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Terminal Arrangement ..... Foldout

Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

NBEL0001

The supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER" used along with a seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. The SRS system composition which is available to INFINITI QX4 is as follows:

- For a frontal collision
  The Supplemental Restraint System consists of driver air bag module (located in the center of the steering wheel), front passenger air bag module (located on the instrument panel on passenger side), seat belt pre-tensioners, a diagnosis sensor unit, warning lamp, wiring harness and spiral cable.
- For a side collision
  The Supplemental Restraint System consists of side air bag module (located in the outer side of front seat), satellite sensor, diagnosis sensor unit (one of components of air bags for a frontal collision), wiring harness, warning lamp (one of components of air bags for a frontal collision).

Information necessary to service the system safely is included in the **RS section** of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the RS section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. Spiral cable and wiring harnesses (except "SEAT BELT PRE-TENSIONER") covered with yellow insulation either just before the harness connectors or for the complete harness are related to the SRS.**

Wiring Diagrams and Trouble Diagnosis

NBEL0002

When you read wiring diagrams, refer to the followings:

- "HOW TO READ WIRING DIAGRAMS" in GI section
- "POWER SUPPLY ROUTING" for power distribution circuit in EL section

When you perform trouble diagnosis, refer to the followings:

- "HOW TO FOLLOW TEST GROUP IN TROUBLE DIAGNOSIS" in GI section
- "HOW TO PERFORM EFFICIENT DIAGNOSIS FOR AN ELECTRICAL INCIDENT" in GI section

Check for any Service bulletins before servicing the vehicle.

Description

NBEL0003

HARNESS CONNECTOR (TAB-LOCKING TYPE)

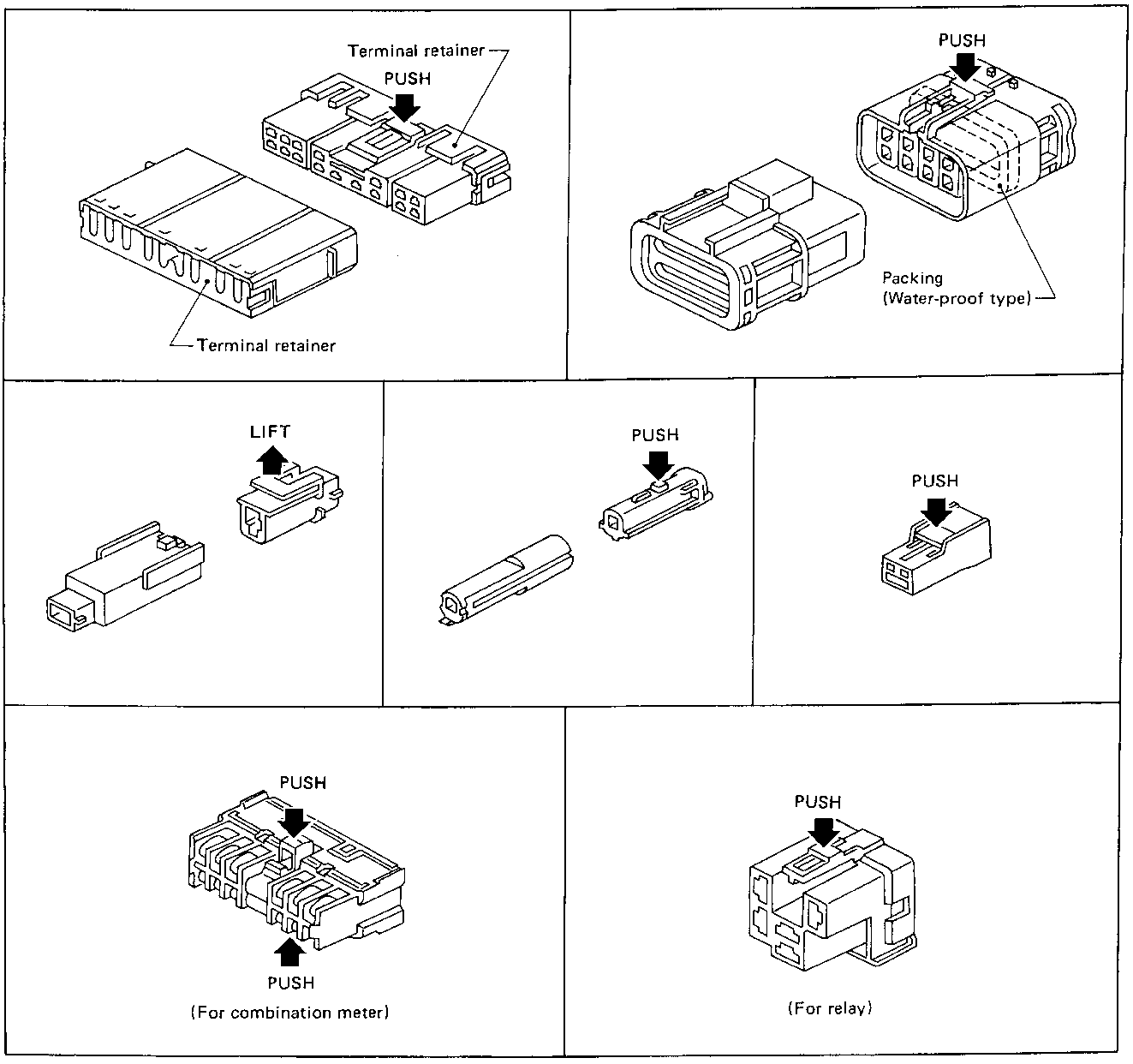
NBEL0003S01

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

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

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

[Example]



SEL769D

Description (Cont'd)

HARNESS CONNECTOR (SLIDE-LOCKING TYPE)

NBEL0003S02

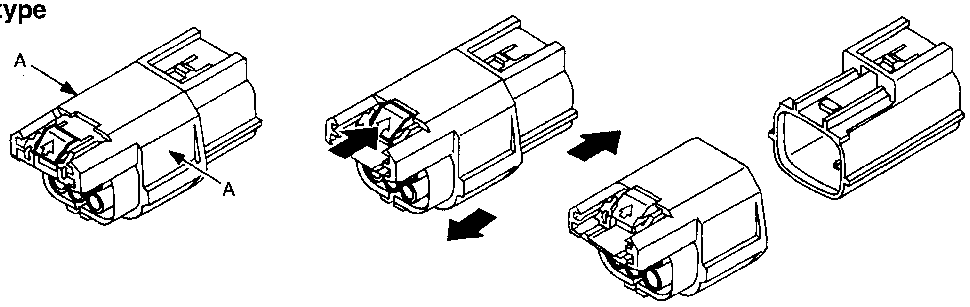
- A new style slide-locking type connector is used on certain systems and components, especially those related to OBD.
- The slide-locking type connectors help prevent incomplete locking and accidental looseness or disconnection.
- The slide-locking type connectors are disconnected by pushing or pulling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

CAUTION:

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

[Example]

Waterproof type

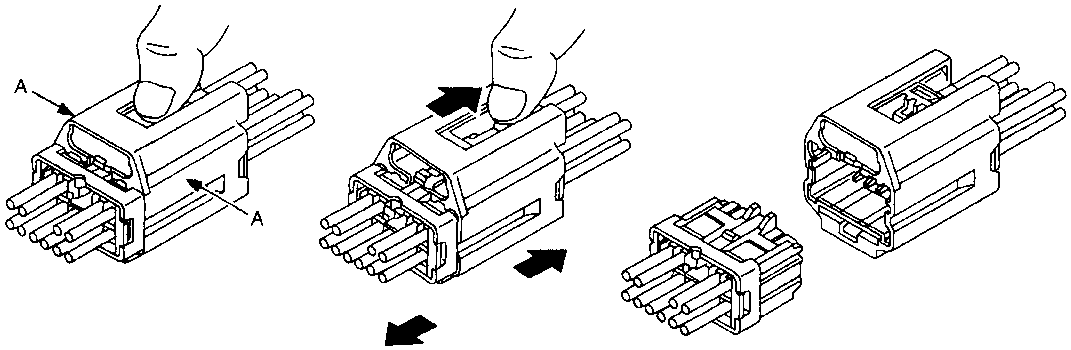


① Firmly grasp shell of connector housing at A.

② Push slider until connector pops or snaps apart.

③ Disconnect harness connector.

Non-waterproof type



① Firmly grasp shell of connector housing at A.

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

③ Disconnect harness connector.

SEL769V

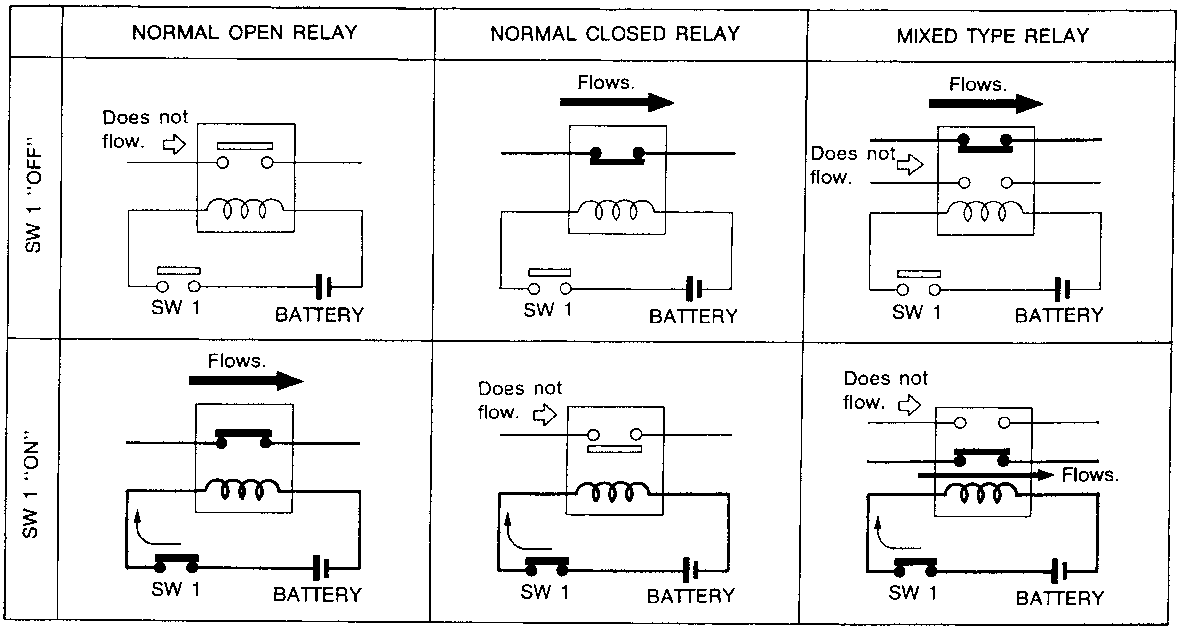
Description

NBEL0004

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

NBEL0004S01

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

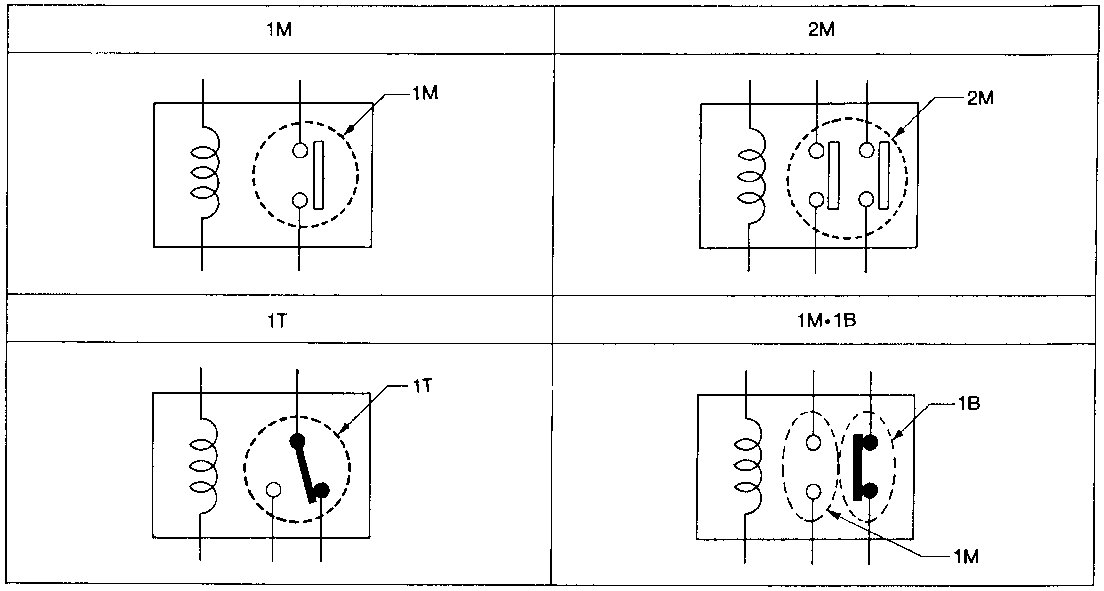


SEL881H

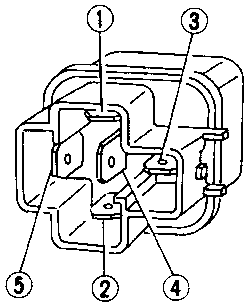
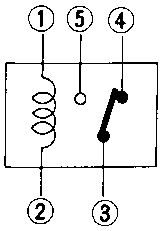
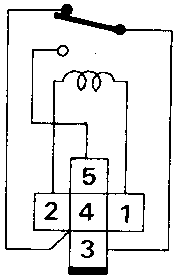
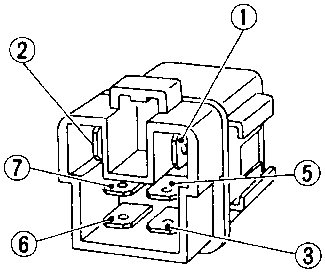
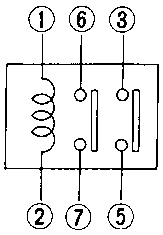
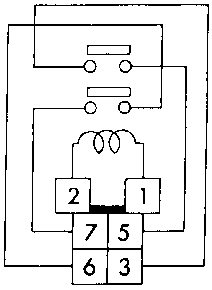
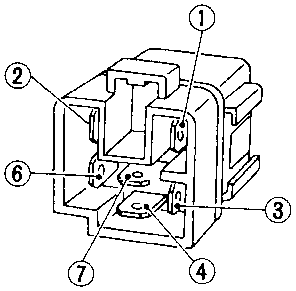
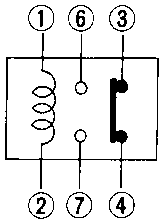
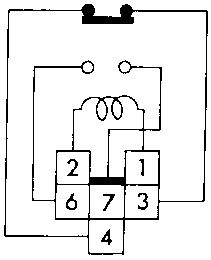
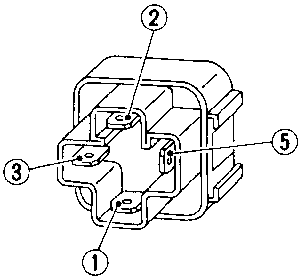
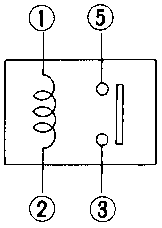
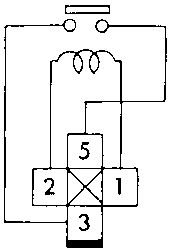
TYPE OF STANDARDIZED RELAYS

NBEL0004S02

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



SEL882H

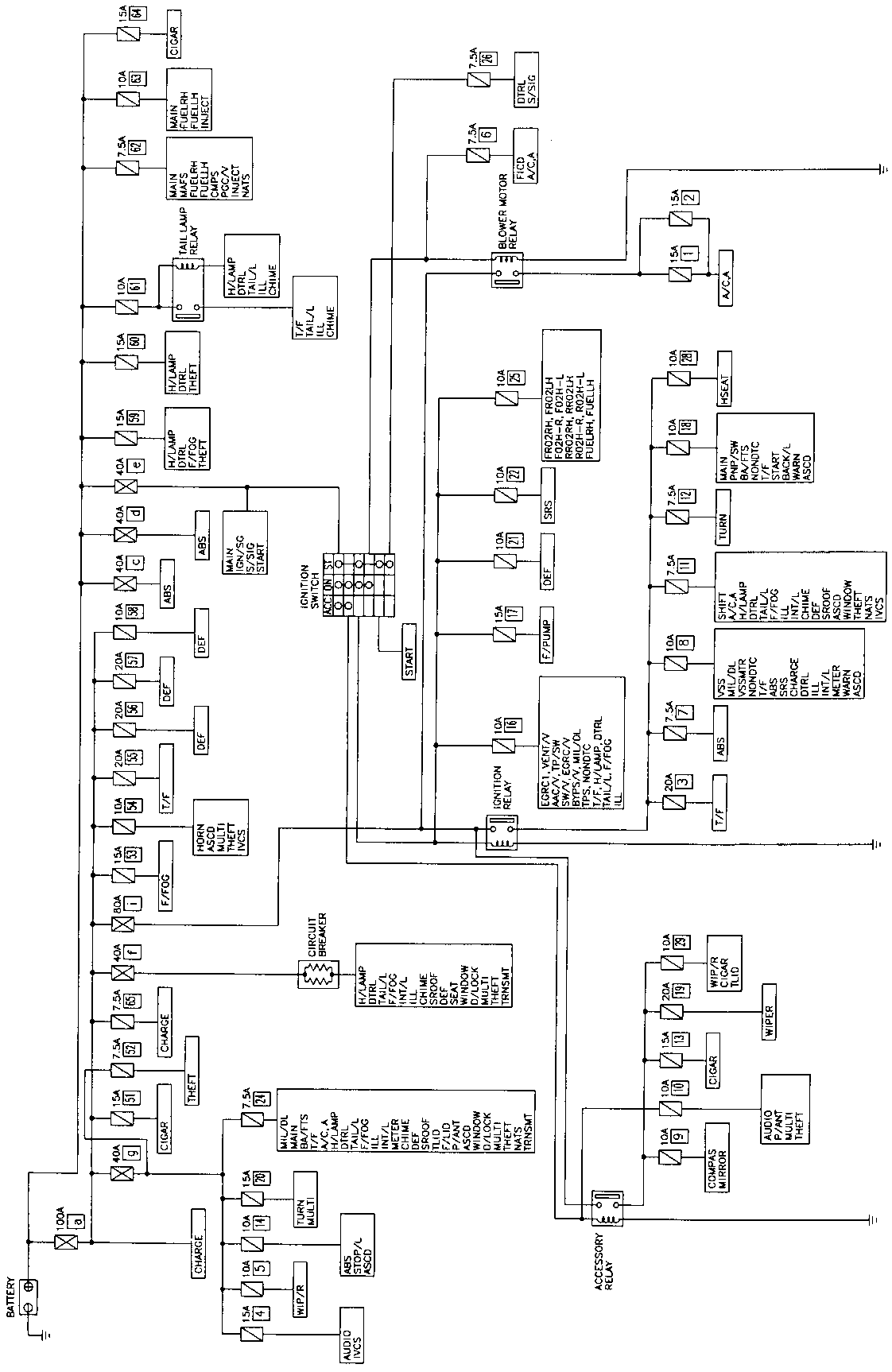
Type	Outer view	Circuit	Connector symbol and connection	Case color
1T				BLACK
2M				BROWN
1M•1B				GRAY
1M				BLUE

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

SEL661TA

Schematic

NBEL0005



MEL740J

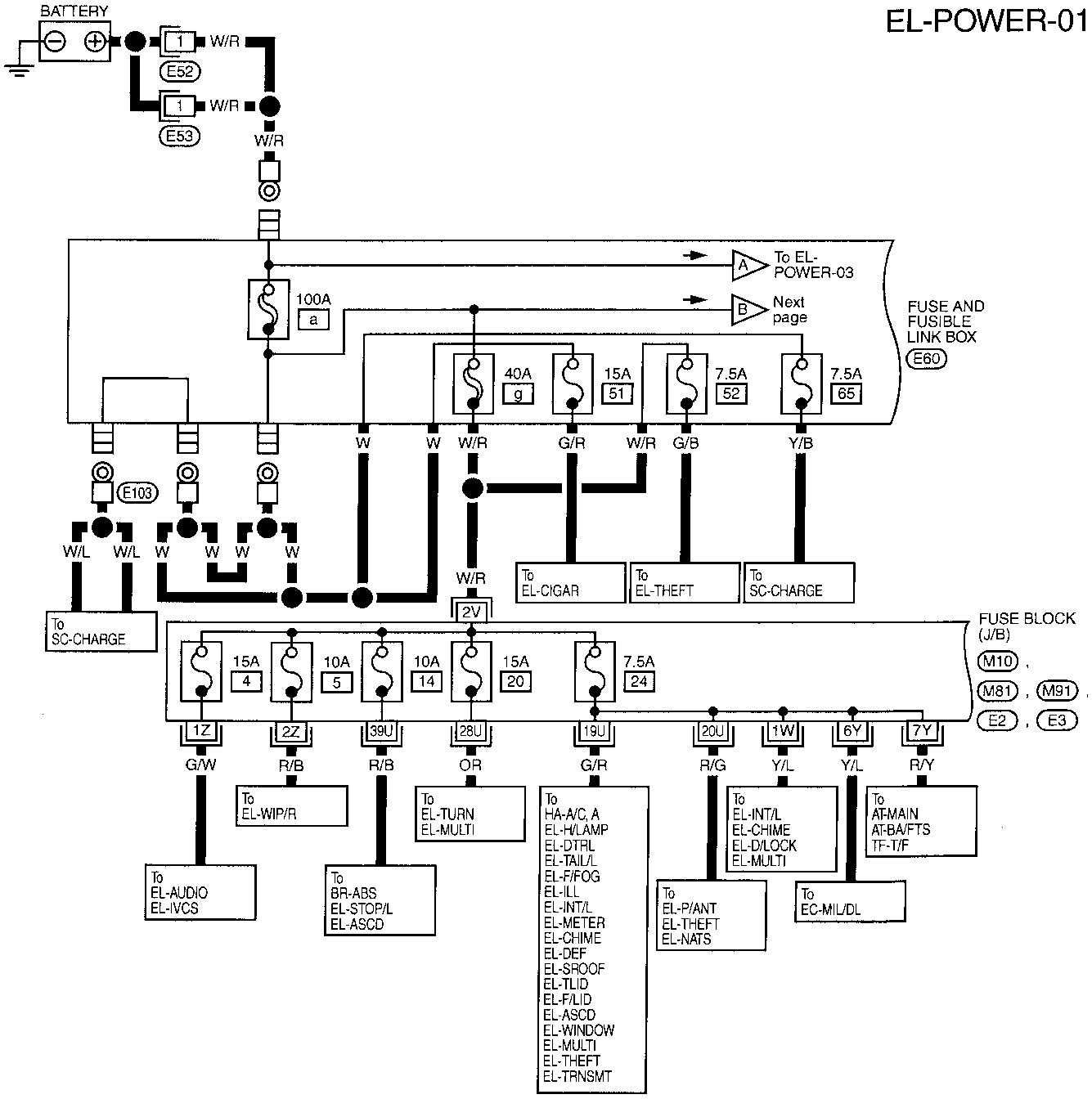
Wiring Diagram — POWER —

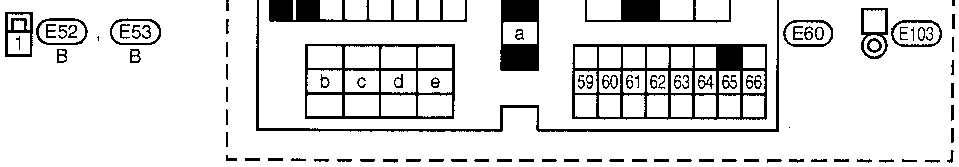
NBEL0006

BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION

NBEL0006S01

EL-POWER-01





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M10 , M81 , M91 , E2 , E3

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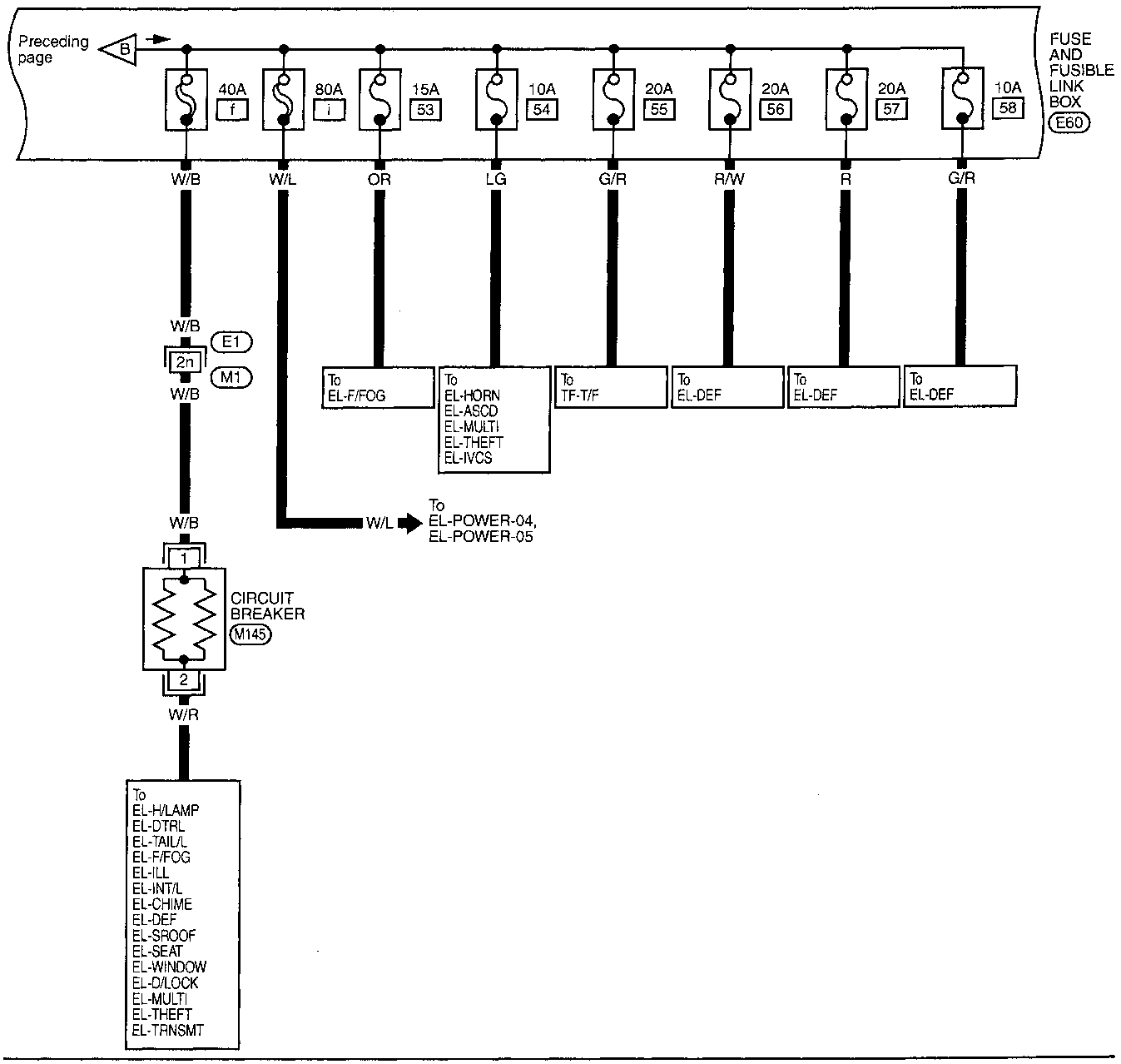
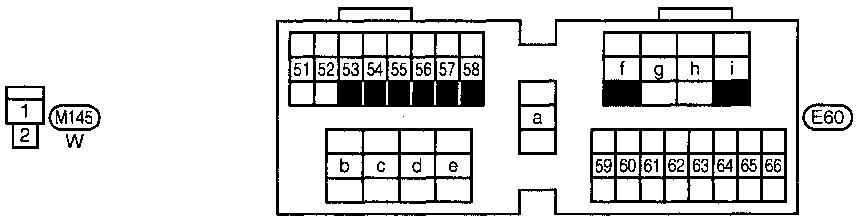
16	17	18	19	20
21	22			
24	25	26		
	28	29		

MEL741J

EL-POWER-02





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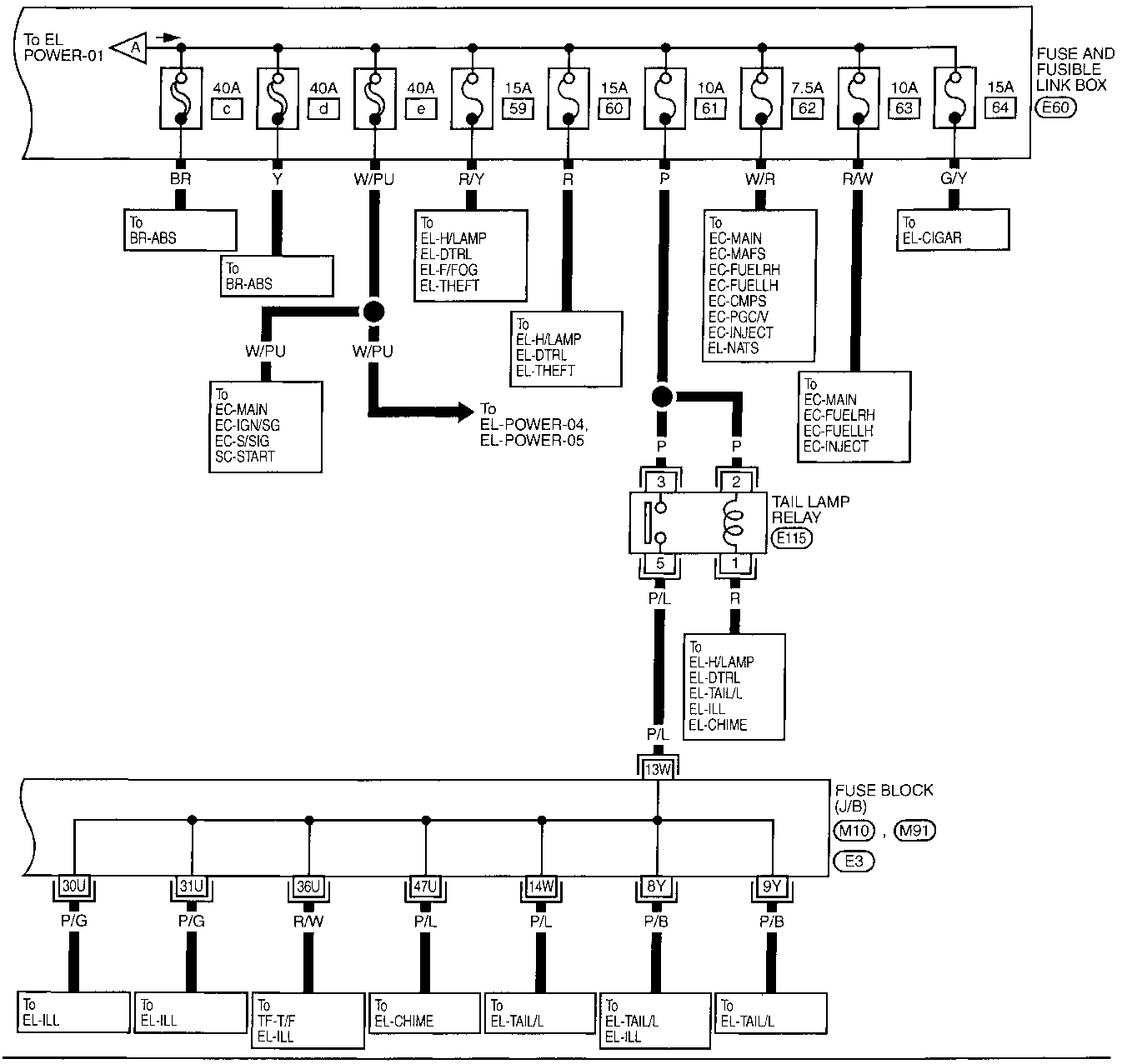
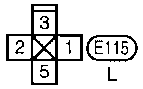
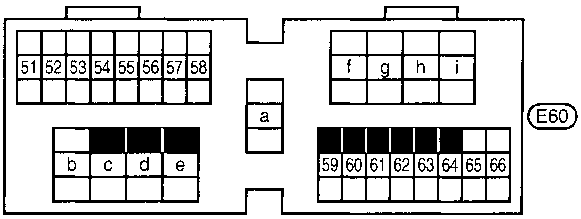
M1 , E1

MEL742J

EL-POWER-03







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M10 , M91 , E3

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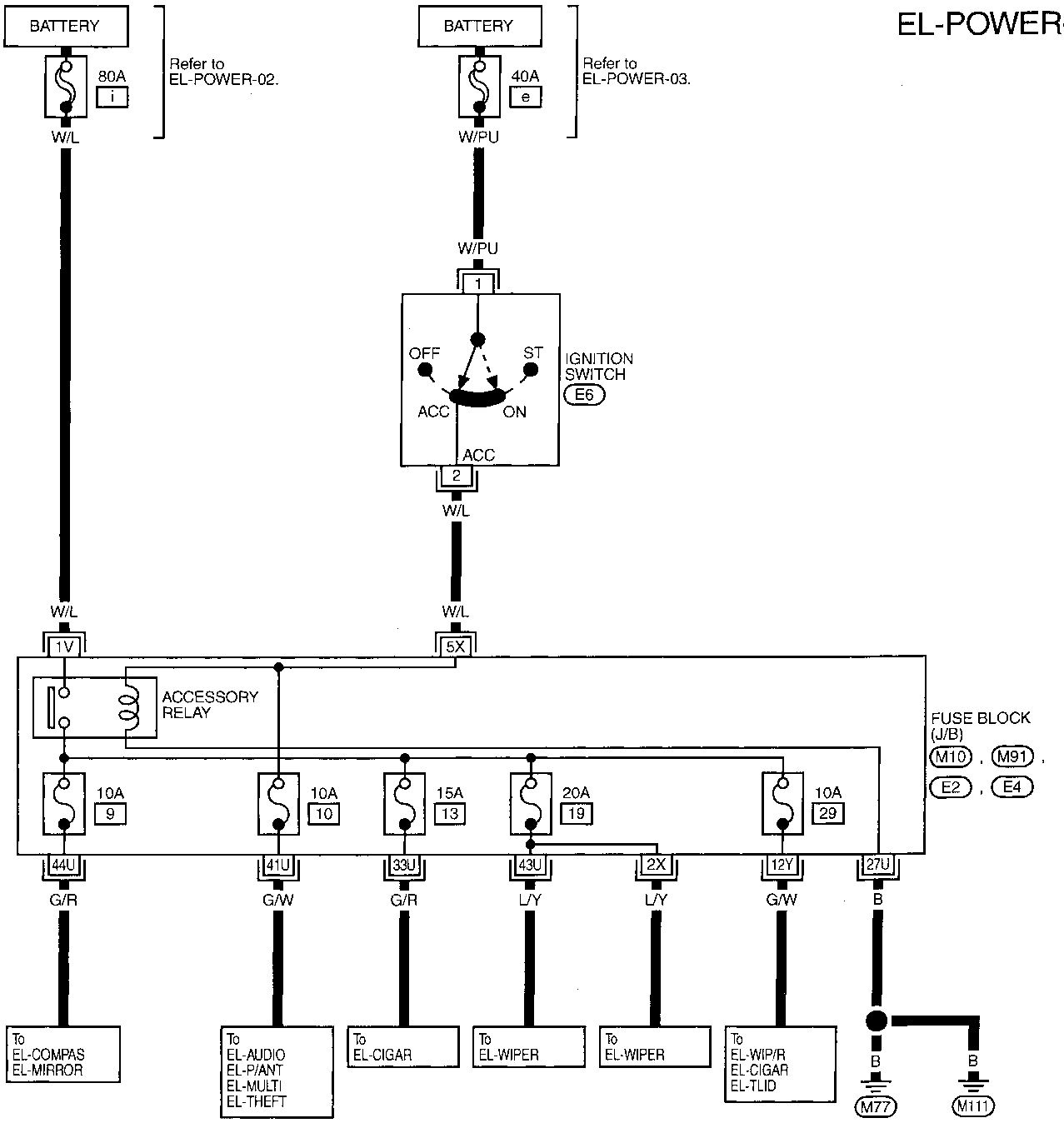
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22			
24	25	26		
	28	29		

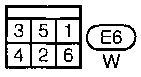
MEL743J

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

NBEL0006S02

EL-POWER-04





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M10 , M91 , E2 , E4

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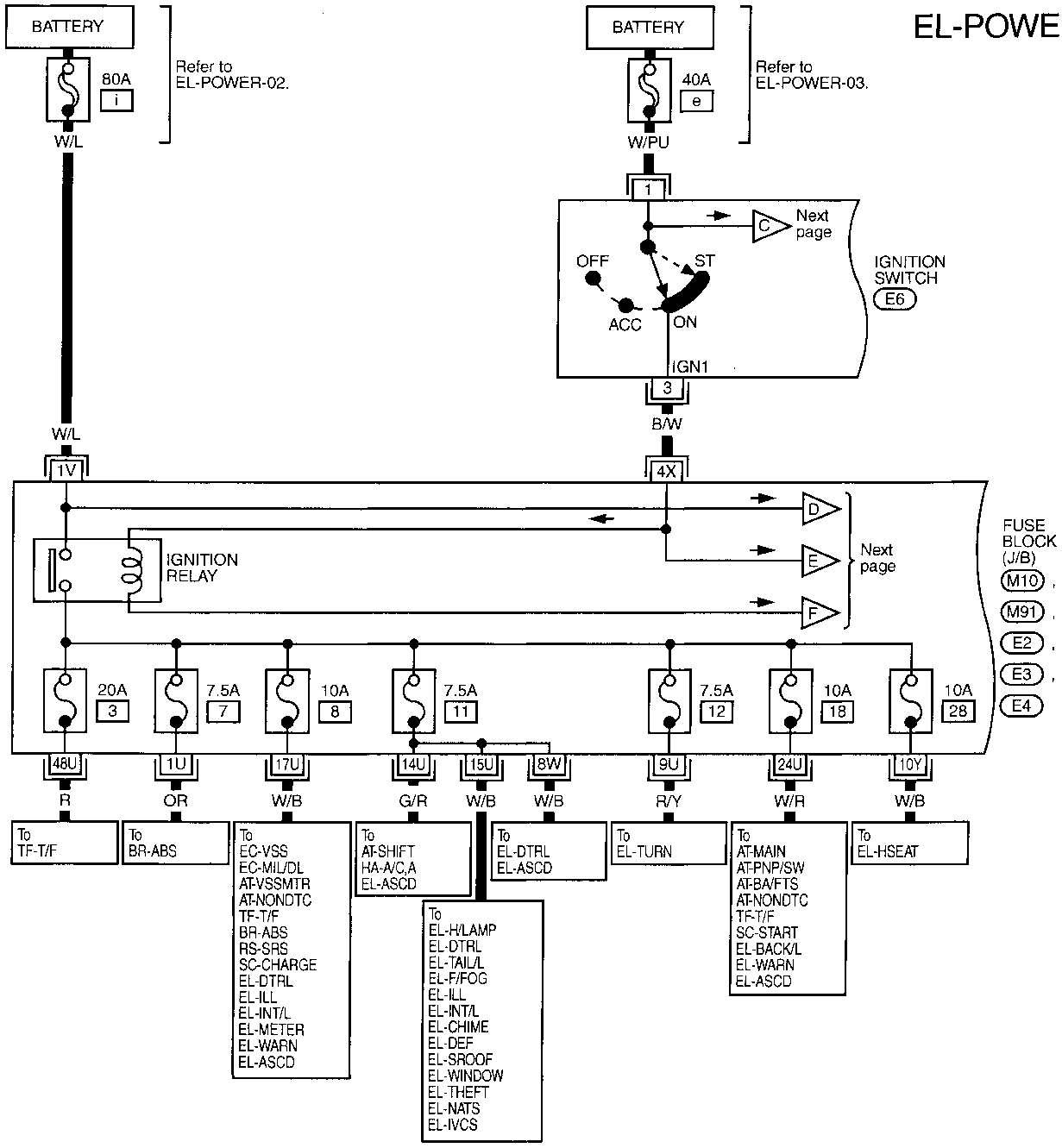
	28	29		

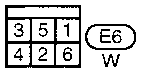
MEL744J

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

NBEL0006S03

EL-POWER-05





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M10 , M91 , E2 , E3 , E4

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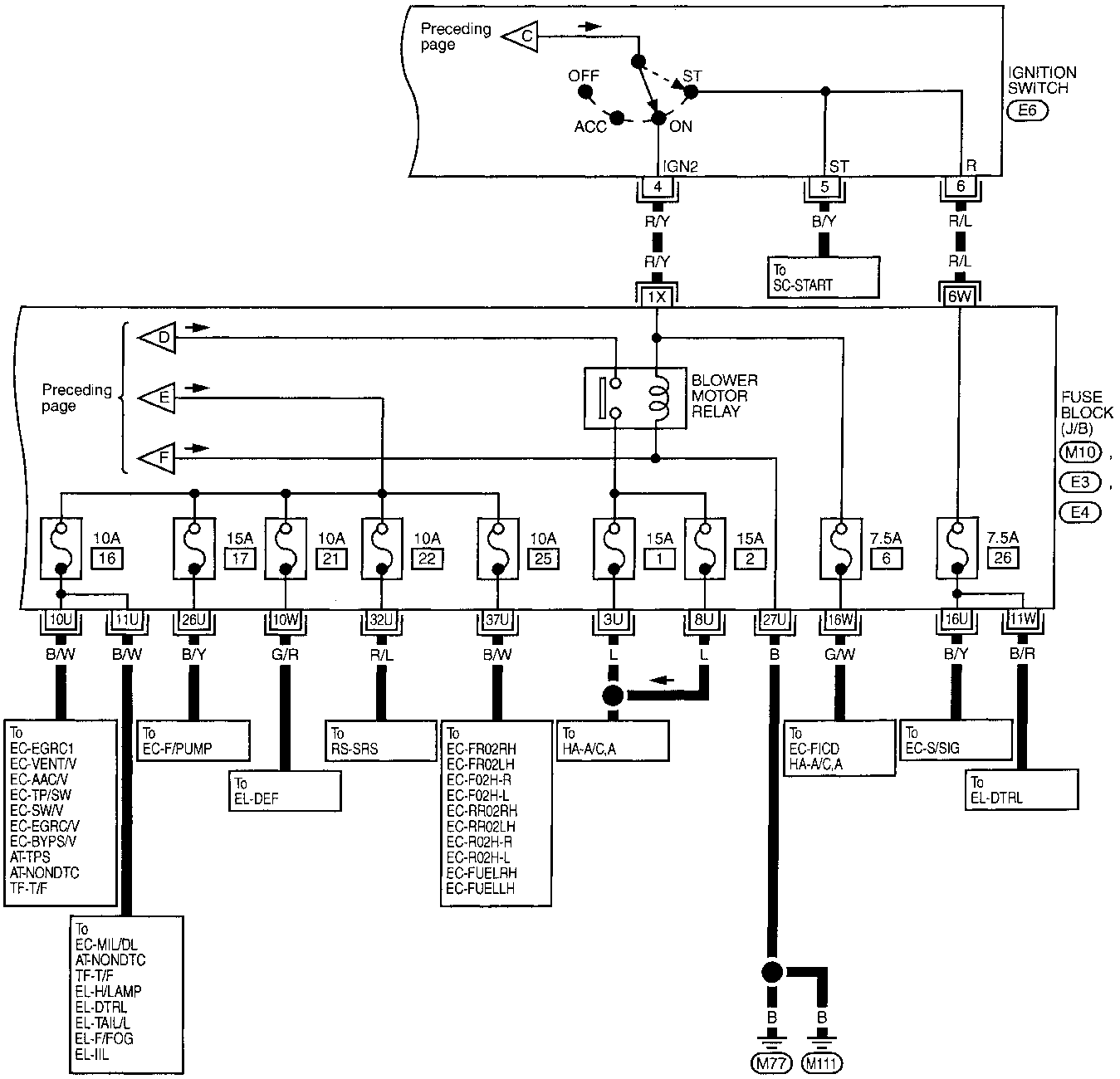
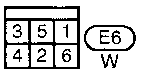
	28	29		

MEL745J

EL-POWER-06





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M10 , E3 , E4

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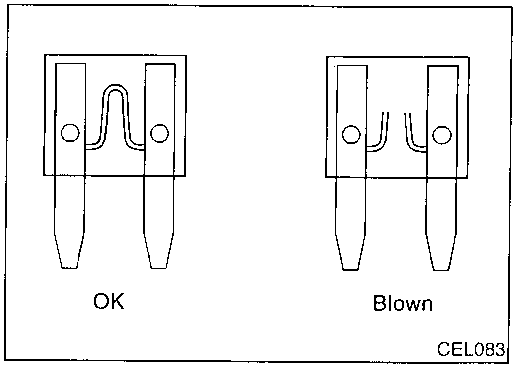
24	25	26		
	28	29		

MEL746J



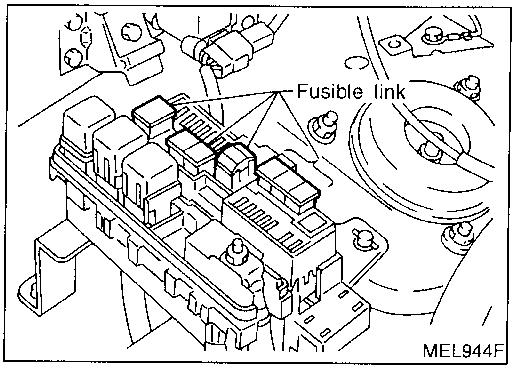
Inspection

NBEL0007

FUSE

NBEL0007S01

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



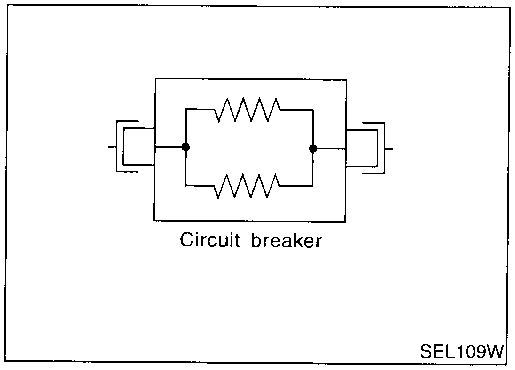
FUSIBLE LINK

NBEL0007S02

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 should melt, it is possible that critical circuit (power supply or large current carrying circuit) is shorted. In such a case, carefully check and eliminate cause of problem.**
- **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 (PTC THERMISTOR TYPE)

NBEL0007S03

The PTC thermister generates heat in response to current flow. The temperature (and resistance) of the thermister element varies with current flow. Excessive current flow will cause the element's temperature to rise. When the temperature reaches a specified level, the electrical resistance will rise sharply to control the circuit current.

Reduced current flow will cause the element to cool. Resistance falls accordingly and normal circuit current flow is allowed to resume.

Ground Distribution

NBEL0006

EARTH	CONNECT TO	CONN. NO.	CELL CODE
M4/M66	AIR BAG DIAGNOSIS SENSOR UNIT	Z4	RS-SRS
	AIR MIX DOOR MOTOR	M55	HA-A/C, A
	ASCD CONTROL UNIT	M3	EL-ASCD
	ASCD MAIN SWITCH	M18	EL-ASCD
	COMBINATION FLASHER UNIT	M15	EL-TURN
	DOOR LOCK AND UNLOCK SWITCH RH	D38	EL-D/LOCK
	DOOR MIRROR DEFOGGER RH	D31	EL-DEF
	DOOR MIRROR REMOTE CONTROL SWITCH	M17	EL-MIRROR
	FRONT DOOR KEY CYLINDER SWITCH RH	D39	EL-D/LOCK EL-THEFT
	HEADLAMP BATTERY SAVER CONTROL UNIT	M115	EL-H/LAMP EL-DTRL EL-TAIL/L EL-F/FOG EL-ILL
	HEADLAMP BATTERY SAVER CONTROL UNIT	M116	EL-H/LAMP EL-DTRL EL-TAIL/L EL-F/FOG EL-ILL
	MODE DOOR MOTOR	M38	HA-A/C, A
	POWER ANTENNA	M69	EL-P/ANT
	POWER WINDOW RELAY	M23	EL-SROOF EL-WINDOW
	REAR POWER SOCKET RELAY	M144	EL-CIGAR
	REAR WINDOW DEFOGGER SWITCH	M36	EL-DEF
	SHIELD WIRE (TWEETER LH)	M8	EL-AUDIO
M77/M111	A/C AUTO AMP.	M102	HA-A/C, A
	A/C AUTO AMP.	M103	HA-A/C, A
	AUDIO AMP. RELAY	B47	EL-AUDIO
	COMBINATION METER (4WD SHIFT INDICATOR LAMP)	M25	TF-T/F
	COMBINATION METER (ABS)	M25	BR-ABS EL-WARN
	COMBINATION METER (AIR BAG)	M24	RS-SRS EL-WARN
	COMBINATION METER (CRUISE INDICATOR LAMP)	M25	EL-WARN EL-ASCD
	COMBINATION METER (FUEL GAUGE)	M24	EL-METER
	COMBINATION METER (HIGH BEAM INDICATOR)	M25	EL-H/LAMP EL-DTRL
	COMBINATION METER (SPEEDOMETER)	M24	TF-T/F EC-VSS AT-VSSMTR EL-METER EL-ASCD
	COMBINATION METER (TURN SIGNAL)	M25	EL-TURN
	COMBINATION METER (WATER TEMPERATURE GAUGE)	M24	EL-METER
	COMPASS AND THERMOMETER	R4	EL-COMPAS
	COMPASS AND THERMOMETER (ILLUMINATION)	R4	EL-ILL
	CIGARETTE LIGHTER SOCKET	M56	EL-CIGAR
	DATA LINK CONNECTOR FOR CONSULT	M11	EC-MIL/DL AT-NONDTC TF-T/F
	DATA LINK CONNECTOR FOR GST	M9	EC-MIL/DL

Ground Distribution (Cont'd)

EARTH	CONNECT TO	CONN. NO.	CELL CODE
M77/M11	DOOR MIRROR DEFOGGER LH	D1	EL-DEF
	FAN CONTROL AMP.	M60	HA-A/C, A
	FRONT DOOR KEY CYLINDER SWITCH LH	D9	EL-D/LOCK EL-THEFT
	FRONT DOOR LOCK ACTUATOR LH	D7	EL-INT/L EL-MULTI EL-THEFT
	FRONT DOOR LOCK ACTUATOR RH	D37	EL-THEFT
	FRONT DOOR SPEAKER LH	D12	EL-AUDIO
	FRONT DOOR SPEAKER RH	D42	EL-AUDIO
	FRONT WIPER AMP.	M79	EL-WIPER
	FRONT WIPER MOTOR	M78	EL-WIPER
	FUEL FILLER LID AND GLASS HATCH OPENER SWITCH	D14	EL-TLID EL-F/LID
	FUSE BLOCK (ACCESSORY RELAY, IGNITION RELAY AND BLOWER MOTOR RELAY)	M10	EL-POWER
	HEADLAMP BATTERY SAVER CONTROL UNIT	M115	EL-H/LAMP EL-DTRL EL-TAIL/L EL-F/FOG EL-ILL
	HEADLAMP BATTERY SAVER CONTROL UNIT	M116	EL-H/LAMP EL-DTRL EL-TAIL/L EL-F/FOG EL-ILL
	HEATED SEAT SWITCH LH	M52	EL-HSEAT
	HEATED SEAT SWITCH RH	M53	EL-HSEAT
	ILLUMINATION CONTROL SWITCH	M19	EL-ILL
	INTEGRATED HOMELINK® TRANSMITTER	R5	EL-TRNSMT
	INTAKE DOOR MOTOR	M59	HA-A/C, A
	IVCS SWITCH	R10	EL-IVCS
	POWER WINDOW MAIN SWITCH	D6	EL-WINDOW
	POWER WINDOW MAIN SWITCH (DOOR LOCK AND UNLOCK SWITCH LH)	D6	EL-D/LOCK EL-MULTI
	SHIELD WIRE (FRONT DOOR SPEAKER LH)	D12	EL-AUDIO
	SHIELD WIRE (FRONT DOOR SPEAKER RH)	D42	EL-AUDIO
	SHIELD WIRE (TWEETER RH)	M64	EL-AUDIO
	SMART ENTRANCE CONTROL UNIT	M121	EL-H/LAMP EL-DTRL EL-TAIL/L EL-F/FOG EL-ILL EL-INT/L EL-CHIME EL-DEF EL-SROOF EL-WINDOW EL-D/LOCK EL-MULTI EL-THEFT EL-TRNSMT
	SPOT LAMP	R6	EL-INT/L
	VANITY MIRROR LH (ILLUMINATION)	R5	EL-INT/L
	VANITY MIRROR RH (ILLUMINATION)	R3	EL-INT/L

EARTH	CONNECT TO	CONN. NO.	CELL CODE
E13/E41	AMBIENT AIR TEMPERATURE SWITCH	E34	EC-FICD HA-A/C, A
	ASCD HOLD RELAY	E22	EL-ASCD
	BRAKE FLUID LEVEL SWITCH	E28	EL-WARN
	COMBINATION SWITCH (FRONT FOG LAMP SWITCH)	E63	EL-F/FOG
	COMBINATION SWITCH (FRONT WIPER SWITCH)	E9	EL-WIPER
	COMBINATION SWITCH (LIGHTING SWITCH)	E7	EL-H/LAMP EL-F/FOG EL-TAIL/L EL-ILL EL-CHIME EL-DTRL
	COMBINATION SWITCH (REAR WIPER SWITCH)	E114	EL-WIP/R
	DAYTIME LIGHT CONTROL UNIT	E45	EL-DTRL EL-THEFT
	FRONT FOG LAMP LH	E61	EL-F/FOG
	FRONT FOG LAMP RH	E62	EL-F/FOG
	FRONT TURN SIGNAL LAMP LH	E30	EL-TURN
	FRONT TURN SIGNAL LAMP RH	E39	EL-TURN
	HEADLAMP LH	E29	EL-H/LAMP EL-THEFT
	HEADLAMP RH	E38	EL-H/LAMP EL-DTRL EL-THEFT
	HOOD SWITCH	E31	EL-THEFT
	PARKING LAMP LH	E12	EL-TAIL/L
	PARKING LAMP RH	E40	EL-TAIL/L
	REAR WASHER MOTOR	E43	EL-WIP/R
	THEFT WARNING HORN RELAY	E23	EL-THEFT
	TRANSFER SHIFT HI RELAY	E95	TF-T/F
	TRANSFER SHIFT LOW RELAY	E99	TF-T/F
	WASHER LEVEL SWITCH	E42	EL-WARN
E101	ALTERNATOR	E105	SC-CHARGE
	POWER STEERING OIL PRESSURE SWITCH	E110	EC-PST/SW
E112	ABS ACTUATOR AND ELECTRIC UNIT	E111	BR-ABS
	SHIELD WIRE (FRONT WHEEL SENSOR LH)	E14	BR-ABS
	SHIELD WIRE (FRONT WHEEL SENSOR RH)	E51	BR-ABS
	SHIELD WIRE (REAR WHEEL SENSOR LH)	B8	BR-ABS
	SHIELD WIRE (REAR WHEEL SENSOR RH)	B69	BR-ABS
F20/F25	DATA LINK CONNECTOR FOR GST	M9	EC-MIL/DL
	DISTRIBUTOR (CAMSHAFT POSITION SENSOR)	F7	EC-CMPS
	DISTRIBUTOR (IGNITION)	F7	EC-IGN/SG
	ECM	F24	EC-MAIN
	NATS IMMU	E113	EL-NATS
	REAR HEATED OXYGEN SENSOR LH	F3	EC-RRO2LH EC-RO2H-L
	REAR HEATED OXYGEN SENSOR RH	F1	EC-RRO2RH EC-RO2H-R
	SHIELD WIRE (ABSOLUTE PRESSURE SENSOR)	E88	EC-AP/SEN

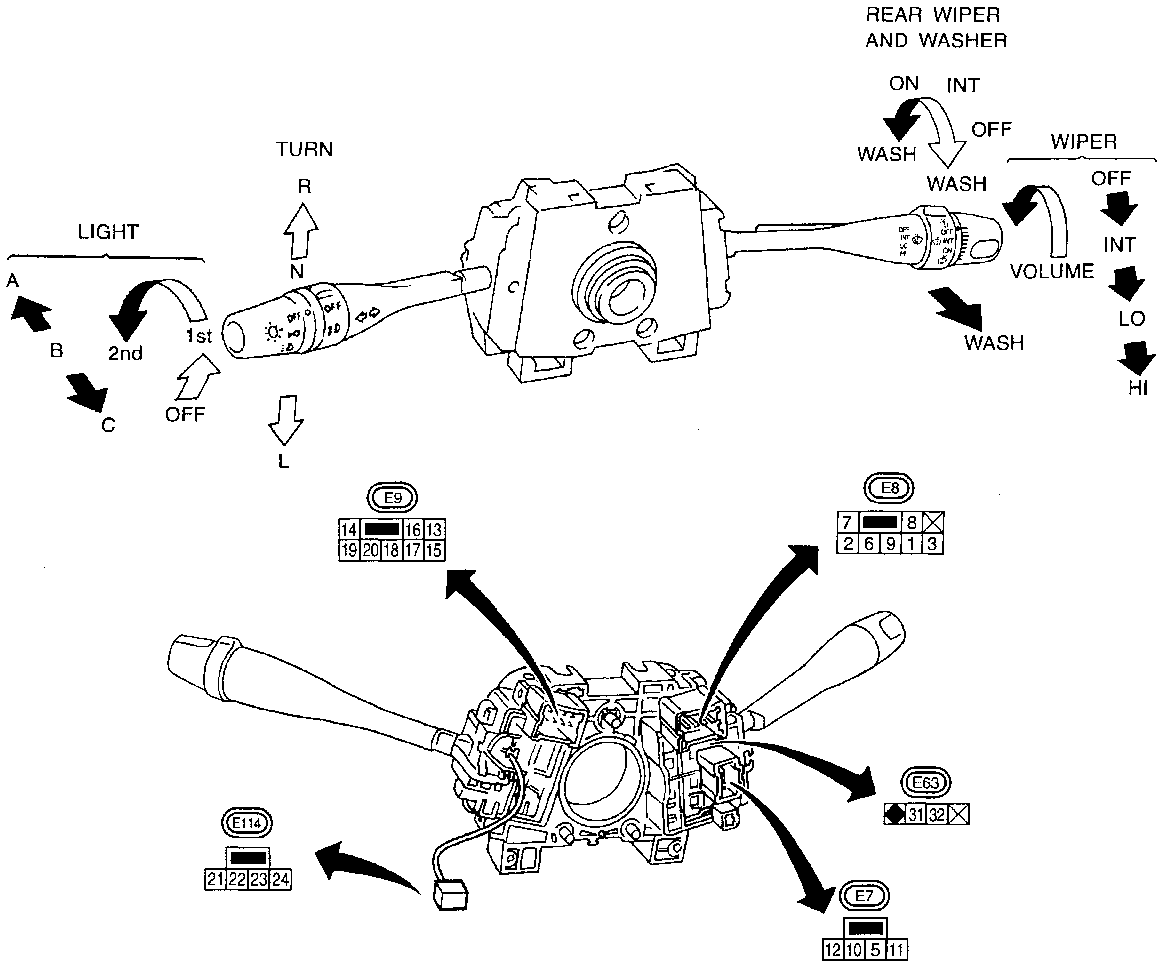
Ground Distribution (Cont'd)

EARTH	CONNECT TO	CONN. NO.	CELL CODE
F20/F25	SHIELD WIRE [CRANKSHAFT POSITION SENSOR (OBD)]	F110	EC-CKPS
	SHIELD WIRE [DISTRIBUTOR (CAMSHAFT POSITION SENSOR)]	F7	EC-CMPS
	SHIELD WIRE (EVAP CONTROL SYSTEM PRESSURE SENSOR)	B102	EC-PRE/SE
	SHIELD WIRE (FRONT HEATED OXYGEN SENSOR LH)	F4	EC-FRO2LH EC-FO2H-L EC-FUELLH
	SHIELD WIRE (FRONT HEATED OXYGEN SENSOR RH)	F2	EC-FRO2RH EC-FO2H-R EC-FUELRH
	SHIELD WIRE (KNOCK SENSOR)	F102	EC-KS
	SHIELD WIRE (MASS AIR FLOW SENSOR)	F10	EC-MAFS
	SHIELD WIRE (REAR HEATED OXYGEN SENSOR LH)	F3	EC-RRO2LH EC-RO2H-L
	SHIELD WIRE (REAR HEATED OXYGEN SENSOR RH)	F1	EC-RRO2RH EC-RO2H-R
	SHIELD WIRE (THROTTLE POSITION SENSOR)	F8	EC-TPS AT-TPS TF-T/F
	TCM (TRANSMISSION CONTROL MODULE)	M120	AT-MAIN
	TRANSFER CONTROL UNIT	M142	TF-T/F
	TRANSFER CONTROL UNIT	M143	TF-T/F
B11/B22/D210	BACK DOOR HANDLE SWITCH	D213	EL-IVCS
	BACK DOOR LOCK ACTUATOR	D207	EL-THEFT
	BACK DOOR KEY CYLINDER SWITCH	D201	EL-D/LOCK EL-THEFT
	BACK DOOR SWITCH	D208	EL-INT/L EL-D/LOCK EL-MULTI EL-THEFT
	DOOR MIRROR DEFOGGER RELAY	B112	EL-DEF
	FUEL PUMP	B13	EC-F/PUMP
	FUEL TANK GAUGE UNIT	B12	EC-TFTS EL-METER EL-WARN
	FRONT DOOR SWITCH LH	B9	RS-SRS EL-H/LAMP EL-DTRL EL-TAIL/L EL-F/FOG EL-ILL EL-INT/L EL-CHIME EL-SROOF EL-WINDOW EL-D/LOCK EL-MULTI EL-THEFT
	GLASS HATCH OPENER ACTUATOR	D200	EL-TLID
	GLASS HATCH SWITCH	D209	EL-INT/L EL-WIP/R EL-THEFT
	HEATED SEAT LH	B5	EL-HSEAT
	IVCS UNIT	B114	EL-IVCS
	HIGH-MOUNTED STOP LAMP	D302	EL-STOP/L
	LICENSE PLATE LAMP LH	D202	EL-TAIL/L
	LICENSE PLATE LAMP RH	D211	EL-TAIL/L
	LUGGAGE ROOM LAMP	D103	EL-INT/L

EARTH	CONNECT TO	CONN. NO.	CELL CODE
B11/B22/D210	POWER SEAT LH	B7	EL-SEAT
	POWER SOCKET	B4	EL-CIGAR
	POWER SOCKET RELAY	B111	EL-CIGAR
	REAR COMBINATION LAMP LH (BACK-UP LAMP LH)	B26	EL-BACK/L
	REAR COMBINATION LAMP LH (STOP LAMP LH)	B26	EL-TAIL/L EL-STOP/L
	REAR COMBINATION LAMP LH (TAIL LAMP LH)	B26	EL-TAIL/L EL-STOP/L
	REAR COMBINATION LAMP LH (TURN SIGNAL LAMP LH)	B26	EL-TURN
	REAR WIPER AMP.	B14	EL-WIP/R
	REAR DOOR LOCK ACTUATOR LH	D54	EL-THEFT
	REAR WIPER MOTOR	D212	EL-WIP/R EL-TLID
	REAR SPEAKER AMP.	B46	EL-AUDIO
	SEAT BELT BUCKLE SWITCH	B6	RS-SRS EL-WARN EL-CHIME
B55/B75	A/T DEVICE (PARK POSITION SWITCH and OVER-DRIVE CONTROL SWITCH)	B59	AT-NONDTC AT-SHIFT
	ASHTRAY ILLUMINATION	B76	EL-ILL
	ATP SWITCH	B210	TF-T/F EL-WARN
	HEATED SEAT RH	B56	EL-HSEAT
	PARK/NEUTRAL POSITION SWITCH	B66	EC-PNP/SW SC-START EL-ASCD
	POWER SEAT RH	B57	EL-SEAT
	REAR COMBINATION LAMP RH (BACK-UP LAMP RH)	B74	EL-BACK/L
	REAR COMBINATION LAMP RH (STOP LAMP RH)	B74	EL-TAIL/L EL-STOP/L
	REAR COMBINATION LAMP RH (TAIL LAMP RH)	B74	EL-TAIL/L EL-STOP/L
	REAR COMBINATION LAMP RH (TURN SIGNAL LAMP RH)	B74	EL-TURN
	REAR DOOR LOCK ACTUATOR RH	D74	EL-THEFT
	REAR POWER SOCKET	B129	EL-CIGAR
	TRANSFER CONTROL DEVICE	B252	TF-T/F
	TRANSFER MOTOR	B212	TF-T/F
	WAIT DETECTION SWITCH	B211	TF-T/F
	NEUTRAL-4LO SWITCH	B213	TF-T/F EL-WARN
B108	SHIELD WIRE (SATELLITE SENSOR LH)	B107	RS-SRS
B122	SHIELD WIRE (AIR BAG DIAGNOSIS SENSOR UNIT)	B121	RS-SRS
B127	SHIELD WIRE (SATELLITE SENSOR RH)	B128	RS-SRS
D305	REAR WINDOW DEFOGGER	D304	EL-DEF

Check

NBEL0009



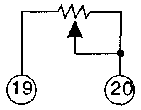
LIGHTING SWITCH

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

FRONT WIPER SWITCH

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

VARIABLE INTERMITTENT WIPER VOLUME



FOG LAMP SWITCH

	OFF	ON
31		○
32		○

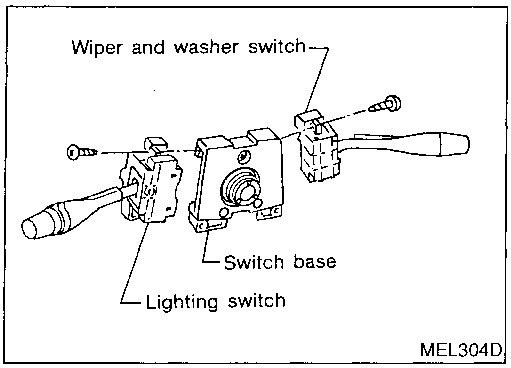
	L	N	R
1	○		○
2			○
3	○		

TURN SIGNAL SWITCH

REAR WIPER SWITCH

	WASH	OFF	INT	ON	WASH
21			○		
22				○	○
23	○			○	○
24	○		○	○	○

MEL860J

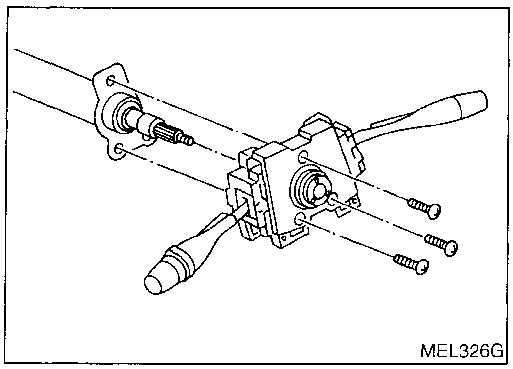


Replacement

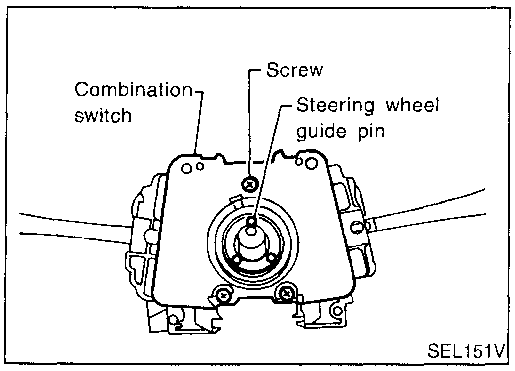
NBEL0010

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.



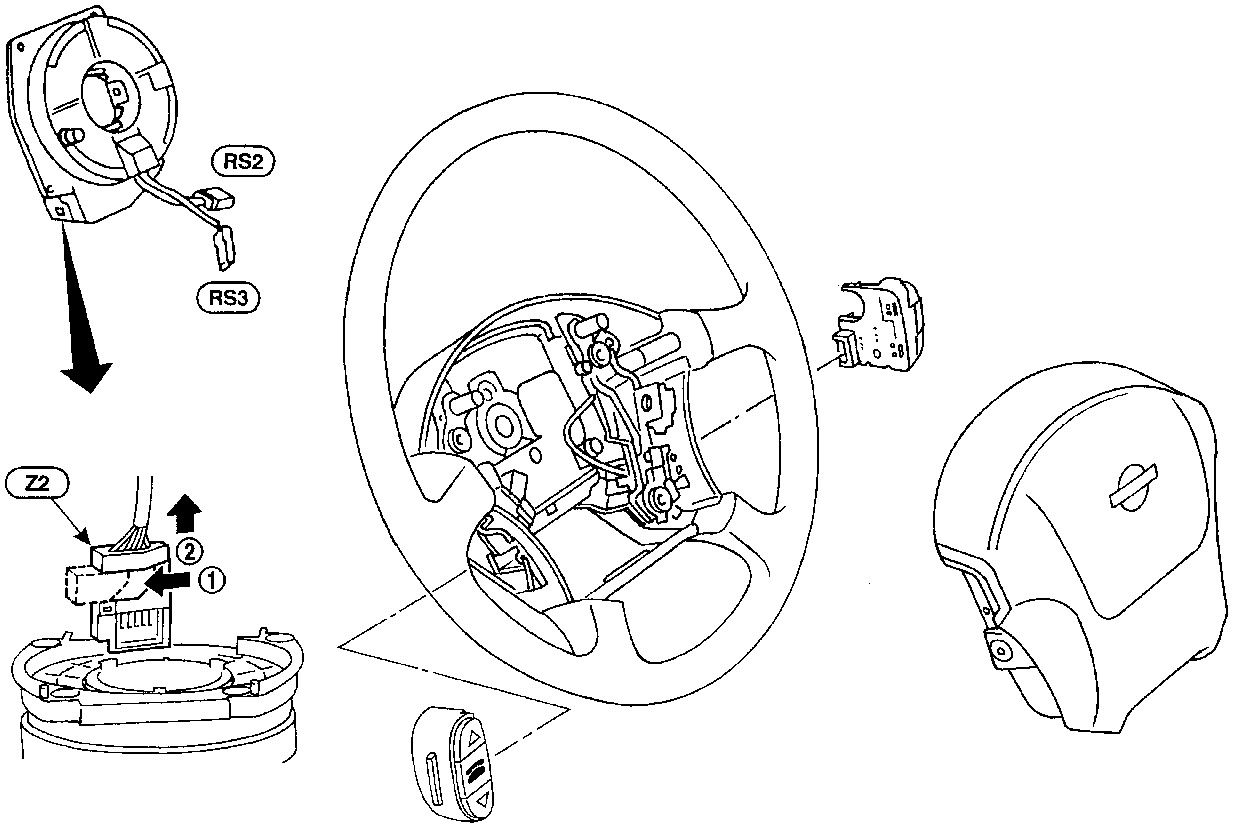
- To remove combination switch base, remove base attaching screw.

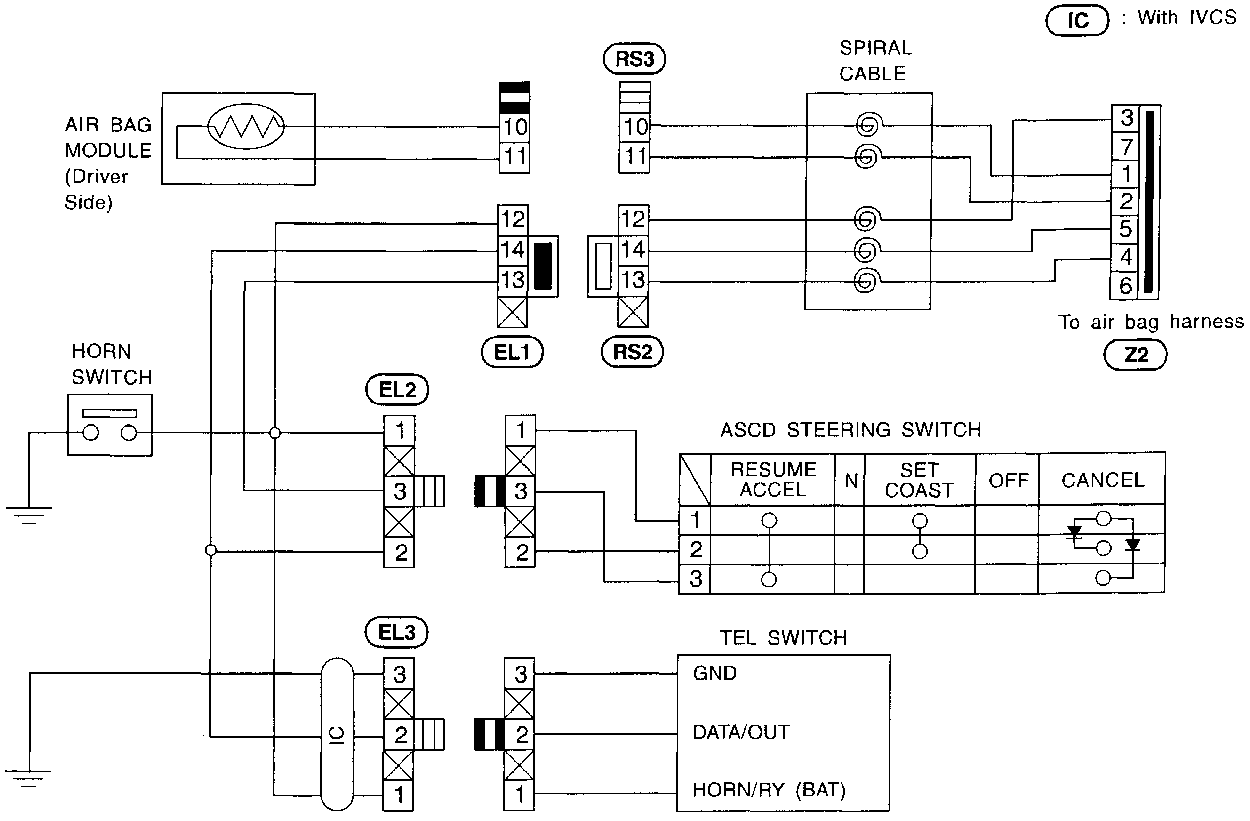


- Before installing the steering wheel, align the steering wheel guide pins with the screws which secure the combination switch as shown in the left figure.

Check

NBEL0011

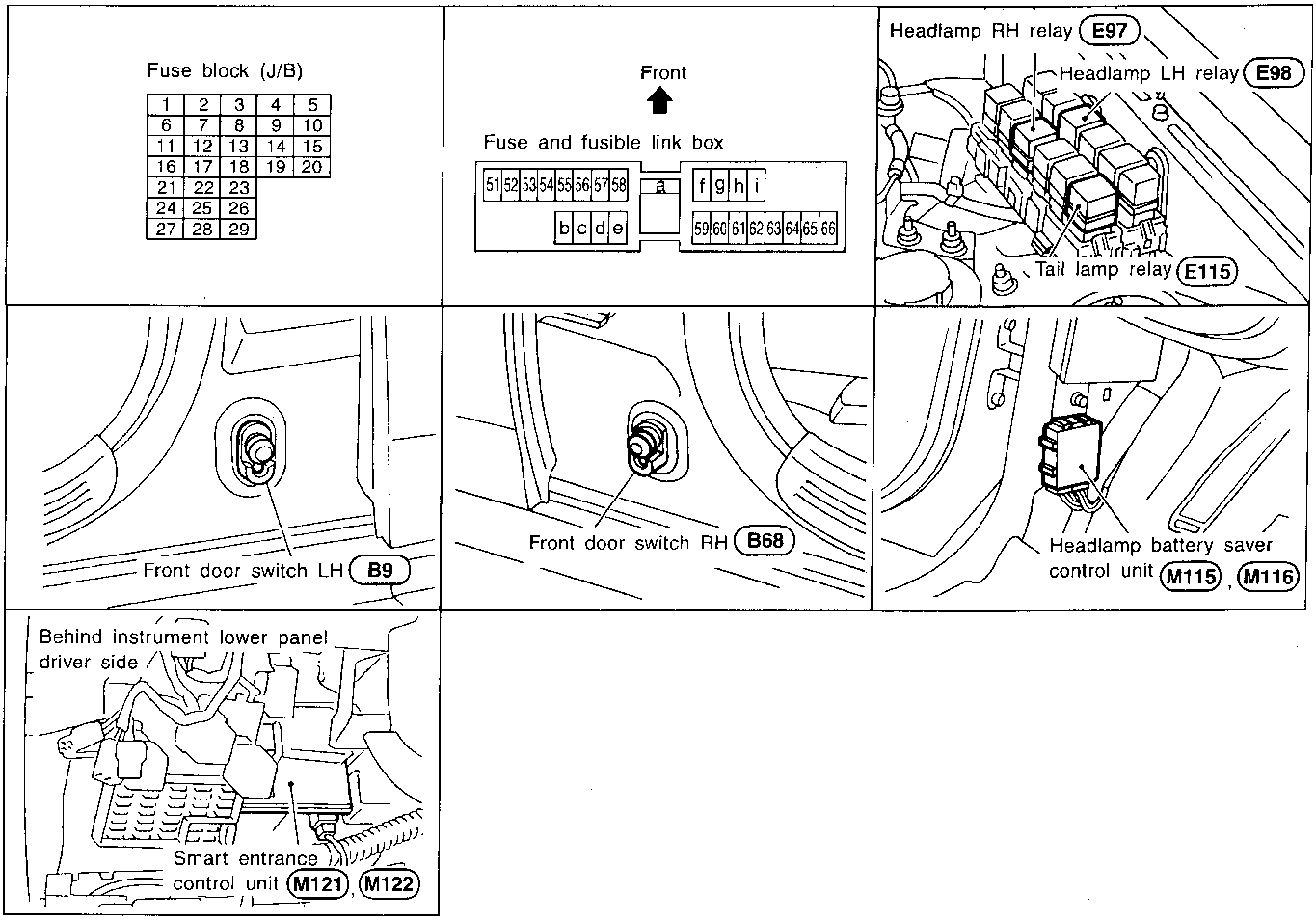




MEL861J

Component Parts and Harness Connector Location

NBEL0159



SEL044W

System Description

NBEL0012

The headlamp operation is controlled by the lighting switch which is built into the combination switch and headlamp battery saver control unit. And the headlamp battery saver system is controlled by the headlamp battery saver control unit and smart entrance control unit.

OUTLINE

NBEL0012S04

Power is supplied at all times

- to headlamp LH relay terminals 2 and 3
- through 15A fuse (No. 60, located in the fuse and fusible link box), and
- to headlamp RH relay terminals 2 and 3
- through 15A fuse (No. 59, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7
- through 7.5A fuse [No. 24, located in the fuse block (J/B)].

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 16, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 7.5A fuse [No. 11, located in the fuse block (J/B)]

Ground is supplied to headlamp battery saver control unit terminals 4 and 11.

When Ignition Switch is in ON or START Position

NBEL0012S0401

Ground is supplied

- to headlamp LH relay terminal 1 from headlamp battery saver control unit terminal 2
- through headlamp battery saver control unit terminal 3, and
- through body grounds M4 and M66, and
- to headlamp RH relay terminal 1 from headlamp battery saver control unit terminal 8
- through headlamp battery saver control unit terminal 9, and
- through body grounds M77 and M111.

Headlamp relays (LH and RH) are then energized.

When Ignition Switch is in OFF or ACC Position

NBEL0012S0402

When lighting switch is in 2ND (or 1ST) position, ground is supplied

- to headlamp battery saver control unit terminals 5 and 13
- from lighting switch terminal 11.

And then, ground is also supplied to headlamp LH and RH relays terminal 1 from headlamp battery saver control unit. Headlamp relays (LH and RH) are then energized.

LOW BEAM OPERATION

NBEL0012S01

When the lighting switch is turned to the 2ND position and placed in 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 E13 and E41.
With power and ground supplied, the headlamp(s) will illuminate.

HIGH BEAM OPERATION/FLASH-TO-PASS OPERATION

NBEL0012S02

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

- from lighting switch terminal 6
- to terminal 1 of the RH headlamp, and
- from lighting switch terminal 9
- to terminal 1 of the LH headlamp, and
- to combination meter terminal 33 for the high beam indicator.

Ground is supplied to terminal 19 of the combination meter through body grounds M77 and M111.
Terminal 3 of each headlamp supplies ground through body grounds E13 and E41.
With power and ground supplied, the high beams and the high beam indicator illuminate.

BATTERY SAVER CONTROL

NBEL0012S05

When the ignition switch is turned from ON or START to OFF or ACC positions while headlamps illuminate, the RAP signal is supplied to terminal 10 of the headlamp battery saver control unit from smart entrance control unit terminal 5.
After counting 45 seconds by the RAP signal from the smart entrance control unit to headlamp battery saver control unit, the ground supply to terminal 1 of the headlamp LH and RH relay from headlamp battery saver control unit terminals 2 and 8 is terminated.
Then the headlamps are turned off.
The headlamps are turned off when driver or passenger side door is opened even if 45 seconds have not passed after ignition switch is turned from ON (or START) to OFF (or ACC) positions while headlamps are illuminated.
When the lighting switch is turned from OFF to 2ND after headlamps are turned to off by the battery saver control, ground is supplied

- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and
- to headlamp LH and RH relays terminal 1 from headlamp battery saver control unit terminals 2 and 8.

Then headlamps illuminate again.

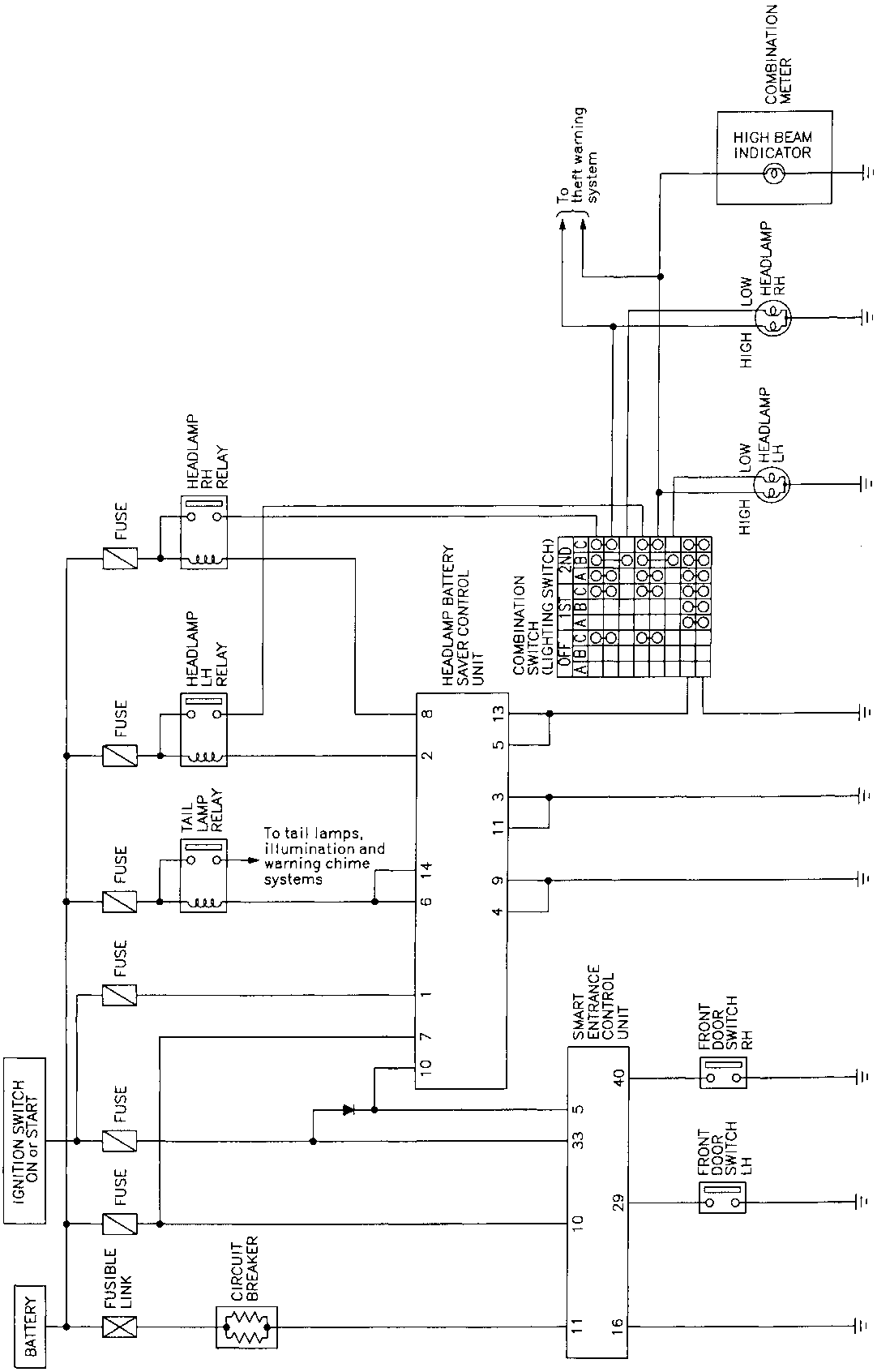
THEFT WARNING SYSTEM

NBEL0012S03

The theft warning system will flash the high beams if the system is triggered. Refer to "THEFT WARNING SYSTEM" (EL-227).

Schematic

NBEL0160

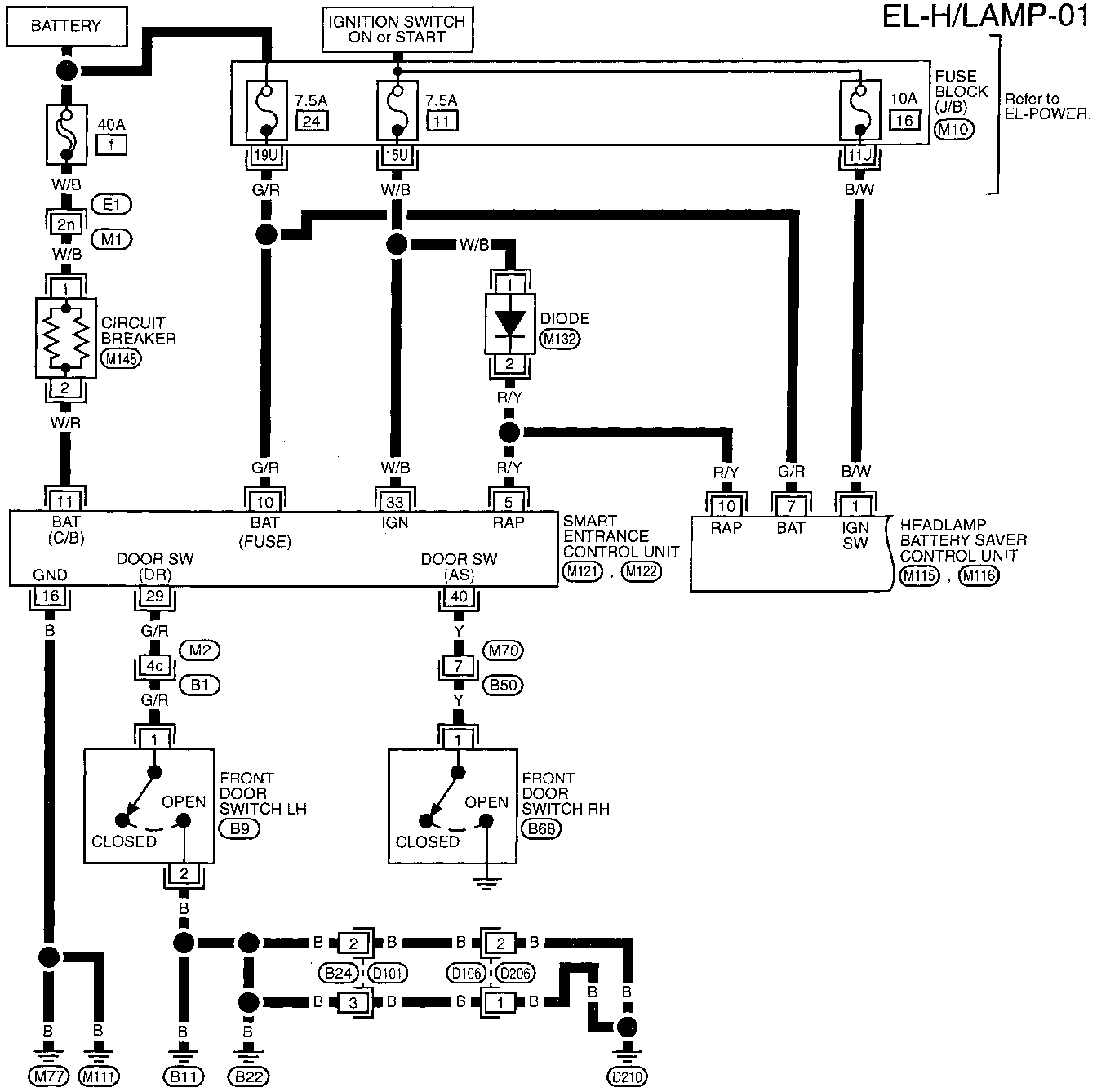


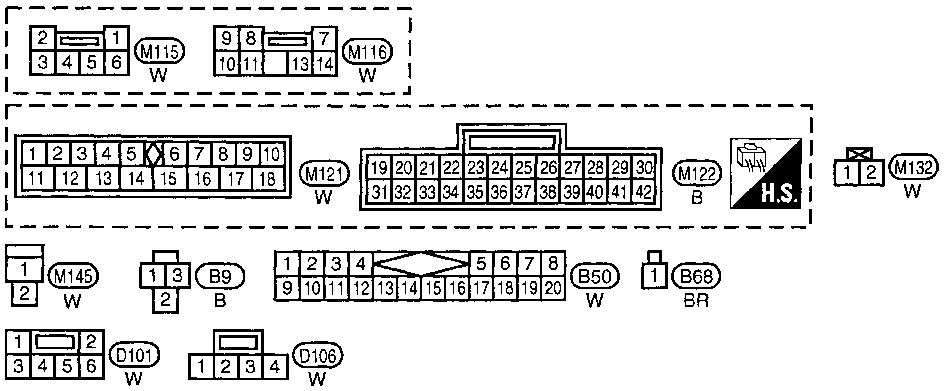
MEL837J

Wiring Diagram — H/LAMP —

NBEL0013

EL-H/LAMP-01

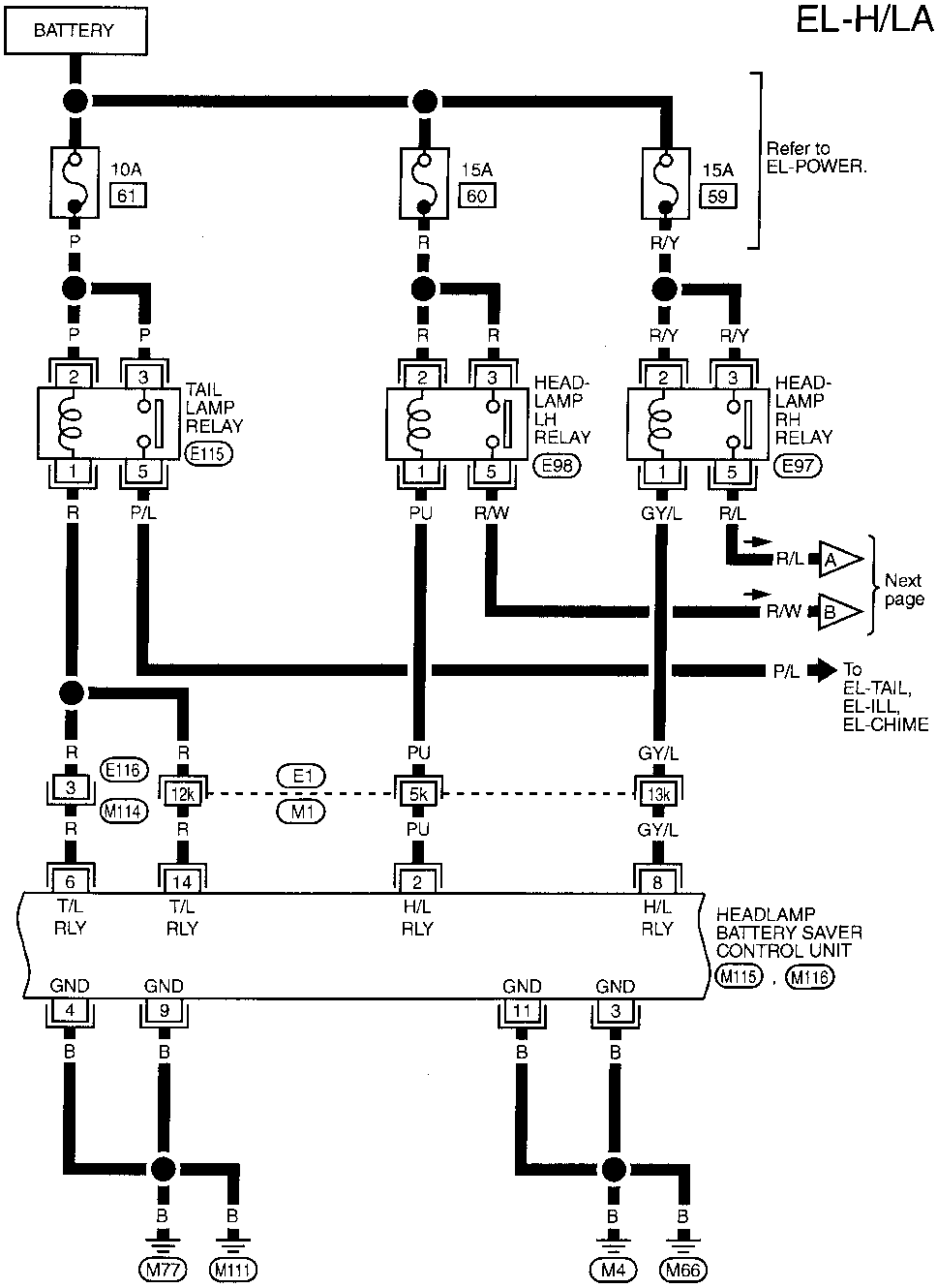


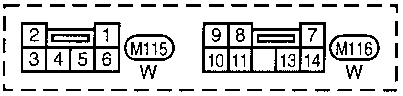


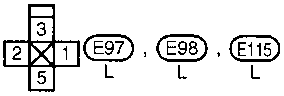
Refer to last page (Foldout page).
M1, E1
M2, B1
M10

MEL838J

EL-H/LAMP-02







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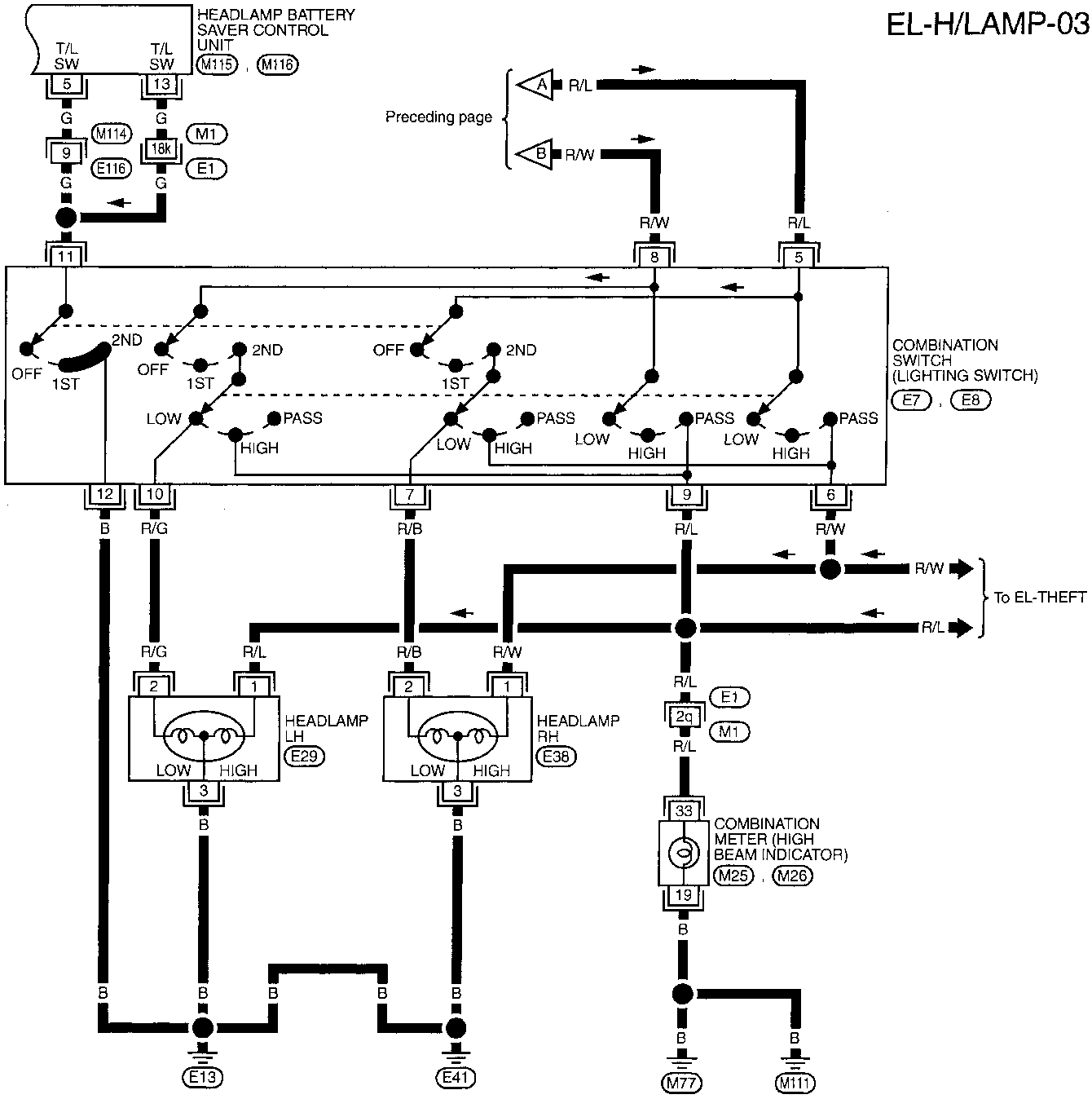
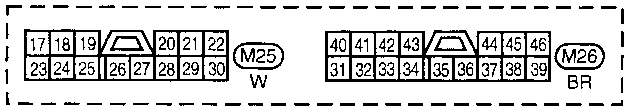
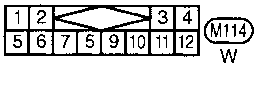
M1 , E1

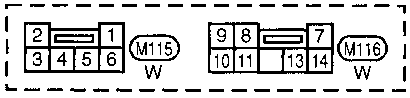
MEL747J

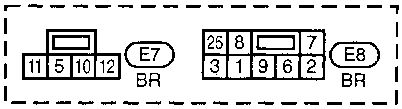
EL-H/LAMP-03

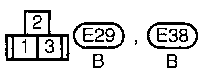












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M1 , E1

MEL748J

Trouble Diagnoses

NBEL0014

Symptom	Possible cause	Repair order
Neither headlamp operates.	1. 7.5A fuse 2. Lighting switch 3. Headlamp battery saver control unit	1. Check 7.5A fuse [No. 24, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 7 of headlamp battery saver control unit. 2. Check Lighting switch. 3. Check headlamp battery saver control unit.
LH headlamp (low and high beam) does not operate, but RH headlamp (low and high beam) does operate.	1. Bulb 2. LH headlamp ground circuit 3. 15A fuse 4. Headlamp LH relay 5. Headlamp LH relay circuit 6. Lighting switch 7. Headlamp battery saver control unit	1. Check bulb. 2. Check harness between LH headlamp and ground. 3. Check 15A fuse (No. 60, located in fusible link and fuse box). Verify battery positive voltage is present at terminals 2 and 3 of headlamp LH relay. 4. Check headlamp LH relay. 5. Check harness between headlamp LH relay and lighting switch. Check harness between headlamp LH relay and headlamp battery saver control unit. 6. Check lighting switch. 7. Check headlamp battery saver control unit.
RH headlamp (low and high beam) does not operate, but LH headlamp (low and high beam) does operate.	1. Bulb 2. RH headlamp ground circuit 3. 15A fuse 4. Headlamp RH relay 5. Lighting switch circuit 6. Lighting switch 7. Headlamp battery saver control unit	1. Check bulb. 2. Check harness between RH headlamp and ground. 3. Check 15A fuse (No. 59, located in fusible link and fuse box). Verify battery positive voltage is present at terminals 2 and 3 of headlamp RH relay. 4. Check headlamp RH relay. 5. Check harness between headlamp RH relay and lighting switch. Check harness between headlamp RH relay and headlamp battery saver control unit. 6. Check lighting switch. 7. Check headlamp battery saver control unit.
LH high beam does not operate, but LH low beam does operate.	1. Bulb 2. Open in LH high beams circuit 3. Lighting switch	1. Check bulb. 2. Check R/L 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 does operate.	1. Bulb 2. Open in LH low beams circuit 3. Lighting switch	1. Check bulb. 2. Check R/G 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 does operate.	1. Bulb 2. Open in RH high beams circuit 3. Lighting switch	1. Check bulb. 2. Check R/W 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 does operate.	1. Bulb 2. Open in RH low beams circuit 3. Lighting switch	1. Check bulb. 2. Check R/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. Ground circuit 3. Open in high beam circuit	1. Check bulb in combination meter. 2. Check harness between high beam indicator and ground. 3. Check R/L wire between lighting switch and combination meter for an open circuit.

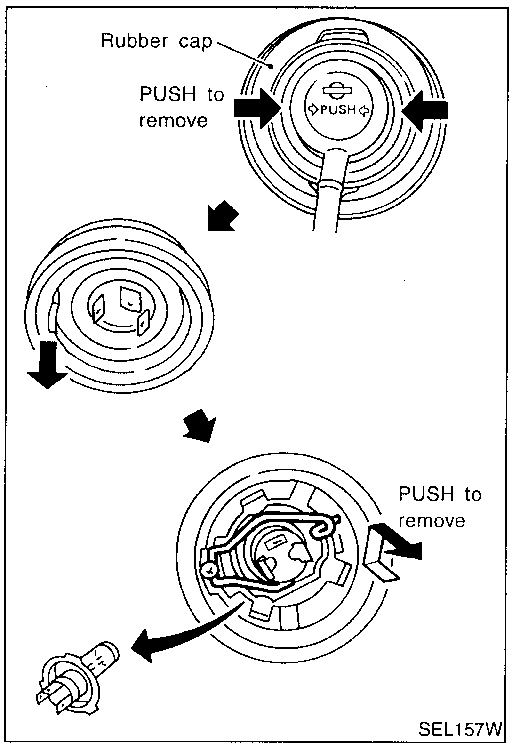
Symptom	Possible cause	Repair order
Battery saver control does not operate properly.	1. RAP signal circuit 2. Driver or passenger side door switch circuit 3. Lighting switch circuit 4. Headlamp battery saver control unit 5. Smart entrance control unit	1. Check harness between headlamp battery saver control unit terminal 10 and smart entrance control unit terminal 5 for open or short circuit. 2. Check harness between smart entrance control unit and driver or passenger side door switch for open or short circuit. Check driver or passenger side door switch ground circuit. Check driver or passenger side door switch. 3. Check harness between headlamp battery saver control unit terminals 5 or 13 and lighting switch terminal 11 for open or short circuit. Check harness between lighting switch terminal 12 and ground. Check lighting switch. 4. Check headlamp battery saver control unit. (EL-31) 5. Check smart entrance control unit. (EL-254)

BATTERY SAVER CONTROL UNIT INSPECTION TABLE

NBEL0014S01

Terminal No.	Item	Condition		Voltage (Approximate value)
1	Ignition ON power supply	Ignition switch	OFF or ACC	Less than 1V
			ON or START	Battery voltage
2	Headlamp LH relay	Ignition switch (with lighting switch OFF)	OFF or ACC	Battery voltage
			ON or START	Less than 1V
		Lighting switch (with ignition switch OFF)	OFF	Battery voltage
			1ST or 2ND	Less than 1V
3	Ground	—		—
4	Ground	—		—
5	Tail lamp switch	Lighting switch	OFF	Battery voltage
			1ST or 2ND	Less than 1V
6	Tail lamp relay	Ignition switch (with lighting switch OFF)	OFF or ACC	Battery voltage
			ON or START	Less than 1V
		Lighting switch (with ignition switch OFF)	OFF	Battery voltage
			1ST or 2ND	Less than 1V
7	Power supply	—		Battery voltage
8	Headlamp RH relay	Ignition switch (with lighting switch OFF)	OFF or ACC	Battery voltage
			ON or START	Less than 1V
		Lighting switch (with ignition switch OFF)	OFF	Battery voltage
			1ST or 2ND	Less than 1V
9	Ground	—		—

Terminal No.	Item	Condition		Voltage (Approximate value)
10	RAP signal	Ignition switch	OFF or ACC (After more than 45 seconds with ignition switch turned OFF or ACC)	Less than 1V
			ON or START	Battery voltage
11	Ground	—		—
13	Tail lamp switch	Lighting switch	OFF	Battery voltage
			1ST or 2ND	Less than 1V
14	Tail lamp relay	Ignition switch (with lighting switch OFF)	OFF or ACC	Battery voltage
			ON or START	Less than 1V
		Lighting switch (with ignition switch OFF)	OFF	Battery voltage
			1ST or 2ND	Less than 1V



Bulb Replacement

NBEL0015

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. Disconnect the harness connector from the back side of the bulb.
3. Pull off the rubber cap.
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 headlamp reflector without bulb for a long period of time. Dust, moisture, smoke, etc. entering headlamp body may affect the performance of the headlamp. Remove headlamp bulb from the headlamp reflector just before a replacement bulb is installed.

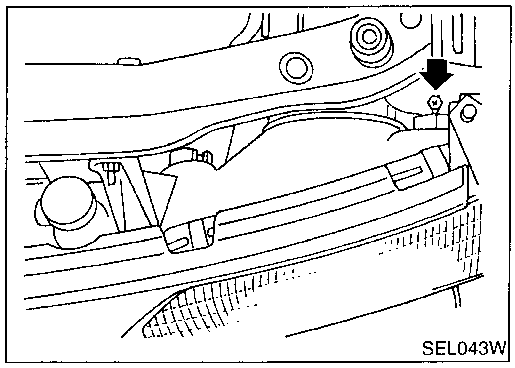
Aiming Adjustment

NBEL0016

Before performing aiming adjustment, check the following.

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

1) Keep all tires inflated to correct pressures.
2) Place vehicle flat surface.
3) 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).

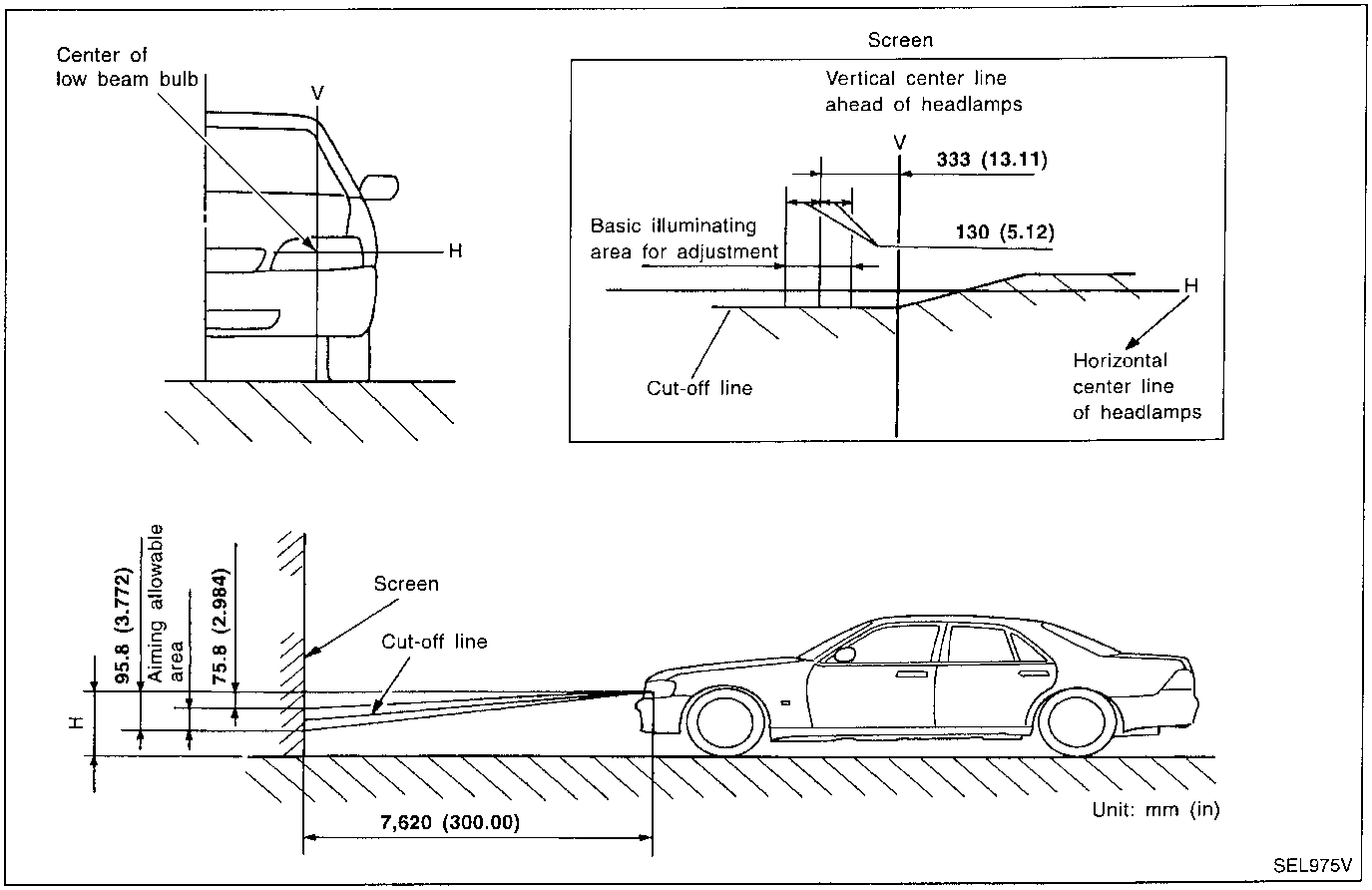

SEL043W

LOW BEAM

NBEL0016S02

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.**



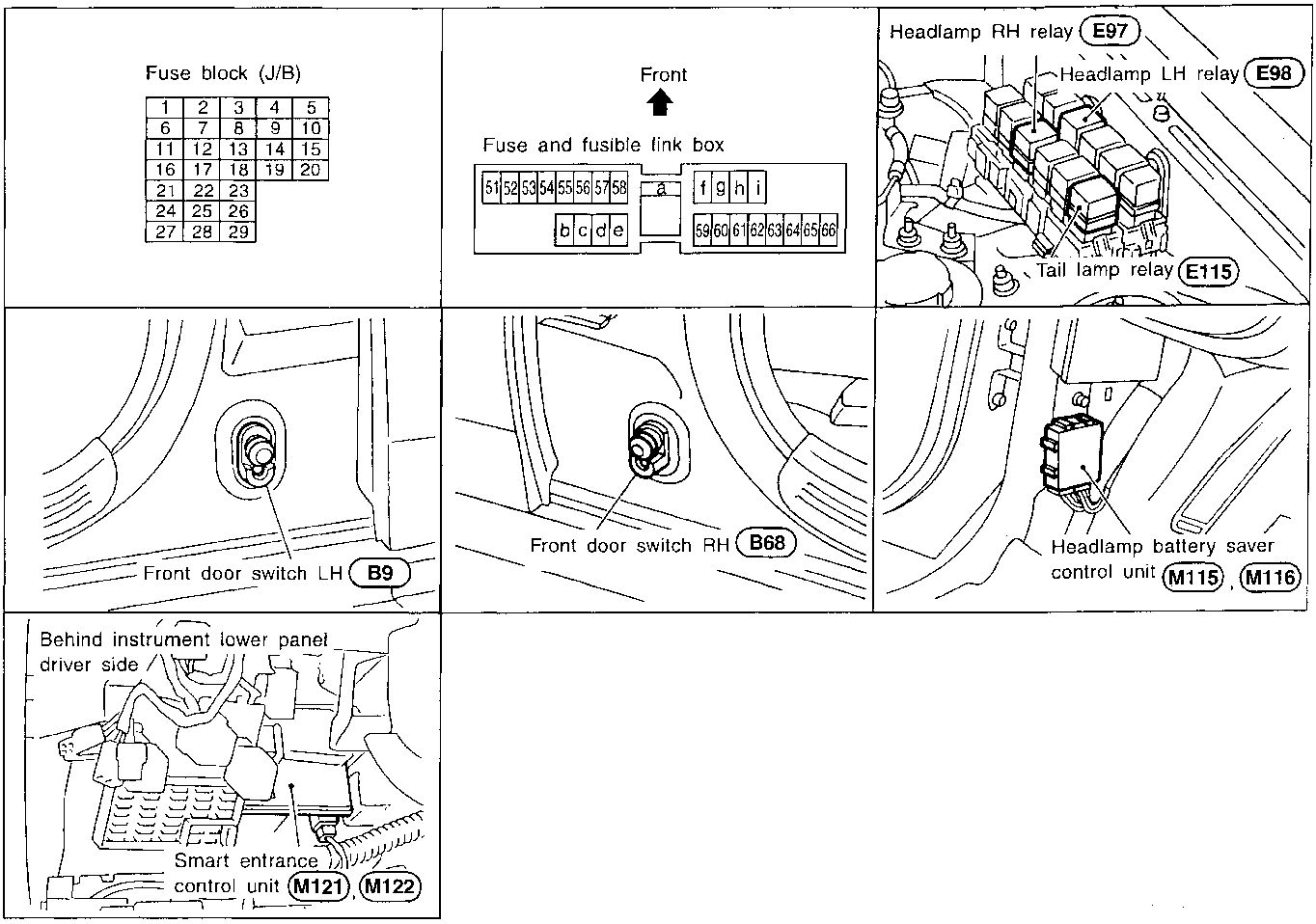
SEL975V

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.

- **Basic illuminating area for adjustment should be within the range shown on the aiming chart. Adjust headlamps accordingly.**

Component Parts and Harness Connector Location

NBEL0161



SEL044W

System Description

NBEL0017

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

And battery saver system is controlled by the headlamp battery saver control unit and smart entrance control unit.

Power is supplied at all times

- to daytime light control unit terminal 3, and
- to headlamp LH relay terminals 2 and 3
- through 15A fuse (No. 60, located in the fuse and fusible link box), and
- to daytime light control unit terminal 2 and
- to headlamp RH relay terminals 2 and 3
- through 15A fuse (No. 59, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7
- through 7.5A fuse [No. 24, located in the fuse block (J/B)].

Ground is supplied

- to daytime light control unit terminal 9 and
- to headlamp battery saver control unit terminals 4 and 11

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

- to daytime light control unit terminal 12,
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 7.5A fuse [No. 11, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 16, located in the fuse block (J/B)].

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

- to daytime light control unit terminal 1
- through 7.5A fuse [No. 26, located in the fuse block (J/B)].

HEADLAMP OPERATION

NBEL0017S01

When Ignition Switch is in ON or START Position

NBEL0017S0103

Ground is supplied

- to headlamp LH relay terminal 1 from headlamp battery saver control unit terminal 2
- through headlamp battery saver control unit terminal 3, and
- through body grounds M4 and M66, and
- to headlamp RH relay terminal 1 from headlamp battery saver control unit terminal 8
- through headlamp battery saver control unit terminal 9, and
- through body grounds M77 and M111.

Headlamp relays (LH and RH) are then energized.

When Ignition Switch is in OFF or ACC Position

NBEL0017S0104

When lighting switch is in 1ST (or 2ND) position, ground is supplied

- to headlamp battery saver control unit terminals 5 and 13
- from lighting switch terminal 11.

And then, ground is also supplied to headlamp LH and RH relays terminal 1 from headlamp battery saver control unit. Headlamp relays (LH and RH) are then energized.

Low Beam Operation

NBEL0017S0101

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

- from lighting switch terminal 7
- to RH headlamp terminal 2
- to daytime light control unit terminal 4.

Ground is supplied to RH headlamp terminal 3 through body grounds E13 and E41.
Also, when the lighting switch is turned to the 2ND position and placed in LOW ("B") position, power is supplied

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

Ground is supplied

- to LH headlamp terminal 3
- from daytime light control unit terminal 7
- through daytime light control unit terminal 9
- through body grounds E13 and E41.

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

High Beam Operation/Flash-to-pass Operation

NBEL0017S0102

When the lighting switch is turned to the 2ND position and placed in HIGH ("A") position, power is supplied

- from lighting switch terminal 6
- to terminal 1 of RH headlamp.

When the lighting switch is turned to the 2ND position and placed in HIGH ("A") position, power is supplied

- from lighting switch terminal 9
- to daytime light control terminal 5
- to combination meter terminal 33 for the high beam indicator, and
- through daytime light control terminal 6

- to terminal 1 of LH headlamp.

Ground is supplied in the same manner as low beam operation.
Ground is supplied to terminal 19 of the combination meter through body grounds M77 and M111.
With power and ground supplied, the high beam headlamps and HI BEAM indicator illuminate.

BATTERY SAVER CONTROL

NBEL0017S04

When the ignition switch is turned from ON (or START) to OFF (or ACC) positions while headlamps are illuminated, The RAP signal is supplied to terminal 10 of the headlamp battery saver control unit from smart entrance control unit terminal 5.
After counting 45 seconds by the RAP signal from the smart entrance control unit to headlamp battery saver control unit, the ground supply to terminal 1 of headlamp LH and RH relays from headlamp battery saver control unit terminals 2 and 8 is terminated.
Then headlamps are turned off.
The headlamps are turned off when driver or passenger side door is opened even if 45 seconds have not passed after the ignition switch is turned from ON (or START) to OFF (or ACC) positions while headlamps are illuminated.
When the lighting switch is turned from OFF to 2ND after headlamps are turned to off by the battery saver control, ground is supply

- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and
- to headlamp LH and RH relays terminal 1 from headlamp battery saver control unit terminals 2 and 8.

Then headlamps illuminate again.

DAYTIME LIGHT OPERATION

NBEL0017S02

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

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

Ground is supplied to terminal 3 of RH headlamp through body grounds E13 and E41.
Because the high beam headlamps are now wired in series, they operate at half illumination.

OPERATION

NBEL0017S03

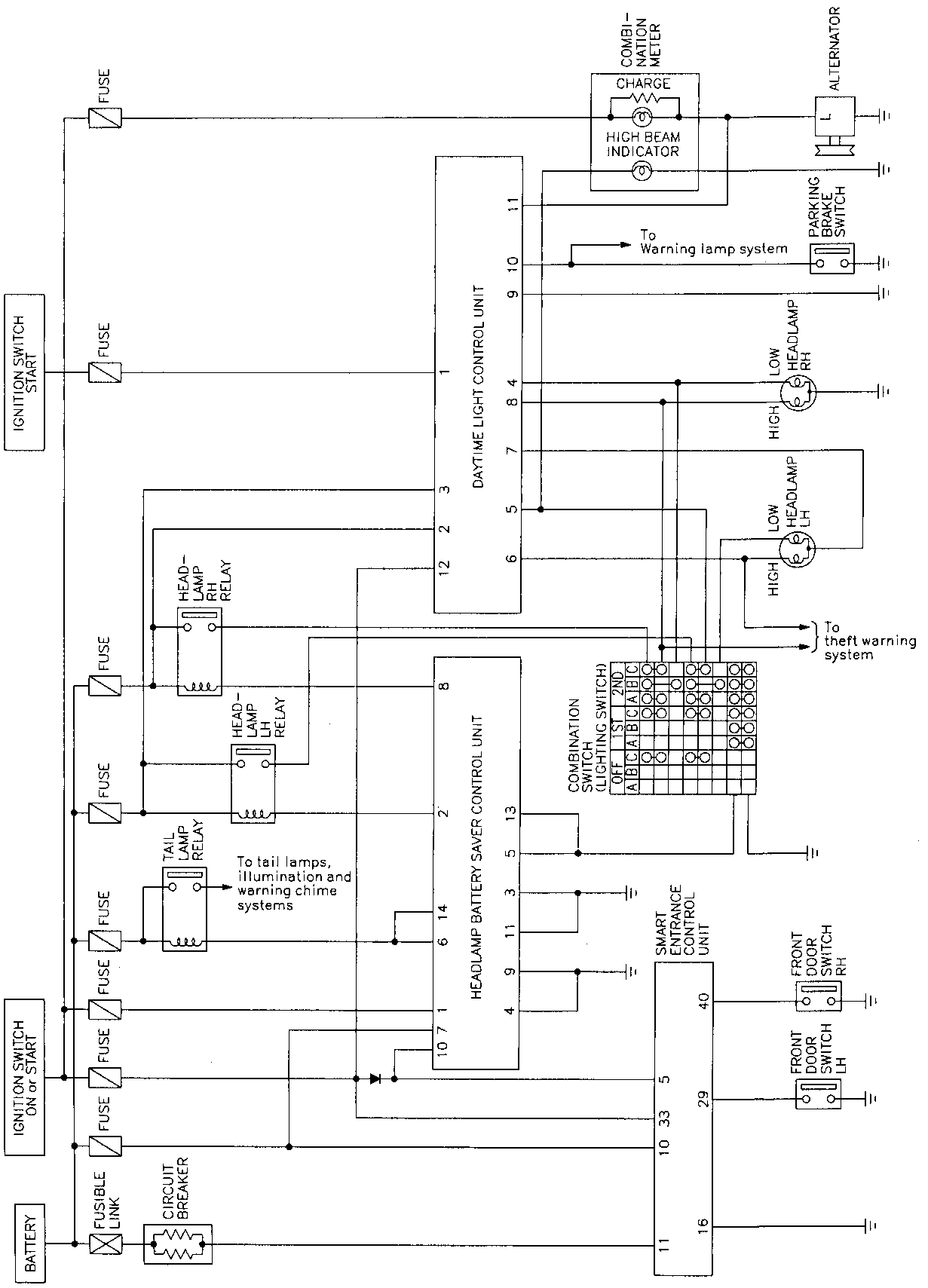
After starting the engine with the lighting switch in the "OFF" or "1ST" position, the headlamp high beam automatically turns on. Lighting switch operations other than the above are the same as conventional light systems.

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

A: "HIGH BEAM" position
B: "LOW BEAM" position
C: "FLASH TO PASS" position
O : Lamp "ON"
X : Lamp "OFF"
△ : Lamp dims. (Added functions)
*: When starting the engine with the parking brake released, the daytime light will come ON.
When starting the engine with the parking brake pulled, the daytime light won't come ON.

Schematic

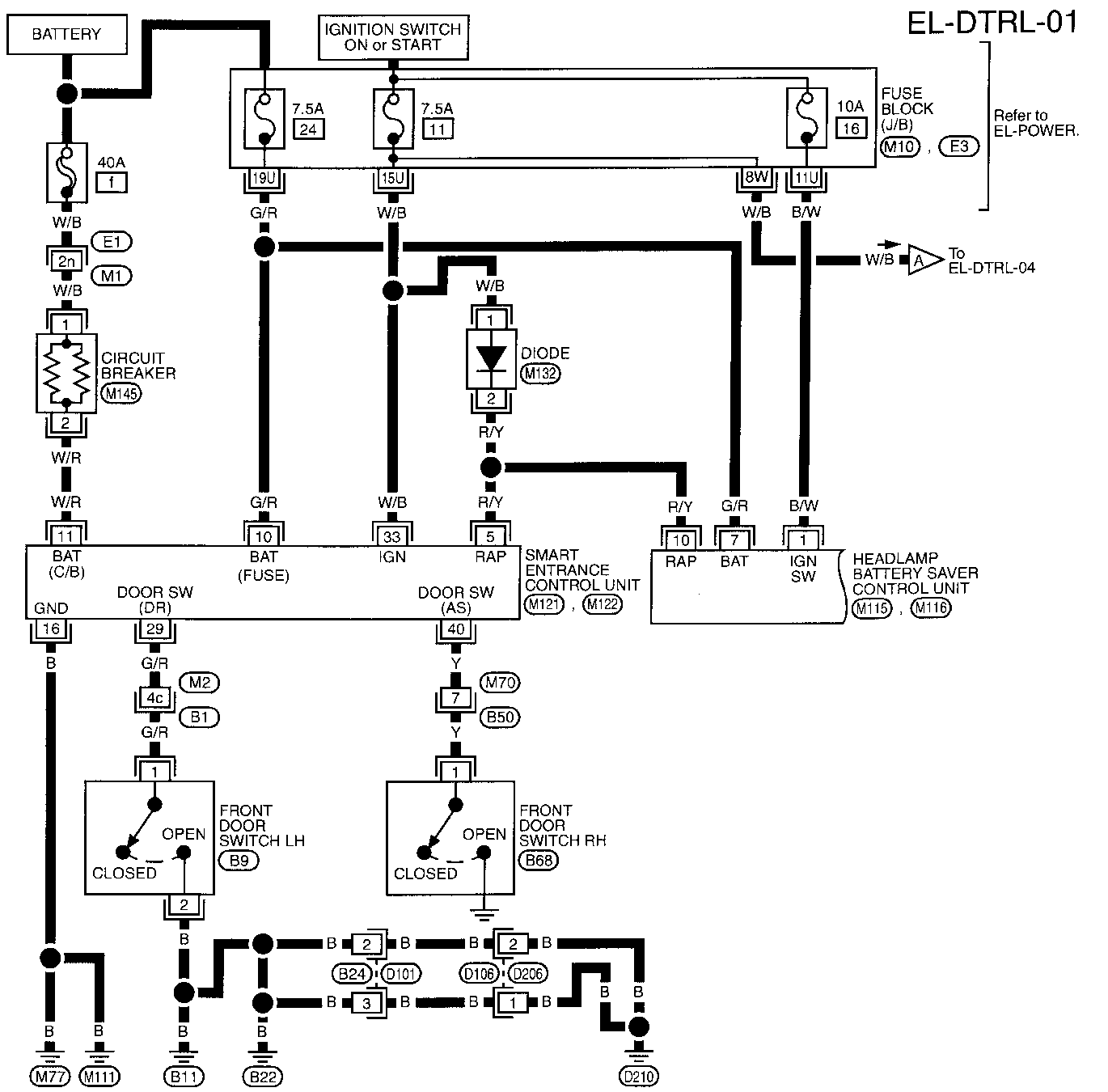
NBEL0019

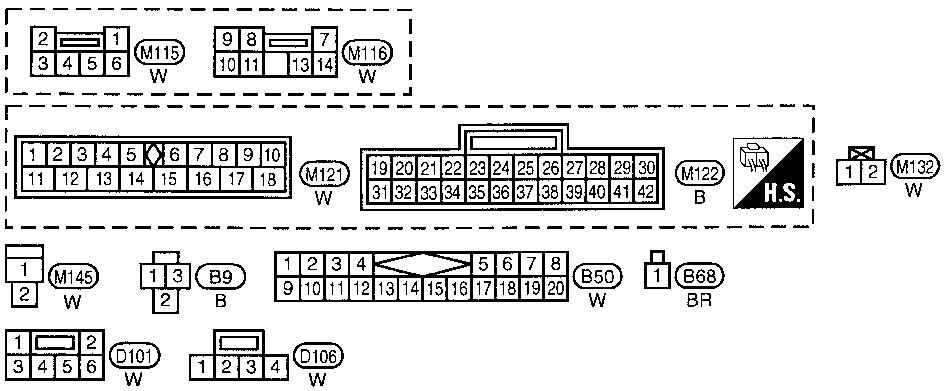


MEL749J

Wiring Diagram — DTRL —

NBEL0020





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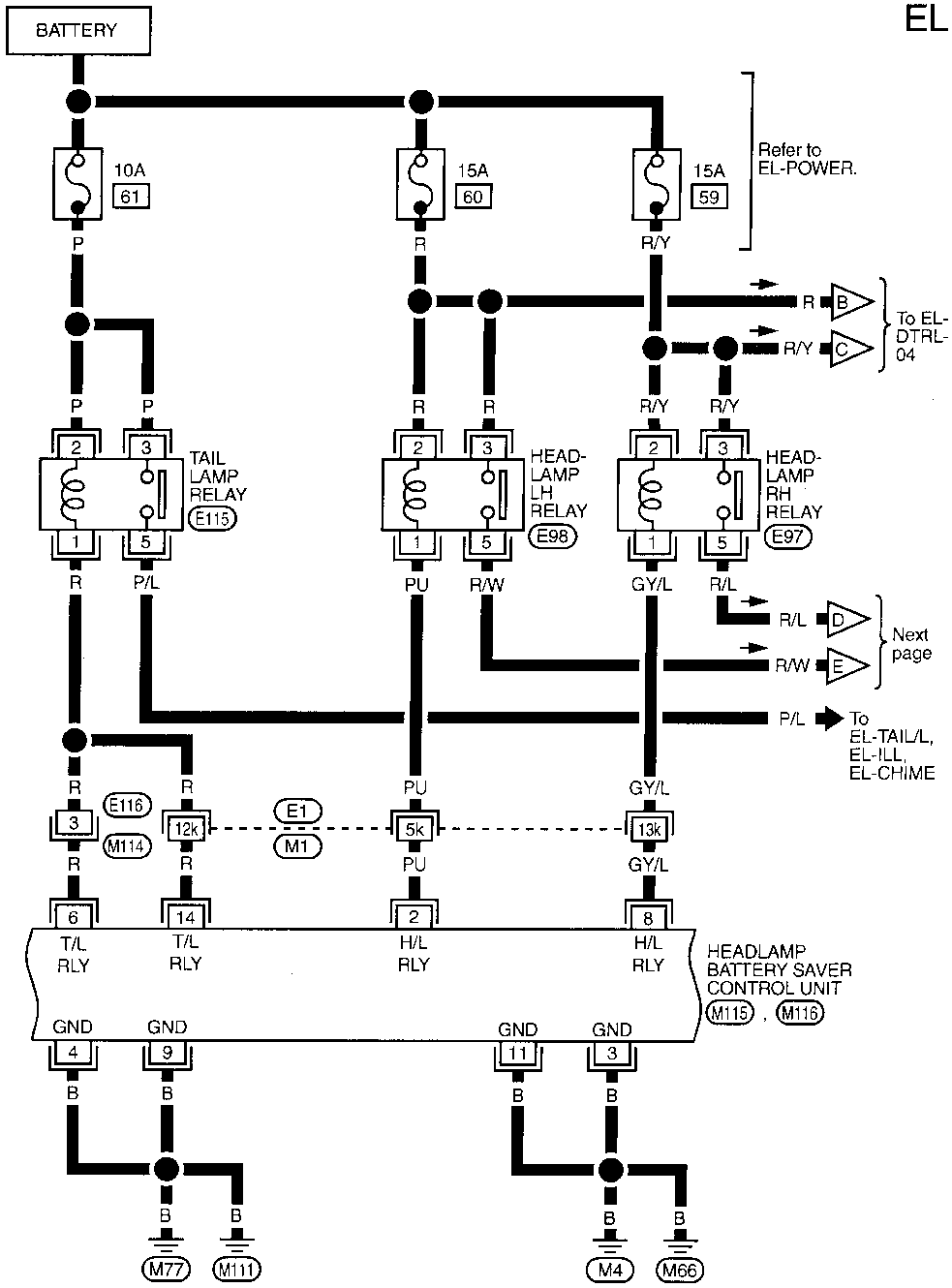
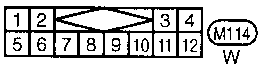
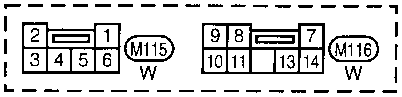
M1 , E1
M2 , B1
M10
E3

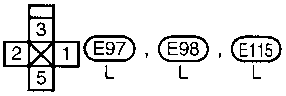
MEL839J

EL-DTRL-02









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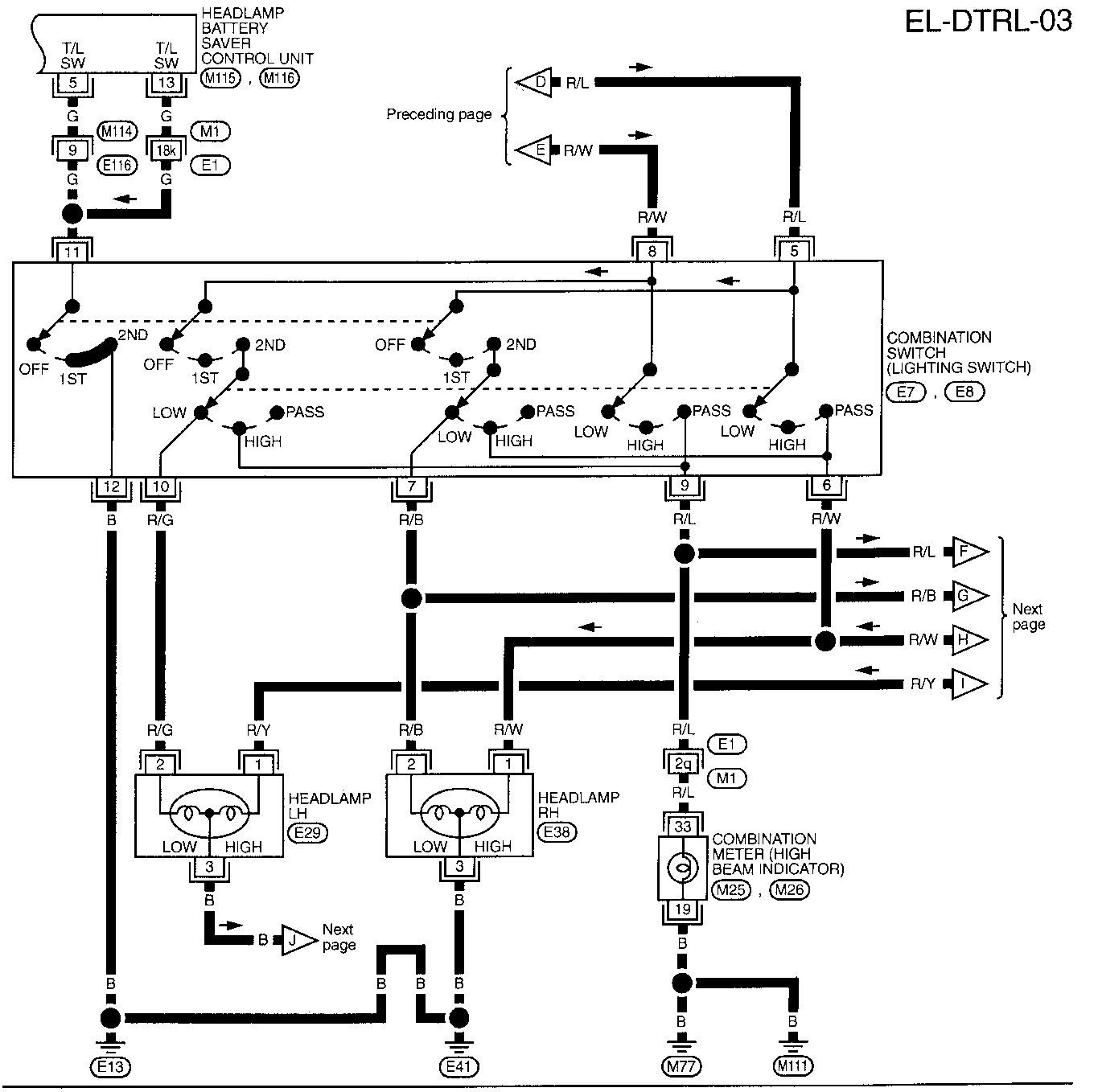
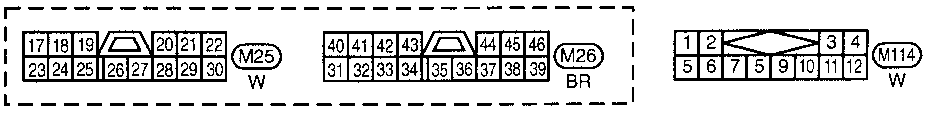
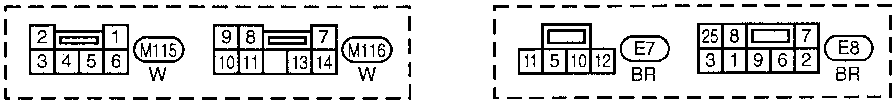
M1 , E1

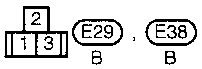
MEL750J

EL-DTRL-03









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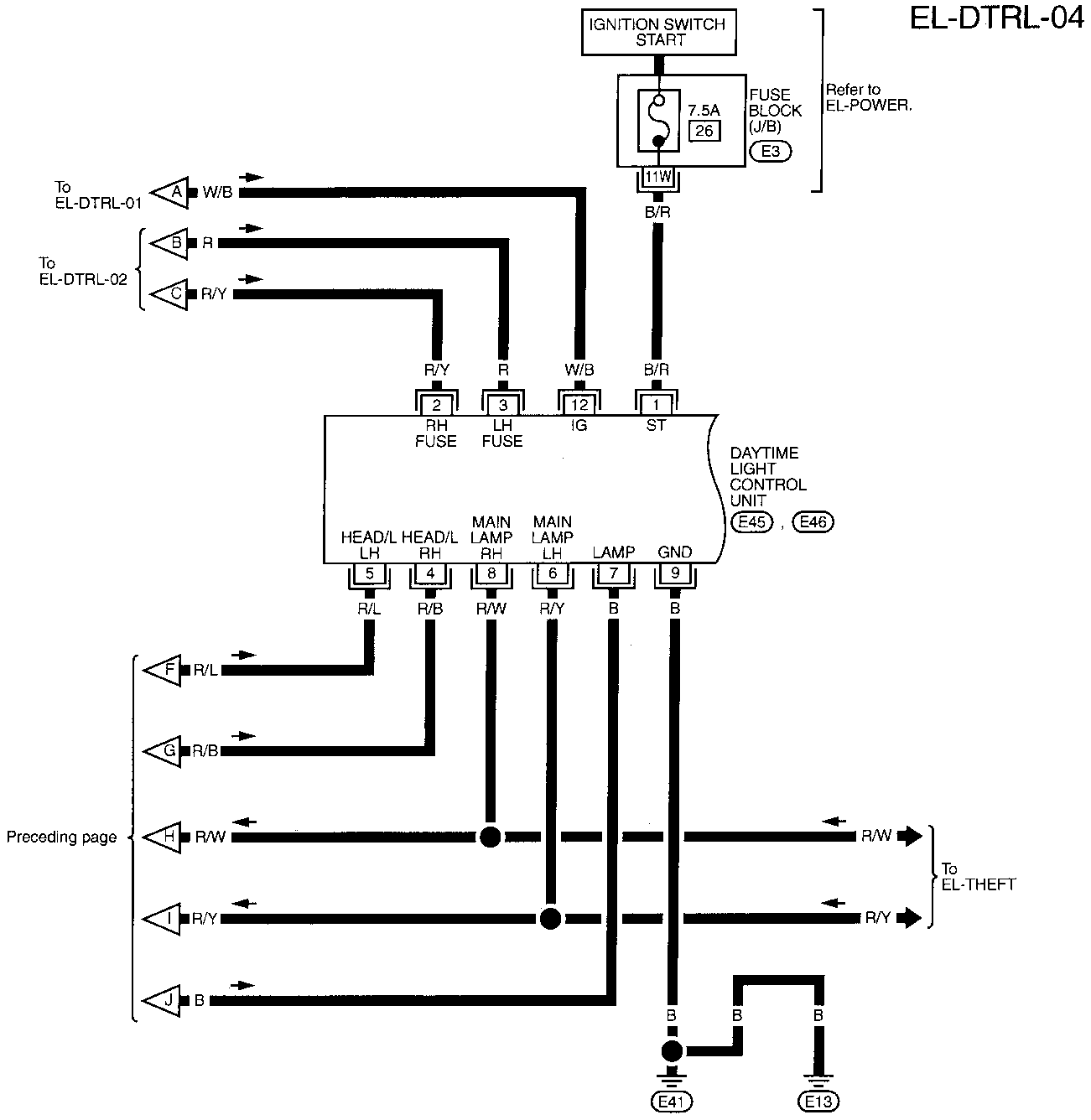
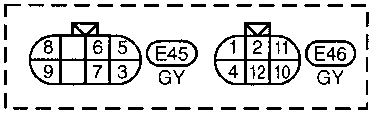
M1 , E1

MEL751J





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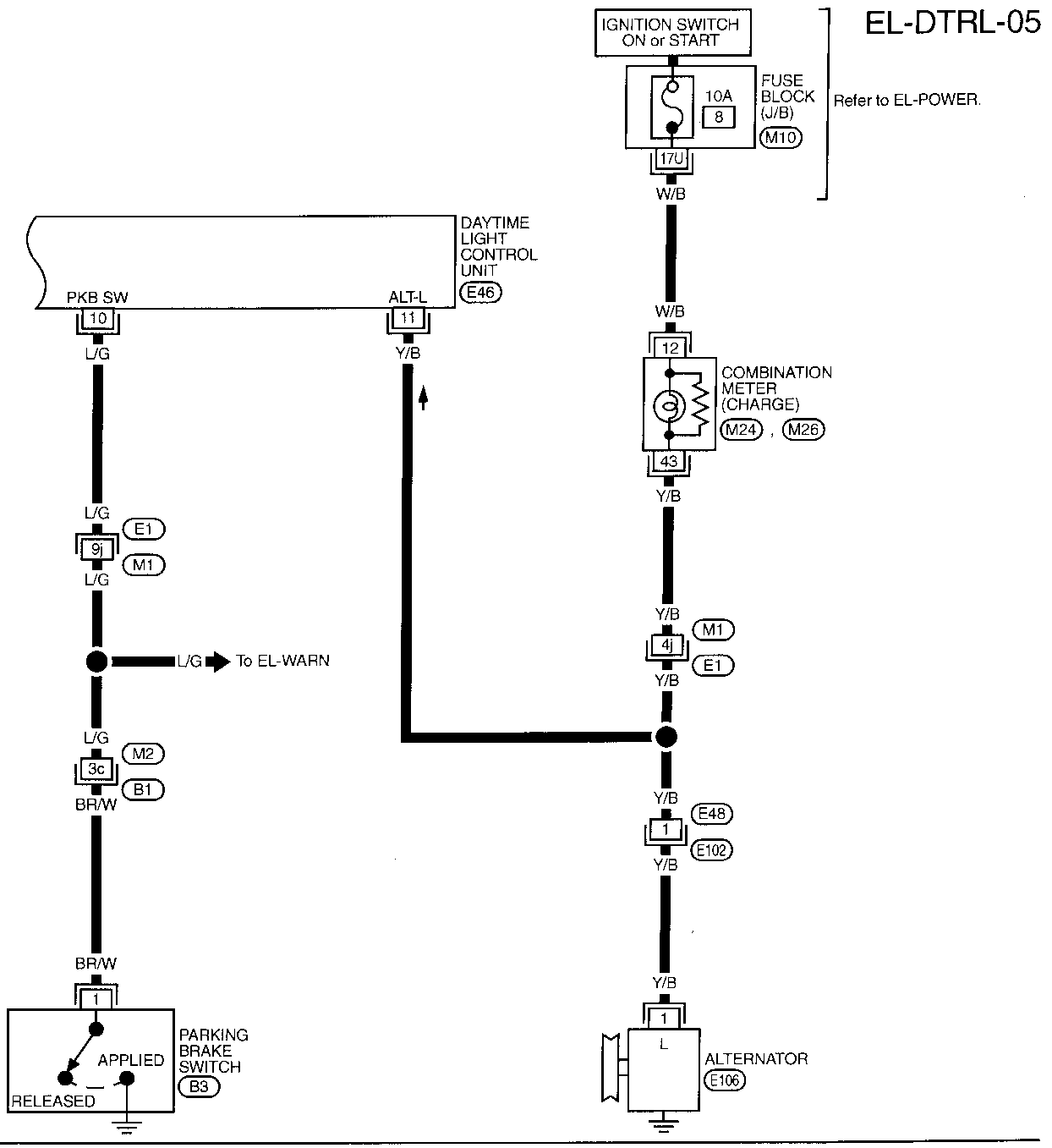
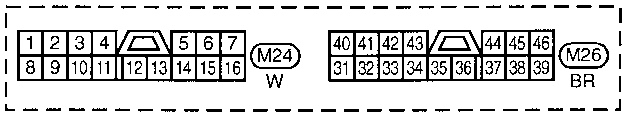
E3

MEL752J





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M1 , E1

M2 , B1

M10

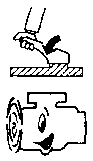
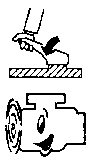
MEL753J

Trouble Diagnoses

NBEL0021

DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

NBEL0021S01

Terminal No.	Item	Condition		Voltage (Approximate values)
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 (Lo beam)		When lighting switch is turned to the 2ND position with "LOW BEAM" position	Battery voltage
5	Lighting switch (Hi beam)		When turning lighting switch to "HI BEAM"	Battery voltage
			When turning lighting switch to "FLASH TO PASS"	Battery voltage
6	LH hi beam		When turning lighting switch to "HI BEAM"	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	LH headlamp control (ground)		When lighting switch is turned to the 2ND position with "LOW BEAM" position	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	RH hi beam		When lighting switch is turned to the 2ND position with "HI BEAM" position	Battery voltage
			When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) **CAUTION:** **Block wheels and ensure selector lever is in N or P position.**	Approx. half battery voltage
9	Ground		—	—

Trouble Diagnoses (Cont'd)

Terminal No.	Item	Condition		Voltage (Approximate values)
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

BATTERY SAVER CONTROL UNIT INSPECTION TABLE

NBEL0021S02

Refer to "HEADLAMP (FOR USA)" EL-31.

Bulb Replacement

NBEL0022

Refer to "HEADLAMP (FOR USA)" (EL-32).

Aiming Adjustment

NBEL0023

Refer to "HEADLAMP (FOR USA)" (EL-32).

System Description

NBEL0162

The parking, license and tail lamp operation is controlled by the lighting switch which is built into the combination switch and headlamp battery saver control unit. The battery saver system is controlled by the headlamp battery saver control unit and smart entrance control unit.

Power is supplied at all times

- to tail lamp relay terminals 2 and 3
- through 10A fuse (No. 61, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7
- through 7.5A fuse [No. 24, located in the fuse block (J/B)].

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 16, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 7.5A fuse [No. 11, located in the fuse block (J/B)].

Ground is supplied to headlamp battery saver control unit terminals 4 and 11.

LIGHTING OPERATION BY LIGHTING SWITCH

NBEL0162S01

When lighting switch is in 1ST (or 2ND) position, ground is supplied

- to tail lamp relay terminal 1 from headlamp battery saver control unit terminals 6 and 14
- through headlamp battery saver control unit terminals 5 and 13, and
- through body grounds E13 and E41.

Tail lamp relay is then energized and the parking, license and tail lamps illuminate.

BATTERY SAVER CONTROL

NBEL0162S02

When the ignition switch is turned from ON (or START) to OFF (or ACC) positions while parking, license and tail lamps are illuminated, the RAP signal is supplied to terminal 10 of the headlamp battery saver control unit from smart entrance control unit terminal 5.

After counting 45 seconds by the RAP signal from the smart entrance control unit to headlamp battery saver control unit, the ground supply to terminal 1 of the tail lamp relay from headlamp battery saver control unit terminals 6 and 14 is terminated.

Then the parking, license and tail lamps are turned off.

The parking, license and tail lamps are turned off when driver or passenger side door is opened even if 45 seconds have not passed after the ignition switch is turned from ON (or START) to OFF (or ACC) positions while parking, license and tail lamps are illuminated.

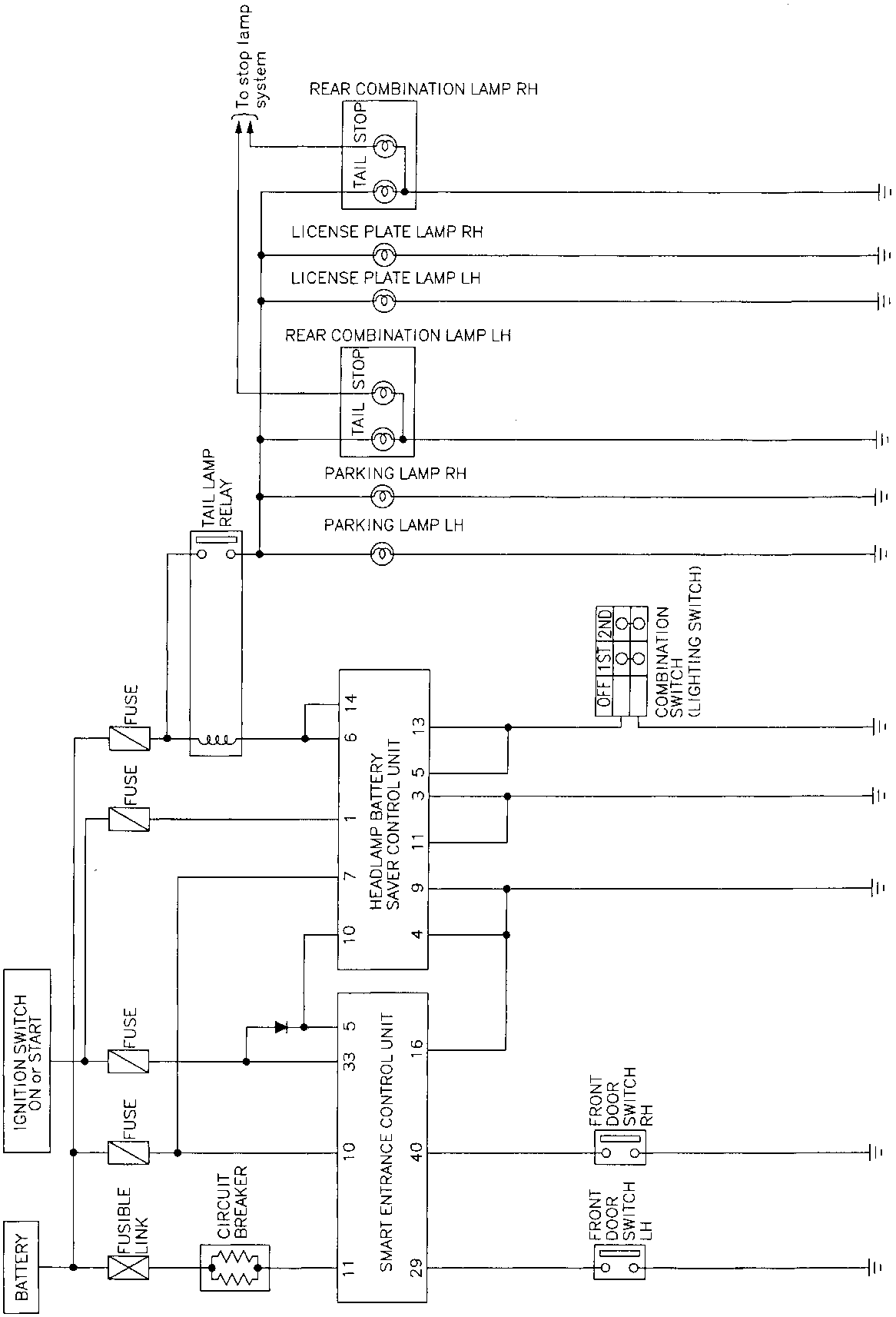
When the lighting switch is turned from OFF to 1ST (or 2ND) after the parking, license and tail lamps are turned off by the battery saver control, ground is supplied.

- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and
- to tail lamp relay terminal 1 from headlamp battery saver control unit terminals 6 and 14.

Then the parking, license and tail lamps illuminate again.

Schematic

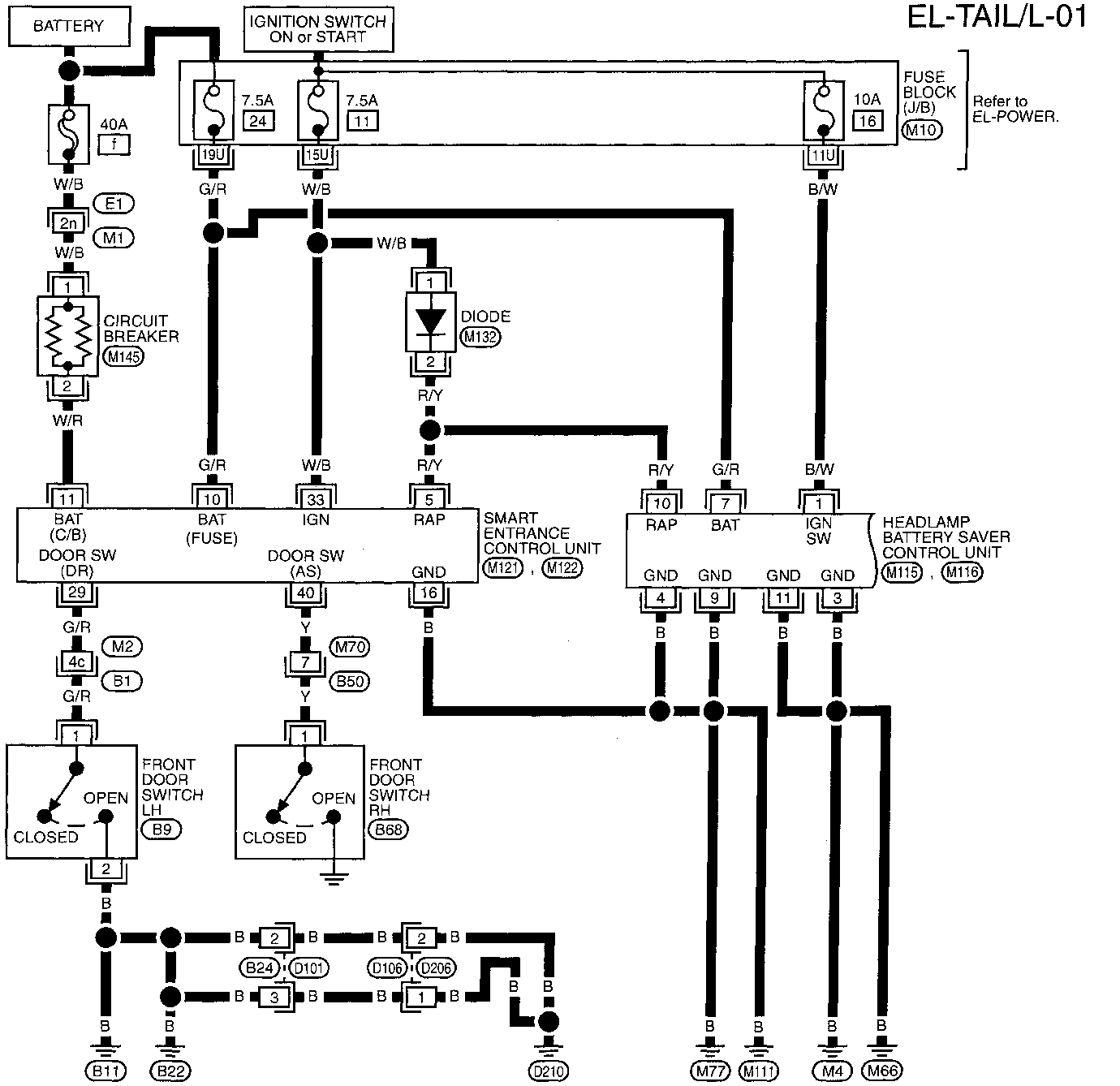
NBEL0163

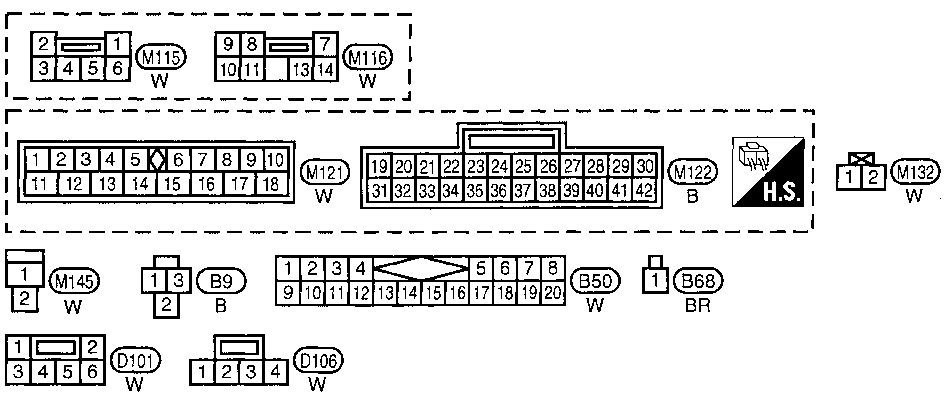


MEL840J

Wiring Diagram — TAIL/L —

NBEL0024





Refer to last page (Foldout page).

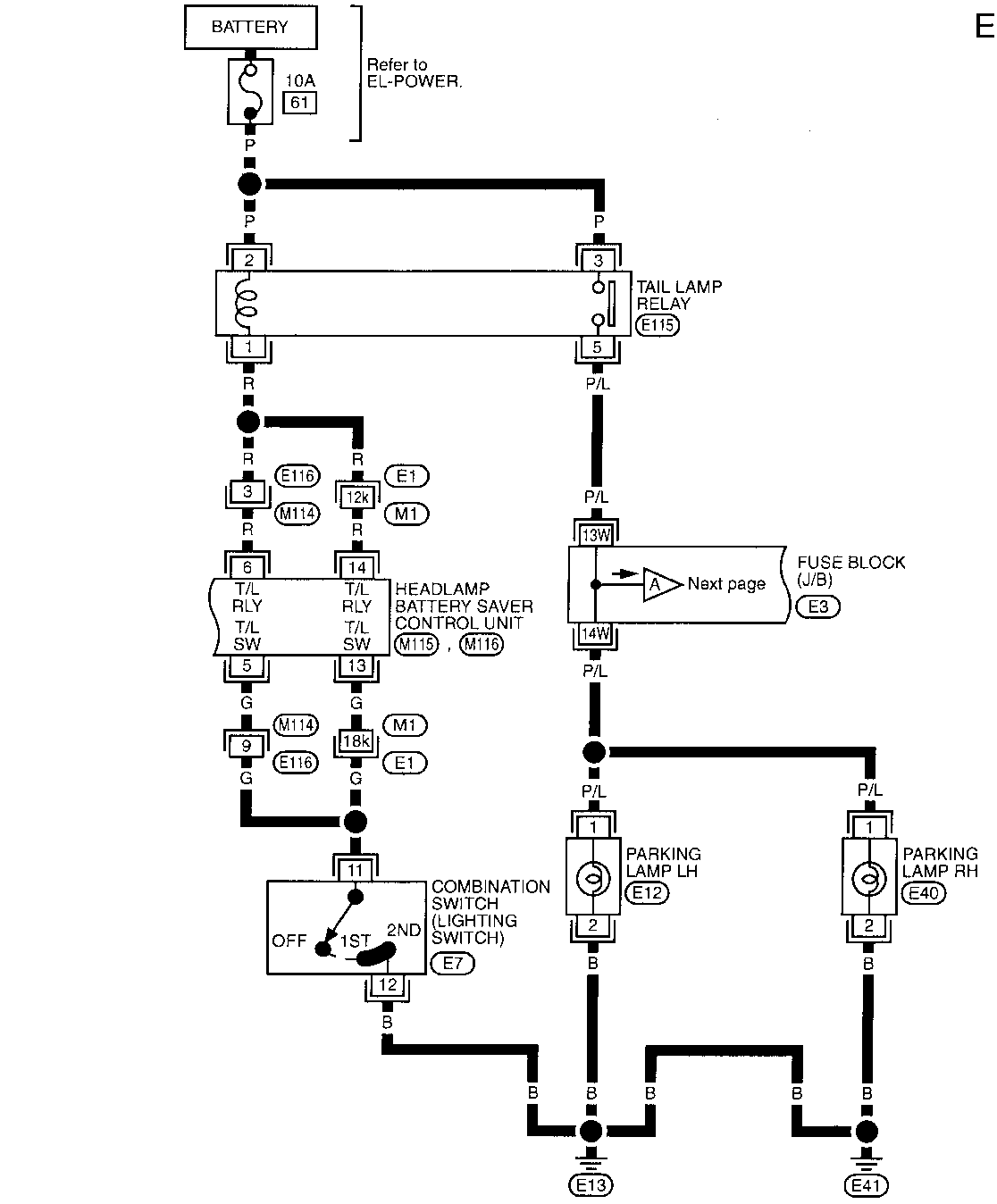
M1, E1

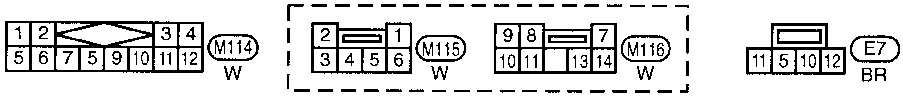
M2, B1

M10

MEL841J

EL-TAIL/L-02

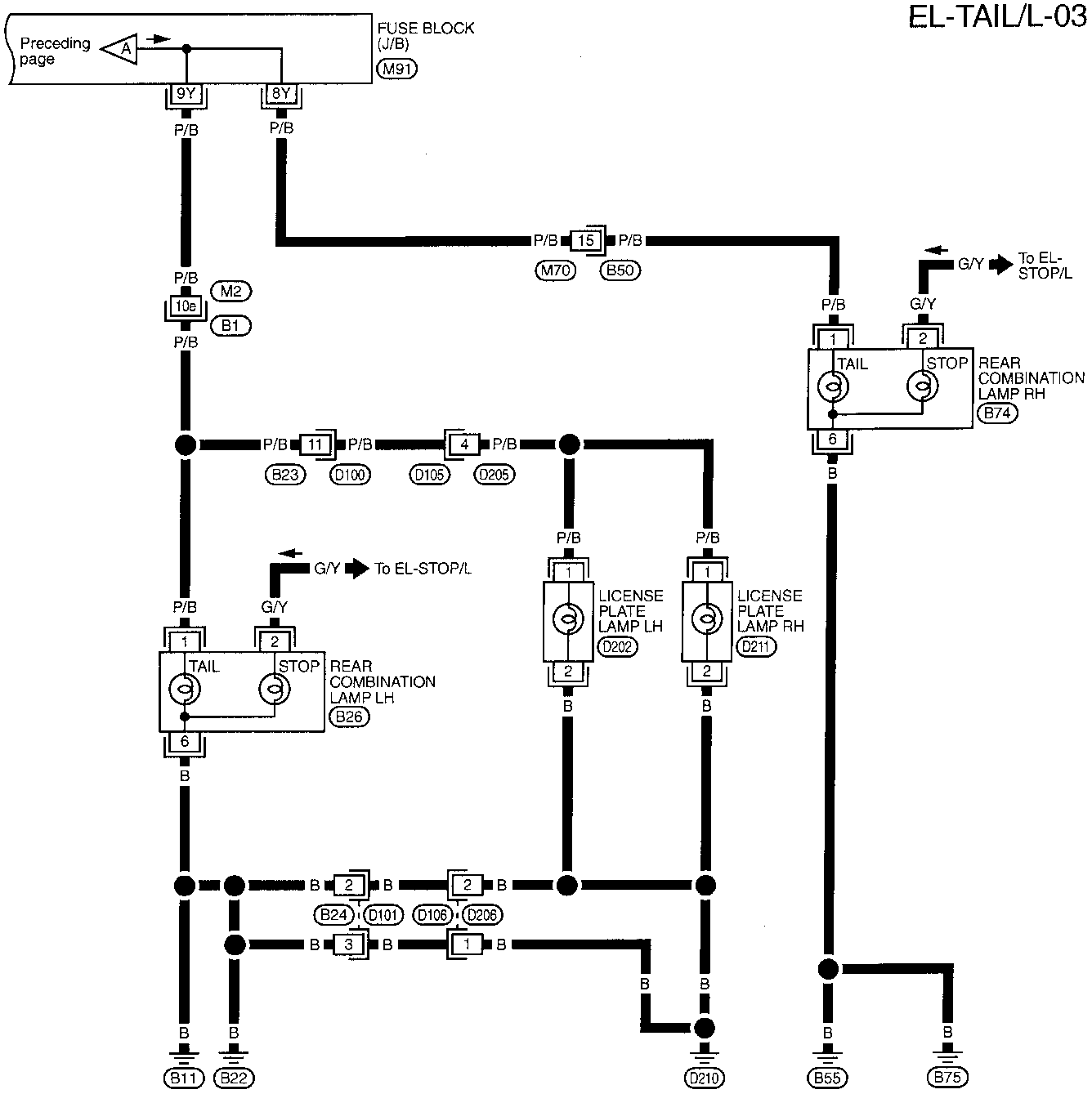


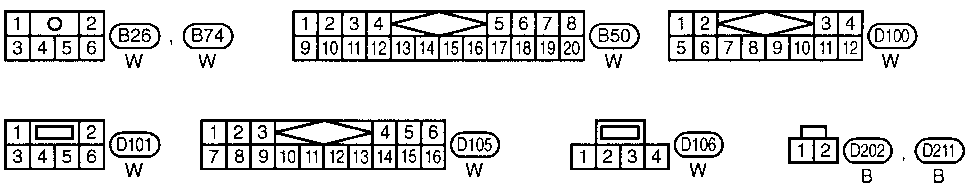


Refer to last page (Foldout page).
M1 , E1
E3

MEL754J

EL-TAIL/L-03





Refer to last page (Foldout page).

M2 , B1

M91

MEL755J

Trouble Diagnoses

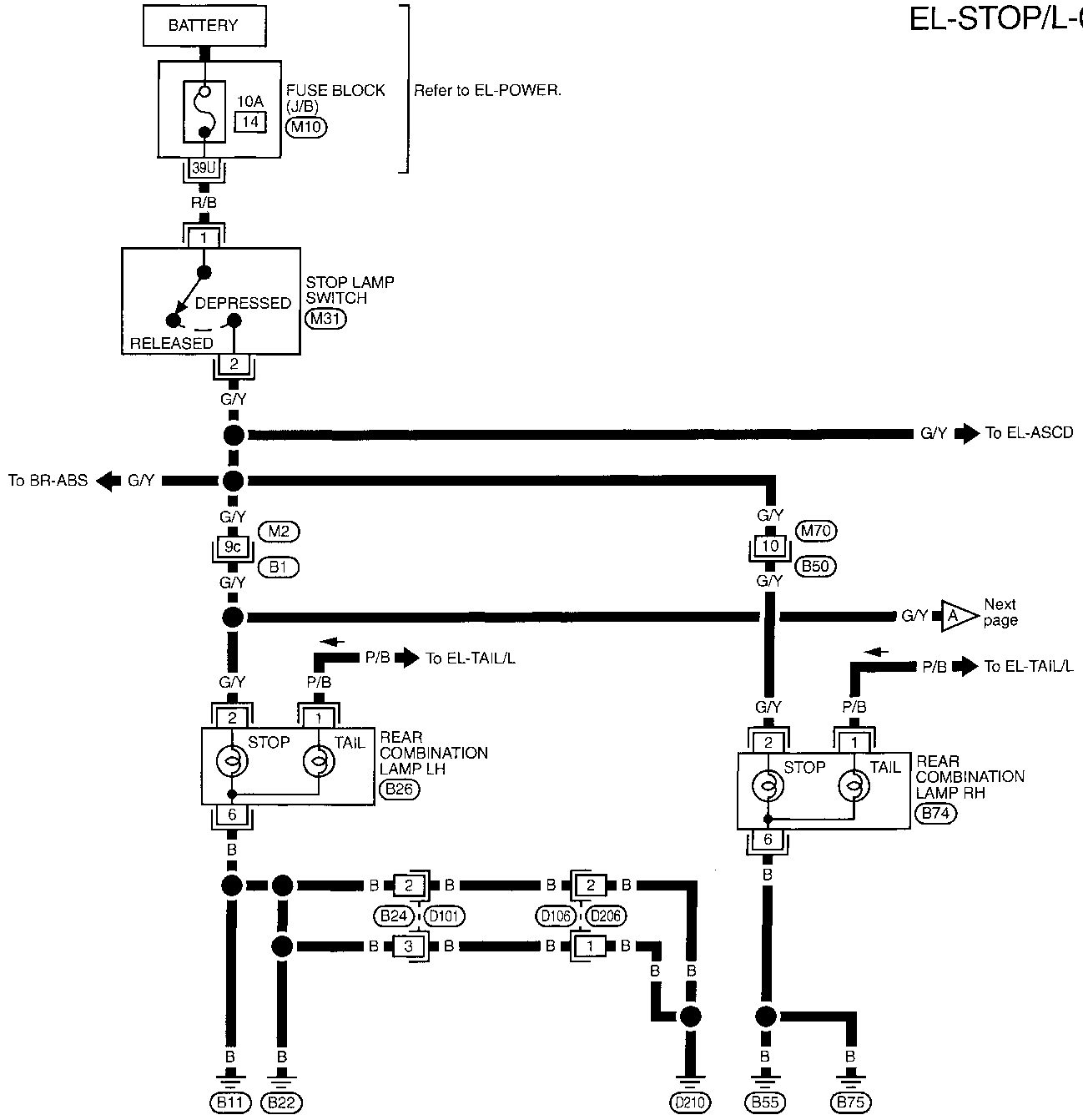
NBEL0164

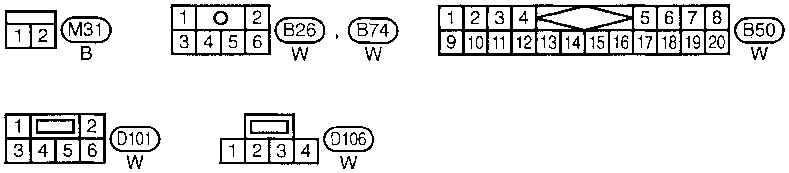
Symptom	Possible cause	Repair order
No lamps operate (including headlamps).	1. 7.5A fuse 2. Lighting switch 3. Headlamp battery saver control unit	1. Check 7.5A fuse [No. 24, lacated in fuse block (J/B)]. Verify battery positive voltage is present at terminal 7 of headlamp battery saver control unit. 2. Check lighting switch. 3. Check headlamp battery saver control unit. (EL-31)
No parking, license and tail lamps operate, but headlamps do operate.	1. 10A fuse 2. Tail lamp relay 3. Tail lamp relay circuit 4. Lighting switch 5. Lighting switch circuit 6. Headlamp battery saver control unit	1. Check 10A fuse (No. 61, located in fusible and fuse block). Verify battery positive voltage is present at terminals 2 and 3 of tail lamp relay. 2. Check tail lamp relay. 3. Check harness between headlamp battery saver control unit terminals 6 and 14 and tail lamp relay terminal 1. Check harness between tail lamp relay terminal 5 and fuse block. 4. Check lighting switch. 5. Check harness between lighting switch terminal 11 and headlamp battery saver control unit terminals 5 and 13. Check harness between lighting switch terminal 12 and ground. 6. Check headlamp battery saver control unit. (EL-31)
Battery saver control does not operate properly.	1. RAP signal circuit 2. Driver or passenger side door switch circuit 3. Lighting switch circuit 4. Headlamp battery saver control unit 5. Smart entrance control unit	1. Check harness between headlamp battery saver control unit terminal 10 and smart entrance control unit terminal 5 for open or short circuit. 2. Check harness between smart entrance control unit and driver or passenger side door switch for open or short circuit. Check driver or passenger side door switch ground circuit. Check driver or passenger side door switch. 3. Check harness between headlamp battery saver control unit terminals 5 or 13 and lighting switch terminal 11 for open or short circuit. Check harness between lighting switch terminal 12 and ground. Check lighting switch. 4. Check headlamp battery saver control unit. (EL-31) 5. Check smart entrance control unit. (EL-254)

Wiring Diagram — STOP/L —

NBEL0025

EL-STOP/L-01





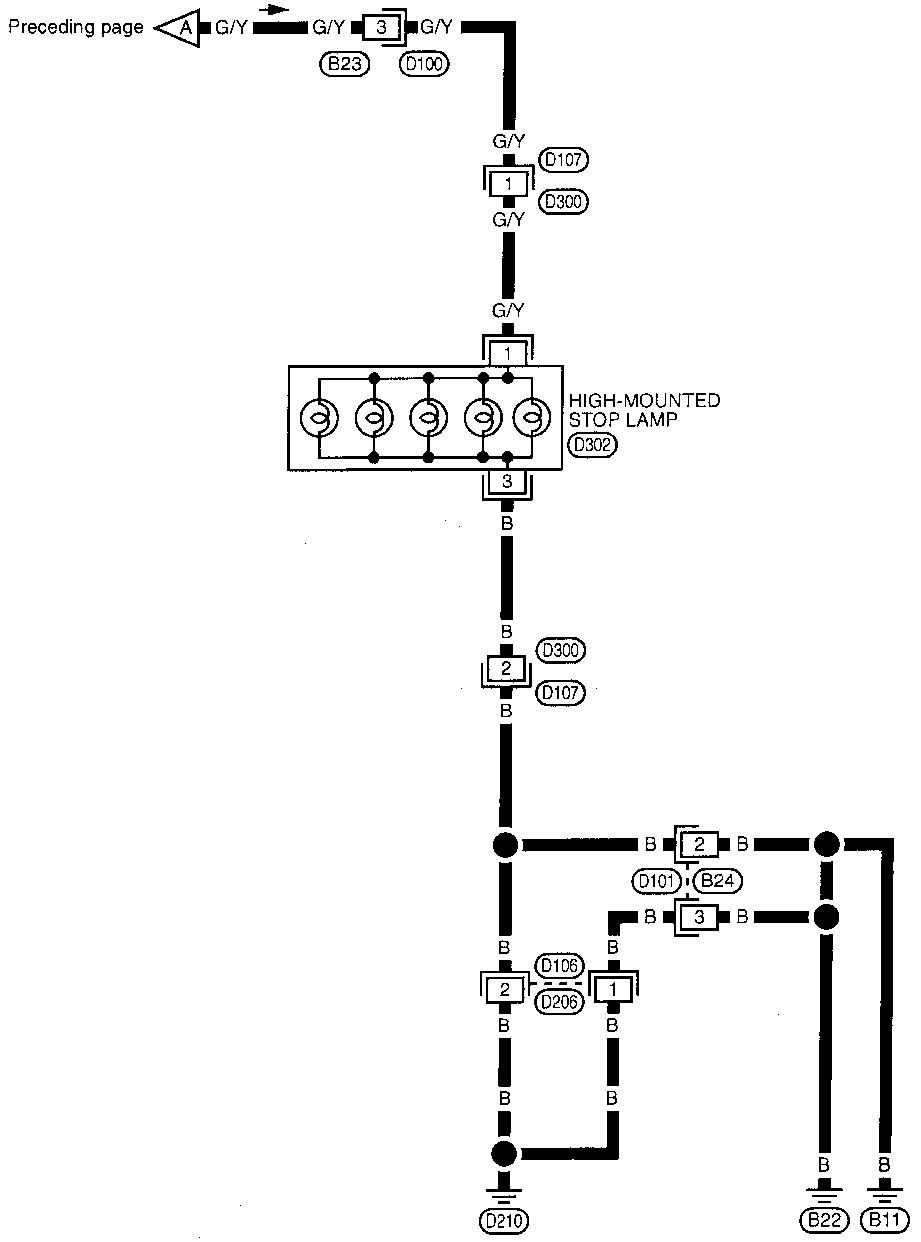
Refer to last page (Foldout page).

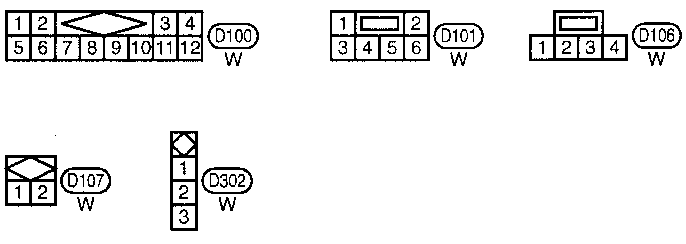
M2 , B1

M10

MEL756J

EL-STOP/L-02



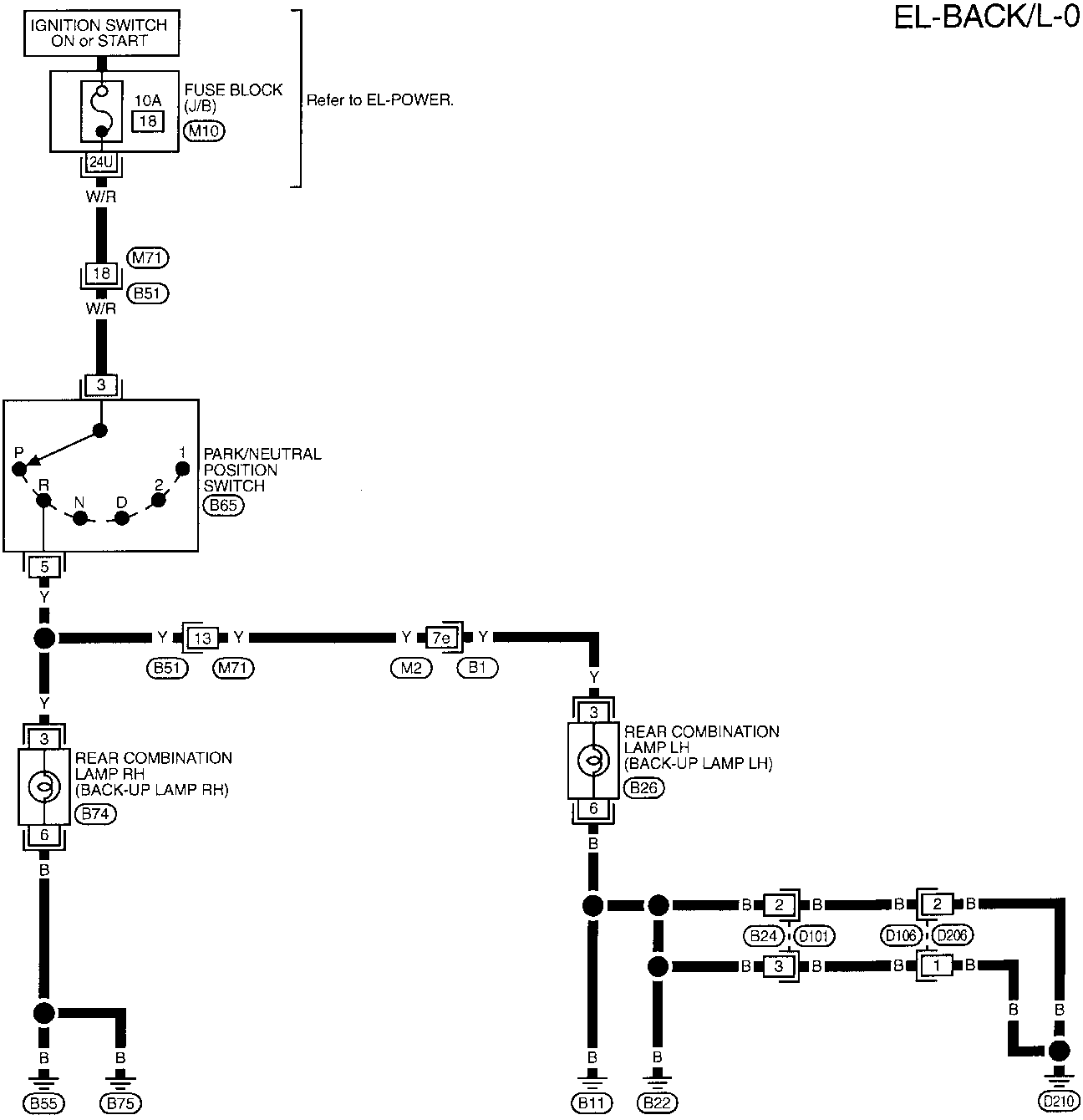


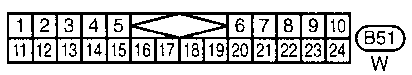
MEL550F

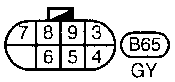
Wiring Diagram — BACK/L —

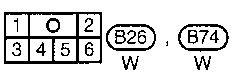
NBEL0026

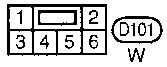
EL-BACK/L-01

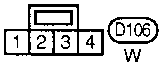












Refer to last page (Foldout page).
M2 , B1
M10

MEL757J

System Description

NBEL0027

OUTLINE

NBEL0027S02

Power is supplied at all times
- to headlamp RH relay terminals 2 and 3
- through 15A fuse (No. 59, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7
- through 7.5A fuse [No. 24, located in the fuse block (J/B)], and
- to front fog lamp relay terminal 3
- through 15A fuse (No. 53, located in the fuse and fusible link box).

When ignition switch is in ON or START position, power is supplied
- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 16, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 7.5A fuse [No. 11, located in the fuse block (J/B)].

Ground is supplied to headlamp battery saver control unit terminals 4 and 11.

When Ignition Switch is in ON or START Position

NBEL0027S0201

Ground is supplied
- to headlamp RH relay terminal 1 from headlamp battery saver control unit terminal 8.
- through headlamp battery saver control unit terminal 9, and
- through body grounds M77 and M111.

Headlamp RH relay is then energized.

When Ignition Switch is in OFF or ACC Position

NBEL0027S0202

When lighting switch is in 2ND (or 1ST) position, ground is supplied
- to headlamp battery saver control unit terminals 5 and 13
- from lighting switch terminal 11.

And then, ground is also supplied to headlamp RH relay terminal 1 from the headlamp battery saver control unit. The headlamp RH relay is then energized.

FOG LAMP OPERATION

NBEL0027S01

The fog lamp switch is built into the combination switch. The lighting switch must be in the 2ND position and LOW ("B") position for fog lamp operation.
With the fog lamp switch in the ON position, ground is supplied
- to fog lamp relay terminal 2
- through the fog lamp switch and body grounds E13 and E41.

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

Ground is supplied to terminal 2 of each fog lamp through body grounds E13 and E41.
With power and ground supplied, the fog lamps illuminate.

BATTERY SAVER CONTROL

NBEL0027S03

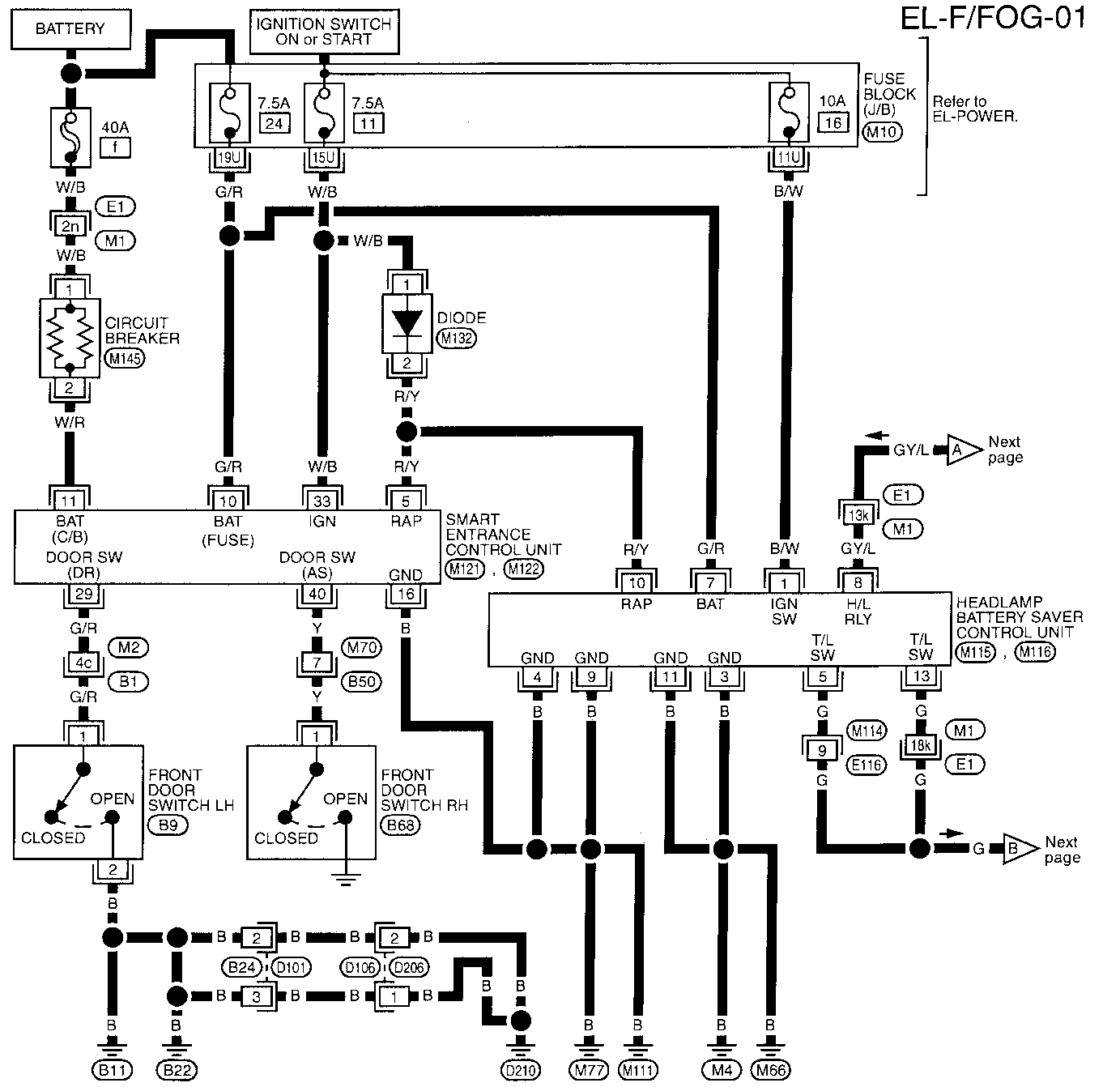
When the ignition switch is turned from ON (or START) to OFF (or ACC) positions while fog lamps are illuminated, the RAP signal is supplied to terminal 10 of the headlamp battery saver control unit from smart entrance control unit terminal 5.
After counting 45 seconds by the RAP signal from the smart entrance control unit to headlamp battery saver control unit, the ground supply to terminal 1 of headlamp RH relay from headlamp battery saver control unit terminal 8 is terminated.
Then fog lamps are turned to off.
Fog lamps are turned off when driver or passenger side door is opened even if 45 seconds have not passed after the ignition switch is turned from ON (or START) to OFF (or ACC) positions while fog lamps are illuminated.
When the lighting switch is turned from OFF to 2ND after fog lamps are turned off by the battery saver control, ground is supplied

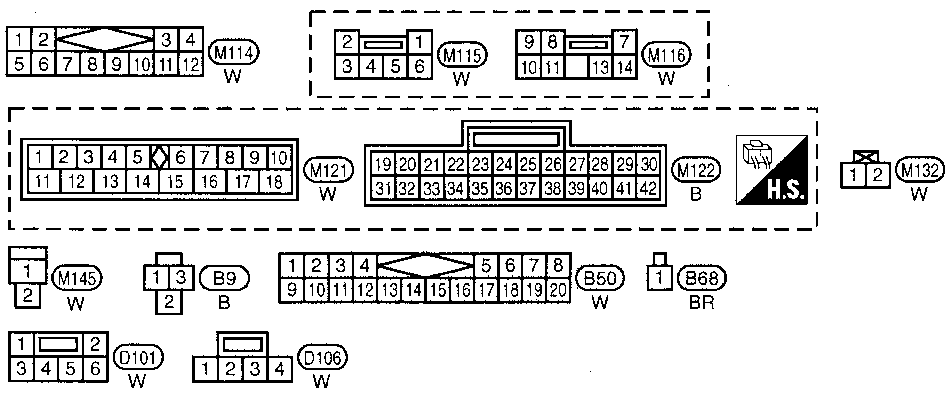
- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and
- to headlamp RH relay terminal 1 from headlamp battery saver control unit terminal 8.

Then the fog lamps illuminate again.

Wiring Diagram — F/FOG —

NBEL0028





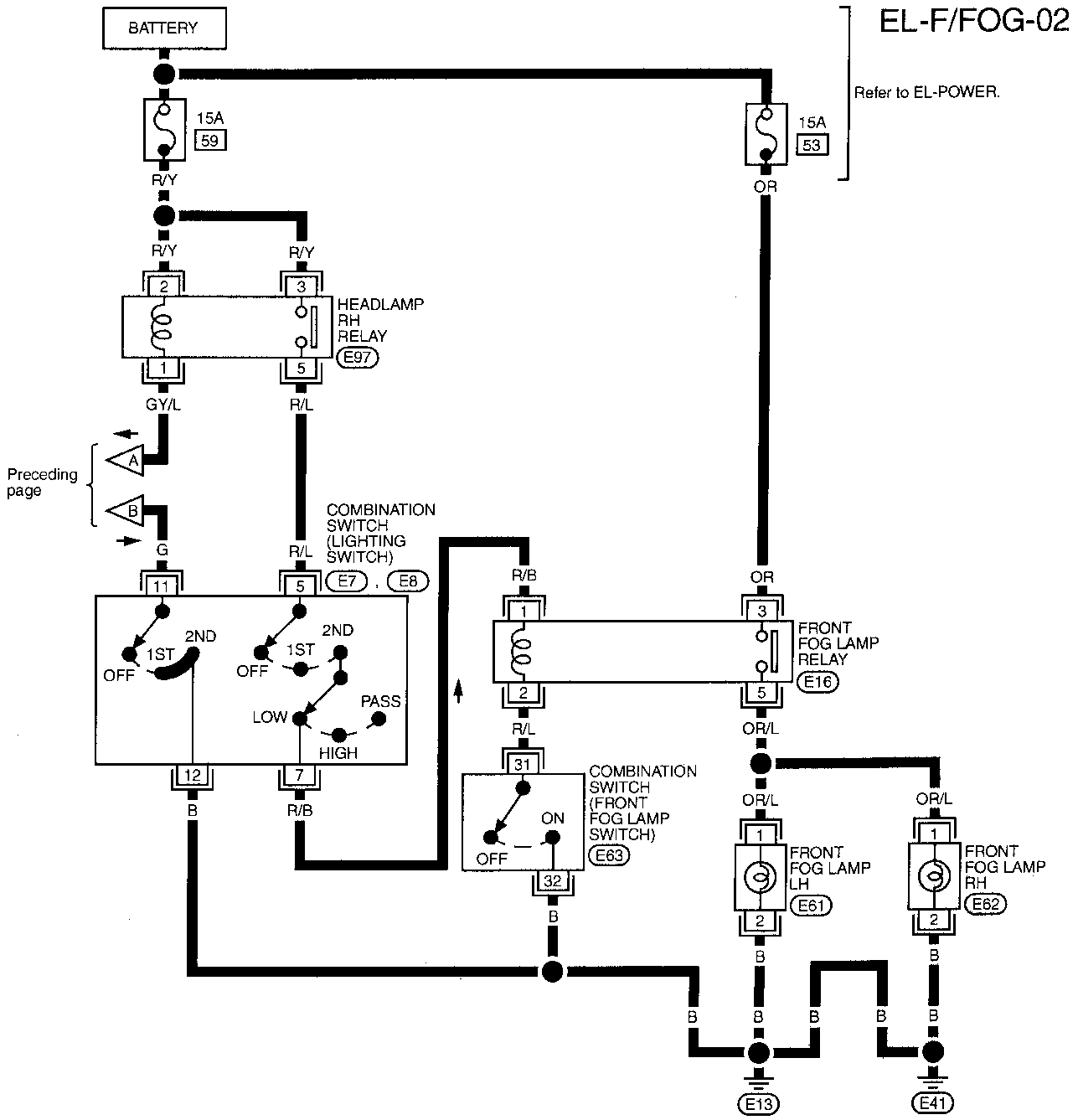
Refer to last page (Foldout page).

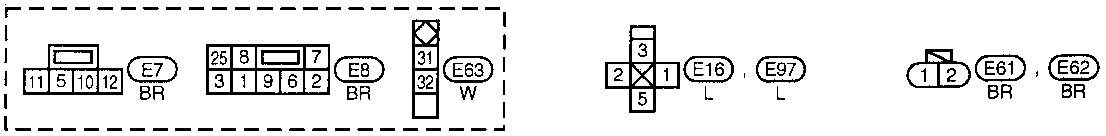
M1, E1

M2, B1

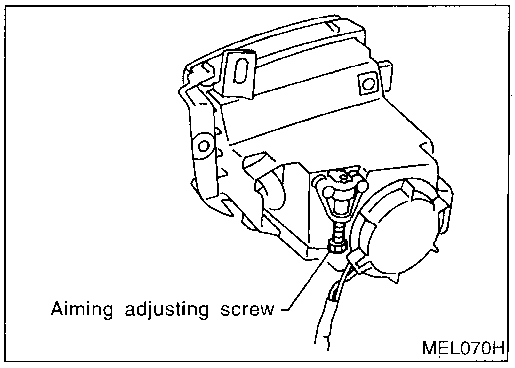
M10

MEL068K


EL-F/FOG-02
Refer to EL-POWER.
BATTERY
15A
59
15A
53
R/Y
OR
HEADLAMP
RH
RELAY
E97
GY/L
R/L
Preceding
page
COMBINATION
SWITCH
(LIGHTING
SWITCH)
E7
E8
G
R/B
OFF
1ST
2ND
LOW
PASS
HIGH
FRONT
FOG LAMP
RELAY
E16
OR/L
COMBINATION
SWITCH
(FRONT
FOG LAMP
SWITCH)
E63
ON
FRONT
FOG LAMP
LH
E61
FRONT
FOG LAMP
RH
E62
B
E13
E41


E7
BR
E8
BR
E63
W
E16
L
E97
L
E61
BR
E62
BR

MEL758J



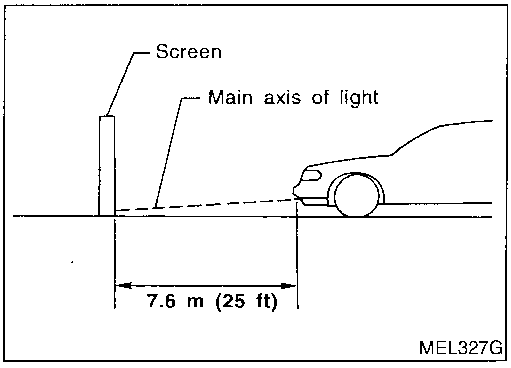
Aiming Adjustment

NBEL0029

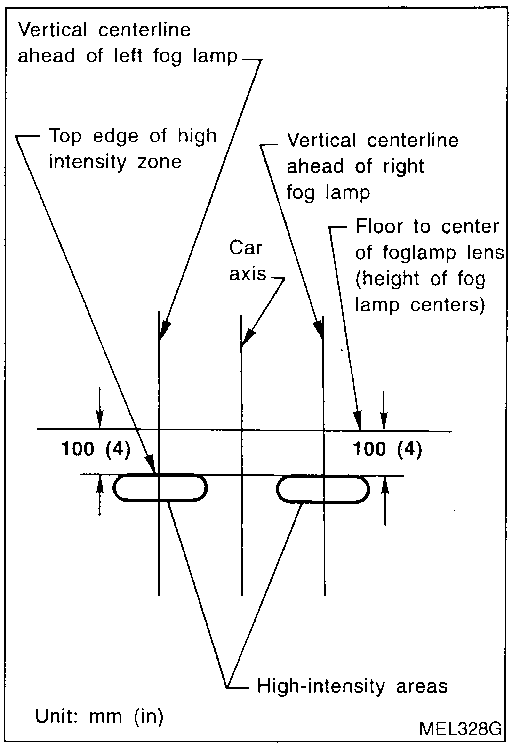
Before performing aiming adjustment, make sure of the following.

1) Keep all tires inflated to correct pressure.
2) Place vehicle on level ground.
3) 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's 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.

System Description

NBEL0030

TURN SIGNAL OPERATION

NBEL0030S01

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. 12, located in the fuse block (J/B)]
- to hazard switch terminal 2
- through terminal 1 of the hazard switch
- to combination flasher unit terminal 1
- through terminal 3 of the combination flasher unit
- to turn signal switch terminal 1.

Ground is supplied to combination flasher unit terminal 2 through body grounds M4 and M66.

LH Turn

NBEL0030S0101

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 2
- combination meter terminal 34
- rear combination lamp LH terminal 5.

Ground is supplied to the front turn signal lamp LH terminal 1 through body grounds E13 and E41.
Ground is supplied to the rear combination lamp LH terminal 6 through body grounds B11, B22 and D210.
Ground is supplied to combination meter terminal 19 through body grounds M77 and M111.
With power and ground supplied, the combination flasher unit controls the flashing of the LH turn signal lamps.

RH Turn

NBEL0030S0102

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 2
- combination meter terminal 32
- rear combination lamp RH terminal 5.

Ground is supplied to the front turn signal lamp RH terminal 1 through body grounds E13 and E41.
Ground is supplied to the rear combination lamp RH terminal 6 through body grounds B55 and B75.
Ground is supplied to combination meter terminal 19 through body grounds M77 and M111.
With power and ground supplied, the combination flasher unit controls the flashing of the RH turn signal lamps.

HAZARD LAMP OPERATION

NBEL0030S02

Power is supplied at all times to hazard switch terminal 3 through:

- 15A fuse [No. 20, located in the fuse block (J/B)].

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

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

Ground is supplied to combination flasher unit terminal 2 through body grounds M4 and M66.
Power is supplied through terminal 5 of the hazard switch to

- front turn signal lamp LH terminal 2
- combination meter terminal 34
- rear combination lamp LH terminal 5.

Power is supplied through terminal 6 of the hazard switch to

- front turn signal lamp RH terminal 2
- combination meter terminal 32
- rear combination lamp RH terminal 5.

Ground is supplied to terminal 1 of each front turn signal lamp through body grounds E13 and E41.
Ground is supplied to terminal 6 of the rear combination lamp LH through body grounds B11, B22 and D210.
Ground is supplied to terminal 6 of the rear combination lamp RH through body grounds B55 and B75.
Ground is supplied to combination meter terminal 19 through body grounds M77 and M111.
With power and ground supplied, the combination flasher unit controls the flashing of the hazard warning lamps.

MULTI-REMOTE CONTROL SYSTEM OPERATION

NBEL0030S03

Power is supplied at all times

- through 15A fuse [No. 20, located in the fuse block (J/B)]
- to multi-remote control relay terminals 1, 3 and 6.

Ground is supplied to multi-remote control relay terminal 2, when the multi-remote control system is triggered through the smart entrance control unit.
Refer to "MULTI-REMOTE CONTROL SYSTEM", EL-206.
The multi-remote control relay is energized.
Power is supplied through terminal 7 of the multi-remote control relay

- to front turn signal lamp LH terminal 2
- to combination meter terminal 34
- to rear combination lamp LH terminal 5.

Power is supplied through terminal 5 of the multi-remote control relay

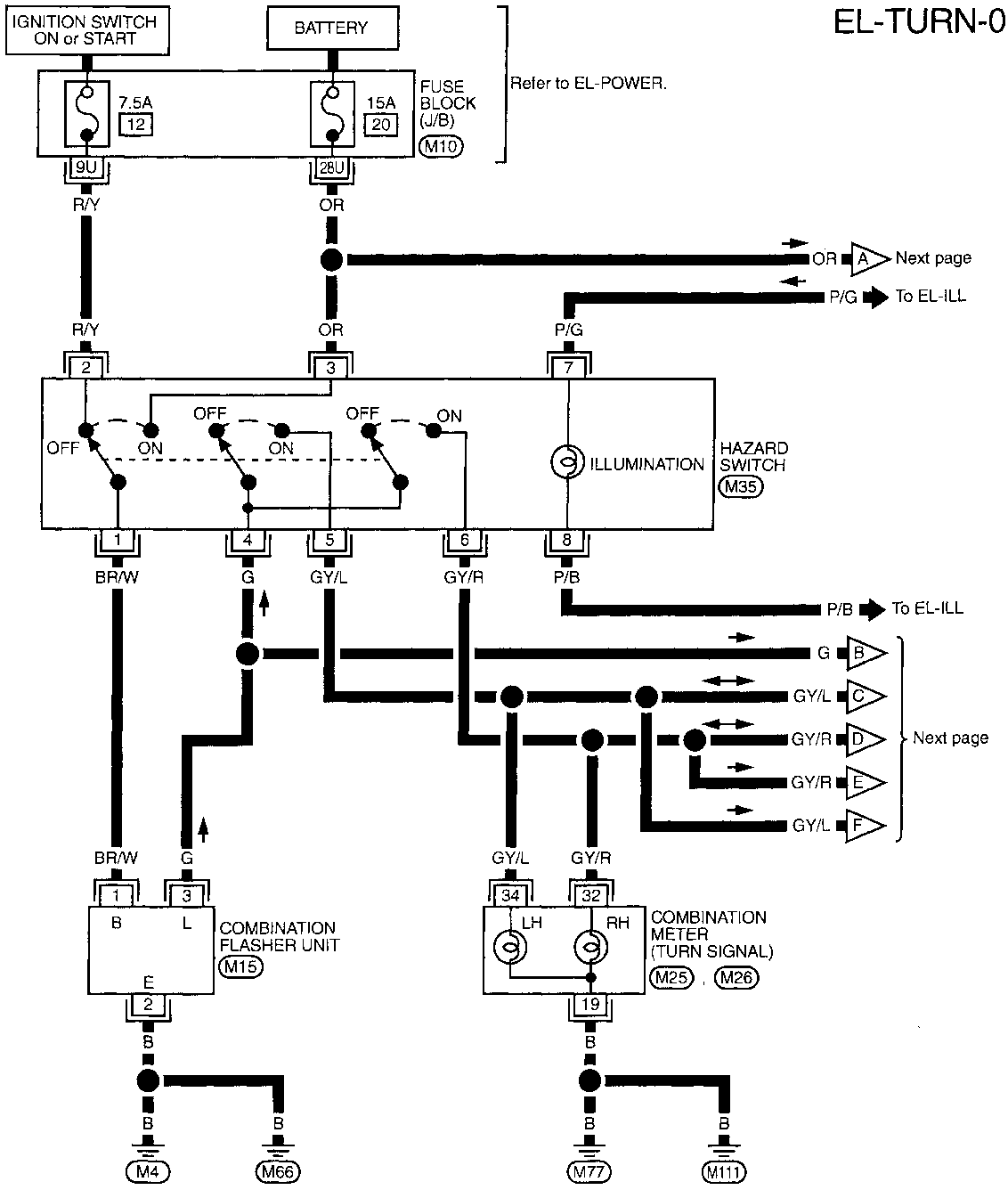
- to front turn signal lamp RH terminal 2
- to combination meter terminal 32
- to rear combination lamp RH terminal 5.

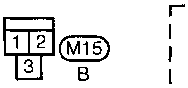
Ground is supplied to terminal 1 of each front turn signal lamp through body grounds E13 and E41.
Ground is supplied to terminal 6 of the rear combination lamp LH through body grounds B11, B22 and D210.
Ground is supplied to terminal 6 of the rear combination lamp RH through body grounds B55 and B75.
Ground is supplied to combination meter terminal 19 through body grounds M77 and M111.
With power and ground supplied, the smart entrance control unit controls the flashing of the hazard warning lamps.

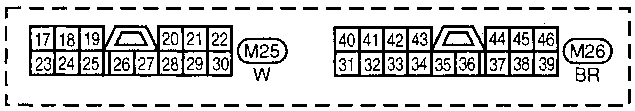
Wiring Diagram — TURN —

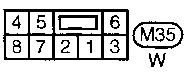
NBEL0032

EL-TURN-01





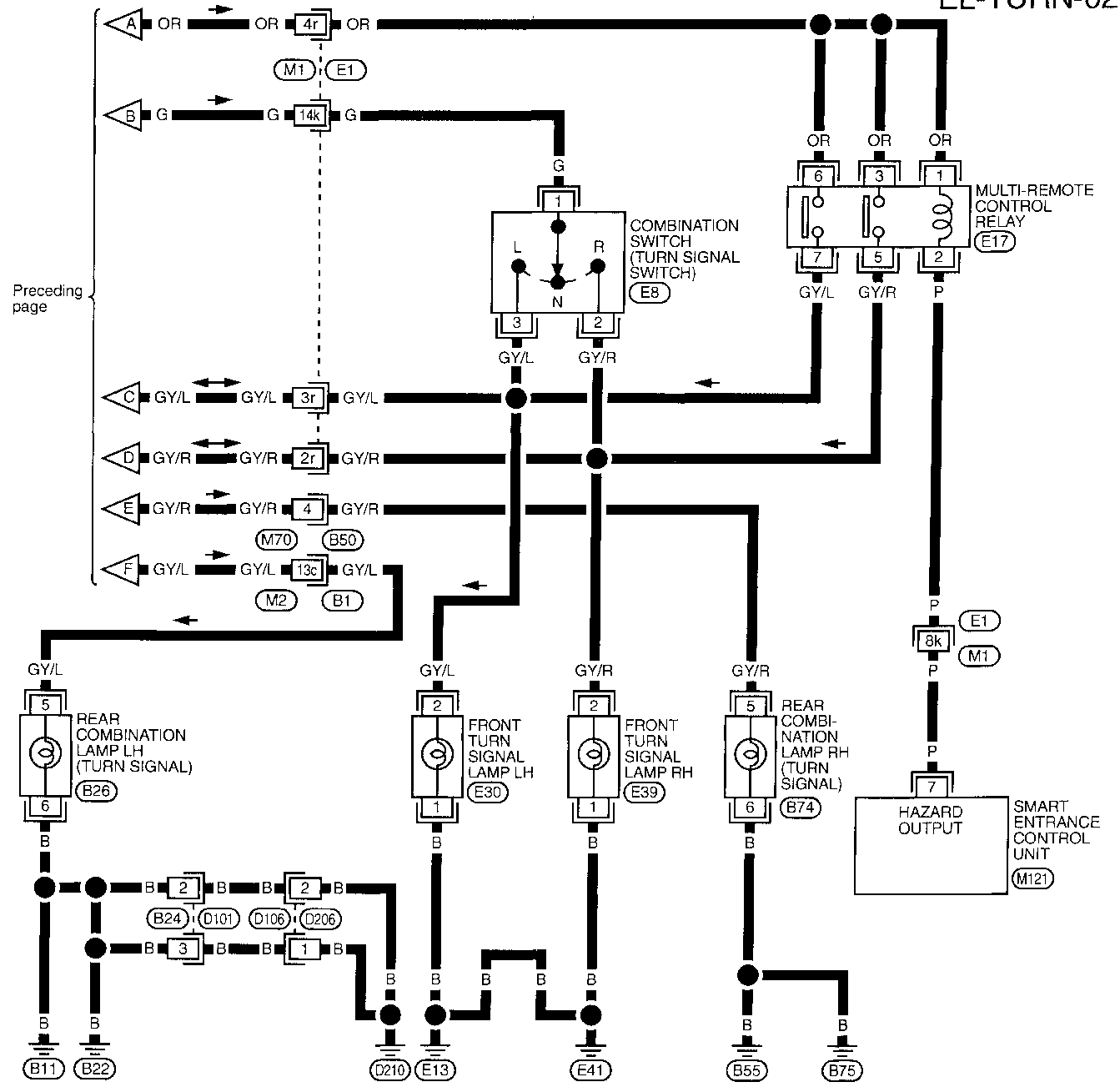


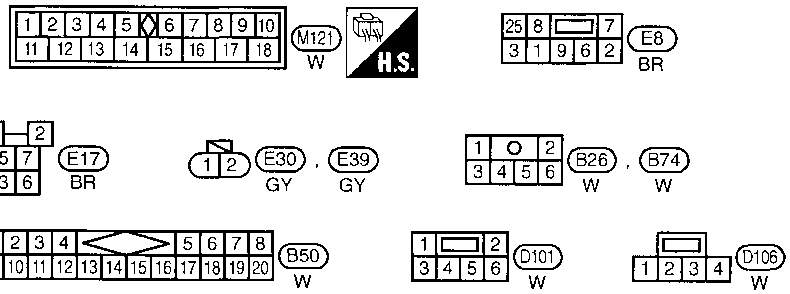


Refer to last page (Foldout page).
M10

MEL759J

EL-TURN-02





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M1 , E1

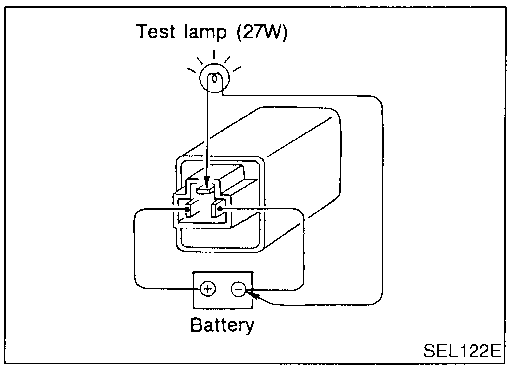
M2 , B1

MEL760J

Trouble Diagnoses

NBEL0033

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. 12, located in fuse block (J/B)]. 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 G wire between combination flasher unit and turn signal switch for open circuit.
Hazard warning lamps do not operate but turn signal lamps operate.	1. 15A fuse 2. Hazard switch 3. Open in hazard switch circuit	1. Check 15A fuse [No. 20, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 3 of hazard switch. 2. Check hazard switch. 3. Check G 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 E13 and E41	1. Check bulb. 2. Check grounds E13 and E41.
Rear turn signal lamp LH does not operate.	1. Bulb 2. Grounds B11, B22 and D210	1. Check bulb. 2. Check grounds B11, B22 and D210.
Rear turn signal lamp RH does not operate.	1. Bulb 2. Grounds B55 and B75	1. Check bulb. 2. Check grounds B55 and B75.
LH and RH turn indicators do not operate.	1. Ground	1. Check grounds M77 and M111.
LH or RH turn indicator does not operate.	1. Bulb	1. Check bulb in combination meter.



Electrical Components Inspection

NBEL0034

COMBINATION FLASHER UNIT CHECK

NBEL0034S01

- 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

NBEL0035

The illumination lamp operation is controlled by the lighting switch which is built into the combination switch and headlamp battery saver control unit. The battery saver system is controlled by the headlamp battery saver control unit and smart entrance control unit.

Power is supplied at all times

- to tail lamp relay terminals 2 and 3
- through 10A fuse (No. 61, located in the fuse and fusible link box), and
- to headlamp battery saver control unit terminal 7
- through 7.5A fuse [No. 24, located in the fuse block (J/B)].

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

- to headlamp battery saver control unit terminal 1
- through 10A fuse [No. 16, located in the fuse block (J/B)], and
- to headlamp battery saver control unit terminal 10, and
- to smart entrance control unit terminal 33
- through 7.5A fuse [No. 11, located in the fuse block (J/B)].

Ground is supplied to headlamp battery saver control unit terminals 4 and 11.

LIGHTING OPERATION BY LIGHTING SWITCH

NBEL0035S01

When lighting switch is 1ST (or 2ND) position, ground is supplied

- to tail lamp relay terminal 1 from headlamp battery saver control unit terminals 6 and 14
- through headlamp battery saver control unit terminals 5 and 13, and
- through body grounds E13 and E41.

Tail lamp relay is then energized and illumination lamps illuminate.

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

The illumination control switch that controls the amount of current to the illumination system. As the amount of current increases, the illumination becomes brighter.

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

Component	Connector No.	Power terminal	Ground terminal
Illumination control switch	M19	1	3
4WD shift switch	M141	7	8
A/T indicator	B59	3	4
Ashtray	B76	1	2
Cigarette lighter	M57	3	4
Audio unit	M48	8	7
Compass and thermometer	R4	5	2
ASCD main switch	M18	5	6
Hazard switch	M35	7	8
Rear window defogger switch	M36	5	6
Power window main switch	D6	4	2
A/C auto amp.	M102	24	25
IVCS switch	R10	2	12
Combination meter	M25, M26	37	29
Odo trip (Combination meter)	M24, M25	12	29

The ground for all of the components except for compass, thermometer and ashtray are controlled through terminals 2 and 3 of the illumination control switch and body grounds M4 and M77.

BATTERY SAVER CONTROL

NBEL0035S02

When the ignition switch is turned from ON (or START) to OFF (or ACC) positions while illumination lamps are illuminated, the RAP signal is supplied to terminal 10 of the headlamp battery saver control unit from smart entrance control unit terminal 5.

After counting 45 seconds by the RAP signal from the smart entrance control unit to headlamp battery saver control unit, the ground supply to terminal 1 of the tail lamp relay from headlamp battery saver control unit teminals 6 and 14 is terminated.

Then illumination lamps are turned off.

Illumination lamps are turned off when driver or passenger side door is opened even if 45 seconds have not passed after the ignition switch is turned from ON (or START) to OFF (or ACC) positions while illumination lamps are illuminated.

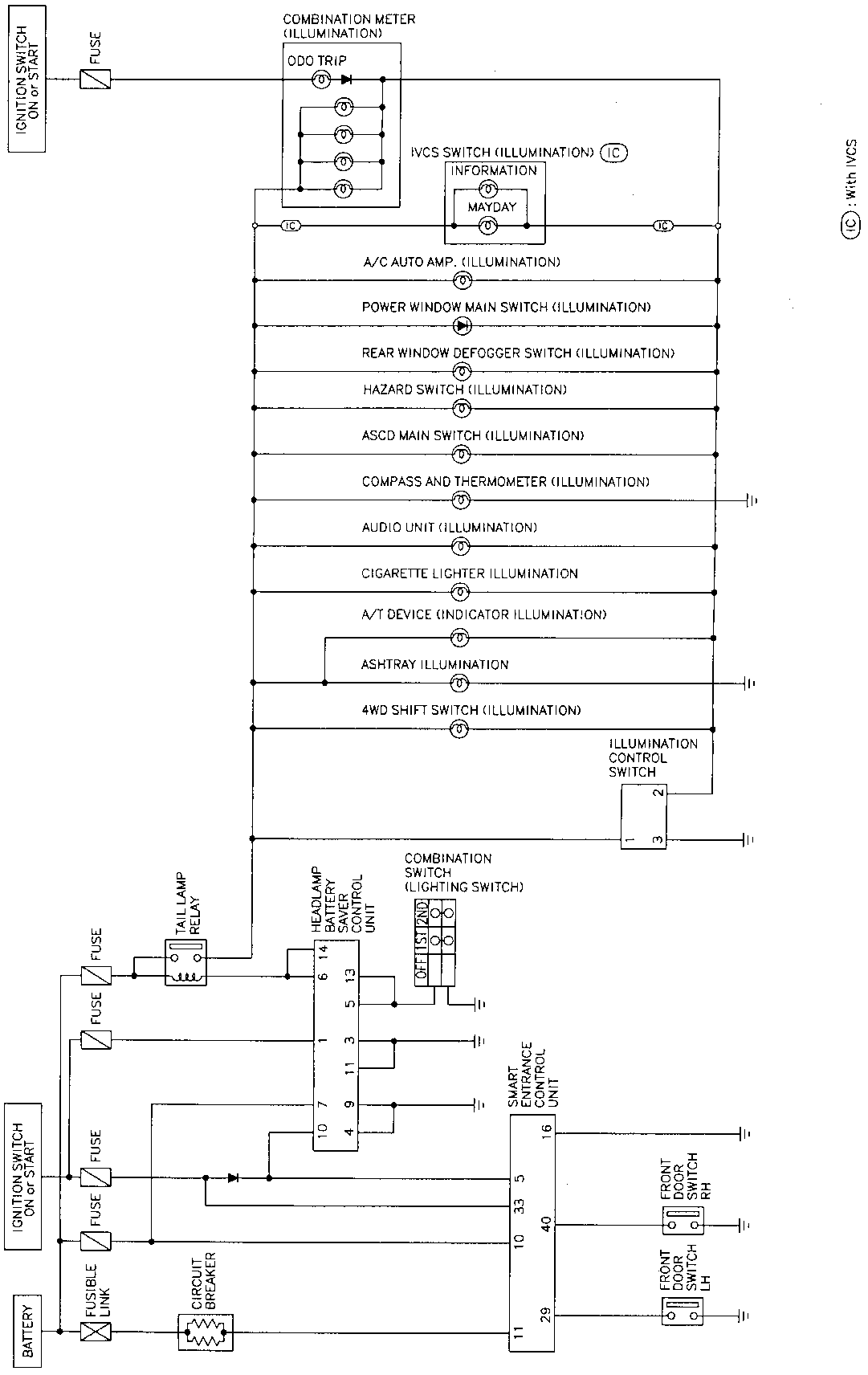
When the lighting switch is turned from OFF to 1ST (or 2ND) after illumination lamps are turned off by the battery saver control, ground is supplied

- to headlamp battery saver control unit terminals 5 and 13 from lighting switch terminal 11, and
- to tail lamp relay terminal 1 from headlamp battery saver control unit terminals 6 and 14.

Then illumination lamps illuminate again.

Schematic

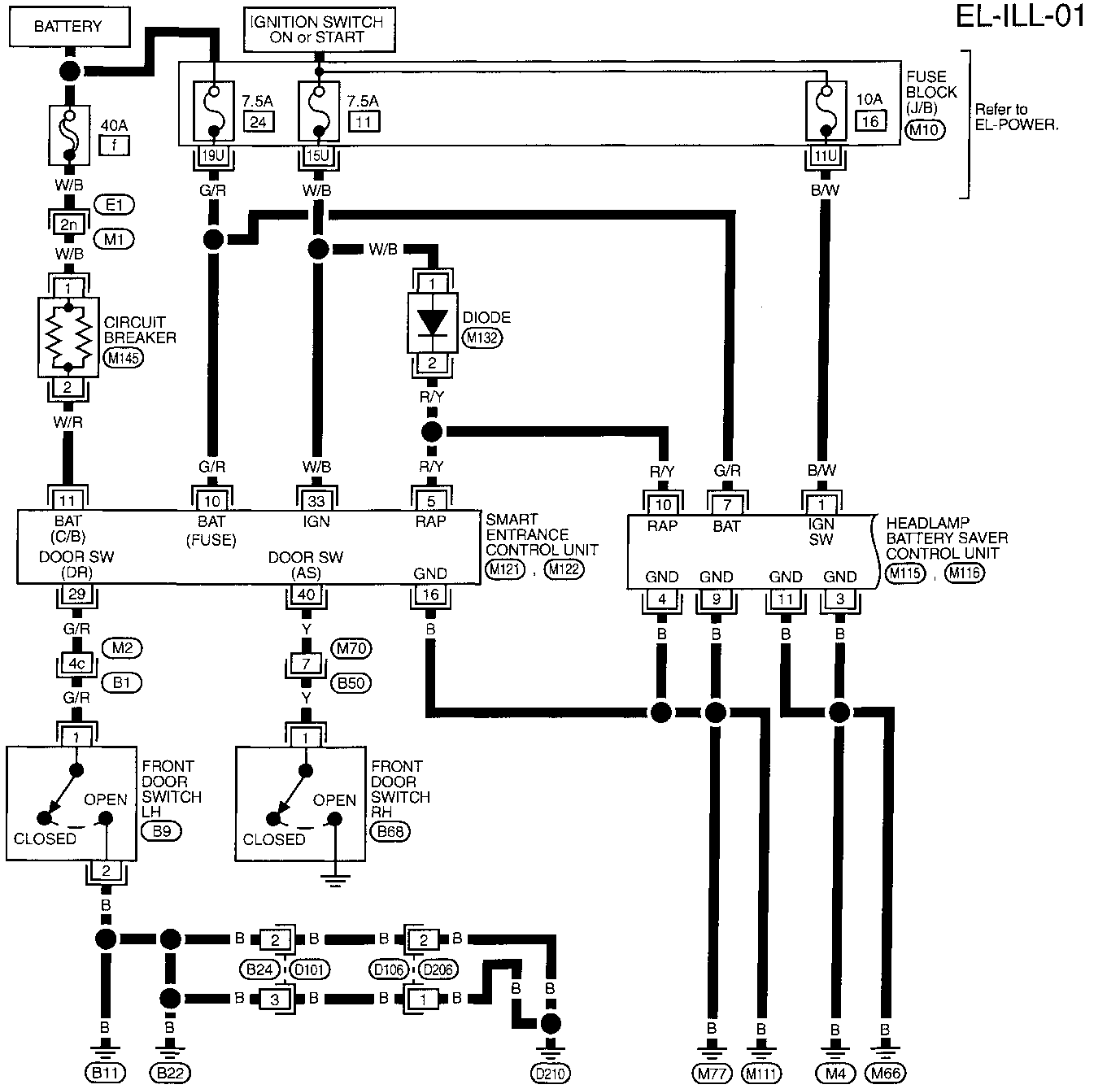
NBEL0036

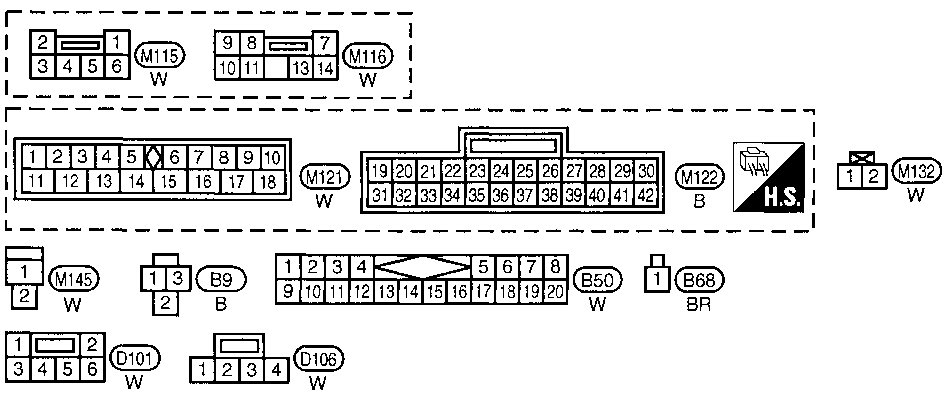


MEL761J

Wiring Diagram — ILL —

NBEL0037





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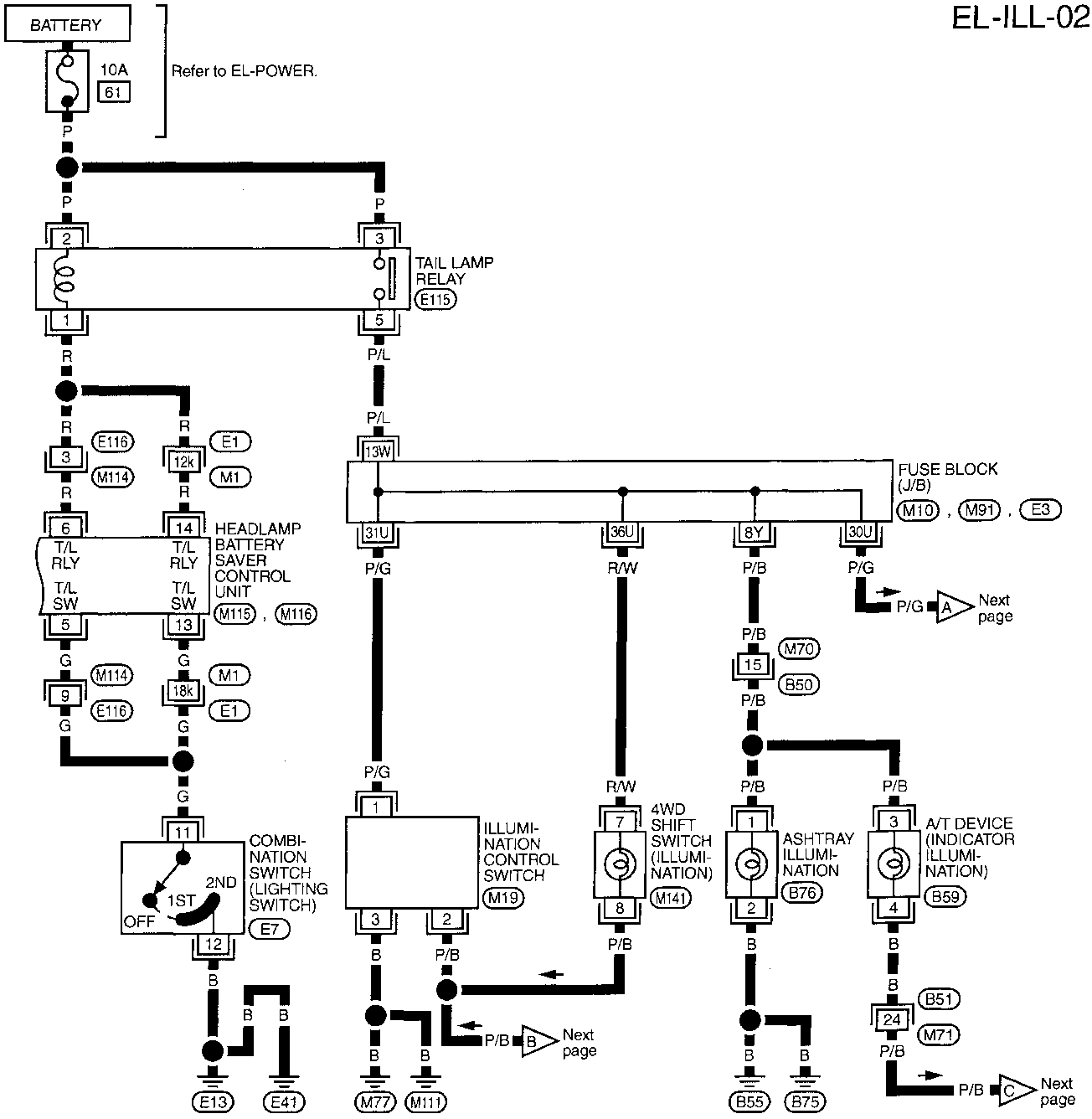
M1, E1

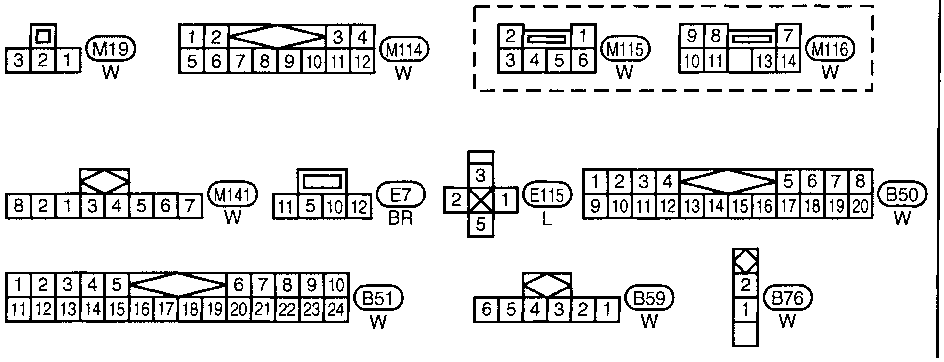
M2, B1

M10

MEL069K

EL-ILL-02





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M1 , E1

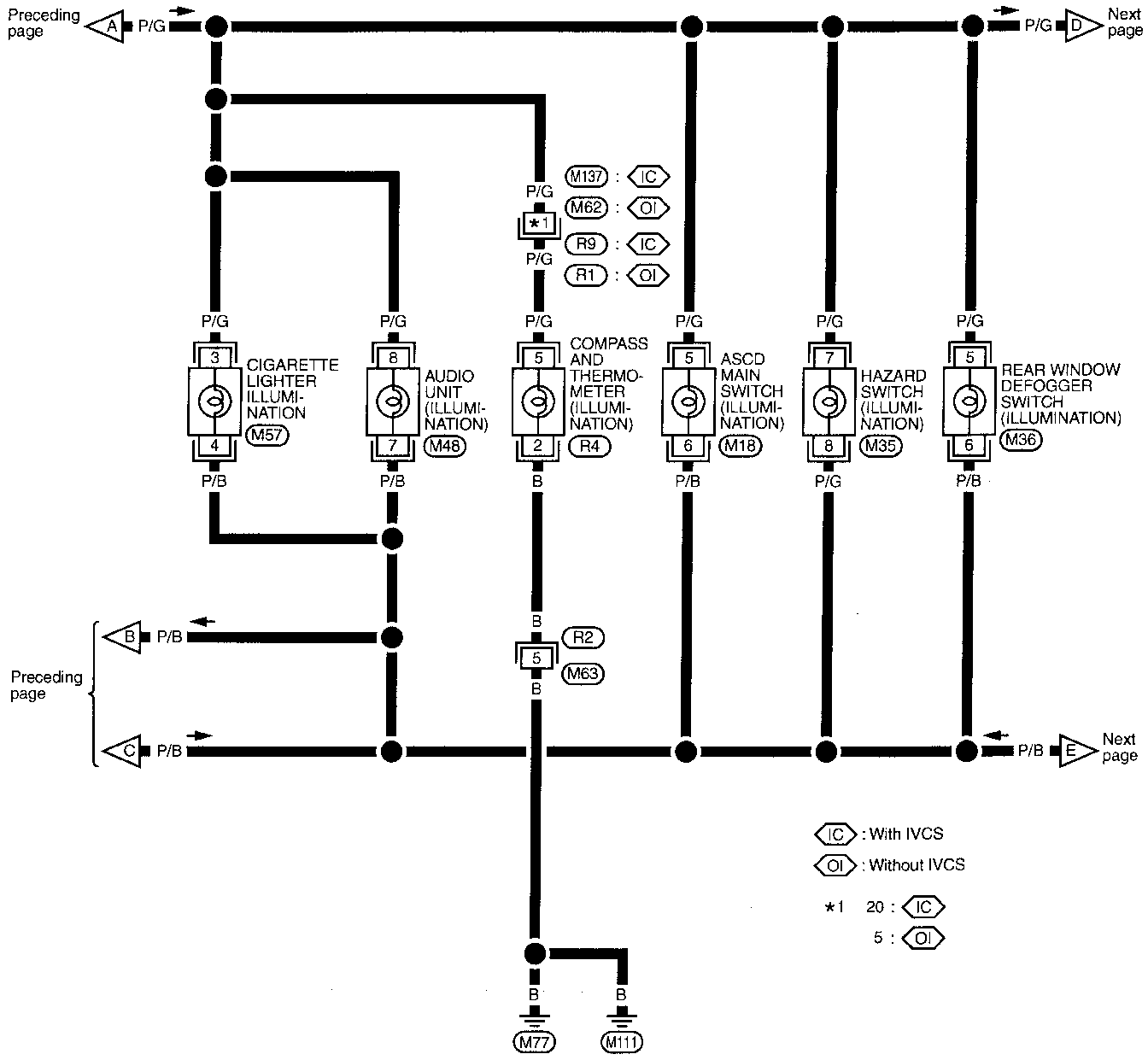
M10

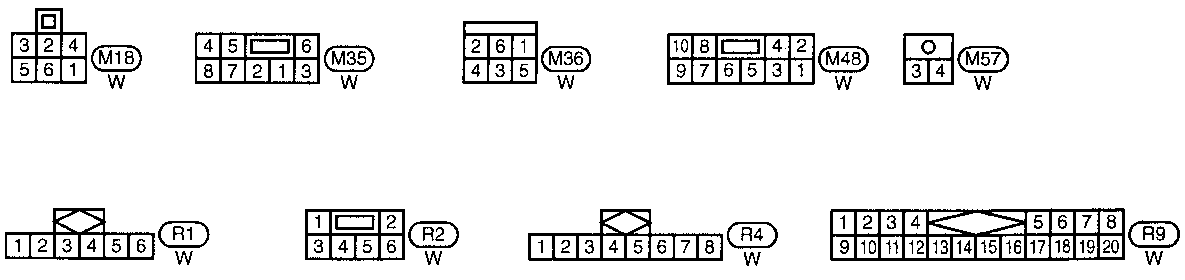
M91

E3

MEL762J

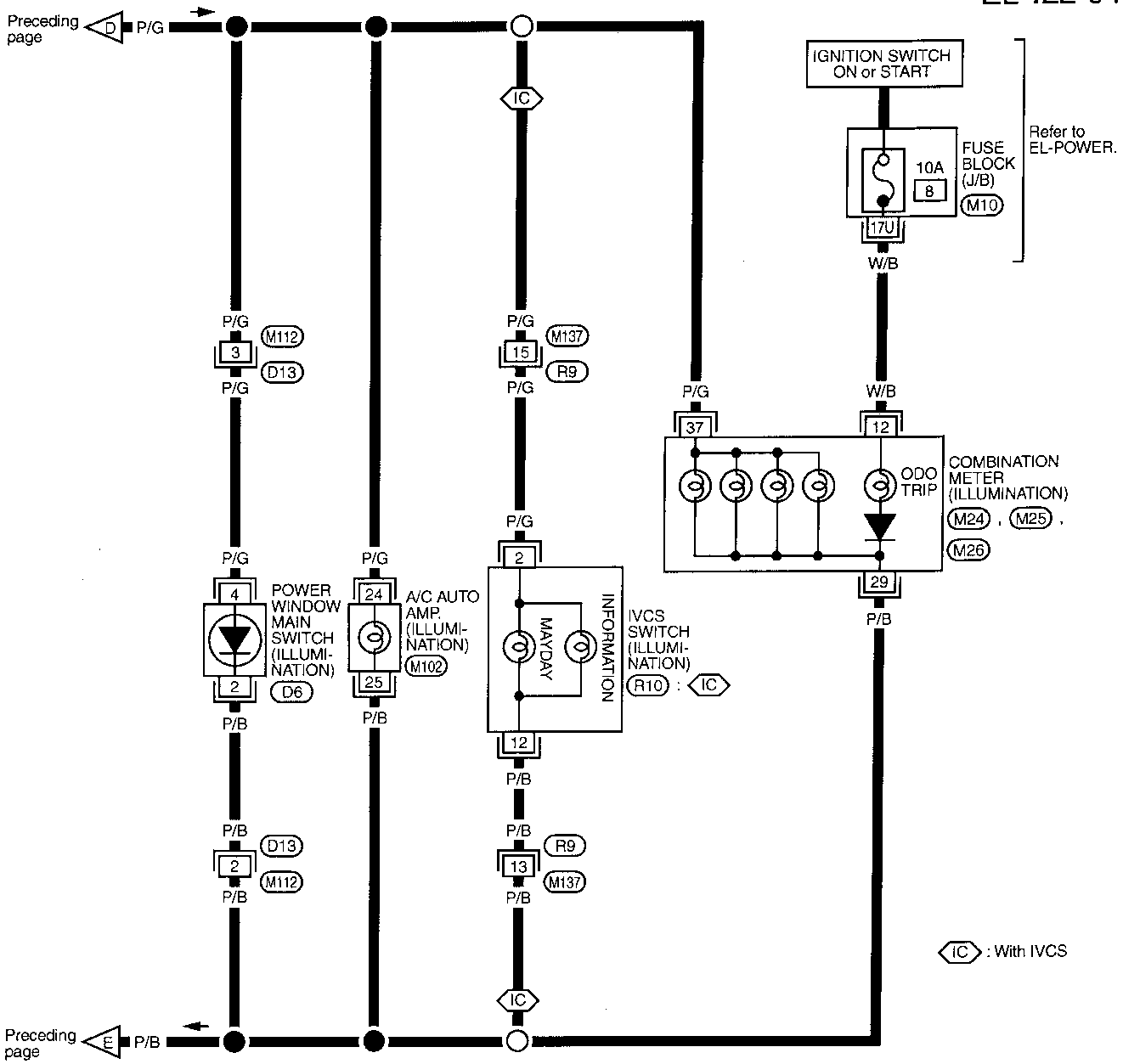
EL-ILL-03

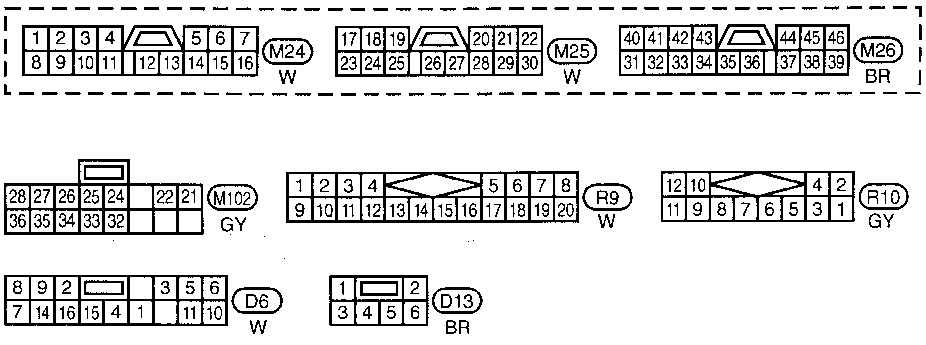




MEL763J

EL-ILL-04





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M10

MEL764J

System Description

NBEL0038

POWER SUPPLY AND GROUND

NBEL0038S06

Power is supplied at all times:
- through 40A fusible link (Letter **f**, located in the fuse and fusible link box)
- to circuit breaker terminal 1
- through circuit breaker terminal 2
- to smart entrance control unit terminal 11.

Power is supplied at all times:
- through 7.5A fuse [No. 24, located in the fuse block (J/B)]
- to key switch terminal 2 and
- to smart entrance control unit terminal 10.

When the key is removed from ignition key cylinder, power is interrupted:
- through key switch terminal 1
- to smart entrance control unit terminal 32.

With the ignition key switch in the ON or START position, power is supplied:
- through 7.5A fuse [No. 11, located in the fuse block (J/B)]
- to smart entrance control unit terminal 33.

Ground is supplied:
- to smart entrance control unit terminal 16
- through body grounds terminals M77 and M111.

When the front driver side door is opened, ground is supplied:
- through body grounds B11, B22 and B210
- to front door switch (driver side) terminal 2
- from front door switch (driver side) terminal 1
- to smart entrance control unit terminal 29.

When the front passenger side door is opened, ground is supplied:
- through case ground of front door switch (passenger side)
- from front door switch (passenger side) terminal 1
- to smart entrance control unit terminal 40.

When any other door (except front door) is opened, ground is supplied to smart entrance control unit terminal 28 in the same manner as the front door switch (front passenger side).

When the front driver side door is unlocked, the smart entrance control unit receives a ground signal:
- through body grounds terminals M77 and M111
- to front door lock actuator (driver side unlock sensor) terminal 2
- from front door lock actuator (driver side unlock sensor) terminal 4
- to smart entrance control unit terminal 36.

When a signal, or combination of signals is received by the smart entrance control unit, ground is supplied:
- through smart entrance control unit terminal 8
- to interior lamp terminal 2.

With power and ground supplied, the interior lamp illuminates.

SWITCH OPERATION

NBEL0038S07

When interior lamp switch is ON, ground is supplied:
- through case grounds of interior lamp
- to interior lamp.

And power is supplied:
- to interior lamp terminal 1
- from smart entrance control unit terminal 17.

When spot lamp (LH and/or RH) is ON, ground is supplied:
- through body grounds M77 and M111
- to spot lamp terminal 2.

And power is supplied:

- to spot lamp terminal 1
- from smart entrance control unit terminal 17.

When vanity mirror illumination (LH and/or RH) is ON, ground is supplied:

- through body grounds M77 and M111
- to vanity mirror illuminations (LH and RH) terminals 2.

And power is supplied:

- to vanity mirror illuminations (LH and RH) terminals 1
- from smart entrance control unit terminal 17.

With power and ground supplied, interior lamps turn ON.

INTERIOR LAMP TIMER OPERATION

NBEL0038S08

When interior lamp switch is in the "DOOR" position, the smart entrance control unit keeps the interior lamp illuminated for about 30 seconds when:

- unlock signal is supplied from driver's door unlock sensor while all doors are closed and key is removed from ignition key cylinder
- key is removed from ignition key cylinder while all doors are closed
- driver's door is opened and then closed while key is removed from the iginition key cylinder. (However, if the driver's door is closed with the key insered in the ignition key cylinder after the driver's door is opened with the key removed, the timer is operated.)

When the interior lamp switch is in the "DOOR" position and the unlock signal is supplied from the multi-remote controller while the driver's door is locked and all doors are closed (even if key is inserted), the smart entrance control unit keeps the interior lamp illuminated for about 30 senconds.
The timer is canceled when:

- driver's door is locked,
- driver's door is opened, or
- ignition switch is turned ON.

ON-OFF CONTROL

NBEL0038S09

When the driver side door, front passenger door, rear LH or RH door is opened, the interior room lamp turns on while the interior room lamp switch is in the "DOOR" position.

BATTERY SAVER

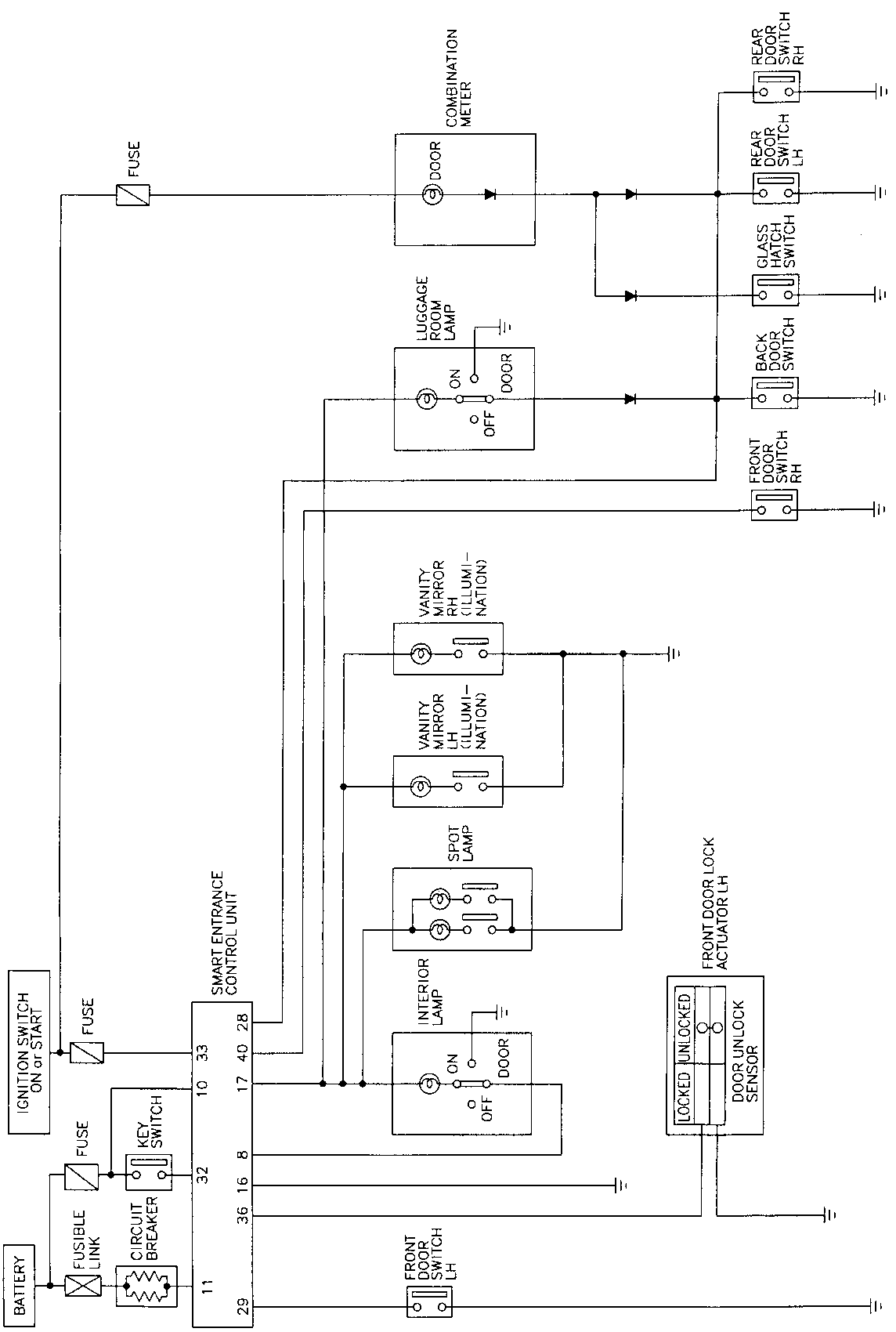
NBEL0038S10

The lamp turns off automatically when interior lamp, luggage room lamp, spot lamp and/or vanity mirror illumination is illuminated with the ignition key is in OFF position, if the lamp remains lit by the door switch open signal or if the lamp switch is in ON position for more than 10 minutes.
After lamps turn OFF by the battery saver system, the lamps illuminate again when:

- driver's door is locked or unlocked,
- door is opened or closed,
- key is inserted in ignition key cylinder.

Schematic

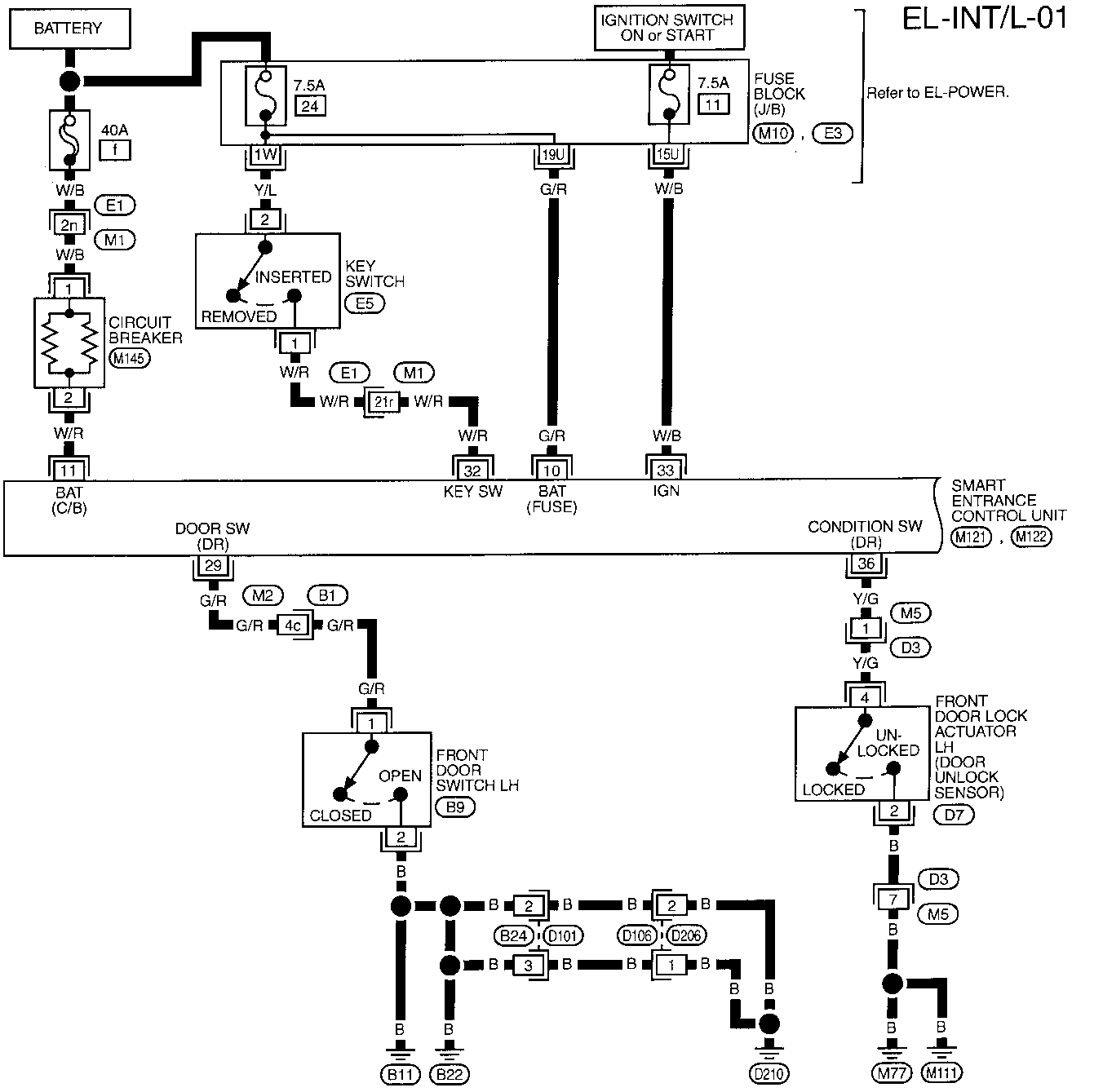
NBEL0158

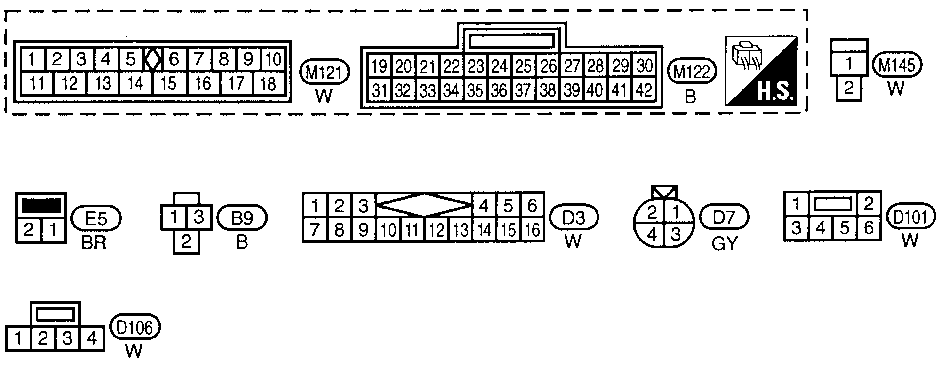


MEL765J

Wiring Diagram — INT/L —

NBEL0040





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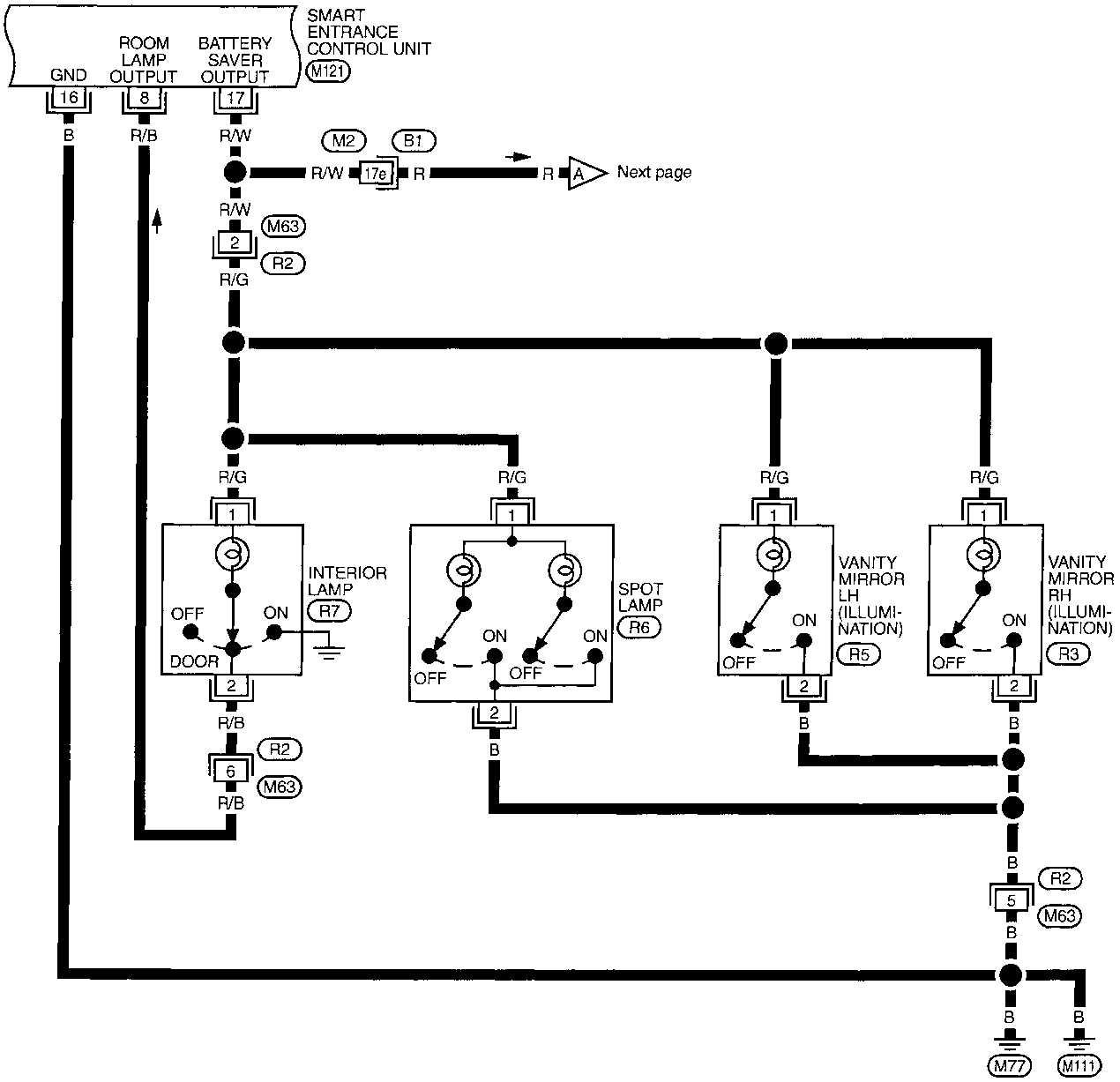
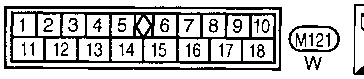
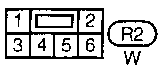
M1 , E1
M2 , B1
M10
E3

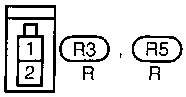
MEL766J

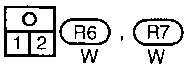
EL-INT/L-02











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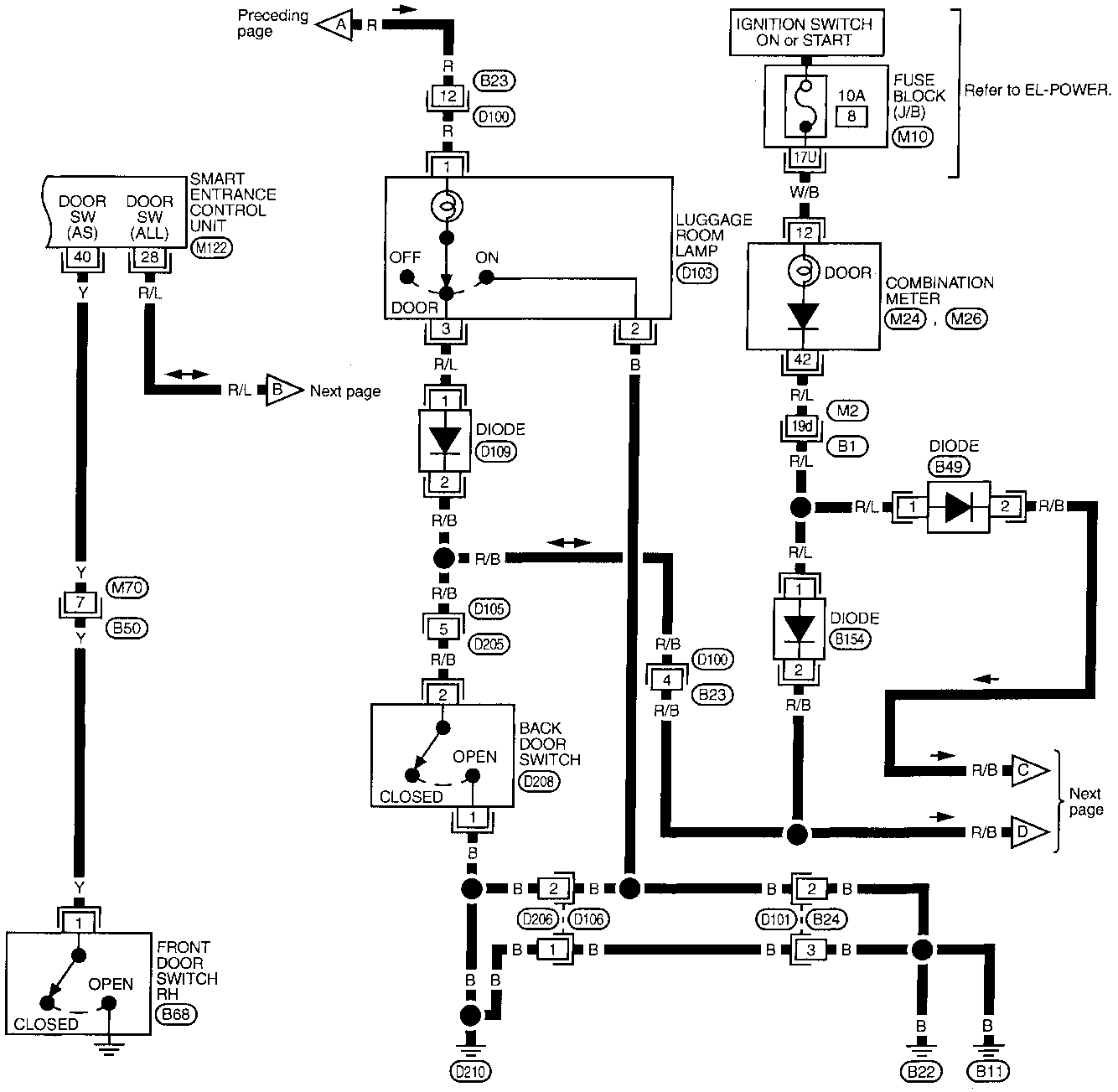
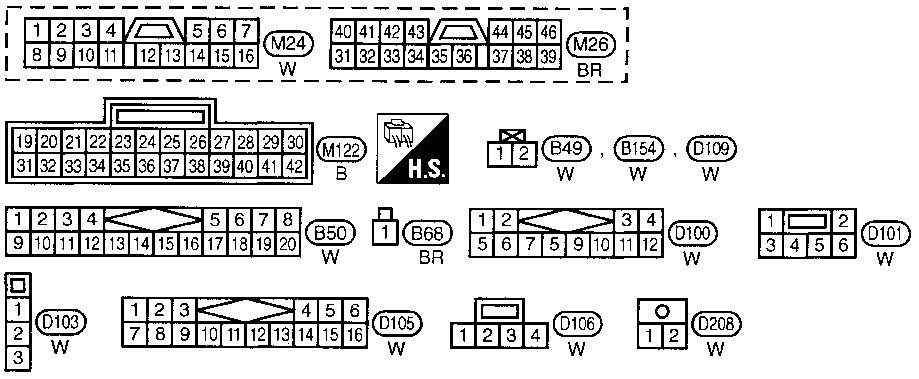
M2 , B1

MEL767J

EL-INT/L-03





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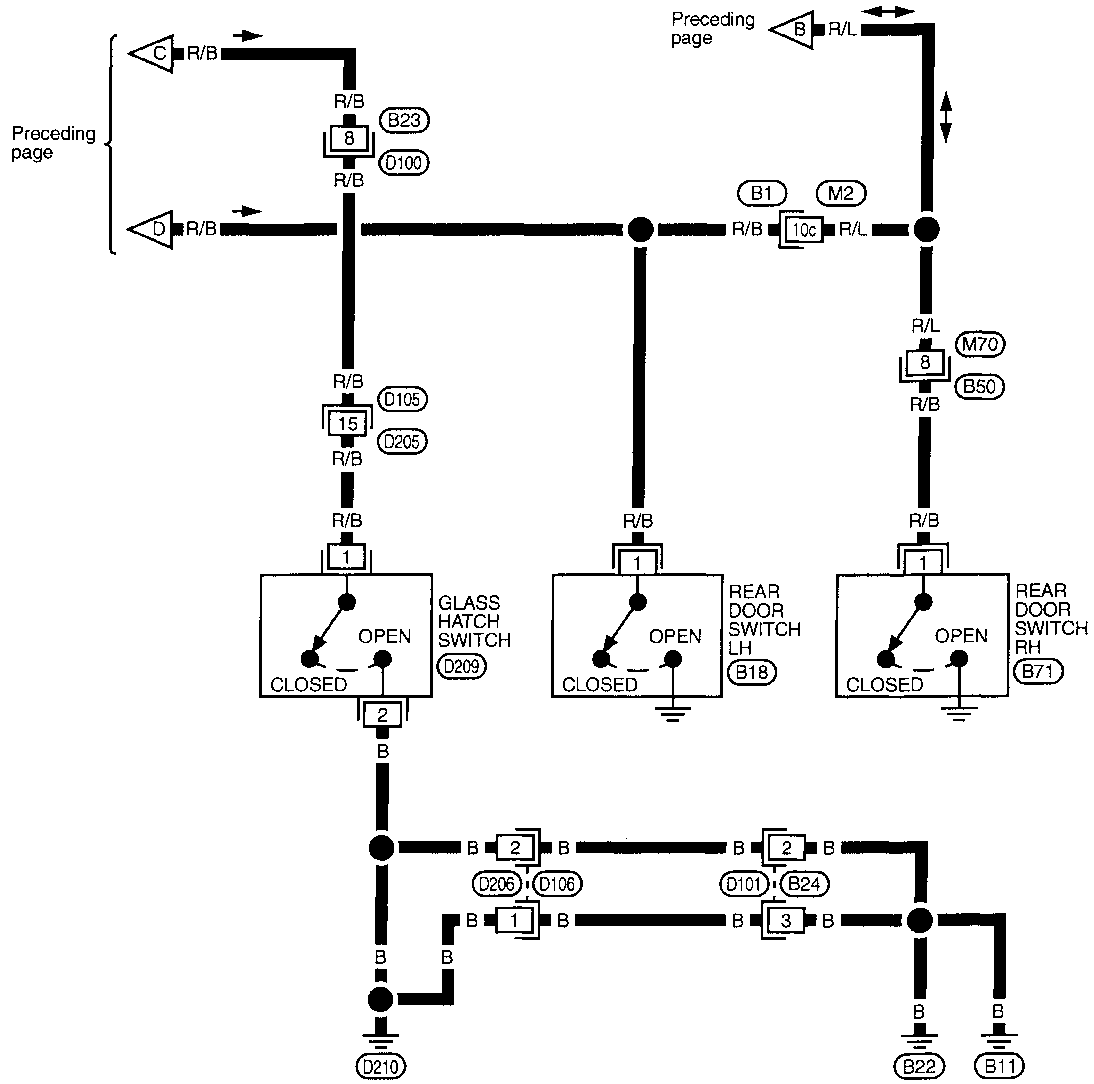
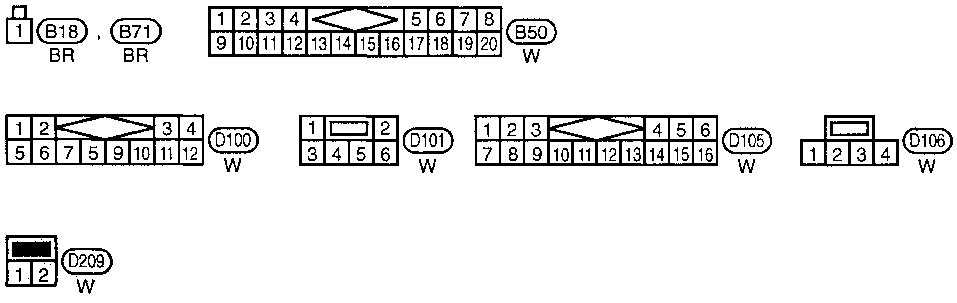
M2 , B1
M10

MEL768J

EL-INT/L-04





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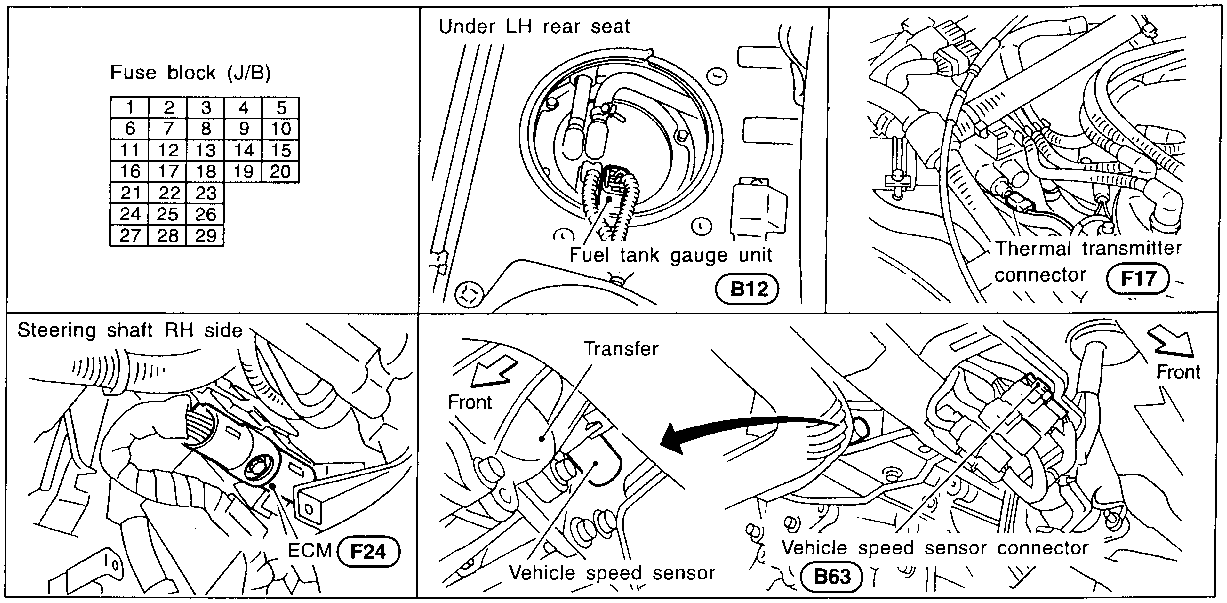
M2 , B1

MEL769J

Component Parts and Harness Connector Location

NBEL0041



SEL045W

System Description

NBEL0042

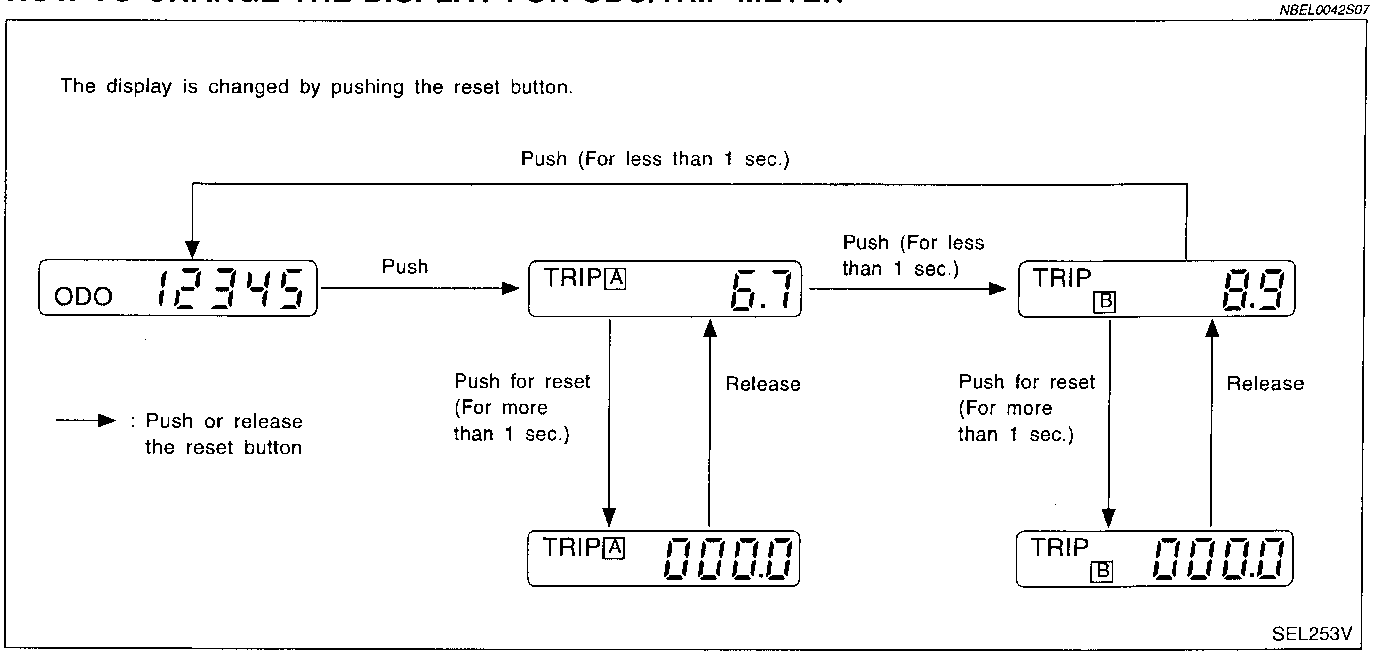
UNIFIED CONTROL METER

NBEL0042S06

- 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

NBEL0042S07



SEL253V

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

POWER SUPPLY AND GROUND CIRCUIT

NBEL0042S08

Power is supplied at all times

- through 7.5A fuse [No. 24, located in the fuse block (J/B)]
- to combination meter terminal 3.

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

- through 10A fuse [No. 8, located in the fuse block (J/B)]
- to combination meter terminal 12.

Ground is supplied

- to combination meter terminal 2
- through body grounds M77 and M111.

WATER TEMPERATURE GAUGE

NBEL0042S01

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 6 of the combination meter for the water temperature gauge. The needle on the gauge moves from "C" to "H".

TACHOMETER

NBEL0042S02

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

The tachometer is regulated by a signal

- from terminal 3 of the ECM
- to combination meter terminal 15 for the tachometer.

FUEL GAUGE

NBEL0042S03

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 7 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 B11, B22 and D210.

SPEEDOMETER

NBEL0042S04

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

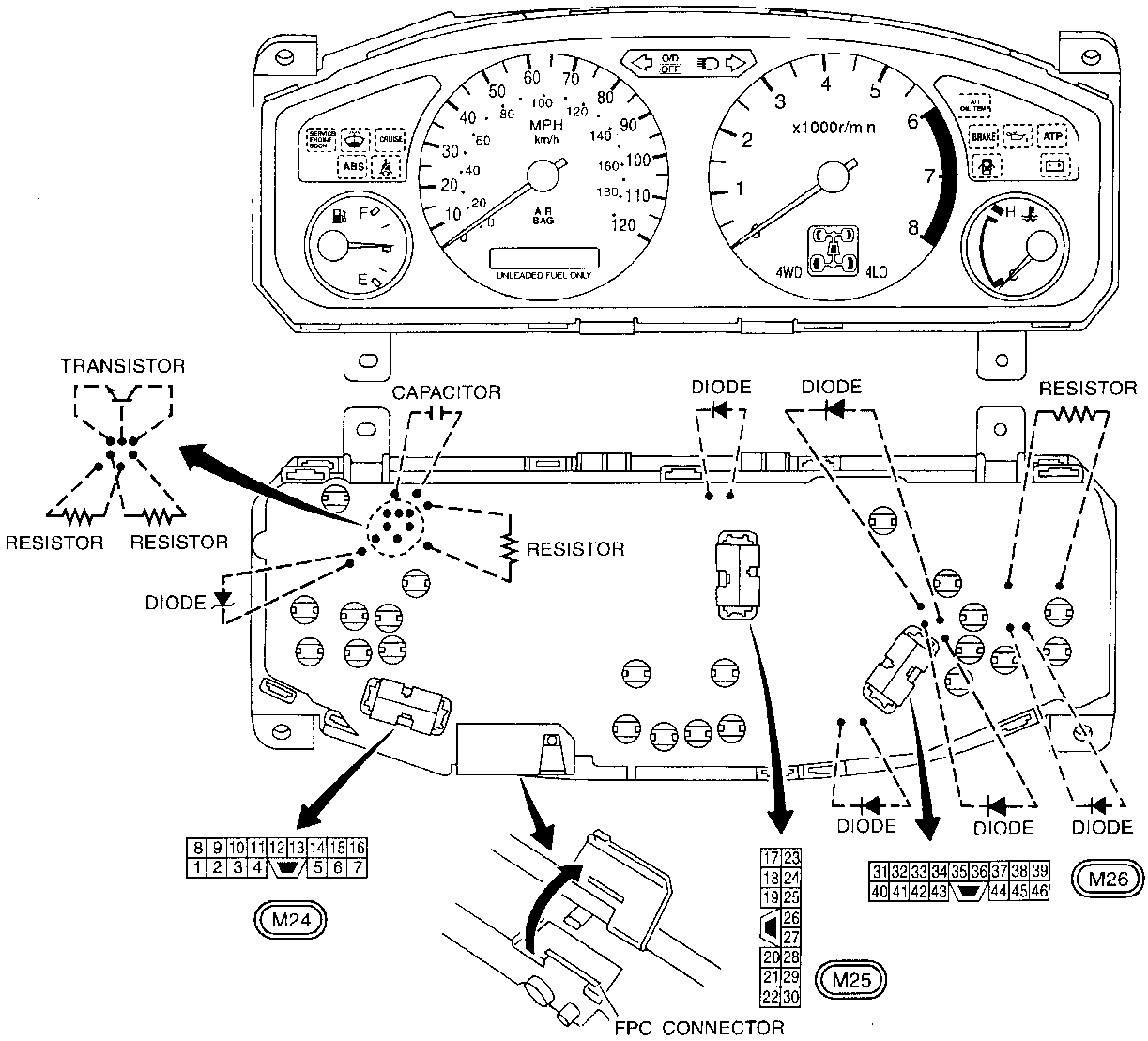
The voltage is supplied

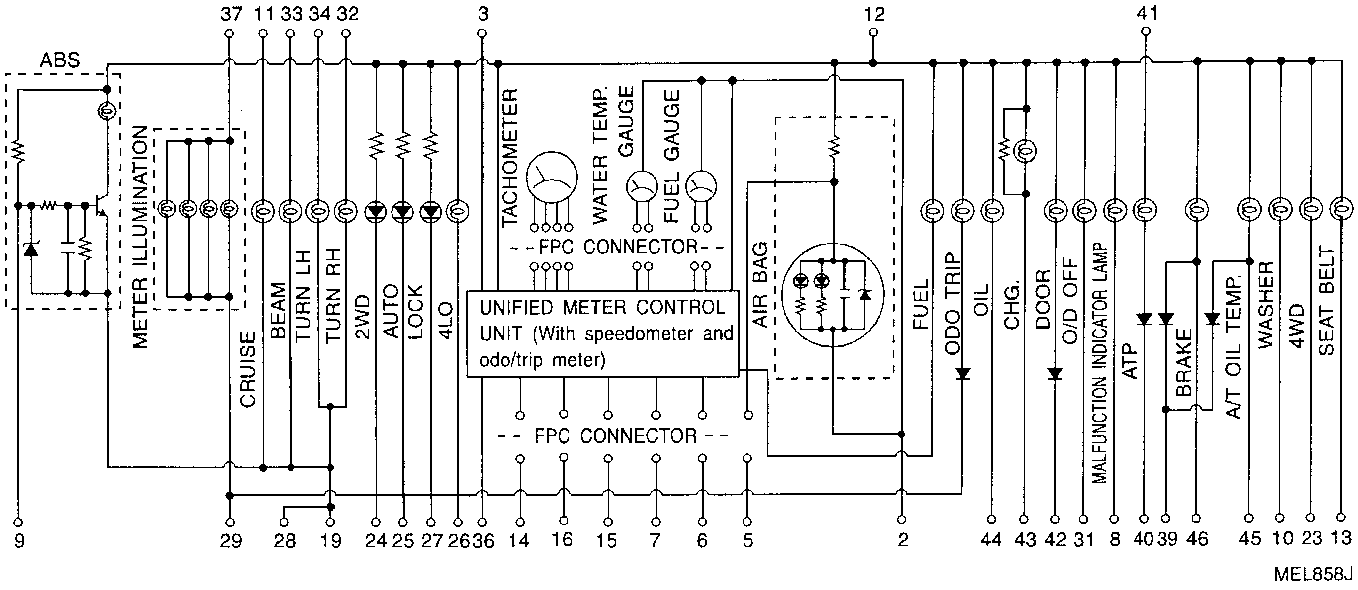
- to combination meter terminals 16 and 14 for the speedometer
- from terminals 2 and 1 of the vehicle speed sensor.

The speedometer converts the voltage into the vehicle speed displayed.

Combination Meter/For USA

NBEL0043

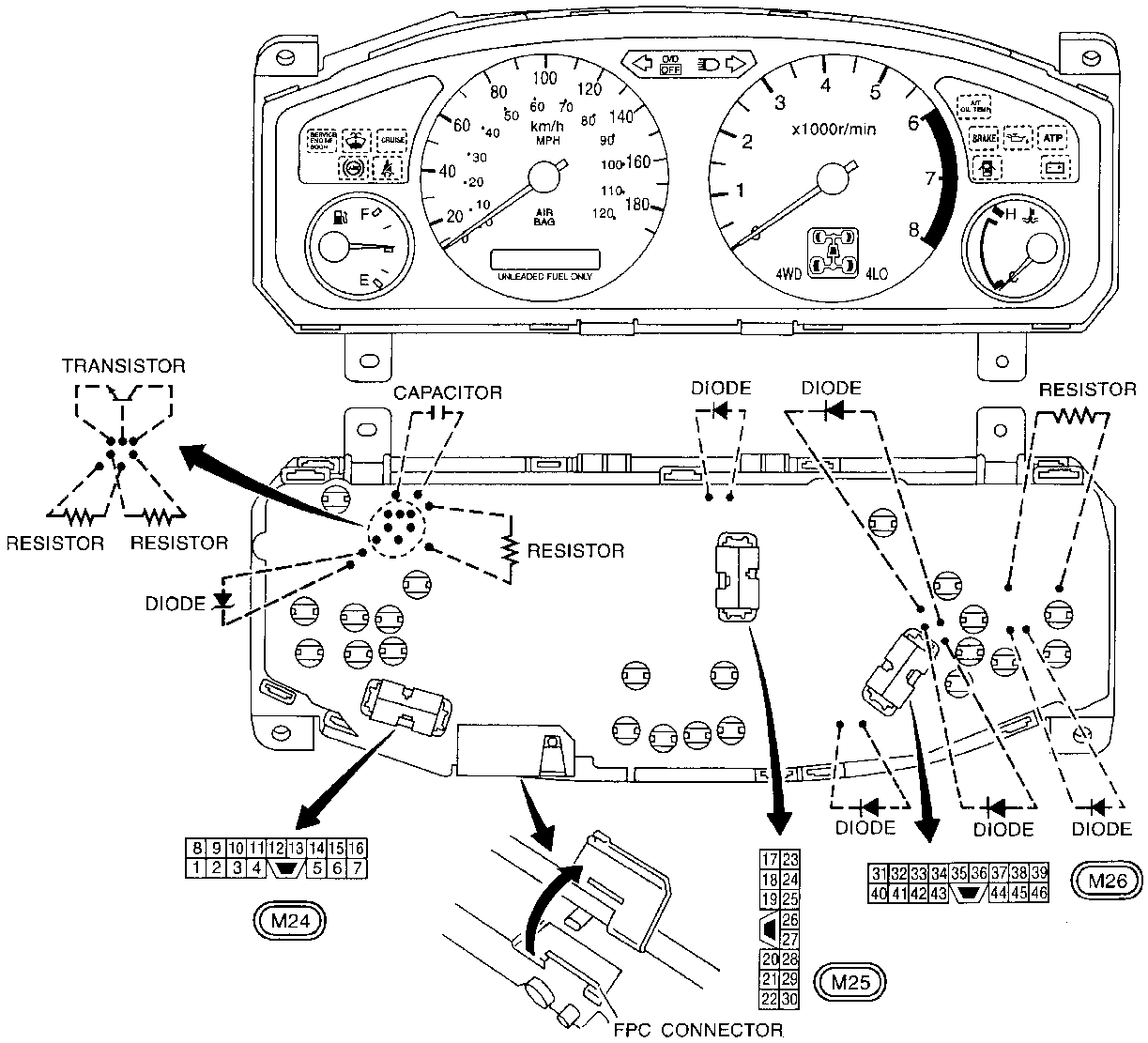


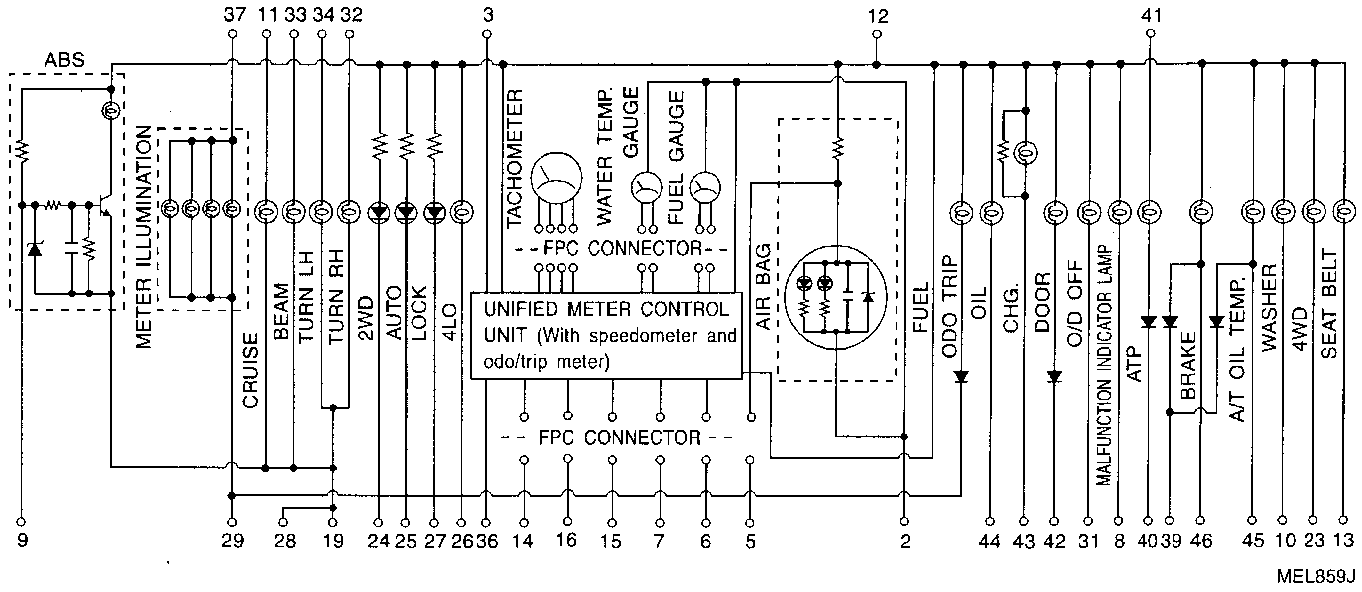


MEL858J

Combination Meter/For Canada

NBEL0165



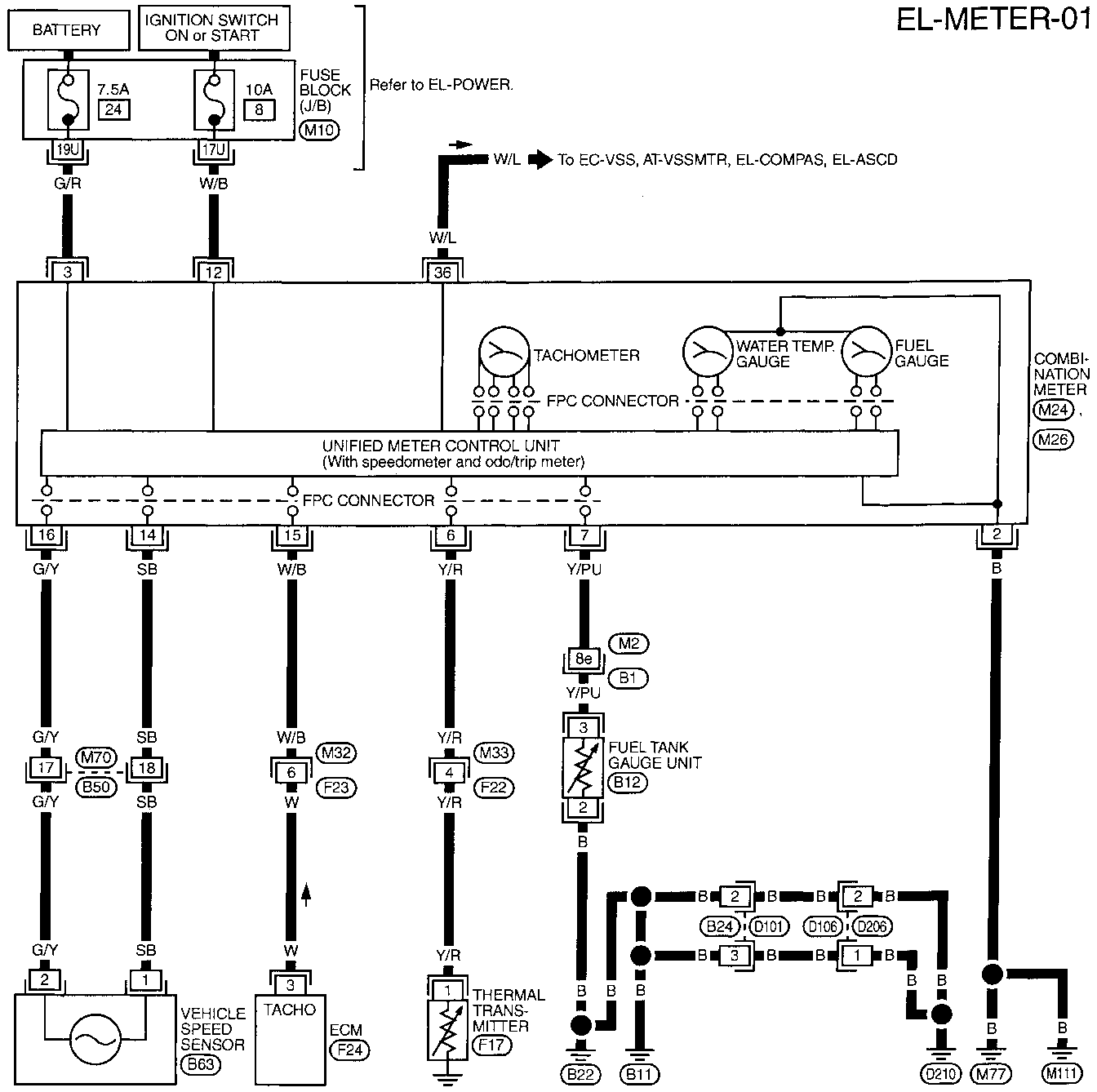


MEL859J

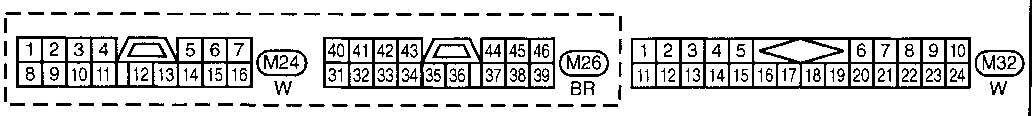
Wiring Diagram — METER —

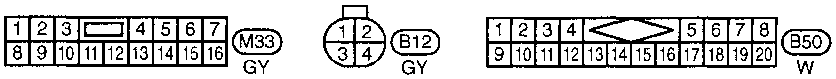
NBEL0045

EL-METER-01



Refer to last page (Foldout page).
M2, B1
M10
F24





MEL770J

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

NBEL0151

DIAGNOSIS FUNCTION

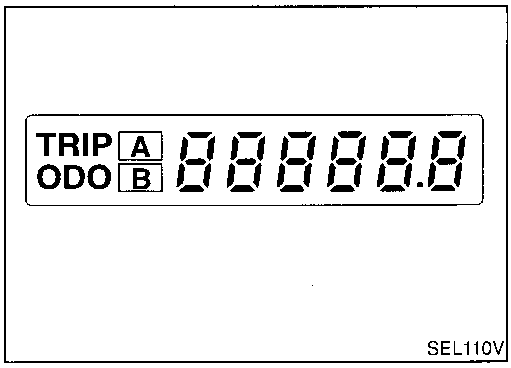
NBEL0151S01

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

HOW TO ALTERNATE DIAGNOSIS MODE

NBEL0151S02

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.

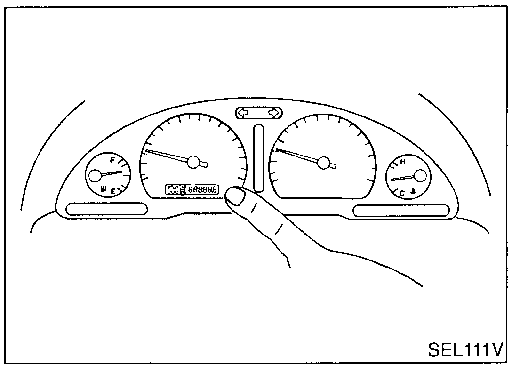


SEL110V

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.


SEL111V

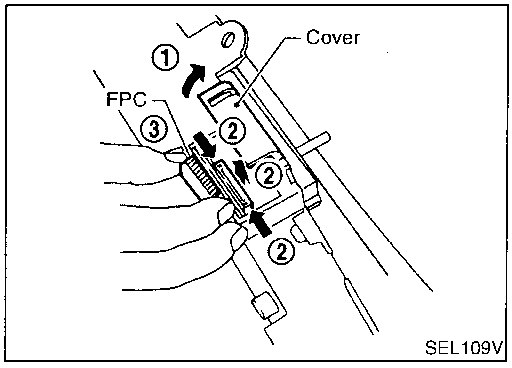
7. Push odo/trip meter switch. Indication of each meter/gauge should be as shown left during pushing odo/trip meter switch if it is no malfunctioning.

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

Flexible Print Circuit (FPC)

=NBEL0152

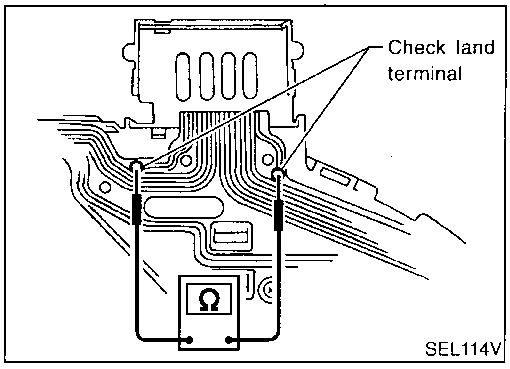
Tachometer, fuel gauge and water temperature gauge are connected with unified meter control unit (speedometer) by Flexible Print Circuit (FPC) connector. When replace or remove and install unified control unit (speedometer), disconnect and connect FPC connector according to the following steps.



DISCONNECT

NBEL0152S01

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



CONNECT

NBEL0152S02

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.

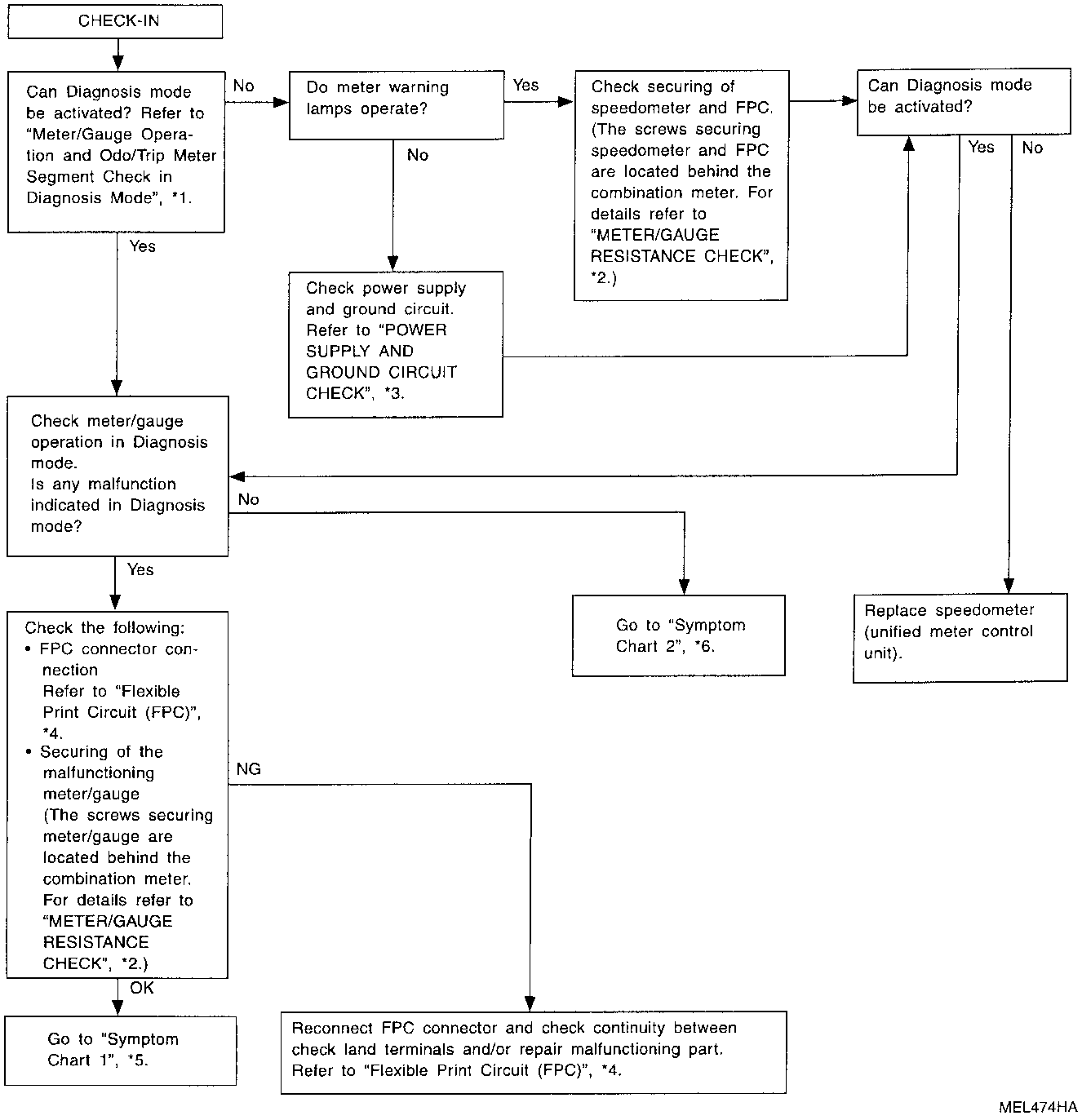
   Resistance: 0Ω
4. Close connector cover.

Trouble Diagnoses

PRELIMINARY CHECK

NBEL0046

NBEL0046S04



MEL474HA

*1: Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode (EL-83)
*2: METER/GAUGE RESISTANCE CHECK (EL-90)
*3: POWER SUPPLY AND GROUND CIRCUIT CHECK (EL-87)
*4: Flexible Print Circuit (FPC) (EL-84)
*5: Symptom Chart 1 (EL-86)
*6: Symptom Chart 2 (EL-86)

SYMPTOM CHART

NBEL0046S10

Symptom Chart 1 (Malfunction is Indicated in Diagnosis Mode)

NBEL0046S1001

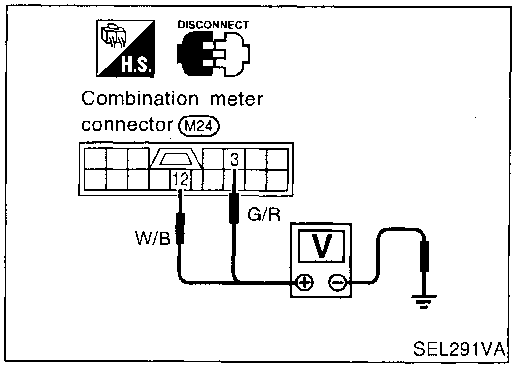
Symptom	Possible causes	Repair order
Speedometer and/or odo/trip meter indicate(s) malfunction in Diagnosis mode.	• Speedometer (Unified meter control unit)	• Replace speedometer (unified meter control unit).
Multiple meter/gauge indicate malfunction in Diagnosis mode.		
One of tachometer/fuel gauge/water 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-90. 2. If the resistance is OK, replace speedometer (unified meter control unit).

Symptom Chart 2 (No Malfunction is Indicated in Diagnosis Mode)

NBEL0046S1002

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-88.) 2. Check FPC connector. Refer to "Flexible Print Circuit (FPC)", EL-84. 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-84. 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-88.) INSPECTION/FUEL TANK GAUGE UNIT (Refer to EL-89.) INSPECTION/THERMAL TRANSMITTER (Refer to EL-89.) 2. Check FPC connector. Refer to "Flexible Print Circuit (FPC)", EL-84. 3. Replace speedometer (unified meter control unit).

Before starting trouble diagnoses below, perform PRELIMINARY CHECK, EL-85.



POWER SUPPLY AND GROUND CIRCUIT CHECK

=NBEL0046S07

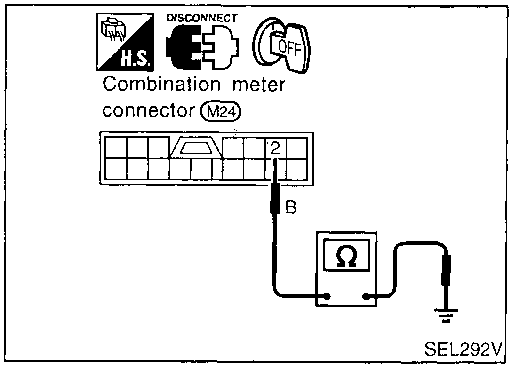
Power Supply Circuit Check

NBEL0046S0701

Terminals		Ignition switch position		
(+)	(−)	OFF	ACC	ON
3	Ground	Battery voltage	Battery voltage	Battery voltage
12	Ground	0V	0V	Battery voltage

If NG, check the following.

- 7.5A fuse [No. 24, located in fuse block (J/B)]
- 10A fuse [No. 8, located in fuse block (J/B)]
- Harness for open or short between fuse and combination meter



Ground Circuit Check

NBEL0046S0702

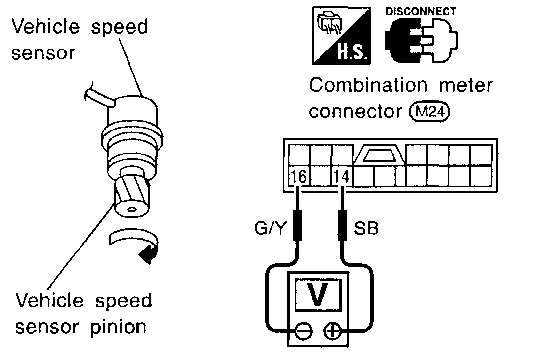
Terminals	Continuity
2 - Ground	Yes

INSPECTION/VEHICLE SPEED SENSOR

=NBEL0046S03

1	CHECK VEHICLE SPEED SENSOR OUTPUT

1. Remove vehicle speed sensor from transmission.
2. Check voltage between combination meter terminals 14 and 16 while quickly turning speed sensor pinion.



NOTE:
Vehicle speed sensor connector should remain connected.

SEL293V

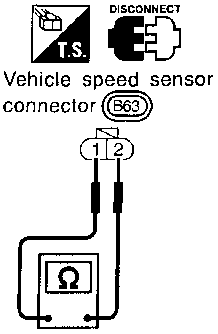
Voltage: Approx. 0.5V

OK or NG

OK	▶	Vehicle speed sensor is OK.
NG	▶	GO TO 2.

2	CHECK VEHICLE SPEED SENSOR

Check resistance between vehicle speed sensor terminals 1 and 2.



SEL344V

Resistance: Approx. 250Ω

OK or NG

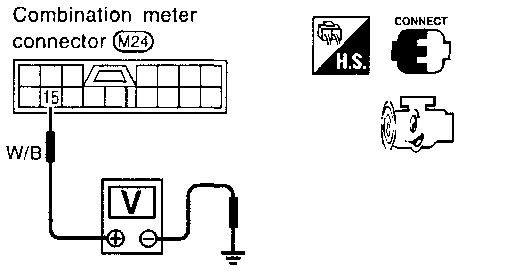
OK	▶	Check harness or connector between speedometer and vehicle speed sensor.
NG	▶	Replace vehicle speed sensor.

INSPECTION/ENGINE REVOLUTION SIGNAL

NBEL0046S02

1	CHECK ECM OUTPUT

1. Start engine.
2. Check voltage between combination meter terminals 15 and ground at idle and 2,000 rpm.



SEL294V

Higher rpm = Higher voltage
Lower rpm = Lower voltage
Voltage should change with rpm.

OK or NG

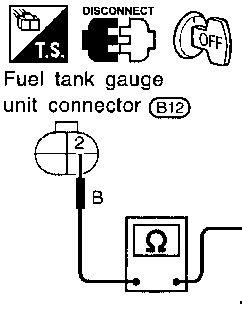
OK	▶	Engine revolution signal is OK.
NG	▶	Harness for open or short between ECM and combination meter

INSPECTION/FUEL TANK GAUGE UNIT

=NBEL0046S08

1	CHECK GROUND CIRCUIT FOR FUEL TANK GAUGE UNIT

Check harness continuity between fuel tank gauge unit terminal 2 and ground.



MEL839G

Does continuity exist?

Yes	▶	GO TO 2.
No	▶	Repair harness or connector.

2	CHECK GAUGE UNITS

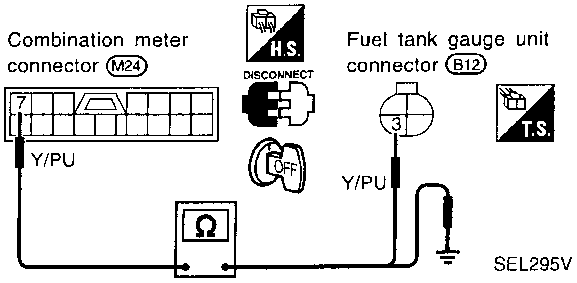
Refer to "FUEL TANK GAUGE UNIT CHECK" (EL-90).

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace fuel tank gauge unit.

3	CHECK HARNESS FOR OPEN OR SHORT

1. Disconnect combination meter connector and fuel tank gauge unit connector.
2. Check continuity between combination meter terminal 7 and fuel tank gauge unit terminal 3.
3. Check continuity between combination meter terminal 7 and ground.



SEL295V

Continuity:

Combination meter terminal 7 and fuel tank gauge unit terminal 3

Yes

Combination meter terminal 7 and ground

No

OK or NG

OK	▶	Fuel tank gauge unit is OK.
NG	▶	Repair harness or connector.

INSPECTION/THERMAL TRANSMITTER

NBEL0046S09

1	CHECK THERMAL TRANSMITTER

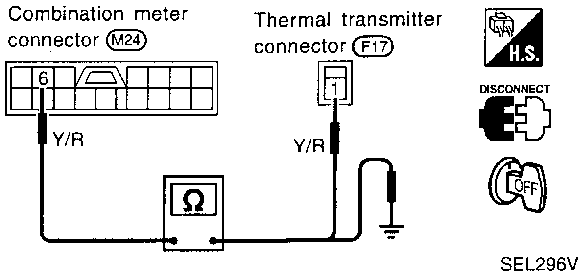
Refer to "THERMAL TRANSMITTER CHECK" (EL-91).

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace.

2	CHECK HARNESS FOR OPEN OR SHORT

1. Disconnect combination meter connector and thermal transmitter connector.
2. Check continuity between combination meter terminal 6 and thermal transmitter terminal 1.
3. Check continuity between combination meter terminal 6 and ground.



SEL296V

Continuity:

Combination meter terminal 6 and thermal transmitter terminal 1

Yes

Combination meter terminal 6 and ground

No

OK or NG

OK	▶	Thermal transmitter is OK.
NG	▶	Repair harness or connector.

Electrical Components Inspection

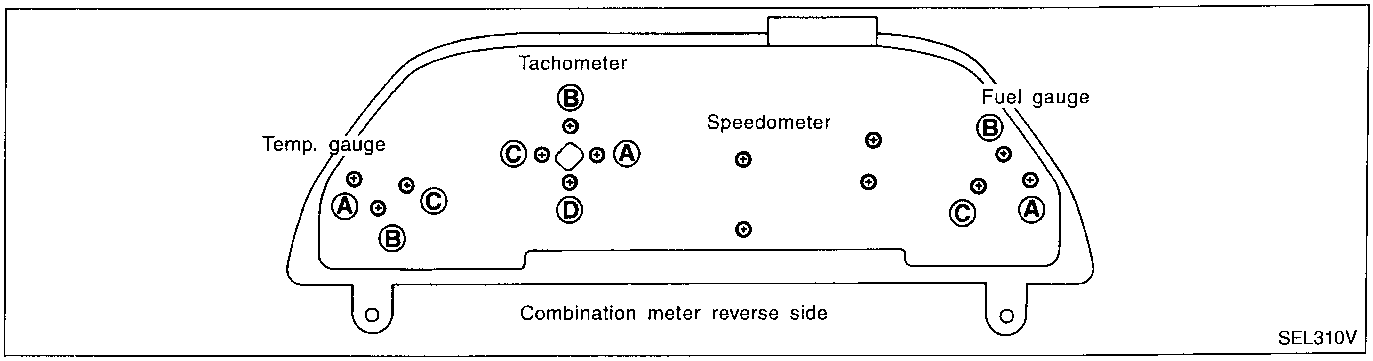
NBEL0047

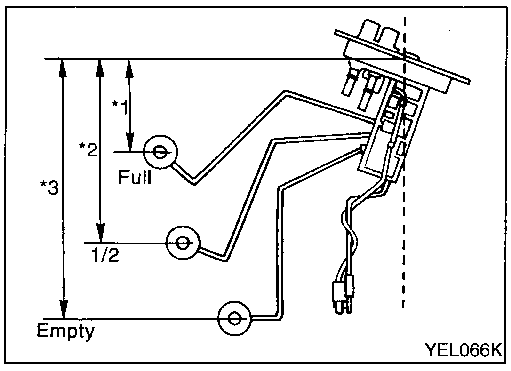
METER/GAUGE RESISTANCE CHECK

NBEL0047S04

1. Disconnect FPC connector. Refer to "Flexible Print Circuit (FPC)" (EL-84).
2. Check resistance between installation screws of meter/gauge.

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





FUEL TANK GAUGE UNIT CHECK

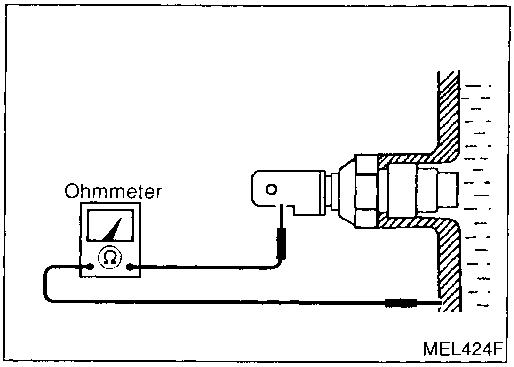
NBEI 0047S01

- For removal, refer to FE section.

Check the resistance between terminals 3 and 2.

Ohmmeter (+)	Ohmmeter (−)		Float position mm (in)		Resistance value (Ω)
3	2	*1	Full	95 (3.74)	Approx. 4 - 6
		*2	1/2	184 (7.24)	31 - 34
		*3	Empty	265 (10.43)	80 - 83

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

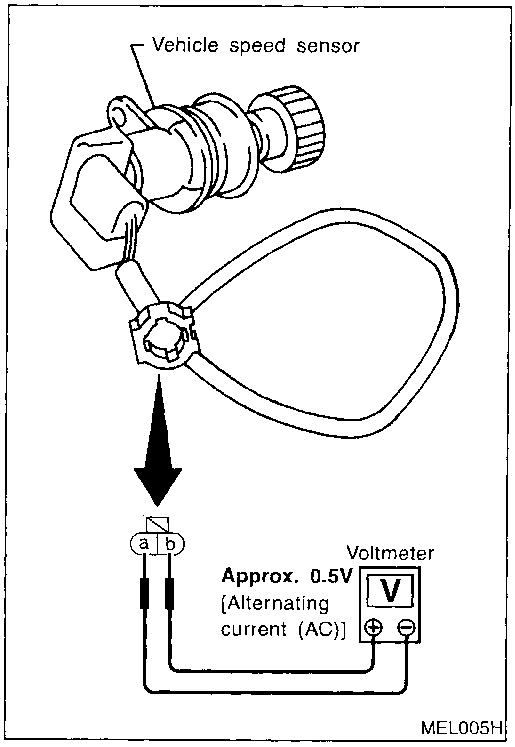


THERMAL TRANSMITTER CHECK

NBEL0047S02

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

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



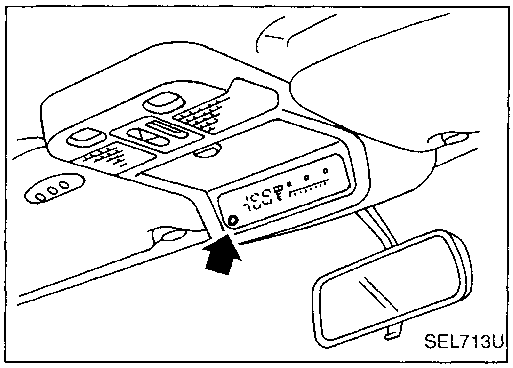
VEHICLE SPEED SENSOR SIGNAL CHECK

NBEL0047S03

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

System Description

NBEL0153



This unit displays following items:

- Earth magnetism and heading direction of vehicle.
- Outside air temperature.
- Caution for frozen road surfaces.

OUTSIDE TEMPERATURE DISPLAY

NBEL0153S01

Push the switch when the ignition key is in the "ACC" or "ON" position. The outside temperature will be displayed in "°F".

- Selecting the indication range
  Push the switch to change from "°F" to "°C".
- When the outside temperature drops below freezing point, ICE is displayed on the unit.
- When the outside temperature is between 55°C (130°F) and 70°C (158°F), the display shows 55°C (130°F).
- When the outside temperature is lower than –30°C (–20°F) or higher than 70°C (158°F), the display shows only "---" though it is operating. This is not a problem.
- The indicated temperature on the thermometer is not readily affected by engine heat. It changes only when one of the following conditions is present.

a) The temperature detected by the ambient air temperature sensor is lower than the indicated temperature on the thermometer.

b) The difference in temperature detected during a period of 40 seconds is less than 1°C (1.8°F) when vehicle speed has been greater than 24 km/h (15 MPH) for more than 100 seconds.
(This is to prevent the indicated temperature from being affected by engine heat or cooling fan operation during low-speed driving.)

c) The ignition key has been turned to the "OFF" position for more than 4 hours. (The engine is cold.)

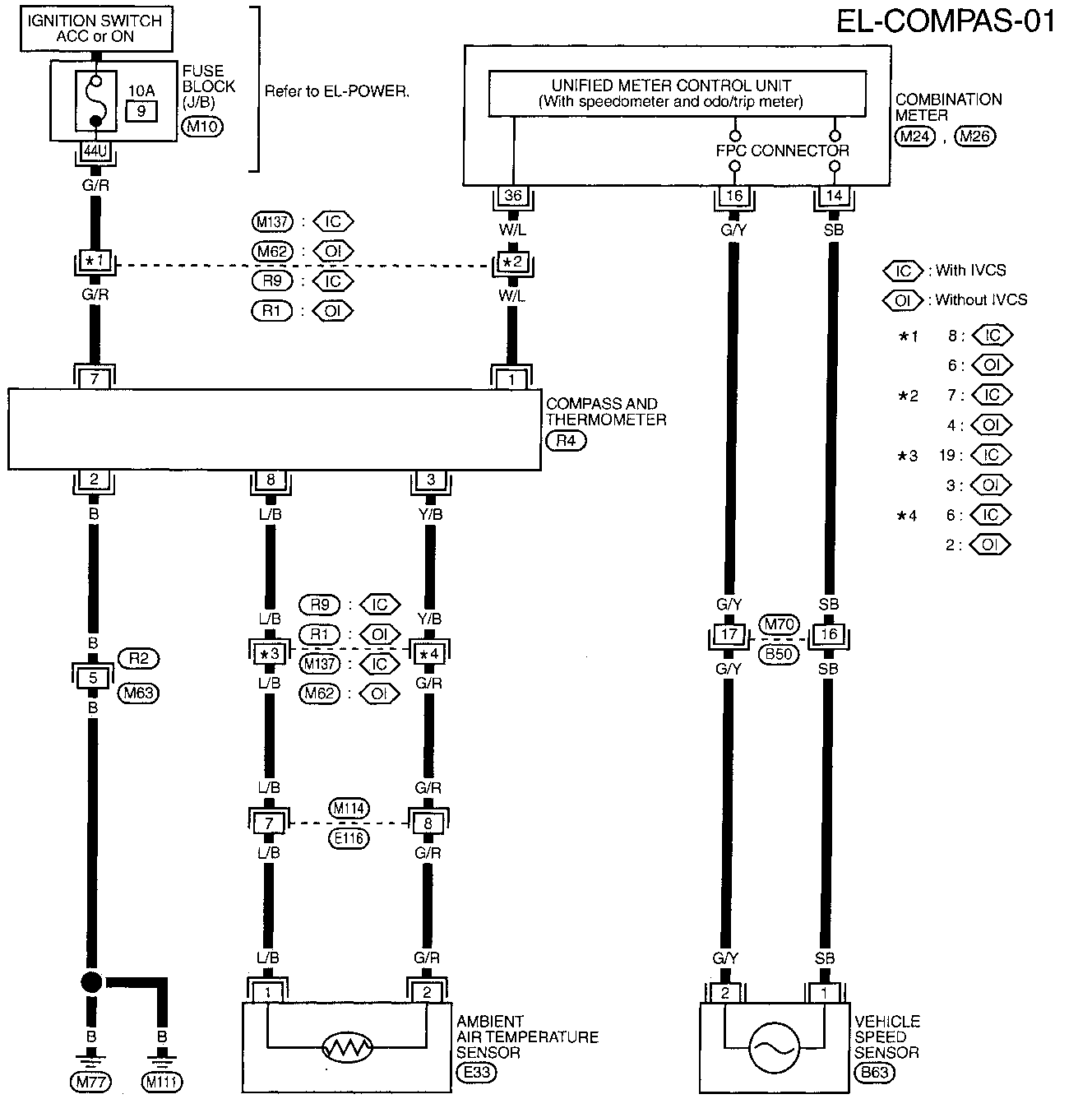
DIRECTION DISPLAY

NBEL0153S02

Push the switch when the ignition key is in the "ACC" or "ON" position. The direction will be displayed.

Wiring Diagram — COMPAS —

NBEL0154



MEL771J

Trouble Diagnoses

PRELIMINARY CHECK FOR THERMOMETER

NBEL0048

NBEL0048S02

1	COOL DOWN CHECK
1. Turn the ignition key switch to the "ACC" position. 2. Cool down the ambient air temperature sensor with water or ice, so that the indicated temperature falls. **Does the indicated temperature fall?**	
Yes ▶	GO TO 2.
No ▶	The system is malfunctioning. Check the system following "INSPECTION/ COMPASS AND THERMOMETER".

2	WARM UP CHECK
1. Leave the vehicle for 10 minutes, so that the indicated temperature rises. 2. With the ignition key in the "ACC" position, disconnect and reconnect the ambient air temperature sensor connector. **Does the indicated temperature rise?**	
Yes ▶	The system is OK.
No ▶	The system is malfunctioning. Check the system following "INSPECTION/ COMPASS AND THERMOMETER".

NOTE:

- When the outside temperature is between 55°C (130°F) and 70°C (158°F), the display shows 55°C (130°F). When the outside temperature is lower than −30°C (−20°F) or higher than 70°C (158°F), the display shows only "---".
- The indicated temperature on the thermometer is not readily affected by engine heat. It changes only when one of the following conditions is present.

a) The temperature detected by the ambient air temperature sensor is lower than the indicated temperature on the thermometer.

b) The difference in temperature detected during a period of 40 seconds is less than 1°C (1.8°F) when vehicle speed has been greater than 24 km/h (15 MPH) for more than 100 seconds. (This is to prevent the indicated temperature from being affected by engine heat or cooling fan operation during low-speed driving.)

c) The ignition key has been turned to the "OFF" position for more than 4 hours. (The engine is cold.)

INSPECTION/COMPASS AND THERMOMETER

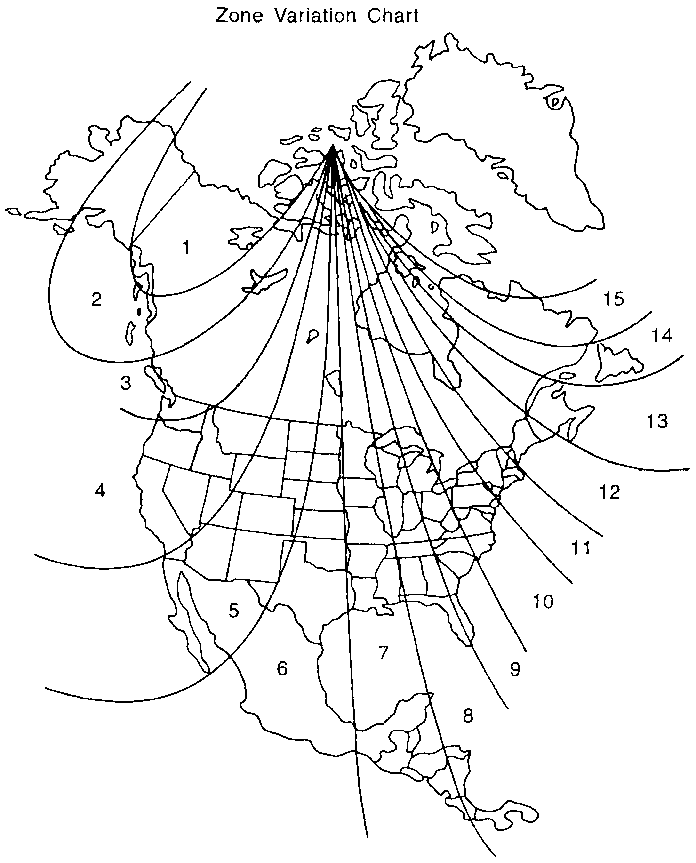
NBEL0048S01

Symptom	Possible causes	Repair order
No display at all	1. 10A fuse 2. Ground circuit 3. Compass and thermometer	1. Check 10A fuse [No. 9, located in fuse block (J/B)]. Turn the ignition switch ON and verify that battery positive voltage is at terminal 7 of compass and thermometer. 2. Check ground circuit for compass and thermometer. 3. Replace compass and thermometer.
Forward direction indication slips off the mark or incorrect.	1. In manual correction mode (Bar and display vanish.) 2. Zone variation change is not done.	1. Drive the vehicle and turn at an angle of 90°. 2. Perform the zone variation change.
Compass reading remains unchanged.	1. Vehicle speed sensor is not entered. 2. Compass and thermometer	1. Check harness for open or short between combination meter terminal 36 and compass and thermometer terminal 1. 2. Replace compass and thermometer.
Displays wrong temperature when ambient temperature is between −30°C (−20°F) and 55°C (130°F). (See NOTE above.)	1. Check operation 2. Ambient air temperature sensor circuit 3. Vehicle speed sensor is not entered. 4. Ambient air temperature sensor 5. Compass and thermometer	1. Perform preliminary check shown above. 2. Check harness for open or short between ambient air temperature sensor and compass and thermometer. 3. Check harness for open or short between combination meter terminal 36 and compass and thermometer terminal 1. 4. Replace ambient air temperature sensor. 5. Replace compass and thermometer.

Calibration Procedure for Compass

NBFL0155

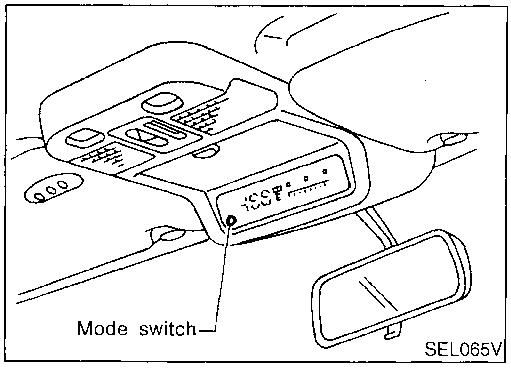
The difference between magnetic North and geographical North can sometimes be great enough to cause false compass readings. In order for the compass to operate accurately in a particular zone, it must be calibrated using the following procedure.



1. Determine your location on the zone map. Record your zone number.
2. Turn the ignition switch to ACC or ON position.
3. Push the "Mode" switch continuously for five seconds until the current zone entry number is displayed.
4. Press the "Mode" switch repeatedly until the desired zone number is displayed.

Once the desired zone number is displayed, stop pressing the "Mode" switch and the display will show compass direction after a few seconds.

SEL738UA



CORRECTION FUNCTIONS OF COMPASS

NBEL0155S01

The direction display is equipped with automatic correction function. If the direction is not shown correctly, carry out initial correction.

INITIAL CORRECTION PROCEDURE FOR COMPASS

NBEL0155S02

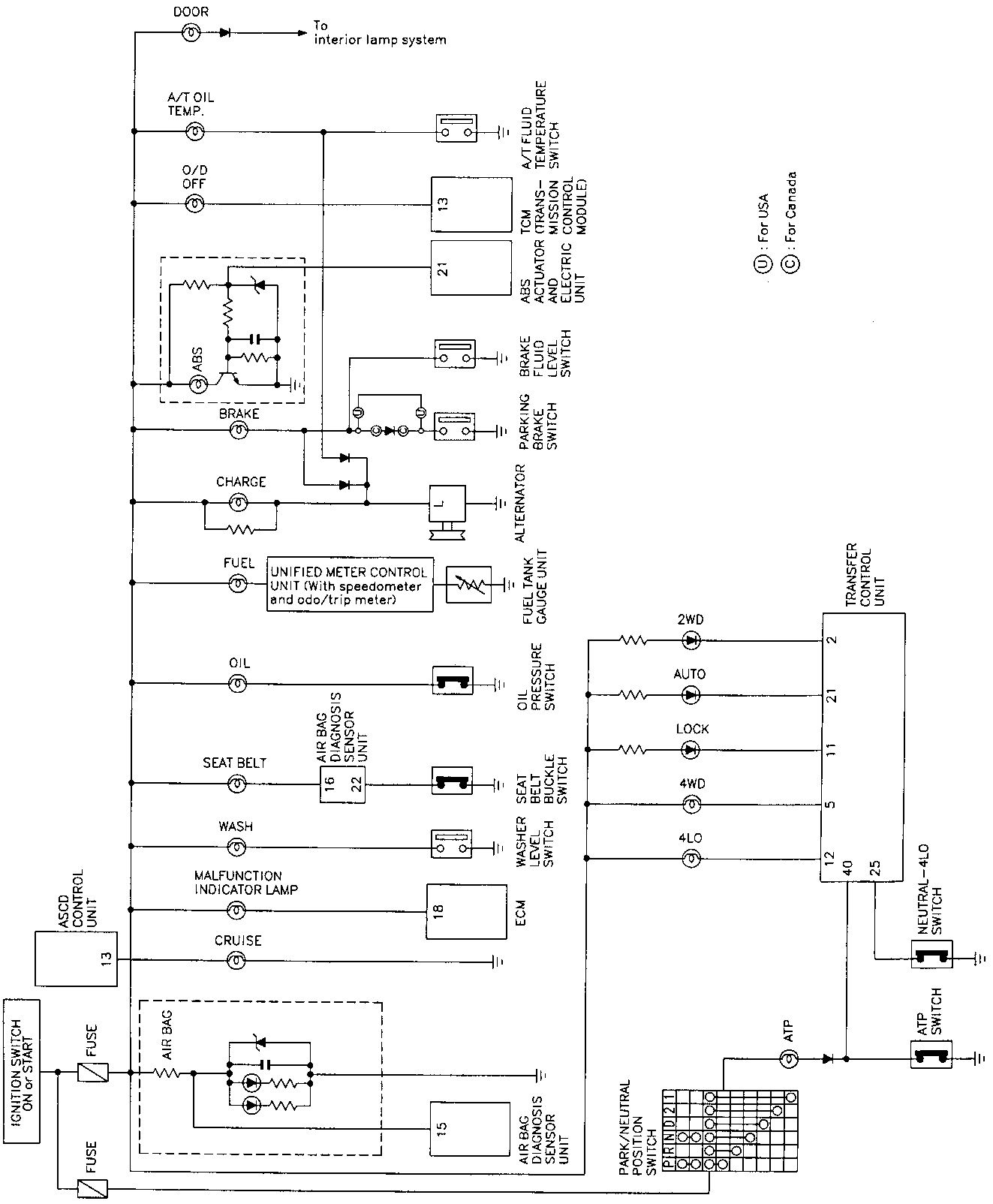
1. Pushing the "Mode" switch for about 10 seconds will enter the initial correction mode. The direction bar starts blinking.
2. Turn the vehicle slowly in an open, safe place. The initial correction is completed in one or two turns.

NOTE:

In places where the terrestrial magnetism is extremely disturbed, the initial correction may start automatically.

Schematic

NBEL0049

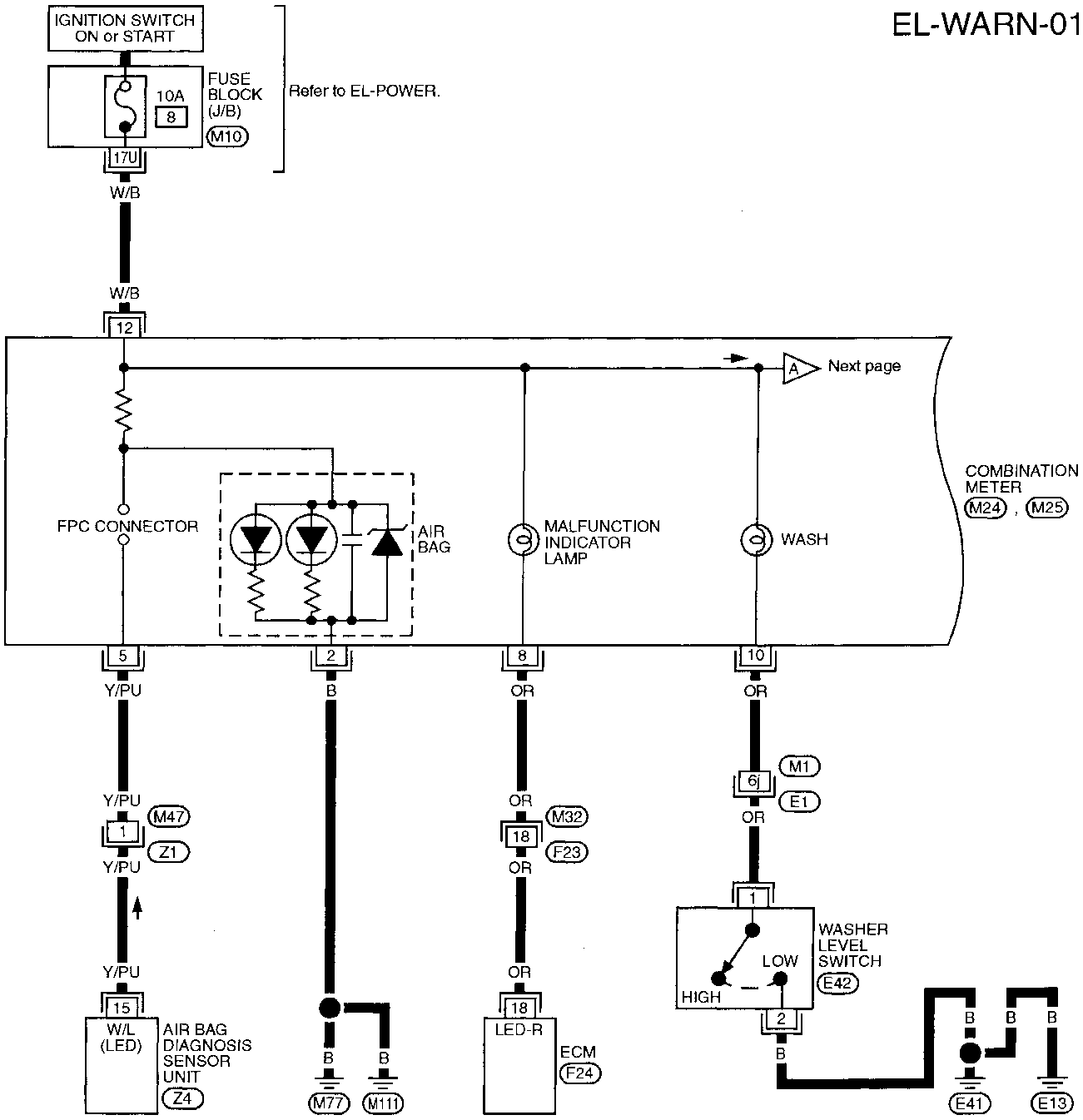


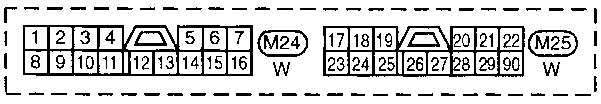
MEL772J

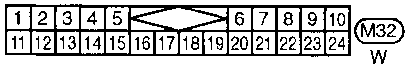
Wiring Diagram — WARN —

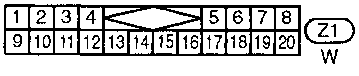
NBEL0050

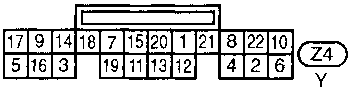
EL-WARN-01







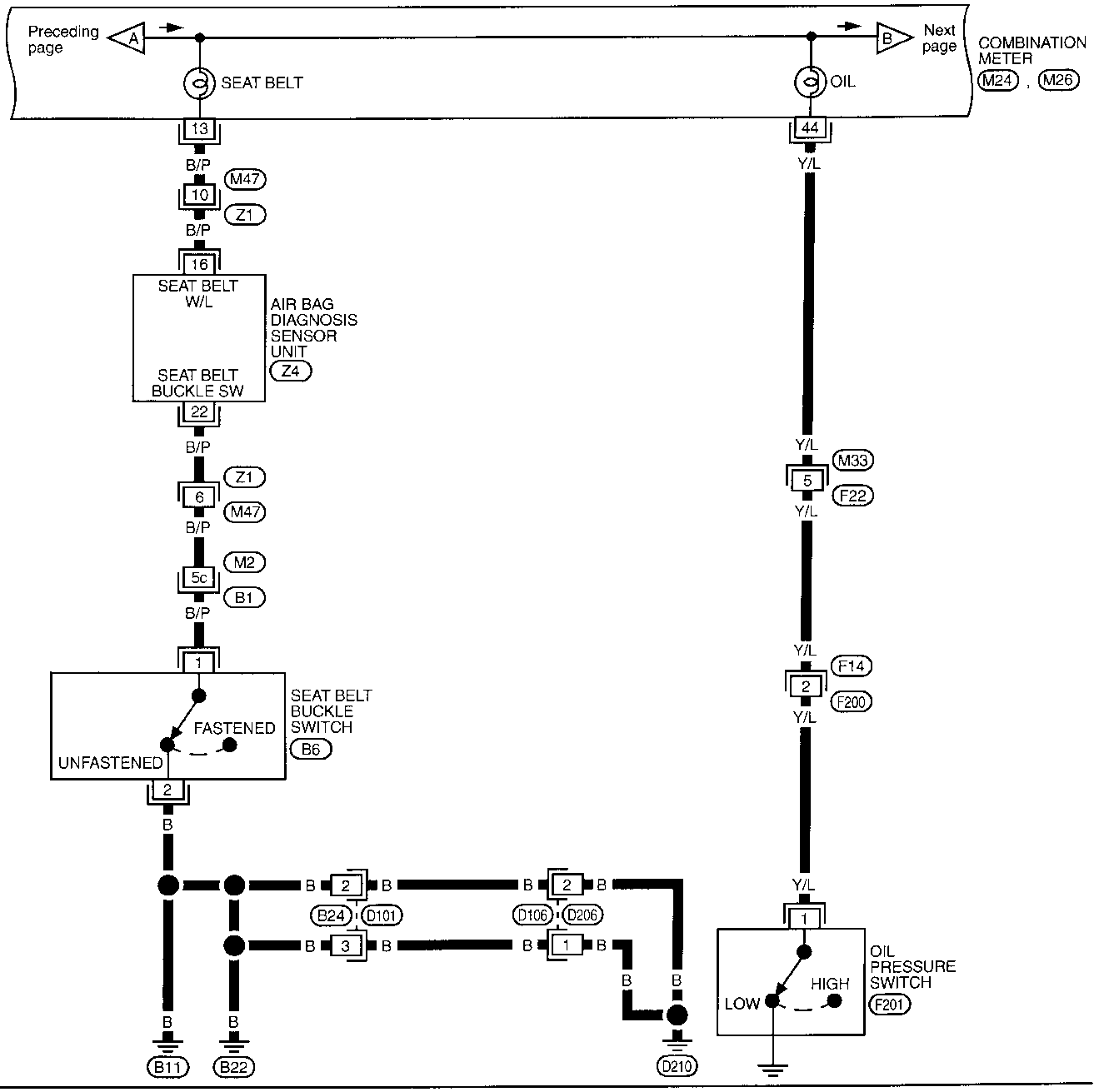


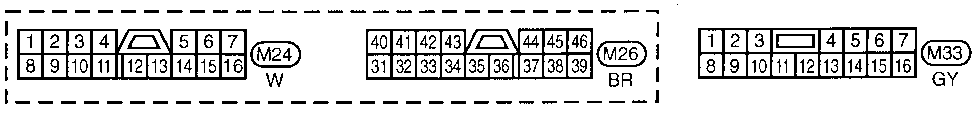


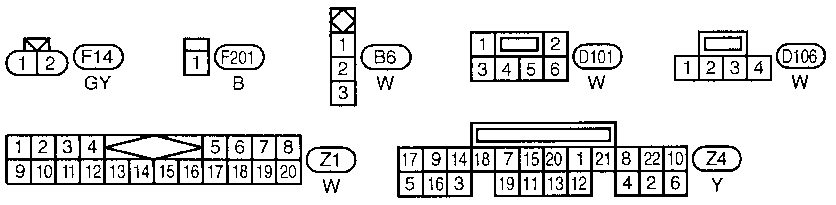
Refer to last page (Foldout page).
M1 , E1
M10
F24

MEL773J

EL-WARN-02

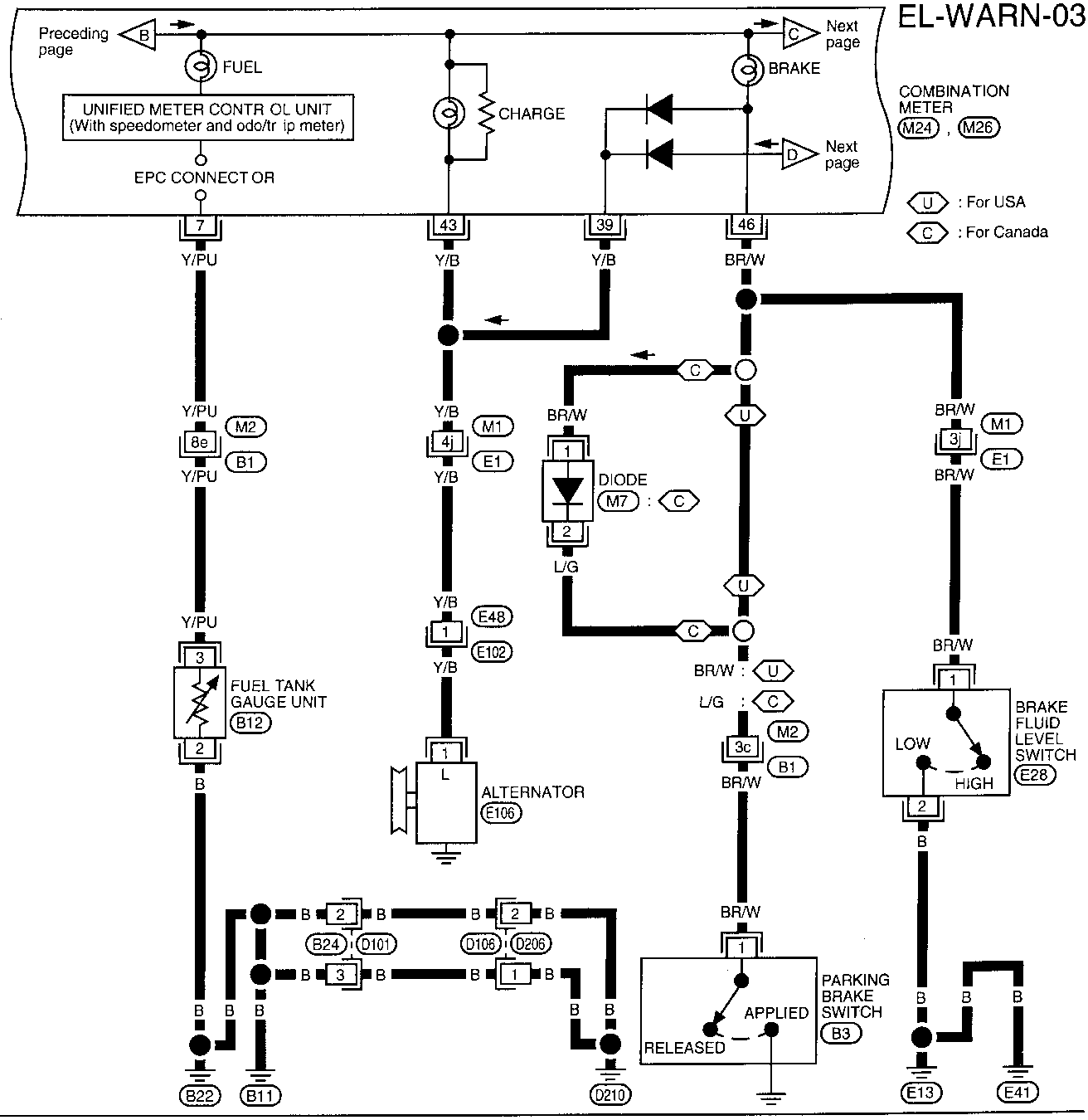


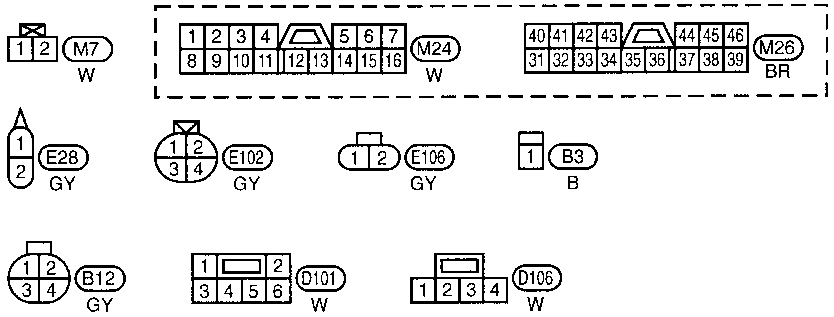




Refer to last page (Foldout page).
M2 , B1

MEL774J





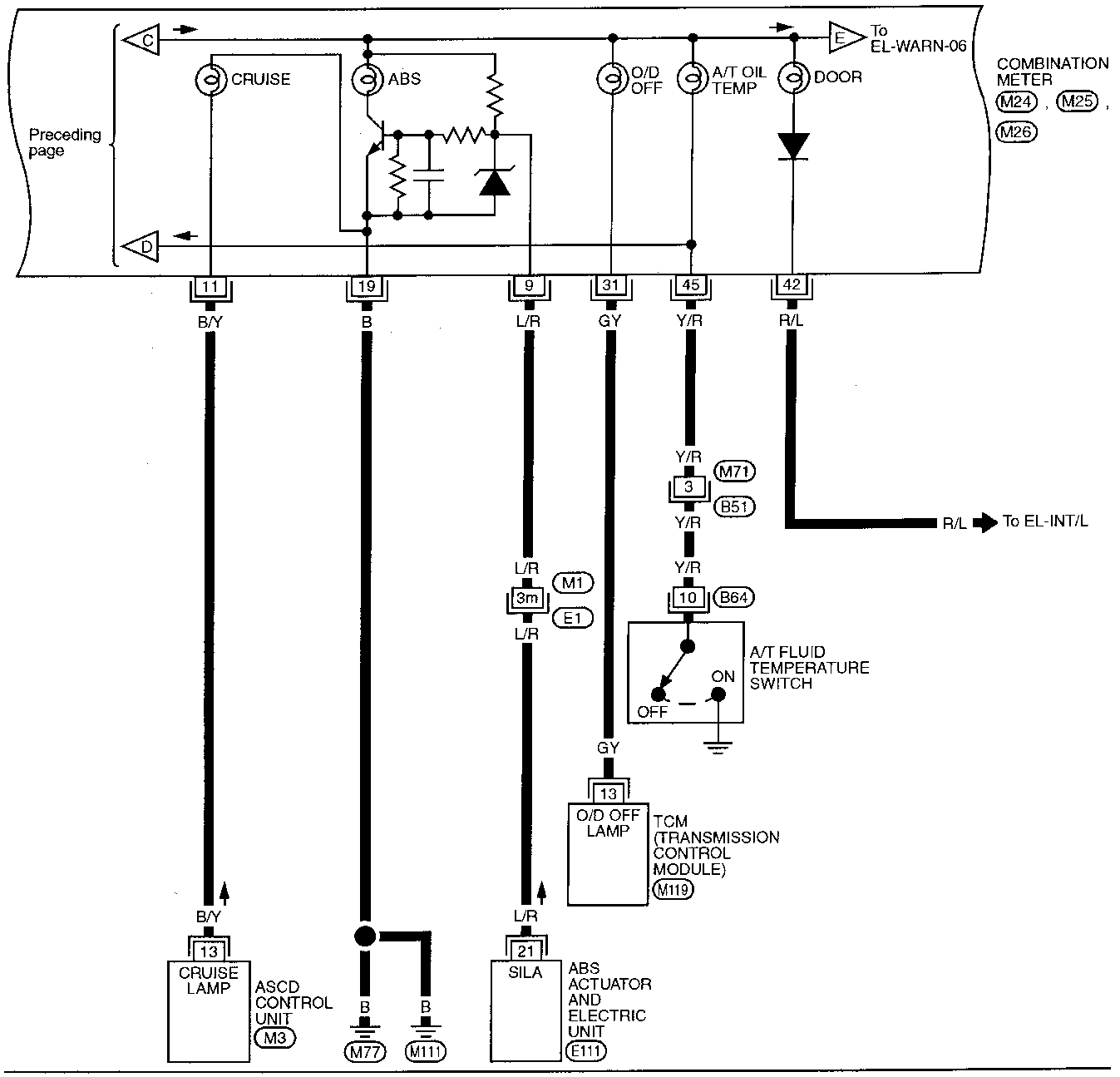
Refer to last page (Foldout page).

M1 , E1

M2 , B1

MEL775J

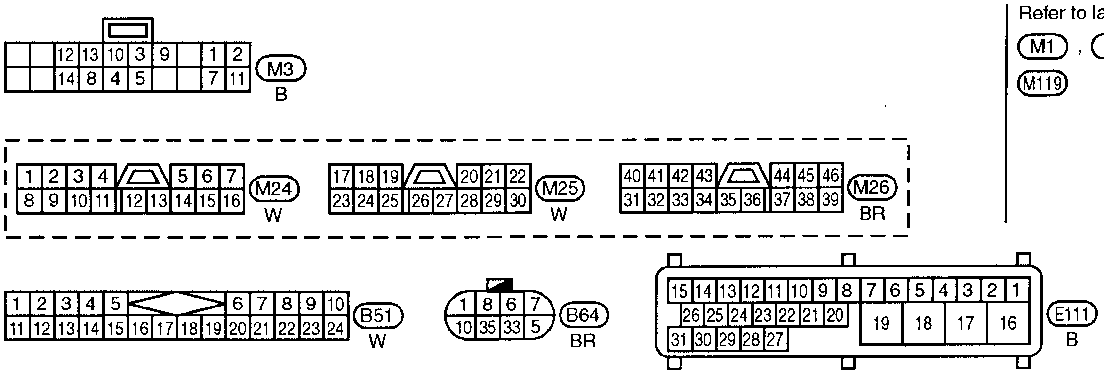
EL-WARN-04



Refer to last page (Foldout page).

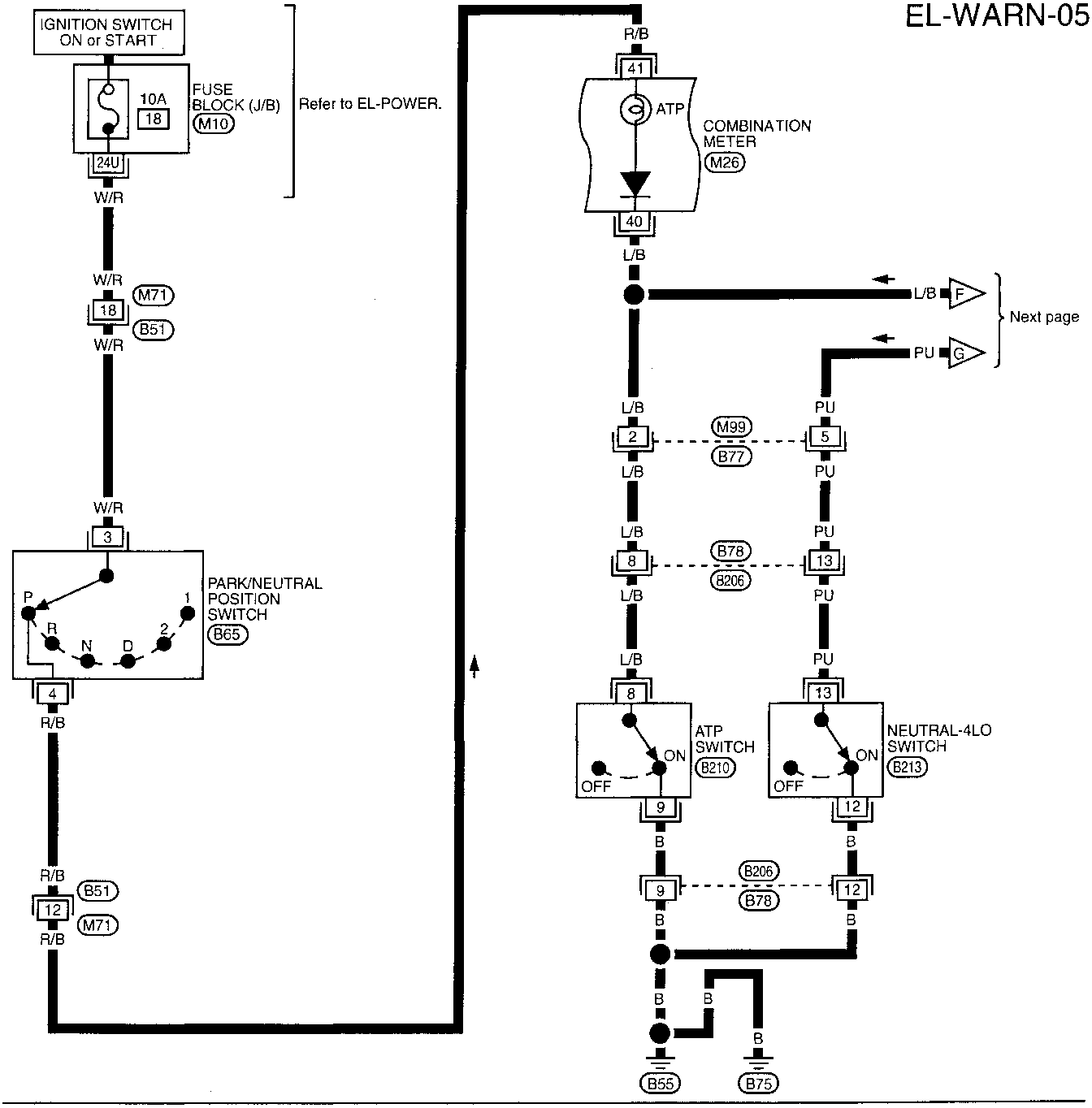
M1 , E1

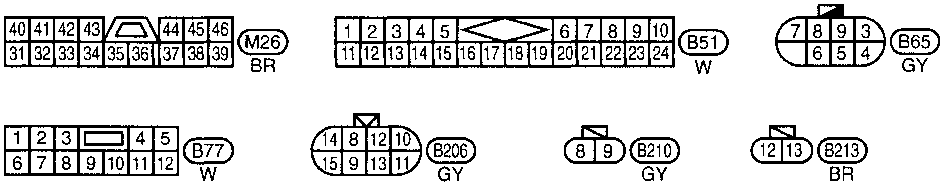
M119



MEL776J

EL-WARN-05

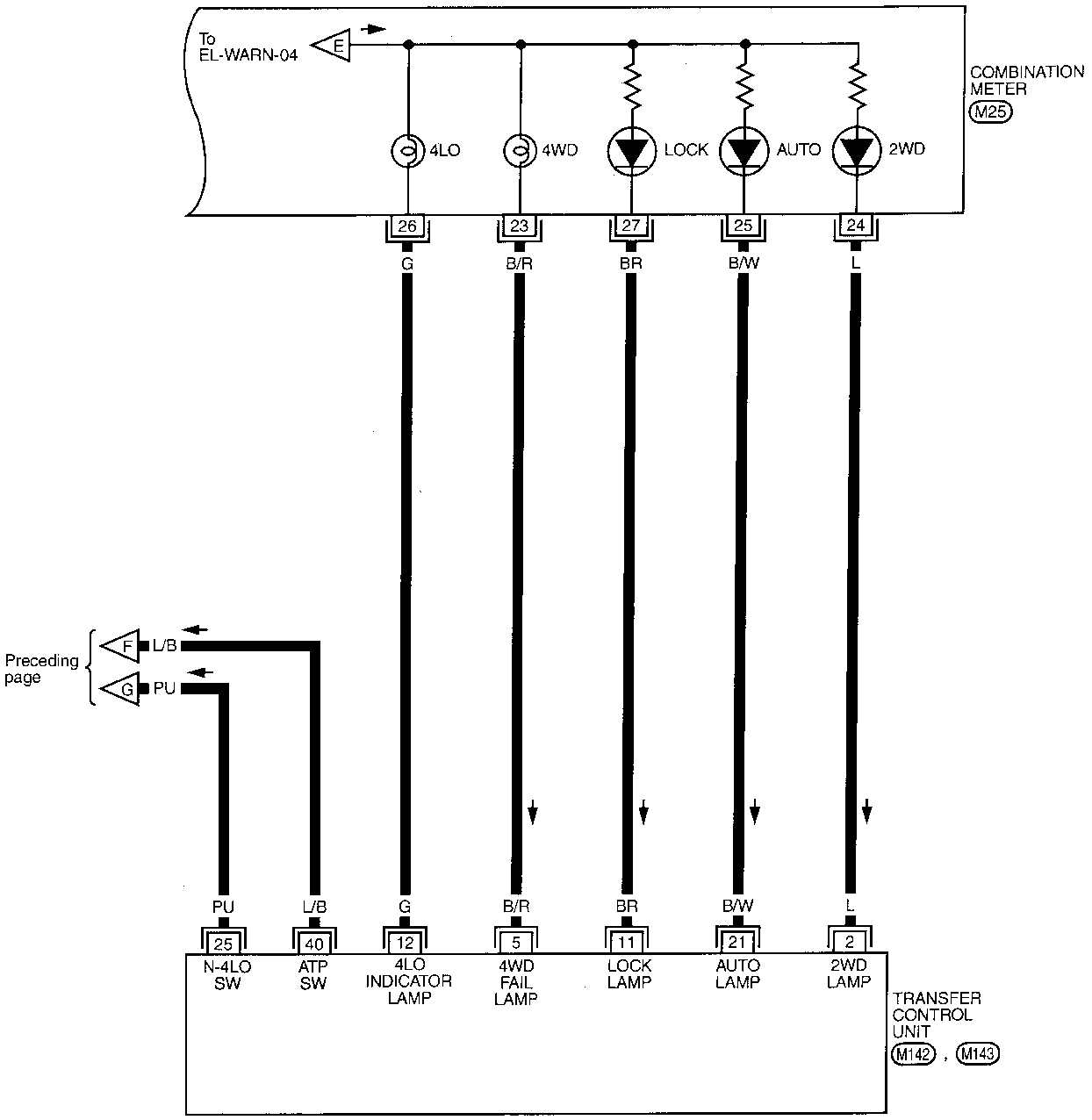




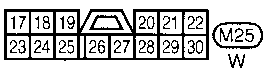
Refer to last page (Foldout page).
M10

MEL777J

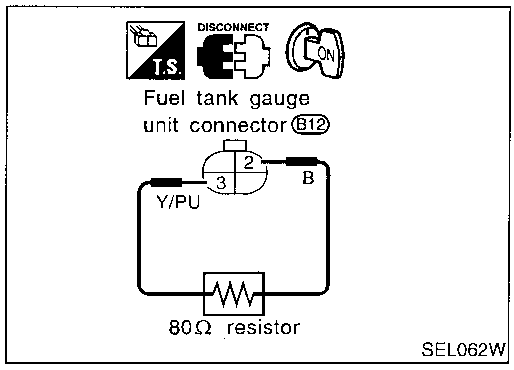
EL-WARN-06



Refer to last page (Foldout page).
M142 , M143



MEL778J



Fuel Warning Lamp Sensor Check

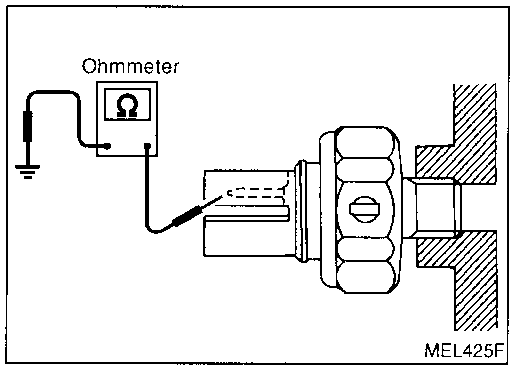
NBEL0166

1. Turn ignition switch "OFF".
2. Disconnect fuel tank gauge unit harness connector B12.
3. Connect a resistor (80Ω) between fuel tank gauge unit harness connector terminals 2 and 3.
4. Turn ignition switch "ON".

The fuel warning lamp should come on.

NOTE:

ECM might store the 1st trip DTC P0180 during this inspection. If the DTC is stored in ECM memory, erase the DTC after reconnecting fuel tank gauge unit harness connector.
Refer to "HOW TO ERASE EMISSION-RELATED DIAGNOSTIC INFORMATION" "Emission-related Diagnostic Information" "ON BOARD DIAGNOSTIC SYSTEM DESCRIPTION" in EC section.



Electrical Components Inspection

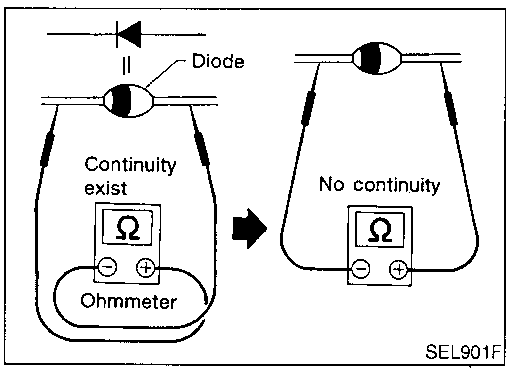
NBEL0051

OIL PRESSURE SWITCH CHECK

NBEL0051S02

	Oil pressure kPa (kg/cm², 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

NBEL0051S03

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

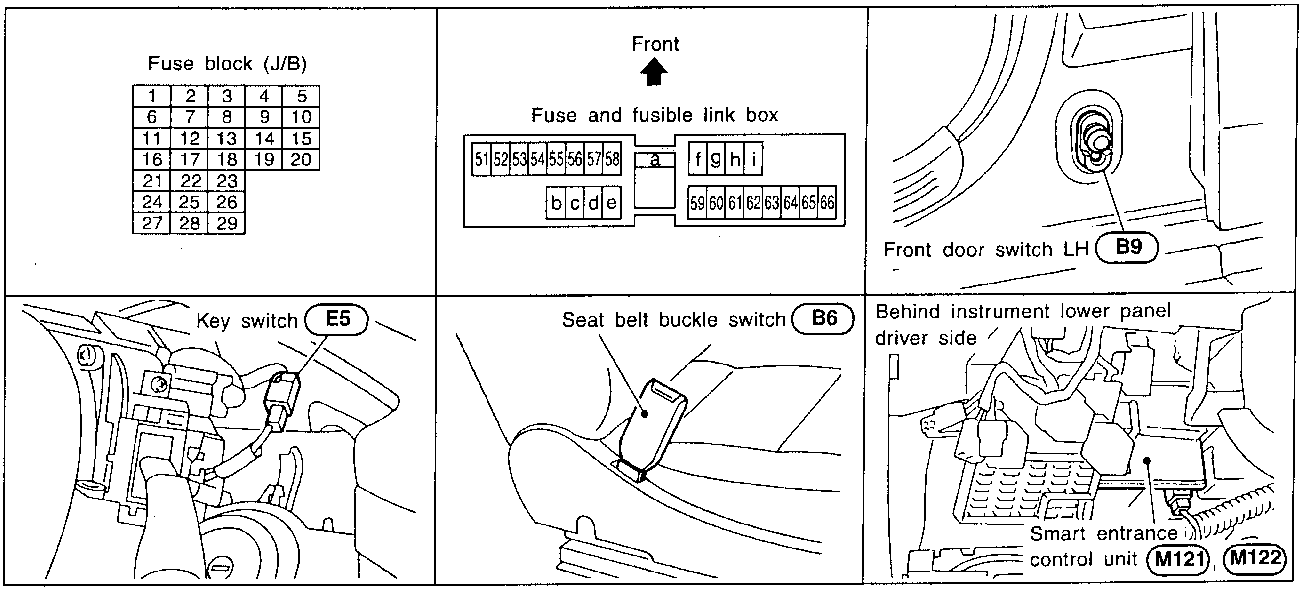
NOTE:

Specification may vary depending on the type of tester. Before performing this inspection, be sure to refer to the instruction manual for the tester to be used.

- Diodes for warning lamps are built into the combination meter printed circuit.
- For location of diodes, refer to Combination Meter, EL-80.

Component Parts and Harness Connector Location

NBEL0052



SEL046W

System Description

NBEL0053

The warning chime is controlled by the smart entrance control unit.
The warning chime is located in the smart entrance control unit.
Power is supplied at all times

- through 7.5A fuse [No. 24, located in the fuse block (J/B)]
- to key switch terminal 2.

Power is supplied at all times

- through 10A fuse [No. 61, located in the fuse block (J/B)]
- to tail lamp relay terminals 2 and 3.

Power is supplied at all times

- through 40A fusible link (letter **f**, located in the fuse and fusible link box).
- to smart entrance control unit terminal 11.

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

- through 7.5A fuse [No. 11, located in the fuse block (J/B)]
- to smart entrance control unit terminal 33.

Ground is supplied to smart entrance control unit terminal 16 through body grounds M77 and M111.

IGNITION KEY WARNING CHIME

NBEL0053S01

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

- from key switch terminal 1
- to smart entrance control unit terminal 32.

Ground is supplied

- from front door switch LH terminal 1
- to smart entrance control unit terminal 29.

Front door switch LH terminal 2 is grounded through body grounds B11, B22 and D210.

LIGHT WARNING CHIME

NBEL0053S02

With ignition switch OFF or ACC, driver's door open, warning chime will sound. [Except when headlamp battery saver control operates (for 45 seconds after ignition switch is turned to OFF or ACC position) and headlamps do not illuminate.] A battery positive voltage is supplied.

- from tail lamp relay terminal 5

- to smart entrance control unit terminal 34.

Ground is supplied

- from front door switch LH terminal 1
- to smart entrance control unit terminal 29.

Front door switch LH terminal 2 is grounded through body grounds B11, B22 and D210.

SEAT BELT WARNING CHIME

NBEL0053S03

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

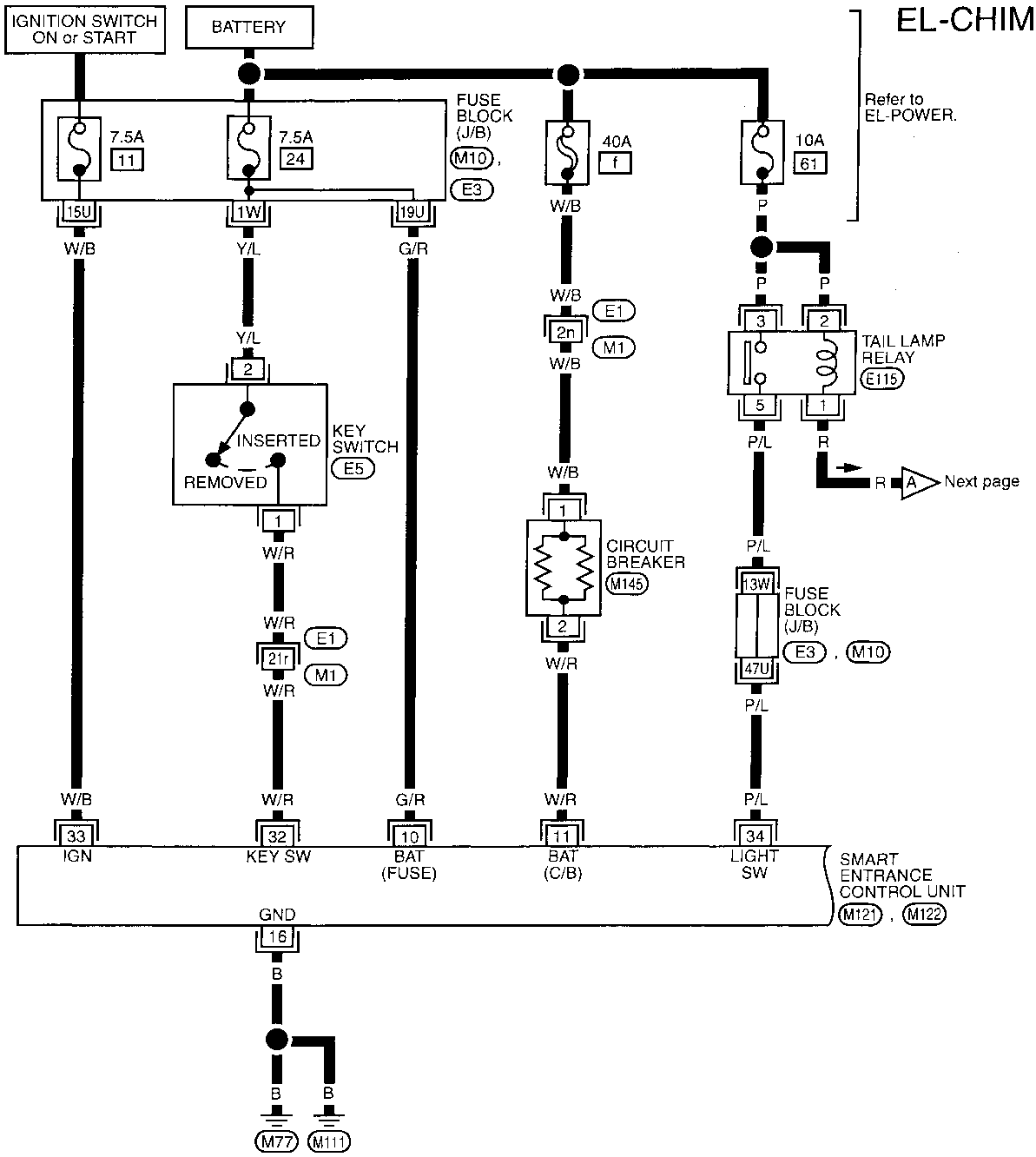
Ground is supplied

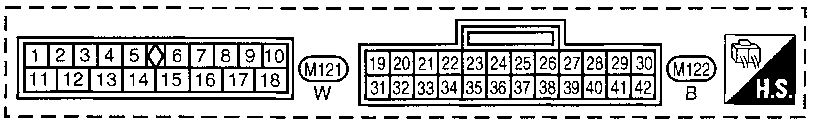
- from seat belt switch terminal 1
- to smart entrance control unit terminal 22.

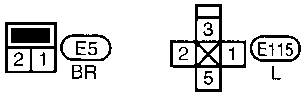
Seat belt switch terminal 2 is grounded through body grounds B11, B22 and D210.

Wiring Diagram — CHIME —

NBEL0054







Refer to last page (Foldout page).

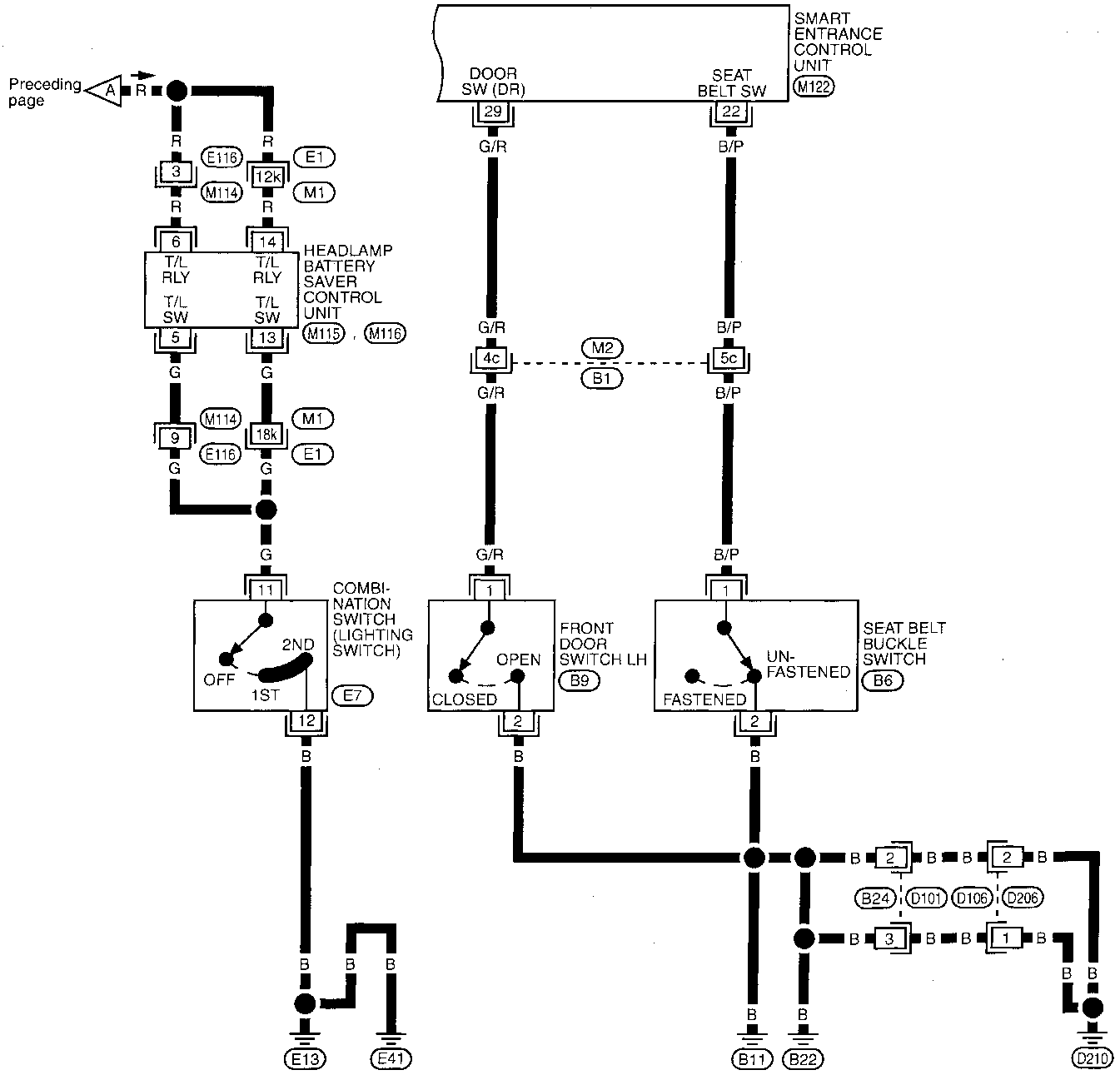
M1, E1

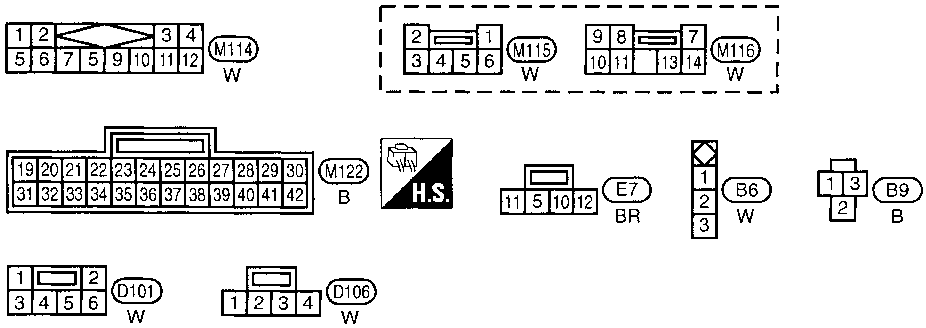
M10

E3

MEL779J

EL-CHIME-02





Refer to last page (Foldout page).

M1, E1

M2, B1

MEL780J

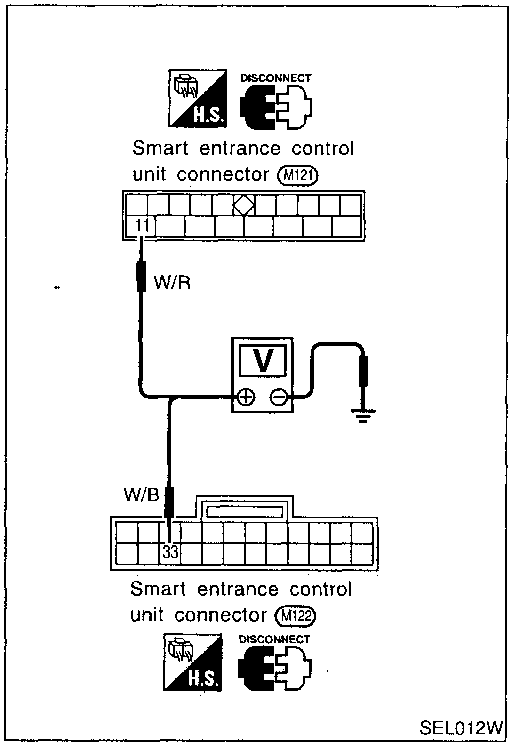
Trouble Diagnoses

NBEL0055

SYMPTOM CHART

NBEL0055S01

REFERENCE PAGE (EL-)	108	110	111	112	112
SYMPTOM	POWER SUPPLY AND GROUND CIRCUIT CHECK	LIGHTING SWITCH INPUT SIGNAL CHECK	KEY SWITCH (INSERT) CHECK	SEAT BELT BUCKLE SWITCH CHECK	DRIVER SIDE DOOR SWITCH CHECK
Light warning chime does not activate.	X	X			X
Ignition key warning chime does not activate.	X		X		X
Seat belt warning chime does not activate.	X			X	
All warning chimes do not activate.	X				X



SEL012W

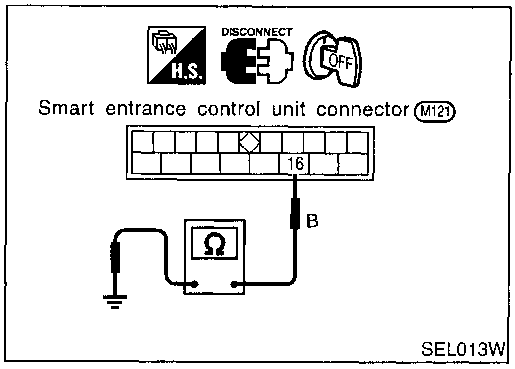
POWER SUPPLY AND GROUND CIRCUIT CHECK

NBEL0055S02

Power Supply Circuit Check

NBEL0055S0201

Terminals		Ignition switch position		
(+)	(−)	OFF	ACC	ON
11	Ground	Battery voltage	Battery voltage	Battery voltage
33	Ground	0V	0V	Battery voltage



Ground Circuit Check

NBEL0055S0202

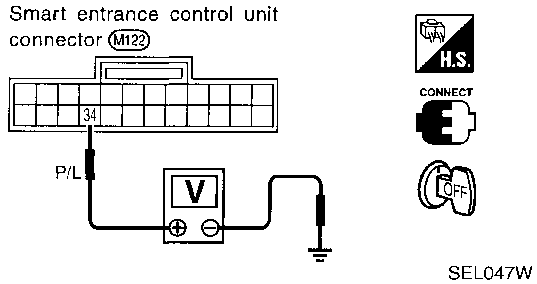
Terminals	Continuity
16 - Ground	Yes

LIGHTING SWITCH INPUT SIGNAL CHECK

=NBEL0055S03

1 CHECK LIGHTING SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit terminal 34 and ground.



SEL047W

Voltage [V]:

Condition of lighting switch: 1ST or 2ND

Approx. 12

Condition of lighting switch: OFF

0

OK or NG

OK	▶	Lighting switch is OK.
NG	▶	GO TO 2.

2 CHECK FUSE

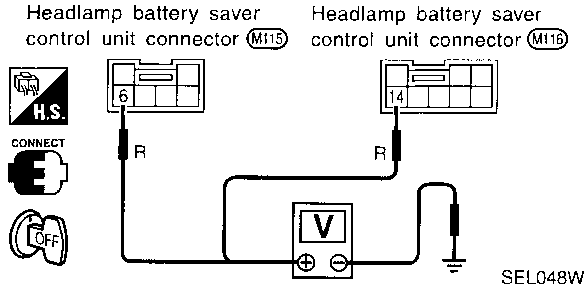
Is 10A fuse (No. 61, located in the fuse and fusible link box) OK?

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace fuse.

3 CHECK TAIL LAMP RELAY CIRCUIT

Check voltage between headlamp battery saver control unit terminal 6, 14 and ground.



SEL048W

Voltage [V]:

Condition of lighting switch: 1ST or 2ND

0

Condition of lighting switch: OFF

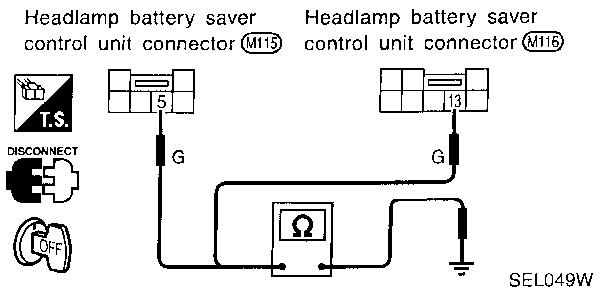
Approx. 12

OK or NG

OK	▶	GO TO 4.
NG	▶	**Check the following.** • Tail lamp relay • Harness for open or short between headlamp battery saver control unit and tail lamp relay

4 CHECK TAIL LAMP SWITCH GROUND CIRCUIT

1. Disconnect headlamp battery saver control unit connector.
2. Check continuity between headlamp battery saver control unit terminal 5, 13 and ground.



SEL049W

Continuity:

Condition of lighting switch: 1ST or 2ND

Yes

Condition of lighting switch: OFF

No

OK or NG

OK	▶	**Check the following.** • Harness for open or short between smart entrance control unit and tail lamp relay
NG	▶	**Check the following.** • Lighting switch • Harness for open or short between headlamp battery saver control unit terminal 5, 13 and lighting switch terminal 11 • Harness between lighting switch terminal 12 and ground

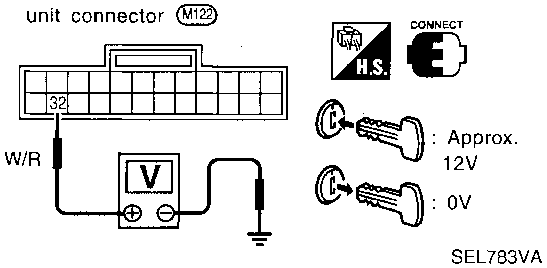
KEY SWITCH (INSERT) CHECK

=NBEL0055S04

1	CHECK KEY SWITCH INPUT SIGNAL

Check voltage between control unit terminal 32 and ground.

Smart entrance control unit connector (M122)



SEL783VA

Voltage [V]:

Condition of key switch: Key is inserted.

Approx. 12

Condition of key switch: Key is removed.

0

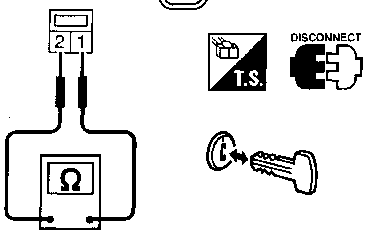
OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH (INSERT)

Check continuity between terminals 1 and 2.

Key switch connector (E5)



SEL784VA

Continuity:

Condition of key switch: Key is inserted.

Yes

Condition of key switch: Key is removed.

No

OK or NG

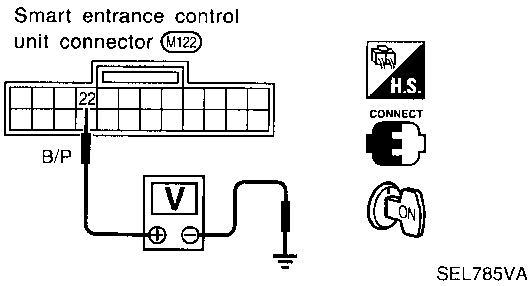
OK	▶	**Check the following.** • 7.5A fuse [No. 24, located in fuse block (J/B)] • Harness for open or short between key switch and fuse • Harness for open or short between control unit and key switch
NG	▶	Replace key switch.

SEAT BELT BUCKLE SWITCH CHECK

=NBEL0055S05

1 CHECK SEAT BELT BUCKLE SWITCH INPUT SIGNAL

1. Turn ignition switch "ON".
2. Check voltage between control unit terminal 22 and ground.



SEL785VA

Voltage [V]:

Condition of seat belt buckle switch: Fastened

Approx. 12

Condition of seat belt buckle switch: Unfastened

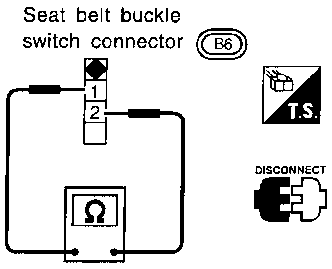
0

OK or NG

OK	▶	Seat belt buckle switch is OK.
NG	▶	GO TO 2.

2 CHECK SEAT BELT BUCKLE SWITCH

Check continuity between terminals 1 and 2 when seat belt is fastened and unfastened.



SEL298V

Continuity:

Seat belt is fastened.

No

Seat belt is unfastened.

Yes

OK or NG

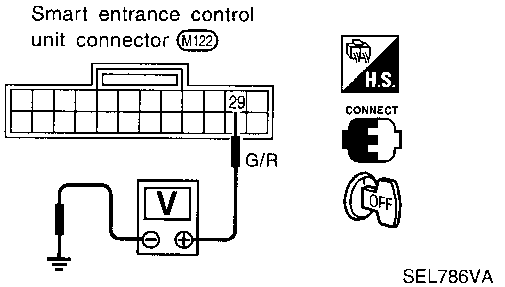
OK	▶	**Check the following.** • Seat belt buckle switch ground circuit • Harness for open or short between control unit and seat belt buckle switch
NG	▶	Replace seat belt buckle switch.

DRIVER SIDE DOOR SWITCH CHECK

NBEL0055S06

1 CHECK DOOR SWITCH INPUT SIGNAL

Check voltage between control unit terminal 29 and ground.



SEL786VA

Voltage [V]:

Condition of driver's door: CLOSED

Approx. 5

Condition of driver's door: OPENED

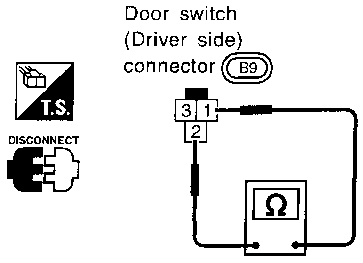
0

OK or NG

OK	▶	Driver side door switch is OK.
NG	▶	GO TO 2.

2 CHECK DRIVER SIDE DOOR SWITCH

Check continuity between terminals 1 and 2.



SEL050W

Continuity:

Door switch is pushed.

No

Door switch is released.

Yes

OK or NG

OK	▶	**Check the following.** • Door switch ground circuit • Harness for open or short between control unit and door switch
NG	▶	Replace driver side door switch.

System Description

NBEL0057

WIPER OPERATION

NBEL0057S01

The wiper switch is controlled by a lever built into the combination switch.
There are three wiper switch positions:

- LO speed
- HI speed
- INT (Intermittent)

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

- through 20A fuse [No. 19, located in the fuse block (J/B)]
- to wiper motor terminal 6.

Low and High Speed Wiper Operation

NBEL0057S0101

Ground is supplied to wiper switch terminal 17 through body grounds E13 and E41.
When the wiper switch is placed in the LO position, ground is supplied

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

With power and ground supplied, the wiper motor operates at low speed.
When the wiper switch is placed in the HI position, ground is supplied

- through terminal 16 of the wiper switch
- to wiper motor terminal 1.

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

Auto Stop Operation

NBEL0057S0102

With wiper switch turned OFF, wiper motor will continue to operate until wiper arms reach windshield base.
When wiper arms are not located at base of windshield with wiper switch OFF, ground is provided

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

Ground is also supplied

- through terminal 13 of the wiper switch
- to wiper amplifier terminal 2
- through terminal 7 of the wiper amplifier
- to wiper motor terminal 5
- through terminal 4 of the wiper motor, and
- through body grounds M77 and M111.

When wiper arms reach base of windshield, wiper motor terminals 5 and 6 are connected instead of terminals 4 and 5. Wiper motor will then stop wiper arms at the PARK position.

Intermittent Operation

NBEL0057S0103

The wiper motor operates the wiper arms one time at low speed at a set interval of approximately 3 to 13 seconds. This feature is controlled by the wiper amplifier.
When the wiper switch is placed in the INT position, ground is supplied

- to wiper amplifier terminal 1
- from wiper switch terminal 15
- through body grounds E13 and E41.
- to wiper motor terminal 2
- through the wiper switch terminal 14
- to wiper switch terminal 13
- through wiper amplifier terminal 2
- to wiper amplifier terminal 3
- through body grounds M77 and M111.

The desired interval time is input

- to wiper amplifier terminal 8
- from wiper switch terminal 19.

The wiper motor operates at low speed at the desired time interval.

System Description (Cont'd)

WASHER OPERATION

NBEL0057S02

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

- through 20A fuse [No. 19, located in the fuse block (J/B)]
- to washer motor terminal 1.

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

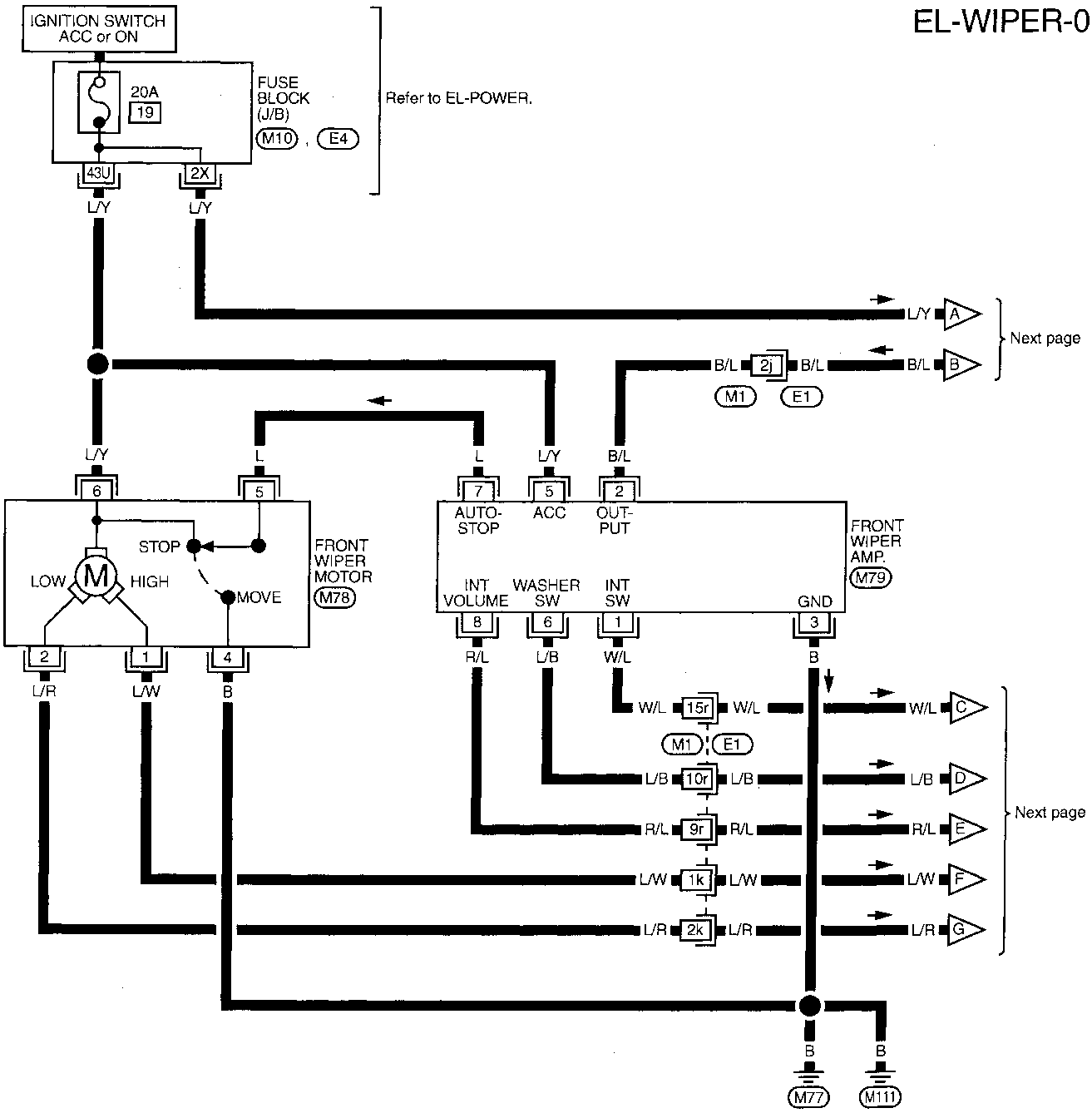
- to washer motor terminal 2, and
- to wiper amplifier terminal 6
- from terminal 18 of the wiper switch
- through terminal 17 of the wiper switch, and
- through body grounds E13 and E41.

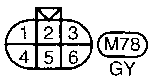
With power and ground supplied, the washer motor operates.
When the lever is pulled to the WASH position for one second or more, the wiper motor operates at low speed for approximately 3 seconds to clean windshield. This feature is controlled by the wiper amplifier in the same manner as the intermittent operation.

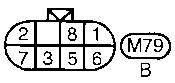
Wiring Diagram — WIPER —

NBEL0058

EL-WIPER-01







Refer to last page (Foldout page).

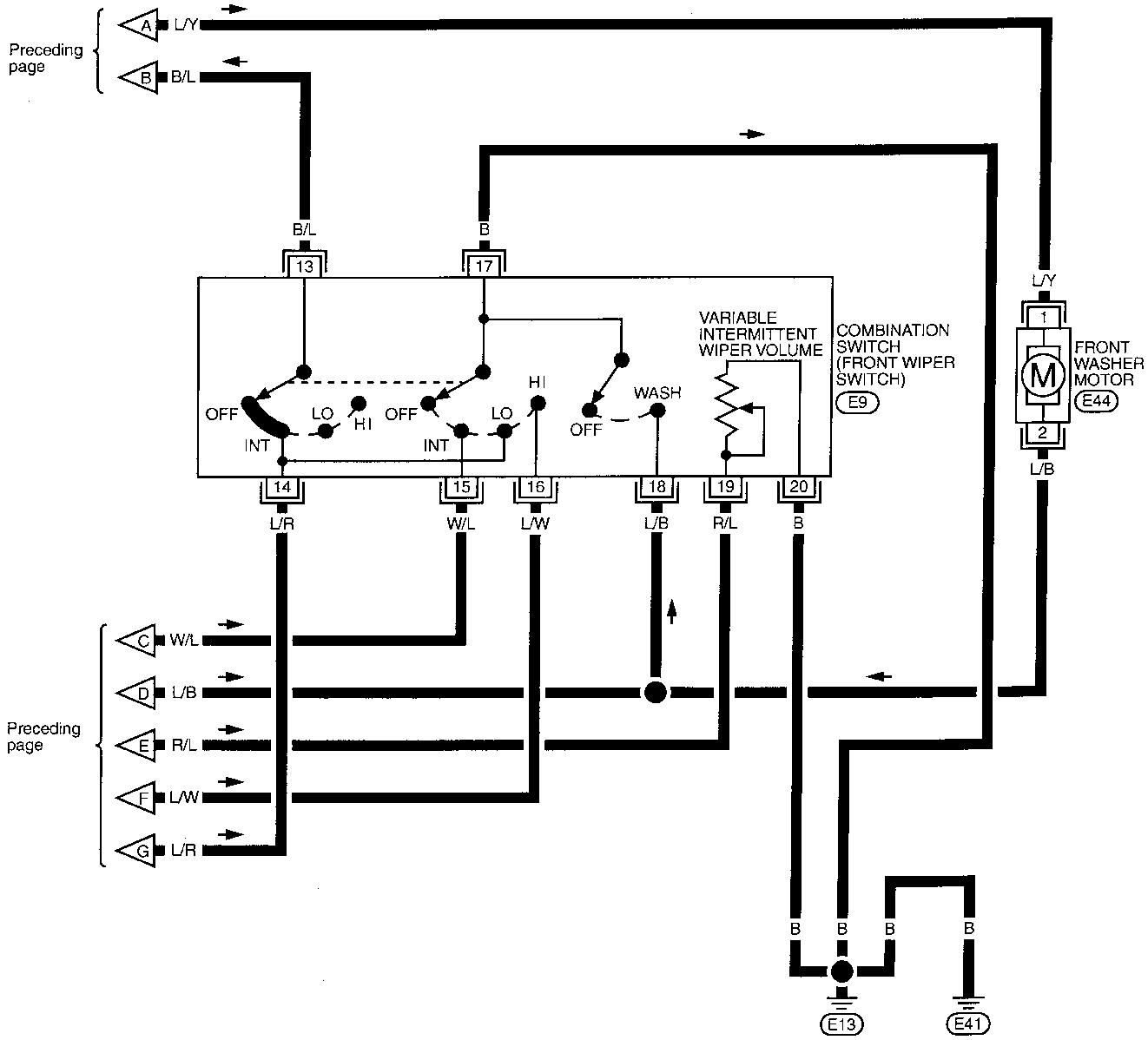
M1 , E1

M10

E4

MEL781J

EL-WIPER-02



MEL952J

Trouble Diagnoses

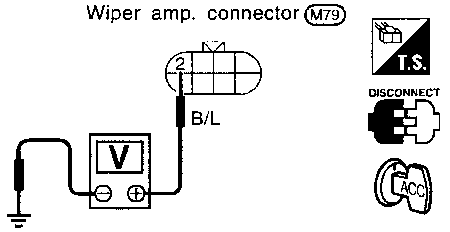
NBEL0059

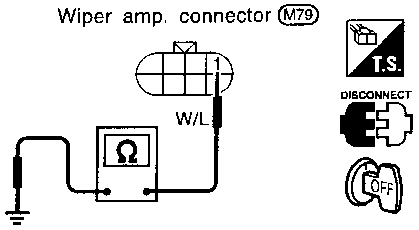
DIAGNOSTIC PROCEDURE 1

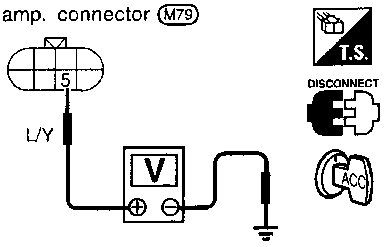
NBEL0059S01

SYMPTOM: Intermittent wiper does not operate.

1	CHECK WIPER OPERATION
Check whether wiper operates with the wiper switch at Lo position.	
Does wiper operate at Lo speed?	
Yes ▶	GO TO 2.
No ▶	**Check the following.** • 20A fuse [No. 19, located in fuse block (J/B)] • Wiper motor • Wiper switch • Harness for open or short

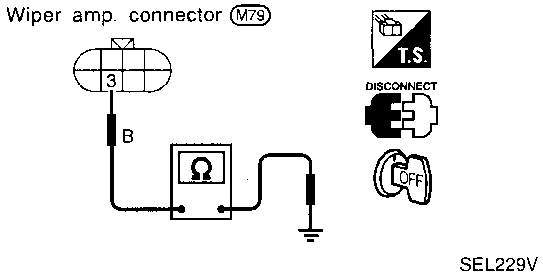
2	CHECK WIPER AMP. OUTPUT
1. Turn front wiper switch to OFF. 2. Disconnect wiper amp. connector. 3. Check voltage between wiper amp. terminal 2 and ground.	
Wiper amp. connector (M79)  SEL226V	
Does battery voltage exist?	
Yes ▶	GO TO 3.
No ▶	**Check the following.** • Wiper switch • Harness for open or short between wiper amp. terminal 2 and wiper switch terminal 13

3	CHECK INTERMITTENT SWITCH INPUT SIGNAL
Check harness continuity between wiper amp. terminal 1 and ground.	
Wiper amp. connector (M79)  SEL227V	
Continuity: **Condition of wiper switch: OFF** **No** **Condition of wiper switch: INT** **Yes**	
OK or NG	
OK ▶	GO TO 4.
NG ▶	**Check the following.** • Wiper switch • Harness for open or short between wiper amp. terminal 1 and wiper switch terminal 15 • Ground circuit for front wiper switch terminal 17

4	CHECK WIPER AMP. POWER SUPPLY CIRCUIT
Check voltage between wiper amp. terminal 5 and ground while ignition switch is "ACC".	
Wiper amp. connector (M79)  SEL228V	
Does battery voltage exist?	
Yes ▶	GO TO 5.
No ▶	**Check the following.** • 20A fuse [No. 19, located in fuse block (J/B)] • Harness for open or short between wiper amp. and fuse

5	CHECK WIPER AMP. GROUND CIRCUIT

Check harness continuity between wiper amp. terminal 3 and body ground.



SEL229V

Does continuity exist?

Yes	▶	Replace wiper amp.
No	▶	Repair harness or connector.

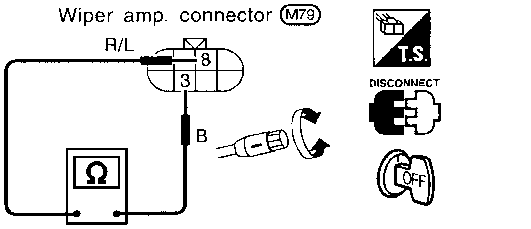
DIAGNOSTIC PROCEDURE 2

NBEL0059S02

SYMPTOM: Intermittent time of wiper cannot be adjusted.

1	CHECK INTERMITTENT WIPER VOLUME INPUT SIGNAL

1. Disconnect wiper amp. connector.
2. Measure resistance between wiper amp. terminals 8 and 3 while turning intermittent wiper volume.



SEL230V

Resistance [Ω]:
Position of wiper knob: S
0
Position of wiper knob: L
Approx. 1 k

OK or NG

OK	▶	Replace wiper amp.
NG	▶	**Check the following.** • Intermittent wiper volume • Harness for open or short between wiper amp. terminal 8 and wiper switch terminal 19 • Ground circuit for front wiper switch terminal 20

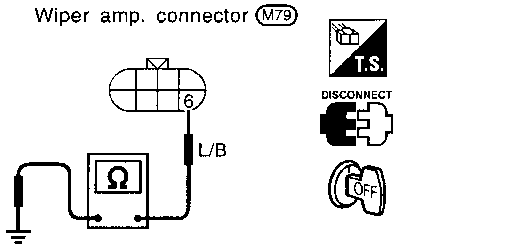
DIAGNOSTIC PROCEDURE 3

=NBEL0059S03

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

1	CHECK WASHER SWITCH INPUT SIGNAL

1. Turn ignition switch to "OFF".
2. Disconnect wiper amp. connector.
3. Check harness continuity between wiper amp. terminal 6 and ground.

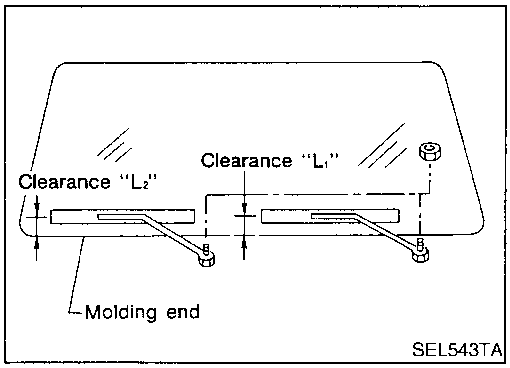


SEL231V

Continuity:
Condition of washer switch: OFF
No
Condition of washer switch: ON
Yes

OK or NG

OK	▶	Go to DIAGNOSTIC PROCEDURE 1.
NG	▶	Check harness for open or short between wiper amp. terminal 6 and wiper switch terminal 18.



SEL543TA

Removal and Installation

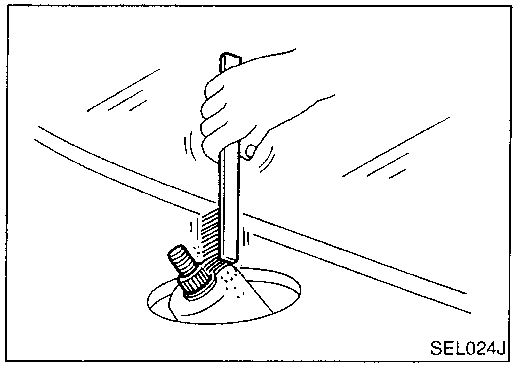
NBEL0060

WIPER ARMS

NBEL0060S01

1. Prior to wiper arm installation, 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 to set the blade center to clearance "L_1" & "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": 34 mm (1.34 in)
   Clearance "L_2": 37 mm (1.46 in)

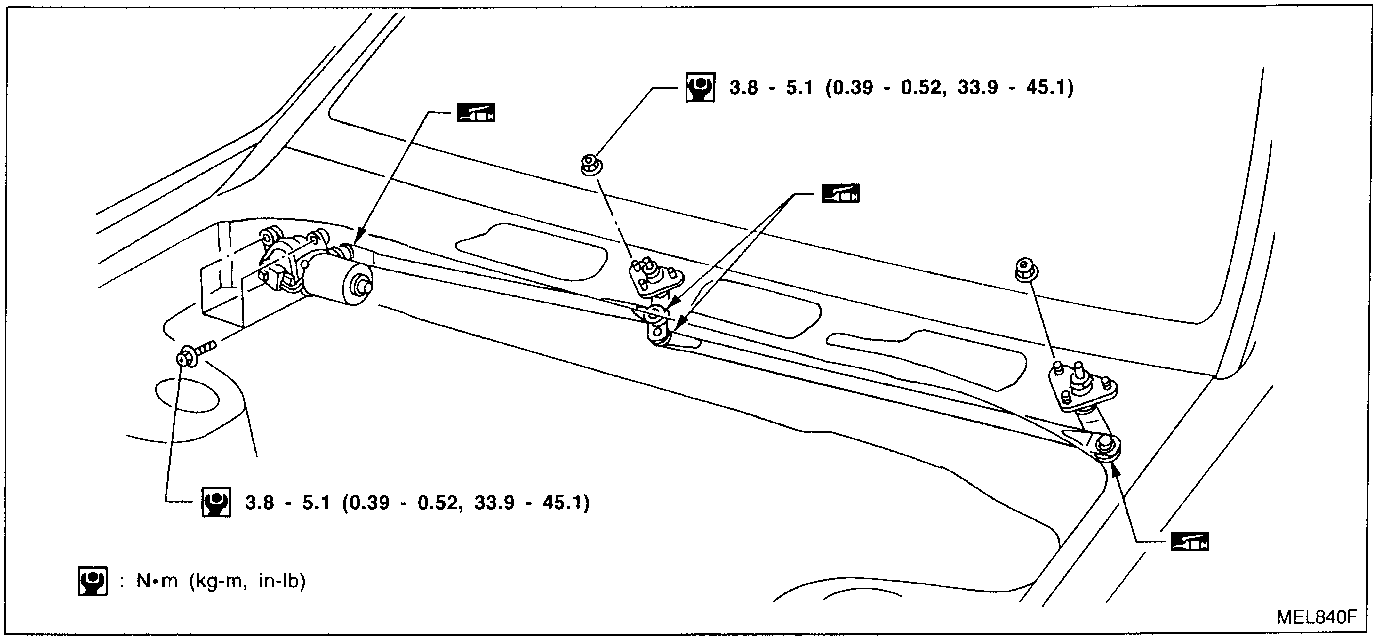
- Tighten wiper arm nuts to specified torque.
  Front wiper: 21 - 26 N·m (2.1 - 2.7 kg-m, 15 - 20 ft-lb)


SEL024J

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

WIPER LINKAGE

NBEL0060S02



MEL840F

Removal

NBEL0060S0201

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

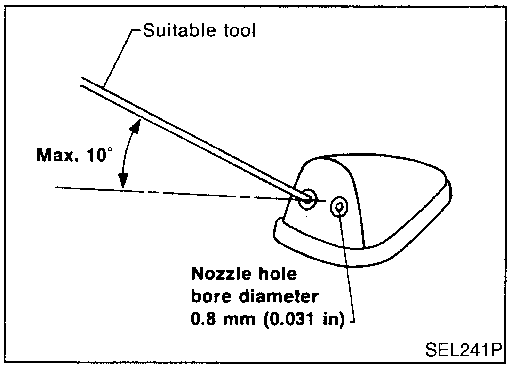
Be careful not to break ball joint rubber boot.

Installation

NBEL0060S0202

- Grease ball joint portion before installation.

1. Installation is the reverse order of removal.



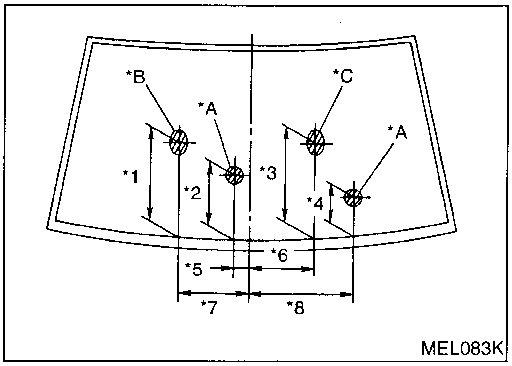
SEL241P

Washer Nozzle Adjustment

NBEL0061

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

  Adjustable range: ±10°

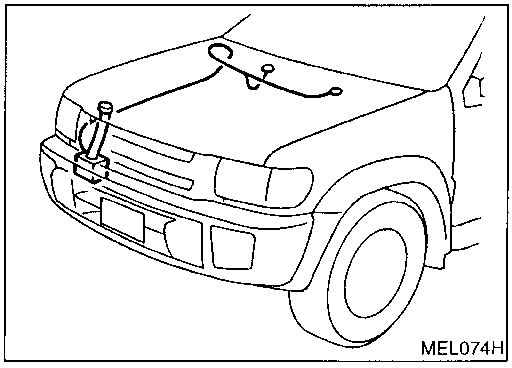


MEL083K

Unit: mm (in)

*1	395 (15.55)	*5	122 (4.80)
*2	157 (6.18)	*6	160 (6.30)
*3	410 (16.14)	*7	259 (10.20)
*4	169 (6.65)	*8	524 (20.63)

*A: The diameters of these circles are less than 80 mm (3.15 in).
*B: The diameter of this circle is less than 127 × 80 mm (5.00 × 3.15 in).
*C: The diameter of this circle is less than 142 × 80 mm (5.59 × 3.15 in).


MEL074H

Washer Tube Layout

NBEL0062

System Description

NBEL0063

WIPER OPERATION

NBEL0063S01

Power Supply and Ground

NBEL0063S0101

Power is supplied at all times
- through 10A fuse [No. 5, located in the fuse block (J/B)]
- to rear wiper amp. terminal 1.

With ignition switch in the ACC or ON position, power is supplied
- through 10A fuse [No. 29, located in the fuse block (J/B)]
- to rear wiper amp. terminal 2.

When the glass hatch switch is OPEN, ground is supplied
- to rear wiper amp. terminal 12
- from glass hatch switch terminal 1.

Then washer motor and wiper motor is interrupted.
(If the glass hatch is opened, no function of rear wiper motor will operate.)
Ground is supplied
- to rear wiper amplifier terminal 3
- through body grounds B11, B22 and D210.

Rising Up Operation

NBEL0063S0102

When the rear wiper switch is turned to the ON position, ground is supplied
- through terminal 22 of rear wiper switch
- to rear wiper amp. terminal 15.

When the rear wiper switch is turned to the INT position, ground is supplied
- through terminal 21 of rear wiper switch
- to rear wiper amp. terminal 14.

Then power is supplied
- through rear wiper amp. terminal 5
- to rear wiper motor terminal 4.

Ground is supplied
- through rear wiper motor terminal 3
- to rear wiper amp. terminal 8.

With power and ground supplied, rear wiper operates and rear wiper arm moves up.
Wiper does not return to resting position until wiper switch is turned to OFF position.

Low Speed Wiper Operation

NBEL0063S0103

When the rear wiper switch is placed in the ON position, ground is supplied
- to rear wiper amp. terminal 15
- from body grounds
- through rear wiper switch terminals 22 and 24.

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

Auto Stop Operation

NBEL0063S0104

With rear wiper switch turned OFF, rear wiper motor will continue to operate until wiper arms reach rear wiper stopper.
When wiper arm is not located at rear wiper stopper with wiper switch OFF, ground is provided
- to rear wiper amp. terminal 7
- through wiper motor terminals 7 and 8
- from body grounds B11, B22 and D210.

Then, power continues to be supplied
- through rear wiper amp. terminal 5
- to rear wiper motor terminal 4.

Ground continues to be supplied
- through rear wiper motor terminal 3

- to rear wiper amp. terminal 8.

With power and ground supplied, rear wiper continues to operate.
When wiper arms reach rear wiper stopper, ground is interrupted

- to rear wiper amp. terminal 7
- from body grounds.

Rear wiper motor will then stop wiper arms at the PARK position.

Intermittent Operation

NBEL0063S0105

The rear wiper motor operates the wiper arms at low speed approximately every 7 seconds. This feature is controlled by the wiper amp.
When the wiper switch is placed in the INT position, ground is supplied

- to wiper amp. terminal 14
- from rear wiper switch terminal 21
- through body grounds E13 and E41.

Then, power is supplied

- through rear wiper amp. terminal 5
- to rear wiper motor terminal 4.

Ground is supplied

- through rear wiper motor terminal 3
- to rear wiper amp. terminal 8.

The rear wiper motor operates at low speed intermittent.

WASHER OPERATION

NBEL0063S02

When the rear wiper switch is turned to WASH position, ground is supplied

- to rear wiper amp. terminal 13
- through terminals 23 and 24 of rear wiper switch
- through body grounds E13 and E41.

Then, power is supplied

- through rear wiper amp. terminal 9
- to rear washer motor terminal 2.

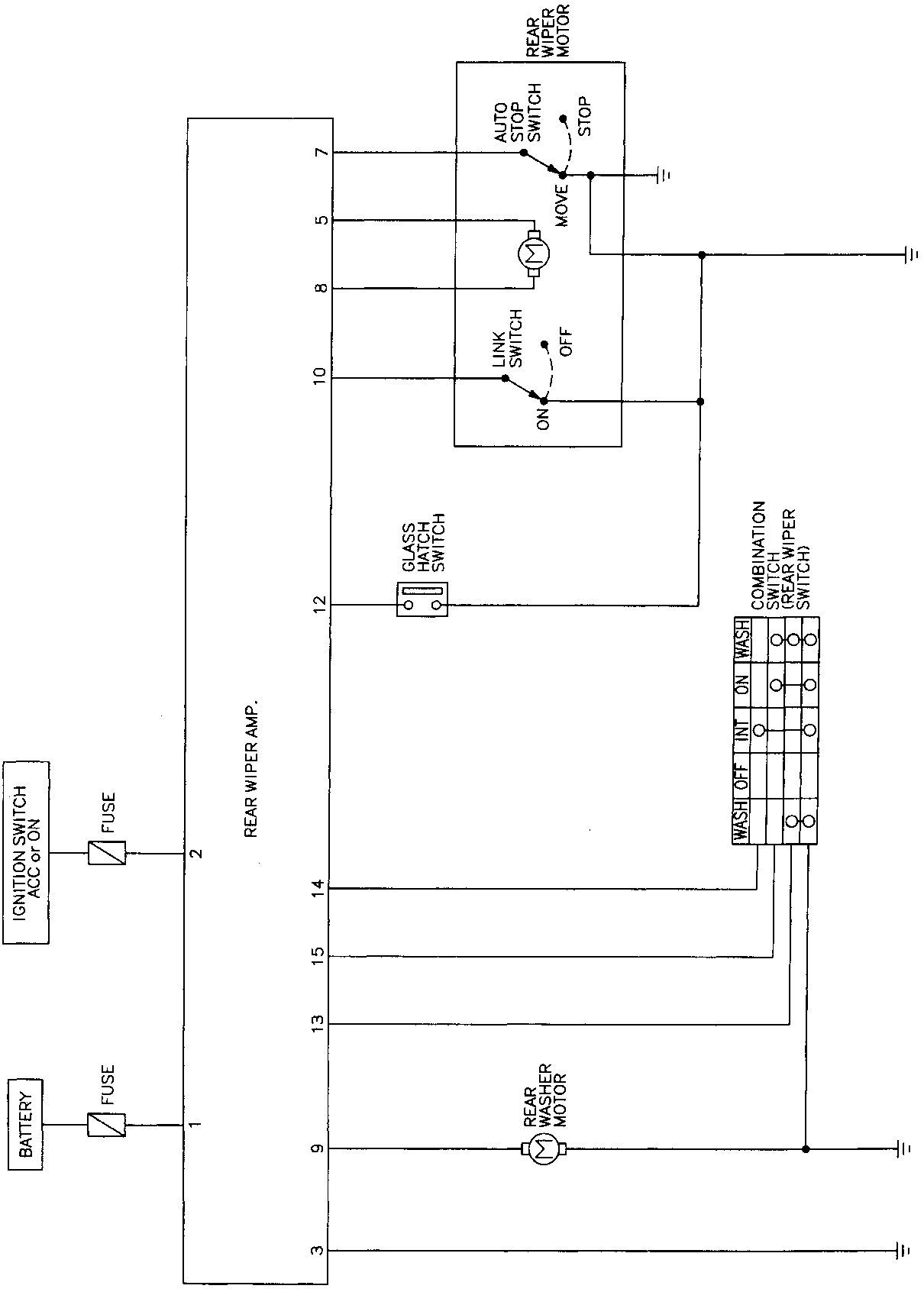
Ground is supplied

- through body grounds E13 and E41
- to rear washer motor terminal 1.

With power and ground supplied, the rear washer motor operates.
When the rear wiper switch is turned to WASH position for one second or more, the rear wiper motor operates at low speed for approximately 3 seconds after the rear wiper switch is released. This feature is controlled by the rear wiper amp. in the same manner as the intermittent operation.

Schematic

NBEL0064

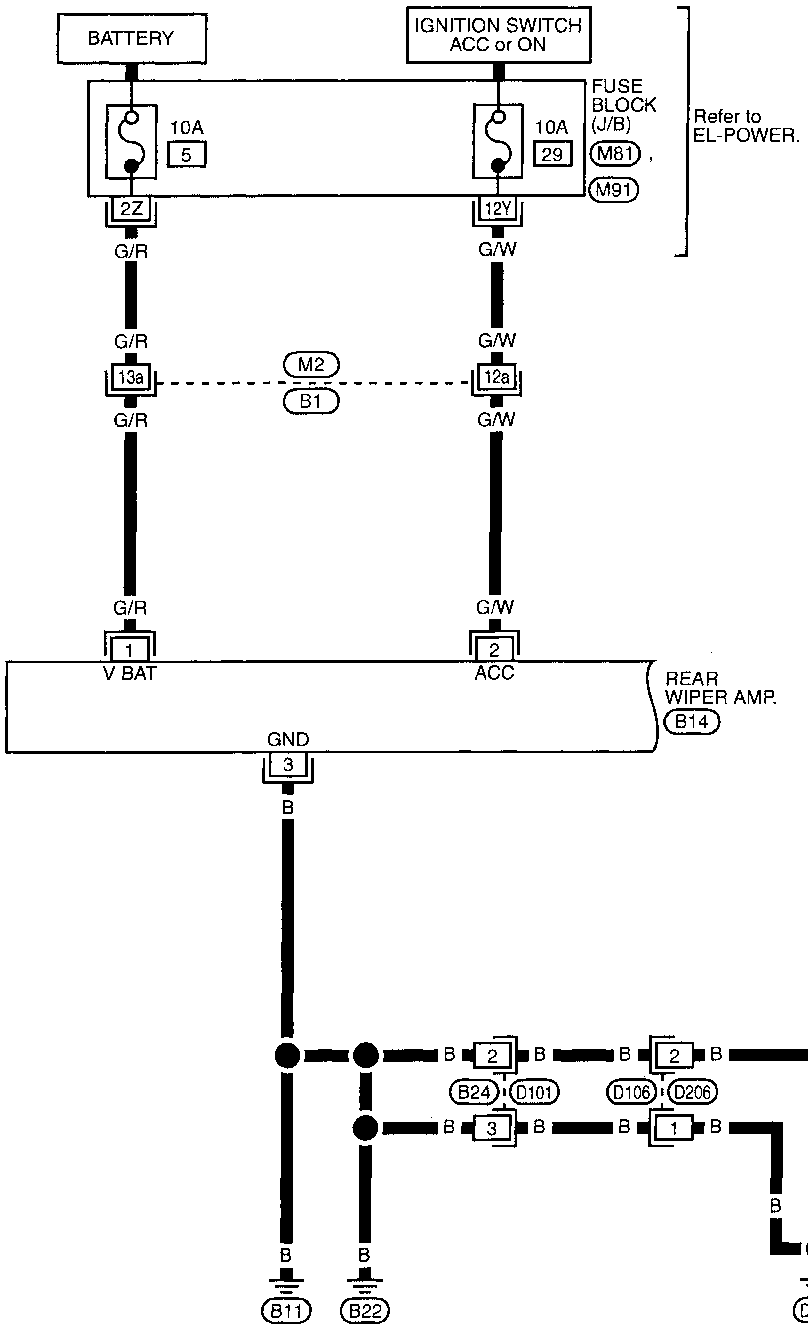


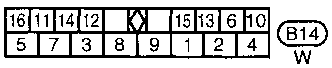
MEL782J

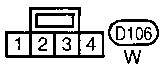
Wiring Diagram — WIP/R —

NBEL0065

EL-WIP/R-01







Refer to last page (Foldout page).

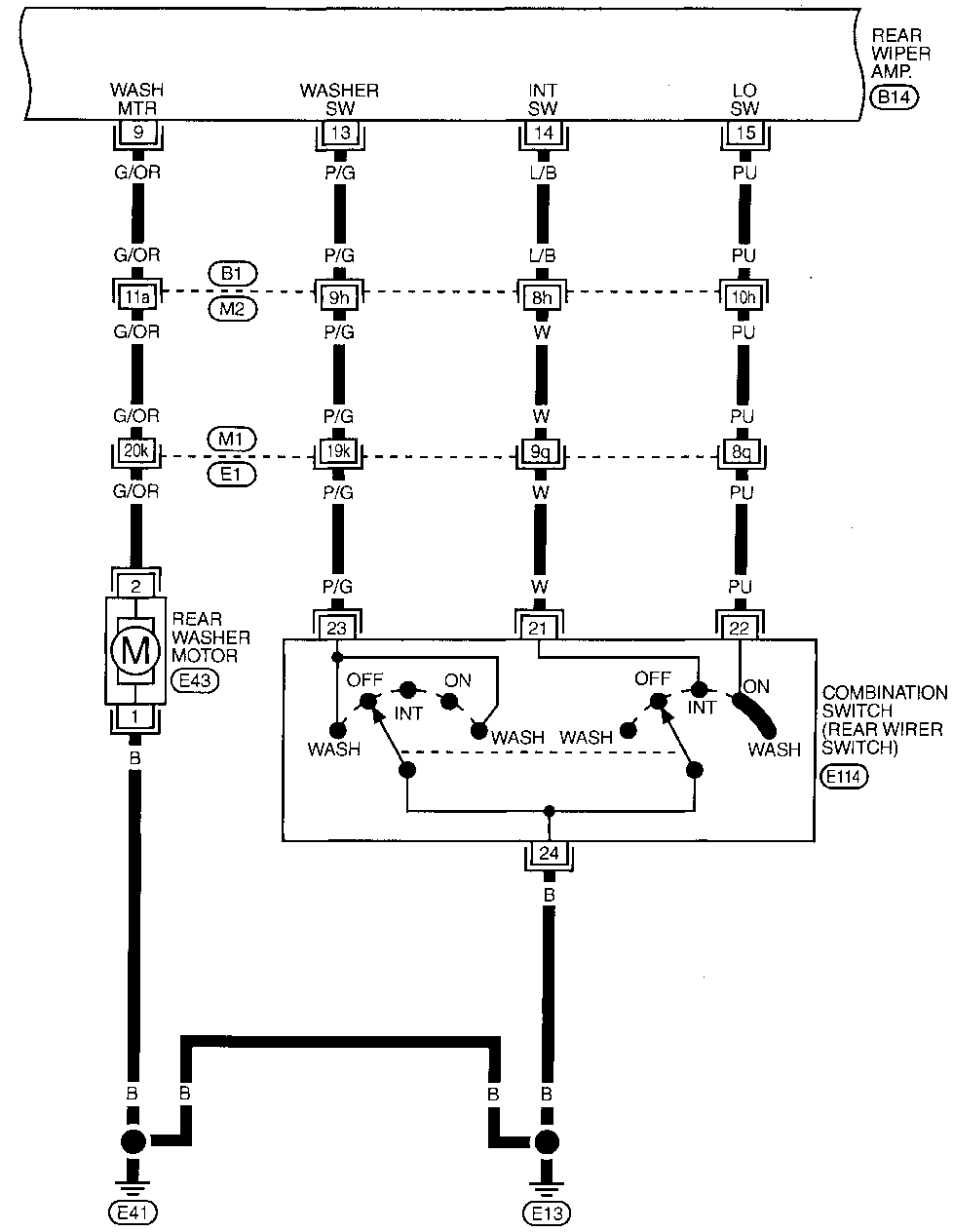
M2 , B1

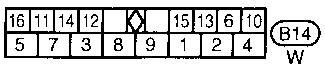
M81

M91

MEL783J

EL-WIP/R-02





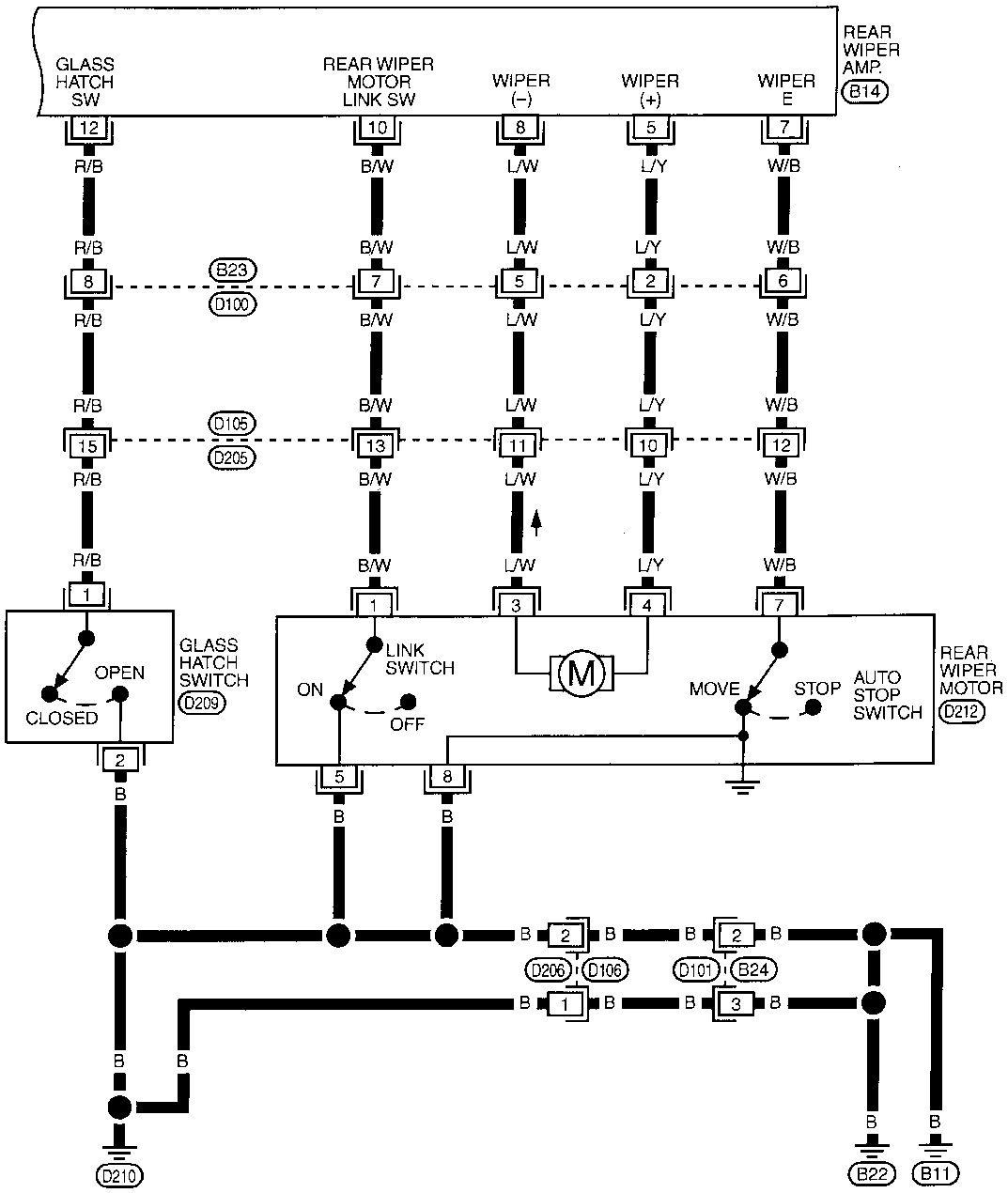
Refer to last page (Foldout page).

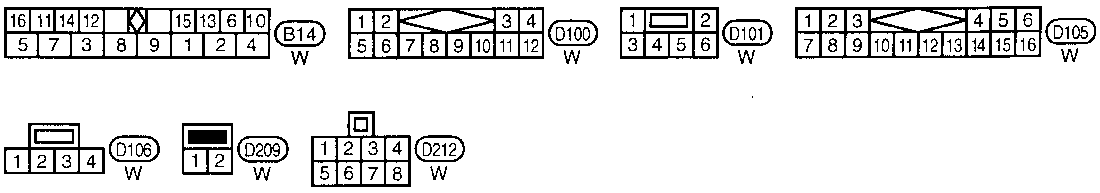
M1 , E1

M2 , B1

MEL784J

EL-WIP/R-03





MEL785J

Trouble Diagnoses

NBEL0066

REAR WIPER AMP. INSPECTION TABLE

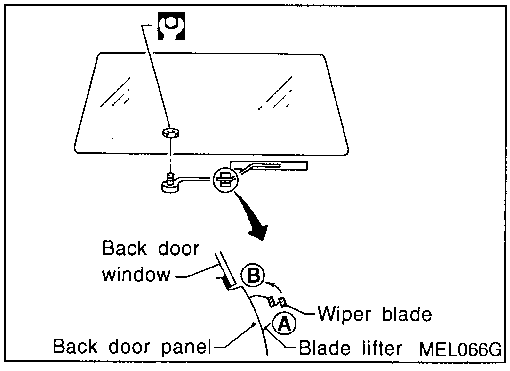
NBEL0066S01

(Data are reference values.)

Terminal No.	Item	Condition			Voltage (Approximate value)
1	Power supply (BAT)	—			Battery voltage
2	Power supply (ACC)		—		Battery voltage
3	Ground	—			—
5	Rear wiper motor		Rear wiper switch	ON	Battery voltage
				OFF	Less than 1V
7	Auto stop		Rear wiper switch should be at "INT" to inspect the value for wiper movement.	Wiper is moving	Less than 1V
				Wiper stop	Battery voltage
10	Link switch		Rear wiper switch should be at "ON" to inspect the value.	Wiper is moving	Less than 1V
				Wiper stop	Battery voltage
12	Glass hatch switch	Glass hatch		Open	Less than 1V
				Closed	Battery voltage
13	Washer switch		Rear wiper switch	WASH	Less than 1V
				OFF, ON or INT	Battery voltage
14	Intermittent switch		Rear wiper switch	INT	Less than 1V
				OFF, ON or WASH	Battery voltage
15	Wiper on switch		Rear wiper switch	ON or WASH	Less than 1V
				OFF or INT	Battery voltage

NOTE:

Power to the rear wiper amp. will be interrupted when the rear glass hatch is opened. In that case, conduct the inspection of the rear wiper amp. with the rear glass hatch closed, unless otherwise indicated.



Removal and Installation

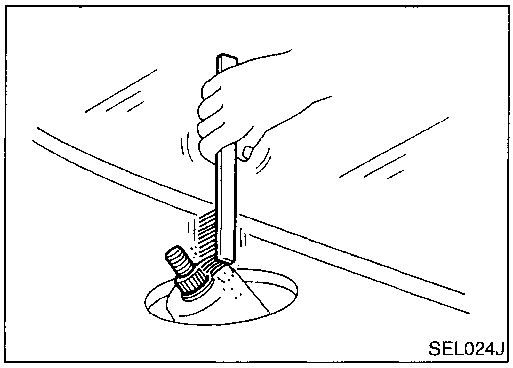
NBEL0067

WIPER ARMS

NBEL0067S01

1. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it "OFF" (Auto Stop).
2. Install wiper arm to portion A as in figure below and tighten wiper arm nut to specification.
3. Then, set wiper arm to portion B.

: 13 - 18 N·m (1.3 - 1.8 kg-m, 9 - 13 ft-lb)

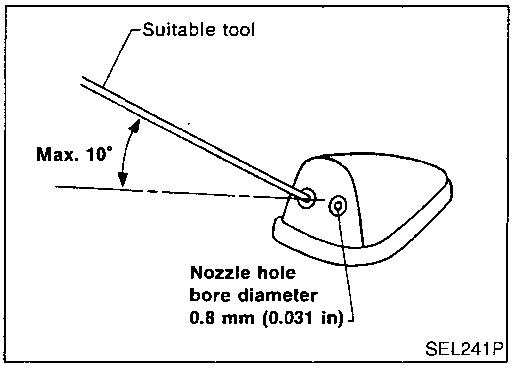

SEL024J

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

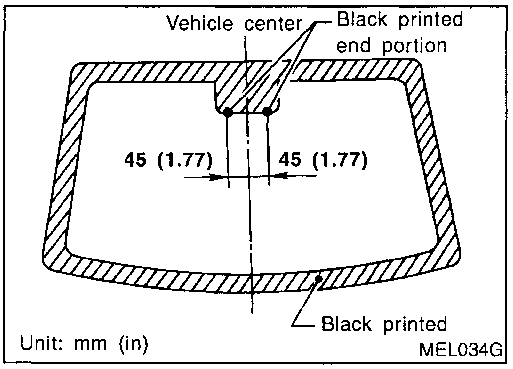
Washer Nozzle Adjustment

NBEL0068

- Adjust washer nozzle with suitable tool as shown in the figure at left.
  Adjustable range: ±10° (In any direction)



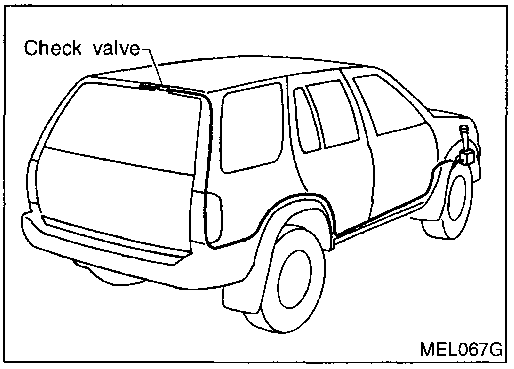
SEL241P



Unit: mm (in)
MEL034G

Washer Tube Layout

NBEL0069

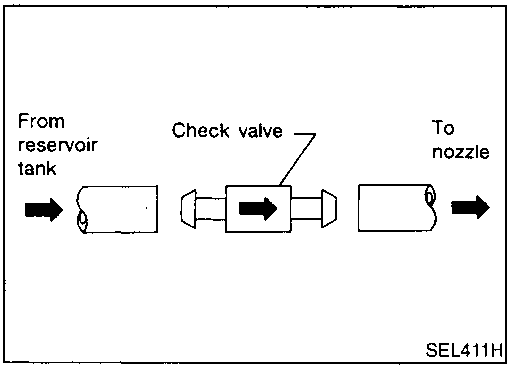


MEL067G

Check Valve

NBEL0070

- A check valve is provided in the washer fluid line. Be careful not to connect check valve to washer tube in the wrong direction.

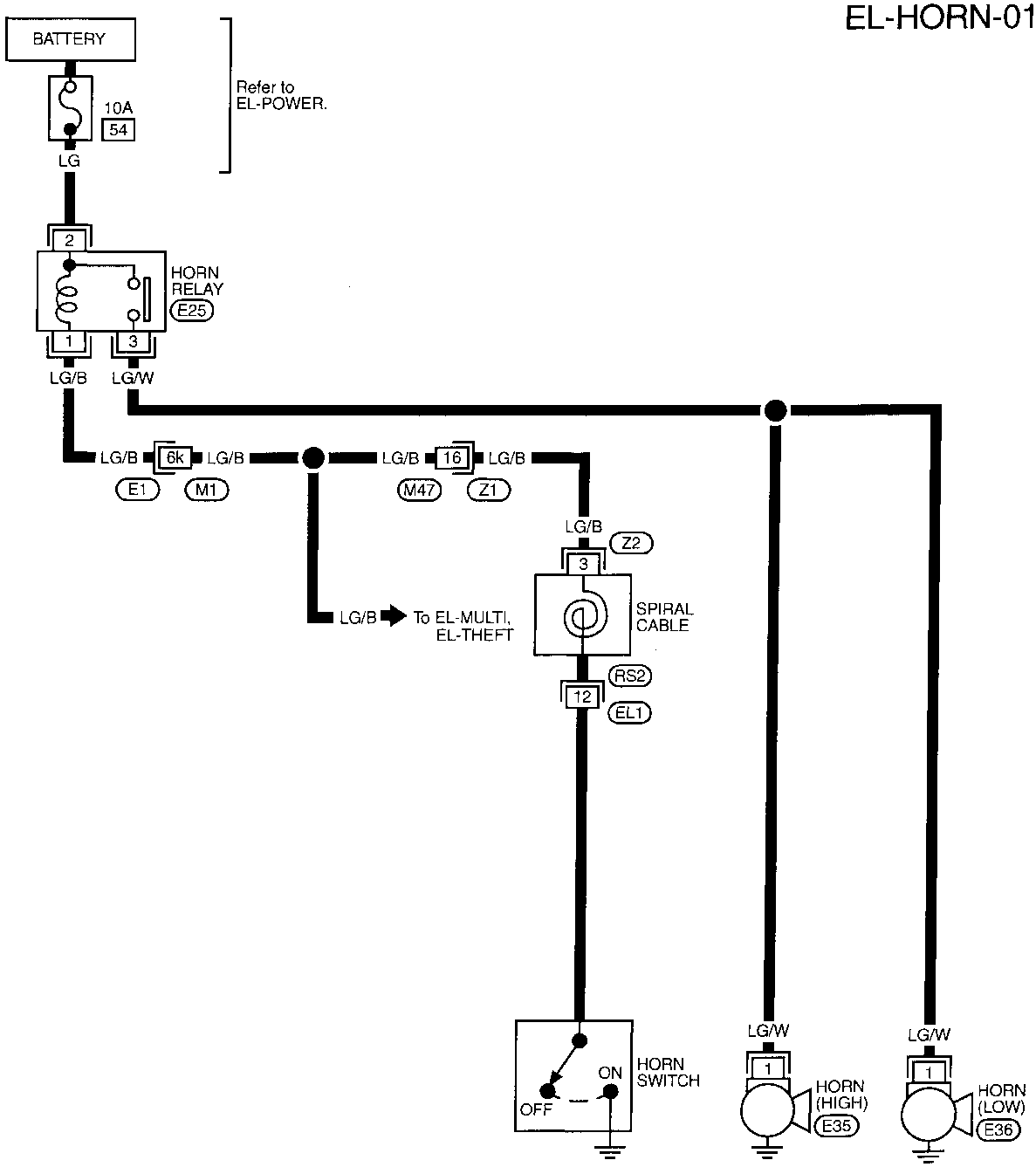


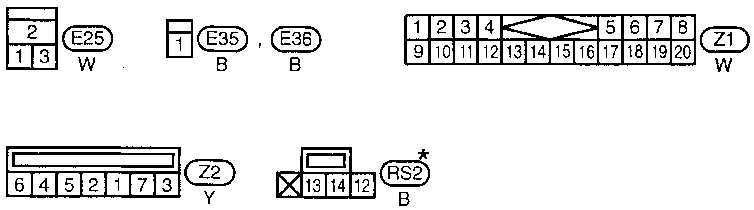
SEL411H

Wiring Diagram — HORN —

NBEL0071

EL-HORN-01





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

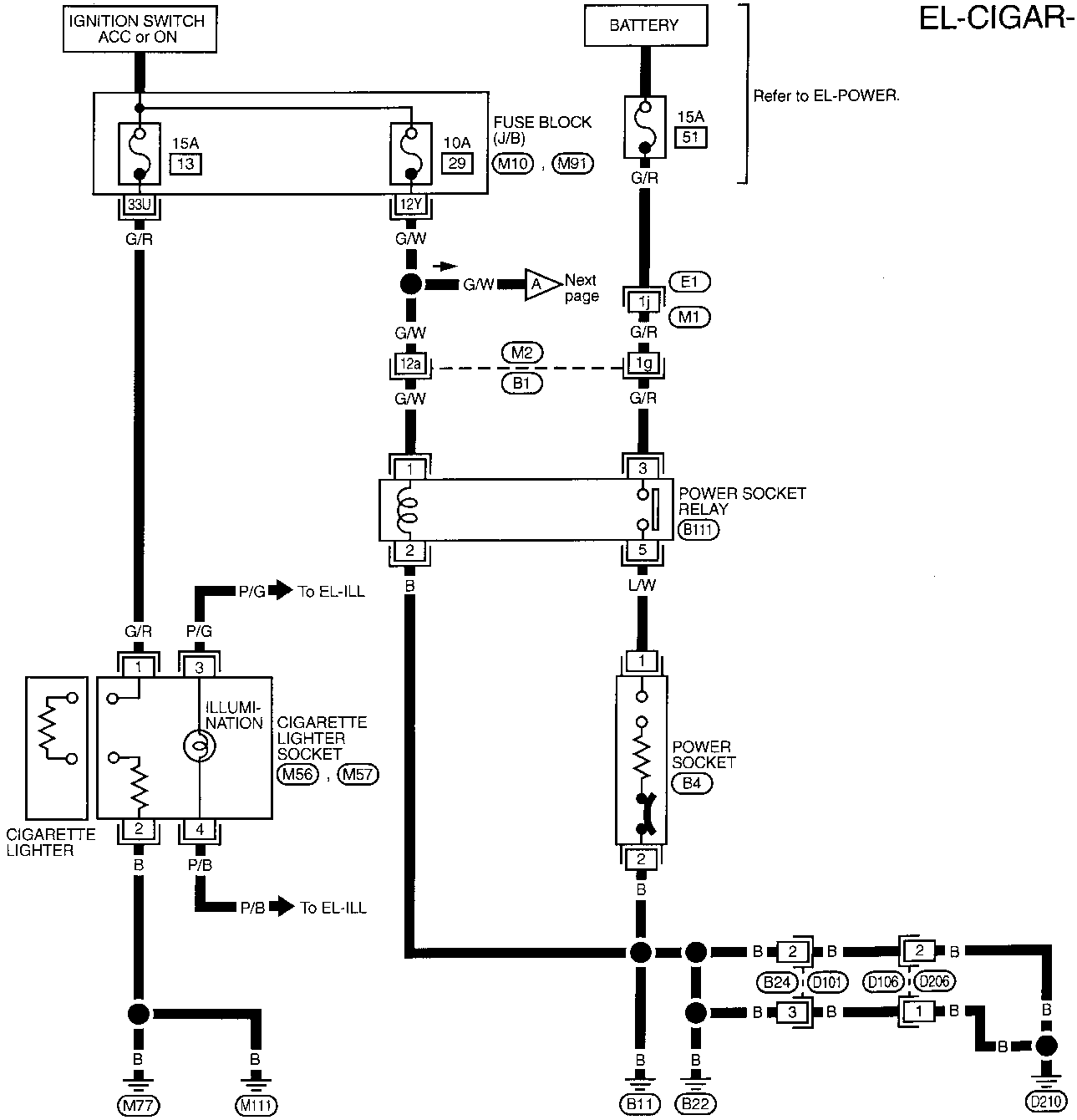
Refer to last page (Foldout page).
M1 , E1

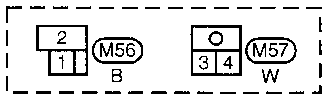
MEL786J

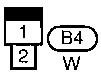
Wiring Diagram — CIGAR —

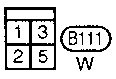
NBEL0156

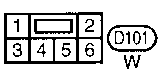
EL-CIGAR-01

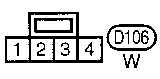








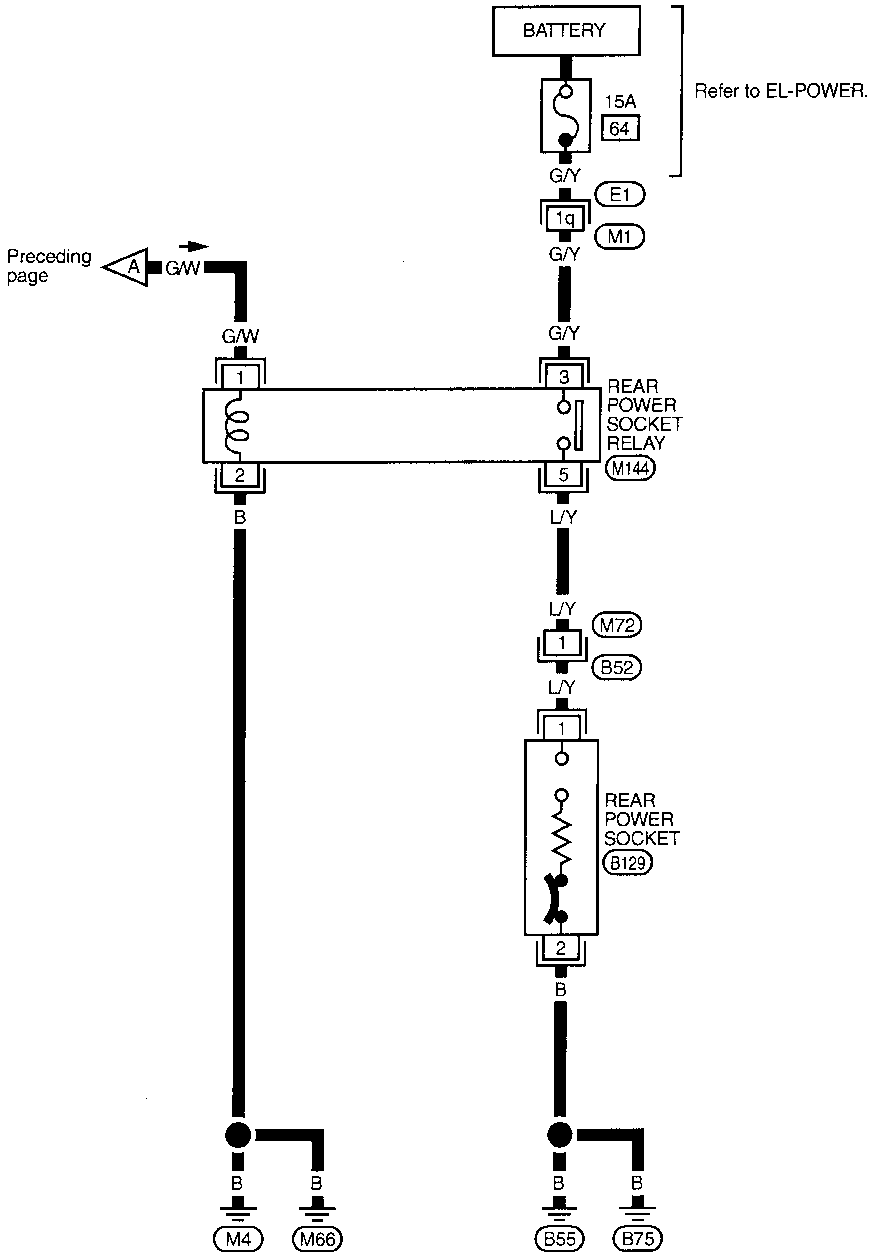


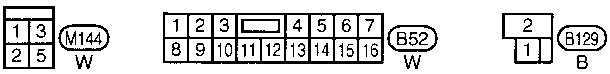


Refer to last page (Foldout page).
M1 , E1
M2 , B1
M10
M91

MEL787J

EL-CIGAR-02



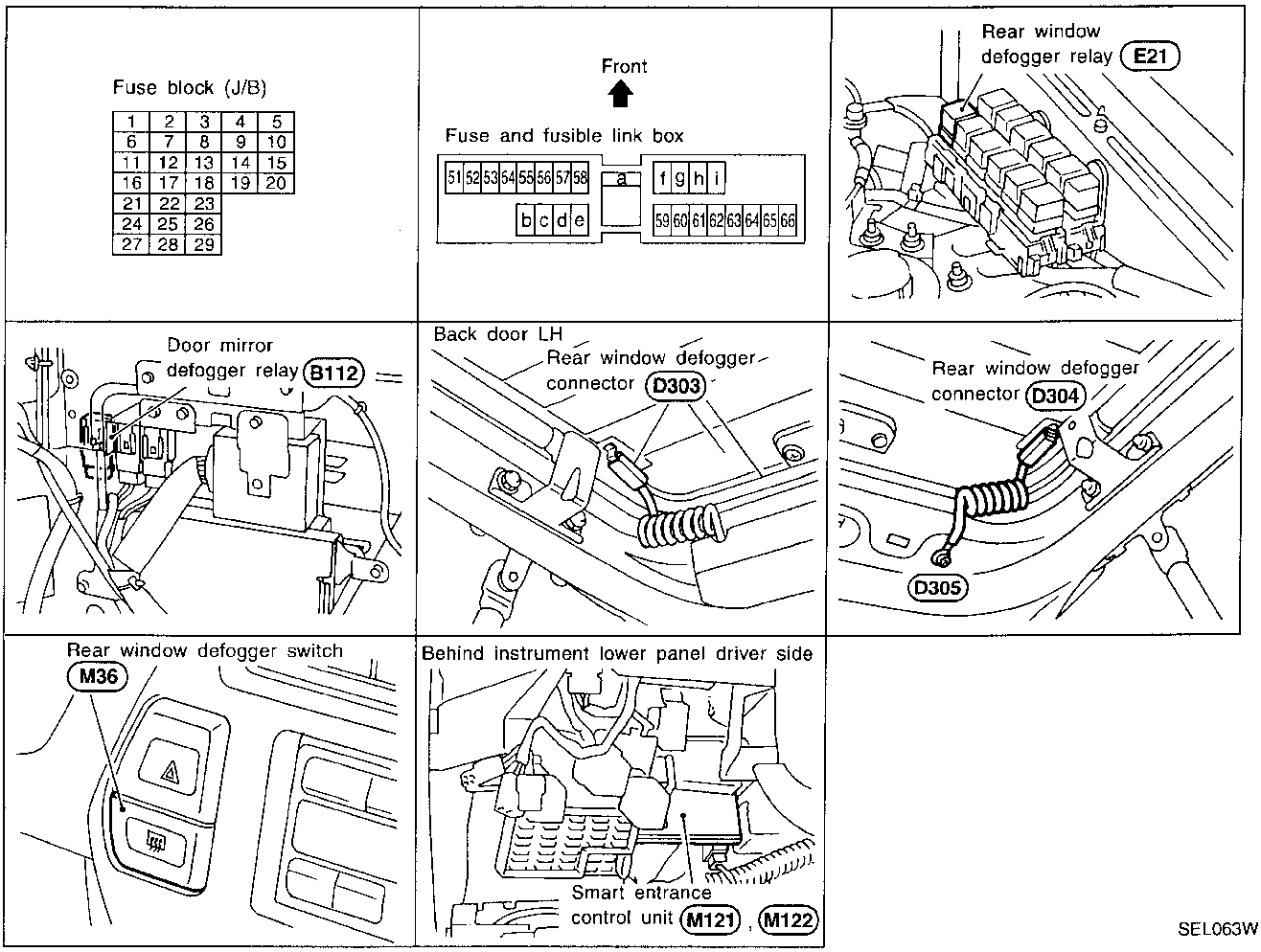


Refer to last page (Foldout page).
M1 , E1

MEL070K

Component Parts and Harness Connector Location

NBEL0072



SEL063W

System Description

NBEL0073

The rear window defogger system is controlled by the smart entrance control unit. The rear window defogger operates only for approximately 15 minutes.

Power is supplied at all times

- to rear window defogger relay terminal 3
- through 20A fuse (No. 56, located in the fuse and fusible link box) and
- to rear window defogger relay terminal 6
- through 20A fuse (No. 57, located in the fuse and fusible link box).

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

- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to the rear window defogger relay terminal 1 and
- through 7.5A fuse [No. 11, located in the fuse block (J/B)]
- to smart entrance control unit terminal 33.

Ground is supplied to terminal 1 of the rear window defogger switch through body grounds M4 and M66.

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

- through terminal 2 of the rear window defogger switch
- to smart entrance control unit terminal 39.

Terminal 2 of the smart entrance control unit then supplies ground to the rear window defogger relay terminal 2.

With power and ground supplied, the rear window defogger relay is energized.

Power is supplied

- through terminals 5 and 7 of the rear window defogger relay
- to the rear window defogger.

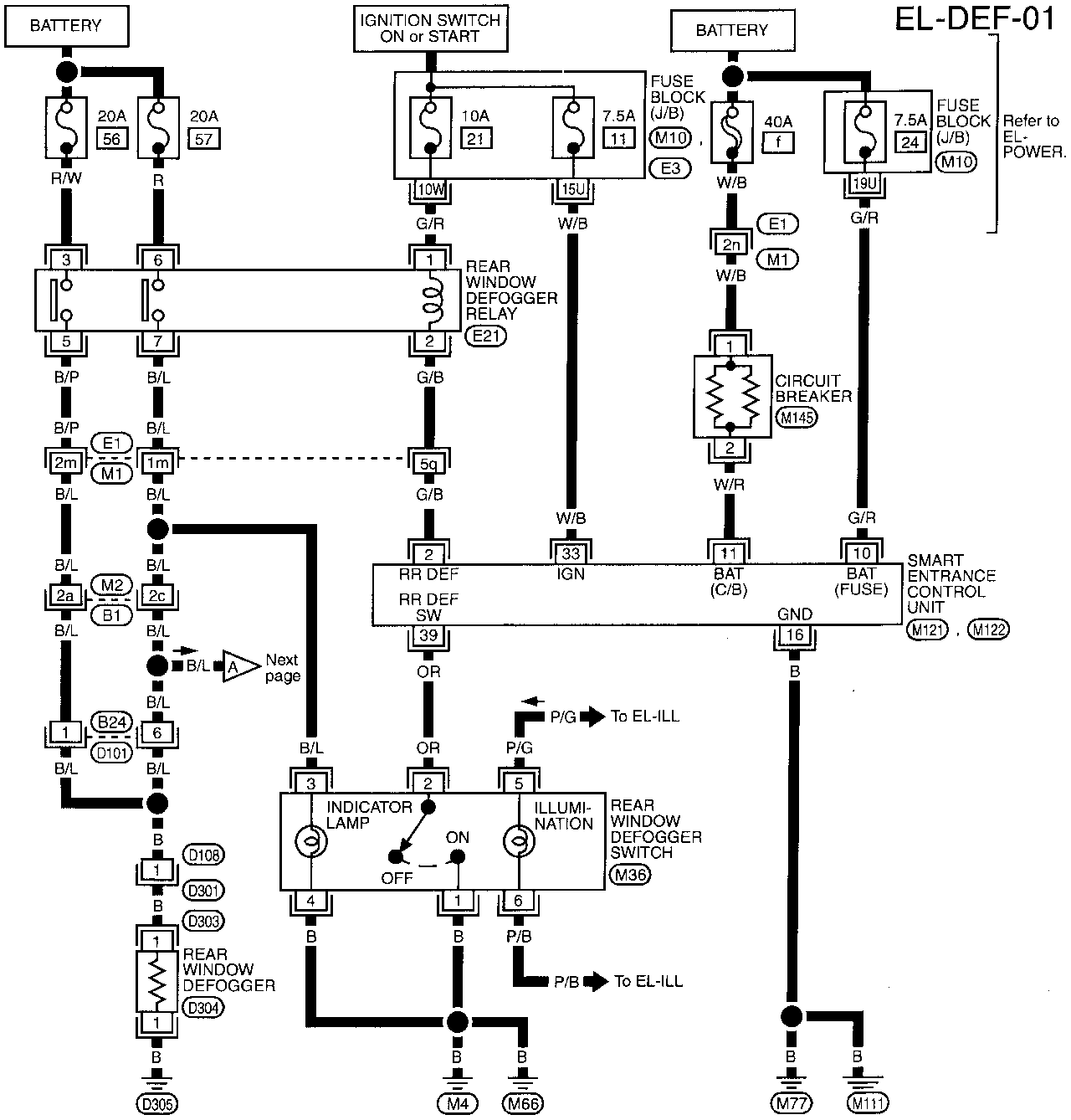
The rear window defogger has an independent ground.
With power and ground supplied, the rear window defogger filaments heat and defog the rear window.
When the system is activated, the rear window defogger indicator illuminates in the rear window defogger switch.
Power is supplied

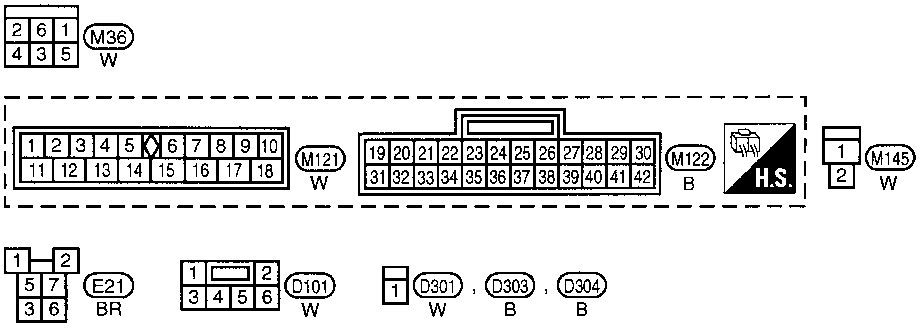
- to terminal 3 of the rear window defogger switch
- from terminal 7 of the rear window defogger relay.

Terminal 4 of the rear window defogger switch is grounded through body grounds M4 and M66.

Wiring Diagram — DEF —

NBEL0074



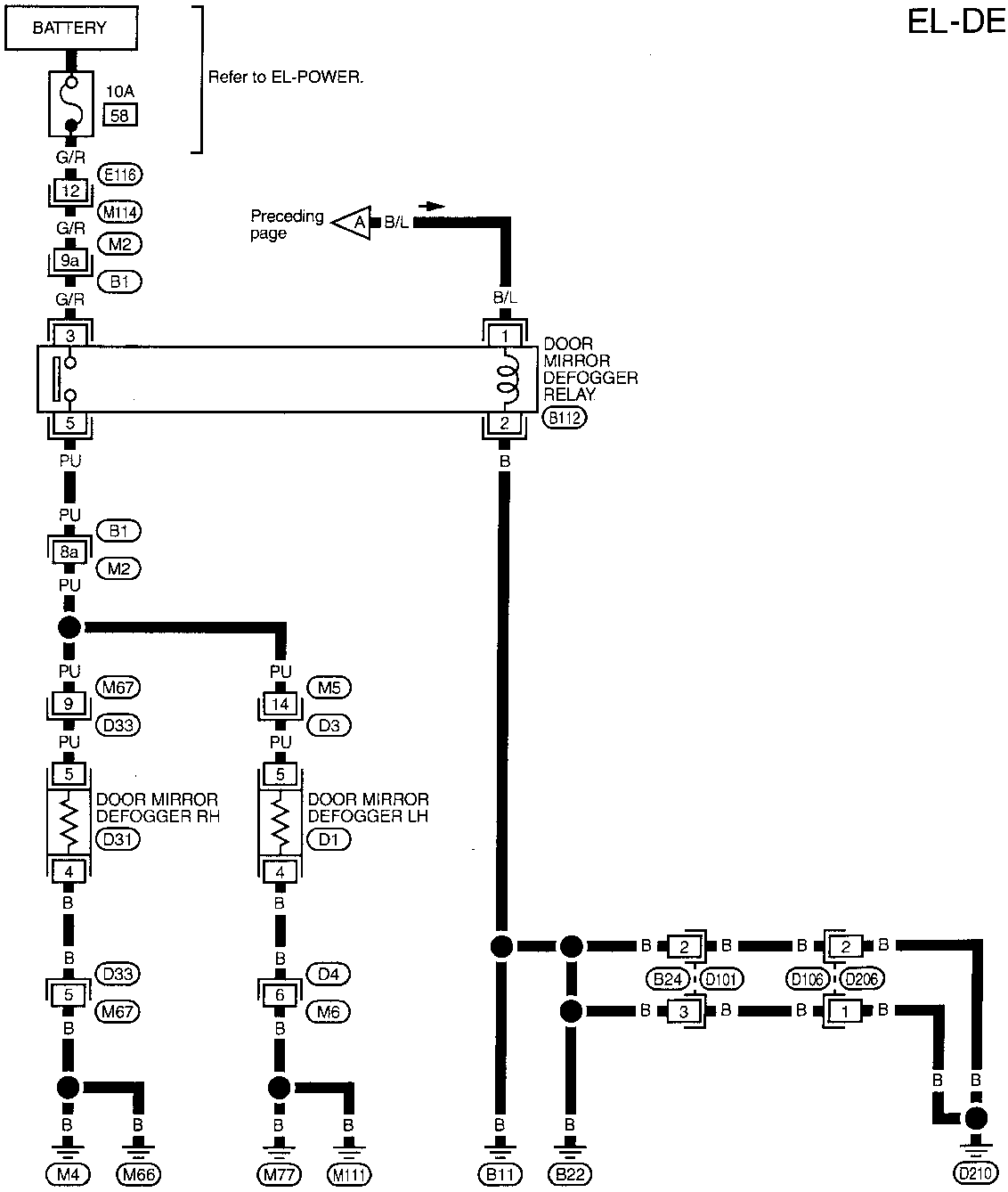


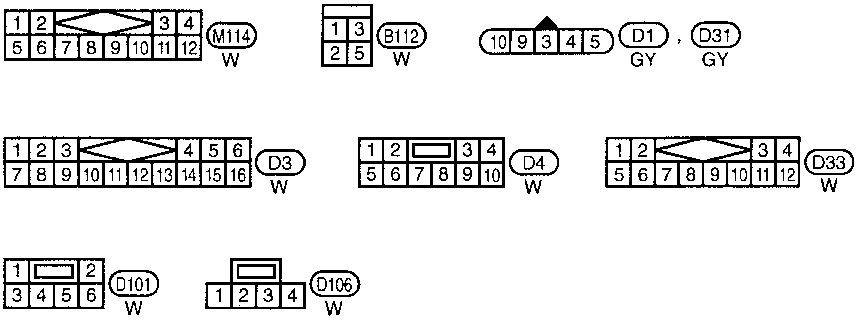
Refer to last page (Foldout page).

M1, E1
M2, B1
M10
E3

MEL788J

EL-DEF-02





Refer to last page (Foldout page).

M2 , B1

MEL789J

Trouble Diagnoses

NBEL0075

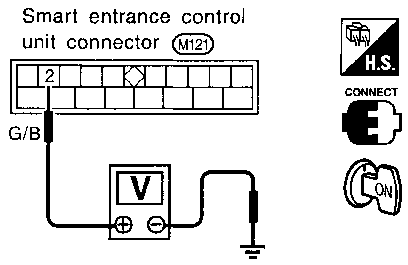
DIAGNOSTIC PROCEDURE

NBEL0075S01

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

1 CHECK REAR WINDOW DEFOGGER OUTPUT SIGNAL

1. Turn ignition switch to ON position.
2. Check voltage between control unit harness terminal 2 and ground.



SEL787VA

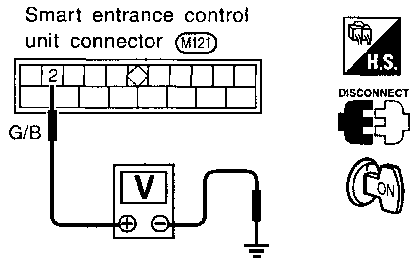
Voltage [V]:
Rear window defogger switch is "OFF".
Approx. 12
Rear window defogger switch is "ON".
0

OK or NG

OK	▶	**Check the following.** • Rear window defogger relay (Refer to EL-138.) • Rear window defogger circuit • Rear window defogger filament (Refer to EL-138.)
NG	▶	GO TO 2.

2 CHECK DEFOGGER RELAY COIL SIDE CIRCUIT

1. Disconnect control unit connector.
2. Turn ignition switch to ON position.
3. Check voltage between control unit terminal 2 and ground.



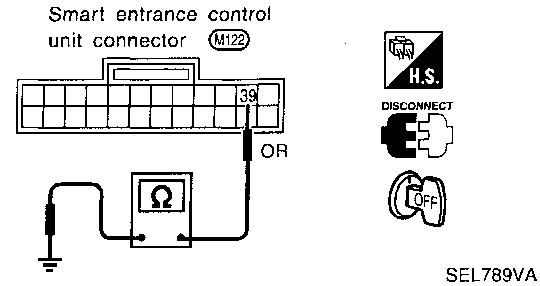
SEL788VA

Does battery voltage exist?

Yes	▶	GO TO 3.
No	▶	**Check the following.** • 10A fuse [No. 21, located in the fuse block (J/B)] • Rear window defogger relay • Harness for open or short between rear window defogger relay and control unit

3 CHECK REAR WINDOW DEFOGGER SWITCH INPUT SIGNAL

Check continuity between control unit terminal 39 and ground.



SEL789VA

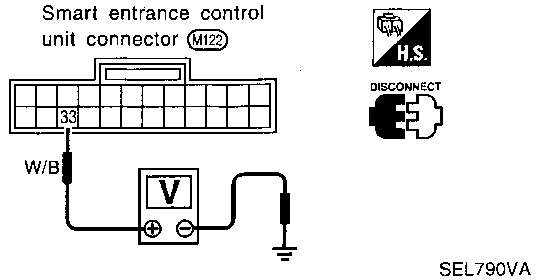
Continuity:
Rear window defogger switch is pushed.
Yes
Rear window defogger switch is released.
No

OK or NG

OK	▶	GO TO 4.
NG	▶	**Check the following.** • Rear window defogger switch (Refer to EL-138.) • Harness for open or short between control unit and rear window defogger switch • Rear window defogger switch ground circuit

4 CHECK IGNITION INPUT SIGNAL

Check voltage between control unit terminal 33 and ground.



SEL790VA

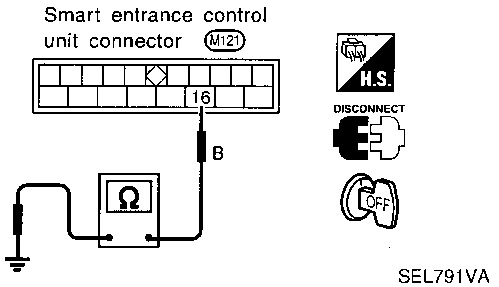
Voltage [V]:
Ignition switch is "ON".
Approx. 12
Ignition switch is "OFF".
0

OK or NG

OK	▶	GO TO 5.
NG	▶	**Check the following.** • 7.5A fuse [No. 11, located in the fuse block (J/B)] • Harness for open or short between control unit and fuse

5	CHECK CONTROL UNIT GROUND CIRCUIT

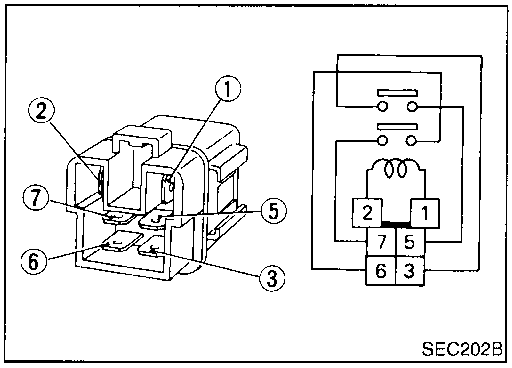
Check continuity between control unit terminal 16 and ground.



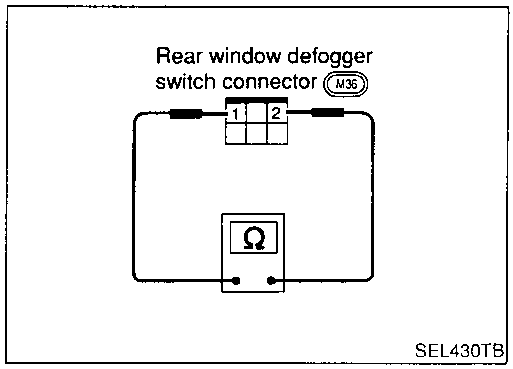
SEL791VA

Does continuity exist?

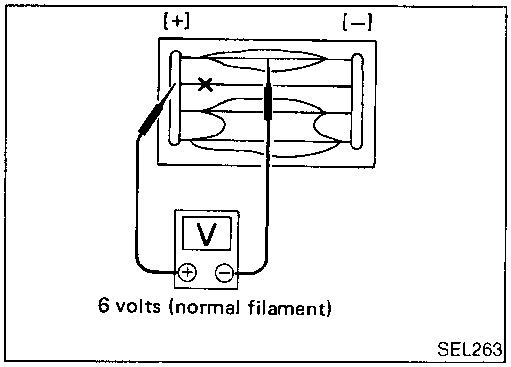
Yes	▶	Replace control unit.
No	▶	Repair harness or connectors.



SEC202B



SEL430TB



SEL263

Electrical Components Inspection

NBEL0076

REAR WINDOW DEFOGGER RELAY

NBEL0076S01

Check continuity between terminals 3 and 5, 6 and 7.

Condition	Continuity
12V direct current supply between terminals 1 and 2	Yes
No current supply	No

REAR WINDOW DEFOGGER SWITCH

NBEL0076S02

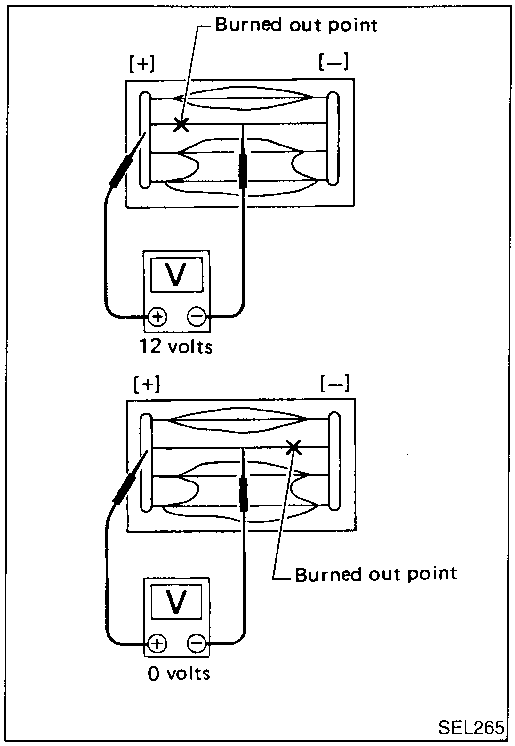
Check continuity between terminals when rear window defogger switch is pushed and released.

Terminals	Condition	Continuity
1 - 2	Rear window defogger switch is pushed	Yes
	Rear window defogger switch is released	No

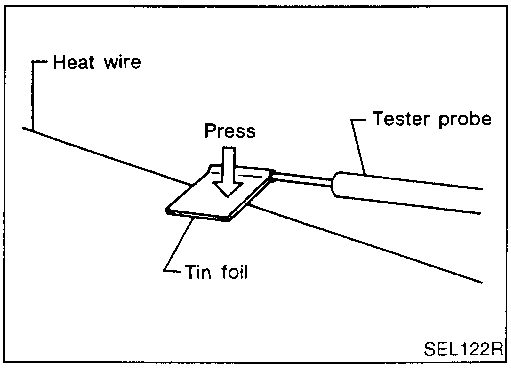
Filament Check

NBEL0077

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



2. If a filament is burned out, circuit tester registers 0 or 12 volts.
3. To locate burned out point, move probe to left and right along filament. Test needle will swing abruptly when probe passes the point.



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

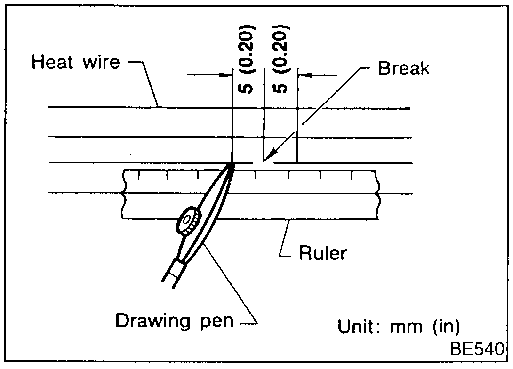
Filament Repair

NBEL0078

REPAIR EQUIPMENT

NBEL0078S01

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

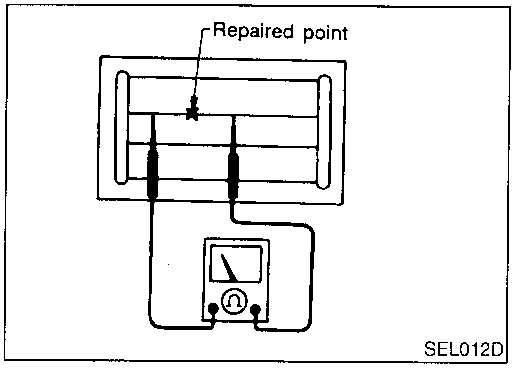
NBEL0078S02

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.

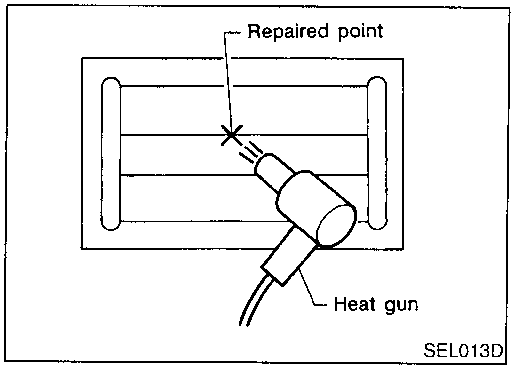
3. Place ruler on glass along broken line. Deposit conductive silver composition on break with drawing pen. Slightly overlap existing heat wire on both sides [preferably 5 mm (0.20 in)] of the break.

Filament Repair (Cont'd)



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

NBEL0079

Refer to Owner's Manual for audio system operating instructions.
Power is supplied at all times

- through 15A fuse [No. 4, located in the fuse block (J/B)]
- to audio unit terminal 6,
- to audio amp. relay terminal 3 and
- to rear speaker amp. terminal 11.

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

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

Ground is supplied through the case of the audio unit.
Ground is supplied

- to audio amp. relay terminal 2,
- to front door speaker LH terminal 5 and
- to front door speaker RH terminal 5
- through body grounds M77 and M111
- to rear speaker amp. terminal 24
- through body grounds B11, B22 and D210.

When the audio unit POWER button is pressed, power is supplied to rear speaker amp. terminal 9 and audio amp. relay terminal 1 from audio unit terminal 12. Then audio amp. relay is energized and power is supplied

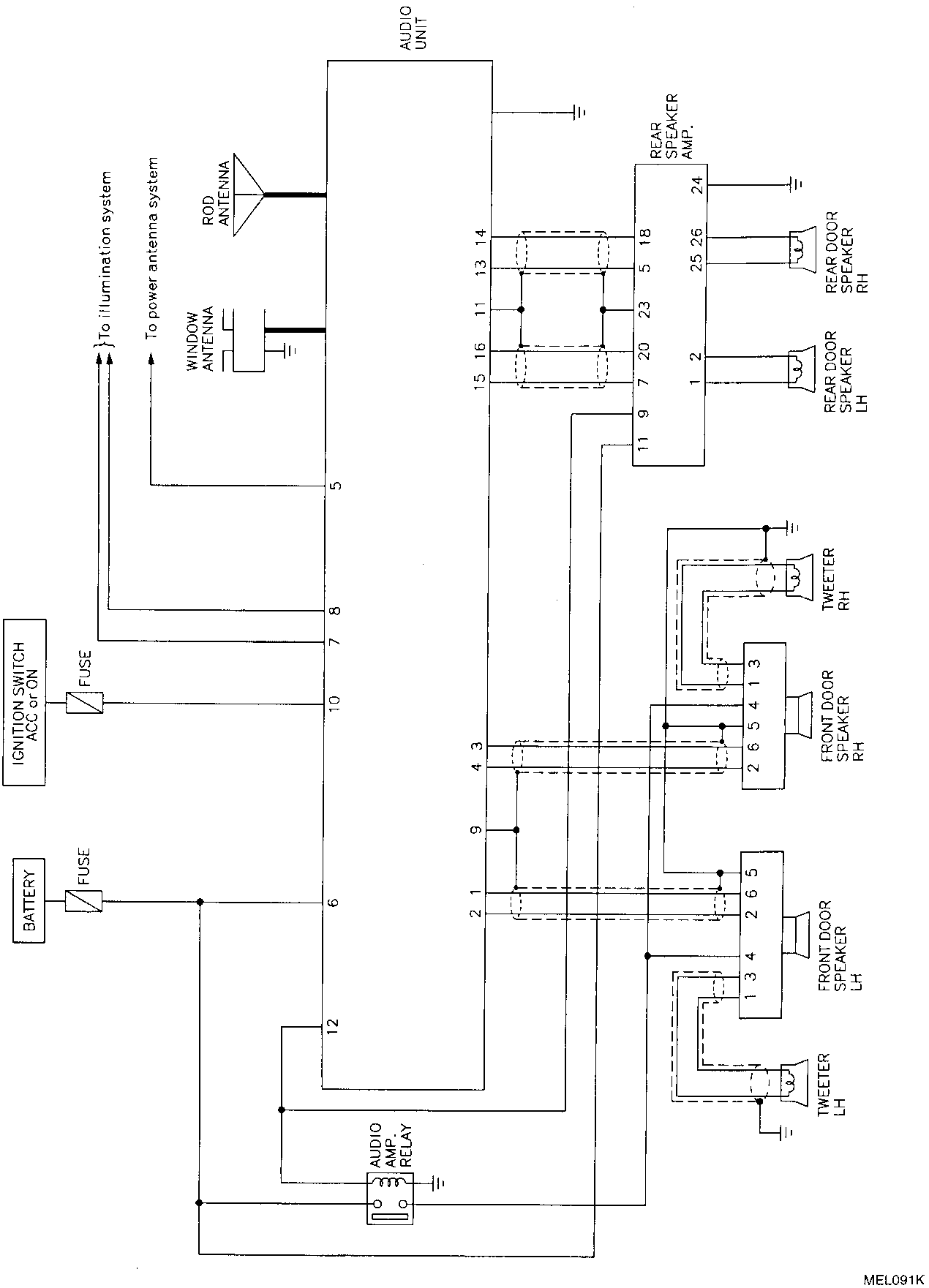
- to front door speaker LH terminal 4 and
- to front door speaker RH terminal 4.

Audio signals are supplied

- through audio unit terminals 1, 2, 3, 4, 13, 14, 15 and 16
- to terminals 2 and 6 of the LH and RH front speakers and terminals 5, 7, 18 and 20 of the rear speaker amp.
- to LH and RH tweeters through terminals 1 and 3 of the front speakers
- to rear LH and RH speakers through terminals 1, 2, 25 and 26 of the rear speaker amp.

Schematic

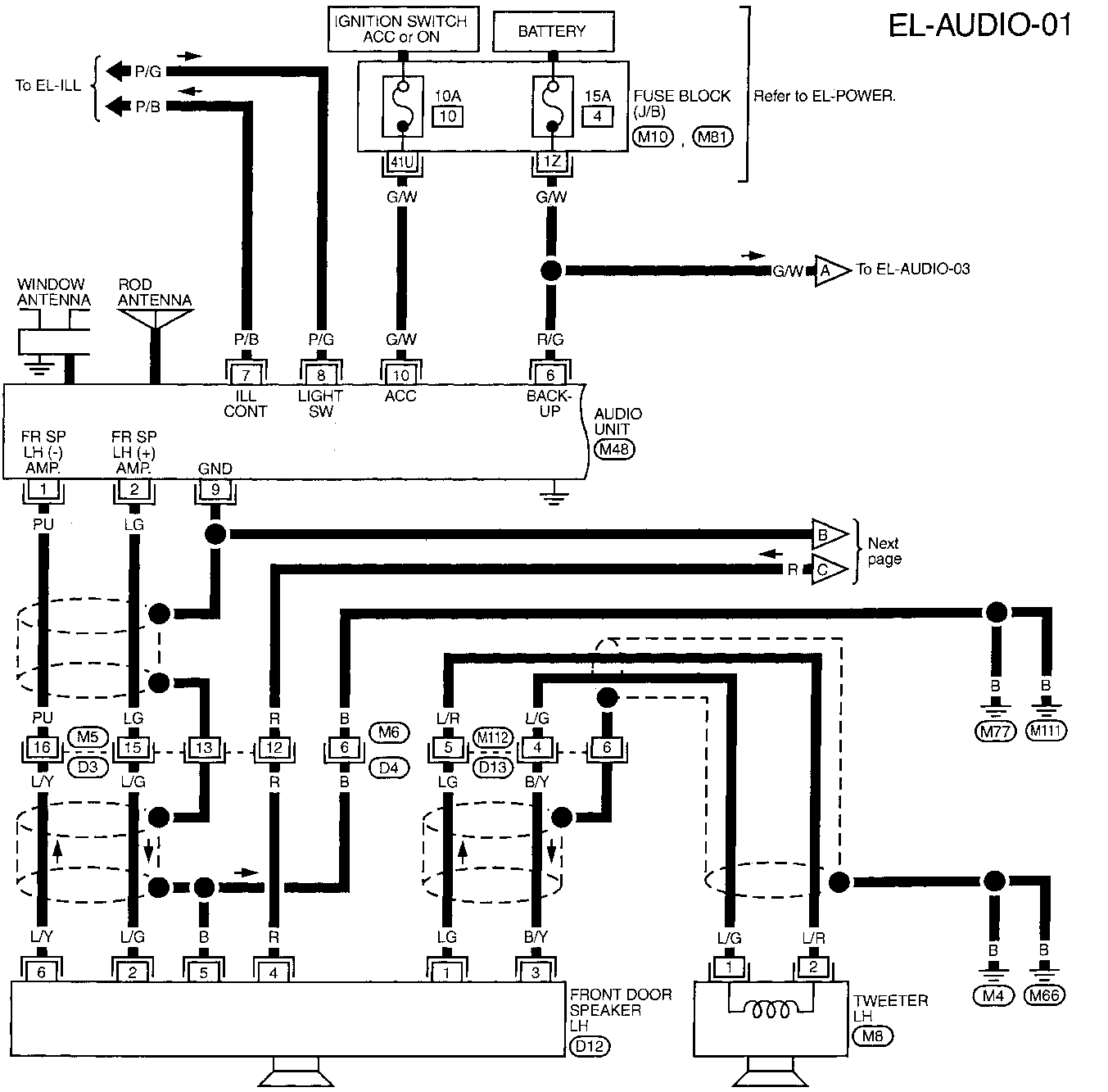
NBEL0080

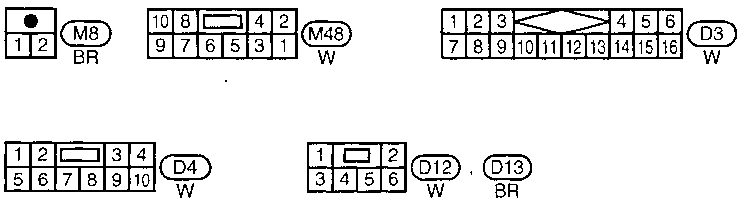


MEL091K

Wiring Diagram — AUDIO —

NBEL0081





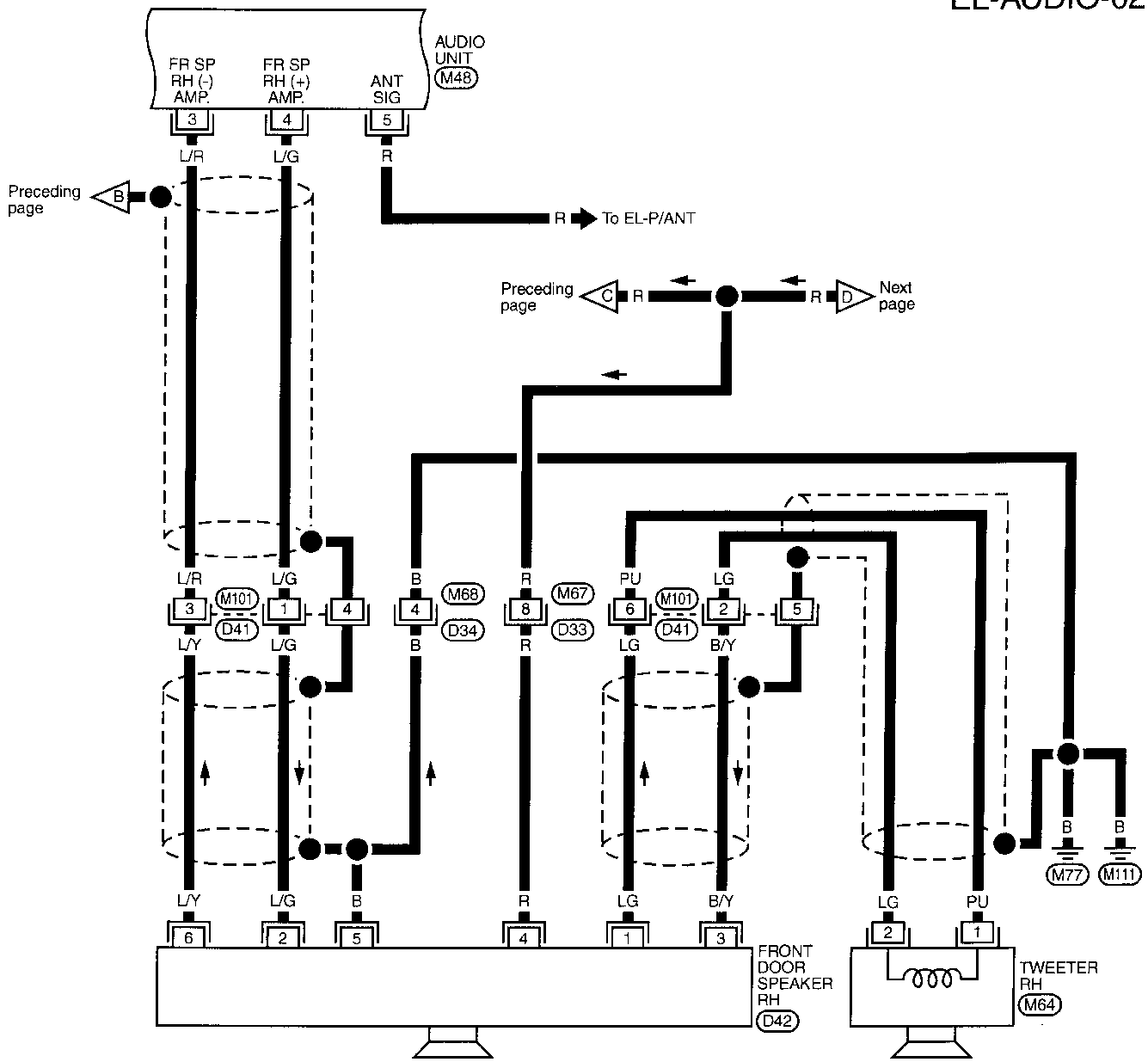
Refer to last page (Foldout page).

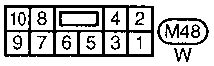
M10

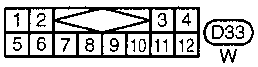
M81

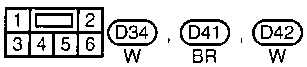
MEL790J

EL-AUDIO-02



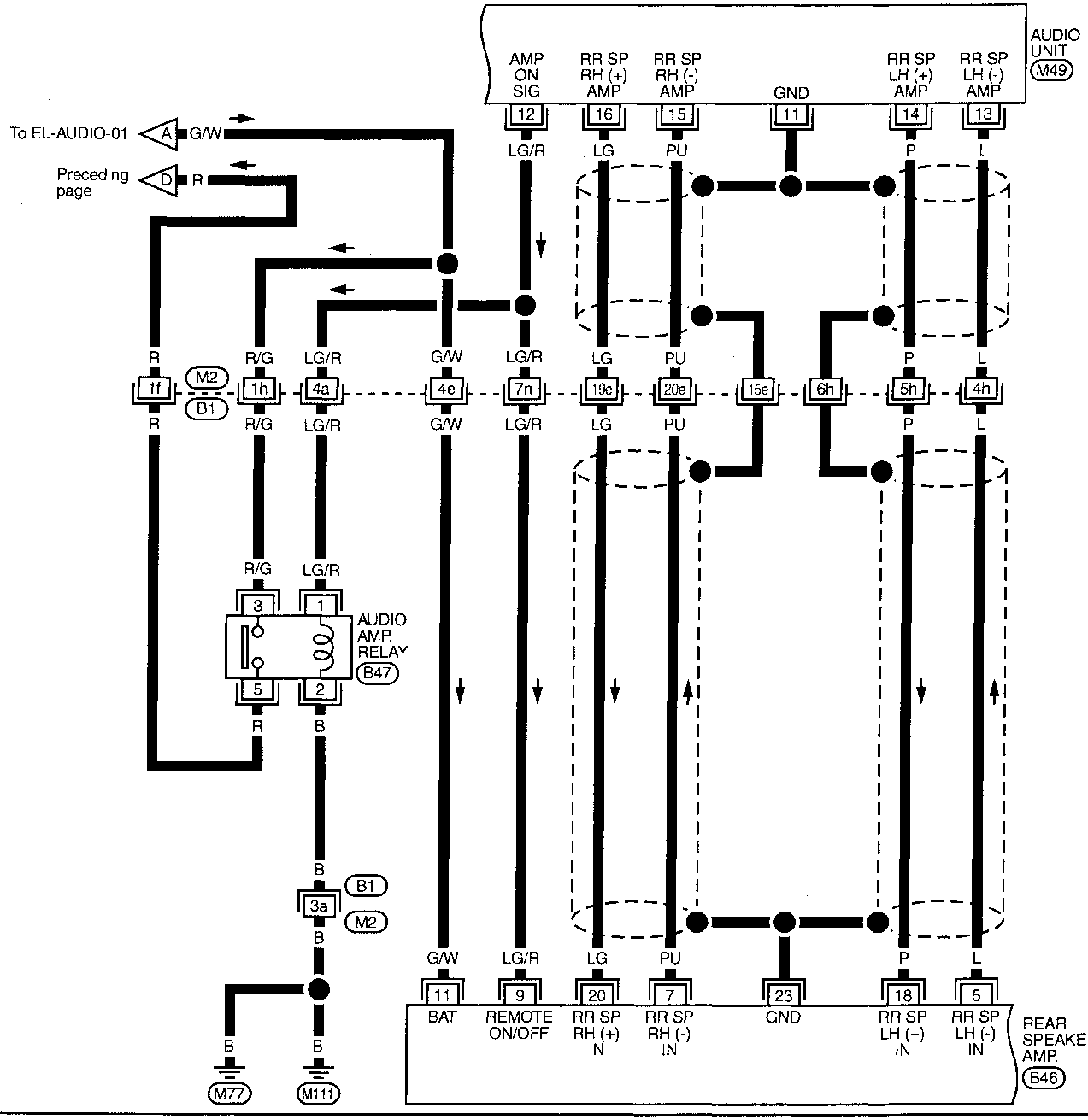




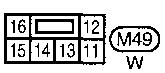


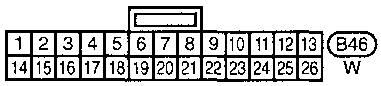
MEL791J

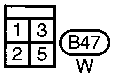
EL-AUDIO-03



Refer to last page (Foldout page).
M2 , B1

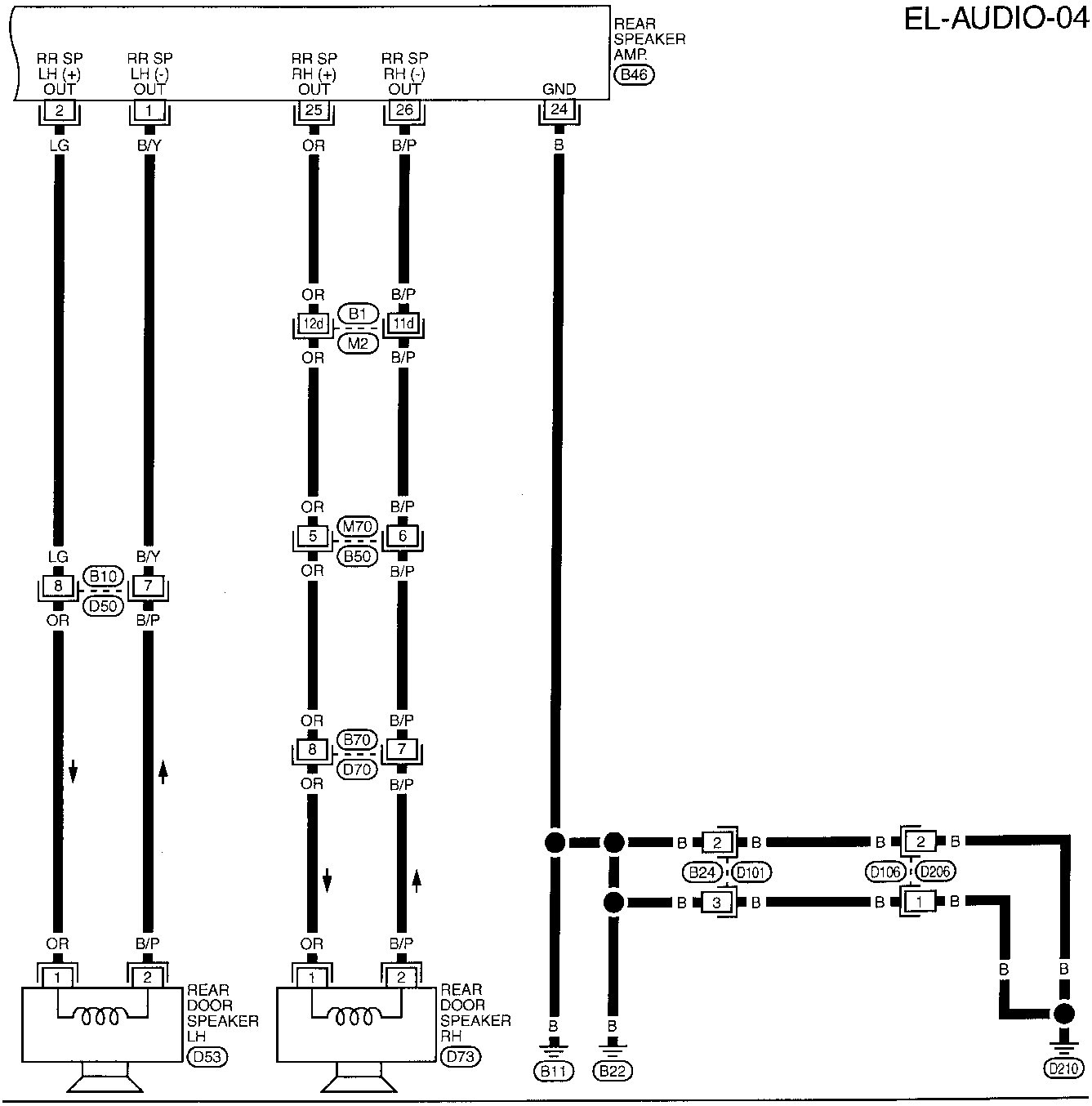




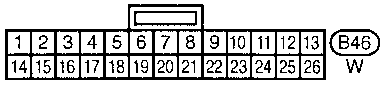


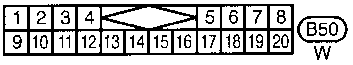
MEL792J

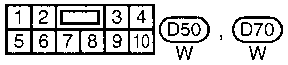
EL-AUDIO-04

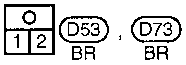


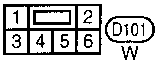
Refer to last page (Foldout page).
M2 , B1











MEL793J

Trouble Diagnoses

NBEL0082

AUDIO UNIT

NBEL0082S01

Symptom	Possible causes	Repair order
Audio unit inoperative (no digital display and no sound from speakers).	1. 10A fuse 2. Poor audio unit case ground 3. Audio unit	1. Check 10A fuse [No. 10, located in fuse block (J/B)]. Turn ignition switch ON and verify that battery positive voltage is present at terminal 10 of audio unit. 2. Check audio unit case ground. 3. Remove audio unit for repair.
Audio unit presets are lost when ignition switch is turned OFF.	1. 15A fuse 2. Audio unit	1. Check 15A fuse [No. 4, located in fuse block (J/B)] and verify that battery positive voltage is present at terminal 6 of audio unit. 2. Remove audio unit for repair.
AM stations are weak or noisy (FM stations OK).	1. Antenna 2. Poor audio unit ground 3. Audio unit	1. Check antenna. 2. Check audio unit ground. 3. Remove audio unit for repair.
FM stations are weak or noisy (AM stations OK).	1. Window antenna 2. Audio unit	1. Check window antenna. 2. Remove audio unit for repair.
Audio unit generates noise in AM and FM modes with engine running.	1. Poor audio unit ground 2. Loose or missing ground bonding straps 3. Ignition condenser or rear window defogger noise suppressor condenser 4. Alternator 5. Ignition coil or secondary wiring 6. Audio unit	1. Check audio unit ground. 2. Check ground bonding straps. 3. Replace ignition condenser or rear window defogger noise suppressor condenser. 4. Check alternator. 5. Check ignition coil and secondary wiring. 6. Remove audio unit for repair.
Audio unit generates noise in AM and FM modes with accessories on (switch pops and motor noise).	1. Poor audio unit ground 2. Antenna 3. Accessory ground 4. Faulty accessory	1. Check audio unit ground. 2. Check antenna. 3. Check accessory ground. 4. Replace accessory.
Audio unit controls are operational, but no sound is heard from any speaker.	1. 15A fuse 2. Audio unit output 3. Audio unit	1. Check 15A fuse [No. 4, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 3 of audio amp. relay. 2. Check audio unit output voltage (Terminal 12). 3. Remove audio unit for repair.
All front speakers are inoperative.	1. Audio amp. relay 2. Audio amp. relay ground 3. Amp. ON signal	1. Check audio amp. relay. 2. Check audio amp. relay ground (Terminal 2). 3. Turn ignition switch ACC and audio unit ON. Verify battery positive voltage is present at terminal 1 of audio amp. relay.
Individual front speaker is noisy or inoperative.	1. Speaker ground 2. Power supply 3. Audio unit output 4. Speaker	1. Check speaker ground (Terminal 5). 2. Check power supply for speaker (Terminal 4). 3. Check audio unit output voltage for speaker. 4. Replace speaker.
Both rear speakers are inoperative.	1. Poor rear speaker amp. ground 2. Power supply 3. Amp. ON signal 4. Rear speaker amp.	1. Check rear speaker amp. ground circuit. 2. Check power supply for rear speaker amp. (Terminal 11). 3. Turn ignition switch ACC and audio unit ON. Verify battery positive voltage is present at terminal 9 of rear speaker amp. 4. Remove rear speaker amp. for repair.
Individual rear speaker is noisy or inoperative.	1. Speaker 2. Audio unit/amp. output 3. Speaker circuit 4. Audio unit	1. Check speaker. 2. Check audio unit/amp. output. 3. Check wires for open or short between audio unit/amp. and speakers. 4. Remove audio unit for repair.

Inspection

NBEL0083

AUDIO UNIT AND AMP.

NBEL0083S01

All voltage inspections are made with:

- Ignition switch ON or ACC
- Audio unit ON
- Audio unit and amps. connected (If audio unit or amp. is removed for inspection, supply a ground to the case using a jumper wire.)

ANTENNA

NBEL0083S02

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.

System Description

NBEL0084

Power is supplied at all times

- through 7.5A fuse [No. 24, located in the fuse block (J/B)]
- to power antenna terminal 6.

Ground is supplied to the power antenna terminal 2 through body grounds M4 and M66.
When the audio unit is turned to the ON position, battery positive voltage is supplied

- through audio unit terminal 5
- to power antenna terminal 4.

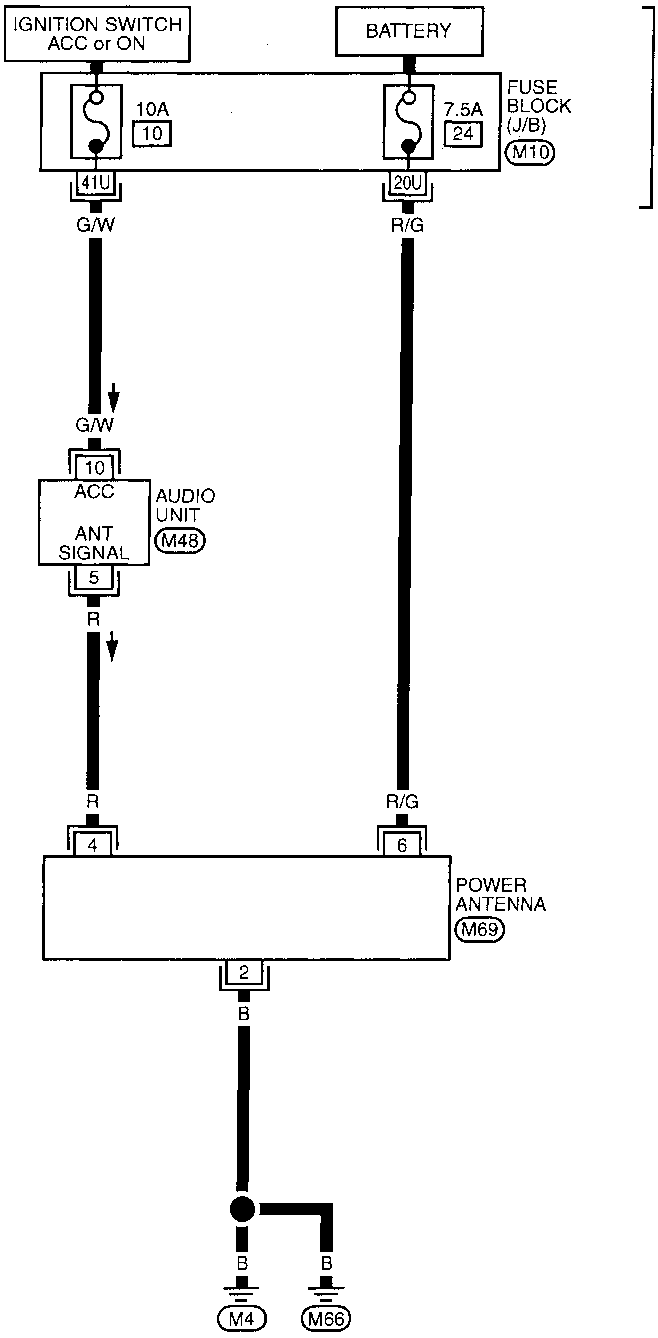
The antenna raises and is held in the extended position.
When the audio unit is turned to the OFF position, battery positive voltage is interrupted

- from audio unit terminal 5
- to power antenna terminal 4.

The antenna retracts.

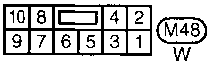
Wiring Diagram — P/ANT —

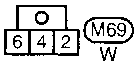
NBEL0085



EL-P/ANT-01

Refer to EL-POWER.





Refer to last page (Foldout page).
M10

MEL092K

Trouble Diagnoses

NBEL0086

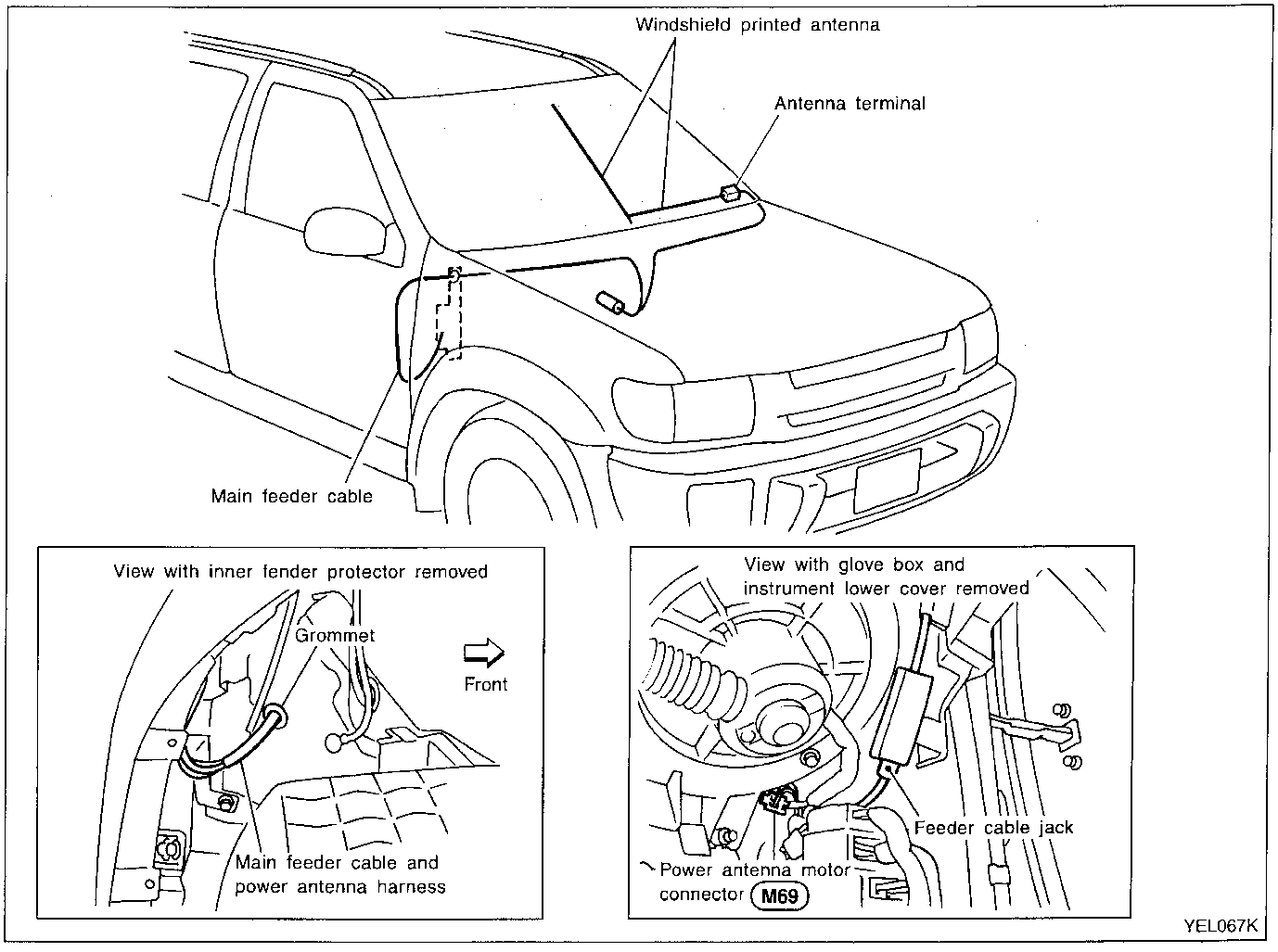
POWER ANTENNA

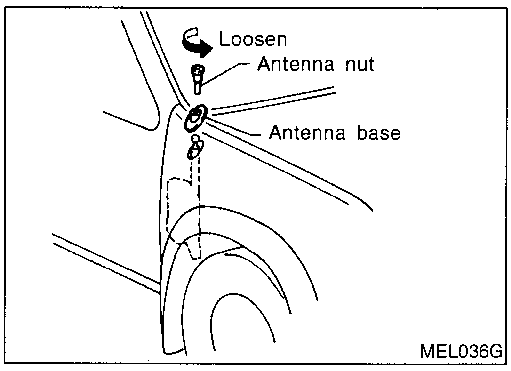
NBEL0086S01

Symptom	Possible causes	Repair order
Power antenna does not operate.	1. 7.5A fuse 2. Audio unit signal 3. Grounds M4 and M66	1. Check 7.5A fuse [No. 24, located in fuse block (J/B)]. Verify that battery positive voltage is present at terminal 6 of power antenna. 2. Turn ignition switch and audio unit ON. Verify that battery positive voltage is present at terminal 4 of power antenna. 3. Check grounds M4 and M66.

Location of Antenna

NBEL0087





Antenna Rod Replacement

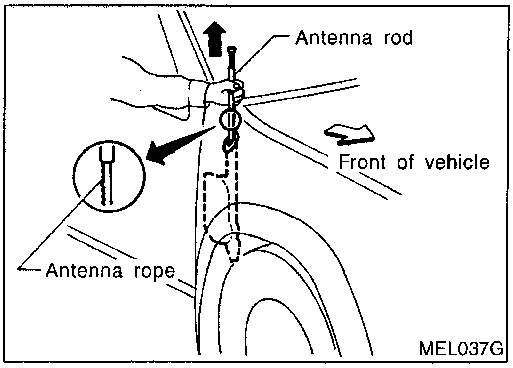
NBEL0088

REMOVAL

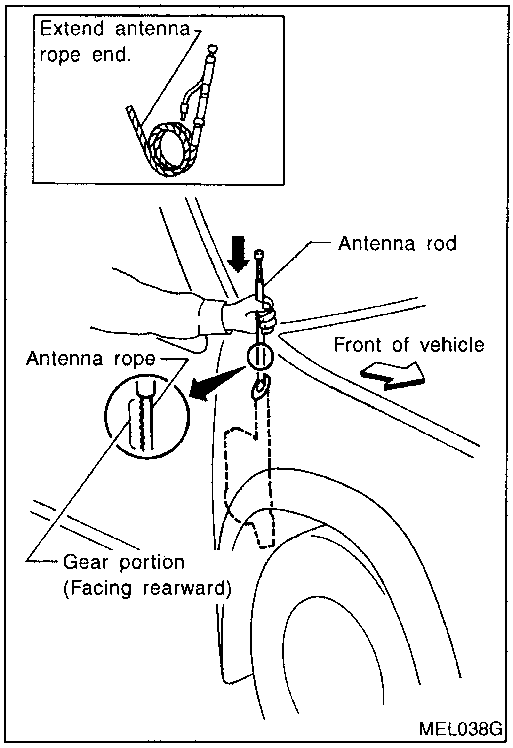
NBEL0088S01

1. Remove antenna nut and antenna base.

Antenna Rod Replacement (Cont'd)



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



INSTALLATION

NBEL0088S02

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.

System Description

NBEL0167

OUTLINE

NBEL0167S01

Electric sunroof system consists of

- Sunroof switch
- Sunroof motor
- Power window relay
- Smart entrance control unit

Smart entrance control unit controls retained power operation.

RETAINED POWER OPERATION

NBEL0167S02

When the ignition switch is turned to OFF position from ON or START position, power is supplied for 45 seconds

- to power window relay terminal 2
- from smart entrance control unit terminal 5.

Ground is always supplied

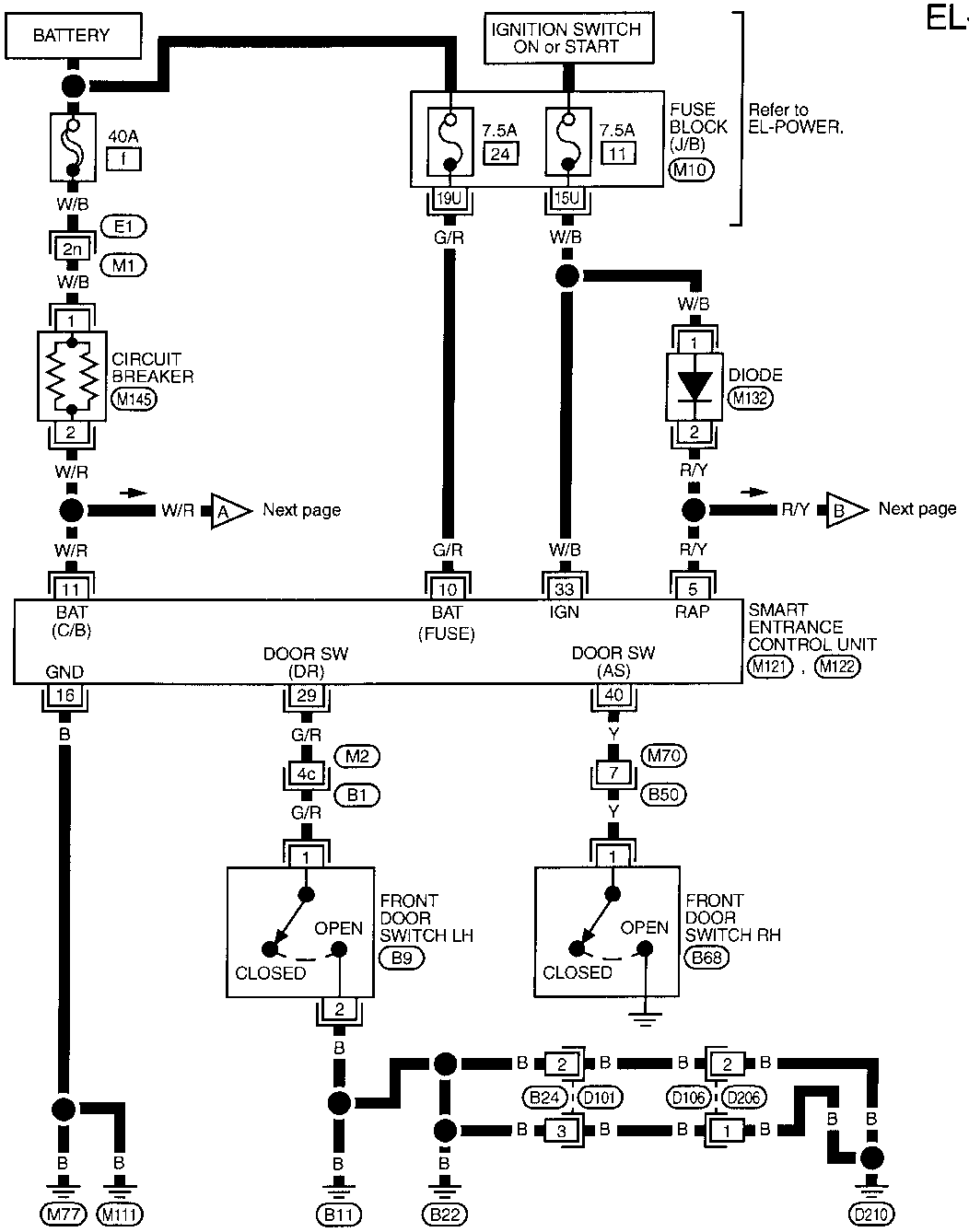
- to power window relay terminal 1
- through body grounds.

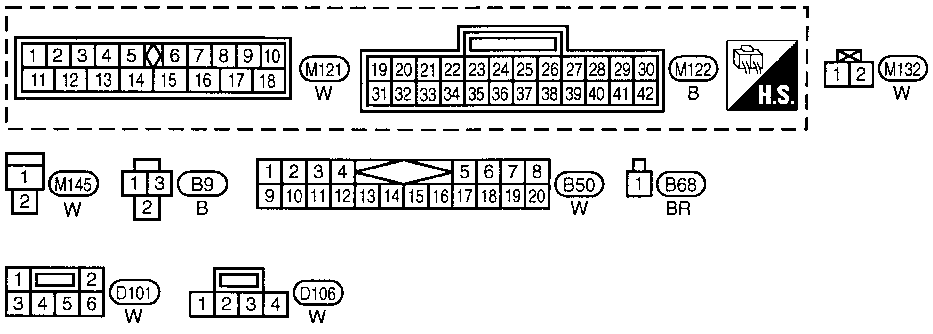
When power and ground is supplied, the power window relay continues to be energized, and the electrical sunroof can be operated.
The retained power operation is canceled when the driver or passenger side door is opened.

Wiring Diagram — SROOF —

NBEL0089

EL-SROOF-01





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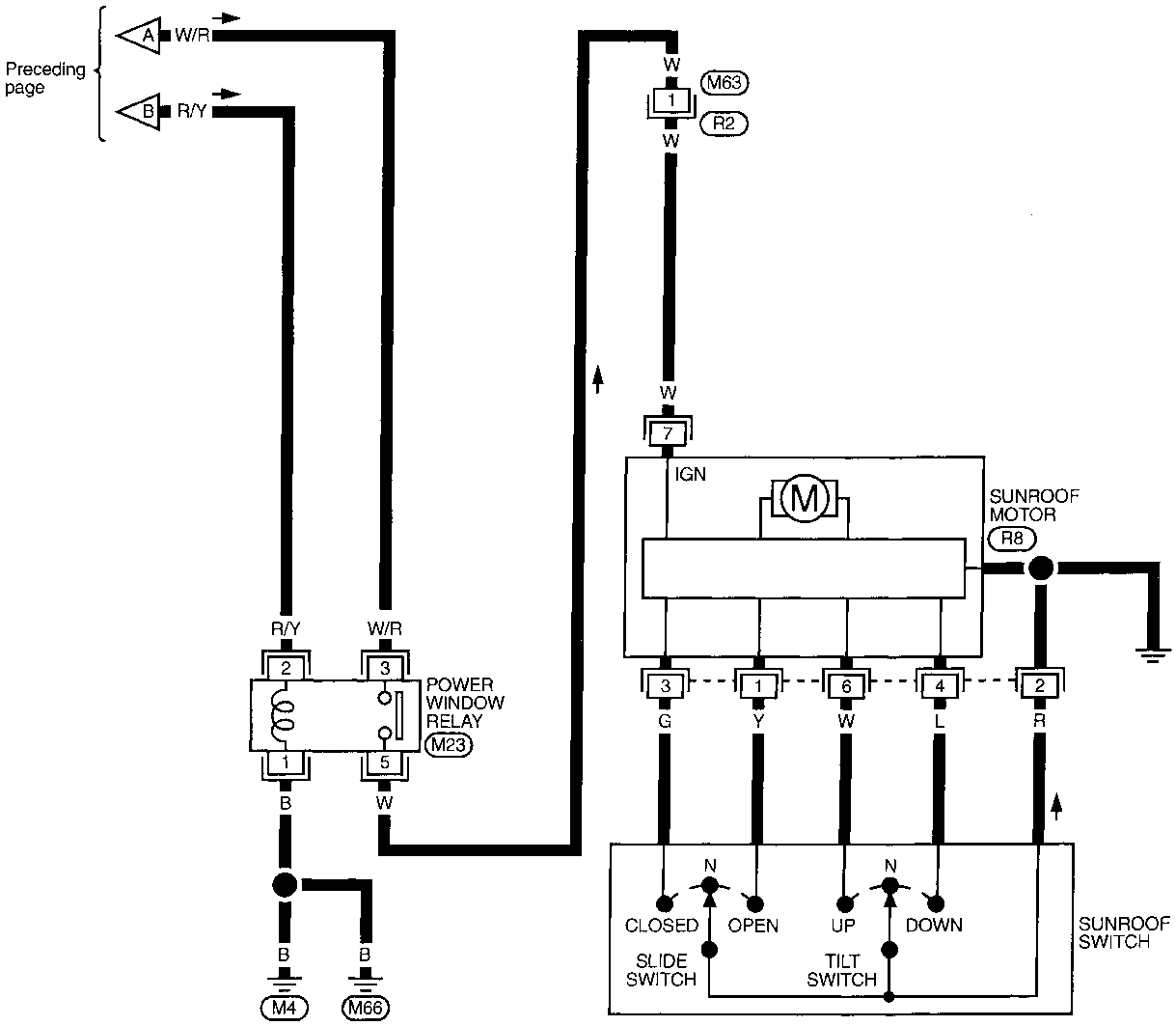
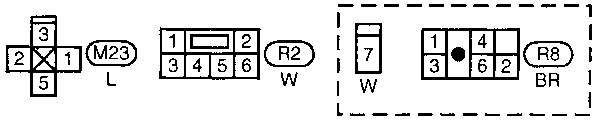
M1 , E1
M2 , B1
M10

MEL071K

EL-SROOF-02



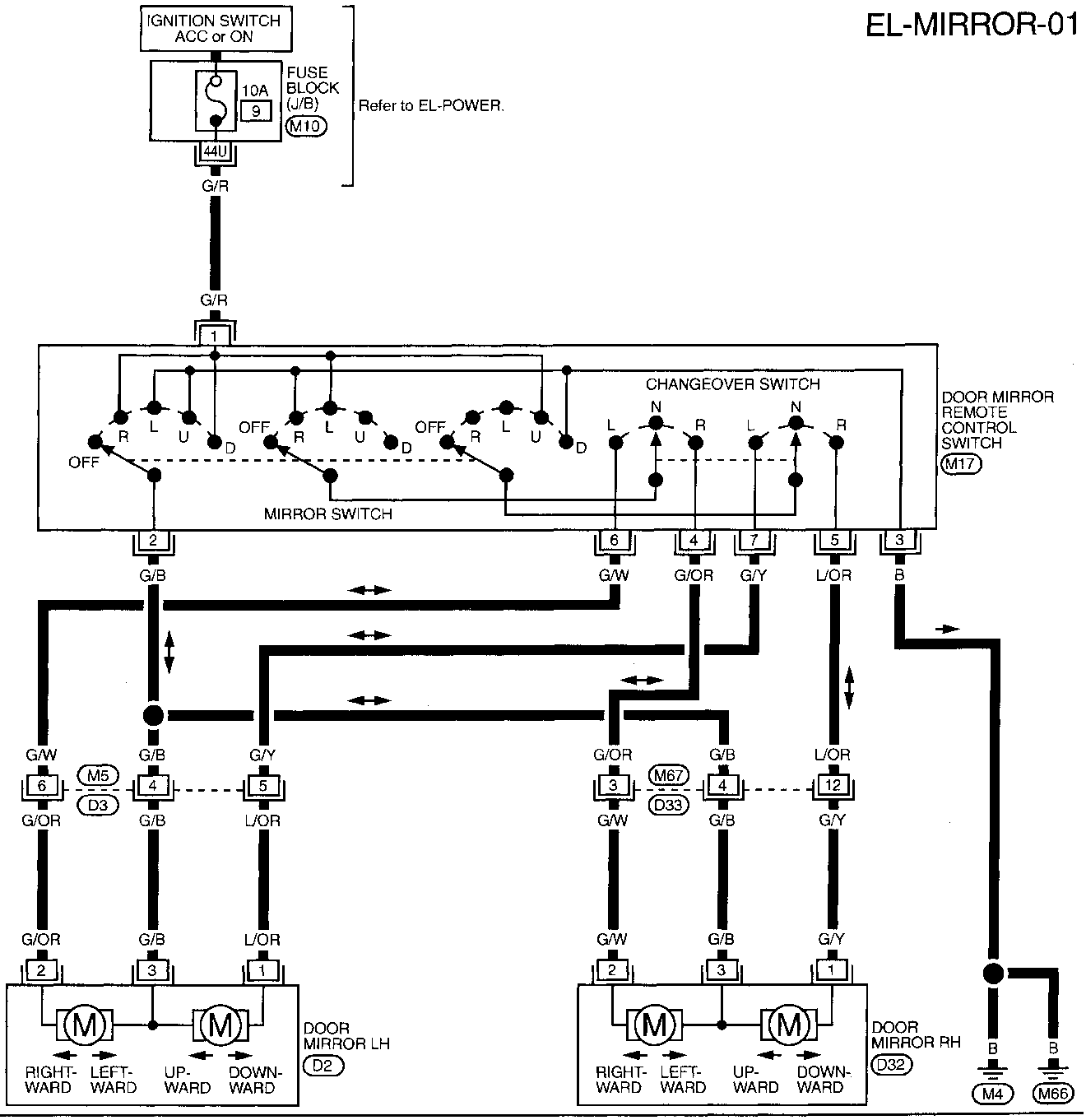


MEL794J

Wiring Diagram — MIRROR —

NBEL0090

EL-MIRROR-01



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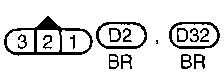
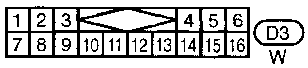
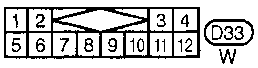
M10





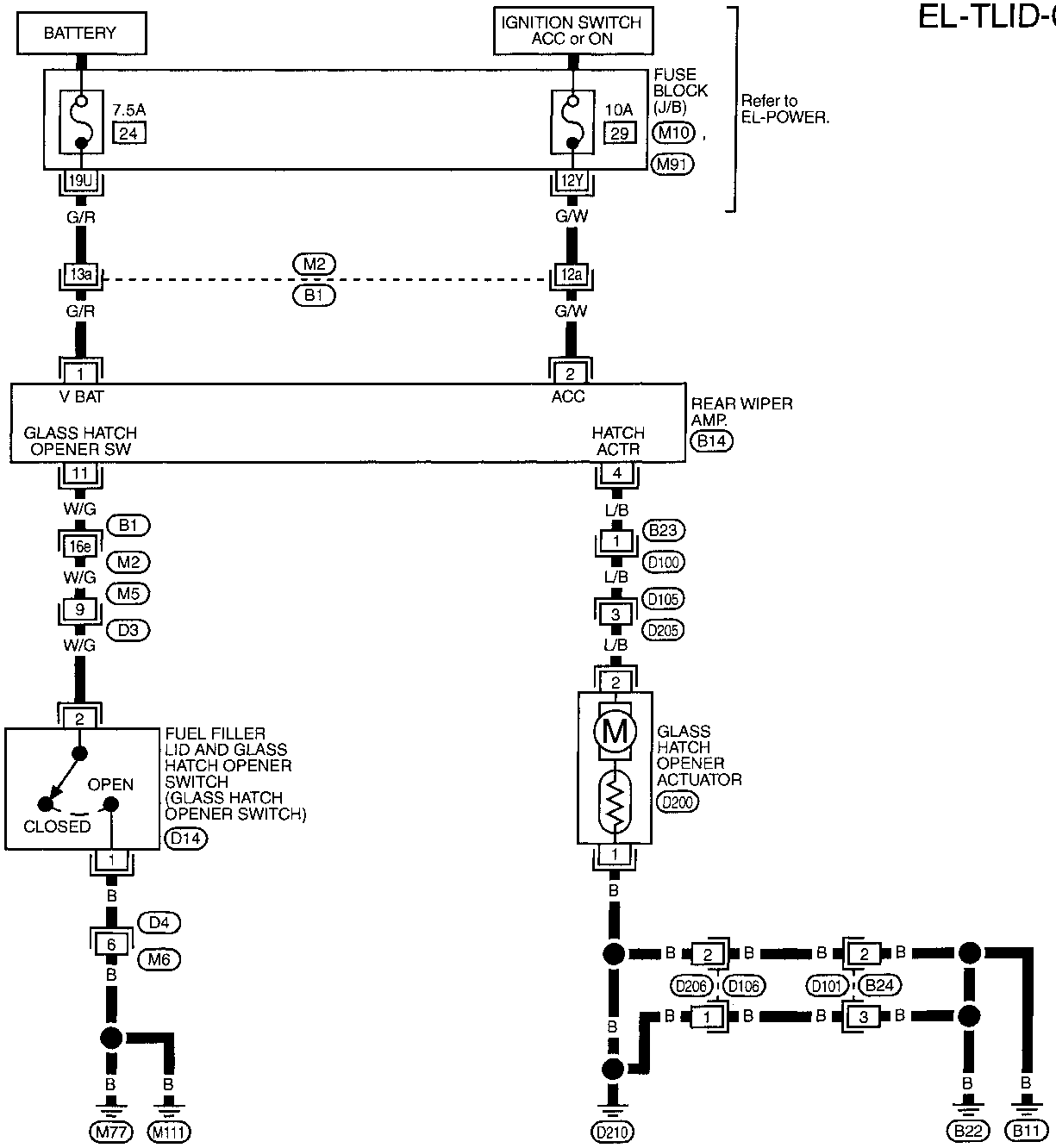


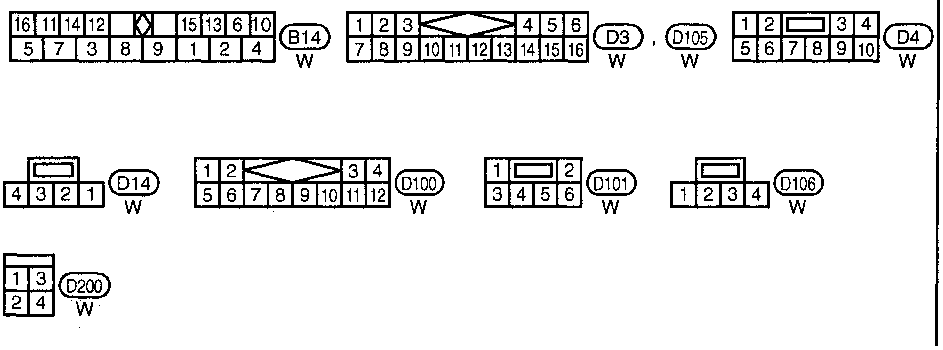
MEL052I

Wiring Diagram — TLID —

NBEL0091

EL-TLID-01





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M2, B1

M10

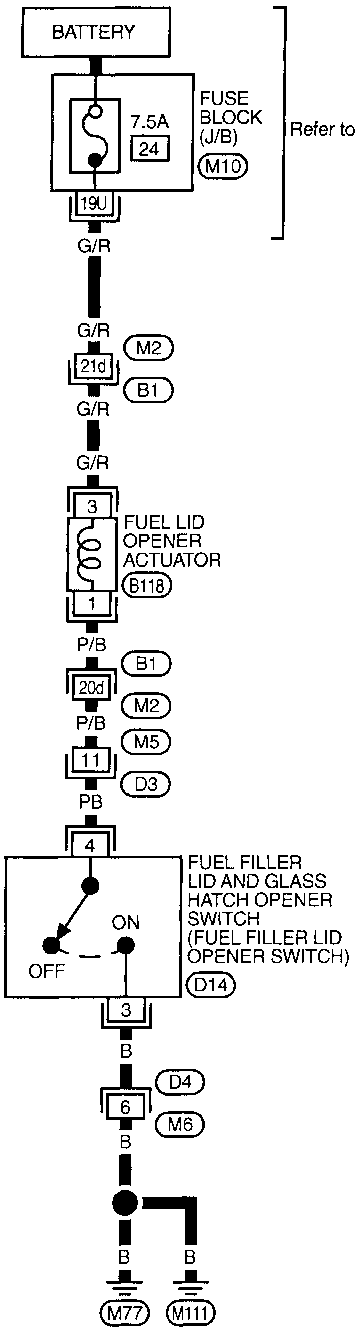
M91

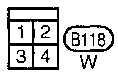
MEL795J

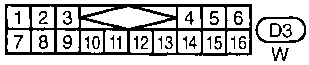
Wiring Diagram — F/LID —

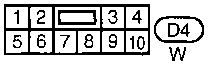
NBEL0168

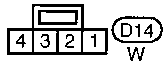
EL-F/LID-01











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M2 , B1

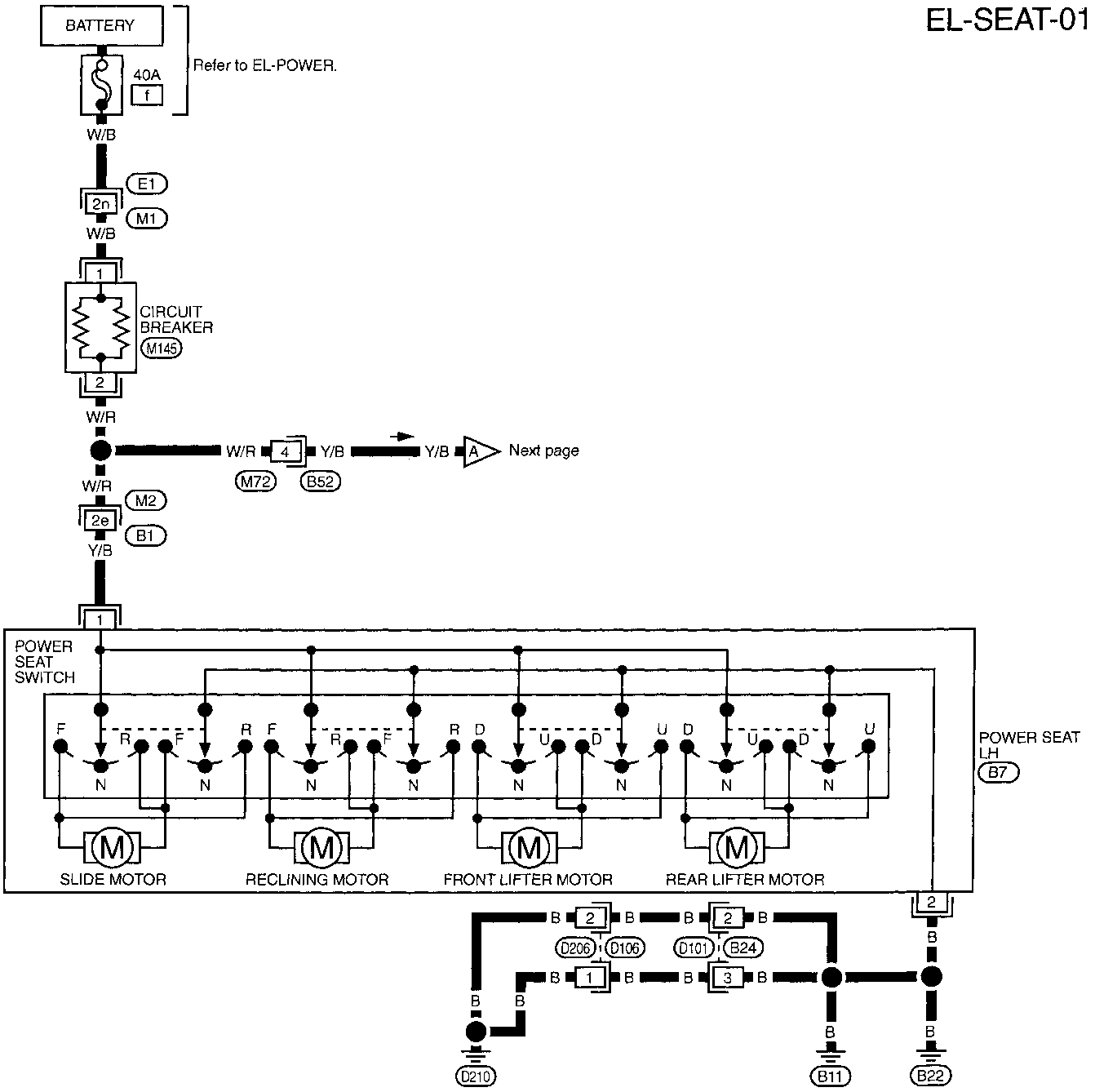
M10

MEL796J

Wiring Diagram — SEAT —

NBEL0092

EL-SEAT-01



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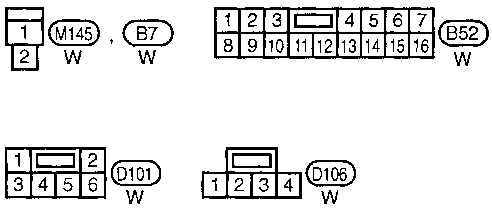
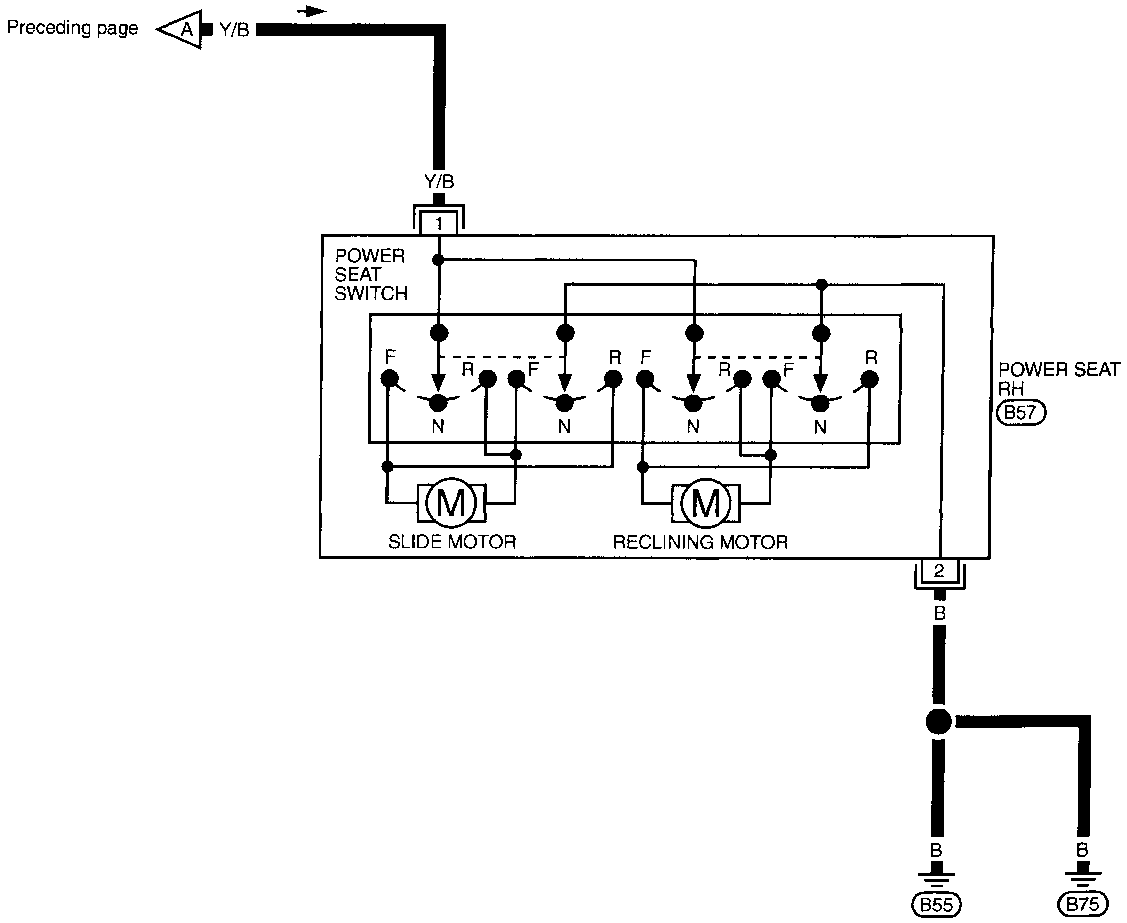
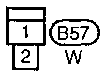
M1 , E1
M2 , B1



MEL797J

EL-SEAT-02



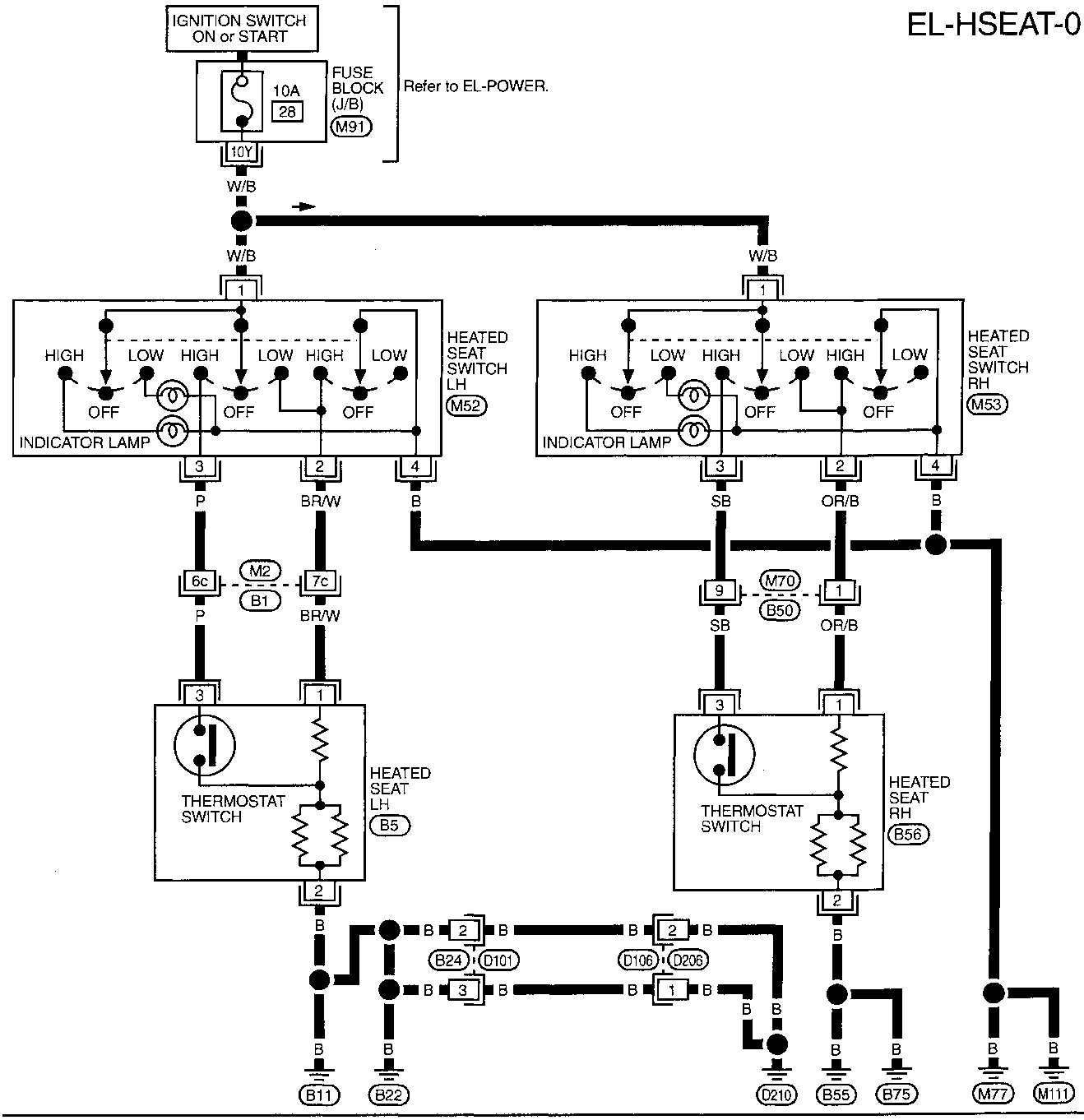


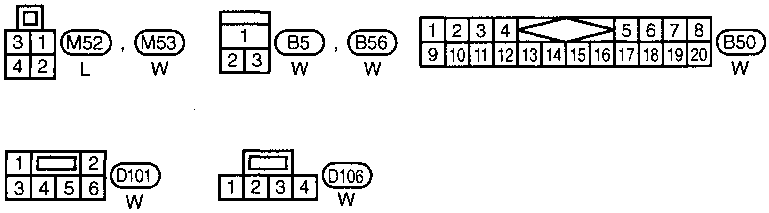
MEL601F

Wiring Diagram — HSEAT —

NBEL0093

EL-HSEAT-01





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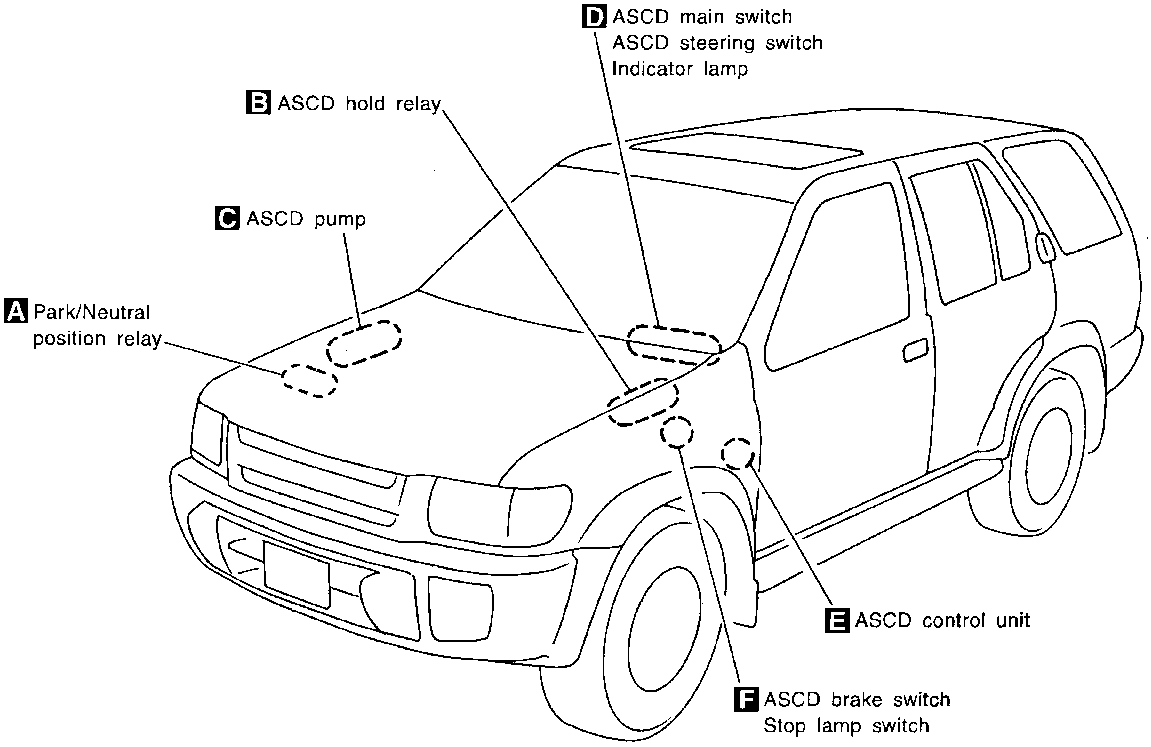
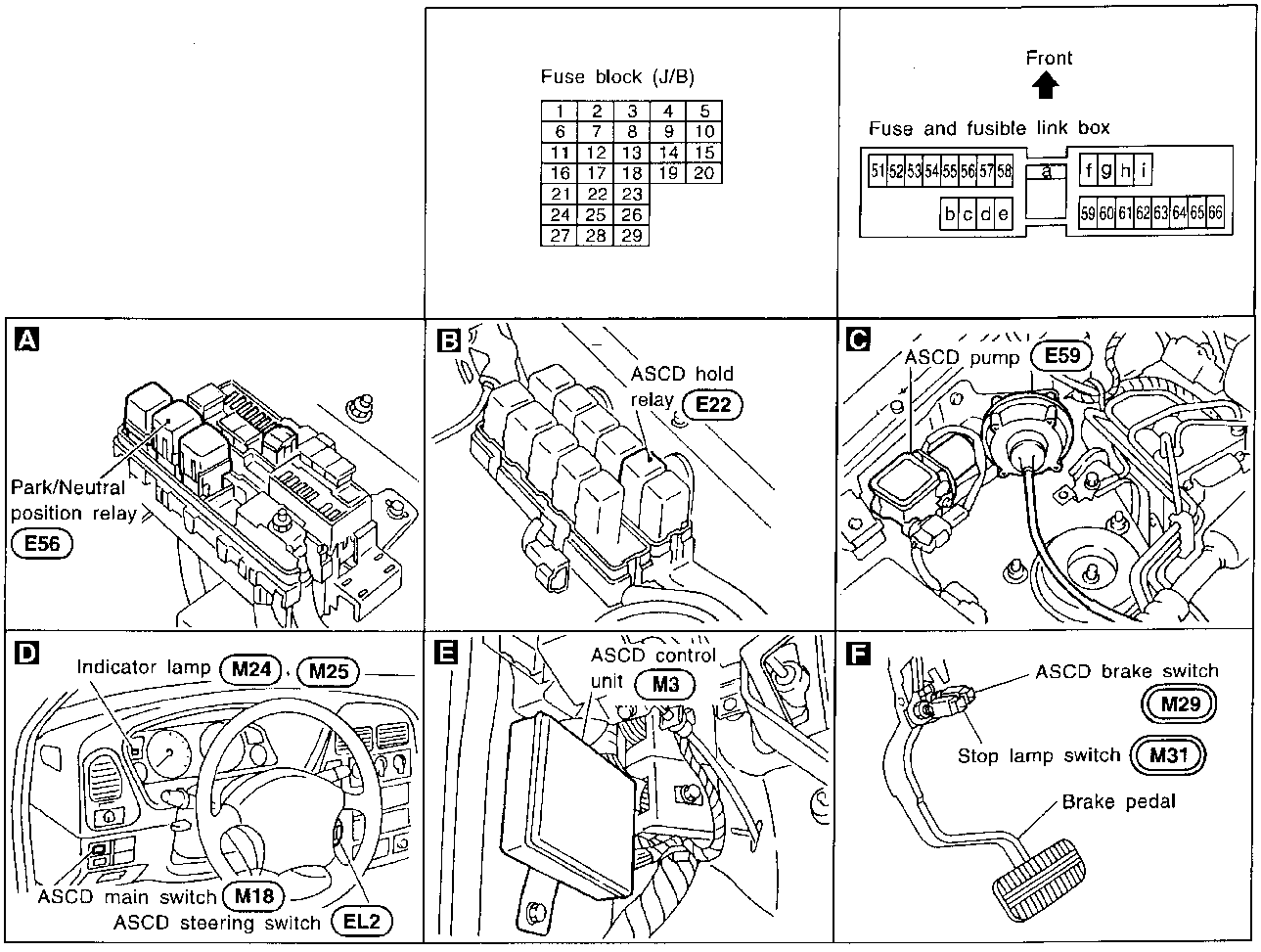
M2 , B1
M91

MEL798J

Component Parts and Harness Connector Location

NBEL0094





MEL458I

System Description

NBEL0095

Refer to Owner's Manual for ASCD operating instructions.

POWER SUPPLY AND GROUND

NBEL0095S03

When ignition switch is in the ON or START position, power is supplied
- through 7.5A fuse [No. 11, located in the fuse block (J/B)]
- to ASCD hold relay terminal 7 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 E13 and E41.

With power and ground is supplied, ASCD hold relay is energized. And then power is supplied
- from ASCD hold relay terminal 6
- 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 brake switch, ASCD hold relay and park/neutral position relay.

Ground is supplied
- to ASCD control unit terminal 3
- through body grounds M4 and M66.

OPERATION

NBEL0095S04

Set Operation

NBEL0095S0401

To activate the ASCD, all of following conditions must exist.
- Power supply to ASCD control unit terminal 4
- Power supply to ASCD control unit terminal 5 (Brake pedal is released and A/T selector lever is in other than P and N position.)
- Vehicle speed is greater than 48 km/h (30 MPH). (Signal from combination meter)

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

And then ASCD pump is activated to control throttle wire and ASCD control unit supply power
- to combination meter terminal 11 to illuminate CRUISE indicator.

A/T Overdrive Control during Cruise Control Driving

NBEL0095S0402

When the vehicle speed is approximately 8 km/h (5 MPH) below set speed, a signal is sent
- from ASCD control unit terminal 12
- to TCM (transmission control module) terminal 24.

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

Coast Operation

NBEL0095S0403

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

Accel Operation

NBEL0095S0404

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

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

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

Cancel Operation

NBEL0095S0405

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

- CANCEL switch is depressed. (Power supply to ASCD control unit terminals 1 and 2)
- Brake pedal is depressed. (Power supply to ASCD control unit terminal 11 from stop lamp switch)
- Brake pedal is depressed or A/T selector lever is shifted to P or N position. (Power supply to ASCD control unit terminal 5 is interrupted.)

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

Resume Operation

NBEL0095S0406

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

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

ASCD PUMP OPERATION

NBEL0095S05

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

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

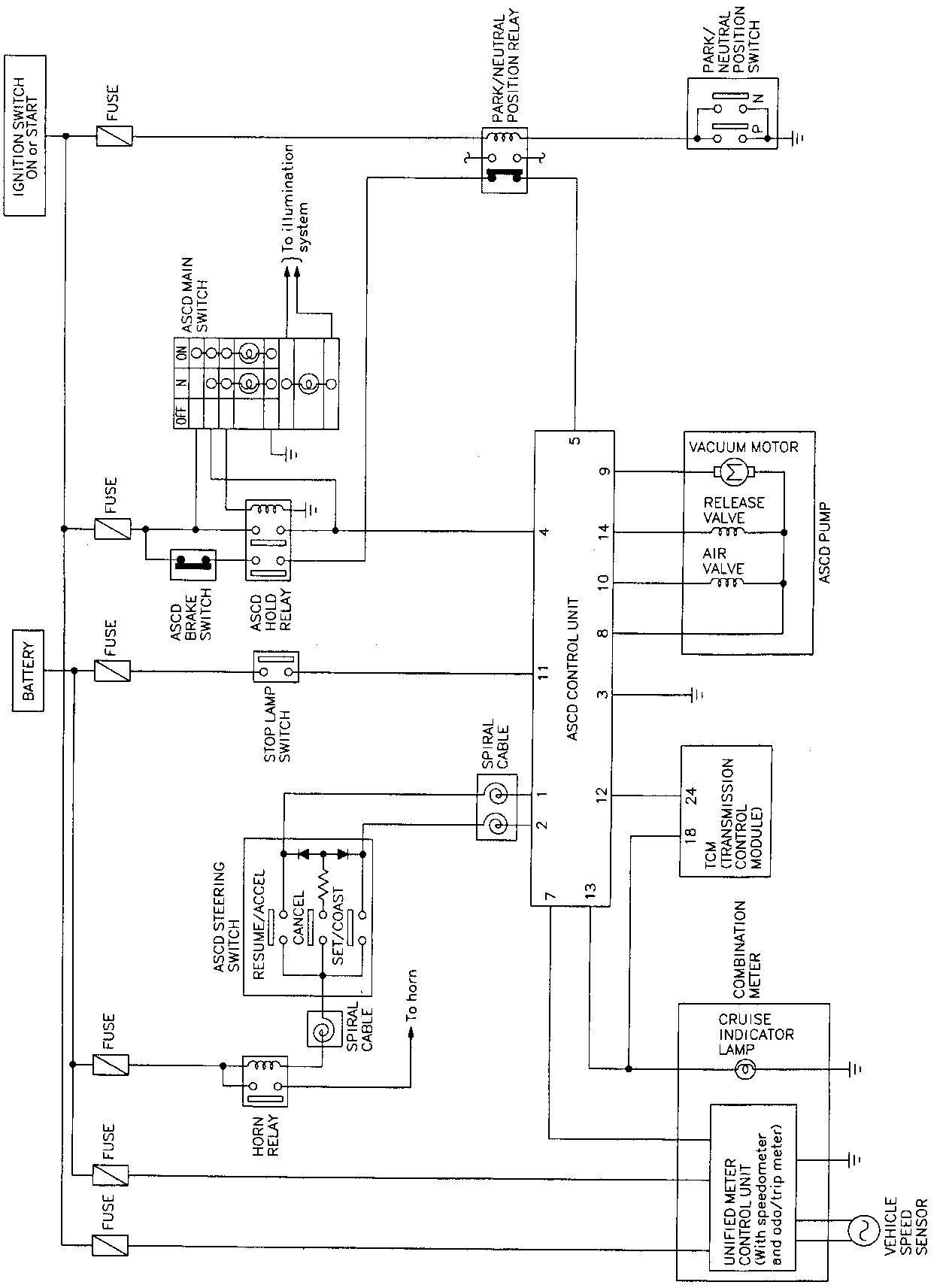
Ground is supplied to vacuum motor, air valve and release valve from ASCD control unit depending on the operated condition as shown in the below table.
The pump is connected to ASCD actuator by vacuum hose. When the ASCD pump is activated, the ASCD pump vacuum the diaphragm of ASCD actuator to control throttle cable.

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

*1: When power and ground is supplied, valve is closed.
*2: Set position held.

Schematic

NBEL0096



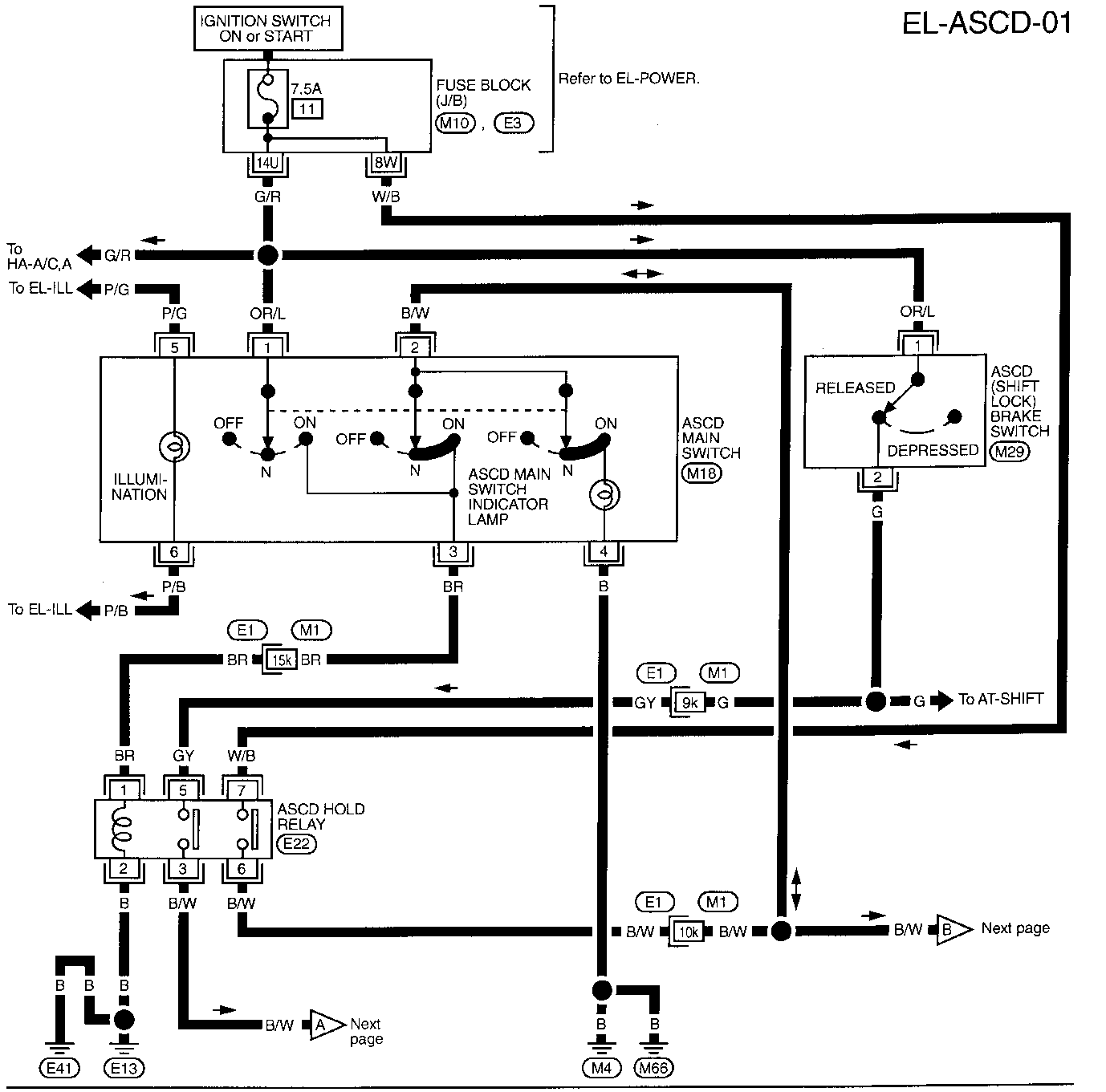
MEL799J

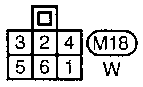
Wiring Diagram — ASCD —

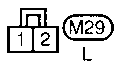
NBEL0097

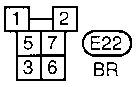
FIG. 1

NBEL0097S01









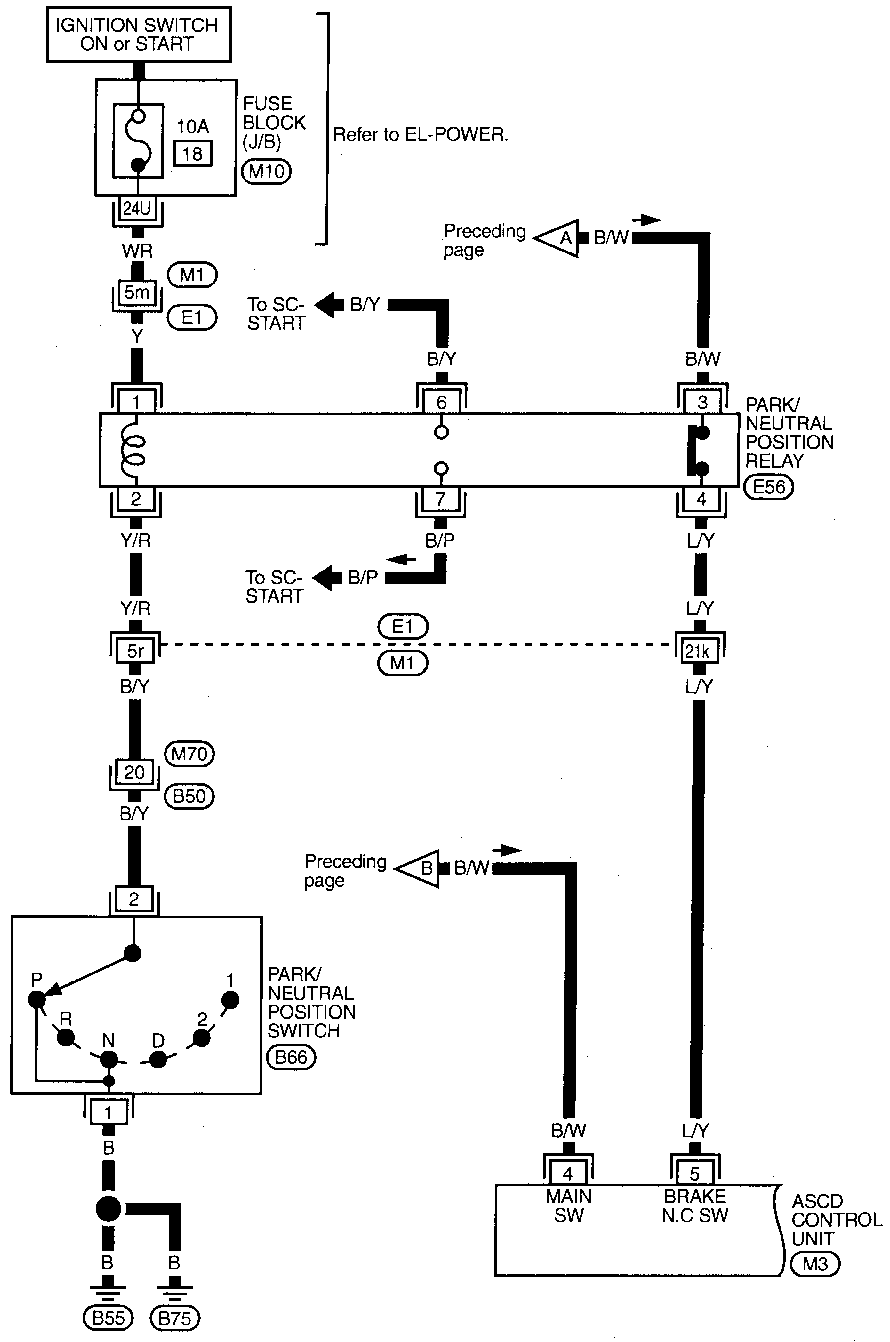
Refer to last page (Foldout page).
M1 , E1
M10
E3

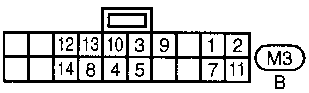
MEL800J

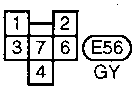
FIG. 2

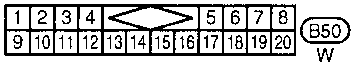
NBEL0097S02

EL-ASCD-02







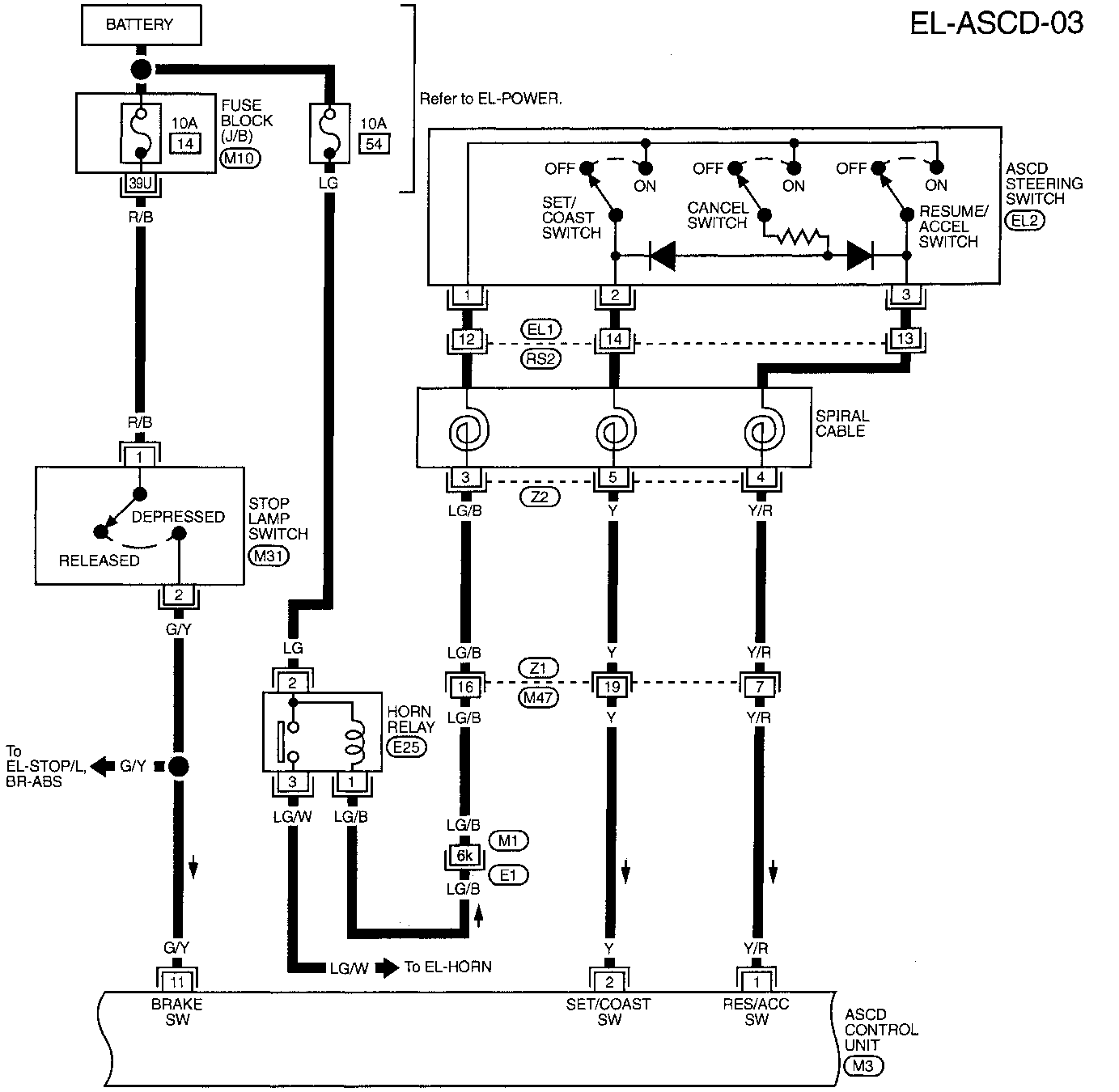


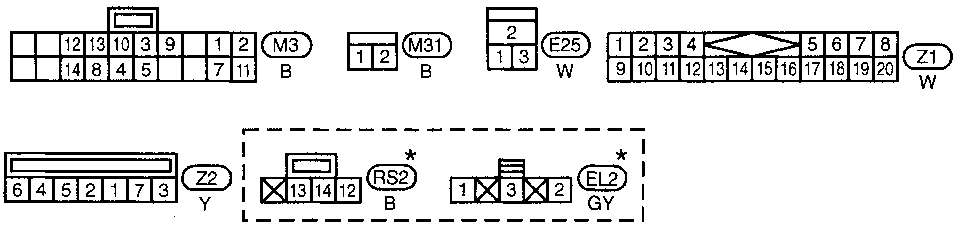
Refer to last page (Foldout page).
M1 , E1
M10

MEL801J

FIG. 3

NBEL0097S03





Refer to last page (Foldout page).
M1, E1
M10

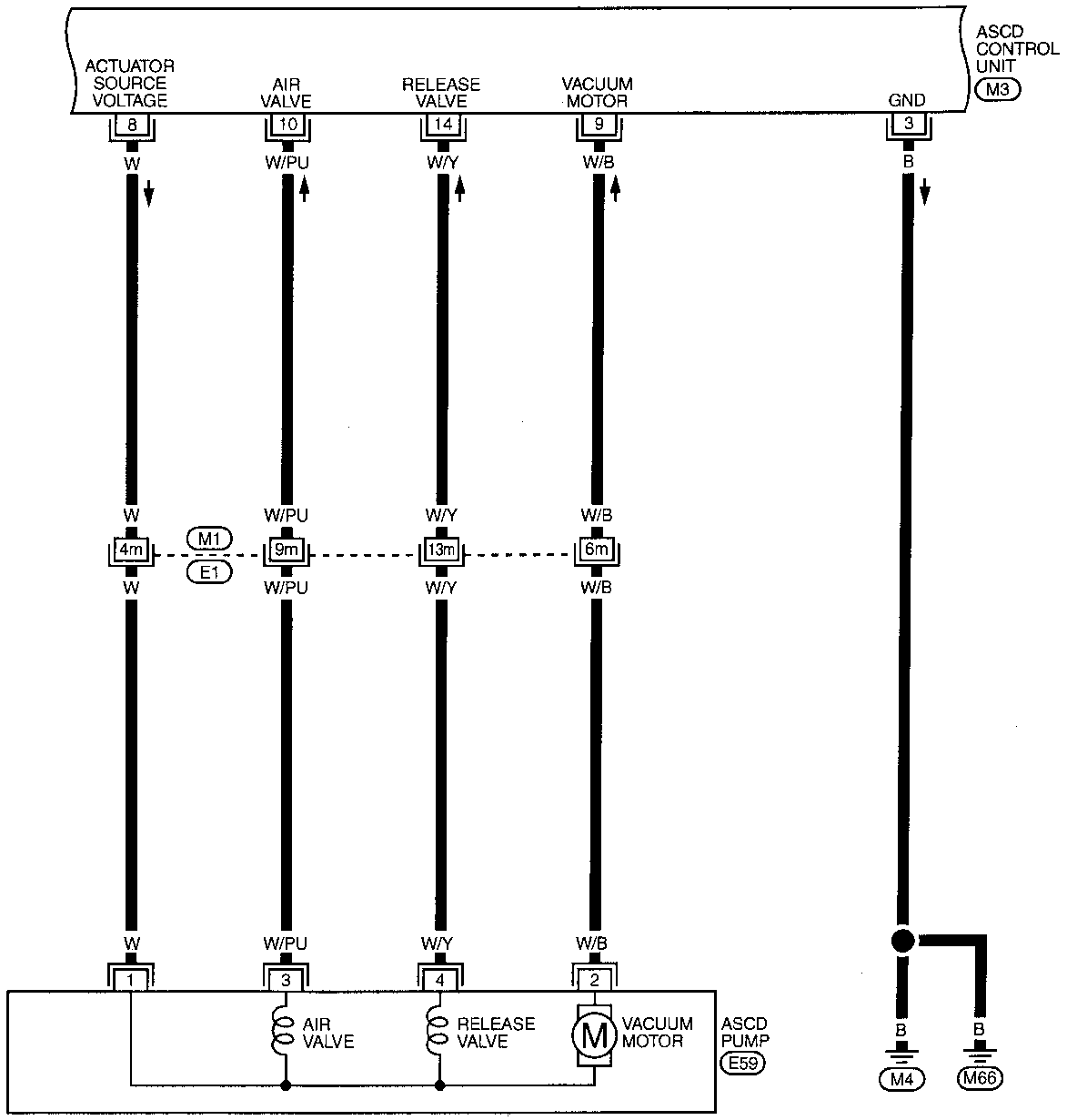
* : This connector is not shown in "HARNESS LAYOUT".

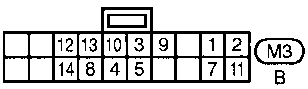
MEL802J

FIG. 4

NBEL0097S04

EL-ASCD-04



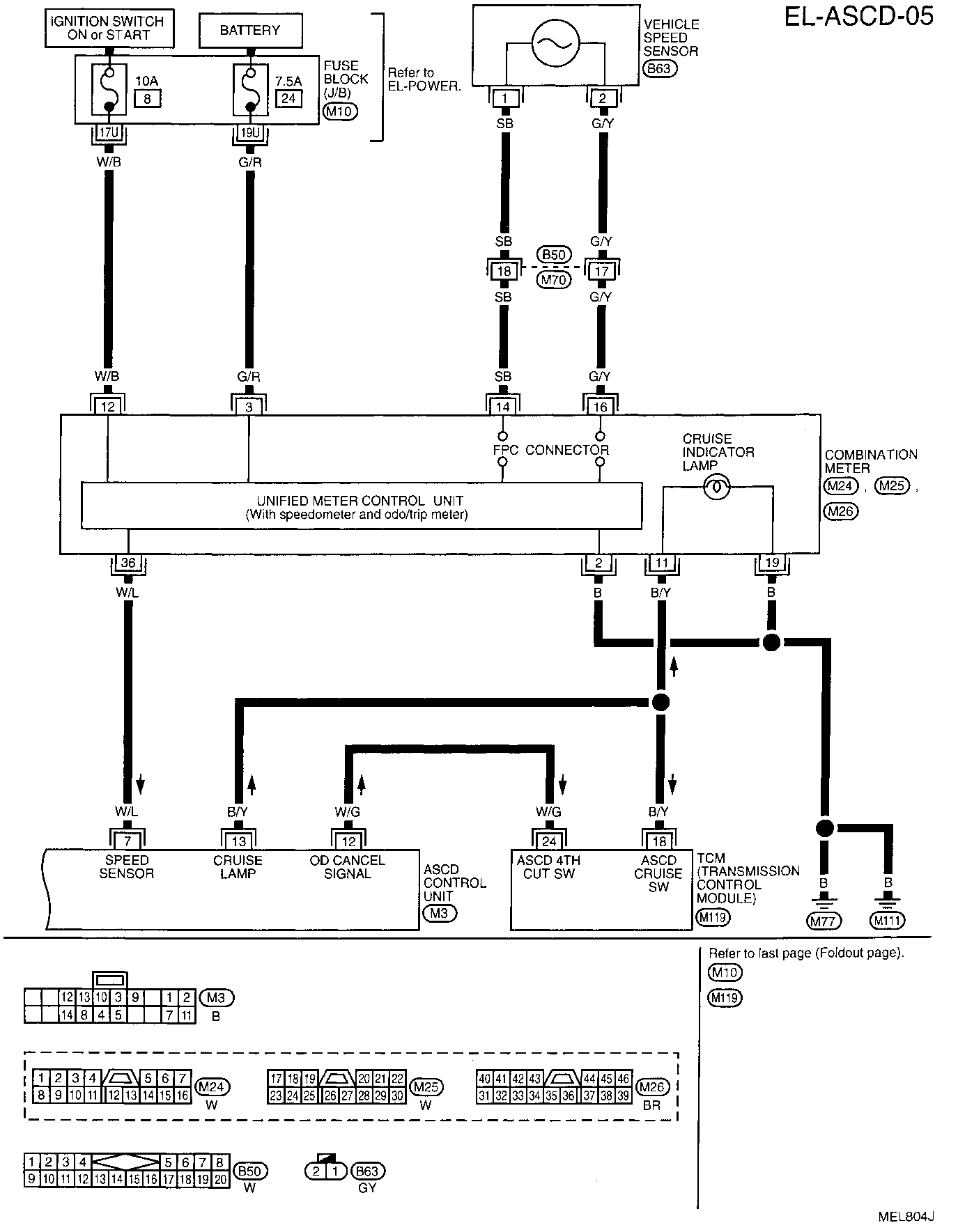


Refer to last page (Foldout page).
M1 , E1

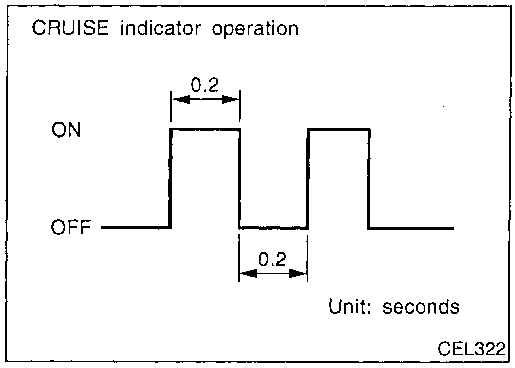
MEL803J

FIG. 5

NBEL0097S05



MEL804J



Fail-safe System

NBEL0098

DESCRIPTION

NBEL0098S01

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

NBEL0098S02

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.

Trouble Diagnoses

NBEL0099

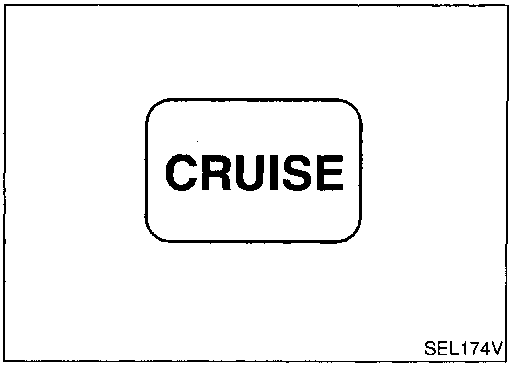
SYMPTOM CHART

NBEL0099S01

PROCEDURE	Diagnostic procedure								
REFERENCE PAGE (EL-)	173	174	175	176	177	178	179	179	180
SYMPTOM	FAIL-SAFE SYSTEM CHECK	POWER SUPPLY AND GROUND CIRCUIT CHECK	ASCD MAIN SWITCH CHECK	ASCD HOLD RELAY CHECK	ASCD BRAKE/STOP LAMP SWITCH CHECK	ASCD STEERING SWITCH CHECK	VEHICLE SPEED SENSOR CHECK	ASCD PUMP CIRCUIT CHECK	ASCD ACTUATOR/PUMP CHECK
ASCD cannot be set. ("CRUISE" indicator lamp does not blink.)		X	X	X		X	X		
ASCD cannot be set. ("CRUISE" indicator lamp blinks.★1)	X				X	X	X	X	
Vehicle speed does not decrease after SET/COAST switch has been pressed.						X			X
Vehicle speed does not return to the set speed after RESUME/ACCEL switch has been pressed.★2						X			X
Vehicle speed does not increase after RESUME/ACCEL switch has been pressed.						X			X
System is not released after CANCEL switch (steering) has been pressed.						X			X
Large difference between set speed and actual vehicle speed.									X
Deceleration is greatest immediately after ASCD has been set.									X

★1: It indicates that system is in fail-safe. After completing diagnostic procedures, perform "FAIL-SAFE SYSTEM CHECK" (EL-173) 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.

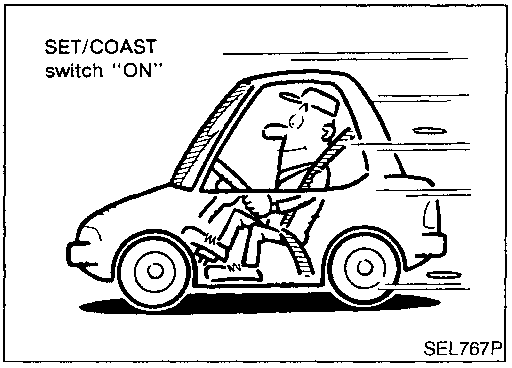


SEL174V

FAIL-SAFE SYSTEM CHECK

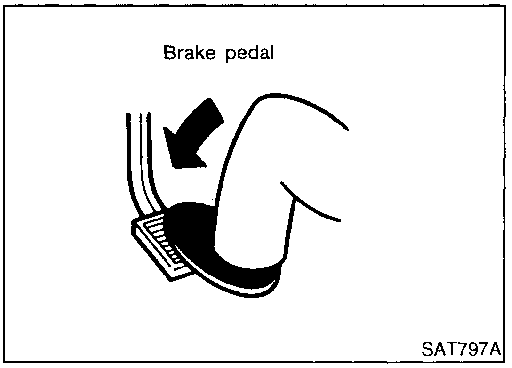
=NBEL0099S02

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 EL-178.



SEL767P

3. Drive the vehicle at more than 48 km/h (30 MPH) and push SET/COAST switch.
   If the indicator lamp blinks, check the following.
- Vehicle speed sensor. Refer to EL-179.
- ASCD pump circuit. Refer to EL-179.
- Replace control unit.



SAT797A

4. Depress brake pedal slowly (brake pedal should be depressed more than 5 seconds).
   If the indicator lamp blinks, check the following.
- ASCD brake/stop lamp switch. Refer to EL-177.

5. END. (System is OK.)

POWER SUPPLY AND GROUND CIRCUIT CHECK

=NBEL0099S03

1 OPERATION CHECK

1. Turn ignition switch ON.
2. Turn ASCD main switch "ON".

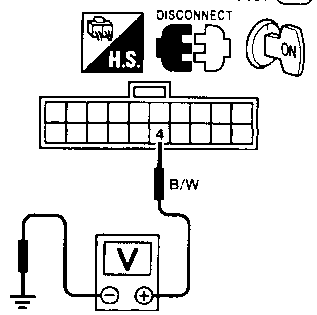
Does ASCD indicator illuminate?

Yes ▶	GO TO 2.
No ▶	Go to ASCD MAIN SWITCH CHECK. Refer to EL-175.

2 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.

ASCD control unit connector (M3)



SEL289UD

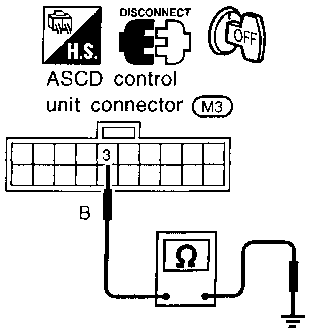
Refer to wiring diagram in EL-167.

Does battery voltage exist?

Yes ▶	GO TO 3.
No ▶	**Check the following.** • ASCD hold relay Refer to "ASCD HOLD RELAY CHECK", EL-176. • Harness for open or short

3 CHECK GROUND CIRCUIT FOR ASCD CONTROL UNIT

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



SEL764U

Refer to wiring diagram in EL-169.

Does continuity exist?

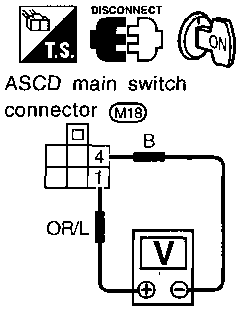
Yes ▶	Power supply and ground circuit is OK.
No ▶	Repair harness.

ASCD MAIN SWITCH CHECK

=NBEL0099S04

1	CHECK POWER SUPPLY FOR ASCD MAIN SWITCH

1. Disconnect main switch connector.
2. Check voltage between main switch terminals 1 and 4.



MEL842F

Refer to wiring diagram in EL-166.

Does battery voltage exist?

Yes	▶	GO TO 2.
No	▶	**Check the following.** • 7.5A fuse (No. 11, located in the fuse block) • Harness for open or short between fuse and ASCD main switch • Ground circuit for ASCD main switch

2	CHECK ASCD MAIN SWITCH

Refer to "Electrical Component Inspection" (EL-181).

OK or NG

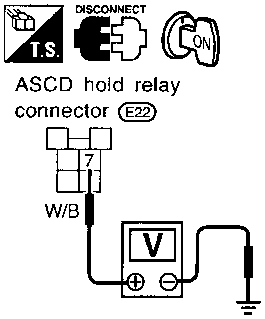
OK	▶	Go to ASCD HOLD RELAY CHECK. Refer to EL-176.
NG	▶	Replace ASCD main switch.

ASCD HOLD RELAY CHECK

=NBEL0099S05

1 CHECK POWER SUPPLY CIRCUIT FOR ASCD HOLD RELAY

1. Disconnect ASCD hold relay.
2. Check voltage between ASCD hold relay terminal 7 and body ground.



MEL843F

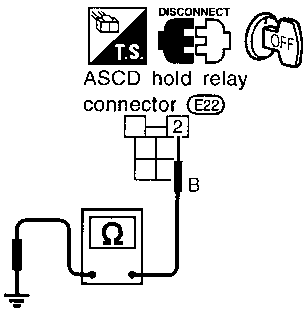
Refer to wiring diagram in EL-166.

Does battery voltage exist?

Yes	▶	GO TO 2.
No	▶	**Check the following.** • 7.5A fuse (No. 11, located in the fuse block) • Harness for open or short between fuse and ASCD hold relay

2 CHECK GROUND CIRCUIT FOR ASCD HOLD RELAY

Check continuity between ASCD hold relay terminal 2 and ground.



MEL844F

Does continuity exist?

Yes	▶	GO TO 3.
No	▶	Repair harness.

3 CHECK ASCD HOLD RELAY

Check ASCD hold relay.

OK or NG

OK	▶	GO TO 4.
NG	▶	Replace ASCD hold relay.

4 CHECK ASCD MAIN SWITCH

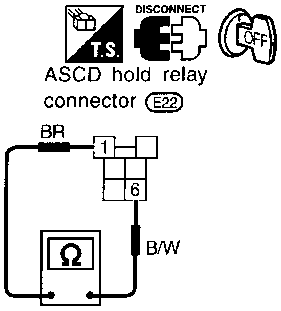
Refer to "Electrical Component Inspection" (EL-181).

OK or NG

OK	▶	GO TO 5.
NG	▶	Replace ASCD main switch.

5 CHECK ASCD HOLD RELAY OPEN OR SHORT CIRCUIT

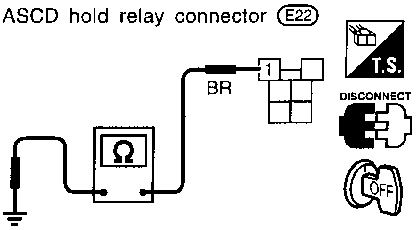
1. Connect ASCD main switch.
2. Check ASCD hold relay terminals 1 and 6.



MEL845F

Continuity should exist.

3. Check continuity between ASCD hold relay terminal 1 and ground.



SEL392V

Continuity should not exist.

OK or NG

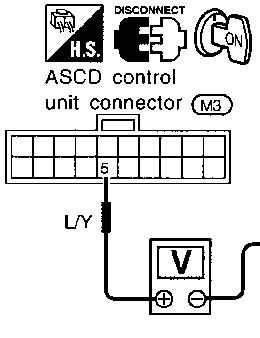
OK	▶	ASCD hold relay is OK.
NG	▶	Repair harness.

ASCD BRAKE/STOP LAMP SWITCH CHECK

=NBEL0099S06

1 CHECK ASCD BRAKE SWITCH CIRCUIT

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.



SEL765U

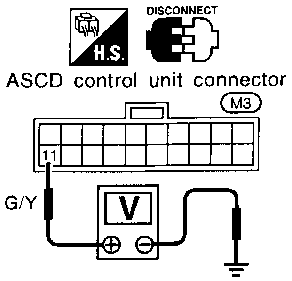
When brake pedal is depressed or A/T selector lever is in "N" or "P" range:
Approx. 0V
When both brake pedal is released and A/T selector lever is not in "N" or "P" range:
Battery voltage should exist.
Refer to wiring diagram in EL-167.

OK or NG

OK	▶	GO TO 2.
NG	▶	**Check the following.** • ASCD brake switch Refer to "Electrical Component Inspection" (EL-181). • Park/neutral position switch Refer to "Electrical Component Inspection" (EL-181). • ASCD hold relay • Park/neutral position relay • Harness for open or short

2 CHECK STOP LAMP SWITCH CIRCUIT

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



SEL154W

Voltage [V]:
Stop lamp switch: Depressed
Approx. 12
Stop lamp switch: Released
0
Refer to wiring diagram in EL-168.

OK or NG

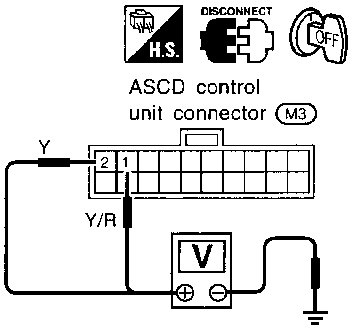
OK	▶	ASCD brake/stop lamp switch is OK.
NG	▶	**Check the following.** • 10A fuse [No. 14, located in the fuse block (J/B)] • Harness for open or short between ASCD control unit and stop lamp switch • Harness for open or short between fuse and stop lamp switch • Stop lamp switch Refer to "Electrical Component Inspection" (EL-181).

ASCD STEERING SWITCH CHECK

=NBEL0099S07

1 CHECK ASCD STEERING SWITCH CIRCUIT FOR ASCD CONTROL UNIT

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



SEL760U

	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

MTBL0002

Refer to wiring diagram in EL-168.

OK or NG

OK ▶	ASCD steering switch is OK.
NG ▶	GO TO 2.

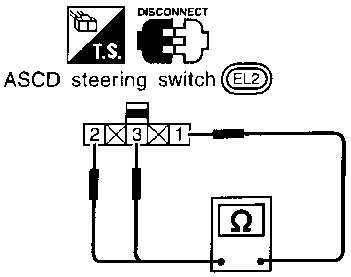
2 CHECK POWER SUPPLY FOR ASCD STEERING SWITCH

Does horn work?

Yes ▶	GO TO 3.
No ▶	**Check the following.** • 10A fuse (No. 54, located in the relay box) • Horn relay • Harness for open or short between horn and fuse

3 CHECK ASCD STEERING SWITCH

1. Disconnect ASCD steering switch.
2. Check continuity between terminals by pushing each switch.



SEL064W

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

MTBL0267

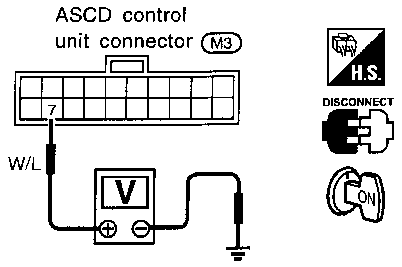
OK or NG

OK ▶	Check harness for open or short between ASCD steering switch and ASCD control unit.
NG ▶	Replace ASCD steering switch.

VEHICLE SPEED SENSOR CHECK

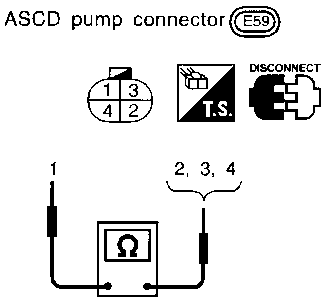
=NBEL0099S08

1	CHECK SPEEDOMETER OPERATION
Refer to wiring diagram in EL-170. **Does speedometer operate normally?**	
Yes ▶	GO TO 2.
No ▶	Check speedometer and vehicle speed sensor circuit. Refer to EL-85.

2	CHECK VEHICLE SPEED INPUT
1. Apply wheel chocks and jack up drive wheel. 2. Disconnect control unit connector. 3. Check voltage between control unit terminal 7 and ground with turning drive wheel slowly.	
 SEL347V	
Does voltage pointer deflect?	
Yes ▶	Vehicle speed sensor is OK.
No ▶	Check harness for open or short between ASCD control unit terminal 7 and combination meter terminal 36.

ASCD PUMP CIRCUIT CHECK

NBEL0099S09

1	CHECK ASCD PUMP
1. Disconnect ASCD pump connector. 2. Measure resistance between ASCD pump terminals 1 and 2, 3, 4.	
 MEL243H	

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

MTBL0048

Refer to wiring diagram in EL-169.

OK or NG

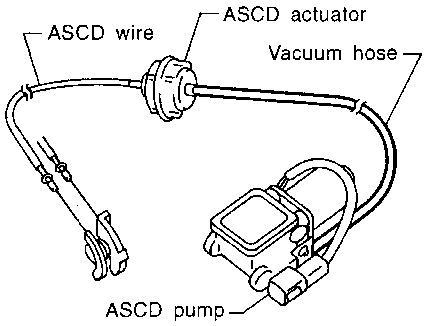
OK ▶	Check harness for open or short between ASCD pump and ASCD control unit.
NG ▶	Replace ASCD pump.

ASCD ACTUATOR/PUMP CHECK

=NBEL0099S10

1 CHECK VACUUM HOSE

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



MEL402G

OK or NG

OK	▶	GO TO 2.
NG	▶	Repair or replace hose.

2 CHECK ASCD WIRE

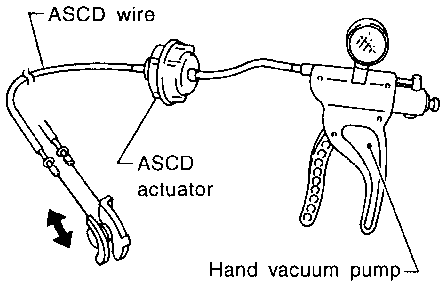
Check wire for improper installation, rust formation or breaks.

OK or NG

OK	▶	GO TO 3.
NG	▶	Repair or replace wire. Refer to "ASCD Wire Adjustment" (EL-181).

3 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)



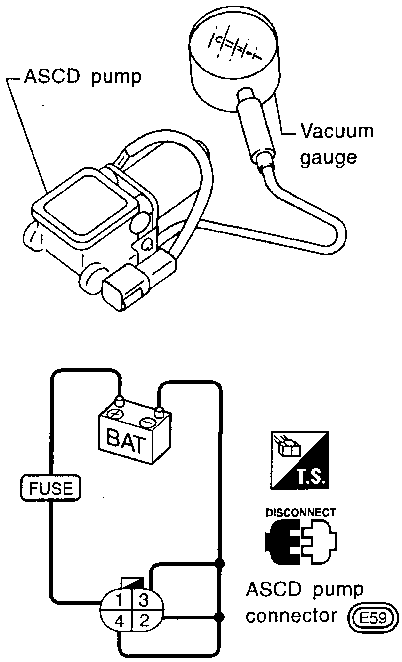
MEL403G

OK or NG

OK	▶	GO TO 4.
NG	▶	Replace ASCD actuator.

4 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.



MEL844G

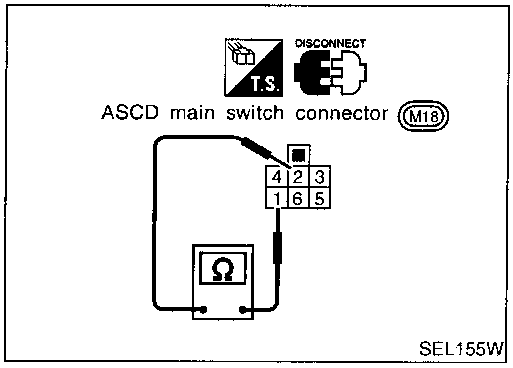
	12V direct current supply terminals		Operation
	(+)	(–)	
Air valve	1	3	Close
Release valve		4	Close
Vacuum motor		2	Operate

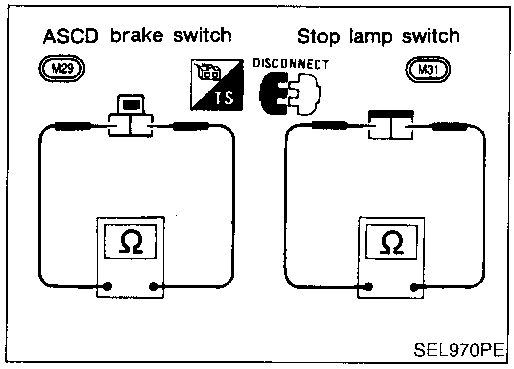
MTBL0004

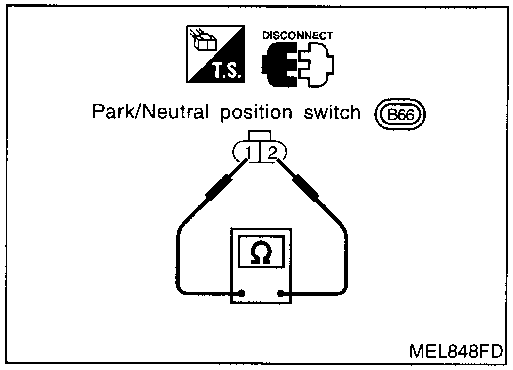
A vacuum pressure of at least –40 kPa (–0.41 kg/cm^2, –5.8 psi) should be generated.

OK or NG

OK	▶	INSPECTION END
NG	▶	Replace ASCD pump.







Electrical Component Inspection

NBEL0100

ASCD MAIN SWITCH

NBEL0100S01

Check continuity between terminals by pushing switch to each position.

Switch position	Terminals	Illumination
ON	1 - 2 - 3 - 4	5 - 6
N	2 - 3 - 4	
OFF		

ASCD BRAKE SWITCH AND STOP LAMP SWITCH

NBEL0100S02

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.

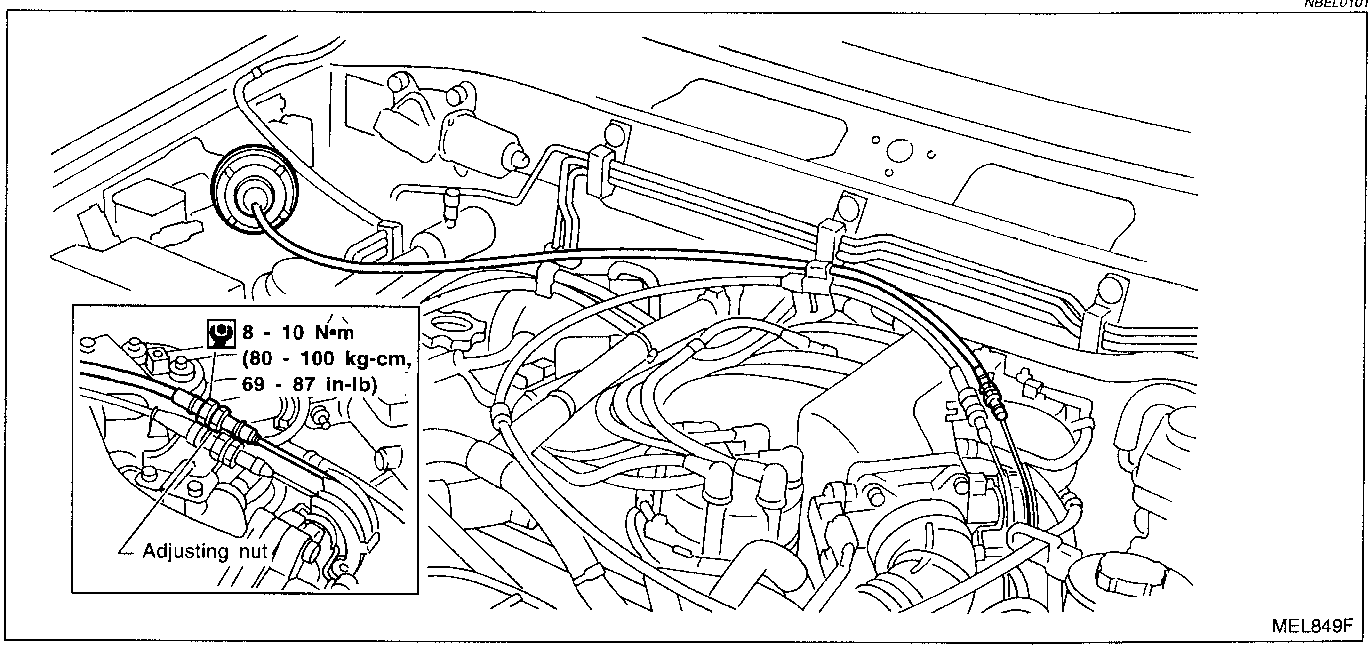
PARK/NEUTRAL POSITION SWITCH

NBEL0100S03

Selector lever position	Continuity
	Between terminals 1 and 2
"P"	Yes
"N"	Yes
Except "P" and "N"	No

ASCD Wire Adjustment

NBEL0101



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 just until throttle drum starts to move.
4. Loosen adjusting nut again 1/2 to 1 turn.
5. Tighten lock nut.

System Description

NBEL0102

Power is supplied at all times
- from 40A fusible link (letter **f**, located in the fuse and fusible link box)
- to circuit breaker terminal 1
- through circuit breaker terminal 2
- to power window relay terminal 3.

With ignition switch in ON or START position, power is supplied
- through 7.5A fuse [No. 11, located in the fuse block (J/B)]
- to power window relay terminal 2, and
- to smart entrance control unit terminal 33.

Ground is supplied to power window relay terminal 1
- through body grounds M4 and M66.

The power window relay is energized and power is supplied
- through power window relay terminal 5
- to power window main switch terminal 1,
- to power window sub switch terminal 5.

MANUAL OPERATION

NBEL0102S01

Front Door LH

NBEL0102S0101

Ground is supplied
- to power window main switch terminal 3
- through body grounds M77 and M111.

WINDOW UP
When the front LH switch in the power window main switch is pressed in the up position, power is supplied
- to front power window regulator LH terminal 2
- through power window main switch terminal 9.

Ground is supplied
- to front power window regulator LH terminal 1
- through power window main switch terminal 8.

Then, the motor raises the window until the switch is released.

WINDOW DOWN
When the LH switch in the power window main switch is pressed in the down position, power is supplied
- to front power window regulator LH terminal 1
- through power window main switch terminal 8.

Ground is supplied
- to front power window regulator LH terminal 2
- through power window main switch terminal 9.

Then, the motor lowers the window until the switch is released.

Front Door RH

NBEL0102S0102

Ground is supplied
- to power window main switch terminal 3
- through body grounds M77 and M111.

NOTE:
Numbers in parentheses are terminal numbers, when power window switch is pressed in the UP and DOWN positions respectively.

MAIN SWITCH OPERATION
Power is supplied
- through power window main switch (5, 6)
- to front power window sub-switch (3, 4).

The subsequent operation is the same as the sub-switch operation.

SUB-SWITCH OPERATION
Power is supplied

- through front power window sub-switch (1, 2)
- to front power window regulator RH (2, 1).

Ground is supplied

- to front power window regulator RH (1, 2)
- through front power window sub-switch (2, 1)
- to front power window sub-switch (4, 3)
- through power window main switch (6, 5).

Then, the motor raises or lowers the window until the switch is released.

Rear Door

NBEL0102S0103

Rear door windows will raise and lower in the same manner as front door RH window.

AUTO OPERATION

NBEL0102S02

The power window AUTO feature enables the driver to lower the driver's window without holding the window switch in the down position.
The AUTO feature only operates on the driver's window downward movement.

POWER WINDOW LOCK

NBEL0102S03

The power window lock is designed to lock operation of all windows except for driver's door window.
When the lock switch is pressed to lock position, ground of the sub-switches in the power window main switch is disconnected. This prevents the power window motors from operating.

RETAINED POWER OPERATION

NBEL0102S04

When the ignition switch is turned to OFF position from ON or START position, power is supplied for 45 seconds

- to power window relay terminal 2
- from smart entrance control unit terminal 5.

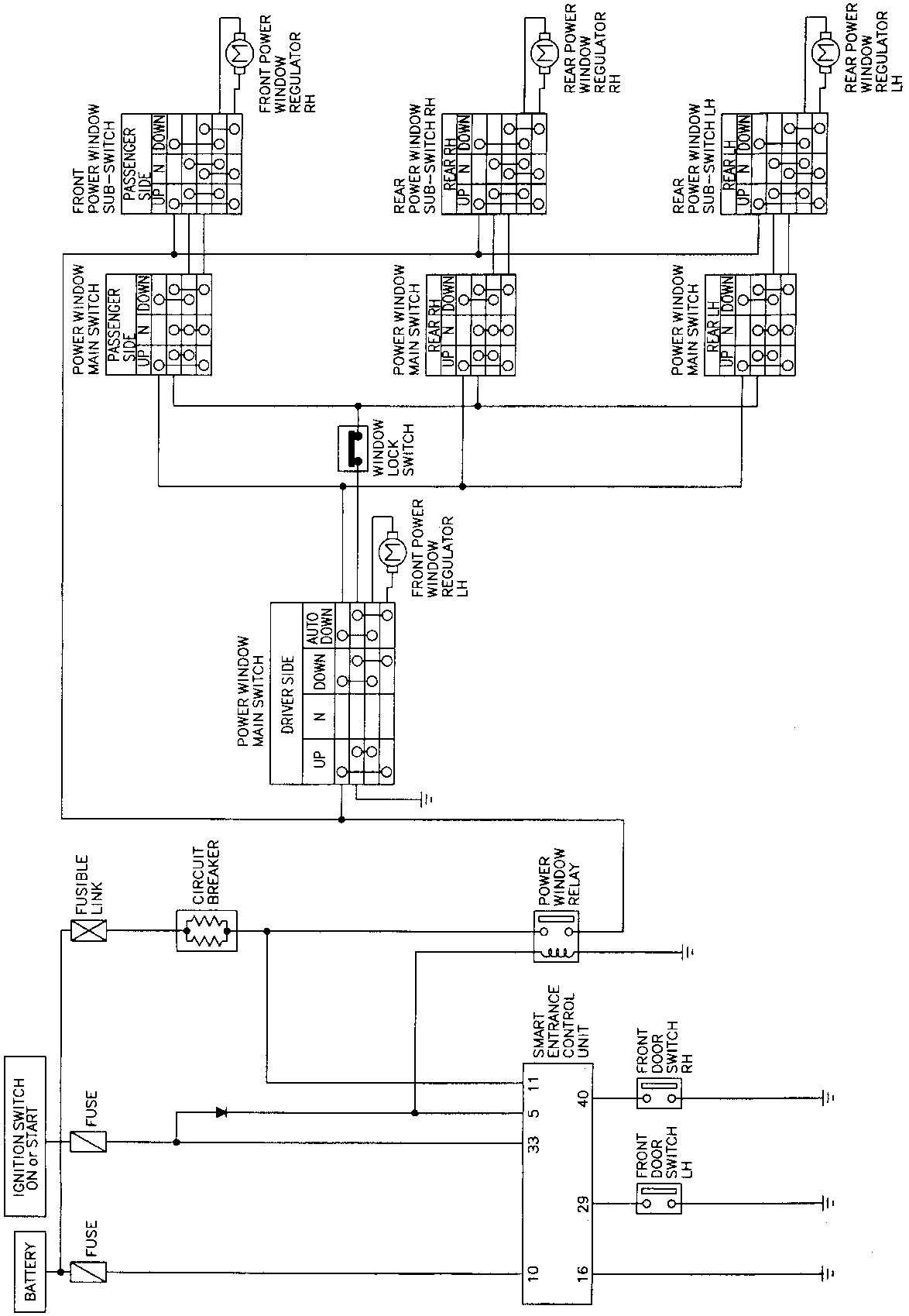
Ground is always supplied

- to power window relay terminal 1
- through body grounds.

When power and ground are supplied, the power window relay continues to be energized, and the power window can be operated.
The retained power operation is canceled when the driver or passenger side door is opened.

Schematic

NBEL0103

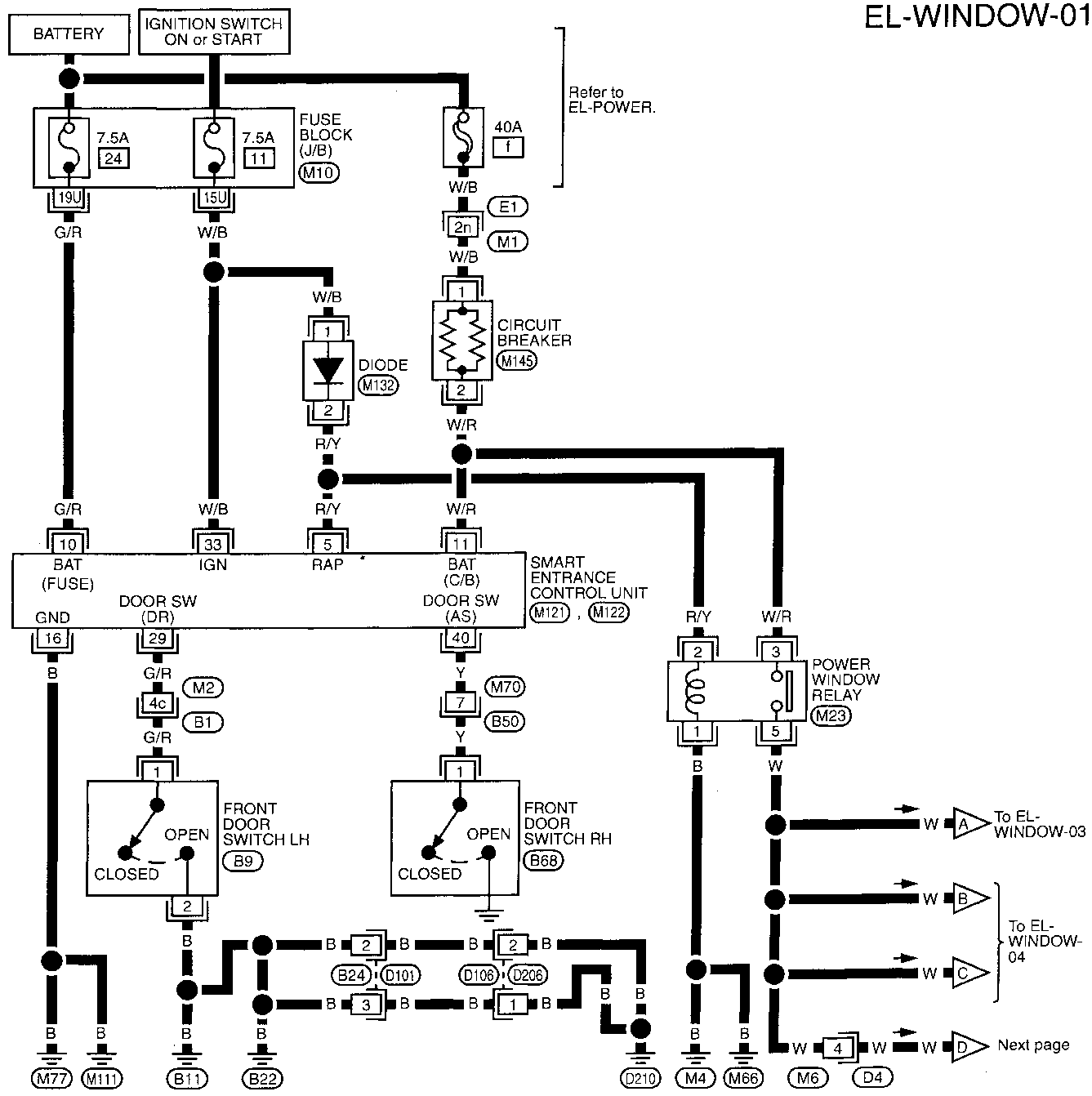


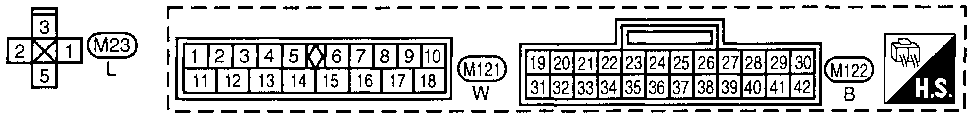
MEL805J

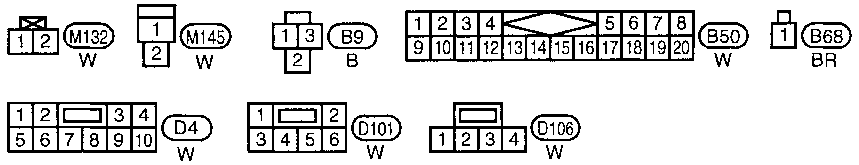
Wiring Diagram — WINDOW —

NBEL0104

EL-WINDOW-01







Refer to last page (Foldout page).

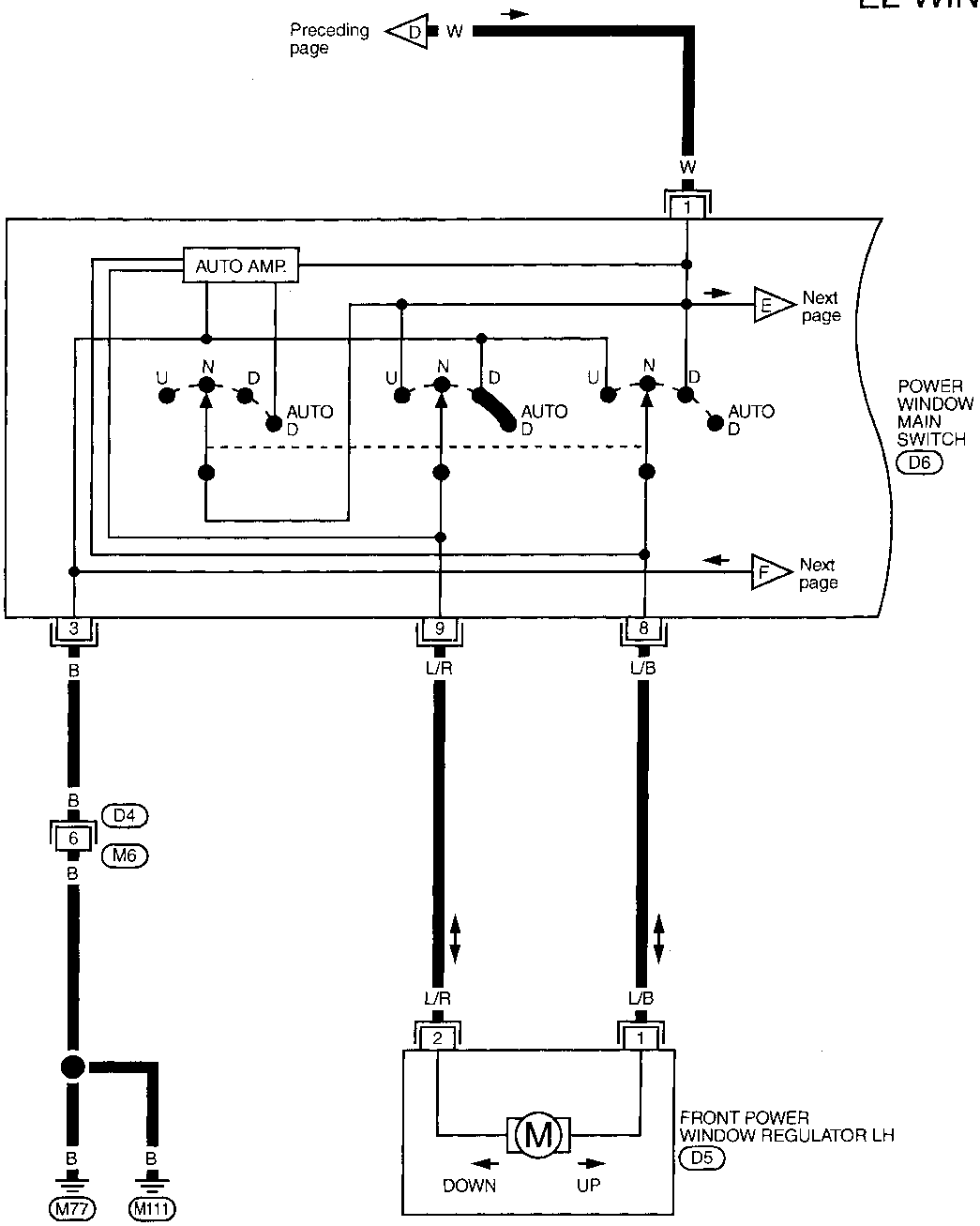
M1, E1

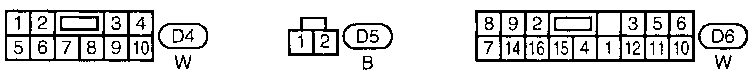
M2, B1

M10

MEL806J

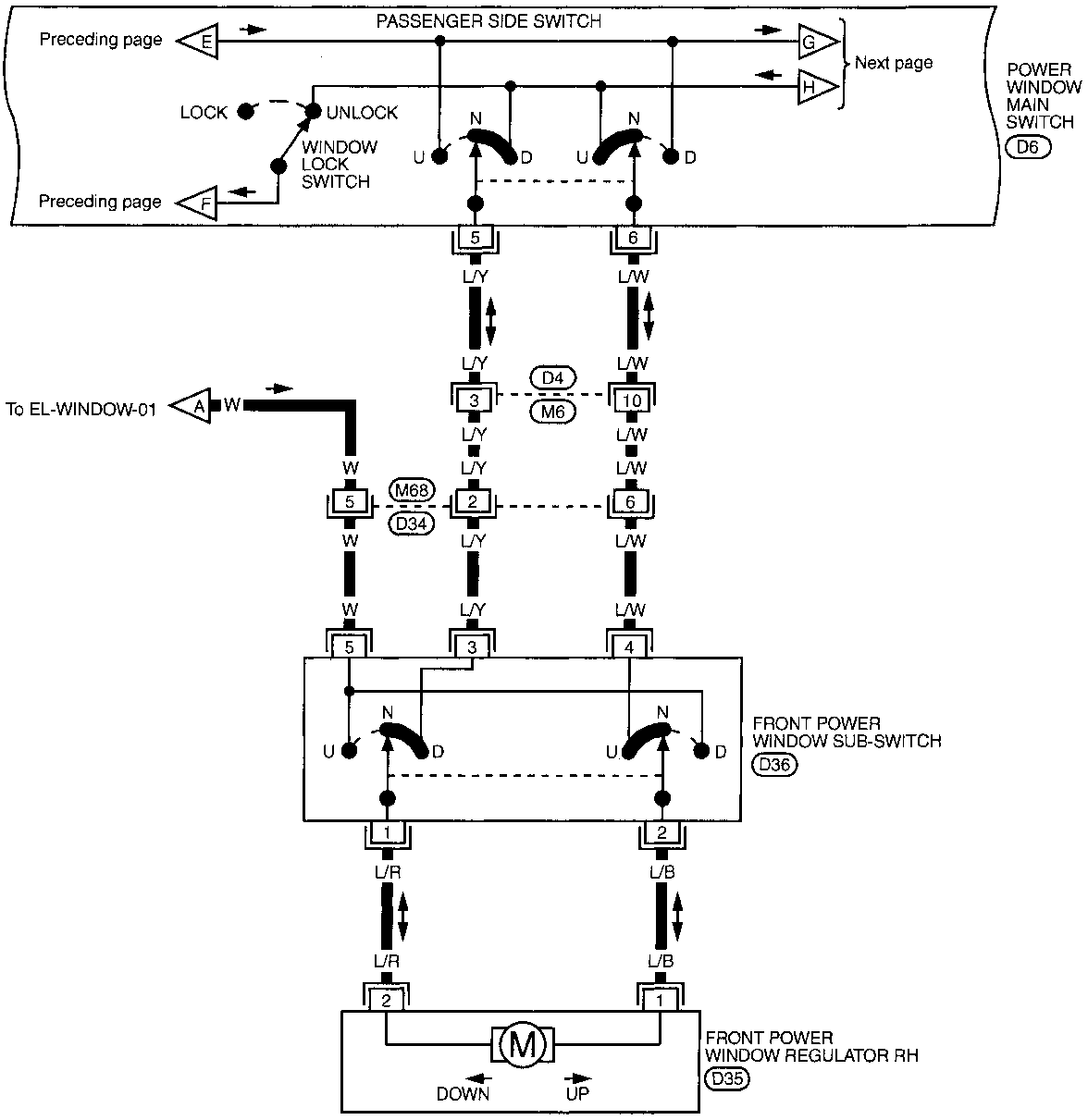
EL-WINDOW-02

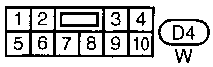


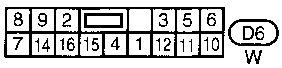


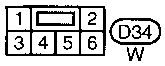
MEL807J

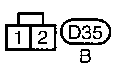
EL-WINDOW-03

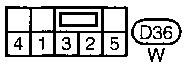






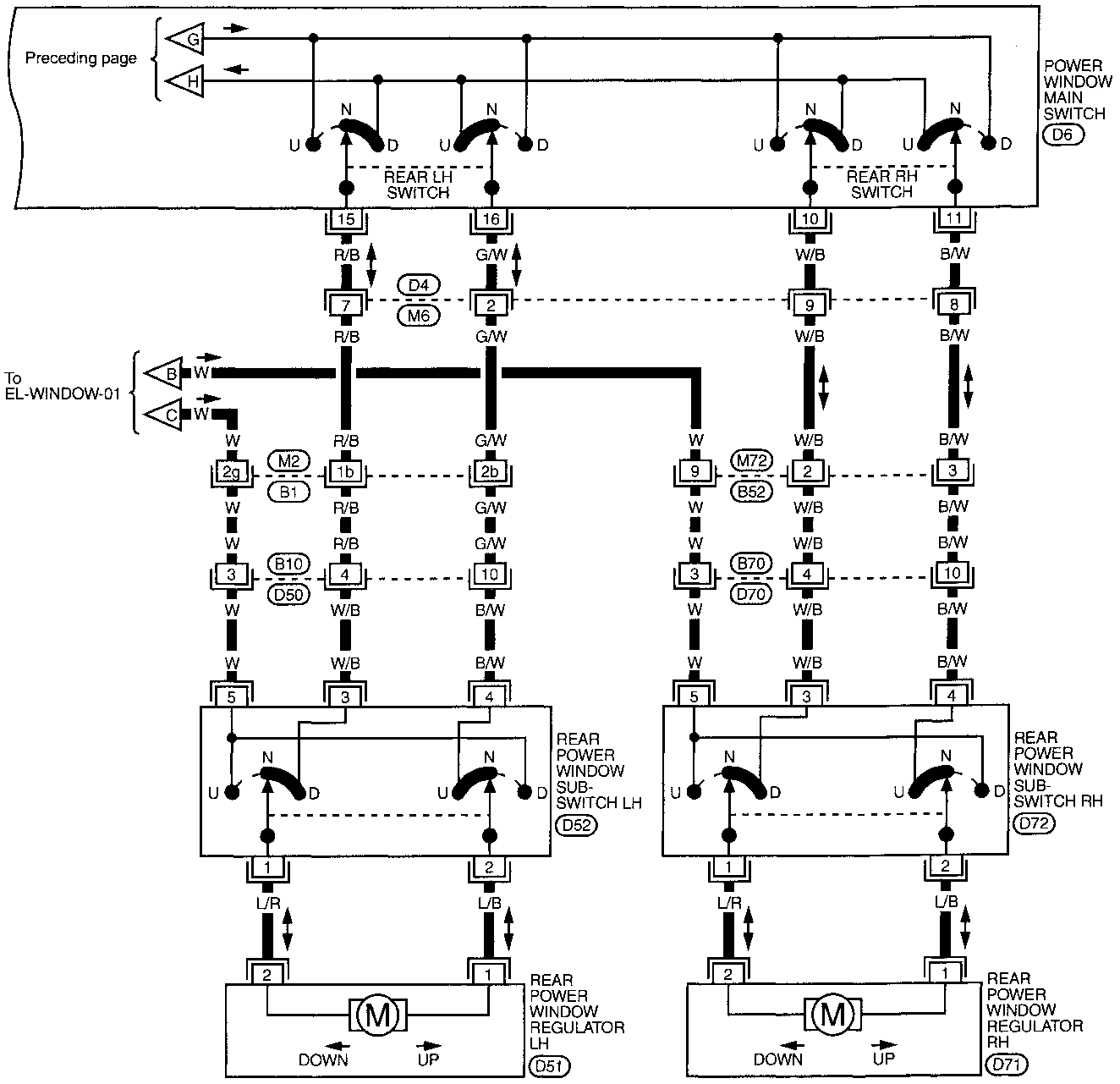


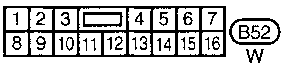


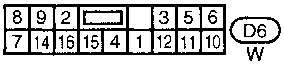


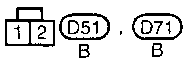
MEL808J

EL-WINDOW-04









Refer to last page (Foldout page).

M2 , B1

MEL809J

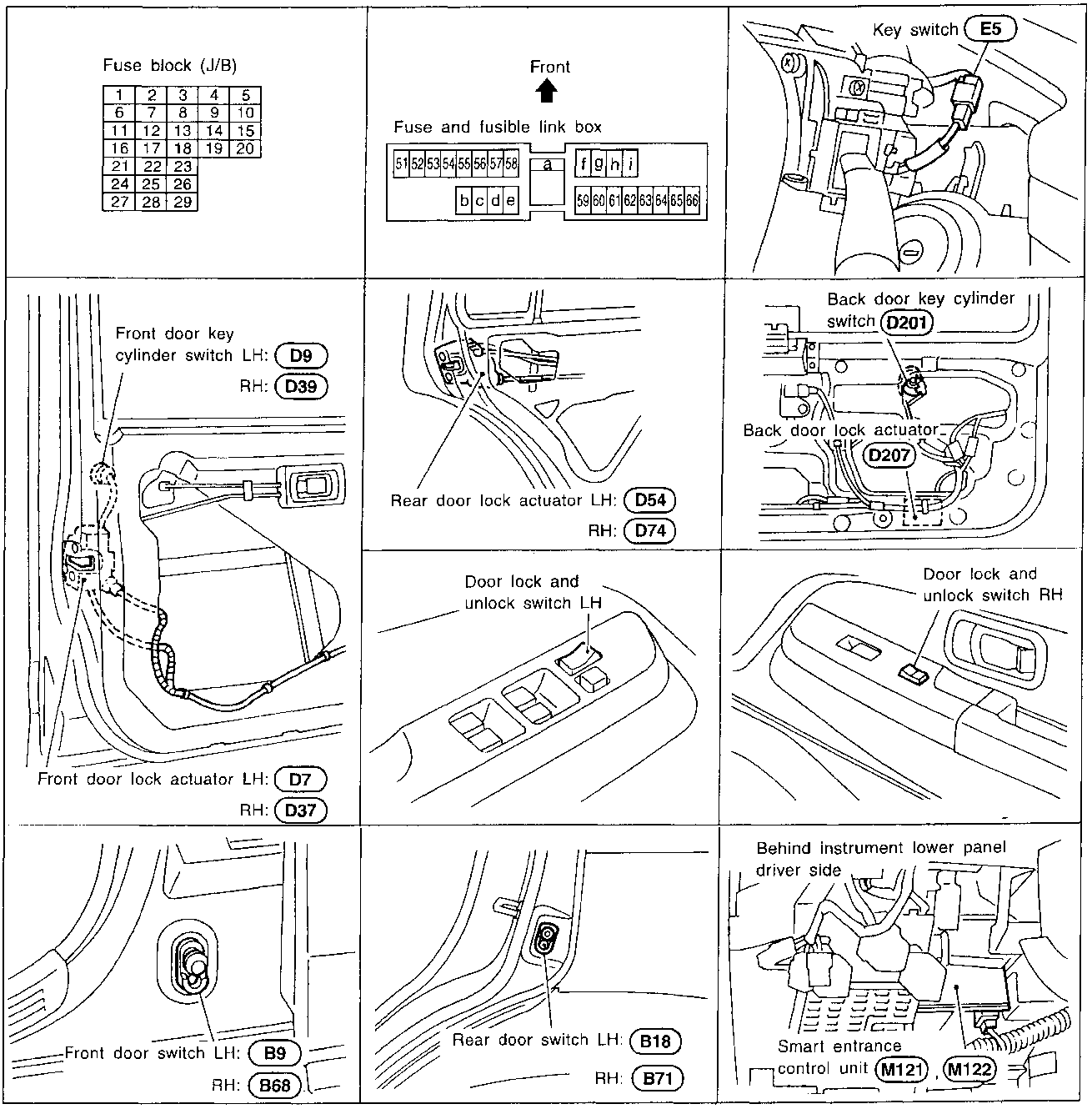
Trouble Diagnoses

NBEL0105

Symptom	Possible cause	Repair order
None of the power windows can be operated using any switch.	1. 7.5A fuse, 40A fusible link and M145 circuit breaker 2. Grounds M4 and M66 3. Power window relay 4. Open/short in power window main switch circuit	1. Check 7.5A fuse [No. 11, located in fuse block (J/B)], 40A fusible link (letter **f**, located in fuse and fusible link box) and M145 circuit breaker. Turn ignition switch "ON" and verify battery positive voltage is present at terminal 1 of power window main switch and terminal 5 of sub-switch. 2. Check grounds M4 and M66. 3. Check power window relay. 4. Check W wire between power window relay and power window main switch for open/short circuit.
Driver side power window cannot be operated but other windows can be operated.	1. Driver side power window regulator circuit 2. Driver side power window regulator 3. Power window main switch	1. Check harness between power window main switch and power window regulator for open or short circuit. 2. Check driver side power window regulator. 3. Check power window main switch.
Passenger power window cannot be operated.	1. Power window sub-switches 2. Passenger side power window regulators 3. Power window main switch 4. Power window circuit	1. Check power window sub-switch. 2. Check passenger side power window regulator. 3. Check power window main switch. 4. Check the following. a. Check harnesses between power window main switch and power window sub-switch for open/short circuit. b. Check harnesses between power window sub-switch and power window regulator for open/short circuit.
Passenger power window cannot be operated using power window main switch but can be operated by power window sub-switch.	1. Power window main switch	1. Check power window main switch.
Driver side power window auto function cannot be operated using power window main switch.	1. Power window main switch	1. Check power window main switch.
Retained power operation does not operate properly.	1. RAP signal circuit 2. Driver or passenger side door switch circuit 3. Smart entrance control unit	1. Check harness between power window relay terminal 2 and smart entrance control unit terminal 5 for open or short circuit. 2. Check harness between smart entrance control unit and driver or passenger side door switch for open or short circuit. Check driver or passenger side door switch ground circuit. Check driver or passenger side door switch. 3. Check smart entrance control unit. (EL-254)

Component Parts and Harness Connector Location

NBEL0106



SEL065W

System Description

NBEL0107

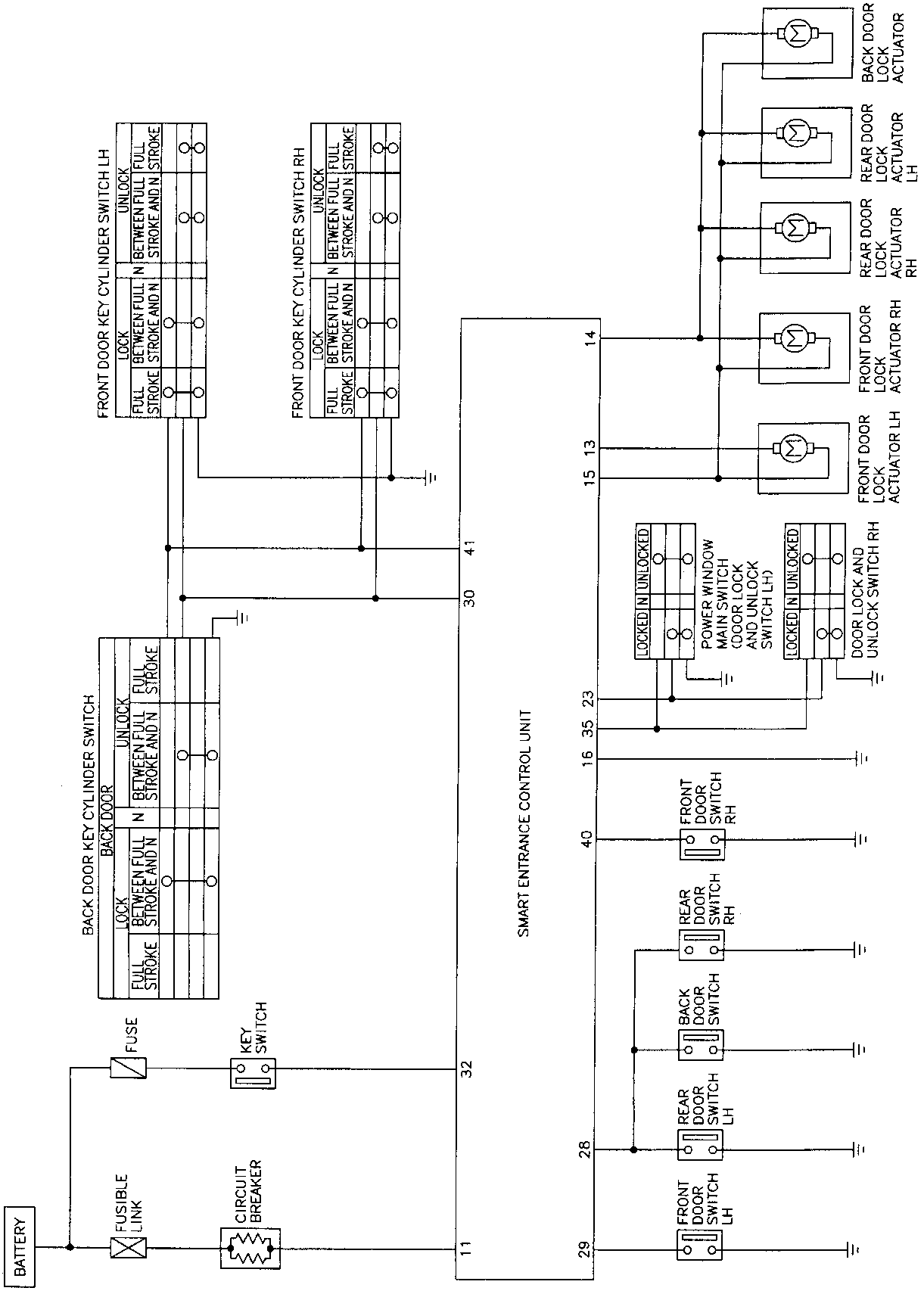
NBEL0107S04

OPERATION

- The lock/unlock switch (LH and RH) on door trim can lock and unlock all doors.
- With the door key inserted in the key cylinder on front LH, RH or back 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)
- If the ignition key is in the ignition key cylinder and one or more of doors are open, setting the lock/unlock switch to "LOCK" locks the doors once but then immediately unlock them. (Combination signals from key switch and door switches) - (KEY REMINDER DOOR SYSTEM)

Schematic

NBEL0108



MEL810J

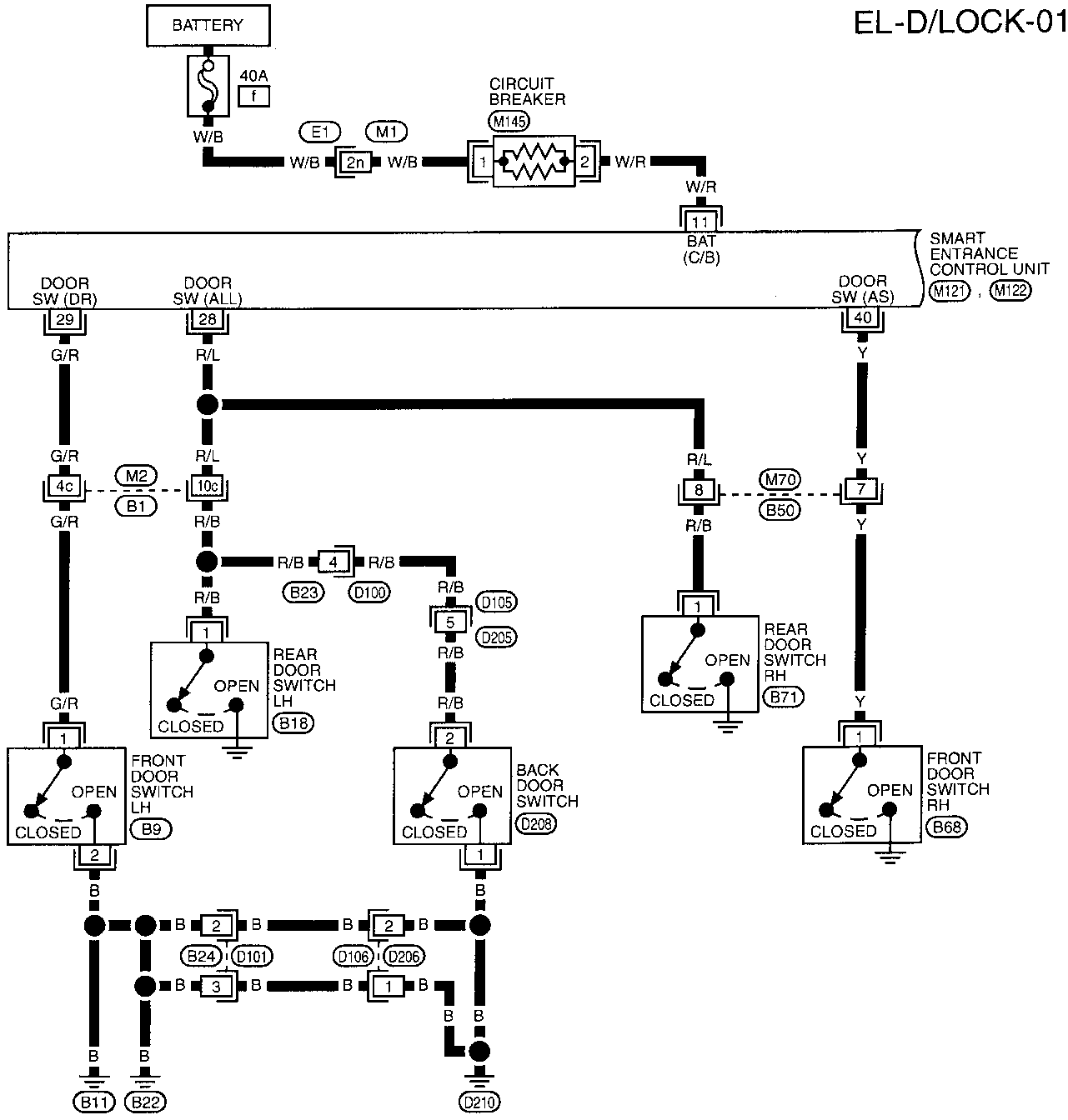
Wiring Diagram — D/LOCK —

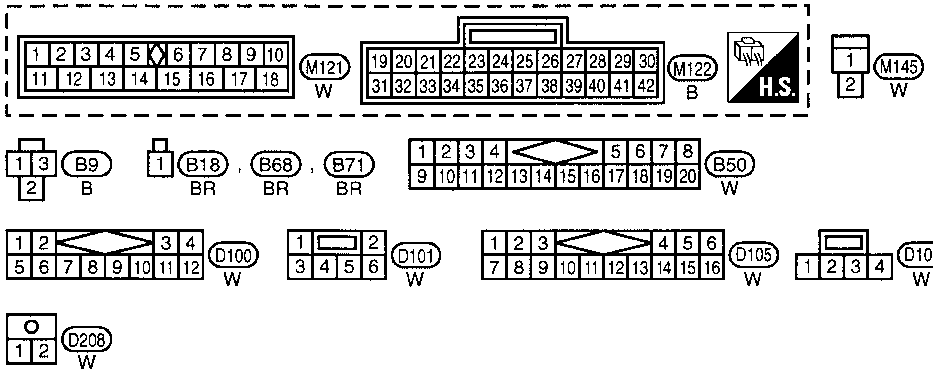
NBEL0109

FIG. 1

NBEL0109S01

EL-D/LOCK-01





Refer to last page (Foldout page).

M1 , E1

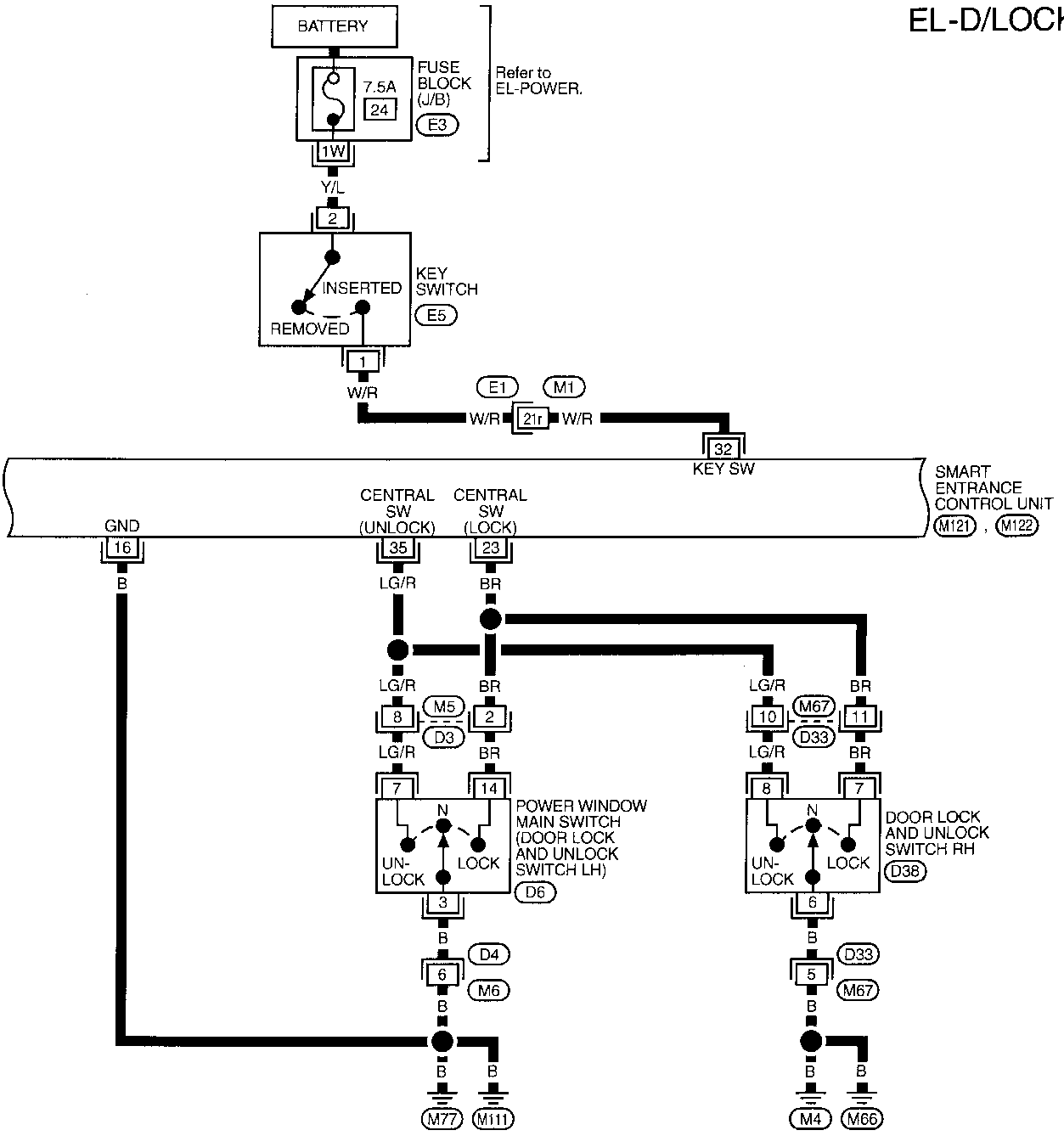
M2 , B1

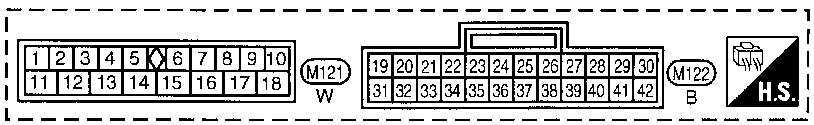
MEL072K

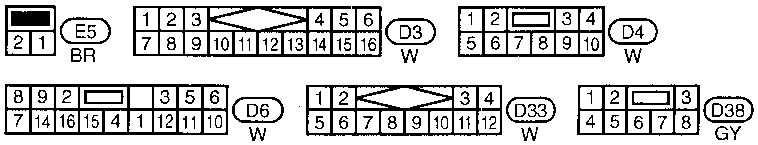
FIG. 2

NBEL0109S02

EL-D/LOCK-02







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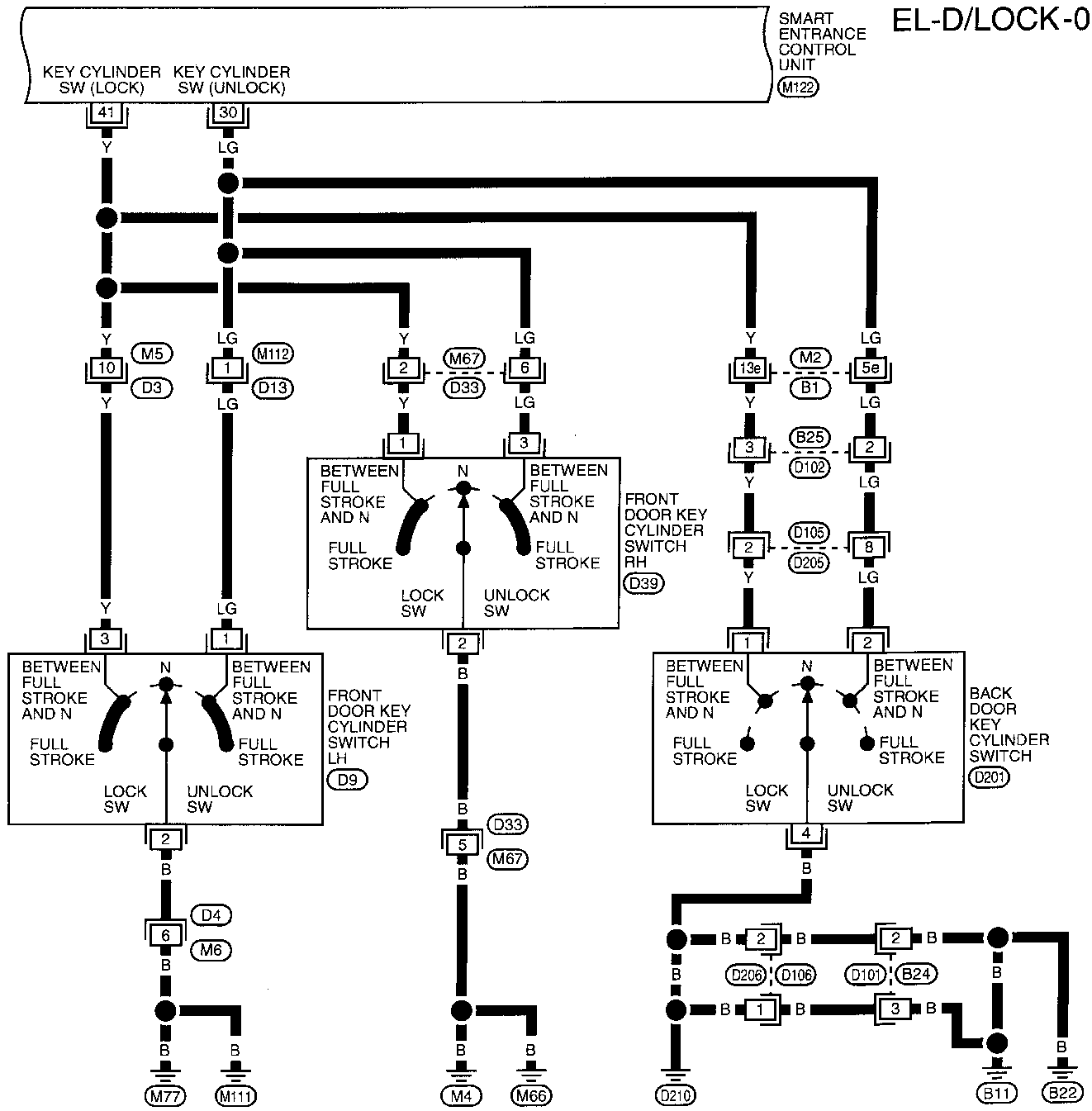
M1 , E1

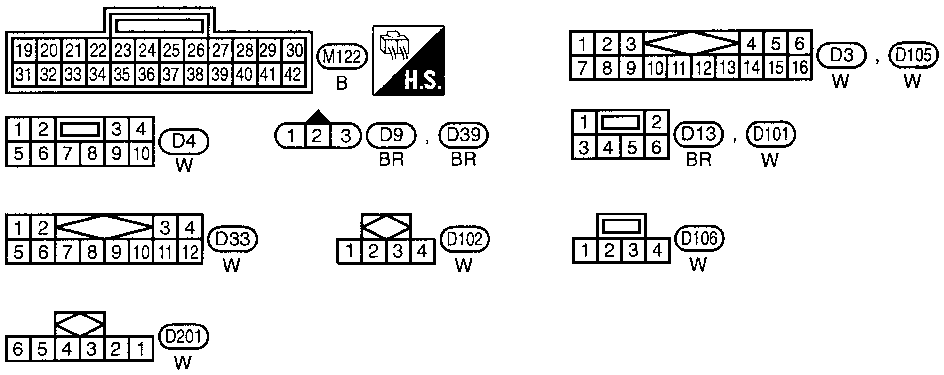
E3

MEL811J

FIG. 3

NBEL0109S03





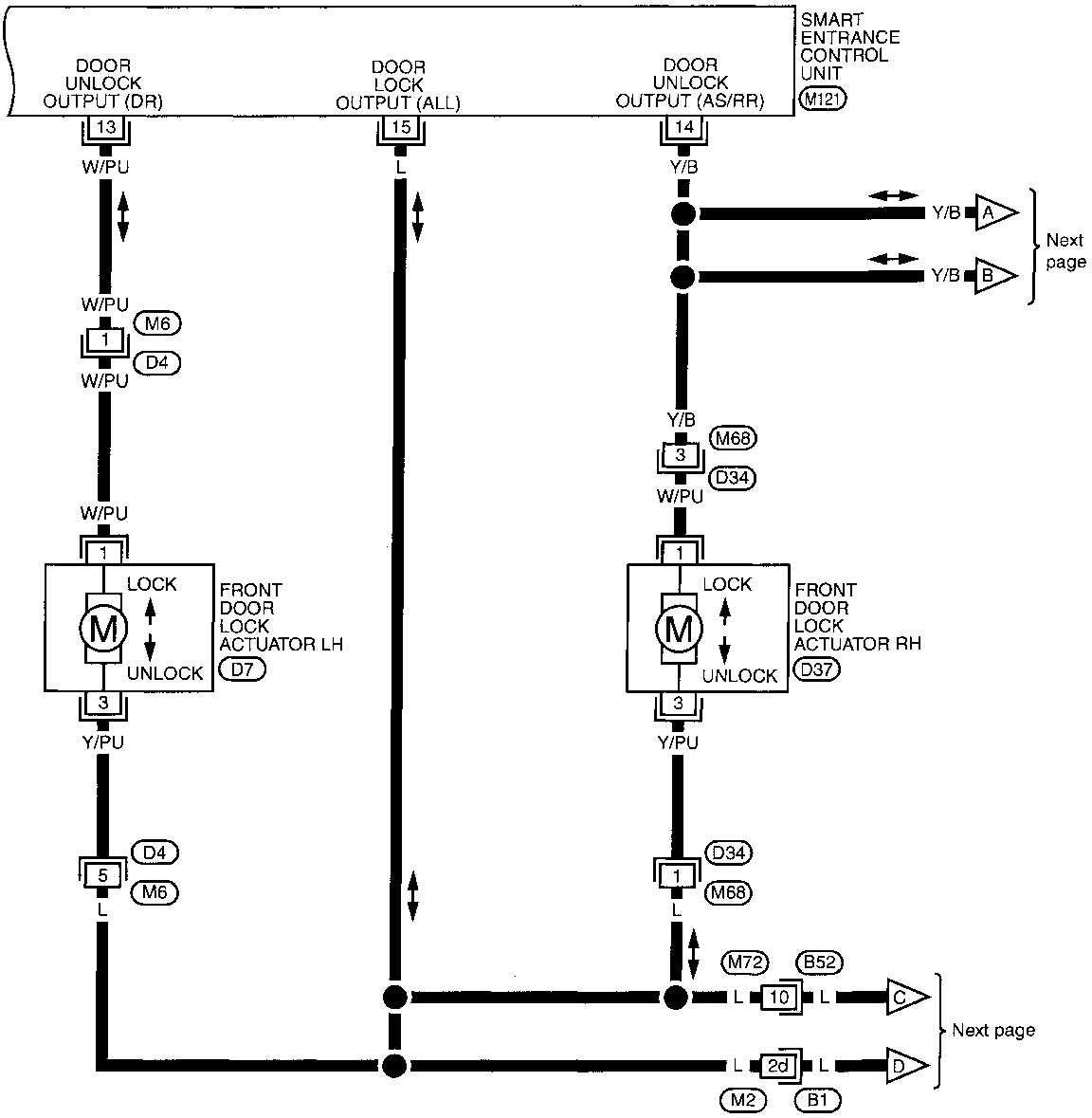
Refer to last page (Foldout page).
M2 , B1

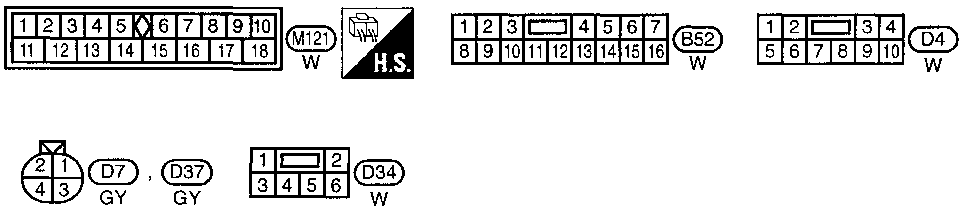
MEL812J

FIG. 4

NBEL0109S04

EL-D/LOCK-04





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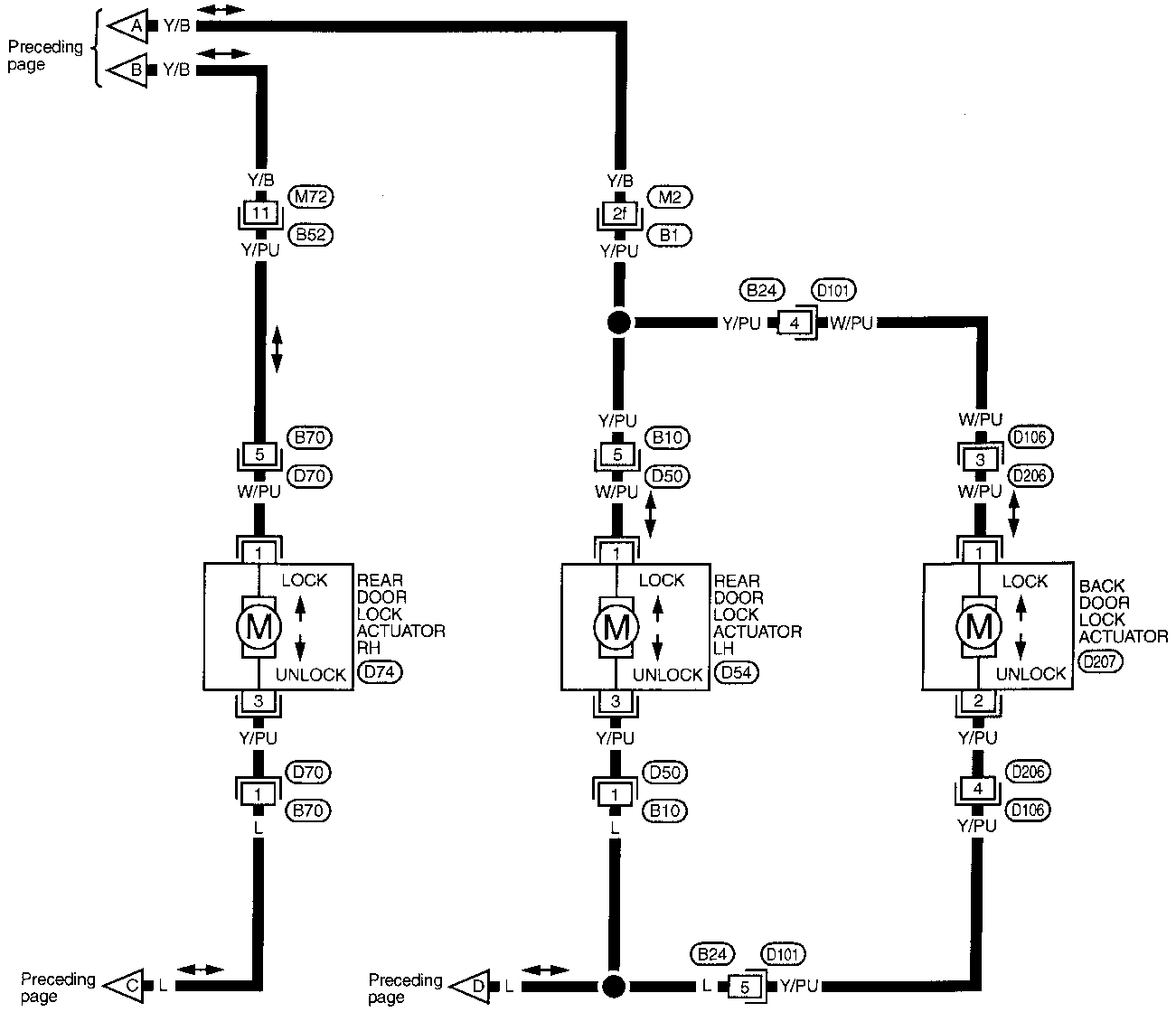
M2 , B1

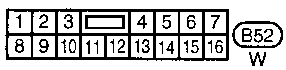
MEL813J

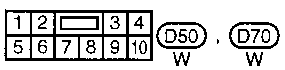
FIG. 5

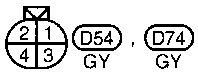
NBEL0109S05

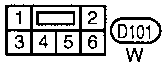
EL-D/LOCK-05

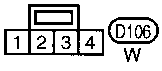












Refer to last page (Foldout page).
M2 , B1

MEL814J

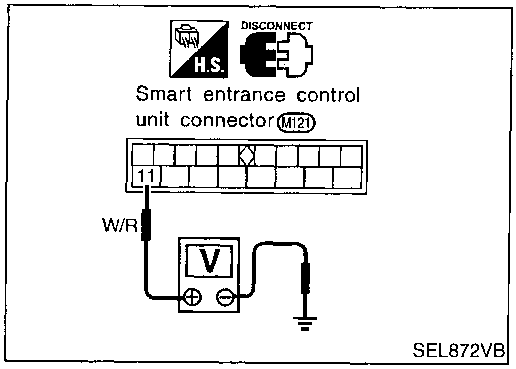
Trouble Diagnoses

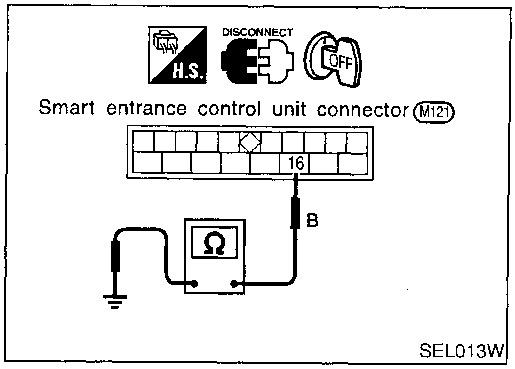
SYMPTOM CHART

NBEL0110

NBEL0110S01

REFERENCE PAGE (EL-)	199	200	201	202	203	204	205
SYMPTOM	MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK	DOOR SWITCH CHECK	KEY SWITCH (INSERT) CHECK	DOOR LOCK/UNLOCK SWITCH CHECK	FRONT DOOR KEY CYLINDER SWITCH CHECK	BACK DOOR KEY CYLINDER SWITCH CHECK	DOOR LOCK ACTUATOR CHECK
Key reminder door system does not operate properly.	X	X	X				X
Specific door lock actuator does not operate.	X						X
Power door lock does not operate with door lock and unlock switch (LH and RH) on door trim.	X			X			
Power door lock does not operate with front door key cylinder operation.	X				X		
Power door lock does not operate with back door key cylinder operation.	X					X	





MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK

NBEL0110S02

Main Power Supply Circuit Check

NBEL0110S0201

Terminal		Ignition switch		
(+)	(−)	OFF	ACC	ON
11	Ground	Battery voltage	Battery voltage	Battery voltage

Ground Circuit Check

NBEL0110S0202

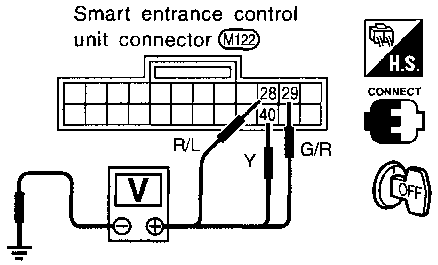
Terminals	Continuity
16 - Ground	Yes

DOOR SWITCH CHECK

=NBEL0110S05

1 CHECK DOOR SWITCH INPUT SIGNAL

Check voltage between control unit terminals 28, 29 or 40 and ground.



SEL886VA

	Terminals (+)	Terminals (–)	Condition	Voltage [V]
Front LH door switch	29	ground	Open	0
			Closed	Approx. 5
Front RH door switch	40	ground	Open	0
			Closed	Approx. 5
Rear and back door switches	28	ground	Open	0
			Closed	Approx. 5

MTBL0262

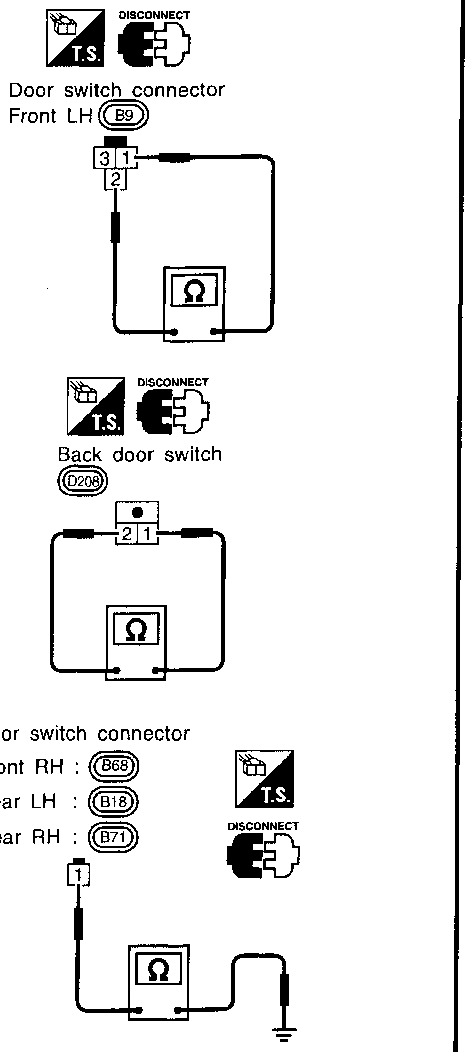
Refer to wiring diagram in EL-193.

OK or NG

OK ▶	Door switch is OK.
NG ▶	GO TO 2.

2 CHECK DOOR SWITCH

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



SEL066W

	Terminals	Condition	Continuity
Front LH door switch	1 - 2	Closed	No
		Open	Yes
Back door switch	1 - 2	Closed	No
		Open	Yes
Front RH and rear door switches	1 - ground	Closed	No
		Open	Yes

MTBL0263

OK or NG

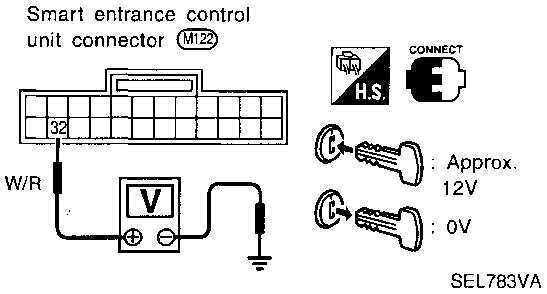
OK ▶	**Check the following.** • Door switch ground circuit (Front LH, back door) or door switch ground condition • Harness for open or short between control unit and door switch
NG ▶	Replace door switch.

KEY SWITCH (INSERT) CHECK

=NBEL0110S06

1	CHECK KEY SWITCH INPUT SIGNAL

Check voltage between control unit terminal 32 and ground.



SEL783VA

Voltage [V]:

Condition of key switch: Key is inserted.

Approx. 12

Condition of key switch: Key is removed.

0

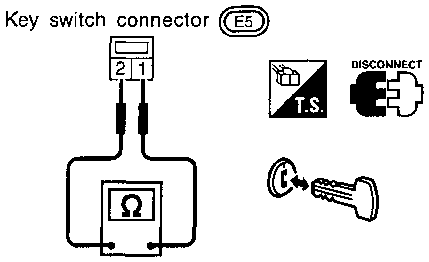
Refer to wiring diagram in EL-194.

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH (INSERT)

Check continuity between terminals 1 and 2.



SEL784VA

Continuity:

Condition of key switch: Key is inserted.

Yes

Condition of key switch: Key is removed.

No

OK or NG

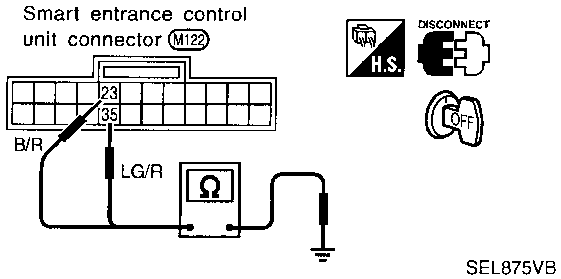
OK	▶	**Check the following.** • 7.5A fuse [No. 24, located in fuse block (J/B)] • Harness for open or short between key switch and fuse • Harness for open or short between control unit and key switch
NG	▶	Replace key switch.

DOOR LOCK/UNLOCK SWITCH CHECK

=NBEL0110S03

1 CHECK DOOR LOCK/UNLOCK SWITCH INPUT SIGNAL

1. Disconnect control unit connector.
2. Check continuity between control unit terminal 23 or 35 and ground.



SEL875VB

Terminals	Door lock/unlock switch (LH or RH) condition	Continuity
23 - ground	Lock	Yes
	N and Unlock	No
35 - ground	Unlock	Yes
	N and Lock	No

MTBL0264

Refer to wiring diagram in EL-194.

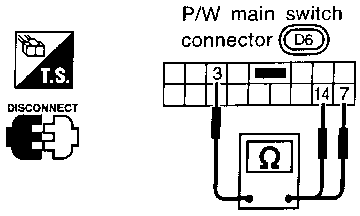
OK or NG

OK	▶	Door lock/unlock switch is OK.
NG	▶	GO TO 2.

2 CHECK DOOR LOCK/UNLOCK SWITCH

1. Disconnect door lock/unlock switch connector.
2. Check continuity between each door lock/unlock switch terminals.

- Power window main switch (Door lock/unlock switch LH)

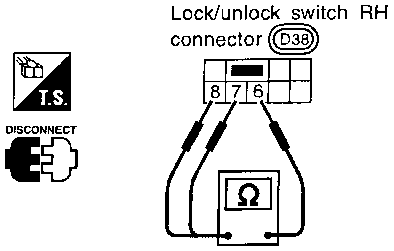


SEL067W

Condition	Terminals		
	3	7	14
Lock	○		○
N	No continuity		
Unlock	○	○	

MTBL0265

- Door lock/unlock switch RH



SEL068W

Condition	Terminals		
	6	7	8
Lock	○	○	
N	No continuity		
Unlock	○		○

MTBL0266

OK or NG

OK	▶	**Check the following.** • Ground circuit for door lock/unlock switch • Harness for open or short between door lock/unlock switch and control unit connector
NG	▶	Replace door lock/unlock switch.

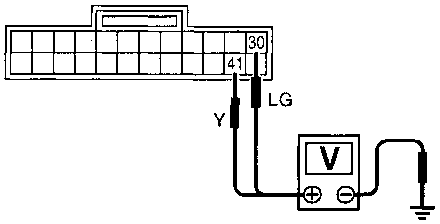
FRONT DOOR KEY CYLINDER SWITCH CHECK

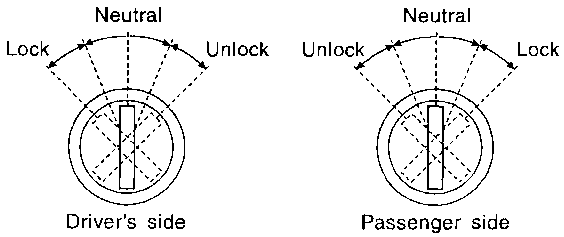
=NBEL0110S07

1 CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL (LOCK/UNLOCK SIGNAL)

Check voltage between control unit terminals 30 or 41 and ground.

Smart entrance control unit connector (M122)





SEL069W

Terminals (+)	Terminals (−)	Key position	Voltage [V]
41	Ground	Neutral/Unlock	Approx. 5
		Lock	0
30	Ground	Neutral/Lock	Approx. 5
		Unlock	0

MTBL0268

Refer to wiring diagram in EL-195.

OK or NG

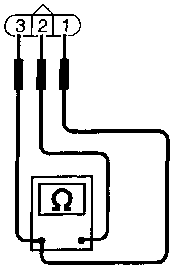
OK	▶	Door key cylinder switch is OK.
NG	▶	GO TO 2.

2 CHECK DOOR KEY CYLINDER SWITCH

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

Door key cylinder switch connector

LH : (D9) RH : (D39)



① : Door unlock switch terminal (LH)
Door lock switch terminal (RH)
② : Ground terminal
③ : Door lock switch terminal (LH)
Door unlock switch terminal (RH)

SEL070W

Terminals	Key position	Continuity
LH: 3 - 2	Neutral/Unlock	No
RH: 1 - 2	Lock	Yes
LH: 1 - 2	Neutral/Lock	No
RH: 3 - 2	Unlock	Yes

MTBL0269

OK or NG

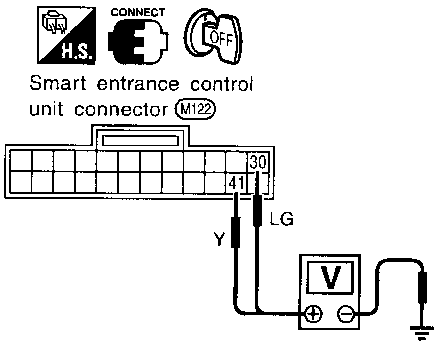
OK	▶	**Check the following.** • Door key cylinder switch ground circuit • Harness for open or short between control unit and door key cylinder switch
NG	▶	Replace door key cylinder switch.

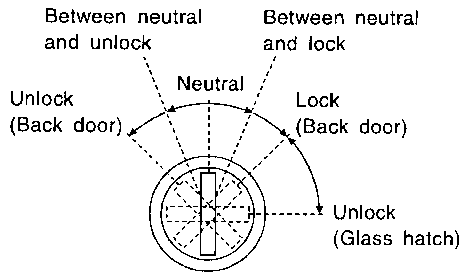
BACK DOOR KEY CYLINDER SWITCH CHECK

=NBEL0110S08

1 CHECK BACK DOOR KEY CYLINDER SWITCH INPUT SIGNAL (LOCK/UNLOCK SIGNAL)

Check voltage between control unit terminals 30 or 41 and ground.





SEL071W

	Terminals (+)	Terminals (−)	Key position	Voltage [V]
Back door	41	Ground	Between neutral and lock	0
			Other positions	Approx. 5
	30	Ground	Between neutral and unlock	0
			Other positions	Approx. 5

MTBL0270

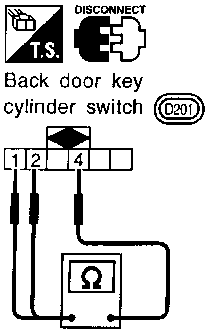
Refer to wiring diagram in EL-195.

OK or NG

OK	▶	Back door key cylinder switch is OK.
NG	▶	GO TO 2.

2 CHECK BACK DOOR KEY CYLINDER SWITCH

1. Disconnect back door key cylinder switch connector.
2. Check continuity between back door key cylinder switch terminals.



SEL616U

Key position	Terminals 1	2	4
Between neutral and lock (Back door)	○		○
Between neutral and unlock (Back door)		○	○

MTBL0052

OK or NG

OK	▶	**Check the following.** • Back door key cylinder switch ground circuit • Harness for open or short between control unit and back door key cylinder switch
NG	▶	Replace back door key cylinder switch.

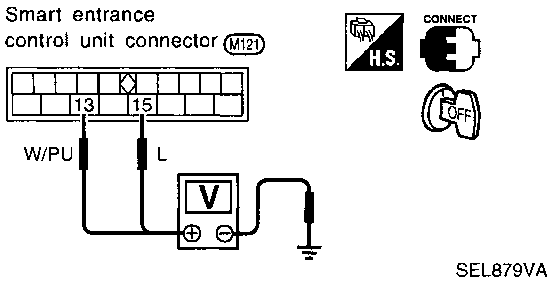
DOOR LOCK ACTUATOR CHECK

NBEL0110S04

1 CHECK DOOR LOCK ACTUATOR CIRCUIT

Check voltage for door lock actuator.

- Door lock actuator front LH

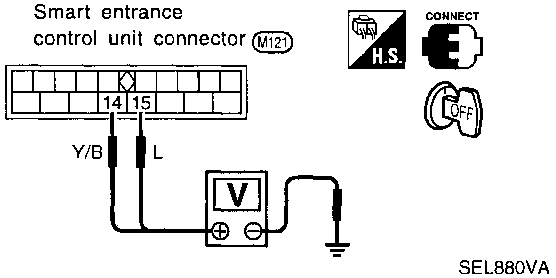


SEL879VA

Door lock/unlock switch condition	Terminal No. (+)	Terminal No. (−)	Voltage (V)
Lock	15	ground	Approx. 12
Unlock	13	ground	

MTBL0271

- Door lock actuator front RH, rear and back



SEL880VA

Door lock/unlock switch condition	Terminal No. (+)	Terminal No. (−)	Voltage (V)
Lock	15	ground	Approx. 12
Unlock	14	ground	

MTBL0272

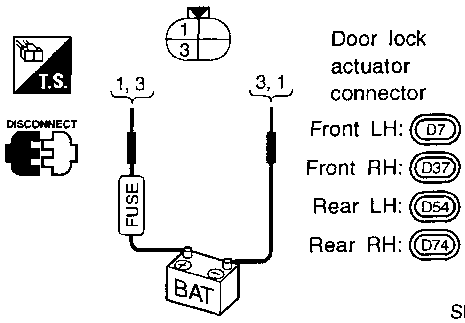
Refer to wiring diagram in EL-196.

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace smart entrance control unit. (Before replacing control unit, perform "DOOR LOCK/UNLOCK SWITCH CHECK".)

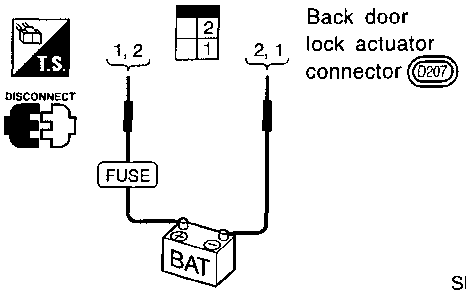
2 CHECK DOOR LOCK ACTUATOR

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



SEL736U

- **Door lock actuator operation:**
  Terminals between (+): 3 and (−): 1
  Unlocked → Locked
  Terminals between (+): 1 and (−): 3
  Locked → Unlocked



SEL072W

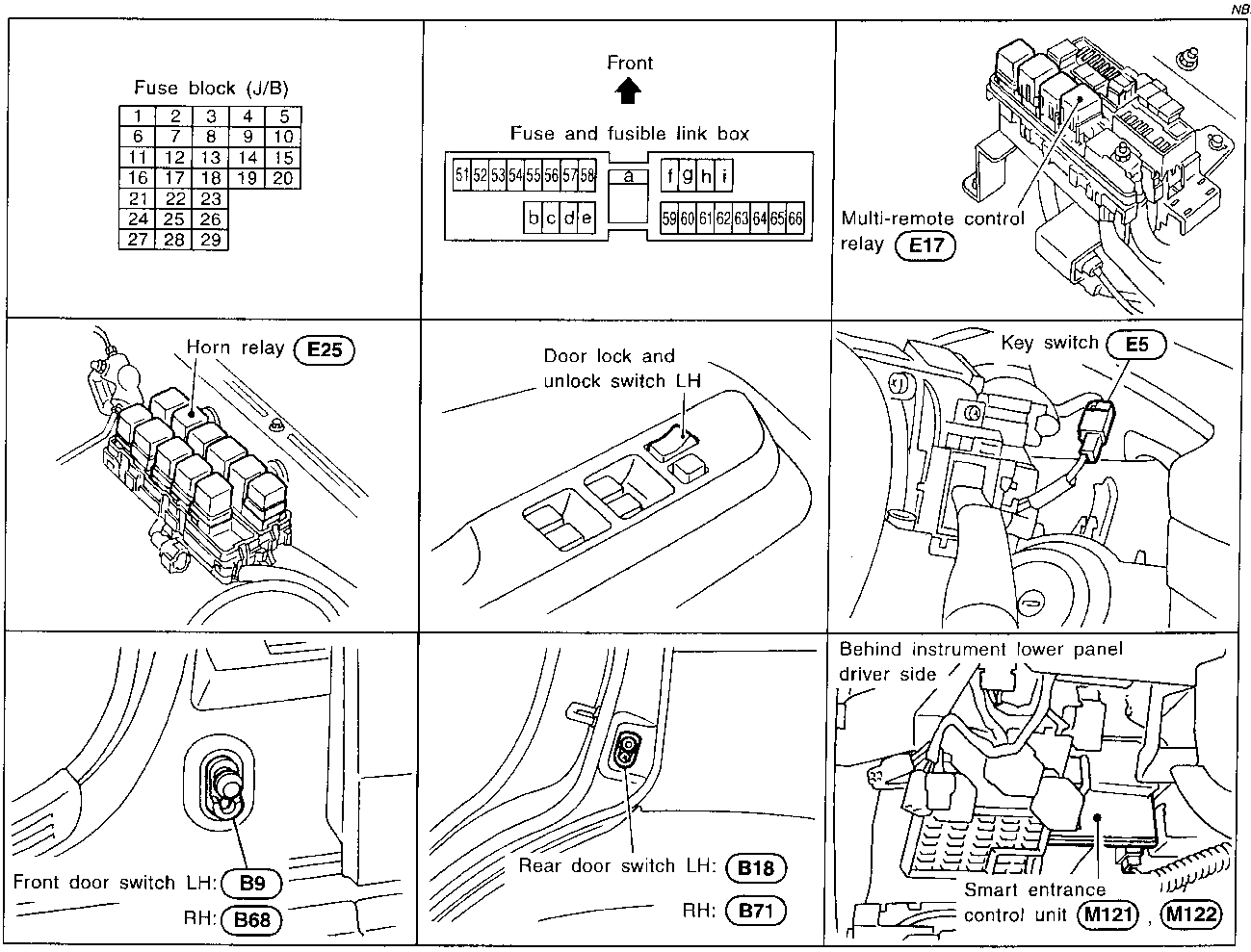
- **Back door lock actuator operation:**
  Terminals between (+): 2 and (−): 1
  Unlocked → Locked
  Terminals between (+): 1 and (−): 2
  Locked → Unlocked

OK or NG

OK	▶	Check harness for open or short between control unit connector and door lock actuator.
NG	▶	Replace door lock actuator.

Component Parts and Harness Connector Location

NBEL0111



SEL073W

System Description

NBEL0112

NBEL0112S01

INPUTS

Power is supplied at all times

- to key switch terminal 2
- through 7.5A fuse [No. 24, located in the fuse block (J/B)].

When the key switch is ON (ignition key is inserted in key cylinder), power is supplied

- through key switch terminal 1
- to smart entrance control unit terminal 32.

When the front door switch LH is OPEN, ground is supplied

- to smart entrance control unit terminal 29
- through front door switch LH terminal 1
- to front door switch LH terminal 2
- through body grounds B11, B22 and D210.

When the front door switch RH is OPEN, ground is supplied

- to smart entrance control unit terminal 40
- through front door switch RH body ground.

When the other door switches are OPEN, ground is supplied

- to smart entrance control unit terminal 28
- through other door switches body grounds.

Remote controller signal is inputted to smart entrance control unit (The antenna of the system is combined with smart entrance control unit).
The multi-remote control system controls operation of the

- power door lock
- interior lamp
- panic alarm
- hazard and horn reminder

OPERATED PROCEDURE

NBEL0112S02

Power Door Lock Operation

NBEL0112S0201

Smart entrance control unit receives a LOCK signal from remote controller. Smart entrance control unit locks all doors with input of LOCK signal from remote controller.
When an UNLOCK signal is sent from remote controller once, driver's door will be unlocked.
Then, if an UNLOCK signal is sent from remote controller again within 5 seconds, all other door will be unlocked.

Hazard and Horn Reminder

NBEL0112S0204

Power is supplied at all times

- to multi-remote control relay terminals 1, 3 and 6
- through 15A fuse [No. 20, located in the fuse block (J/B)], and
- to horn relay terminal 2
- through 10A fuse (No. 54, located in the fusible link and fuse box)

When smart entrance control unit receives LOCK or UNLOCK signal from remote controller with all doors closed, ground is supplied

- to multi-remote control relay terminal 2
- through smart entrance control unit terminal 7, and
- to horn relay terminal 1
- through smart entrance control unit terminal 19

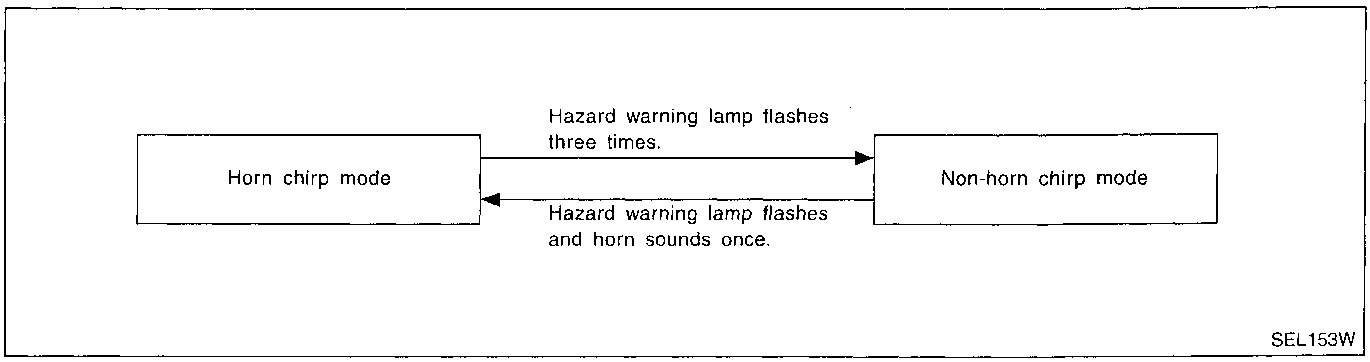
Multi-remote control relay and horn relay are now energized, and hazard warning lamp flashes and horn sounds as a reminder.
The hazard and horn reminder has a horn chirp mode and a non-horn chirp mode.

Operating function of hazard and horn reminder

	Horn chirp mode		Non-horn chirp mode	
	Hazard warning lamp flash	Horn sound	Hazard warning lamp flash	Horn sound
Lock	Twice	Once	Twice	—
Unlock	Once	—	—	—

How to change hazard and horn reminder mode

When LOCK and UNLOCK signals are sent from the remote controller for more than 2 seconds at the same time, the hazard and horn reminder mode is changed and hazard warning lamp flashes and horn sounds as follows:



Interior Lamp Operation

NBEL0112S0202

When the following input signals are both supplied:

- door switch CLOSED (when all the doors are closed);
- driver's door LOCKED;

multi-remote control system turns on interior lamp (for 30 seconds) with input of UNLOCK signal from remote controller.
For detailed description, refer to "INTERIOR, SPOT, VANITY MIRROR AND LUGGAGE ROOM LAMPS" (EL-71).

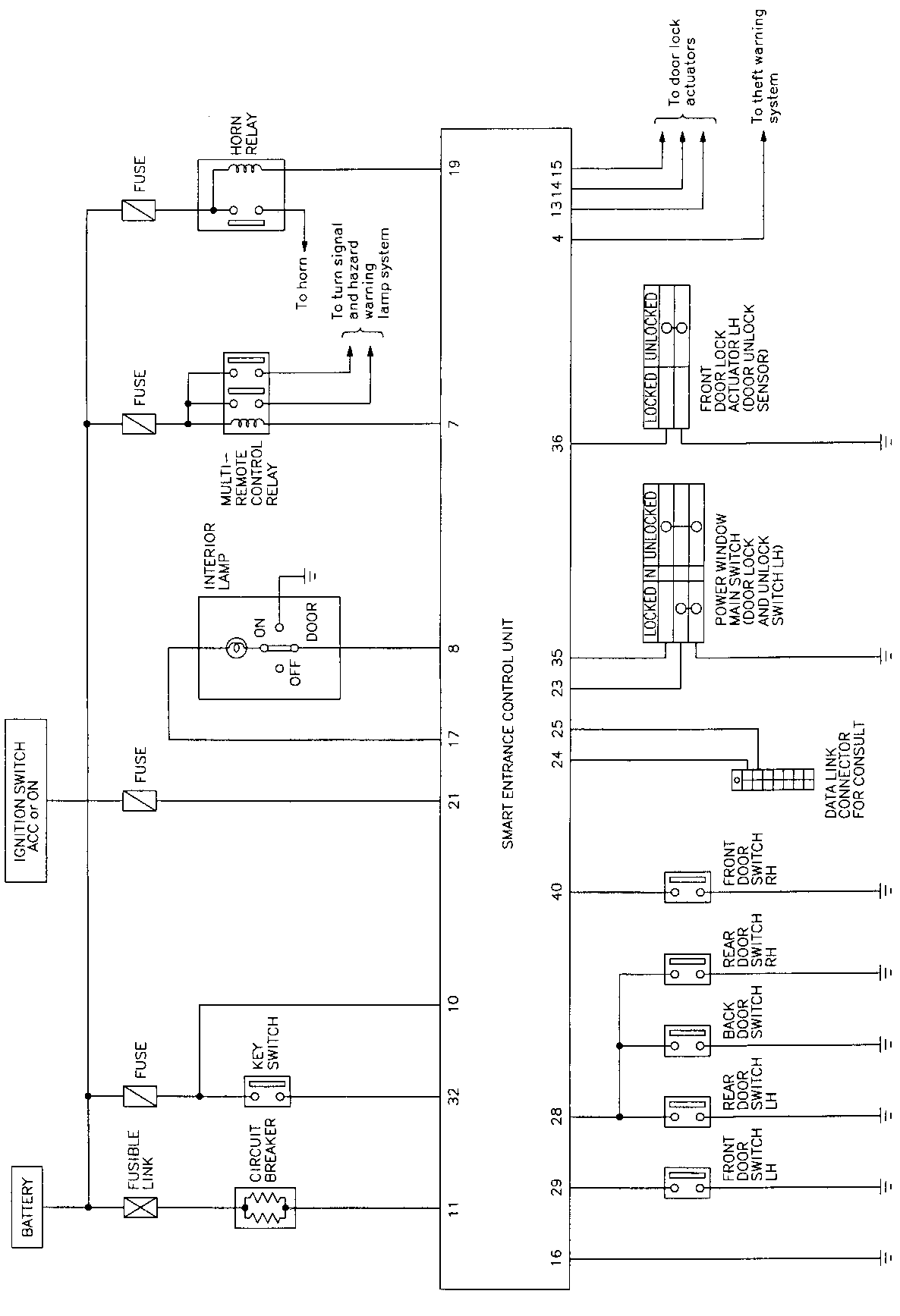
Panic Alarm Operation

NBEL0112S0203

When key switch is OFF (when ignition key is not inserted in key cylinder), multi-remote control system turns on and off horn and headlamp intermittently with input of PANIC ALARM signal from remote controller.
For detailed description, refer to "THEFT WARNING SYSTEM" (EL-227).

Schematic

NBEL0113



MEL815J

Wiring Diagram — MULTI —

NBEL0114

FIG. 1

NBEL0114S01

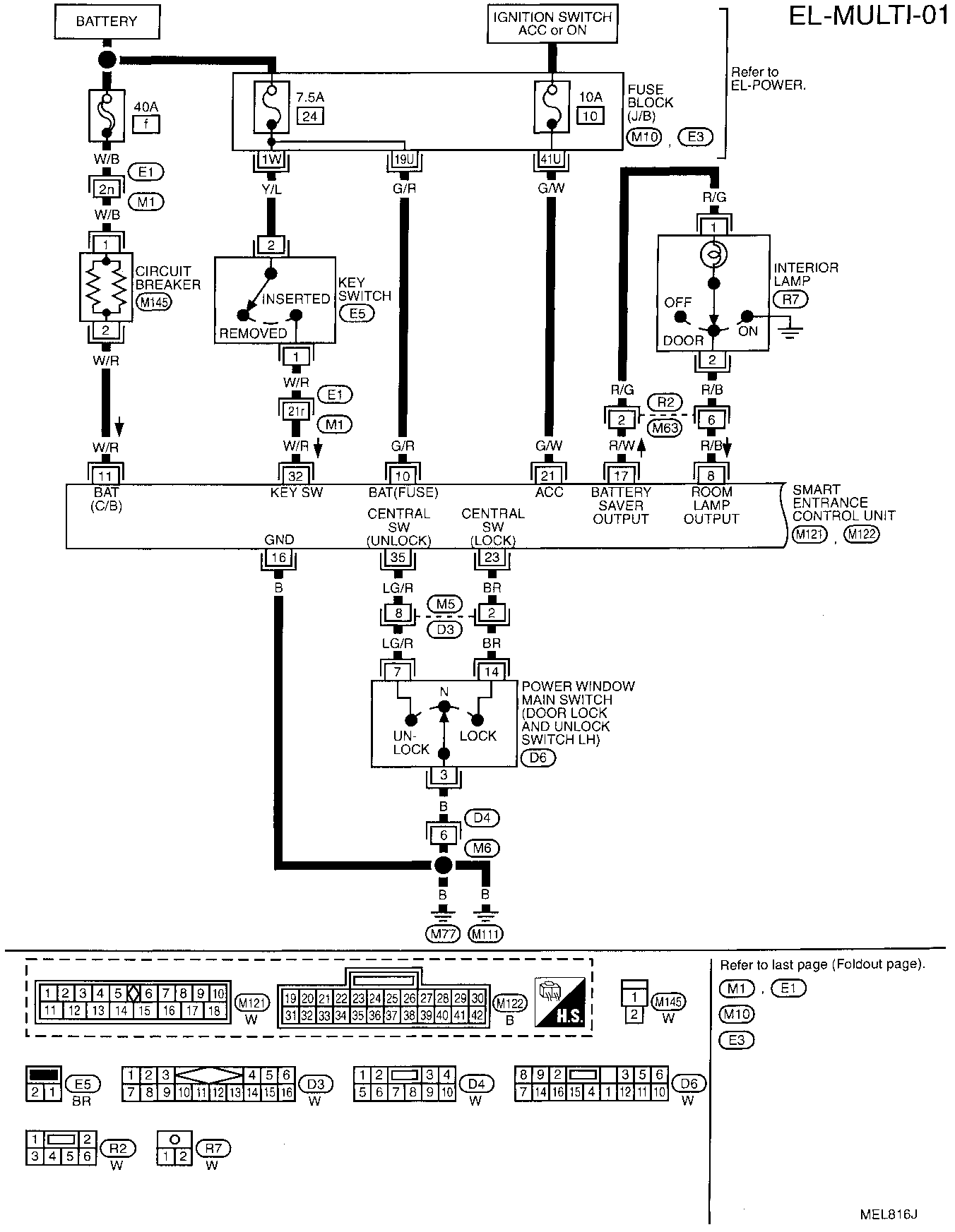
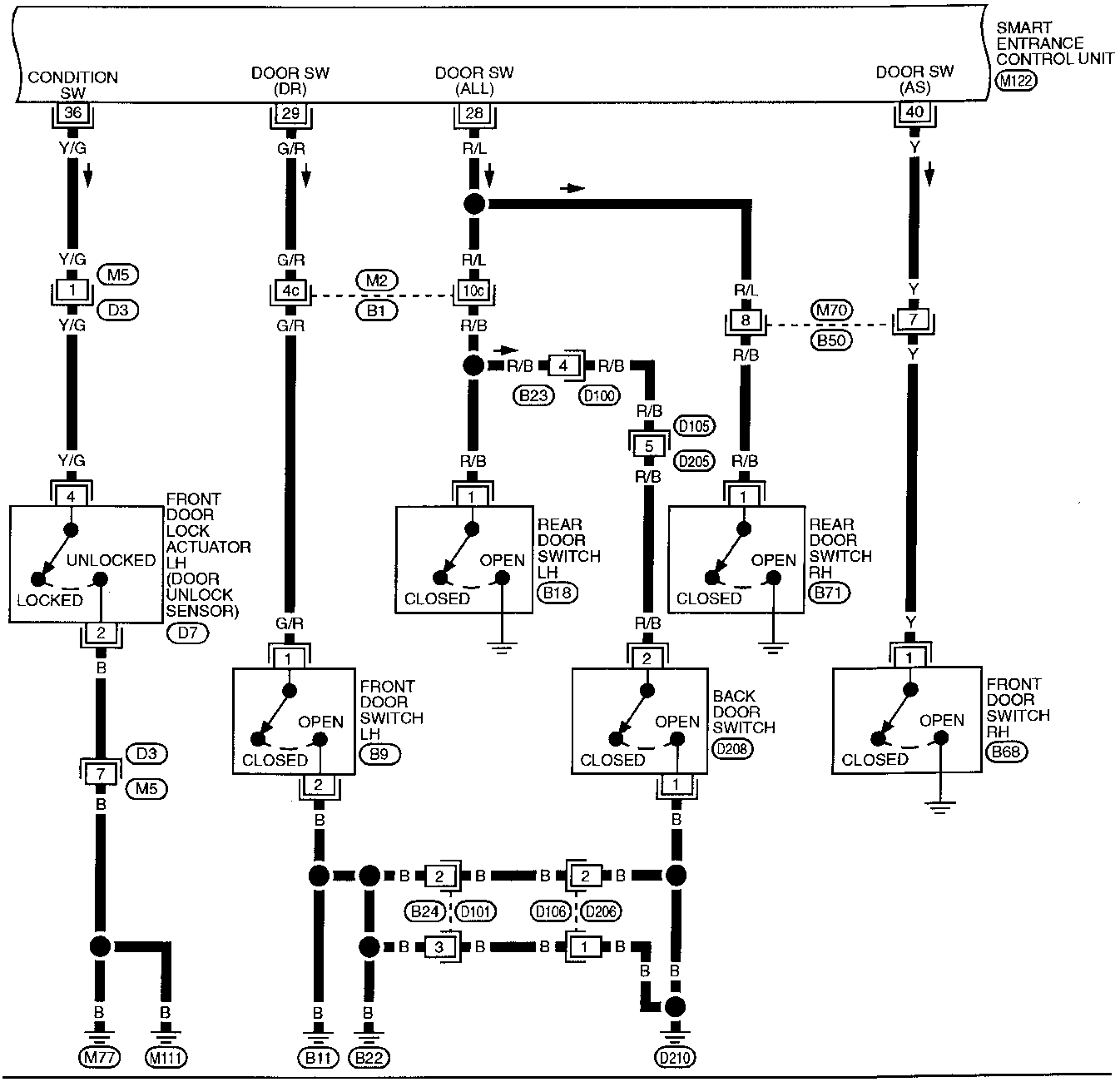
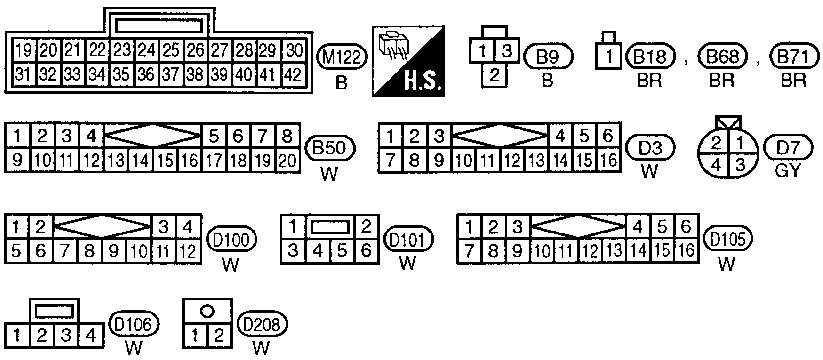


FIG. 2

NBEL0114S02

EL-MULTI-02





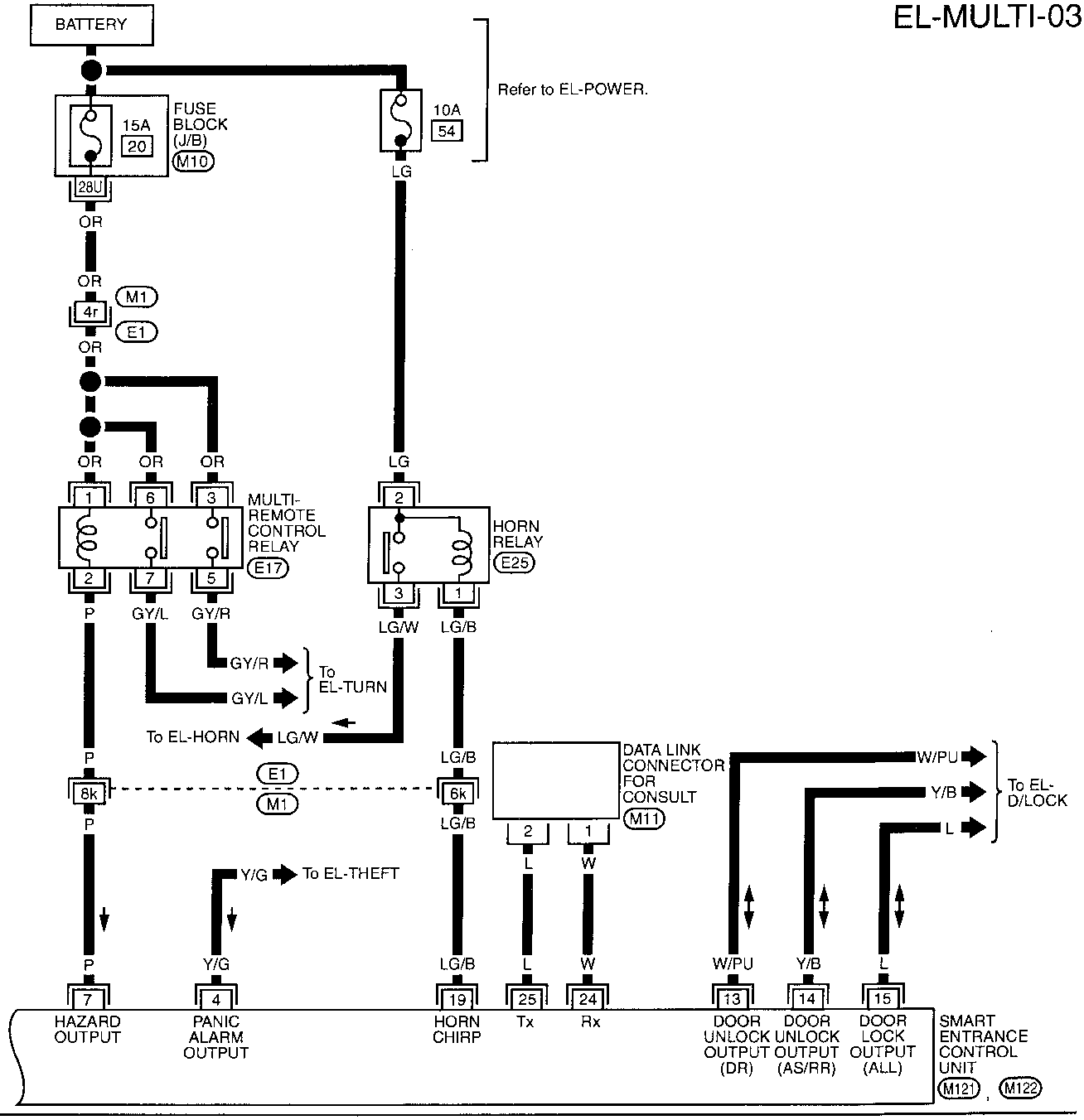
Refer to last page (Foldout page).
M2 , B1

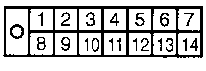
MEL817J

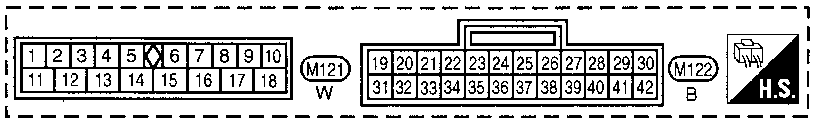
FIG. 3

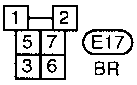
NBEL0114S03

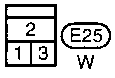
EL-MULTI-03











Refer to last page (Foldout page).
M1, E1
M10

MEL819J

Trouble Diagnoses

NBEL0115

SYMPTOM CHART

NBEL0115S01

NOTE:

- Always check remote controller battery before replacing remote controller.
- The panic alarm operation of multi-remote control system does not activate with the ignition key inserted in the ignition key cylinder.

Symptom	Diagnoses/service procedure	Reference page (EL-)
All function of multi-remote control system do not operate.	1. Remote controller battery check	214
	2. Power supply and ground circuit for control unit check	215
	3. Replace romote controller. Refer to ID Code Entry Procedure.	224
The new ID of remote controller cannot be entered.	1. Remote controller battery check	214
	2. Key switch (insert) check	217
	3. Door switch check	216
	4. Door lock/unlock switch LH check	218
	5. Power supply and ground circuit for control unit check	215
	6. Replace romote controller. Refer to ID Code Entry Procedure.	224
Door lock or unlock does not function. (If the power door lock system does not operate manually, check power door lock system. Refer to EL-198.)	1. Replace remote controller. Refer to ID Code Entry Procedure.	224
Hazard and horn reminder does not activate properly when pressing lock or unlock button of remote controller.	1. Harzard reminder check	220
	2. Horn reminder check* *: Horn chirp can be activated or deactivated. First check the horn chirp setting. Refer to "System Description", EL-206.	221
	3. Door switch check	216
	4. Replace remote controller. Refer to ID Code Entry Procedure.	224
Interior lamp operation does not activate properly.	1. Interior room lamp operation check	221
	2. Key switch (insert) check	217
	3. Door switch check	216
	4. Front LH door unlock sensor check	219
	5. Replace remote controller. Refer to ID Code Entry Procedure.	224
Panic alarm (horn and headlamp) does not activate when panic alarm button is continuously pressed.	1. Theft warning operation check. Refer to "PRELIMINALY CHECK" in "THEFT WARNING SYSTEM".	238
	2. Key switch (insert) check	217
	3. Replace remote controller. Refer to ID Code Entry Procedure.	224

REMOTE CONTROLLER BATTERY CHECK

=NBEL0115S02

1	CHECK REMOTE CONTROLLER BATTERY

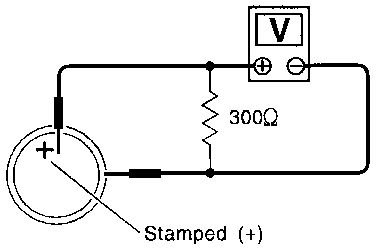
Remove battery (refer to EL-225) and measure voltage across battery positive and negative terminals, (+) and (–).

Voltage [V]:

2.5 - 3.0

NOTE:

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



SEL277V

OK or NG

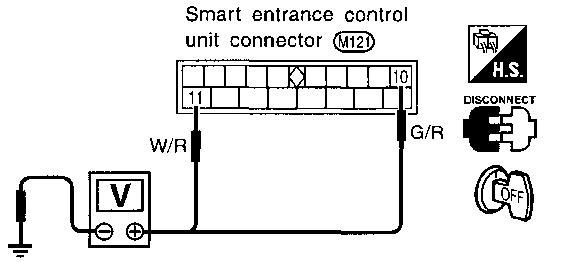
OK	▶	Check remote controller battery terminals for corrosion or damage.
NG	▶	Replace battery.

POWER SUPPLY AND GROUND CIRCUIT CHECK

=NBEL0115S04

1 CHECK MAIN POWER SUPPLY CIRCUIT FOR CONTROL UNIT

1. Disconnect connector from control unit.
2. Check voltage between control unit terminal 10 or 11 and ground.



SEL156W

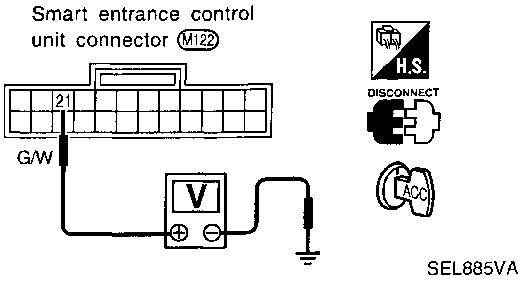
Refer to wiring diagram in EL-210.

Does battery voltage exist?

Yes	▶	GO TO 2.
No	▶	**Check the following.** • 40A fusible link (letter f, located in fuse and fusible link box) • 7.5A fuse [No. 24, located in fuse block (J/B)] • M21 circuit breaker • Harness for open or short between control unit and fuse

2 CHECK IGNITION SWITCH "ACC" CIRCUIT

1. Disconnect control unit connector.
2. Check voltage between control unit terminal 21 and ground while ignition switch is "ACC".



SEL885VA

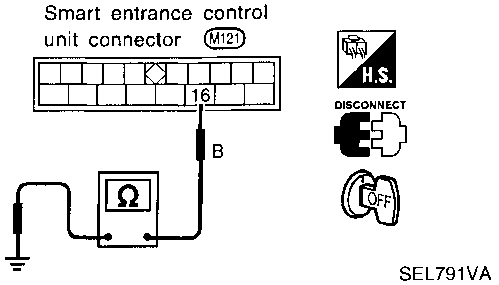
Refer to wiring diagram in EL-210.

Does battery voltage exist?

Yes	▶	GO TO 3.
No	▶	**Check the following.** • 10A fuse [No. 10, located in fuse block (J/B)] • Harness for open or short between control unit and fuse

3 CHECK GROUND CIRCUIT FOR CONTROL UNIT

Check continuity between terminal 16 and ground.



SEL791VA

Refer to wiring diagram in EL-210.

Does continuity exist?

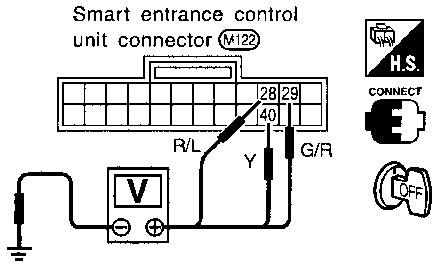
Yes	▶	Power supply and ground circuits are OK.
No	▶	Check ground harness.

DOOR SWITCH CHECK

=NBEL0115S05

1 CHECK DOOR SWITCH INPUT SIGNAL

Check voltage between control unit terminals 28, 29 or 40 and ground.



SEL886VA

	Terminals		Condition	Voltage [V]
	(+)	(−)		
Front LH door switch	29	ground	Open	0
			Closed	Approx. 5
Front RH door switch	40	ground	Open	0
			Closed	Approx. 5
Rear and back door switches	28	ground	Open	0
			Closed	Approx. 5

MTBL0273

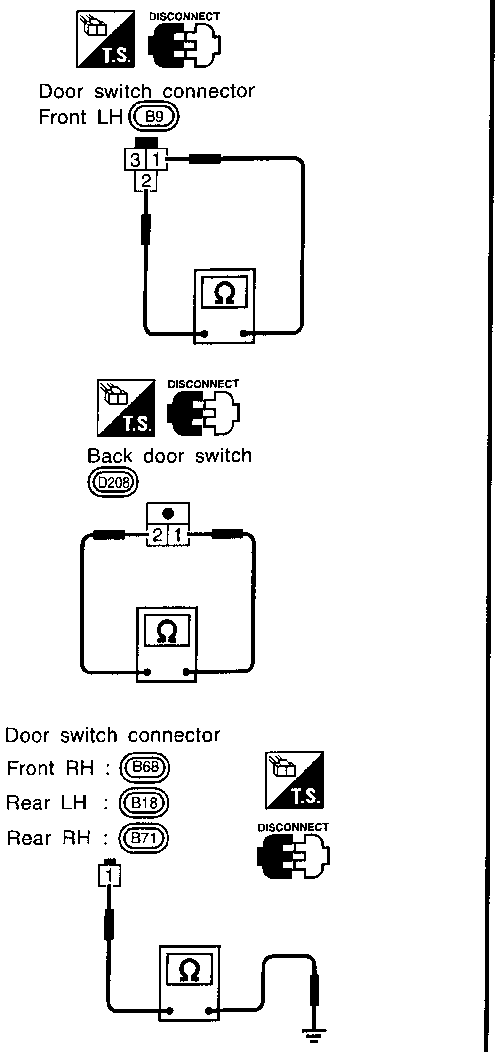
Refer to wiring diagram in EL-211.

OK or NG

OK ▶	Door switch is OK.
NG ▶	GO TO 2.

2 CHECK DOOR SWITCH

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



SEL066W

	Terminals	Condition	Continuity
Front LH door switch	1 - 2	Closed	No
		Open	Yes
Back door switch	2 - 1	Closed	No
		Open	Yes
Front RH and rear door switches	1 - ground	Closed	No
		Open	Yes

MTBL0274

OK or NG

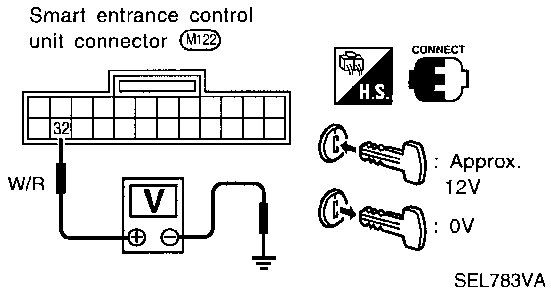
OK ▶	**Check the following.** • Door switch ground circuit (Front, back door) or door switch ground condition • Harness for open or short between control unit and door switch
NG ▶	Replace door switch.

KEY SWITCH (INSERT) CHECK

=NBEL0115S07

1	CHECK KEY SWITCH INPUT SIGNAL

Check voltage between control unit terminal 32 and ground.



SEL783VA

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

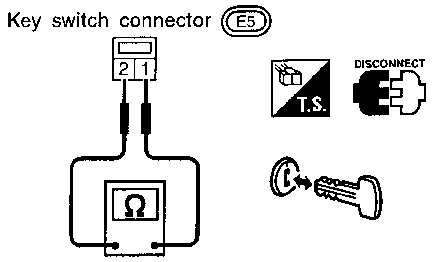
Refer to wiring diagram in EL-210.

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH (INSERT)

Check continuity between terminals 1 and 2.



SEL784VA

Continuity:
Condition of key switch: Key is inserted.
Yes
Condition of key switch: Key is removed.
No

OK or NG

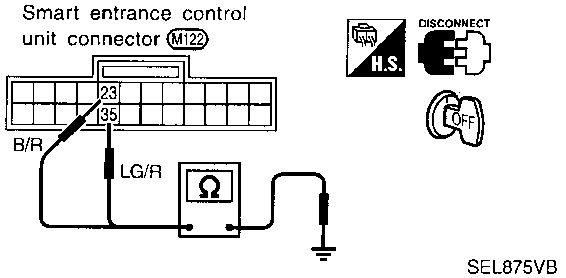
OK	▶	**Check the following.** • 7.5A fuse [No. 24, located in fuse block (J/B)] • Harness for open or short between key switch and fuse • Harness for open or short between control unit and key switch
NG	▶	Replace key switch.

DOOR LOCK/UNLOCK SWITCH LH CHECK

=NBEL0115S10

1 CHECK DOOR LOCK/UNLOCK SWITCH INPUT SIGNAL

1. Disconnect control unit connector.
2. Check continuity between control unit terminal 23 or 35 and ground.



SEL875VB

Terminals	Door lock/unlock switch LH condition	Continuity
23 - ground	Lock	Yes
	N and Unlock	No
35 - ground	Unlock	Yes
	N and Lock	No

MTBL0278

Refer to wiring diagram in EL-210.

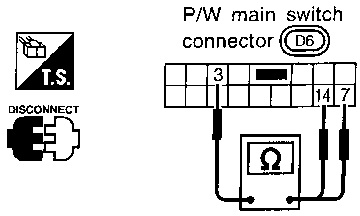
OK or NG

OK	▶	Door lock/unlock switch is OK.
NG	▶	GO TO 2.

2 CHECK DOOR LOCK/UNLOCK SWITCH

1. Disconnect door lock/unlock switch connector.
2. Check continuity between each door lock/unlock switch terminals.

- Power window main switch (Door lock/unlock switch LH)



SEL067W

Condition	Terminals		
	3	7	14
Lock	○		○
N	No continuity		
Unlock	○	○	

MTBL0265

OK or NG

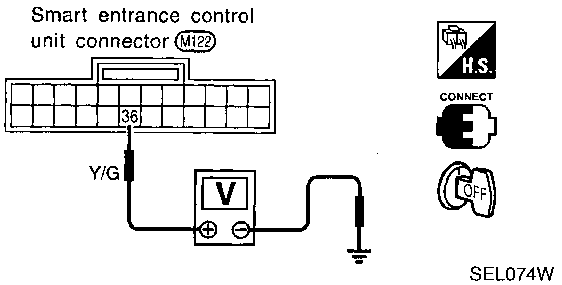
OK	▶	**Check the following.** • Ground circuit for door lock/unlock switch • Harness for open or short between door lock/unlock switch and control unit connector
NG	▶	Replace door lock/unlock switch.

FRONT LH DOOR UNLOCK SENSOR CHECK

=NBEL0115S06

1 CHECK FRONT LH DOOR UNLOCK SENSOR INPUT SIGNAL

Check voltage between control unit terminal 36 and ground.



SEL074W

	Terminals		Condition	Voltage [V]
	(+)	(−)		
Front LH door	36	Ground	Locked	Approx. 5
			Unlocked	0

MTBL0275

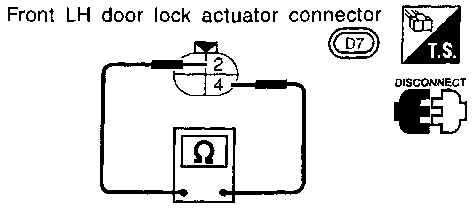
Refer to wiring diagram in EL-211.

OK or NG

OK	▶	Door unlock sensor is OK.
NG	▶	GO TO 2.

2 CHECK FRONT LH DOOR UNLOCK SENSOR

1. Disconnect front LH door unlock sensor connector.
2. Check continuity between door unlock sensor terminals.



SEL247VD

Continuity:
Condition: Locked
No
Condition: Unlocked
Yes

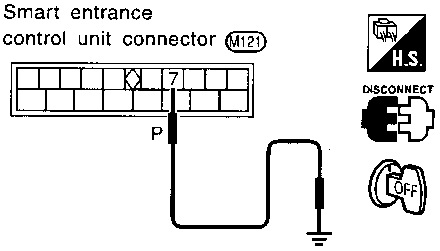
OK or NG

OK	▶	**Check the following.** • Door unlock sensor ground circuit • Harness for open or short between control unit and door unlock sensor
NG	▶	Replace door unlock sensor.

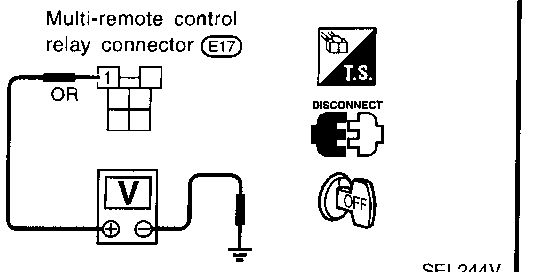
HAZARD REMINDER CHECK

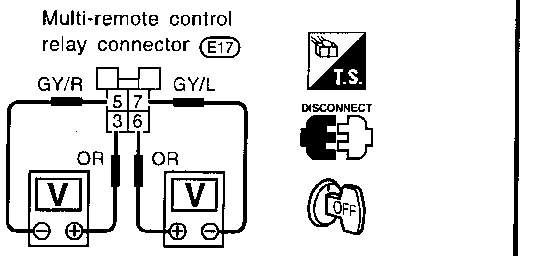
=NBEL0115S08

1	CHECK HAZARD INDICATOR
Check if hazard indicator flashes with hazard switch. **Does hazard indicator operate?**	
Yes ▶	GO TO 2.
No ▶	Check "hazard indicator" circuit.

2	CHECK HAZARD REMINDER OPERATION
1. Disconnect control unit connector. 2. Apply ground to control unit terminal 7.  SEL890VA Refer to wiring diagram in EL-212. **Does hazard indicator illuminate?**	
Yes ▶	Replace smart entrance control unit.
No ▶	GO TO 3.

3	CHECK MULTI-REMOTE CONTROL RELAY
Check multi-remote control relay. **OK or NG**	
OK ▶	GO TO 4.
NG ▶	Replace.

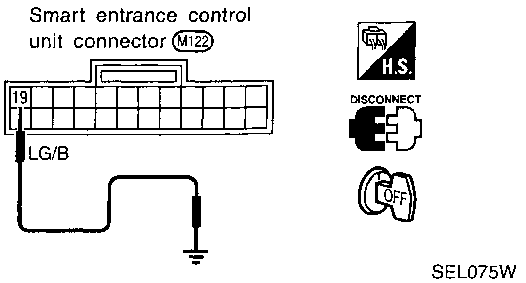
4	CHECK POWER SUPPLY FOR MULTI-REMOTE CONTROL RELAY
1. Disconnect multi-remote control relay connector. 2. Check voltage between terminal 1 and ground.  SEL244V **Does battery voltage exist?**	
Yes ▶	GO TO 5.
No ▶	**Check the following.** • 15A fuse [No. 20, located in fuse block (J/B)] • Harness for open or short between multi-remote control relay and fuse

5	CHECK MULTI-REMOTE CONTROL RELAY CIRCUIT
1. Disconnect multi-remote control relay connector. 2. Check voltage between terminals 3 and 5. 3. Check voltage between terminals 6 and 7.  SEL245V **Battery voltage should exist.** **OK or NG**	
OK ▶	Check harness for open or short between control unit and multi-remote control relay.
NG ▶	**Check the following.** • Harness for open or short between multi-remote control relay and fuse • Harness for open or short between multi-remote control relay and turn signal lamps

HORN REMINDER CHECK

=NBEL0115S11

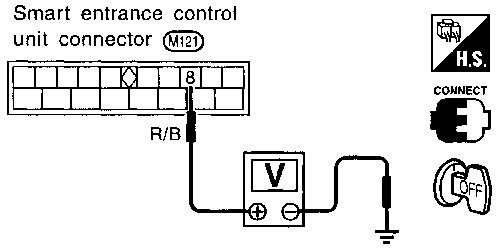
1	CHECK HORN
Check if horn sounds with horn switch. **Does horn operate?**	
Yes ▶	GO TO 2.
No ▶	Check horn circuit.

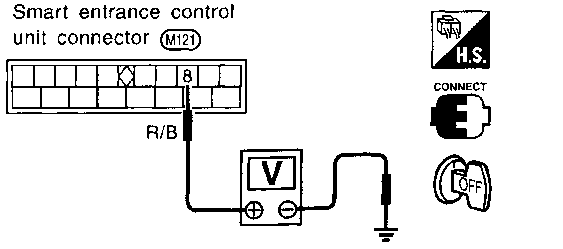
2	CHECK HORN REMINDER OPERATION
1. Disconnect control unit connector. 2. Apply ground to control unit terminal 19.  SEL075W Refer to wiring diagram in EL-212. **Does horn sound?**	
Yes ▶	Replace smart entrance control unit.
No ▶	Check harness for open or short between control unit and horn relay.

INTERIOR ROOM LAMP OPERATION CHECK

NBEL0115S09

1	CHECK INTERIOR ROOM LAMP
Check if the interior room lamp switch is in the "ON" position and the lamp illuminates. **Does interior room lamp illuminate?**	
Yes ▶	GO TO 2.
No ▶	**Check the following.** • Harness for open or short between control unit and interior room lamp • Interior room lamp

2	CHECK INTERIOR ROOM LAMP CIRCUIT
When interior room lamp switch is "DOOR" position, check voltage across control unit terminal 8 and ground.  SEL891VA Refer to wiring diagram in EL-210. **Does battery voltage exist?**	
Yes ▶	GO TO 3.
No ▶	Repair harness between control unit and interior room lamp.

3	CHECK CONTROL UNIT OUTPUT
Push unlock button of remote controller with key removed and all doors closed, and check voltage across control unit terminal 8 and ground.  SEL891VA **Voltage (V):** **Unlock button is pushed.** **0 (For approx. 30 seconds.)** **Unlock button is not pushed.** **Battery voltage** **OK or NG**	
OK ▶	Check system again.
NG ▶	Replace smart entrance control unit.

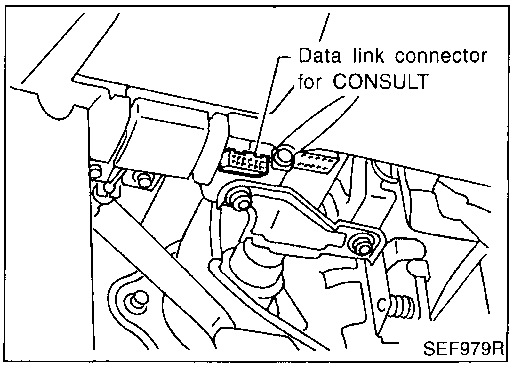
CONSULT

NBEL0169

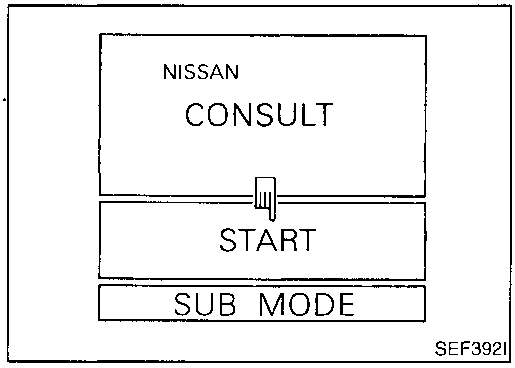
CONSULT REMOTE CONTROLLER ID SET UP PROCEDURE

NBEL0169S01

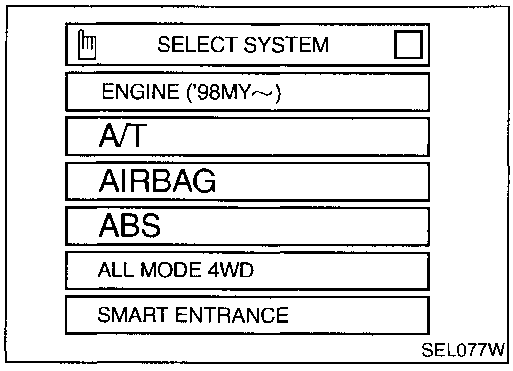
NOTE:
When a customer loses the remote controller, it is recommended to erase the ID code of the lost remote controller to prevent someone from using the lost remote controller. When the ID code of lost remote controller cannot be specified, all ID codes which have been registered should be erased. It will then be necessary to register the ID codes for the remaining remote controller.



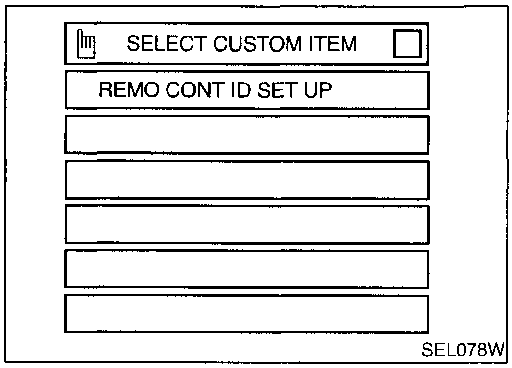
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



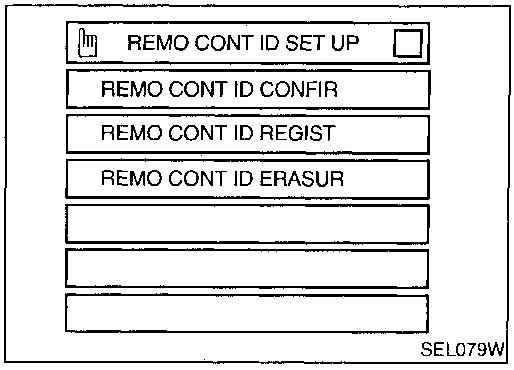
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "SMART ENTRANCE".



6. Touch "REMO CONT ID SET UP".



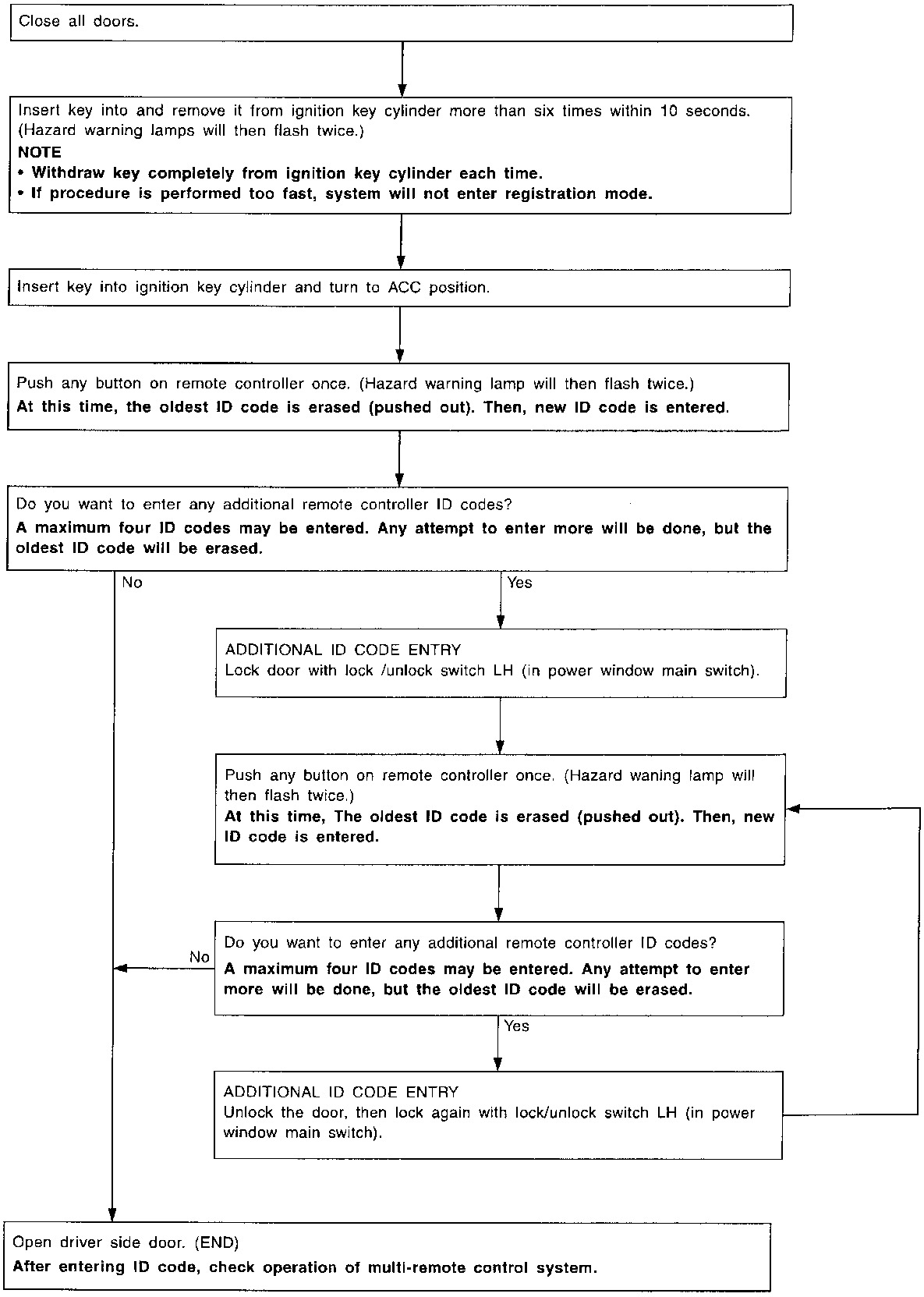
7. The items shown on the figure at left can be set up.
- "REMO CONT ID CONFIR"
  This mode can be confirmed whether remote controller ID code is registered or not.
- "REMO CONT ID REGIST"
  Remote controller ID code can be registered.

NOTE:
Enter the ID code when remote controller or smart entrance control unit is replaced and additional remote controller is activated.

- "REMO CONT ID ERASUR"
  Remote controller ID code can be erased.

ID Code Entry Procedure (Without CONSULT)

NBEL0117



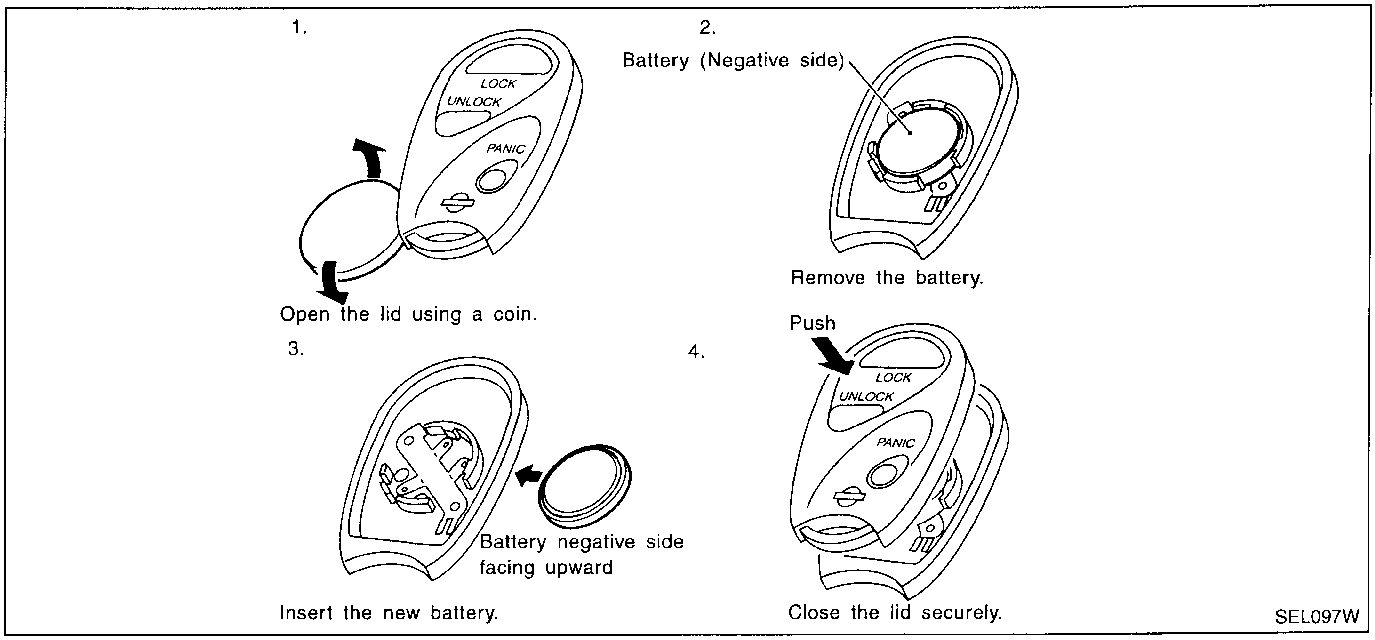
SEL076W

NOTE:

- When a customer loses the remote controller, it is recommended to erase the ID code of the lost remote controller to prevent someone from using the lost remote controller. When the ID code of lost remote controller cannot be specified, all ID codes which have been registered should be erased. It will then be necessary to register the ID codes for the remaining remote controller.
- If you need to activate more than two additional new remote controllers, repeat the procedure "Additional ID code entry" for each new remote controller.
- Entry of maximum four ID codes is allowed. When more than four ID codes are entered, the oldest ID code will be erased.
- Even if the same ID code that is already in the memory is input, the same ID code can be entered. The code is counted as an additional code.

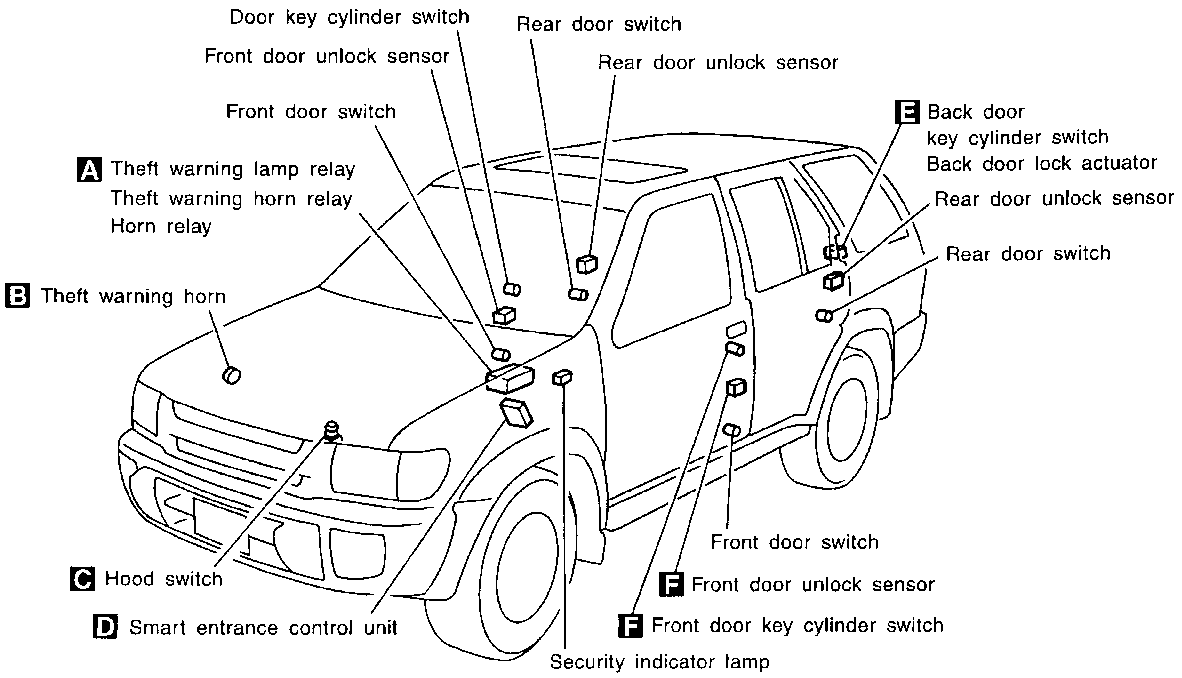
Remote Controller Battery Replacement

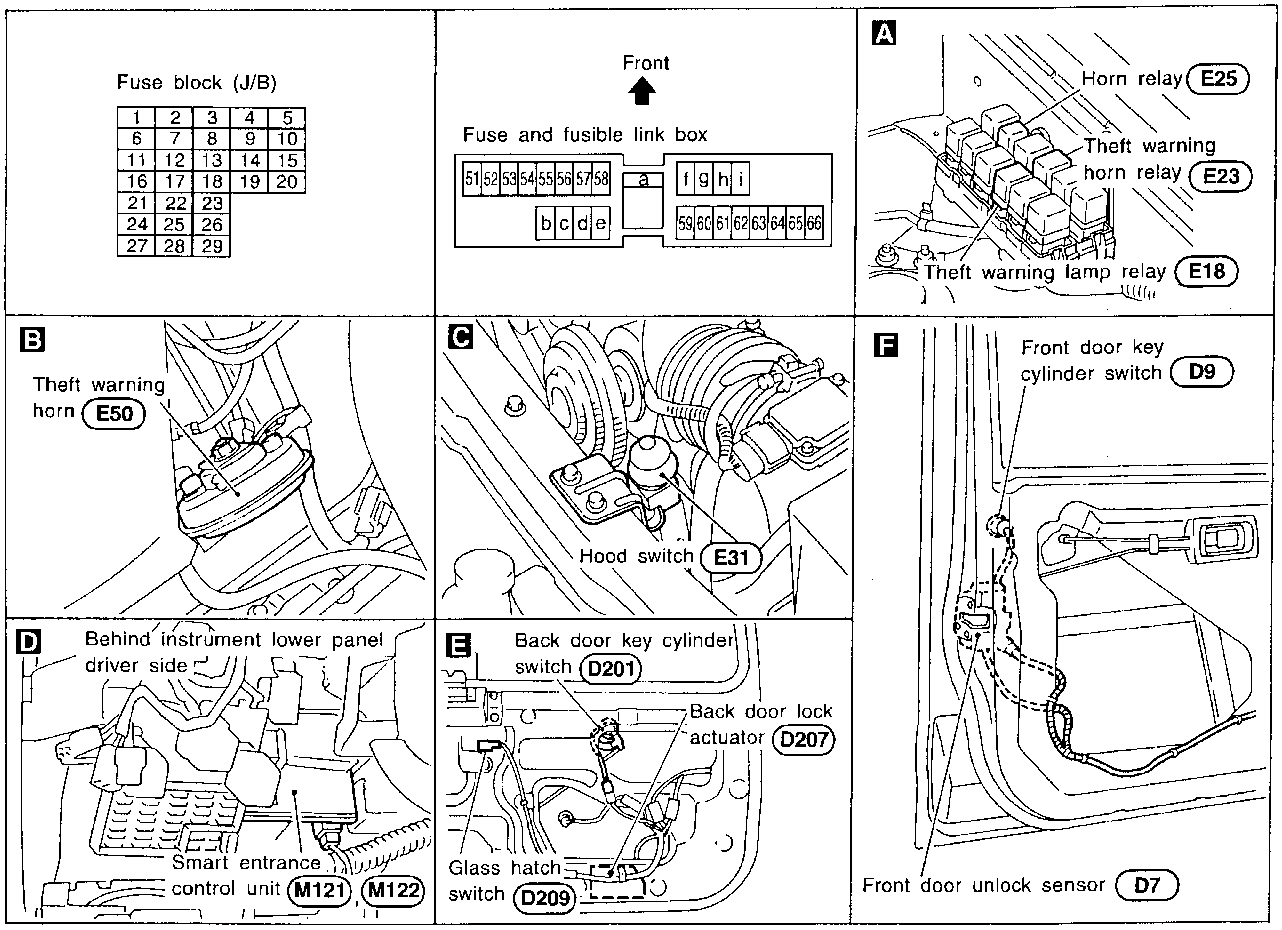
NBEL0118



Component Parts and Harness Connector Location

NBEL0119





SEL080W

System Description

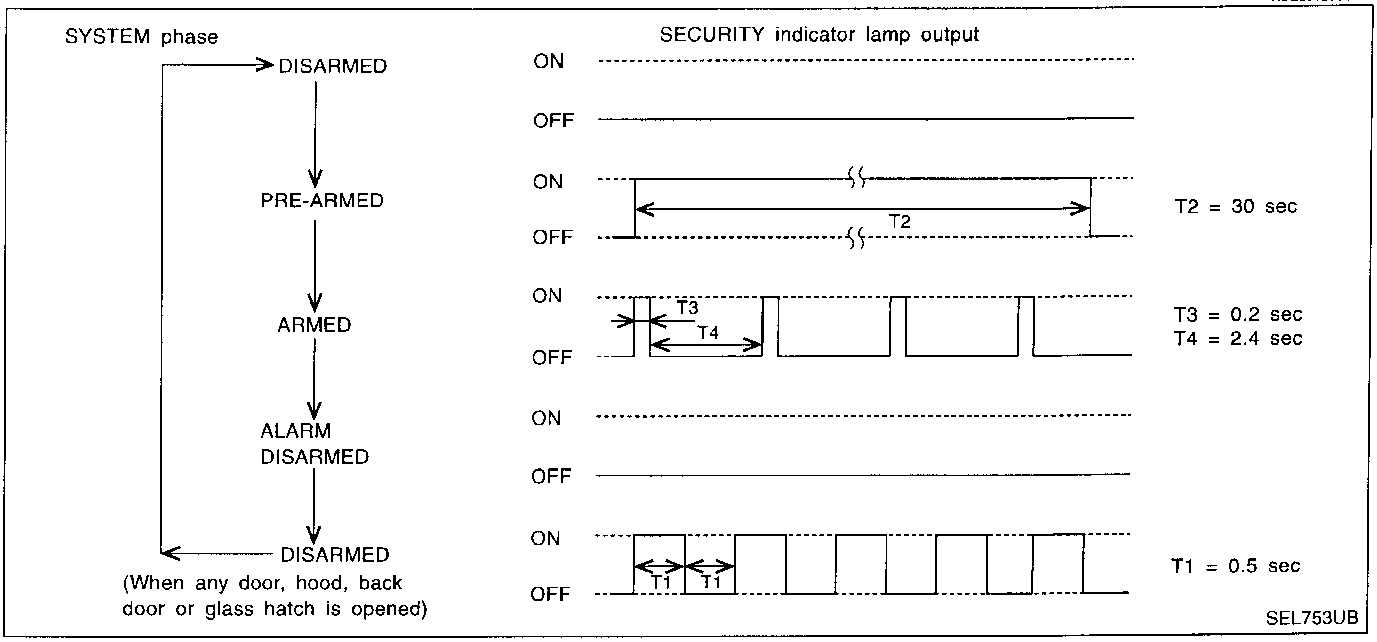
NBEL0120

DESCRIPTION

NBEL0120S01

1. Operation Flow

NBEL0120S0101



2. Setting The Theft Warning System

NBEL0120S0102

Initial condition

1) Close all doors.
2) Close hood and glass hatch.

Disarmed phase

The theft warning system is in the disarmed phase when any door(s), hood or glass hatch 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, glass hatch and all doors are closed and the doors are 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 2.6 seconds.)

3. Canceling The Set Theft Warning System

NBEL0120S0103

When the following 1) or 2) operation is performed, the armed phase is canceled.

1) Unlock the doors with the key or multi-remote controller.
2) Open the glass hatch with the key.

4. Activating The Alarm Operation of The Theft Warning System

NBEL0120S0104

Make sure the system is in the armed phase. (The security indicator lamp blinks every 2.6 seconds.)
When the following operation 1) or 2) is performed, the system sounds the horns and flashes the headlamps for about 2.5 minutes.

1) Engine hood, glass hatch or any door is opened before unlocking door with key or multi-remote controller.
2) Door is unlocked without using key or multi-remote controller.

POWER SUPPLY AND GROUND

NBEL0120S07

Power is supplied at all times

- through 7.5A fuse [No. 24, located in the fuse block (J/B)]
- to security indicator lamp terminal 1.

Power is supplied at all times

- through 40A fusible link (letter **f**, located in the fuse and fusible link box)
- to smart entrance control unit terminal 11.

With the ignition switch in the ON ro START position, power is supplied
- through 7.5A fuse [No. 11, located in the fuse block (J/B)]
- to smart entrance control unit terminal 33.

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

Ground is supplied
- to smart entrance control unit terminal 16
- through body grounds M77 and M111.

INITIAL CONDITION TO ACTIVATE THE SYSTEM

NBEL0120S02

The operation of the theft warning system is controlled by the doors, hood and glass hatch.
To activate the theft warning system, the smart entrance control unit must receive signals indicating the doors, hood and glass hatch are closed and the doors are locked.
When a door is open, smart entrance control unit terminal 28, 29 or 40 receives a ground signal from each door switch.
When a door is unlocked, smart entrance control unit terminal 26, 36 or 37 receives a ground signal from terminal 4 of each door unlock sensor or terminal 3 of back door unlock sensor.
When the hood is open, smart entrance control unit terminal 27 receives a ground signal
- from terminal 1 of the hood switch
- through body grounds E13 and E41.

When the glass hatch is open, smart entrance control unit terminal 38 receives a ground signal
- from terminal 1 of the glass hatch switch
- through body grounds D210, B11 and B22.

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 mode.

THEFT WARNING SYSTEM ACTIVATION (WITH KEY OR REMOTE CONTROLLER USED TO LOCK DOORS)

NBEL0120S03

If the key is used to lock doors, terminal 41 receives a ground signal
- from terminal 3 of the key cylinder switch LH
- from terminal 1 of the door key cylinder switch RH
- through body grounds M77 and M111 or M4 and M66
- from terminal 1 of the back door key cylinder switch
- through body grounds B11, B22 and D210.

If this signal or lock signal from remote controller is received by the smart entrance control unit, the theft warning system will activate automatically.
Once the theft warning system has been activated, smart entrance control unit terminal 31 supplies ground to terminal 2 of the security indicator lamp.
The security lamp will illuminate for approximately 30 seconds and then blink.
Now the theft warning system is in armed phase.

THEFT WARNING SYSTEM ALARM OPERATION

NBEL0120S04

The theft warning system is triggered by
- opening a door
- opening the hood or the glass hatch
- unlocking door without using the key or multi-remote controller.

Once the theft warning system is in armed phase, if the smart entrance control unit receives a ground signal at terminal 26, 36, 37 (door unlock sensor), 28, 29, 40 (door switch), 38 (glass hatch switch) or 27 (hood switch), the theft warning system will be triggered. The headlamps flash and the horn sounds intermittently.
Power is supplied at all times
- through 7.5A fuse (No. 52, located in fuse and fusible link box)
- to theft warning lamp relay terminal 1 and
- to theft warning horn relay terminal 1.

When the theft warning system is triggered, ground is supplied intermittently
- from terminal 4 of the smart entrance control unit

- to theft warning lamp relay terminal 2 and
- to theft warning horn relay terminal 2.

The headlamps flash and the horn sounds intermittently.
The alarm automatically turns off after 2 or 3 minutes but will reactivate if the vehicle is tampered with again.

THEFT WARNING SYSTEM DEACTIVATION

NBEL0120S05

To deactivate the theft warning system, a door, the back door or the glass hatch must be unlocked with the key or remote controller.
When the key is used to unlock the door, smart entrance control unit terminal 30 receives a ground signal

- from terminal 1 of the LH key cylinder switch
- from terminal 3 of the RH key cylinder switch
- from terminal 2 of the back door key cylinder switch.

When the key is used to open the glass hatch, smart entrance control unit terminal 42 receives a ground signal from terminal 3 of the back door key cylinder switch.
When the smart entrance control unit receives either one of these signals or unlock signal from remote controller, the theft warning system is deactivated. (Disarmed phase)

PANIC ALARM OPERATION

NBEL0120S06

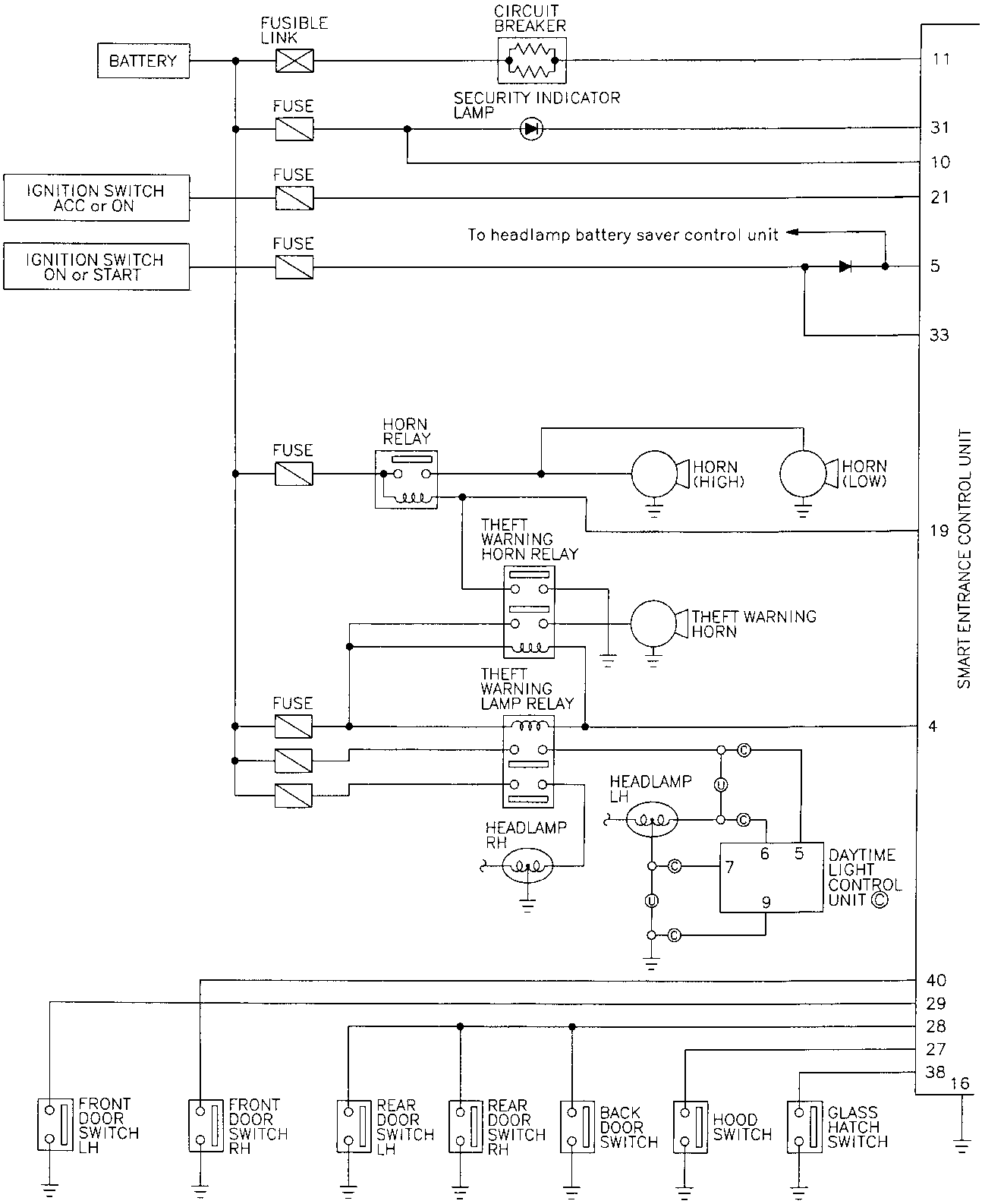
Multi-remote control system may or may not operate theft warning system (horn and headlamps) as required.
When the multi-remote control system is triggered, ground is supplied intermittently.

- from smart entrance control unit terminal 4
- to theft warning lamp relay terminal 2 and
- to theft warning horn relay terminal 2.

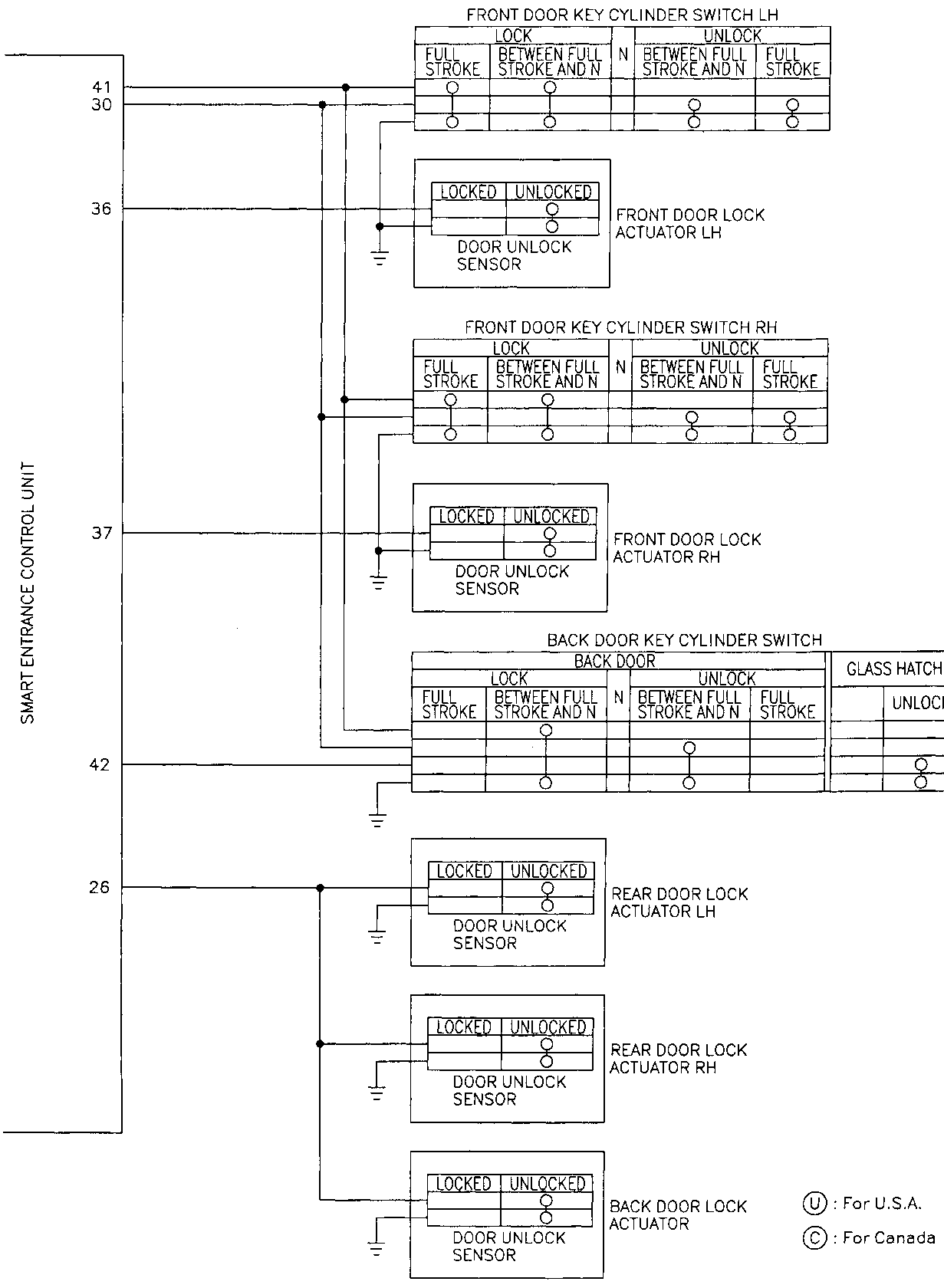
The headlamp flashes and the horn sounds intermittently.
The alarm automatically turns off after 30 seconds or when smart entrance control unit receives any signal from multi-remote controller.

Schematic

NBEL0121



MEL820J

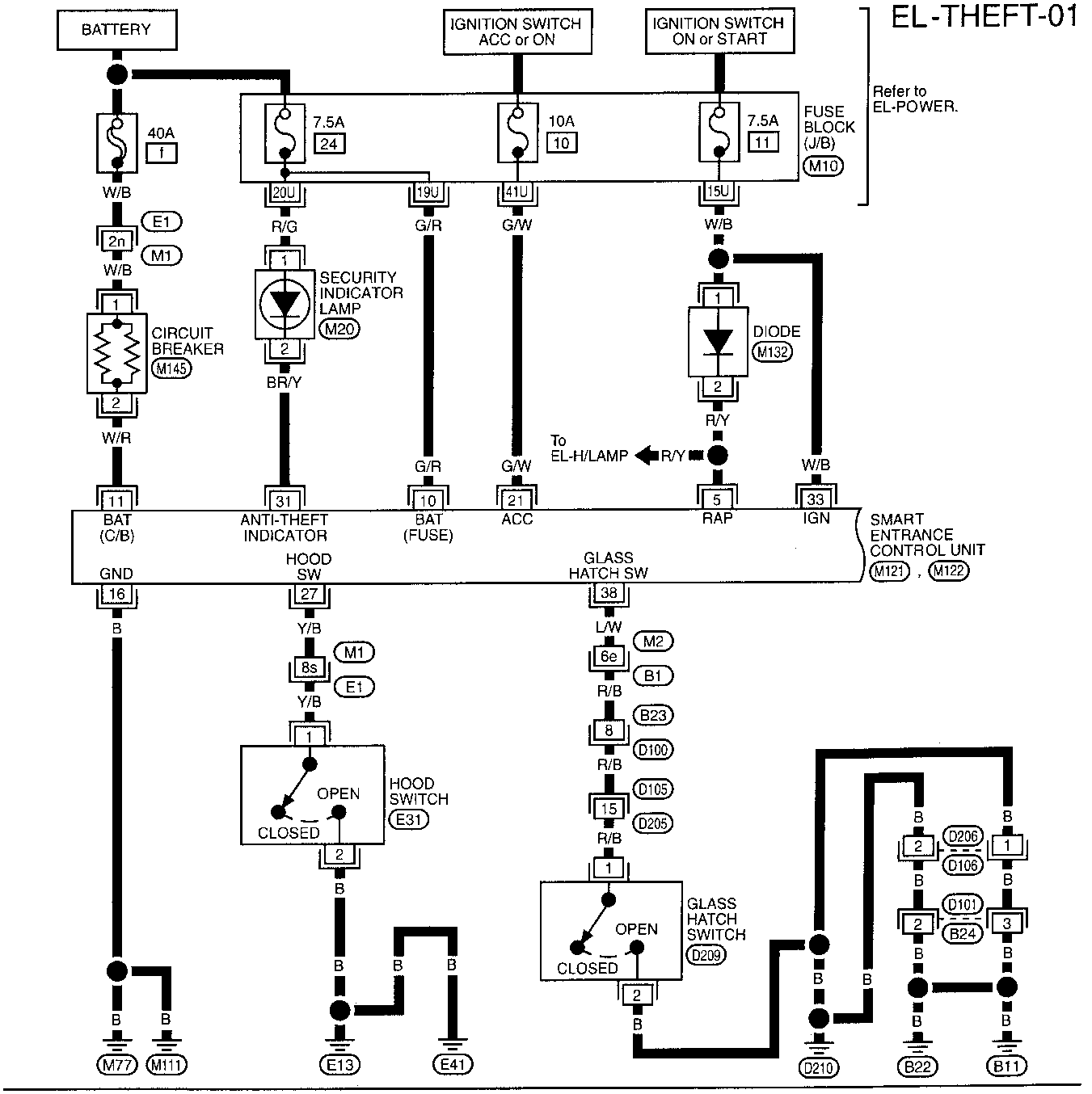

FRONT DOOR KEY CYLINDER SWITCH LH
LOCK
FULL STROKE
BETWEEN FULL STROKE AND N
N
UNLOCK
BETWEEN FULL STROKE AND N
FULL STROKE
41
30
36
LOCKED
UNLOCKED
DOOR UNLOCK SENSOR
FRONT DOOR LOCK ACTUATOR LH
FRONT DOOR KEY CYLINDER SWITCH RH
37
FRONT DOOR LOCK ACTUATOR RH
BACK DOOR KEY CYLINDER SWITCH
BACK DOOR
GLASS HATCH
42
26
REAR DOOR LOCK ACTUATOR LH
REAR DOOR LOCK ACTUATOR RH
BACK DOOR LOCK ACTUATOR
SMART ENTRANCE CONTROL UNIT
Ⓤ : For U.S.A.
Ⓒ : For Canada
MEL821J

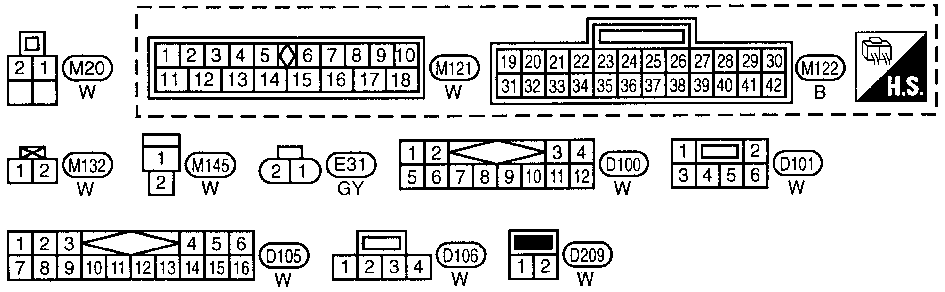
Wiring Diagram — THEFT —

NBEL0122

NBEL0122S01

FIG. 1





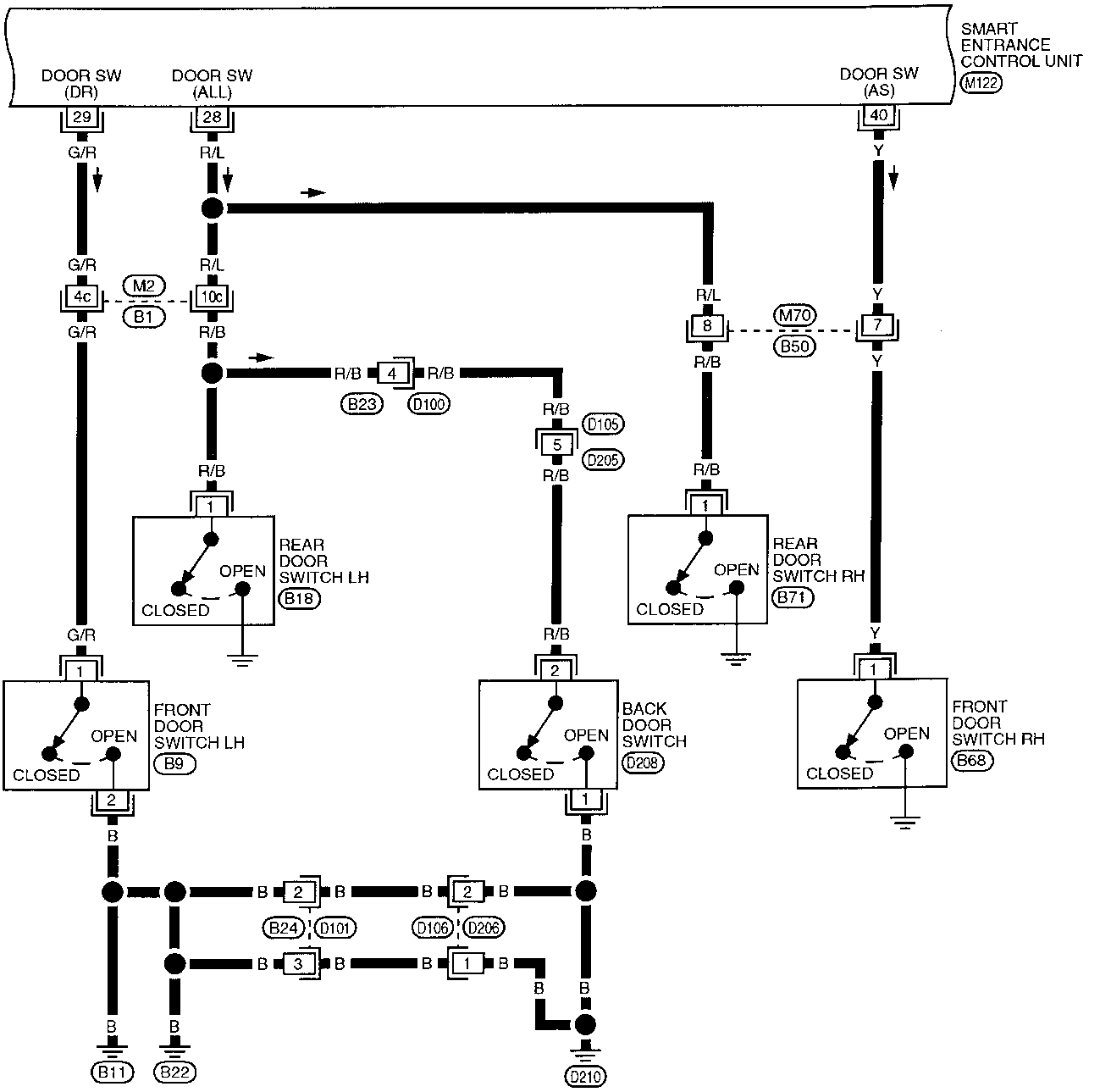
Refer to last page (Foldout page).
M1, E1
M2, B1
M10

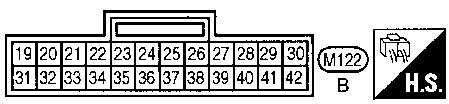
MEL822J

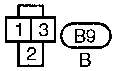
FIG. 2

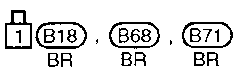
NBEL0122S02

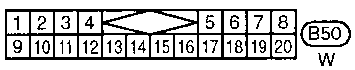
EL-THEFT-02

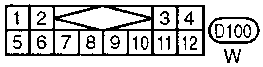


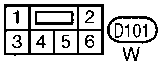


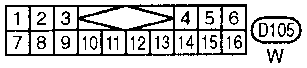


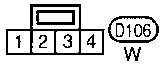












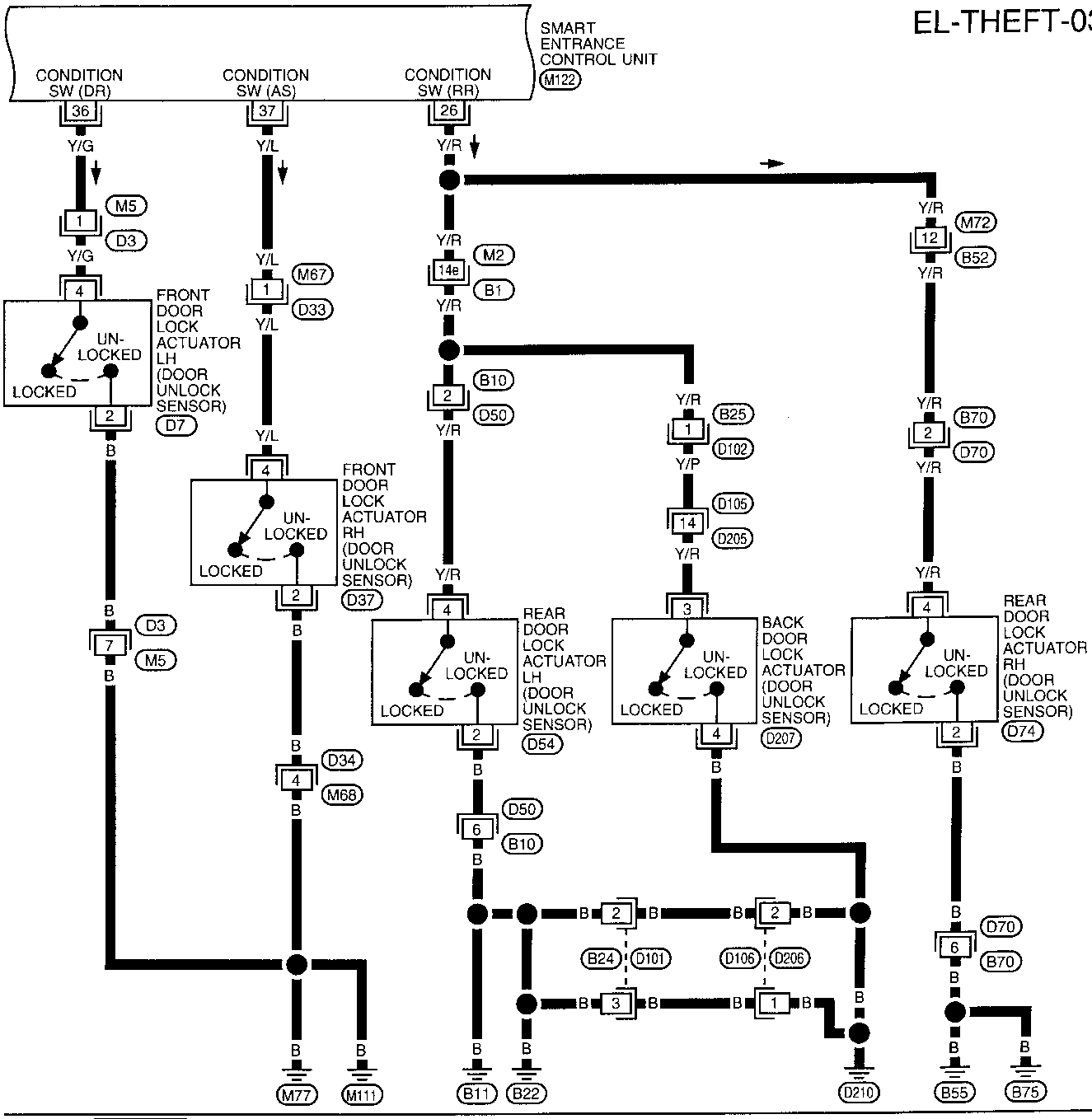
Refer to last page (Foldout page).
M2 , B1

MEL823J

FIG. 3

NBEL0122S03

EL-THEFT-03



Refer to last page (Foldout page).

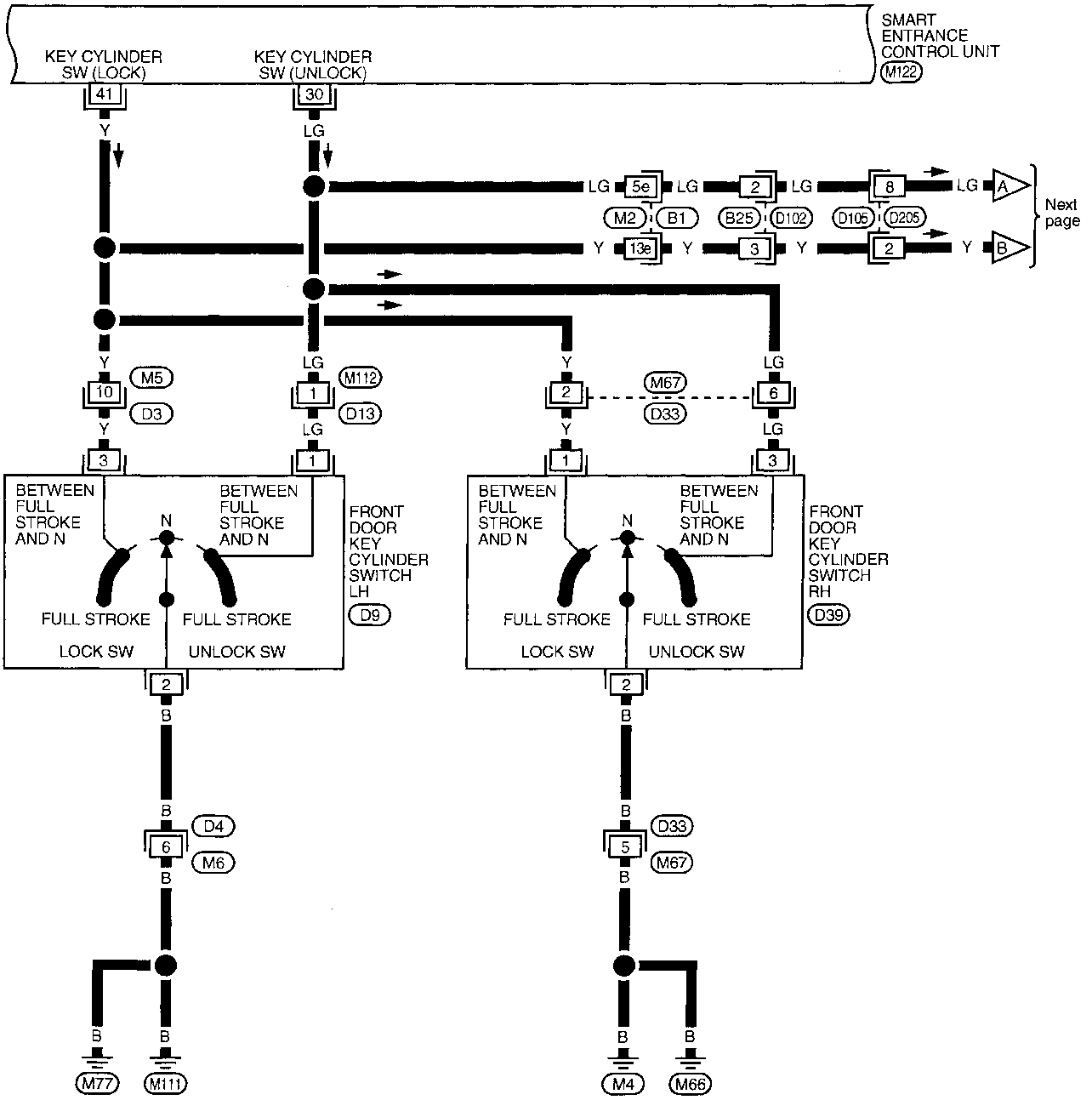
M2 , B1

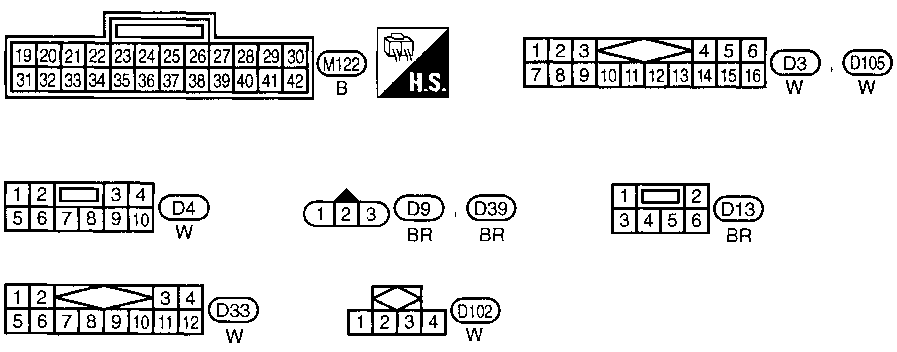
MEL824J

FIG. 4

NBEL0122S04

EL-THEFT-04



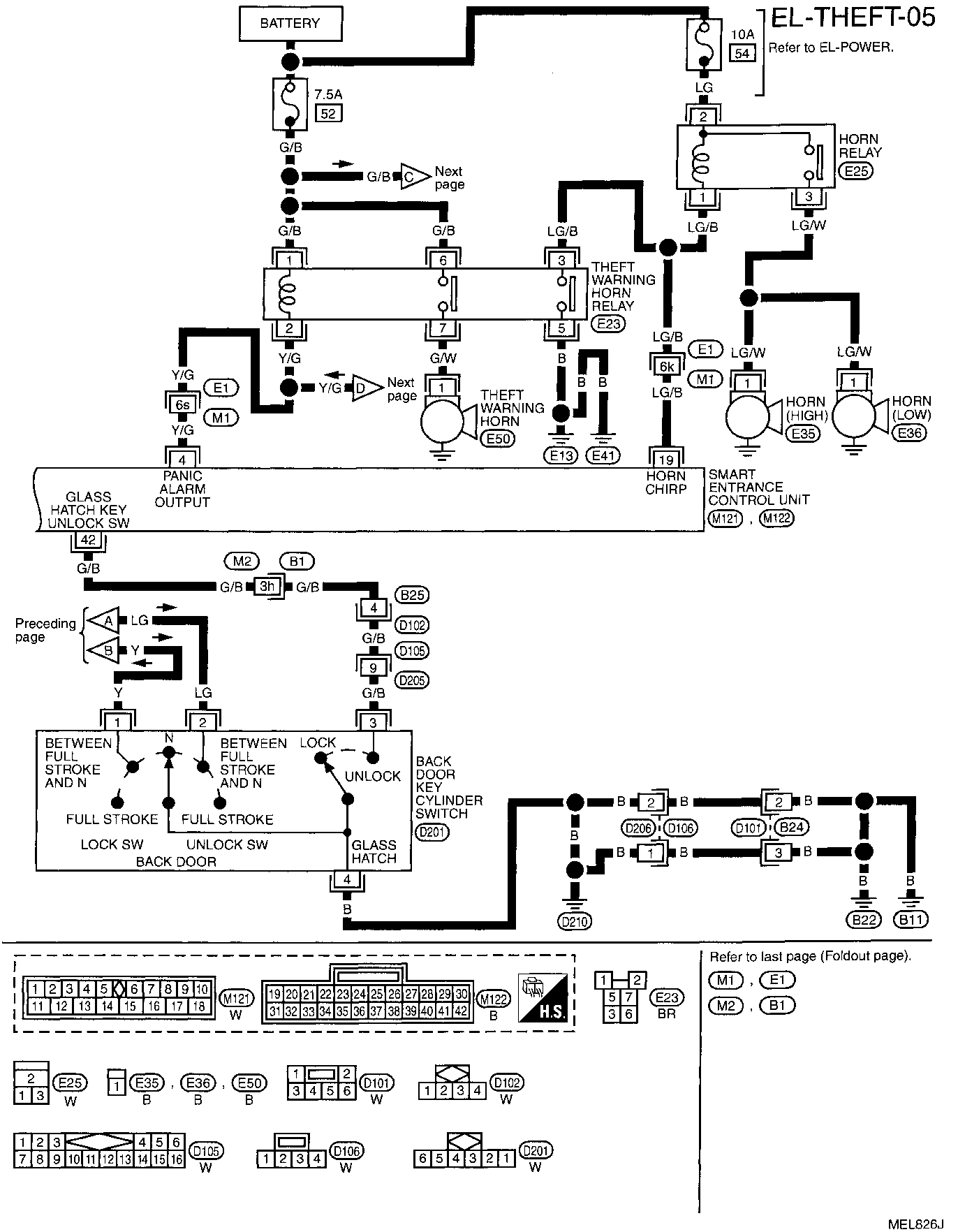


Refer to last page (Foldout page).
M2, B1

MEL825J

FIG. 5

NBEL0122S05

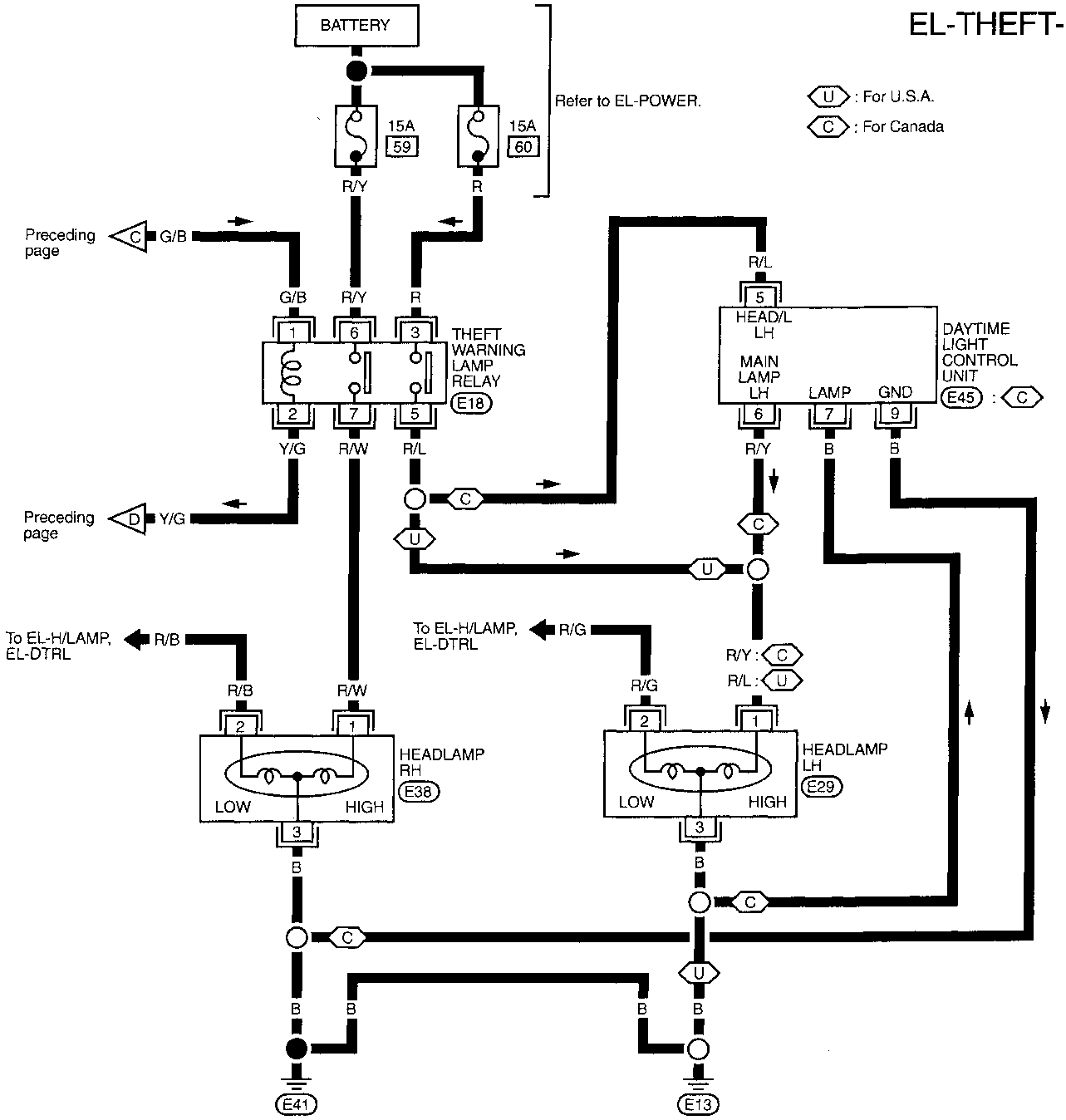


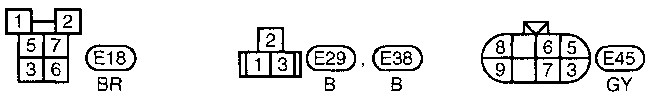
Refer to last page (Foldout page).
M1, E1
M2, B1

MEL826J

FIG. 6

NBEL0122S06





MEL827J

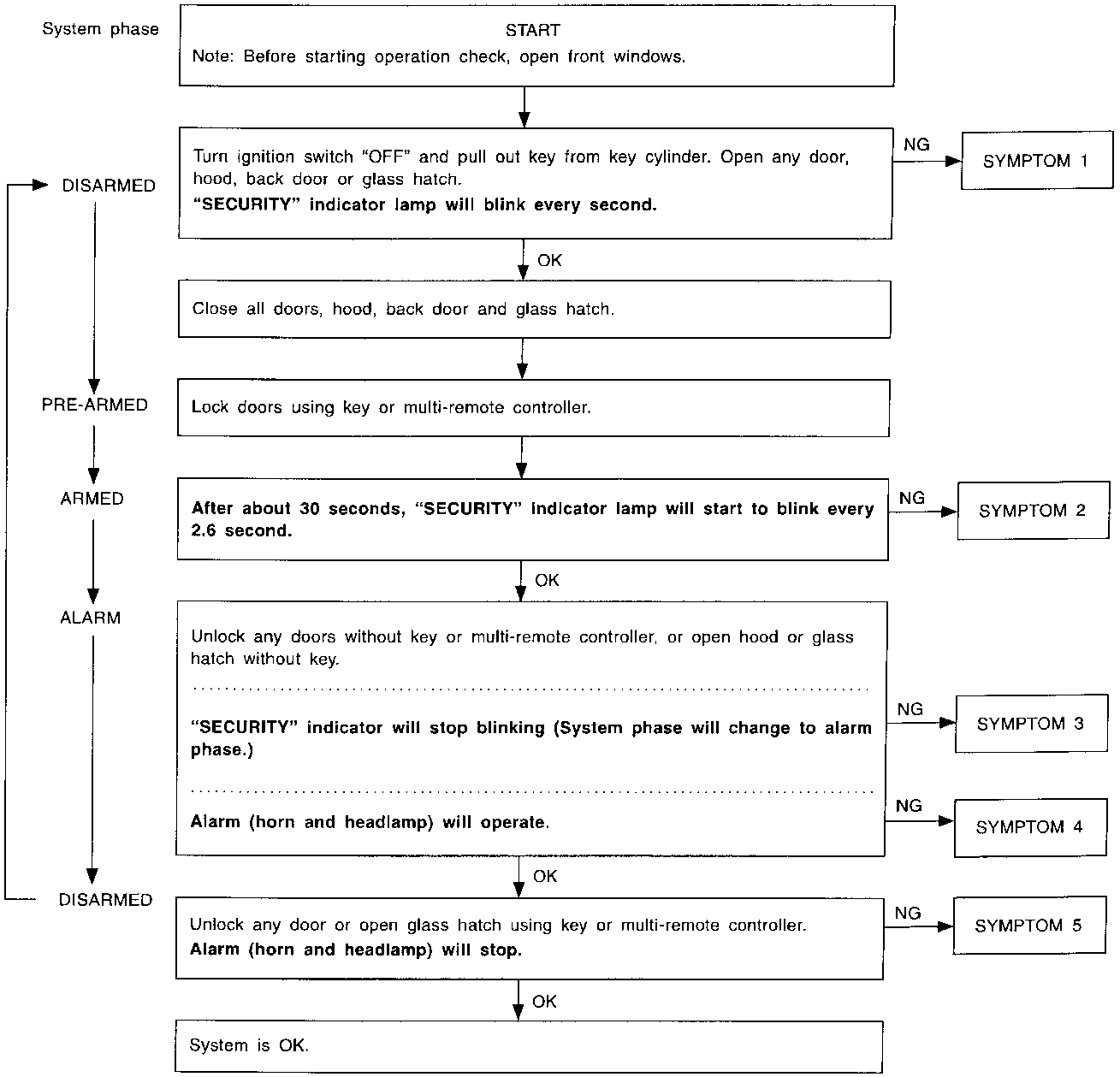
Trouble Diagnoses

NBEL0123

PRELIMINARY CHECK

NBEL0123S01

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



MEL447HC

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

SYMPTOM CHART

NBEL0123S02

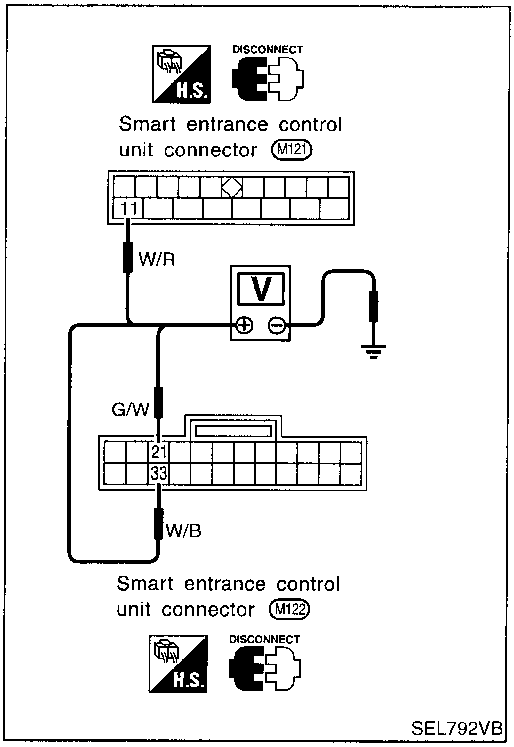
SYMPTOM			PRELIMINARY CHECK	POWER SUPPLY AND GROUND CIRCUIT CHECK	DOOR, HOOD AND GLASS HATCH SWITCH CHECK	SECURITY INDICATOR LAMP CHECK	DOOR UNLOCK SENSOR CHECK	DOOR KEY CYLINDER SWITCH CHECK	BACK DOOR KEY CYLINDER SWITCH CHECK	THEFT WARNING HORN ALARM CHECK	THEFT WARNING HEADLAMP ALARM CHECK	Check "MULTI-REMOTE CONTROL" system.
REFERENCE PAGE (EL-)			238	240	241	244	245	246	247	248	249	213
1	Theft warning indicator does not turn "ON" and is not blinking.		X	X	X	X						
2	Theft warning system cannot be set by	All items	X	X	X		X					
		Door outside key	X					X				
		Back door key	X						X			
		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					
4	Theft warning alarm does not activate.	All function	X		X		X					
		Horn alarm	X							X		
		Headlamp alarm	X								X	
5	Theft warning system cannot be canceled by	Door outside key	X					X				
		Back door key	X						X			
		Multi-remote control	X									X

X : Applicable

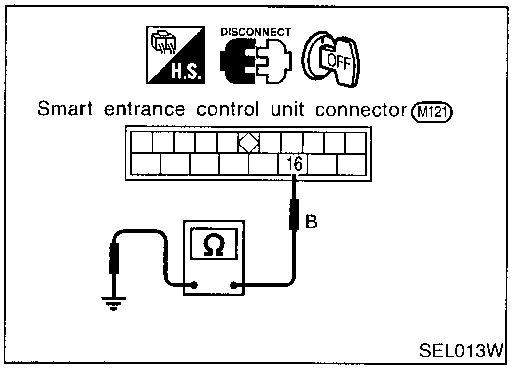
*1: Make sure the system is in the armed phase.

Before starting trouble diagnoses above, perform preliminary check, EL-238.

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



SEL792VB



SEL013W

POWER SUPPLY AND GROUND CIRCUIT CHECK

NBEL0123S03

Power Supply Circuit Check

NBEL0123S0301

Terminals		Ignition switch position		
(+)	(−)	OFF	ACC	ON
11	Ground	Battery voltage	Battery voltage	Battery voltage
21	Ground	0V	Battery voltage	Battery voltage
33	Ground	0V	0V	Battery voltage

Ground Circuit Check

NBEL0123S0302

Terminals	Continuity
16 - Ground	Yes

DOOR, HOOD AND GLASS HATCH SWITCH CHECK

NBEL0123S04

Door Switch Check

NBEL0123S0401

1 PRELIMINARY CHECK

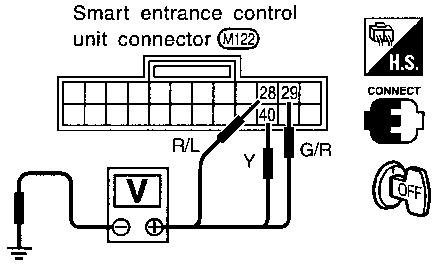
1. Turn ignition switch "OFF" and remove key from key cylinder.
2. Close all doors, hood and glass hatch.
   "SECURITY" indicator lamp should turn off.
3. Open any passenger door or back door.
   "SECURITY" indicator lamp should blink every second.

OK or NG

OK	▶	Door switch is OK.
NG	▶	GO TO 2.

2 CHECK DOOR SWITCH INPUT SIGNAL

Check voltage between control unit terminals 28, 29 or 40 and ground.



SEL886VA

	Terminals (+)	Terminals (−)	Condition	Voltage [V]
Front LH door switch	29	ground	Open	0
			Closed	Approx. 5
Front RH door switch	40	ground	Open	0
			Closed	Approx. 5
Rear and back door switches	28	ground	Open	0
			Closed	Approx. 5

MTBL0273

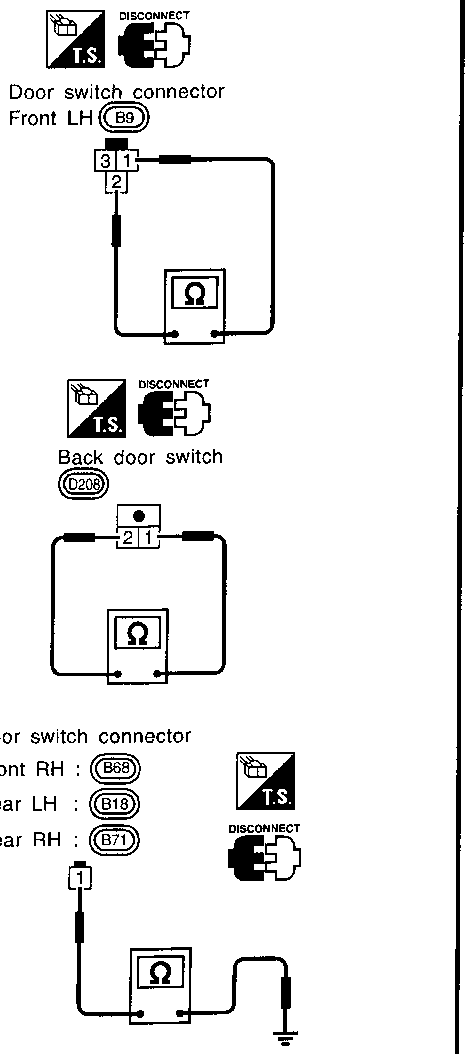
Refer to wiring diagram in EL-233.

OK or NG

OK	▶	Door switch is OK, and go to hood switch check.
NG	▶	GO TO 3.

3 CHECK DOOR SWITCH

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



SEL066W

	Terminals	Condition	Continuity
Front LH door switch	1 - 2	Closed	No
		Open	Yes
Back door switch	2 - 1	Closed	No
		Open	Yes
Front RH and rear door switches	1 - ground	Closed	No
		Open	Yes

MTBL0274

OK or NG

OK	▶	**Check the following.** • Door switch ground circuit (Front LH, back door) or door switch ground condition • Harness for open or short between control unit and door switch
NG	▶	Replace door switch.

Hood Switch Check

=NBEL0123S0402

1	PRELIMINARY CHECK

1. Turn ignition switch "OFF" and remove key from key cylinder.
2. Close all doors, hood and glass hatch.
   "SECURITY" indicator lamp should turn off.
3. Open hood.
   "SECURITY" indicator lamp should blink every second.

OK or NG

OK	▶	Hood switch is OK.
NG	▶	GO TO 2.

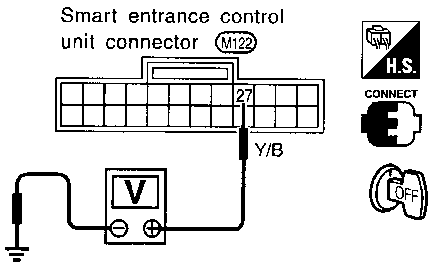
2	CHECK HOOD SWITCH FITTING CONDITION

OK or NG

OK	▶	GO TO 3.
NG	▶	Adjust installation of hood switch or hood.

3	CHECK HOOD SWITCH INPUT SIGNAL

Check voltage between control unit terminal 27 and ground.



SEL932VA

Voltage [V]:
Hood is open.
0
Hood is closed.
Approx. 5

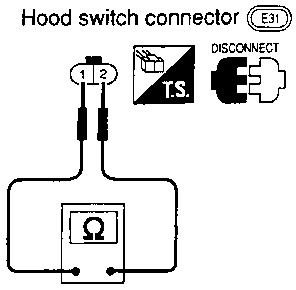
Refer to wiring diagram in EL-232.

OK or NG

OK	▶	Hood switch is OK, and go to glass hatch switch check.
NG	▶	GO TO 4.

4	CHECK HOOD SWITCH

1. Disconnect hood switch connector.
2. Check continuity between hood switch terminals 1 and 2.



SEL397TB

Continuity:
Condition: Pushed
No
Condition: Released
Yes

OK or NG

OK	▶	**Check the following.** • Hood switch ground circuit • Harness for open or short between control unit and hood switch
NG	▶	Replace hood switch.

Glass Hatch Switch Check

=NBEL0123S0403

1	PRELIMINARY CHECK

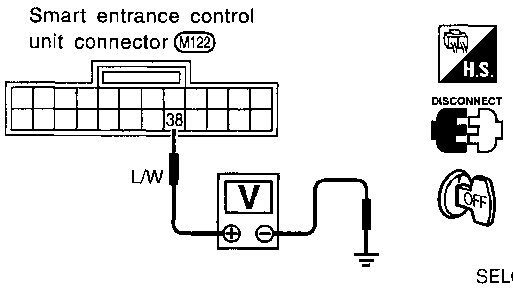
1. Turn ignition switch "OFF" and remove key from key cylinder.
2. Close all doors, hood and glass hatch.
   "SECURITY" indicator lamp should turn off.
3. Open glass hatch.
   "SECURITY" indicator lamp should blink every second.

OK or NG

OK	▶	Glass hatch switch is OK.
NG	▶	GO TO 2.

2	CHECK GLASS HATCH SWITCH INPUT SIGNAL

Check voltage between control unit terminal 38 and ground.



SEL081W

Voltage [V]:
Glass hatch is open.
Approx. 0
Glass hatch is closed.
Approx. 12

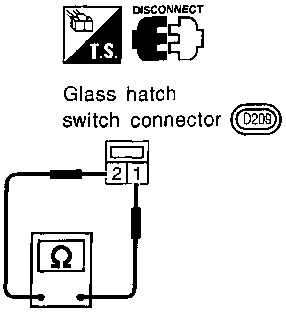
Refer to wiring diagram in EL-232.

OK or NG

OK	▶	Glass hatch switch is OK.
NG	▶	GO TO 3.

3	CHECK GLASS HATCH SWITCH

1. Disconnect glass hatch switch connector.
2. Check continuity between glass hatch switch terminals 1 and 2.



SEL609U

Continuity:
Condition: Closed
No
Condition: Open
Yes

OK or NG

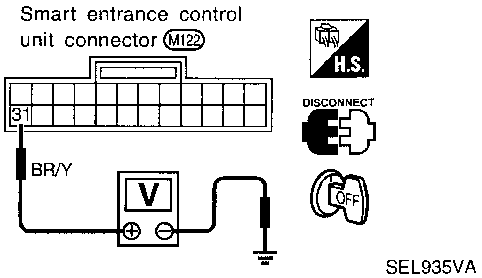
OK	▶	**Check the following.** • Glass hatch switch ground circuit • Harness for open or short between control unit and glass hatch switch
NG	▶	Replace glass hatch switch.

SECURITY INDICATOR LAMP CHECK

=NBEL0123S05

1	CHECK INDICATOR LAMP OUTPUT SIGNAL

1. Disconnect control unit connector.
2. Check voltage between control unit terminal 31 and ground.



SEL935VA

Refer to wiring diagram in EL-232.

Does battery voltage exist?

Yes	▶	Security indicator lamp is OK.
No	▶	GO TO 2.

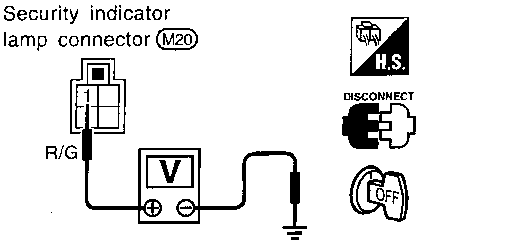
2	CHECK INDICATOR LAMP

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace indicator lamp.

3	CHECK POWER SUPPLY CIRCUIT FOR INDICATOR LAMP

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



SEL082W

Does battery voltage exist?

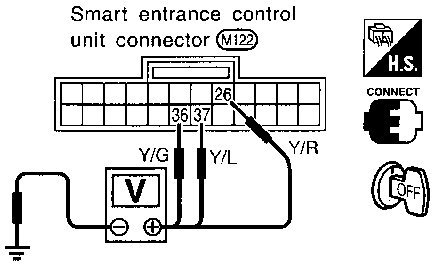
Yes	▶	Check harness for open or short between security indicator lamp and control unit.
No	▶	**Check the following.** • 7.5A fuse [No. 24, located in fuse block (J/B)] • Harness for open or short between security indicator lamp and fuse

DOOR UNLOCK SENSOR CHECK

=NBEL0123S06

1 CHECK DOOR UNLOCK SENSOR INPUT SIGNAL

Check voltage between control unit terminals 26, 36 or 37 and ground.



SEL937VA

	Terminals		Condition	Voltage [V]
	(+)	(−)		
Front LH door	36	Ground	Locked	Approx. 5
			Unlocked	0
Front RH door	37	Ground	Locked	Approx. 5
			Unlocked	0
Rear and back door	26	Ground	Locked	Approx. 5
			Unlocked	0

MTBL0276

Refer to wiring diagram in EL-234.

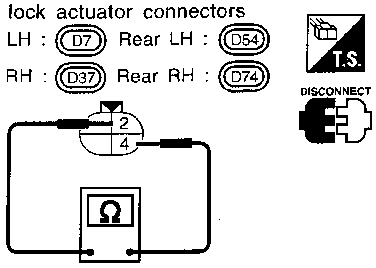
OK or NG

OK	▶	Door unlock sensor is OK.
NG	▶	GO TO 2.

2 CHECK DOOR UNLOCK SENSOR

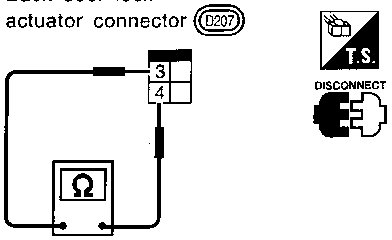
1. Disconnect door unlock sensor connector.
2. Check continuity between door unlock sensor terminals.

Door lock actuator connectors
Front LH : D7 Rear LH : D54
Front RH : D37 Rear RH : D74



SEL247V

Back door lock actuator connector D207



SEL352V

Continuity:
Condition: Locked
No
Condition: Unlocked
Yes

OK or NG

OK	▶	**Check the following.** • Door unlock sensor ground circuit • Harness for open or short between control unit and door unlock sensor
NG	▶	Replace door unlock sensor.

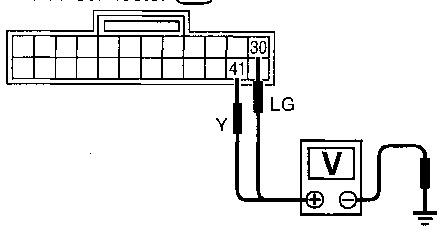
FRONT DOOR KEY CYLINDER SWITCH CHECK

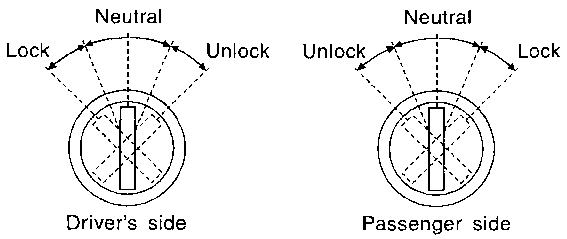
=NBEL0123S07

1 CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL (LOCK/UNLOCK SIGNAL)

Check voltage between control unit terminals 30 or 41 and ground.

Smart entrance control unit connector (M122)





SEL069W

Terminals (+)	Terminals (−)	Key position	Voltage [V]
41	Ground	Neutral/Unlock	Approx. 5
		Lock	0
30	Ground	Neutral/Lock	Approx. 5
		Unlock	0

MTBL0268

Refer to wiring diagram in EL-235.

OK or NG

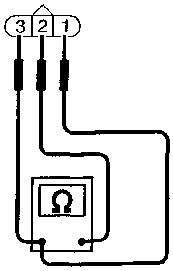
OK ▶	Door key cylinder switch is OK.
NG ▶	GO TO 2.

2 CHECK DOOR KEY CYLINDER SWITCH

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

Door key cylinder switch connector

LH : (D9) RH : (D39)



① : Door unlock switch terminal (LH)
Door lock switch terminal (RH)
② : Ground terminal
③ : Door lock switch terminal (LH)
Door unlock switch terminal (RH)

SEL070W

Terminals	Key position	Continuity
LH: 3 - 2	Neutral/Unlock	No
RH: 1 - 2	Lock	Yes
LH: 1 - 2	Neutral/Lock	No
RH: 3 - 2	Unlock	Yes

MTBL0269

OK or NG

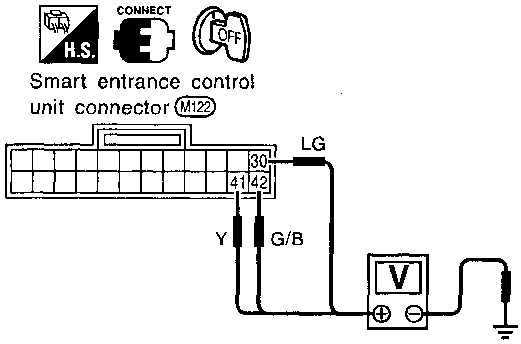
OK ▶	**Check the following.** • Door key cylinder switch ground circuit • Harness for open or short between control unit and door key cylinder switch
NG ▶	Replace door key cylinder switch.

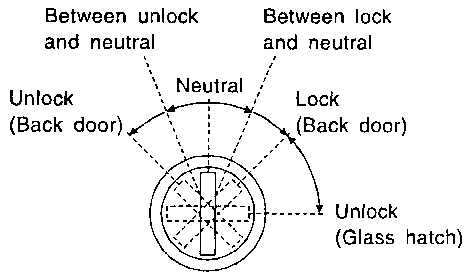
BACK DOOR KEY CYLINDER SWITCH CHECK

=NBEL0123S08

1 CHECK BACK DOOR KEY CYLINDER SWITCH INPUT SIGNAL (LOCK/UNLOCK SIGNAL)

Check voltage between control unit terminals 30, 41 or 42 and ground.





SEL083W

	Terminals (+)	Terminals (−)	Key position	Voltage [V]
Back door	41	Ground	Between neutral and lock	0
			Other positions	Approx. 5
	30	Ground	Between neutral and unlock	0
			Other positions	Approx. 5
Glass hatch	42	Ground	Unlock (Glass hatch)	0
			Other positions	Approx. 5

MTBL0277

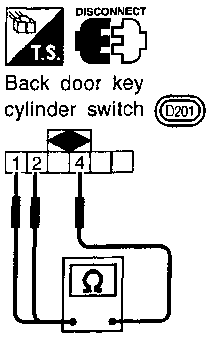
Refer to wiring diagram in EL-235.

OK or NG

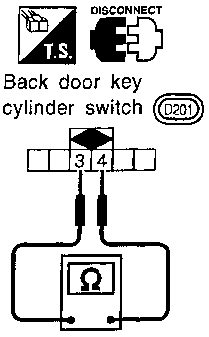
OK ▶	Back door key cylinder switch is OK.
NG ▶	GO TO 2.

2 CHECK BACK DOOR KEY CYLINDER SWITCH

1. Disconnect back door key cylinder switch connector.
2. Check continuity between back door key cylinder switch terminals.



SEL616U



SEL613U

Key position	Terminals 1	2	3	4
Between neutral and lock (Back door)	○			○
Between neutral and unlock (Back door)		○		○
Between lock (Back door) and unlock (glass hatch)			○	○

MTBL0043

OK or NG

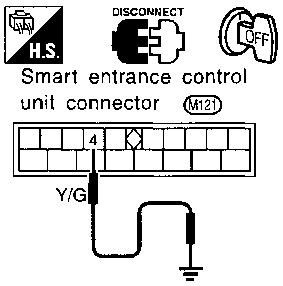
OK ▶	**Check the following.** • Back door key cylinder switch ground circuit • Harness for open or short between control unit and back door key cylinder switch
NG ▶	Replace back door key cylinder switch.

THEFT WARNING HORN ALARM CHECK

=NBEL0123S09

1 CHECK THEFT WARNING HORN ALARM OPERATION

1. Disconnect control unit connector.
2. Apply ground to control unit terminal 4.



SEL943VA

Refer to wiring diagram in EL-236.

Does horn alarm activate?

Yes	▶	Horn alarm is OK.
No	▶	GO TO 2.

2 CHECK THEFT WARNING HORN RELAY

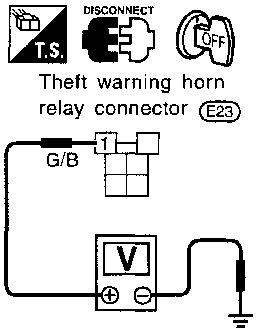
Check theft warning horn relay.

OK or NG

OK	▶	GO TO 3.
NG	▶	Replace theft warning horn relay.

3 CHECK POWER SUPPLY FOR THEFT WARNING HORN RELAY

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



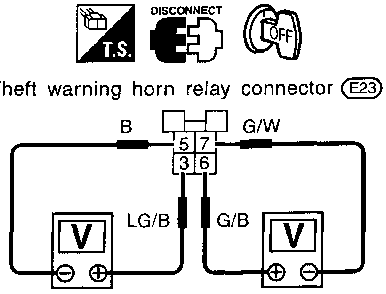
SEL755UB

Does battery voltage exist?

Yes	▶	GO TO 4.
No	▶	**Check the following.** • 7.5A fuse (No. 52, located in the fuse and fusible link box) • Harness for open or short between theft warning horn relay and fuse

4 CHECK THEFT WARNING HORN RELAY CIRCUIT

1. Disconnect theft warning horn relay connector.
2. Check voltage between terminals 3 and 5.
3. Check voltage between terminals 6 and 7.



SEL756UD

Battery voltage should exist.

OK or NG

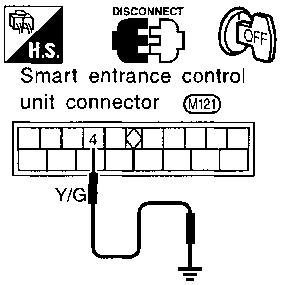
OK	▶	Check harness for open or short between theft warning horn relay and control unit.
NG	▶	Check harness for open or short.

THEFT WARNING HEADLAMP ALARM CHECK

=NBEL0123S10

1 CHECK THEFT WARNING HEADLAMP ALARM OPERATION

1. Disconnect control unit connector.
2. Apply ground to control unit terminal 4.



SEL943VA

Refer to wiring diagram in EL-236.

Does headlamp alarm activate?

Yes	▶	Headlamp alarm is OK.
No	▶	GO TO 2.

2 CHECK HEADLAMP OPERATION

Does headlamp come on when turning lighting switch "ON"?

Yes	▶	GO TO 3.
No	▶	Check headlamp system. Refer to "HEADLAMP".

3 CHECK THEFT WARNING LAMP RELAY

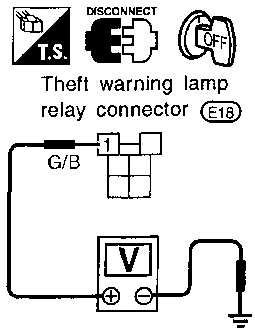
Check theft warning lamp relay.

OK or NG

OK	▶	GO TO 4.
NG	▶	Replace theft warning lamp relay.

4 CHECK POWER SUPPLY FOR THEFT WARNING LAMP RELAY

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



SEL757U

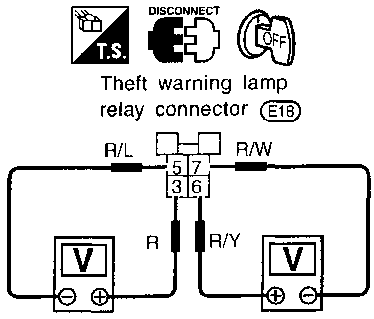
Refer to wiring diagram in EL-237.

Does battery voltage exist?

Yes	▶	GO TO 5.
No	▶	**Check the following.** • 7.5A fuse (No. 52, located in the fuse and fusible link box) • Harness for open or short between theft warning lamp relay and fuse

5 CHECK THEFT WARNING LAMP RELAY CIRCUIT

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



SEL758U

Battery voltage should exist.

OK or NG

OK	▶	Check harness for open or short between theft warning lamp relay and control unit.
NG	▶	**Check the following.** • Harness for open or short between fuse and theft warning lamp relay • Harness for open or short between theft warning lamp relay and headlamps

Description

NBEL0124

The following systems are controlled by the smart entrance control unit.

- Warning chime
- Rear window defogger and door mirror defogger timer
- Power door lock
- Multi-remote control system
- Theft warning system
- Interior lamp timer
- Electric sunroof and power window timer
- Headlamp battery saver
- Battery saver

For detailed description and wiring diagrams, refer to the relevant pages for the each system.
The control unit receives data from the switches and sensors to control their corresponding system relays and actuators.

INPUT/OUTPUT

NBEL0124S01

System	Input	Output
Power door lock	Door lock and unlock switch LH and RH Key switch (Insert) Door switches Door key cylinder switches	Door lock actuator
Multi-remote control	Key switch (Insert) Ignition switch (ACC) Door switches Front door unlock sensor LH Remote controller signal	Horn relays Theft warning lamp relay Theft warning lamp relay Interior lamp Multi-remote control relay Door lock actuator
Warning chime	Key switch (Insert) Ignition switch (ON) Lighting switch (1st) Seat belt switch Front door switch LH	Warning chime (located in smart entrance control unit)
Rear window defogger and door mirror defogger timer	Ignition switch (ON) Rear window defogger switch	Rear window defogger relay
Theft warning	Ignition switch (ACC, ON) Door switches Hood switch Door key cylinder switches (lock/unlock) Trunk lid key cylinder switch (unlock) Door unlock sensores	Horn relays Theft warning lamp relay Theft warning relay Security indicator
Interior lamp timer	Door switches Front door unlock sensor LH Ignition switch (ON) Key switch (Insert)	Interior lamp
Electric sunroof and power window timer	Front door switches ignition switch (ON)	Power window relay
Headlamp battery saver timer	Front door switches ignition switch (ON)	Headlamp battery saver control unit
Battery saver	Ignition switch (ON) Door switches	Interior lamp Luggage room lamp Spot lamp Vanity mirror illumination lamp

BATTERY SAVER

NBEL0124S02

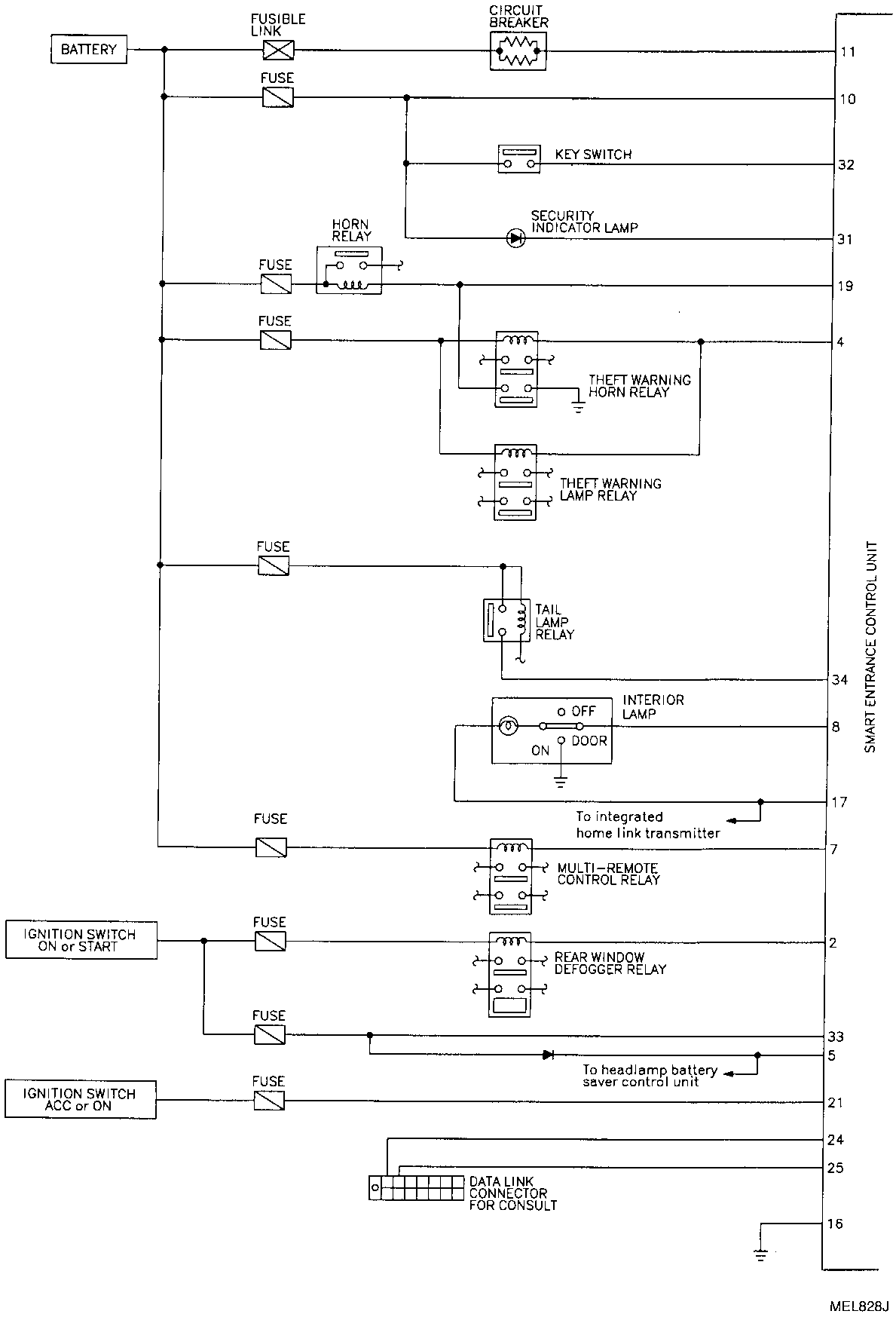
The lamp turns off automatically when the interior lamp, luggage room lamp, spot lamp or/and vanity mirror illumination is illuminated with the ignition key in the OFF position, if the lamp remains lit by the door switch open signal or if the lamp switch is in the ON position for more than 10 minutes.

After lamps turn off by the battery saver system, the lamps illuminate again when:

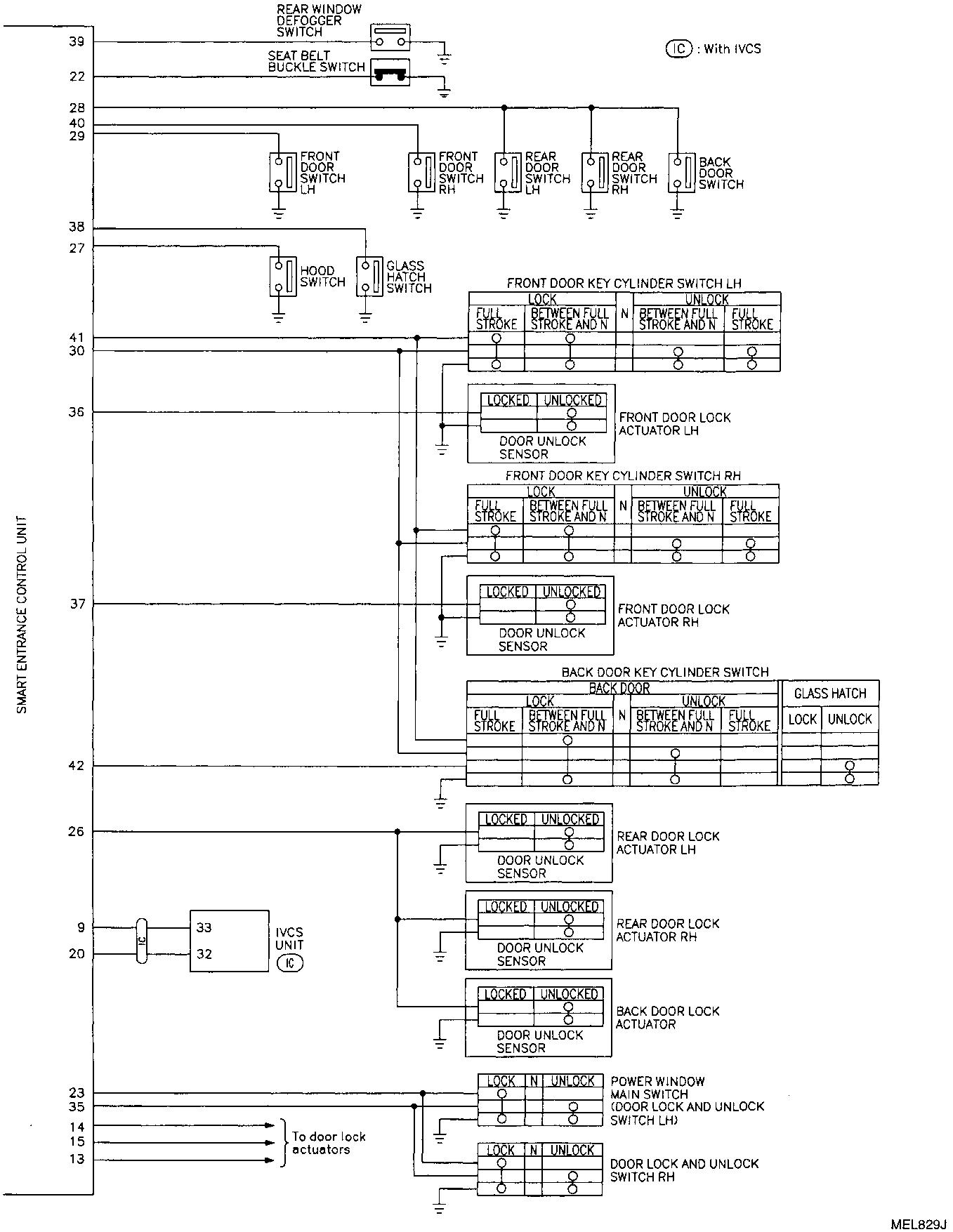
- driver's door is locked or unlocked,
- door is opened or closed,
- key is inserted in ignition key cylinder.

Schematic

NBEL0125



MEL828J


SMART ENTRANCE CONTROL UNIT
REAR WINDOW DEFOGGER SWITCH
SEAT BELT BUCKLE SWITCH
IC : With IVCS
FRONT DOOR SWITCH LH
FRONT DOOR SWITCH RH
REAR DOOR SWITCH LH
REAR DOOR SWITCH RH
BACK DOOR SWITCH
HOOD SWITCH
GLASS HATCH SWITCH
FRONT DOOR KEY CYLINDER SWITCH LH
FRONT DOOR KEY CYLINDER SWITCH RH
BACK DOOR KEY CYLINDER SWITCH
LOCK
UNLOCK
FULL STROKE
BETWEEN FULL STROKE AND N
N
BACK DOOR
GLASS HATCH
LOCKED
UNLOCKED
DOOR UNLOCK SENSOR
FRONT DOOR LOCK ACTUATOR LH
FRONT DOOR LOCK ACTUATOR RH
REAR DOOR LOCK ACTUATOR LH
REAR DOOR LOCK ACTUATOR RH
BACK DOOR LOCK ACTUATOR
IVCS UNIT
POWER WINDOW MAIN SWITCH (DOOR LOCK AND UNLOCK SWITCH LH)
DOOR LOCK AND UNLOCK SWITCH RH
To door lock actuators
39
22
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15
13

MEL829J

Smart Entrance Control Unit Inspection Table

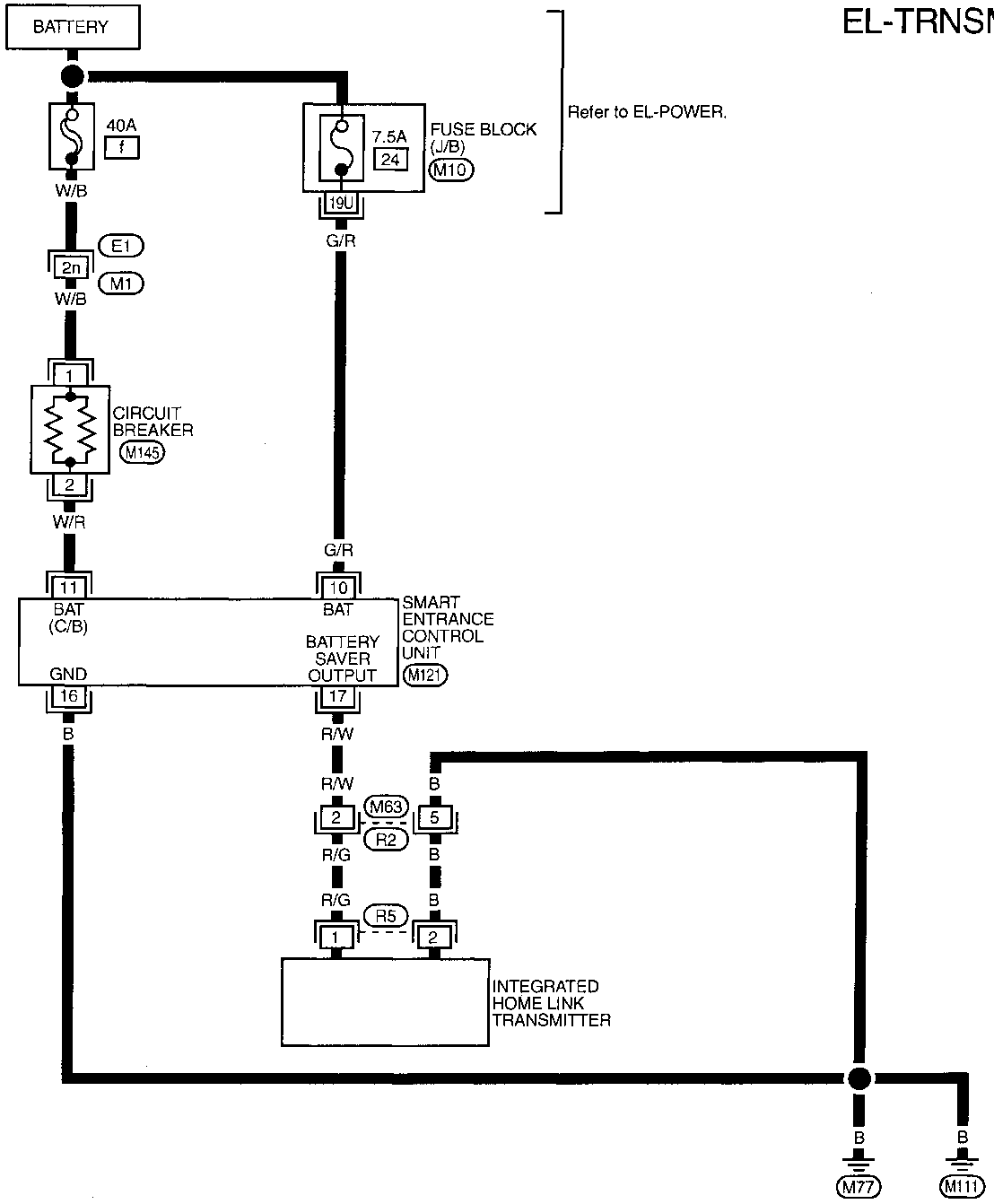
NBEL0126

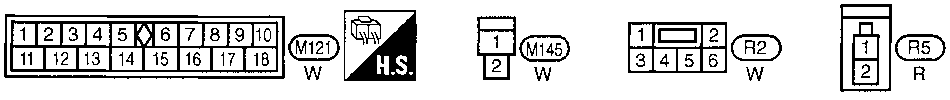
Terminal No.	Wire color	Connections	Operated condition		Voltage (Approximate values)
2	G/B	Rear window defogger relay	OFF → ON (Ignition key is in "ON" position)		0V → 12V
4	Y/G	Theft warning horn/lamp relay	When panic alarm is operated using remote controller		12V → 0V
5	R/Y	Headlamp battery saver control unit	When headlamp battery saver timer is operated		12V
7	P	Multi-remote control relay	When doors are locked using remote controller		12V → 0V
8	R/B	Interior lamp	When interior lamp is operated using remote controller. (Lamp switch in "DOOR" position)		0V → 12V
10	G/R	Power source (Fuse)	—		12V
11	W/R	Power source (C/B)	—		12V
13	W/PU	Driver door lock actuator	Door lock & unlock switch	Free	0V
14	Y/B	Passenger door lock actuator		Unlocked	12V
15	L	Door lock actuators	Door lock & unlock switch	Free	0V
				Locked	12V
16	B	Ground	—		—
17	R/W	Battery saver (Interior lamp)	Battery saver is not operate → Operate		12V → 0V
19	LG/B	Horn relay	When doors are locked using remote controller with horn chirp mode.		12V → 0V
21	G/W	Ignition switch (ACC)	"ACC" position		12V
22	B/P	Seat belt buckle switch	Unfasten → Fasten (Ignition key is in "ON" position)		0V → 12V
23	B/R	Door lock & unlock switches	Neutral → Locks		5V → 0V
26	Y/R	Rear door unlock sensors	All doors are locked → One or more doors are unlocked		5V → 0V
27	Y/B	Hood open signal	ON (Open) → OFF (Closed)		0V → 5V
28	R/L	Rear and back door switches	OFF (Closed) → ON (Open)		5V → 0V
29	G/R	Driver door switch	OFF (Closed) → ON (Open)		5V → 0V
30	LG	Door key cylinder unlock switch	OFF (Neutral) → ON (Unlocked)		12V → 0V
31	BR/Y	Theft warning indicator	Goes off → Illuminates		12V → 0V
32	W/R	Ignition key switch (Insert)	key inserted → key removed from IGN key cylinder		12V → 0V
33	W/B	Ignition switch (ON)	Ignition key is in "ON" position		12V
34	P/L	Tail lamp relay	1ST, 2ND positions: ON → OFF		12V → 0V
35	LG/R	Door lock & unlock switches	Neutral → Unlocks		5V → 0V
36	Y/G	Driver door unlock sensor	Driver door: Locked → Unlocked		5V → 0V
37	Y/L	Passenger door unlock sensor	Passenger door: Locked → Unlocked		5V → 0V
38	L/W	Glass hatch switch	ON (Open) → OFF (Closed)		0V → 12V
39	OR	Rear window defogger switch	OFF → ON		5V → 0V
40	Y	Passenger door switch	OFF (Closed) → ON (Open)		5V → 0V
41	Y	Door key cylinder lock switch	OFF (Neutral) → ON (Locked)		5V → 0V
42	G/B	Back door key unlock switch	OFF (Neutral) → ON (Unlock)		5V → 0V

Wiring Diagram — TRNSMT —

NBEL0127

EL-TRNSMT-01





Refer to last page (Foldout page).
M1 , E1
M10

MEL836J

Trouble Diagnoses

NBEL0128

DIAGNOSTIC PROCEDURE

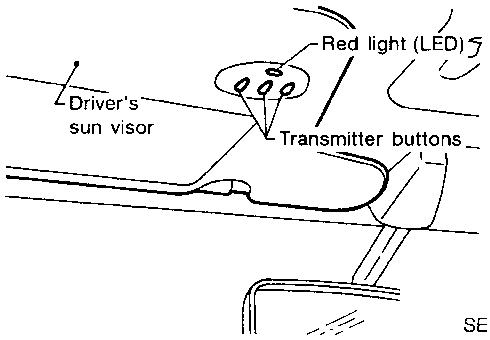
NBEL0128S01

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.

1 PRELIMINARY CHECK

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



SEL442U

Yes or No

Yes	▶	GO TO 2.
No	▶	GO TO 3.

2 CHECK TRANSMITTER FUNCTION

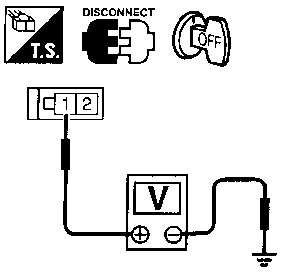
Check transmitter with Tool.
For details, refer to Technical Service Bulletin.

OK or NG

OK	▶	Receiver or handheld transmitter fault, not vehicle related.
NG	▶	Replace transmitter with sun visor assembly.

3 CHECK POWER SUPPLY

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



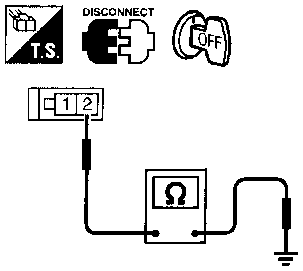
SEL635U

Does battery voltage exist?

Yes	▶	GO TO 4.
No	▶	GO TO 5.

4 CHECK GROUND CIRCUIT

Check continuity between terminal 2 and ground.



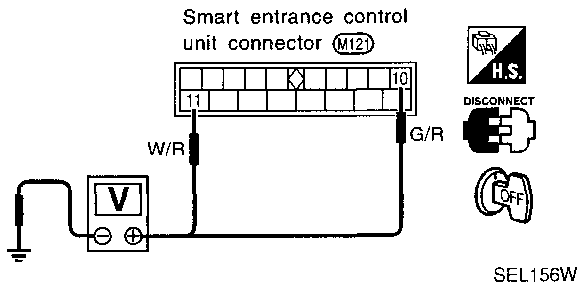
SEL636U

Does continuity exist?

Yes	▶	Replace transmitter with sun visor assembly.
No	▶	Repair harness.

5	CHECK MAIN POWER SUPPLY FOR SMART ENTRANCE CONTROL UNIT

1. Disconnect smart entrance control unit.
2. Check voltage between control unit terminals 10 or 11 and ground.



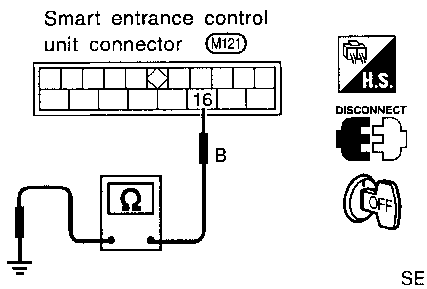
SEL156W

Does battery voltage exist?

Yes	▶	GO TO 6.
No	▶	**Check the following.** • 7.5A fuse No. 24, located in fuse block (J/B) • 40A fusible link (letter f, located in fuse and fusible link box)

6	CHECK GROUND CIRCUIT FOR SMART ENTRANCE CONTROL UNIT

Check continuity between terminal 16 and ground.



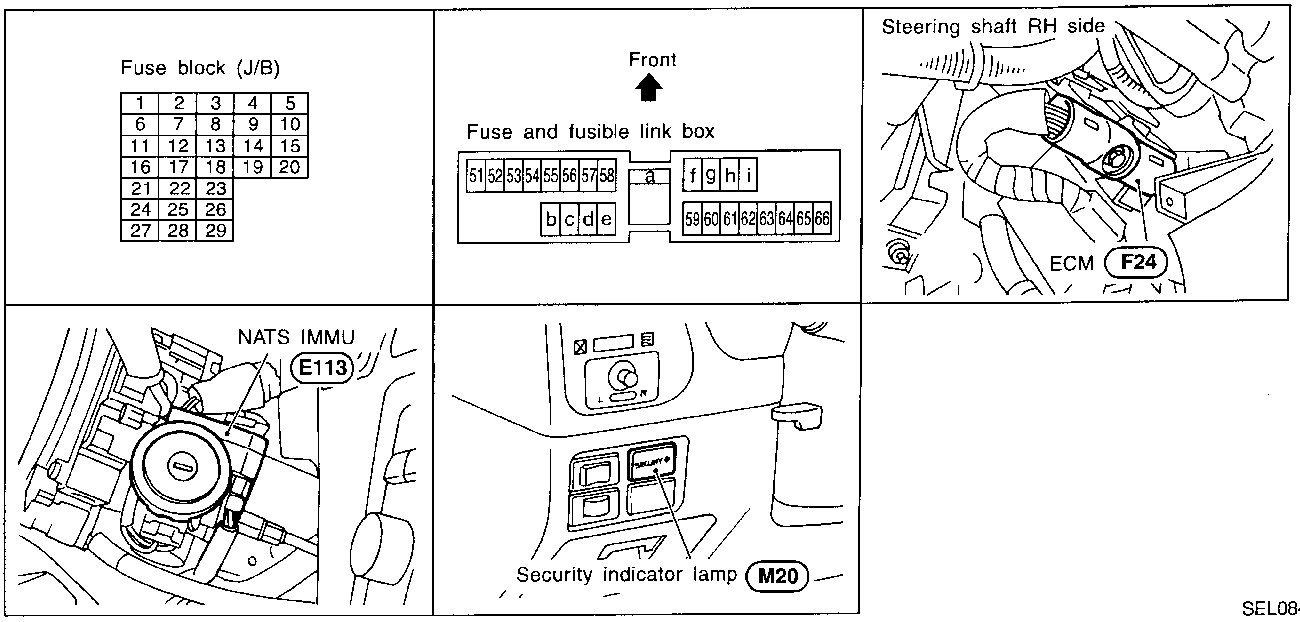
SEL791VA

Does continuity exist?

Yes	▶	Power supply and ground circuits are OK.
No	▶	Check ground harness.

Component Parts and Harness Connetor Location

NBEL0170



SEL084W

System Description

=NBEL0171

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

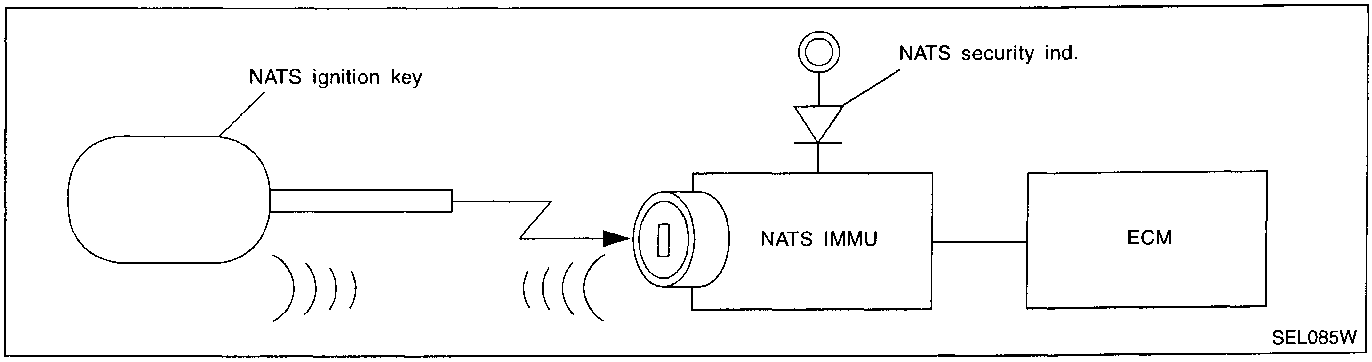
- Since only NATS ignition keys, whose ID nos. have been registered into the ECM and IMMU of NATS, allow the engine to run, operation of a stolen vehicle without a NATS registered key is prevented by NATS. That is to say, NATS will immobilise the engine if someone tries to start it without the registered key of NATS.
- All of the originally supplied ignition key IDs (except for card plate key) have been NATS registered. If requested by the vehicle owner, a maximum of five key IDs can be registered into the NATS components.
- The security indicator blinks when the ignition switch is in "OFF" or "ACC" position. Therefore, NATS warns outsiders that the vehicle is equipped with the anti-theft system.
- When NATS detects trouble, the security indicator lamp lights up while ignition key is in the "ON" position.
- NATS trouble diagnoses, system initialization and additional registration of other NATS ignition key IDs must be carried out using CONSULT hardware and CONSULT NATS software.
  When NATS initialization has been completed, the ID of the inserted ignition key is automatically NATS registered. Then, if necessary, additional registration of other NATS ignition key IDs can be carried out.
  Regarding the procedures of NATS initialization and NATS ignition key ID registration, refer to CONSULT operation manual, NATS.
- **When servicing a malfunction of the NATS (indicated by lighting up of Security Indicator Lamp) or registering another NATS ignition key ID no., it may be necessary to re-register original key identification. Therefore, be sure to receive all keys from vehicle owner.**

System Composition

NBEL0172

The immobiliser function of the NATS consists of the following:

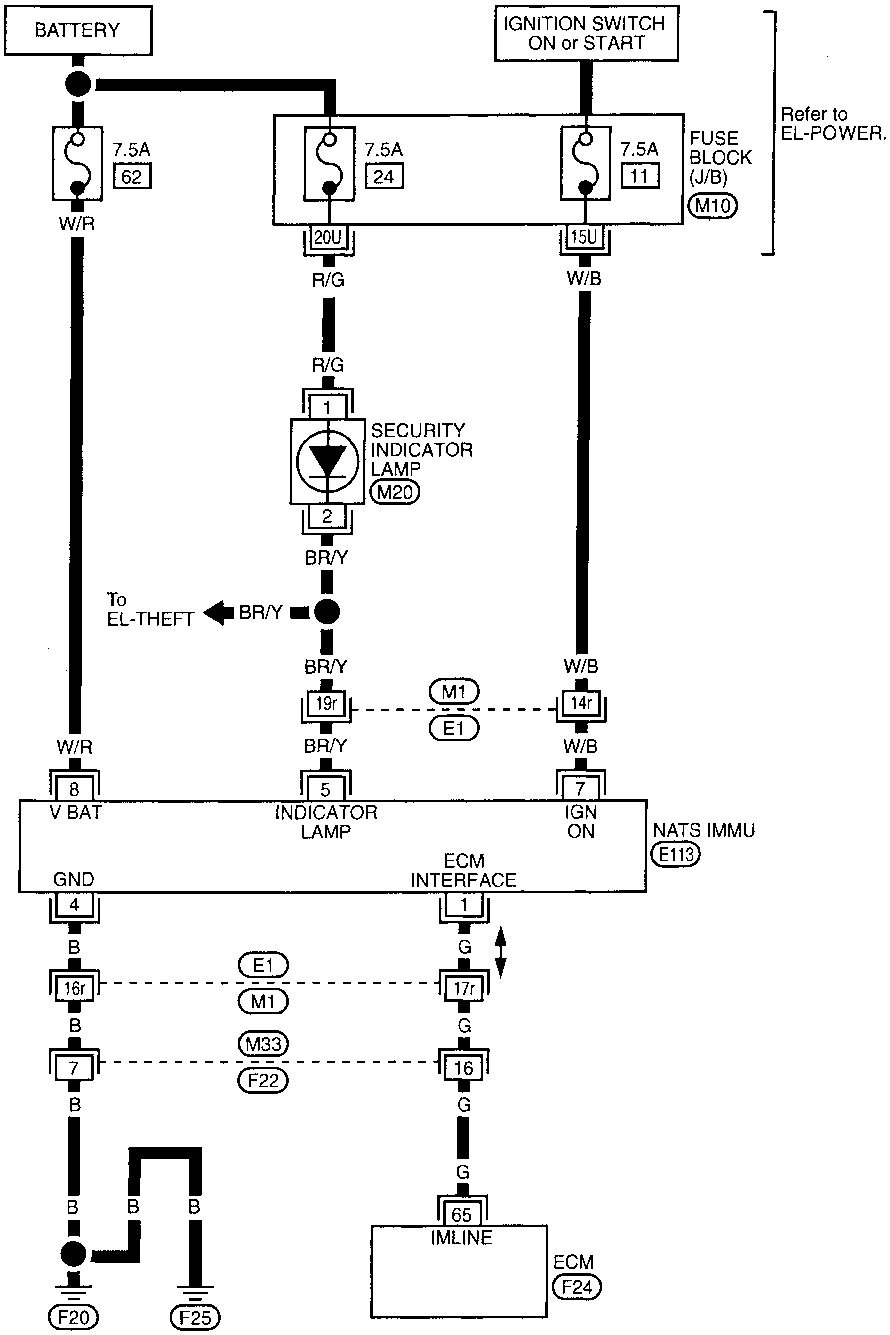
- NATS ignition key
- NATS immobiliser control unit (NATS IMMU) located in the ignition key cylinder
- Engine control module (ECM)
- Security indicator

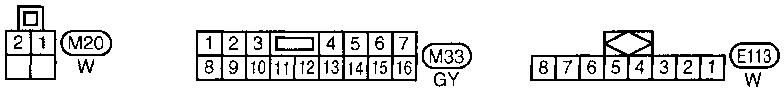


Wiring Diagram — NATS —

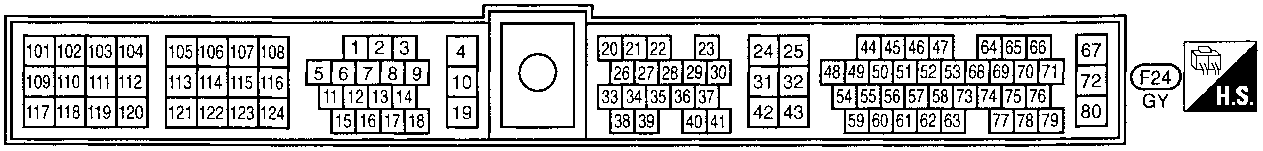
NBEL0173

EL-NATS-01

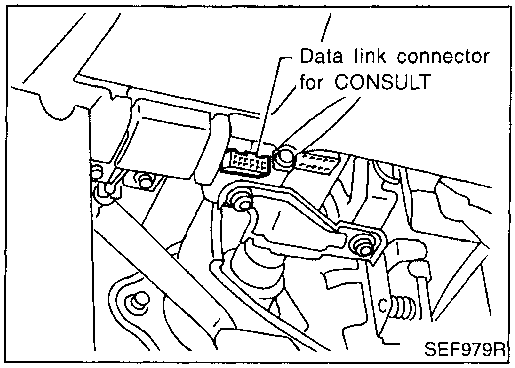




Refer to last page (Foldout page).
M1 , E1
M10



MEL830J



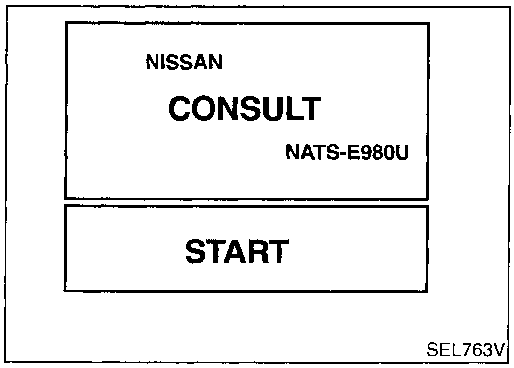
CONSULT

NBEL0174

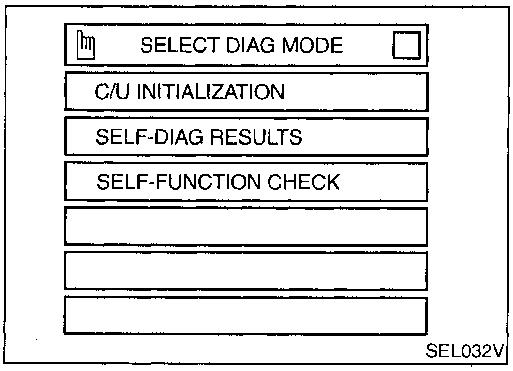
CONSULT INSPECTION PROCEDURE

NBEL0174S01

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



3. Insert NATS program card into CONSULT.
   ⬅ : **Program card**
   NATS-E980U
4. Turn ignition switch ON.
5. Touch "START".



6. Perform each diagnostic test mode according to each service procedure.

For further information, see the CONSULT Operation Manual, NATS.

CONSULT DIAGNOSTIC TEST MODE FUNCTION

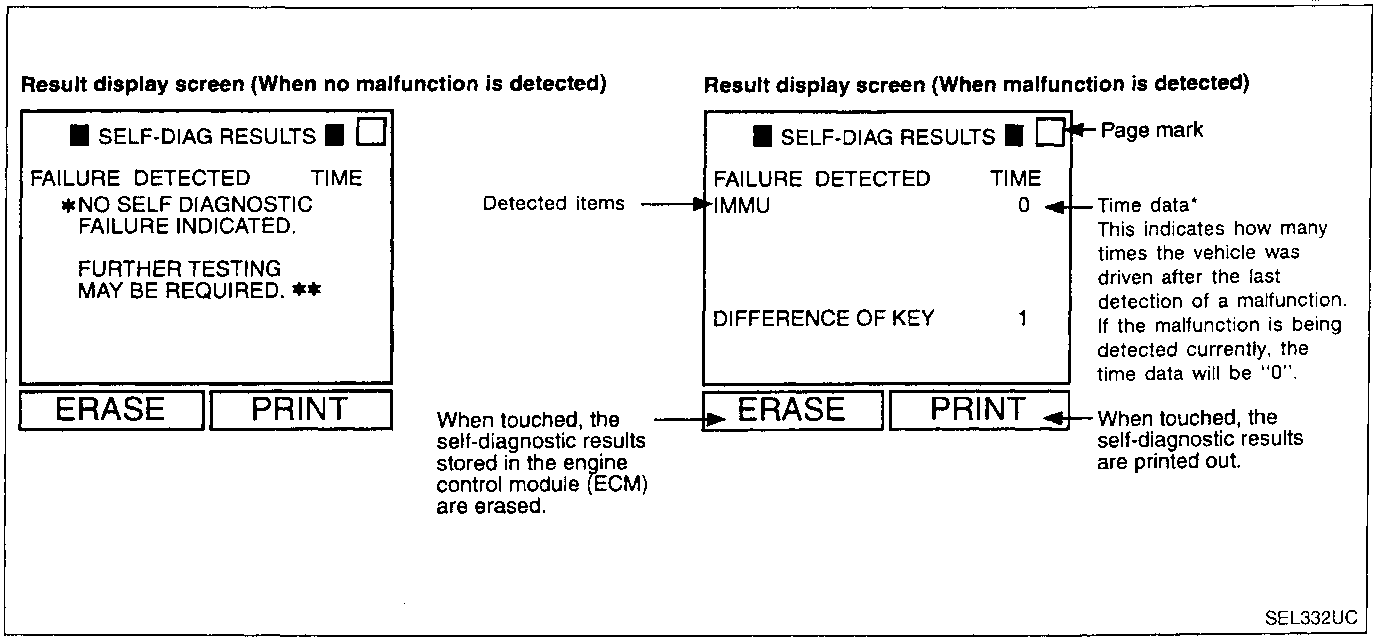
NBEL0174S02

CONSULT DIAGNOSTIC TEST MODE	Description
C/U INITIALIZATION	When replacing any of the following three components, C/U initialization is necessary. [NATS ignition key/IMMU/ECM]
SELF-FUNCTION CHECK	ECM checks its own NATS communication interface by itself.
SELF-DIAGNOSTIC RESULTS	Detected items (screen terms) are as shown in the chart below.

NOTE:
When any initialization is performed, all ID previously registered will be erased and all NATS ignition keys must be registered again. The engine cannot be started with an unregistered key. In this case, the system may show "DIFFERENCE OF KEY" or "LOCK MODE" as a self-diagnostic result on the CONSULT screen.

HOW TO READ SELF-DIAGNOSTIC RESULTS

NBEL0174S03



* If trip number is more than 1, MIL does not blink.

SELF-DIAGNOSTIC RESULTS ITEM CHART

NBEL0174S04

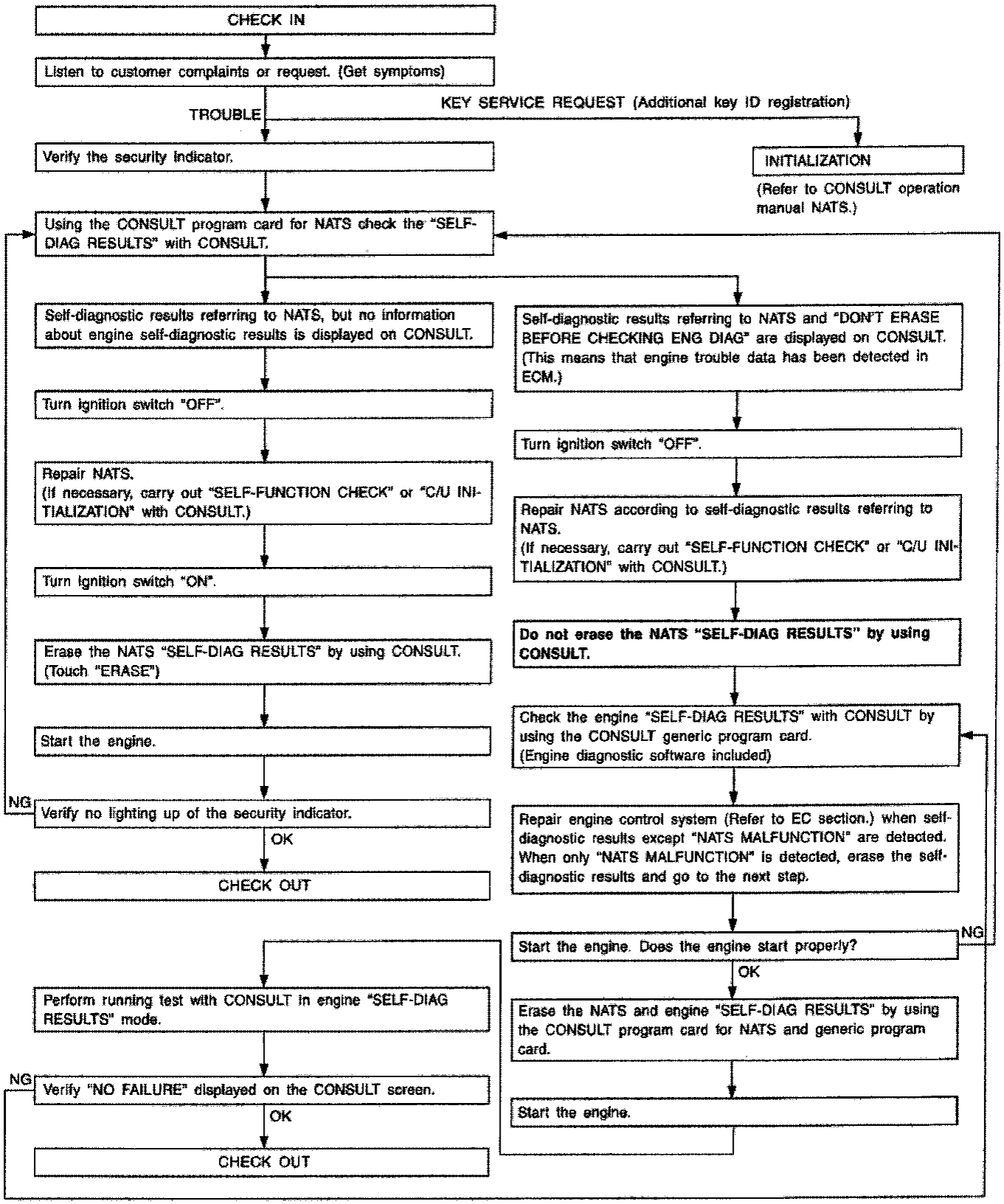
Detected items (Screen terms)	Description	Reference page
IMMU	ECM received the signal from IMMU that IMMU is malfunctioning.	EL-265
ECM	ECM is malfunctioning.	EL-265
CHAIN OF ECM-IMMU	Communication impossible between ECM and IMMU.	EL-266
DIFFERENCE OF KEY	IMMU can receive the key ID signal but the result of ID verification between key ID and IMMU is NG.	EL-268
CHAIN OF IMMU-KEY	IMMU cannot receive the key ID signal.	EL-269
ID DISCORD, IMM-ECM	The result of ID verification between IMMU and ECM is NG. System initialization is required.	EL-270
ELECTRONIC NOISE	Noise (interference) interfered into NATS communication lines during communicating.	EL-270
DON'T ERASE BEFORE CHECKING ENG DIAG	Engine trouble data and NATS trouble data have been detected in ECM.	EL-263
LOCK MODE	When the starting operation is carried out 5 or more times consecutively under the following conditions, NATS will shift the mode to one which prevents the engine from being started. • unregistered ignition key is used • IMMU or ECM malfunctioning	EL-272

Trouble Diagnoses

WORK FLOW

NBEL0176

NBEL0175S01



SEL086W

SYMPTOM MATRIX CHART 1
(Self-diagnosis related item)

NBEL0175S02

SYMPTOM	Displayed "SELF-DIAG RESULTS" on CONSULT screen.	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)	REFERENCE PART NO. OF ILLUSTRATION ON NEXT PAGE
• Security indicator lighting up* • Engine will start.	IMMU	PROCEDURE 1 (EL-265)	IMMU	A
	ECM	PROCEDURE 2 (EL-265)	ECM	B
• Security indicator lighting up* • Engine hard to start	CHAIN OF ECM-IMMU	PROCEDURE 3 (EL-266)	Open circuit in battery voltage line of IMMU circuit	C1
			Open circuit in ignition line of IMMU circuit	C2
			Open circuit in ground line of IMMU circuit	C3
			Open circuit in communication line between IMMU and ECM	C4
			Short circuit between IMMU and ECM communication line and battery voltage line	C4
			Short circuit between IMMU and ECM communication line and ground line	C4
			ECM	B
			IMMU	A
	DIFFERENCE OF KEY	PROCEDURE 4 (EL-268)	Unregistered key	D
			IMMU	A
	CHAIN OF IMMU-KEY	PROCEDURE 5 (EL-269)	Malfunction of key ID chip	E
			IMMU	A
	ID DISCORD, IMM-ECM	PROCEDURE 6 (EL-270)	System initialisation has not yet been completed.	F
			ECM	F
	ELECTRONIC NOISE	PROCEDURE 7 (EL-270)	Noise interference in communication line	—
	LOCK MODE	PROCEDURE 9 (EL-272)	LOCK MODE	D
• MIL staying ON • Security indicator lighting up*	DON'T ERASE BEFORE CHECKING ENG DIAG	WORK FLOW (EL-263)	Engine trouble data and NATS trouble data have been detected in ECM	—

*: When NATS detects trouble, the security indicator lights up while ignition key is in the "ON" position.

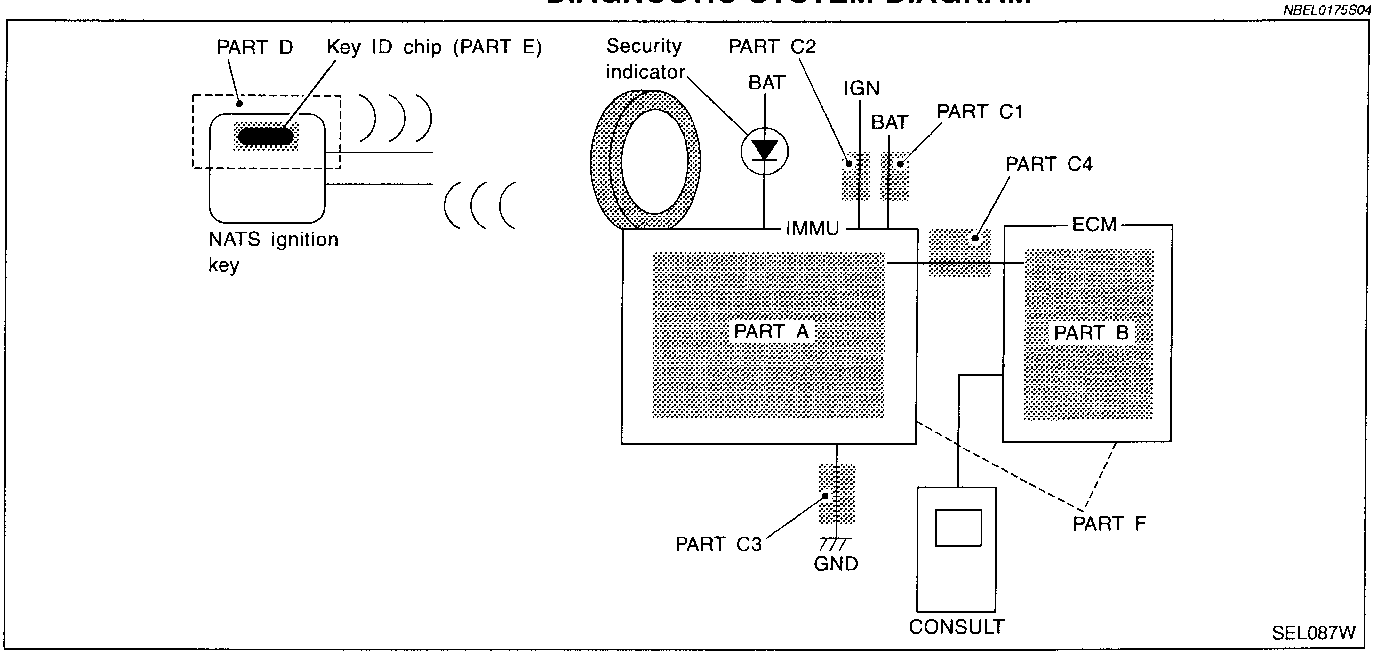
SYMPTOM MATRIX CHART 2
(Non self-diagnosis related item)

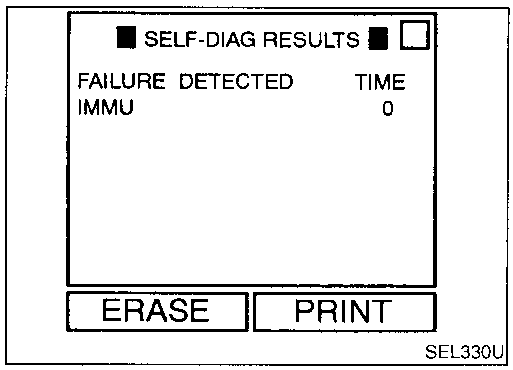
NBEL0175S03

SYMPTOM	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)
Security ind. does not light up.	PROCEDURE 8 (EL-271)	Security ind.
		Open circuit between Fuse and NATS IMMU
		Continuation of initialization mode
		NATS IMMU

DIAGNOSTIC SYSTEM DIAGRAM

NBEL0175S04



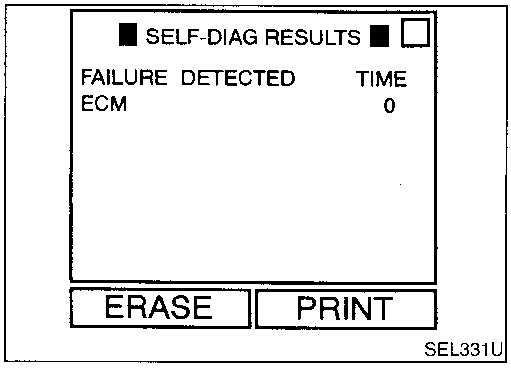


DIAGNOSTIC PROCEDURE 1

NBEL0175S05

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

1. Confirm SELF-DIAGNOSTIC RESULTS "ECM" displayed on CONSULT screen. Ref. part No. B.
2. Replace IMMU.
3. Perform initialization with CONSULT.
   For initialization, refer to "CONSULT operation manual NATS".



DIAGNOSTIC PROCEDURE 2

NBEL0175S06

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

1. Confirm SELF-DIAGNOSTIC RESULTS "ECM" displayed on CONSULT screen. Ref. part No. B.
2. Replace ECM.
3. Perform initialization with CONSULT.
   For initialization, refer to "CONSULT operation manual NATS".

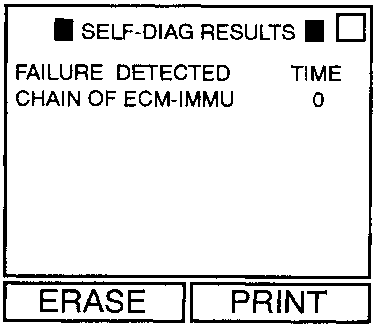
DIAGNOSTIC PROCEDURE 3

NBEL0175S07

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

1 CONFIRM SELF-DIAGNOSTIC RESULTS

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



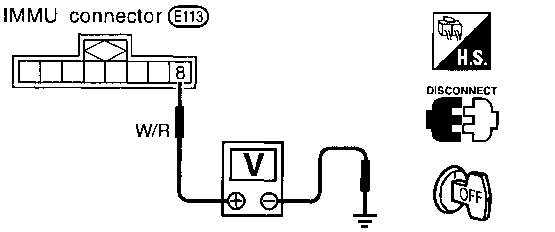
SEL333U

Is CONSULT screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO SYMPTOM MATRIX CHART 1.

2 CHECK POWER SUPPLY CIRCUIT FOR IMMU

1. Disconnect IMMU connector.
2. Check voltage between terminal 8 of IMMU and ground with CONSULT or tester.



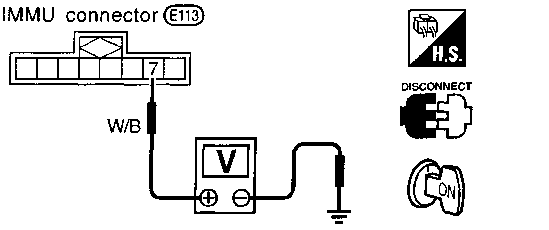
SEL088W

Does battery voltage exist?

Yes	▶	GO TO 3.
No	▶	**Check the following** • 7.5A fuse (No. 62, located in the fuse and fusible link box) • Harness for open or short between fuse and IMMU connector **Ref. Part No. C1**

3 CHECK IGN SW. ON SIGNAL

1. Turn ignition switch ON.
2. Check voltage between terminal 7 of IMMU and ground with CONSULT or tester.



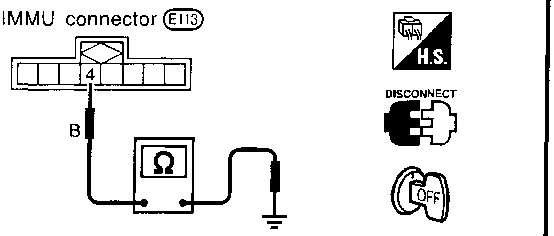
SEL089W

Does battery voltage exist?

Yes	▶	GO TO 4.
No	▶	**Check the following** • 7.5A fuse [No. 11, located in the fuse block (J/B)] • Harness for open or short between fuse and IMMU connector **Ref. part No. C2**

4 CHECK GROUND CIRCUIT FOR IMMU

1. Turn ignition OFF.
2. Check harness continuity between IMMU terminal 4 and ground.



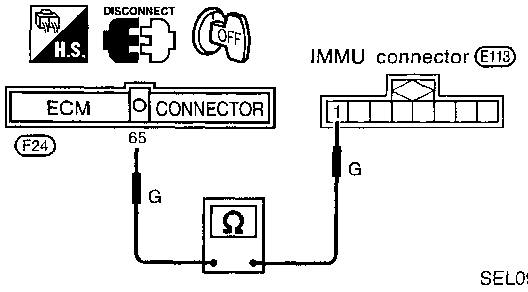
SEL090W

Does continuity exist?

Yes	▶	GO TO 5.
No	▶	Repair harness. **Ref. part No. C3**

5 CHECK COMMUNICATION LINE OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check harness continuity between IMMU terminal 1 and ECM terminal 65.



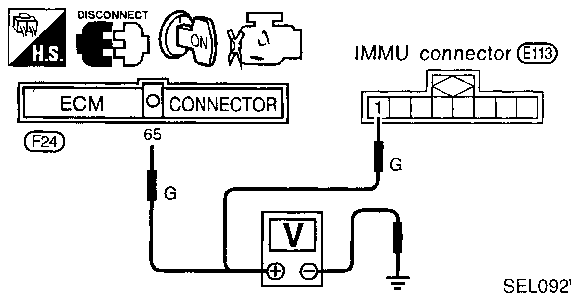
SEL091W

Does continuity exist?

Yes	▶	GO TO 6.
No	▶	Repair harness or connector. **Ref. part No. C4**

6 CHECK COMMUNICATION LINE BATTERY SHORT CIRCUIT

1. Turn ignition ON.
2. Check voltage between ECM terminal 65 or IMMU terminal 1 and ground.



SEL092W

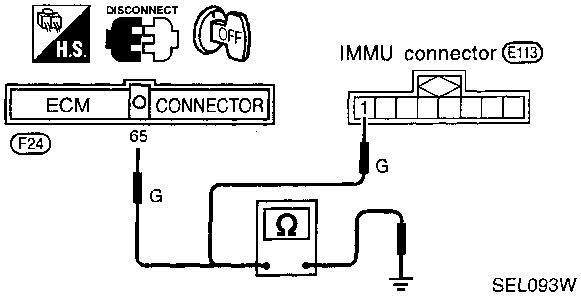
Voltage: 0V

OK or NG

OK	▶	GO TO 7.
NG	▶	Communication line is short-circuited with battery voltage line or ignition switch ON line. Repair harness or connectors. **Ref. part No. C4**

7 CHECK COMMUNICATION LINE GROUND SHORT CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between ECM terminal 65 or IMMU terminal 1 and ground.



SEL093W

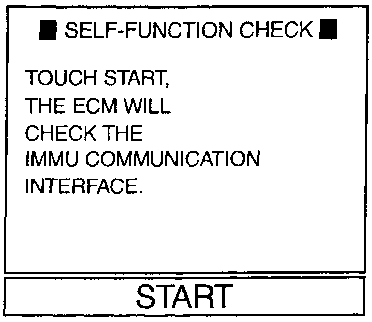
Continuity should not exist.

OK or NG

OK	▶	GO TO 8.
NG	▶	Communication line is short-circuited with ground line. Repair harness or connectors. **Ref. part No. C4**

8 SELF-FUNCTION CHECK

1. Connect ECM connector and disconnect IMMU connector.
2. Turn ignition switch ON.
3. Touch "SELF-FUNCTION CHECK" on CONSULT "SELECT DIAG MODE" screen.
4. Touch "START". ECM will then check its communication interface by itself.



SEL037V

SELF-FUNCTION CHECK result:

OK or NG

OK	▶	IMMU is malfunctioning. Replace IMMU. **Ref. part No. A** Perform initialization with CONSULT. For the operation of initialization, refer to "CONSULT operation manual NATS".
NG	▶	ECM is malfunctioning. Replace ECM. **Ref. part No. B** Perform initialization with CONSULT. For the operation of initialization, refer to "CONSULT operation manual NATS".

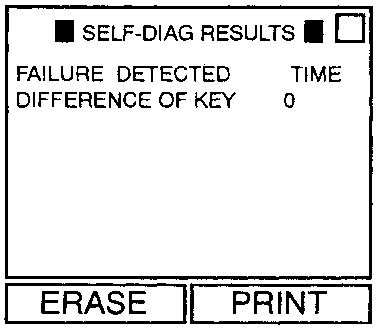
DIAGNOSTIC PROCEDURE 4

=NBEL0175S08

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

1	CONFIRM SELF-DIAGNOSTIC RESULTS

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



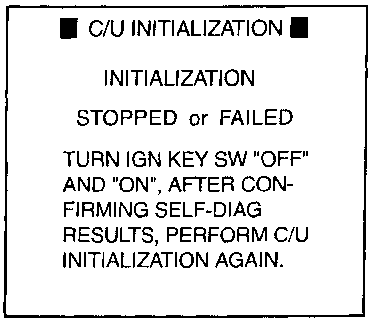
SEL344U

Is CONSULT screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO SYMPTOM MATRIX CHART 1.

2	PERFORM INITIALIZATION WITH CONSULT

Perform initialization with CONSULT. Re-register all NATS ignition key IDs.
For initialization, refer to "CONSULT operation manual NATS".



SEL038V

NOTE:
If the initialization is not completed or fails, CONSULT shows above message on the screen.
Can the system be initialized?

Yes or No

Yes	▶	Start engine. (END) (Ignition key ID was unregistered. **Ref. part No. D**)
No	▶	IMMU is malfunctioning. Replace IMMU. **Ref. part No. A** Perform initialization with CONSULT. For initialization, refer to "CONSULT operation manual NATS".

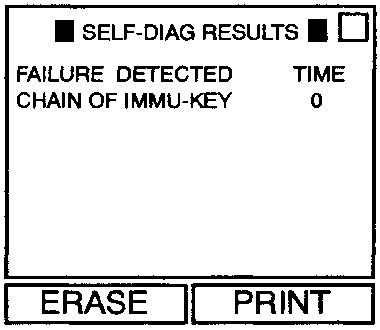
DIAGNOSTIC PROCEDURE 5

=NBEL0175S09

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

1	CONFIRM SELF-DIAGNOSTIC RESULTS

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



SEL373U

Is CONSULT screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO SYMPTOM MATRIX CHART 1.

2	CHECK NATS IGNITION KEY ID CHIP

Start engine with another registered NATS ignition key.

Does the engine start?

Yes	▶	Ignition key ID chip is malfunctioning. Replace the ignition key. **Ref. part No. E** Perform initialization with CONSULT. For initialization, refer to "CONSULT operation manual NATS".
No	▶	GO TO 3.

3	CHECK NATS IMMU INSTALLATION

Check NATS IMMU installation.
Refer to "How to Replace NATS IMMU" in EL-272.

OK or NG

OK	▶	IMMU is malfunctioning. Replace IMMU. **Ref. part No. A** Perform initialization with CONSULT. For initialization, refer to "CONSULT operation manual NATS".
NG	▶	Reinstall NATS IMMU correctly.

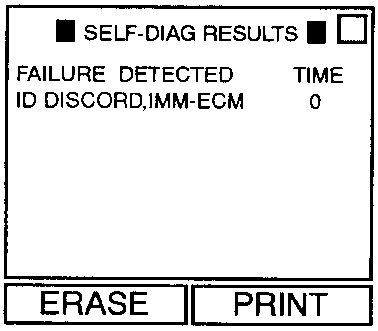
DIAGNOSTIC PROCEDURE 6

NBEL0175S10

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

1	CONFIRM SELF-DIAGNOSTIC RESULTS

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



SEL383U

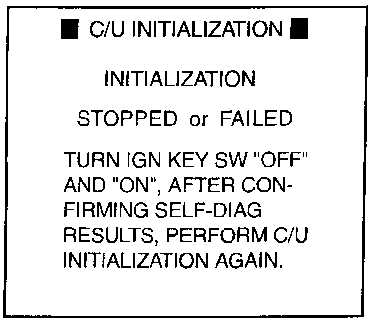
NOTE:
"ID DISCORD IMMU-ECM":
Registered ID of IMMU is in discord with that of ECM.

Is CONSULT screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO SYMPTOM MATRIX CHART 1.

2	PERFORM INITIALIZATION WITH CONSULT

Perform initialization with CONSULT. Re-register all NATS ignition key IDs.
For initialization, refer to "CONSULT operation manual NATS".



SEL038V

NOTE:
If the initialization is not completed or fails, CONSULT shows above message on the screen.
Can the system be initialized?

Yes or No

Yes	▶	Start engine. (END) (System initialization had not been completed. **Ref. part No. F**)
No	▶	ECM is malfunctioning. Replace ECM. **Ref. part No. F** Perform initialization with CONSULT. For initialization, refer to "CONSULT operation manual NATS".

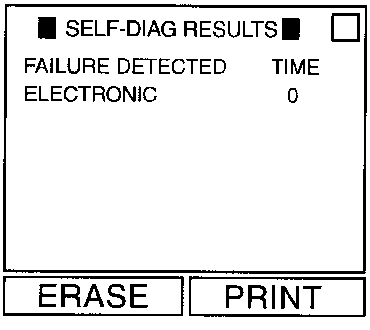
DIAGNOSTIC PROCEDURE 7

NBEL0175S11

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

1	CONFIRM SELF-DIAGNOSTIC RESULTS

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



SEL039V

Is CONSULT screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO SYMPTOM MATRIX CHART 1.

2	TURN OFF AND REMOVE NOISE

1. Turn off or remove any possible noise sources.
2. Touch "ERASE" on CONSULT SELF-DIAGNOSTIC RESULTS screen.
3. Start engine.

Does engine start?

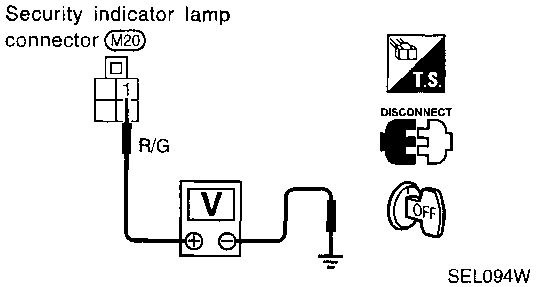
Yes	▶	INSPECTION END
No	▶	GO TO 1.

DIAGNOSTIC PROCEDURE 8
"SECURITY INDICATOR LAMP DOES NOT LIGHT UP"

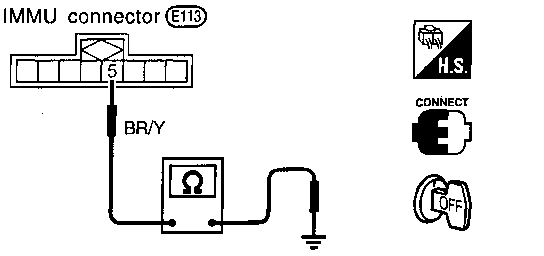
=NBEL0175S12

1	CHECK FUSE
Check 7.5A fuse [No. 24, located in the fuse block (J/B)].	
Is 7.5A fuse OK?	
Yes ▶	GO TO 2.
No ▶	Replace fuse.

2	CHECK SECURITY INDICATOR LAMP
1. Install 7.5A fuse. 2. Perform initialization with CONSULT. For initialization, refer to "CONSULT operation manual NATS". 3. Turn ignition switch OFF. 4. Start engine and turn ignition switch OFF. 5. Check the security indicator lamp lighting.	
Does security indicator lamp light up?	
Yes ▶	INSPECTION END
No ▶	GO TO 3.

3	CHECK SECURITY INDICATOR LAMP POWER SUPPLY CIRCUIT
1. Disconnect security indicator lamp connector. 2. Check voltage between security indicator lamp connector terminal 1 and ground.	
 SEL094W	
Does battery voltage exist?	
Yes ▶	GO TO 4.
No ▶	Check harness for open or short between fuse and security indicator lamp.

4	CHECK SECURITY INDICATOR LAMP
Check security indicator Lamp.	
Is security indicator lamp OK?	
Yes ▶	GO TO 5.
No ▶	Replace security indicator lamp.

5	CHECK NATS IMMU FUNCTION
1. Connect NATS IMMU connector. 2. Disconnect security indicator lamp connector. 3. Check continuity between NATS IMMU terminal 5 and ground.	
 SEL095W	
Does continuity exist intermittently?	
Yes ▶	Check harness for open or short between security indicator lamp and NATS IMMU.
No ▶	NATS IMMU is malfunctioning. Replace IMMU. Perform initialization with CONSULT. For initialization, refer to "CONSULT operation manual NATS".

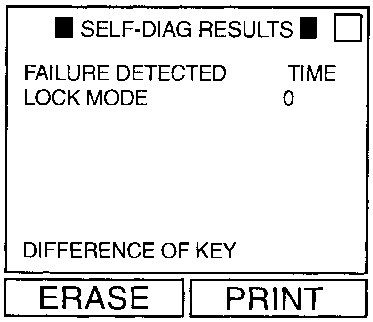
DIAGNOSTIC PROCEDURE 9

=NBEL0175S13

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

1	CONFIRM SELF-DIAGNOSTIC RESULTS

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



SEL790U

Is CONSULT screen displayed as above?

Yes	▶	GO TO 2.
No	▶	GO TO SYMPTOM MATRIX CHART 1.

2	ESCAPE FROM LOCK MODE

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

Does engine start?

Yes	▶	System is OK. (Now system is escaped from "LOCK MODE".)
No	▶	GO TO 3.

3	CHECK NATS IMMU ILLUSTRATION

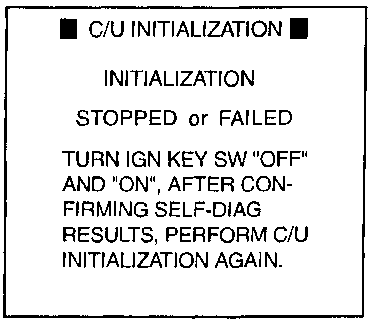
Check NATS IMMU installation. Refer to "How to Replace NATS IMMU" in EL-272.

OK or NG

OK	▶	GO TO 4.
NG	▶	Reinstall NATS IMMU corectly.

4	PERFORM INITIALIZATION WITH CONSULT

Perform initialization with CONSULT.
For initialization, refer to "CONSULT operation manual NATS".

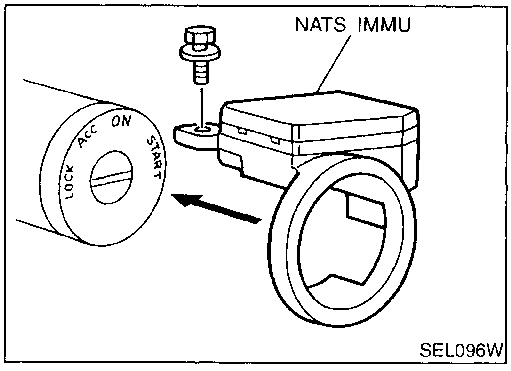


SEL038V

NOTE:
If the initialization is not completed or fails, CONSULT shows the above message on the screen.
Can the system be initialized?

Yes or No

Yes	▶	System is OK.
No	▶	GO TO DIAGNOSTIC PROCEDURE 5 to check "CHAIN OF IMMU-KEY", refer to EL-269.



SEL096W

How to Replace NATS IMMU

NBEL0176

NOTE:

- **If NATS IMMU is not installed correctly, NATS system will not operate properly and SELF-DIAG RESULTS on CONSULT screen will show "LOCK MODE" or "CHAIN OF IMMU-KEY".**

Precaution

NBEL0177

CAUTION:

- **Use CONSULT to set the system "Demonstration mode" if INFINITI Communicator needs to be activated during service procedures. (For details of the demonstration mode, refer to EL-304.)**
- **Make sure to turn the demonstration mode OFF before returning the vehicle to the owner.**
- **In the demonstration mode, no service from the Communicator Response Center is available. Therefore, even if the customer encounters an emergency, no service will be dispatched.**
- **If the theft warning system is activated for more than 7 seconds, INFINITI Communicator will dial to the Communicator Response Center automatically. The operator will contact the customer to confirm whether the vehicle has been stolen or not.**
- **When "Mayday" emergency dialing is activated (if the system is not in the demonstration mode), the Communicator Response Center operator will come online. If there is no emergency, the operator will ask the occupant for the user password (option). Failure to provide the correct password results in a police response.**
- **IVCS unit memory includes VIN (Vehicle Identification Number) and other such vehicle specific data. Therefore, the IVCS unit cannot be transferred to another vehicle. When the IVCS unit is replaced, the new unit must be set up and programmed. The INFINITI Communicator system automatically contacts the Communicator Response Center the first time the vehicle is started after a phone number has been changed or a module (IVCS unit) is replaced. The VIN will be written in the memory of the new unit by transmitting data from the Communicator Response Center. For details, refer to "System Setting", EL-306.**
- **Before servicing the vehicle, confirm that the VIN memorized by the IVCS unit is the same as the VIN on the vehicle's identification plate.**

Communicator Response Center Telephone Number for Technicians

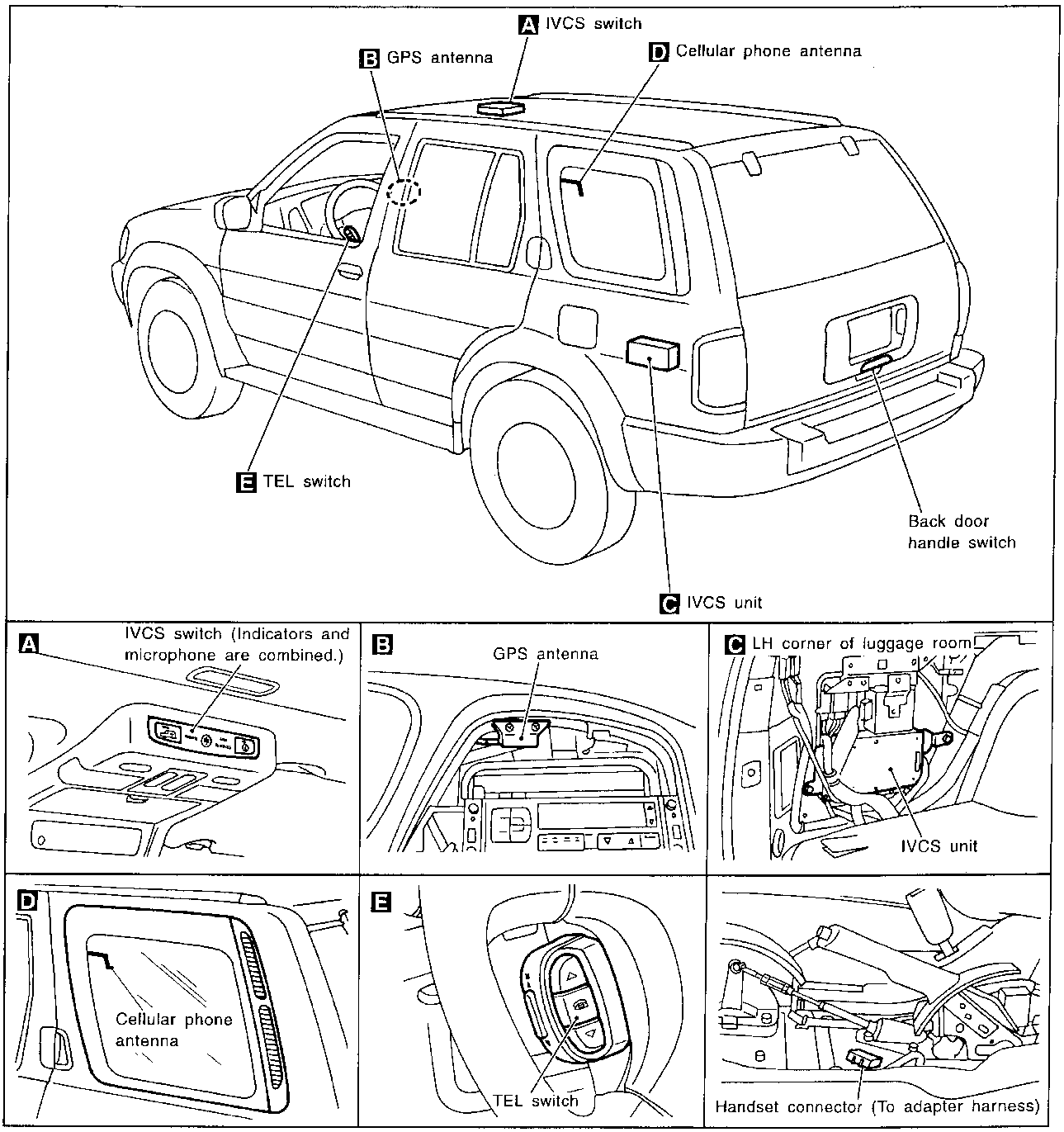
NBEL0178

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

- Customer name
- Unit ID number of old IVCS unit (For details, refer to EL-292.)
- Unit ID number of new IVCS unit
- VIN
- Dealer name and code (For security purposes)
- Dealer contact person (technician)
- Dealer phone and fax numbers

Component Parts and Harness Connector Location

NBEL0179



SEL098W

System Description

NBEL0180

OUTLINE

NBEL0180S01

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

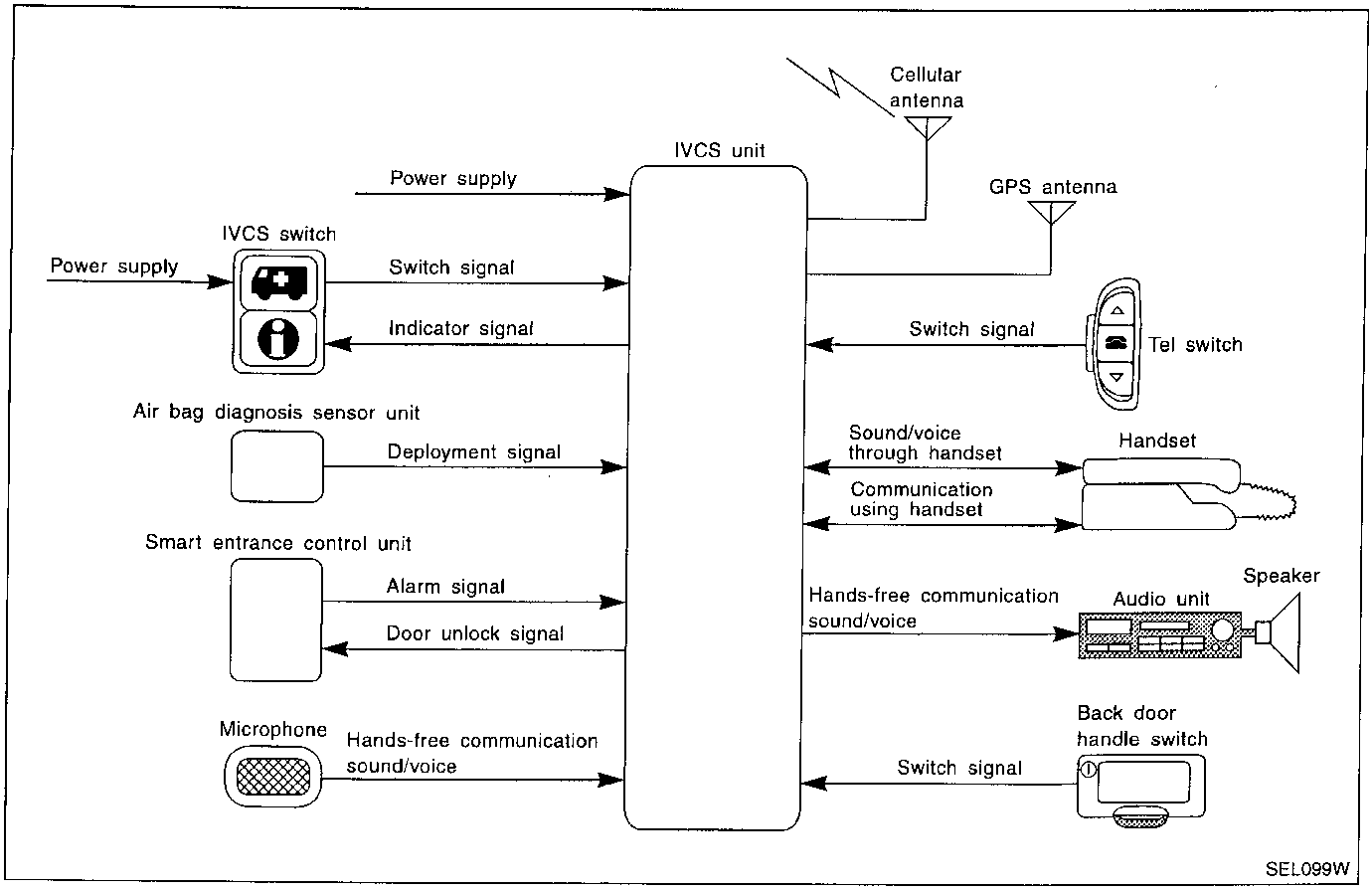
- One touch "Information" dialing
- One touch "Mayday" emergency dialing
- Automatic air bag inflation notification
- Stolen vehicle tracking
- Alarm notification
- Remote door unlock

There are limitations to the INFINITI Communicator system. To understand the system, read SYSTEM LIMITATIONS (EL-276) thoroughly.

SYSTEM COMPOSITION

NBEL0180S02

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



SYSTEM LIMITATIONS

NBEL0180S03

Service Area

NBEL0180S0301

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

Inoperative if Cellular Phone is Inactive or Inoperative

NBEL0180S0302

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

Inoperative if The System is in The Demonstraiton Mode

NBEL0180S0303

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

Battery

NBEL0180S0304

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

Inopertive if Cellular System is Busy

NBEL0180S0305

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

Roaming

NBEL0180S0306

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

Special Cellular Features

NBEL0180S0307

Some cellular carriers offer custom phone numbers that are assigned a Personal Identification Number (PIN). The cellular phone user is required to enter the PIN anytime a phone call is made. The INFINITI Communicator system is not compatible with the PIN feature. A PIN requirement on the cellular phone will cause the INFINITI Communicator system to be inoperative.

Other special features such as call waiting, voice mail, call forwarding, etc. can interfere with INFINITI Communicator system operation.

Cellular Airwave Interference

NBEL0180S0308

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

Possibility of Positioning Capability Degraded

NBEL0180S0309

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

OPERATION

NBEL0180S04

One Touch "Information" Dialing

NBEL0180S0401

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

One Touch "Mayday" Emergency Dialing

NBEL0180S0402

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

Automatic Air Bag Inflation Notification

NBEL0180S0403

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

Stolen Vehicle Tracking

NBEL0180S0404

- When a vehicle is stolen, the owner can contact the Communicator Response Center to attempt to locate the stolen vehicle. The Communicator Response Center will activate the stolen vehicle tracking to locate the vehicle. If the Communicator Response Center successfully locates the vehicle, they will contact the police to provide the location.

- The vehicle location data is calculated using GPS.
- The vehicle ignition switch must be turned to the ON position to obtain the vehicle location. (This is because the system is in the sleep mode when the ignition switch is OFF.)
- Once this function starts up, regardless of the ignition switch position, the system keeps transmitting the vehicle location until the cancel signal is transmitted from the Communicator Response Center.
- While this function is operating, the operator can covertly monitor what is happening inside the vehicle through the hands-free microphone.

Alarm Notification

NBEL0180S0405

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

Remote Door Unlock

NBEL0180S0406

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

NOTE:

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

DATA TRANSMITTING

NBEL0180S05

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

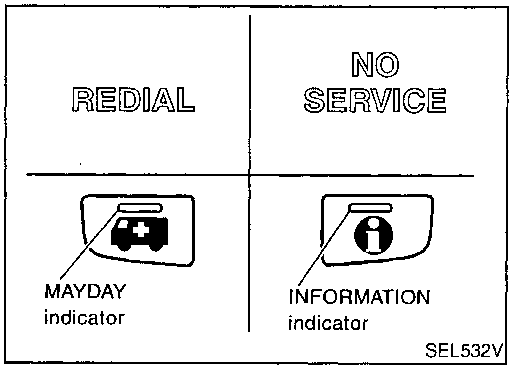
SLEEP/WAKE UP CONTROL

NBEL0180S06

3 minutes after the ignition switch is turned OFF, the system goes into the SLEEP MODE to save battery power supply. Communication with Communicator Response Center is not available in the SLEEP MODE.

To wake up the system, perform either of the following operations.

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



INDICATOR LAMPS OPERATION

NBEL0180S07

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

Indicator	Condition	Description
MAYDAY	Blinks.	System is trying to acquire an available cellular channel by "Mayday" switch operation.
	Lights up. (See NOTE.)	System is connected to a cellular channel and is communicating information to the Communicator Response Center.
INFORMATION	Blinks.	System is trying to acquire an available cellular channel by "Information" switch operation.
	Lights up. (See NOTE.)	System is connected to a cellular channel and is communicating information to the Communicator Response Center.
REDIAL	Lights up.	Re-dialing
	Blinks.	Waiting for re-dial
NO SERVICE	Lights up.	Out of CELLULAR PHONE service area or signal is too weak.

NOTE:

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

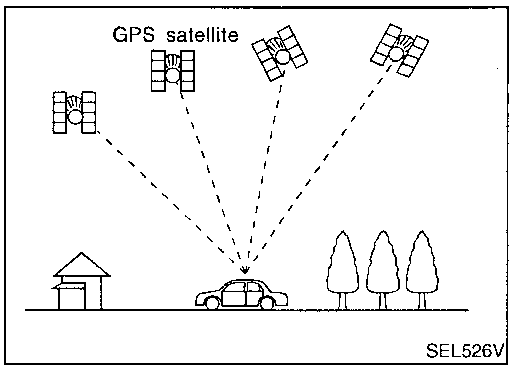
AUTOMATIC RE-DIAL/AUTO RESET TO READY

NBEL0180S08

- When INFINITI Communicator tries to contact the Communicator Response Center, but the cellular network is busy, the system attempts to dial for up to 2 hours. This time varies

greatly depending on the cellular network and cellular signal strength. The system resets to ready when the system completes the dialing attempts. The vehicle owner can press the button again if he or she still needs to contact the Communicator Response Center.

- INFINITI Communicator automatically redials if communication between the vehicle owner and Communicator Response Center is lost for some reason.
- The only way for a transmission to be officially terminated is for the Communicator Response Center to send an end transmission signal, which turns off the indicator in the switch. (Communication with Communicator Response Center can not be terminated by the occupant.)
- If the vehicle owner start the engine during a call, the conversation may be interrupted. When this happens the system may try to resume transmission once after the engine has been started.



GPS (GLOBAL POSITIONING SYSTEM)

NBEL0180S09

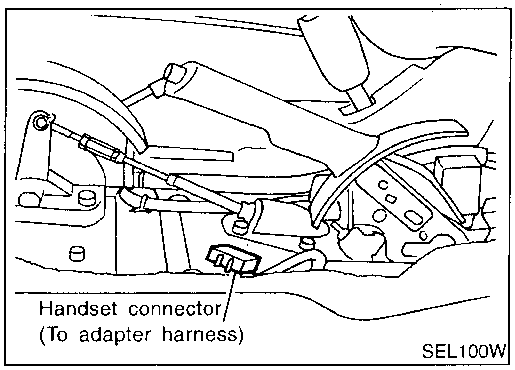
GPS is the global positioning system developed and operated by the US Department of Defense. GPS satellites (NAVSTAR) transmit radio waves and orbit around the earth at an altitude of approximately 21,000 km (13,000 miles).

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

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

Positioning capability is degraded in the following cases.

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

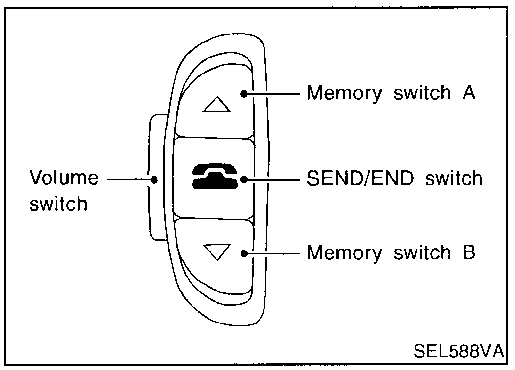


HANDSET

NBEL0180S10

NOTE:

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



TEL SWITCH

NBEL0180S11

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

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

VOLUME Switch

NBEL0180S1103

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

SEND/END Switch Operation

NBEL0180S1101

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

MEMORY Switch Operation

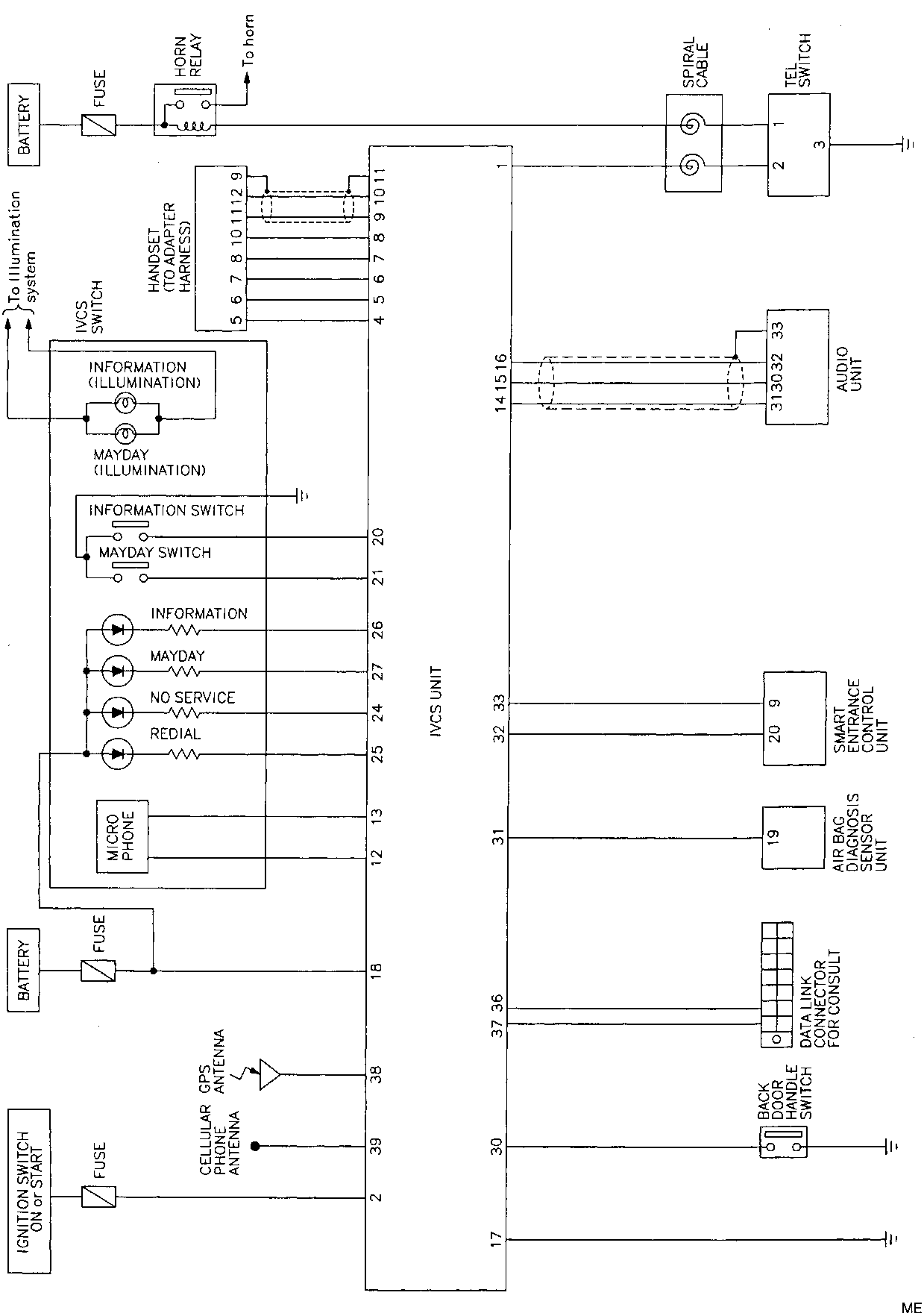
NBEL0180S1102

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

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

Schematic

NBEL0161

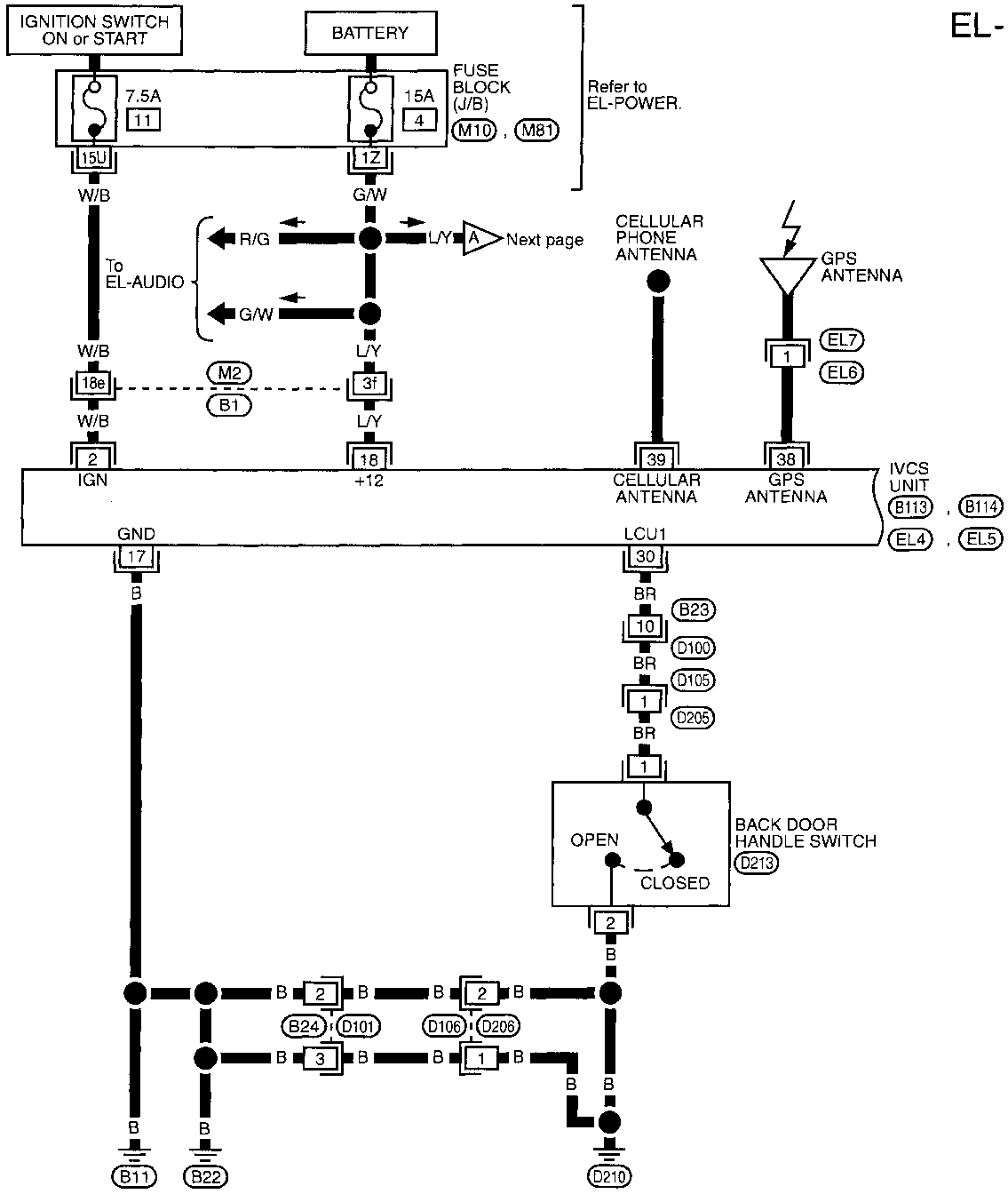


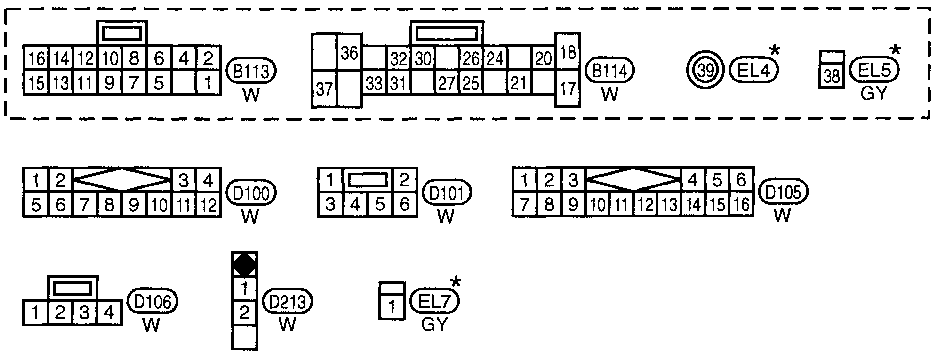
MEL831J

Wiring Diagram — IVCS —

NBEL0182

EL-IVCS-01





Refer to last page (Foldout page).

M2 , B1

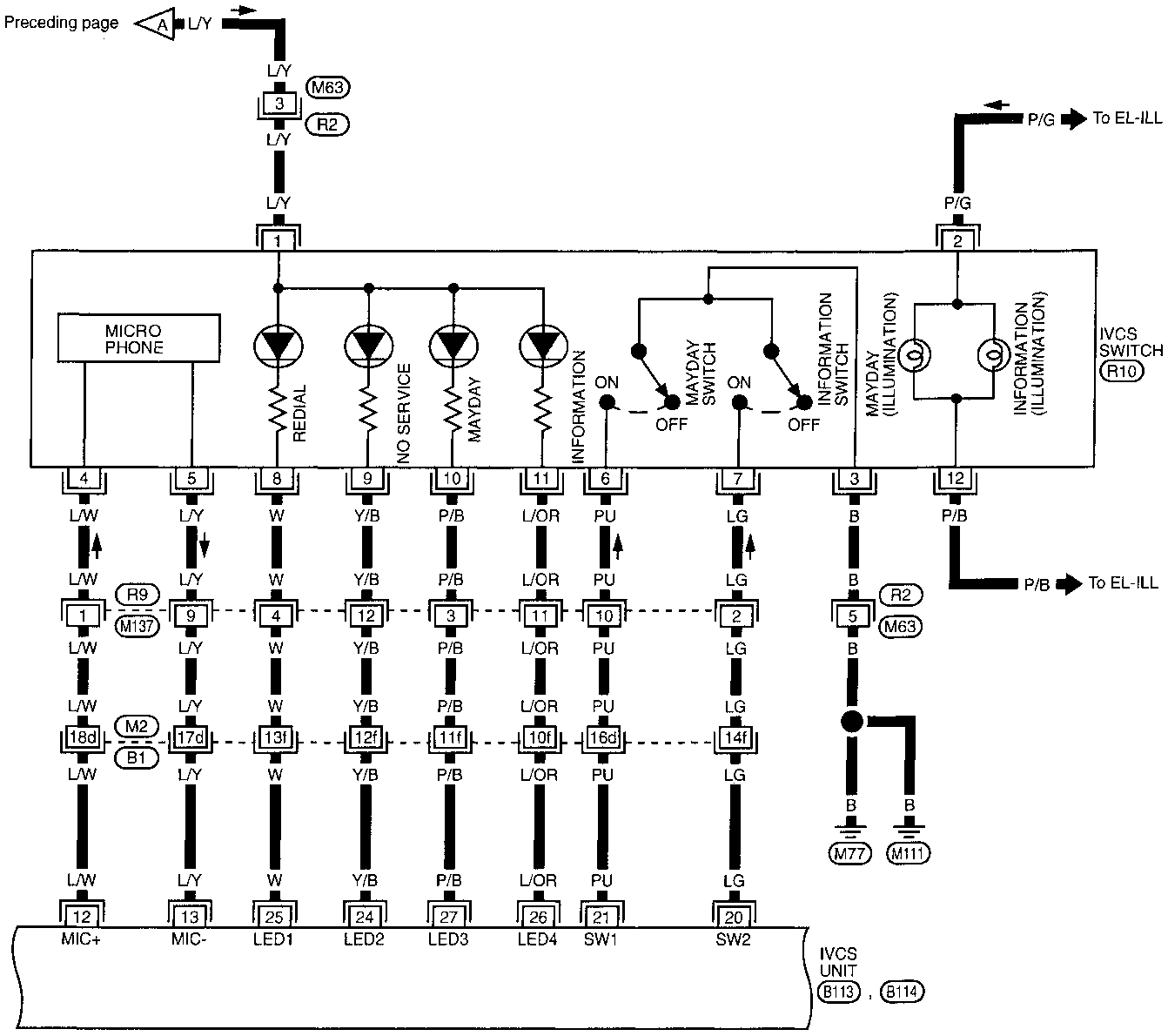
M10

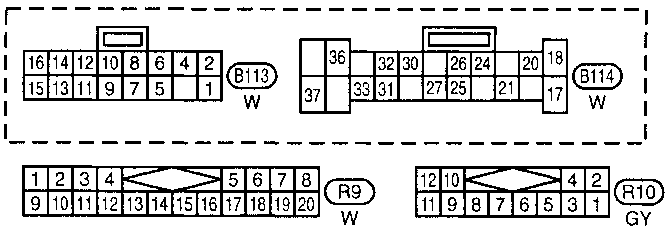
M81

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

MEL832J

EL-IVCS-02





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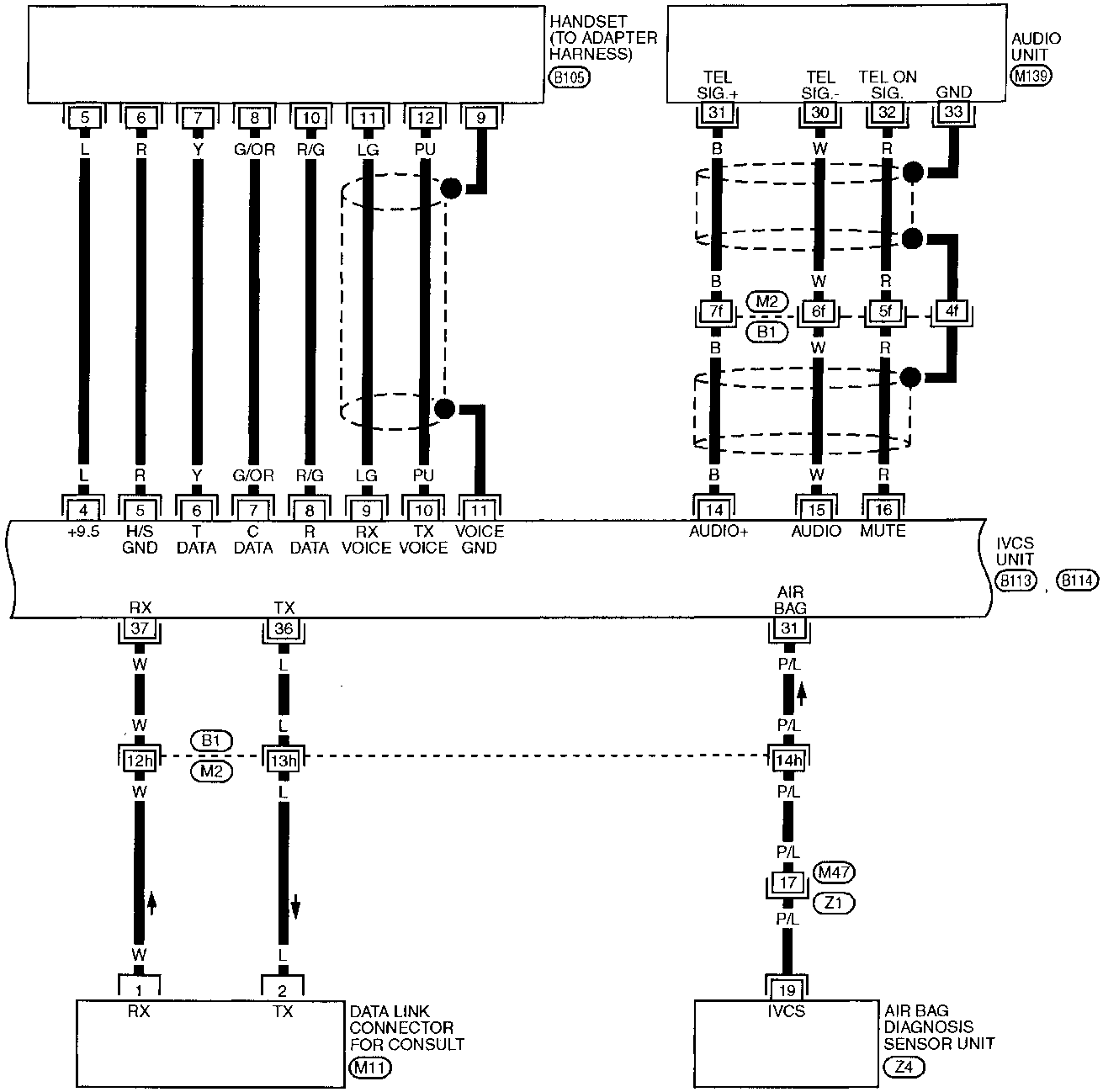
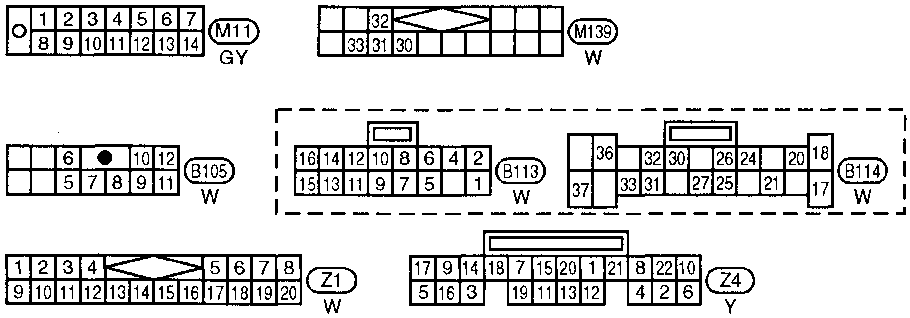
M2 , B1

MEL833J

EL-IVCS-03





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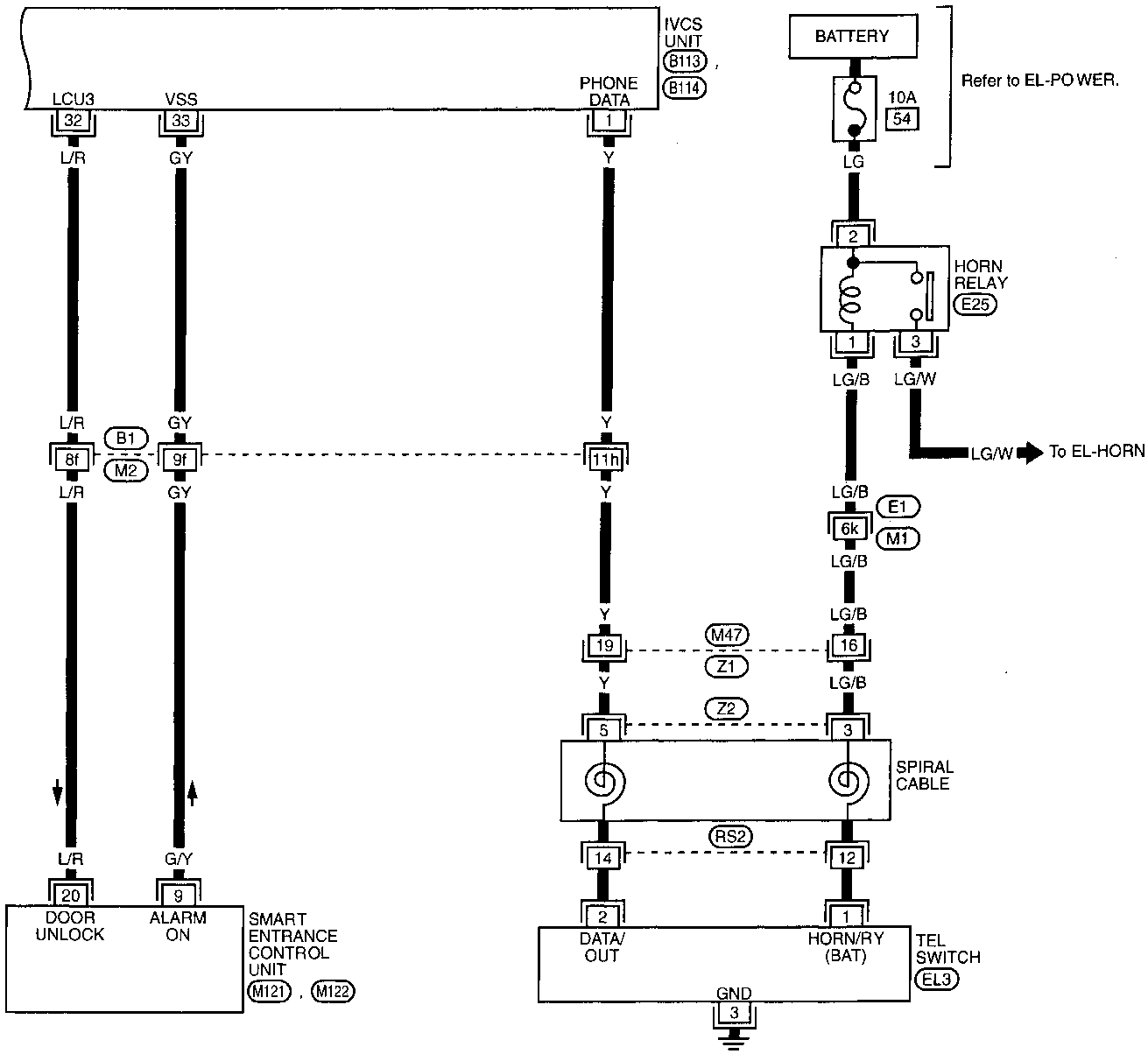
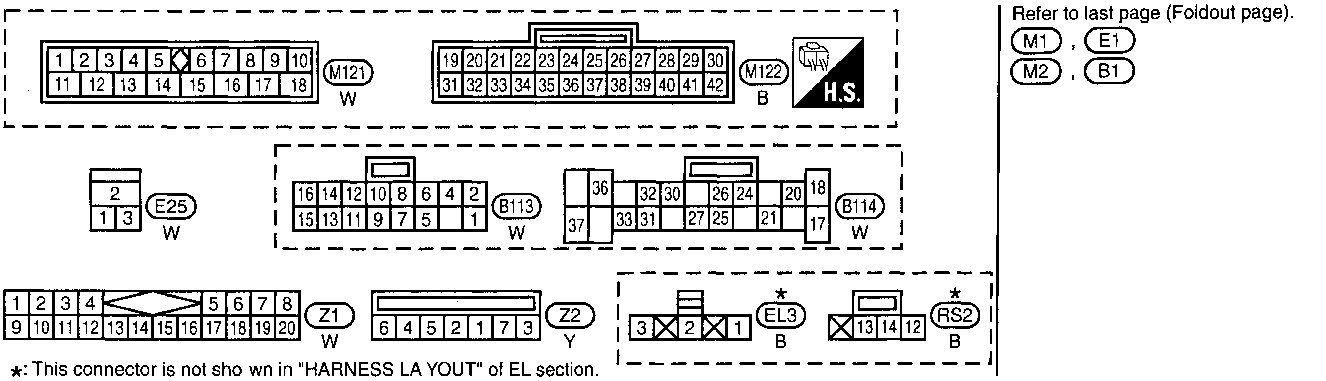
M2 , B1

MEL834J

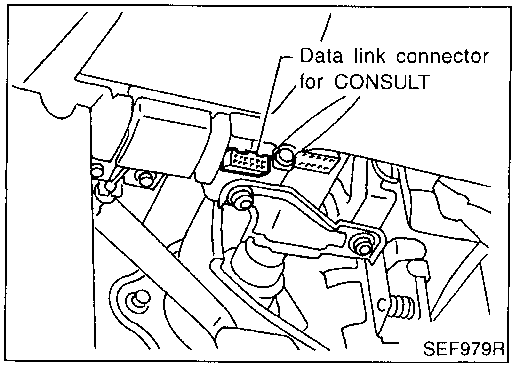
EL-IVCS-04





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

MEL835J



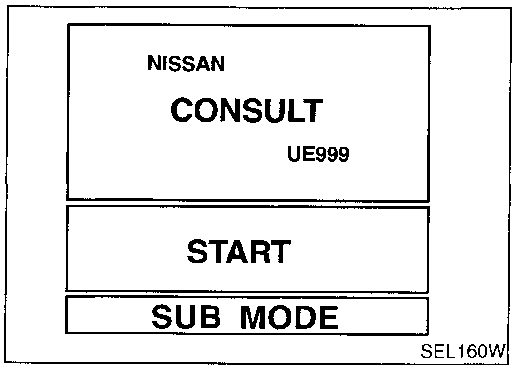
CONSULT

NBEL0183

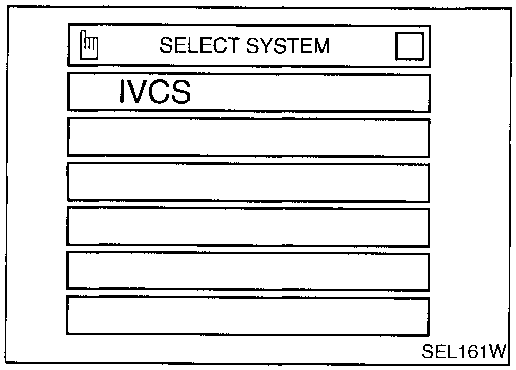
CONSULT INSPECTION PROCEDURE

NBEL0183S01

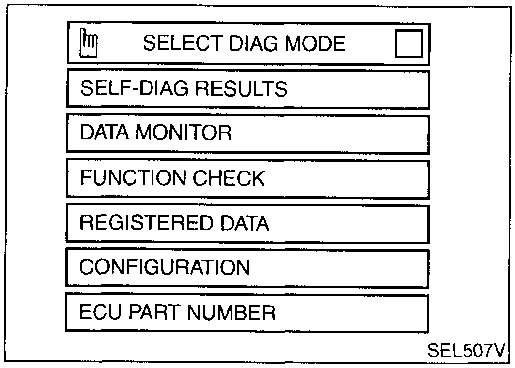
1. Turn ignition switch "OFF".
2. Connect "CONSULT" to the data link connector.



3. Insert UE999 program card in to CONSULT.
4. Turn ignition switch "ON".
5. Touch "START".



6. Touch "IVCS".



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

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

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

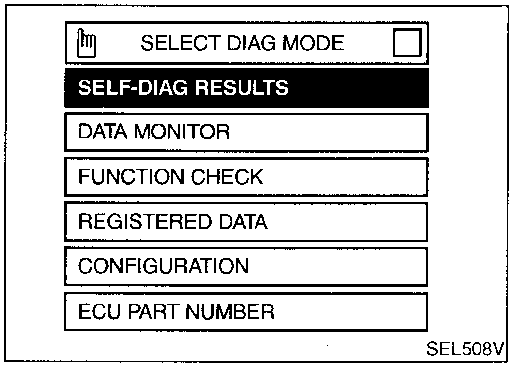
NOTE:
If the DDL connector is disconnected before turning ignition switch to "OFF" position, INFINITI communicator may not operate properly.

APPLICATION ITEMS

NBEL0183S02

Mode	Description	Reference page
SELF DIAG RESULTS	Displays the result of self-diagnosis.	EL-289
DATA MONITOR	Two modes, "GPS MONITOR" and "SWITCH MONITOR" can be selected in this mode. • Displays current data related to GPS in "GPS MONITOR" mode. • Displays IVCS switch and outside door handle switch condition in "SWITCH MONITOR" mode.	EL-291
FUNCTION CHECK	In this mode, "Remote door unlock function" can be checked using CONSULT. Door can be unlocked according to the commands to the smart entrance control unit by the IVCS unit. This check verifies communication circuit between smart entrance control unit and IVCS unit.	EL-299
REGISTERED DATA	Displays the following data registered in the IVCS unit. In this mode the data cannot be re-written. • Unit ID • Cellular phone number • VIN (Vehicle Identification Number)	EL-292
CONFIGURATION (See Note.)	In this mode, the system can be set up in the demonstration mode to confirm system operation.	EL-304
	Various data related to both the Communicator Response Center contract and cellular provider can be written/updated in this mode. • Phone number • NAM (Number Assignment Module) • Stolen vehicle tracking setting (Default should always be on.) • Alarm notification setting (Default should always be on.)	EL-306
ECU PART NUMBER	Displays the part number of the IVCS unit.	—

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



SEL508V

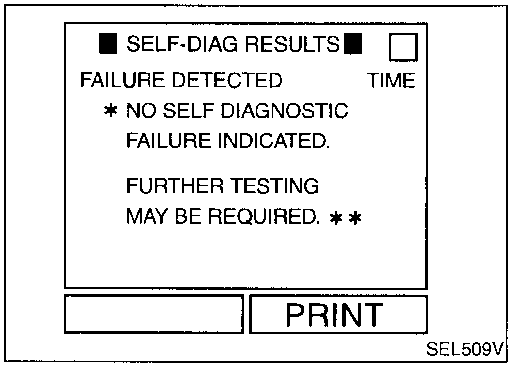
"SELF-DIAG RESULTS" MODE

NBEL0183S03

How to Perform Self-diagnosis

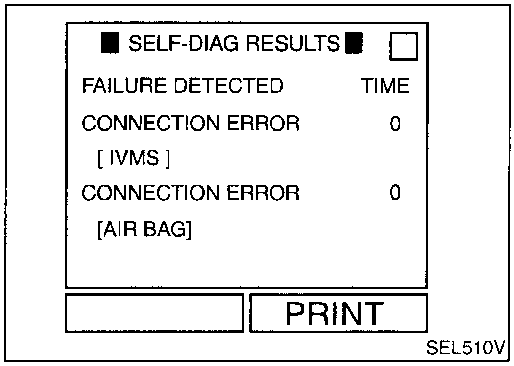
NBEL0183S0301

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



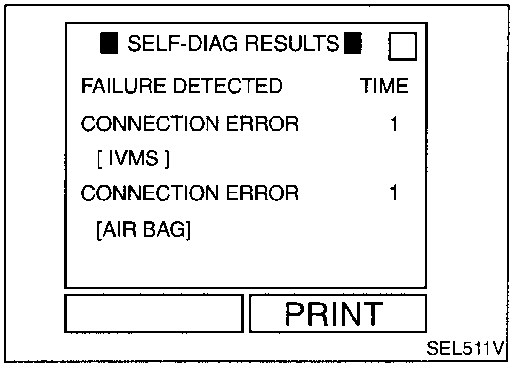
SEL509V

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



- If trouble codes are displayed with "TIME = 0", repair/replace the system according to "SYMPTOM CHART 1 (SELF-DIAGNOSIS ITEM)", EL-294.
- In this case, both "MAYDAY" and "INFORMATION" indicator lamps illuminate for more than 30 seconds while the ignition switch is in the ON position.

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



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

NOTE:
If trouble codes are displayed with "TIME = 1 or greater" even though the INFINITI Communicator has never been serviced. Intermittent incidents may occur. Check the system, refer to "Trouble Diagnoses for Intermittent Incident", EL-302.

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

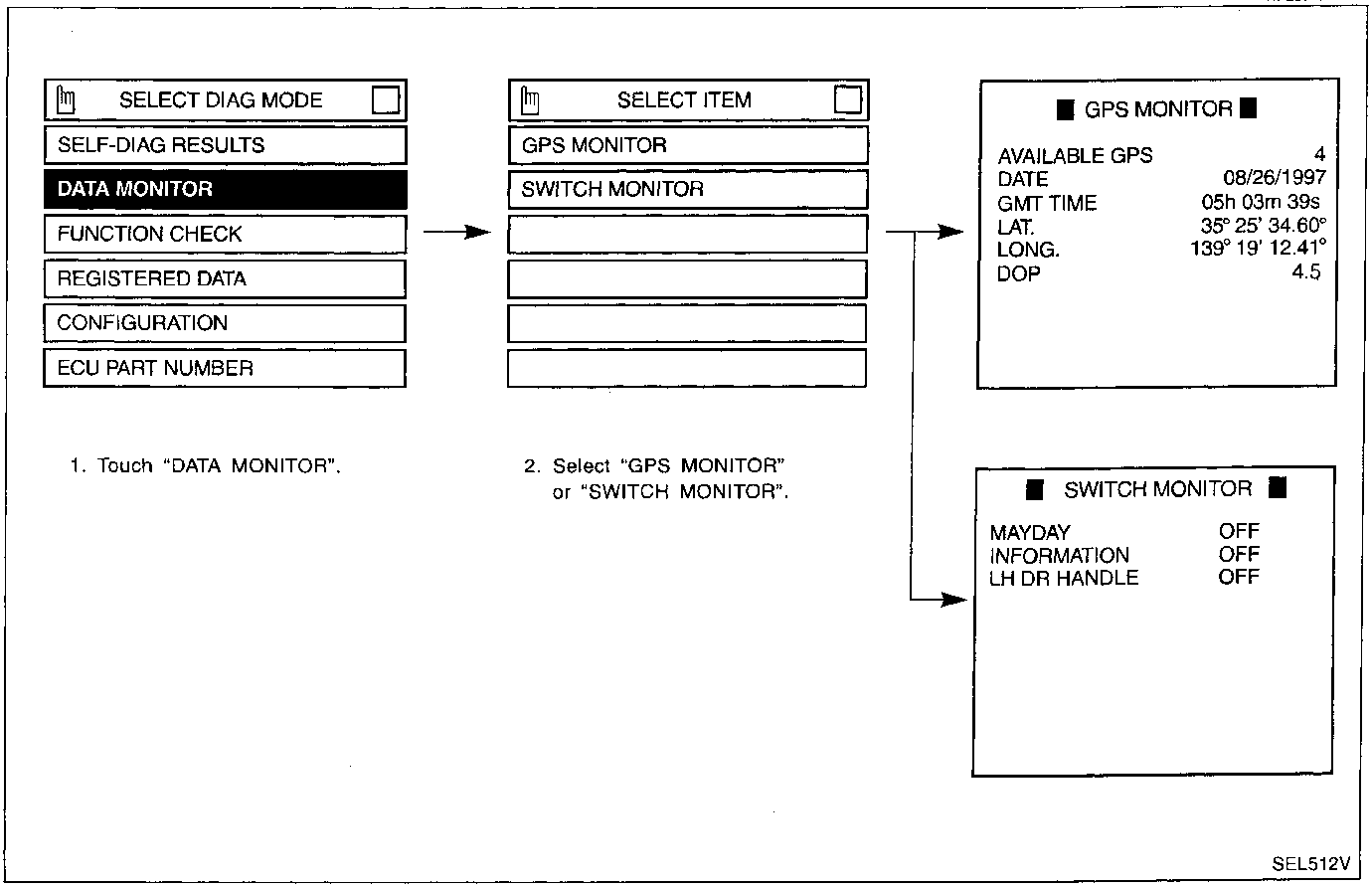
NOTE:
- **The trouble codes cannot be erased by CONSULT.**
- **After 50 ignition cycles, the trouble codes are no longer displayed in the CONSULT " SELF-DIAG RESULTS" mode.**
- **The IVCS unit does not count the ignition switch cycles unless the ignition switch is OFF for more than 3 minutes between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

"DATA MONITOR" MODE

NBEL0183S04

How to Perform Data Monitor

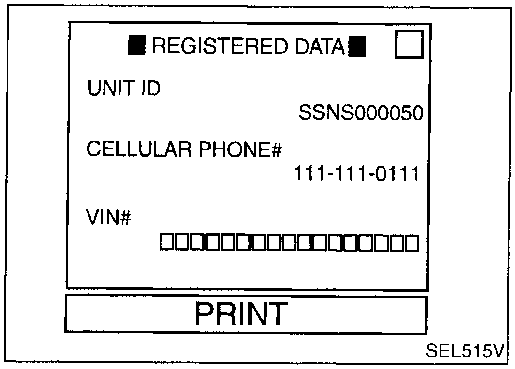
NBEL0183S0401



Data Monitor Item Chart

NBEL0183S0402

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



"REGISTERED DATA" MODE

NBEL0183S05

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

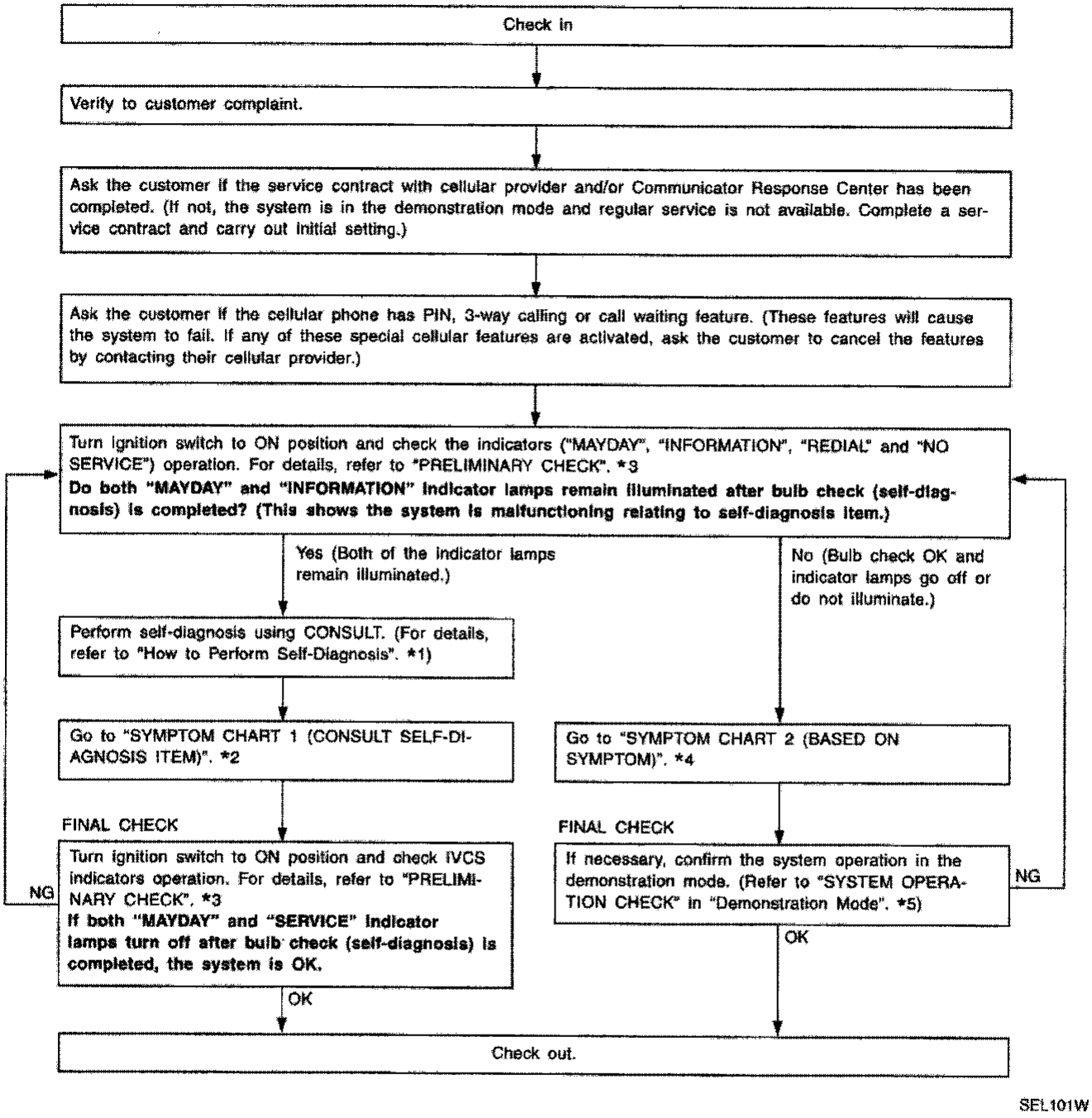
NOTE:
No data can be changed in this CONSULT mode.

Trouble Diagnoses

WORK FLOW

NBEL0184

NBEL0184S01

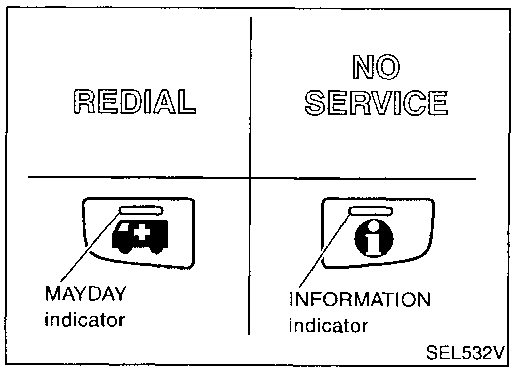


SEL101W

*1 EL-289
*2 EL-294
*3 EL-294
*4 EL-295
*5 EL-304

WARNING:

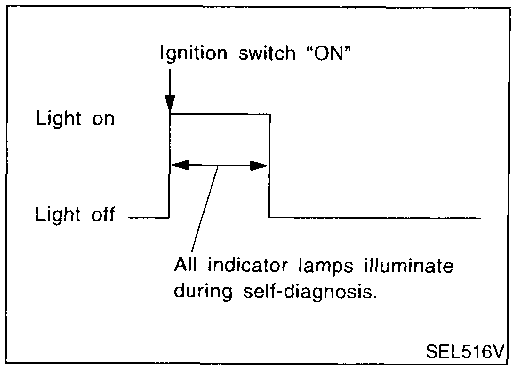
- **Whenever possible, set the system to "Demonstration mode" if INFINITI Communicator system needs to be activated during service procedures. (For details of the demonstration mode, refer to EL-304.)**
- **If you activate the INFINITI Communicator system (when the system is not in the demonstration mode), the Communicator Response Center operator may dispatch police.**



PRELIMINARY CHECK

NBEL0184S02

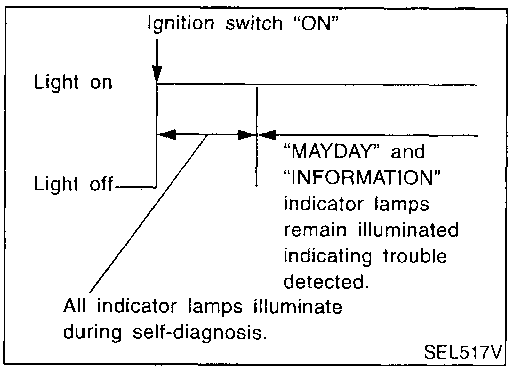
1. Turn ignition switch ON.
2. Check "MAYDAY", "INFORMATION", "REDIAL" and "NO SERVICE" indicator lamps operation.



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

NOTE:

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



- If the system detects malfunctions, both "MAYDAY" and "INFORMATION" indicator lamps remain illuminated. Perform self-diagnosis using CONSULT and repair or replace the system. Refer to "How to Perform Self-diagnosis", EL-289.

NOTE:
For details of indicator lamps operation, refer to "INDICATOR LAMPS OPERATION", EL-279.

SYMPTOM CHART 1 (CONSULT SELF-DIAGNOSIS ITEM)

NBEL0184S03

Detected items (Screen items)	Description	Service procedure
CONNECTION ERROR [GPS ANTENNA]	Connection error between GPS antenna and IVCS unit.	Go to GPS ANTENNA CHECK, EL-301.
CELLULAR PHONE [TWB ERROR]	Communication error between CPU in the IVCS unit and transceiver	Replace IVCS unit.
MEMORY ERROR	Inner memory error of the IVCS unit	Replace IVCS unit.
CONNECTION ERROR [AIR BAG]	Connection error between air bag diagnosis sensor unit and IVCS unit.	Go to AIR BAG DIAGNOSIS SENSOR COMMUNICATION CHECK, EL-301.
CONNECTION ERROR [IVMS]	Connection error between smart entrance control unit and IVCS unit. If this error occurs, alarm notification and auto door unlock may not operate.	Go to SMART ENTRANCE CONTROL UNIT COMMUNICATION CHECK, EL-301.

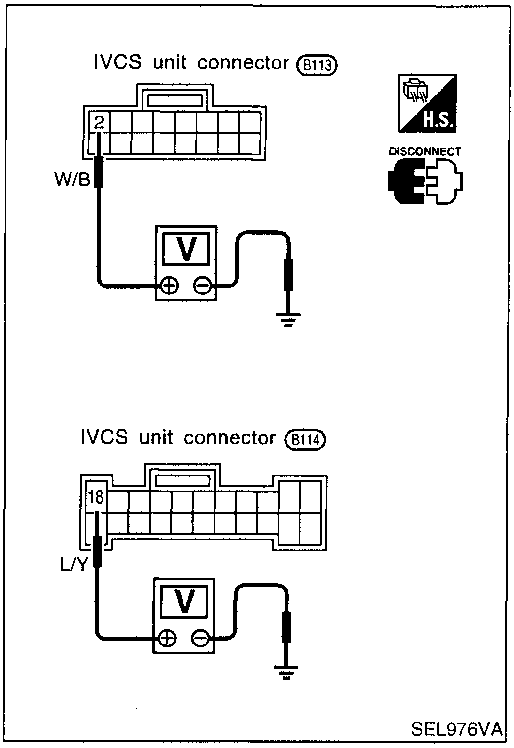
NOTE:
After replacing IVCS unit, set up the replaced IVCS unit. Refer to "System Setting (When IVCS Unit is Replaced.)" in EL-306.

SYMPTOM CHART 2 (BASED ON SYMPTOM)

NBEL0184S04

Before referencing this chart, confirm the operation of the indicator lamps. Refer to "PRELIMINARY CHECK" in EL-294. If the indicators show the system is malfunctioning, perform the self-diagnosis using CONSULT.

Symptom	Diagnoses/service procedure	Reference page
"MAYDAY", "INFORMATION", "RE-DIAL", "NO SERVICE" indicator lamps do not illuminate when ignition switch is turned to ON position. (Bulb check is NG.)	1. Power supply and ground circuit for IVCS unit check	EL-296
	2. Indicator lamps check	EL-297
Mayday/Information call does not operate.	1. IVCS switch check	EL-298
	2. INFINITI Communicator operation check in demonstration mode	EL-304
Remote door unlocking function does not operate.	1. Back door handle switch check	EL-299
	2. Remote door unlock function check	EL-299
	3. INFINITI Communicator operation check in demonstration mode	EL-304
Stolen vehicle tracking function does not operate.	1. Stolen vehicle tracking setting check (Check whether the function is disabled or not.)	EL-300
	2. INFINITI Communicator operation check in demonstration mode	EL-304
Alarm notification function does not operate.	1. Alarm notification setting check (Check whether the function is disabled or not.)	EL-300
	2. INFINITI Communicator operation check in demonstration mode	EL-304
Hands free telephone cannot be operated by using steering switch. (Cellular phone operates properly by using handset.)	1. Telephone steering switch check	EL-302
No sounds related to the telephone are heard from Front RH speaker. (If the audio does not operate properly, check the audio system.)	1. Check harness for open or short between IVCS unit and audio unit.	—
The "NO SERVICE" indicator lamp is not turned off. (Even if a contract with telephone carrier has not been made, the indicator lamp remains illuminated.)	1. Make sure the vehicle is in an area with cellular service.	—
	2. Check cellular phone antenna feeder cable connection.	—
Cellular phone does not operate properly.	1. Check hand set connector connection.	—
	2. Check hand set.	—
No sound is transmitted to the other party by hands free telephone.	1. Check harness for open or short between IVCS unit and microphone.	—
	2. Replace microphone. (IVCS switch assembly)	—



POWER SUPPLY AND GROUND CIRCUIT FOR IVCS UNIT CHECK

NBEL0184S05

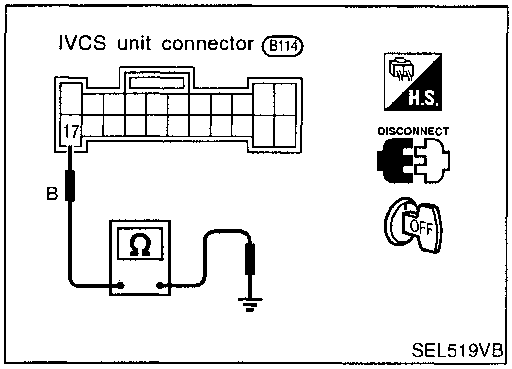
Main Power Supply Circuit Check

NBEL0184S0501

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

If NG, check the following:

- 15A fuse [No. 4, located in fuse and fusible link box]
- 7.5A fuse [No. 11, located in fuse block (J/B)]
- Harness for open or short between fuse and IVCS unit



Ground Circuit Check

NBEL0184S0502

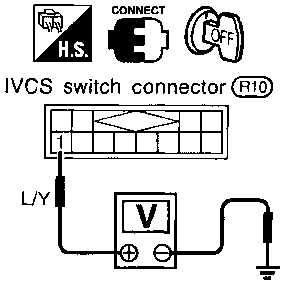
Terminals	Continuity
17 - Ground	Yes

INDICATOR LAMPS CHECK

=NBEL0184S06

1 CHECK POWER SUPPLY FOR INDICATOR LAMPS

Check voltage between IVCS switch terminal 1 and ground.



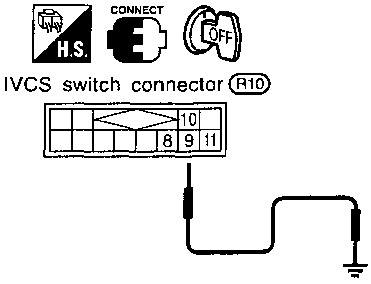
SEL102W

Does battery voltage exist?

Yes	▶	GO TO 2.
No	▶	**Check the following.** • 15A fuse [No. 4, located in fuse block (J/B)] • Harness for open or short between fuse and IVCS switch

2 CHECK INDICATOR LAMPS

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



SEL103W

Indicator	Terminal
REDIAL	8
NO SERVICE	9
MAYDAY	10
INFORMATION	11

MTBL0259

OK or NG

OK	▶	Check harness for open or short between indicators and IVCS unit.
NG	▶	Replace IVCS switch assembly.

IVCS SWITCH CHECK

=NBEL0184S07

1	CHECK IVCS SWITCH INPUT SIGNAL

1. Turn ignition switch "ON".
2. Select "SWITCH MONITOR" in "DATA MONITOR" mode.
3. Check each switch signal.

Condition:

When MAYDAY/INFORMATION switch is pushed:
MAYDAY/INFORMATION ON

When MAYDAY/INFORMATION switch is released:
MAYDAY/INFORMATION OFF

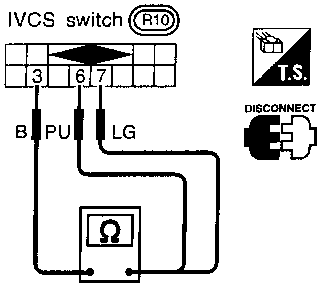
NOTE:
When CONSULT "DATA MONITOR" mode is operating, INFINITI Communicator does not dial to Communicator Response Center when the switches are operated.

OK or NG

OK	▶	IVCS switch is OK.
NG	▶	GO TO 2.

2	CHECK IVCS SWITCH.

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



SEL104W

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

MTBL0260

OK or NG

OK	▶	**Check the following.** • IVCS switch ground circuit • Harness for open or short between IVCS switch and IVCS unit
NG	▶	Replace IVCS switch assembly.

BACK DOOR HANDLE SWITCH CHECK

=NBEL0184S08

1	CHECK BACK DOOR HANDLE SWITCH INPUT SIGNAL

1. Turn ignition switch ON.
2. Select "SWITCH MONITOR" in "DATA MONITOR" mode.
3. Check the switch operation.

Condition:

When back door handle switch is pushed:
LH DR HANDLE ON

When back door handle switch is released:
LH DR HANDLE OFF

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

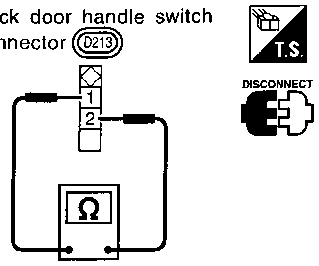
OK or NG

OK	▶	Back door handle switch is OK.
NG	▶	GO TO 2.

2	CHECK BACK DOOR HANDLE SWITCH

1. Disconnect back door handle switch connector.
2. Check continuity between back door handle switch terminals 1 and 2.

Back door handle switch connector D213



SEL105W

Back door handle switch condition	Continuity
Pulled	Yes
Released	No

MTBL0261

OK or NG

OK	▶	**Check the following.** • Back door handle switch ground circuit • Harness for open or short between back door handle switch and IVCS unit
NG	▶	Replace back door handle switch.

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

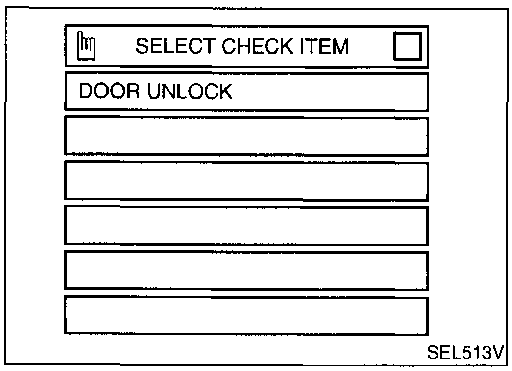
NBEL0184S09

Description

NBEL0184S0901

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

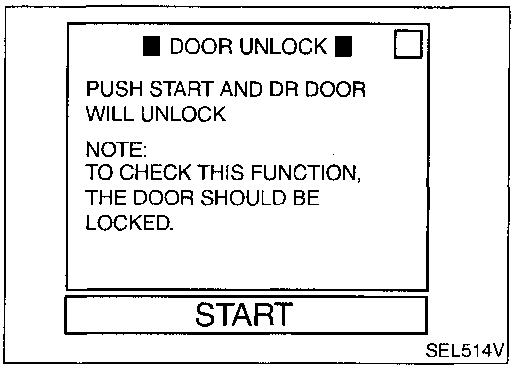
NOTE:
Before performing the function check, confirm that power door lock system operates properly.



SEL513V

How to perform function check.

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



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

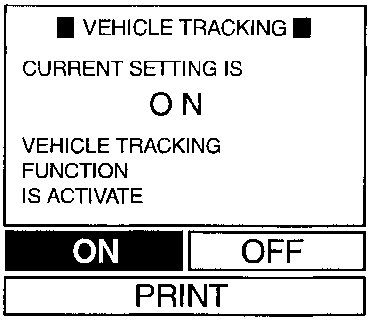
- If the door cannot be unlocked using CONSULT, check harness for open or short between smart entrance control unit terminal 20 and IVCS unit terminal 32.

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

NBEL0184S10

1 CHECK SYSTEM SETTING

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



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

Does the system setting comply with the customer's contract?
NOTE:
Setting of "VEHICLE TRACKING" must be ON at all times.

OK or NG

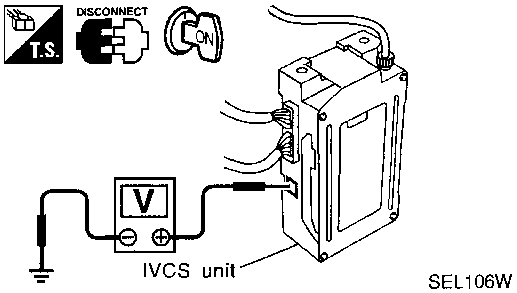
OK ▶	System setting is OK.
NG ▶	If either setting is OFF, contact the Communicator Response Center at 1-888-427-4812 to verify the system setting. **NOTE:** **Whenever dialing the above number, some information about the vehicle will be required by the operator. For details, refer to EL-273.**

GPS ANTENNA CHECK

=NBEL0184S11

1	CHECK VOLTAGE FOR GPS ANTENNA

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



SEL106W

Does approx. 5V exist?

Yes	▶	Replace GPS antenna.
No	▶	Replace IVCS unit.

AIR BAG DIAGNOSES SENSOR UNIT COMMUNICATION CHECK

NBEL0184S12

1	AIR BAG OPERATION CHECK

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

Does air bag warning lamp operate properly?

Yes	▶	Check harness connector connection between air bag diagnosis sensor unit and IVCS unit.
No	▶	Check supplemental restraint system. Refer to RS section in the Service Manual.

SMART ENTRANCE CONTROL UNIT COMMUNICATION CHECK

NBEL0184S13

1	CHECK SMART ENTRANCE CONTROL UNIT OPERATION

Check the system related smart entrance control unit operation. (e.g.: power door lock, power window)

Does the system operate properly?

Yes	▶	Check harness for open or short between smart entrance control unit and IVCS unit.
No	▶	Check smart entrance control unit. Refer to "SMART ENTRANCE CONTROL UNIT" in the Service Manual.

TELEPHONE STEERING SWITCH CHECK

=NBEL0184S14

1	CHECK POWER SUPPLY FOR STEERING SWITCH
Check power supply for steering switch. **Does horn work?**	
Yes ▶	**Check the following.** • 10A fuse (No. 54, located in fuse and fusible link box) • Horn relay • Harness for open or short
No ▶	GO TO 2.

2	CHECK STEERING SWITCH SUB-HARNESS
1. Remove driver's air bag module. For removal procedure, refer to RS section. 2. Check steering switch sub-harness for open or short and ground screw. For details of the harness circuit, refer to "STEERING SWITCH", EL-22. **OK or NG**	
OK ▶	Check harness for open or short between telephone steering switch and IVCS unit. If the circuit is OK, replace telephone steering switch.
NG ▶	Replace or repair the harness.

Trouble Diagnoses for Intermittent Incident

NBEL0185

DESCRIPTION

NBEL0185S01

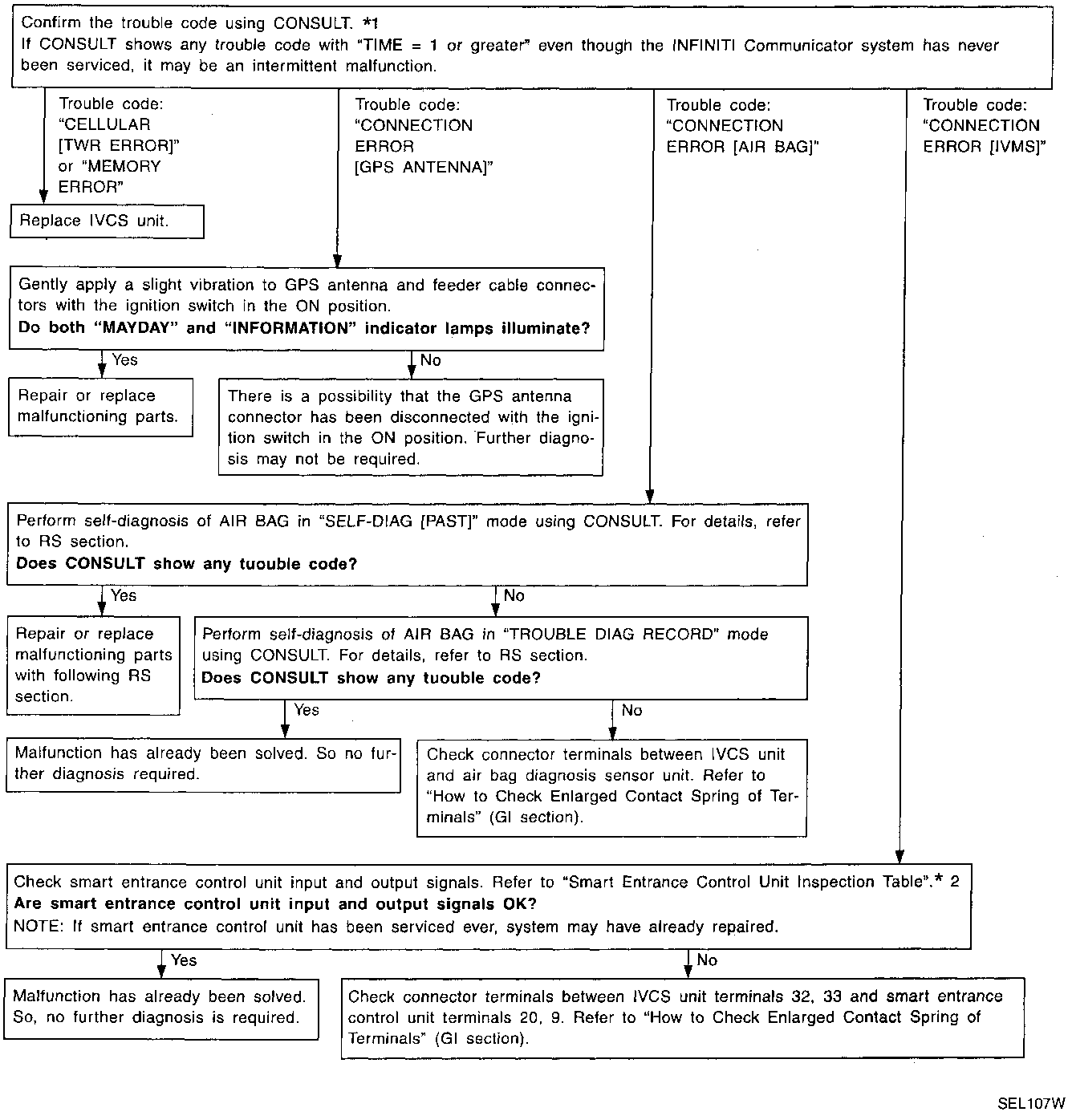
An intermittent incident may be occurring if all of the following conditions exist.

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

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

DIAGNOSTIC PROCEDURE

NBEL0185S02



SEL107W

*1 EL-289 *2 EL-254

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

Demonstration Mode

NBEL0186

DESCRIPTION

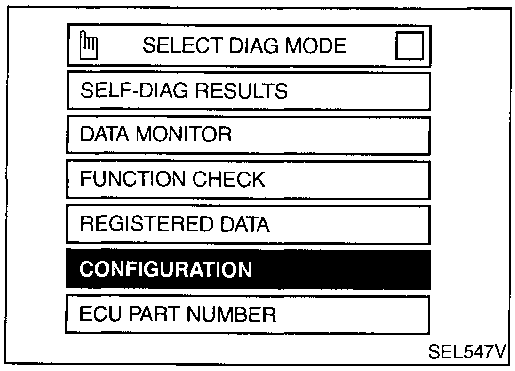
NBEL0186S01

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

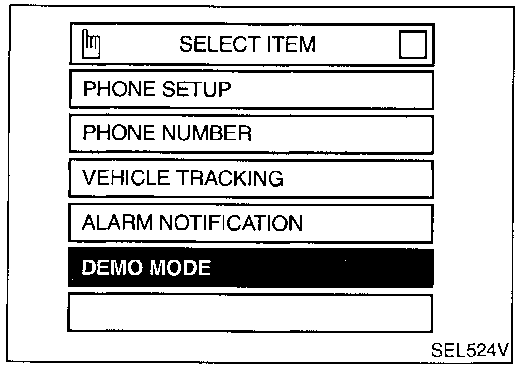
SYSTEM OPERATION CHECK

NBEL0186S02

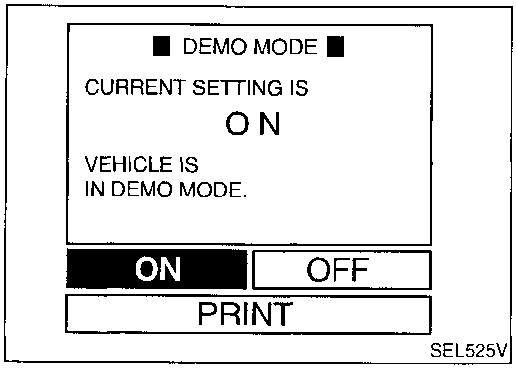
1. Touch "CONFIGURATION".

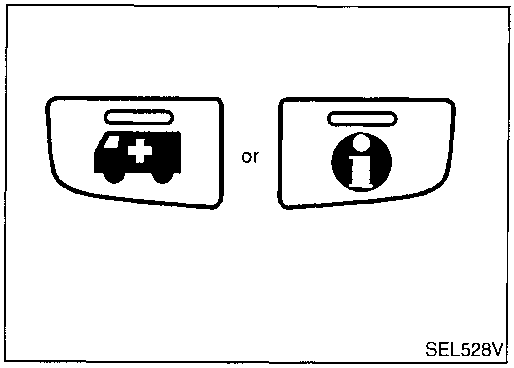


2. Touch "DEMO MODE".



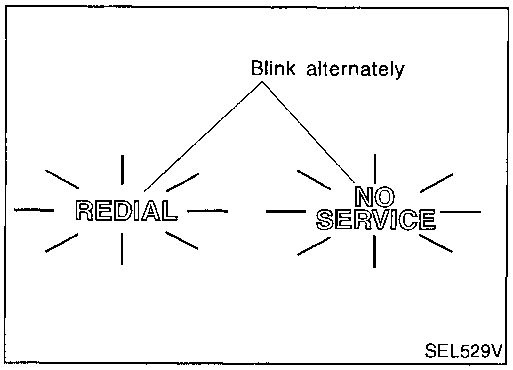
3. Touch "ON". Now, the system is in demonstration mode. (To return to normal mode, touch "OFF".)





SEL528V

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

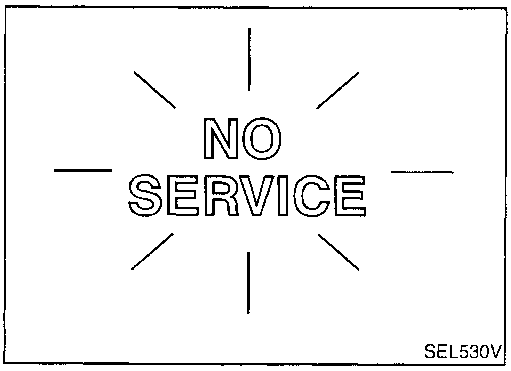


SEL529V

9. Check INFINITI Communicator operation.

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

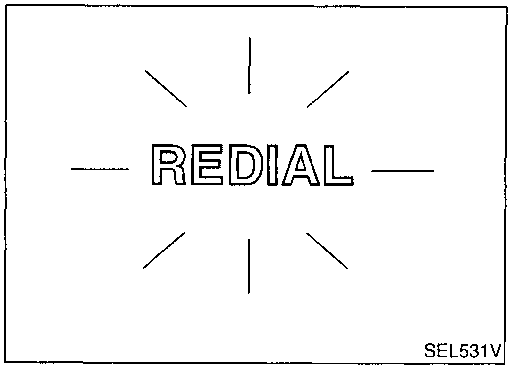
NOTE:
During the system contact to Communicator Response Center in demonstration mode, "REDIAL" and "NO SERVICE" indicators blink alternately.



SEL530V

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

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



SEL531V

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

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

WARNING:

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

System Setting (When IVCS Unit is Replaced)

NBEL0187

DESCRIPTION

NBEL0187S01

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

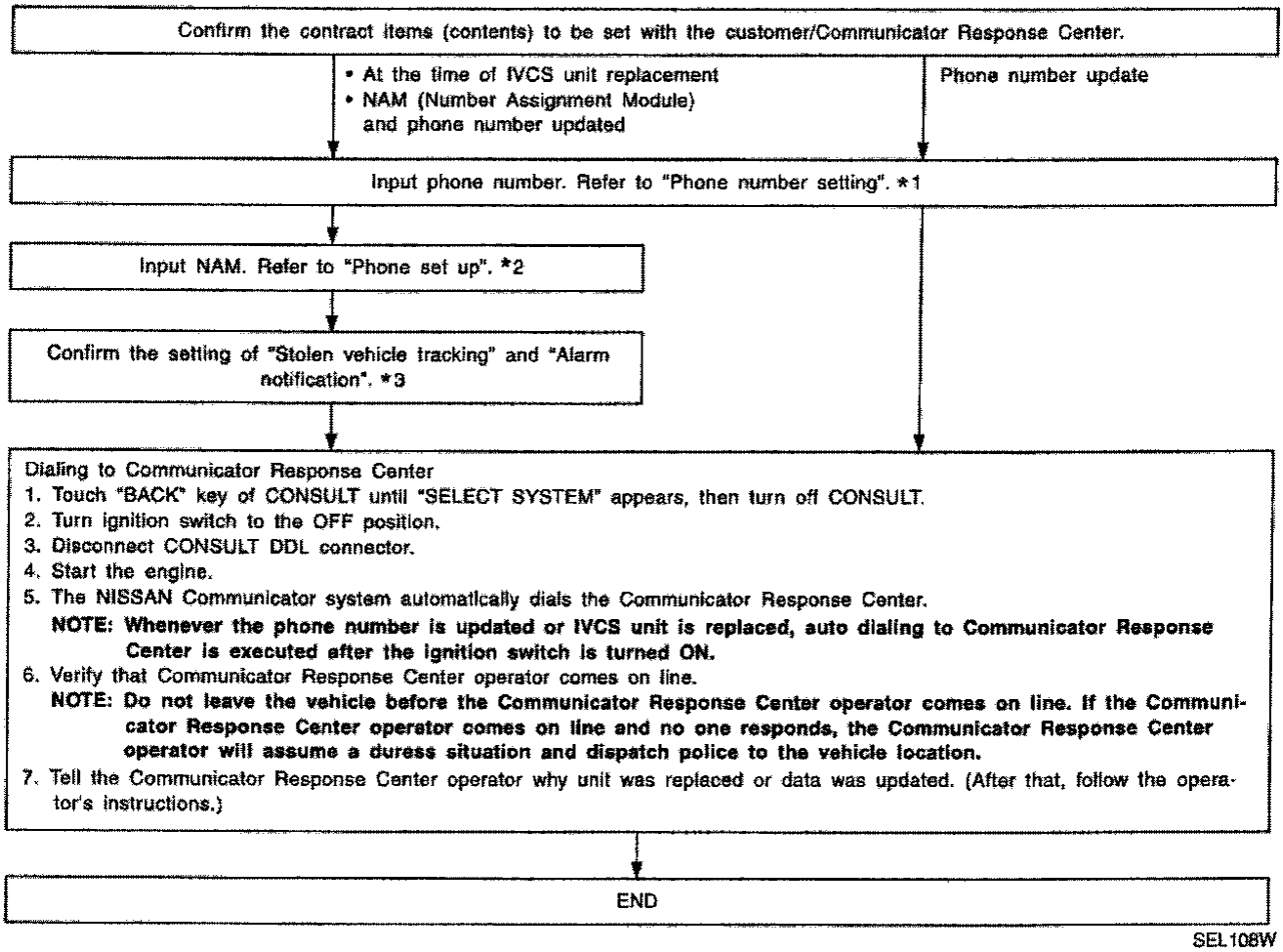
- Phone setup — Data setting regarding NAM (Number Assignment Module)
- Phone number — Phone number setting

NOTE:

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

WORK FLOW

NBEL0187S02



SEL108W

*1 EL-307 *2 EL-308 *3 EL-309

NOTE:

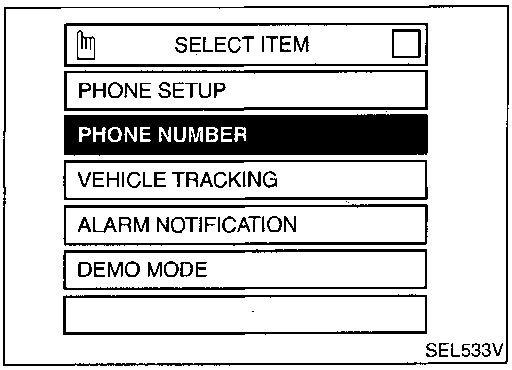
- **If a Communicator Response Center operator does not come on line even though the system activates, the system may not be properly configured. Call the Communicator Response Center at 1-888-427-4812 to verify the configuration information.**

- **Whenever dialing the above number, information about the vehicle is required by the operator. For details, refer to EL-273.**
- **Never release the vehicle to the customer unless INFINITI Communicator system operation is verified by a Communicator Response Center operator coming on line.**

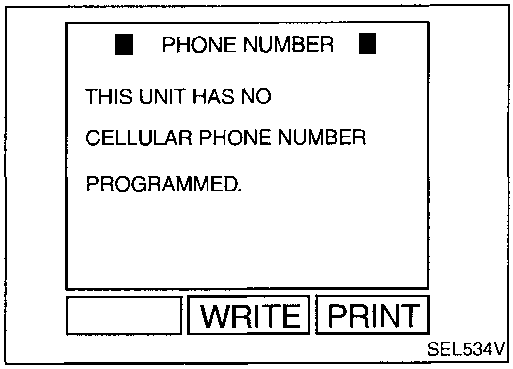
PHONE NUMBER SETTING

NBEL0187S03

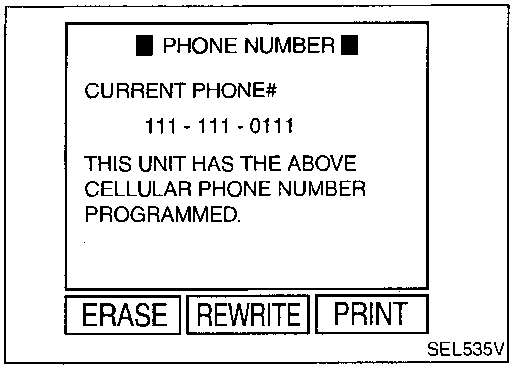
1. Touch "CONFIGURATION".
2. Touch "PHONE NUMBER".



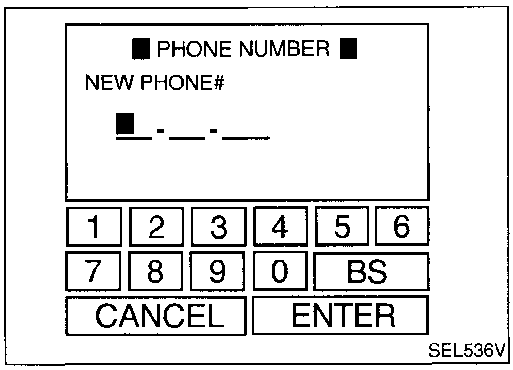
3. Touch "WRITE" or "REWRITE".
- If no phone number is previously memorized, the display shows "This unit has no cellular phone number programmed".

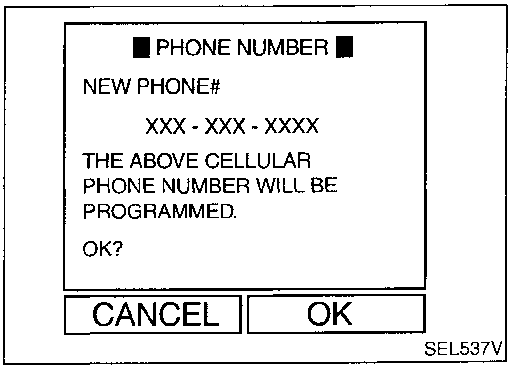


- If the phone number is previously memorized, the display shows the current phone number.
- To erase the phone number, touch "ERASE".



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



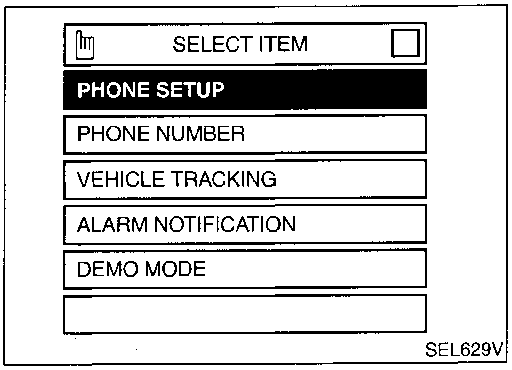


6. Touch "OK".
7. Carry out the next system setting or contact Communicator Response Center and information them that data has been updated or the IVCS unit has been replaced. For details, refer to EL-306.

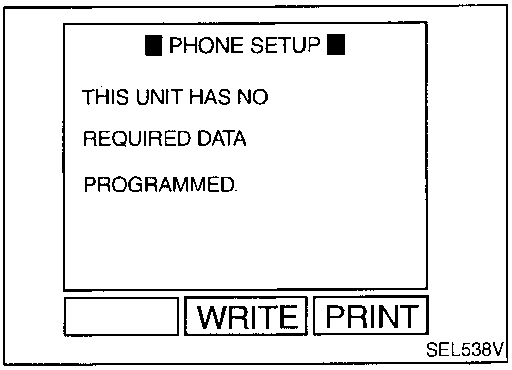
NOTE:
Whenever the phone number is updated or the IVCS unit is replaced, the INFINITI Communicator system automatically contacts the Communicator Response Center the first time the vehicle is started.

PHONE SET UP

NBEL0187S04

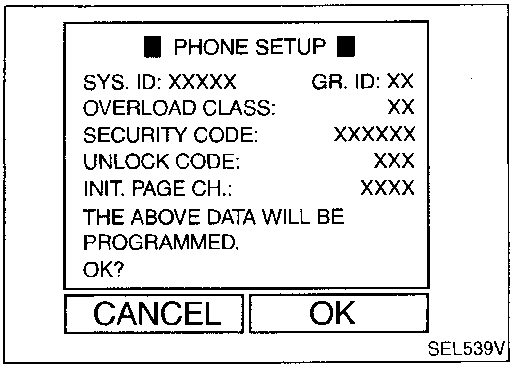


1. Touch "CONFIGURATION".
2. Touch "PHONE SET UP".

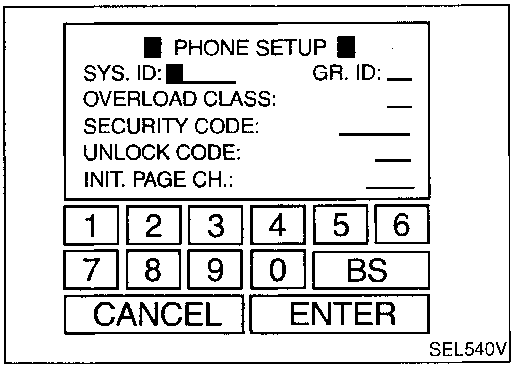


3. Touch "WRITE" or "REWRITE".

- If no data is previously memorized, the display shows "This unit has no required data programmed".



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

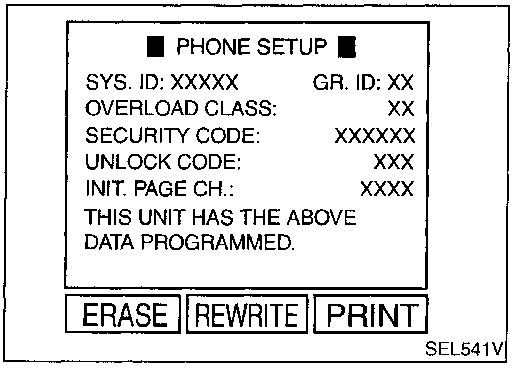


4. Input new NAM data.

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

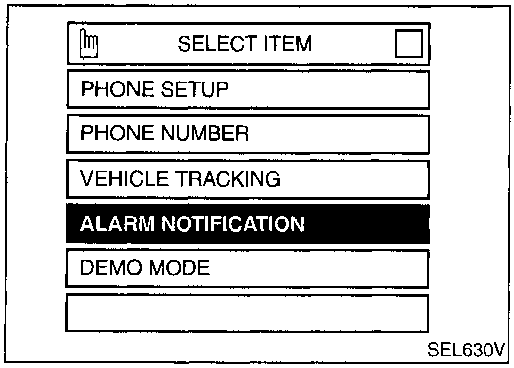
NOTE:
If an unavailable number is input as "SYS ID", "GR ID" or "OVERLOAD CLASS", CONSULT may be locked. In such cases, disconnect the vehicle battery cable once and then setup the system again.

5. Touch "ENTER".



6. Touch "OK".
7. Carry out the next system setting or contact Communicator Response Center and inform them that data has been updated or IVCS unit has been replaced. For details, refer to EL-306.

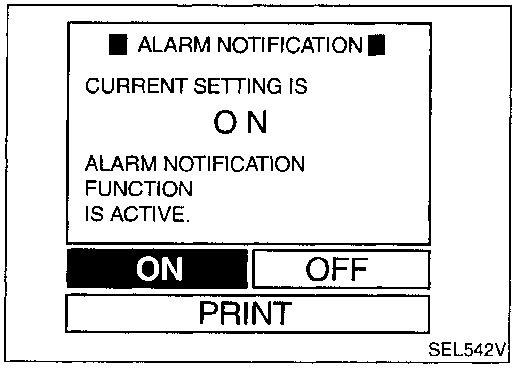
NOTE:
Whenever the phone number is updated or the IVCS unit is replaced, the INFINITI Communicator system automatically contacts the Communicator Response Center the first time the vehicle is stared.



STOLEN VEHICLE TRACKING/ALARM NOTIFICATION SETTING CHECK

NBEL0187S05

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



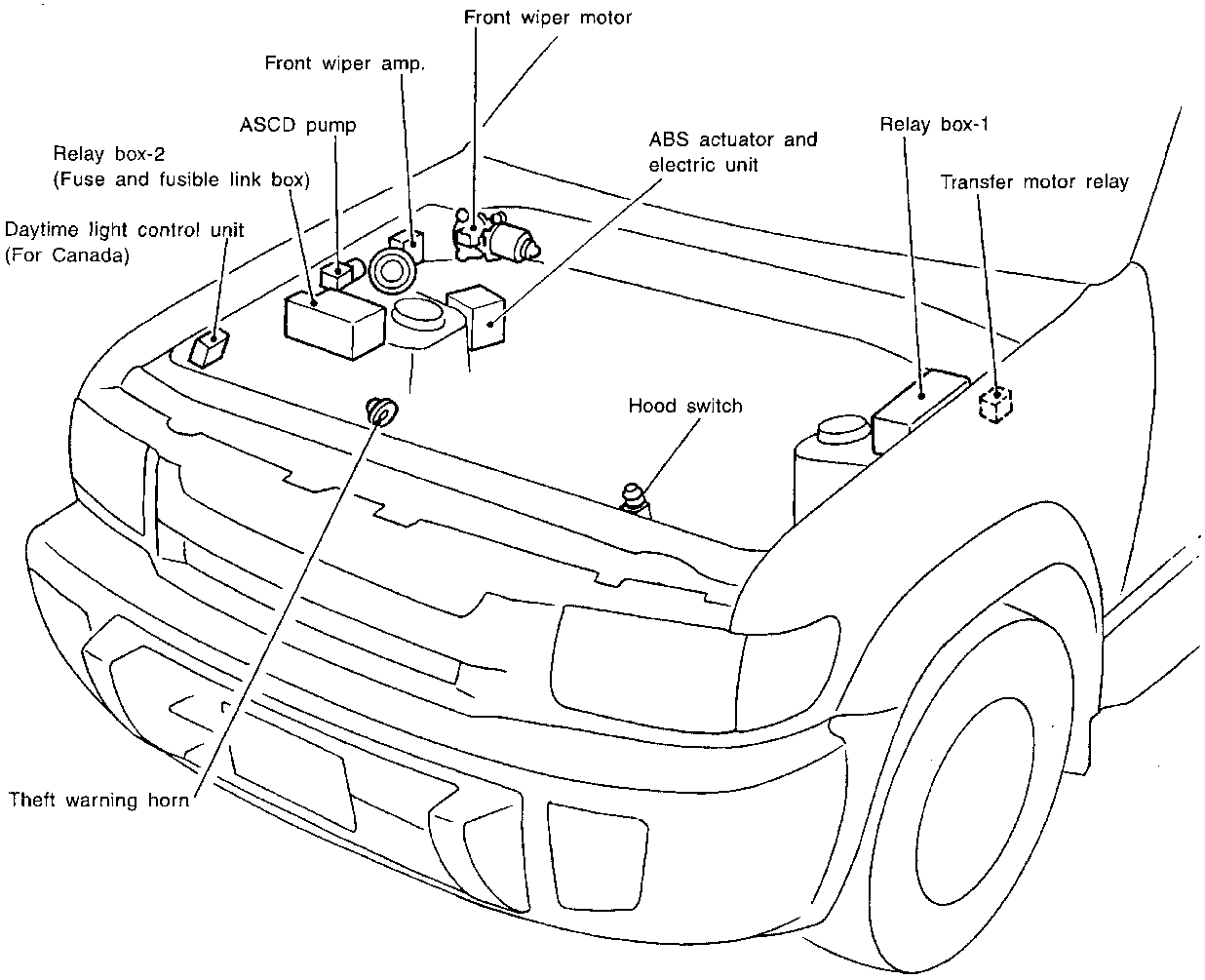
3. This function should always be "ON" (function activate.)

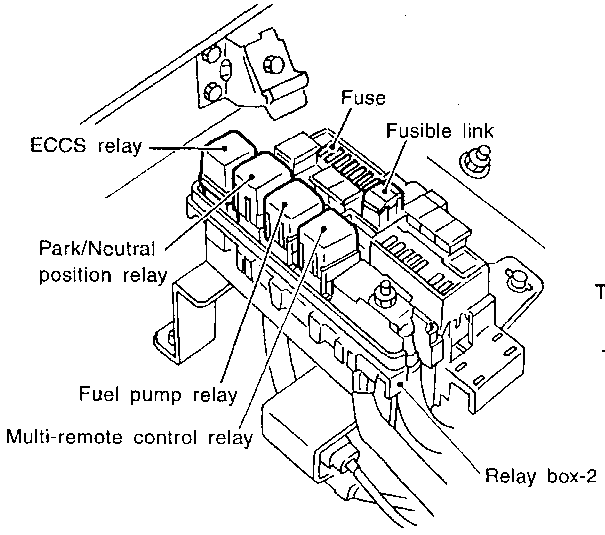
NOTE:

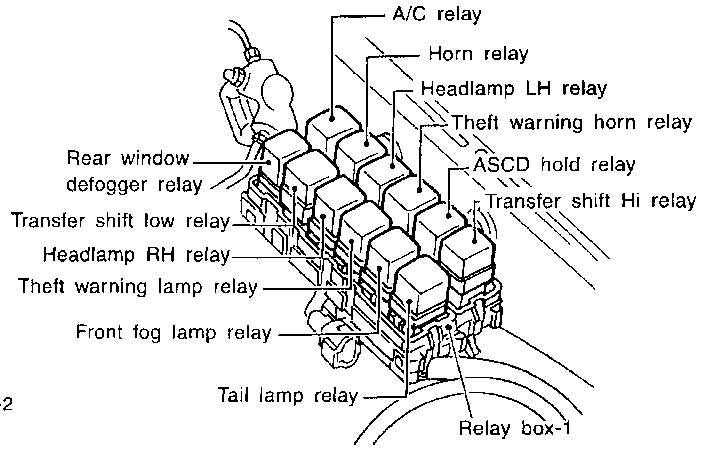
- **If either setting is "OFF", contact the Communicator Response Center at 1-888-427-4812 to verify the system setting.**
- **Whenever dialing the above number, information about the vehicle is required by the operator. For details, refer to EL-273.**

Engine Compartment

NBEL0129



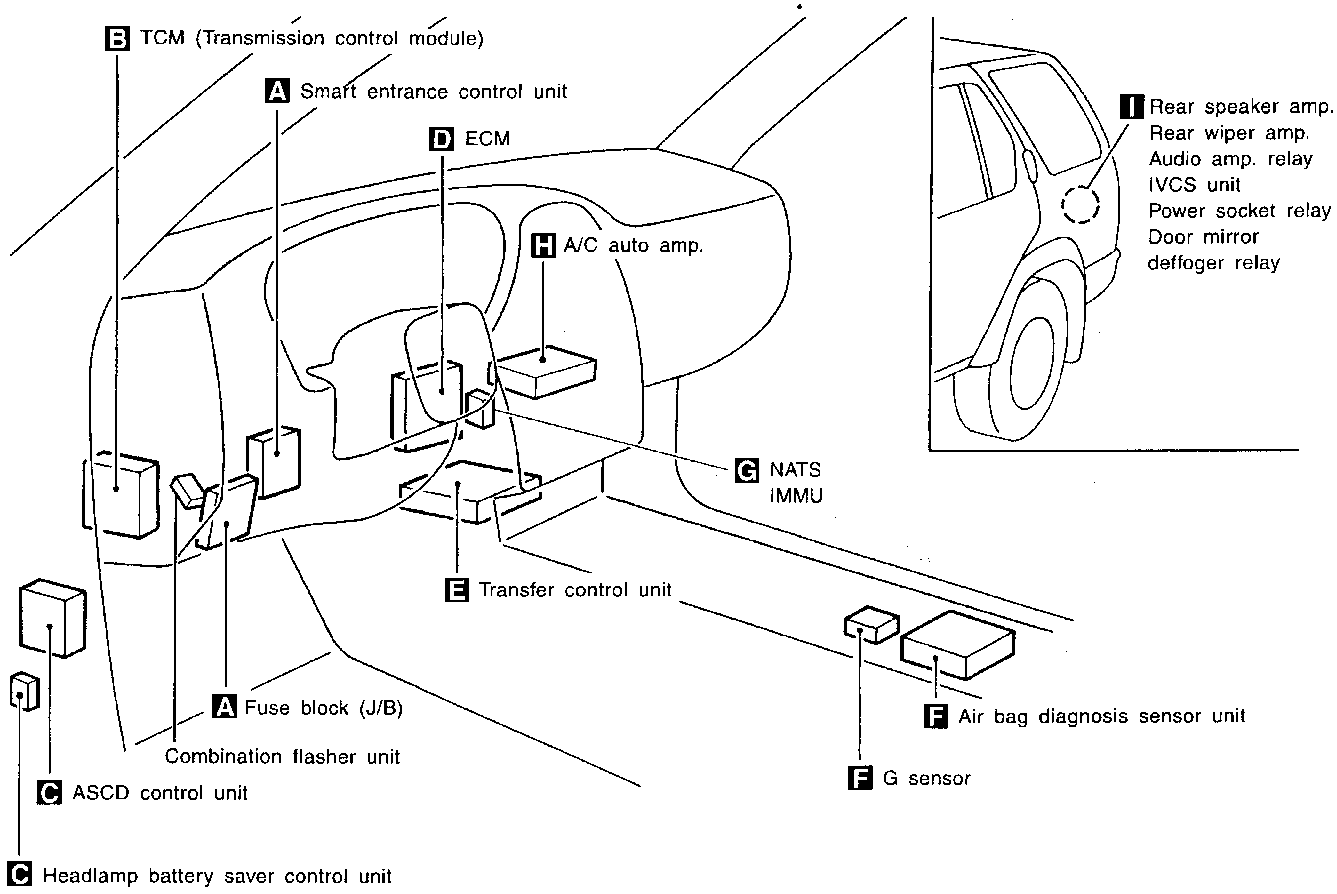


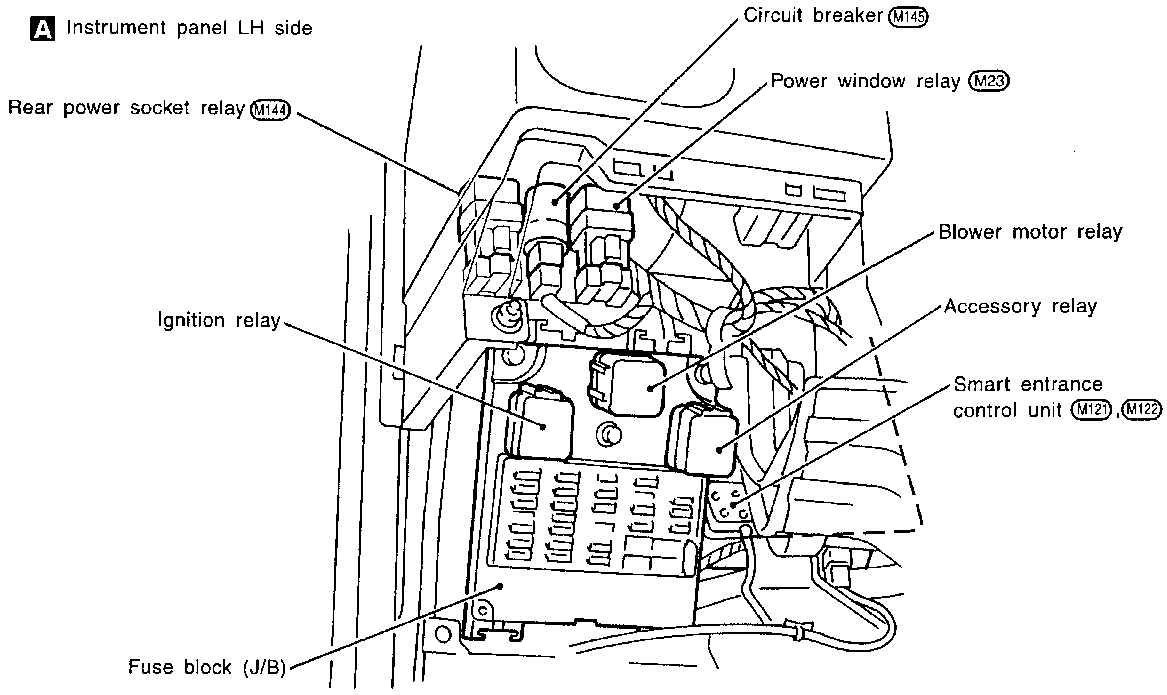


MEL864J

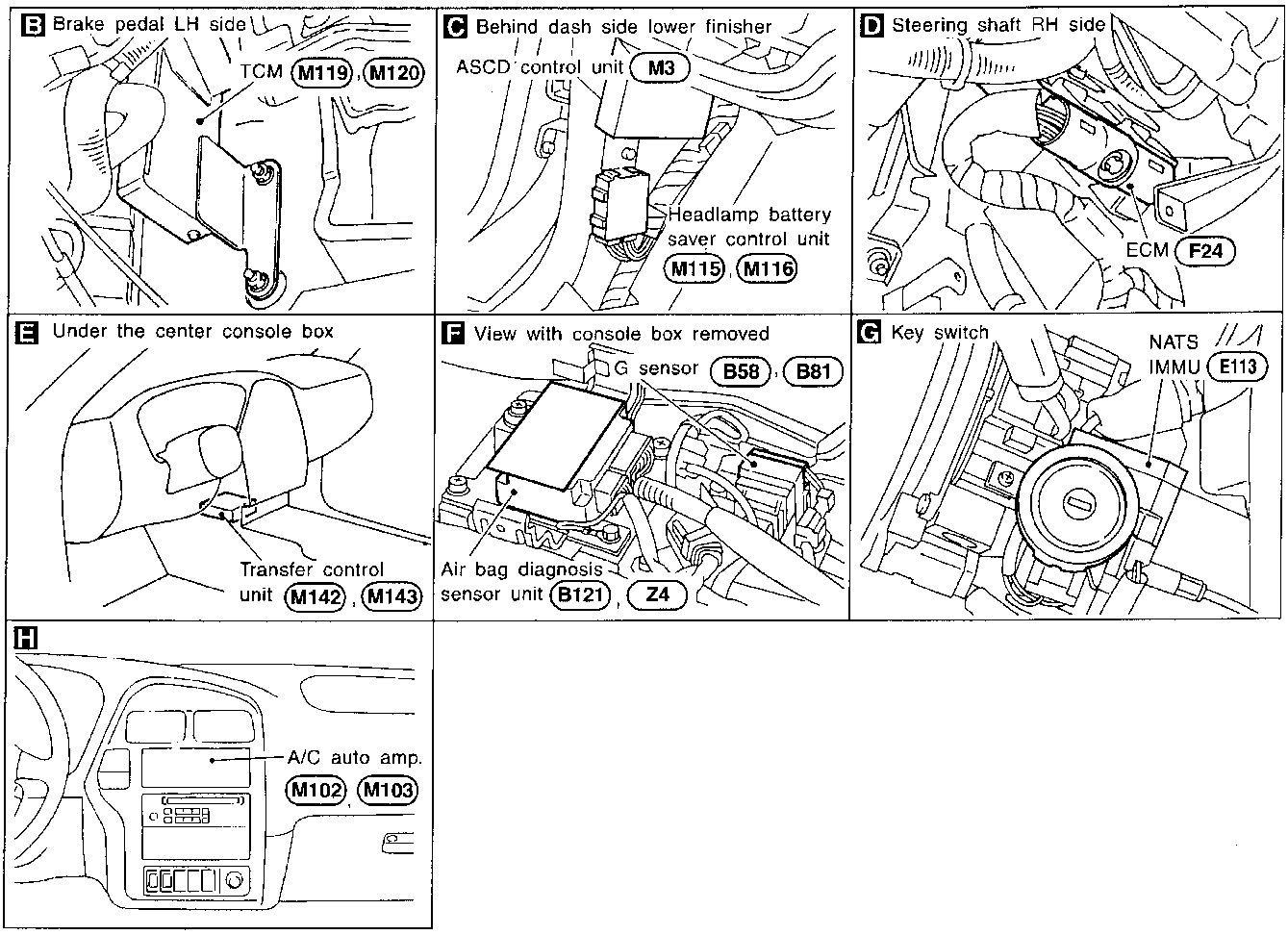
Passenger Compartment

NBEL0130

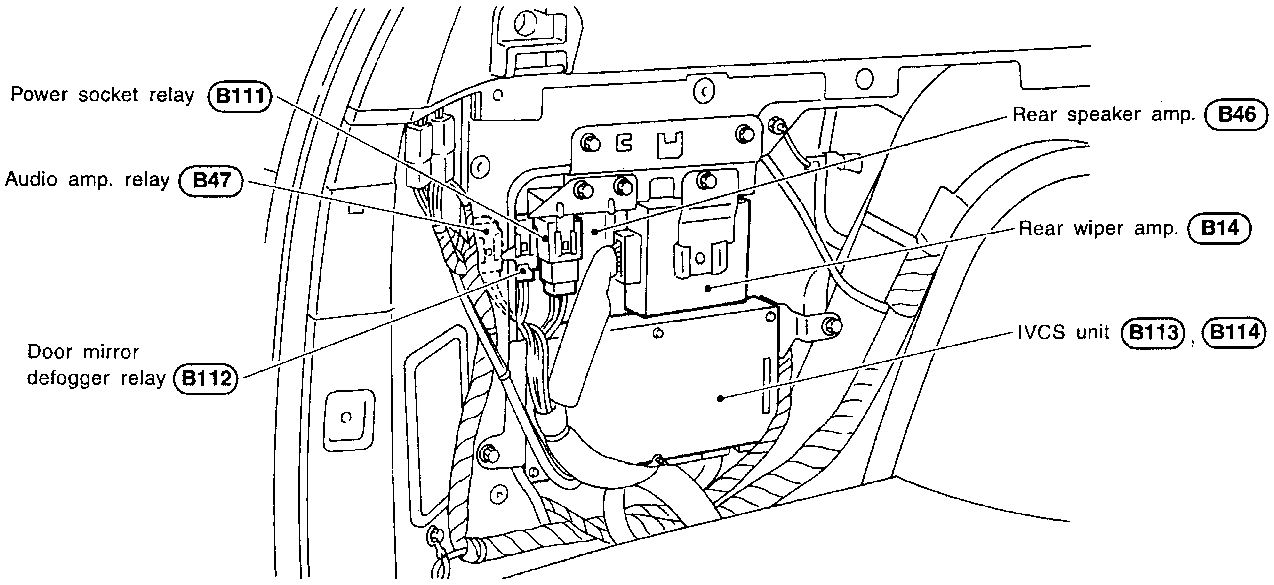




MEL865J



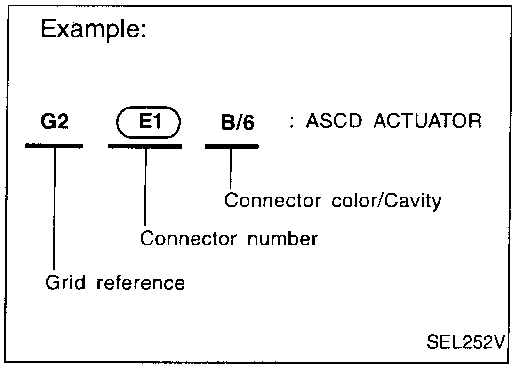
I Behind the luggage room trim LH side



MEL866J

How to Read Harness Layout

NBEL0131



The following Harness Layouts use a map style grid to help locate connectors on the drawings:

- Main Harness
- Engine Room Harness (Engine Compartment)
- Engine Control Harness

TO USE THE GRID REFERENCE

NBEL0131S01

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

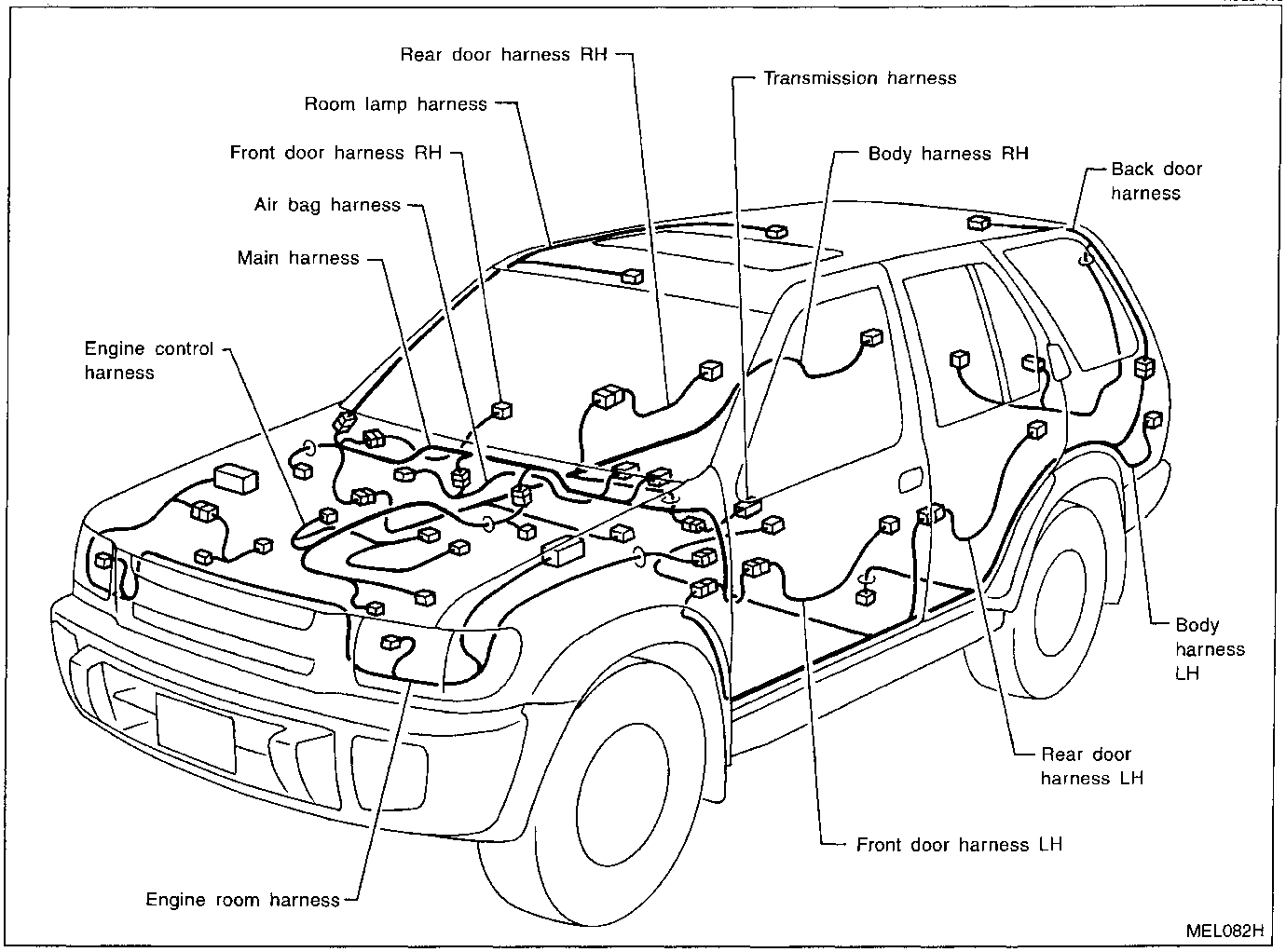
NBEL0131S02

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.	—			

Outline

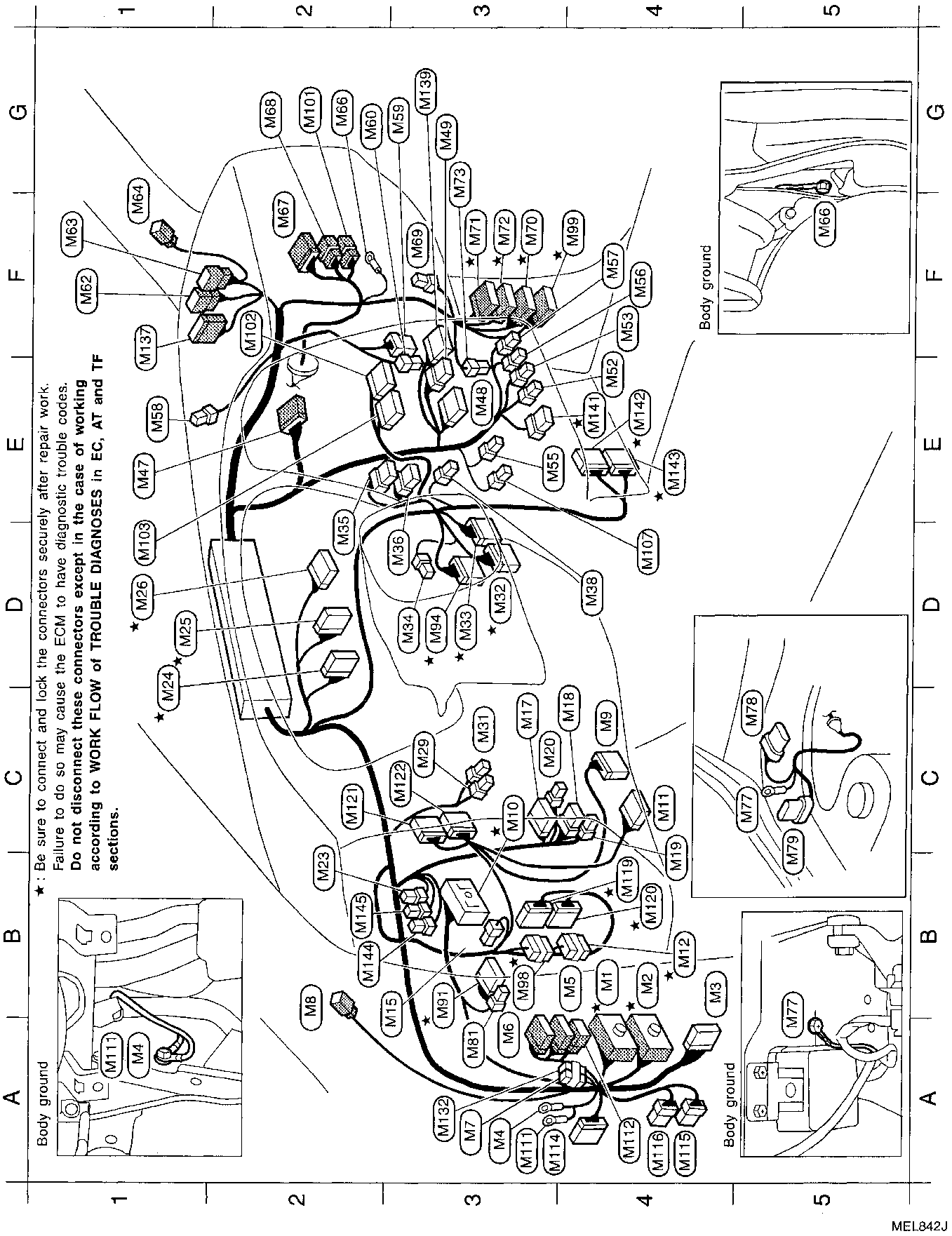
NBEL0132



NOTE:

Main Harness

NBEL0133

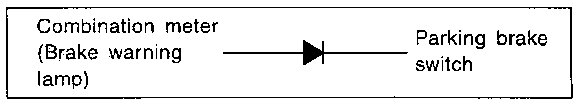


MEL842J

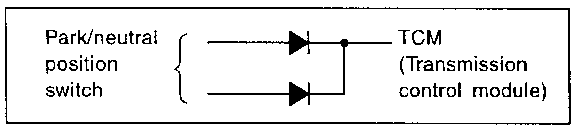
B4★	M1	SMJ	:	To E1
B4★	M2	SMJ	:	To B1
B4	M3	B/20	:	ASCD control unit
A3	M4	—	:	Body ground
B4	M5	W/16	:	To D3
A3	M6	W/10	:	To D4
A3	M7	W/2	:	Diode
B2	M8	BR/2	:	Tweeter LH
C4	M9	W/16	:	Data link connector for GST
C3★	M10	SMJ	:	Fuse block (J/B)
C4	M11	GY/14	:	Data link connector for CONSULT
B4★	M12	SB/6	:	Diode
B3	M15	B/3	:	Combination flasher unit
C3	M17	GY/12	:	Door mirror remote control switch
C4	M18	W/6	:	ASCD main switch
C4	M19	W/3	:	Illumination control switch
C3	M20	W/4	:	Security indicator lamp
B2	M23	L/4	:	Power window relay
D1★	M24	W/16	:	Combination meter
D1★	M25	W/14	:	Combination meter
D1★	M26	BR/16	:	Combination meter
C3	M29	L/2	:	ASCD brake switch
C3	M31	B/2	:	Stop lamp switch
D3★	M32	W/24	:	To F23
D3★	M33	GY/16	:	To F22
D3	M34	W/2	:	In-vehicle sensor
D2	M35	W/8	:	Hazard switch
D3	M36	W/6	:	Rear window defogger switch
D4	M38	W/3	:	Mode door motor
E1	M47	W/20	:	To Z1
E3	M48	W/10	:	Audio unit
G3	M49	W/6	:	Audio unit
E4	M52	L/4	:	Heated seat switch LH
F4	M53	W/4	:	Heated seat switch RH
E3	M55	W/3	:	Air mix door motor
F4	M56	B/2	:	Cigarette lighter socket
F4	M57	W/2	:	Cigarette lighter illumination
E1	M58	B/2	:	Sunload sensor
G3	M59	W/8	:	Intake door motor
G2	M60	W/4	:	Fan control amp.
F1	M62	W/6	:	To R1 (Without IVCS)
F1	M63	W/6	:	To R2
F1	M64	BR/2	:	Tweeter RH
G2	M66	—	:	Body ground
F2	M67	W/12	:	To D33
G2	M68	W/6	:	To D34
F3	M69	W/3	:	Power antenna
F3★	M70	W/20	:	To B50
F3★	M71	W/24	:	To B51
F3★	M72	W/16	:	To B52
G3	M73	W/2	:	Blower motor
C5	M77	—	:	Body ground
C5	M78	GY/6	:	Front wiper motor
C5	M79	B/8	:	Front wiper amp.
A3	M81	B/2	:	Fuse block (J/B)
B3★	M91	W/12	:	Fuse block (J/B)
D3★	M94	W/18	:	To F27
B3★	M98	GY/6	:	Joint connector
F4★	M99	W/12	:	To B77
G2	M101	BR/6	:	To D41
F2	M102	GY/16	:	A/C auto amp.
D1	M103	GY/20	:	A/C auto amp.
D4	M107	W/2	:	Intake sensor
A3	M111	–	:	Body ground
A4	M112	BR/6	:	To D13
A4	M114	W/12	:	To E116
A4	M115	W/6	:	Headlamp battery saver control unit
A4	M116	W/8	:	Headlamp battery saver control unit
B4★	M119	W/24	:	TCM (Transmission control module)
B4★	M120	GY/24	:	TCM (Transmission control module)
C2	M121	W/18	:	Smart entrance control unit
C3	M122	B/24	:	Smart entrance control unit
A3	M132	W/2	:	Diode
F1	M137	W/20	:	To R9 (With IVCS)
G3	M139	W/16	:	Audio unit (With IVCS)
E4★	M141	W/8	:	4WD shift switch
E4★	M142	L/24	:	Transfer control unit
E4★	M143	G/24	:	Transfer control unit
B2	M144	W/4	:	Rear power socket relay
B2	M145	W/2	:	Circuit breaker

★ : 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, AT and TF sections.

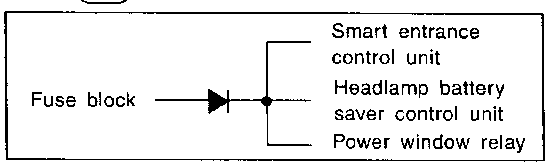
Diode M7



Diode M12



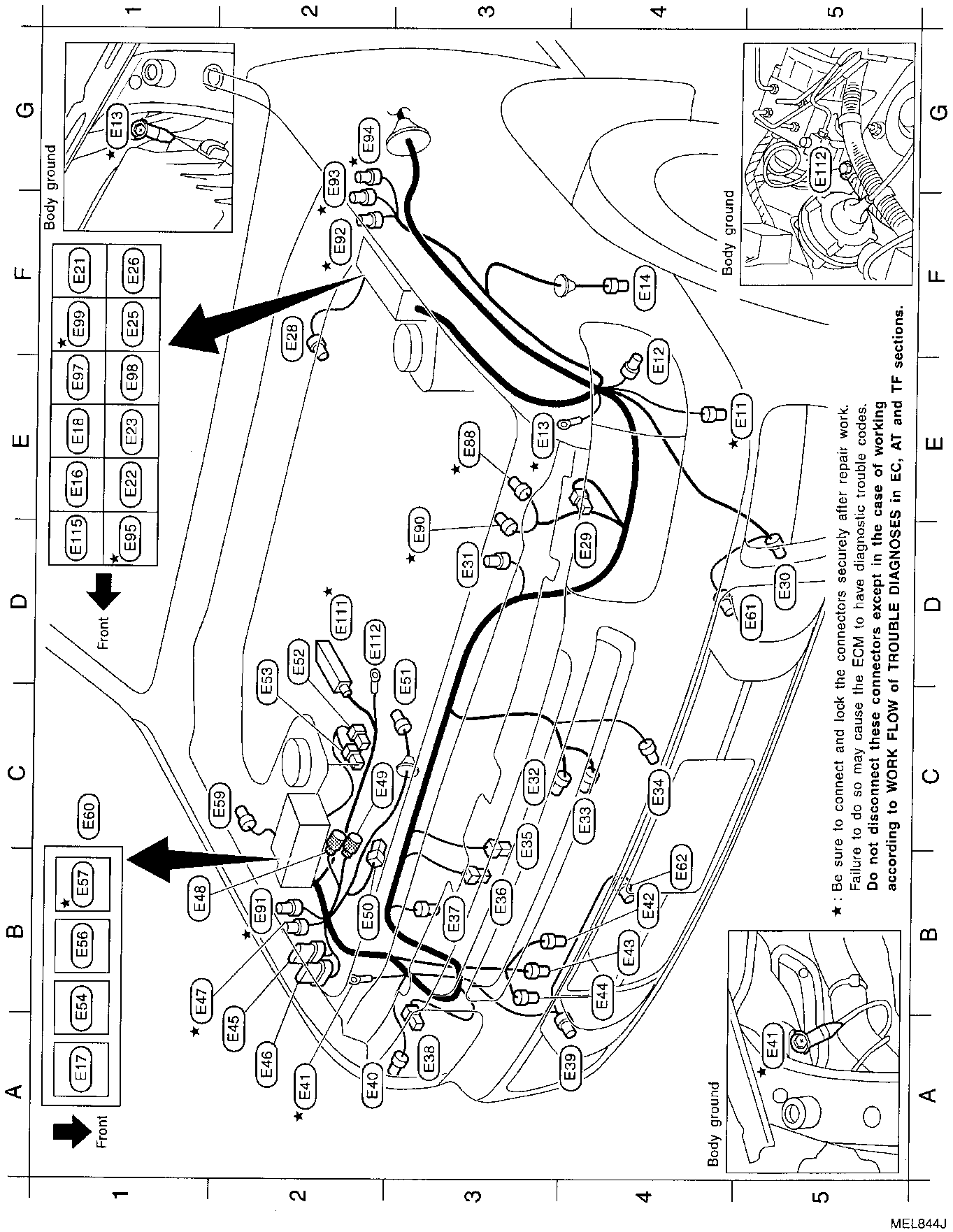
Diode M132



MEL843J

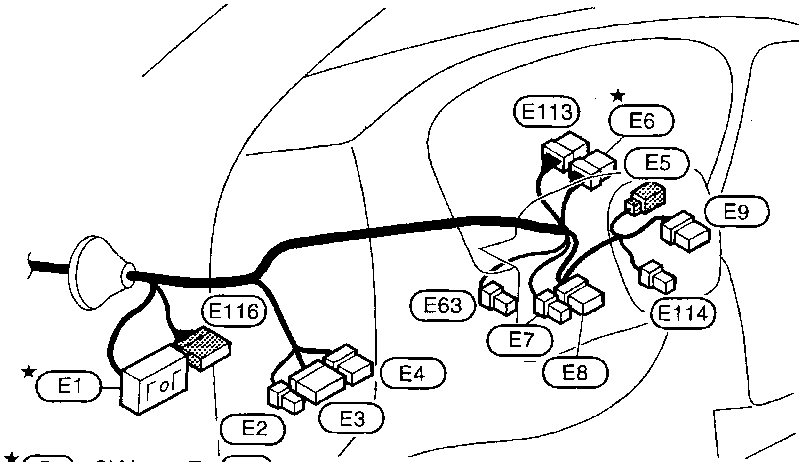
Engine Room Harness

NBEL0134



★: 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, AT and TF sections.**

MEL844J



★: 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, AT and TF sections.**

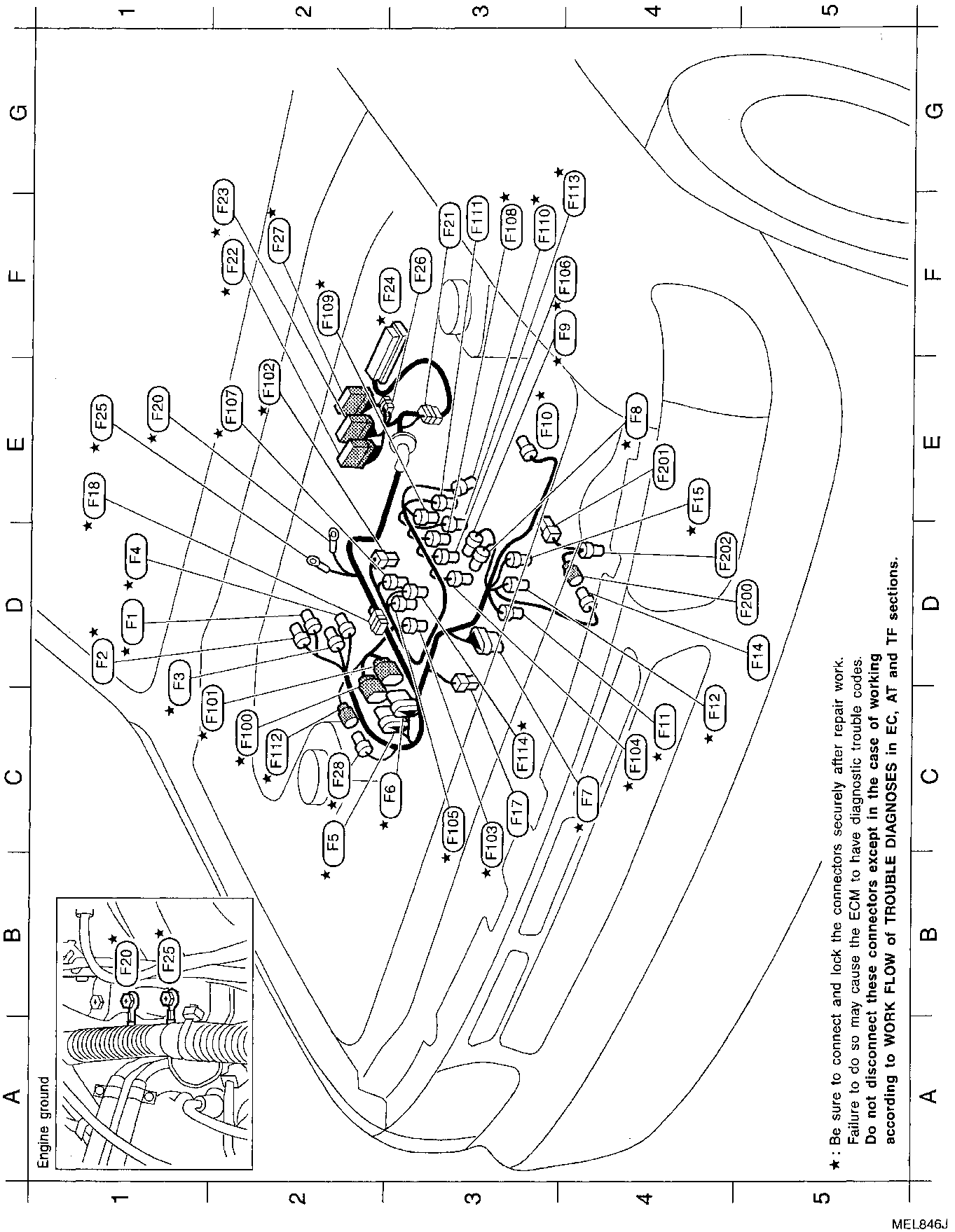
★	E1	SMJ	:	To M1
	E2	B/2	:	Fuse block (J/B)
	E3	W/16	:	Fuse block (J/B)
	E4	W/4	:	Fuse block (J/B)
	E5	BR/2	:	Key switch
★	E6	W/6	:	Ignition switch
	E7	BR/4	:	Combination switch (Lighting switch)
	E8	BR/8	:	Combination switch (Lighting & turn signal switch)
	E9	GY/8	:	Combination switch (Front wiper switch)
E4 ★	E11	GY/2	:	Intake air temperature sensor
E4	E12	GY/2	:	Parking lamp LH
E3 ★	E13	—	:	Body ground
F4	E14	BR/2	:	Front wheel sensor LH
E1	E16	L/4	:	Front fog lamp relay (Relay box-1)
A1	E17	BR/6	:	Multi-remote control relay (Relay box-2)
E1	E18	BR/6	:	Theft warning lamp relay
F1	E21	BR/6	:	Rear window defogger relay
E1	E22	BR/6	:	ASCD hold relay
E1	E23	BR/6	:	Theft warning horn relay
F1	E25	W/3	:	Horn relay
F1	E26	L/4	:	A/C relay
F2	E28	GY/2	:	Brake fluid level switch
D4	E29	B/3	:	Headlamp LH
				} (Relay box-1)
D5	E30	GY/2	:	Front turn signal lamp LH
D3	E31	GY/2	:	Hood switch
C3	E32	B/2	:	Ambient sensor
C4	E33	B/2	:	Ambient air temperature sensor (For thermometer)
C4	E34	GY/2	:	Ambient air temperature switch
C3	E35	B/1	:	Horn (High)
B3	E36	B/1	:	Horn (Low)

B3	E37	B/2	:	Dual-pressure switch
A3	E38	B/3	:	Headlamp RH
A4	E39	GY/2	:	Front turn signal lamp RH
A2	E40	GY/2	:	Parking lamp RH
A2 ★	E41	—	:	Body ground
B4	E42	BR/2	:	Washer level switch
B4	E43	GY/2	:	Rear washer motor
B4	E44	GY/2	:	Front washer motor
A2	E45	GY/8	:	Daytime light control unit
A2	E46	GY/6	:	Daytime light control unit
B1 ★	E47	GY/2	:	A/T dropping resistor
B1	E48	GY/4	:	To E102
C2	E49	GY/1	:	To E104
B2	E50	B/1	:	Theft warning horn
C3	E51	GY/2	:	Front wheel sensor RH
D2	E52	B/1	:	Battery
D2	E53	B/1	:	Battery
B1	E54	L/4	:	Fuel pump relay
B1	E56	GY/6	:	Park/Neutral position relay } (Relay box-2)
B1 ★	E57	BR/6	:	ECCS relay
C2	E59	GY/4	:	ASCD pump
C1	E60	—	:	Fuse and fusible link box
D5	E61	BR/2	:	Front fog lamp LH
B4	E62	BR/2	:	Front fog lamp RH
	E63	W/3	:	Combination switch (Front fog lamp switch)
E3 ★	E88	GY/3	:	Absolute pressure sensor
D3 ★	E90	B/2	:	MAP/BARO switch solenoid valve
B2 ★	E91	GY/2	:	Transfer dropping resistor
F2 ★	E92	W/1	:	Transfer motor relay
G2 ★	E93	W/1	:	Transfer motor relay
G2 ★	E94	G/2	:	Transfer motor relay
D1 ★	E95	B/5	:	Transfer shift Hi relay
E1	E97	L/4	:	Headlamp RH relay
E1	E98	L/4	:	Headlamp LH relay } (Relay box-1)
F1 ★	E99	B/5	:	Transfer shift low relay
D2 ★	E111	SMJ	:	ABS actuator and electric unit
D2	E112	–	:	Body ground
	E113	W/8	:	NATS IMMU
	E114	W/4	:	Combination switch (Rear wiper switch)
D1	E115	L/4	:	Tail lamp relay (Relay box-1)
	E116	W/12	:	To M114

MEL845J

Engine Control Harness

NBEL0135

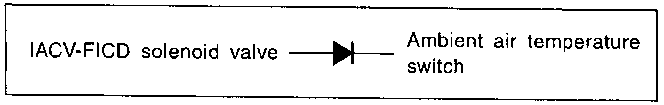


MEL846J

D1★ F1 GY/4 : Rear heated oxygen sensor RH
D1★ F2 GY/3 : Front heated oxygen sensor RH
D1★ F3 GY/4 : Rear heated oxygen sensor LH
D1★ F4 GY/3 : Front heated oxygen sensor LH
C2★ F5 GY/8 : To F100
C3★ F6 B/8 : To F101
C4★ F7 GY/6 : Distributor
E4★ F8 BR/3 : Throttle position sensor
F4★ F9 GY/3 : Throttle position switch
E3★ F10 BR/4 : Mass air flow sensor
C4★ F11 GY/2 : Distributor
C4★ F12 GY/2 : EGR temperature sensor
D5 F14 GY/2 : To F200
E4★ F15 G/2 : EGRC-solenoid valve
C3 F17 B/1 : Thermal transmitter
E1★ F18 GY/2 : Resistor
E1★ F20 — : Engine ground
F3 F21 L/12 : Joint connector
F2★ F22 GY/16 : To M33
F2★ F23 W/24 : To M32
F2★ F24 SMJ : ECM
E1★ F25 — : Engine ground
F3 F26 W/2 : Diode
F2★ F27 W/18 : To M94
C2★ F28 B/4 : To F112
C2★ F100 GY/8 : To F5
C2★ F101 B/8 : To F6

E2★ F102 B/2 : Knock sensor
C3★ F103 B/2 : Injector No. 1
C4★ F104 B/2 : Injector No. 2
C3★ F105 B/2 : Injector No. 3
F4★ F106 B/2 : Injector No. 4
E2★ F107 B/2 : Injector No. 5
F3★ F108 B/2 : Injector No. 6
F2★ F109 BR/2 : IACV-AAC valve
F3★ F110 GY/2 : Crankshaft position sensor (OBD)
F3 F111 GY/2 : IACV-FICD solenoid valve
C2★ F112 B/4 : To F28
F4★ F113 L/2 : EVAP canister purge volume control solenoid valve
C3★ F114 GY/2 : Engine coolant temperature sensor
D5 F200 GY/2 : To F14
E4 F201 B/1 : Oil pressure switch
D4 F202 B/1 : Compressor (Air conditioner)

Diode F26

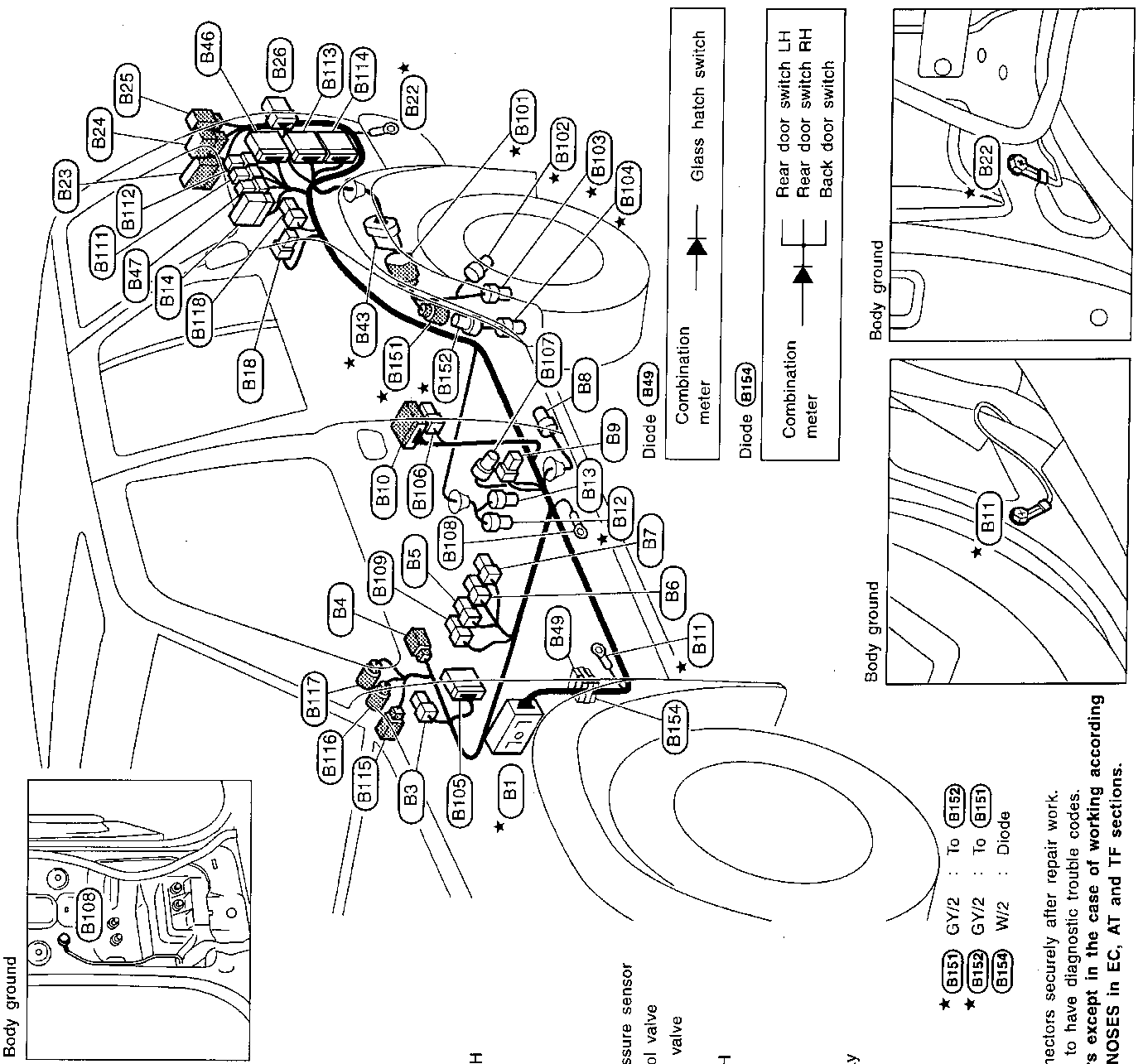


★: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes. **Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC, AT and TF sections.**

MEL847J

Body Harness LH

NBEL0136



★ B1	SMJ	: To M2	
B3	B/1	: Parking brake switch	
B4	W/2	: Power socket	
B5	W/3	: Heated seat LH	
B6	W/3	: Seat belt buckle switch	
B7	W/2	: Power seat LH	
B8	BR/2	: Rear wheel sensor LH	
B9	B/3	: Front door switch LH	
B10	W/10	: To D50	
★ B11	—	: Body ground	
★ B12	GY/4	: Fuel tank gauge unit	
B13	GY/2	: Fuel pump	
B14	W/18	: Rear wiper amp.	
B18	BR/1	: Rear door switch LH	
★ B22	—	: Body ground	
B23	W/12	: To D100	
B24	W/6	: To D101	
B25	W/4	: To D102	
B26	W/6	: Rear combination lamp LH	
★ B43	GY/8	: To B101	
B46	W/26	: Rear speaker amp.	
B47	W/4	: Audio amp. relay	
B49	W/2	: Diode	
★ B101	GY/8	: To B43	
★ B102	GY/3	: EVAP control system pressure sensor	
★ B103	B/2	: EVAP canister vent control valve	
★ B104	G/2	: Vacuum cut valve bypass valve	
B105	W/12	: Handset (With IVCS)	
B106	W/4	: Seat belt pre-tensioner LH	
B107	GY/2	: Satellite sensor LH	
B108	—	: Body ground	
B109	Y/2	: Side air bag module LH	
B111	W/4	: Power socket relay	
B112	W/4	: Door mirror defogger relay	
B113	W/16	: IVCS unit } (With IVCS)	
B114	W/22	: IVCS unit }	
B115	W/2	: To B125	
B116	GY/4	: To B124	
B117	W/2	: To B123	
B118	W/4	: Fuel lid opener actuator	
★ B151	GY/2	: To B152	
★ B152	GY/2	: To B151	
B154	W/2	: Diode	

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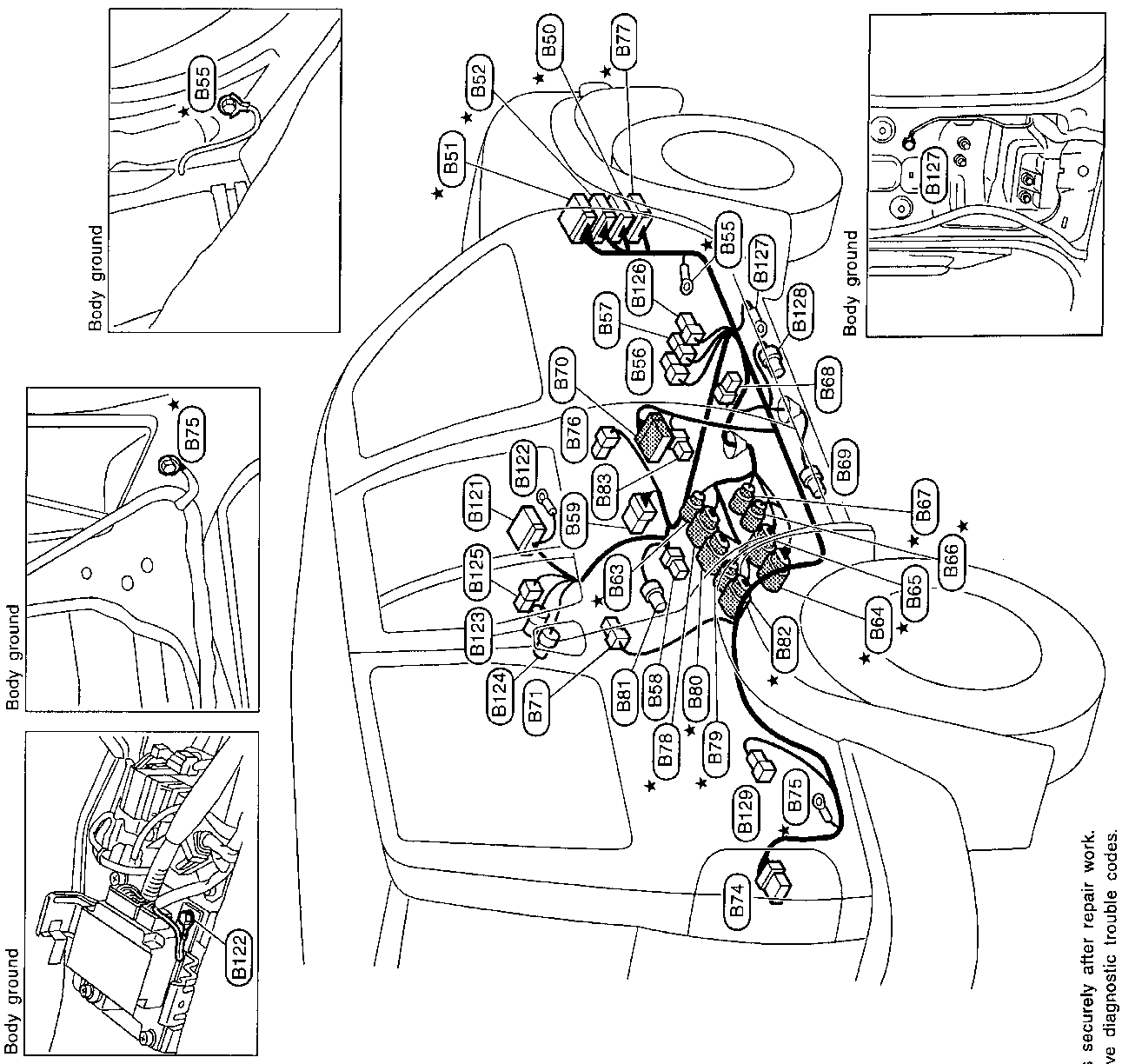
Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC, AT and TF sections.

MEL848J

Body Harness RH

NBEL0137



★★★★	B50	W/20	To M70
★★★★	B51	W/24	To M71
★★★★	B52	W/16	To M72
★★	B55	—	Body ground
	B56	W/3	Heated seat RH
	B57	W/2	Power seat RH
	B58	GY/2	G sensor
	B59	W/6	A/T device
★★	B63	GY/2	Vehicle speed sensor
★★★★	B64	BR/8	Terminal cord assembly
★★★★	B65	GY/8	Park/neutral position switch
★★★★	B66	GY/2	Park/neutral position switch
★★	B67	GY/3	Rear revolution sensor (A/T)
	B68	BR/1	Front door switch RH
	B69	GY/2	Rear wheel sensor RH
	B70	W/10	To D70
	B71	BR/1	Rear door switch RH
	B74	W/6	Rear combination lamp RH
★	B75	—	Body ground
	B76	W/3	Ashtray illumination
★★	B77	W/12	To M99
★★★★	B78	GY/8	To B206
★★★★	B79	B/4	To B208
★★★★	B80	B/8	To B207
	B81	GY/2	G sensor
★	B82	GY/6	To B251
	B83	W/4	Seat belt pre-tensioner RH
	B121	Y/10	Air bag diagnosis sensor unit
	B122	—	Body ground
	B123	W/2	To B117
	B124	GY/4	To B116
	B125	W/2	To B115
	B126	Y/2	Side air bag module RH
	B127	—	Body ground
	B128	GY/2	Satellite sensor RH
	B129	B/Z	Rear power socket

★: Be sure to connect and lock the connectors securely after repair work.
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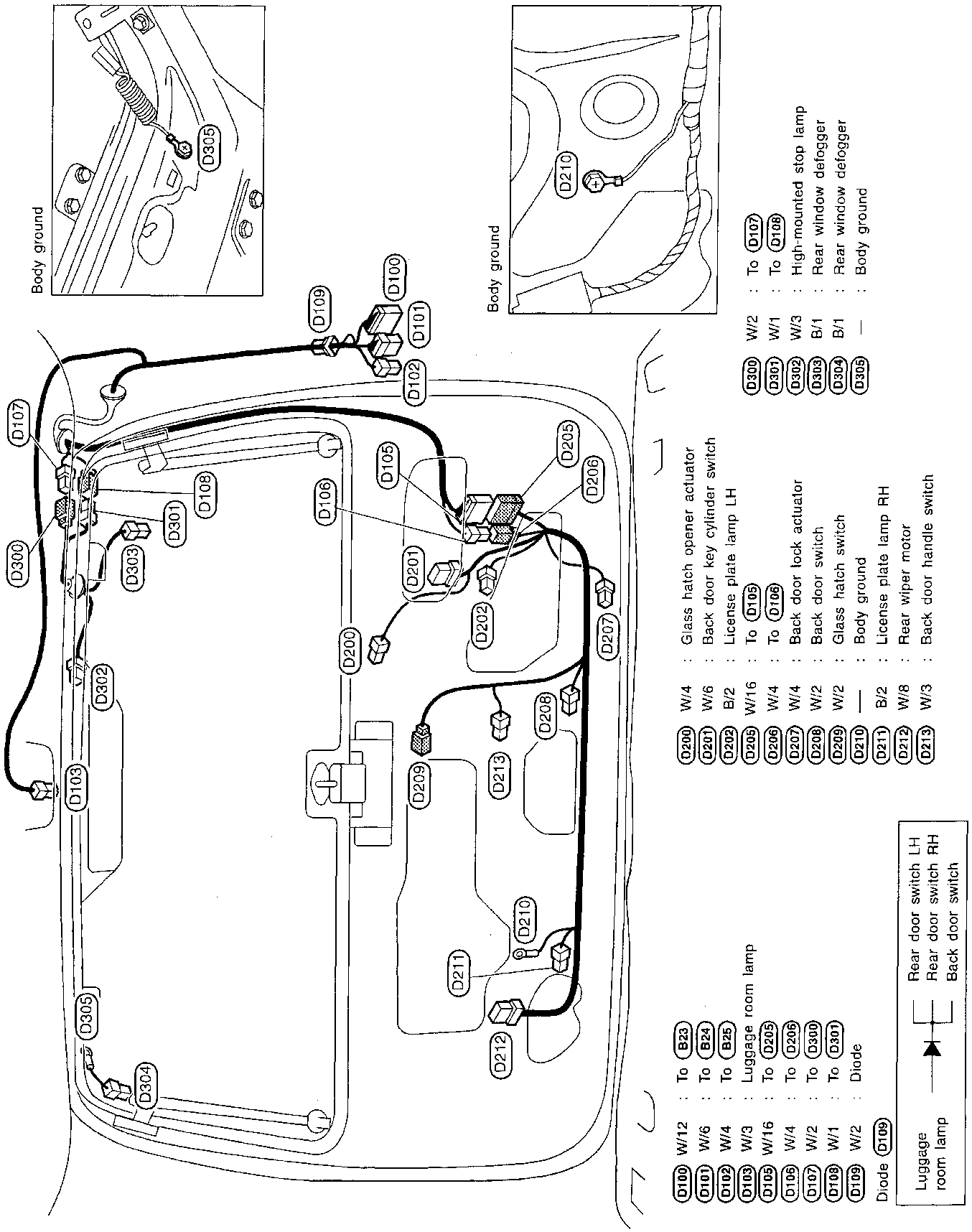
MEL849J

Back Door Harness

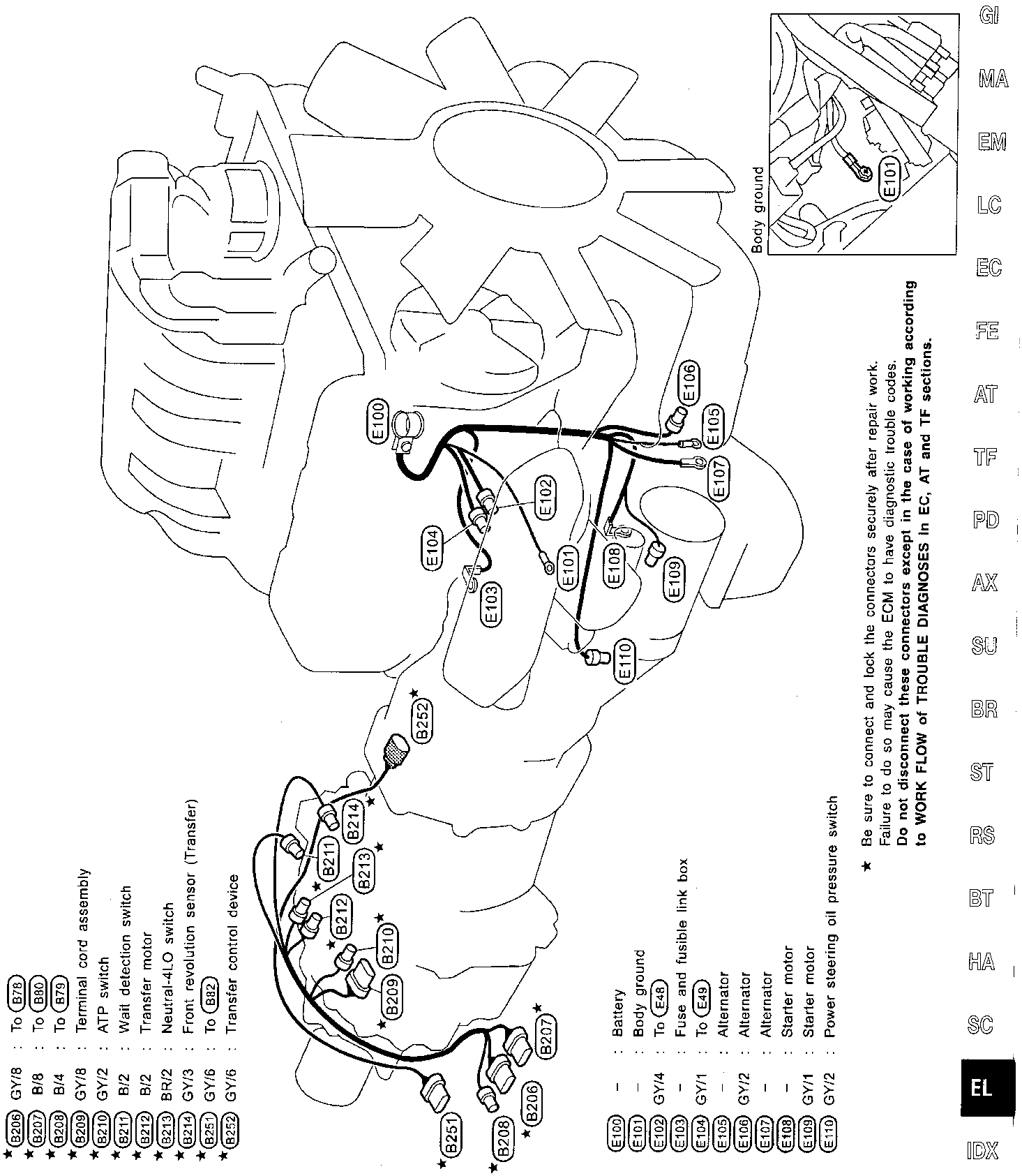
NBEL0138



MEL850J

Engine and Transmission Harness

NBEL0139



★ B206 GY/8 : To B78
★ B207 B/8 : To B80
★ B208 B/4 : To B79
★ B209 GY/8 : Terminal cord assembly
★ B210 GY/2 : ATP switch
★ B211 B/2 : Wait detection switch
★ B212 B/2 : Transfer motor
★ B213 BR/2 : Neutral-4LO switch
★ B214 GY/3 : Front revolution sensor (Transfer)
★ B251 GY/6 : To B82
★ B252 GY/6 : Transfer control device

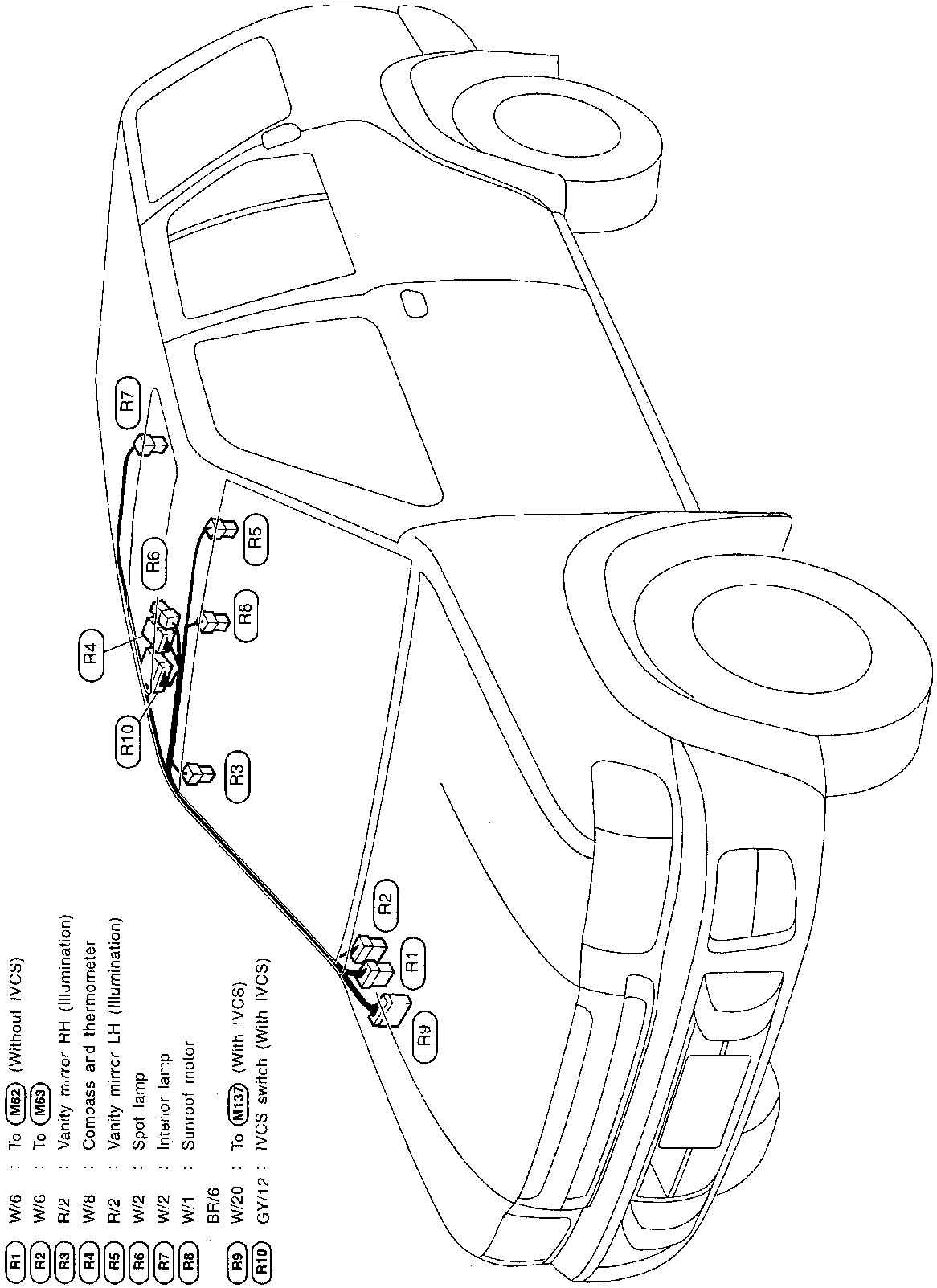
E100 – : Battery
E101 – : Body ground
E102 GY/4 : To E48
E103 – : Fuse and fusible link box
E104 GY/1 : To E49
E105 – : Alternator
E106 GY/2 : Alternator
E107 – : Alternator
E108 – : Starter motor
E109 GY/1 : Starter motor
E110 GY/2 : Power steering oil pressure switch

★ Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC, AT and TF sections.

MEL851J

Room Lamp

NBEL0140

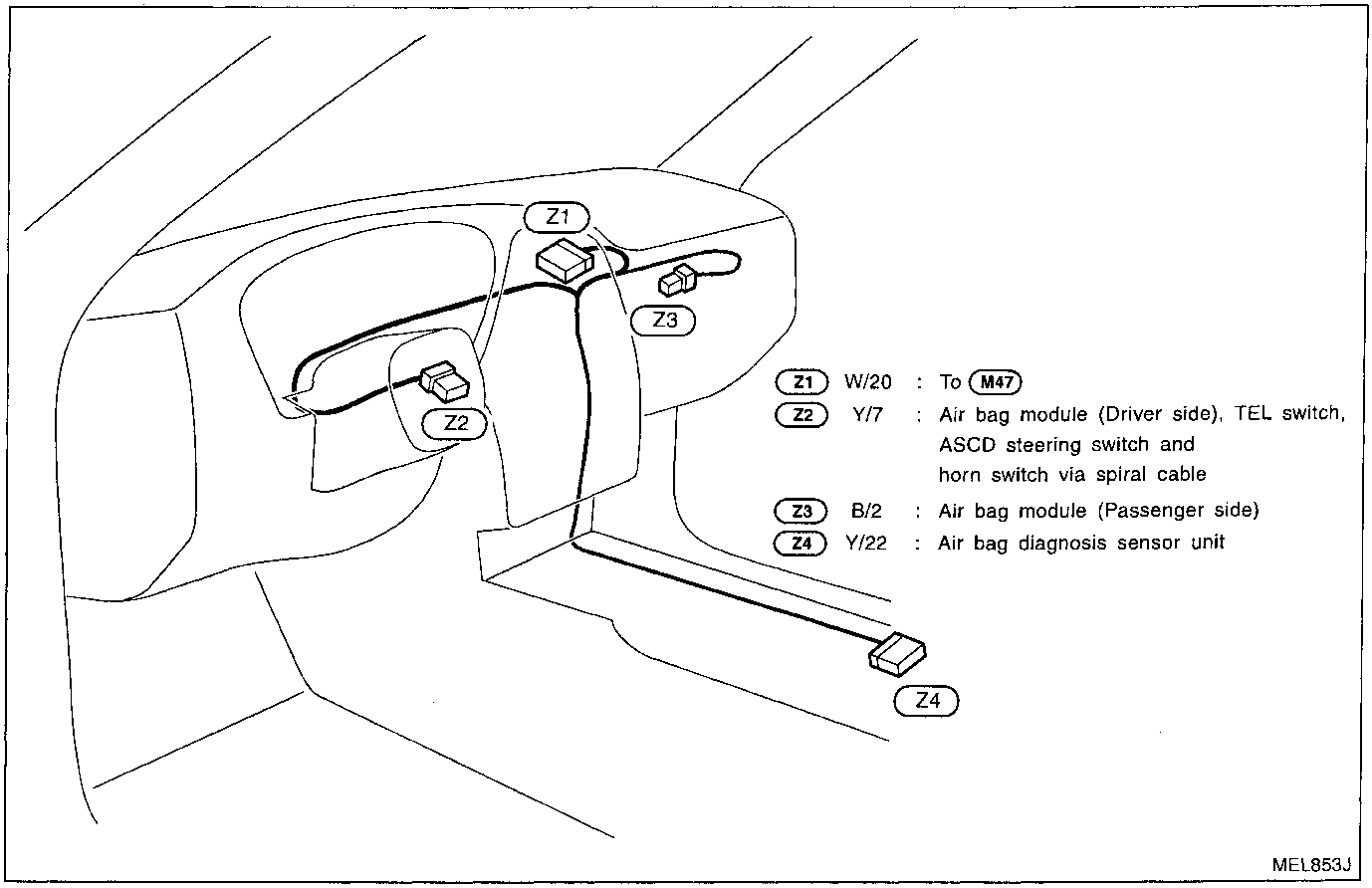


R1	W/6	:	To M62 (Without IVCS)
R2	W/6	:	To M63
R3	R/2	:	Vanity mirror RH (Illumination)
R4	W/8	:	Compass and thermometer
R5	R/2	:	Vanity mirror LH (Illumination)
R6	W/2	:	Spot lamp
R7	W/2	:	Interior lamp
R8	W/1	:	Sunroof motor
	BR/6		
R9	W/20	:	To M137 (With IVCS)
R10	GY/12	:	IVCS switch (With IVCS)

MEL852J

Air Bag Harness

NBEL0141

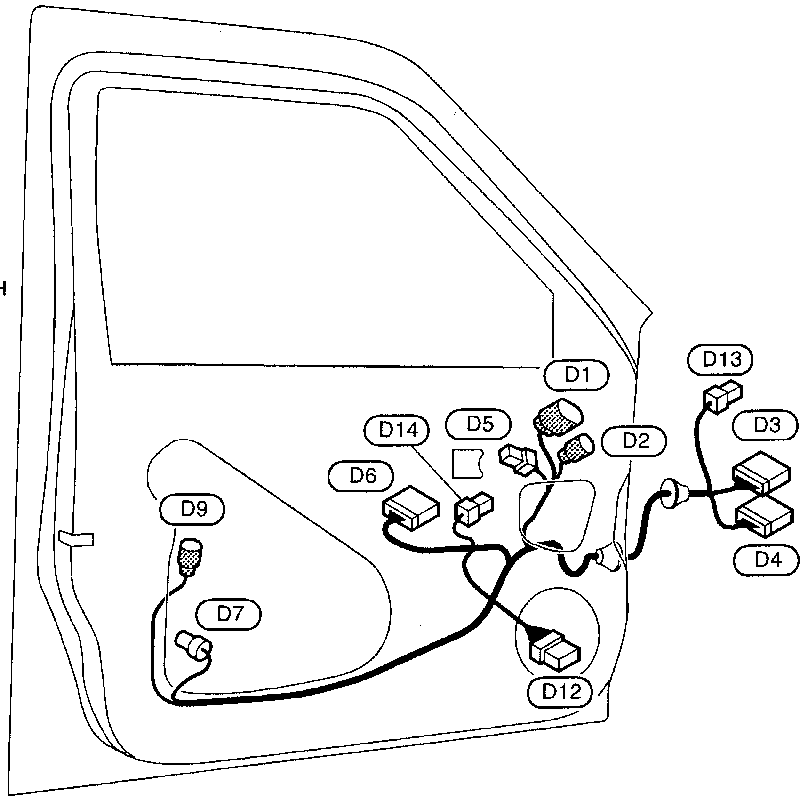


Front Door Harness

NBEL0142

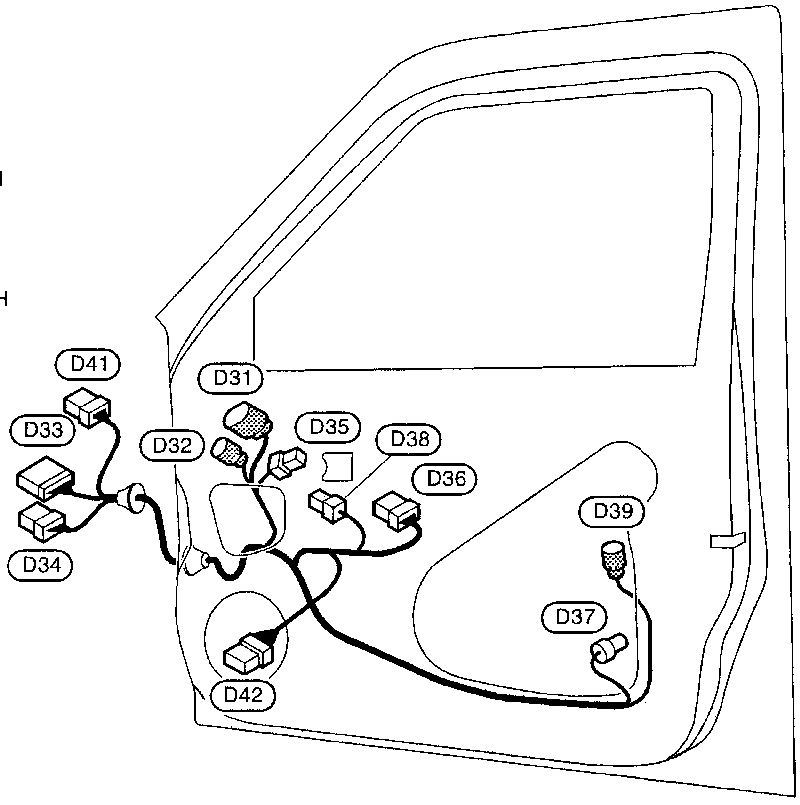
LH side

D1	GY/5	:	Door mirror defogger LH
D2	BR/3	:	Door mirror LH
D3	W/16	:	To M5
D4	W/10	:	To M6
D5	B/2	:	Front power window regulator LH
D6	W/16	:	Power window main switch
D7	GY/4	:	Front door lock actuator LH
D9	BR/3	:	Front door key cylinder switch LH
D12	W/6	:	Front door speaker LH
D13	BR/6	:	To M112
D14	W/4	:	Fuel filler lid delete and glass hatch opener switch



RH side

D31	GY/5	:	Door mirror defogger RH
D32	BR/3	:	Door mirror RH
D33	W/12	:	To M67
D34	W/6	:	To M68
D35	B/2	:	Front power window regulator RH
D36	W/8	:	Front power window sub-switch
D37	GY/4	:	Front door lock actuator RH
D38	GY/8	:	Door lock and unlock switch RH
D39	BR/3	:	Front door key cylinder switch RH
D41	BR/6	:	To M101
D42	W/6	:	Front door speaker RH

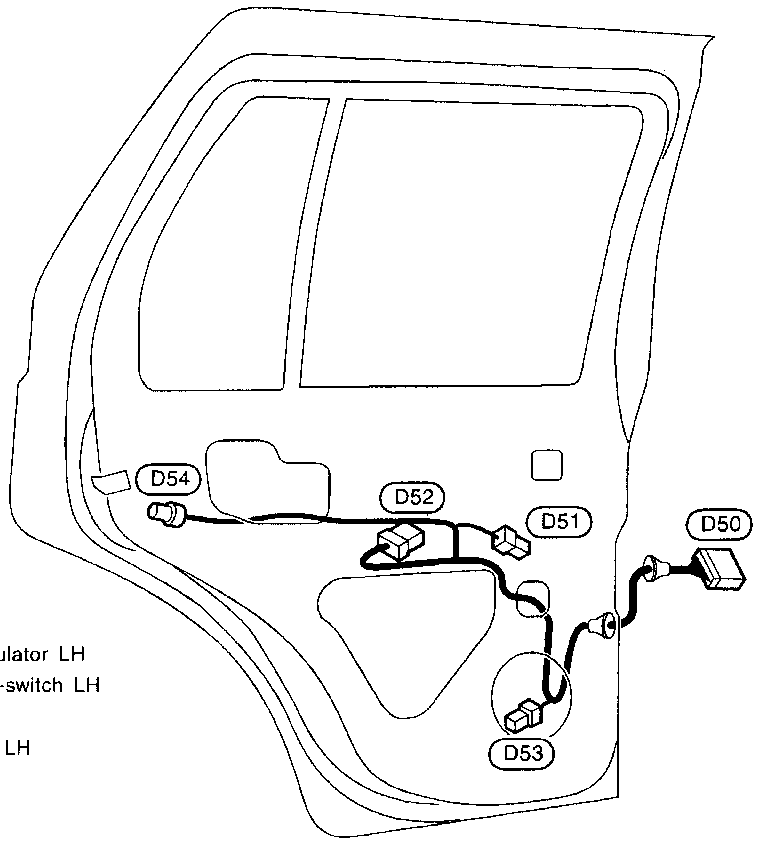


MEL854J

Rear Door Harness

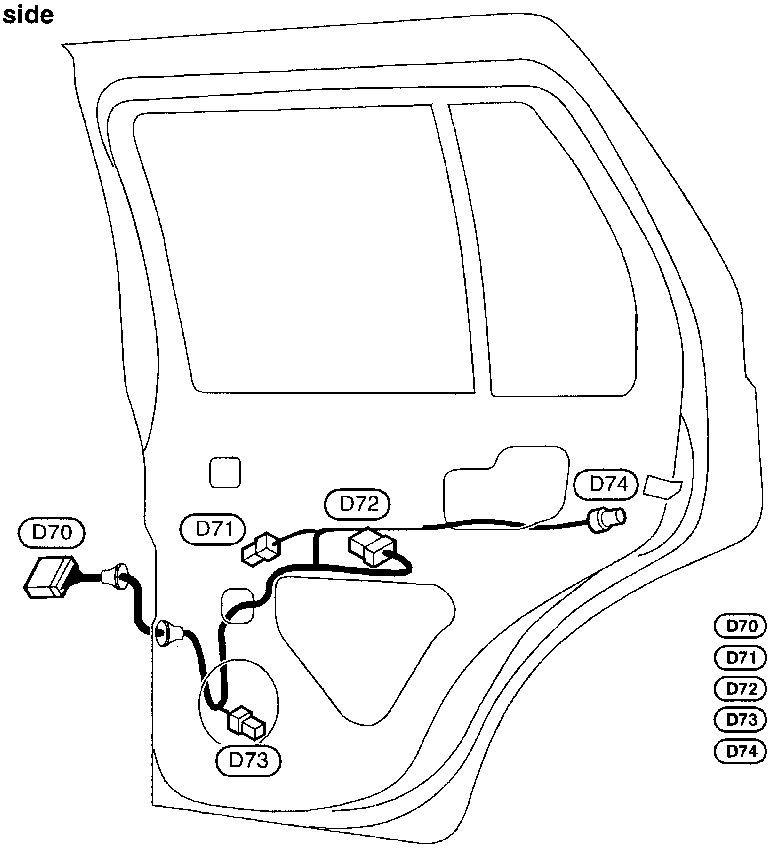
NBEL0143

LH side



D50	W/10	:	To B10
D51	B/2	:	Rear power window regulator LH
D52	W/8	:	Rear power window sub-switch LH
D53	BR/2	:	Rear door speaker LH
D54	GY/4	:	Rear door lock actuator LH

RH side



D70	W/10	:	To B70
D71	B/2	:	Rear power window regulator RH
D72	W/8	:	Rear power window sub-switch RH
D73	BR/2	:	Rear door speaker RH
D74	GY/4	:	Rear door lock actuator RH

MEL870H

BULB SPECIFICATIONS

Headlamp

Headlamp

NBEL0144S03

Item	Wattage (W)
High/Low (Semi-sealed beam)	65/55 (HB2)

Exterior Lamp

NBEL0144S01

Item		Wattage (W)
Front fog lamp		55
Front turn signal lamp		27
Parking lamp		5
Rear combination lamp	Turn signal lamp	27
	Stop/Tail lamp	27/8
Back-up lamp		27
License plate lamp		5
High-mounted stop lamp		5

Interior Lamp

NBEL0144S02

Item	Wattage (W)
Interior lamp	10
Spot lamp	8
Luggage room lamp	10

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
1STSIG	AT	A/T 1ST Signal
2NDSIG	AT	A/T 2ND Signal
3RDSIG	AT	A/T 3RD Signal
4THSIG	AT	A/T 4TH Signal
A/C, A	HA	Auto Air Conditioner
AAC/V	EC	IACV-AAC Valve
ABS	BR	Anti-lock Brake System
AP/SEN	EC	Absolute Pressure Sensor
ASCD	EL	Automatic Speed Control Device
AT/C	EC	A/T Control
ATDIAG	EC	A/T Diagnosis Communication Line
AUDIO	EL	Audio
BA/FTS	AT	A/T Fluid Temperature Sensor and TCM Power Supply
BACK/L	EL	Back-up Lamp
BYPS/V	EC	Vacuum Cut Valve Bypass Valve
CHARGE	SC	Charging System
CHIME	EL	Warning Chime
CIGAR	EL	Cigarette Lighter
CKPS	EC	Crankshaft Position Sensor (OBD)
CMPS	EC	Camshaft Position Sensor
COMPAS	EL	Compass and Thermometer
D/LOCK	EL	Power Door Lock
DEF	EL	Rear Window Defogger
DTRL	EL	Headlamp — With Daytime Light System —
ECTS	EC	Engine Coolant Temperature Sensor
EGR/TS	EC	EGR Temperature Sensor
EGRC/V	EC	EGRC-solenoid Valve
EGRC1	EC	EGR Function
ENGSS	AT	Engine Speed Signal
F/FOG	EL	Front Fog Lamp
F/LID	EL	Glass Hatch Opener
F/PUMP	EC	Fuel Pump Control
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)
FRO2LH	EC	Front Heated Oxygen Sensor (Front HO2S) (Left Bank)
FRO2RH	EC	Front Heated Oxygen Sensor (Front HO2S) (Right Bank)
FTS	AT	A/T Fluid Temperature Sensor
FUELLH	EC	Fuel Injection System Function (Left Bank)
FUELRH	EC	Fuel Injection System Function (Right Bank)
H/LAMP	EL	Headlamp
HORN	EL	Horn
HSEAT	EL	Heated Seat
IATS	EC	Intake Air Temperature Sensor
IGN/SG	EC	Ignition Signal
ILL	EL	Illumination
INJECT	EC	Injector
INT/L	EL	Interior, Spot, Vanity Mirror, and Luggage Room Lamps
IVCS	EL	INFINITI Communicator
KS	EC	Knock Sensor
LPSV	AT	Line Pressure Solenoid Valve
MAFS	EC	Mass Air Flow Sensor
MAIN	AT	Main Power Supply and Ground Circuit
MAIN	EC	Main Power Supply and Ground Circuit
METER	EL	Speedometer, Tachometer, Temp., Oil, and Fuel Gauges
MIL/DL	EC	MIL and Data Link Connectors
MIRROR	EL	Door Mirror
MULTI	EL	Multi-remote Control System
NATS	EL	IVIS (Infiniti Vehicle Immobiliser System)
NONDTC	AT	Non-detectable Items
OVRCSV	AT	Overrun Clutch Solenoid Valve
P/ANT	EL	Power Antenna
PGC/V	EC	EVAP Canister Purge Volume Control Solenoid Valve

WIRING DIAGRAM CODES (CELL CODES)

Code	Section	Wiring Diagram Name
PNP/SW	EC	Park/Neutral Position Switch
PNP/SW	AT	Park/Neutral Position Switch
POWER	EL	Power Supply Routing
PRE/SE	EC	EVAP Control System Pressure Sensor
PST/SW	EC	Power Steering Oil Pressure Switch
RO2H-L	EC	Rear Heated Oxygen Sensor Heater Left Bank
RO2H-R	EC	Rear Heated Oxygen Sensor Heate Right Bank
RRO2LH	EC	Rear Heated Oxygen Sensor Left Bank
RRO2RH	EC	Rear Heated Oxygen Sensor Right Bank
S/SIG	EC	Start Signal
SEAT	EL	Power Seat
SHIFT	AT	A/T Shift Lock System
SROOF	EL	Sunroof
SRS	RS	Supplemental Restraint System
SSV/A	AT	Shift Solenoid Valve A
SSV/B	AT	Shift Solenoid Valve B
START	SC	Starting System
STOP/L	EL	Stop lamp
SW/V	EC	MAP/BARO Switch Solenoid Valve
TAIL/L	EL	Parking, License and Tail Lamps
TCCSIG	AT	A/T TCC Signal (Lock up)
TCV	AT	Torque Converter Clutch Solenoid Valve
T/F	TF	Transfer
TFTS	EC	Tank Fuel Temperature Sensor
THEFT	EL	Theft Warning System
TLID	EL	Glass Hatch Opener
TP/SW	EC	Throttle Position Switch
TPS	AT	Throttle Position Sensor
TPS	EC	Throttle Position Sensor
TRNSMT	EL	Integrated HOMELINK® Transmitter
TURN	EL	Turn Signal and Hazard Warning Lamps
VENT/V	EC	EVAP Canister Vent Control Valve
VSS	EC	Vehicle Speed Sensor
VSSA/T	AT	Vehicle Speed Sensor A/T (Revolution Sensor)
VSSMTR	AT	Vehicle Speed Sensor MTR
WARN	EL	Warning Lamps
WINDOW	EL	Power Window
WIP/R	EL	Rear Wiper and Washer
WIPER	EL	Front Wiper and Washer