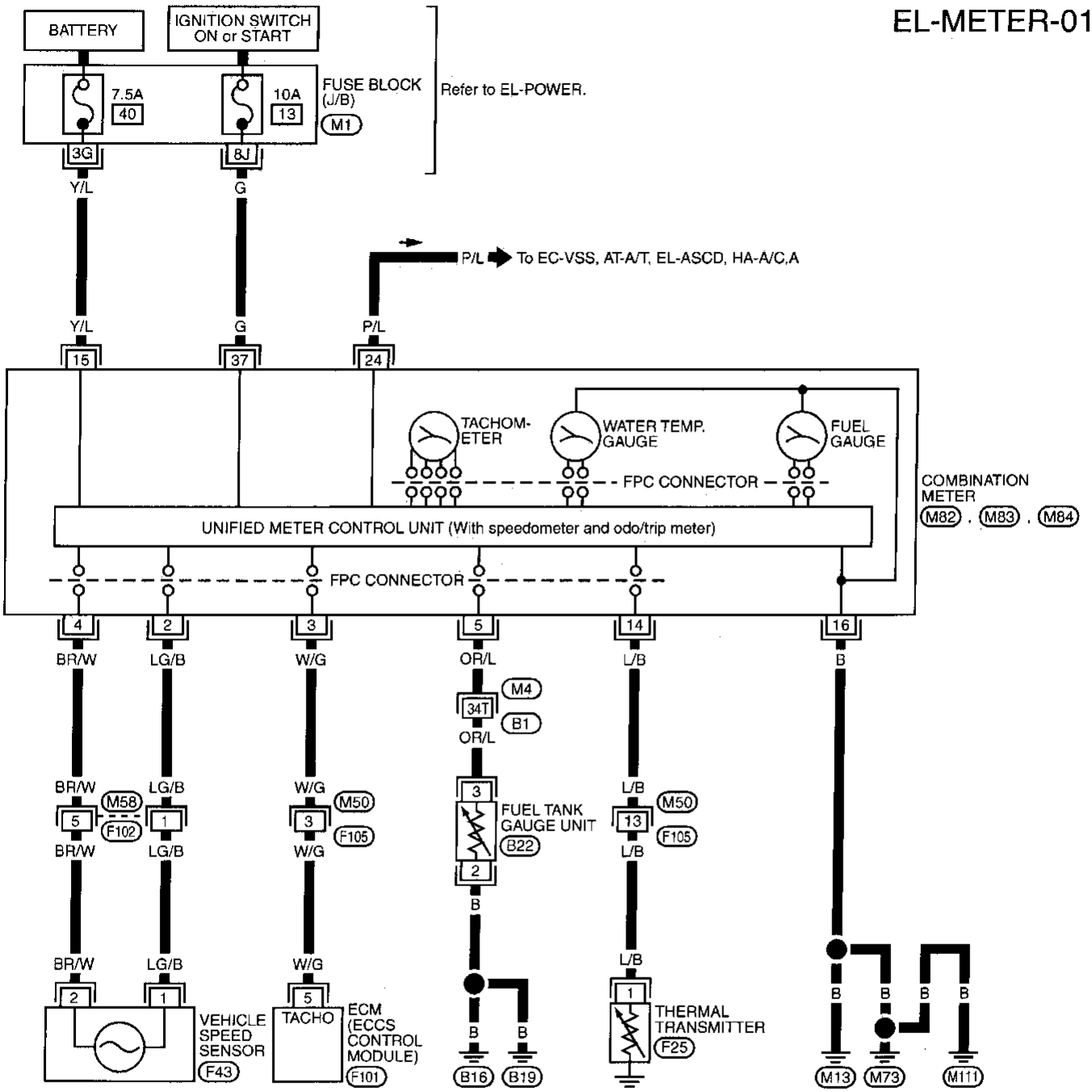
Combination Meter

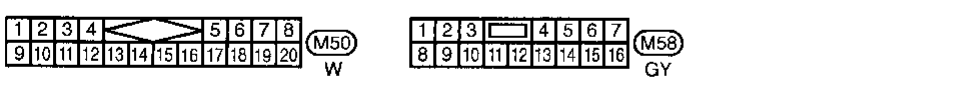


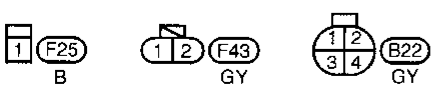
MEL460I

Wiring Diagram — METER —

EL-METER-01







Refer to last page (Foldout page).

M1

M4, B1

F101

MEL115I

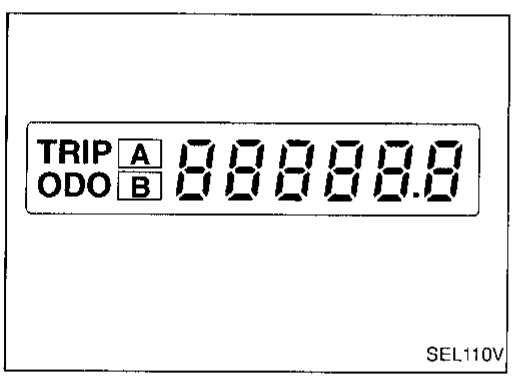
Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode

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

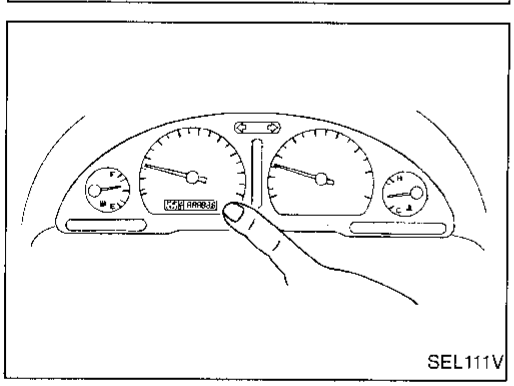
1. Turn ignition switch to ON and change odo/trip meter to "TRIP A" or "TRIP B".
2. Turn ignition switch to OFF.
3. Turn ignition switch to ON when pushing odo/trip meter switch.
4. Confirm that trip meter indicates "000.0".
5. Push odo/trip meter switch more than three times within 5 seconds.



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.

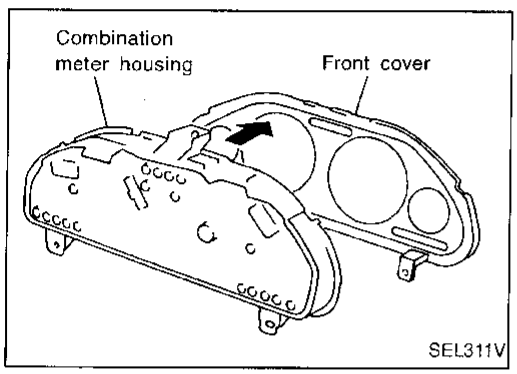


7. Push odo/trip meter switch. Indication of each meter/gauge should be as shown left during pushing odo/trip meter switch if it is no malfunctioning.

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

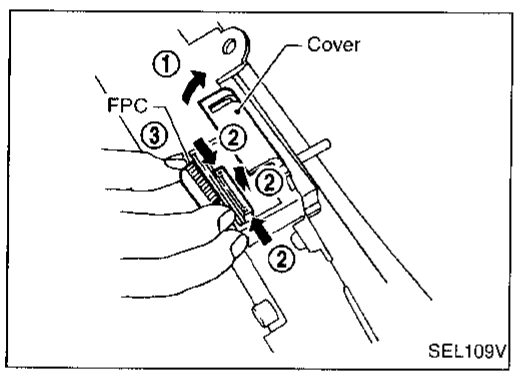
Flexible Print Circuit (FPC)

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.

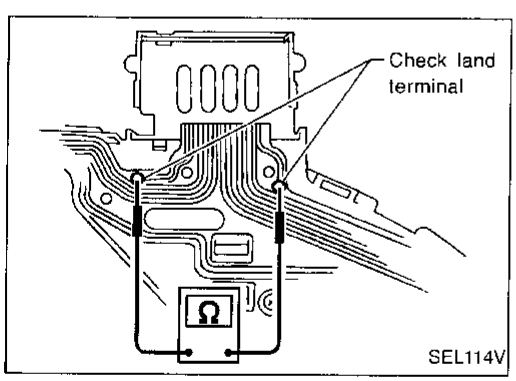


DISCONNECT

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.

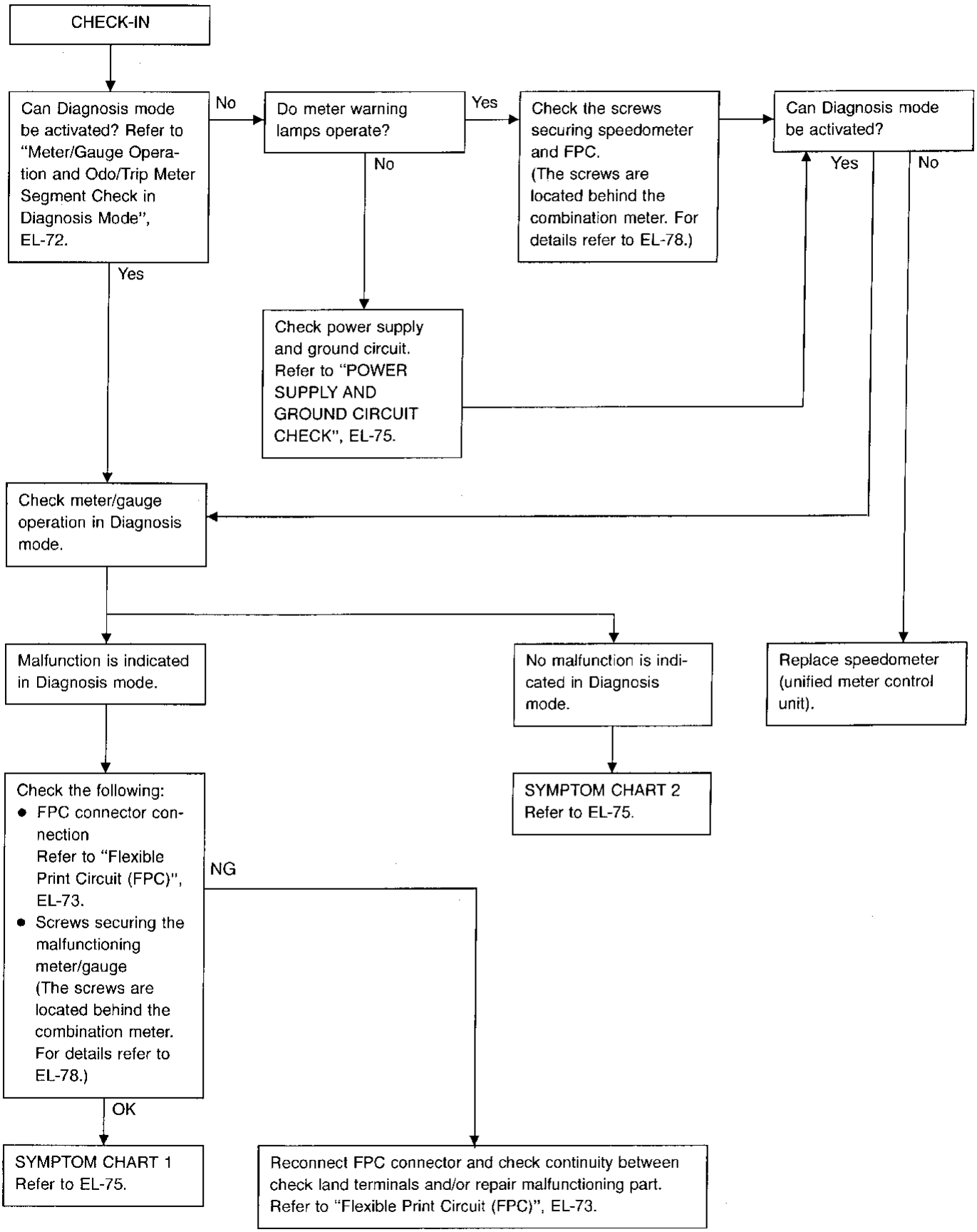


CONNECT

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

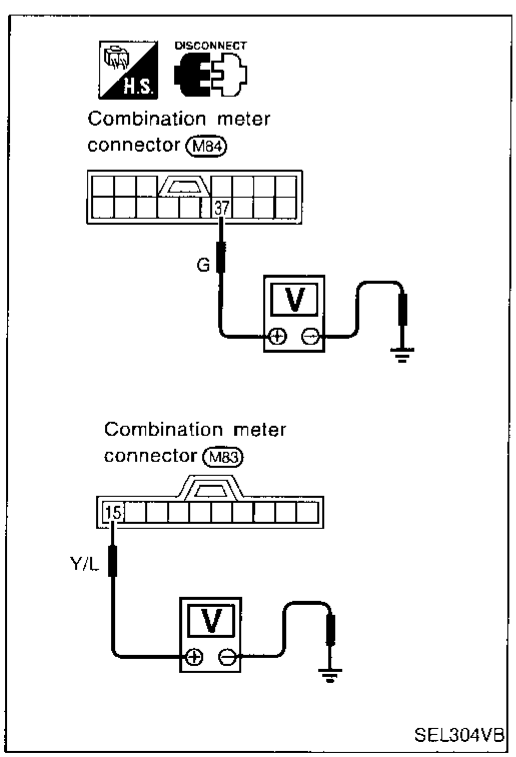
Symptom chart 1 (Malfunction is indicated in Diagnosis mode)

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-78. 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-76.) 2. Check FPC connector. Refer to "Flexible Print Circuit (FPC)", EL-73. 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-73. 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-77.) INSPECTION/FUEL TANK GAUGE (Refer to EL-77.) INSPECTION/THERMAL TRANSMITTER (Refer to EL-78.) 2. Check FPC connector. Refer to "Flexible Print Circuit (FPC)", EL-73. 3. Replace speedometer (unified meter control unit).

Before starting trouble diagnoses above, perform PRELIMINARY CHECK, EL-74.



POWER SUPPLY AND GROUND CIRCUIT CHECK

Power supply circuit check

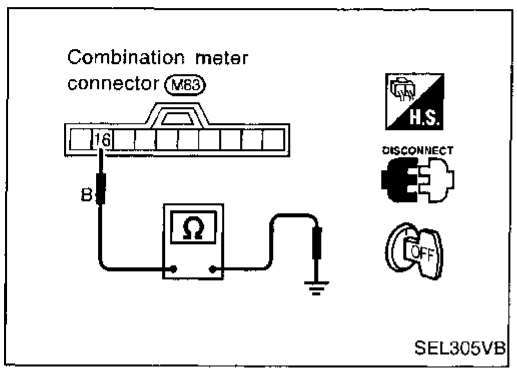
Terminals		Ignition switch position		
⊕	⊖	OFF	ACC	ON
⑮	Ground	Battery voltage	Battery voltage	Battery voltage
㊲	Ground	0V	0V	Battery voltage

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

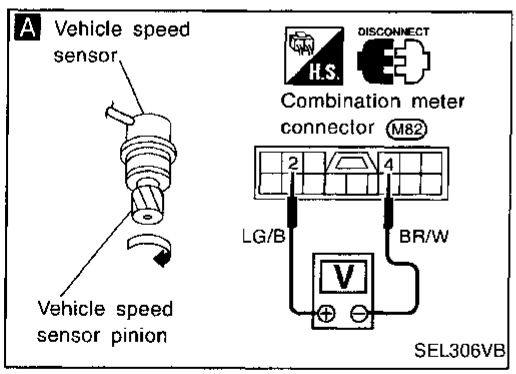
Trouble Diagnoses (Cont'd)

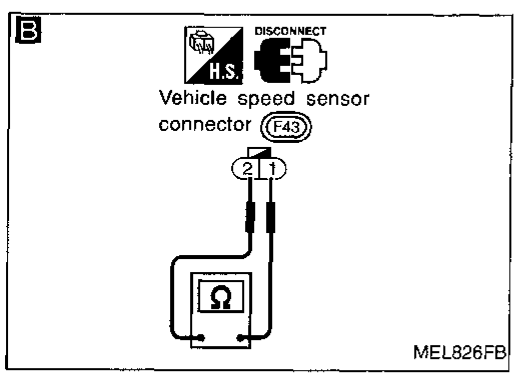
Ground circuit check



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

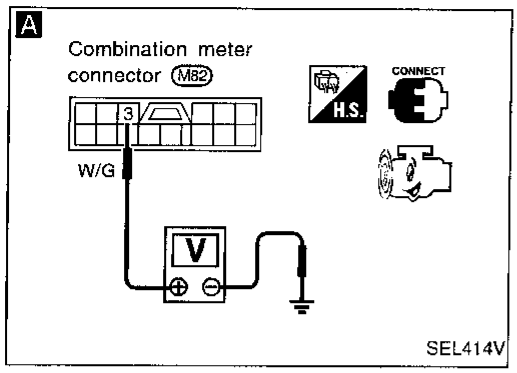
NG → Replace vehicle speed sensor.

OK ↓

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

Trouble Diagnoses (Cont'd)

INSPECTION/ENGINE REVOLUTION SIGNAL



A

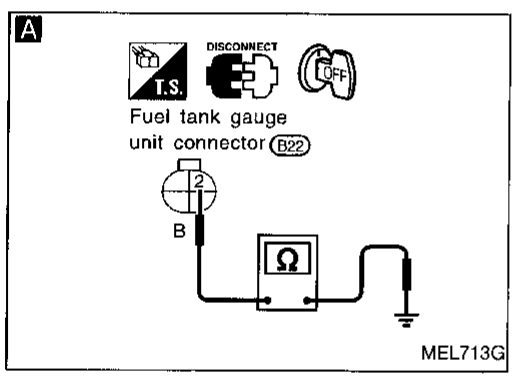
CHECK ECM OUTPUT.
1. Start engine.
2. Check voltage between combination meter terminal ③ and ground at idle and 2,000 rpm.
   Higher rpm = Higher voltage
   Lower rpm = Lower voltage
   Voltage should change with rpm.

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.

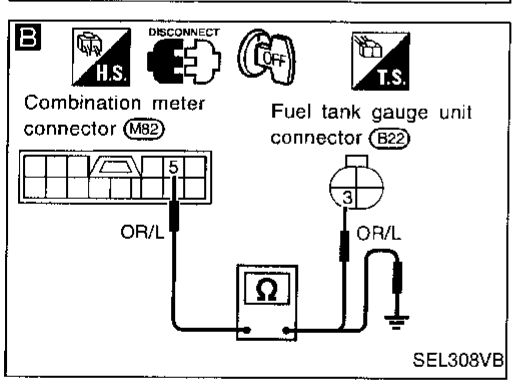
NG → Repair harness or connector.

OK ↓

CHECK GAUGE UNITS.
Refer to "FUEL TANK GAUGE UNIT CHECK" (EL-79).

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.

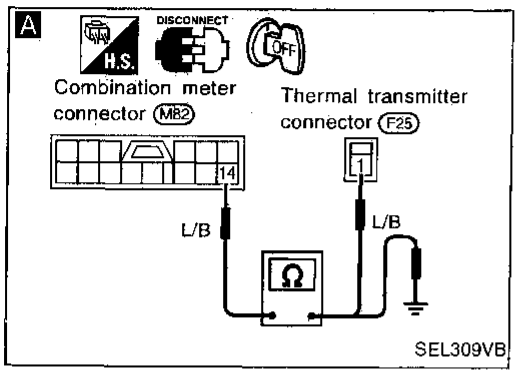
NG → Repair harness or connector.

OK ↓

Fuel tank gauge is OK.

Trouble Diagnoses (Cont'd)

INSPECTION/THERMAL TRANSMITTER



CHECK THERMAL TRANSMITTER.
Refer to "THERMAL TRANSMITTER CHECK" (EL-79).

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 ↓

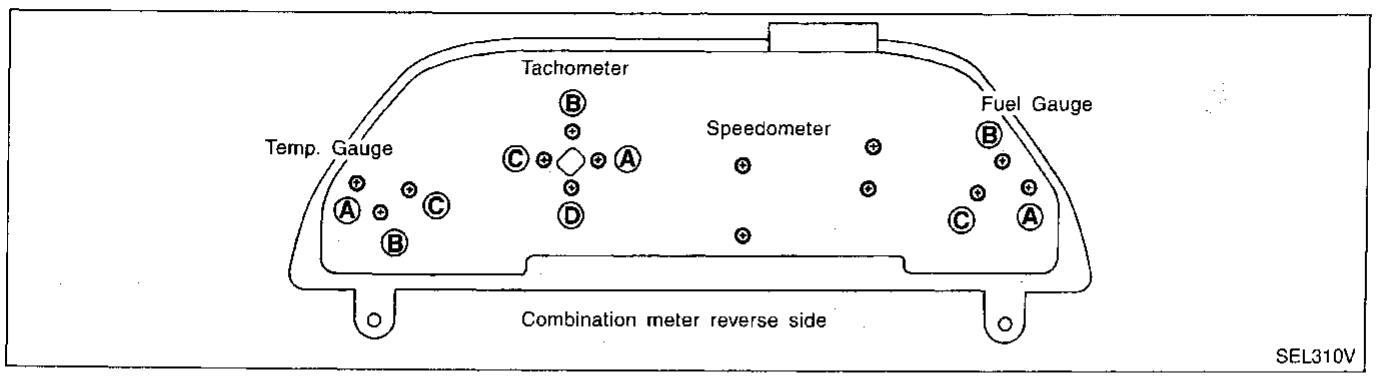
Thermal transmitter is OK.

Electrical Components Inspection

METER/GAUGE RESISTANCE CHECK

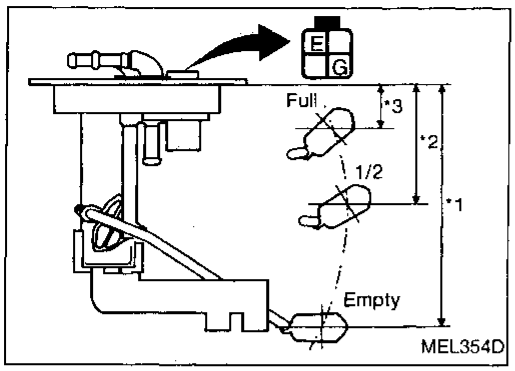
1. Disconnect FPC connector. Refer to "Flexible Print Circuit (FPC)" (EL-73).
2. Check resistance between installation screws of meter/gauge.

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



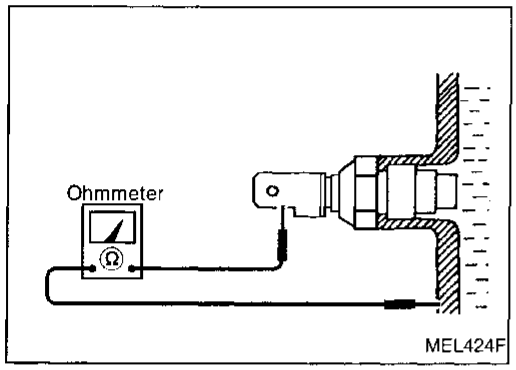
- For removal, refer to FE section.

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.

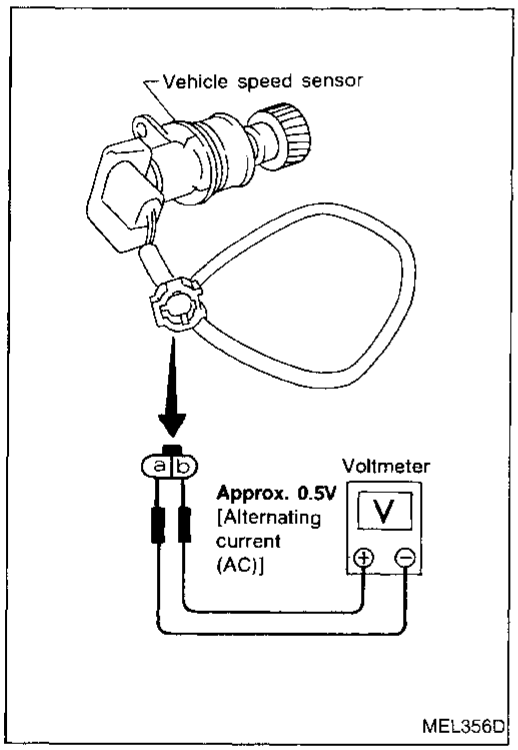
THERMAL TRANSMITTER CHECK



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

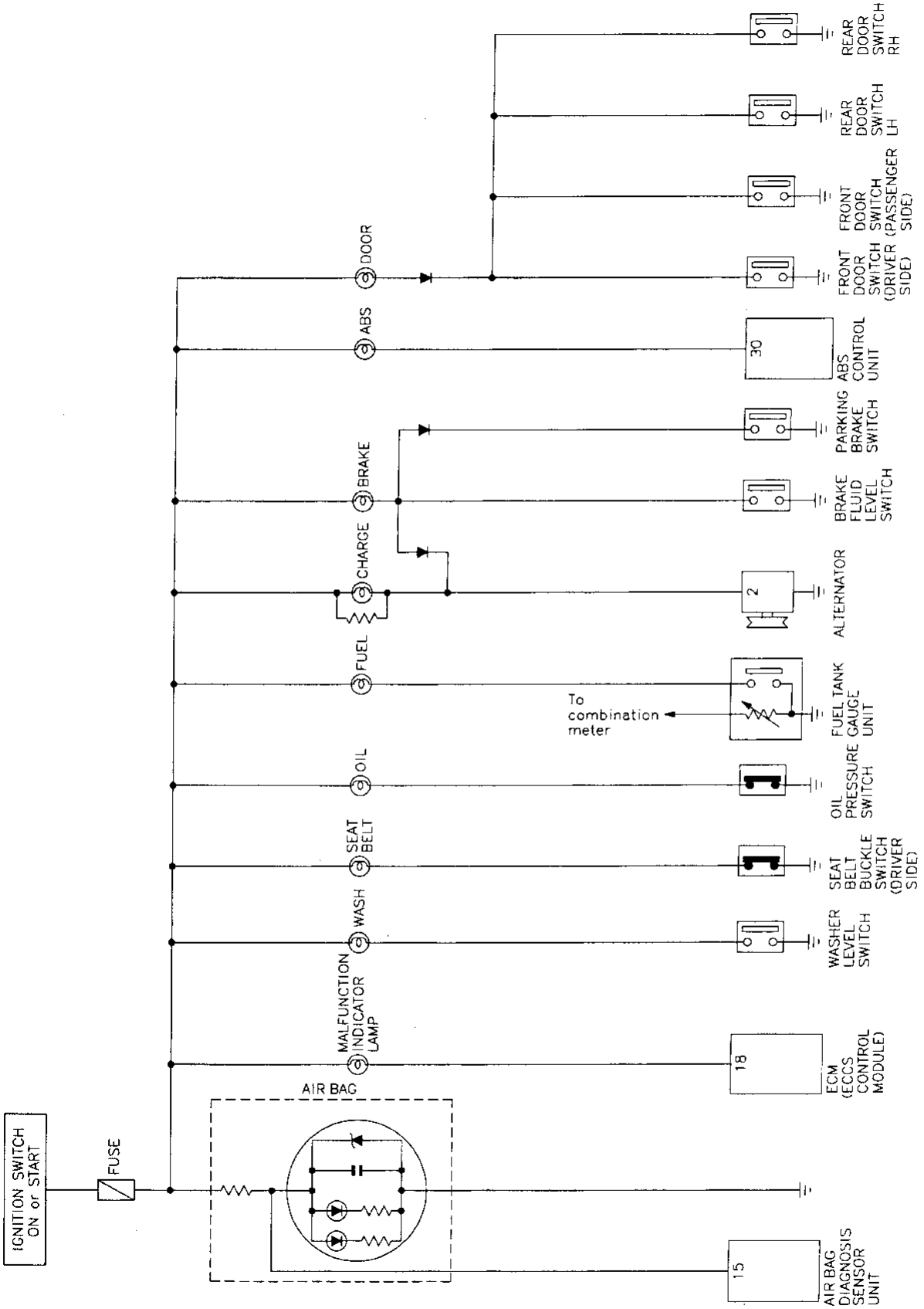
Water temperature	Resistance (Ω)
60°C (140°F)	Approx. 170 - 210
100°C (212°F)	Approx. 47 - 53

VEHICLE SPEED SENSOR CHECK



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

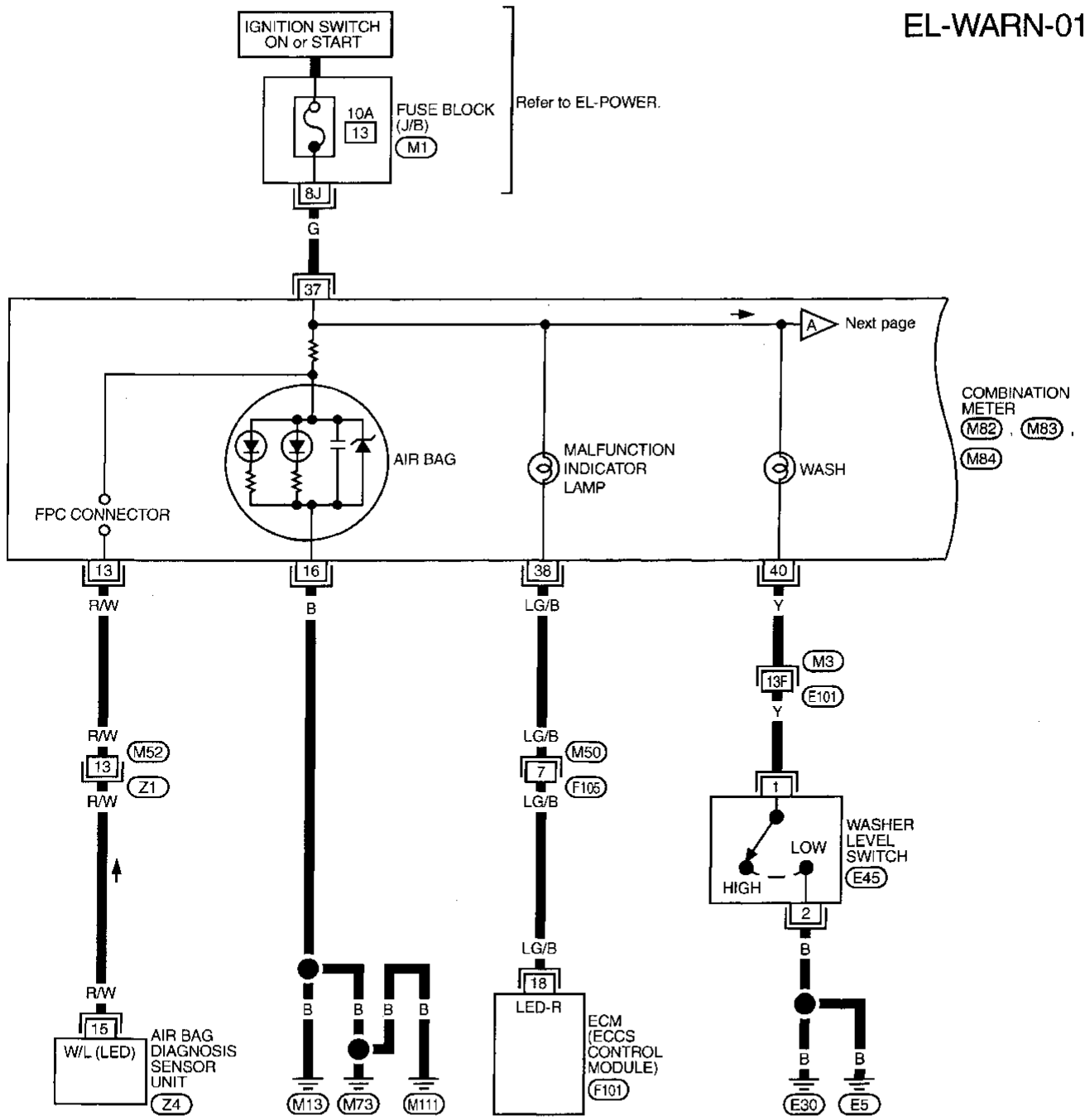
Schematic

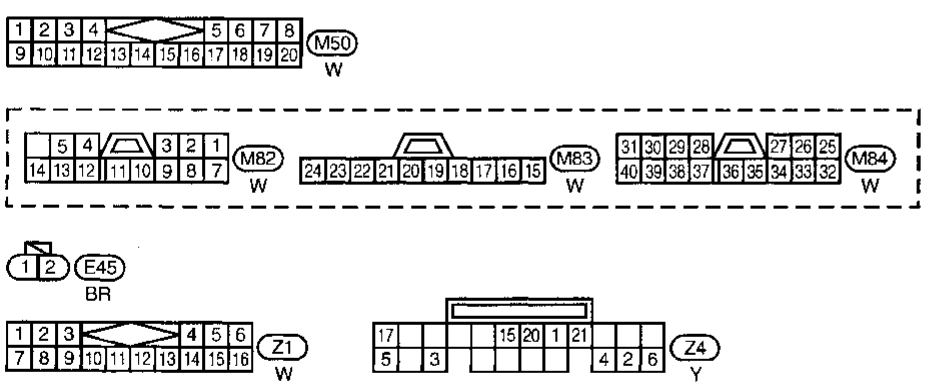


MEL116I

Wiring Diagram — WARN —

EL-WARN-01





Refer to last page (Foldout page).

M1

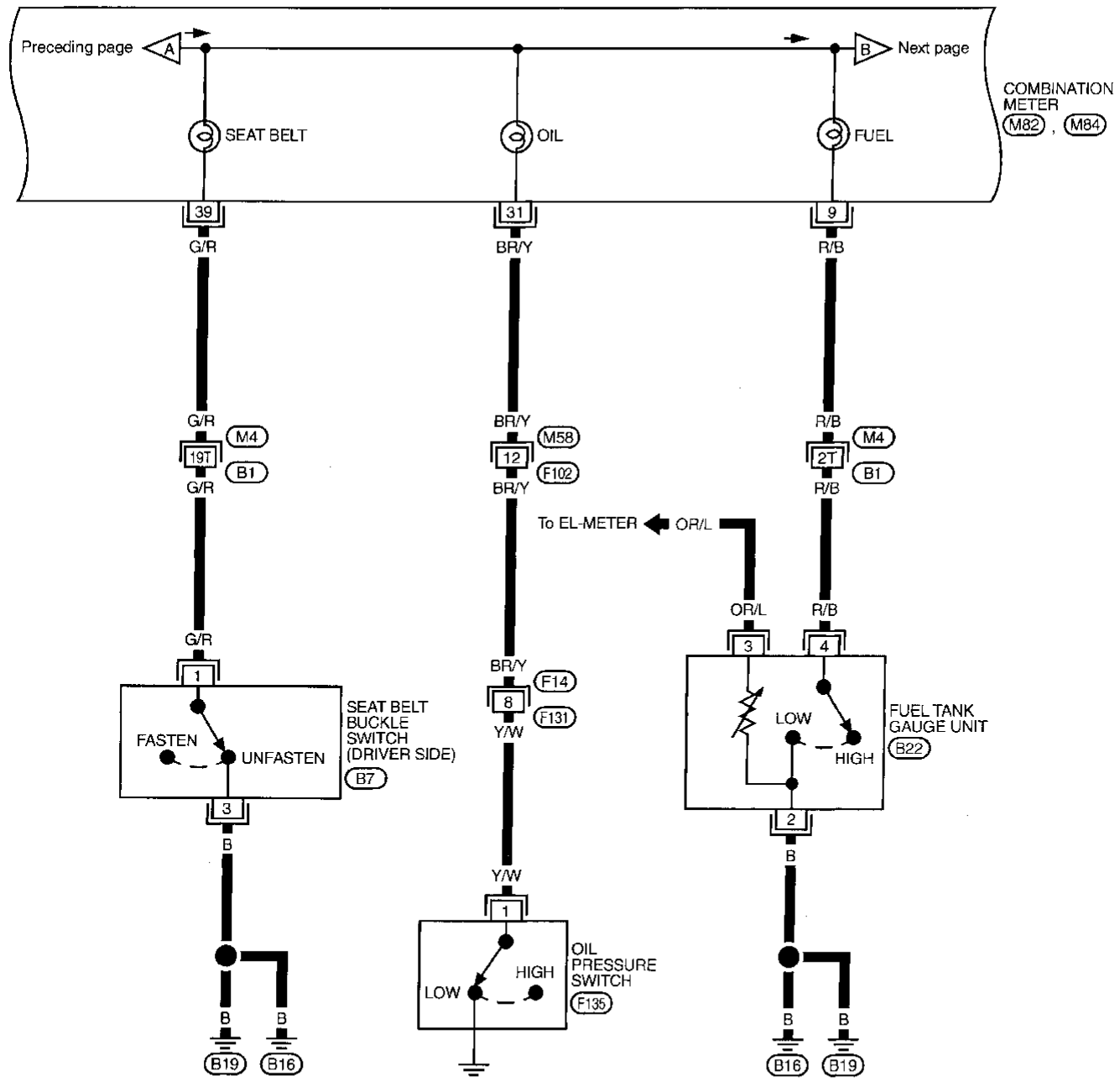
M3 , E101

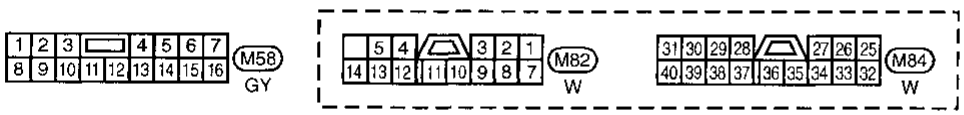
F101

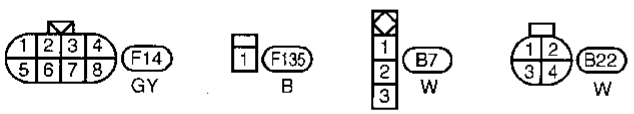
MEL117I

Wiring Diagram — WARN — (Cont'd)

EL-WARN-02





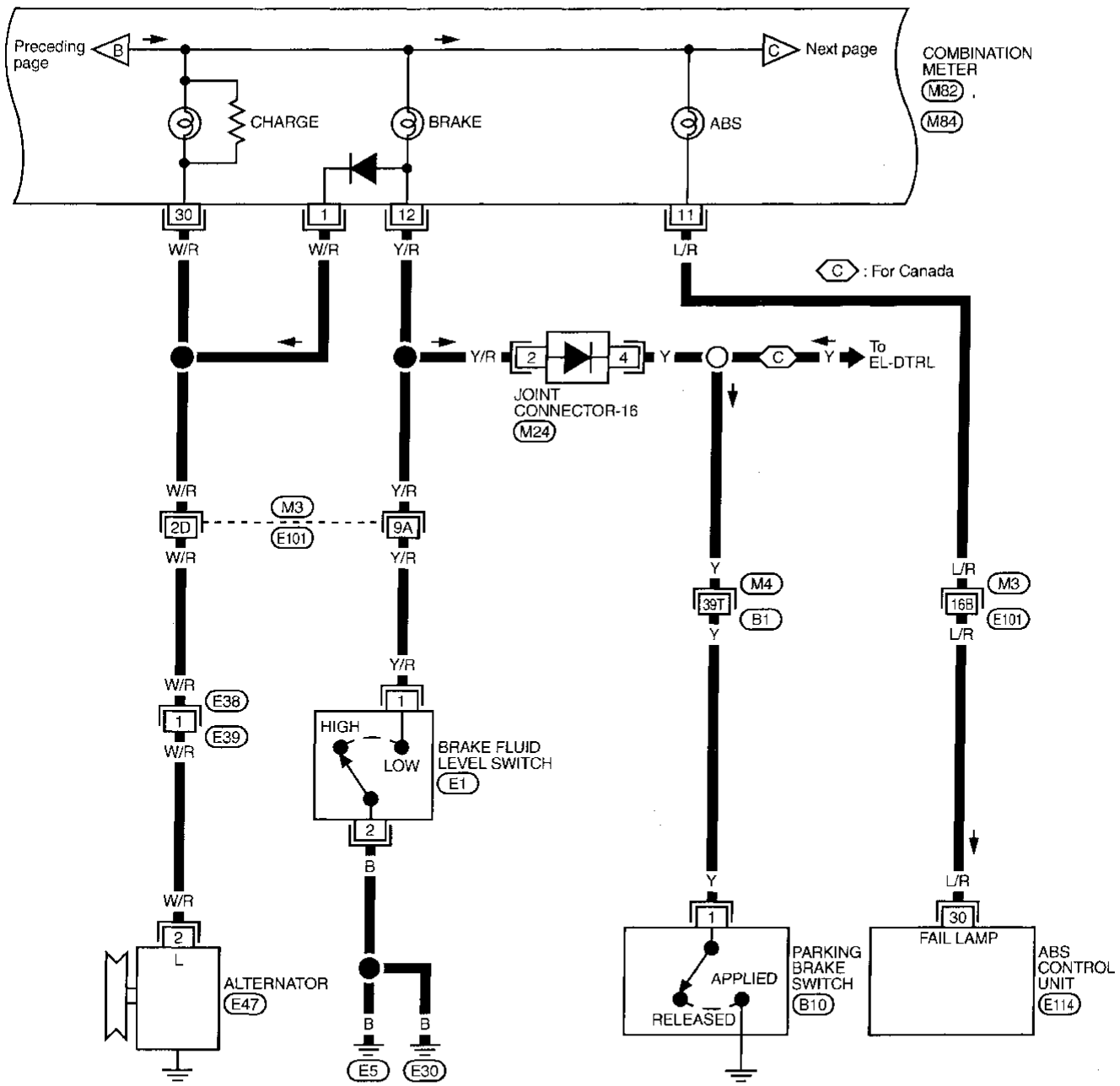


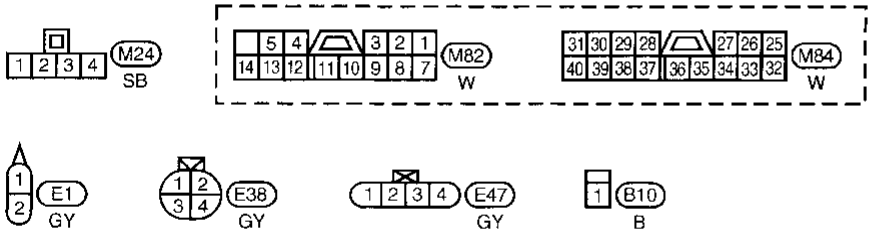
Refer to last page (Foldout page).
M4 , B1

MEL118I

Wiring Diagram — WARN — (Cont'd)

EL-WARN-03





Refer to last page (Foldout page).

M3 , E101

M4 , B1

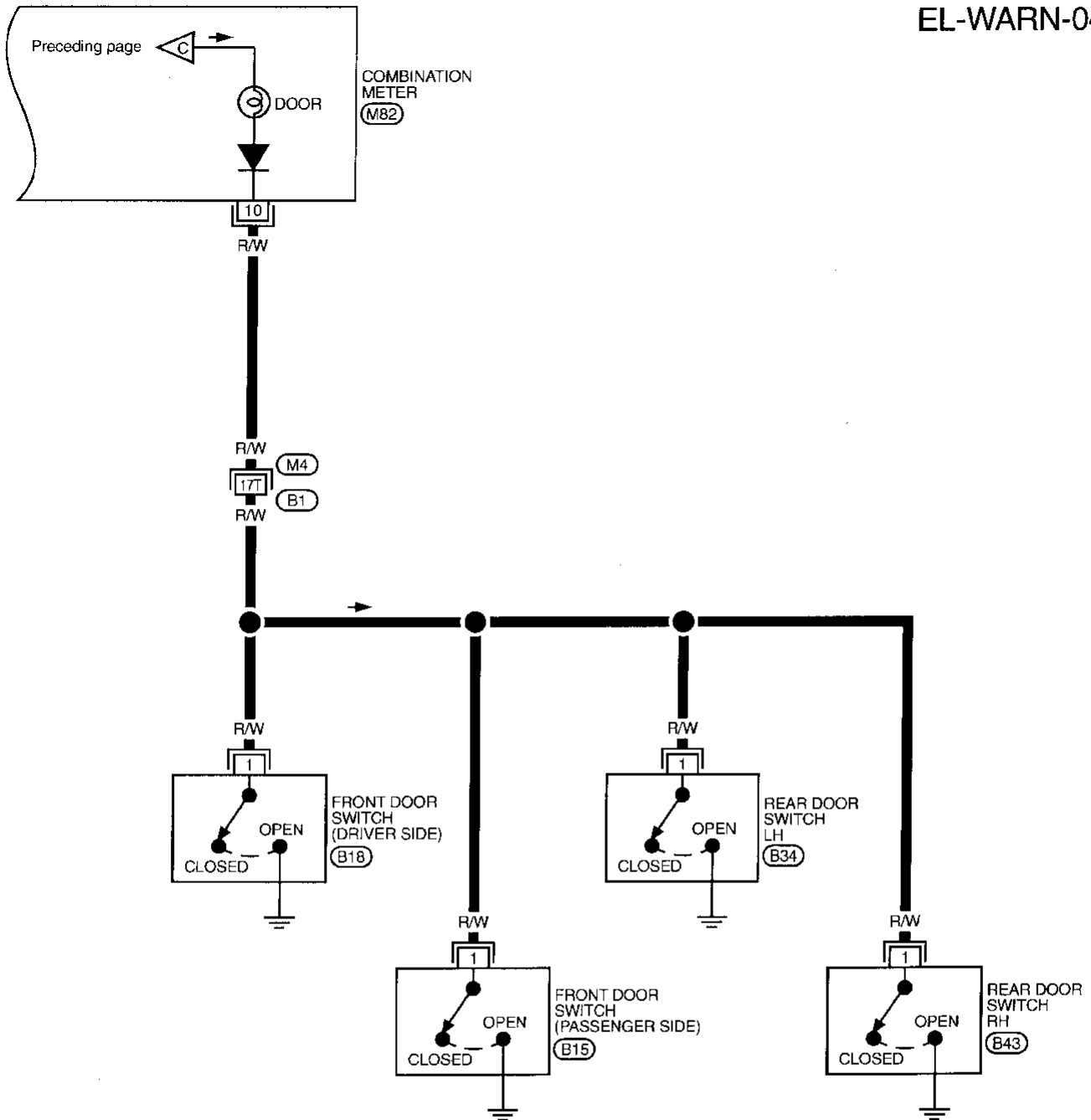
M24

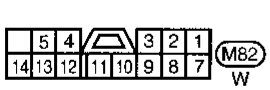
E114

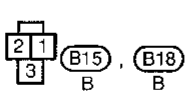
MEL119I

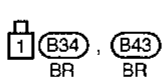
Wiring Diagram — WARN — (Cont'd)

EL-WARN-04



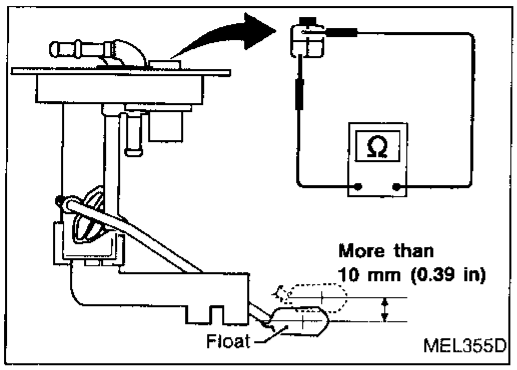


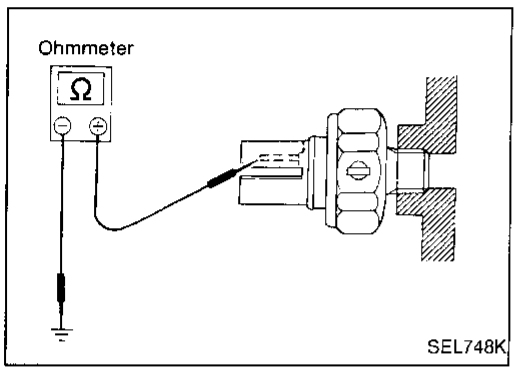


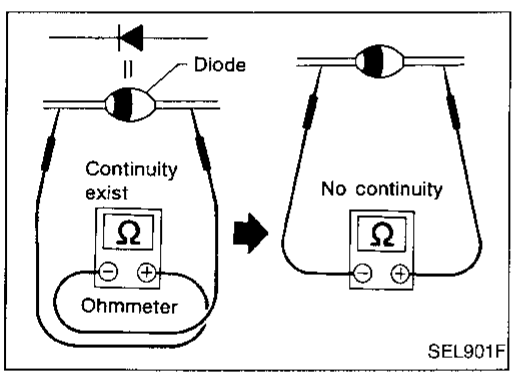


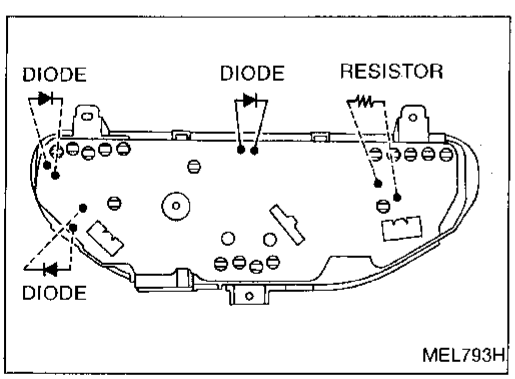
Refer to last page (Foldout page).
M4 , B1

MEL120I









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 lighting switch terminal ⑪.

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 (M111).
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 lighting switch terminal ⑫
- 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.

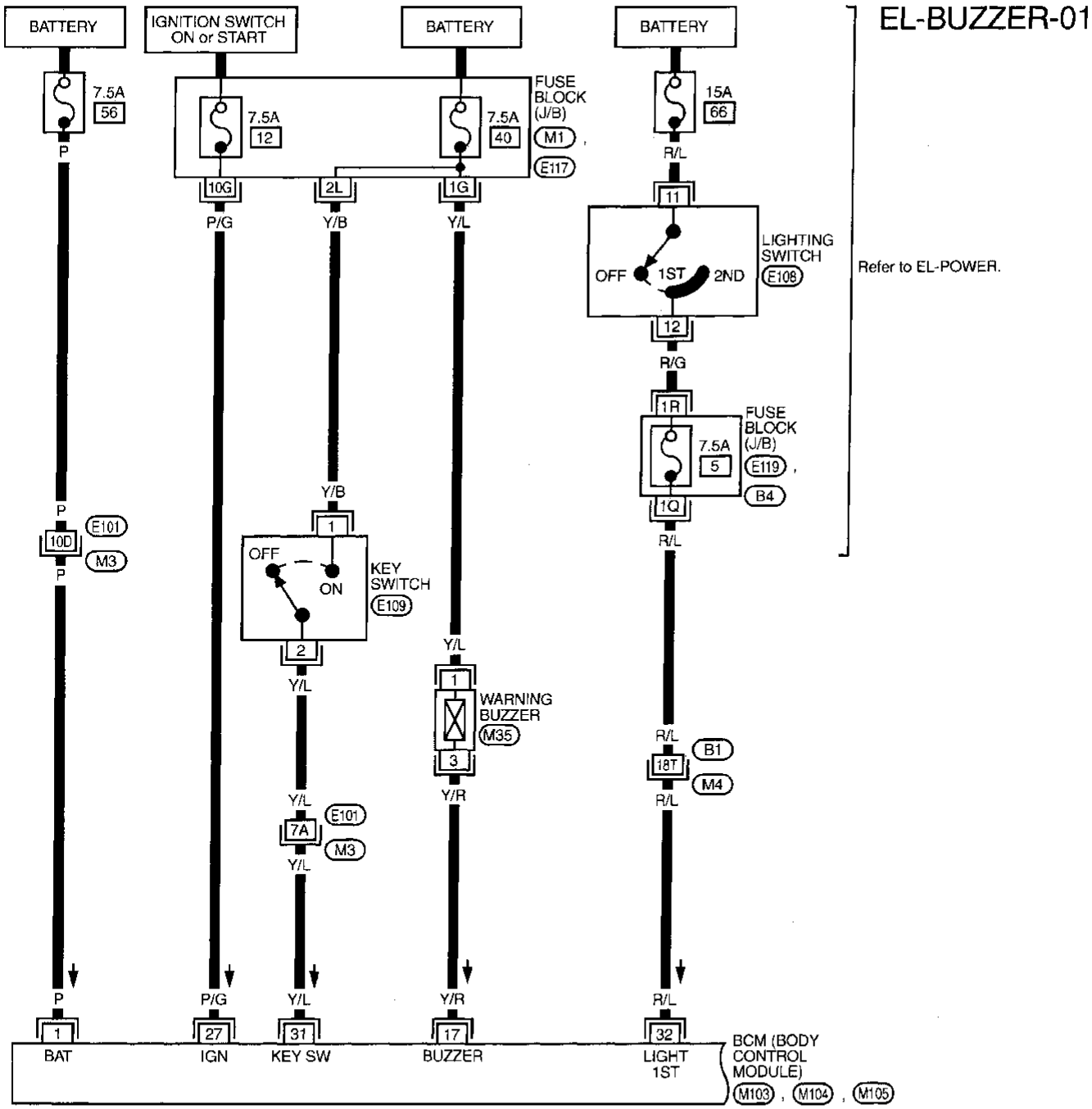
Front door switch LH terminal ③ is grounded through body grounds (B16) and (B19).

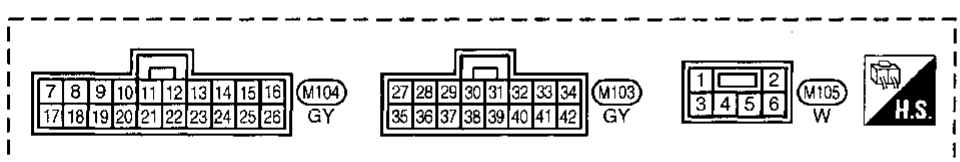
Seat belt warning buzzer

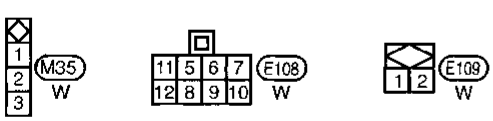
With ignition switch turned ON and seat belt unfastened (seat belt switch ON), warning buzzer will sound for approximately 6 seconds.
Ground is supplied
- from seat belt switch terminal ①
- to BCM terminal ⑧.

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

Wiring Diagram — BUZZER —







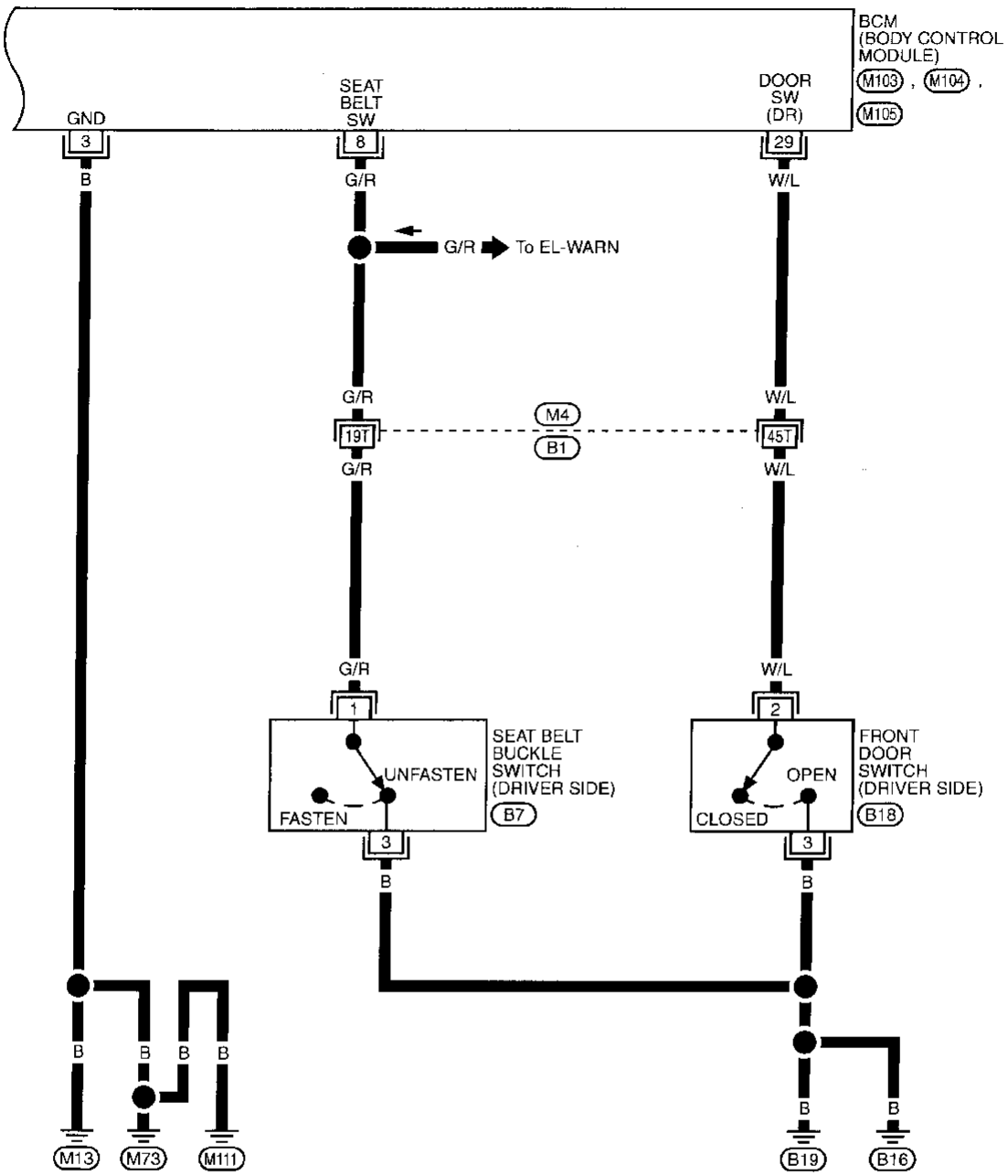
Refer to last page (Foldout page).

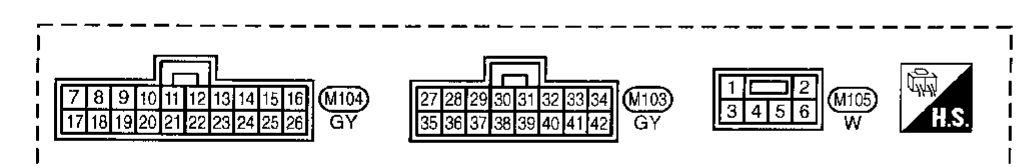
M1
M3, E101
M4, B1
E117
E119
B4

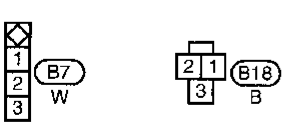
MEL121I

Wiring Diagram — BUZZER — (Cont'd)

EL-BUZZER-02

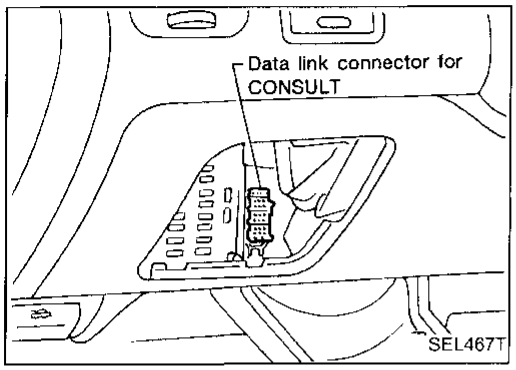






Refer to last page (Foldout page).
M4 , B1

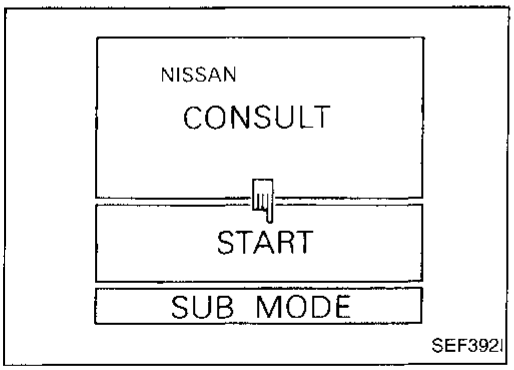
MEL122I



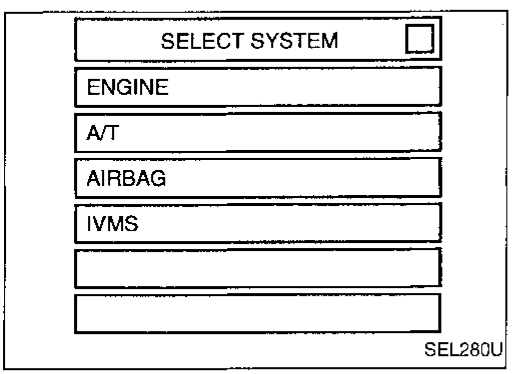
CONSULT

CONSULT INSPECTION PROCEDURE

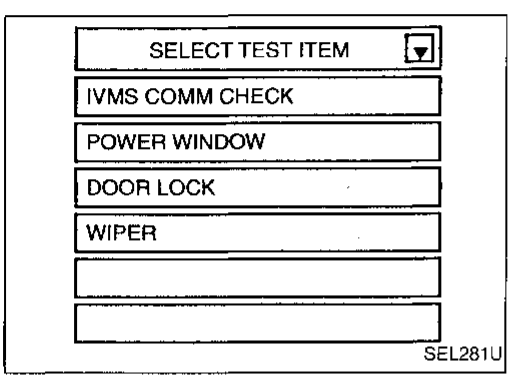
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



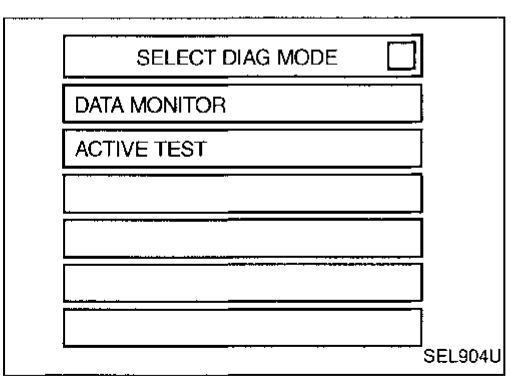
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



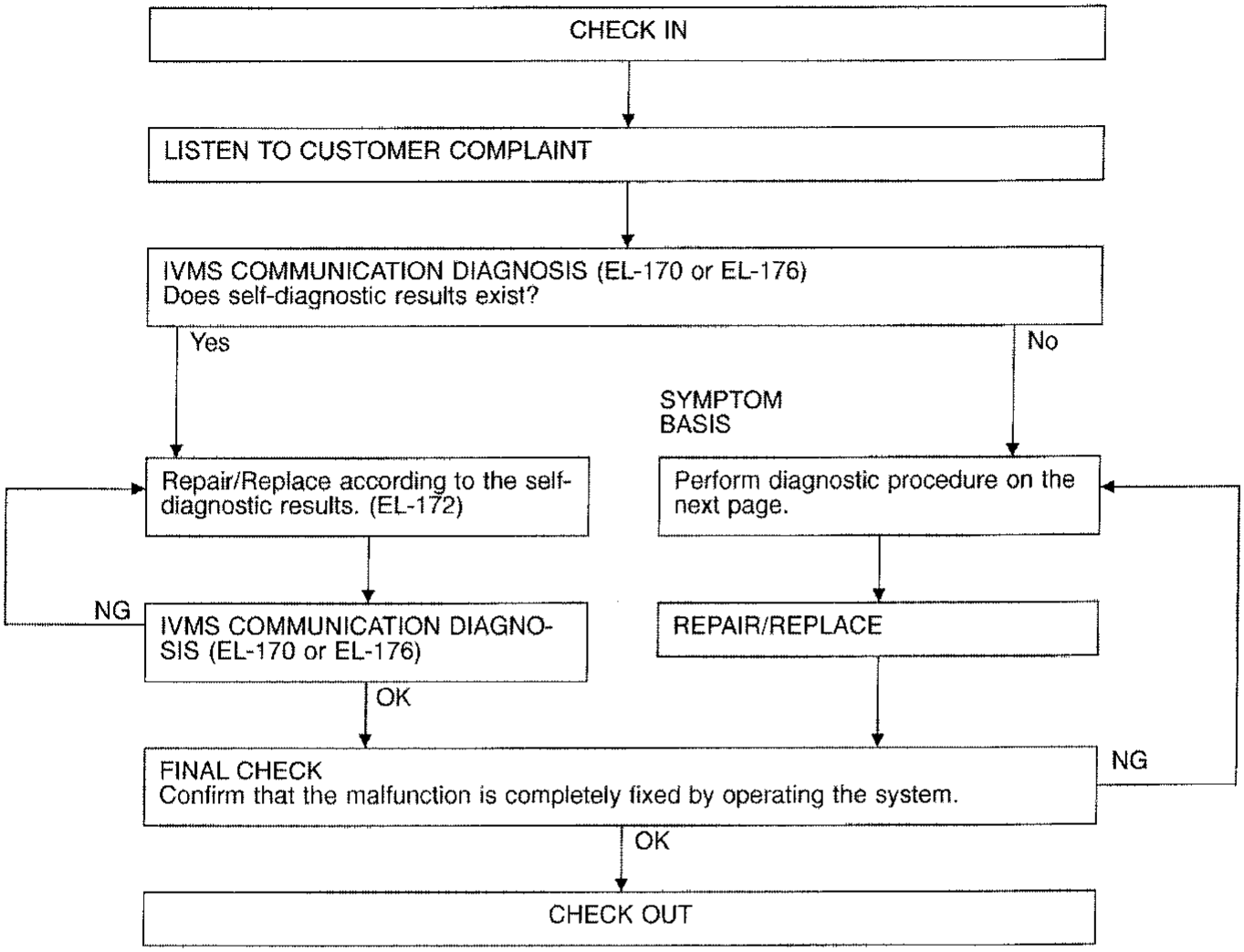
6. Touch "IGN KEY WARN ALM", "LIGHT WARN ALM" or "SEAT BELT TIMER".



- 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-170) or turn the ignition switch to "OFF" position and remove 7.5A fuse (No. 56, located in the fuse and fusible link box).

Trouble Diagnoses (Cont'd)

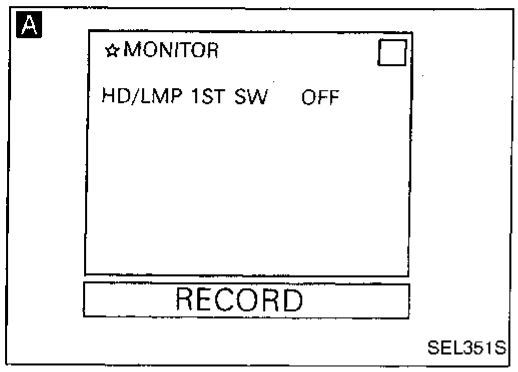
SYMPTOM CHART

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

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

(Lighting switch input signal check)



CHECK LIGHTING SWITCH INPUT SIGNAL.

A CONSULT

See "HD/LMP 1ST SW" in "Data Monitor" mode.
When lighting switch is in 1ST or 2ND:
HD/LMP 1ST SW ON
When lighting switch is OFF:
HD/LMP 1ST SW OFF

OR

ON-BOARD

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

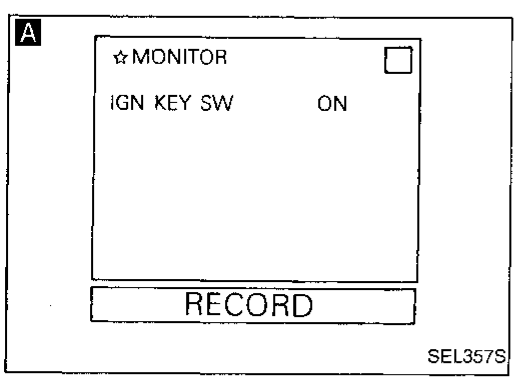
NG → Check the following.
- 7.5A fuse (No. 5, located in the fuse block)
- Harness for open or short between fuse and BCM

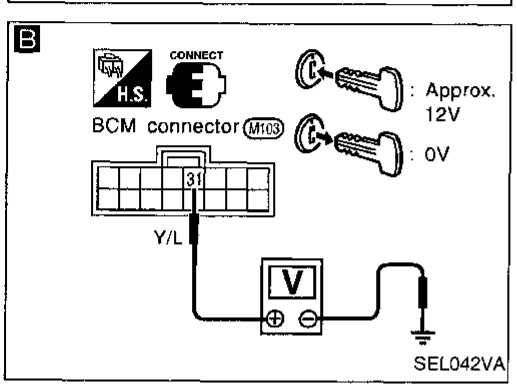
OK ↓

Go to Procedure 4.

DIAGNOSTIC PROCEDURE 2

(Key switch input signal check)





CHECK KEY SWITCH INPUT SIGNAL.

A CONSULT

See "IGN KEY SW" in "Data Monitor" mode.
When key is in ignition:
IGN KEY SW ON
When key is out of ignition:
IGN KEY SW OFF

OR

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

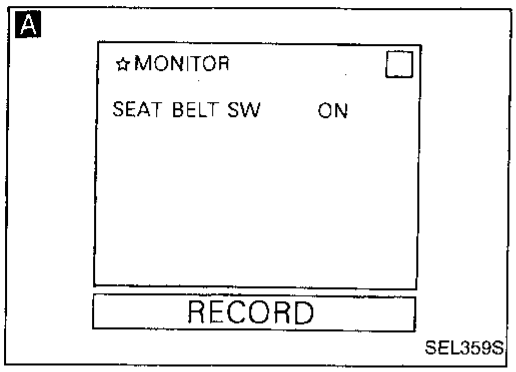
OK ↓

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

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

OR

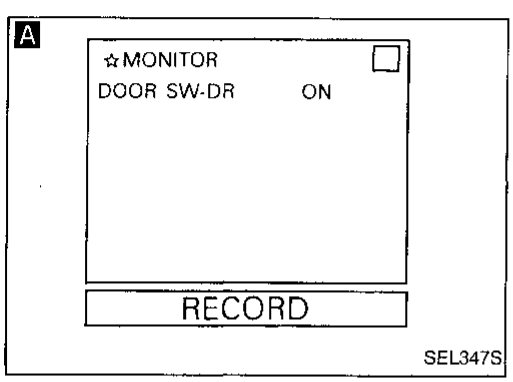
ON-BOARD

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

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

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

OR

ON-BOARD

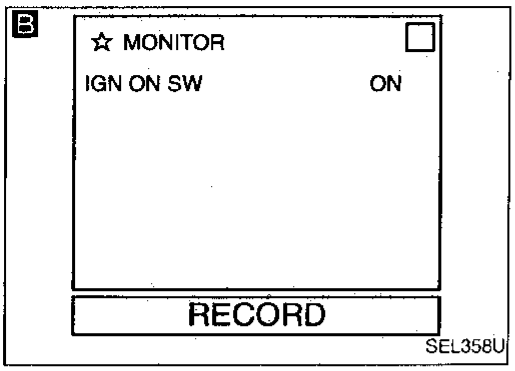
Perform On-board Diagnosis — Mode II (switch monitor) for door switch (driver side). Refer to EL-178.

OK ↓

Ⓐ

Trouble Diagnoses (Cont'd)

B



SEL358U

Ⓐ

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

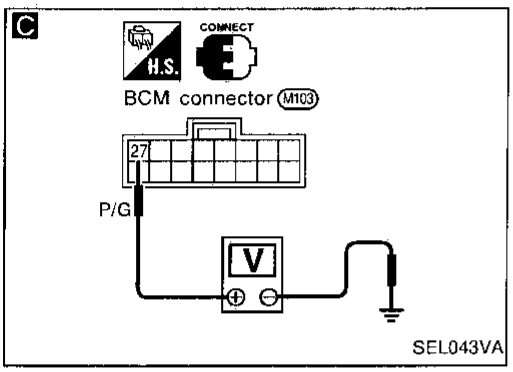
C TESTER

Check voltage between BCM terminal ㉗ and ground.

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

OK ↓

C



SEL043VA

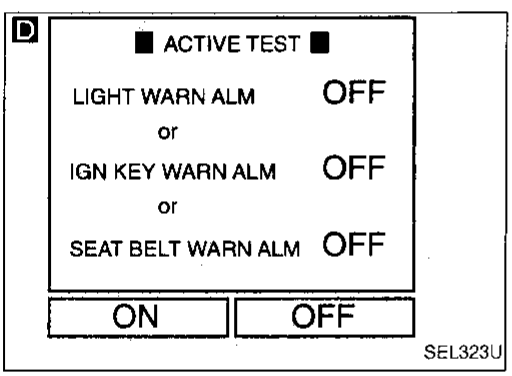
D

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 ↓

D



SEL323U

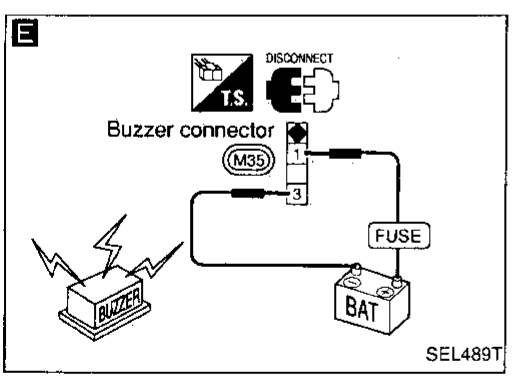
E

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

NG → Replace buzzer.

OK ↓

E



SEL489T

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 M111.

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

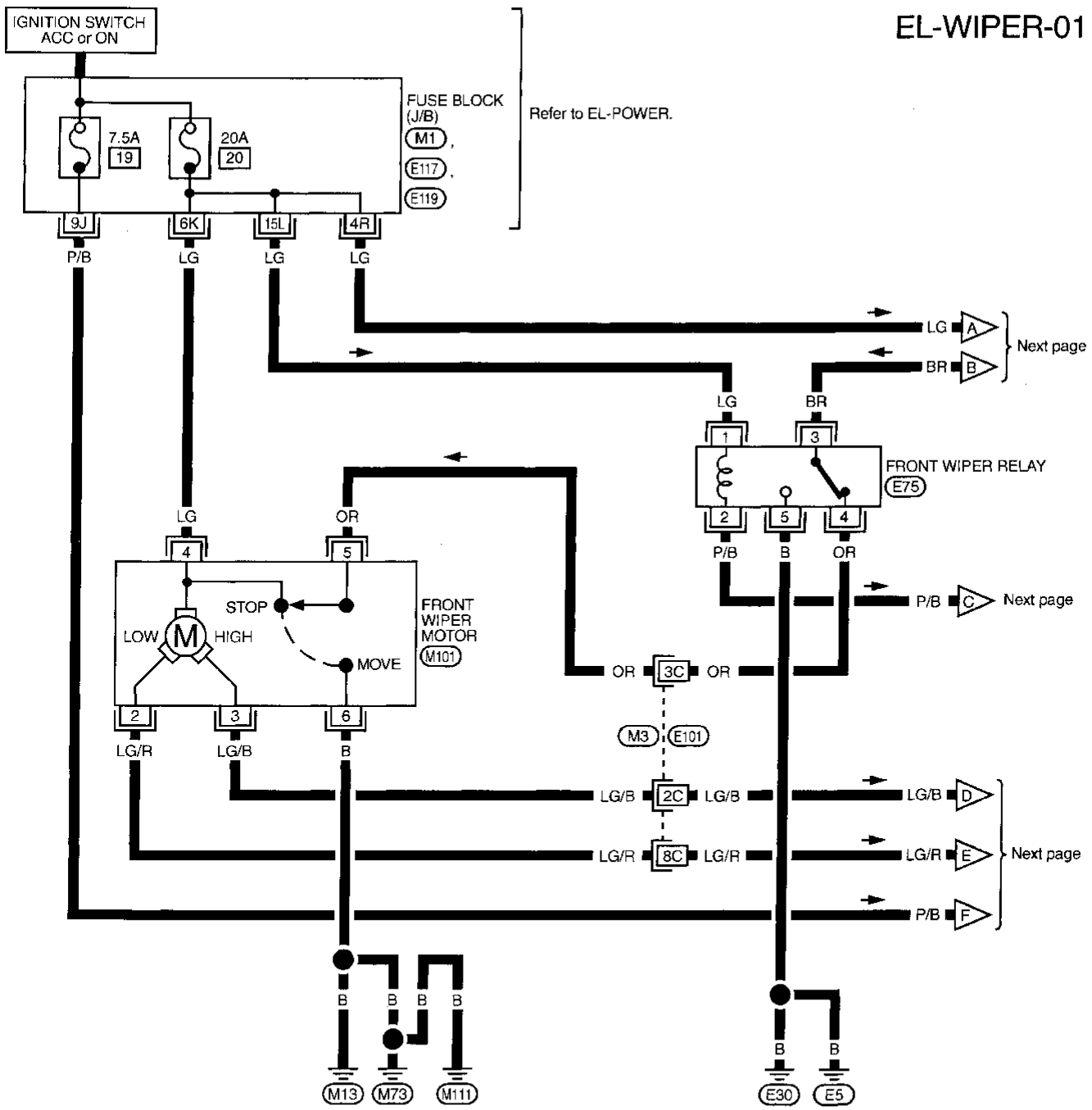
System Description (Cont'd)

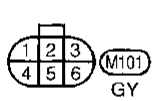
- to BCM terminal ㉞
- from terminal ⑱ of the front wiper switch
- through terminal ⑰ of the front wiper switch, and
- through body grounds E5 and E30.

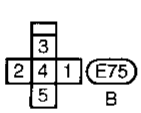
With power and ground supplied, the washer motor operates.
The front wiper motor operates at low speed for about 3 seconds. This feature is controlled by the BCM in the same manner as the intermittent operation.

Wiring Diagram — WIPER —

EL-WIPER-01







Refer to last page (Foldout page).

M1

M3, E101

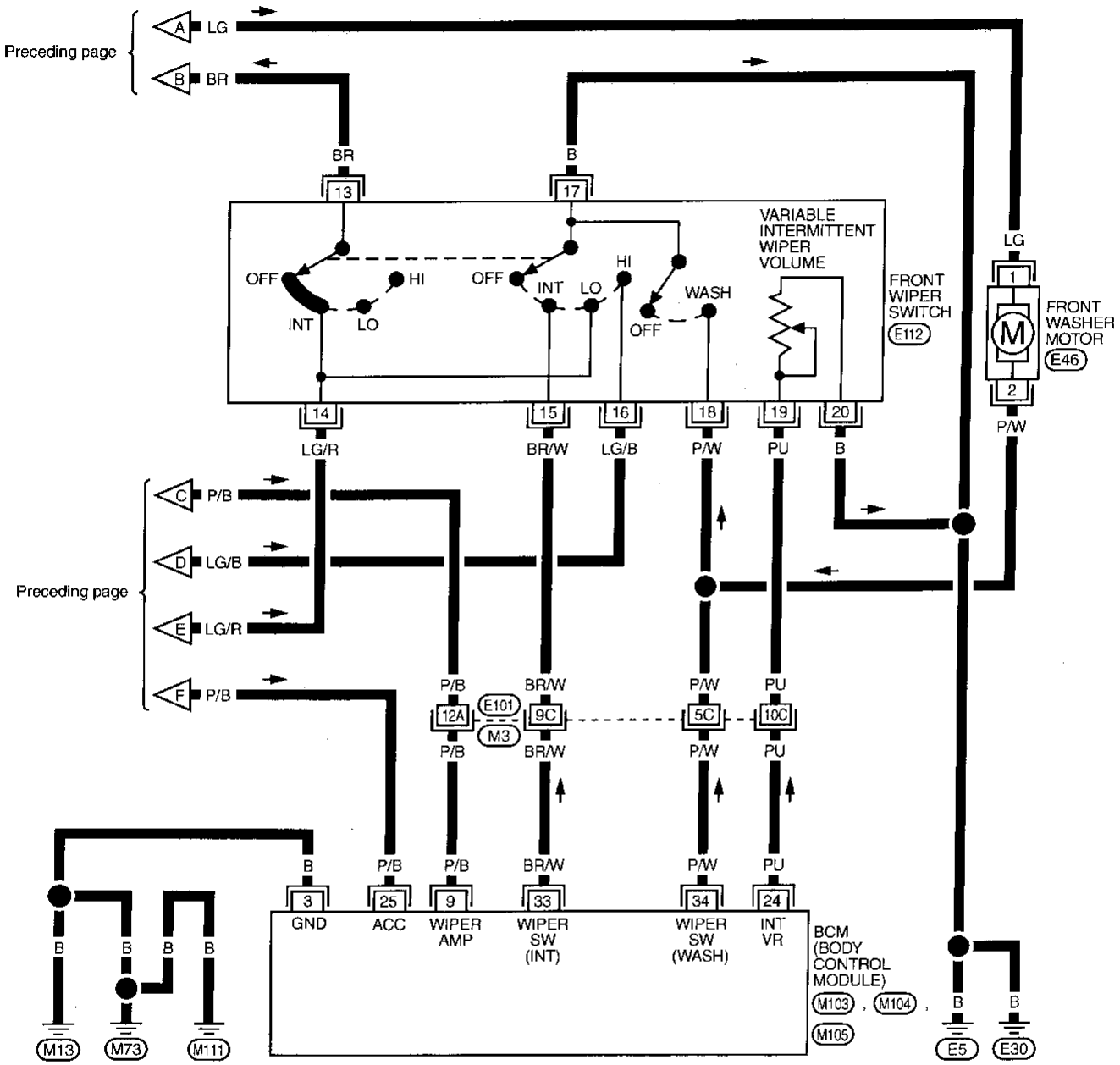
E117

E119

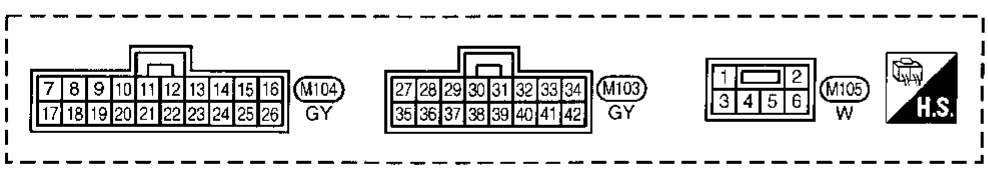
MEL875H

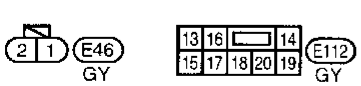
Wiring Diagram — WIPER — (Cont'd)

EL-WIPER-02

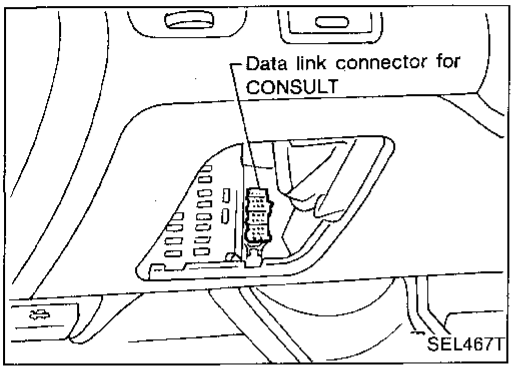


Refer to last page (Foldout page).
M3 , E101





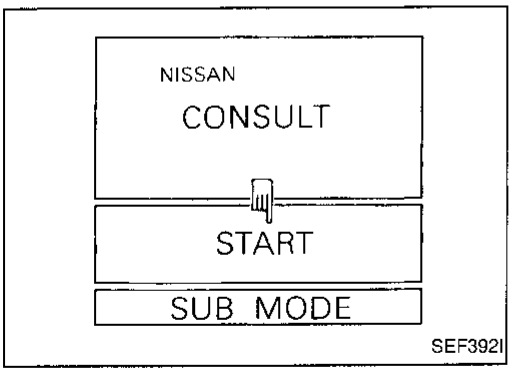
MEL876H



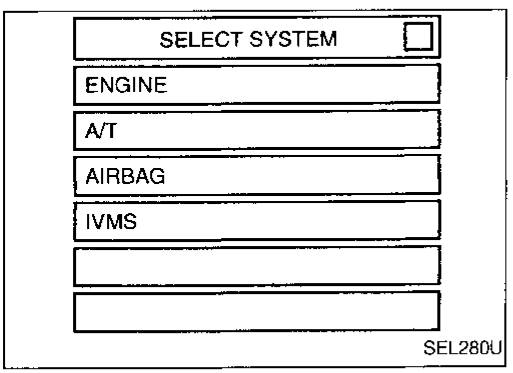
CONSULT

CONSULT INSPECTION PROCEDURE

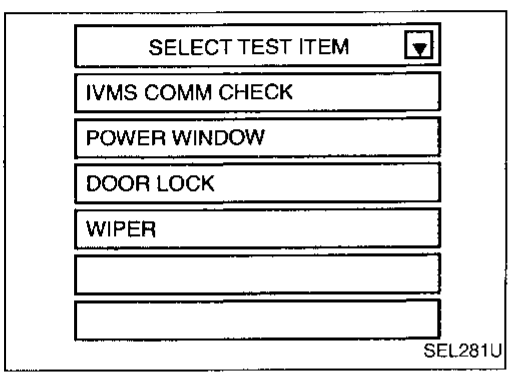
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



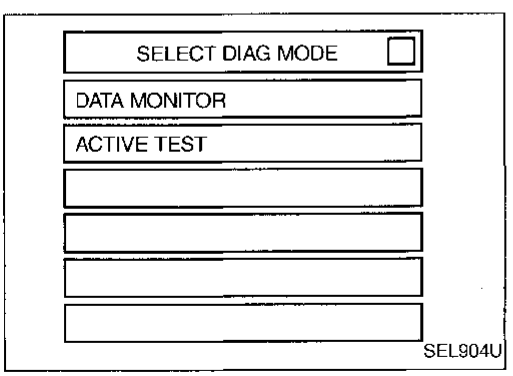
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



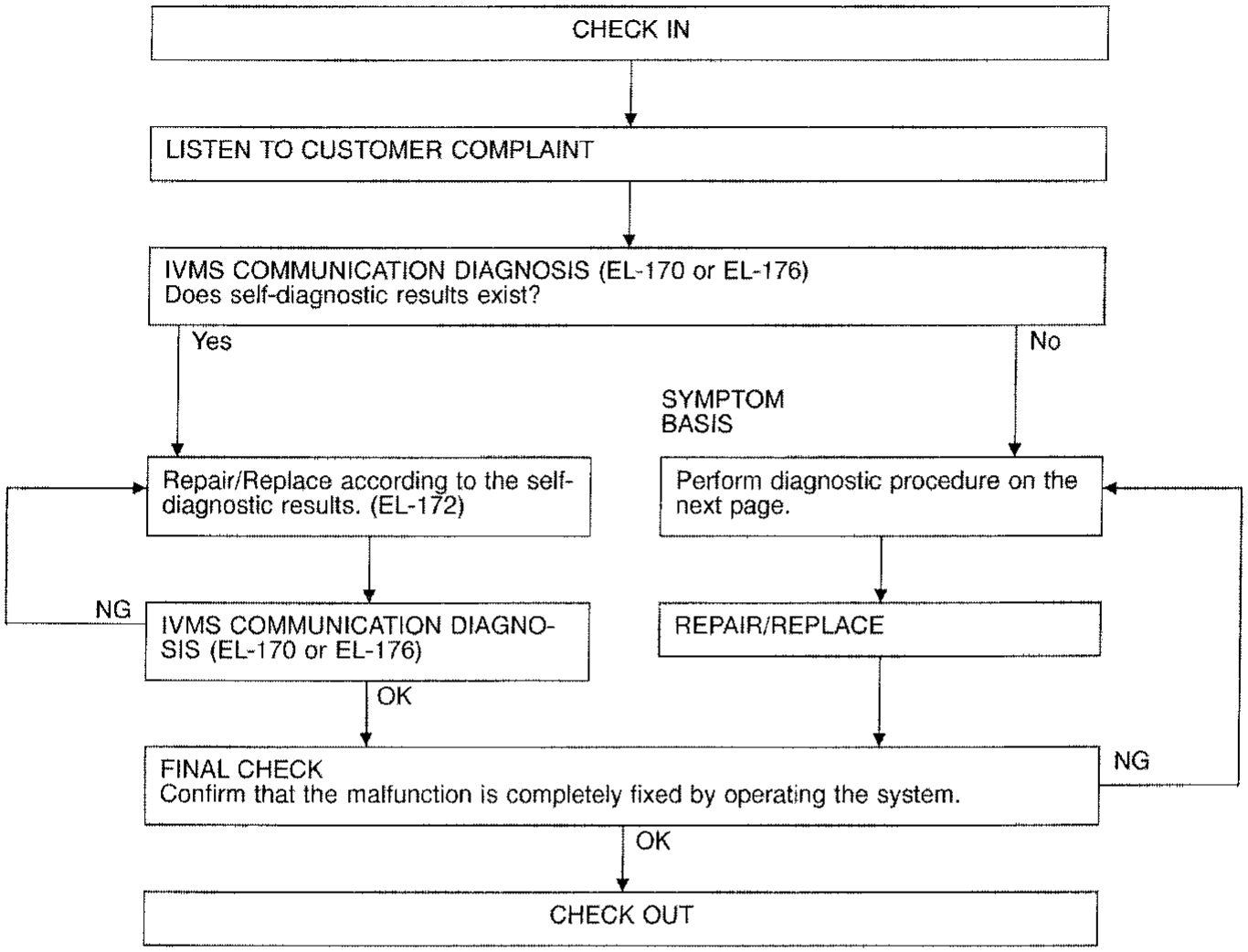
6. Touch "WIPER".



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

Trouble Diagnoses

WORK FLOW



NOTICE:

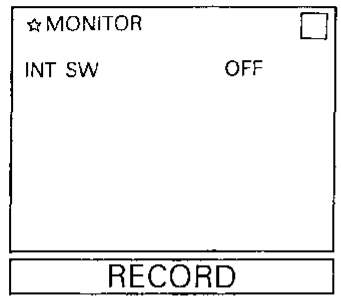
- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with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

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

SYMPTOM: Intermittent wiper does not operate.

A



SEL340S

CHECK INTERMITTENT WIPER SWITCH INPUT SIGNAL.

A TESTER

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

OR

ON-BOARD

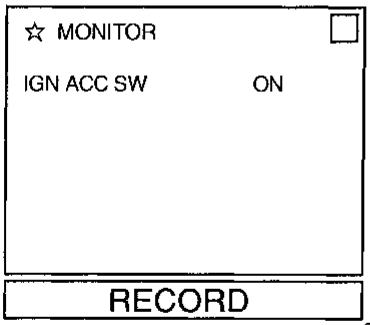
Perform On-board Diagnosis — Mode II (switch monitor) for wiper switch (INT). Refer to EL-178.

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

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

OK ↓

B



SEL919U

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

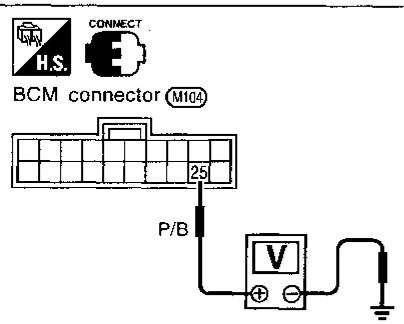
Check voltage between BCM terminal ㉕ and ground.

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

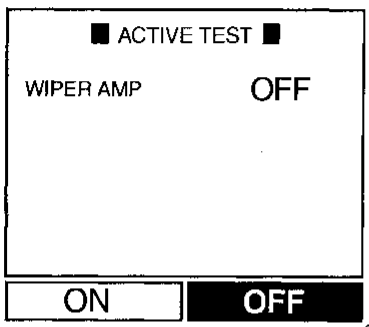
OK ↓

C



SEL052VA

D



SEL649U

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 ↓

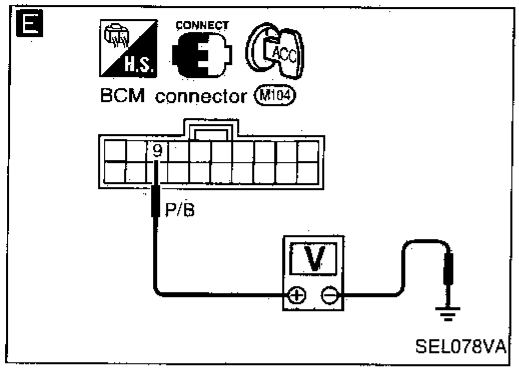
Check wiper relay. → NG → Replace wiper relay.

OK ↓

Ⓐ

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

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.

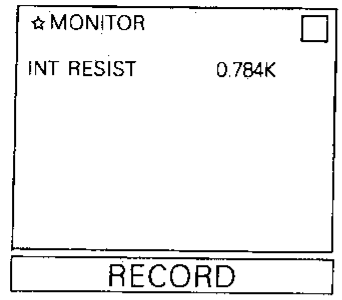
- 20A fuse [No. 20, located in the fuse block (J/B)]
- Harness for open or short between fuse and wiper relay
- Harness for open or short between wiper relay and BCM

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

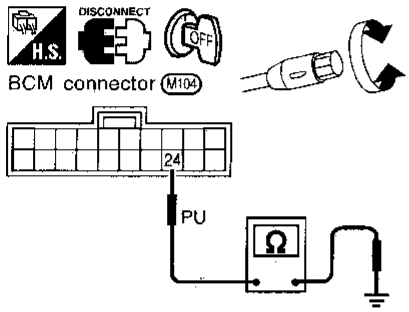
SYMPTOM: Intermittent time of wiper cannot be adjusted.

A



SEL342S

B



SEL393V

CHECK INTERMITTENT WIPER VOLUME INPUT SIGNAL.

A CONSULT

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

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

OR

B TESTER

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

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

OK → Replace BCM.

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

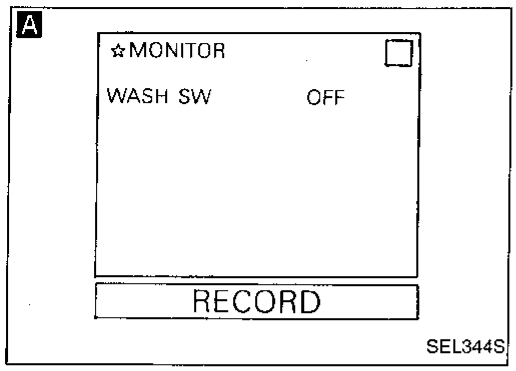
NG → Replace intermittent wiper volume.

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

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

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



CHECK WASHER SWITCH INPUT SIGNAL.

A CONSULT

See "WASH SW" in "Data monitor" mode.
When washer switch is ON:
WASH SW ON
When washer switch is OFF:
WASH SW OFF

OR

ON-BOARD

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

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

OK ↓

Replace BCM.

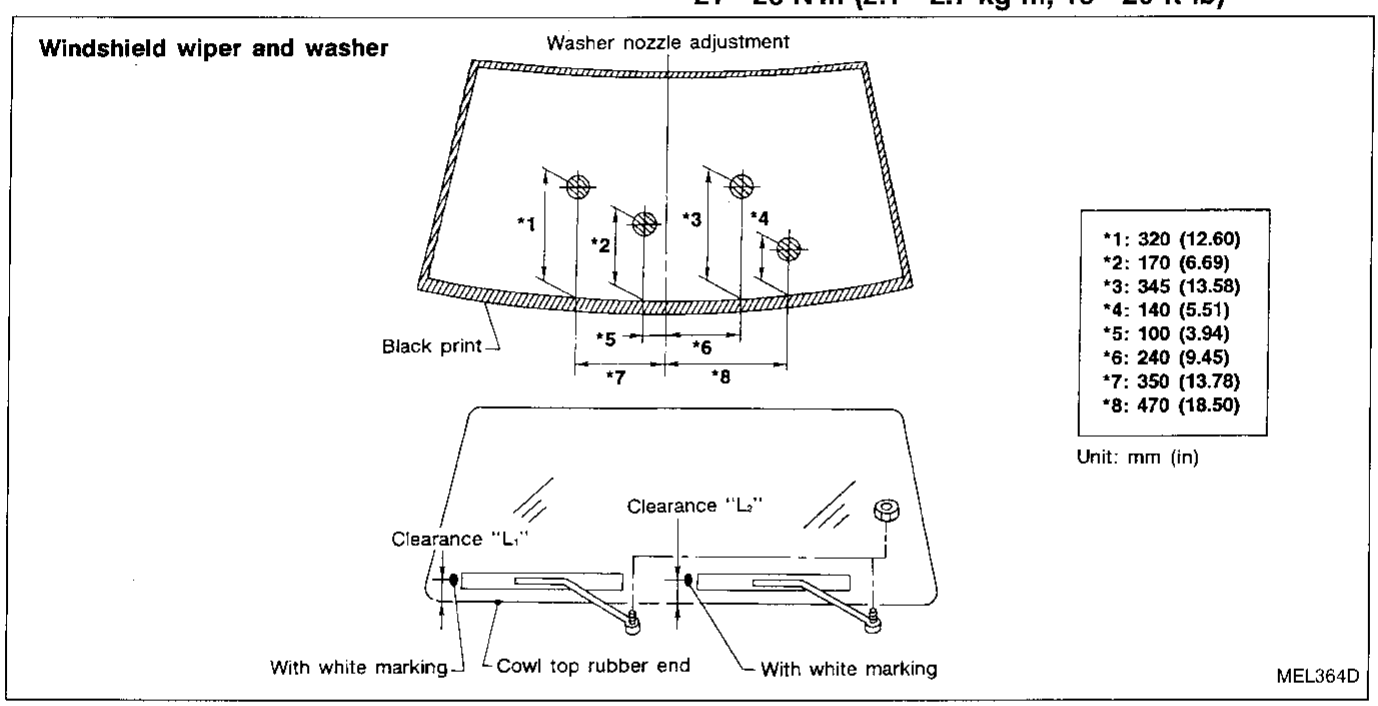
Removal and Installation

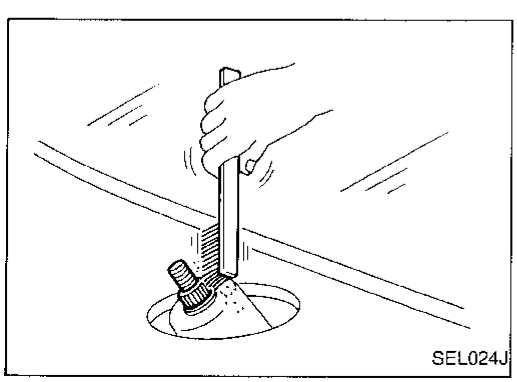
WIPER ARMS

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

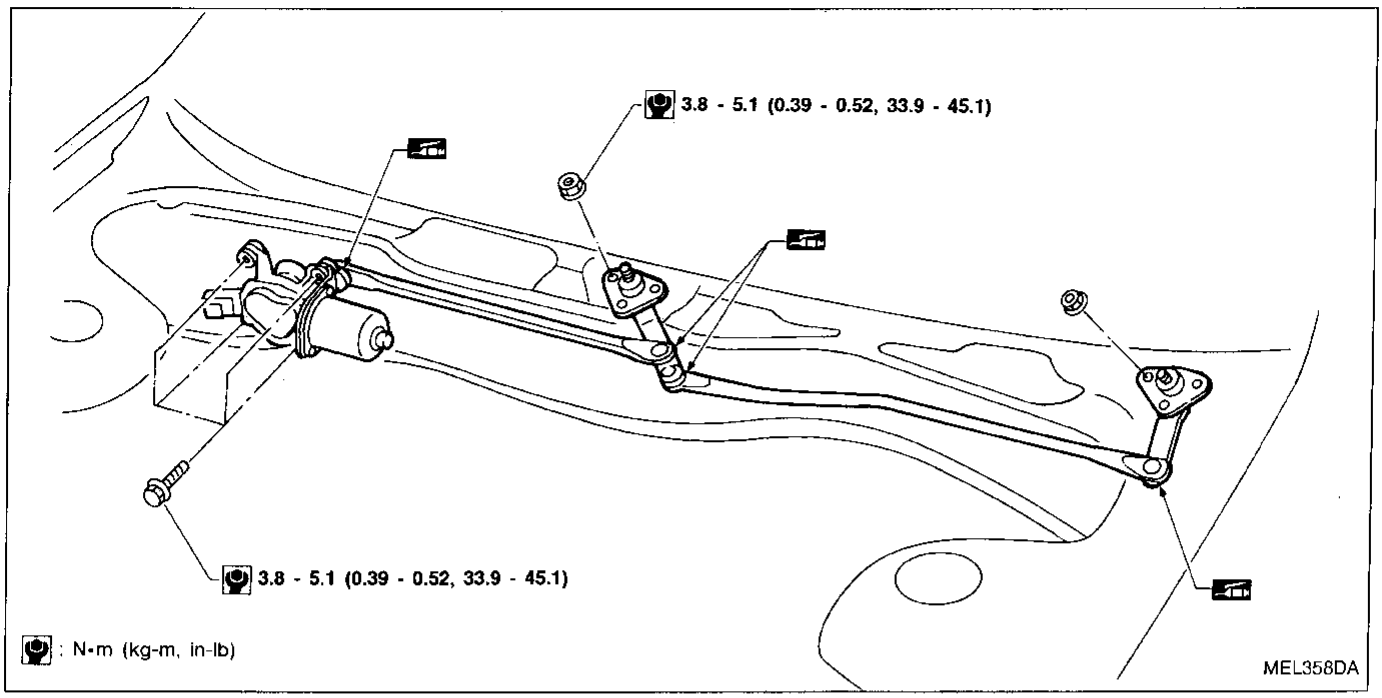




- **Before reinstalling wiper arm, clean up the pivot area as illustrated. This will reduce possibility of wiper arm looseness.**

Removal and Installation (Cont'd)

WIPER LINKAGE



Removal

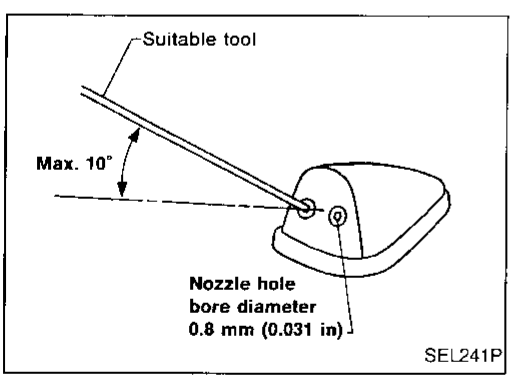
1. Remove 4 bolts that secure wiper motor.
2. Detach wiper motor from wiper linkage at ball joint.
3. Remove wiper linkage.

Be careful not to break ball joint rubber boot.

Installation

- Grease ball joint portion before installation.

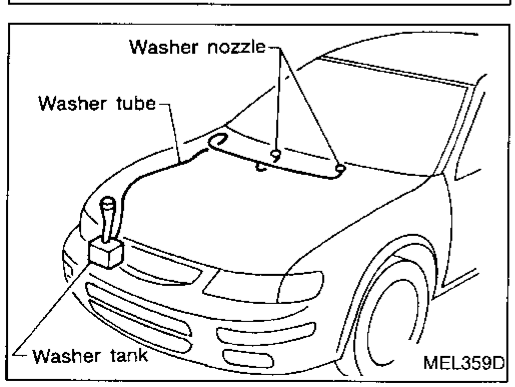
Installation is in reverse order of removal.



Washer Nozzle Adjustment

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

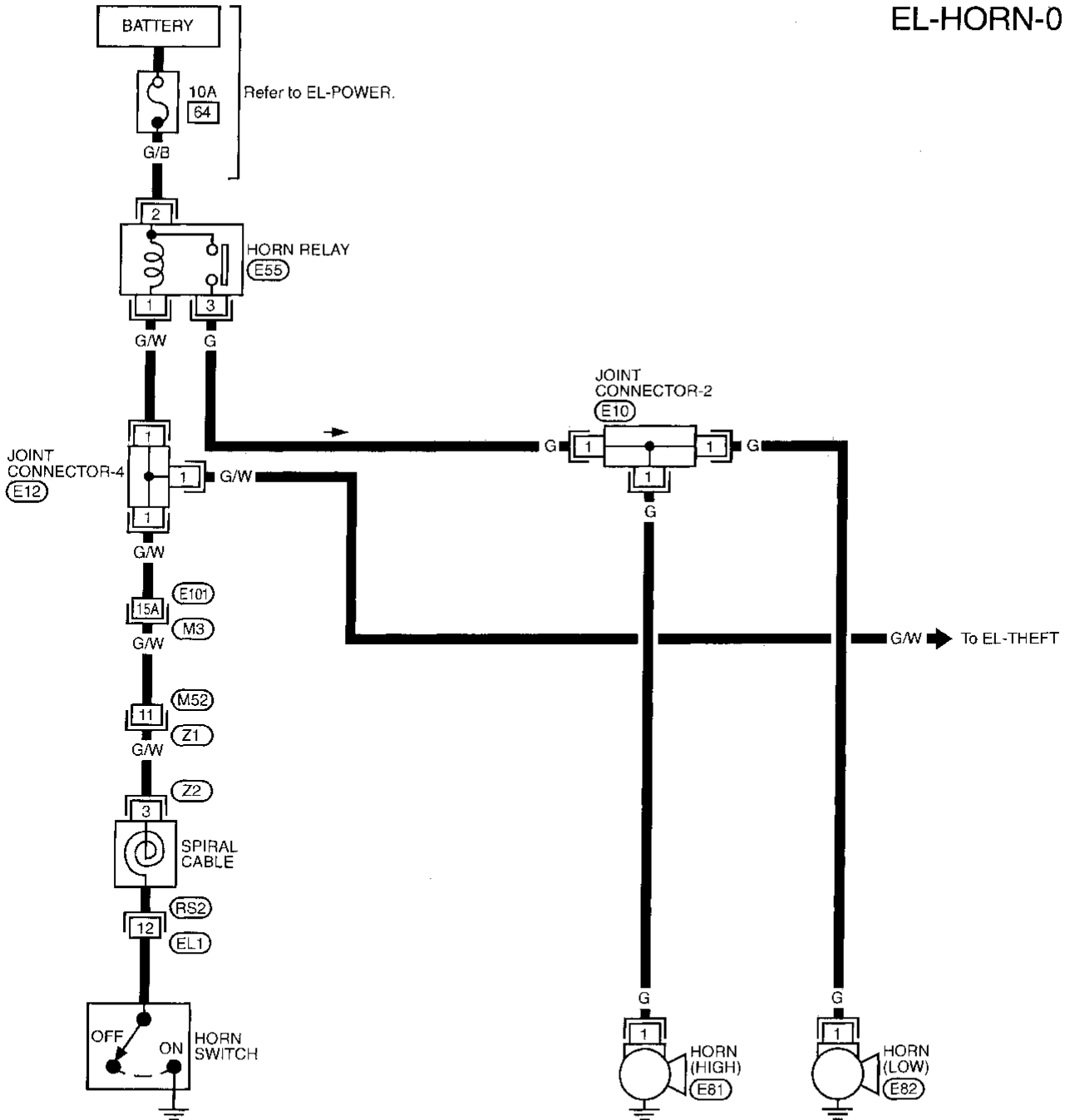
  Adjustable range: ±10°

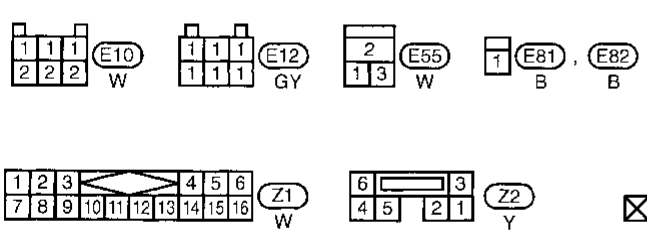


Check Valve (Built in washer nozzles)

Wiring Diagram — HORN —

EL-HORN-01





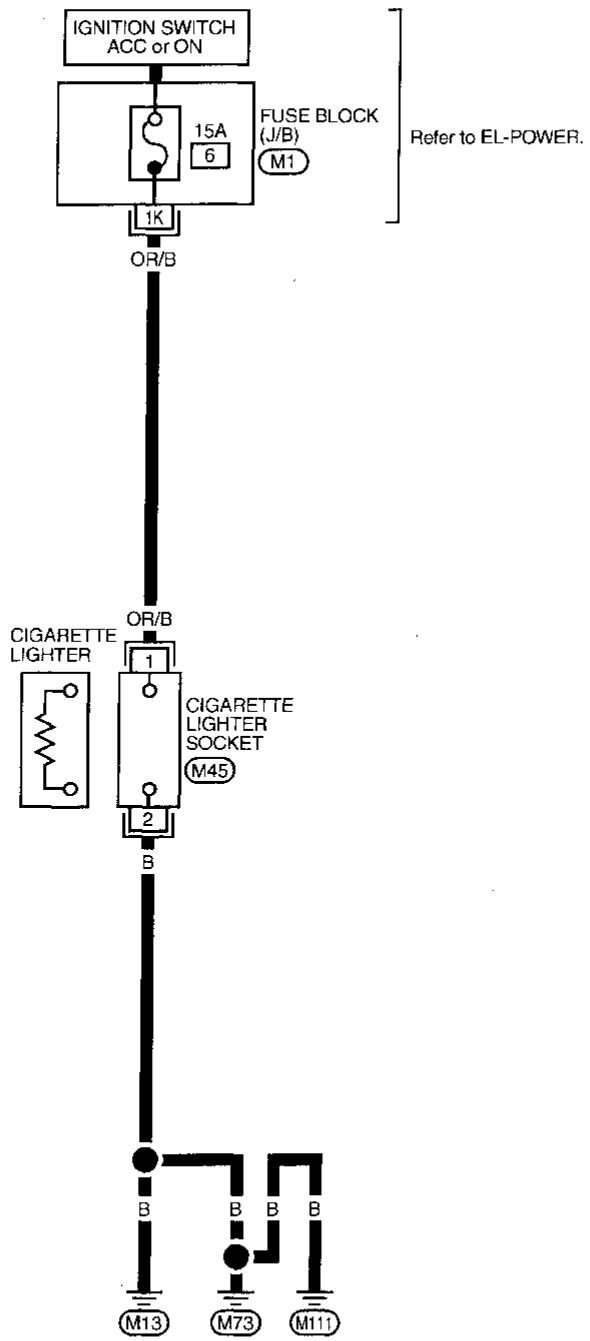
★ : This connector is not shown in "HARNESS LAYOUT".

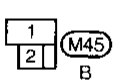
Refer to last page (Foldout page).
M3, E101

MEL877H

Wiring Diagram — CIGAR —

EL-CIGAR-01



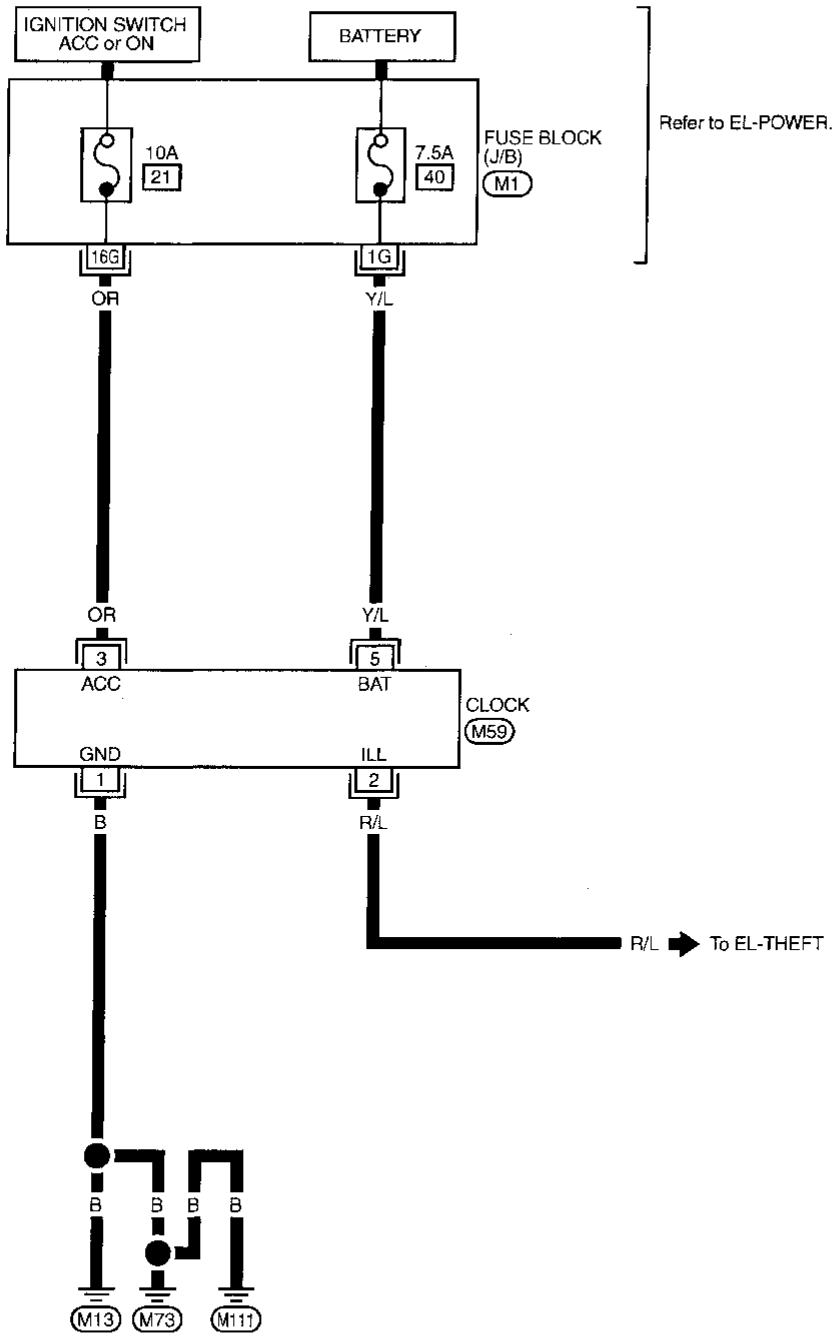


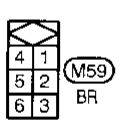
Refer to last page (Foldout page).
M1

MEL879H

Wiring Diagram — CLOCK —

EL-CLOCK-01





Refer to last page (Foldout page).
M1

MEL878H

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 .

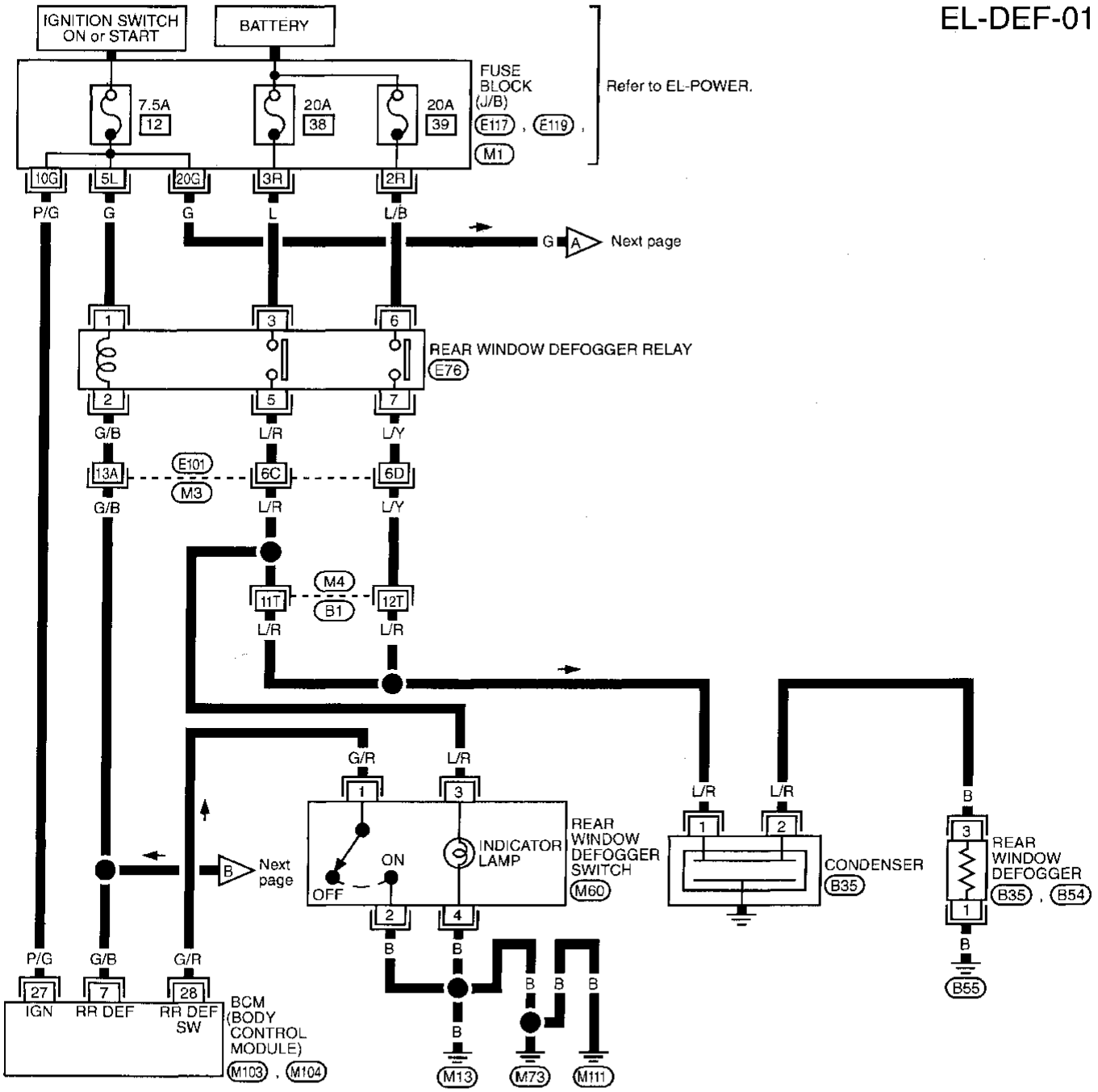
When the rear window defogger switch is ON, ground is supplied

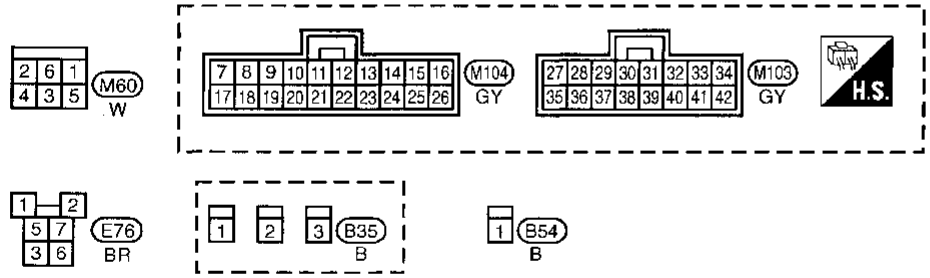
- through terminal ① of the rear window defogger switch
- to BCM terminal ㉘ .

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 —

EL-DEF-01





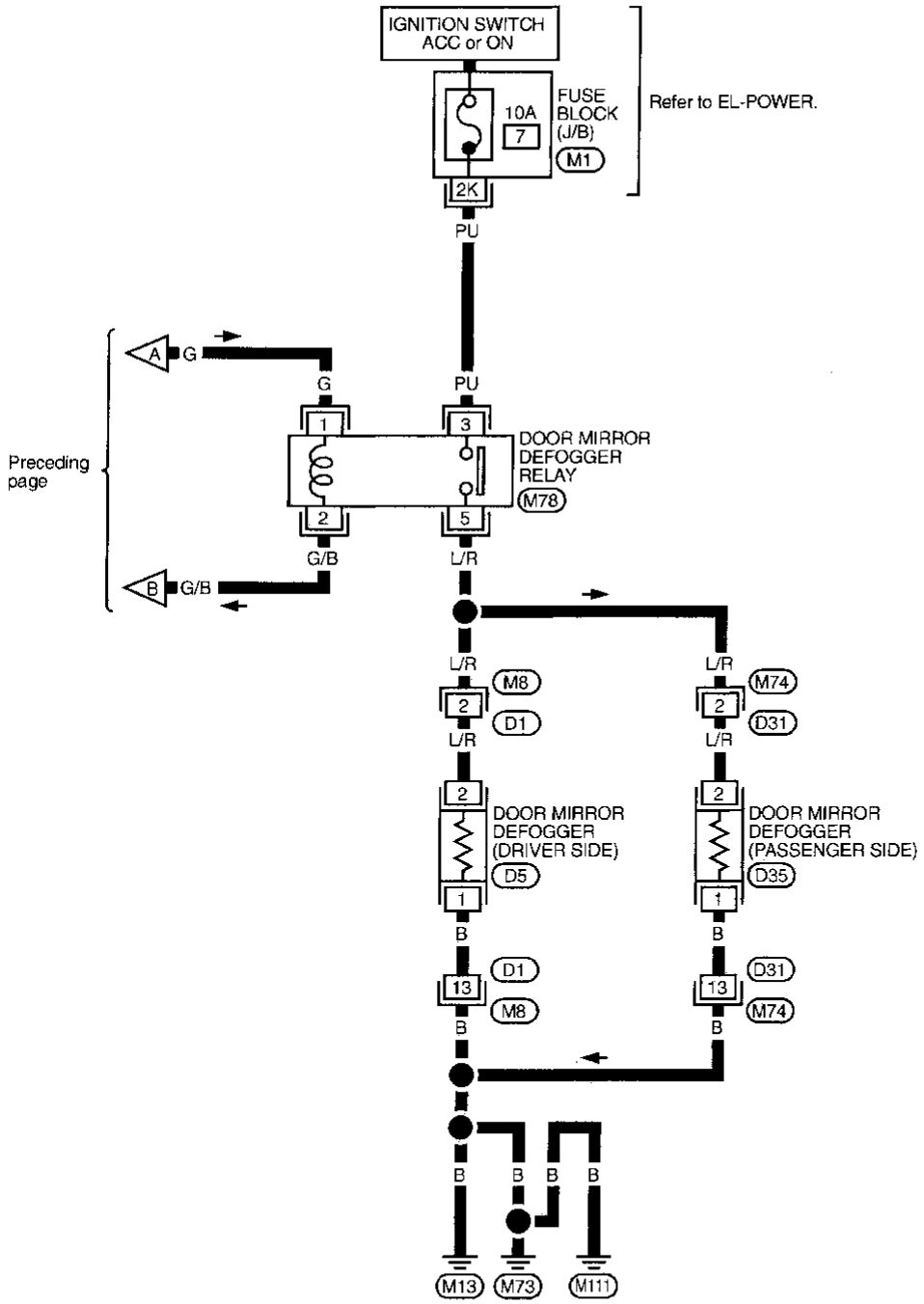
Refer to last page (Foldout page).

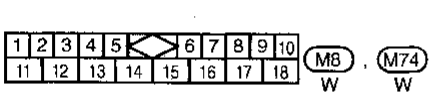
M1
M3, E101
M4, B1
E117
E119

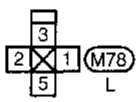
MEL880H

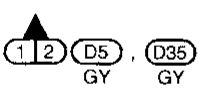
Wiring Diagram — DEF — (Cont'd)

EL-DEF-02





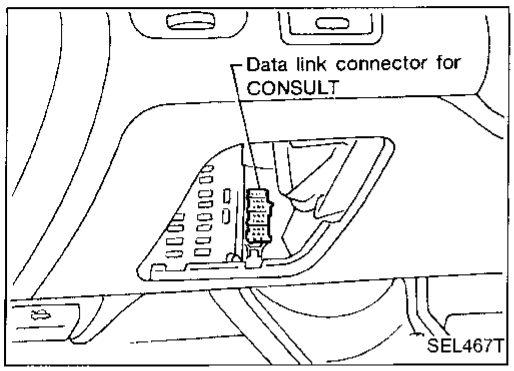




Refer to last page (Foldout page).

M1

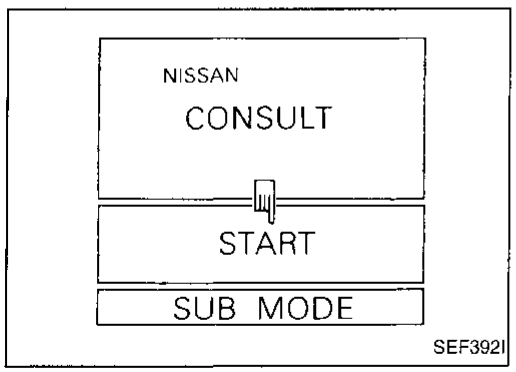
MEL881H



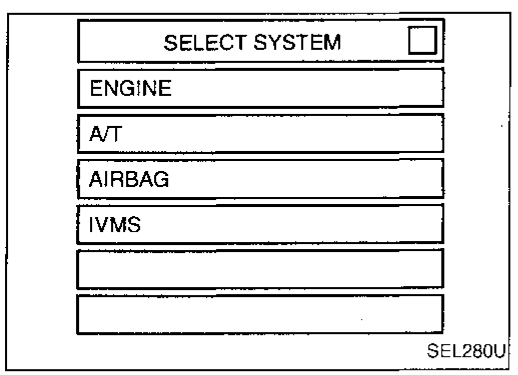
CONSULT

CONSULT INSPECTION PROCEDURE

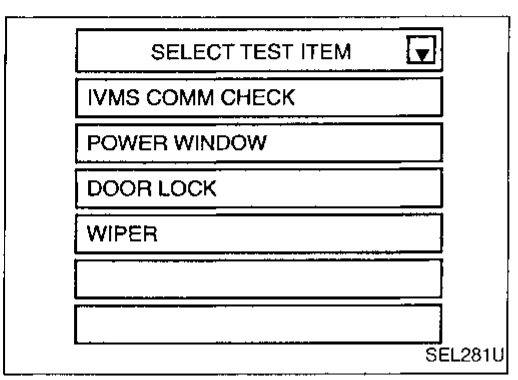
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



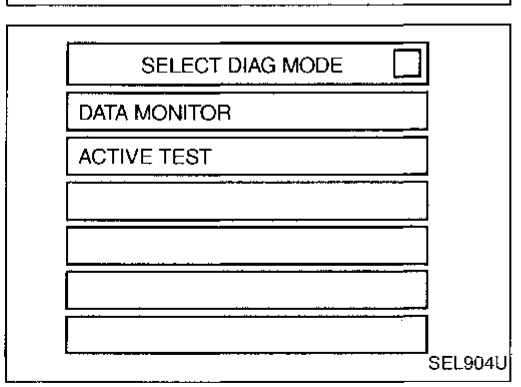
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



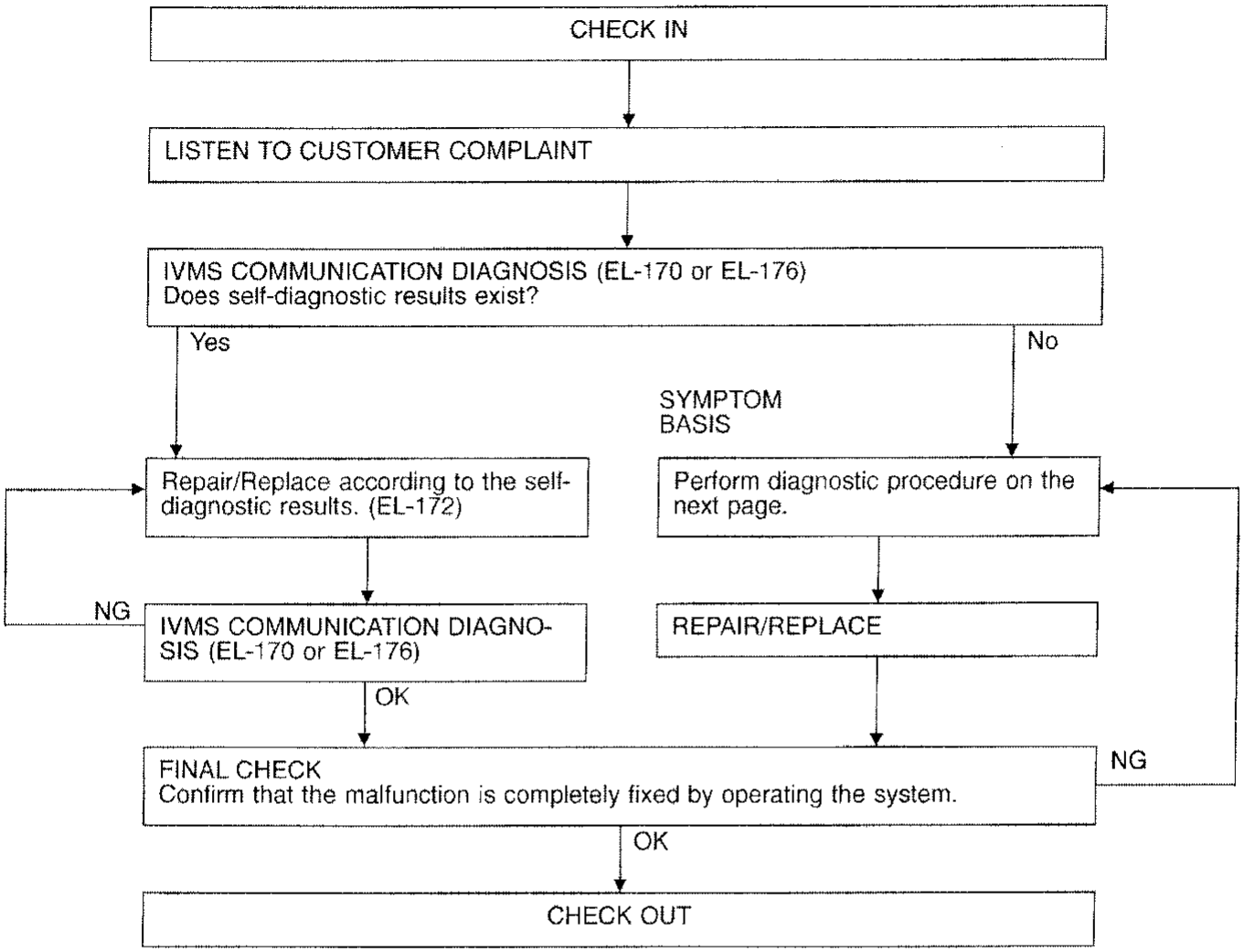
6. Touch "REAR DEFOGGER".



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

Trouble Diagnoses

WORK FLOW



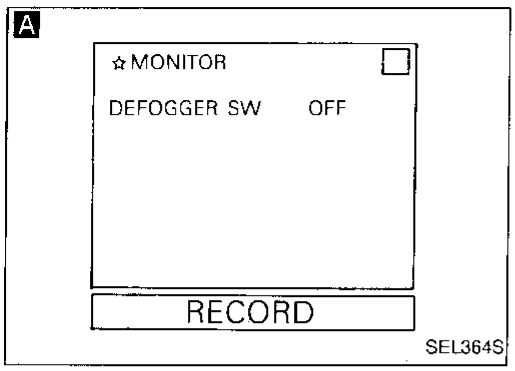
NOTICE:

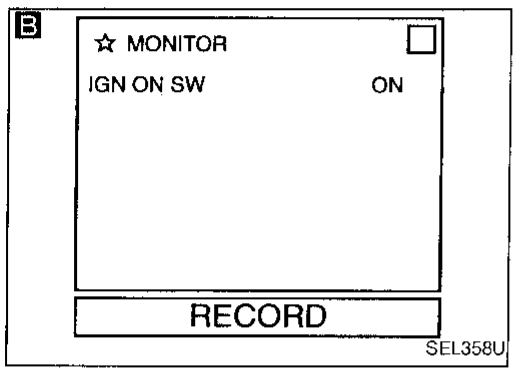
- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with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

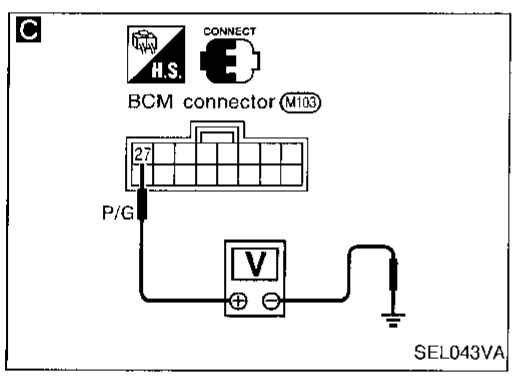
Trouble Diagnoses (Cont'd)

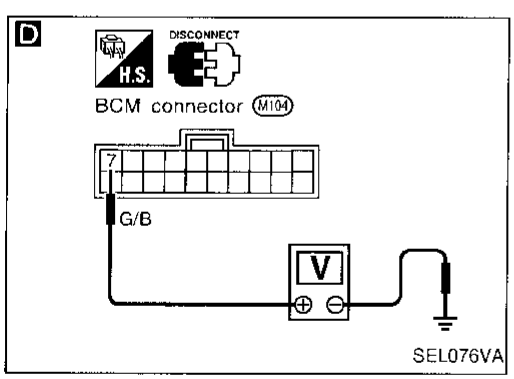
DIAGNOSTIC PROCEDURE

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









CHECK REAR WINDOW DEFOGGER SWITCH INPUT SIGNAL.

A CONSULT

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

OR

ON-BOARD

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

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.

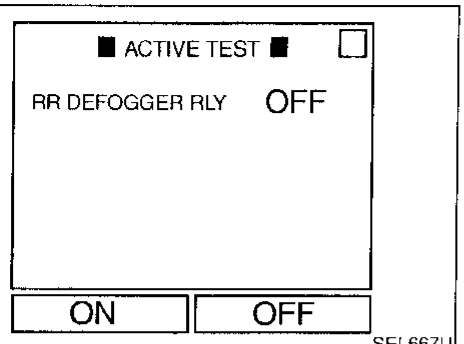
OK ↓

Connect BCM connector.

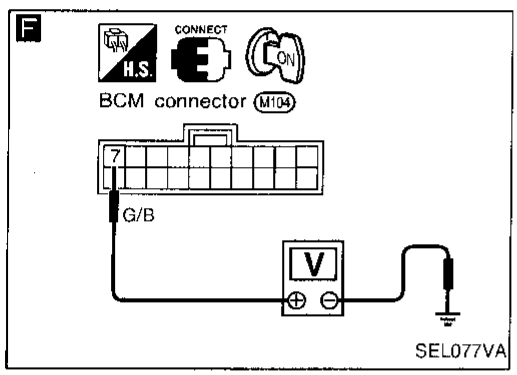
Ⓐ

Trouble Diagnoses (Cont'd)

E



F



Ⓐ

REAR WINDOW DEFOGGER ACTIVE TEST.

E CONSULT

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

NG → Replace BCM.

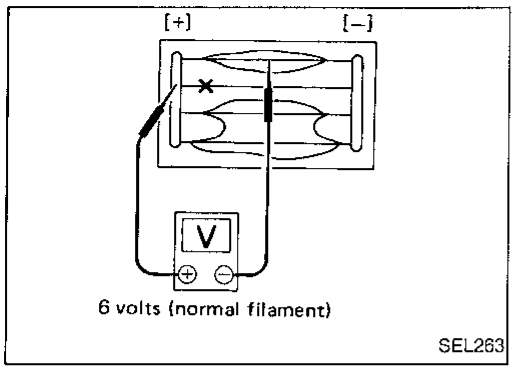
OR

F TESTER

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

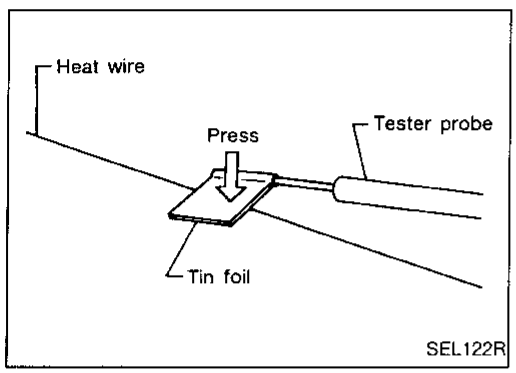
Condition of rear defogger switch	Voltage [V]
ON	0
OFF	Approx. 12

OK → Check rear window defogger circuit.

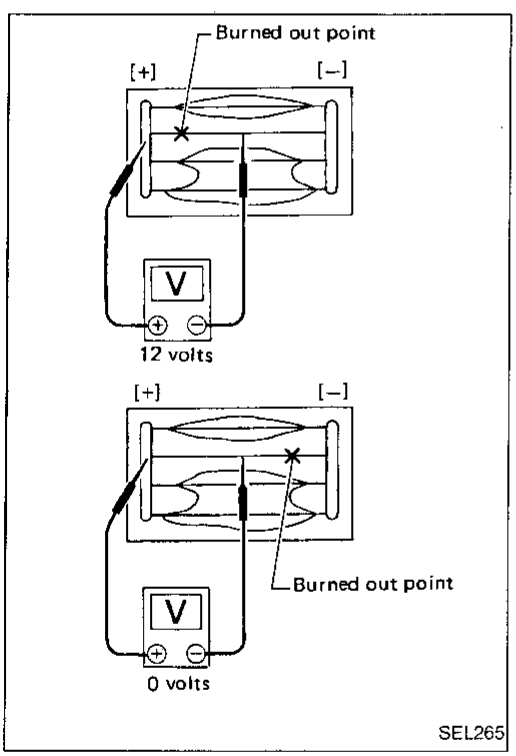


Filament Check

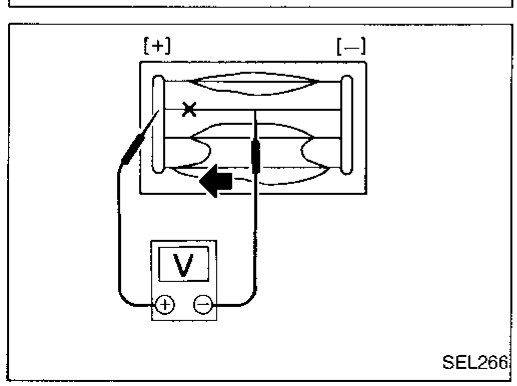
1. Attach probe circuit tester (in volt range) to middle portion of each filament.



- **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.

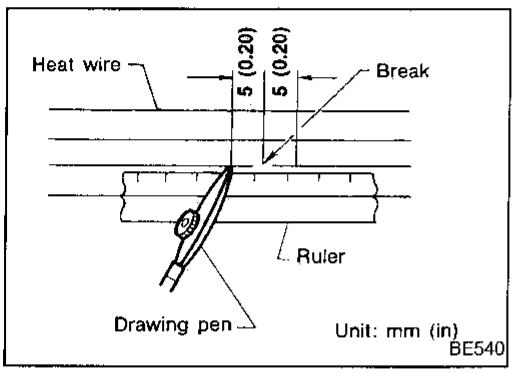


3. To locate burned out point, move probe along filament. Tester needle will swing abruptly when probe passes the point.

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



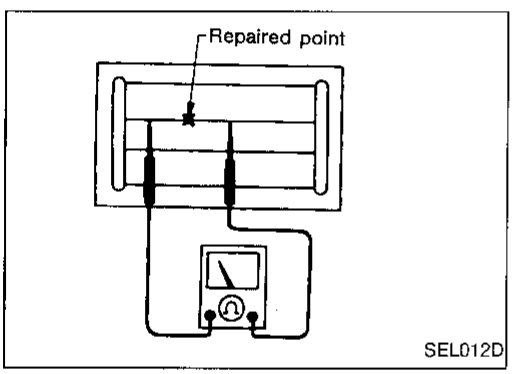
REPAIRING PROCEDURE

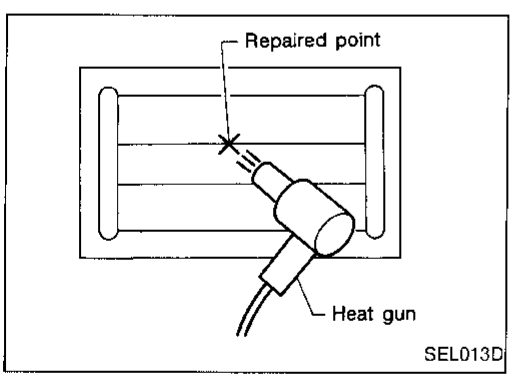
1. Wipe broken heat wire and its surrounding area clean with a cloth dampened in alcohol.
2. Apply a small amount of conductive silver composition to tip of drawing pen.

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.

BOSE SYSTEM

Power is supplied at all times
- through 15A fuse (No. 62, located in the fuse and fusible link box)
- to audio terminal ⑥.

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

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

Ground is supplied through the case of the radio.

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

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

Then audio amp. relay is energized and power is supplied
- to front door speaker LH terminal ⑤
- to front door speaker RH terminal ⑤ and
- to rear speaker LH terminal ③ and RH terminal ③.

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

BASE SYSTEM

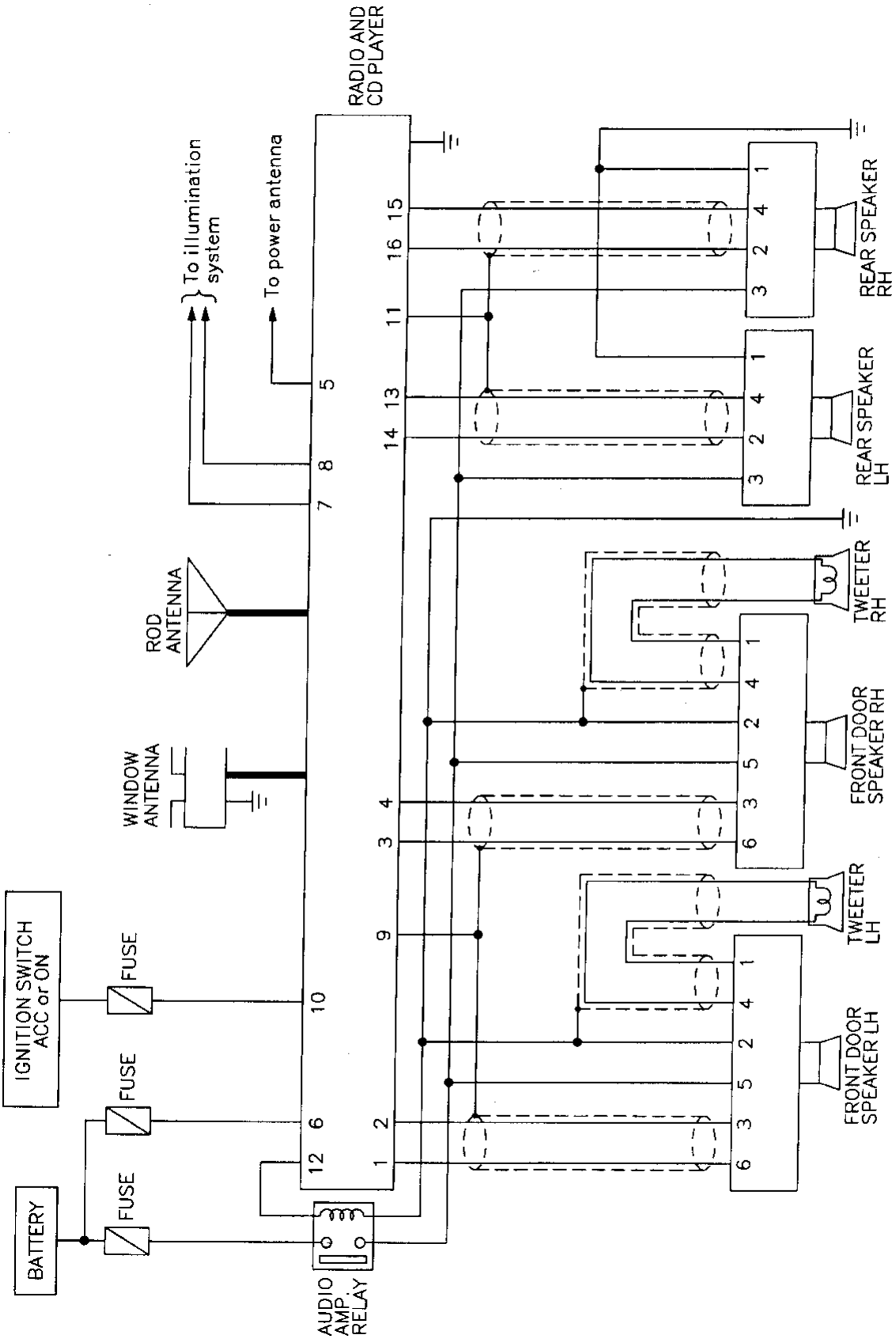
Power is supplied at all times
- through 15A fuse [No. 62, located in the fuse and fusible link box]
- to audio terminal ⑥ and,
- through 10A fuse [No. 29, located in the fuse block (J/B)]
- to CD player terminal ㉔.

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

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

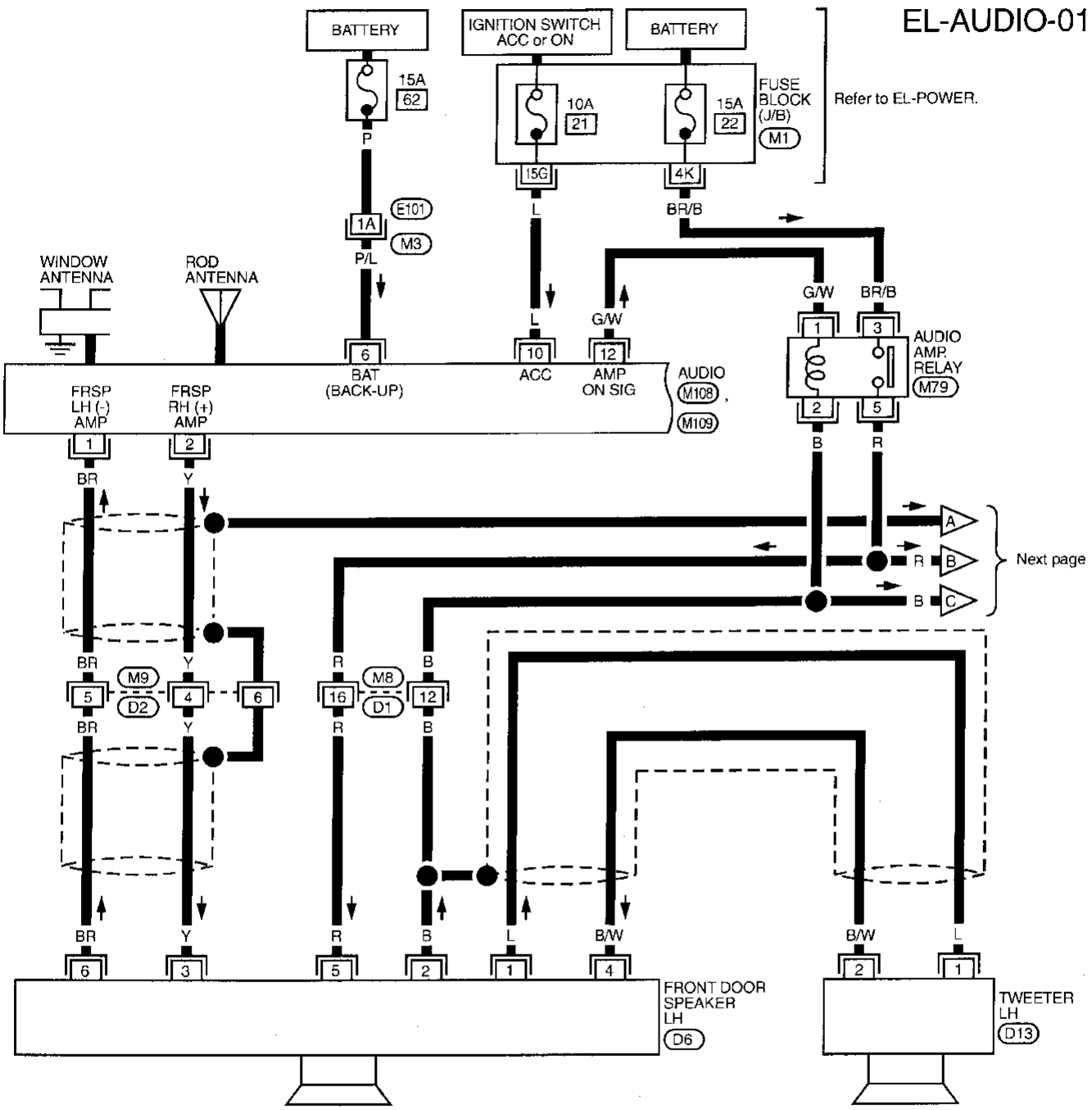
When the audio power knob is pushed to the ON position, the audio signal is supplied
- through radio terminals ①, ②, ③, ④, ⑬, ⑭, ⑮ and ⑯
- to terminals ① and ② of the LH and RH front speaker, LH and RH tweeter and LH and RH rear speaker.

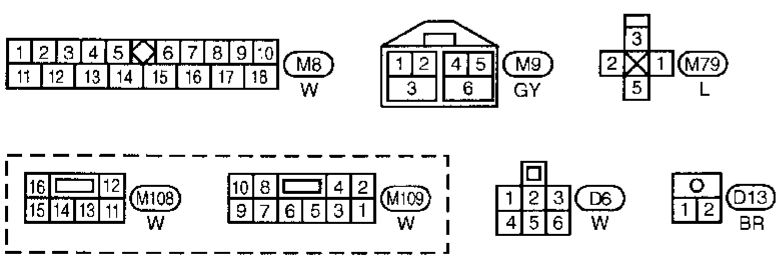
Schematic/BOSE System



MEL802H

Wiring Diagram — AUDIO —/BOSE System

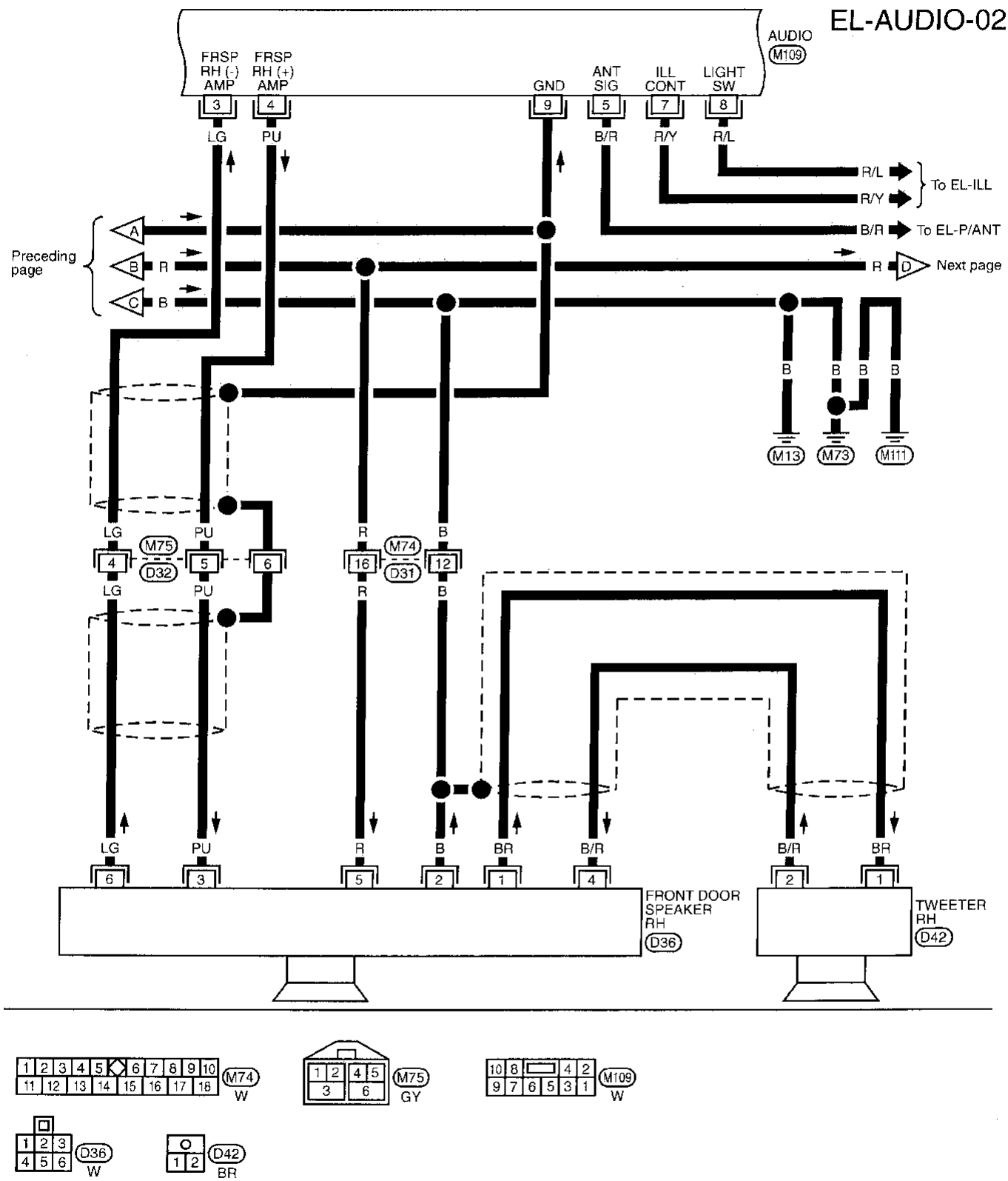




Refer to last page (Foldout page).
M1
M3 , E101

MEL882H

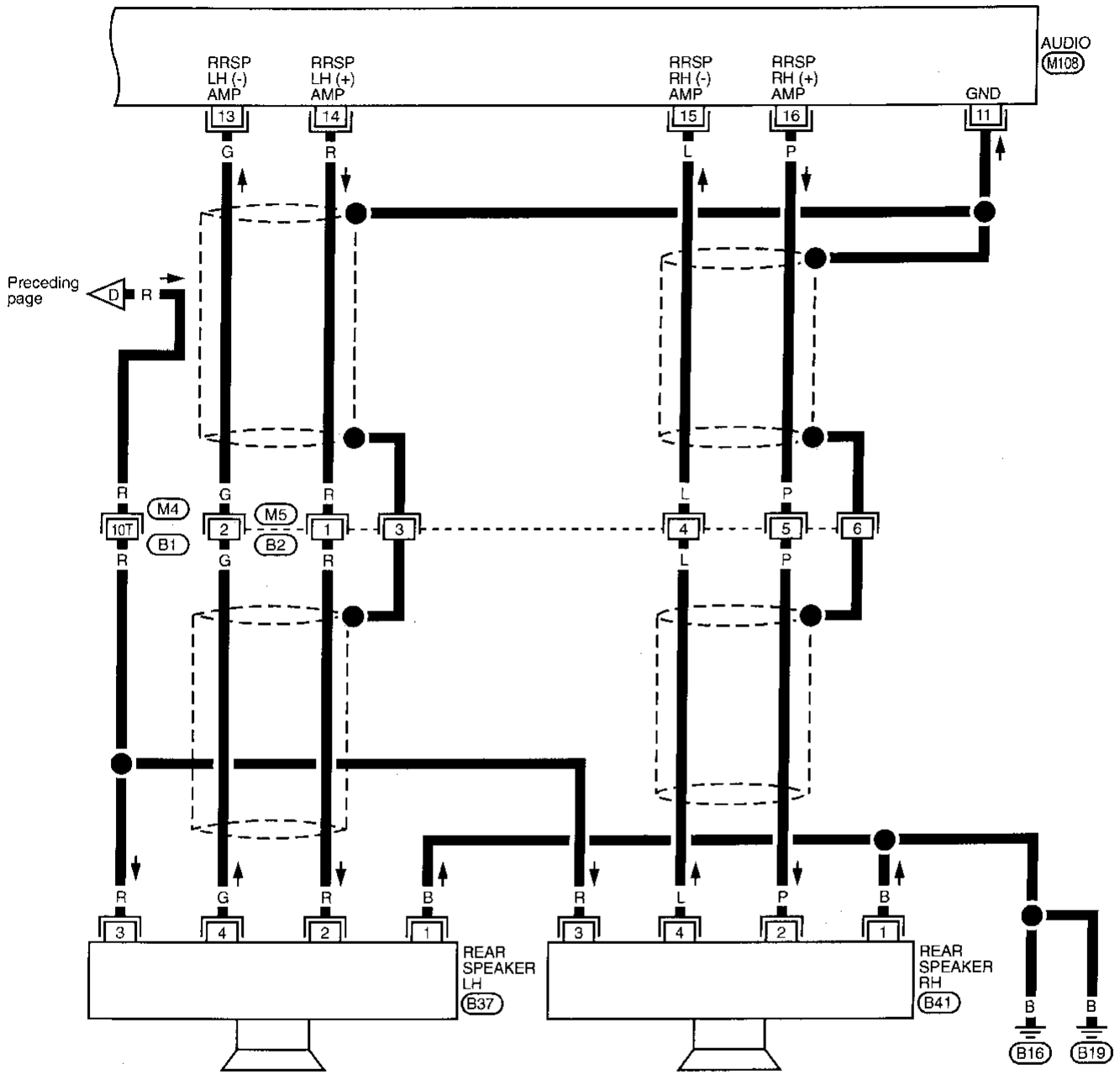
Wiring Diagram — AUDIO —/BOSE System (Cont'd)

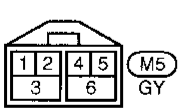


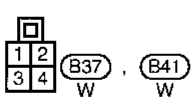
MEL883H

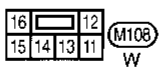
Wiring Diagram — AUDIO —/BOSE System (Cont'd)

EL-AUDIO-03





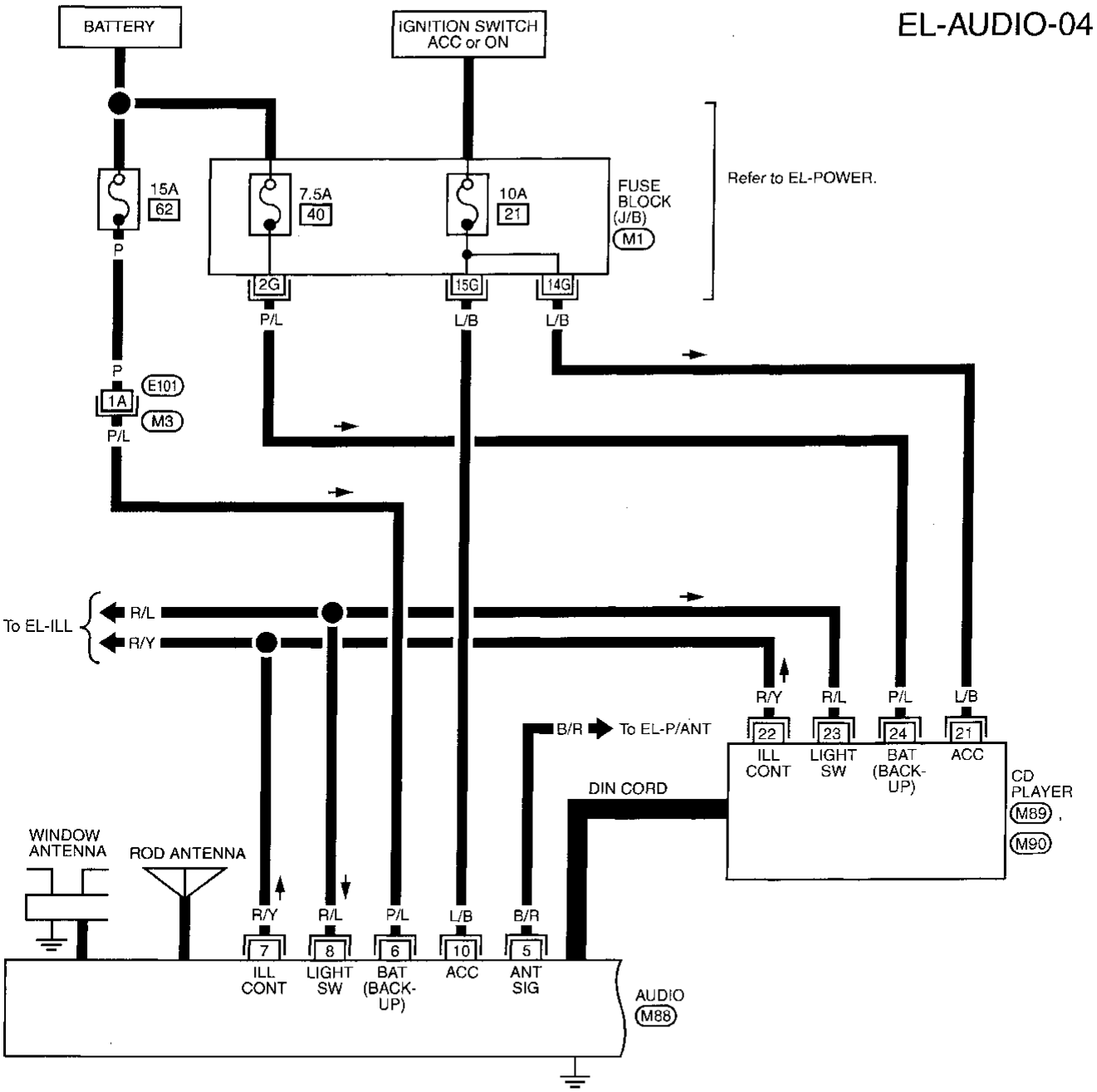


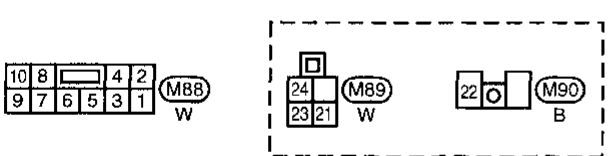


Refer to last page (Foldout page).
B1 , M4

MEL884H

Wiring Diagram — AUDIO —/Base System





Refer to last page (Foldout page).

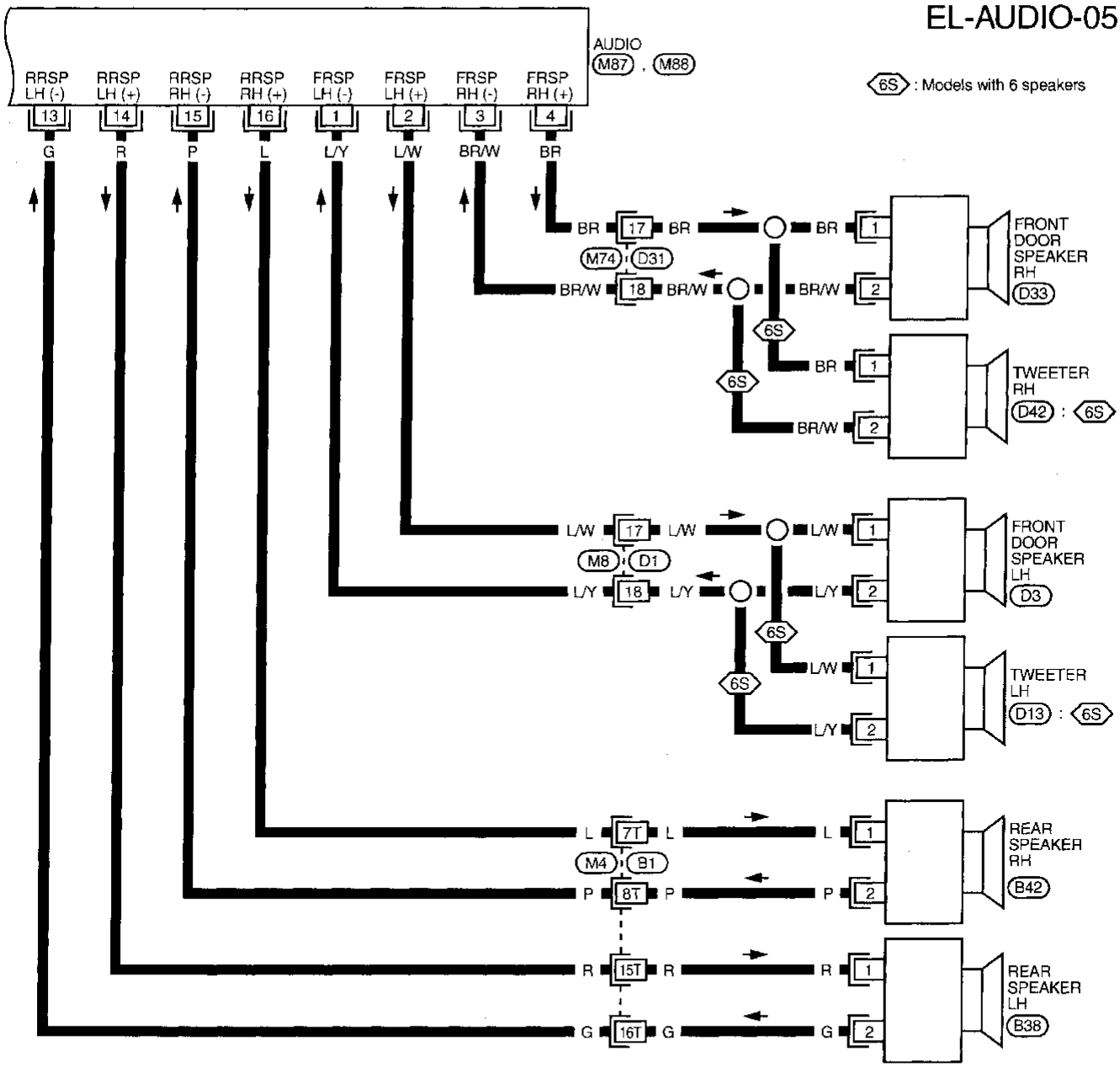
M1

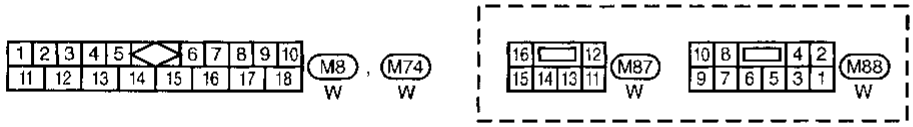
M3 , E101

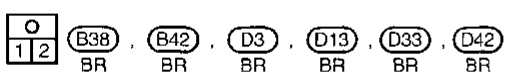
MEL885H

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

EL-AUDIO-05







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

MEL886H

Trouble Diagnoses

RADIO

Symptom	Possible causes	Repair order
Radio is inoperative (no digital display and no sound from speakers).	1. 10A fuse	1. Check 10A fuse [No. 21], located in fuse block (J/B)]. Turn ignition switch ON and verify battery positive voltage is present at terminal ⑩ of radio.
	2. Poor radio case ground	2. Check radio case ground.
	3. Radio	3. Remove radio for repair.
Radio presets are lost when ignition switch is turned OFF.	1. 15A fuse	1. Check 15A fuse (No. 62, located in fuse and fusible link box). Verify battery positive voltage is present at terminal ⑥ of radio.
	2. Radio	2. Remove radio for repair.
AM stations are weak or noisy (FM stations OK).	1. Antenna	1. Check antenna.
	2. Poor radio ground	2. Check radio ground.
	3. Radio	3. Remove radio for repair.
FM stations are weak or noisy (AM stations OK).	1. Window antenna	1. Check antenna.
	2. Radio	2. Remove radio for repair.
Radio generates noise in AM and FM modes with engine running.	1. Poor radio ground	1. Check radio ground.
	2. Loose or missing ground bonding straps	2. Check ground bonding straps.
	3. Ignition condenser or rear window defogger noise suppressor condenser	3. Replace ignition condenser or rear window defogger noise suppressor condenser.
	4. Alternator	4. Check alternator.
	5. Ignition coil or secondary wiring	5. Check ignition coil and secondary wiring.
	6. Radio	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	1. Check radio ground.
	2. Antenna	2. Check antenna.
	3. Accessory ground	3. Check accessory ground.
	4. Faulty accessory	4. Replace accessory.

BOSE SYSTEM

Symptom	Possible causes	Repair order
Radio controls are operational, but no sound is heard from any speaker.	1. 15A fuse	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. Audio amp. relay	2. Check audio amp. relay.
	3. Audio amp. relay ground	3. Check audio amp. relay ground (Terminal ②).
	4. Amp. ON signal	4. Turn ignition switch ACC and radio ON. Verify battery positive voltage is present at terminal ① of audio amp. relay.
	5. Radio output	5. Check radio output voltage.
	6. Radio	6. Remove radio for repair.
Individual speaker is noisy or inoperative.	1. Speaker ground	1. Check speaker ground (Terminal ② : FR LH, ② : FR RH, ① : RR LH, ① : RR RH).
	2. Power supply	2. Check power supply for speaker.
	3. Radio output	3. Check radio output voltage for speaker.
	4. Speaker	4. Replace speaker.

Trouble Diagnoses (Cont'd)

BASE SYSTEM

Symptom	Possible causes	Repair order
Individual speaker is noisy or inoperative.	1. Speaker 2. Harness 3. Radio output 4. Radio	1. Check speaker. 2. Check harness between radio and speaker. 3. Check radio output voltage for speaker. 4. Remove radio for repair.

SPEAKER INSPECTION (For base system)

1. Disconnect speaker harness connector.
2. Measure the resistance between front and rear speaker terminals ① and ② or terminals ① and ② of tweeter (for 6-speaker type).
- The resistance should be 2 to 4Ω.
3. Using jumper wires, momentarily connect a 9V battery between front and rear speaker terminals ① and ② .
- A momentary hum or pop should be heard.

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 audio terminal ⑩.

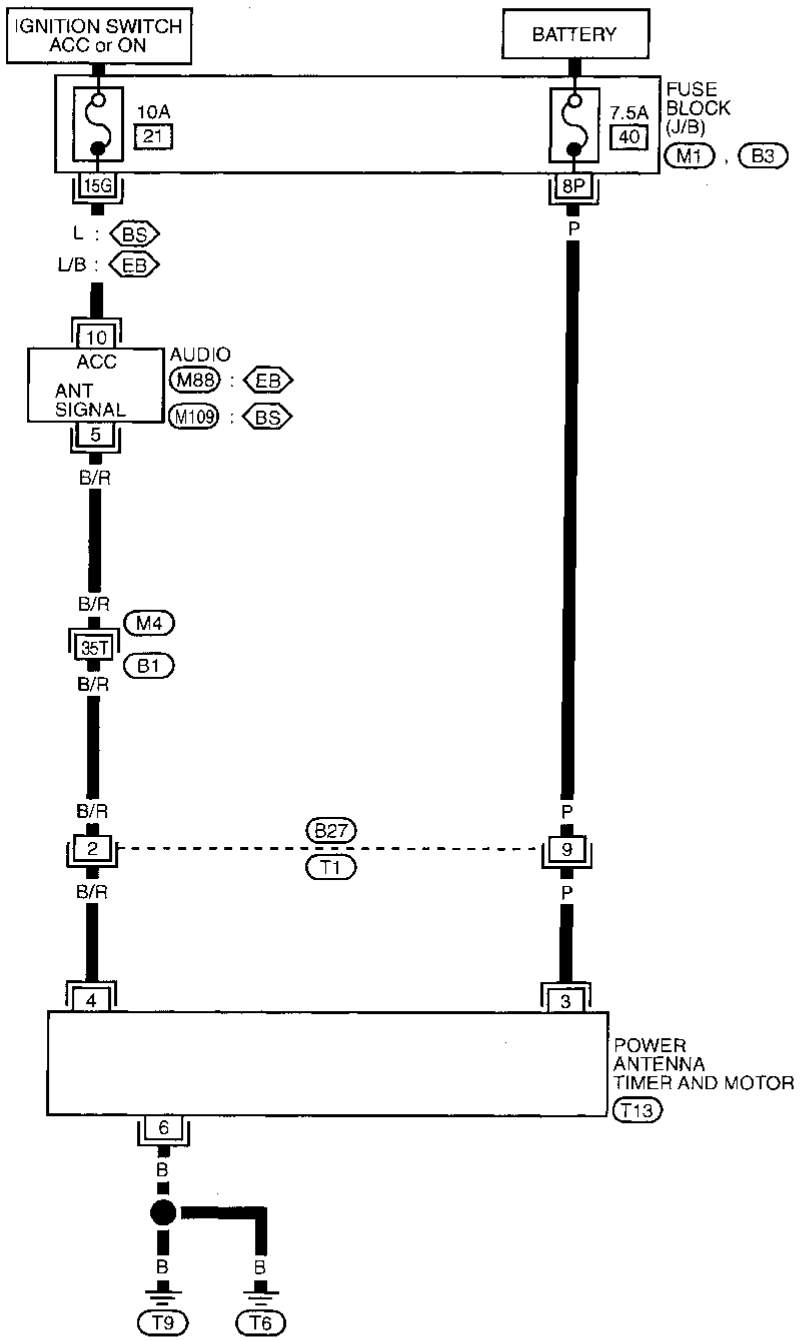
Ground is supplied to the power antenna timer and motor terminal ⑥ through body grounds T6 and T9.
When the radio is turned to the ON position, battery voltage is supplied
- through audio terminal ⑤
- to power antenna timer and motor terminal ④.

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

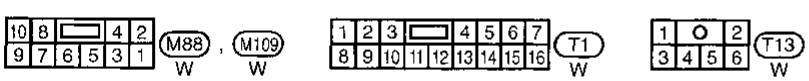
The antenna retracts.

Wiring Diagram — P/ANT —

EL-P/ANT-01



BS : BOSE system
EB : Except for BOSE system



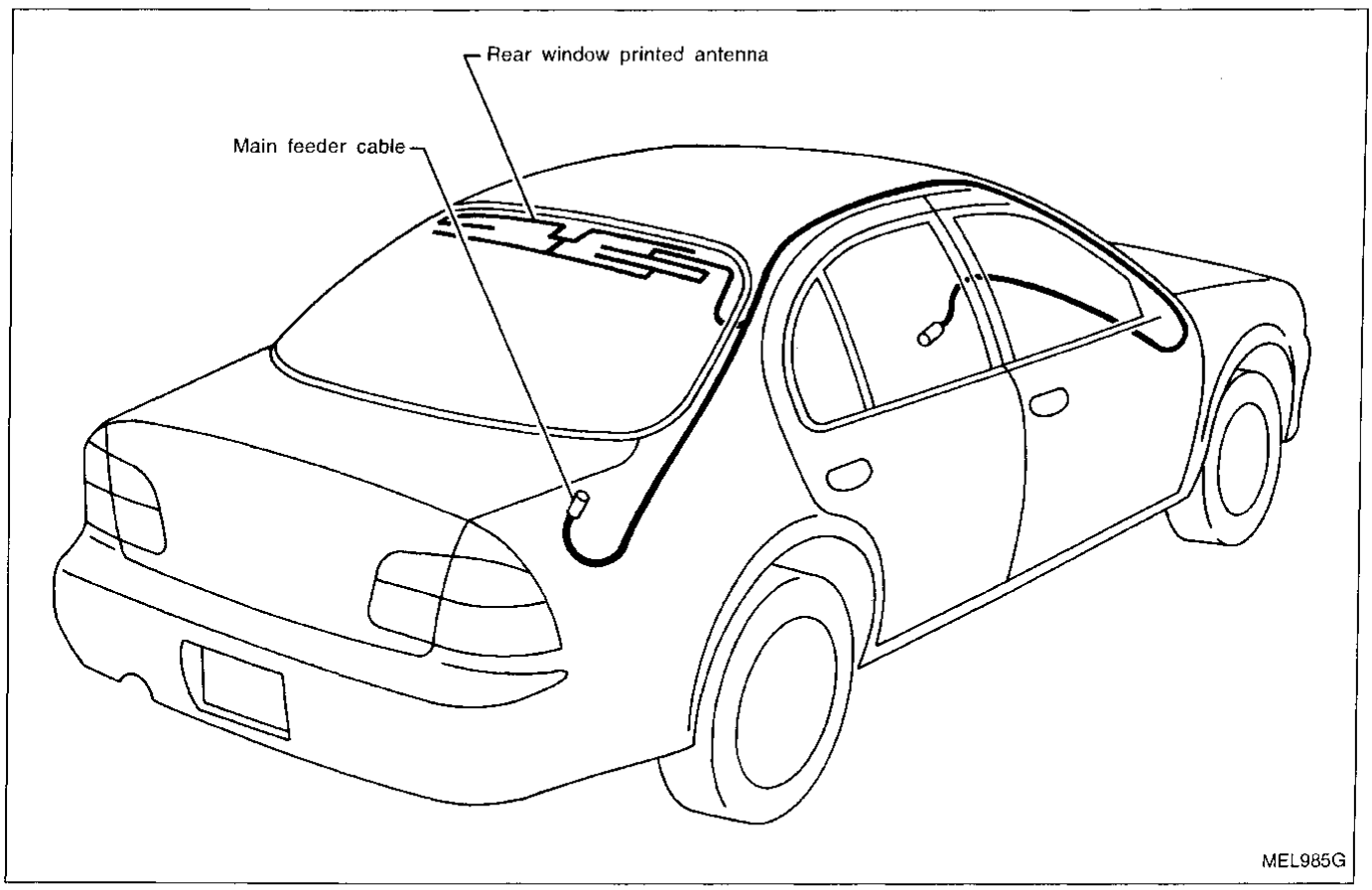
Refer to last page (Foldout page).
M1 , B3
M4 , B1

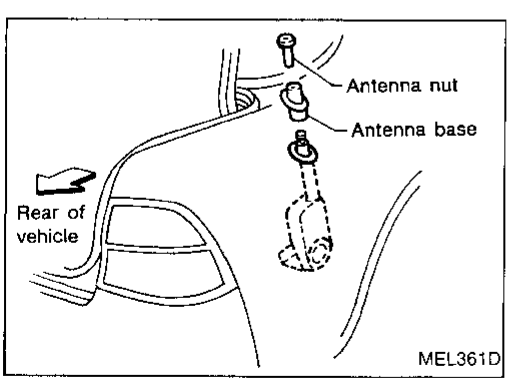
MEL887H

Trouble Diagnoses

Symptom	Possible causes	Repair order
Power antenna does not operate.	1. 7.5A fuse	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. Radio signal	2. Turn ignition switch and radio ON. Verify that battery positive voltage is present at terminal ④ of power antenna.
	3. Grounds (T6) and (T9)	3. Check grounds (T6) and (T9).

Location of Antenna



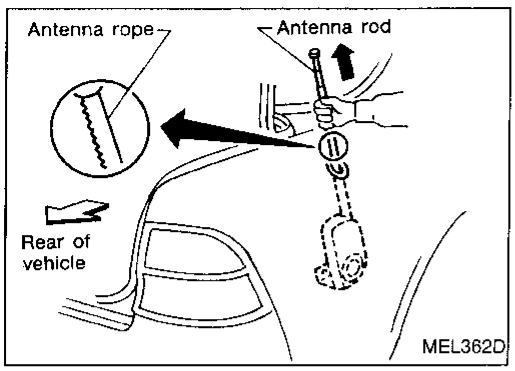


Antenna Rod Replacement

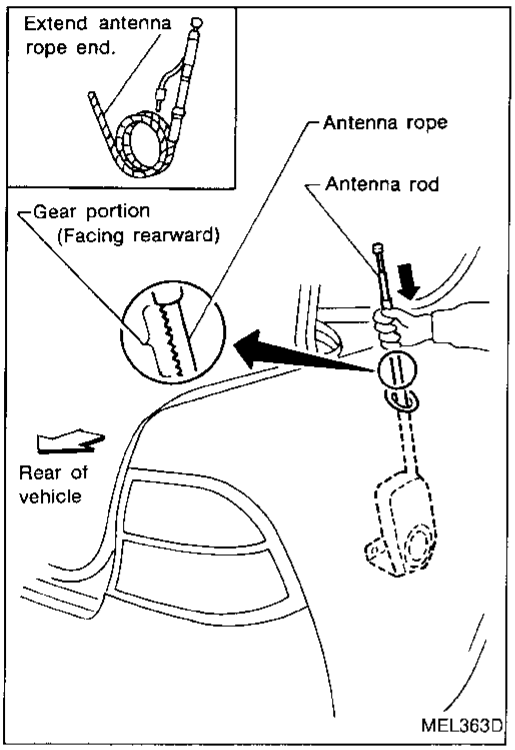
REMOVAL

1. Remove antenna nut and antenna base.

Antenna Rod Replacement (Cont'd)



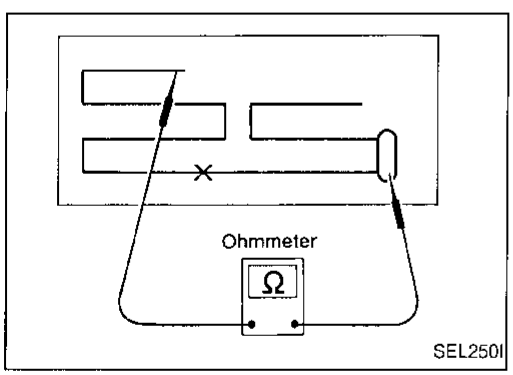
2. Withdraw antenna rod while raising it by operating antenna motor.



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 and base.

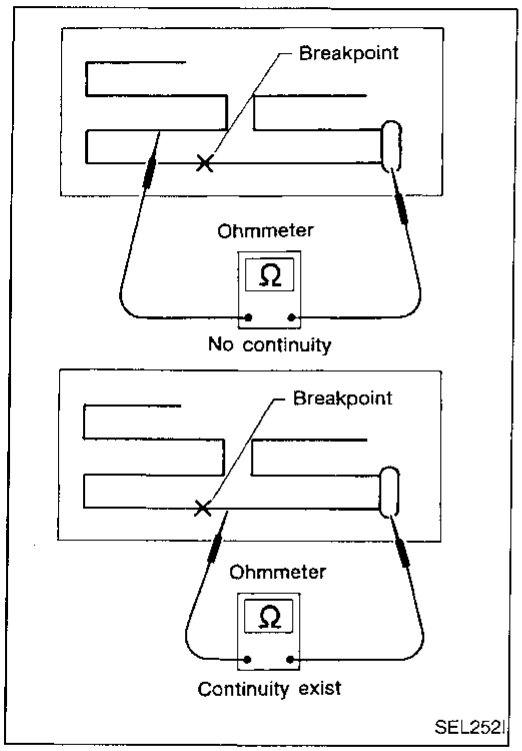
Window Antenna Repair



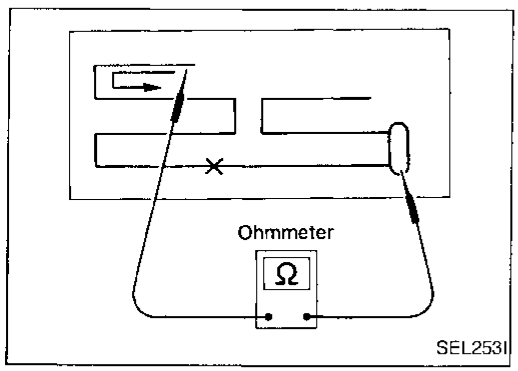
ELEMENT CHECK

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

Window Antenna Repair (Cont'd)



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

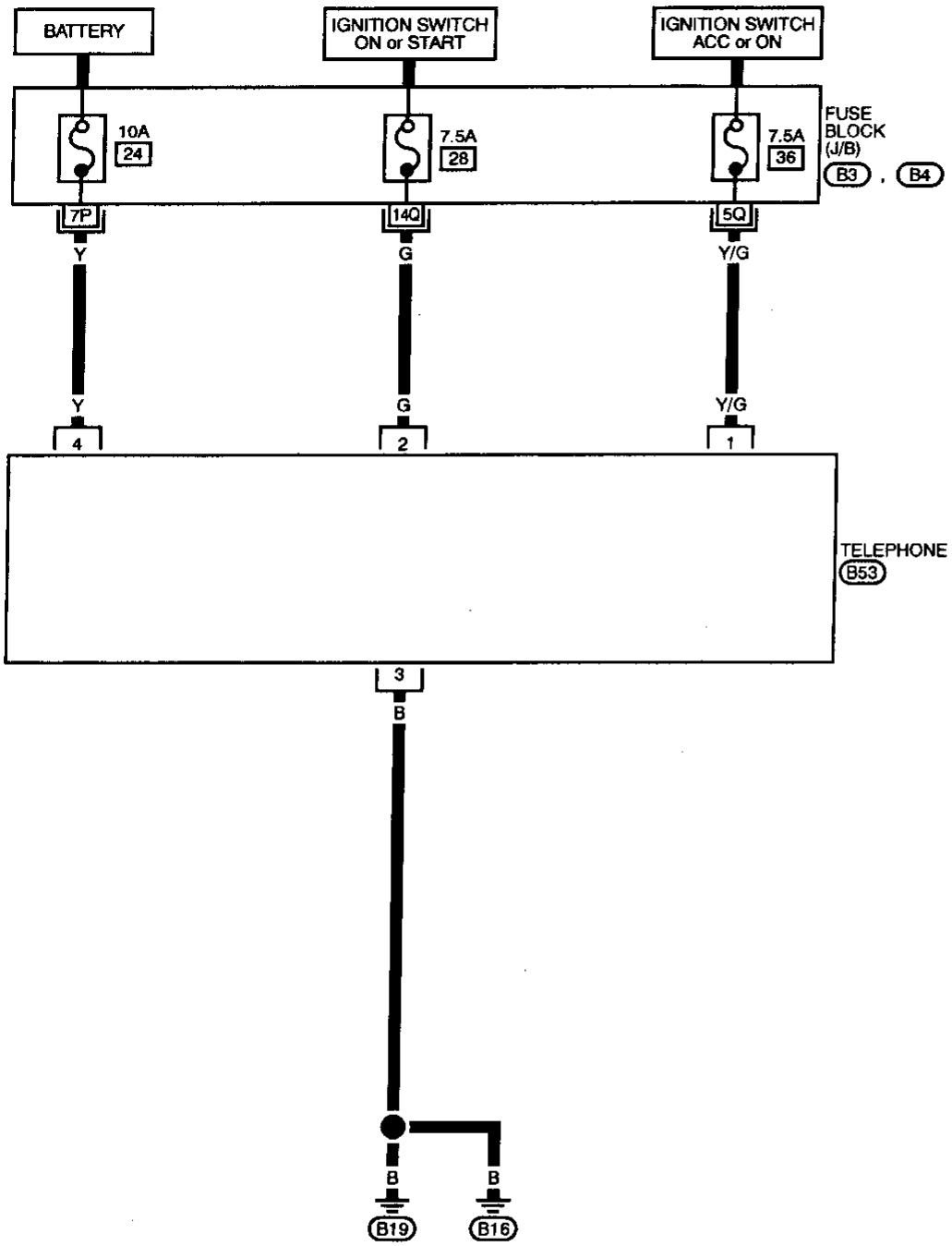


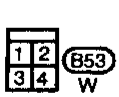
3. To locate broken point, move probe along element. Tester needle will swing abruptly when probe passes the point.

ELEMENT REPAIR

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

Wiring Diagram — PHONE —



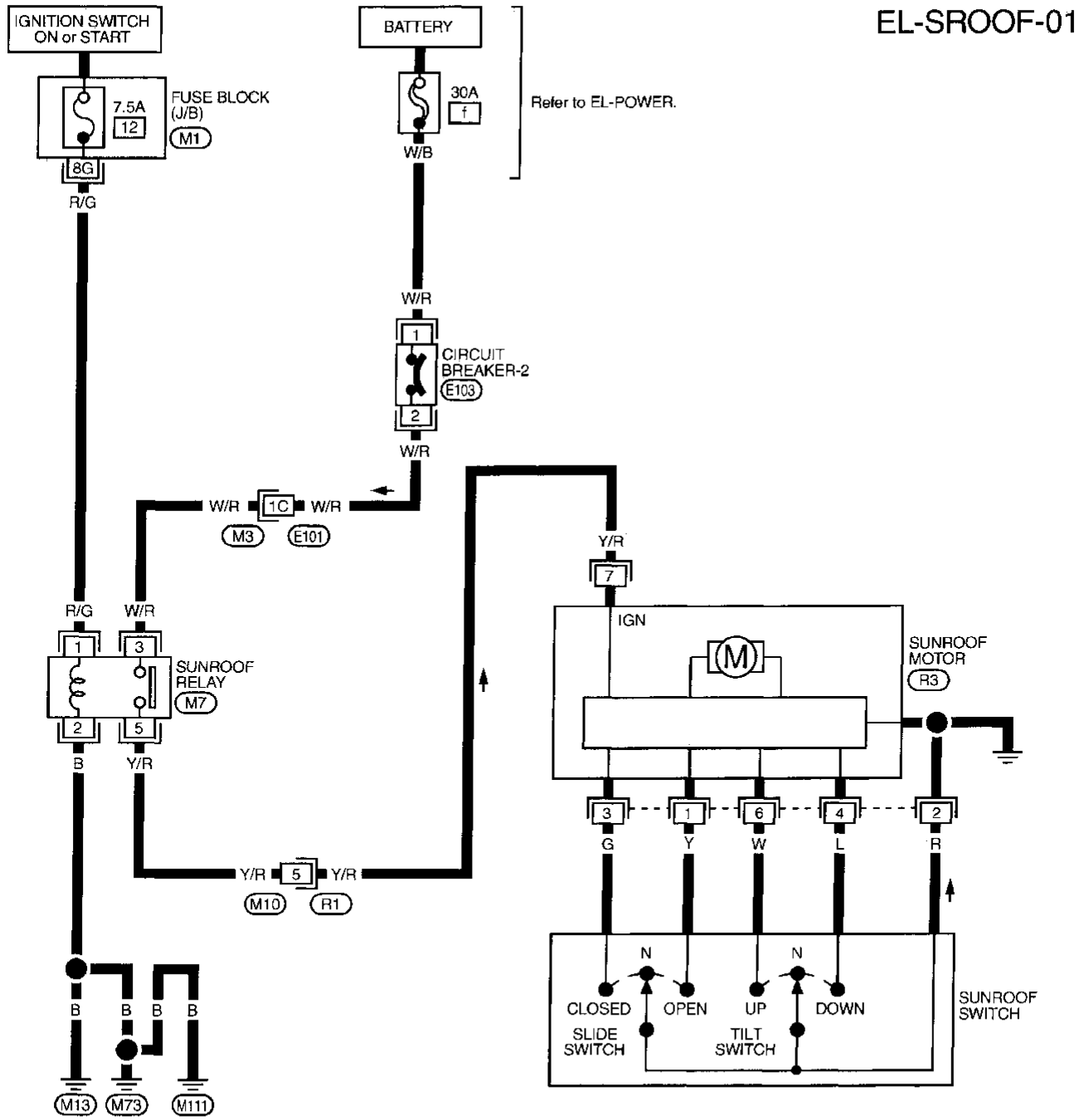


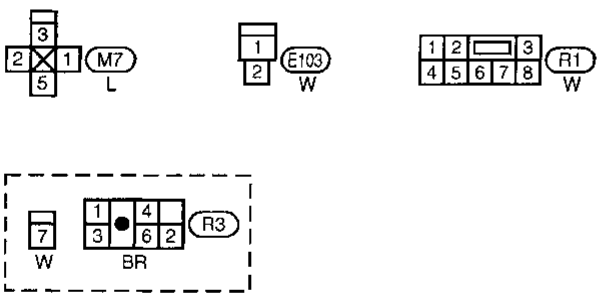
Refer to last page (Foldout page).
B3 , B4

MEL525E

Wiring Diagram — SROOF —

EL-SROOF-01





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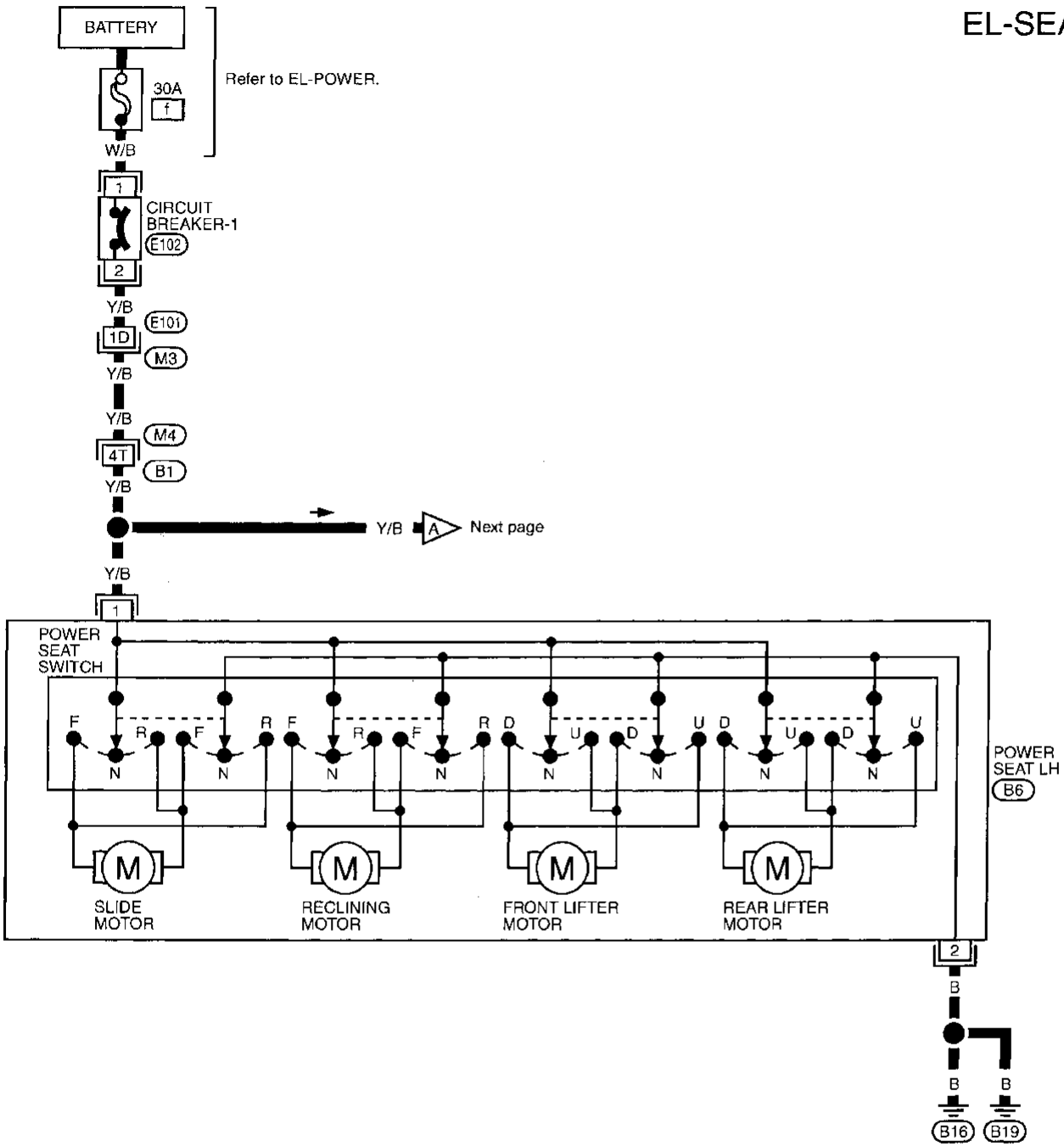
M1

M3 , E101

MEL888H

Wiring Diagram — SEAT —

EL-SEAT-01



1 2 E102 W , B6 W

Refer to last page (Foldout page).

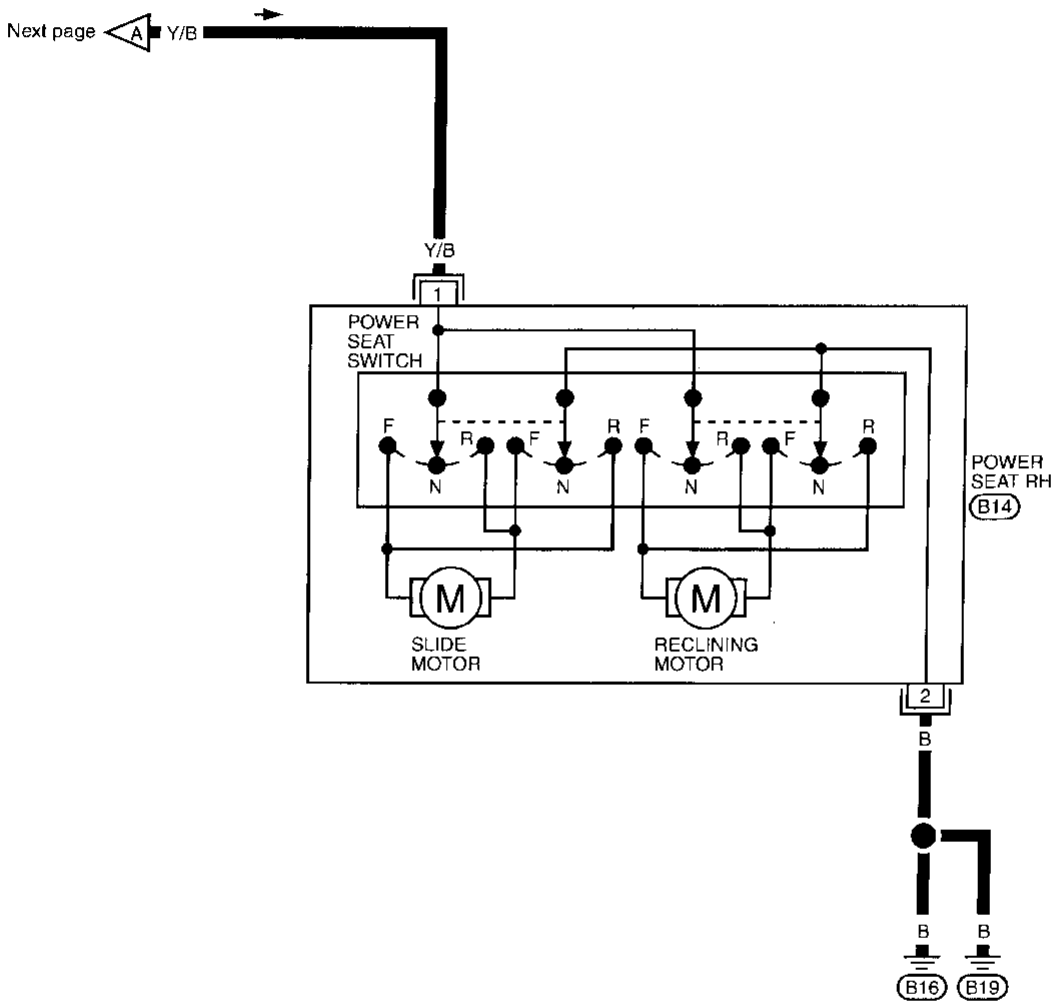
M3 , E101

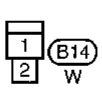
M4 , B1

MEL109H

Wiring Diagram — SEAT — (Cont'd)

EL-SEAT-02

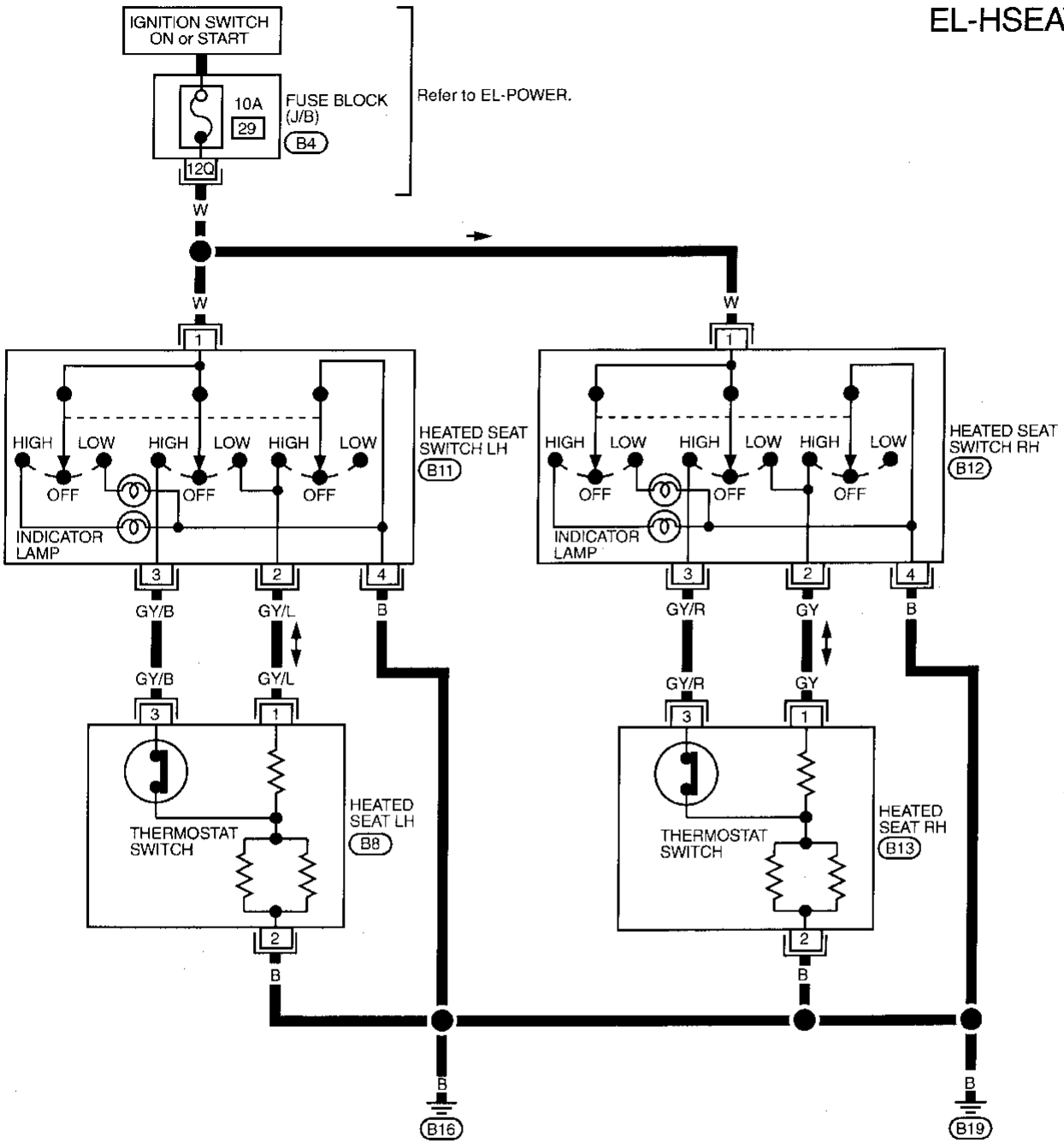


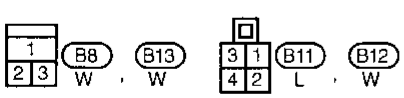


MEL110H

Wiring Diagram — HSEAT —

EL-HSEAT-01





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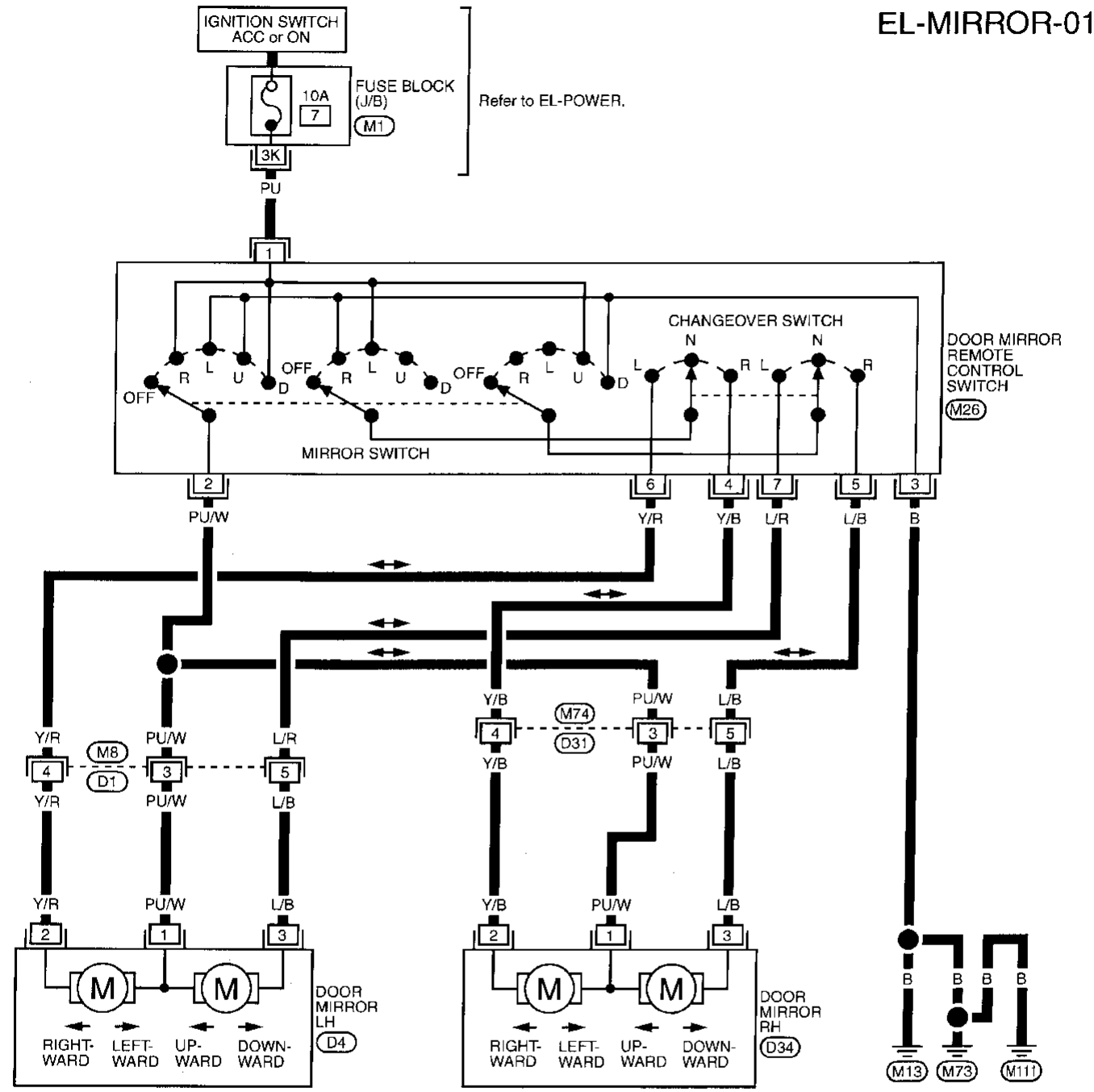
B4

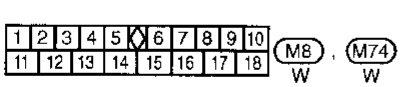
MEL747E

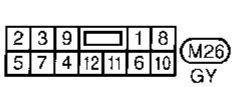
1503

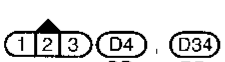
Wiring Diagram — MIRROR —



Refer to last page (Foldout page). M1



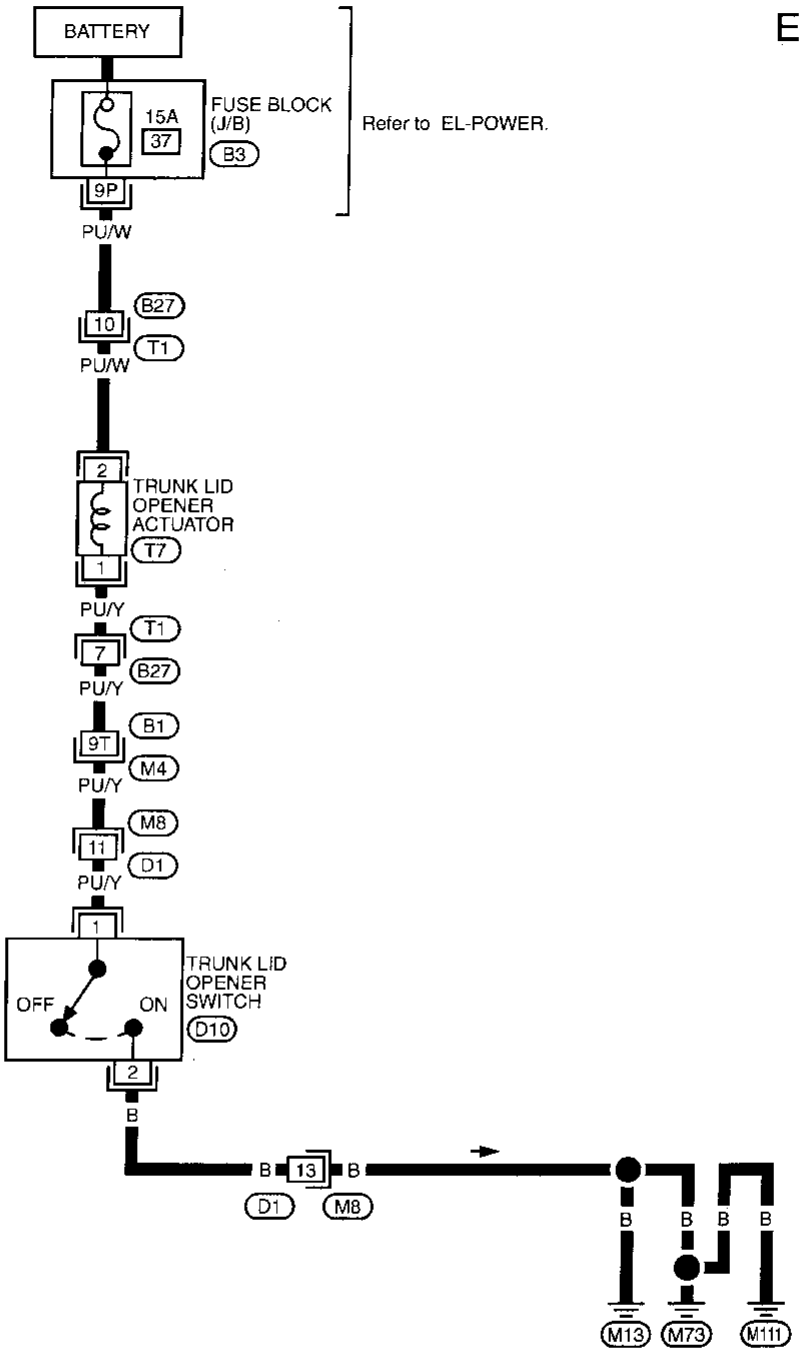


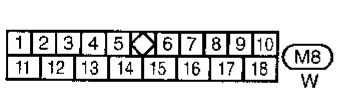


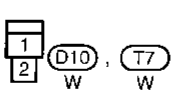
MEL889H

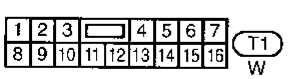
Wiring Diagram — TLID —

EL-TLID-01









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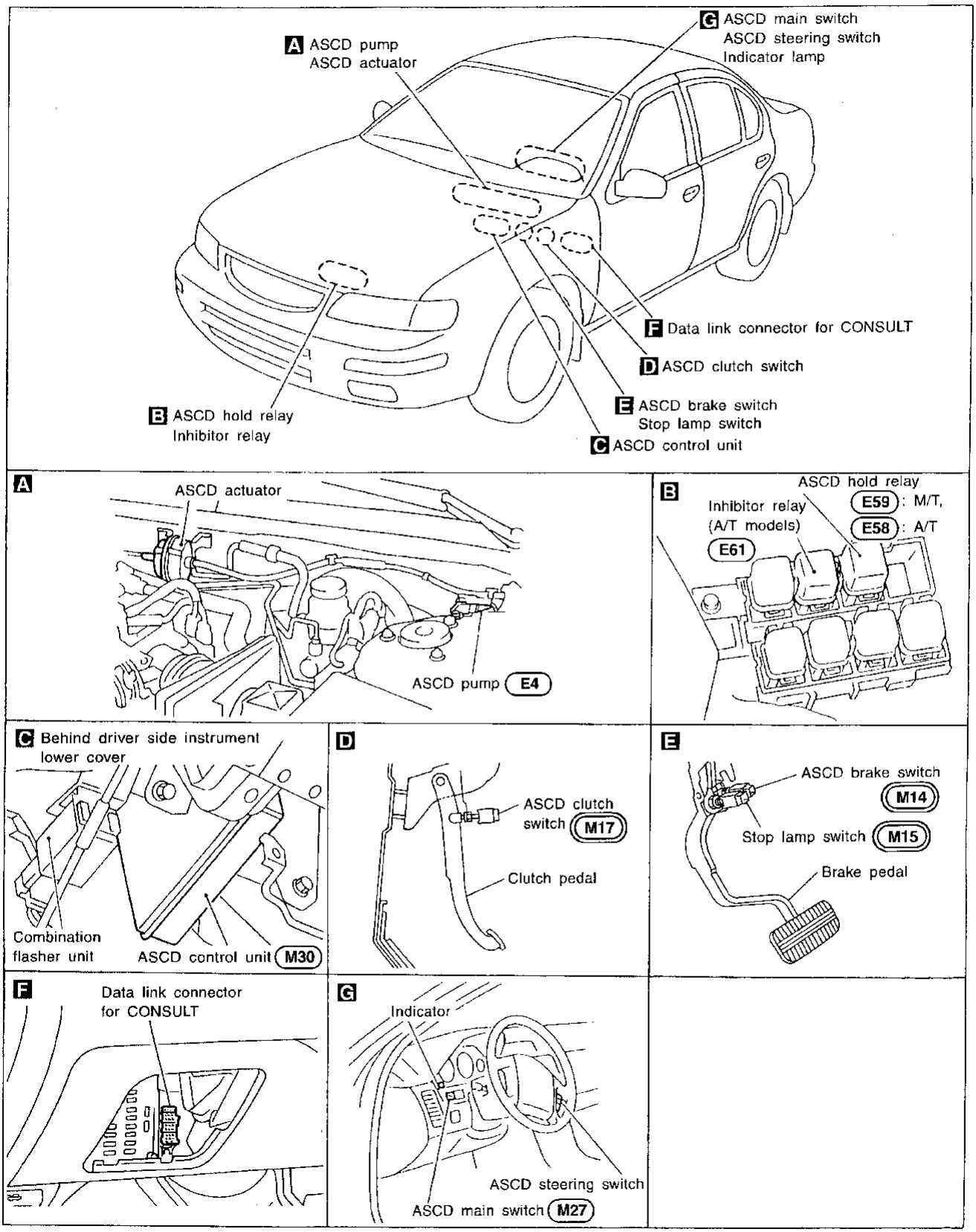
M4 , B1

B3

MEL890H

Component Parts and Harness Connector Location



SEL355VA

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 inhibitor relay (A/T models).

Ground is supplied
- to ASCD control unit terminal ③
- through body grounds M13, M73 and M111.

Inputs

At this point, the system is ready to activate or deactivate, based on inputs from the following:
- speedometer in the combination meter
- stop lamp switch
- ASCD steering switch
- inhibitor relay (A/T models)
- ASCD clutch switch (M/T models) and
- ASCD brake switch.

A vehicle speed input is supplied
- from terminal ㉔ of the combination meter
- to ASCD control unit terminal ⑦.

Power is supplied at all times
- to stop lamp switch terminal ①
- through 15A fuse [No. 10, located in the fuse block (J/B)].

When the brake pedal is depressed, power is supplied
- from terminal ② of the stop lamp switch
- to ASCD control unit terminal ⑪.

Power is supplied at all times
- through 10A fuse (No. 64, located in the fuse and fusible link box)
- to horn relay terminal ②,
- through terminal ① of the horn relay
- to ASCD steering switch terminal ①.

When the SET/COAST switch is depressed, power is supplied
- from terminal ② of the ASCD steering switch
- to ASCD control unit terminal ②.

When the RESUME/ACCEL switch is depressed, power is supplied
- from terminal ③ of the ASCD steering switch
- to ASCD control unit terminal ①.

When the ASCD CANCEL switch is depressed, power is supplied
- to ASCD control unit terminals ① and ②.

System Description (Cont'd)

When the system is activated, power is supplied
- to ASCD control unit terminal ⑤ and

Power is interrupted when
- the selector is placed in P or N (A/T models)
- the clutch pedal is depressed (M/T models) or
- the brake pedal is depressed.

Outputs

The ASCD actuator controls the throttle drum via the ASCD wire based on inputs from the ASCD control unit.
The ASCD actuator consists of a vacuum motor, an air valve, and a release valve.
Power is supplied
- from terminal ⑧ of the ASCD control unit
- to ASCD pump terminal ① .

Ground is supplied to the vacuum motor
- from terminal ⑨ of the ASCD control unit
- to ASCD pump terminal ④ .

Ground is supplied to the air valve
- from terminal ⑩ of the ASCD control unit
- to ASCD pump terminal ② .

Ground is supplied to the release valve
- from terminal ⑭ of the ASCD control unit
- to ASCD pump terminal ③ .

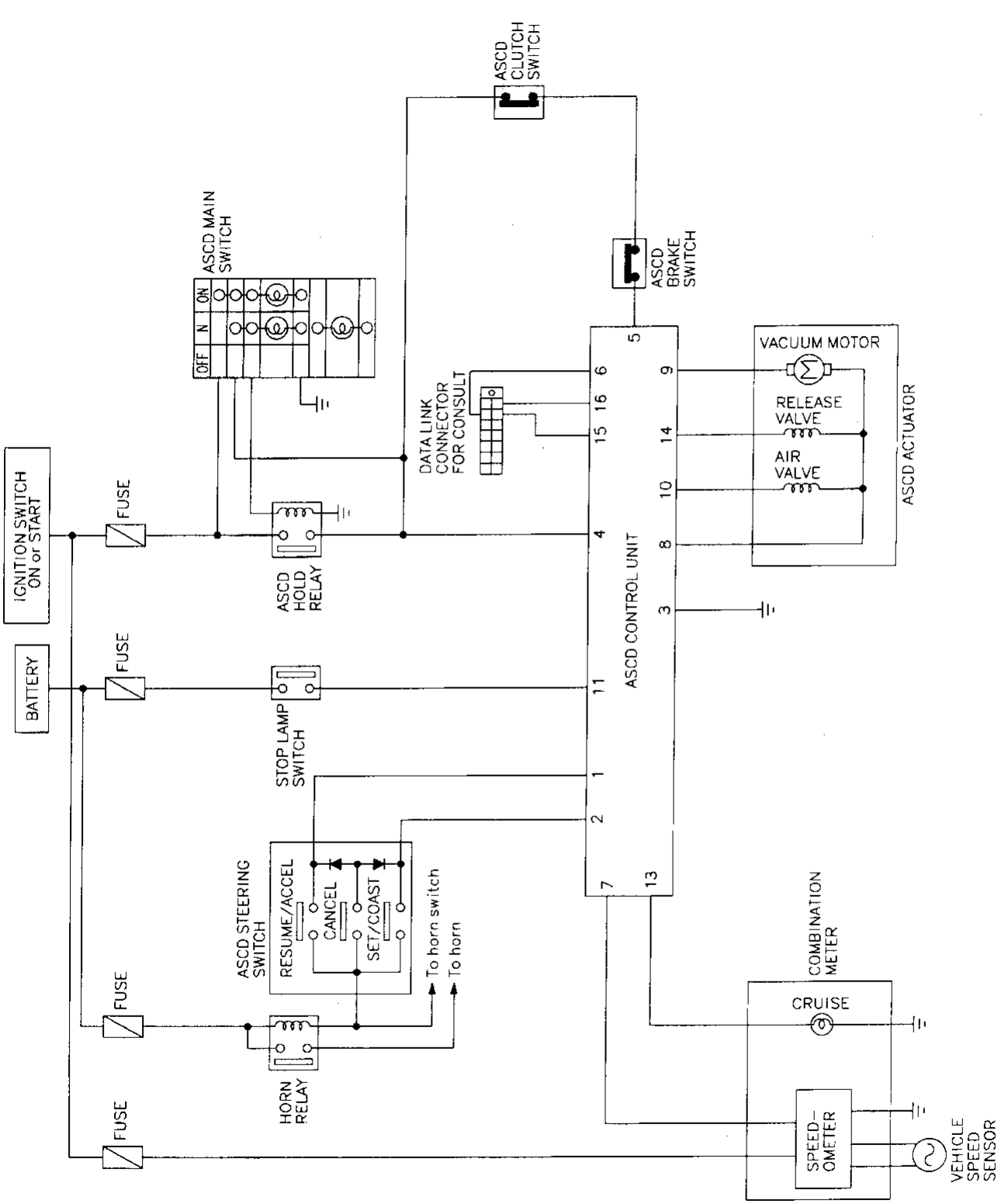
When the system is activated, power is supplied
- from terminal ⑬ of the ASCD control unit
- to combination meter terminal ⑧ and
- to TCM (Transmission control module) terminal ㊲ (A/T models).

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

With power and ground supplied, the CRUISE indicator illuminates.
When vehicle speed is approximately 8 km/h (5 MPH) below set speed on A/T models, a signal is sent
- from terminal ⑫ of the ASCD control unit
- to TCM (Transmission control module) terminal ㊵ .

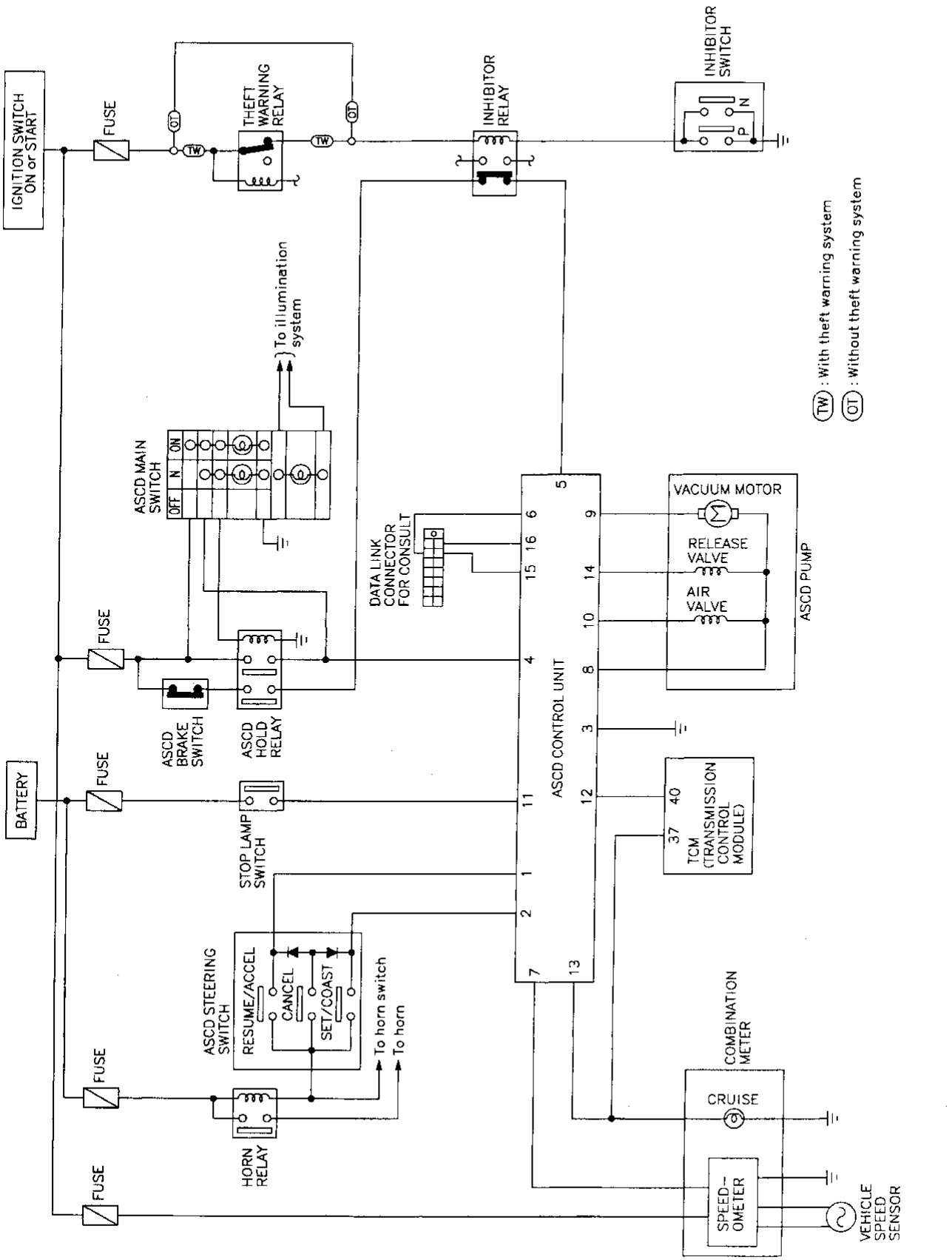
When this occurs, the TCM (Transmission control module) cancels overdrive.
After vehicle speed is approximately 3 km/h (2 MPH) above set speed, overdrive is reactivated.

Schematic/M/T Models



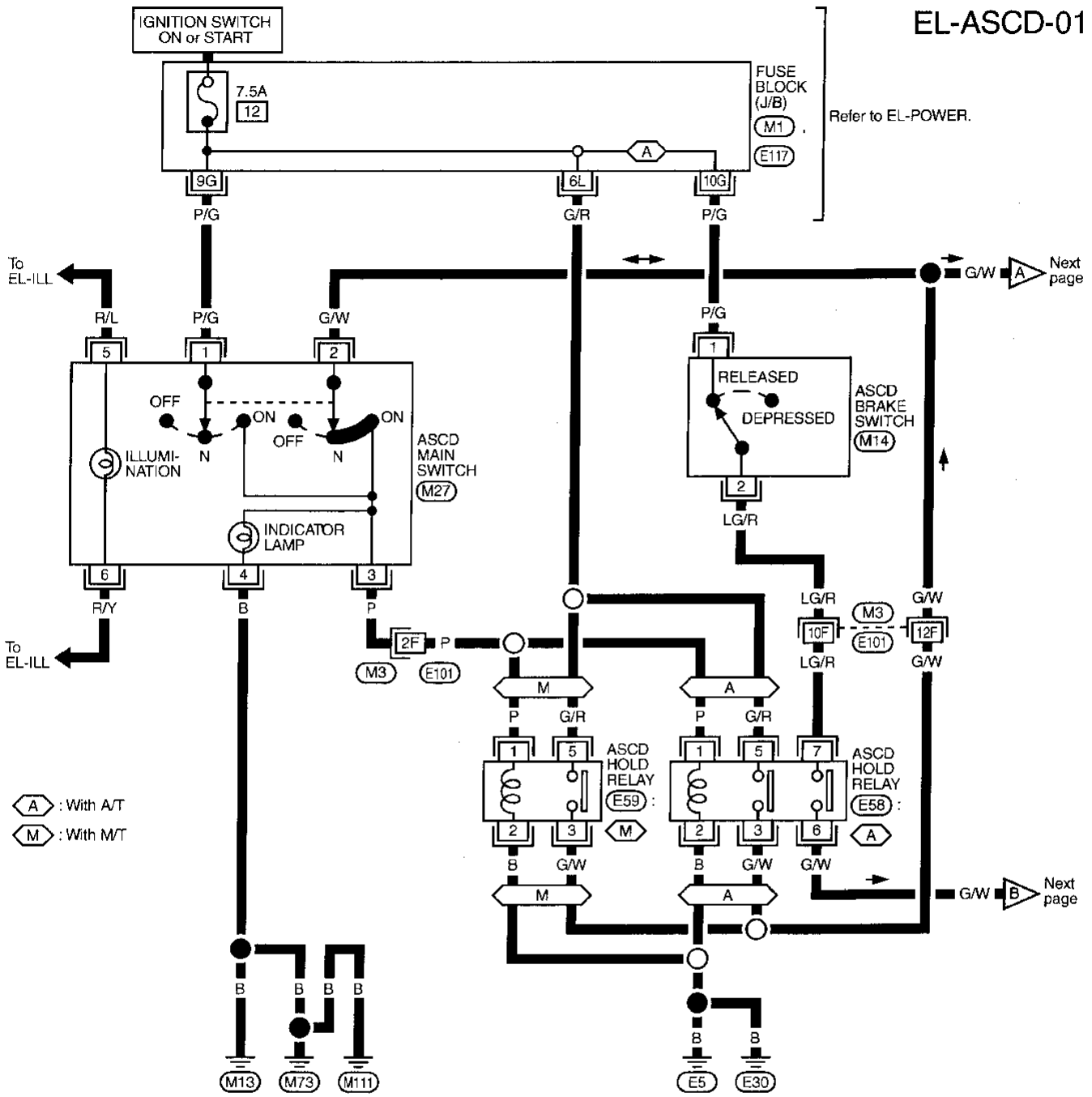
MEL474I

Schematic/A/T Models



MEL937H

Wiring Diagram — ASCD —



M14 L
M27 W
E58 BR
E59 L

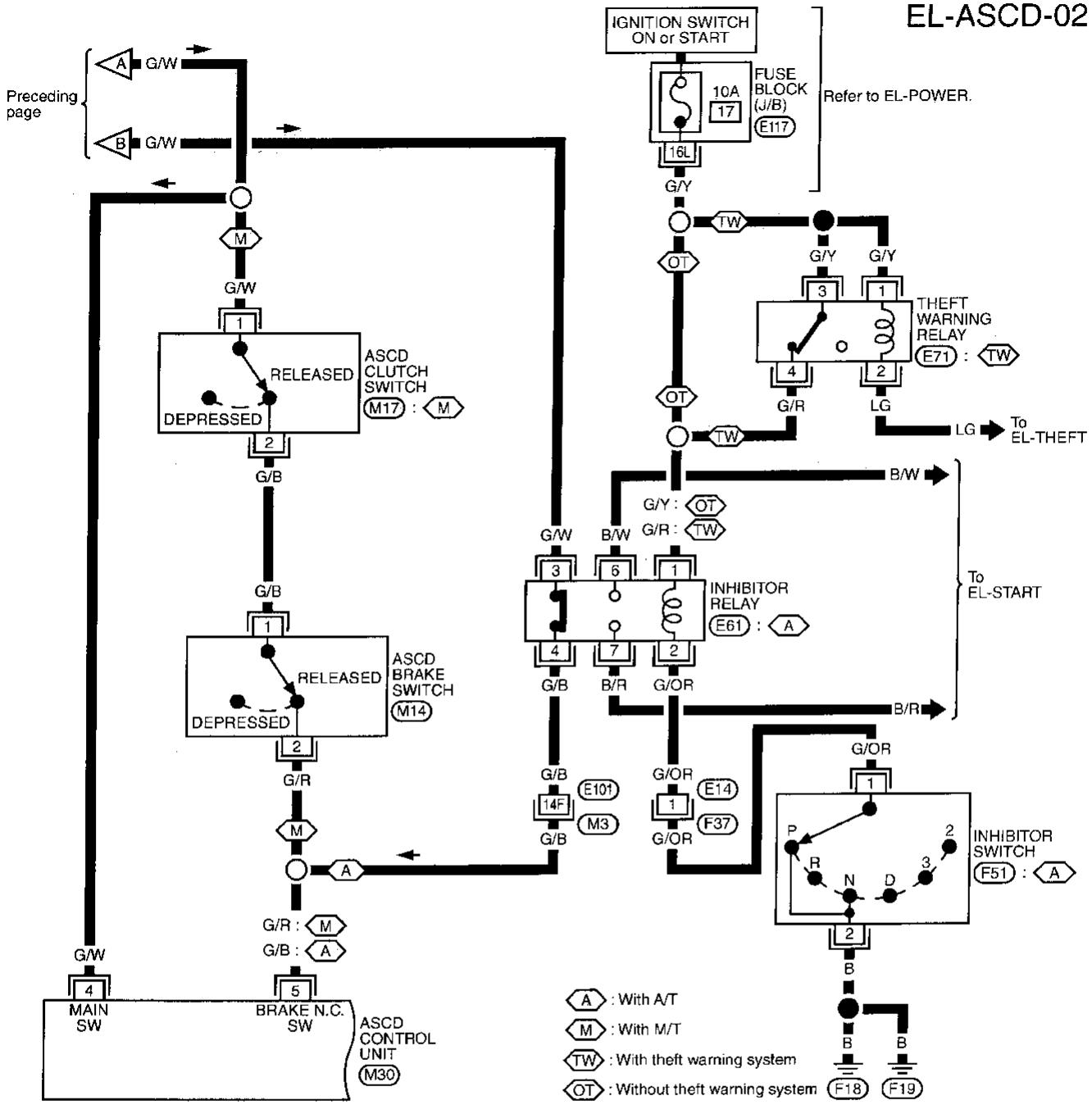
Refer to last page (Foldout page).
M1
M3, E101
E117

MEL891H

1511

Wiring Diagram — ASCD — (Cont'd)

EL-ASCD-02



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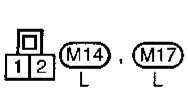
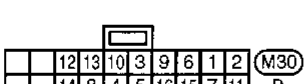
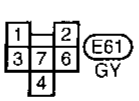
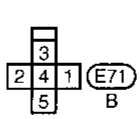
M3 , E101

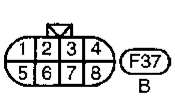
E117







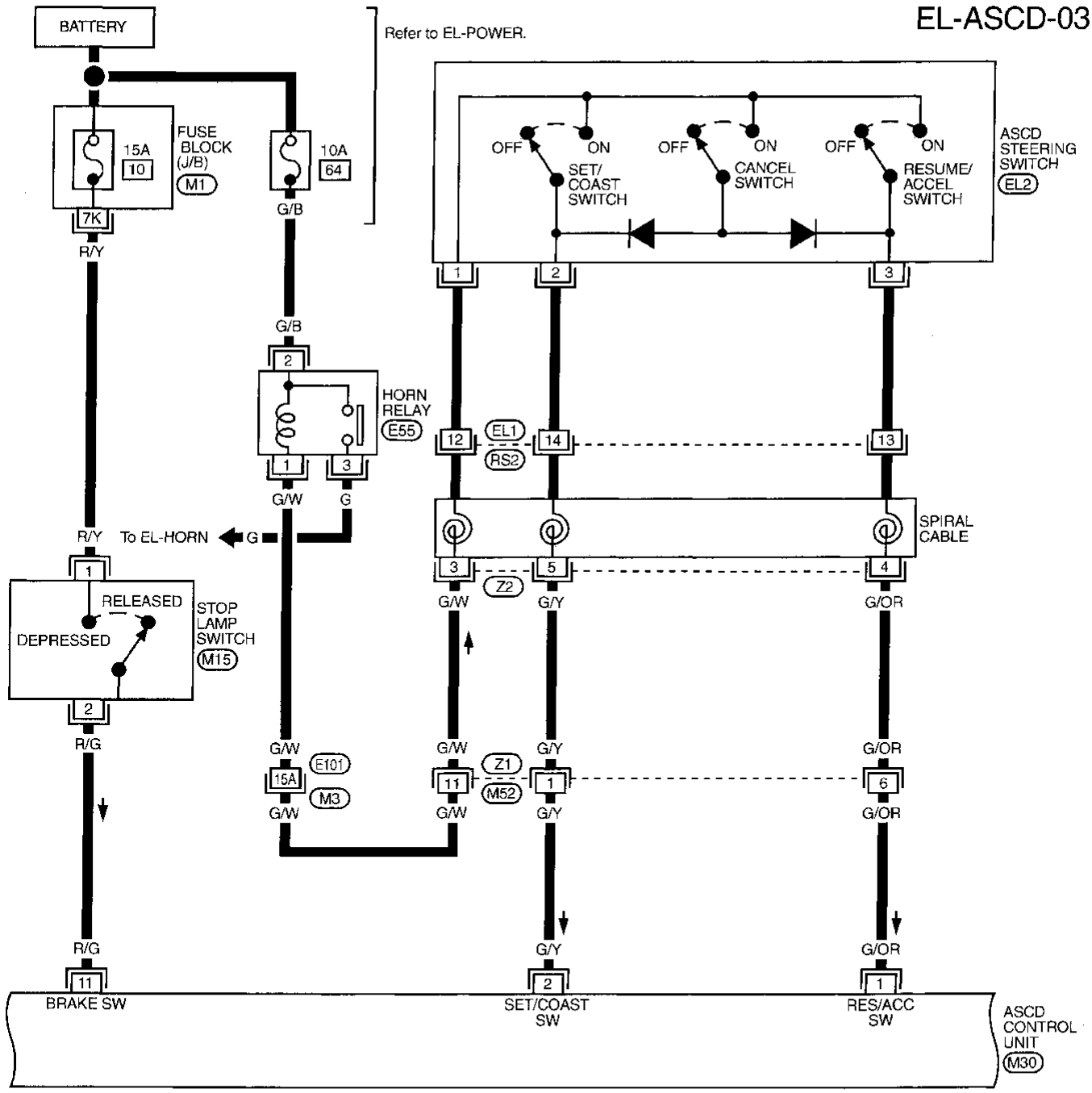


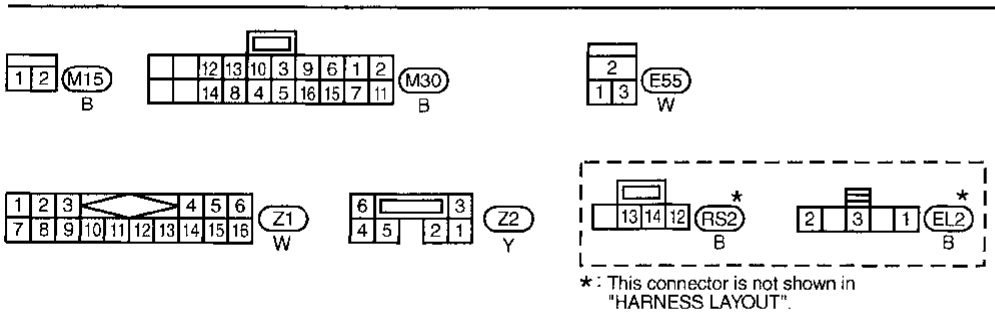


MEL892H

Wiring Diagram — ASCD — (Cont'd)

EL-ASCD-03





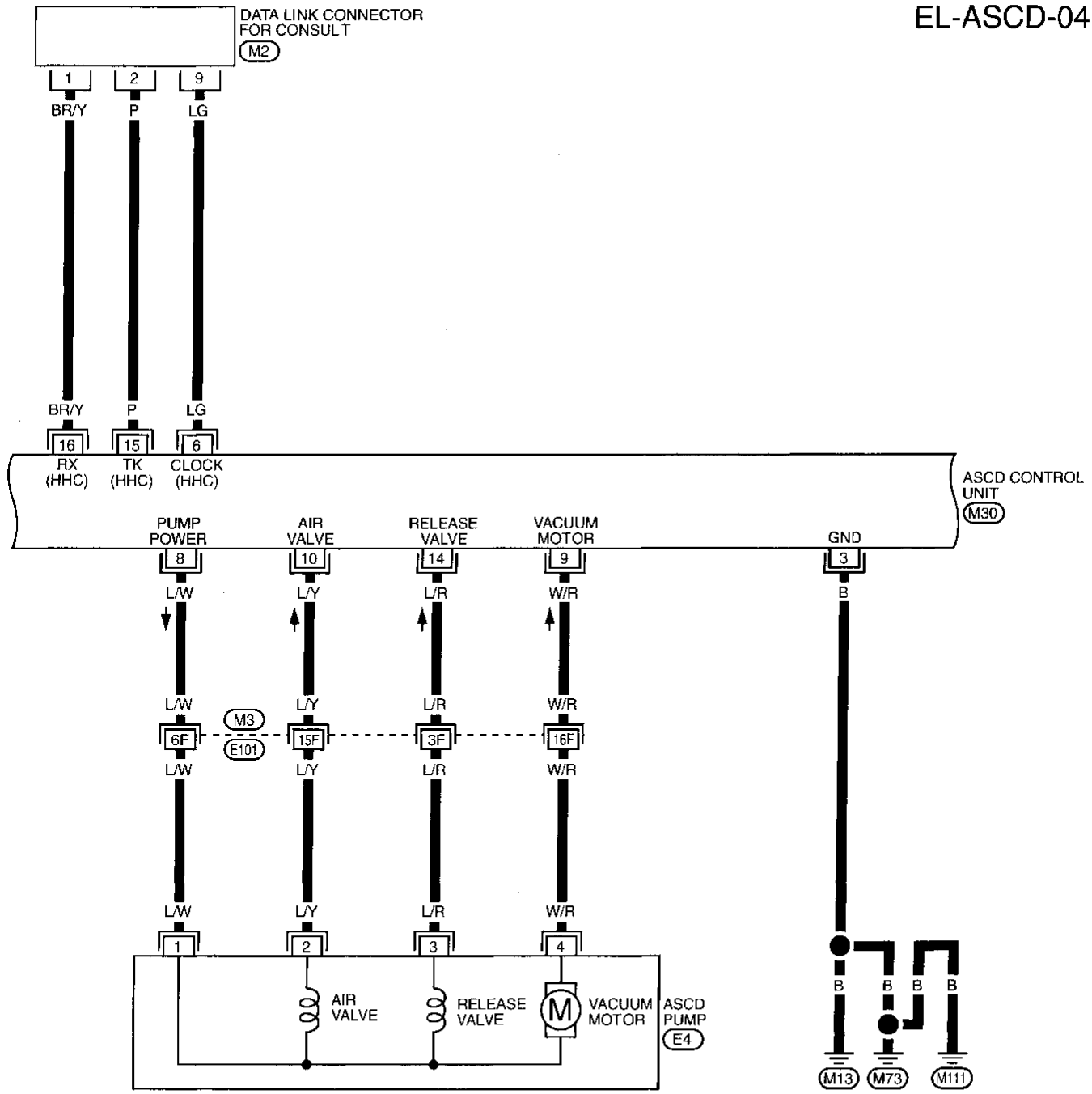
Refer to last page (Foldout page).
M1
M3 , E101

MEL893H

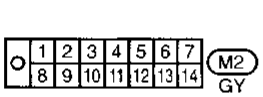
1513

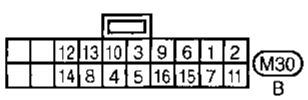
Wiring Diagram — ASCD — (Cont'd)

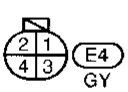
EL-ASCD-04



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



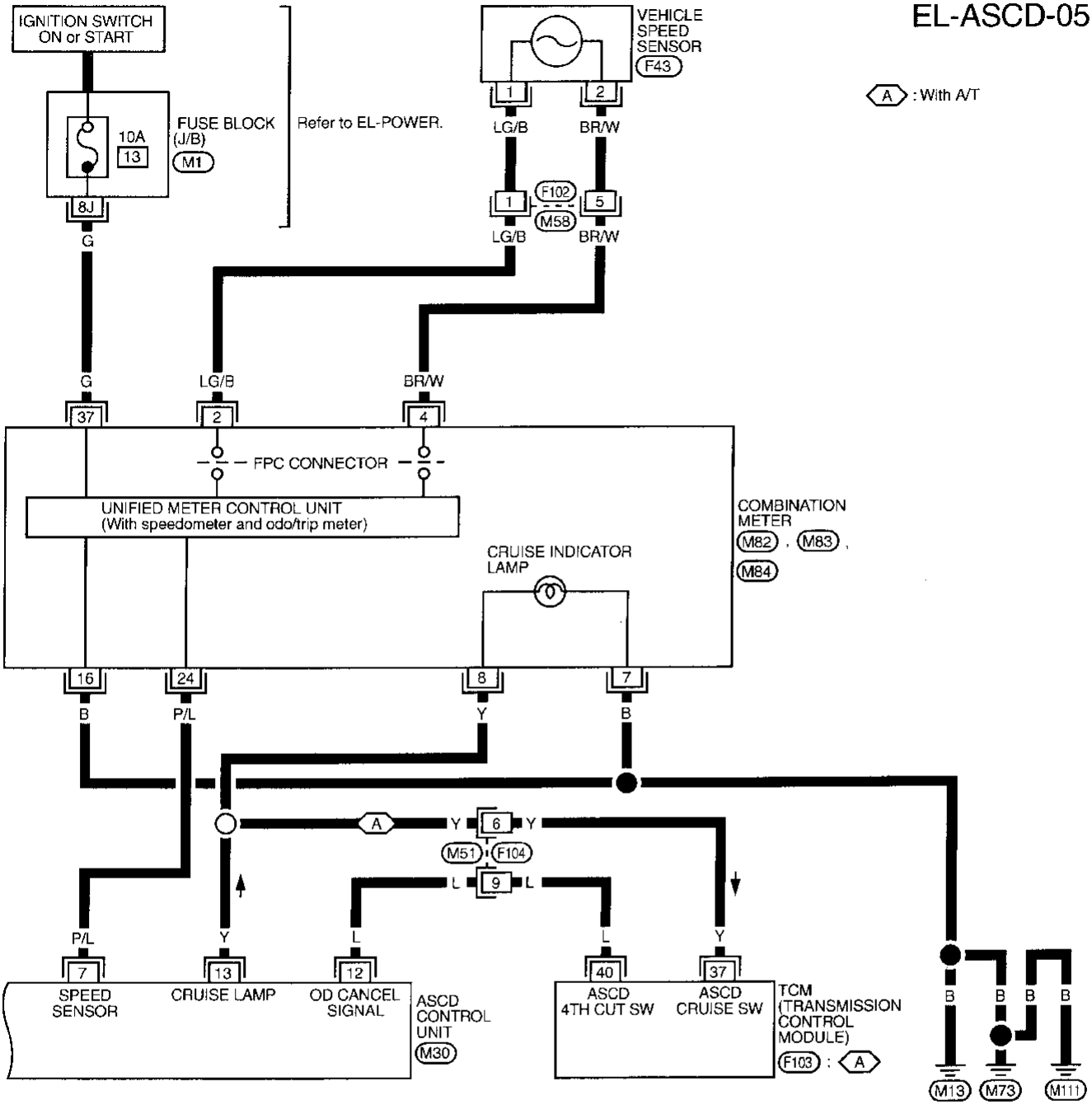


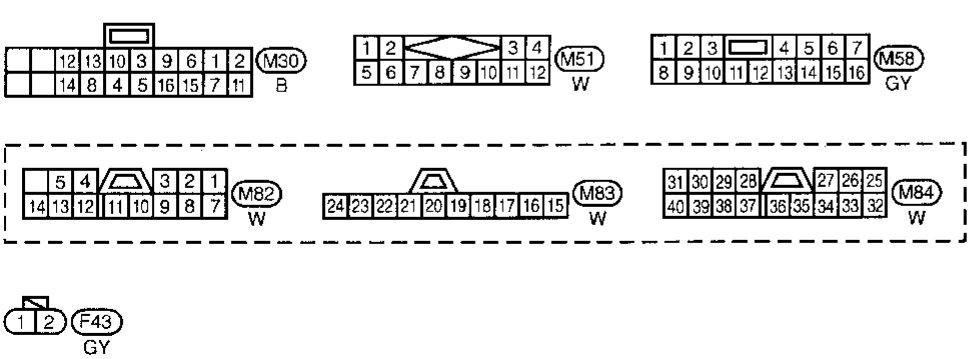


MEL894H

Wiring Diagram — ASCD — (Cont'd)

EL-ASCD-05

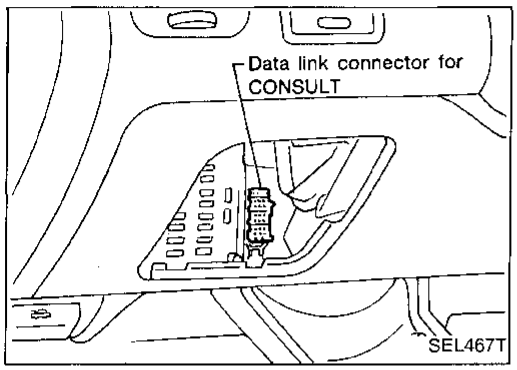




Refer to last page (Foldout page).
M1
F103

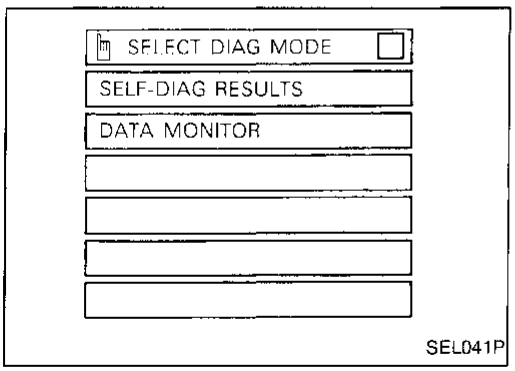
MEL895H

1515

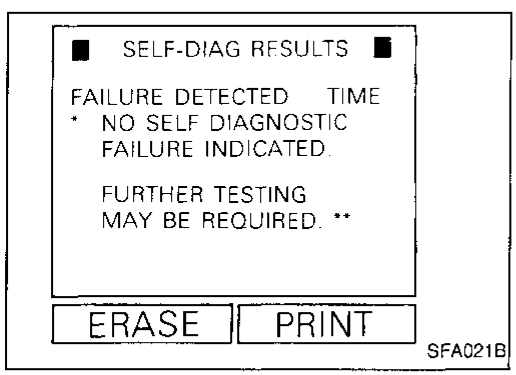


CONSULT

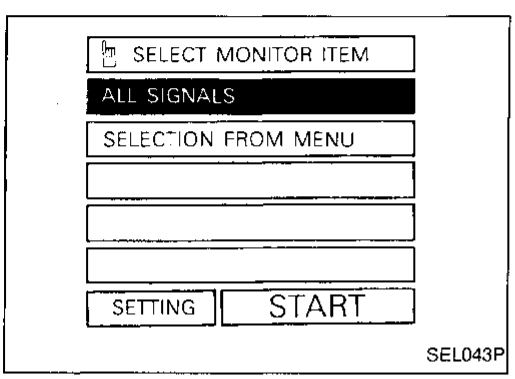
1. Turn off ignition switch.
2. Connect "CONSULT" to data link connector for CONSULT.



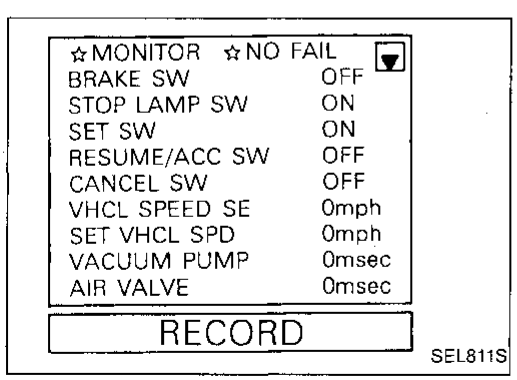
3. Turn on ignition switch.
4. Turn on ASCD main switch.
5. Touch START (on CONSULT display).
6. Touch ASCD.
7. Touch SELF-DIAG RESULTS.



- 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.

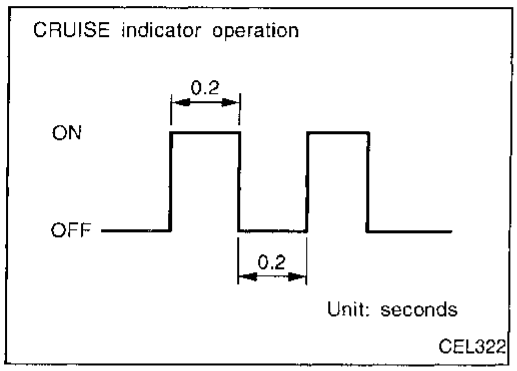
CONSULT (Cont'd)

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 ASCD pump is open. (An abnormally high voltage is entered.)	Diagnostic procedure 7 (EL-160)
VACUUM PUMP	• The vacuum pump circuit is open or shorted. (An abnormally high or low voltage is entered.	Diagnostic procedure 7 (EL-160)
AIR VALVE	• The air valve circuit is open or shorted. (An abnormally high or low voltage is entered.)	Diagnostic procedure 7 (EL-160)
RELEASE VALVE	• The release valve circuit is open or shorted. (An abnormally high or low voltage is entered.)	Diagnostic procedure 7 (EL-160)
VHCL SP-S/FAILSAFE	• The vehicle speed sensor or the fail-safe circuit is malfunctioning.	Diagnostic procedure 6 (EL-159)
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-157)

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

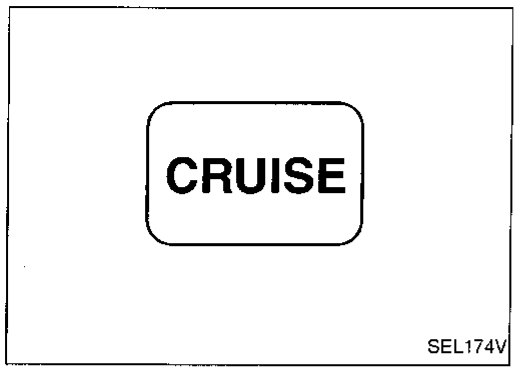
When the fail-safe system senses a malfunction, it deactivates ASCD operation. The CRUISE indicator in the combination meter will then flash.

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.

Fail-safe System (Cont'd)

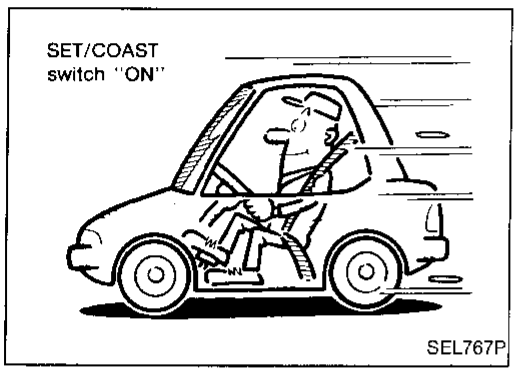
FAIL-SAFE SYSTEM CHECK



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

If the indicator lamp blinks, check the following.

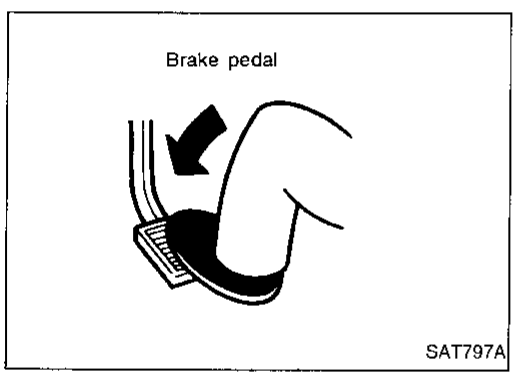
- ASCD steering switch. Refer to "DIAGNOSTIC PROCEDURE 5" (EL-158).



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

If the indicator lamp blinks, check the following.

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



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

If the indicator lamp blinks, check the following.

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

5. END. (System is OK.)

Trouble Diagnoses

SYMPTOM CHART

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

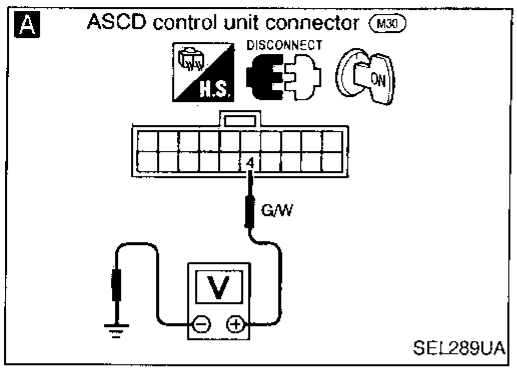
★1: It indicates that system is in fail-safe. After completing diagnostic procedures, perform "Fail-safe System Check" (EL-153) to verify repairs.

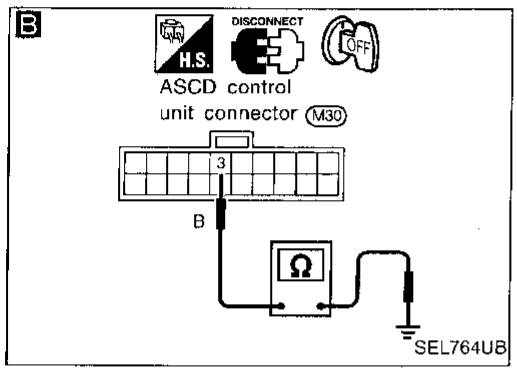
★2: If vehicle speed is greater than 48 km/h (30 MPH) after system has been released, pressing RESUME/ACCEL switch returns vehicle speed to the set speed previously achieved. However, doing so when the ASCD main switch is turned to "OFF", vehicle speed will not return to the set speed since the memory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

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

(POWER SUPPLY AND GROUND CIRCUIT CHECK)





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

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

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-146.

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

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-148.

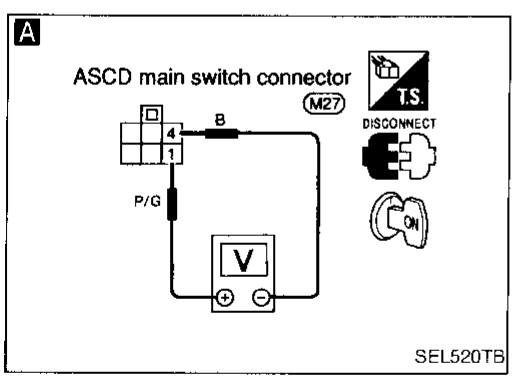
NG → Repair harness.

OK ↓

Go to next procedure.

DIAGNOSTIC PROCEDURE 2

(ASCD MAIN SWITCH CHECK)



A

CHECK POWER SUPPLY FOR ASCD MAIN SWITCH.

1. Disconnect main switch connector.
2. Measure voltage between main switch terminals ① and ④.
   Battery voltage should exist.

   Refer to wiring diagram in EL-145.

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

OK ↓

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

NG → Replace ASCD main switch.

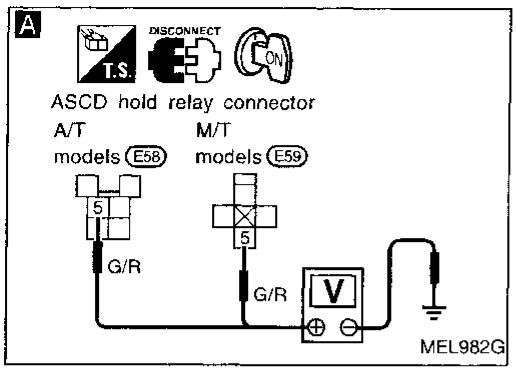
OK ↓

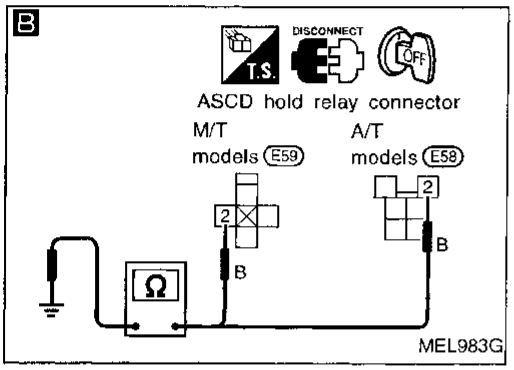
Go to DIAGNOSTIC PROCEDURE 3 (ASCD HOLD RELAY CHECK). Refer to EL-156.

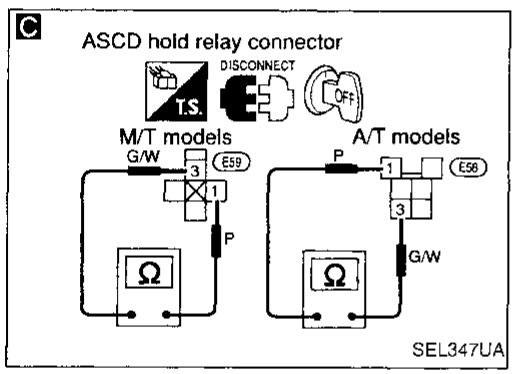
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

(ASCD HOLD RELAY CHECK)







A

CHECK POWER SUPPLY CIRCUIT FOR ASCD HOLD RELAY.
1. Disconnect ASCD hold relay
2. Do approx. 12 volts exist between ASCD hold relay terminal ⑤ and ground?

Refer to wiring diagram in EL-145.

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.
Does continuity exist between ASCD hold relay terminal ② and ground?

No → Repair harness.

Yes ↓

C

CHECK ASCD HOLD RELAY CIRCUIT.
Does continuity exist between ASCD hold relay terminals ③ and ①?

Yes → Check ASCD hold relay.

No ↓

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

NG → Replace ASCD main switch.

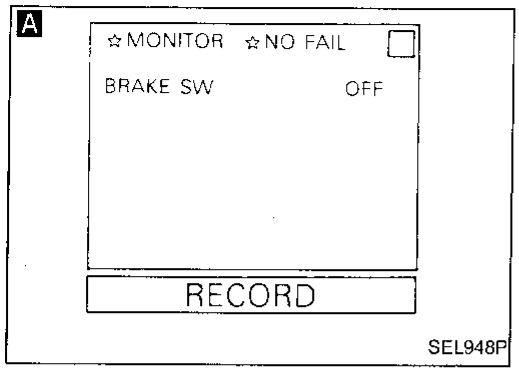
OK ↓

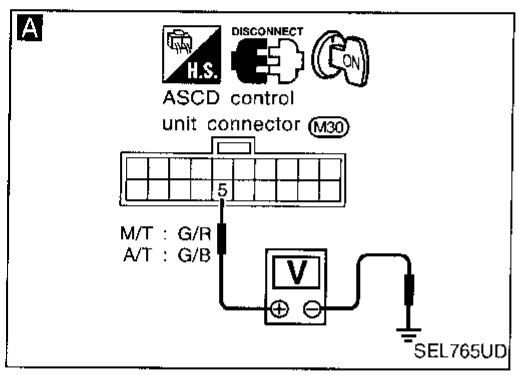
ASCD hold relay is OK.

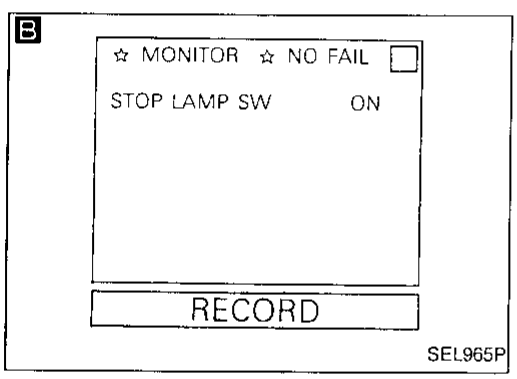
Trouble Diagnoses (Cont'd)

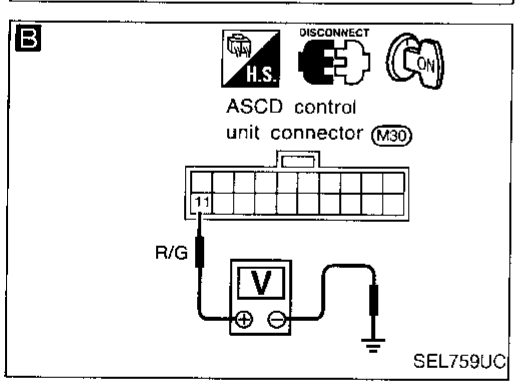
DIAGNOSTIC PROCEDURE 4

(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-162).
- ASCD clutch switch (M/T model)
  Refer to "Electrical Components Inspection" (EL-162).
- Inhibitor switch (A/T model)
  Refer to "Electrical Components Inspection" (EL-162).
- 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-146.

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-162).

OR

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

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

Refer to wiring diagram in EL-147.

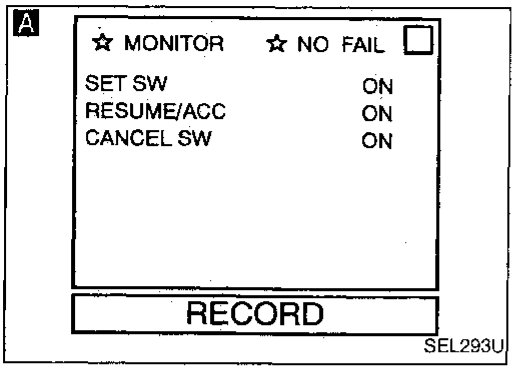
OK ↓

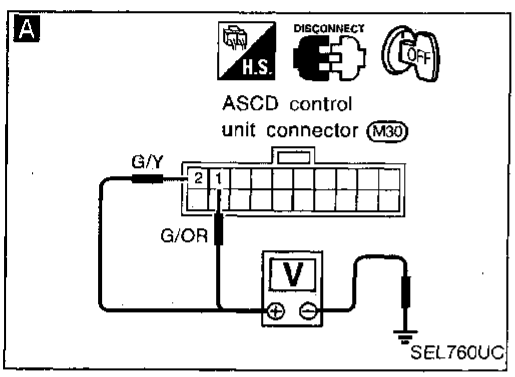
ASCD brake/stop lamp switch is OK.

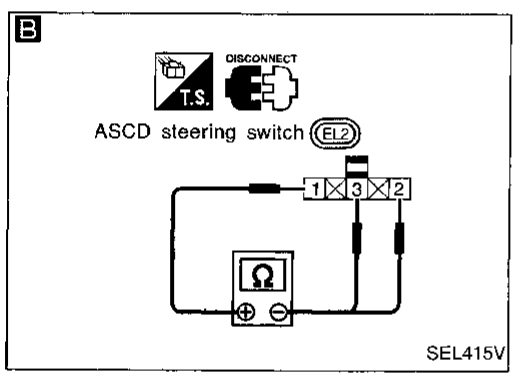
Trouble Diagnoses (Cont'd)

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

OK → ASCD steering switch is OK.

OR

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

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

Refer to wiring diagram in EL-147.

NG

CHECK POWER SUPPLY FOR ASCD STEERING SWITCH.
Does horn work?

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

OK

B

CHECK ASCD STEERING SWITCH.
Check continuity between terminals by pushing each switch.

NG → Replace ASCD steering switch.

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

OK

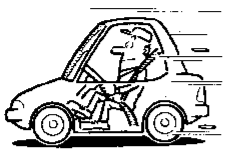
Check harness for open or short between ASCD steering switch and ASCD control unit.

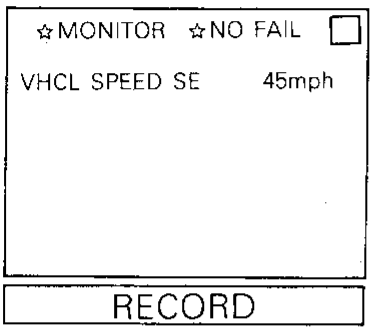
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

(VEHICLE SPEED SENSOR CHECK)

A

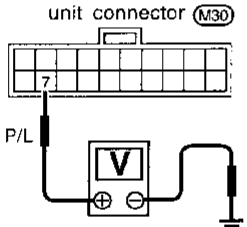




SEL084T

A

ASCD control unit connector (M30)



SEL761UC

CHECK VEHICLE SPEED SENSOR CIRCUIT.

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

OR

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

Refer to wiring diagram in EL-149.

OK → Vehicle speed sensor is OK.

NG

Does speedometer operate normally?

No → Check speedometer and vehicle speed sensor circuit. Refer to EL-74.

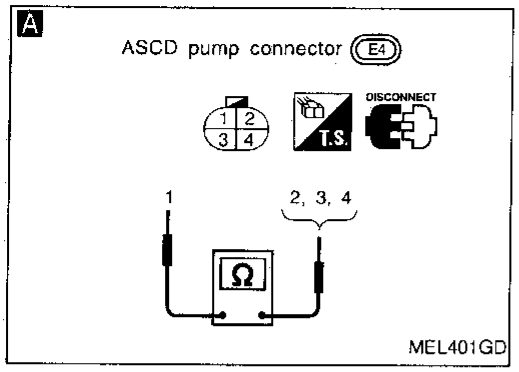
Yes

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-148.

NG → Replace ASCD pump.

OK ↓

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

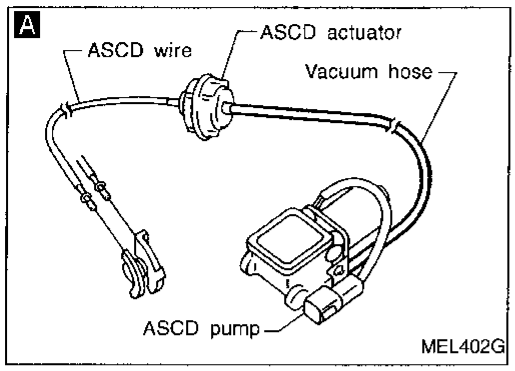
If a self-diagnostic result has already been accomplished, check using the following table.

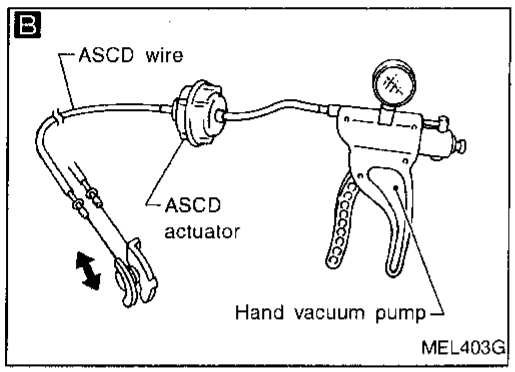
CONSULT self-diagnostic result	Check circuit	
	ASCD control unit terminal	ASCD pump terminal
POWER SUPPLY-VALVE	⑧	①
VACUUM PUMP	⑨	④
AIR VALVE	⑩	②
RELEASE VALVE	⑭	③

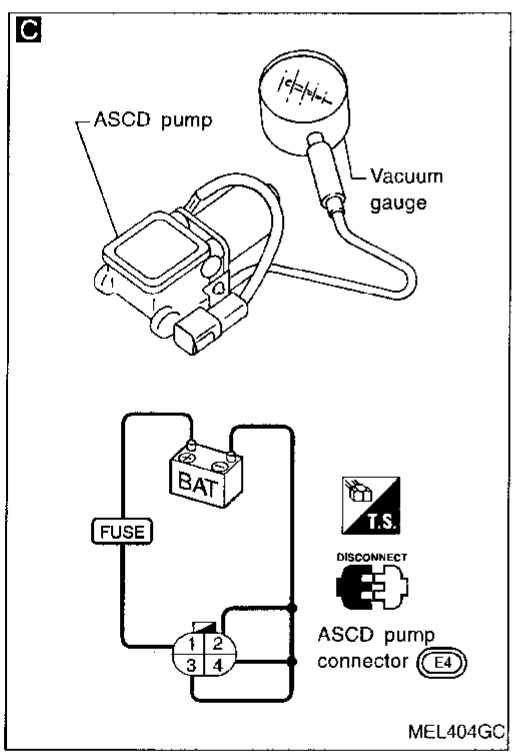
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8

(ASCD ACTUATOR/PUMP CHECK)







A

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

NG → Repair or replace hose.

OK ↓

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

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

OK ↓

B

CHECK ASCD ACTUATOR.

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

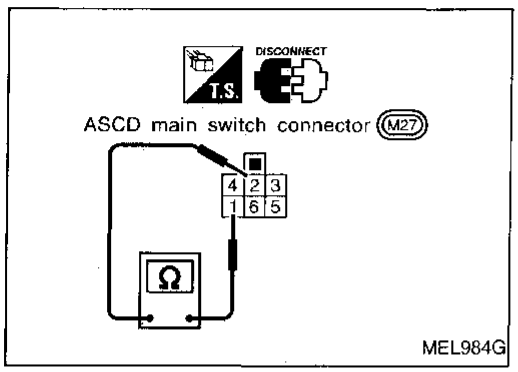
	12V direct current supply terminals		Operation
	⊕	⊖	
Air valve	①	②	Close
Release valve		③	Close
Vacuum motor		④	Operate

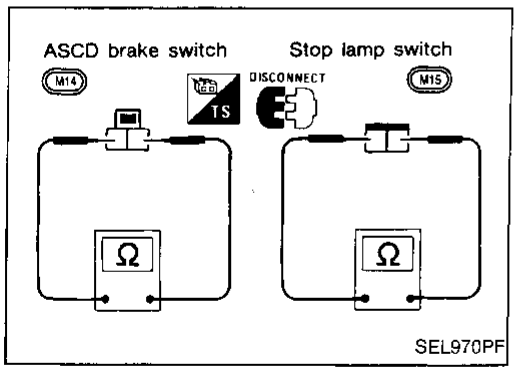
A vacuum pressure of at least –35 kPa (–0.36 kg/cm^2, –5.1 psi) should be generated.

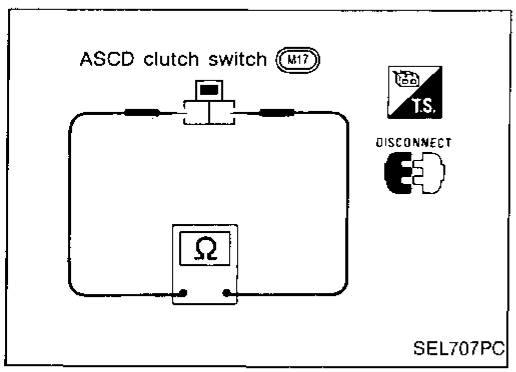
NG → Replace ASCD pump.

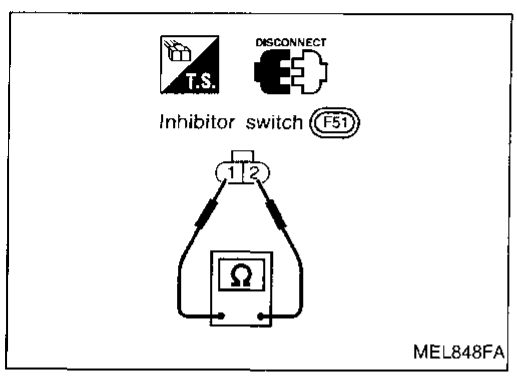
OK ↓

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	○	○	○	○	ILL.	
N		○	○	○	○	○
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.

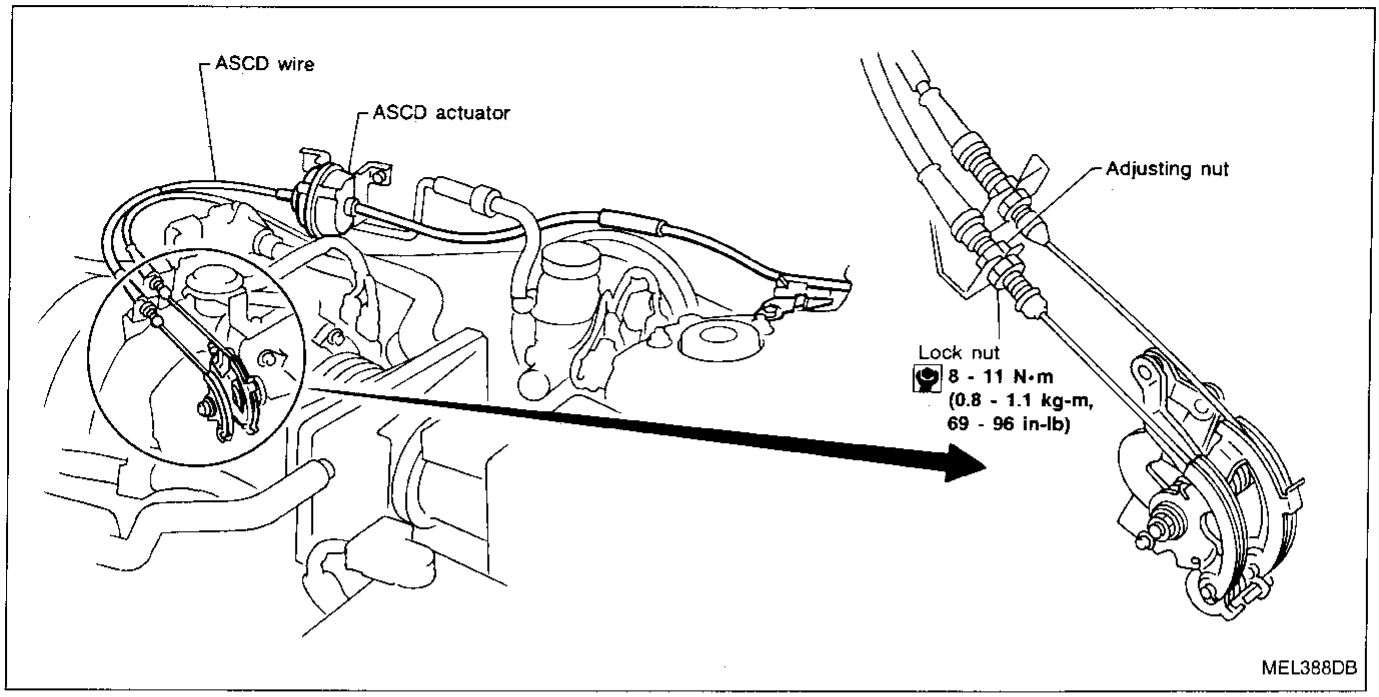
ASCD CLUTCH SWITCH (For M/T models)

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

INHIBITOR SWITCH (For A/T models)

Shift lever position	Continuity
	Between terminals ① and ②
"P"	Yes
"N"	Yes
Except "P" and "N"	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.

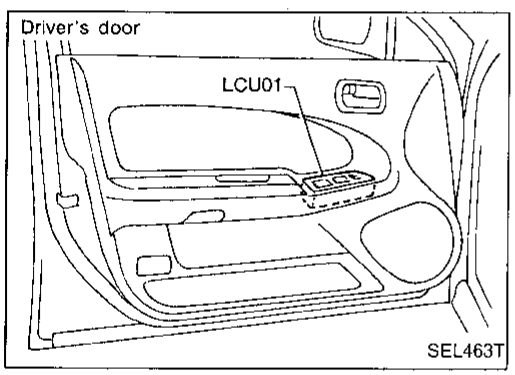
Overall Description

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.

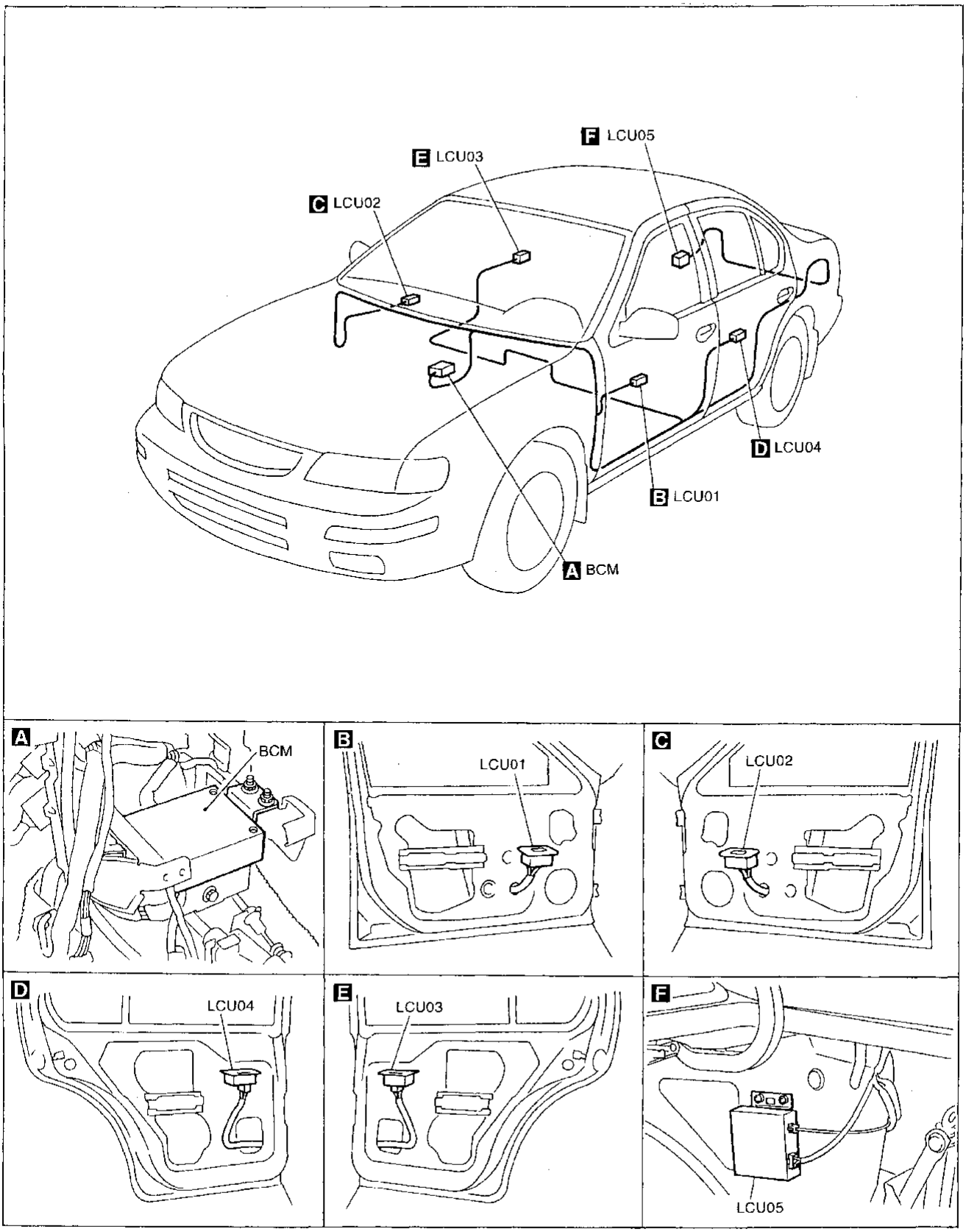
CONTROLLED SYSTEMS

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".)
- Trouble-diagnosing system
  — with CONSULT
  — ON-BOARD

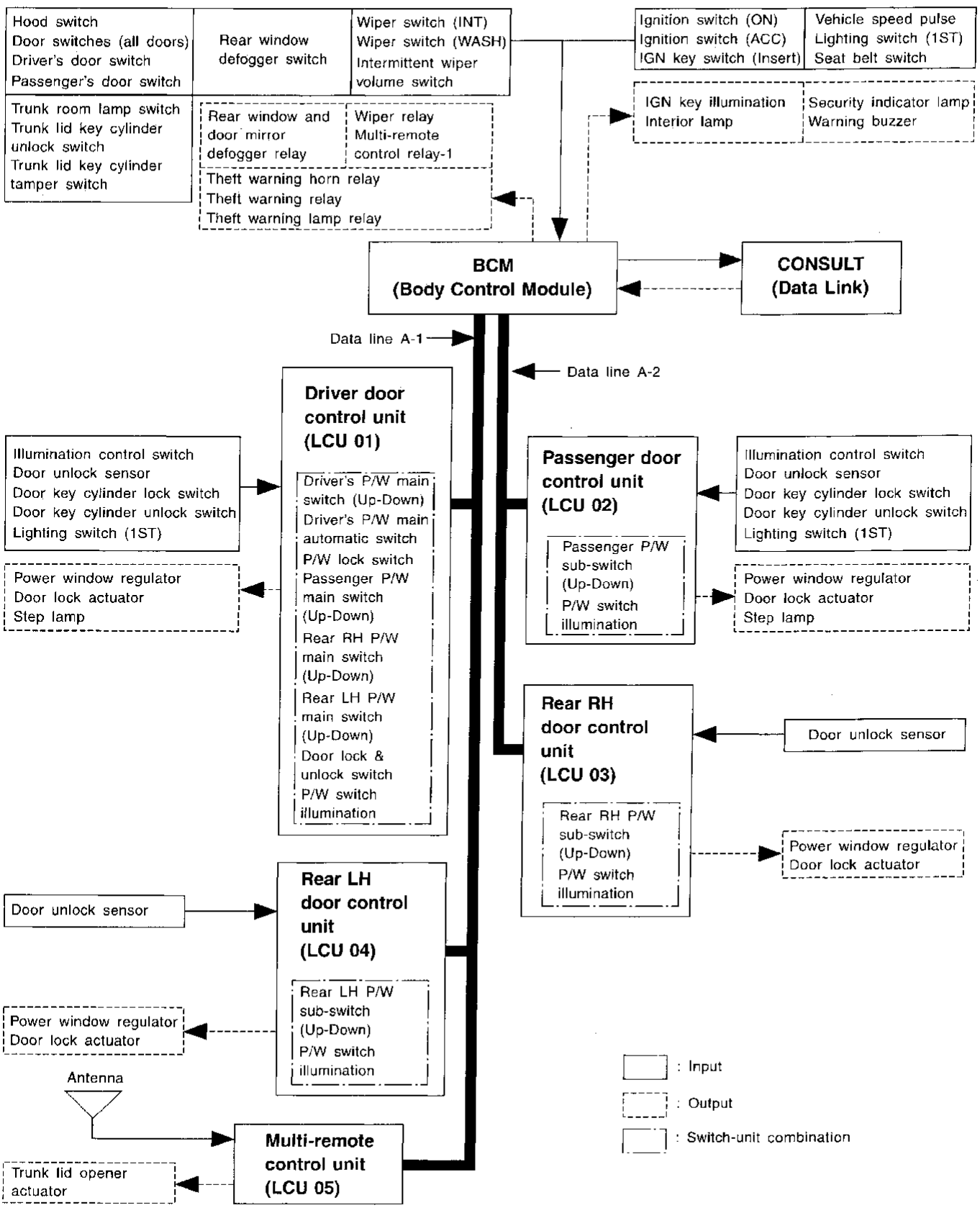
Also, IVMS has the "sleep/wake-up control" function. IVMS puts itself (the whole IVMS system) to sleep under certain conditions to prevent unnecessary power consumption. Then, when a certain input is detected, the system wakes itself up. For more detailed information, refer to "Sleep/Wake-up Control".

Component Parts Location



MEL462I

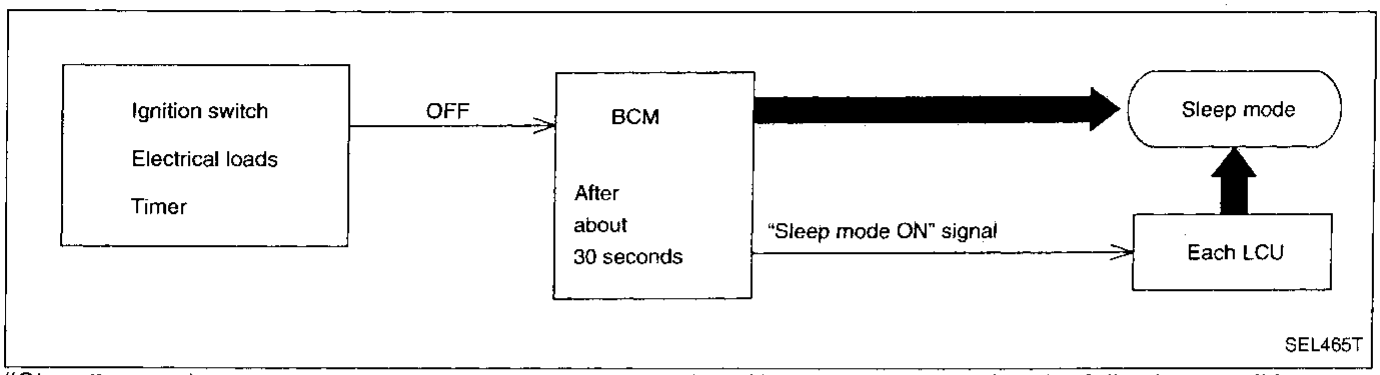
System Diagram



SEL337V

Sleep/Wake-up Control

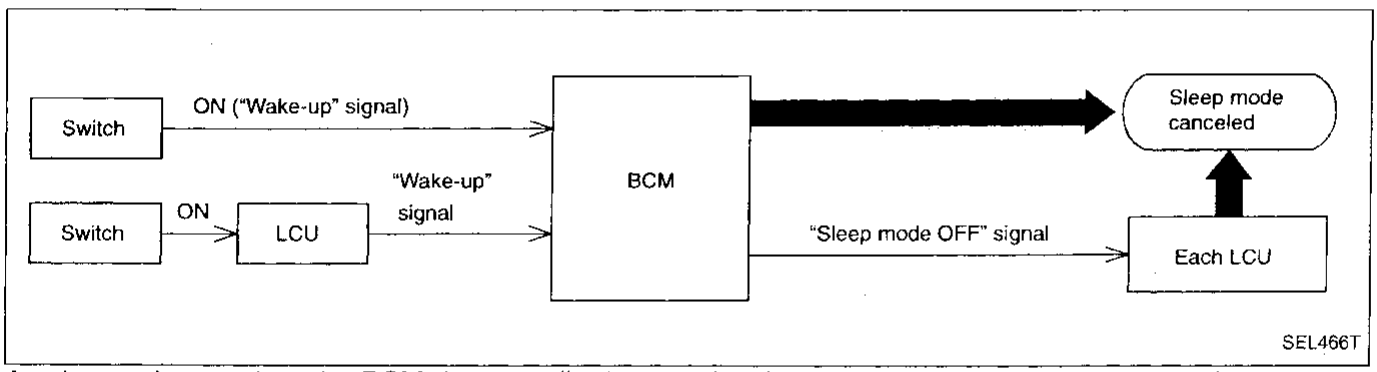
SLEEP CONTROL



"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
- Trunk lid key cylinder switch (Unlock/Tamper)
- Multi-remote controller
- All switches combined or connected with door LCU

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

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

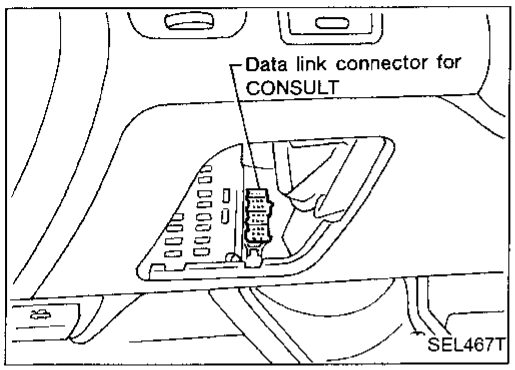
DIAGNOSTIC ITEMS DESCRIPTION

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

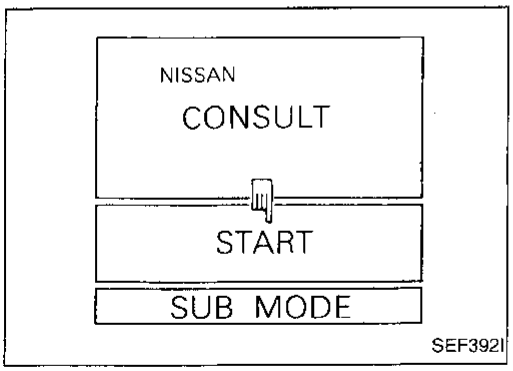
NOTE: When CONSULT diagnosis is operating, some systems under IVMS control do not operate.

CONSULT (Cont'd)

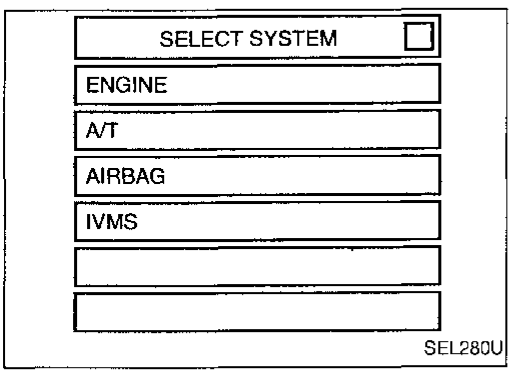
CONSULT INSPECTION PROCEDURE



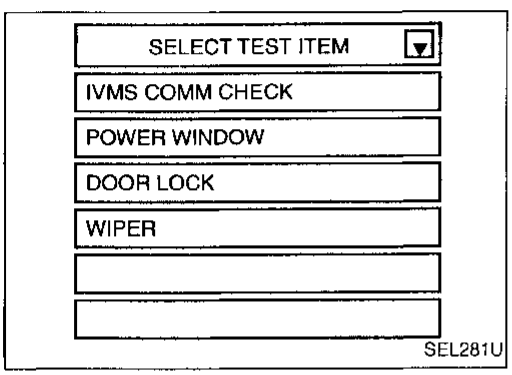
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



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



5. Touch "IVMS".

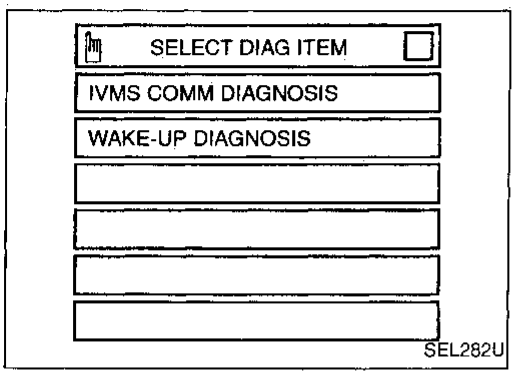


6. Perform each diagnostic item according to the item application chart as shown in EL-168.

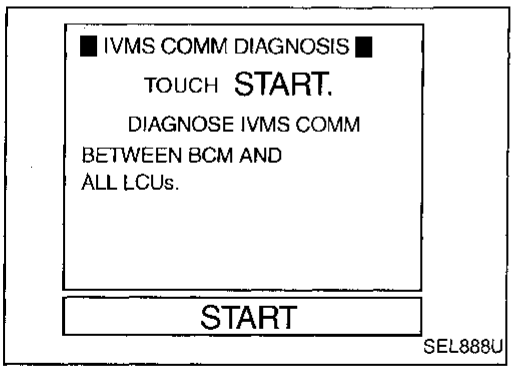
For further information, read the CONSULT Operation Manual.

CONSULT (Cont'd)

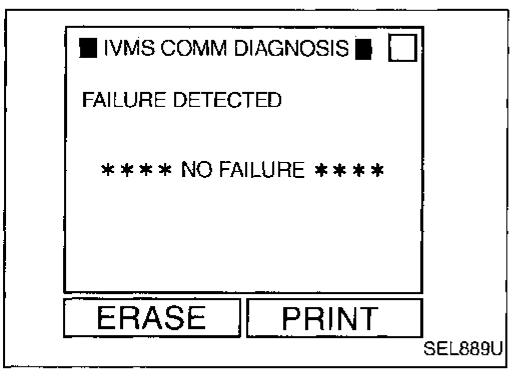
IVMS COMMUNICATION DIAGNOSIS



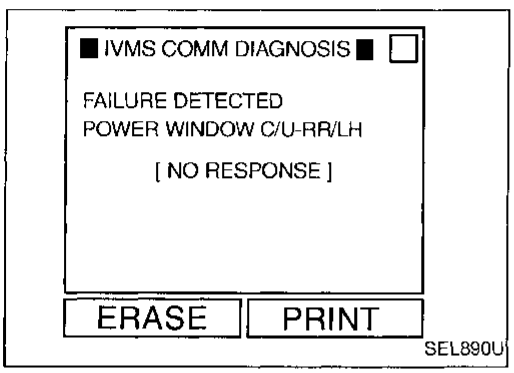
1. Touch "IVMS COMM DIAGNOSIS" in "IVMS-COMM CHECK".



2. Touch "START".



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

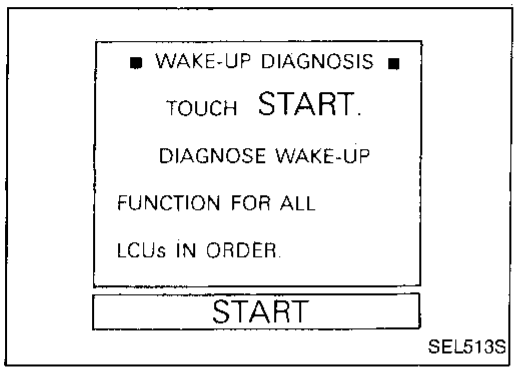


If any problem code is displayed, repair/replace the system according to the IVMS communication diagnosis results. (Refer to EL-172.)

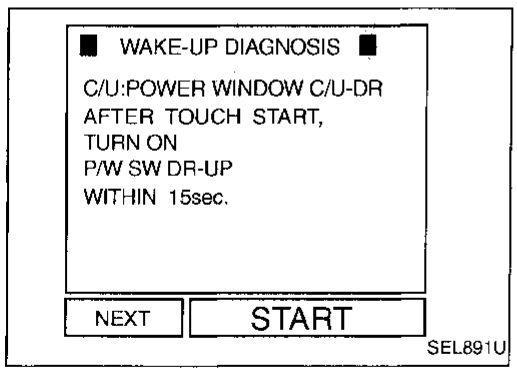
4. Erase the diagnostic results memory.
a. Turn ignition switch "ON".
b. Touch "IVMS".
c. Touch "IVMS COMM DIAGNOSIS" in "IVMS-COMM CHECK".
d. Touch "START" for "IVMS COMM DIAGNOSIS".
e. Touch "ERASE".

CONSULT (Cont'd)

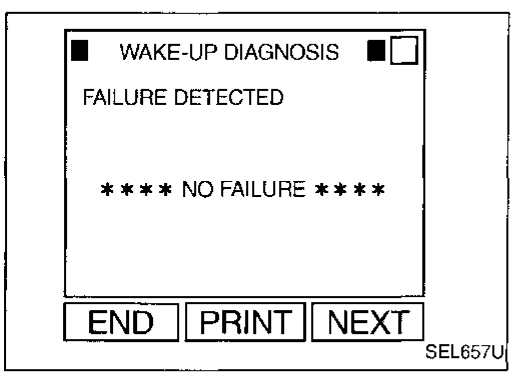
WAKE-UP DIAGNOSIS



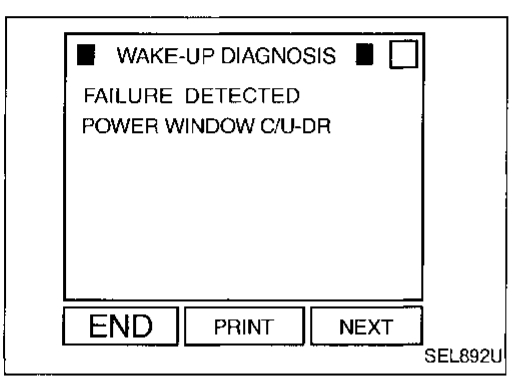
1. Touch "WAKE-UP DIAGNOSIS" in "IVMS-COMM CHECK".
2. Touch "START" for "WAKE-UP DIAGNOSIS".



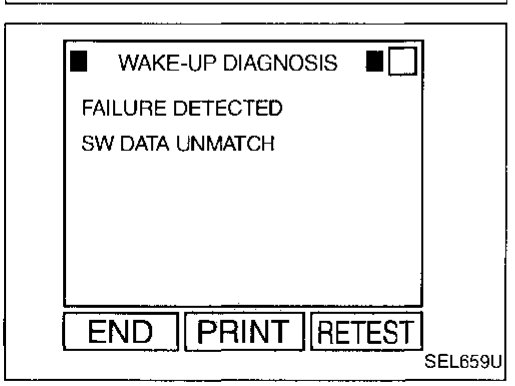
3. After touching "START", turn ON switch designated on CONSULT display within 15 seconds.



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-170) 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-184) 2. Check connector connection of LCU in question. 3. Check ground circuit of the LCU in question. (EL-185) 4. Check open circuit in the data line between BCM and LCU in question. (EL-186) 5. Replace LCU.*
		POWER WINDOW C/U-AS [NO RESPONSE]	35		
		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-184) 2. Check connector connection of LCU in question. 3. Check open circuit in the data line between BCM and LCU in question. (EL-186)
	All	BCM/HARNESS [COMM LINE]	25, 35, 42, 45 and 55	1. Short circuit in the data line 2. Poor connection at BCM connector 3. Open circuit in the data line between BCM and all LCUs. 4. Malfunctioning BCM 5. Short circuit in the data line of LCU internal circuit	1. Short circuit in the data line between BCM and any LCU. (EL-186) 2. Check connector connection of BCM. 3. Check open circuit in the data line between BCM and all LCUs. (EL-186) 4. Replace BCM.* 5. Disconnect each LCUs one by one to check whether the other LCUs operate properly.

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

NOTE: When CONSULT indicates [PAST COMM FAIL] or [PAST NO RESPONSE], erase the memory and perform communication diagnoses again.
To erase the memory, perform the procedure below.
Erase the memory by CONSULT (refer to EL-170) or turn the ignition to "OFF" position and remove 7.5A fuse (No. 56, located in the fuse and fusible link box).

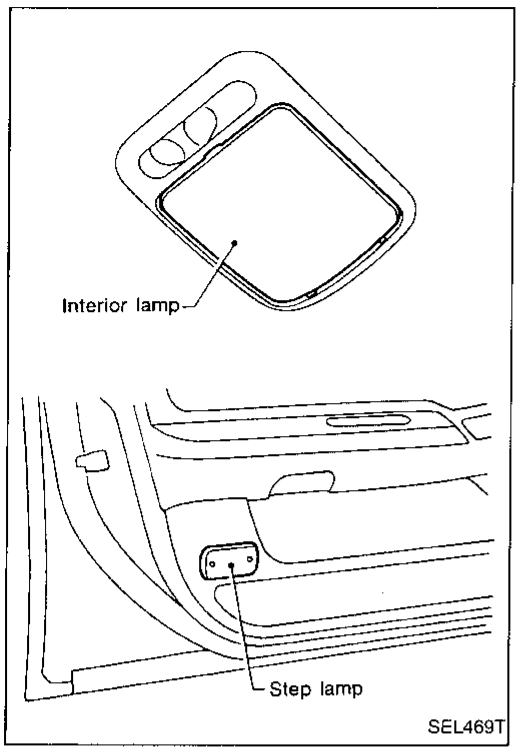
CONSULT (Cont'd)

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



On-board Diagnosis

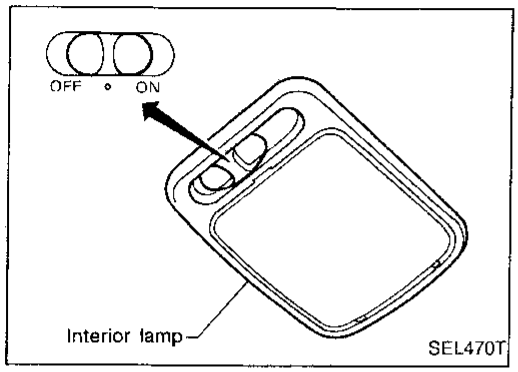
ON-BOARD DIAGNOSTIC RESULTS INDICATOR LAMP

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

ON-BOARD DIAGNOSTIC FUNCTION

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

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



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".

↓

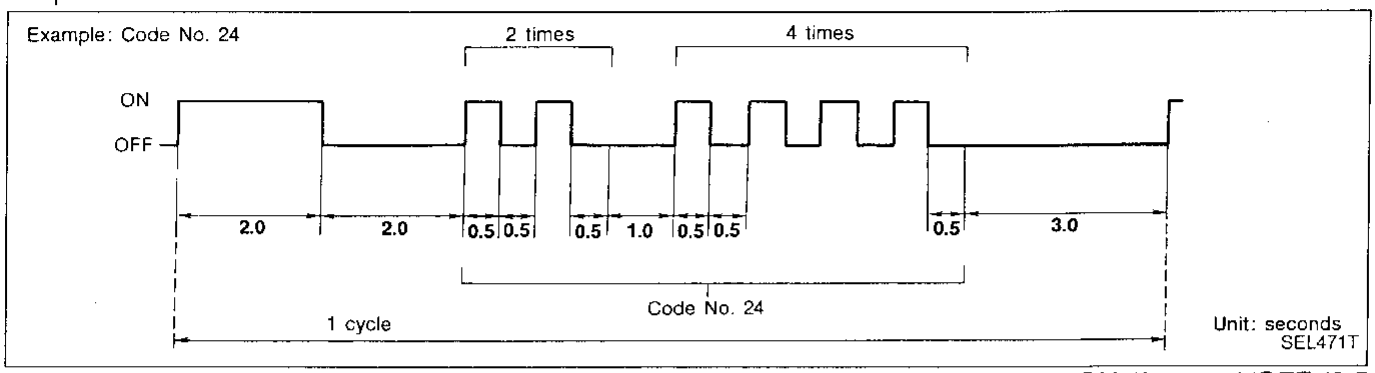
DIAGNOSIS END*

*: 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

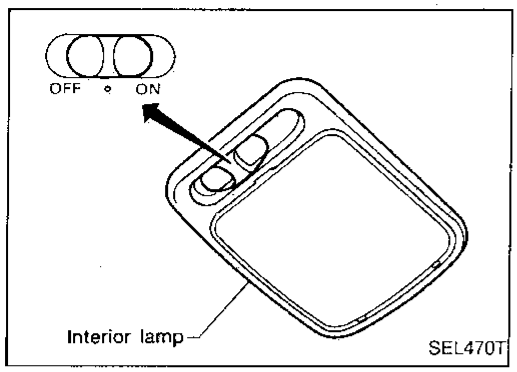
In this mode, a malfunction code is indicated by the number of flashes from the front map lamps and step lamps as shown below:



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



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".

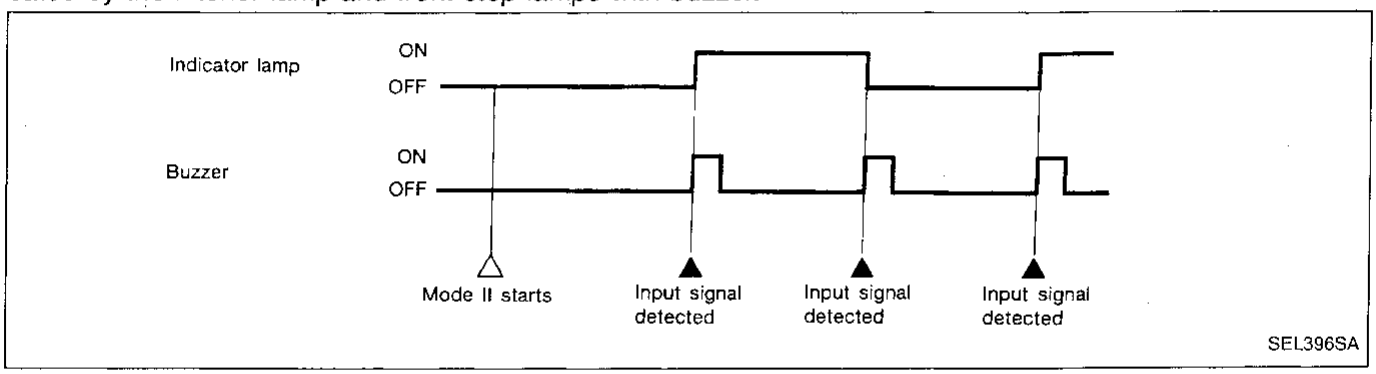
↓

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.



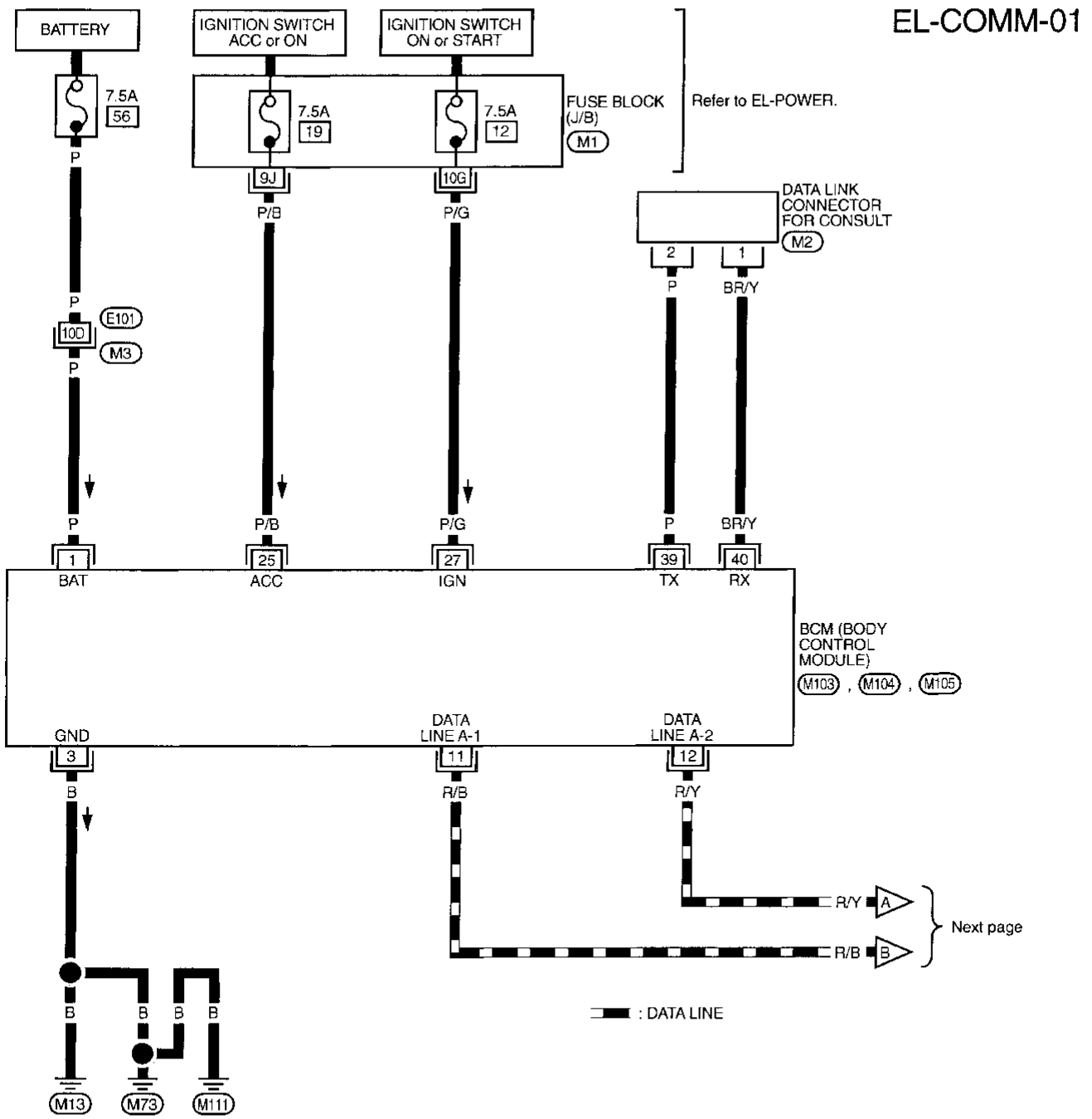
SWITCH MONITOR ITEM

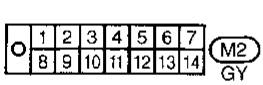
BCM	• Hood switch • Trunk room lamp switch • Trunk lid key cylinder switch (UNLOCK) • Lighting switch (1st) • Rear window defogger switch • Wiper switch (INT) • Wiper switch (WASH) • Door switch (driver side) • Door switch (passenger side) • Door switches (all doors) • Seat belt buckle switch • Trunk lid key cylinder tamper switch
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)

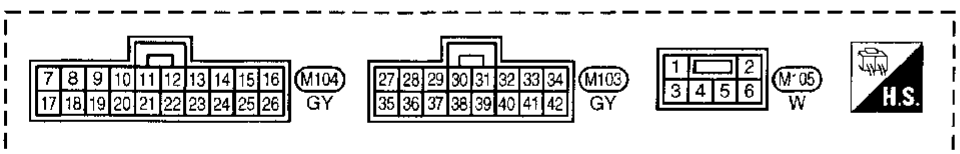
LCU 02	• Door key cylinder switch (LOCK/UNLOCK) • Door unlock sensor • Passenger power window sub-switch (UP/DOWN)	
LCU 03	• Door unlock sensor • Power window sub-switch (Rear RH) (UP/DOWN)	
LCU 04	• Door unlock sensor • Power window sub-switch (Rear LH) (UP/DOWN)	
LCU 05	• Door lock button • Door unlock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

Wiring Diagram — COMM —

POWER SUPPLY, GROUND AND COMMUNICATION CIRCUITS







Refer to last page (Foldout page).

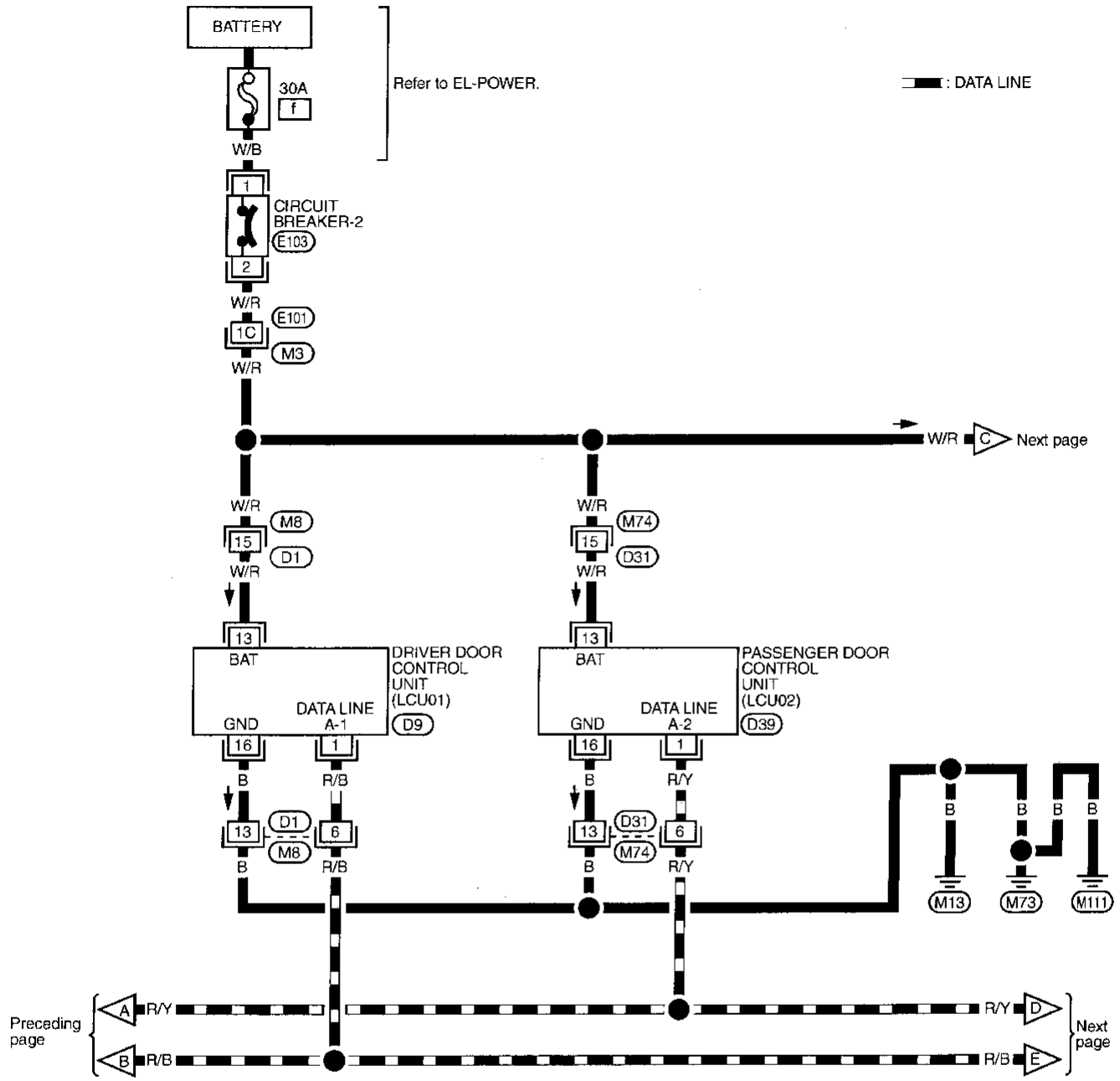
M1

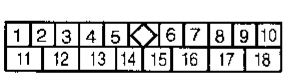
M3, E101

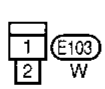
MEL899H

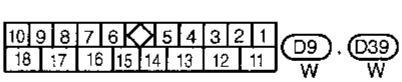
Wiring Diagram — COMM — (Cont'd)

EL-COMM-02







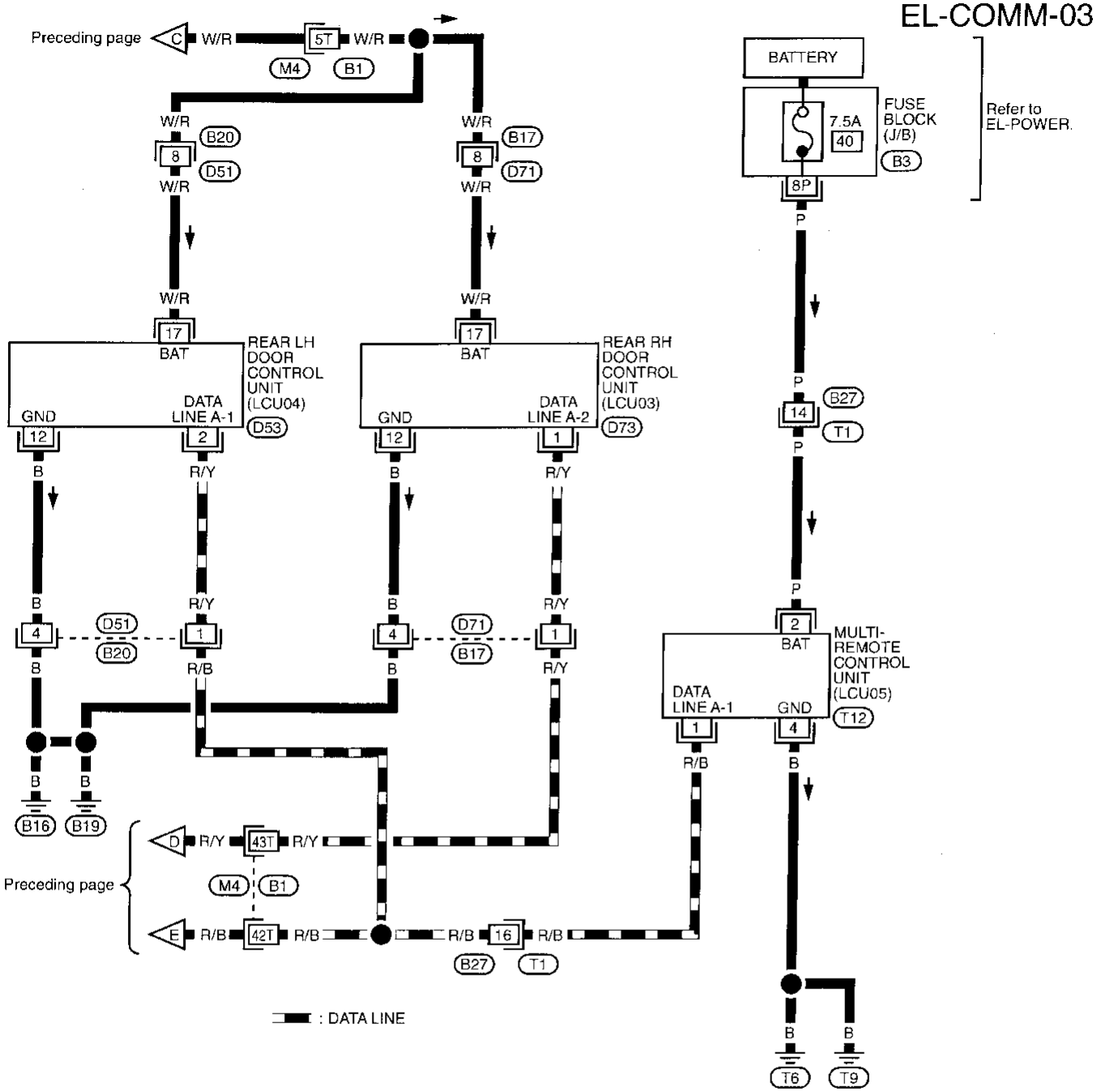


Refer to last page (Foldout page).
M3 , E101

MEL900H

Wiring Diagram — COMM — (Cont'd)

EL-COMM-03



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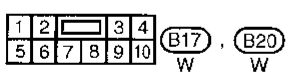
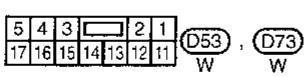
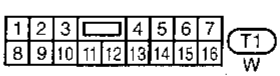
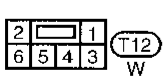
M4 , B1





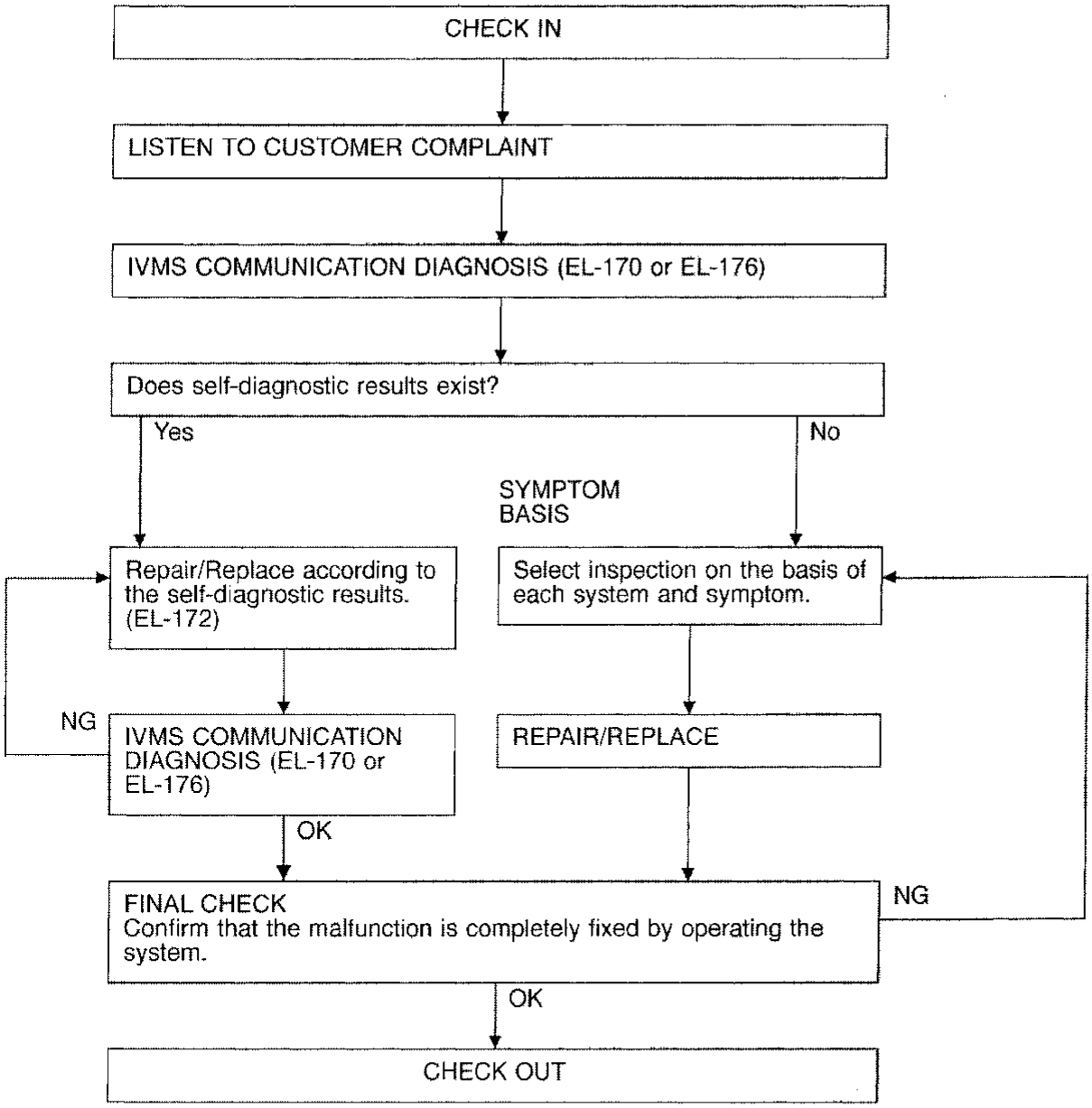




MEL901H

Trouble Diagnoses

WORK FLOW

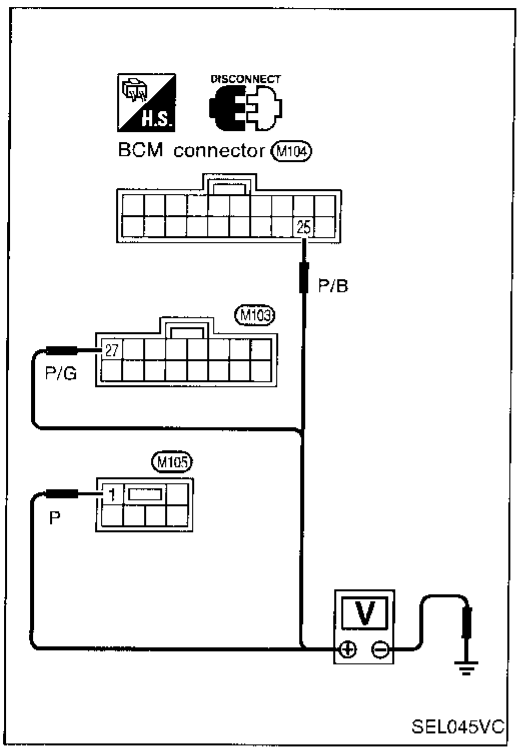


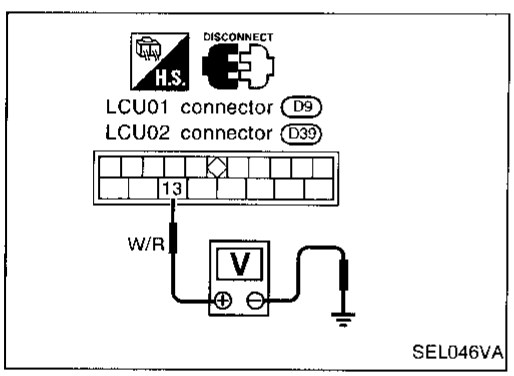
NOTICE:

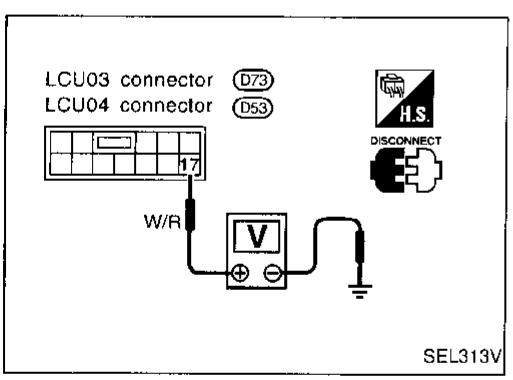
- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with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

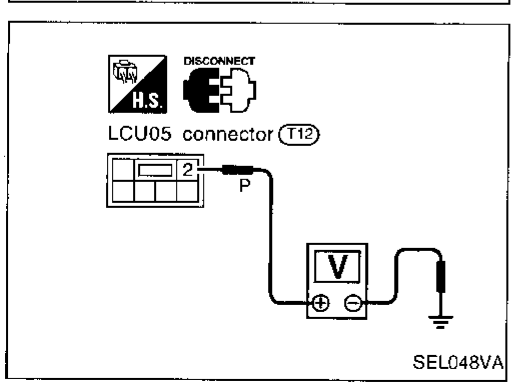
Trouble Diagnoses (Cont'd)

POWER SUPPLY CIRCUIT CHECK







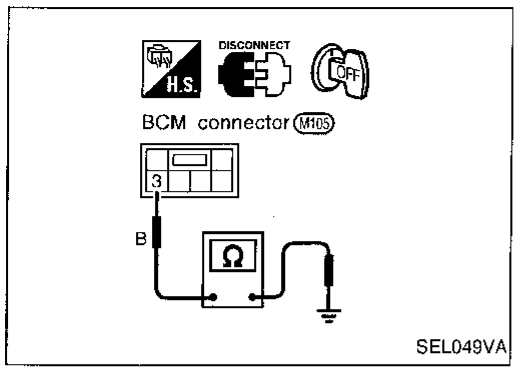


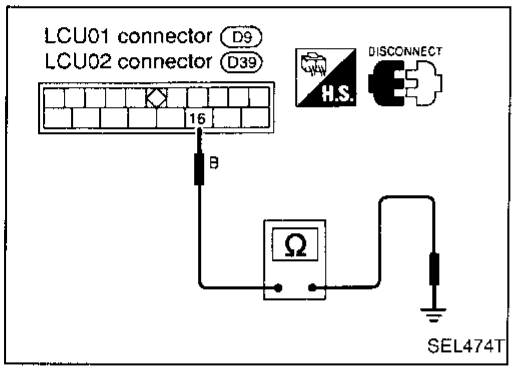
Control unit	Terminals		Ignition switch position		
	⊕	⊖	OFF	ACC	ON
BCM	①	Ground	Battery voltage		
	㉕	Ground	Approx. 0V	Battery voltage	
	㉗	Ground	Approx. 0V		Battery voltage
LCU01 and LCU02	⑬	Ground	Battery voltage		
LCU03 and LCU04	⑰	Ground	Battery voltage		
LCU05	②	Ground	Battery voltage		

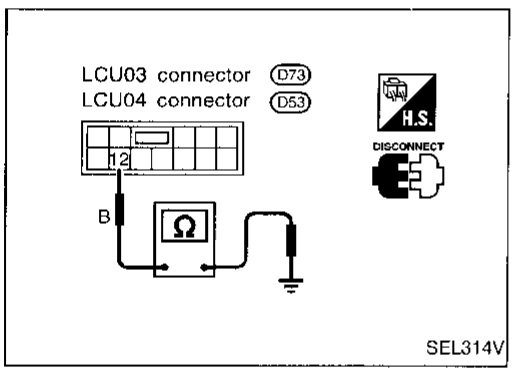
*CONSULT (data monitor) may be used to check for the ignition switch input (ACC, ON).

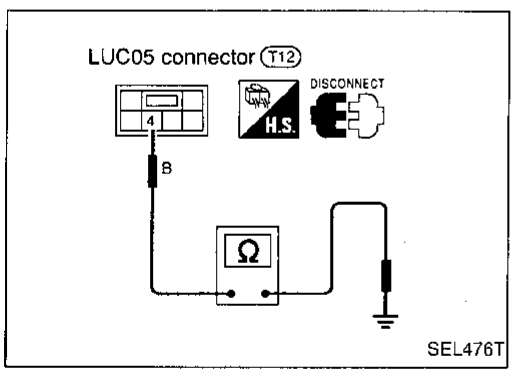
Trouble Diagnoses (Cont'd)

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)

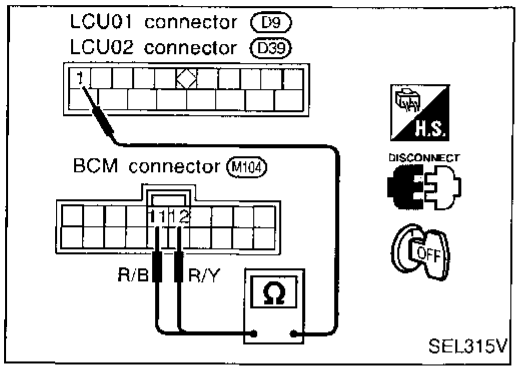
DATA LINES CIRCUIT CHECK

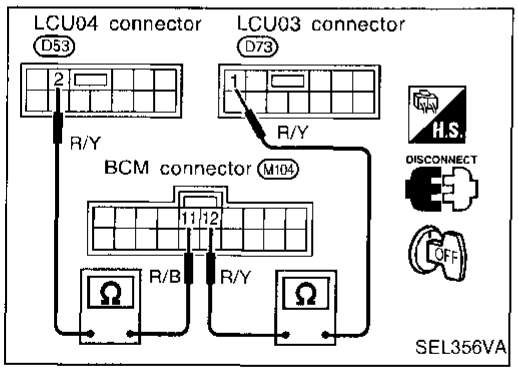
Data lines open circuit check

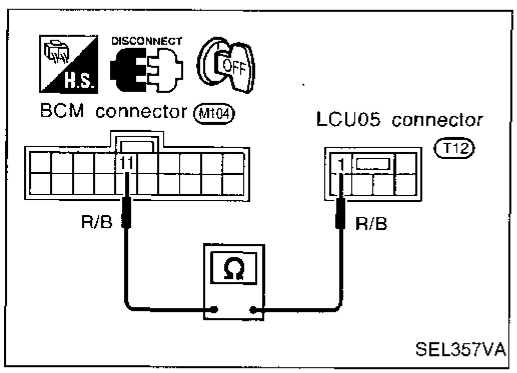
NOTE: When checking data line circuit, disconnect BCM and all LCU connectors.

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	



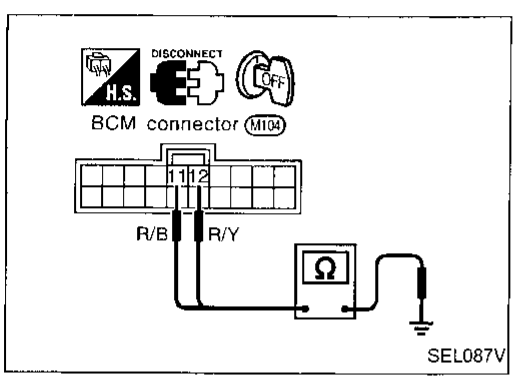




Data lines short circuit check

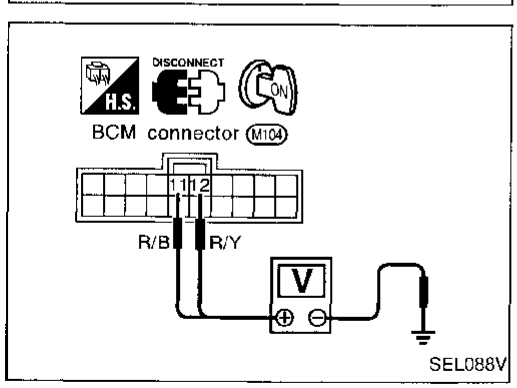
1. Disconnect BCM and all LCU connectors.
2. Check continuity between BCM terminal and body ground.

Terminals	Continuity
⑪ - Ground	No
⑫ - Ground	

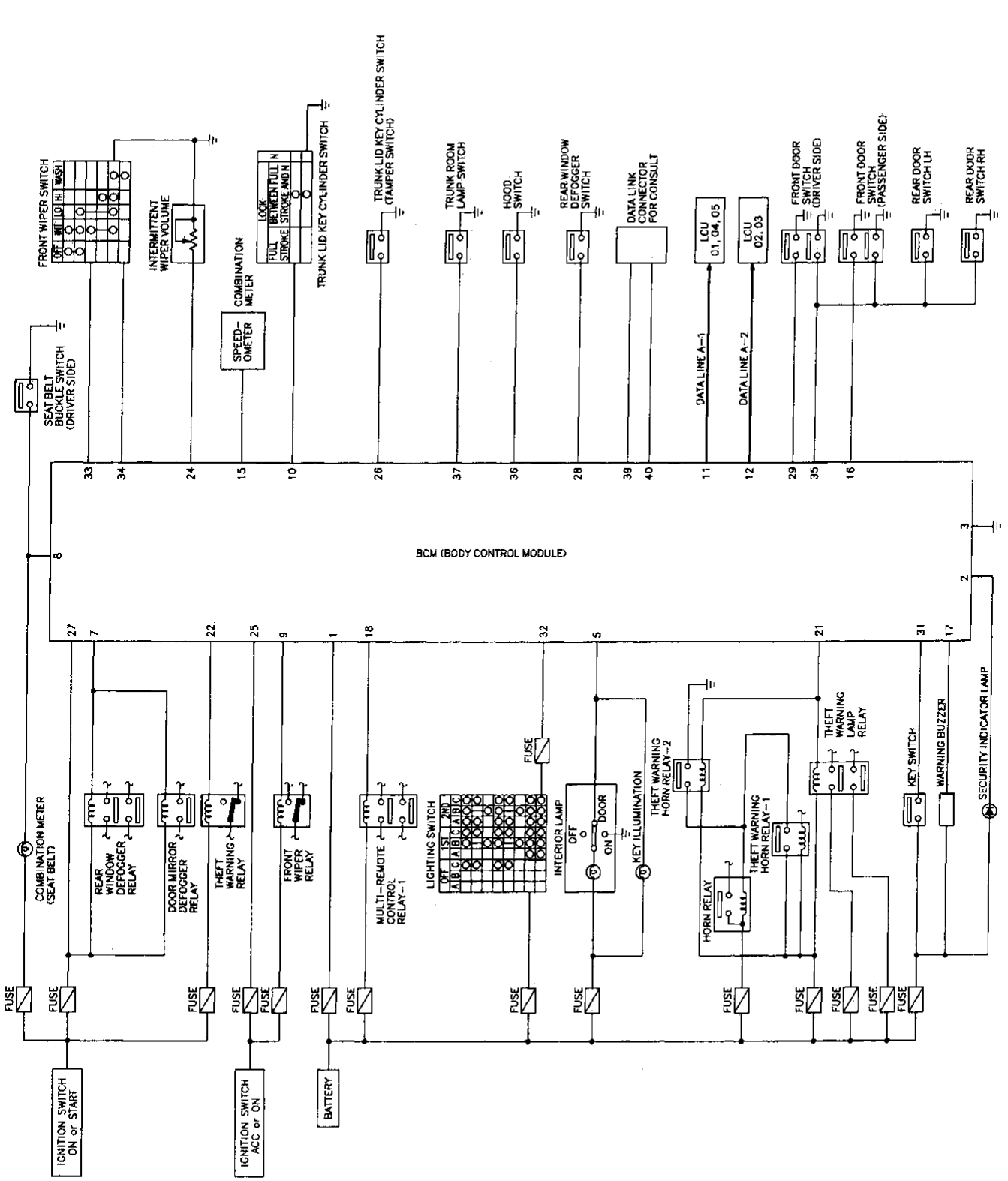


3. Check voltage between BCM terminal and body ground.

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



Schematic



MEL898H

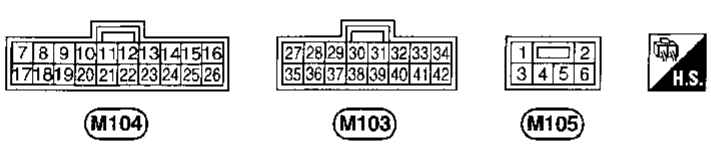
Input/Output Operation Signal

Terminal No.	Connections	INPUT (I)/ OUTPUT (O)	Operated condition		Voltage (V) (Approximate values)
1	Power source	—	—		12
2	Security indicator lamp	O	Theft warning control	Illuminated	0
				Turned off	12
3	Ground	—	—		—
5	Interior lamp/Ignition key hole illumination	O	ON (Illuminated)		0
			OFF		12
7	Rear window defogger relay	O	Ignition switch "ON" Time control	ON	0
				OFF	12
8	Seat belt switch	I	Ignition switch "ON"	When the seat belt is fastened	12
				When the seat belt is not fastened	0
9	Front wiper relay	O	Wiper motor intermittent/ washer operation	Operate	0
				Stop	12
10	Trunk lid unlock switch	I	Unlocked (ON)		0
			Neutral (OFF)		5
11	Data line A-1	I/O	—		—
12	Data line A-2	I/O	—		—
15	Vehicle speed pulse	I	Pulse		0 - 5
16	Door switch (Passenger side)	I	ON (Open)		0
			OFF (Closed)		12
17	Warning buzzer	O	ON		0
			OFF		12
18	Multi-remote control relay	O	Hazard lamp	ON	0
				OFF	12
21	Theft warning horn relays and theft warning lamp relay	O	ON		0
			OFF		12
22	Theft warning relay (Starter interrupt)	O	Theft warning control	ON	0
				OFF	12
24	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)

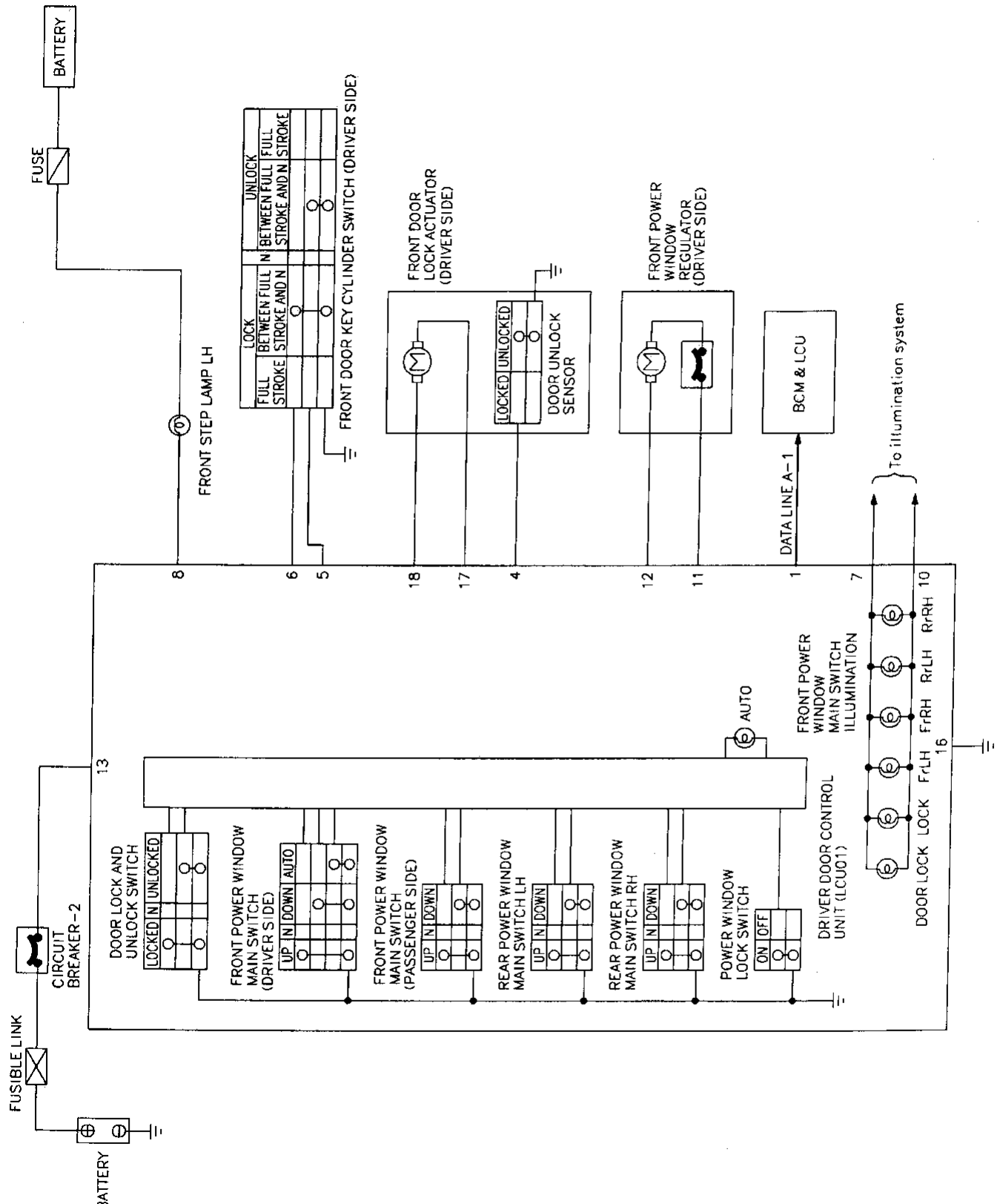
Terminal No.	Connections	INPUT (I)/ OUTPUT (O)	Operated condition		Voltage (V) (Approximate values)
25	Ignition switch (ACC)	I	Ignition switch "ACC"		12
26	Trunk lid key cylinder tamper switch	I	Key cylinder installed		12
			Key cylinder withdrawn		0
27	Ignition switch (ON)	I	Ignition switch "ON"		12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

BCM (BODY CONTROL MODULE)



MEL003H

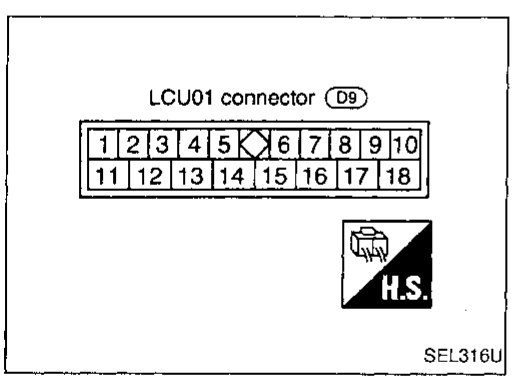
Schematic



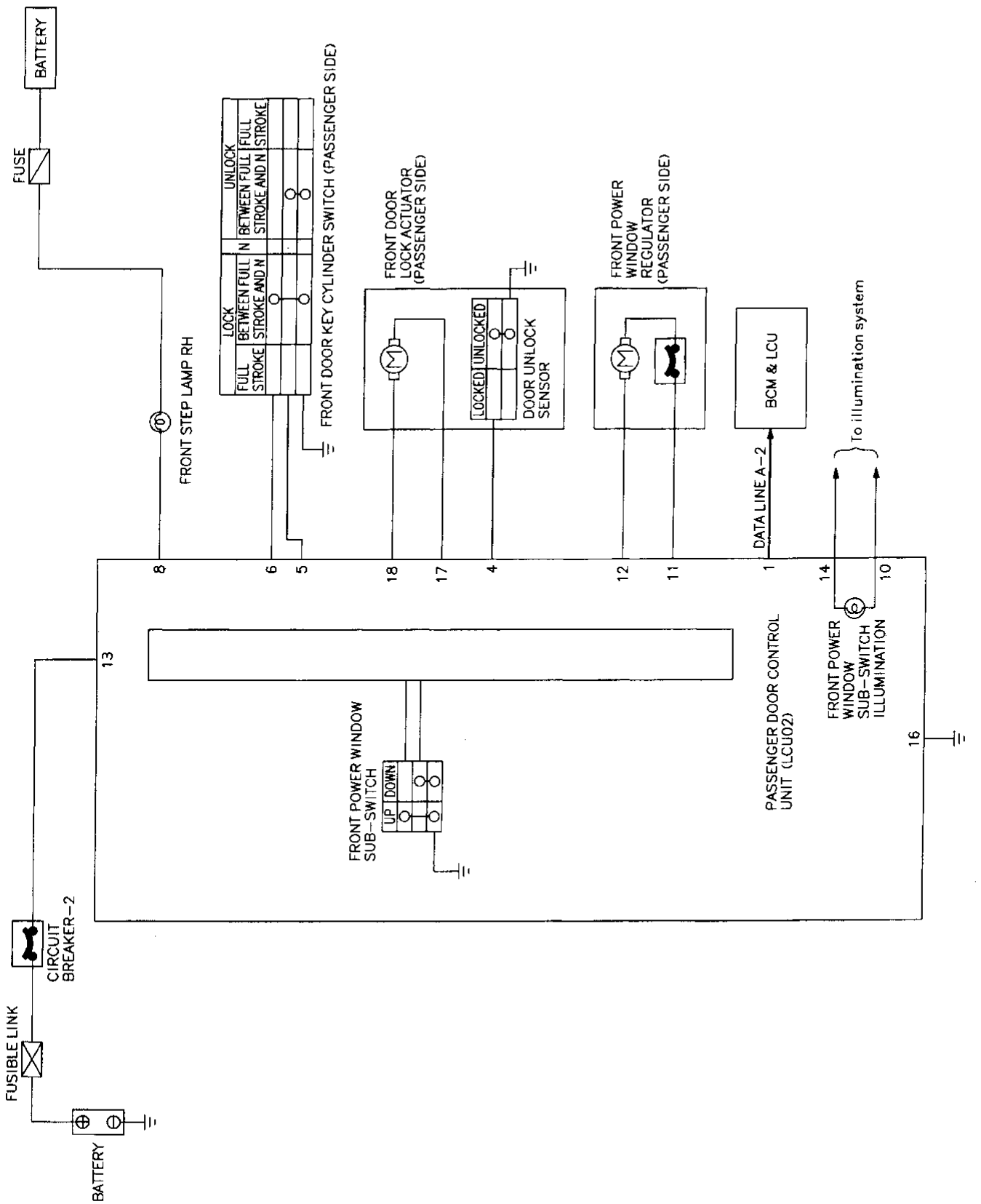
MEL721H

Input/Output Operation Signal

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



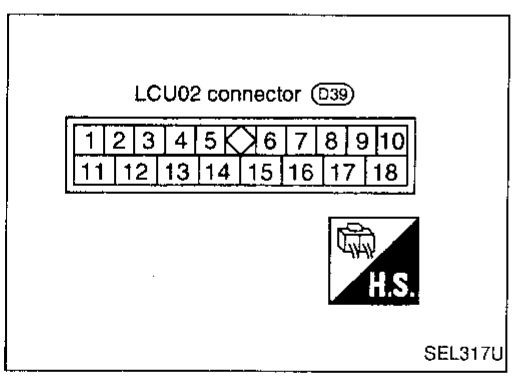
Schematic



MEL912G

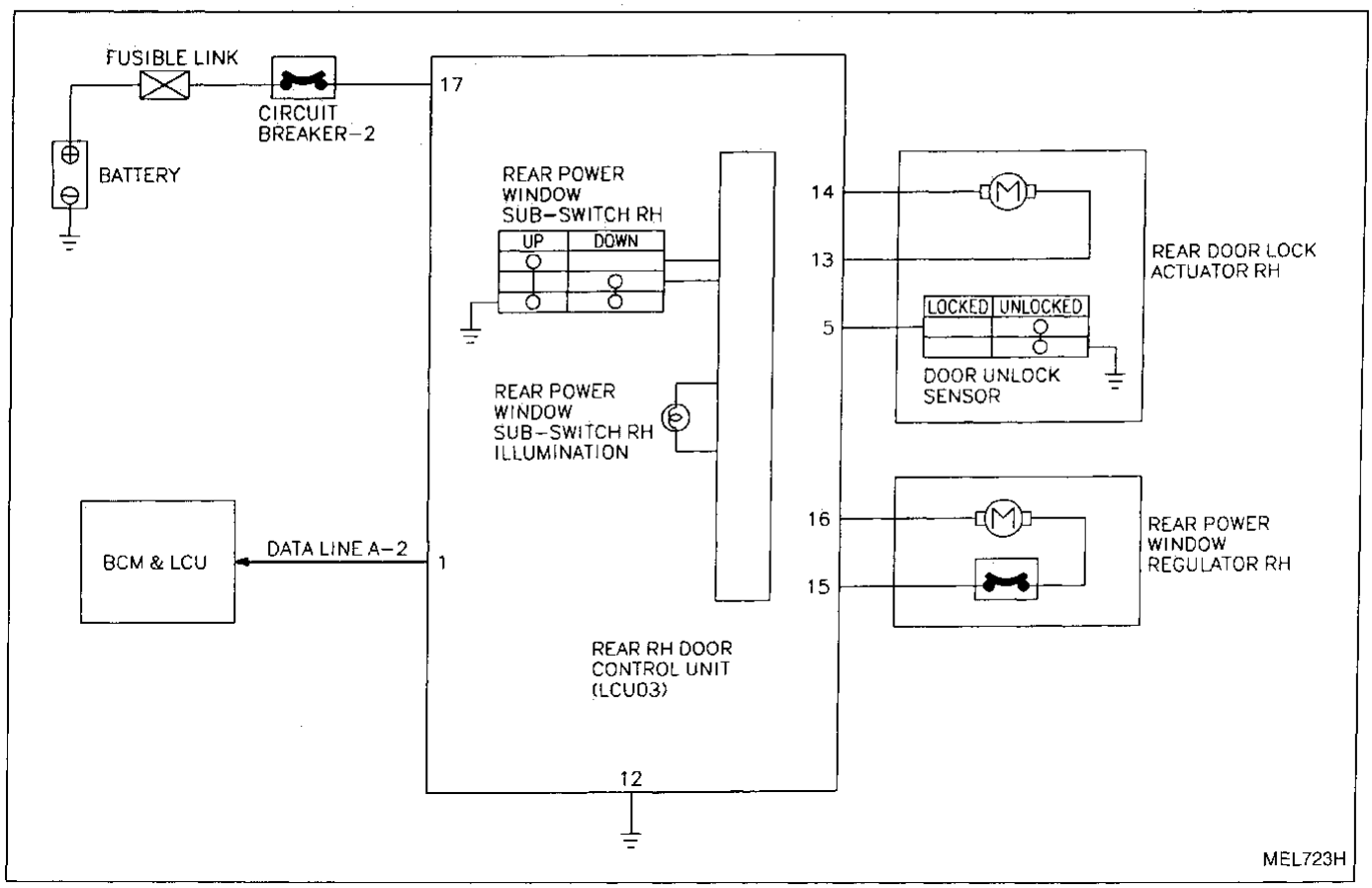
Input/Output Operation Signal

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



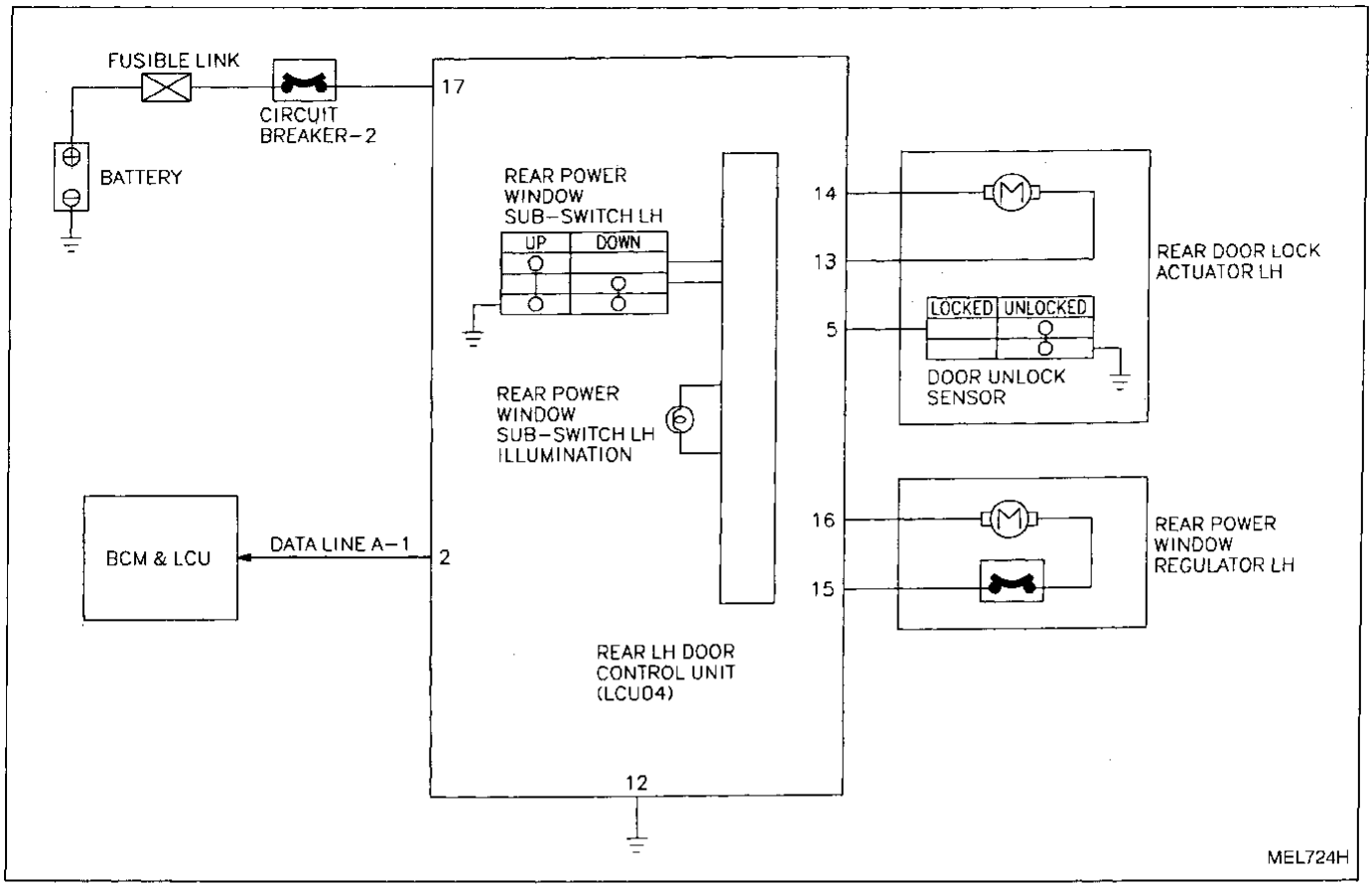
Schematic

REAR RH DOOR CONTROL UNIT (LCU03)



Schematic (Cont'd)

REAR LH DOOR CONTROL UNIT (LCU04)



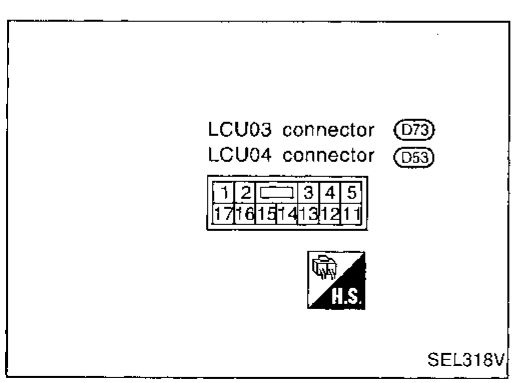
Input/Output Operation Signal

REAR RH DOOR CONTROL UNIT (LCU03)

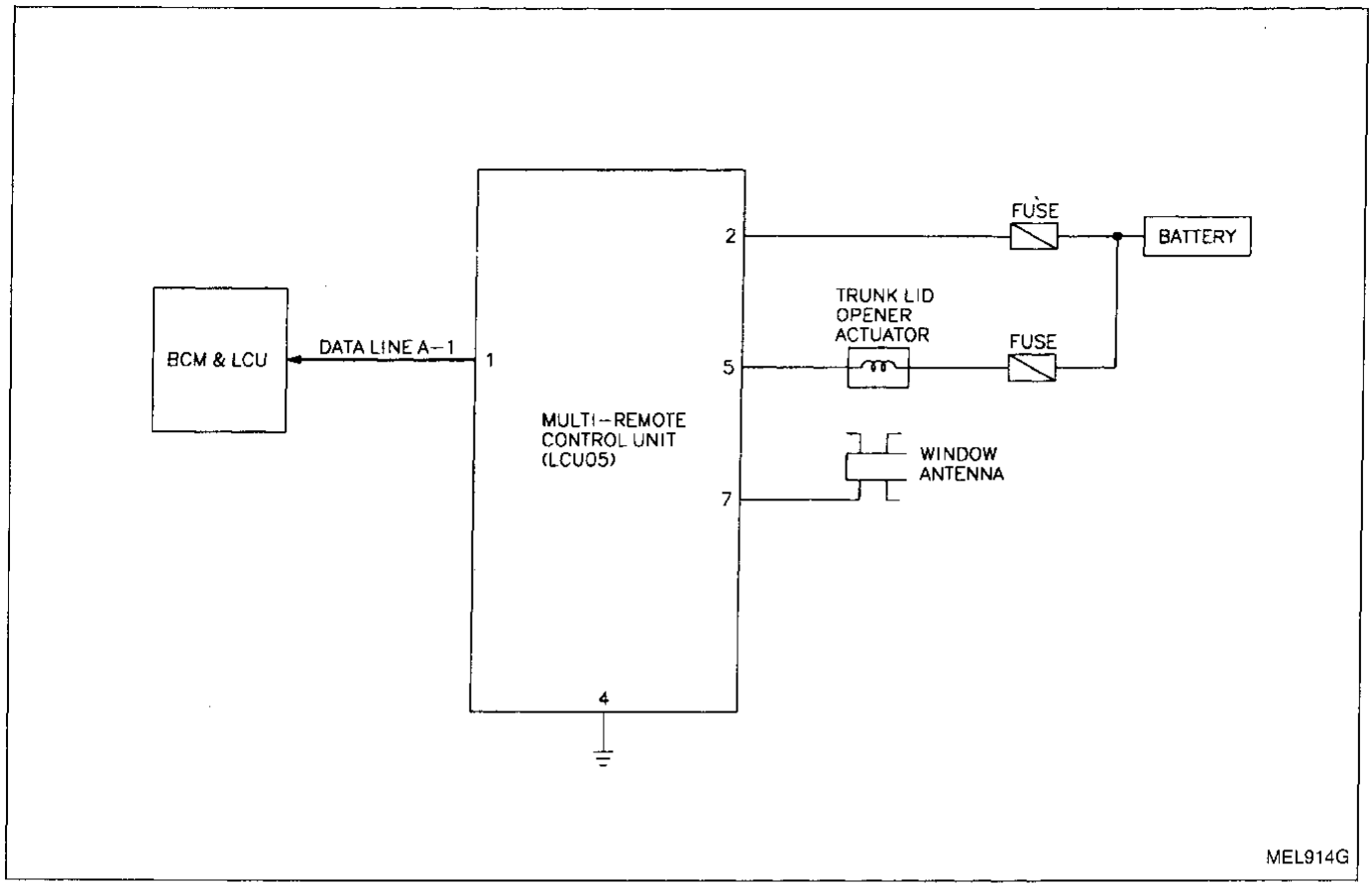
Terminal No.	Connections	INPUT (I)/ OUTPUT (O)	Operated condition		Voltage (V) (Approximate values)
1	Data line A-2	I/O	—		—
5	Door unlock sensor	I	Unlocked (ON)		0
			Locked (OFF)		5
12	Ground	—	—		—
13	Door lock actuator — Lock	O	Door lock & unlock switch	Locked	12
				Free	0
14	Door lock actuator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

REAR LH DOOR CONTROL UNIT (LCU04)

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

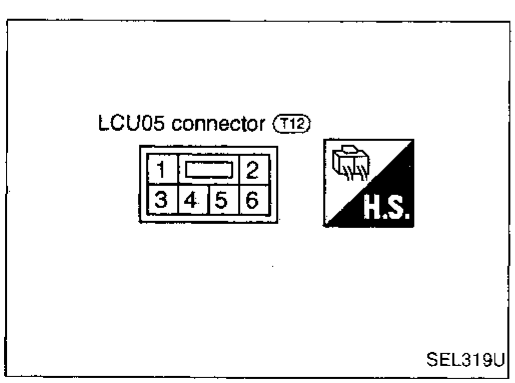


Schematic



Input/Output Operation Signal

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



System Description

OUTLINE

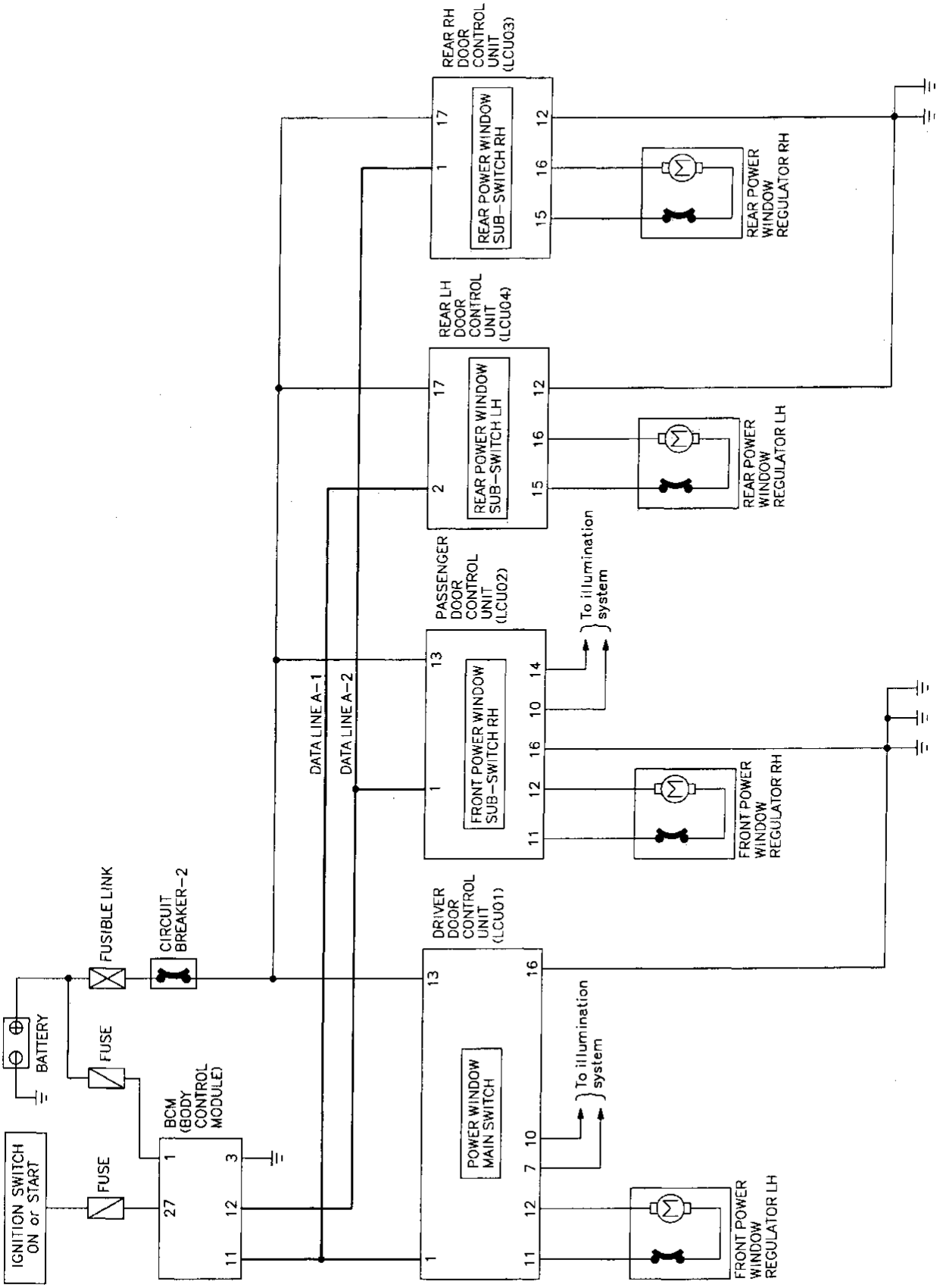
Power window system consists of
- a BCM (Body Control Module)
- four LCUs (Local Control Module)
- four power window regulators

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.

OPERATIVE CONDITION

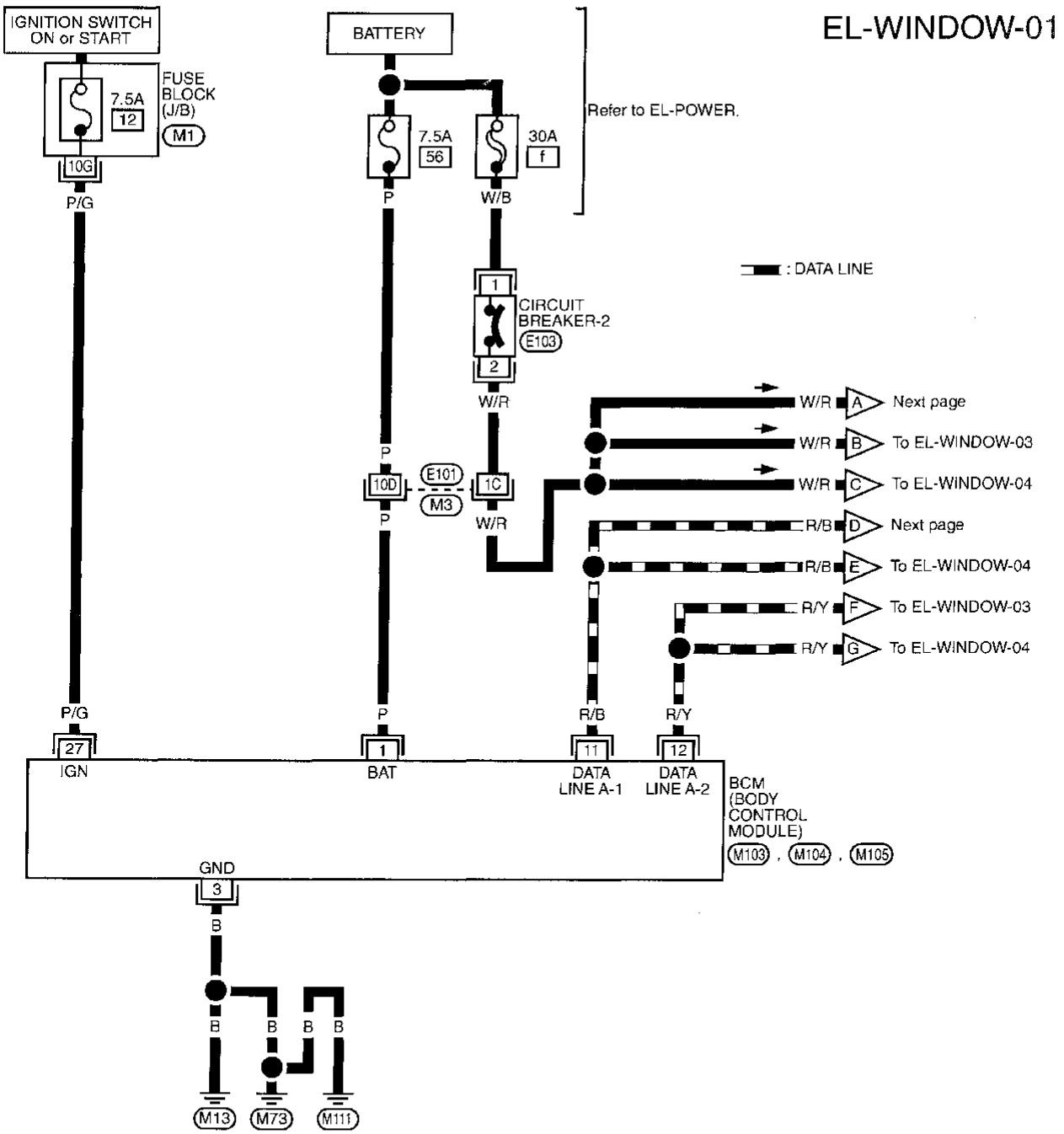
- Power windows can be raised or lowered with each sub-switch or the power window main switch located on the driver's door trim when ignition key is in the "ON" position and power window lock switch on the driver's door trim is unlocked.
- When power window lock switch is locked, no windows can be raised 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.

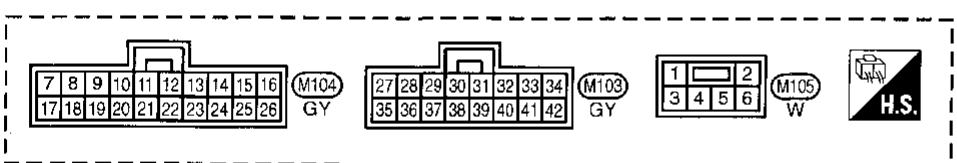
Schematic

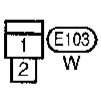


MEL902H

Wiring Diagram — WINDOW —







Refer to last page (Foldout page).

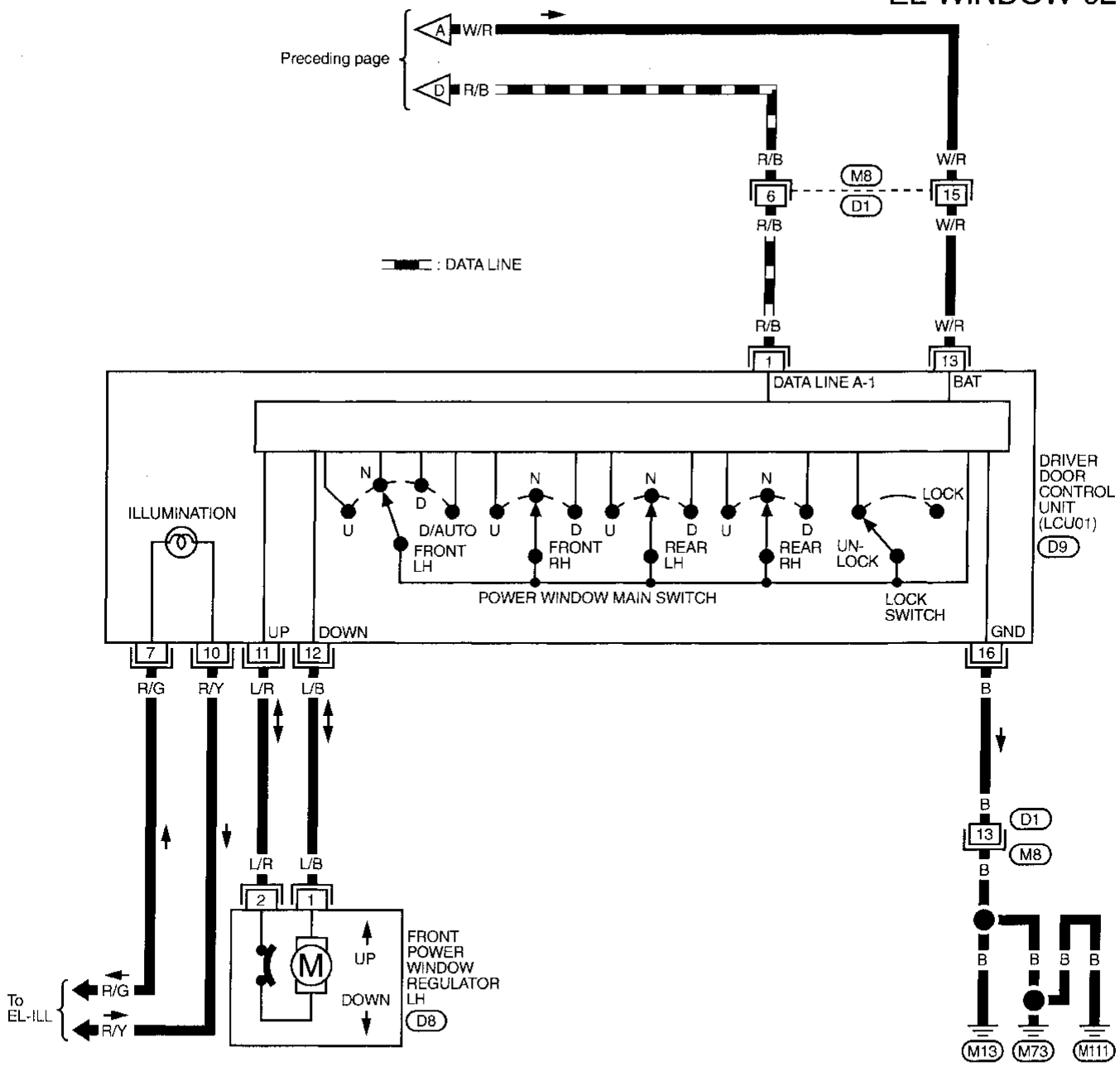
M1

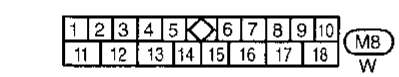
M3 , E101

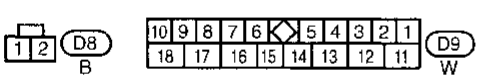
MEL903H

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-02



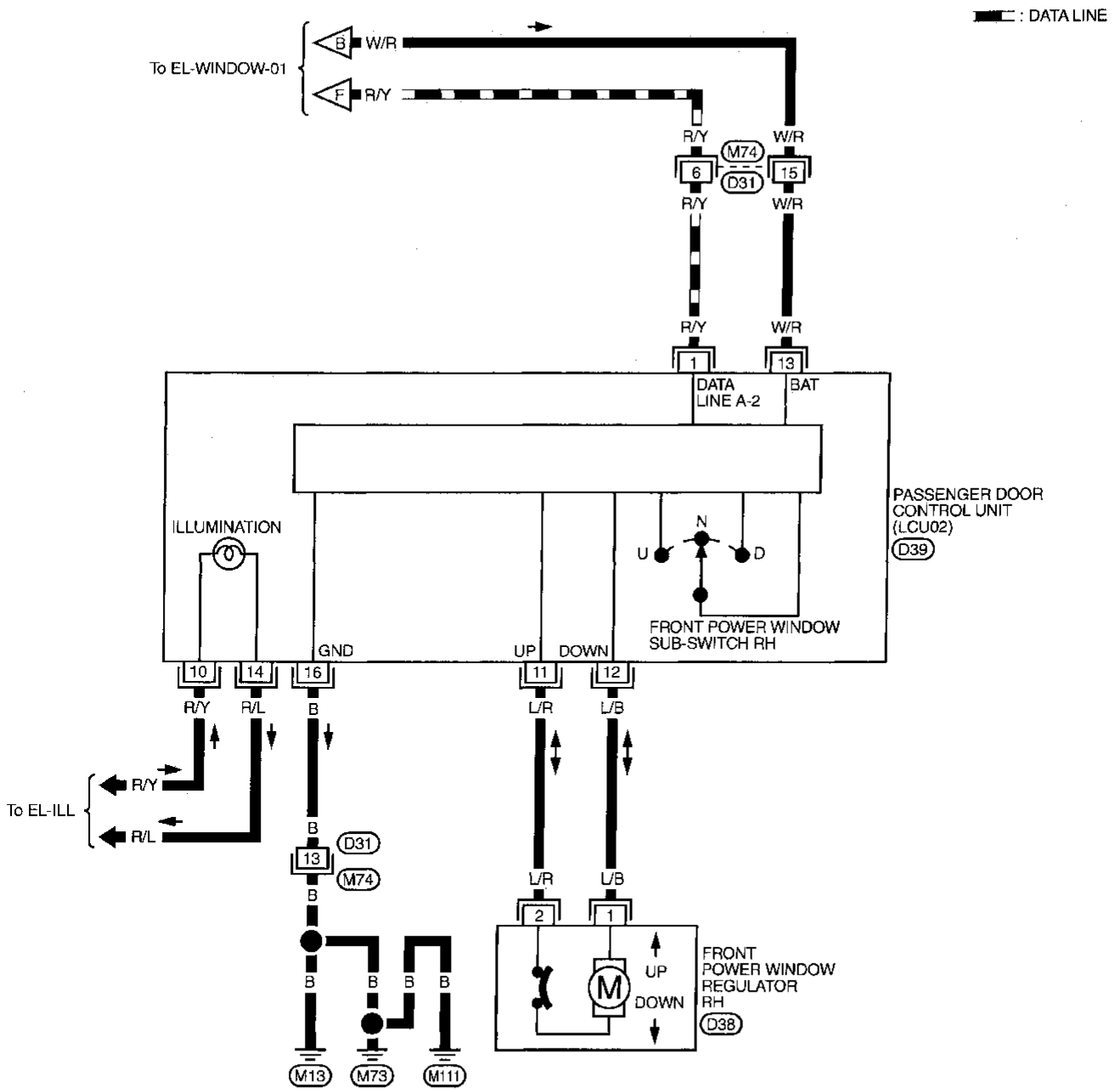


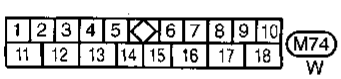


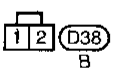
MEL904H

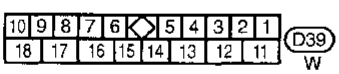
Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-03





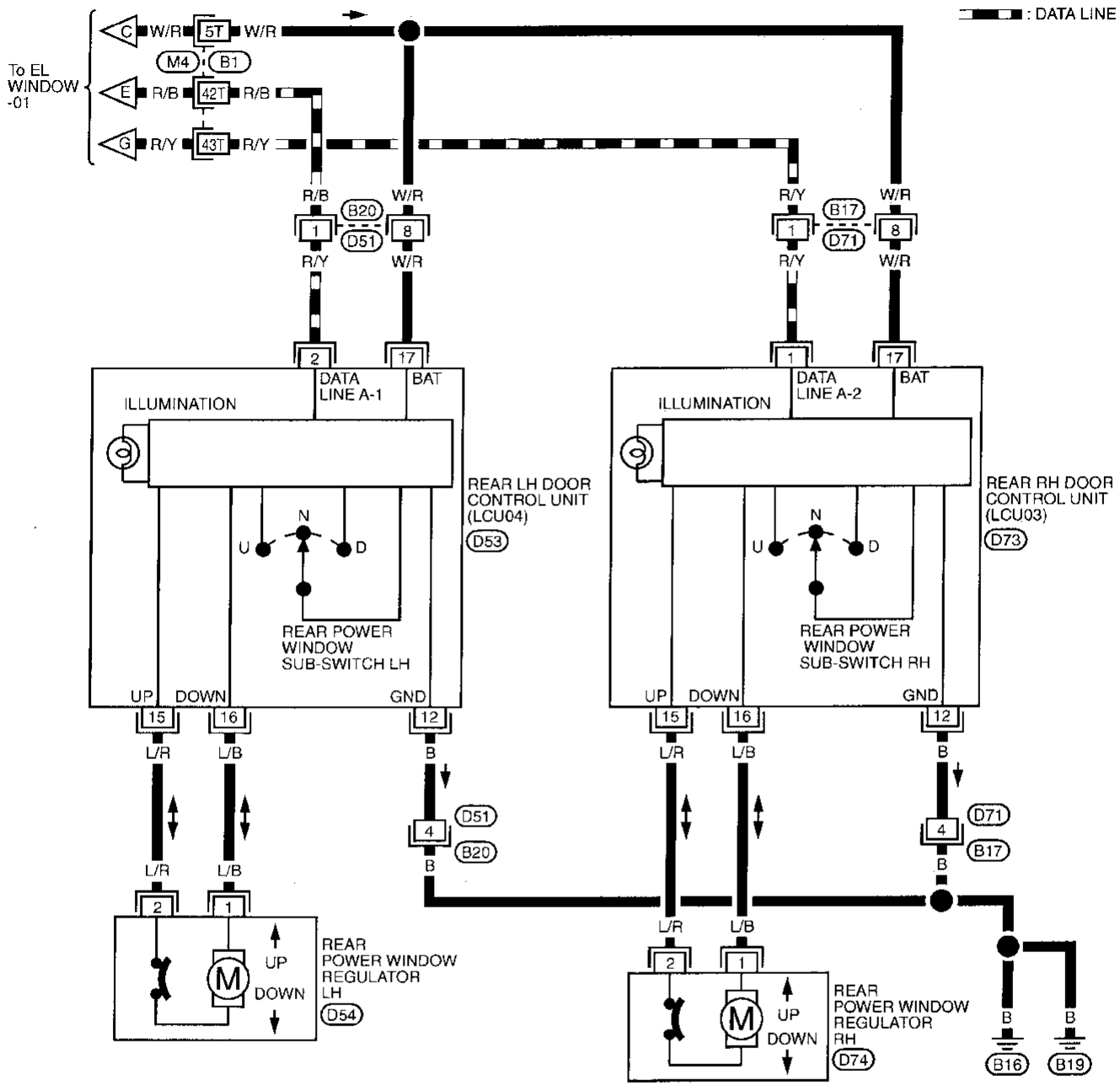




MEL905H

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-04



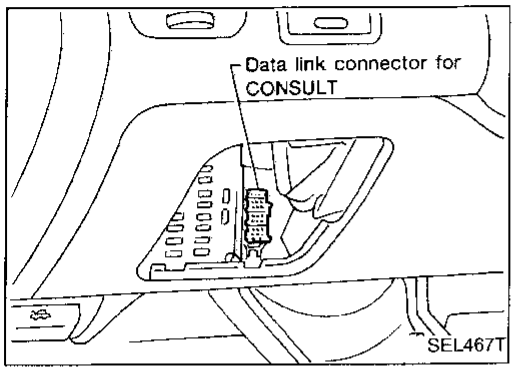
B17 W, B20 W

B53 W, D73 W

D54 B, D74 B

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

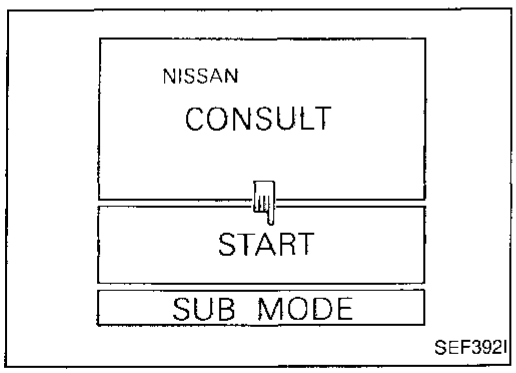
MEL733H



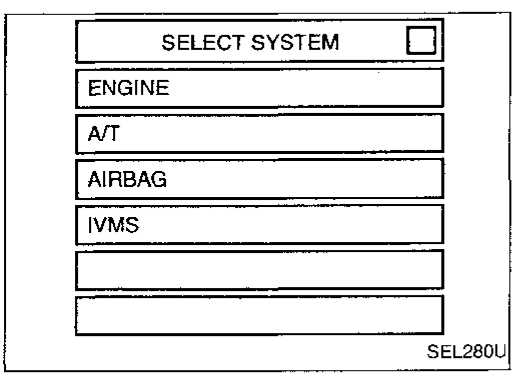
CONSULT

CONSULT INSPECTION PROCEDURE

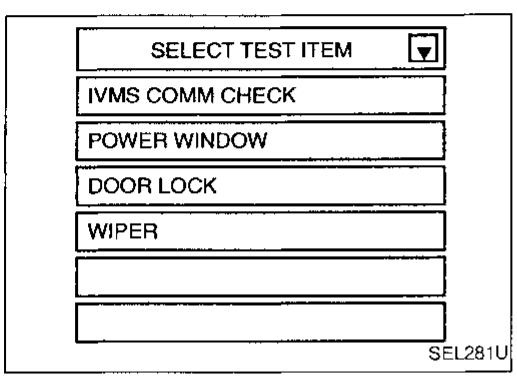
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



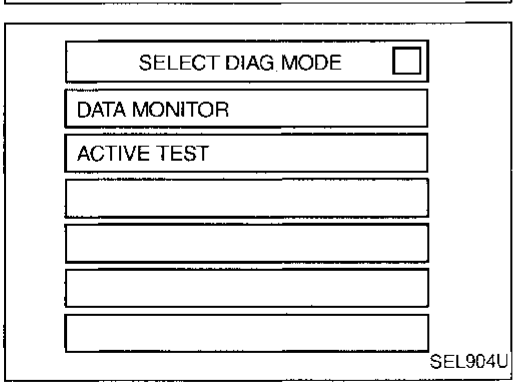
3. Turn ignition switch "ON".
4. Touch "START".



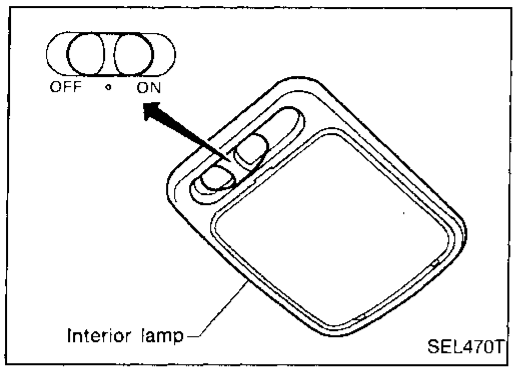
5. Touch "IVMS".



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".

↓

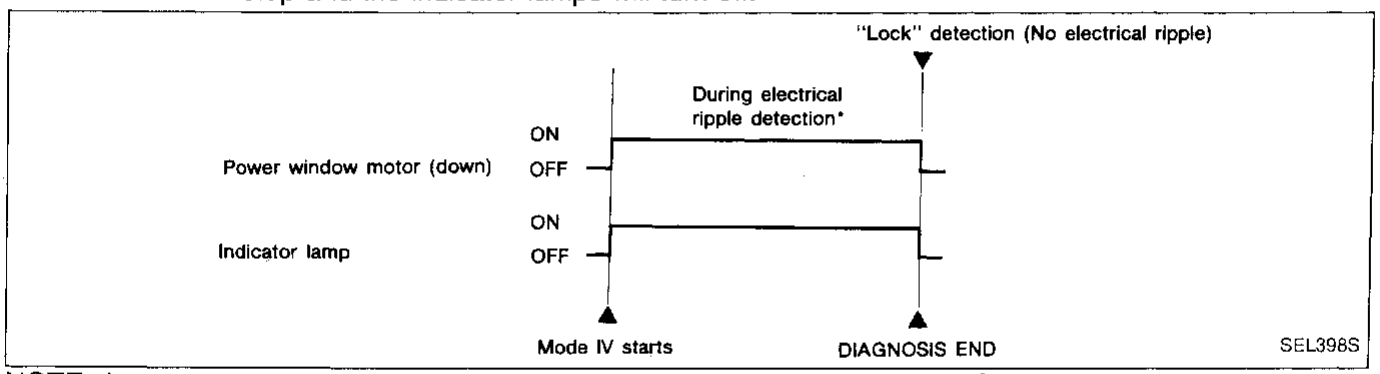
DIAGNOSIS END* (**Be sure to turn off the lighting switch.**)

*: 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.

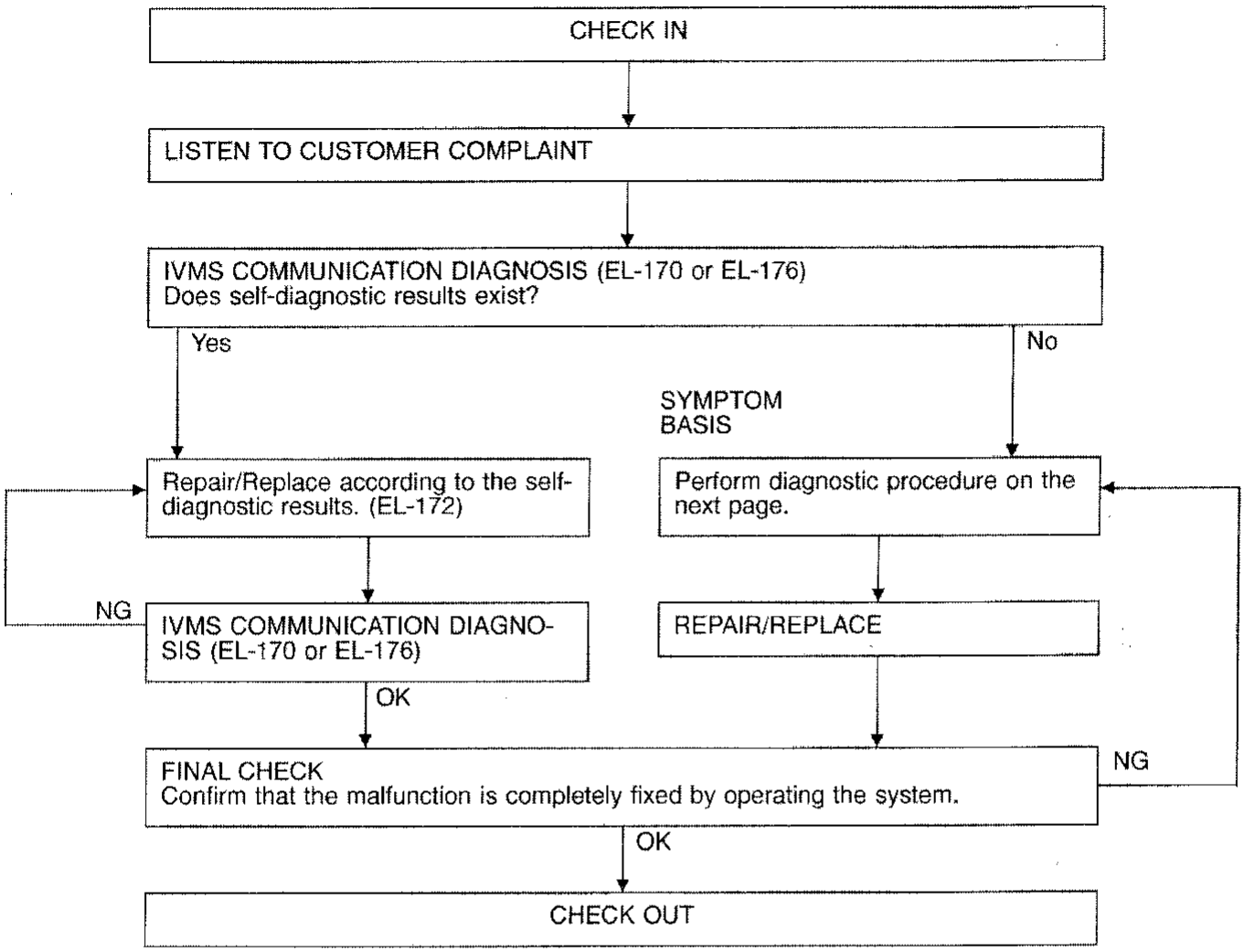


NOTE: As soon as manual switches (each seat's power window switch) turn ON, driver power window motor (DOWN) stops and diagnosis ends.

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

Trouble Diagnoses

WORK FLOW

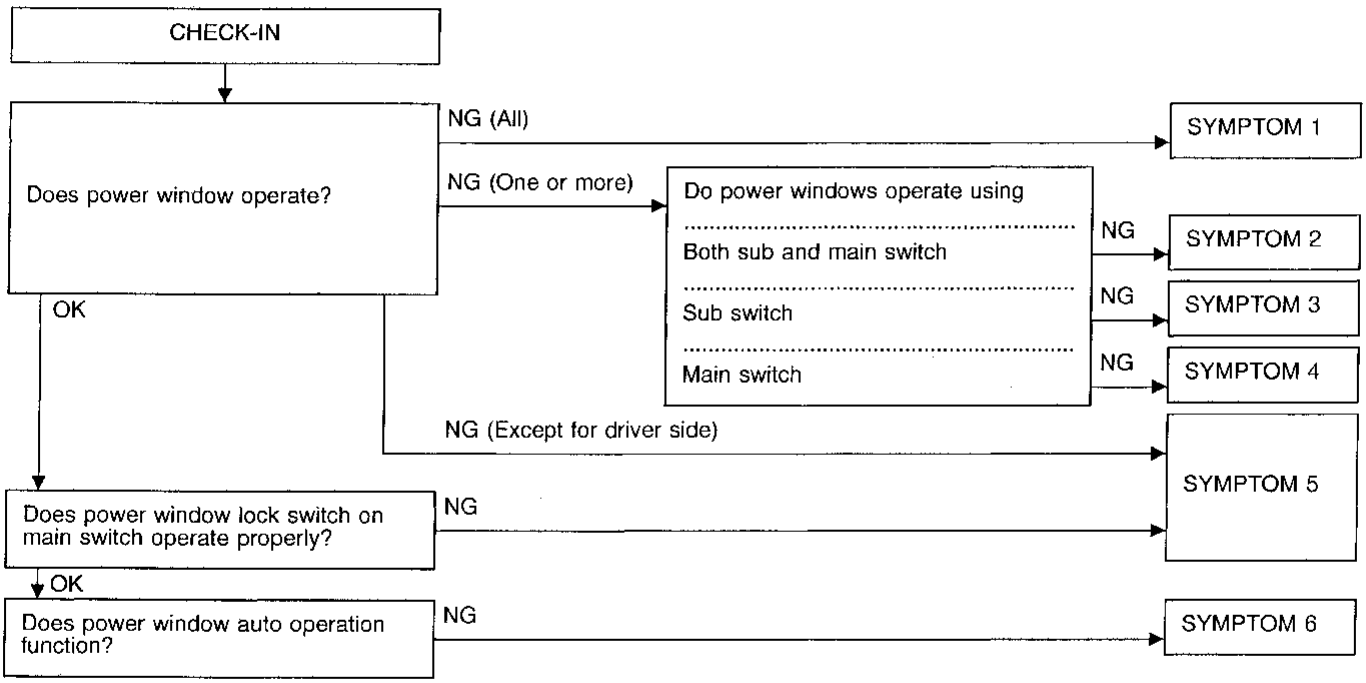


NOTICE:

- **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-170) or turn the ignition switch to "OFF" position and remove 7.5A fuse (No. 56, located in the fuse and fusible link box).

Trouble Diagnoses (Cont'd)

PRELIMINARY CHECK



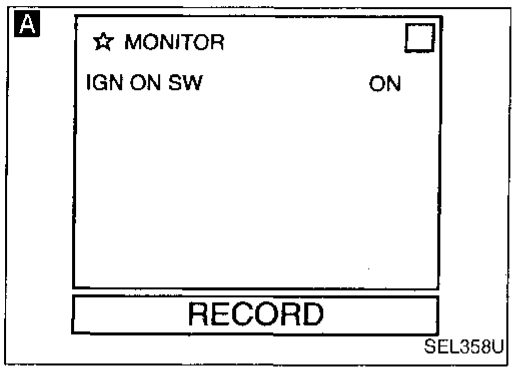
SYMPTOM CHART

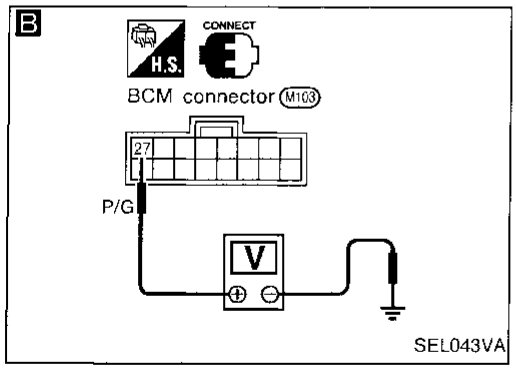
PROCEDURE		Diagnostic procedure					
REFERENCE PAGE		EL-209	EL-209	EL-210	EL-210	EL-211	EL-212
SYMPTOM		Procedure 1 (Ignition switch ON signal check)	Procedure 2 (Power window lock switch check)	Procedure 3 (Power window main switch check)	Procedure 4 (Power window sub-switch check)	Procedure 5 (Power window regulator check)	Procedure 6 (Power window automatic switch check)
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 lock and/or unlock all windows.		X				
6	Driver power window automatic operation does not function.						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

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

OR

B TESTER

Check voltage between BCM terminal ㉗ and ground.

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

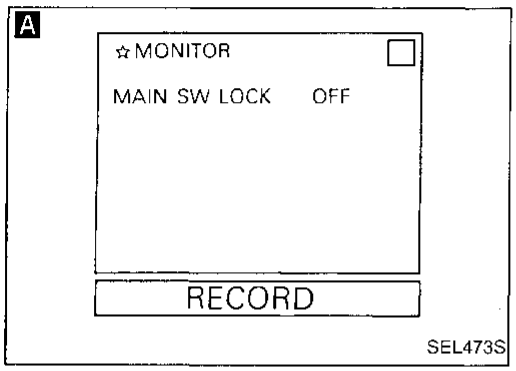
Refer to wiring diagram in EL-200.

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.

NG → Replace LCU01.

OR

ON-BOARD

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

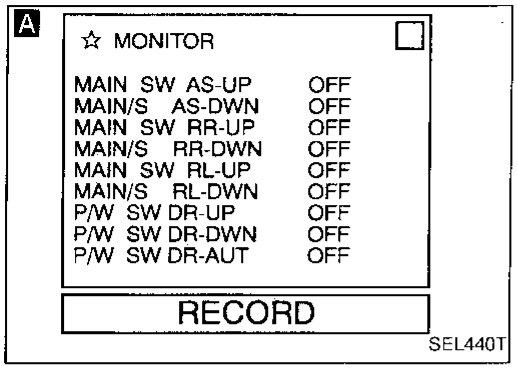
OK ↓

Power window lock switch is OK.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

(Power window main switch check)



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

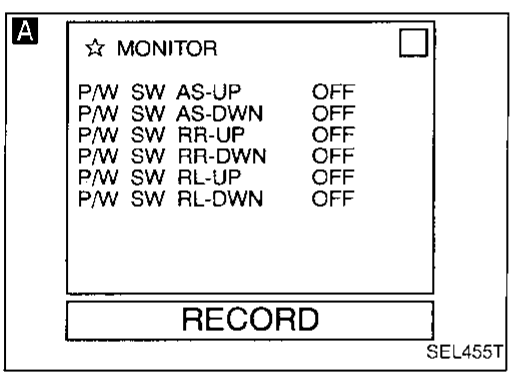
Check power window main switch operation in Switch monitor (Mode II) mode. (Refer to On-board Diagnosis, EL-178.)

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-178.)

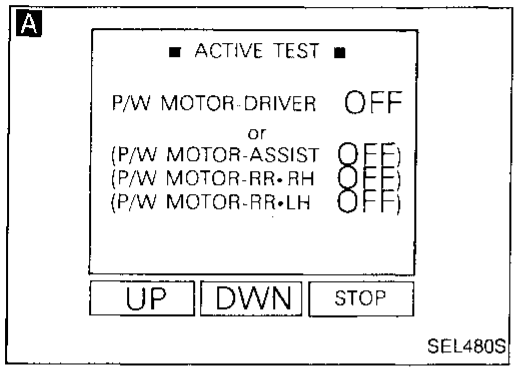
OK ↓

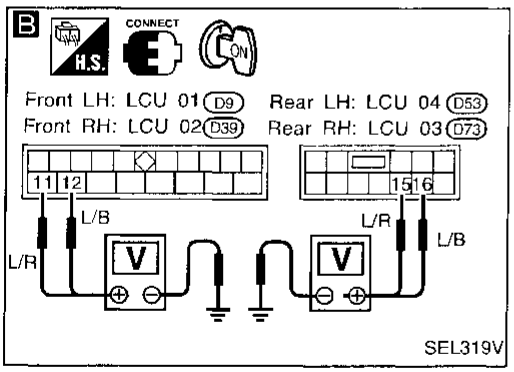
Power window sub-switch is OK.

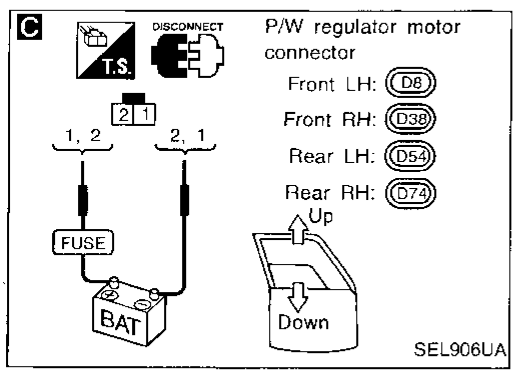
Trouble Diagnoses (Cont'd)

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.

NG → Replace LCU for malfunctioning portion.

Operation		Terminals ⊕	Terminals ⊖	Voltage
Front (LCU01, LCU02)	Down	⑫	Ground	Battery voltage
	Up	⑪	Ground	
Rear (LCU03, LCU04)	Down	⑭	Ground	
	Up	⑮	Ground	

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

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.

NG → Replace power window regulator motor.

Terminals ⊕	Terminals ⊖	Operation
①	②	Downward
②	①	Upward

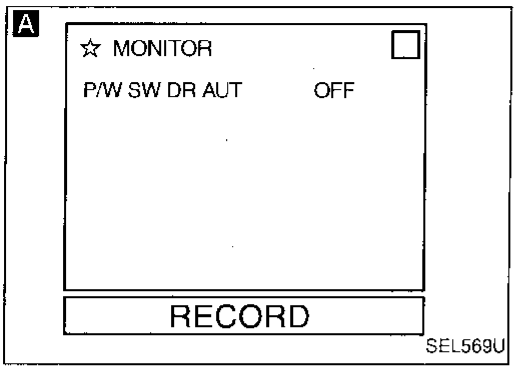
OK ↓

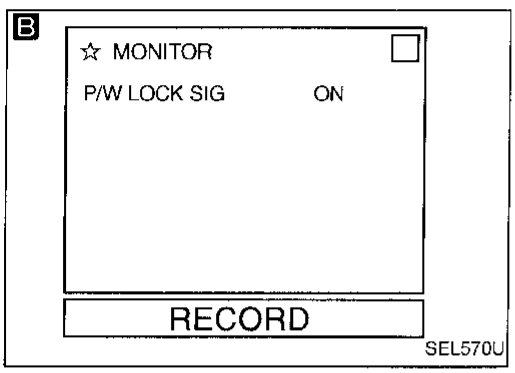
Check harness for open or short between power window switch, and power window regulator motor.

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

(Power window automatic switch check)





CHECK POWER WINDOW AUTO SWITCH INPUT SIGNAL.

A CONSULT

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

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

NG → Replace LCU01.

OR

ON-BOARD

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

OK ↓

CHECK POWER WINDOW LOCK SIGNAL.

B CONSULT

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

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

NG → Replace LCU01.

OR

ON-BOARD

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

OK ↓

Check the system again.

System Description

POWER SUPPLY AND GROUND

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

Power is supplied to BCM terminal 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 M111.

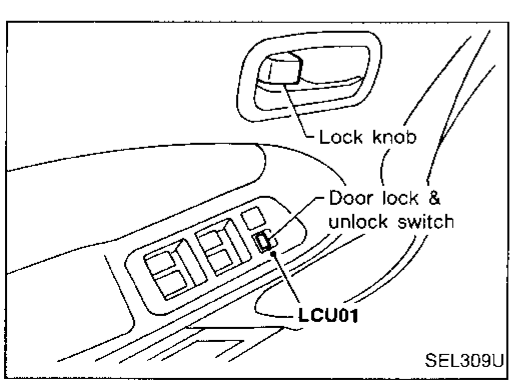
Front RH door key cylinder switch will supply ground to passenger door control unit (LCU02) in the same manner as driver side.
Ground is supplied
- to driver door control unit (LCU01) terminal ④
- from door unlock sensor (in the front LH door lock actuator) terminal ② when door lock is in UNLOCKED position
- through front LH door lock actuator terminal ④ and
- through body grounds M13, M73 and M111.

Front passenger door unlock sensors (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.

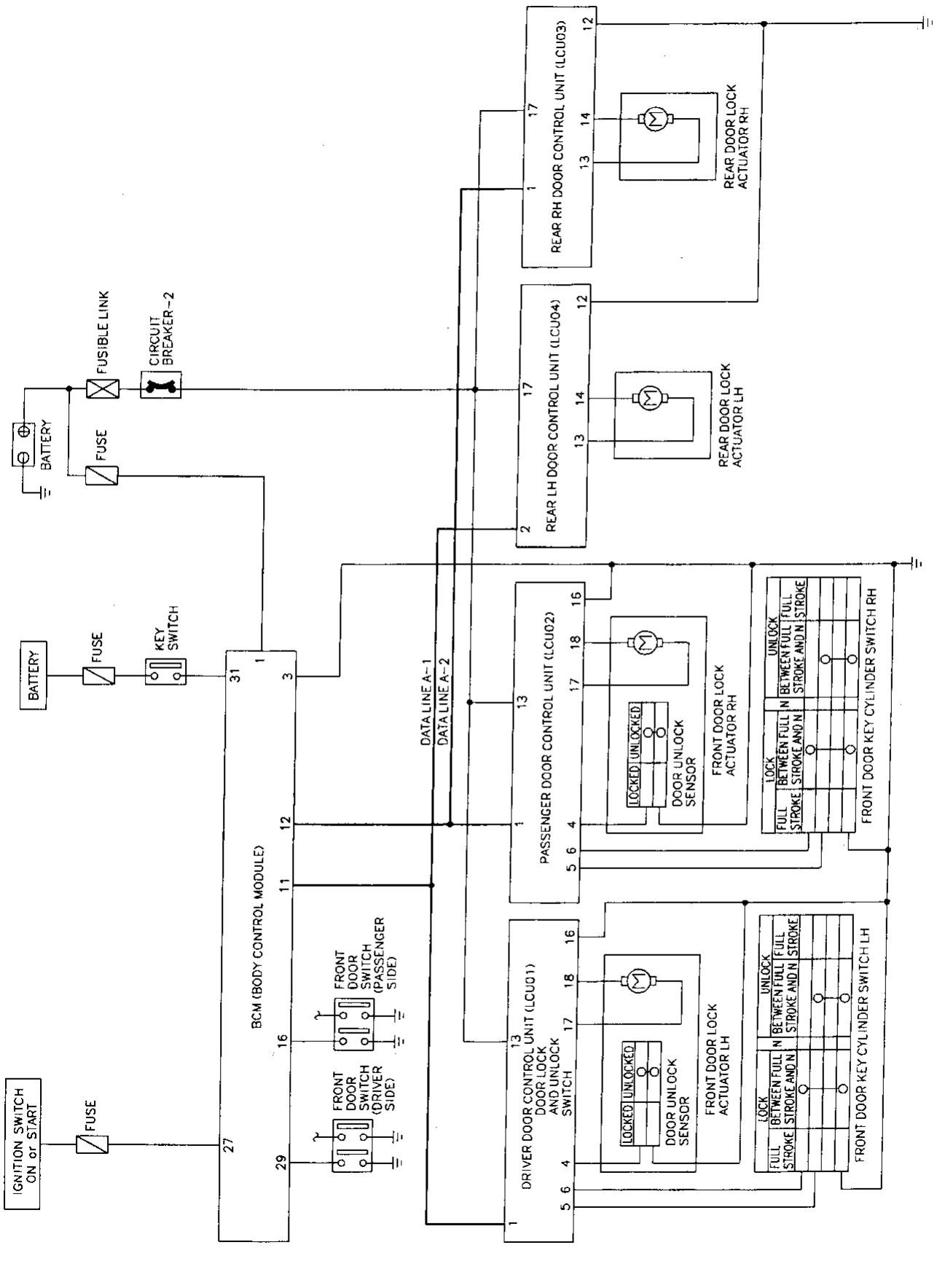
OPERATION

- 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)

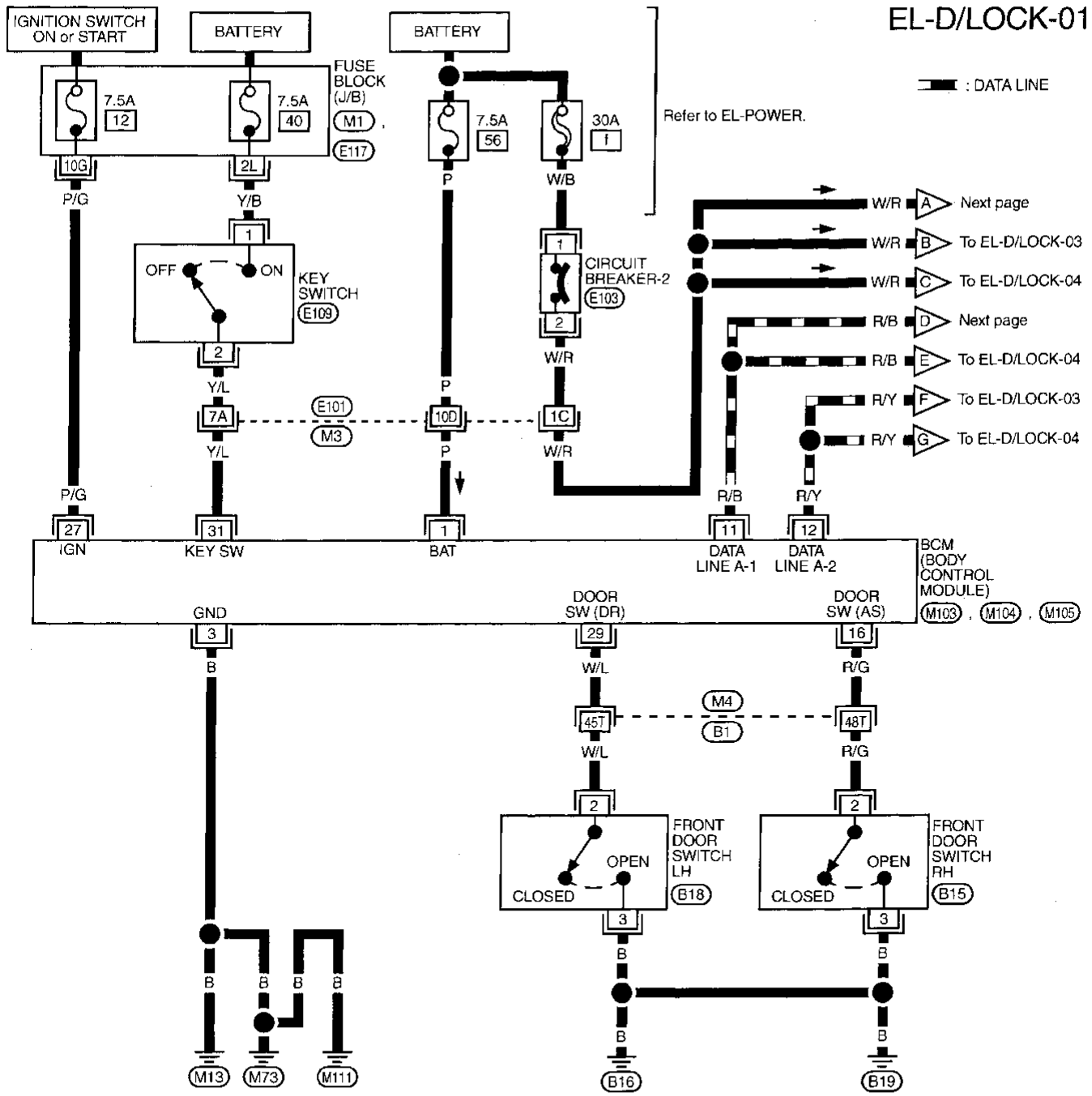


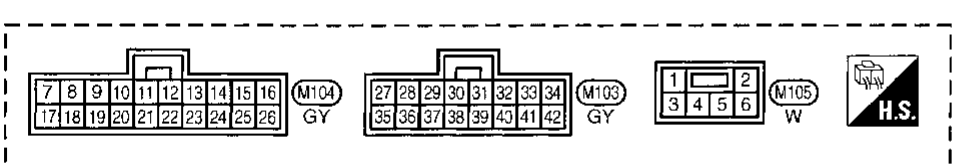
Schematic

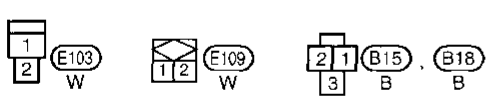


MEL734H

Wiring Diagram — D/LOCK —







Refer to last page (Foldout page).

M1

M3, E101

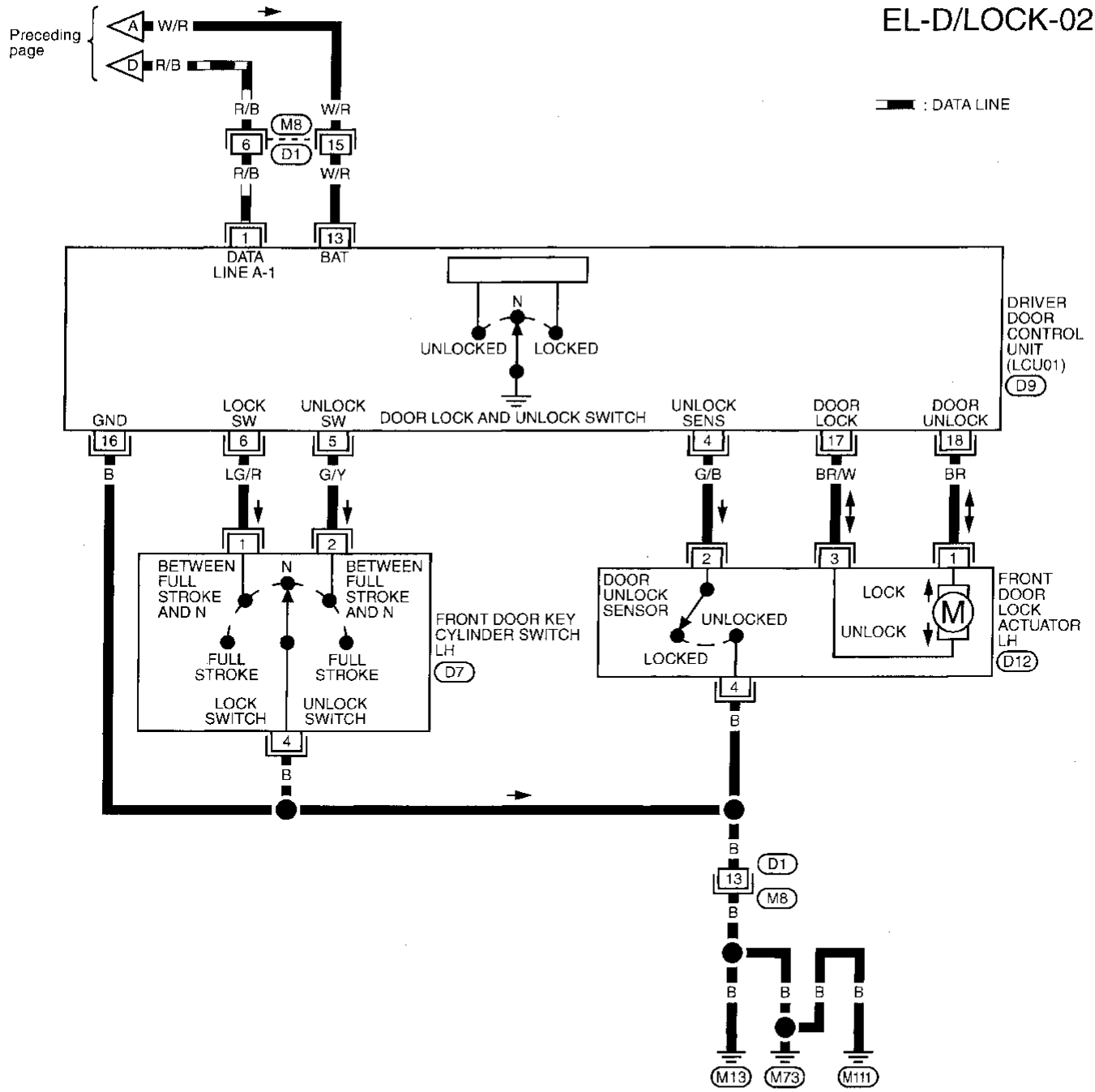
M4, B1

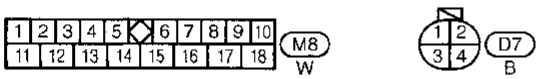
E117

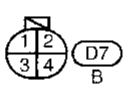
MEL130I

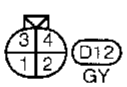
Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-02





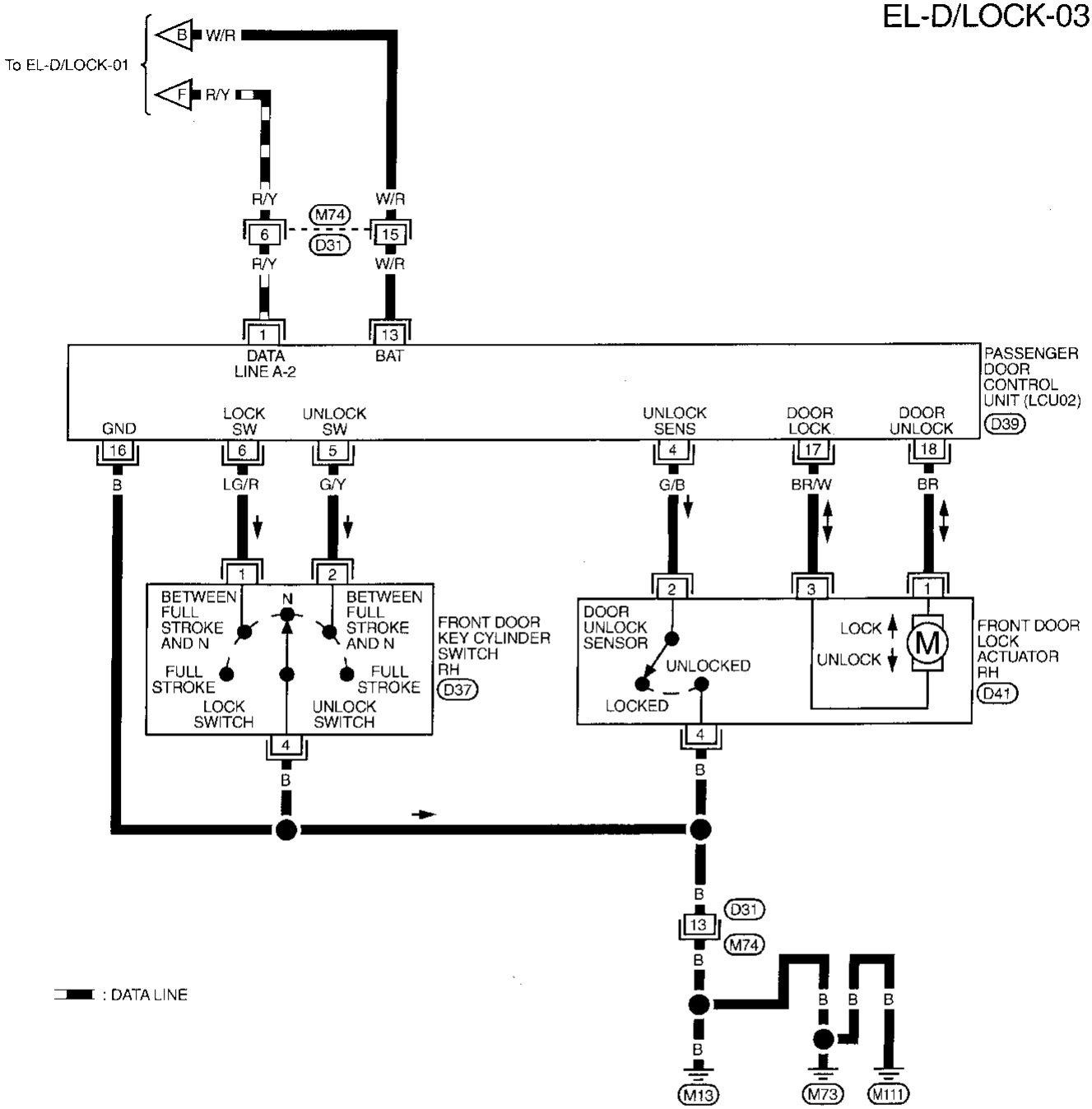


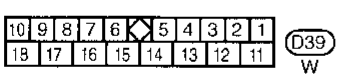


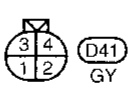
MEL906H

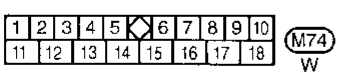
Wiring Diagram — D/LOCK — (Cont'd)

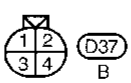
EL-D/LOCK-03







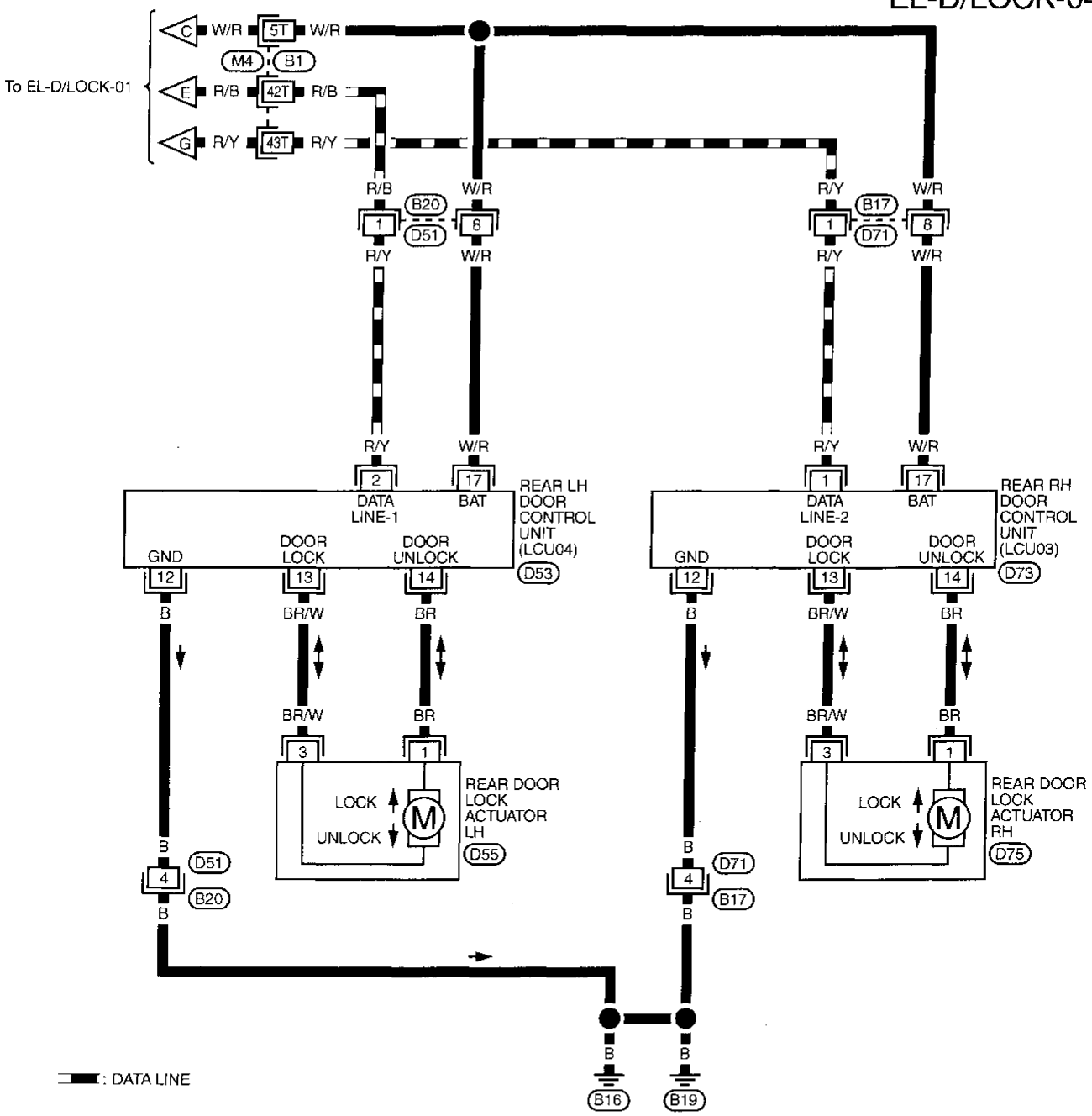


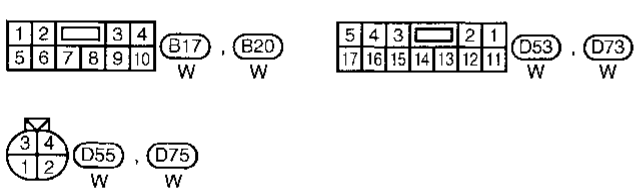


MEL131I

Wiring Diagram — D/LOCK — (Cont'd)

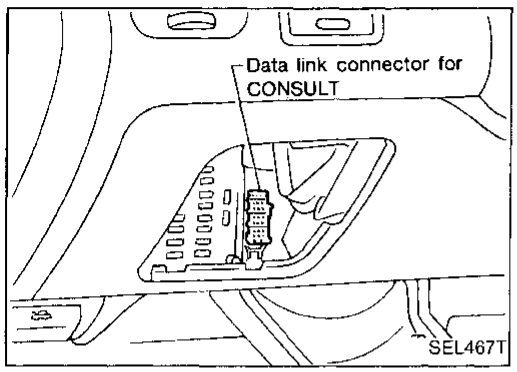
EL-D/LOCK-04





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

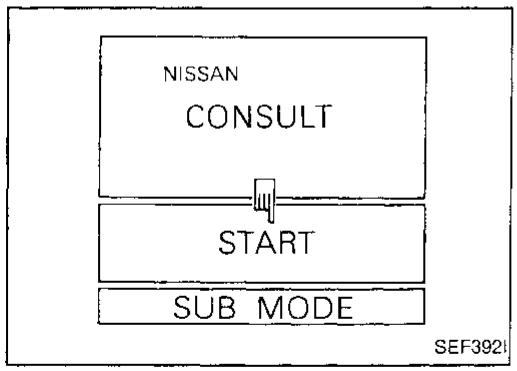
MEL738H



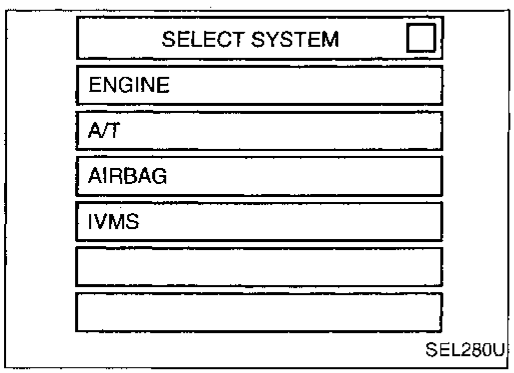
CONSULT

CONSULT INSPECTION PROCEDURE

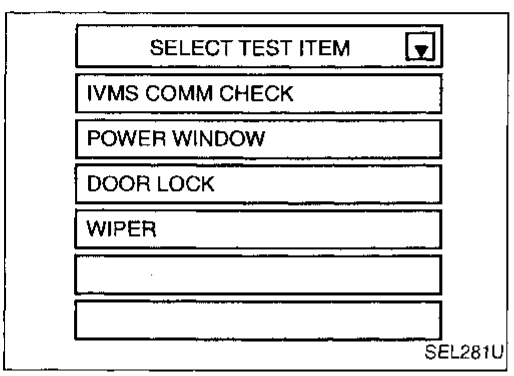
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to Data link connector.



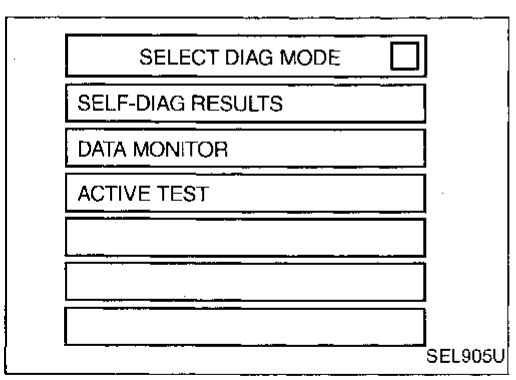
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



6. Touch "DOOR LOCK".

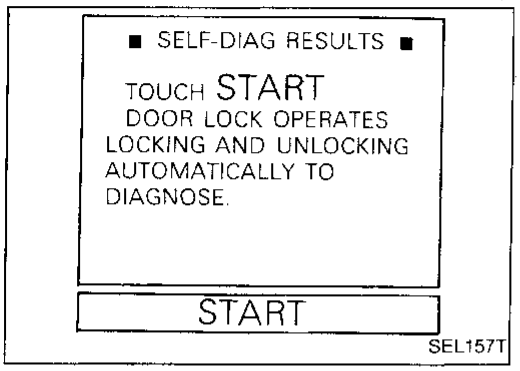


- DATA MONITOR, ACTIVE TEST and SELF-DIAGNOSIS are available for the power door lock.

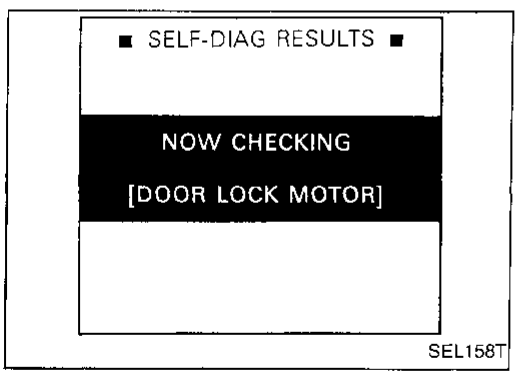
CONSULT (Cont'd)

HOW TO PERFORM SELF-DIAGNOSIS

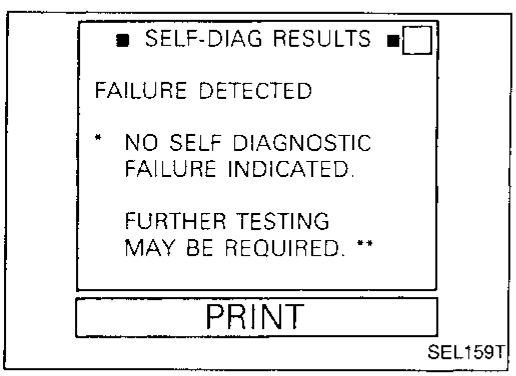
1. Choose "DOOR LOCK" in SELECT TEST ITEM.
2. Touch "SELF-DIAG RESULTS" of SELECT DIAG mode.
3. Touch "START".



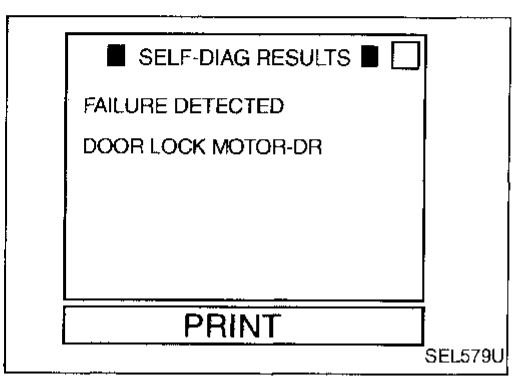
4. Start self-diagnosis on all door motors. Lock and unlock all doors by operating door motors automatically.



- When no malfunction is detected.



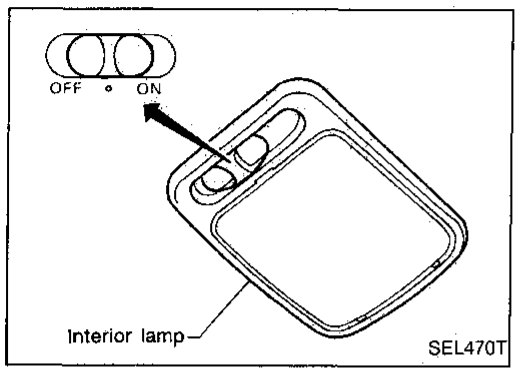
- When malfunction is detected.
  A summary of diagnostic results is given in the following chart.



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



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".

↓

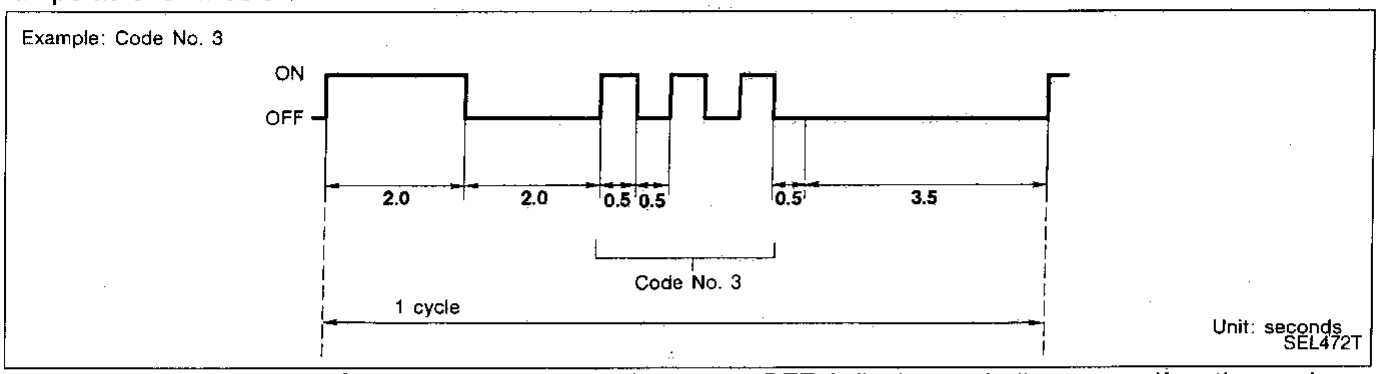
DIAGNOSIS END* (**Be sure to turn off the lighting switch.**)

*: 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".

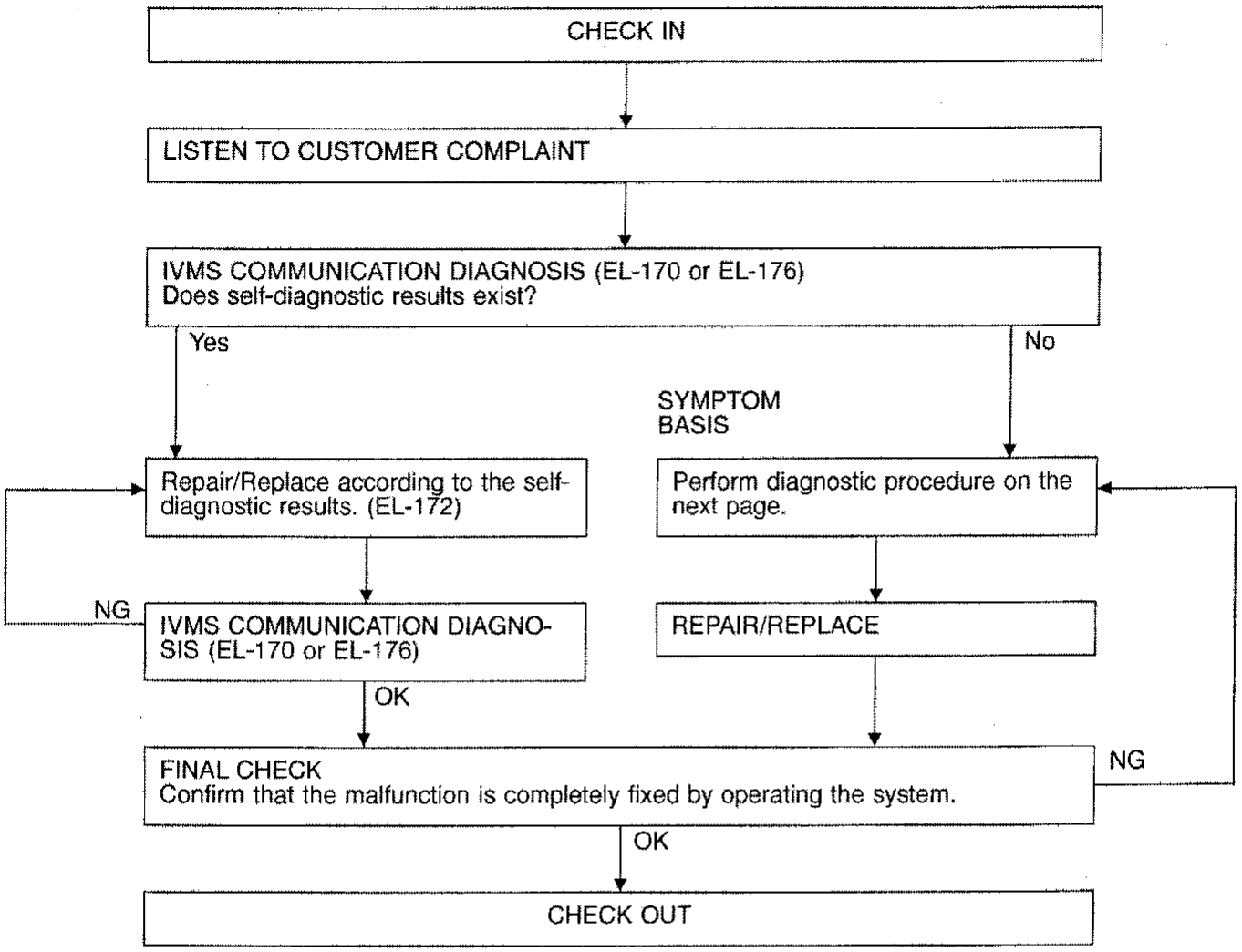
The self-diagnostic results will remain in the BCM memory.

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-230
2	Passenger door lock actuator/unlock sensor		
3	Rear RH door lock actuator/unlock sensor	Procedure 6 (Door lock actuator check)	EL-231
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-170) or turn the ignition switch to "OFF" position and remove 7.5A fuse (No. 56, located in the fuse block and fusible link box).

Trouble Diagnoses (Cont'd)

SYMPTOM CHART

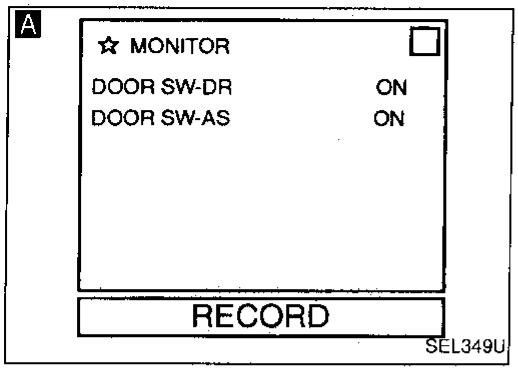
PROCEDURE	Self-diagnosis		Diagnostic procedure						—
REFERENCE PAGE	EL-220	EL-222	EL-226	EL-227	EL-228	EL-229	EL-230	EL-231	EL-171
SYMPTOM	CONSULT	On-board diagnosis (Mode III)	Procedure 1 (Front door switch check)	Procedure 2 (Key switch check)	Procedure 3 (Lock & unlock switch check)	Procedure 4 (Door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

Trouble Diagnoses (Cont'd)

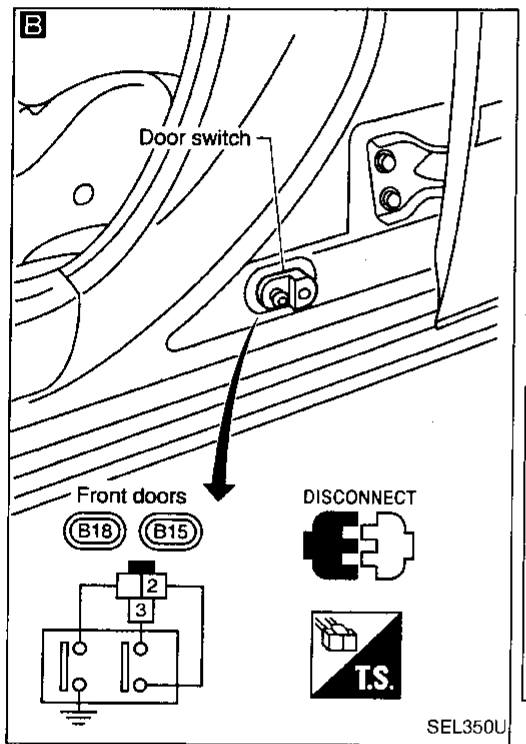
DIAGNOSTIC PROCEDURE 1

(Front door switch check)

A



B



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

OK → Door switch is OK.

OR

ON-BOARD

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

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

Refer to wiring diagram in EL-215.

NG ↓

B

CHECK DOOR SWITCH.

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

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

NG → Replace door switch.

OK ↓

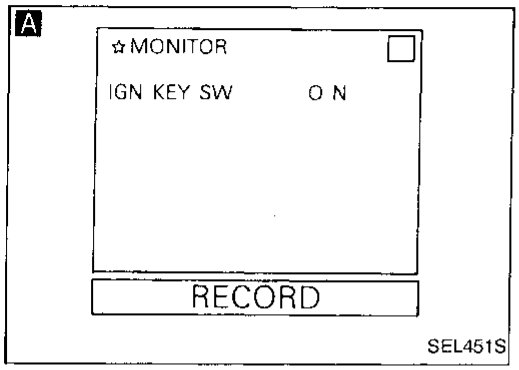
Check the following.

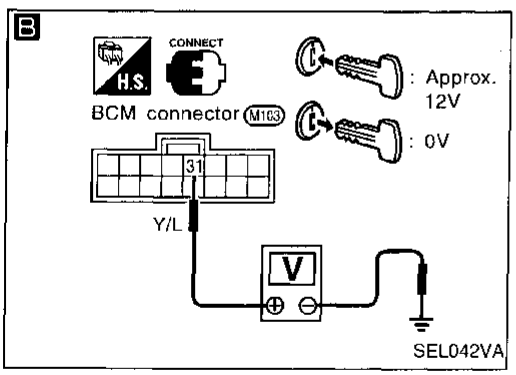
- Door switch ground circuit
- Harness for open or short between door switch and BCM

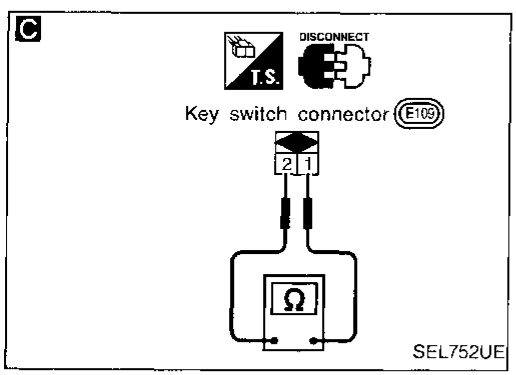
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

[Key switch (Insert) check]







CHECK KEY SWITCH INPUT SIGNAL.

A CONSULT

See "IGN KEY SW" in DATA MONITOR mode.

When key is inserted in ignition key cylinder:

IGN KEY SW ON

When key is removed from ignition key cylinder:

IGN KEY SW OFF

OK → Ignition key switch is OK.

OR

B TESTER

Check voltage between BCM terminal ㉛ and ground.

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

Refer to wiring diagram in EL-215.

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.

NG → Replace key switch (insert).

Condition	Continuity
Key is inserted	Yes
Key is removed	No

OK

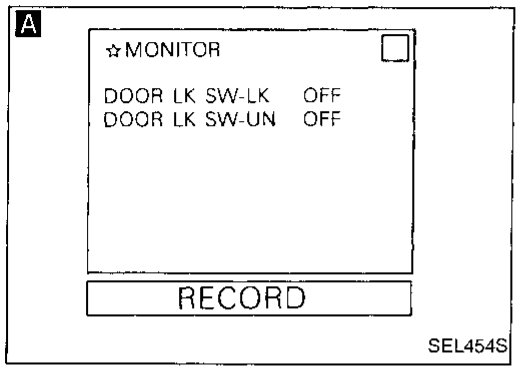
Check the following.

- 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-178.)

NG ↓

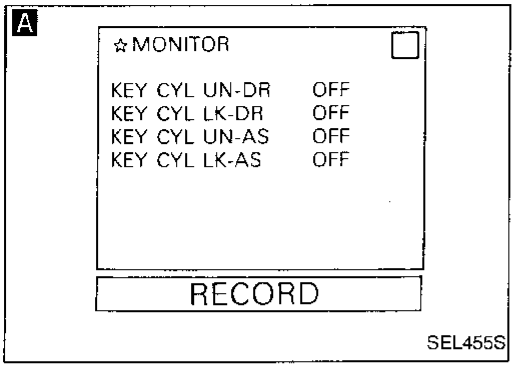
Replace driver door control unit (LCU01).

Trouble Diagnoses (Cont'd)

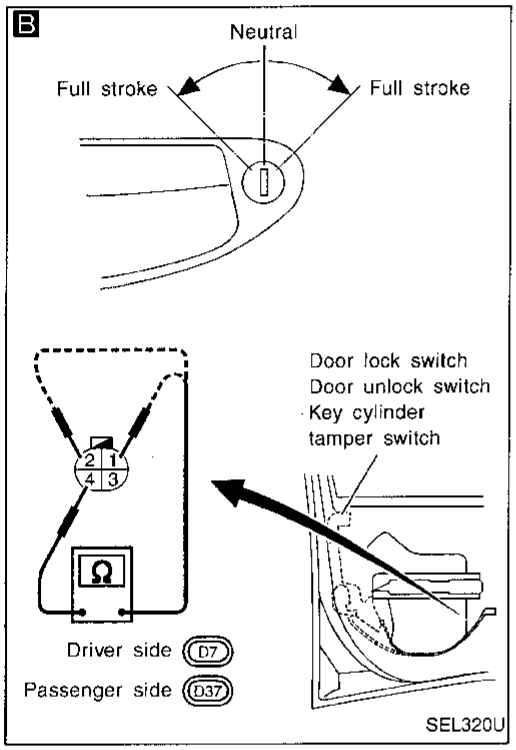
DIAGNOSTIC PROCEDURE 4

(Door key cylinder switch check)

A



B



CHECK DOOR KEY CYLINDER SIGNAL.

A CONSULT

See "KEY CYL DR or AS" in DATA MONITOR mode.
These signals should be "ON" when ignition key inserted in the door key cylinder was turned to lock or unlock.
If signals turn from "OFF" to "ON" too quickly on CONSULT display when key cylinder is turned, check these signals in the graphic mode.
(Refer to CONSULT OPERATION MANUAL.)

OR

ON-BOARD

Check front LH or RH door lock key cylinder lock and unlock switch in Switch monitor (Mode II) mode.
(Refer to On-board Diagnosis, EL-178.)

Refer to wiring diagram in EL-216 or 217.

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 ↓

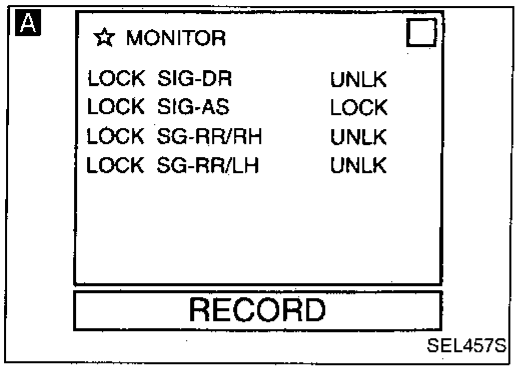
Check the following.
- Door key cylinder switch ground circuit
- Harness for open or short between door key cylinder switch and LCU01/02

Trouble Diagnoses (Cont'd)

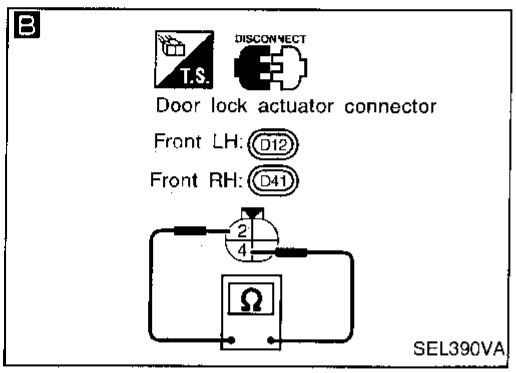
DIAGNOSTIC PROCEDURE 5

(Door unlock sensor check)

A



B



CHECK DOOR UNLOCK SENSOR INPUT SIGNAL.

A CONSULT

See "LOCK SIG SW" in DATA MONITOR mode.
When door is locked:
LOCK SIG LOCK
When door is unlocked:
LOCK SIG UNLK

OR

ON-BOARD

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

Refer to wiring diagram in EL-216 or 217.

OK → Door unlock sensor is OK.

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 ↓

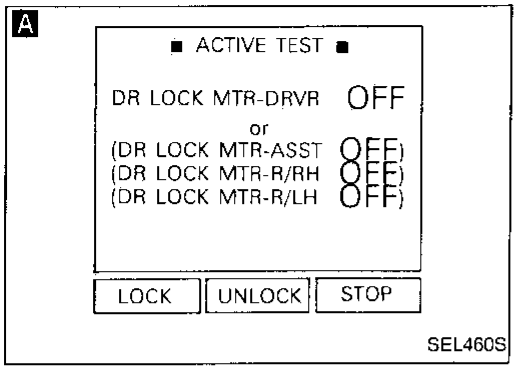
Check the following.
- Harness for open or short between LCU and door unlock sensor
- Ground circuit for door unlock sensor

Trouble Diagnoses (Cont'd)

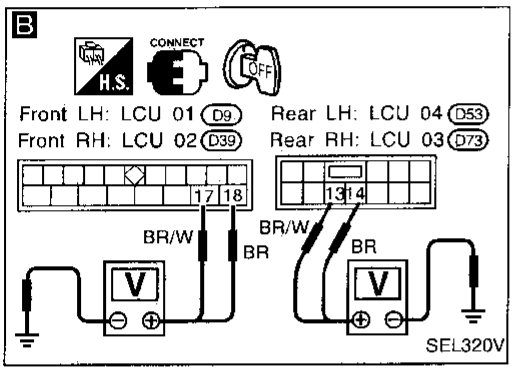
DIAGNOSTIC PROCEDURE 6

(Door lock actuator check)

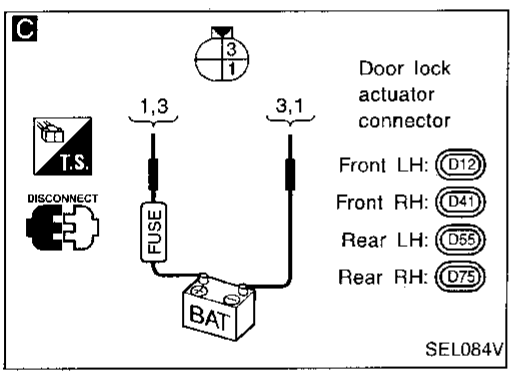
A



B



C



CHECK DOOR LOCK MOTOR OPERATION.

A CONSULT

See "DR LOCK MTR" in ACTIVE TEST mode.
Perform operation shown on display. **Door lock motor should operate.**

OR

ON-BOARD

Perform On-board Diagnosis Mode III. (Refer to EL-222.)
Door lock motor should operate.

OK → Door lock actuator is OK.

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-216, 217 or 218.

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 (M111).

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 (M111).

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-213).

Power window operation

When an UNLOCK signal from remote controller is input into multi-remote control unit (LCU05) continuously more than 1.5 seconds, front power windows lower the windows.

Hazard reminder

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

When multi-remote control unit (LCU05) receives a LOCK signal, ground is supplied
- to multi-remote control relay-1 terminal ②
- through BCM terminal ⑱.

Multi-remote control relay is now energized and door lock actuators lock all doors. (Hazard warning lamps flash twice as a reminder.)

Trunk lid opener operation

Power is supplied at all times
- through 15A fuse [No. 37], located in the fuse block (J/B)]
- to trunk lid opener actuator terminal ②.

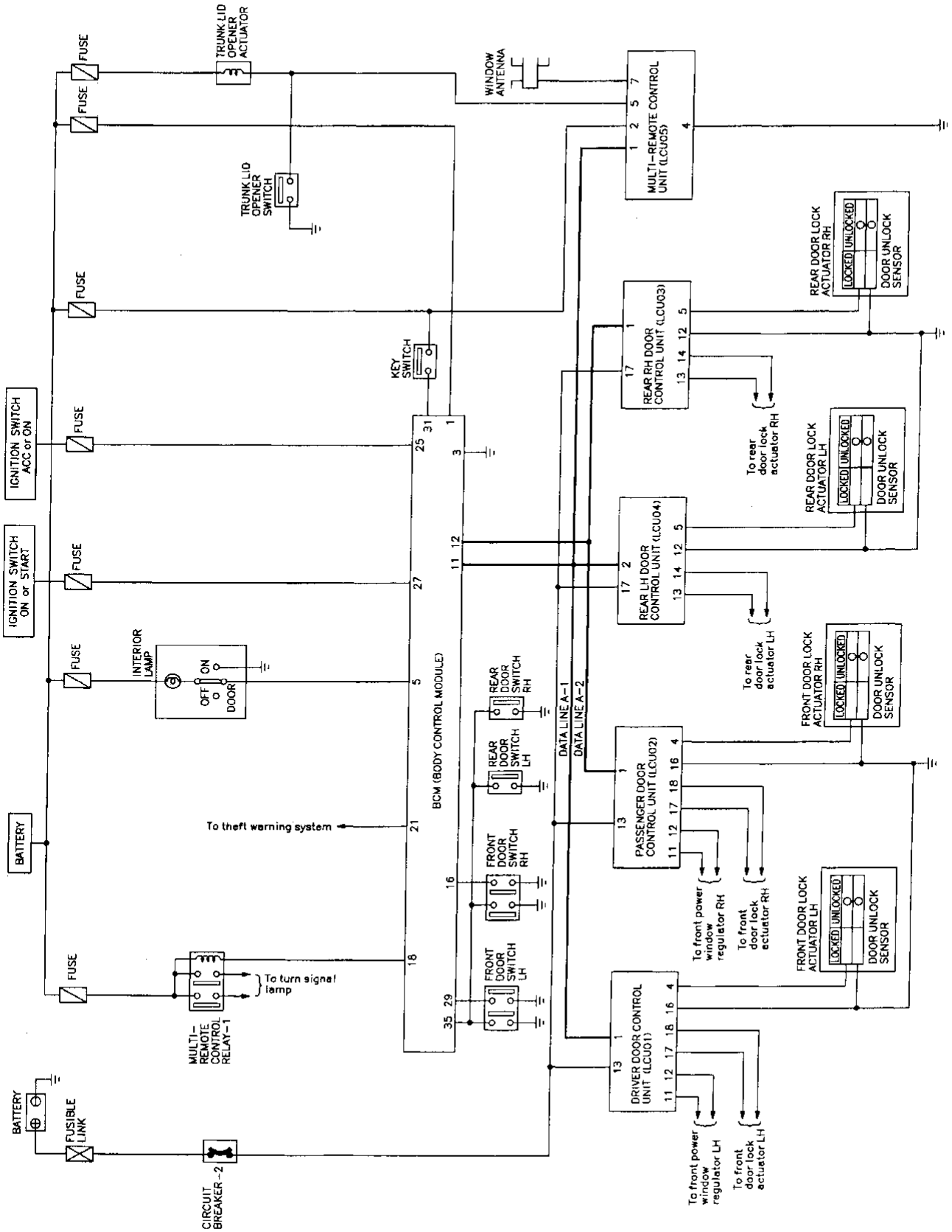
When TRUNK OPEN signal is sent from remote controller, ground is supplied
- to trunk lid opener actuator terminal ①
- through multi-remote control unit (LCU05) terminal ⑤.

When power and ground are supplied, trunk lid opener actuator opens trunk lid.

Panic alarm operation

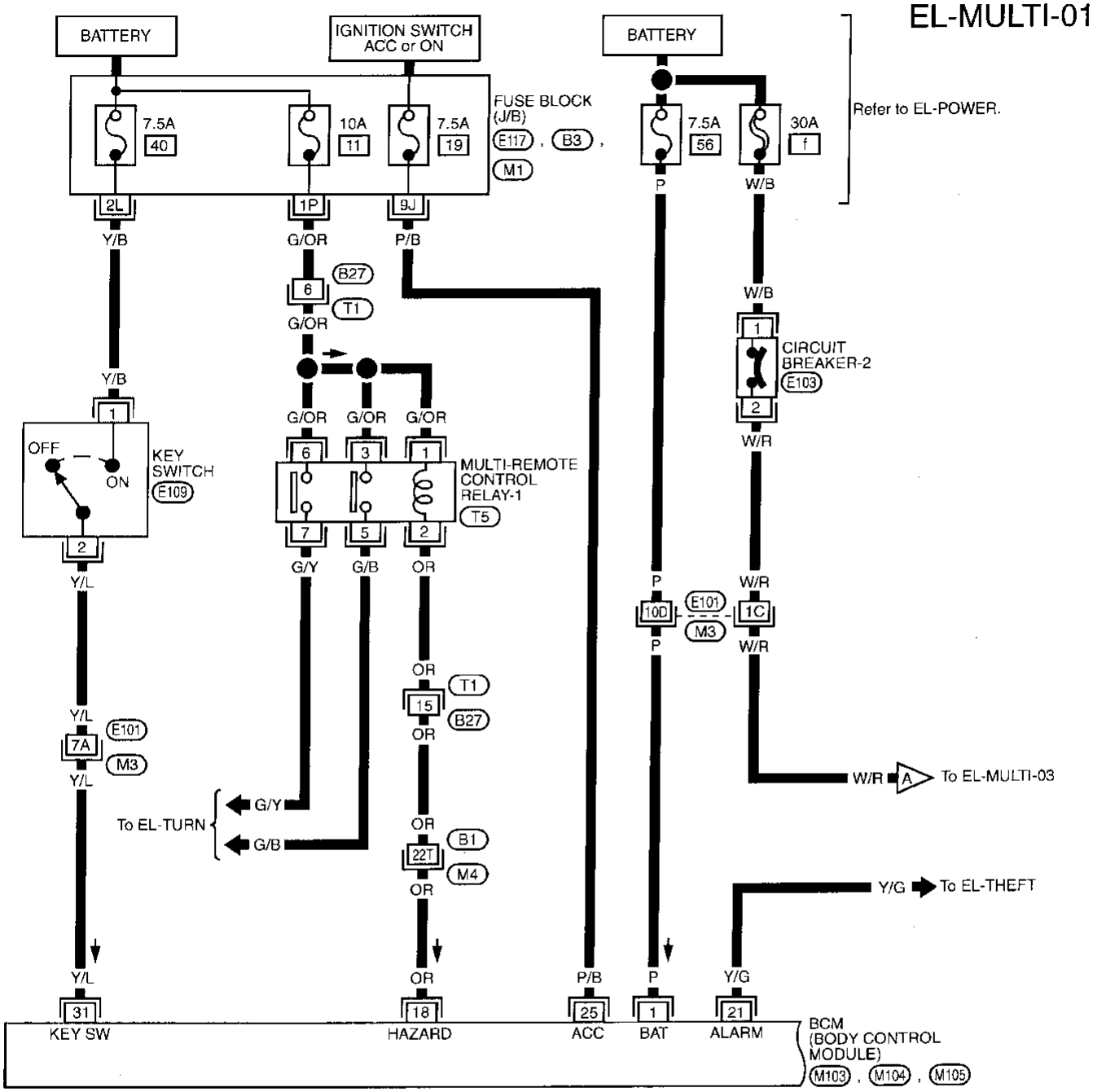
Multi-remote control system activates horn and headlamps intermittently when an alarm signal is sent from remote controller to multi-remote control system.
For detailed description, refer to "THEFT WARNING SYSTEM — IVMS" (EL-251).

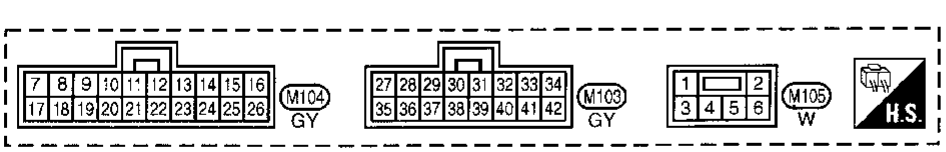
Schematic

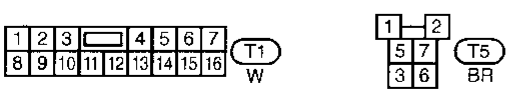


MEL907H

Wiring Diagram — MULTI —







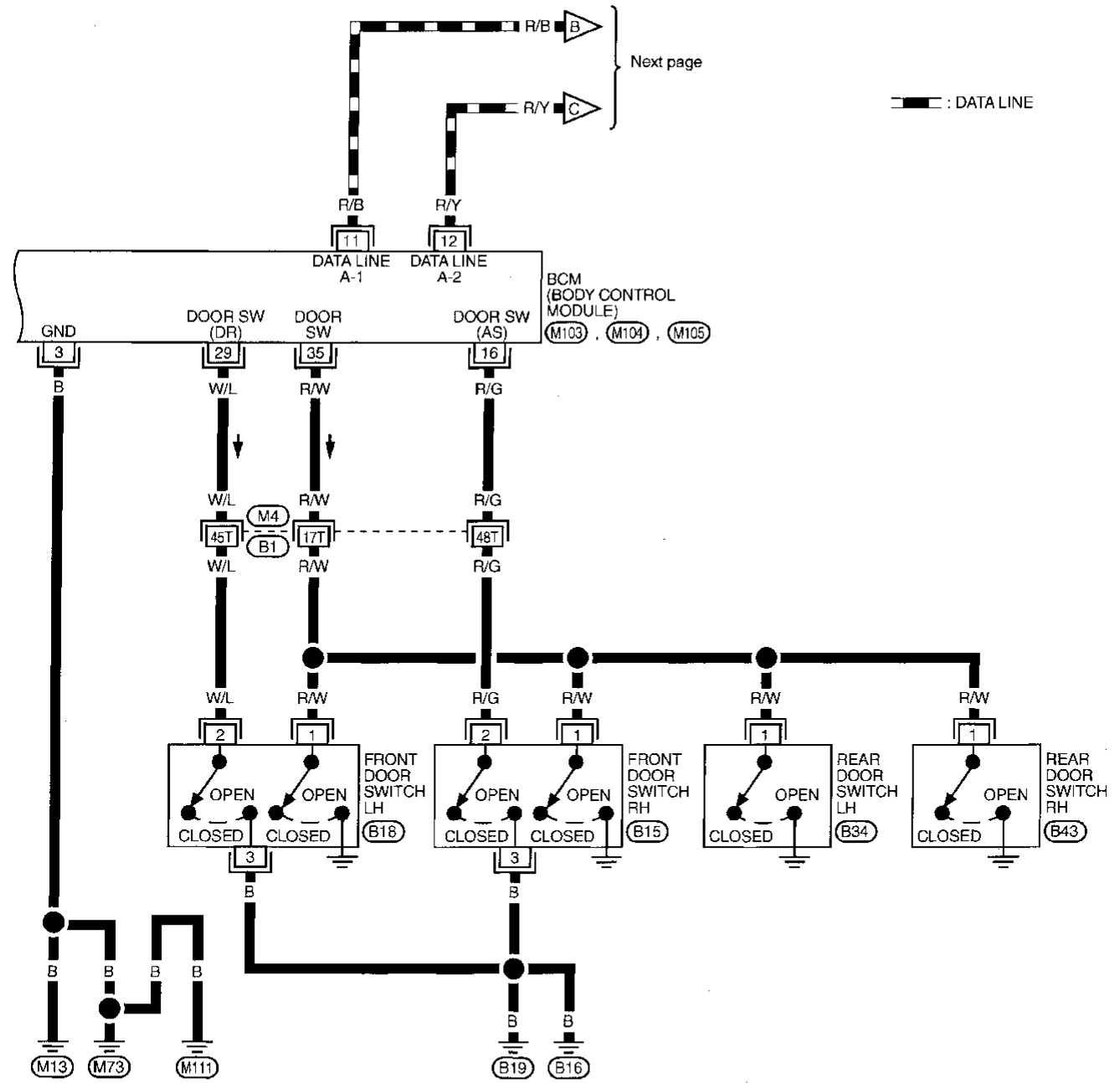
Refer to last page (Foldout page).

M1
M3 , E101
M4 , B1
E117
B3

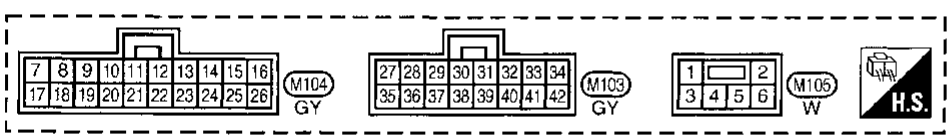
MEL908H

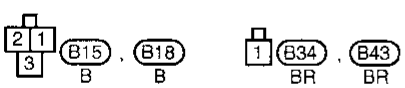
Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-02



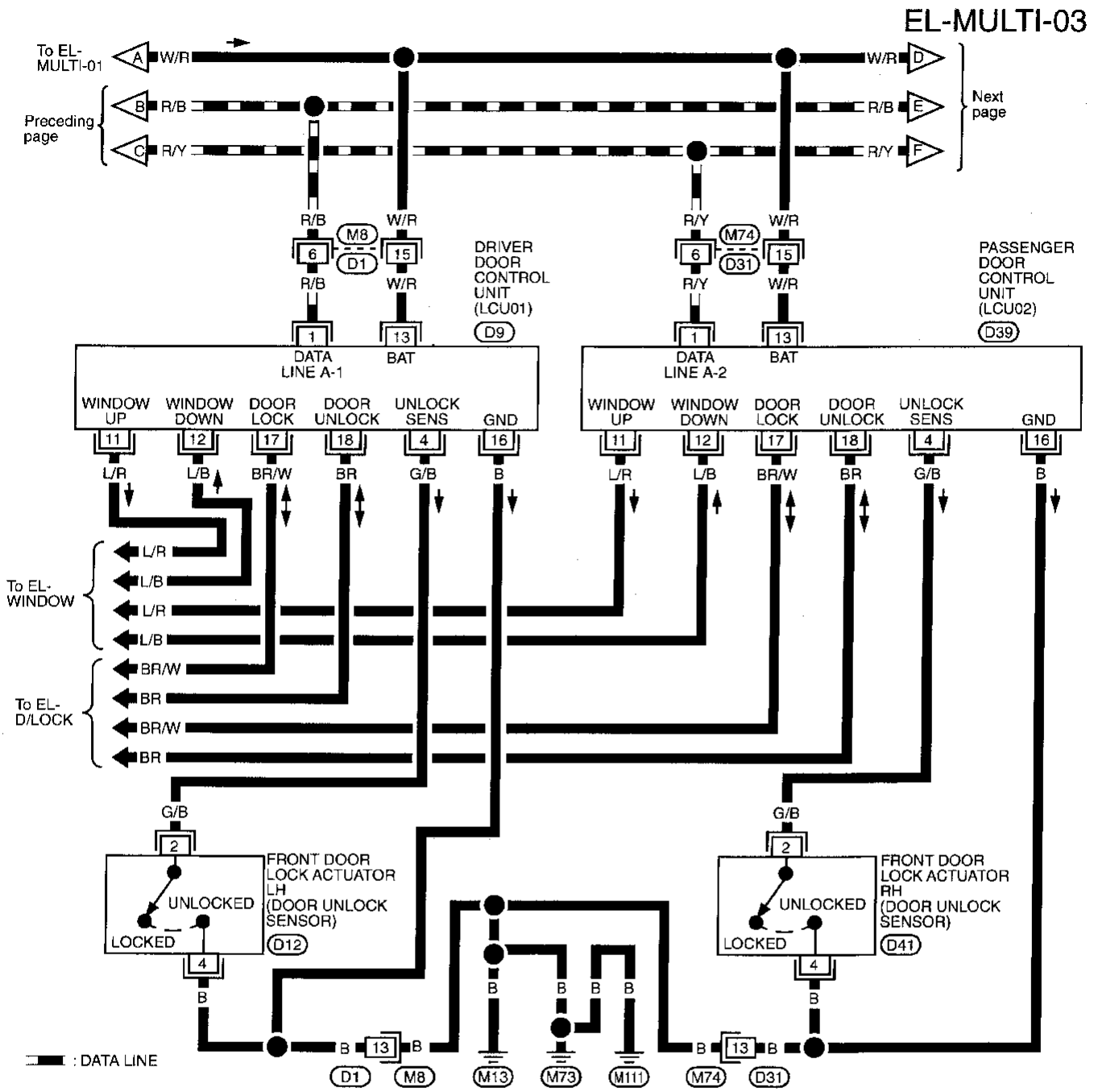
Refer to last page (Foldout page).
M4 , B1

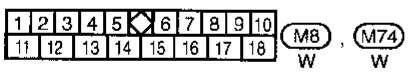


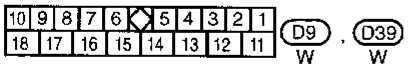


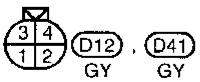
MEL909H

Wiring Diagram — MULTI — (Cont'd)





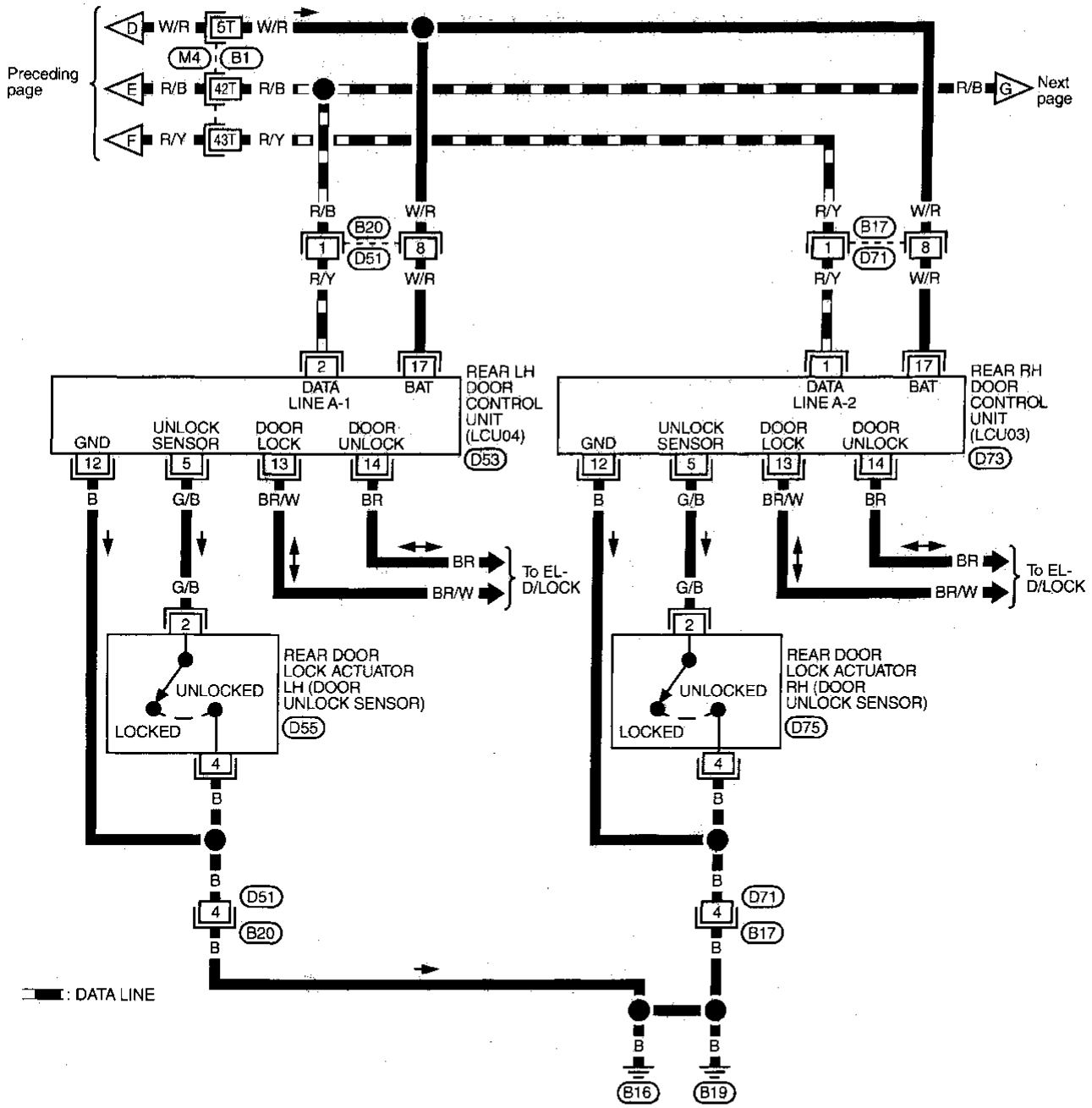




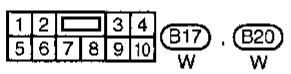
MEL910H

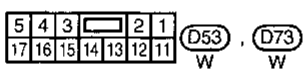
Wiring Diagram — MULTI — (Cont'd)

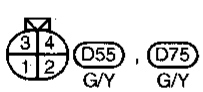
EL-MULTI-04



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



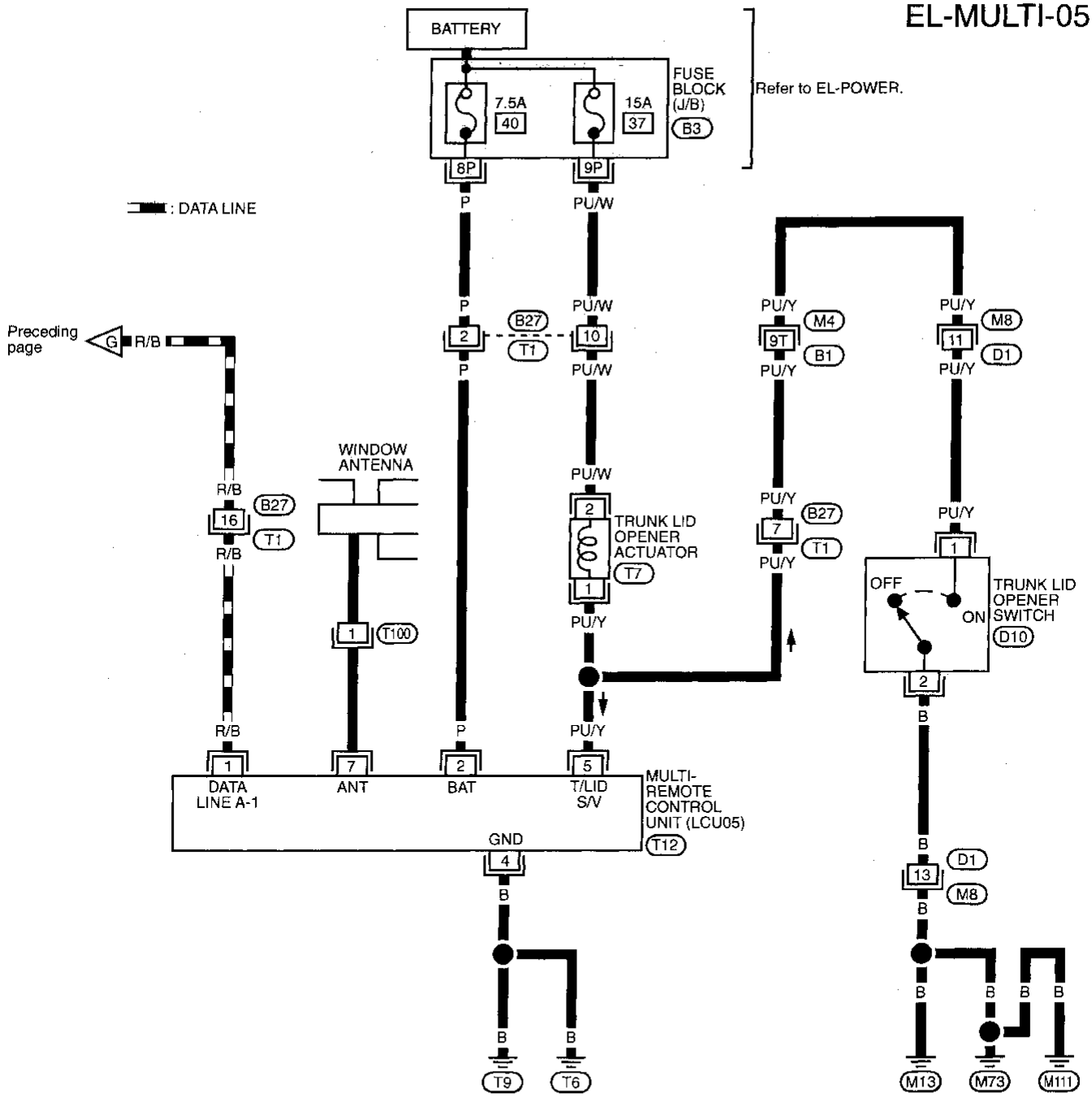


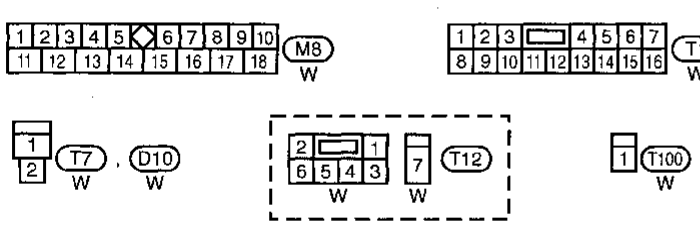


MEL911H

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-05

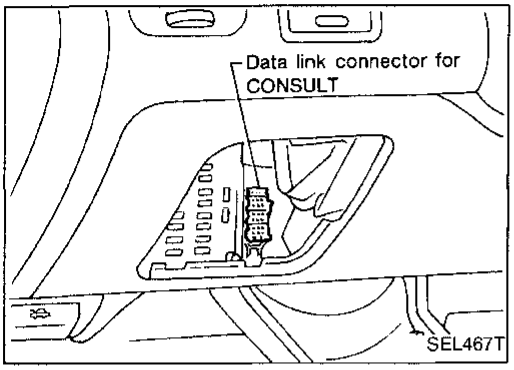




Refer to last page (Foldout page).
M4 , B1
B3

MEL912H

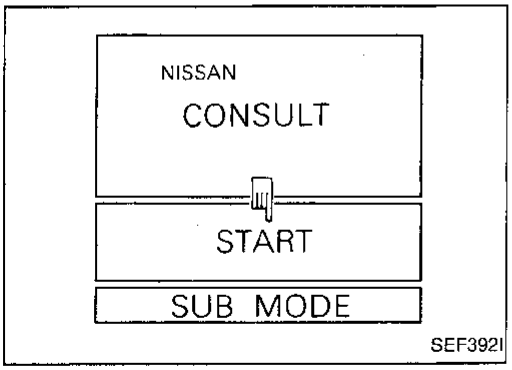
1605



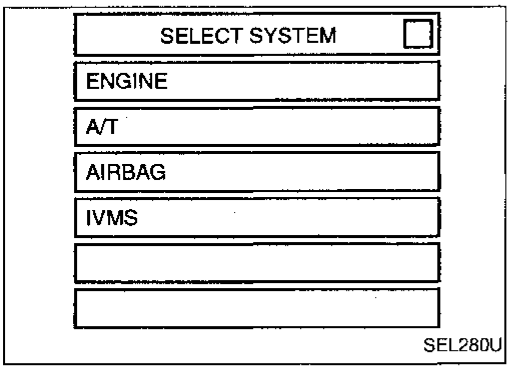
CONSULT

CONSULT INSPECTION PROCEDURE

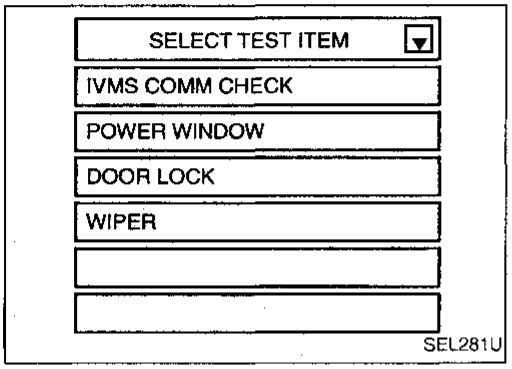
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



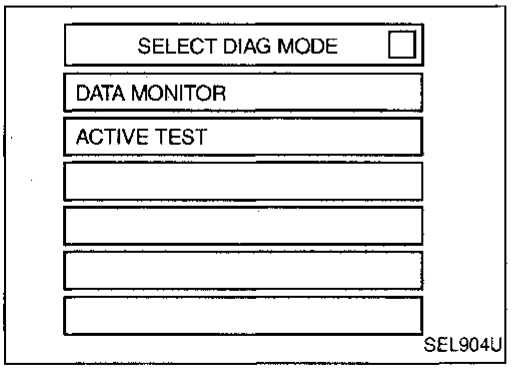
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



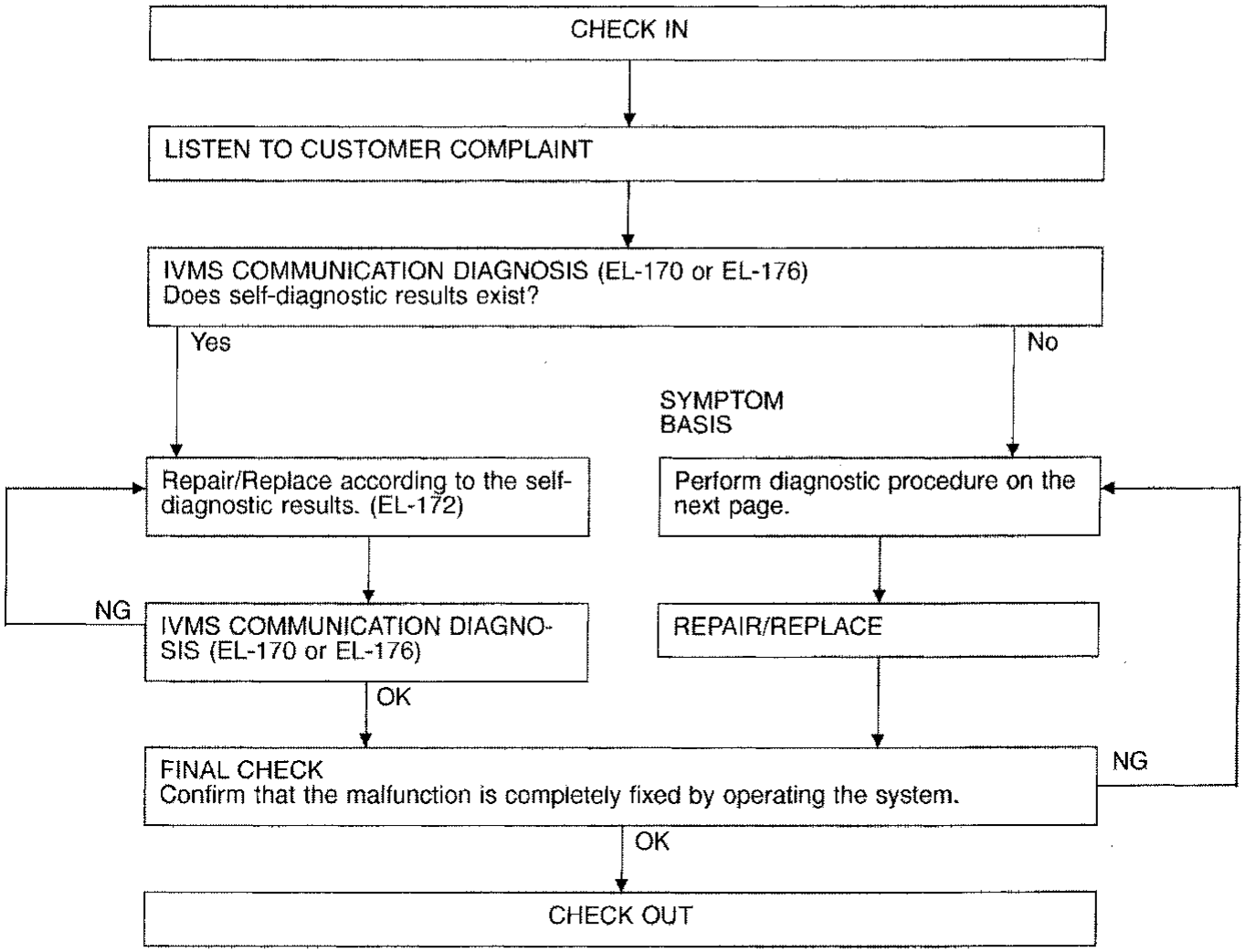
6. Touch "MULTI-REMOTE CONT SYS".



- 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-170) or turn the ignition switch to "OFF" position and remove 7.5A fuse (No. 56, located in the fuse and fusible link box).

Trouble Diagnoses (Cont'd)

TROUBLE SYMPTOM

- All functions of remote control system do not operate.

CHECK REMOTE CONTROLLER BATTERY.
Refer to DIAGNOSTIC PROCEDURE 1, EL-243.
NG → Replace battery.
OK ↓
Enter the Identity (ID) code of different or new remote controller. Refer to EL-249.
OK ↓
Can the new ID code be entered?
No → Go to DIAGNOSTIC PROCEDURE 2, EL-243 and DIAGNOSTIC PROCEDURE 3, EL-244.
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-178).

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-244.)

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-248.

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

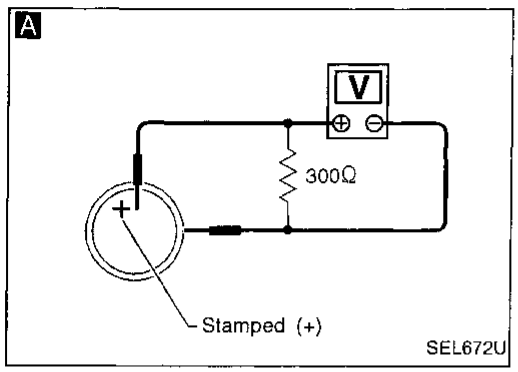
⑥ TRUNK LID DOES NOT OPEN WHEN TRUNK OPENER BUTTON IS PRESSED.
- Check if trunk lid opens with trunk lid opener switch.

No → Go to DIAGNOSTIC PROCEDURE 5 (EL-247).
Yes ↓
Go to DIAGNOSTIC PROCEDURE 4 (EL-246).

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



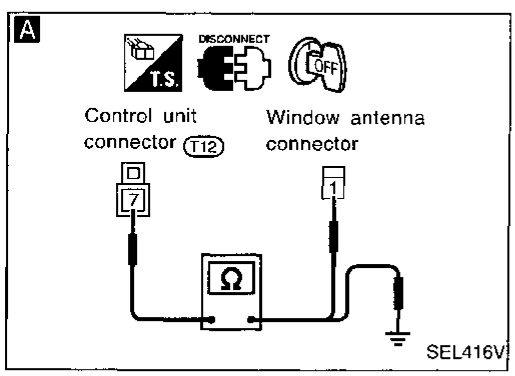
A

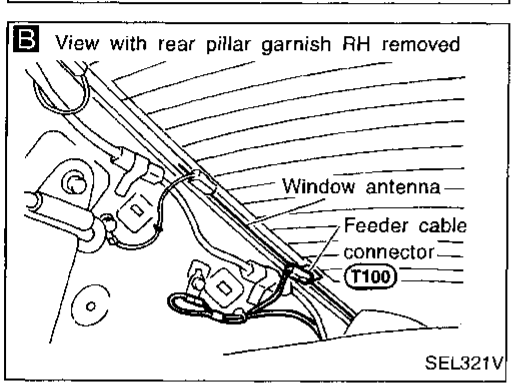
CHECK REMOTE CONTROLLER BATTERY.
Remove battery and measure voltage across battery positive and negative terminals, ⊕ and ⊖.

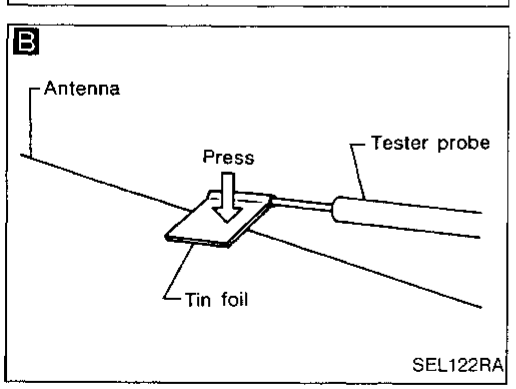
Measuring terminal		Standard value
⊕	⊖	
Battery positive terminal ⊕	Battery negative terminal ⊖	2.5 - 3.0V

Note:
Remote controller does not function if battery is not set correctly.

DIAGNOSTIC PROCEDURE 2







A

CHECK ANTENNA FEEDER CABLE.
1. Disconnect feeder cable connector from control unit.
2. Remove rear pillar garnish and disconnect feeder cable connector from rear window glass antenna. (Feeder cable connector is the one at bottom left.)
3. Check continuity between the feeder cable connectors.
Continuity should exist.
4. Check continuity between the feeder cable connector terminal and ground.
Continuity should not exist.

Refer to wiring diagram in EL-239.

NG → Replace feeder cable.

OK ↓

B

CHECK REAR WINDOW GLASS ANTENNA.
1. Remove rear pillar garnish and disconnect feeder cable connector from rear window glass antenna.
2. Check continuity between glass antenna terminal and end of glass antenna.
Continuity should exist.
Note: When checking continuity, wrap tin foil around top of the probe. Then press the foil against the wire with your finger.

NG → Repair glass window antenna. Refer to "Filament Repair", "REAR WINDOW DEFOGGER" (EL-118).

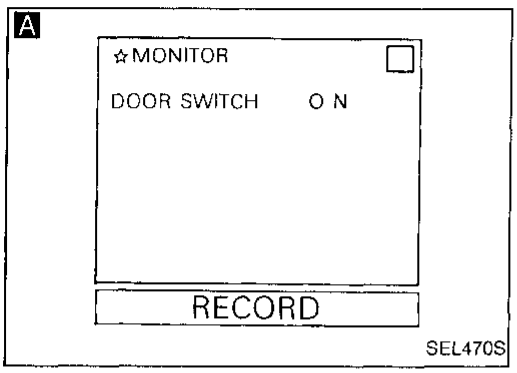
OK ↓

Antenna of multi-remote control is OK.

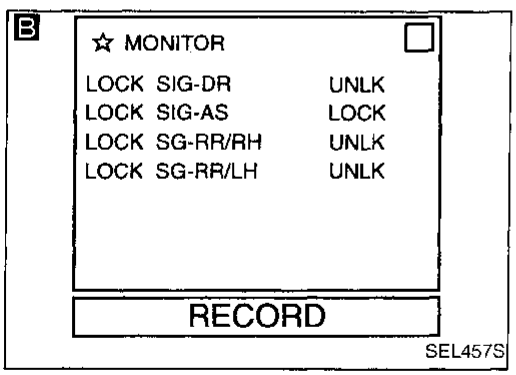
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

A



B



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

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

OR

ON-BOARD

Check all doors switches in Switch monitor (Mode II) mode.
(Refer to On-board Diagnosis, EL-178.)

Refer to wiring diagram in EL-236.

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

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

OR

ON-BOARD

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

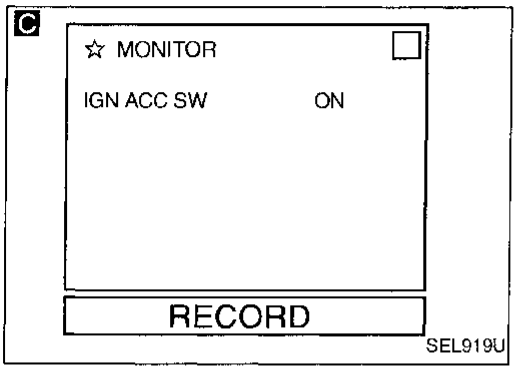
Refer to wiring diagram in EL-237 or 238.

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

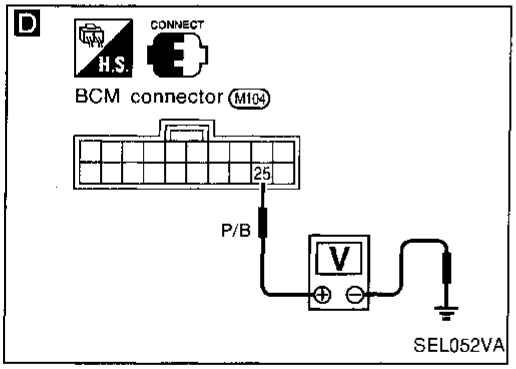
D TESTER

Check voltage between BCM terminal ㉕ and ground.

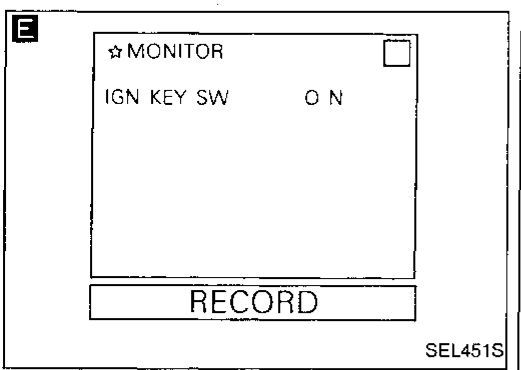
Condition of ignition switch	Voltage [V]
ACC or ON	Approx. 12
OFF	0

Refer to wiring diagram in EL-235.

D



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

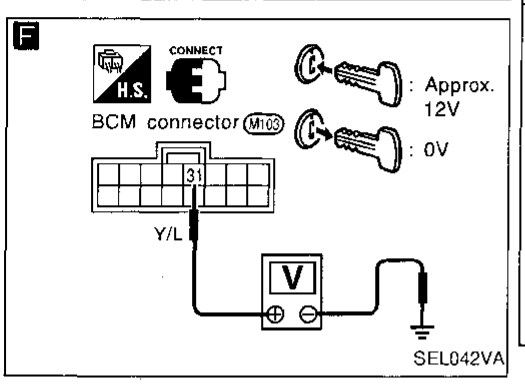
F TESTER

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-235.

F

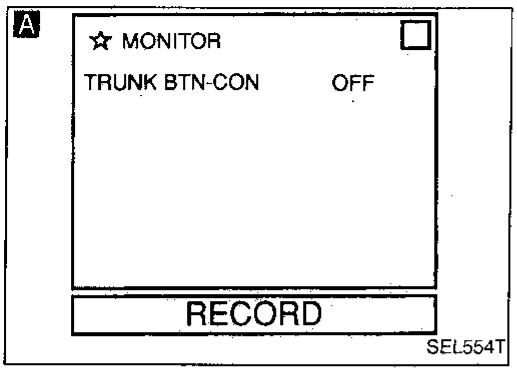


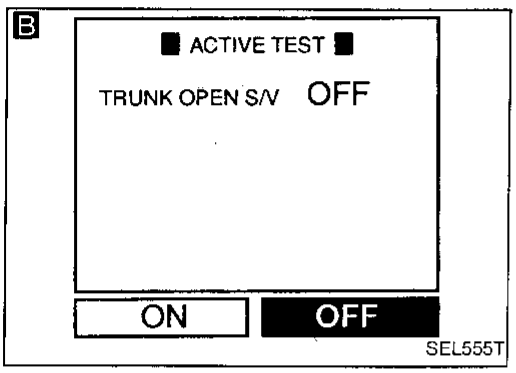
OK

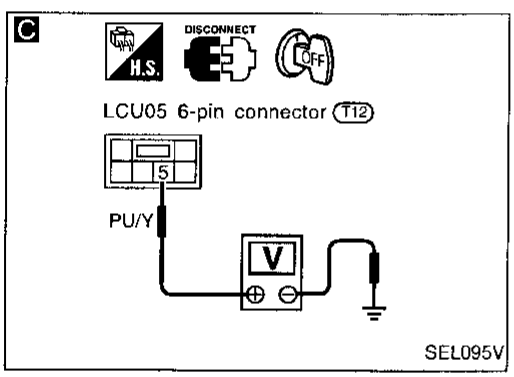
Check operation parts in multi-remote control system for function.

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-178.)

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-239.

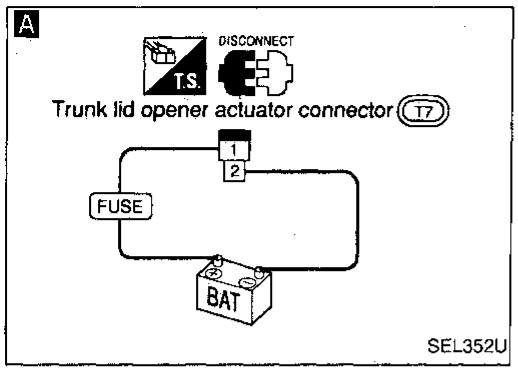
NG ↓

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-239.

NG → Replace trunk lid opener actuator.

OK ↓

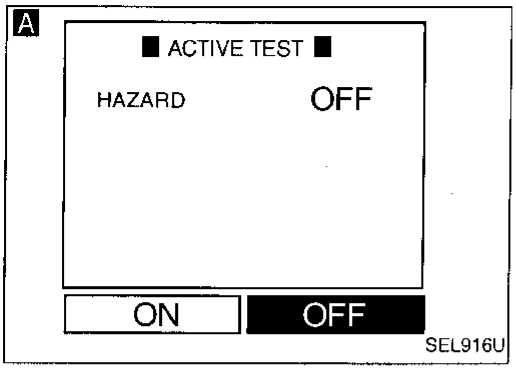
Check the following.

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

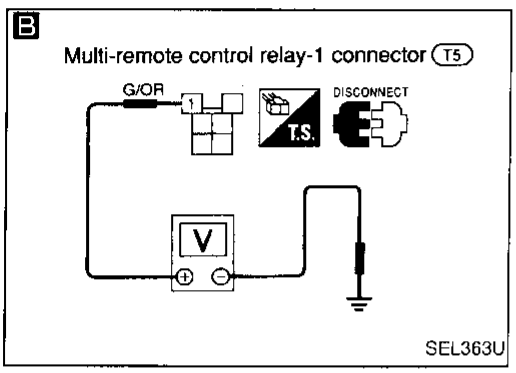
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

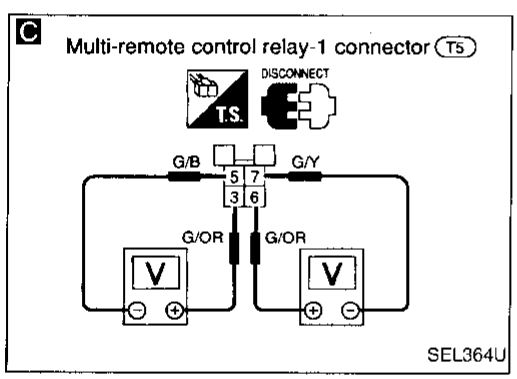
A



B



C



A

Perform "HAZARD" in ACTIVE TEST mode.
Check operation of hazard lamps.
If CONSULT is not available, skip this procedure and go to the next procedure below.

OK → Hazard reminder is OK.

NG ↓

Check multi-remote control relay-1.

NG → Replace.

OK ↓

B

CHECK POWER SUPPLY FOR MULTI-REMOTE CONTROL RELAY-1.
1. Disconnect multi-remote control relay-1 connector.
2. Check voltage between terminal ① and body ground.
   Battery voltage should exist.

   Refer to wiring diagram in EL-235.

NG → Check the following.
- 10A fuse (No. 11, located in the fuse block)
- Harness for open or short between fuse and multi-remote control relay-1

OK ↓

C

CHECK THEFT WARNING RELAY-1 CIRCUIT.
1. Disconnect theft warning relay-1 connector.
2. Measure voltage between terminals ③ and ⑤.
   Battery voltage should exist.
3. Measure voltage between terminals ⑥ and ⑦.
   Battery voltage should exist.

NG → Check harness for open or short.

OK ↓

Check harness for open or short between multi-remote control relay and BCM.

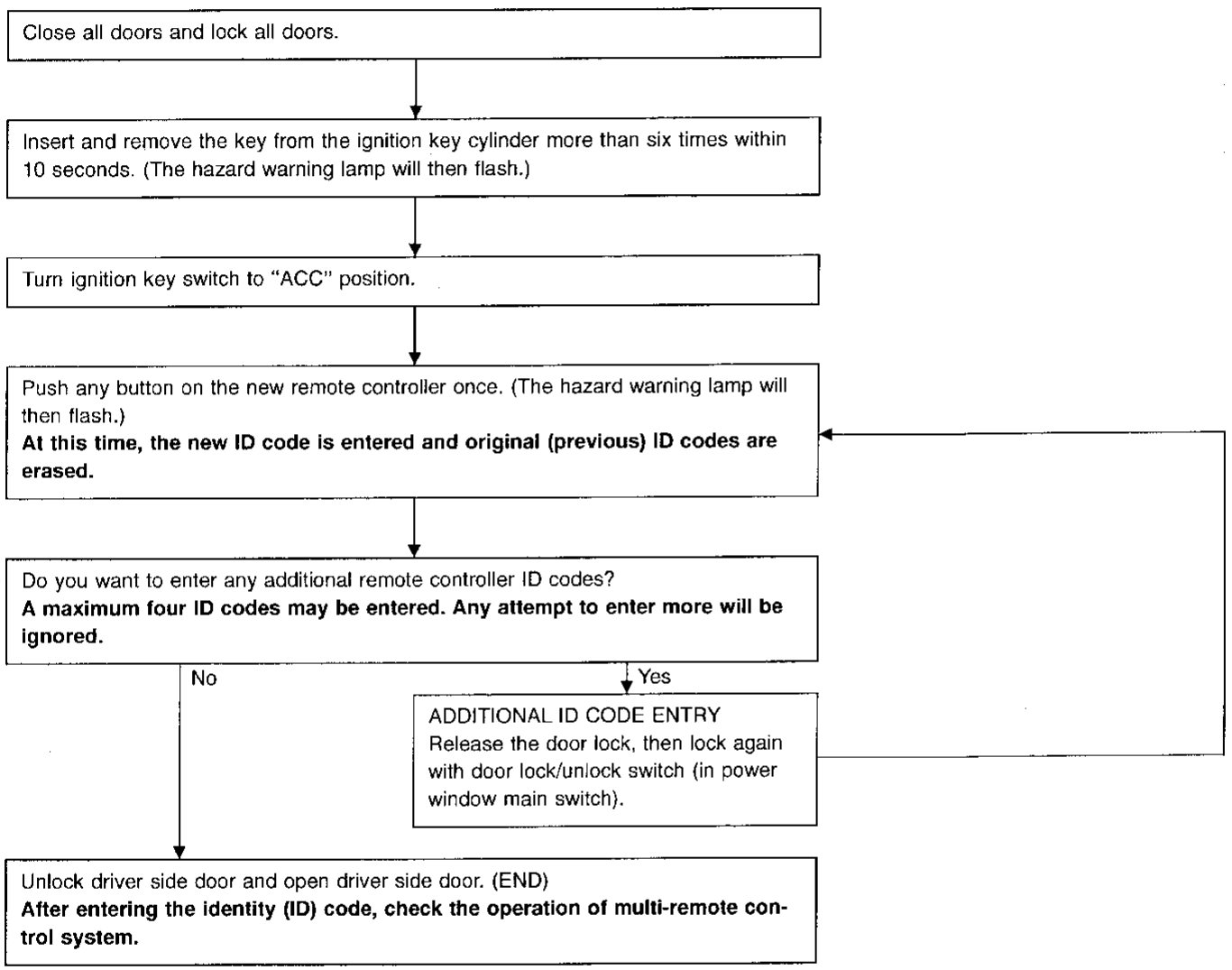
ID Code Entry Procedure

Enter the identity (ID) code manually when:
- **remote controller or control unit (LCU05) is replaced.**
- **an additional remote controller is activated.**

ID Code Entry Procedure

To enter the ID code, follow the procedures below.

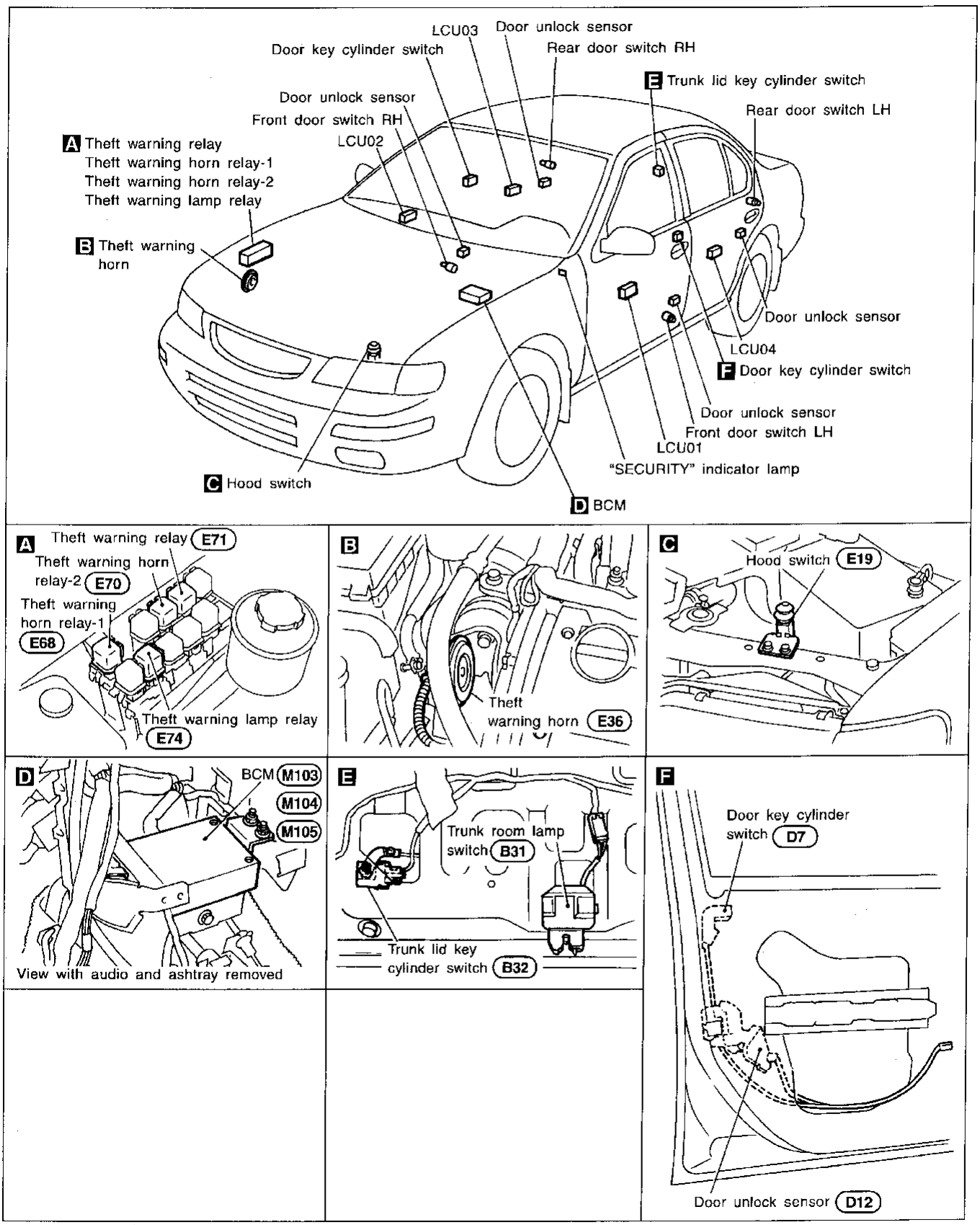
PROCEDURE



NOTE

- **If you need to activate more than two additional new remote controllers, repeat the procedure "Additional ID code entry" for each new remote controller.**
- **If the same ID code that exists in the memory is input, the entry will be ignored.**
- **Entry of maximum four ID codes is allowed and any attempt to enter more will be ignored.**

Component Parts and Harness Connector Location

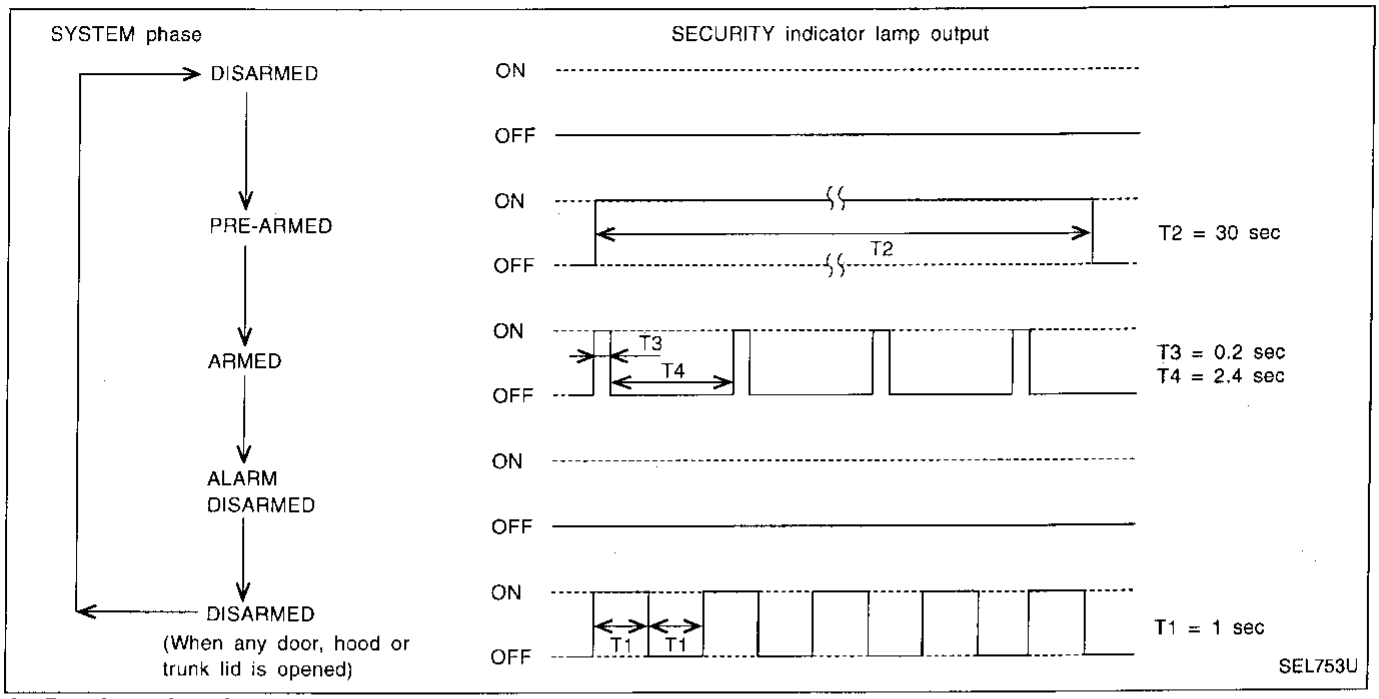


MEL463I

System Description

DESCRIPTION

1. Operation flow



2. Setting the theft warning system

Initial condition

(1) Close all doors.
(2) Close hood and trunk lid.

Disarmed phase

The theft warning system is in the disarmed phase when any door(s), hood or trunk lid is opened. The security indicator lamp blinks every second.

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). (The security indicator lamp blinks every 2.4 seconds.)

3. 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.

4. 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) Trunk lid key cylinder is removed, by being punched, for example.

System Description (Cont'd)

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 each 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 trunk lid key cylinder is removed by being punched, for example, BCM terminal ㉖ receives a ground signal from removed 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.

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 M111.

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.

System Description (Cont'd)

THEFT WARNING SYSTEM ALARM OPERATION

The theft warning system is triggered by
- opening a door
- opening the trunk lid
- opening the hood
- removing trunk lid 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
- trunk lid key cylinder removed signal at BCM terminal ㉖

Power is supplied at all times
- through 10A fuse [No. 17, located in the fuse block (J/B)].
- to theft warning relay terminal ① .

If the theft warning system is triggered, ground is supplied
- from terminal ㉒ of the BCM
- to theft warning relay terminal ② .

With power and ground supplied, power to the clutch interlock relay (M/T models) or inhibitor relay (A/T models) is interrupted. The starter motor will not crank and the engine will not start.
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-2 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-2 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.

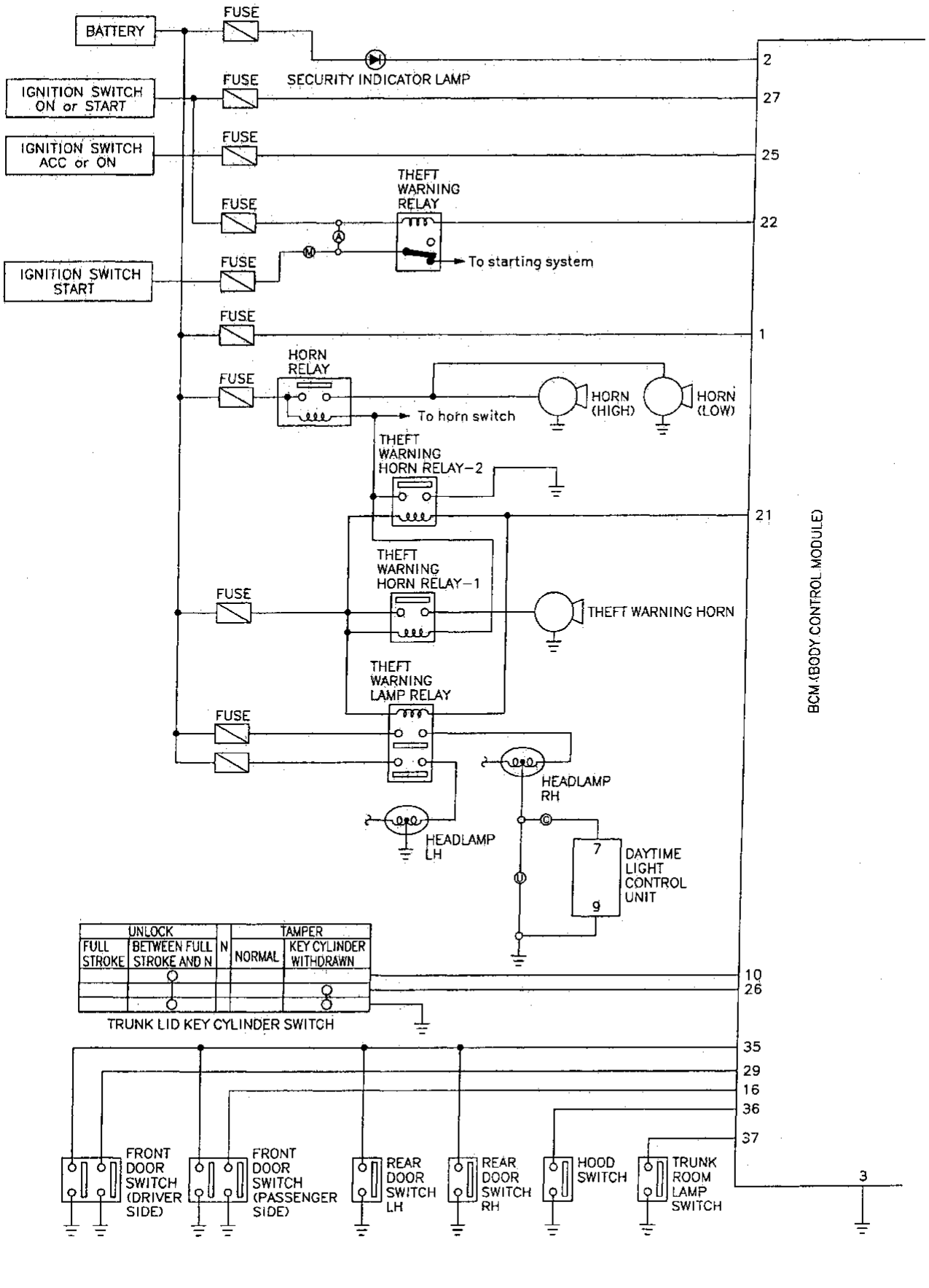
When the key is used to unlock the trunk lid, BCM terminal ⑩ receives a ground signal from terminal ① of the trunk lid key cylinder switch.
When the BCM/LCUs receives either one of these signals or unlock signal from remote controller, the theft warning system is deactivated. (Disarmed phase)

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-2 terminal ② .

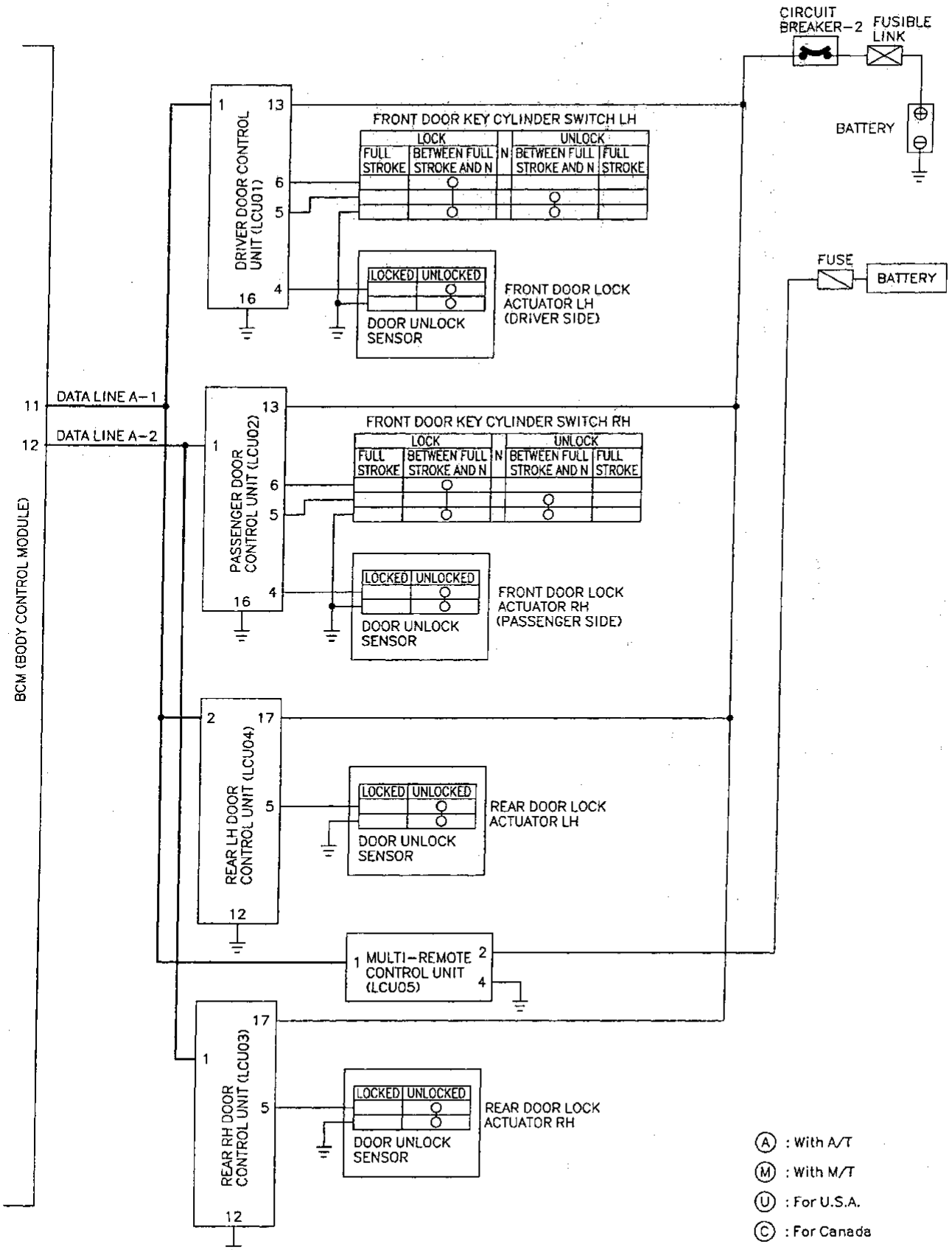
The headlamp flashes and the horn sounds intermittently.
The alarm automatically turns off after 30 seconds or when LCU05 (multi-remote control unit) receives any signal from multi-remote controller.

Schematic



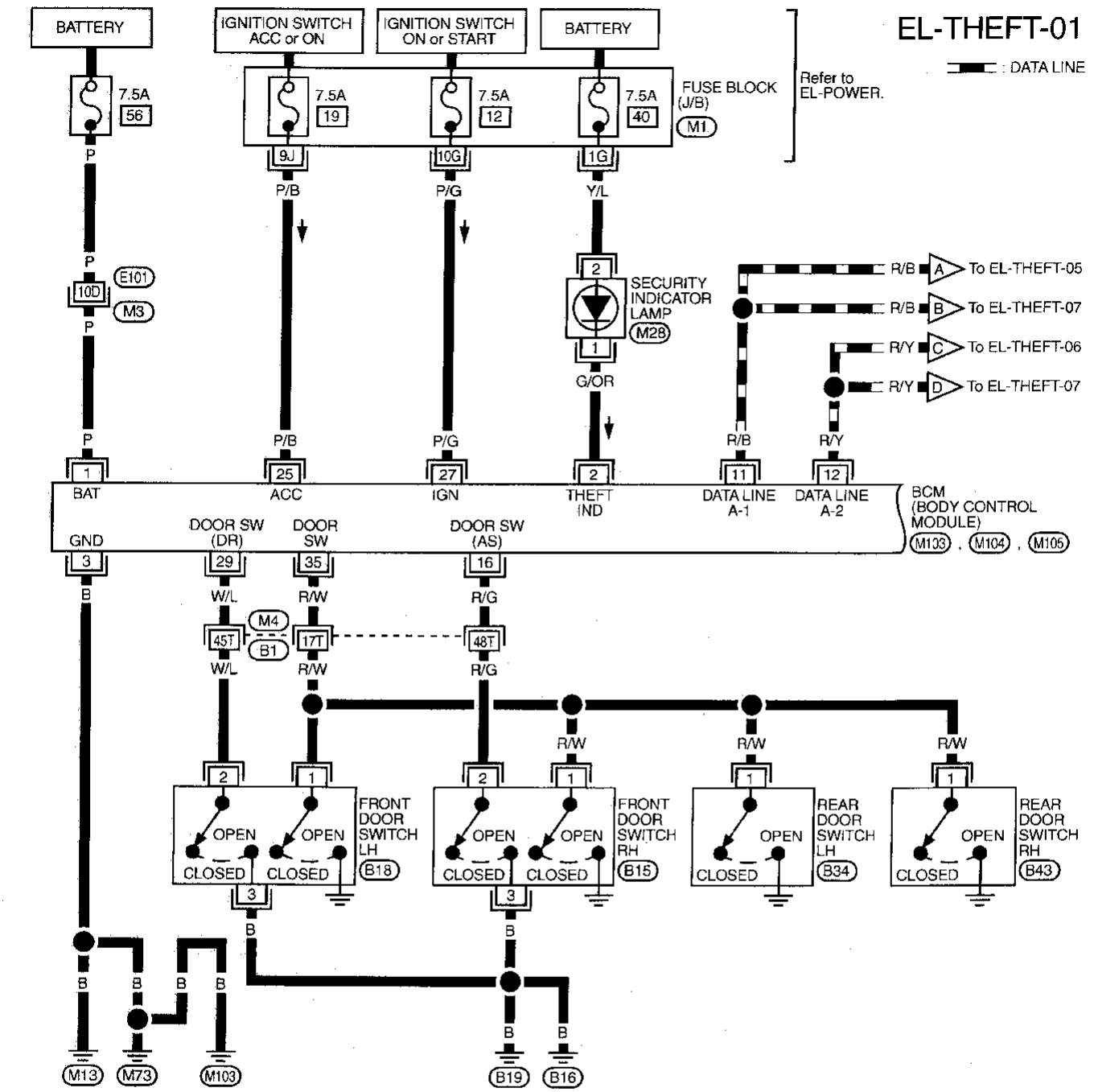
MEL913H

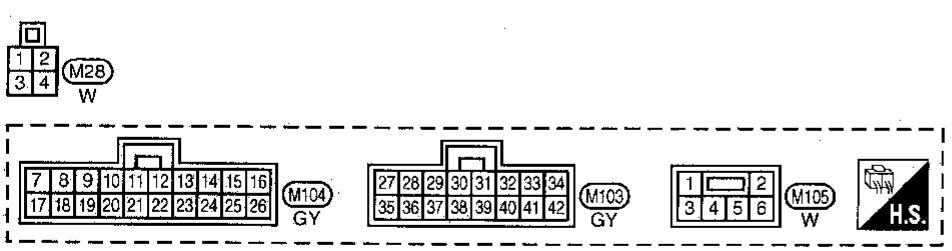
Schematic (Cont'd)



MEL914H

Wiring Diagram — THEFT —





Refer to last page (Foldout page).

M3, E101

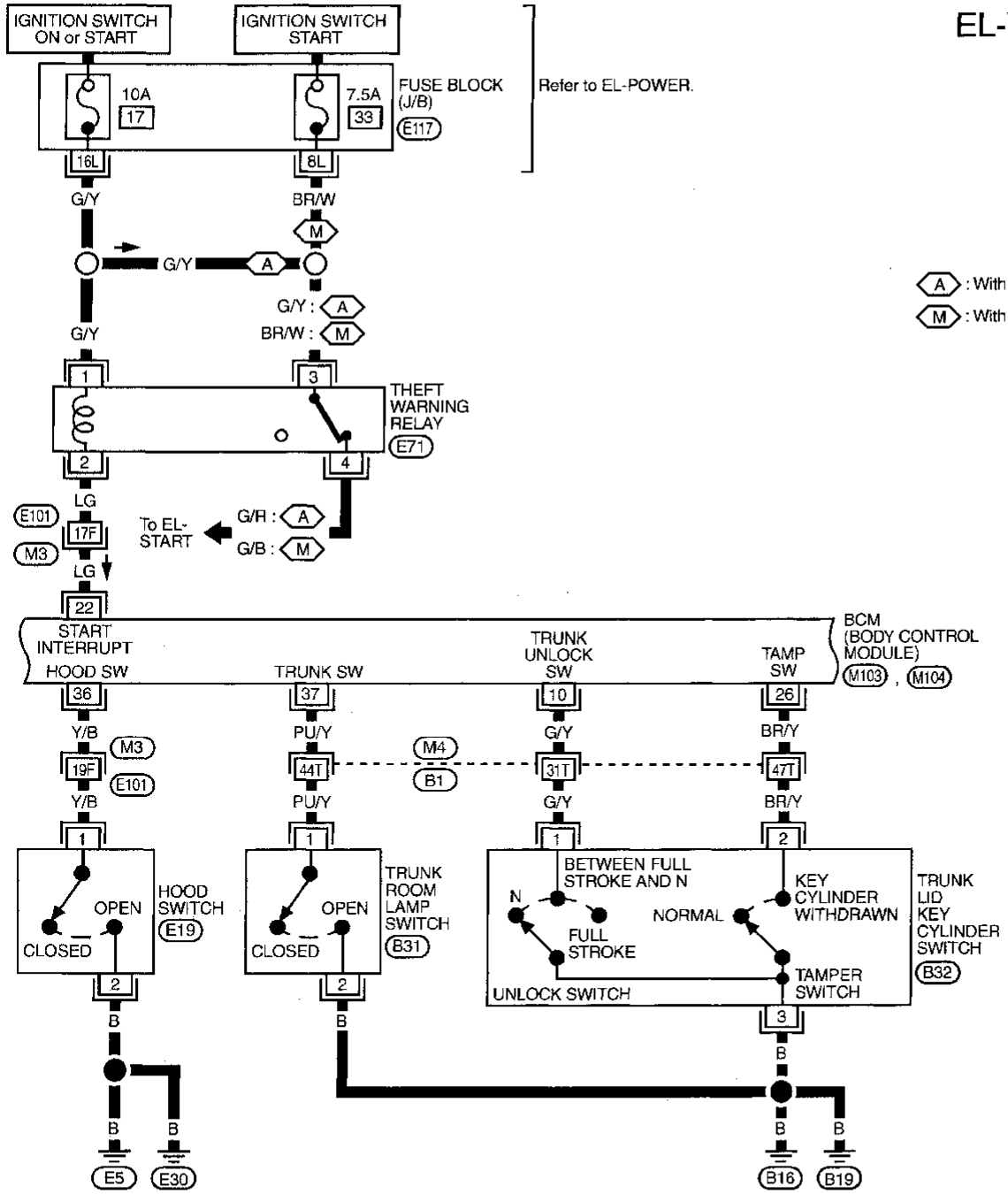
M4, B1

M1

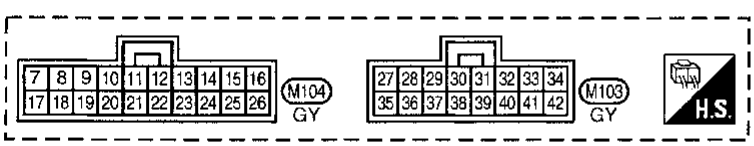
MEL915H

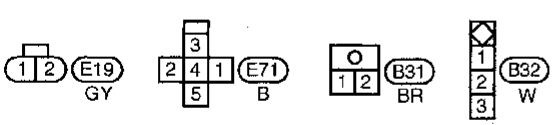
Wiring Diagram — THEFT — (Cont'd)

EL-THEFT-02



A : With A/T
M : With M/T

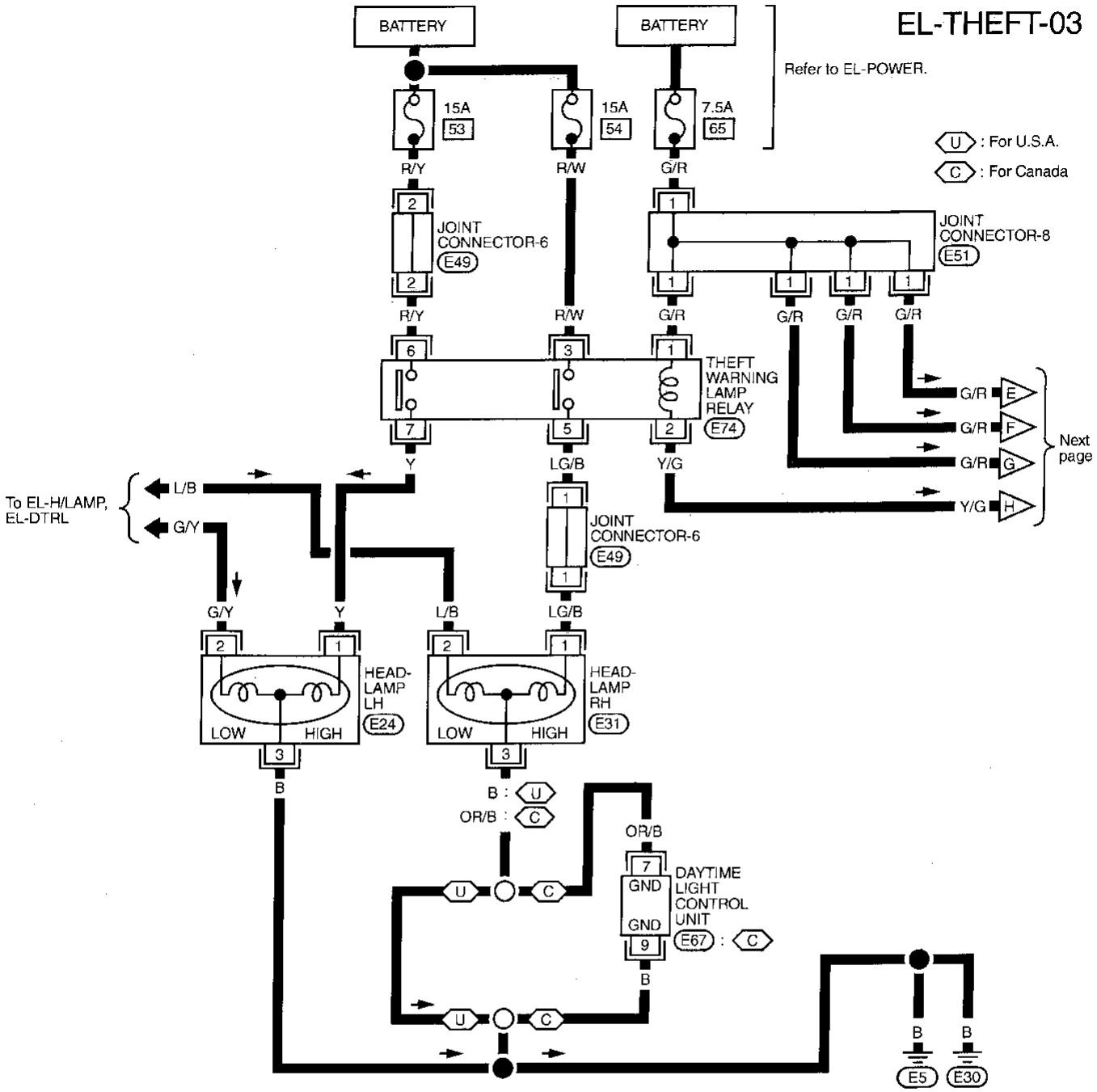


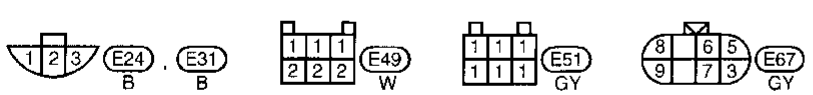


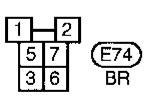
Refer to last page (Foldout page).
M3 , E101
M4 , B1
E117

MEL916H

Wiring Diagram — THEFT — (Cont'd)

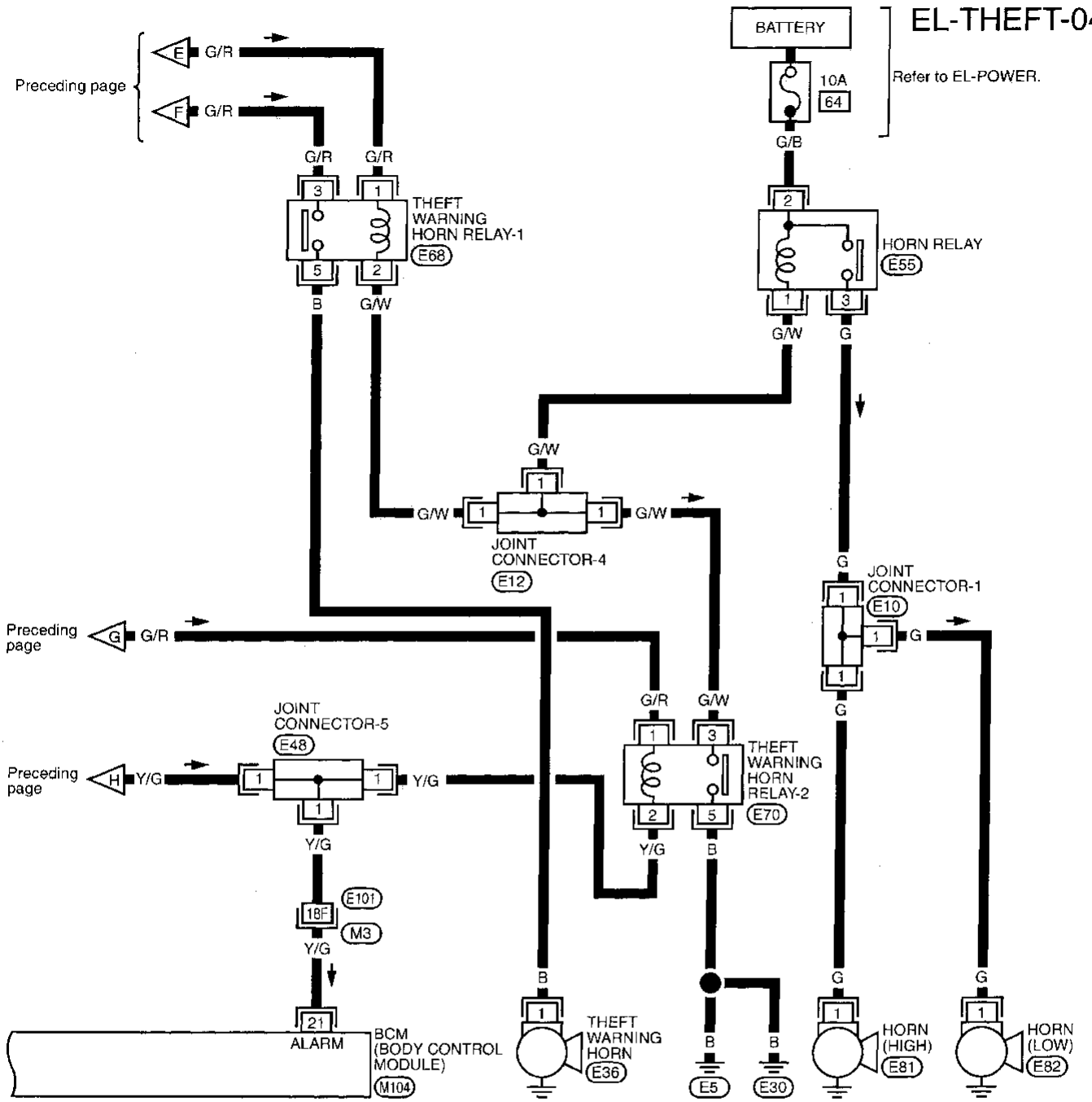






MEL917H

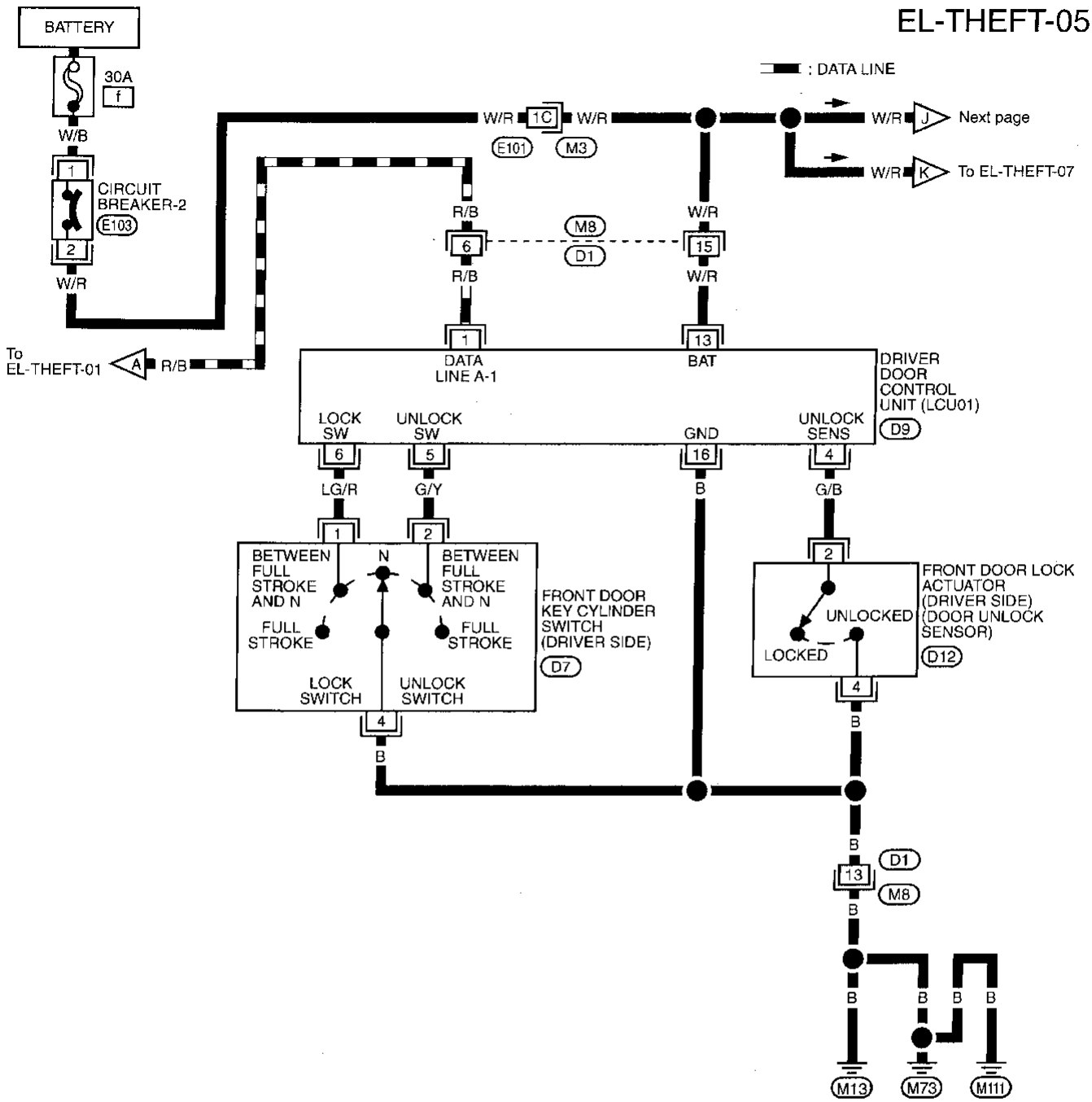
Wiring Diagram — THEFT — (Cont'd)

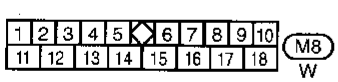


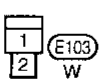
MEL918H

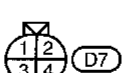
Wiring Diagram — THEFT — (Cont'd)

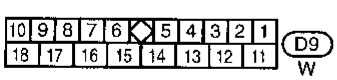
EL-THEFT-05

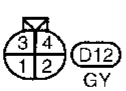










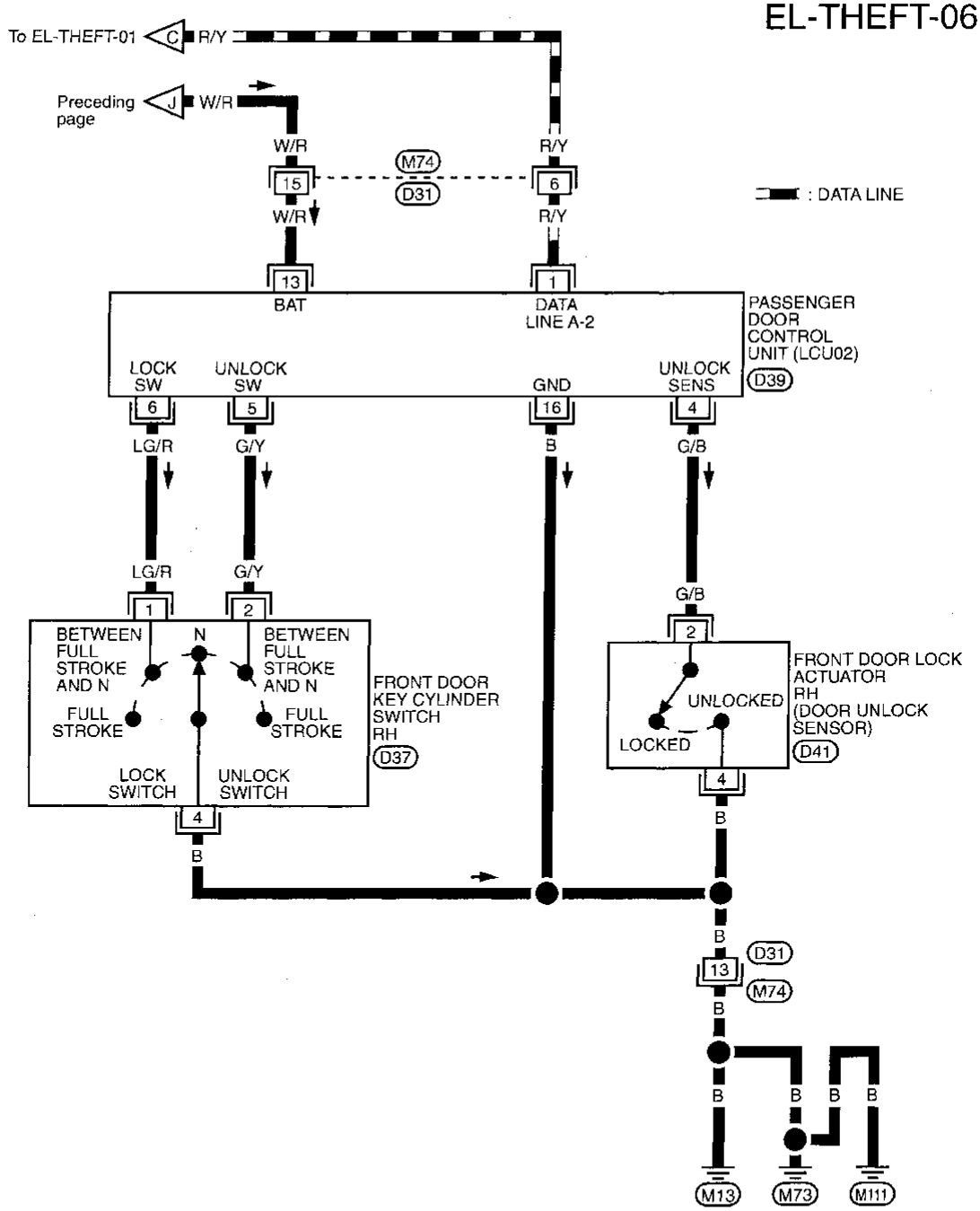


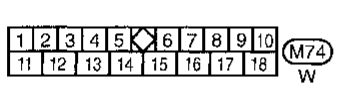
Refer to last page (Foldout page).
M3 , E101

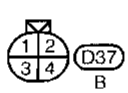
MEL919H

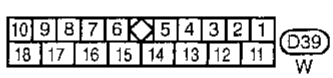
Wiring Diagram — THEFT — (Cont'd)

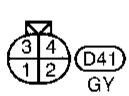
EL-THEFT-06







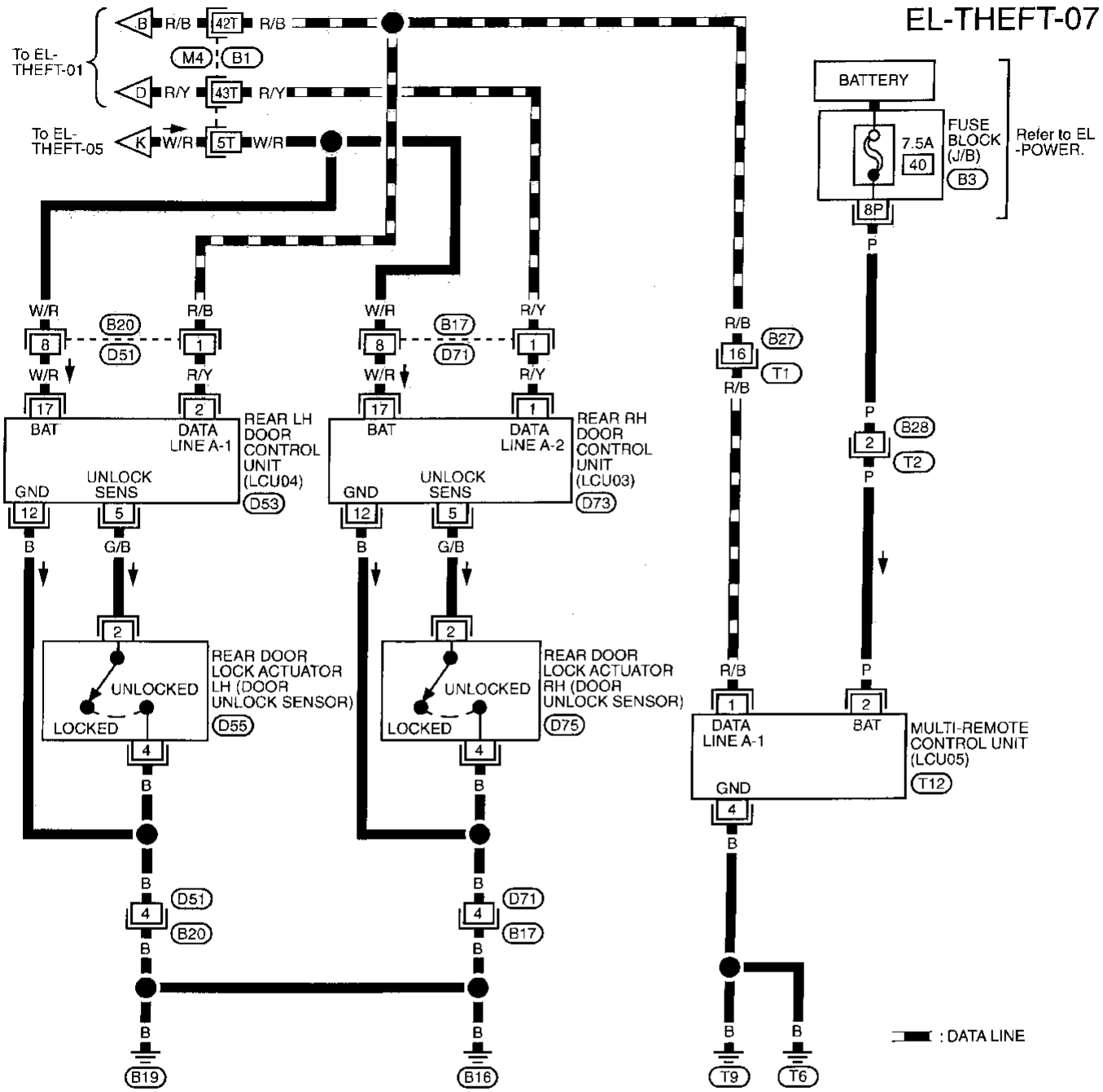


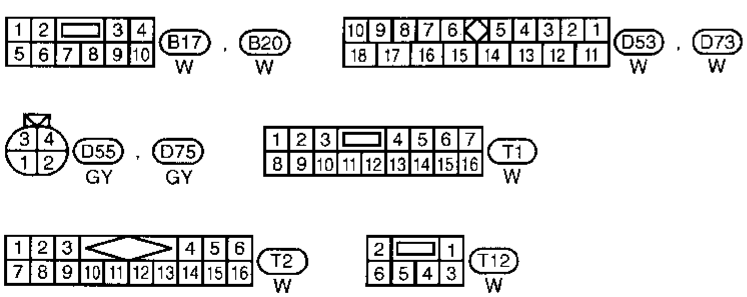


MEL920H

Wiring Diagram — THEFT — (Cont'd)

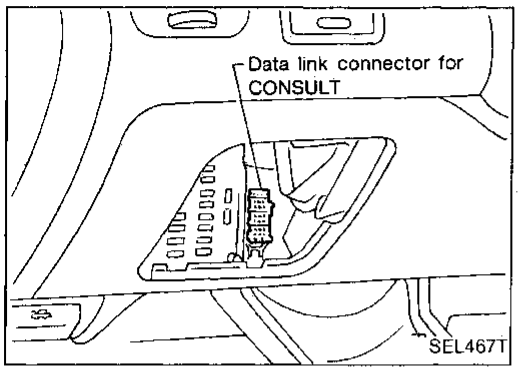
EL-THEFT-07





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

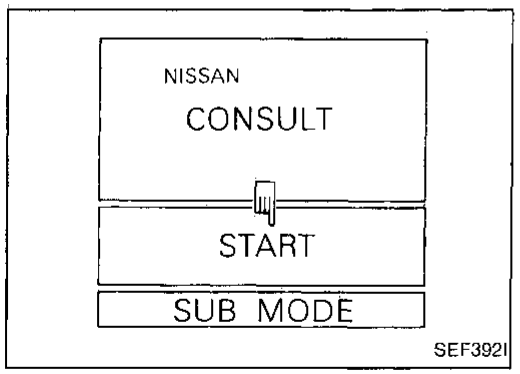
MEL591I



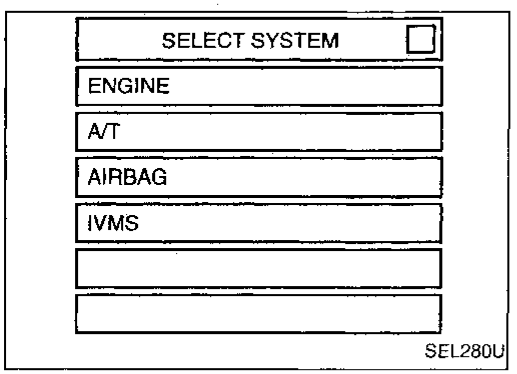
CONSULT

CONSULT INSPECTION PROCEDURE

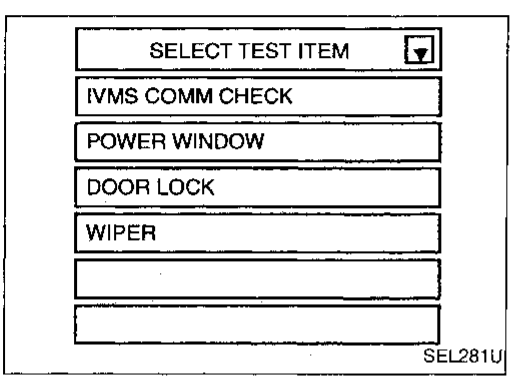
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



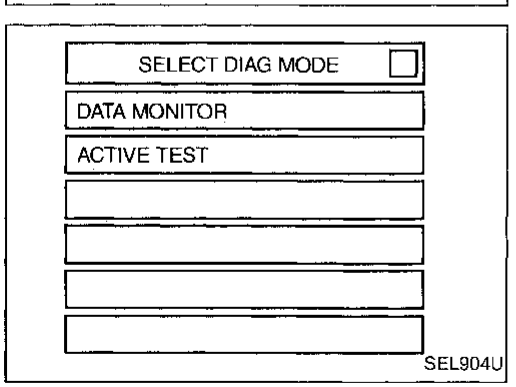
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



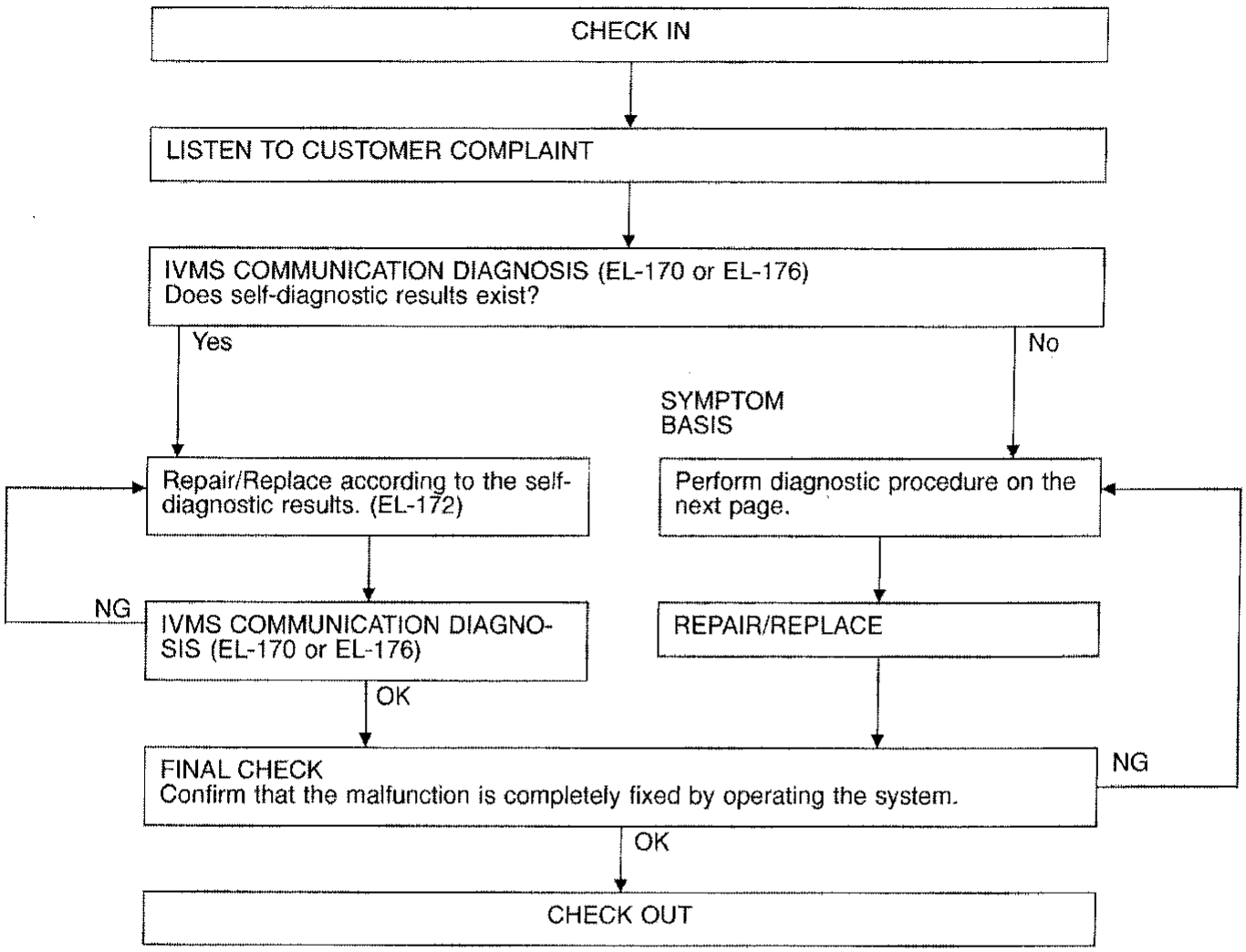
6. Touch "THEFT WARNING SYSTEM".



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

Trouble Diagnoses

WORK FLOW



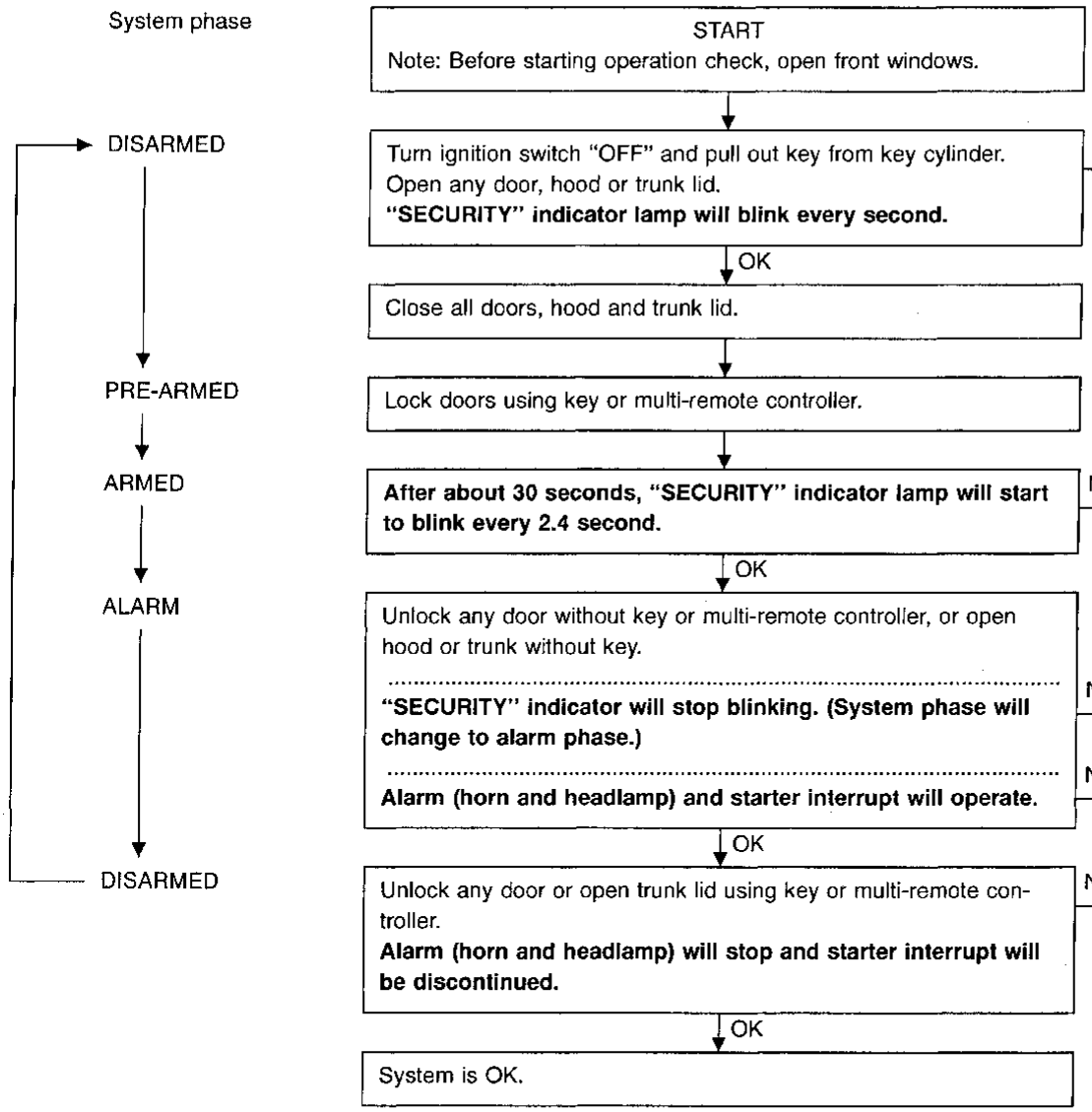
NOTICE:

- **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-170) or turn the ignition switch to "OFF" position and remove 7.5A fuse (No. 56, located in the fuse and fusible link box).

Trouble Diagnoses (Cont'd)

PRELIMINARY CHECK

The system operation is canceled by turning ignition switch to "ACC" at any step between START and ARMED in the following flow chart.



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

Trouble Diagnoses (Cont'd)

Before starting trouble diagnoses below, perform preliminary check, EL-265.

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

SYMPTOM CHART

PROCEDURE			—	Diagnostic procedure									—	
REFERENCE PAGE			EL-265	EL-267	EL-271	EL-272	EL-273	EL-274	EL-275	EL-276	EL-277	EL-242	EL-171
SYMPTOM			Preliminary check	Diagnostic Procedure 1 (Door, hood, trunk room lamp and 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 alarm check)	Diagnostic Procedure 7 (Headlamp alarm check)	Diagnostic Procedure 8 (Starter interrupt system check)	Check "MULTI-REMOTE CONTROL" system.	WAKE-UP DIAGNOSES
1	Theft warning indicator does not turn "ON" or blinking.		X		X								
2	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	
3	*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)
4	Theft warning alarm does not activate.	All function	X	X		X							
		Horn alarm	X						X				
		Headlamp alarm	X							X			
		Starter interrupt	X								X		
5	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	

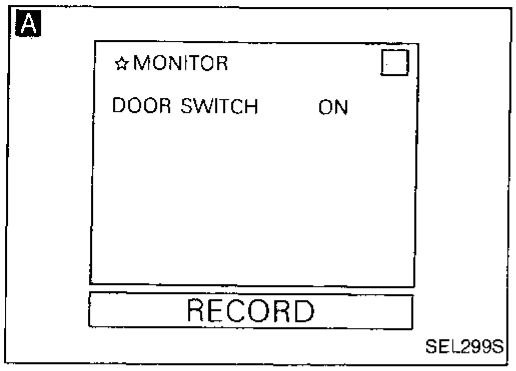
X : Applicable

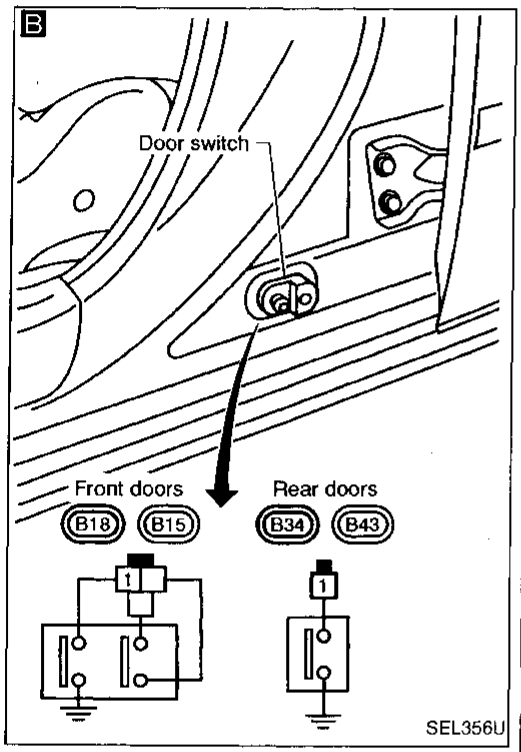
*1: Make sure the system is in the armed phase.

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-178.)

Refer to wiring diagram in EL-256.

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

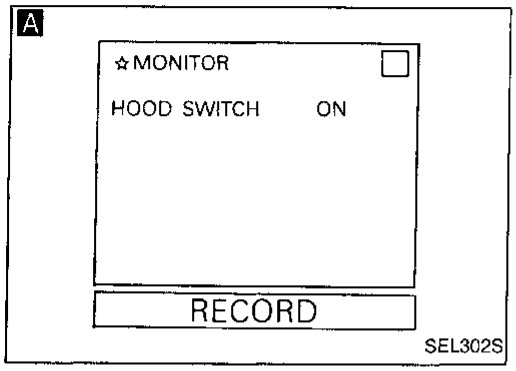
NG → Replace door switch.

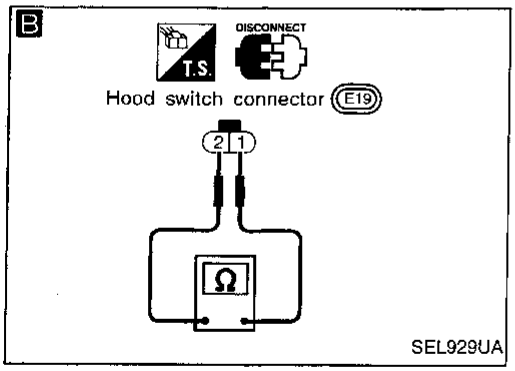
OK ↓

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)





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-178.)

Refer to wiring diagram in EL-257.

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.

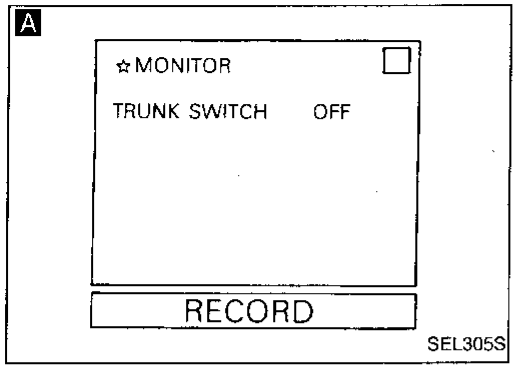
OK ↓

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

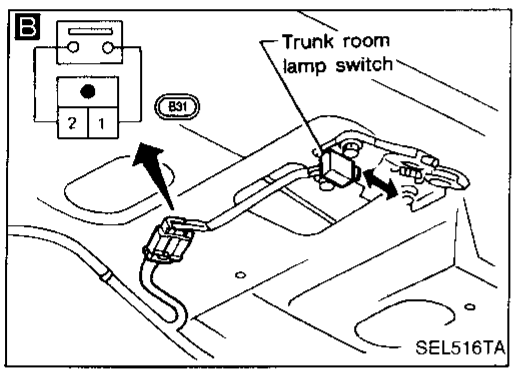
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1-(3)
(Trunk room lamp switch check)

A



B



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-178.)

Refer to wiring diagram in EL-257.

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

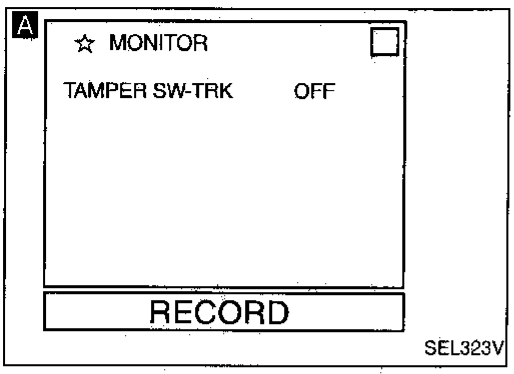
NG → Replace trunk room lamp switch.

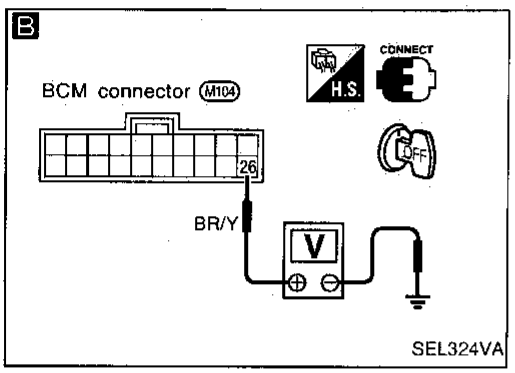
OK ↓

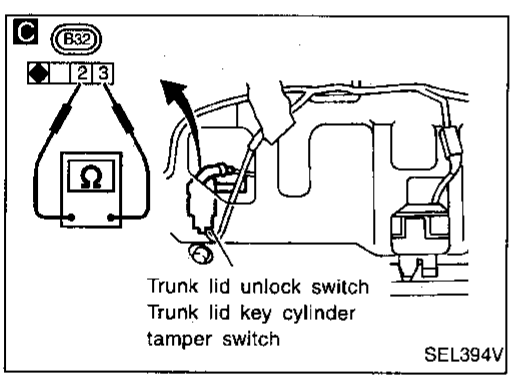
Check the following.
- Trunk room lamp switch ground circuit
- Harness for open or short between control unit and trunk room lamp switch

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1-(4)
(Trunk key cylinder tamper switch check)







CHECK TRUNK KEY CYLINDER TAMPER SWITCH INPUT SIGNAL.

A CONSULT

See "TAMPER SW-TRK" in DATA MONITOR mode.
When trunk key cylinder is installed:
TAMPER SW TRK OFF
When one of trunk key cylinders is removed:
TAMPER SW TRK ON

OR

B TESTER

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

Refer to wiring diagram in EL-257.

OK → Trunk key cylinder tamper switch is OK.

NG

CHECK INSTALLATION OF TRUNK KEY CYLINDER.

NG → Reinstall trunk key cylinder correctly.

OK

C

CHECK TRUNK KEY TAMPER SWITCH.

1. Disconnect trunk key cylinder (tamper) switch connector.
2. Check continuity between trunk key cylinder (tamper) switch terminals.

Condition	Continuity
Key cylinder is installed	No
Key cylinder is removed	Yes

NG → Replace trunk key cylinder switch.

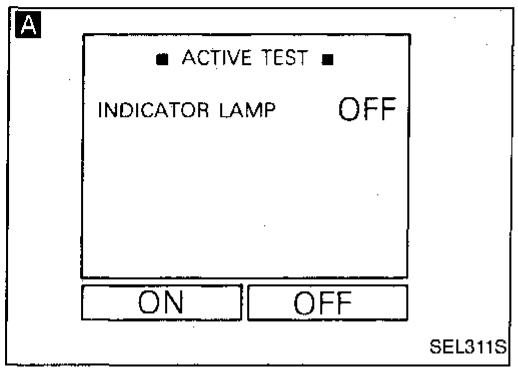
OK

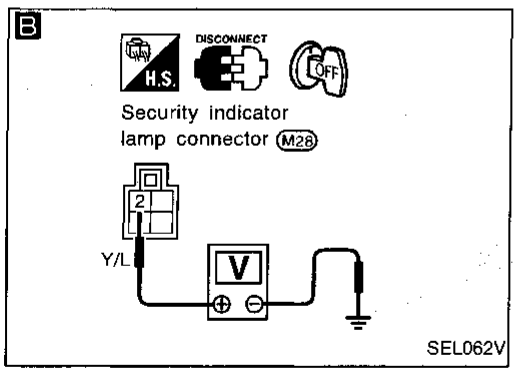
Check the following.
- Harness for open or short between BCM and tamper switch
- Tamper switch ground circuit

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-256.

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 ↓

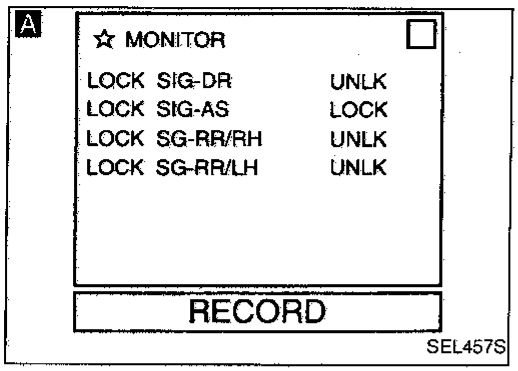
Check harness for open or short between security indicator lamp and BCM.

Trouble Diagnoses (Cont'd)

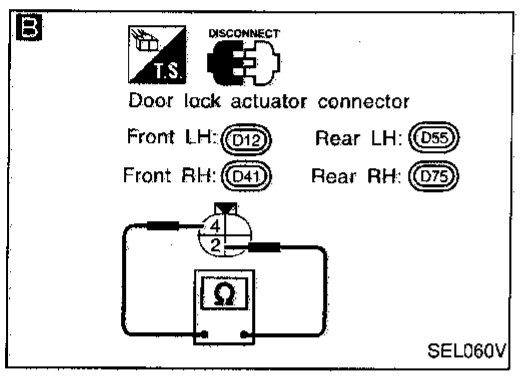
DIAGNOSTIC PROCEDURE 3

(Door unlock sensor check)

A



B



CHECK DOOR LOCK KNOB SWITCH CIRCUITS.

A CONSULT

See "LOCK SIG SW" in DATA MONITOR mode.
When door is locked:
LOCK SIG LOCK
When door is unlocked:
LOCK SIG UNLK

OR

ON-BOARD

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

Refer to wiring diagram in EL-260, 261 or 262.

OK → Door unlock sensor is OK.

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 ↓

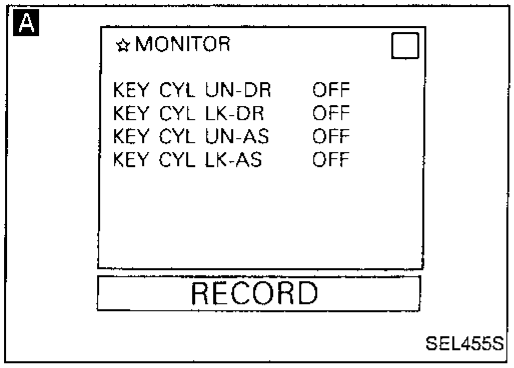
Check the following.
- Door unlock sensor ground circuit
- Harness for open or short between LCU and door unlock sensor

Trouble Diagnoses (Cont'd)

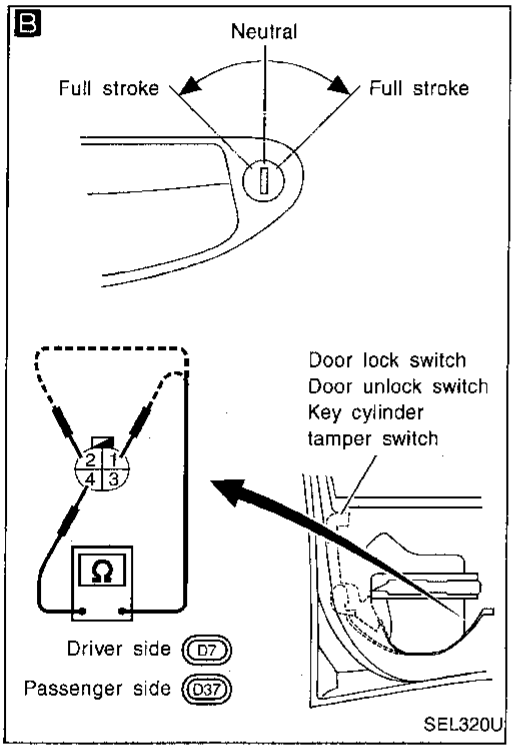
DIAGNOSTIC PROCEDURE 4

(Door key cylinder switch check)

A



B



CHECK DOOR KEY CYLINDER SIGNAL.

A CONSULT

See "KEY CYL DR or AS" in DATA MONITOR mode.
These signals should be "ON" when ignition key inserted in the door key cylinder was turned to lock or unlock.
If signals turn from "OFF" to "ON" too quickly on CONSULT display when key cylinder is turned, check these signals in the graphic mode.
(Refer to CONSULT OPERATION MANUAL.)

OR

ON-BOARD

Check front LH or RH door lock key cylinder lock and unlock switch in Switch monitor (Mode II) mode.
(Refer to On-board Diagnosis, EL-178.)

Refer to wiring diagram in EL-260 or 261.

OK → Door key cylinder switch is OK.

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

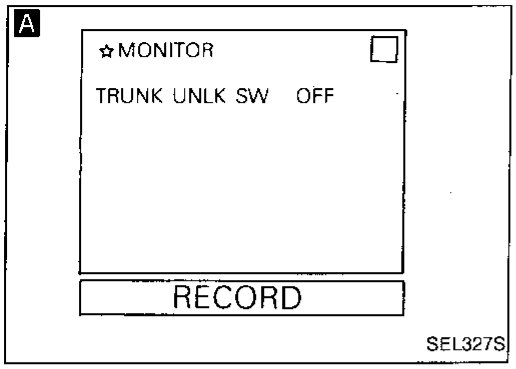
Check the following.
- Door key cylinder switch ground circuit
- Harness for open or short between door key cylinder switch and LCU01/02

Trouble Diagnoses (Cont'd)

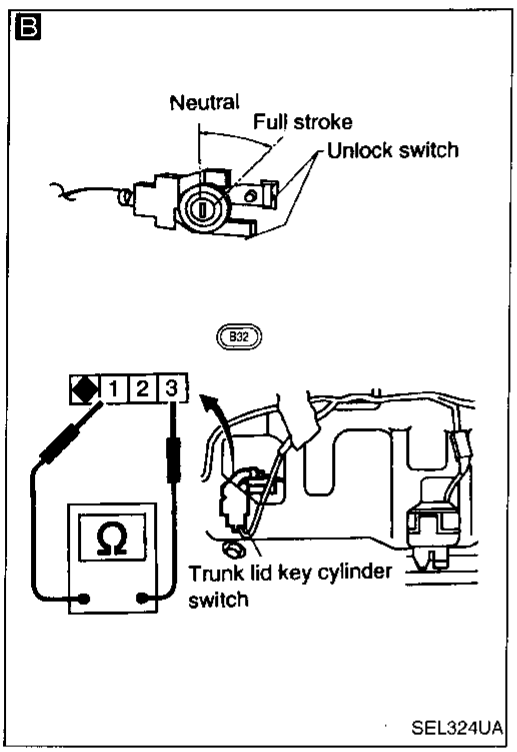
DIAGNOSTIC PROCEDURE 5

(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-178.)

Refer to wiring diagram in EL-257.

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.

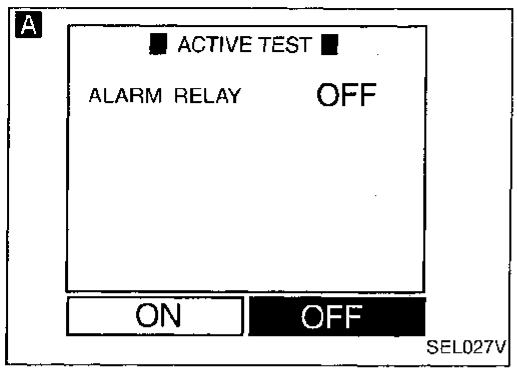
- Trunk lid key cylinder switch ground circuit
- Harness for open or short between trunk lid key cylinder switch and BCM

Trouble Diagnoses (Cont'd)

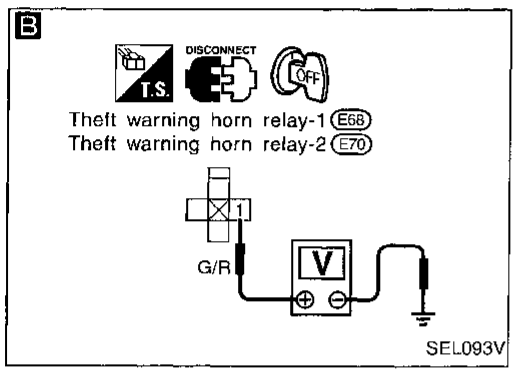
DIAGNOSTIC PROCEDURE 6

(Theft warning horn alarm check)

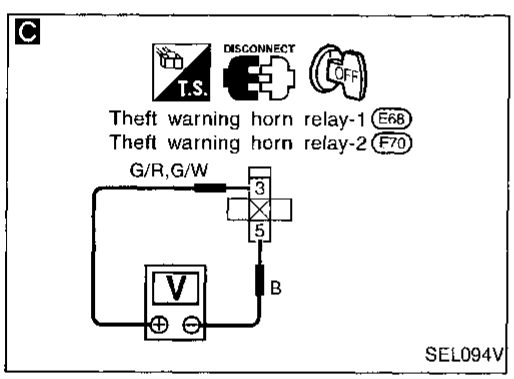
A



B



C



A

THEFT WARNING HORN RELAY ACTIVE TEST

CONSULT

Perform "ALARM RELAY" in ACTIVE TEST mode.
Check horn operation.
If CONSULT is not available, skip this procedure and go to the next procedure below.

OK → Horn alarm is OK.

NG ↓

Does horn work?

NG → Check horn system.

OK ↓

Check theft warning horn relays.

NG → Replace.

OK ↓

B

CHECK POWER SUPPLY FOR THEFT WARNING HORN RELAYS.
1. Disconnect theft warning horn relays connector.
2. Check voltage between terminal ① and ground.
Battery voltage should exist.

Refer to wiring diagram in EL-259.

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 ↓

C

CHECK THEFT WARNING HORN CIRCUIT.
1. Disconnect theft warning horn relays connector.
2. Check voltage between terminals ③ and ⑤.
Battery voltage should exist.

To confirm voltage between theft warning horn relay-2 terminals, connect theft warning horn relay-1.

NG → Check the following.
- Harness for open or short between fuse and theft warning horn relay-1
- Theft warning horn and theft warning horn relay ground (For horn relay-1)
- Theft warning horn relay-2 ground circuit
- Harness for open or short between theft warning horn relay-1 and horn relay-2 (For horn relay-2)

OK ↓

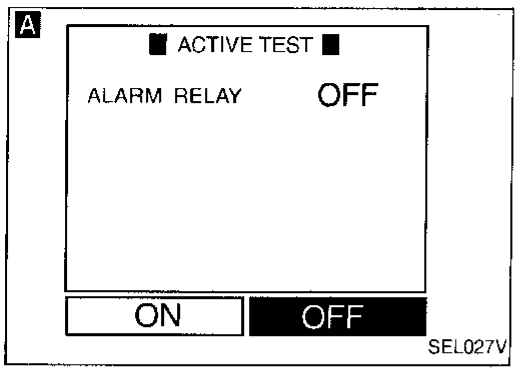
Check harness for open or short between theft warning horn relay-2 and BCM.

Trouble Diagnoses (Cont'd)

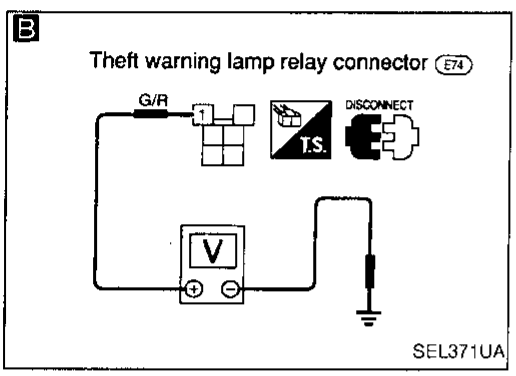
DIAGNOSTIC PROCEDURE 7

(Headlamp alarm check)

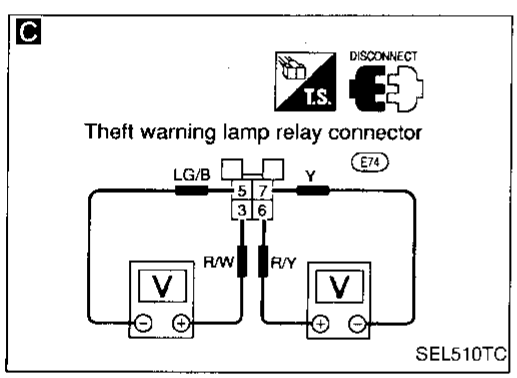
A



B



C



A

THEFT WARNING HEADLAMP RELAY ACTIVE TEST

CONSULT

Perform "ALARM RELAY" in ACTIVE TEST mode.
Check headlamp operation.
If CONSULT is not available, skip this procedure and go to the next procedure below.

OK → Headlamp alarm is OK.

NG ↓

Check theft warning lamp relay.

NG → Replace.

OK ↓

B

CHECK POWER SUPPLY FOR THEFT WARNING LAMP RELAY.

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

   Refer to wiring diagram in EL-258.

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

OK ↓

C

CHECK THEFT WARNING LAMP RELAY CIRCUIT.

1. Disconnect theft warning lamp relay connector.
2. Check voltage between terminals ③ and ⑤.
   Battery voltage should exist.
3. Check voltage between terminals ⑥ and ⑦.
   Battery voltage should exist.

NG → Check harness for open or short.

OK ↓

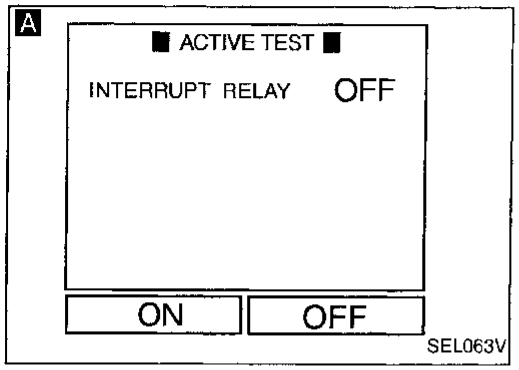
Check harness for open or short between BCM and theft warning lamp relay.

Trouble Diagnoses (Cont'd)

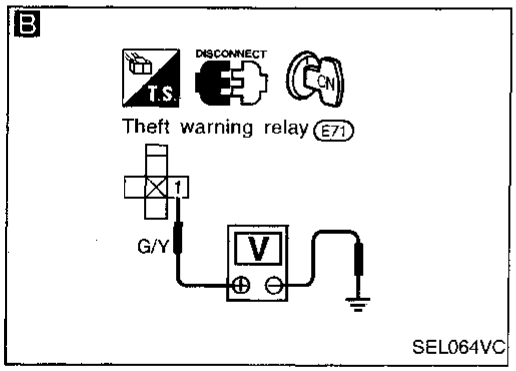
DIAGNOSTIC PROCEDURE 8

(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-257.

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.

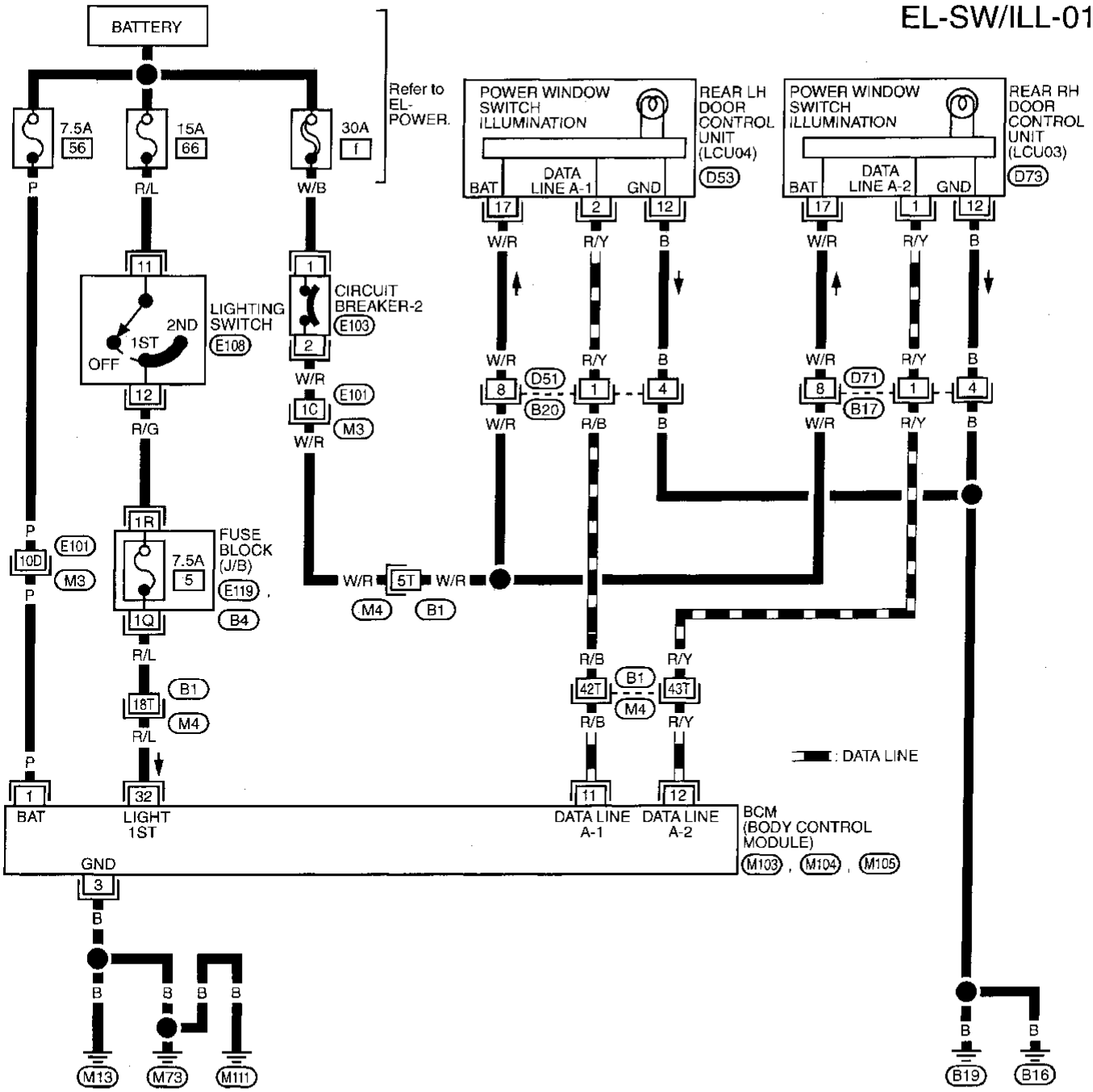
System Description

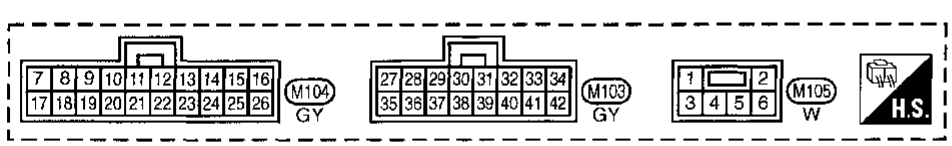
Power is supplied at all times
- to lighting switch terminal ⑪
- through 15A fuse (No. 66, located in the fuse and fusible link box).

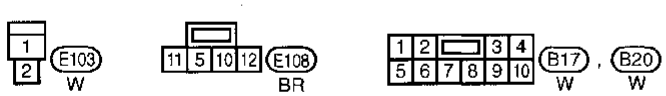
With the lighting switch in the 1ST or 2ND position, power is supplied
- to BCM terminal ㉜
- through lighting switch terminal ⑫ and
- 7.5A fuse [No. 5 , located in the fuse block (J/B)].

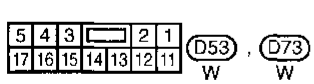
BCM is connected to LCU03 and LCU04 as DATA LINES A-1 or A-2.
When power is supplied to BCM, BCM sends a signal to rear LH and RH door control units to turn on power window switch illumination. Power and ground are supplied to power window switch illumination, then power window switch illumination turns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

Wiring Diagram — SW/ILL —



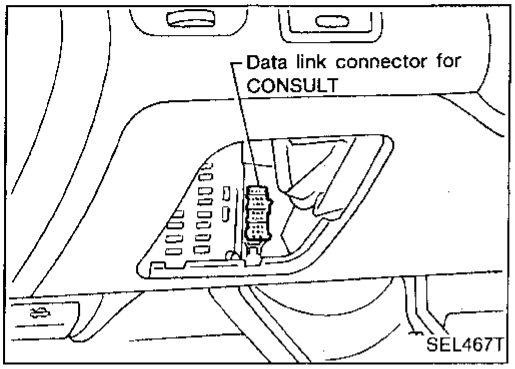






Refer to last page (Foldout page).
M3 , E101
M4 , B1
E119
B4

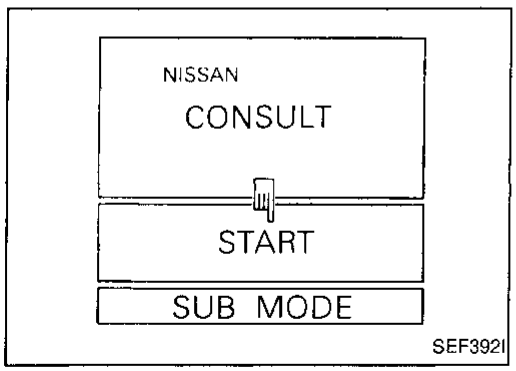
MEL921H



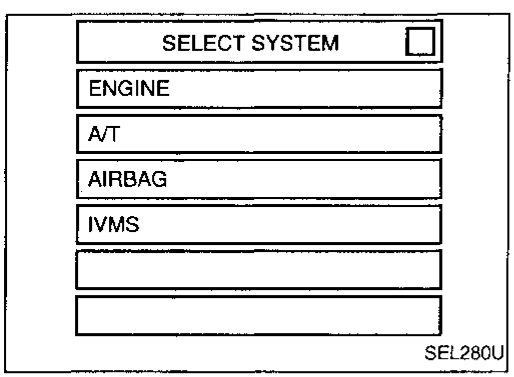
CONSULT

CONSULT INSPECTION PROCEDURE

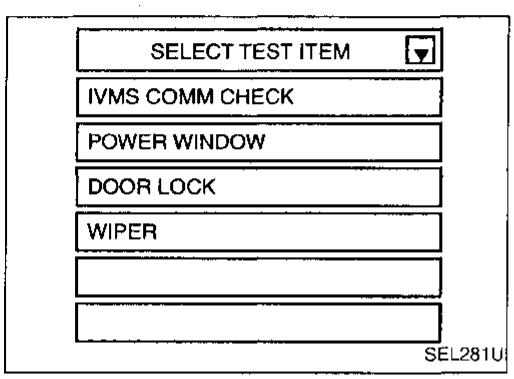
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



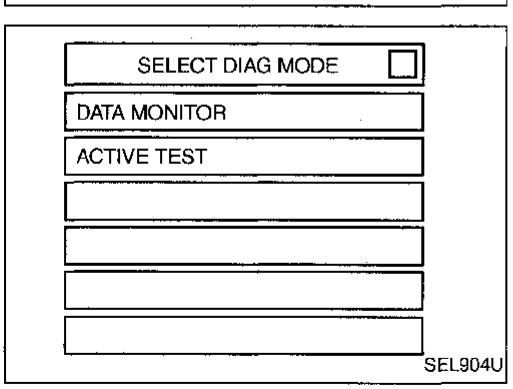
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



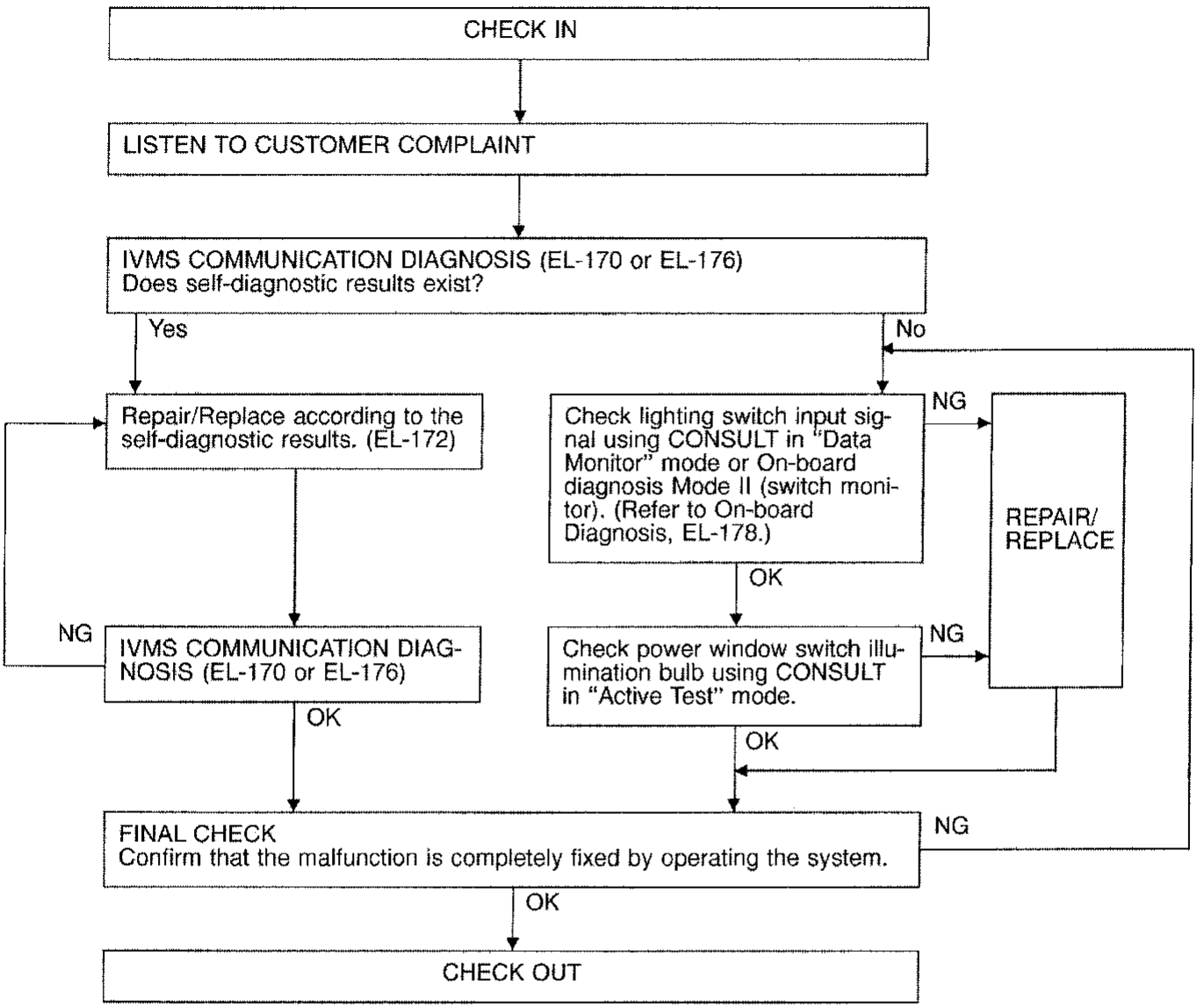
6. Touch "ILLUM LAMP".



- 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-170) or remove turn the ignition switch to "OFF" position and remove 7.5A fuse (No. 56, located in the fuse and fusible link box).

System Description

INTERIOR LAMP, IGNITION KEYHOLE ILLUMINATION

Power supply and ground

Power is supplied at all times
- through 7.5A fuse [No. 26], located in the fuse block (J/B)]
- to interior lamp terminal ①,
- to ignition keyhole illumination terminal ①.

Power is also supplied at all times
- through 7.5A fuse [No. 40], located in the fuse block (J/B)]
- to key switch terminal ①.

With the ignition switch in the ON or START position, power is supplied
- through 7.5A fuse [No. 12], located in the fuse block (J/B)]
- to BCM terminal 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 (M111).

Switch operation

When interior lamp switch is in the ON position, ground is supplied
- to interior lamp
- through case ground of interior lamp.

When power and ground is supplied, the interior lamp turns ON.

Interior lamp timer operation

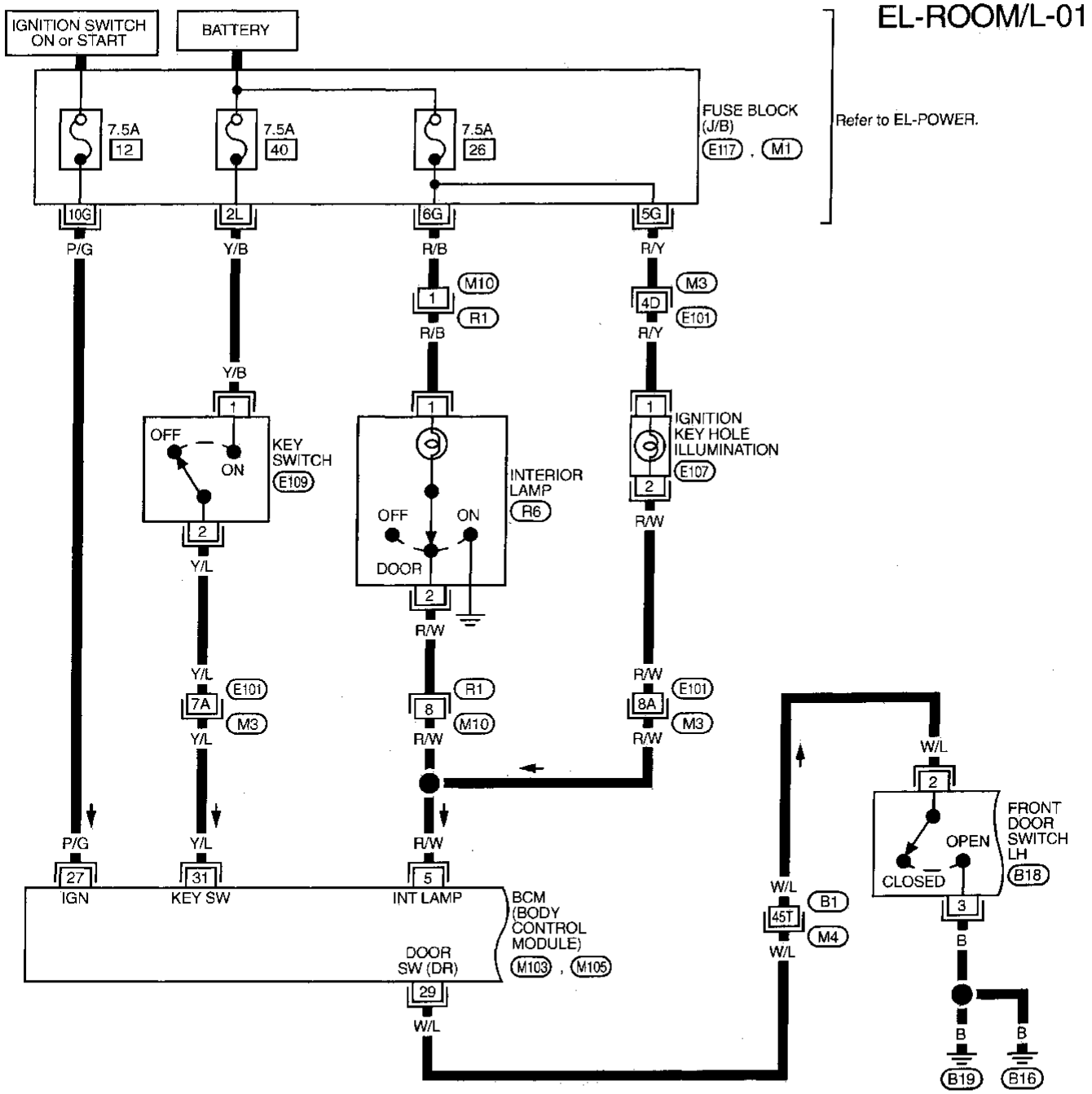
When interior lamp switch is in the "DOOR" position, BCM keeps interior lamp and ignition keyhole illumination on for about 30 seconds when:
- driver's door is unlocked while key is out of the ignition key cylinder,
- unlock signal is supplied from multi-remote controller (Models with multi-remote control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

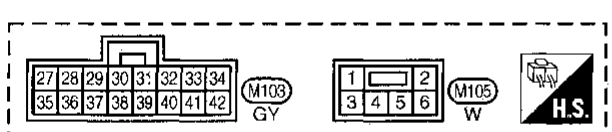
The timer is canceled, and interior lamp and ignition keyhole illumination turn off when:
- driver's door is locked, or
- ignition switch is turned "ON".

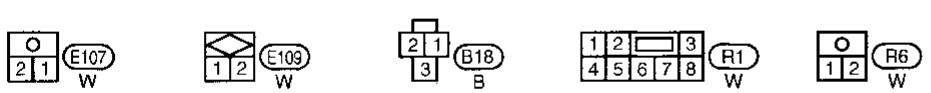
ON-OFF control

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 —



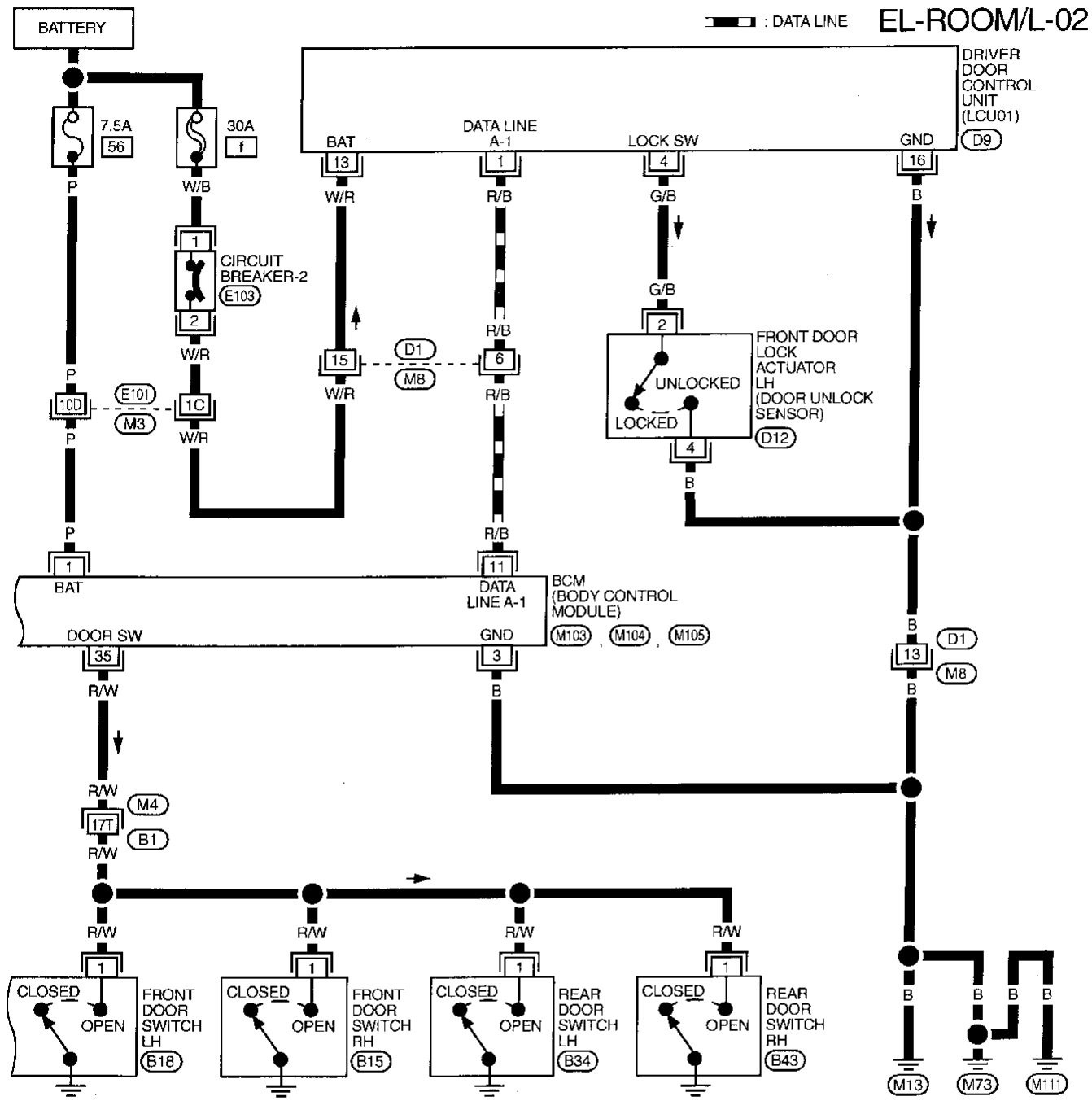




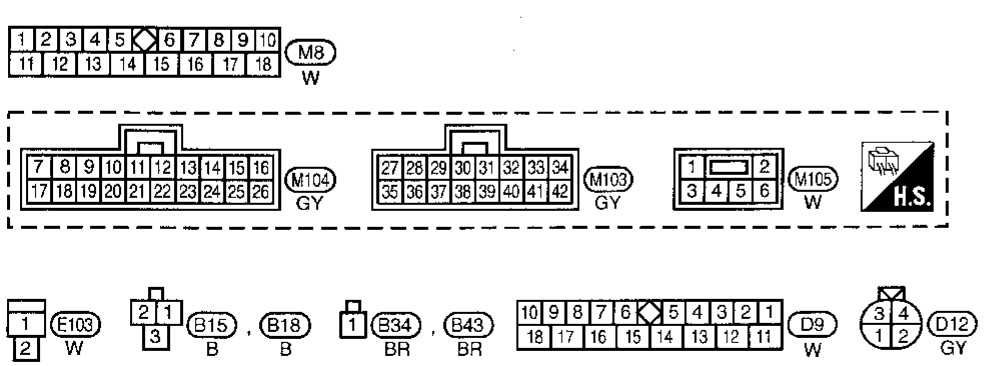
Refer to last page (Foldout page).
M1
M3 , E101
M4 , B1
E117

MEL922H

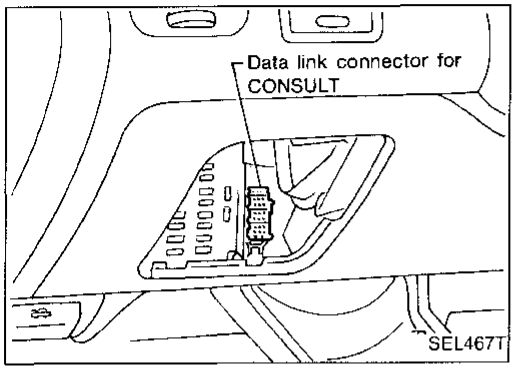
Wiring Diagram — ROOM/L — (Cont'd)



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



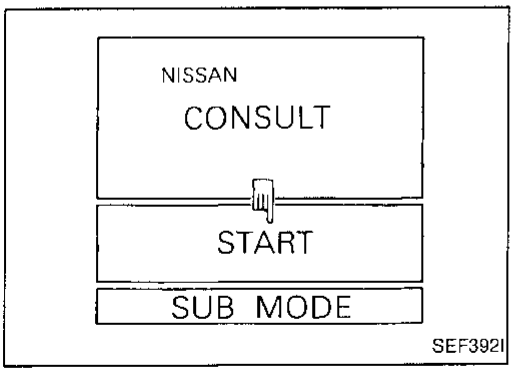
MEL923H



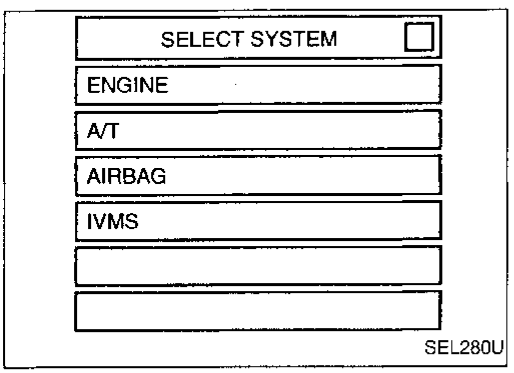
CONSULT

CONSULT INSPECTION PROCEDURE

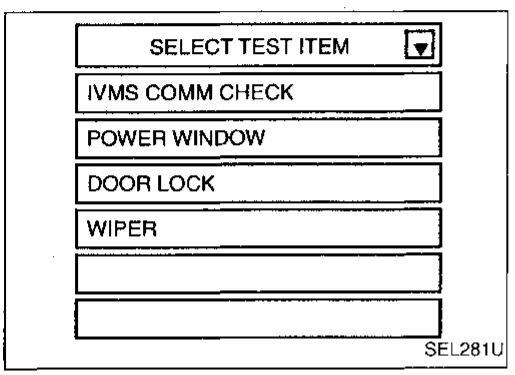
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



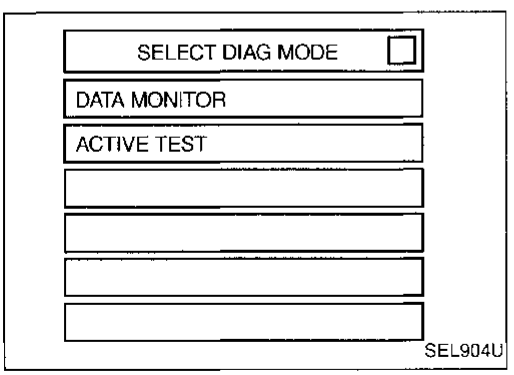
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



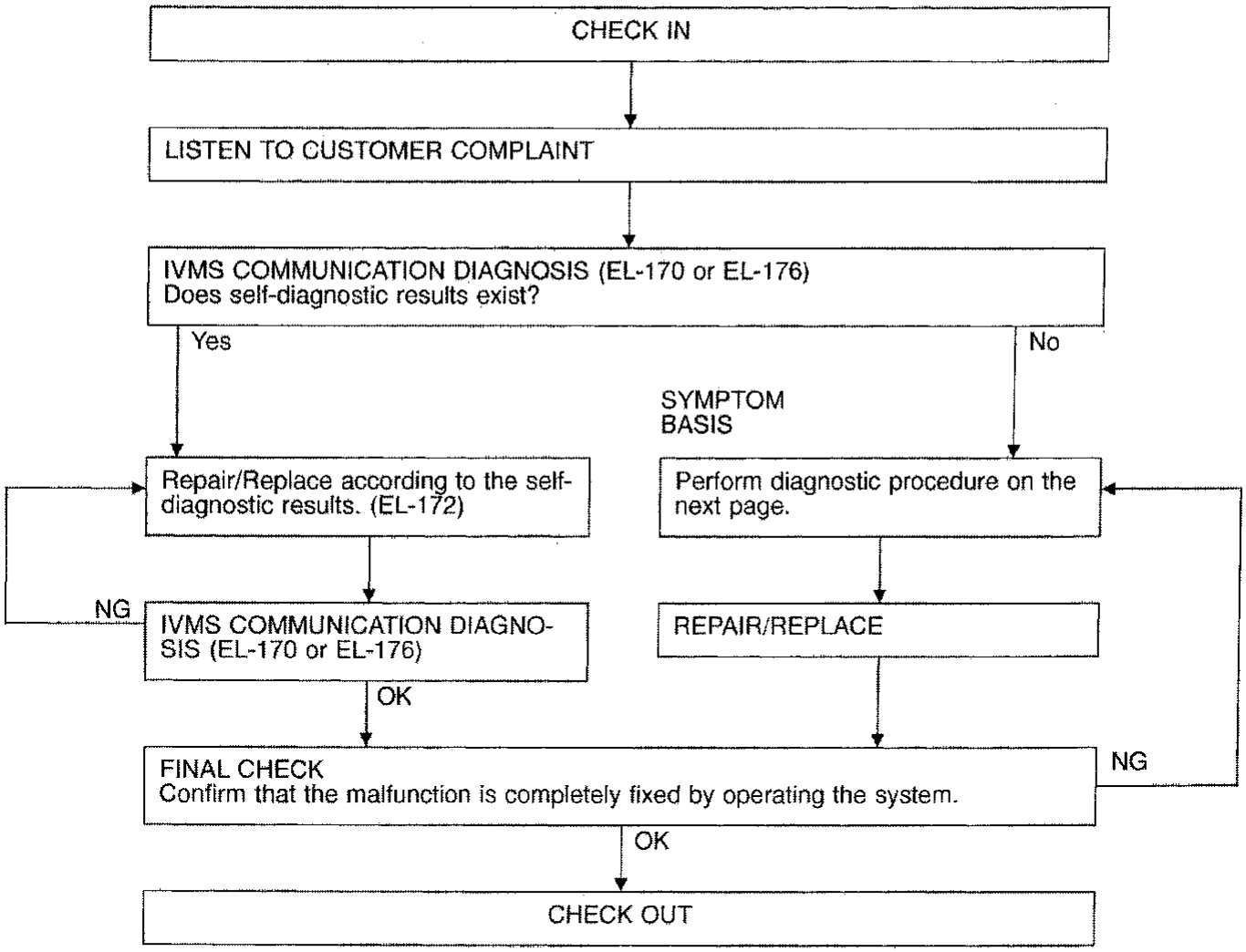
6. Touch "ROOM LAMP TIMER".



- 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-170) or turn the ignition switch to "OFF" position and remove 7.5A fuse (No. 56, located in the fuse and fusible link box).

Trouble Diagnoses (Cont'd)

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 ↓

Does ignition keyhole illumination illuminate when any door is opened?

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

NG ↓

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-178.

OK ↓

B

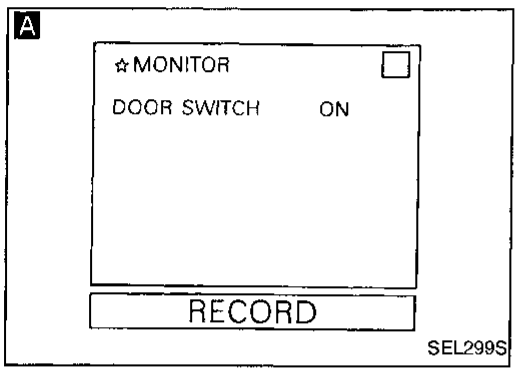
CHECK INTERIOR LAMP SIGNAL.
1. Turn interior lamp switch to DOOR (center) position.
2. Check voltage between BCM terminal ⑤ and ground.
Battery voltage should exist.

NG → Check harness for open or short between interior lamp, ignition keyhole illumination and BCM.

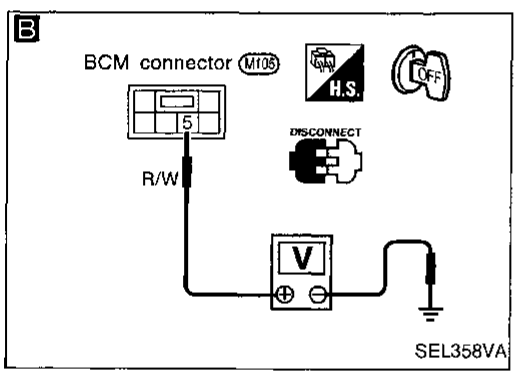
OK ↓

Replace BCM.

A



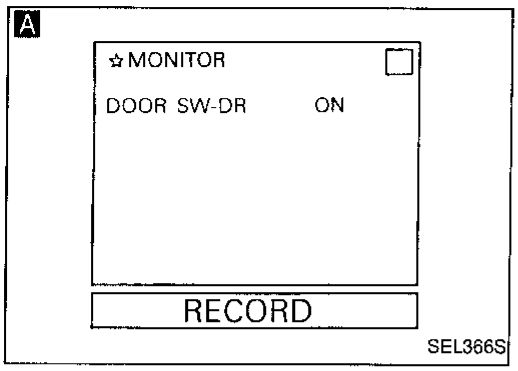
B

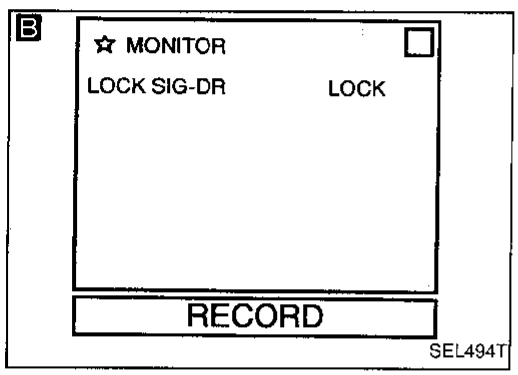


Trouble Diagnoses (Cont'd)

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

— OR —

ON-BOARD

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

NG →

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

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

— OR —

ON-BOARD

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

OK →

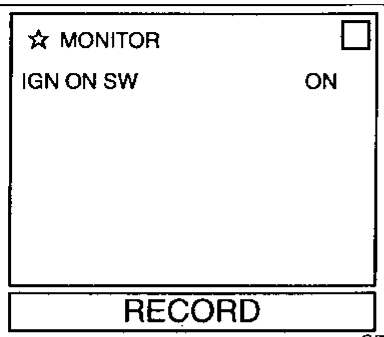
Check the following.
- Driver door unlock sensor
- Driver door unlock sensor ground circuit
- Harness for open or short between door unlock sensor and LCU

NG ↓

Ⓐ

Trouble Diagnoses (Cont'd)

C



Ⓐ

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

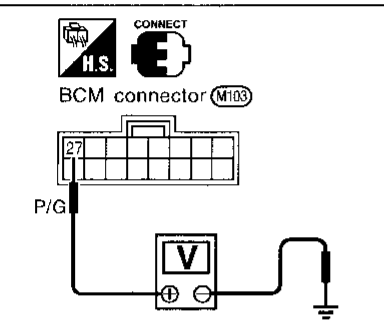
D TESTER

Check voltage between BCM terminal ㉗ and ground.

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

OK ↓

D



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

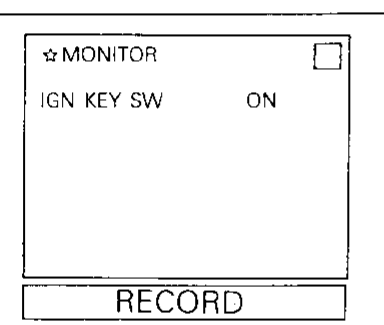
Check voltage between BCM terminal ㉛ and ground.

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

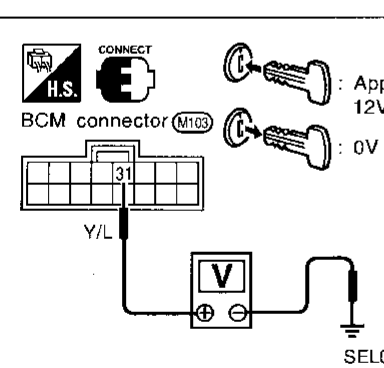
OK ↓

Replace BCM.

E



F



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

System Description

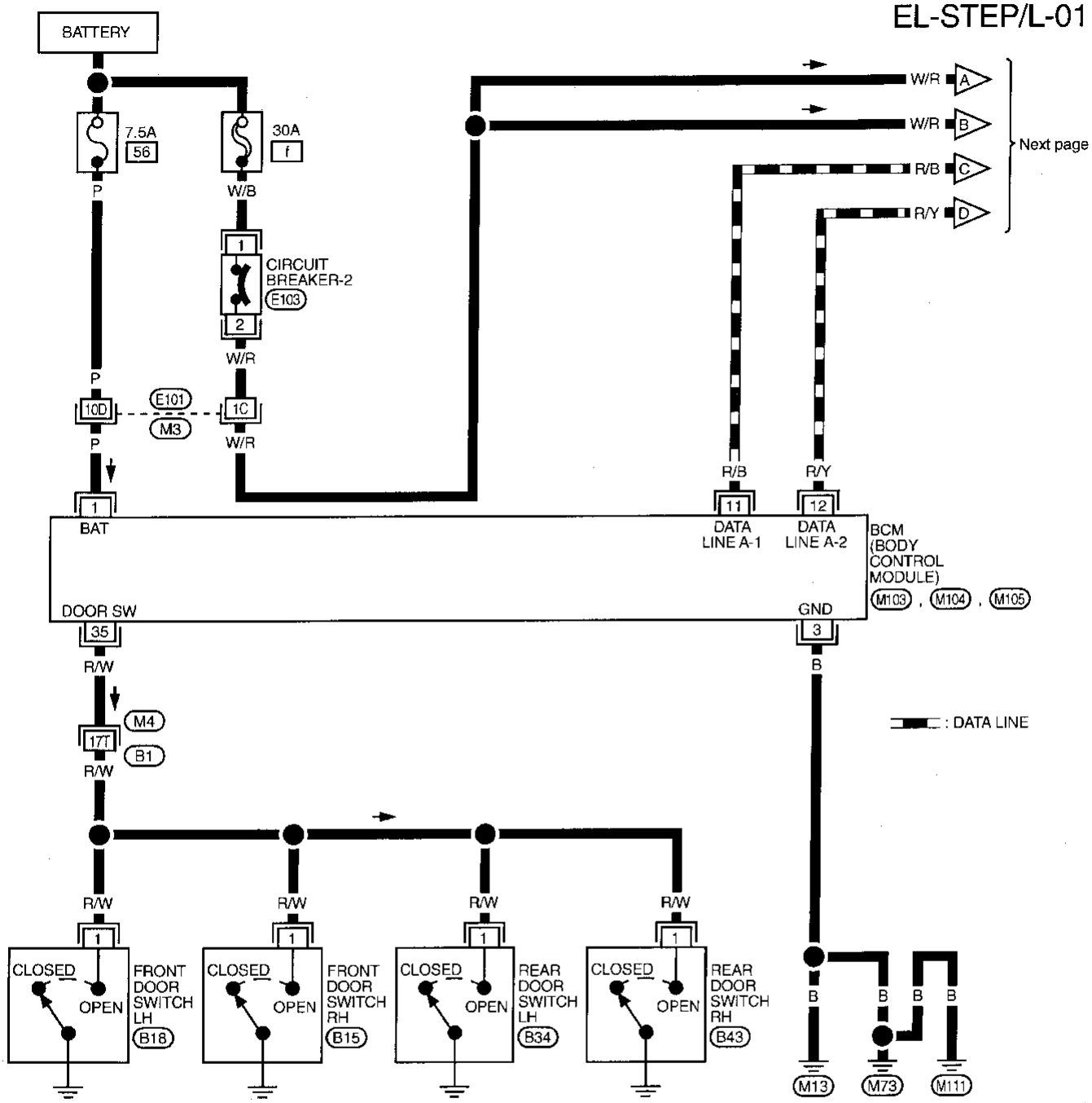
Power is supplied at all times
- to BCM terminal ①
- through 7.5A fuse (No. 56, located in the fuse and fusible link box).

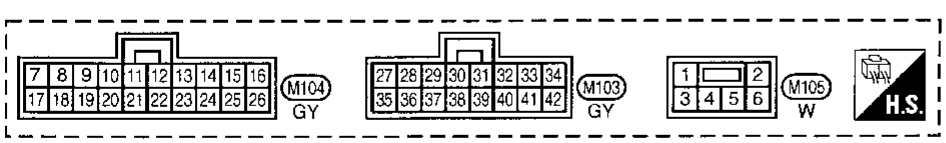
Power is supplied at all times
- to front step lamp LH and RH terminals ①
- through 7.5A fuse [No. 26, located in the fuse block (J/B)].

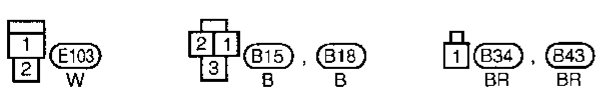
Ground is supplied to terminal ⑯ of LCU01 and LCU02 through body grounds M13, M73 and M111.
BCM is connected to LCU01 and LCU02 as DATA LINE A-1 or A-2.
BCM terminal ㉟ is grounded when any door switch is in OPEN position.
When the driver door switch, passenger door switch, rear RH door switch, or rear 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 —

EL-STEP/L-01







Refer to last page (Foldout page).

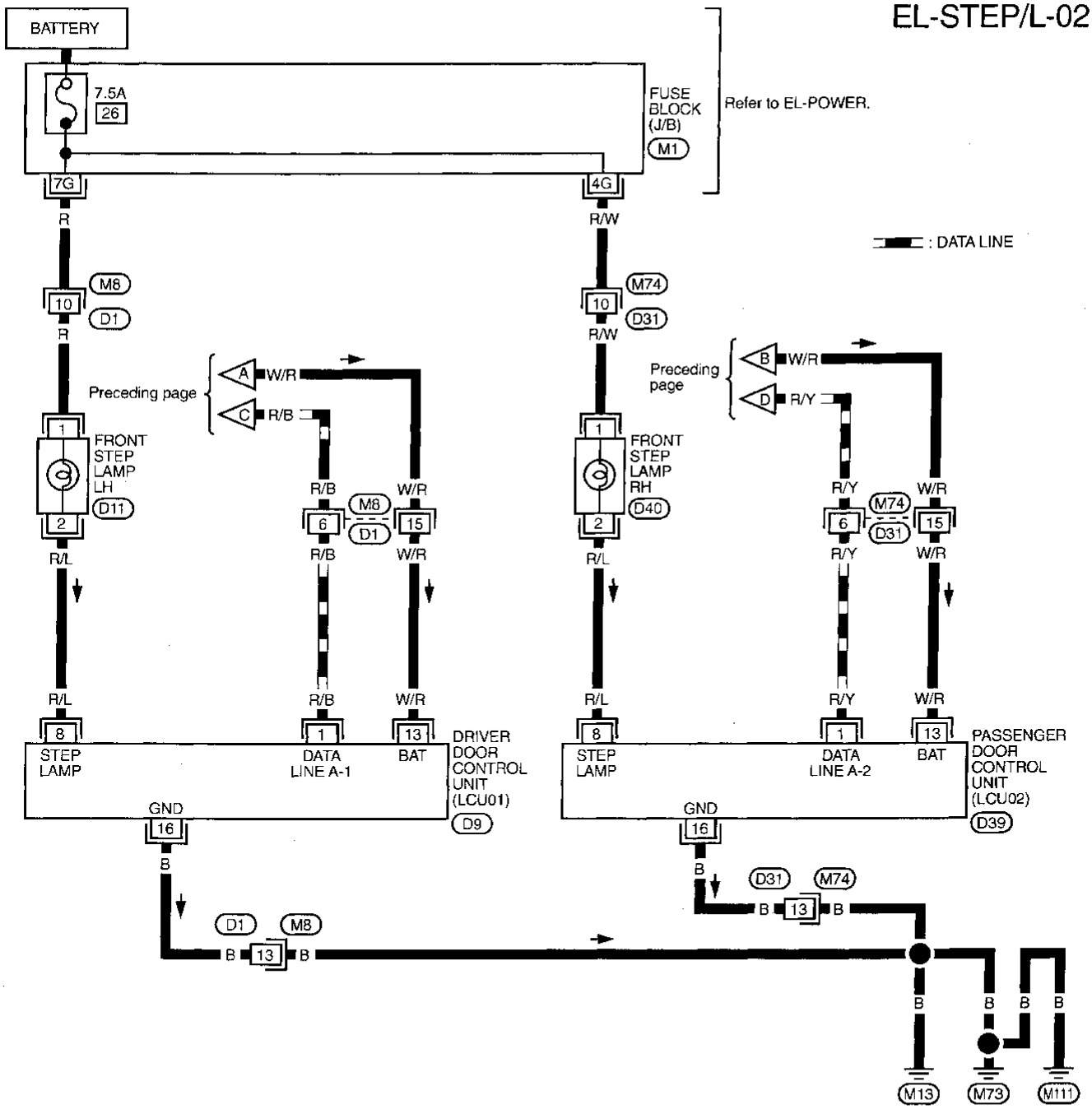
M3 , E101

M4 , B1

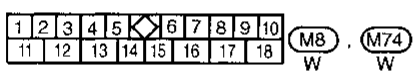
MEL924H

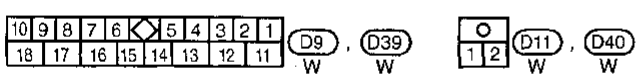
Wiring Diagram — STEP/L — (Cont'd)

EL-STEP/L-02

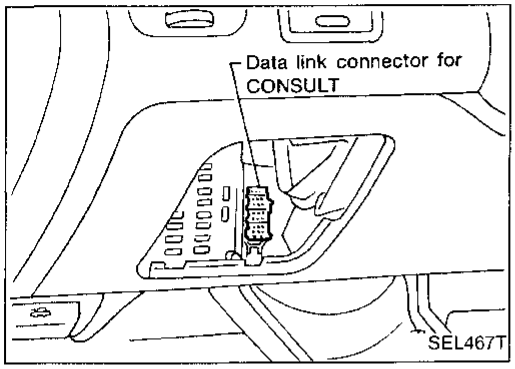


Refer to last page (Foldout page).
M1





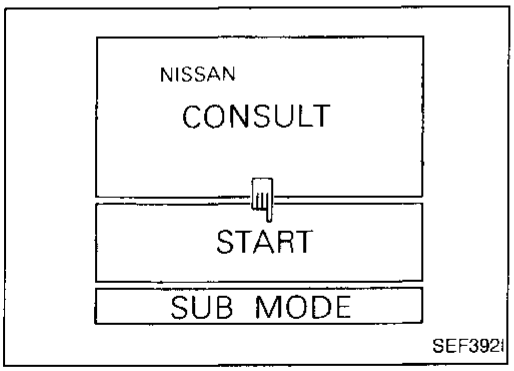
MEL925H



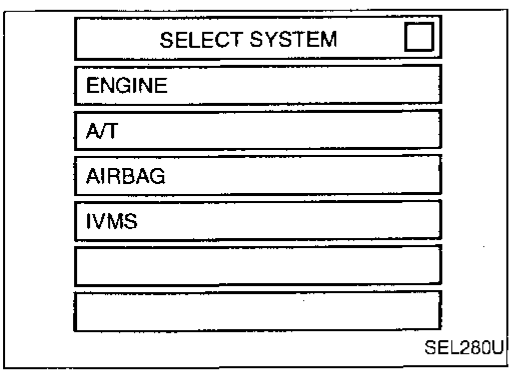
CONSULT

CONSULT INSPECTION PROCEDURE

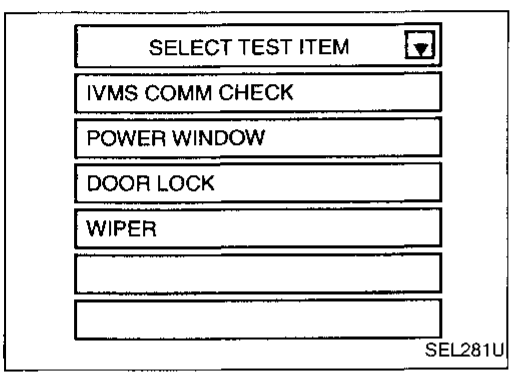
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



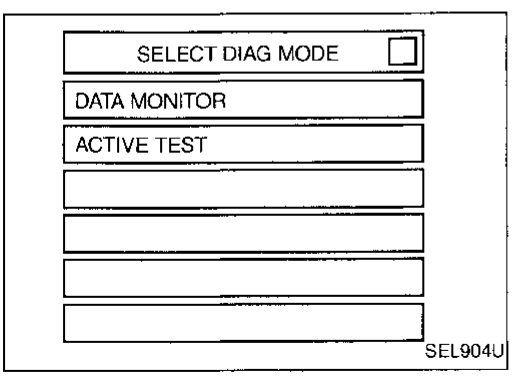
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "IVMS".



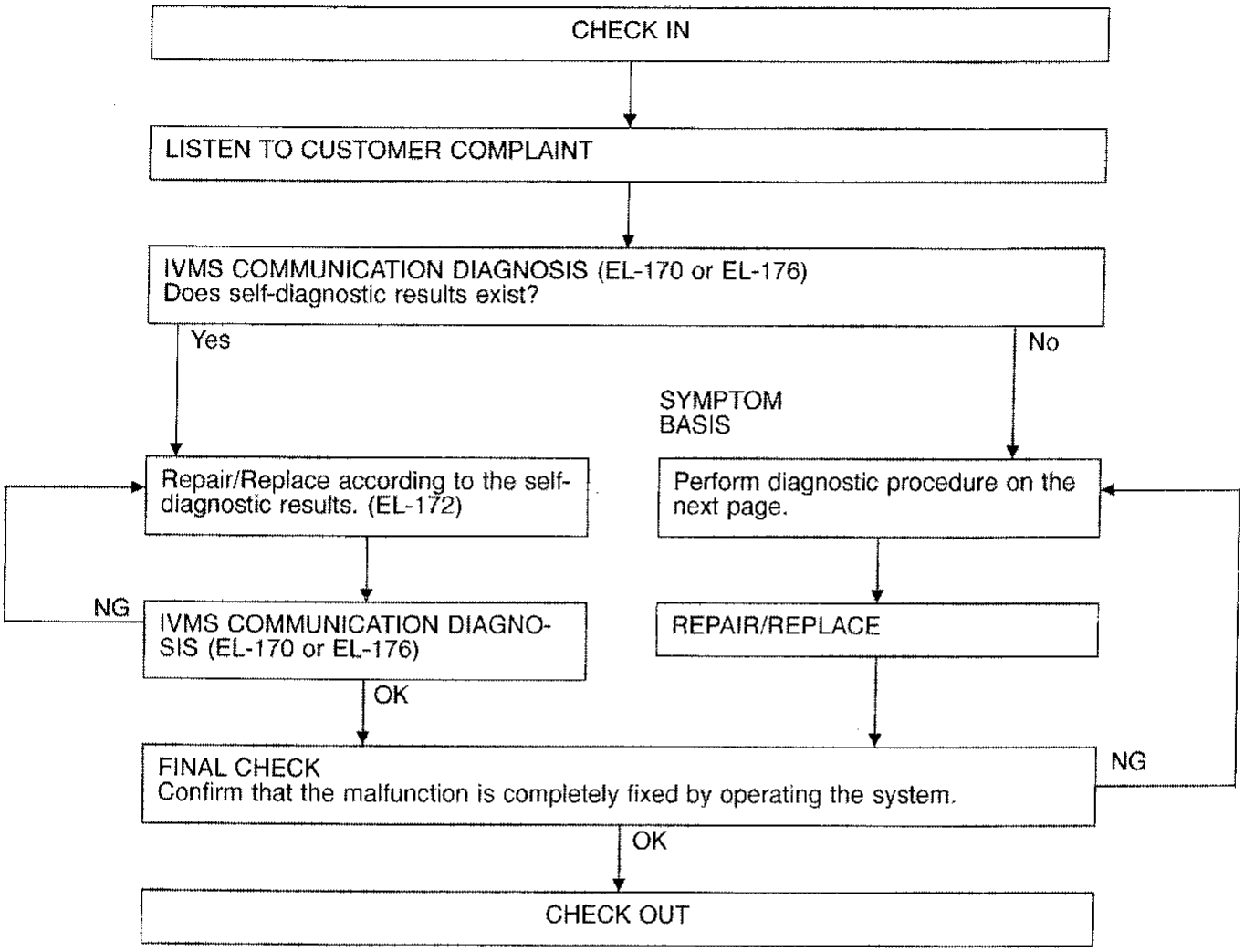
6. Touch "STEP LAMP".



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

Trouble Diagnoses

WORK FLOW



NOTICE:

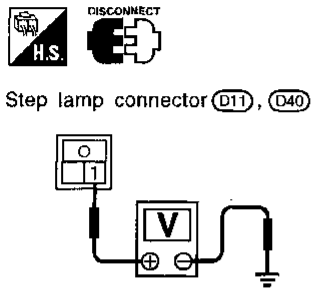
- **When LCU connectors are disconnected for more than 1 minute such as during trouble diagnoses, the "disconnected" data will be memorized by the BCM. Therefore, after reconnecting the LCU connectors, erase the memory.**
- **To erase the memory, perform the procedure below.**
  Erase the memory with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

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE

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

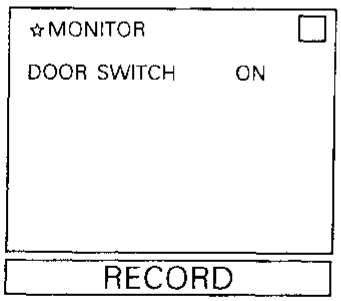
A



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

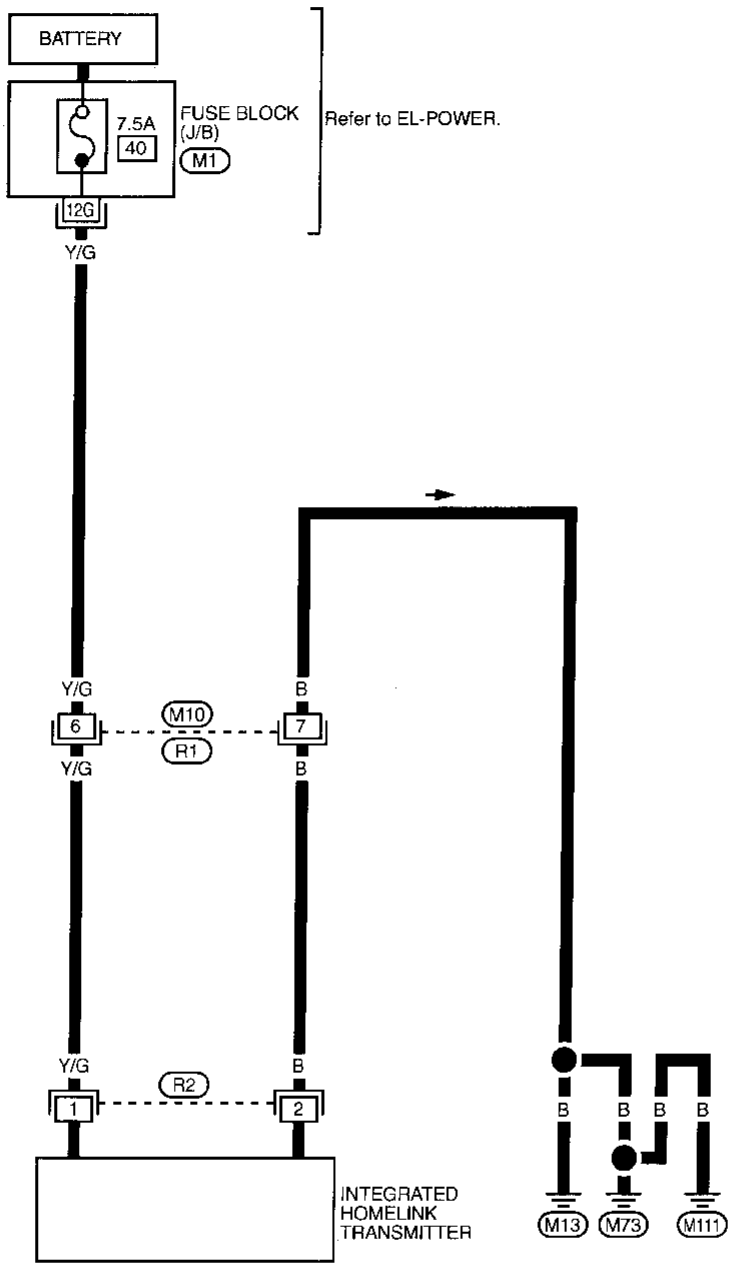
Perform On-board Diagnosis — Mode II (switch monitor) for all door switches. Refer to EL-178.

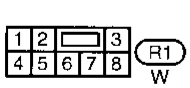
OK ↓

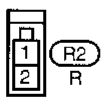
Check harness for open or short between step lamp and LCU.

Wiring Diagram — TRNSMT —

EL-TRNSMT-01

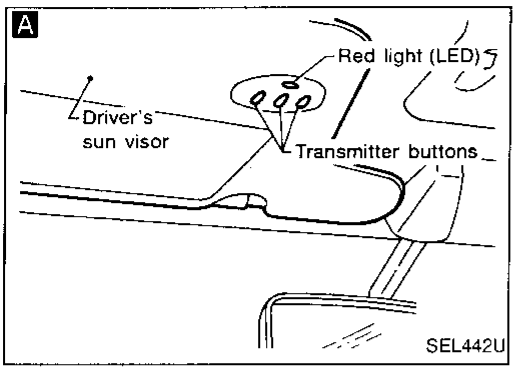


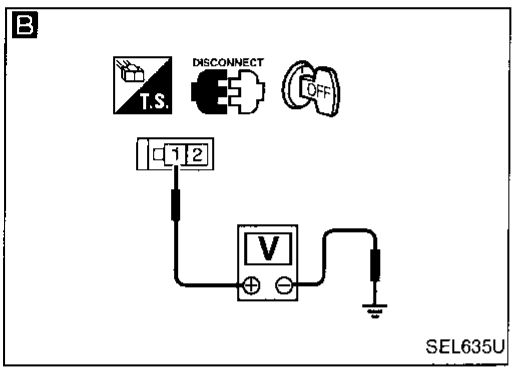


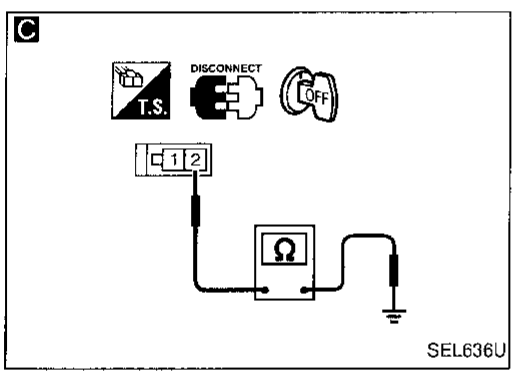


Refer to last page (Foldout page).
M1

MEL926H







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*.

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.

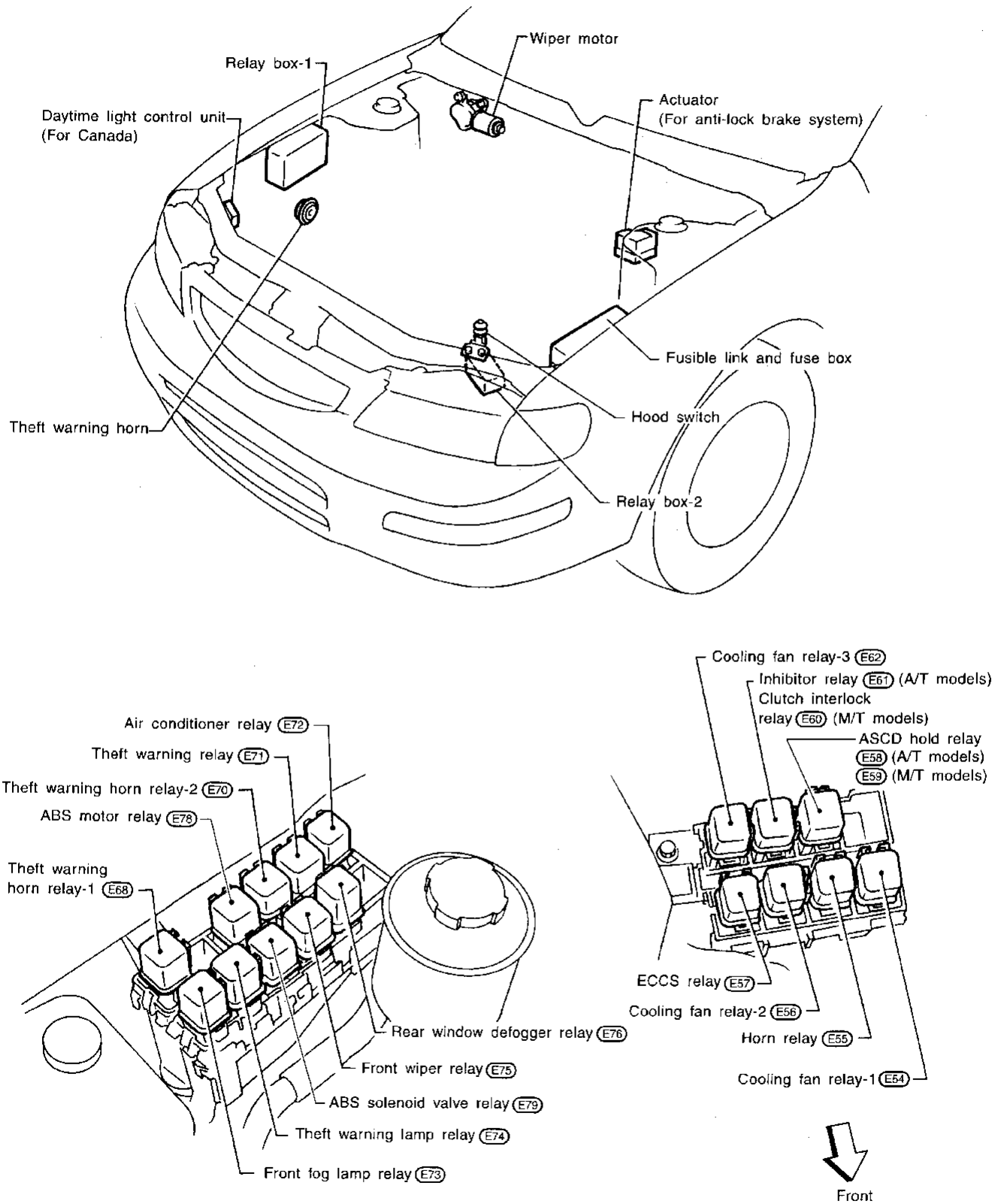
NG → Repair harness.

OK ↓

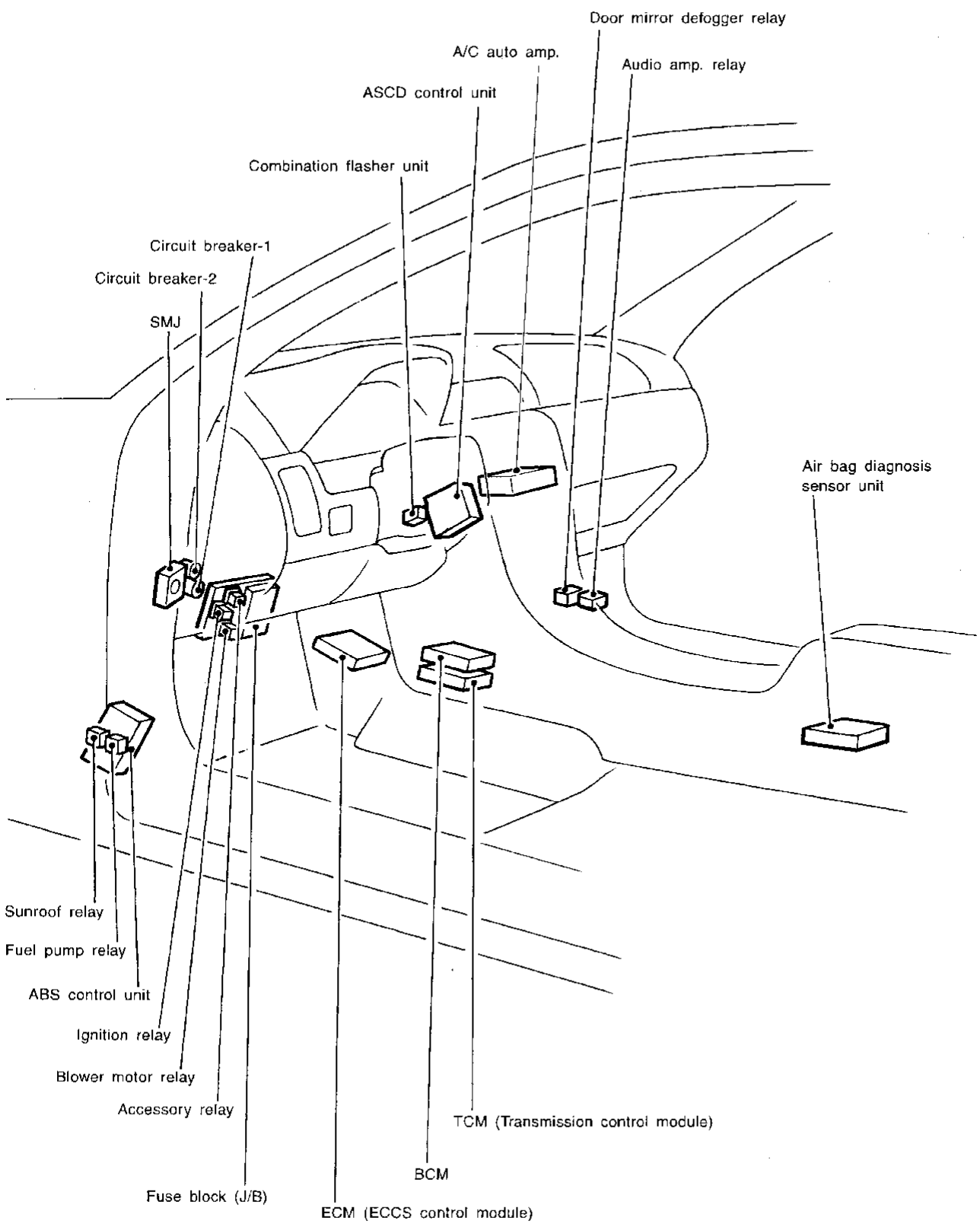
Replace transmitter with sun visor assembly.

*For details, refer to Technical Service Bulletin.

Engine Compartment

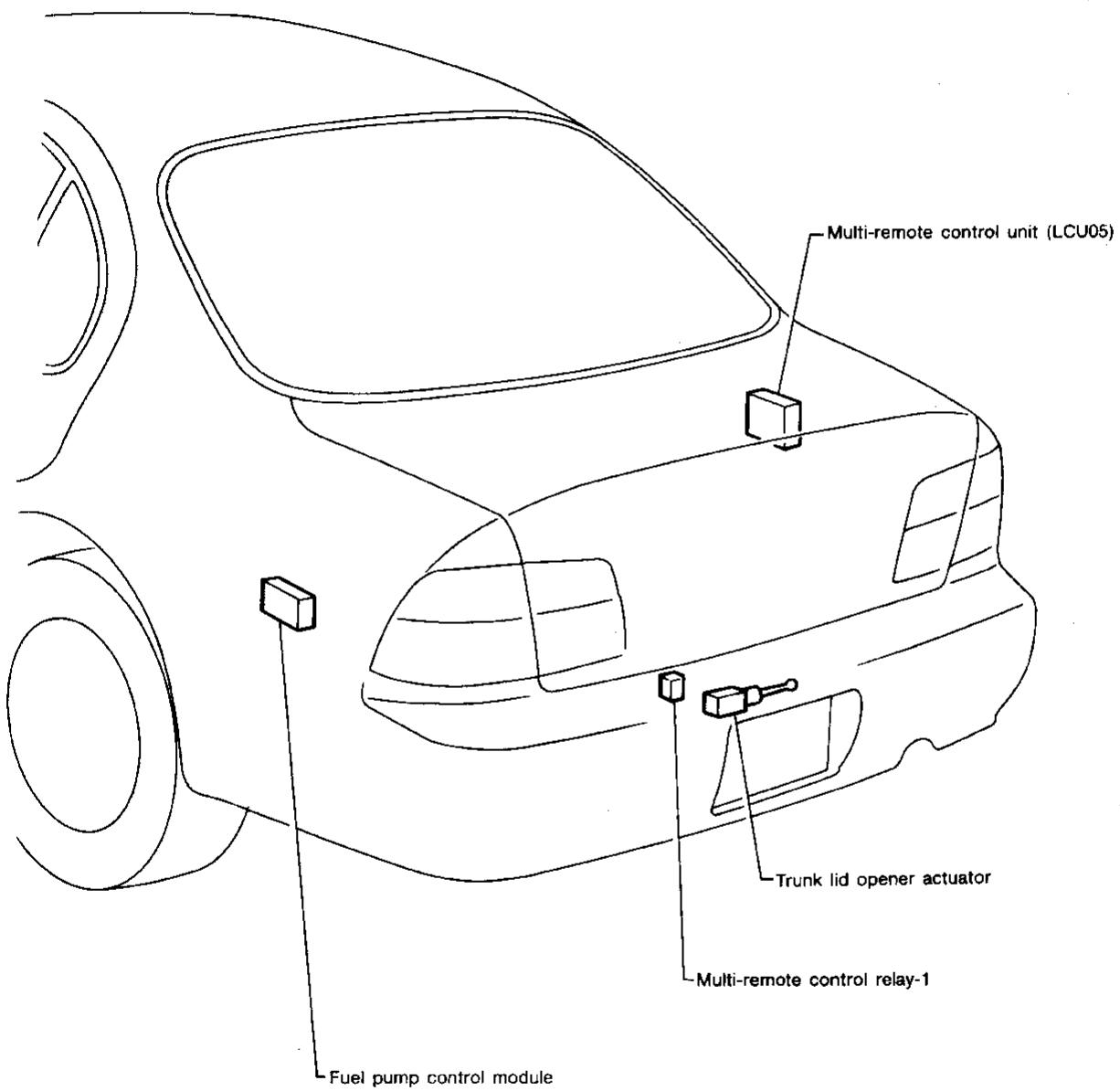


Passenger Compartment



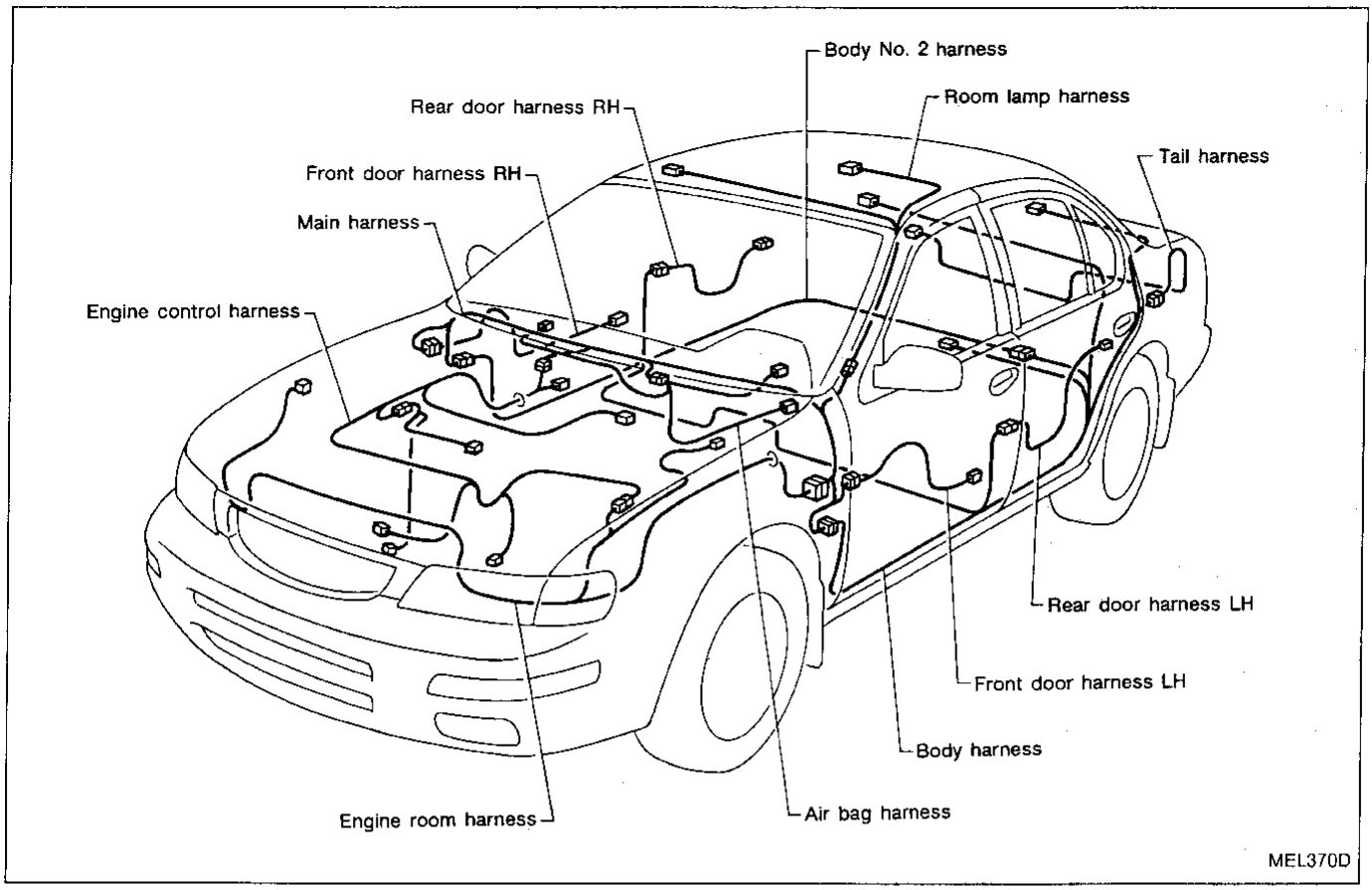
MEL464I

Luggage Compartment



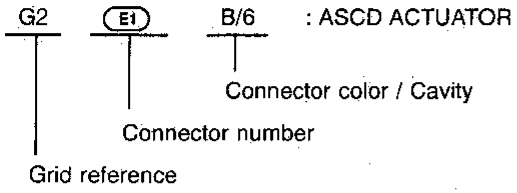
MEL369DA

Outline


Body No. 2 harness
Rear door harness RH
Room lamp harness
Tail harness
Front door harness RH
Main harness
Engine control harness
Rear door harness LH
Front door harness LH
Body harness
Engine room harness
Air bag harness
MEL370D

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

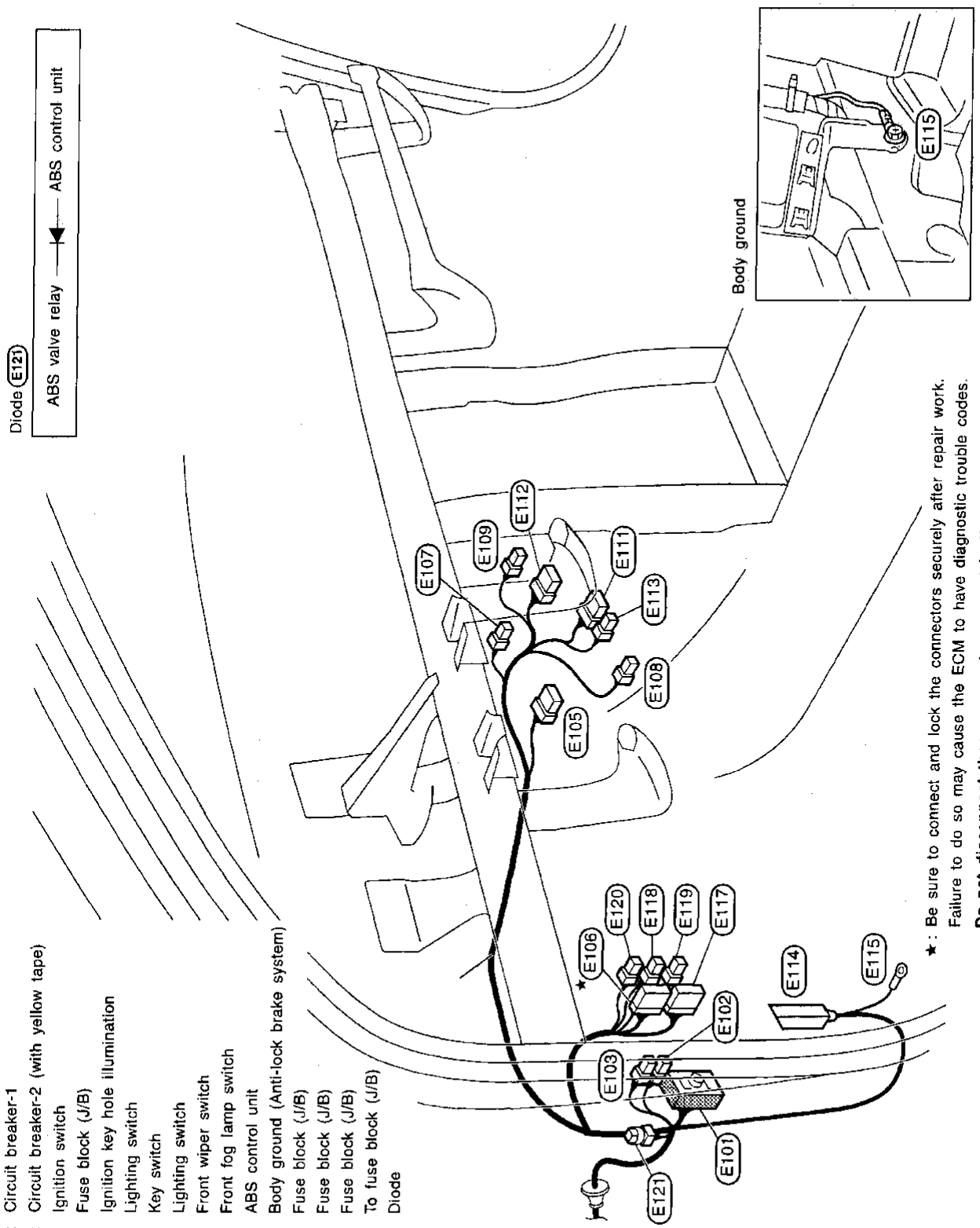
1) Find the desired connector number on the connector list.
2) Find the grid reference.
3) On the drawing, find the crossing of the grid reference letter column and number row.
4) Find the connector number in the crossing zone.
5) Follow the line (if used) to the connector.

CONNECTOR SYMBOL

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

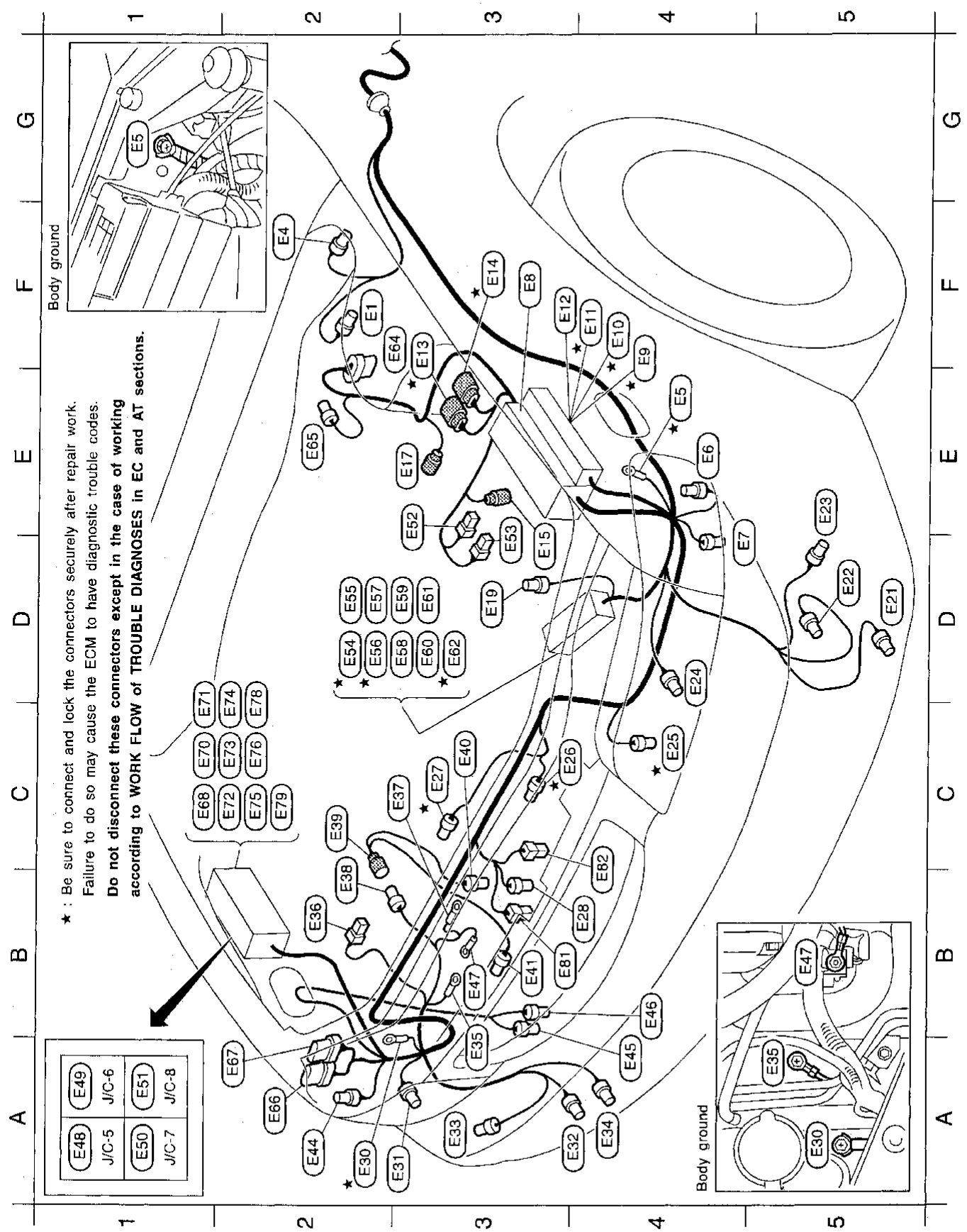
Connector type	Water proof type		Standard type	
	Male	Female	Male	Female
• Cavity: Less than 4 • Relay connector				
• Cavity: From 5 to 8				
• Cavity: More than 9	—	—		
• Ground terminal etc.	—			

Engine Room Harness



MEL955H

Engine Room Harness (Cont'd)



MEL956H

F2	E1	GY/2	:	Brake fluid level switch
F2	E4	GY/4	:	ASCD pump
E4★	E5	–	:	Body ground
E4	E6	GY/2	:	Parking lamp LH
D4	E7	GY/3	:	To front fog lamp harness (For optional)
F3	E8	–	:	Fuse and fusible link box
E4★	E9	W/6	:	Joint connector-1 (White)
F4★	E10	W/6	:	Joint connector-2 (White)
F4★	E11	GY/6	:	Joint connector-3 (Gray)
F3	E12	GY/6	:	Joint connector-4 (Gray)
F3★	E13	BR/8	:	To F36
F3★	E14	B/8	:	To F37
D3	E15	GY/1	:	Starter motor
E3	E17	BR/2	:	Front wheel sensor LH (Anti-lock brake system)
D3	E19	BR/2	:	Hood switch (Theft warning system)
D5	E21	GY/2	:	Front fog lamp LH
D5	E22	BR/2	:	Front turn signal lamp LH
E5	E23	GY/2	:	Front side marker lamp LH
D4	E24	B/3	:	Headlamp LH
C4★	E25	B/4	:	Triple-pressure switch
C4★	E26	GY/4	:	Cooling fan motor-1
C3★	E27	GY/4	:	Cooling fan motor-2
B4	E28	B/2	:	Ambient sensor
A2★	E30	–	:	Body ground
A3	E31	B/3	:	Headlamp RH
A4	E32	BR/2	:	Front turn signal lamp RH
A3	E33	GY/2	:	Front side marker lamp RH
A4	E34	GY/2	:	Front fog lamp RH
A3	E35	–	:	Body ground
B2	E36	B/1	:	Theft warning horn
C3	E37	–	:	Alternator
B2	E38	GY/4	:	To E39
C2	E39	GY/4	:	To E38
C3	E40	GY/4	:	Alternator
B3	E41	B/1	:	Compressor (Air conditioner)
A2	E44	GY/2	:	Parking lamp RH
A4	E45	BR/2	:	Washer level switch
B4	E46	GY/2	:	Front washer motor
B3	E47	GY/4	:	Alternator
A1	E48	W/6	:	Joint connector-5 (White)
A1	E49	W/6	:	Joint connector-6 (White)
A1	E50	W/6	:	Joint connector-7 (White)
A1	E51	GY/6	:	Joint connector-8 (Gray)
E3	E52	B/1	:	Battery
D3	E53	B/1	:	Battery
D2★	E54	L/4	:	Cooling fan relay-1
D2	E55	W/3	:	Horn relay
D2★	E56	BR/6	:	Cooling fan relay-2
D2	E57	L/4	:	ECCS relay
D3	E58	BR/6	:	ASCD hold relay (A/T models)
D3	E59	L/4	:	ASCD hold relay (M/T models)
D3	E60	L/4	:	Clutch interlock relay
D3	E61	GY/6	:	Inhibitor relay
D3★	E62	BR/6	:	Cooling fan relay-3

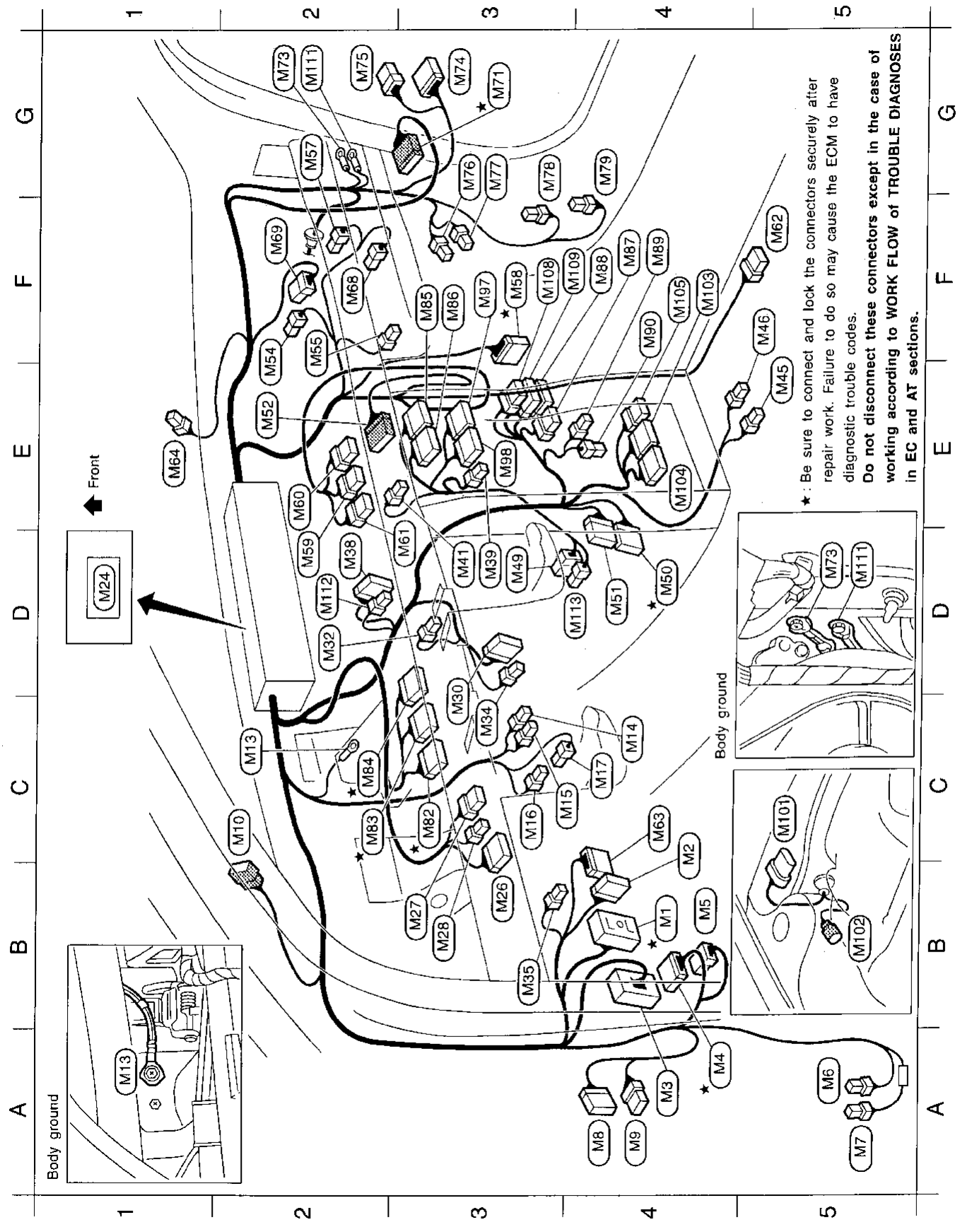
Relay box-1 (Refer to "LOCATION OF ELECTRICAL UNITS".)

F2	E64	GY/8	:	ABS control actuator
E2	E65	W/2	:	ABS control actuator
A2	E66	GY/6	:	Daytime light control unit (For Canada)
A2	E67	GY/8	:	Daytime light control unit (For Canada)
C1	E68	L/4	:	Theft warning horn relay-1
C1	E70	L/4	:	Theft warning horn relay-2
C1	E71	B/5	:	Theft warning relay
C2	E72	L/4	:	Air conditioner relay
C2	E73	L/4	:	Front fog lamp relay
C2	E74	BR/6	:	Theft warning lamp relay
C2	E75	B/5	:	Front wiper relay
C2	E76	BR/6	:	Rear window defogger relay
C2	E78	B/5	:	ABS motor relay
C2	E79	W/5	:	ABS solenoid valve relay
B3	E81	B/1	:	Horn (High)
C4	E82	B/1	:	Horn (Low)

Relay box-2 (Refer to "LOCATION OF ELECTRICAL UNITS".)

★ : 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



MEL958H

B4★	M1	SMJ	:	Fuse block (J/B)
C4	M2	GY/14	:	Data link connector for CONSULT
A4	M3	SMJ	:	To E101
A4★	M4	W/48	:	To B1
B4	M5	GY/6	:	To B2
A5	M6	L/4	:	Fuel pump relay
A5	M7	L/4	:	Sunroof relay (with yellow tape)
A4	M8	W/18	:	To D1
A4	M9	GY/6	:	To D2
C2	M10	W/8	:	To R1
C2	M13	–	:	Body ground
C4	M14	L/2	:	ASCD brake switch
C4	M15	B/2	:	Stop lamp switch
C3	M16	L/2	:	Clutch interlock switch (M/T models)
C4	M17	L/2	:	ASCD clutch switch
D1	M24	SB/4	:	Joint connector-16 (Sky blue-Diode)
B3	M26	GY/12	:	Door mirror remote control switch
B3	M27	W/6	:	ASCD main switch
B3	M28	W/4	:	Security indicator lamp
D3	M30	B/20	:	ASCD control unit
D2	M32	W/3	:	Illumination control switch
C3	M34	B/3	:	Combination flasher unit
B3	M35	W/3	:	Warning buzzer
D2	M38	BR/10	:	Mode door motor (Manual A/C)
D3	M39	W/6	:	Fan switch (Manual A/C)
D3	M41	W/2	:	In-vehicle sensor
E5	M45	B/2	:	Cigarette lighter socket
F5	M46	W/2	:	Ashtray illumination
D3	M49	B/6	:	Air mix door motor (Manual A/C)
D4★	M50	W/20	:	To F105
D4	M51	W/12	:	To F104
E2	M52	W/16	:	To Z1
F2	M54	W/3	:	Intake sensor
F2	M55	BR/2	:	Glove box lamp switch
G2	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
D3	M61	W/8	:	Hazard switch
F5	M62	W/6	:	A/T device
C4	M63	W/16	:	Data link connector for GST
E1	M64	B/2	:	Sunload sensor
F2	M68	Bulb	:	Glove box lamp
F2	M69	W/8	:	Intake door motor
G3★	M71	GY/16	:	To B102
G2	M73	–	:	Body ground
G3	M74	W/18	:	To D31
G3	M75	GY/6	:	To D32
G3	M76	W/2	:	Blower motor
G3	M77	BR/4	:	Fan resistor (Manual A/C)
G3	M78	L/4	:	Door mirror defogger relay
G4	M79	L/4	:	Audio amp. relay
C3★	M82	W/14	:	Combination meter
C2★	M83	W/10	:	Combination meter
C2★	M84	W/16	:	Combination meter
F3	M85	B/16	:	Push control unit (Manual A/C)
F3	M86	B/12	:	Push control unit (Manual A/C)
F4	M87	W/6	:	Audio (Except for BOSE system)
F4	M88	W/10	:	Audio (Except for BOSE system)
F4	M89	W/4	:	CD player
F4	M90	B/2	:	CD player
F3	M97	GY/16	:	A/C auto amp.
E3	M98	GY/20	:	A/C auto amp.
C5	M101	GY/6	:	Front wiper motor
B5	M102	GY/2	:	Front wheel sensor RH (Anti-lock brake system)
F4	M103	GY/16	:	BCM (Body control module)
E4	M104	GY/20	:	BCM (Body control module)
F4	M105	W/6	:	BCM (Body control module)
F3	M108	W/6	:	Audio (BOSE system)
F4	M109	W/10	:	Audio (BOSE system)
G2	M111	–	:	Body ground
D2	M112	W/3	:	Mode door motor (Auto A/C)
D4	M113	W/3	:	Air mix door motor (Auto A/C)

Diode M24

Parking brake switch	Combination meter

★ : 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.
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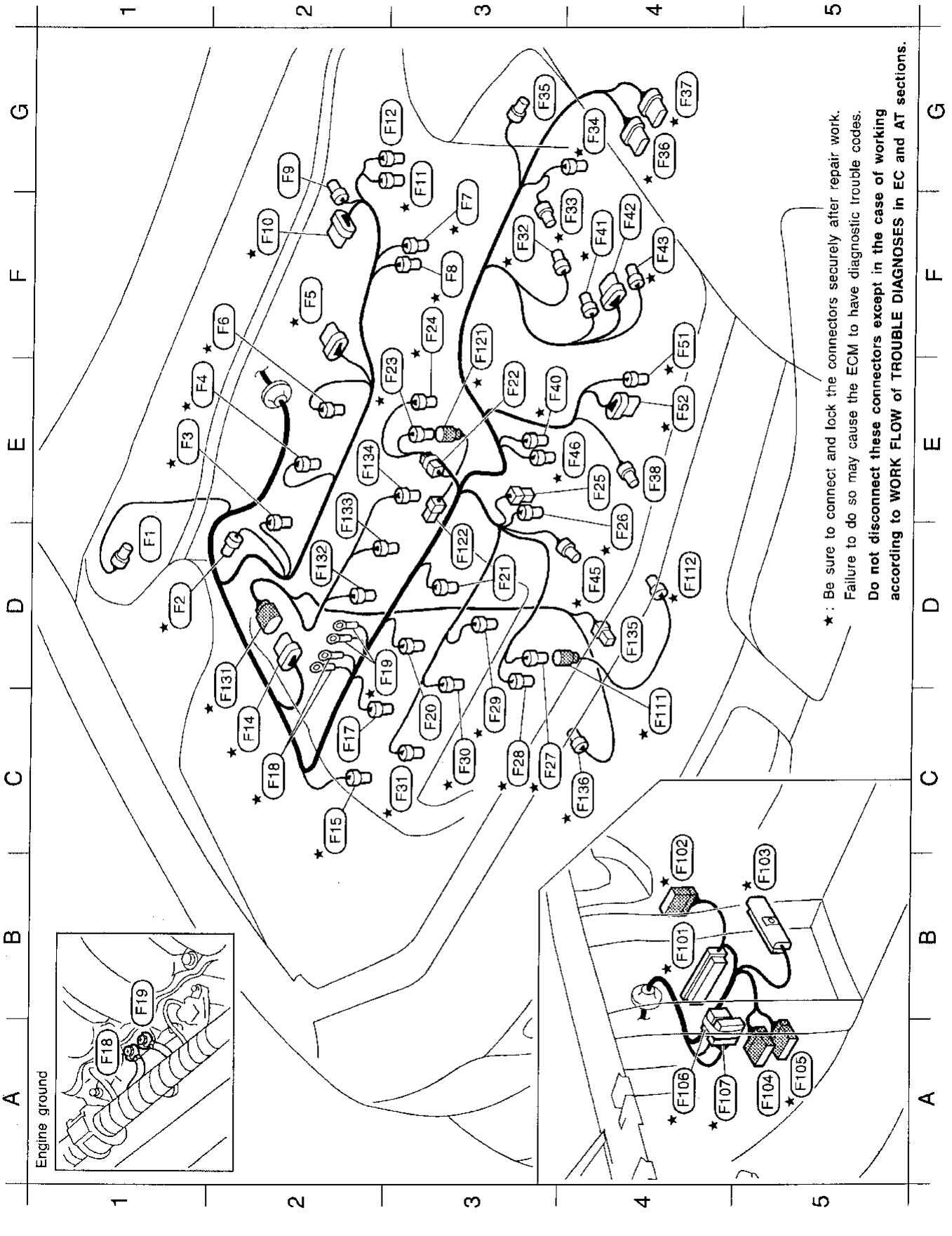
Engine Control Harness



MEL959G

D1	F1	GY/2	:	Power steering oil pressure switch
D1★	F2	GY/3	:	Front heated oxygen sensor RH
E1★	F3	GY/3	:	Ignition coil No.1
E1★	F4	GY/3	:	Ignition coil No.3
F2★	F5	GY/6	:	EVAP canister purge volume control valve
F2★	F6	GY/3	:	Ignition coil No.5
F3★	F7	GY/3	:	Throttle position switch
F3★	F8	BR/3	:	Throttle position sensor
G2	F9	R/2	:	IACV-FICD solenoid valve-2
F2★	F10	GY/6	:	IACV-AAC valve
G3★	F11	GY/2	:	EGR temperature sensor
G2	F12	PU/2	:	IACV-FICD solenoid valve-1
C2★	F14	GY/8	:	To F131
C2★	F15	GY/2	:	Camshaft position sensor (PHASE)
C2	F17	B/2	:	Injector No.2
C2★	F18	–	:	Engine ground
D2★	F19	–	:	Engine ground
C3	F20	B/2	:	Injector No.4
D3	F21	B/2	:	Injector No.6
E3	F22	GY/2	:	Condenser
E3★	F23	B/2	:	To F121
F3★	F24	G/2	:	EGRC-solenoid valve
E4	F25	B/1	:	Thermal transmitter
D4★	F26	GY/2	:	Engine coolant temperature sensor
C3★	F27	B/4	:	To F111
C3★	F28	GY/3	:	Front heated oxygen sensor LH
C3★	F29	GY/3	:	Ignition coil No.6
C3★	F30	GY/3	:	Ignition coil No.4
C3★	F31	GY/3	:	Ignition coil No.2
F3★	F32	GY/4	:	Neutral and reverse position switch
F4★	F33	GY/3	:	Mass air flow sensor
G4★	F34	GY/2	:	Intake air temperature sensor
G3	F35	GY/2	:	Dropping resistor
G4★	F36	BR/8	:	To E13
G4★	F37	B/8	:	To E14
E4	F38	BR/3	:	Front engine mounting
E3★	F40	B/2	:	EVAP canister purge control solenoid valve
F4★	F41	GY/3	:	Revolution sensor
F4	F42	BR/8	:	Terminal cord assembly (A/T models)
F4★	F43	GY/2	:	Vehicle speed sensor
D4★	F45	GY/3	:	Absolute pressure sensor
E4★	F46	BR/2	:	MAP/BARO switch solenoid valve
F4★	F51	GY/2	:	Inhibitor switch
E4★	F52	GY/8	:	Inhibitor switch
B4★	F101	GY/103	:	ECM (ECCS control module)
C4★	F102	GY/16	:	To M58
B5★	F103	L/48	:	TCM (Transmission control module) (A/T models)
A5	F104	W/12	:	To M51
A5★	F105	W/20	:	To M50
A4★	F106	GY/6	:	Joint connector-24 (Gray)
A4★	F107	L/12	:	Joint connector-25 (Blue)
C4★	F111	GY/3	:	To F27
D4★	F112	B/4	:	Crankshaft position sensor (POS)
F3★	F121	B/2	:	To F23
D3★	F122	B/2	:	Knock sensor
D2★	F131	GY/8	:	To F14
D2	F132	B/2	:	Injector No.1
E2	F133	B/2	:	Injector No.3
E2	F134	B/2	:	Injector No.5
D4	F135	B/1	:	Oil pressure switch
C4★	F136	GY/2	:	Crankshaft position sensor (REF)

★: 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.
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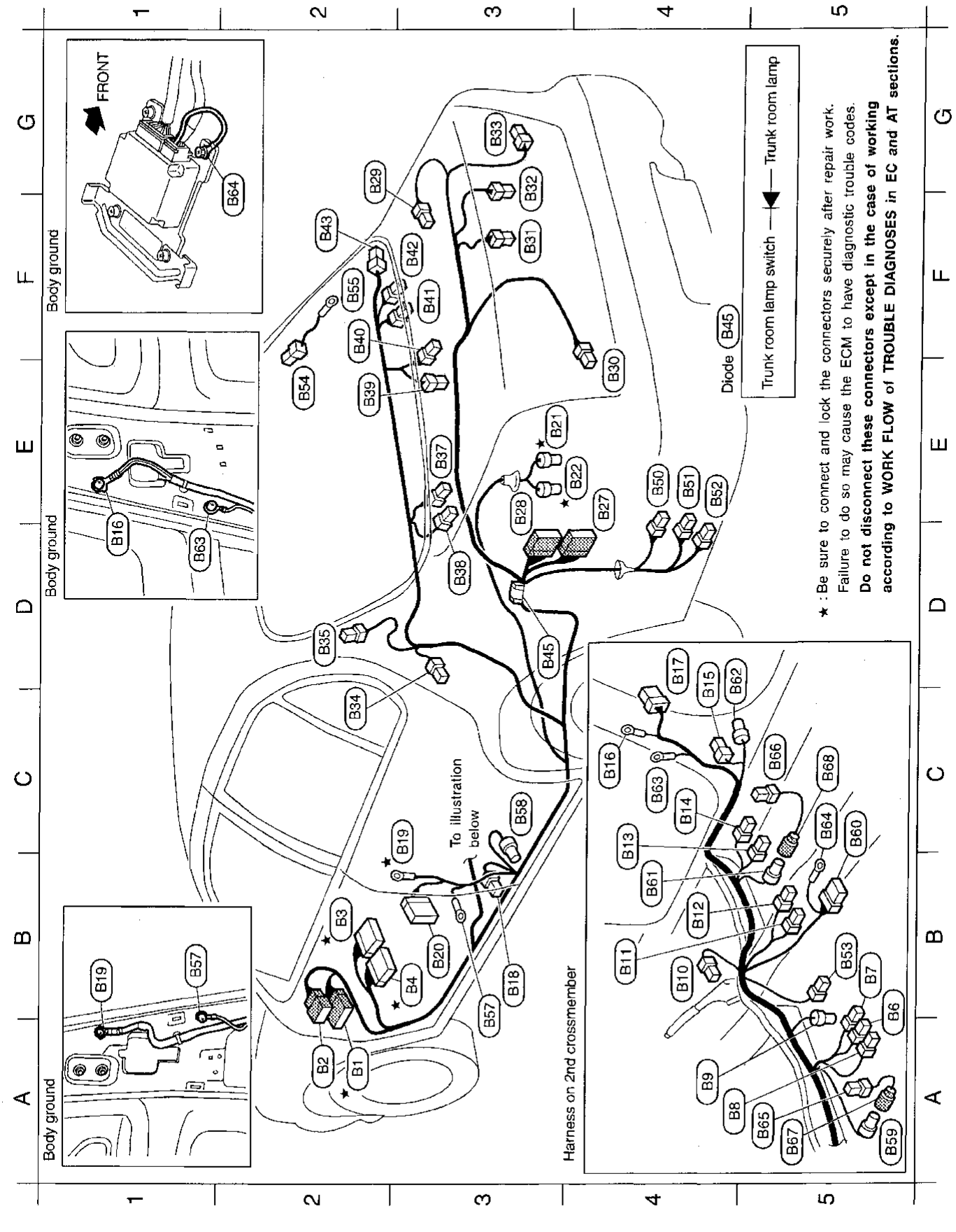
Body Harness

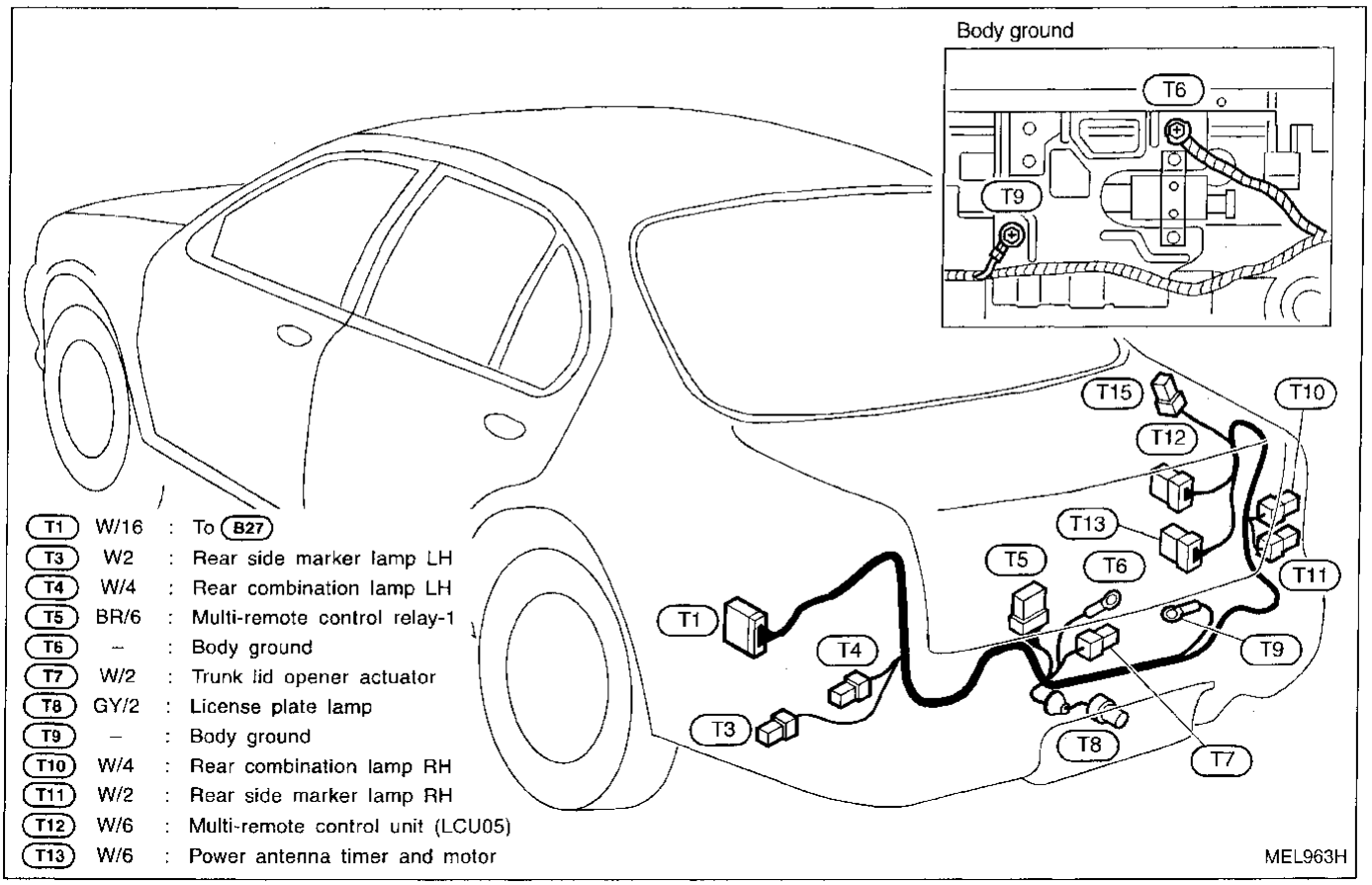


MEL961H

A2★	B1	W/24	:	To M4
A2	B2	GY/6	:	To M5
B2★	B3	W/12	:	Fuse block (J/B)
B3★	B4	BR/16	:	Fuse block (J/B)
B5	B6	W/2	:	Power seat LH
B5	B7	W/3	:	Seat belt buckle switch
A4	B8	W/3	:	Heated seat LH
A4★	B9	GY/4	:	Rear heated oxygen sensor
B4	B10	B/1	:	Parking brake switch
B4	B11	L/4	:	Heated seat switch LH
B4	B12	W/4	:	Heated seat switch RH
C4	B13	W/3	:	Heated seat RH
C4	B14	W/2	:	Power seat RH
D4	B15	B/3	:	Front door switch RH
C4★	B16	–	:	Body ground
D4	B17	W/10	:	To D71
B3	B18	B/3	:	Front door switch LH
C3★	B19	–	:	Body ground
B3	B20	W/10	:	To D51
E3	B21	W/2	:	Fuel pump
E4★	B22	W/4	:	Fuel tank gauge unit
E4	B27	W/16	:	To T1
G2	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
F3	B31	BR/2	:	Trunk room lamp switch
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	:	Rear window defogger
E3	B37	W/4	:	Rear speaker LH (For BOSE system)
D3	B38	BR/2	:	Rear speaker LH (Except for BOSE system)
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 (For BOSE system)
F3	B42	BR/2	:	Rear speaker RH (Except for BOSE system)
F2	B43	BR/1	:	Rear door switch RH
D3	B45	SB/2	:	Diode
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
E2	B54	B/1	:	Rear window defogger
F2	B55	–	:	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
B4	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

★ : 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

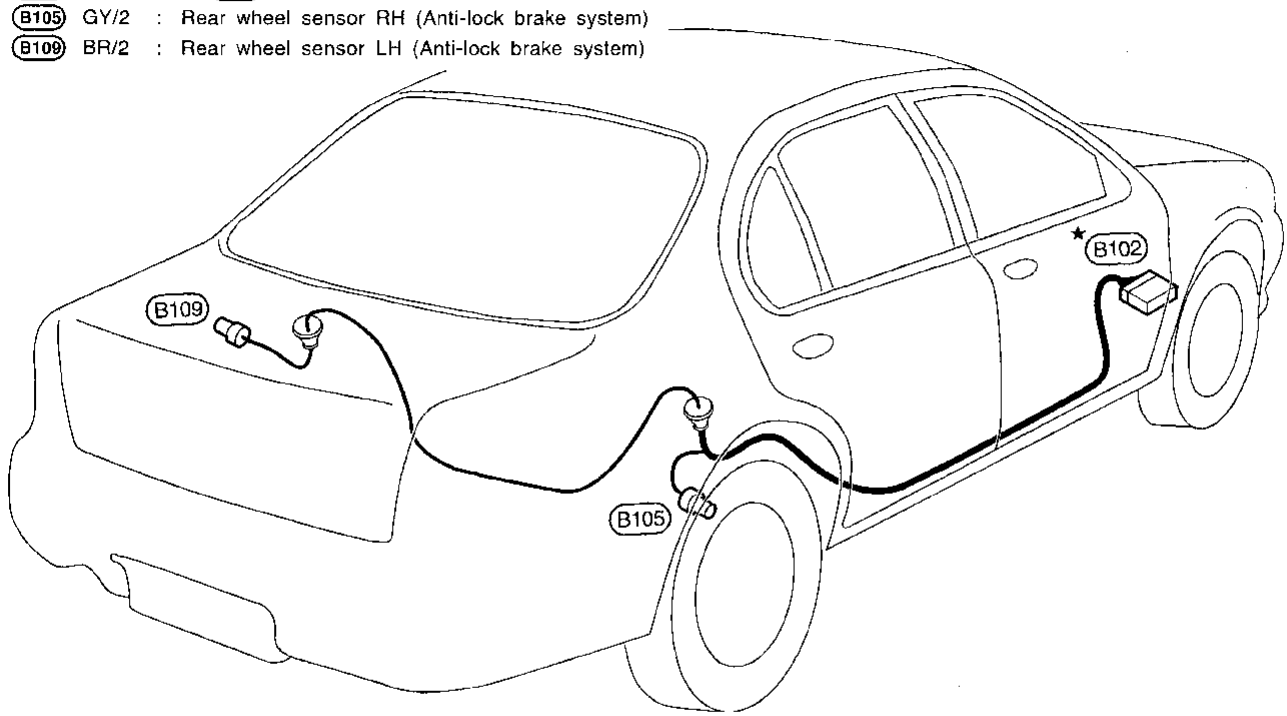


T1	W/16	:	To B27
T3	W2	:	Rear side marker lamp LH
T4	W/4	:	Rear combination lamp LH
T5	BR/6	:	Multi-remote control relay-1
T6	–	:	Body ground
T7	W/2	:	Trunk lid opener actuator
T8	GY/2	:	License plate lamp
T9	–	:	Body ground
T10	W/4	:	Rear combination lamp RH
T11	W/2	:	Rear side marker lamp RH
T12	W/6	:	Multi-remote control unit (LCU05)
T13	W/6	:	Power antenna timer and motor

MEL963H

Tail Harness

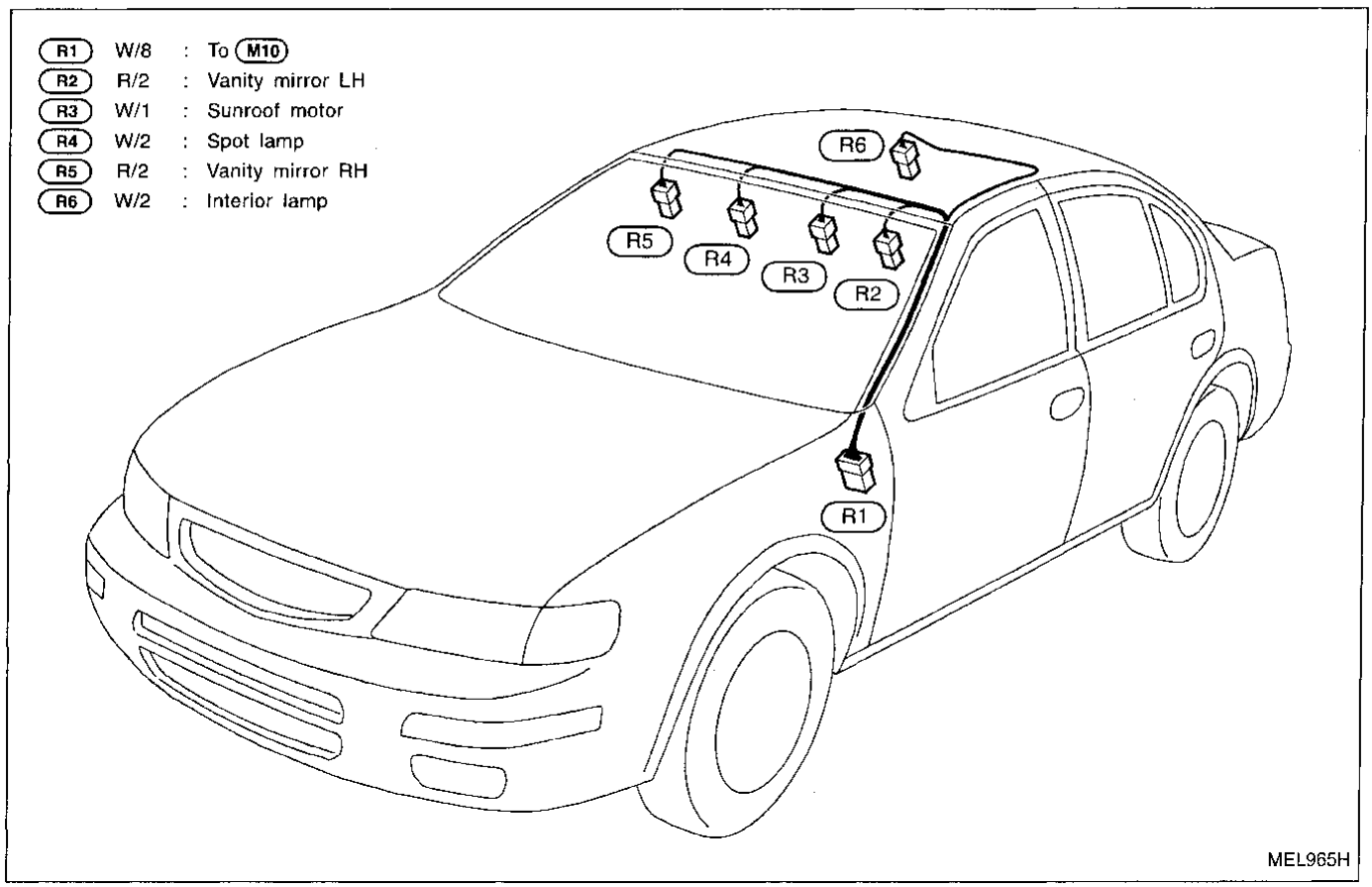
★ B102	GY/16	:	To M71
B105	GY/2	:	Rear wheel sensor RH (Anti-lock brake system)
B109	BR/2	:	Rear wheel sensor LH (Anti-lock brake system)



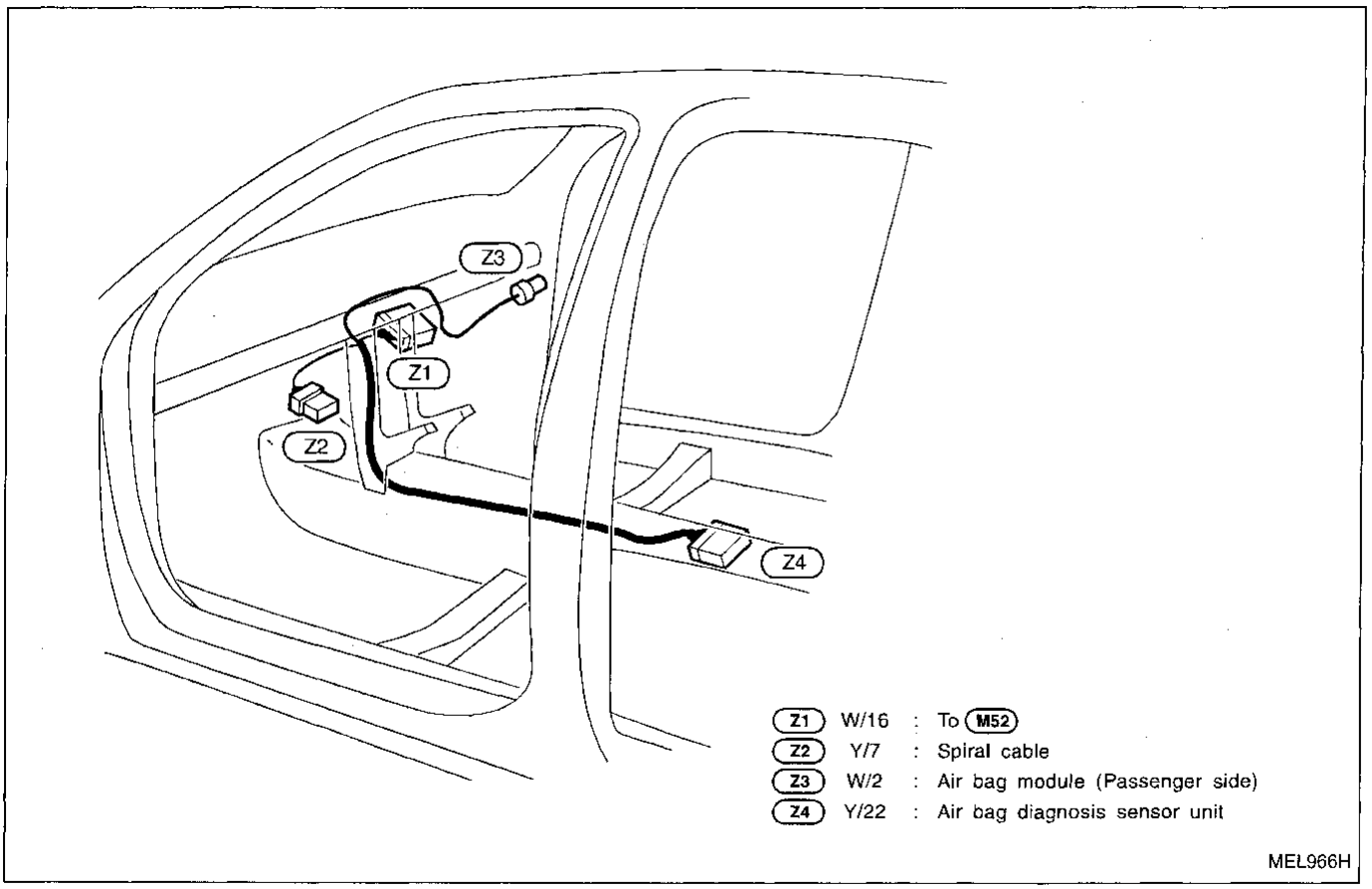
★ : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the on-board diagnostic system to light up the MIL as an open circuit detection.

MEL964H

Room Lamp Harness



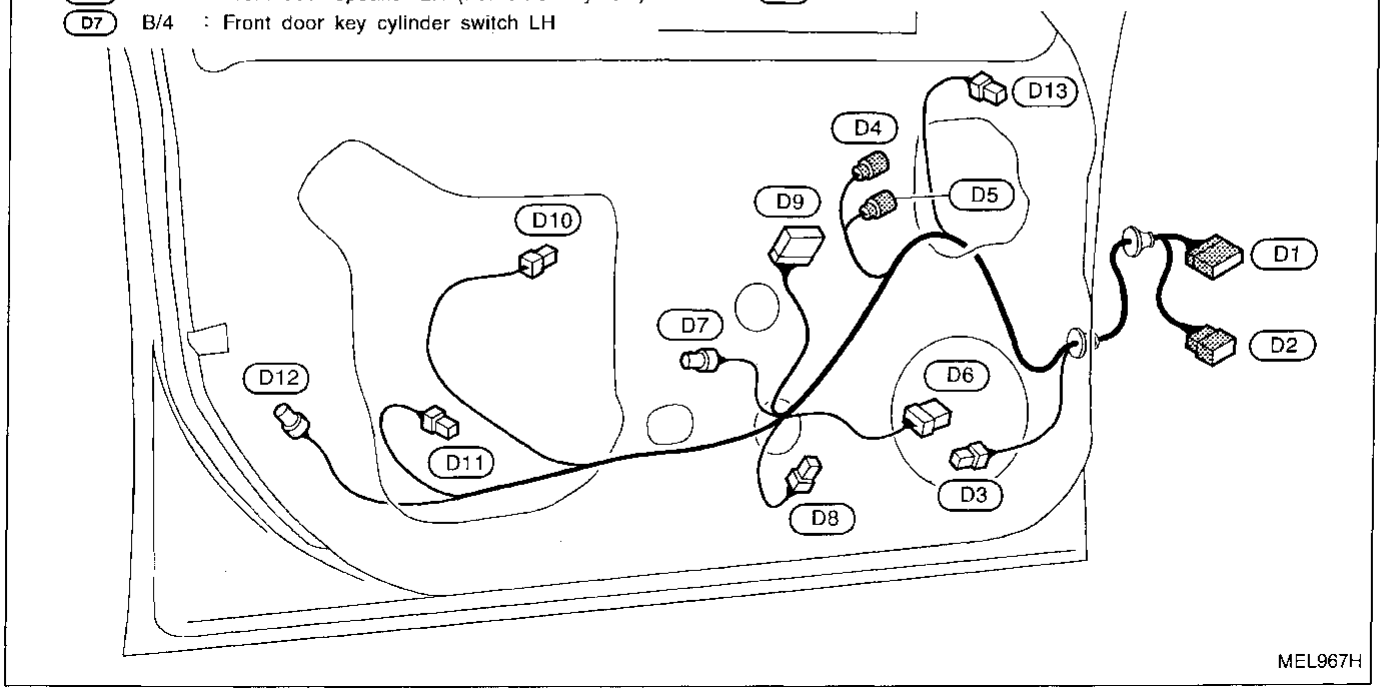
Air Bag Harness



Door Harness (LH side)

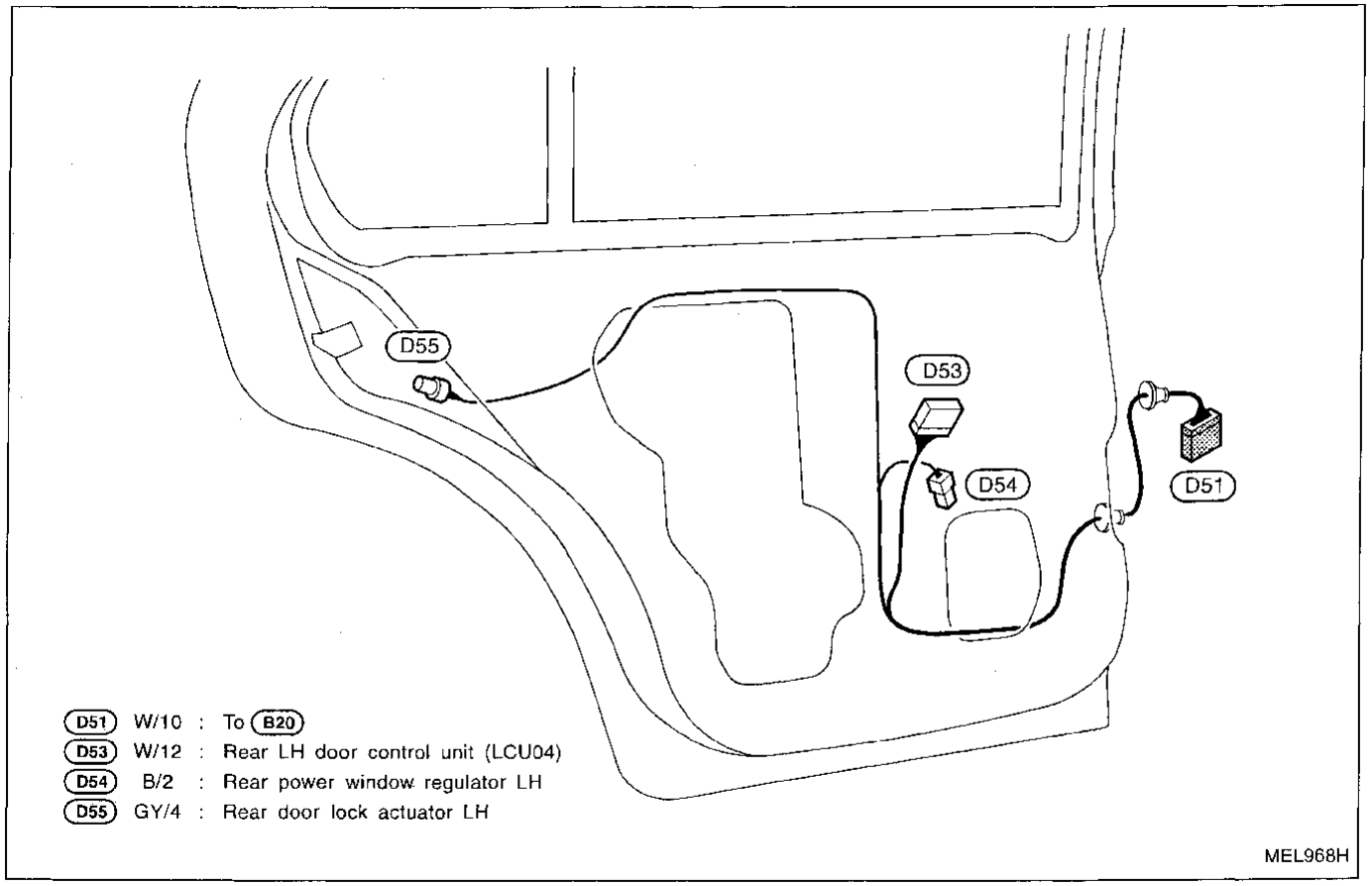
FRONT

(D1) W/18 : To (M8)
(D2) GY/6 : To (M9)
(D3) BR/2 : Front door speaker LH (Except for BOSE system)
(D4) BR/3 : Door mirror LH
(D5) GY/2 : Door mirror defogger (Driver side)
(D6) W/6 : Front door speaker LH (For BOSE system)
(D7) B/4 : Front door key cylinder switch LH
(D8) B/2 : Front 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



MEL967H

REAR



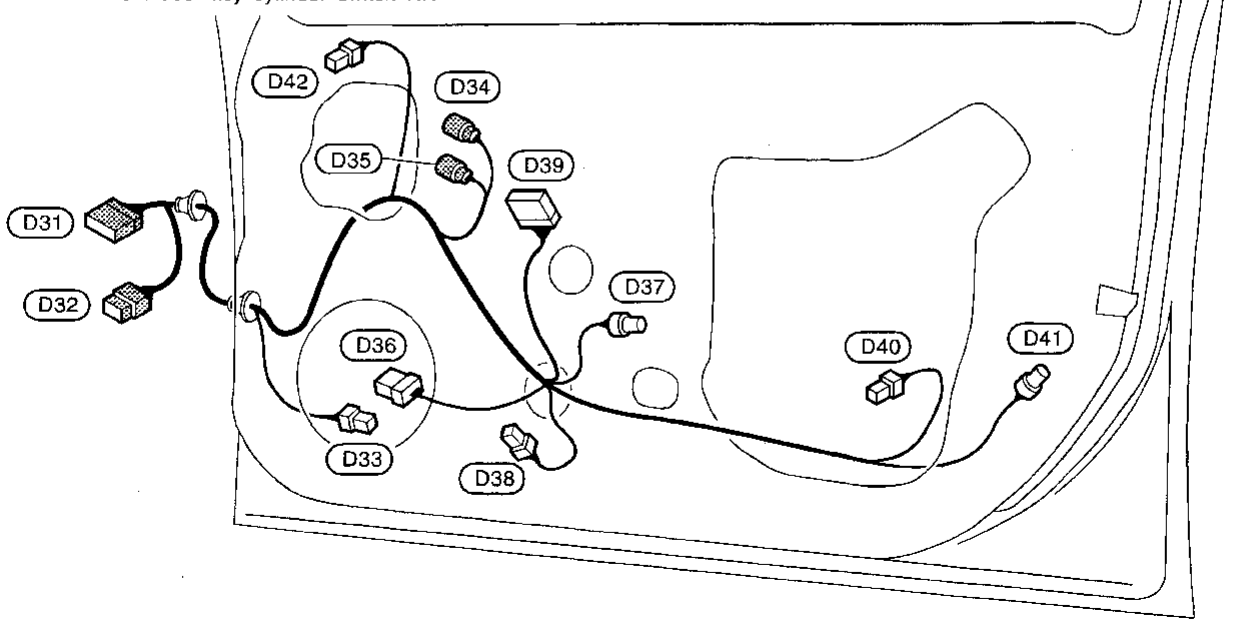
(D51) W/10 : To (B20)
(D53) W/12 : Rear LH door control unit (LCU04)
(D54) B/2 : Rear power window regulator LH
(D55) GY/4 : Rear door lock actuator LH

MEL968H

FRONT

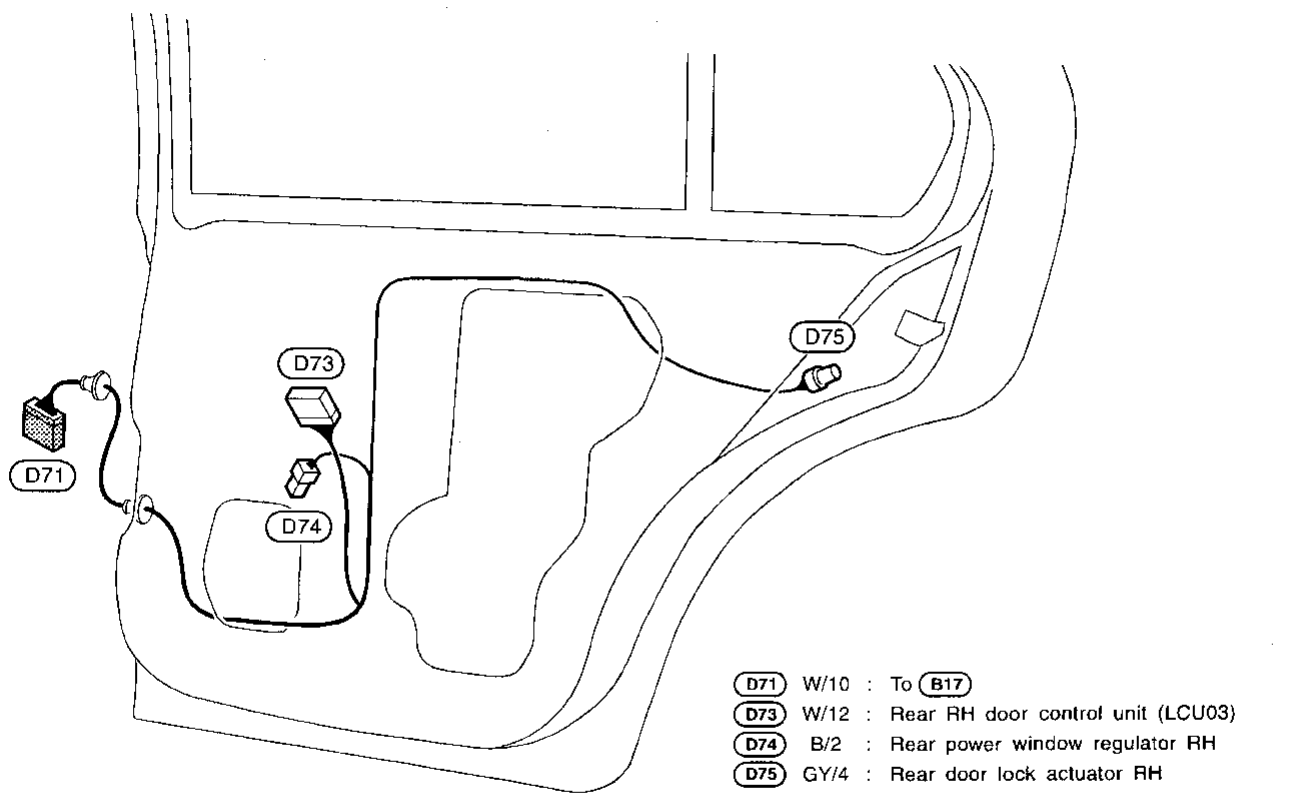
Door Harness (RH side)

(D31) W/18 : To (M74)
(D32) GY/6 : To (M75)
(D33) BR/2 : Front door speaker RH (Except for BOSE system)
(D34) BR/3 : Door mirror RH
(D35) GY/2 : Door mirror defogger (Passenger side)
(D36) W/6 : Front door speaker RH (For BOSE system)
(D37) B/4 : Front door key cylinder switch RH
(D38) B/2 : Front 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



MEL969H

REAR



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

MEL970H

Headlamp

	Wattage (12V)
High/low (Semi-sealed beam)	60/55

Exterior Lamp

		Wattage (12V)
Front turn signal lamp		27
Front combination lamp	Parking	8
	Front side marker	3.8
Front fog lamp		55 (H3)
Rear combination lamp	Turn signal	27
	Stop/Tail	27/8
	Back-up	27
Rear side marker lamp		3.8
License plate lamp		5
High-mounted stop lamp		18

Interior Lamp

	Wattage (12V)
Interior lamp	10
Spot lamp	10
Step lamp	2.7
Trunk room lamp	3.4

WIRING DIAGRAM CODES (Cell codes)

Use the chart below to find out what each wiring diagram code stands for.
Refer to the wiring diagram code in the alphabetical index to find the location (page number) of each wiring diagram.

Code	Section	Wiring Diagram Name
AAC/V	EC	IACV-AAC Valve
ABS	BR	Anti-lock Brake System
A/C, A	HA	Auto Air Conditioner
A/C, M	HA	Manual Air Conditioner
AP/SEN	EC	Absolute Pressure Sensor
ASCD	EL	Automatic Speed Control Device (ASCD)
A/T	AT	A/T
AT/C	EC	A/T Control
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
CANI/V	EC	EVAP Canister Purge Control Valve/ Solenoid Valve
CHARGE	EL	Charging System
CIGAR	EL	Cigarette Lighter
CLOCK	EL	Clock
COMM	EL	Main Power Supply, Ground and Communication Circuits — IVMS
COOL/F	EC	Cooling Fan
DEF	EL	Rear Window Defogger
D/LOCK	EL	Power Door Lock — IVMS
DTRL	EL	Headlamp - With Daytime Light System
ECTS	EC	Engine Coolant Temperature Sensor
EGRC	EC	EGR Function
EGRC/V	EC	EGRC-Solenoid Valve
EGR/TS	EC	EGR Temperature Sensor
EMNT	EC	Engine Mount
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)
FPCM	EC	Fuel Pump Control Module
F/PUMP	EC	Fuel Pump

Code	Section	Wiring Diagram Name
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/SEAT	EL	Heated Seat
IATS	EC	Intake Air Temperature Sensor
IGN/SG	EC	Ignition Signal
ILL	EL	Illumination
INJECT	EC	Injector
INT/L	EL	Spot, Vanity Mirror and Trunk Room Lamps
KS	EC	Knock Sensor
LD/SIG	EC	Electrical Load Signal
MAFS	EC	Mass Air Flow Sensor
MAIN	EC	Main Power Supply and Ground Circuit
METER	EL	Speedometer, Tachometer, Temp., Oil and Fuel Gauges
MIL/DL	EC	MIL & Data Link Connector
MIRROR	EL	Power Door Mirror
MULTI	EL	Multi-remote Control System — IVMS
P/ANT	EL	Power Antenna
PHONE	EL	Telephone Pre-wire
PGC/V	EC	EVAP Canister Purge Volume Control Valve
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
RRO2	EC	Rear Heated Oxygen Sensor

Code	Section	Wiring Diagram Name
RRO2/H	EC	Rear Heated Oxygen Sensor Heater
SEAT	EL	Power Seat
SHIFT	AT	A/T Shift Lock System
SROOF	EL	Sunroof
SRS	RS	Supplemental Restraint System
S/SIG	EC	Start Signal
START	EL	Starting System
STEP/L	EL	Step Lamp — IVMS
STOP/L	EL	Stop lamp
SW/ILL	EL	Power Window Switch Illumination — IVMS
SW/V	EC	MAP/BARO Switch Solenoid Valve
TAIL/L	EL	Parking, License and Tail Lamps
TFTS	EC	Tank Fuel Temperature Sensor

Code	Section	Wiring Diagram Name
T/LID	EL	Trunk Lid Opener
THEFT	EL	Theft Warning System — IVMS
TPS	EC	Throttle Position Sensor
TP/SW	EC	Closed Throttle Position Switch
TRANSMT	EL	Integrated HOMELINK (TM) Transmitter
TURN	EL	Turn Signal and Hazard Warning Lamps
VENT/V	EC	EVAP Canister Vent Control Valve
VSS	EC	Vehicle Speed Sensor
WARN	EL	Warning Lamps
WINDOW	EL	Power Window — IVMS
WIPER	EL	Front Wiper and Washer