

ELECTRICAL SYSTEM

SECTION **EL**

When you read wiring diagrams:

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

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

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WIRING DIAGRAM REFERENCE CHART

COOLING SYSTEM	LC SECTION
ECCS (Ignition system)	EC SECTION
AUTOMATIC TRANSAXLE CONTROL SYSTEM	AT SECTION
ANTI-LOCK BRAKE SYSTEM	BR SECTION
SRS "AIR BAG"	RS SECTION
HEATER AND AIR CONDITIONER	HA SECTION

PRECAUTIONS

Supplemental Restraint System (SRS) “AIR BAG” (Dual Air Bag System)

The Supplemental Restraint System “Air Bag”, used along with a seat belt, helps to reduce the risk or severity of injury to the driver and front passenger in a frontal collision. The Supplemental Restraint System consists of air bag modules (located in the center of the steering wheel and on the instrument panel on the passenger side), a diagnosis sensor unit, warning lamp, wiring harness and spiral cable. Information necessary to service the system safely is included in the **RS section** of this Service Manual.

WARNING:

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

Supplemental Restraint System (SRS) “AIR BAG” (Single Air Bag System)

The Supplemental Restraint System “Air Bag”, used along with a seat belt, helps to reduce the risk or severity of injury to the driver in a frontal collision. The Supplemental Restraint System consists of an air bag module (located in the center of the steering wheel), a diagnosis sensor unit, warning lamp and spiral cable. Information necessary to service the system safely is included in the **RS section** of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system.
- Do not use electrical test equipment on any circuit related to the SRS.

HARNESS CONNECTOR

Description

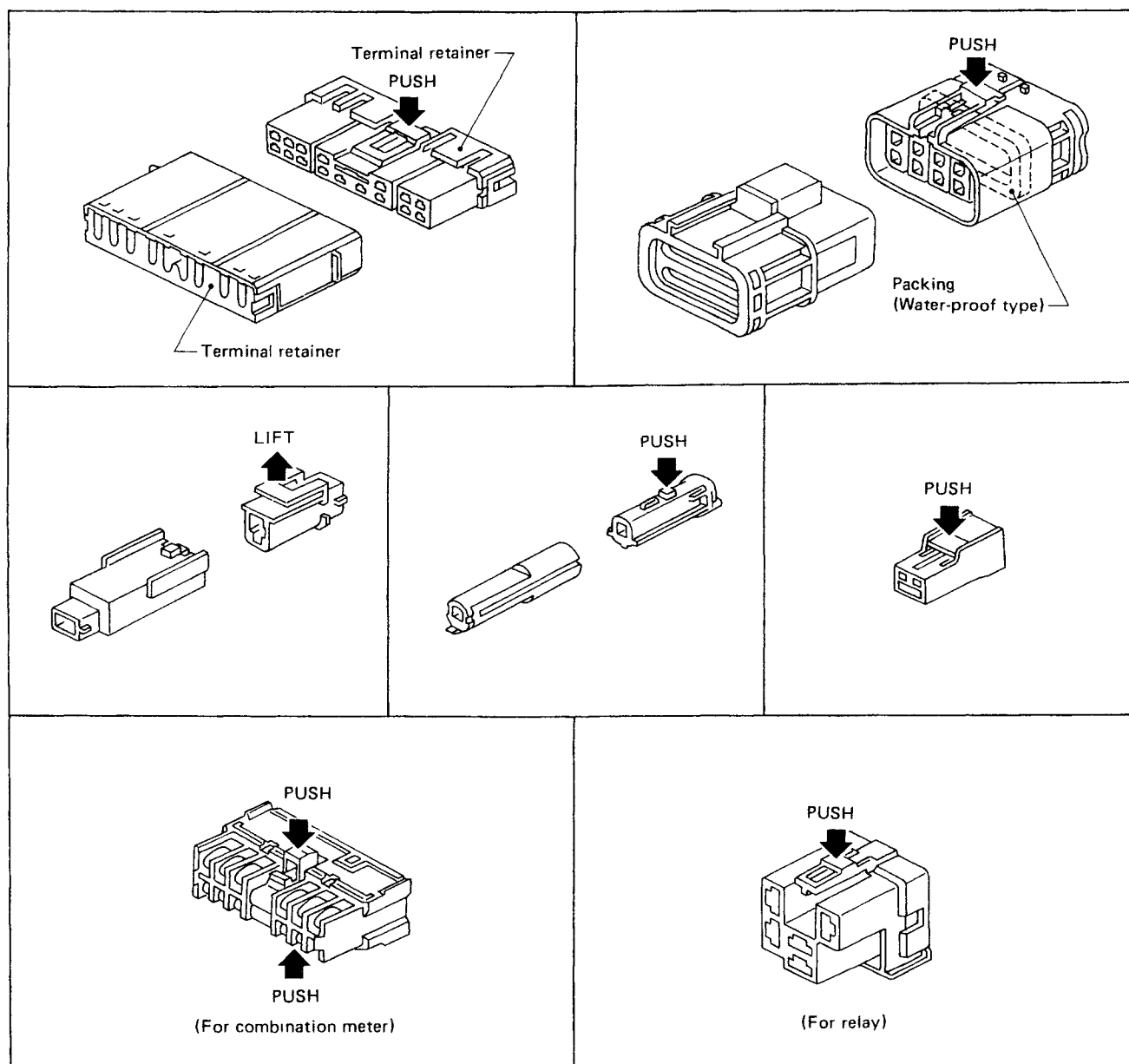
HARNESS CONNECTOR

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

CAUTION:

Do not pull the harness when disconnecting the connector.

[Example]



EL

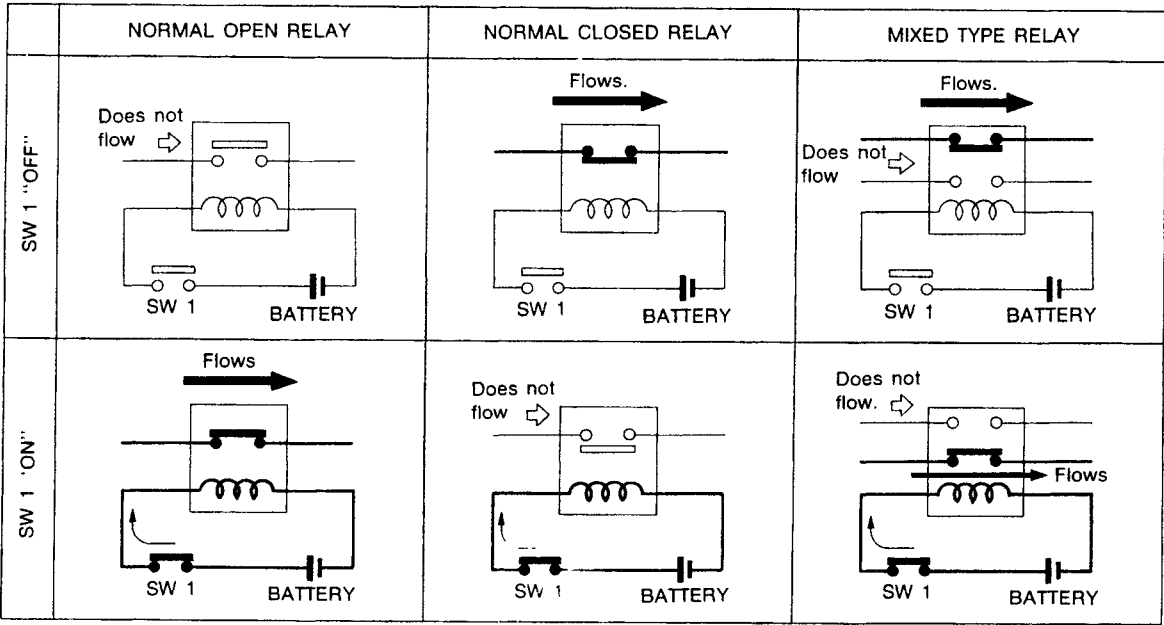
SEL769D

STANDARDIZED RELAY

Description

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

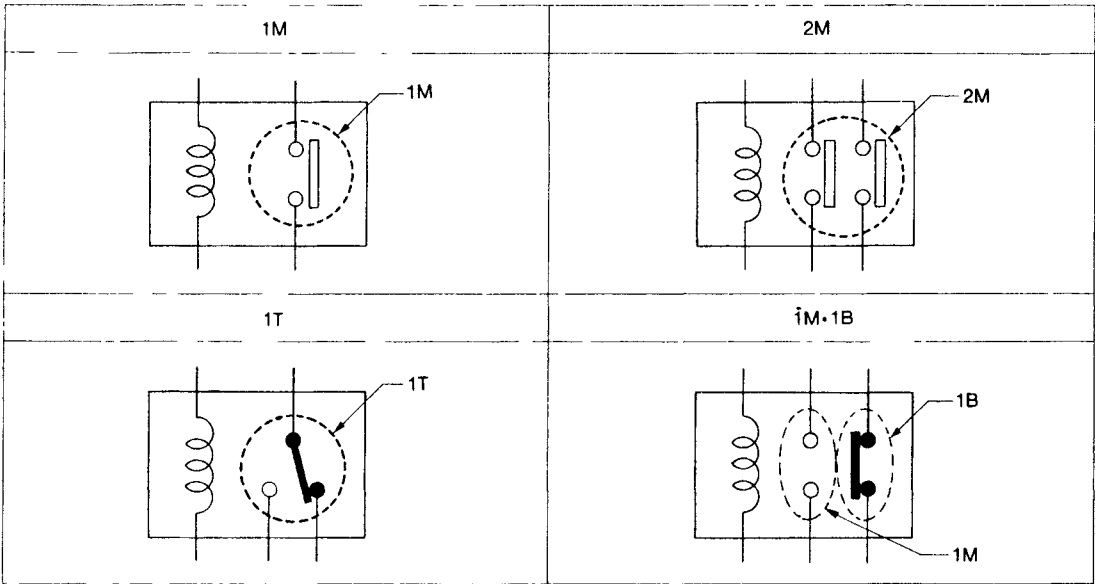
Relays can mainly be divided into three types: normal open, normal closed and mixed type relays.



SEL881H

TYPE OF STANDARDIZED RELAYS

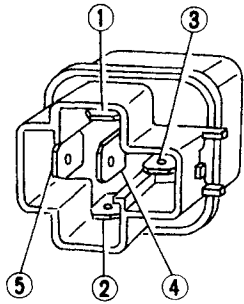
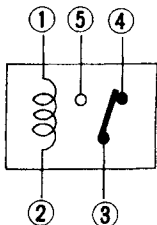
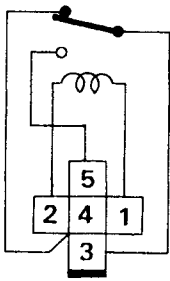
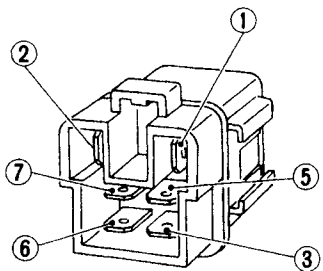
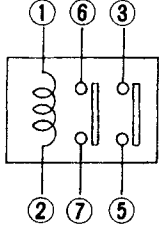
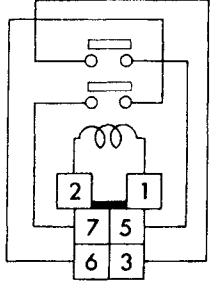
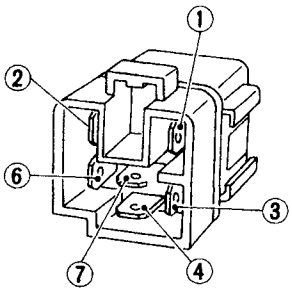
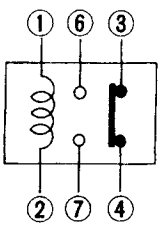
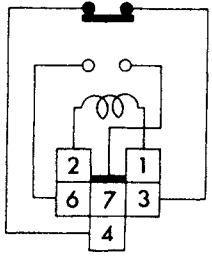
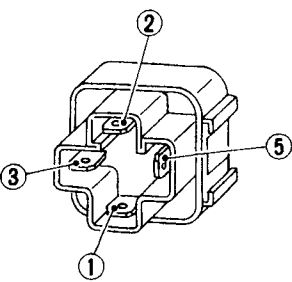
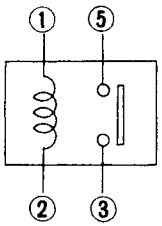
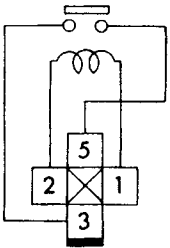
1M .. 1 Make 2M 2 Make
1T . .. 1 Transfer 1M 1B . . . 1 Make 1 Break



SEL882H

STANDARDIZED RELAY

Description (Cont'd)

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

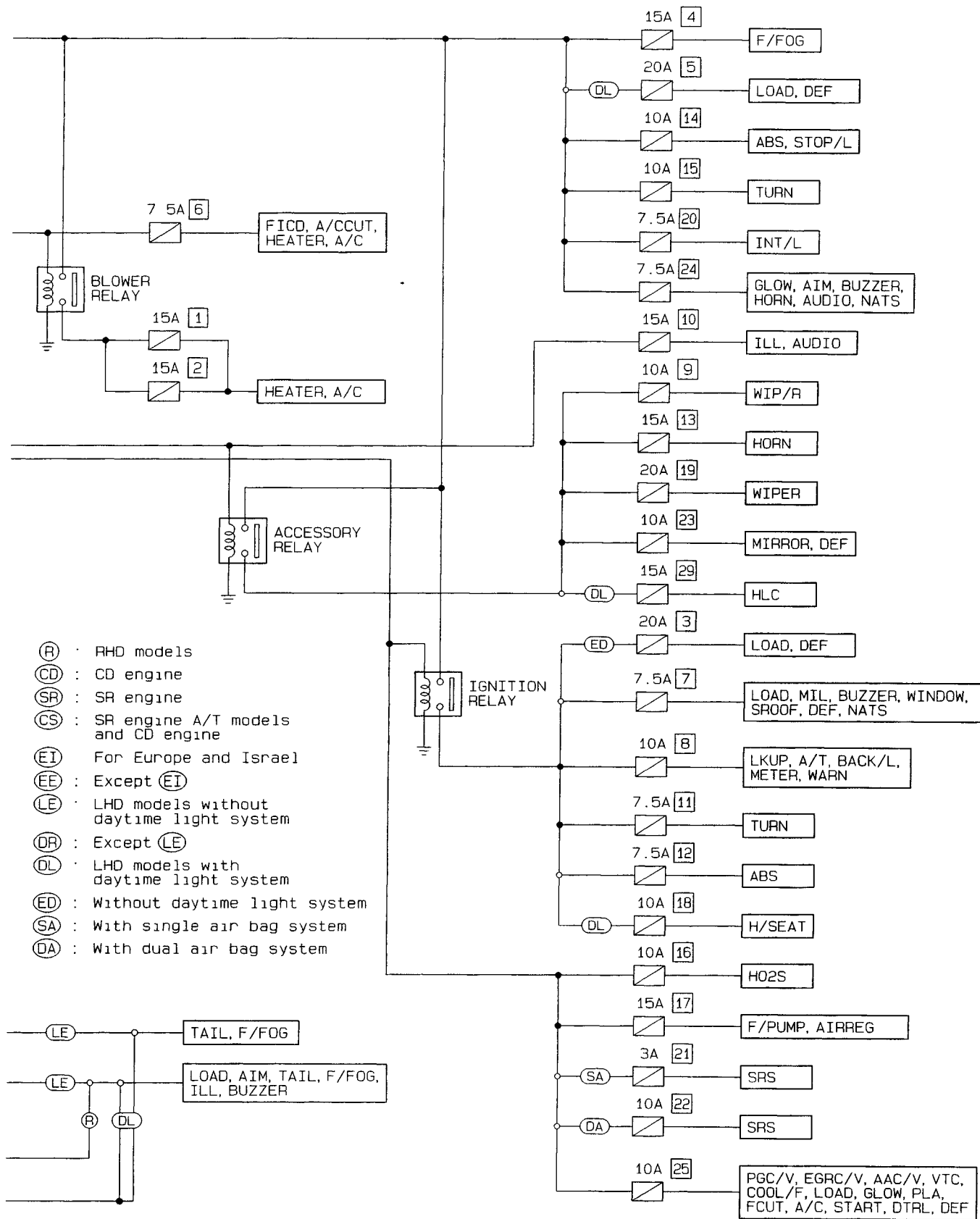
The arrangement of terminal numbers on the actual relays may differ from those shown above.

EL



POWER SUPPLY ROUTING

Schematic (Cont'd)

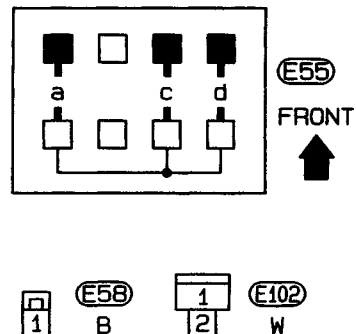
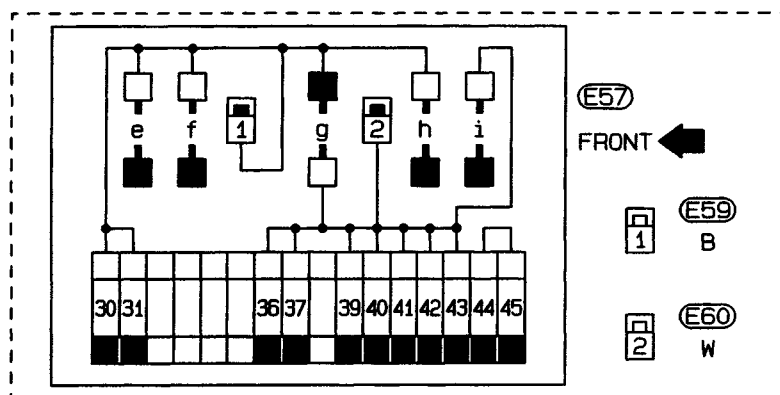
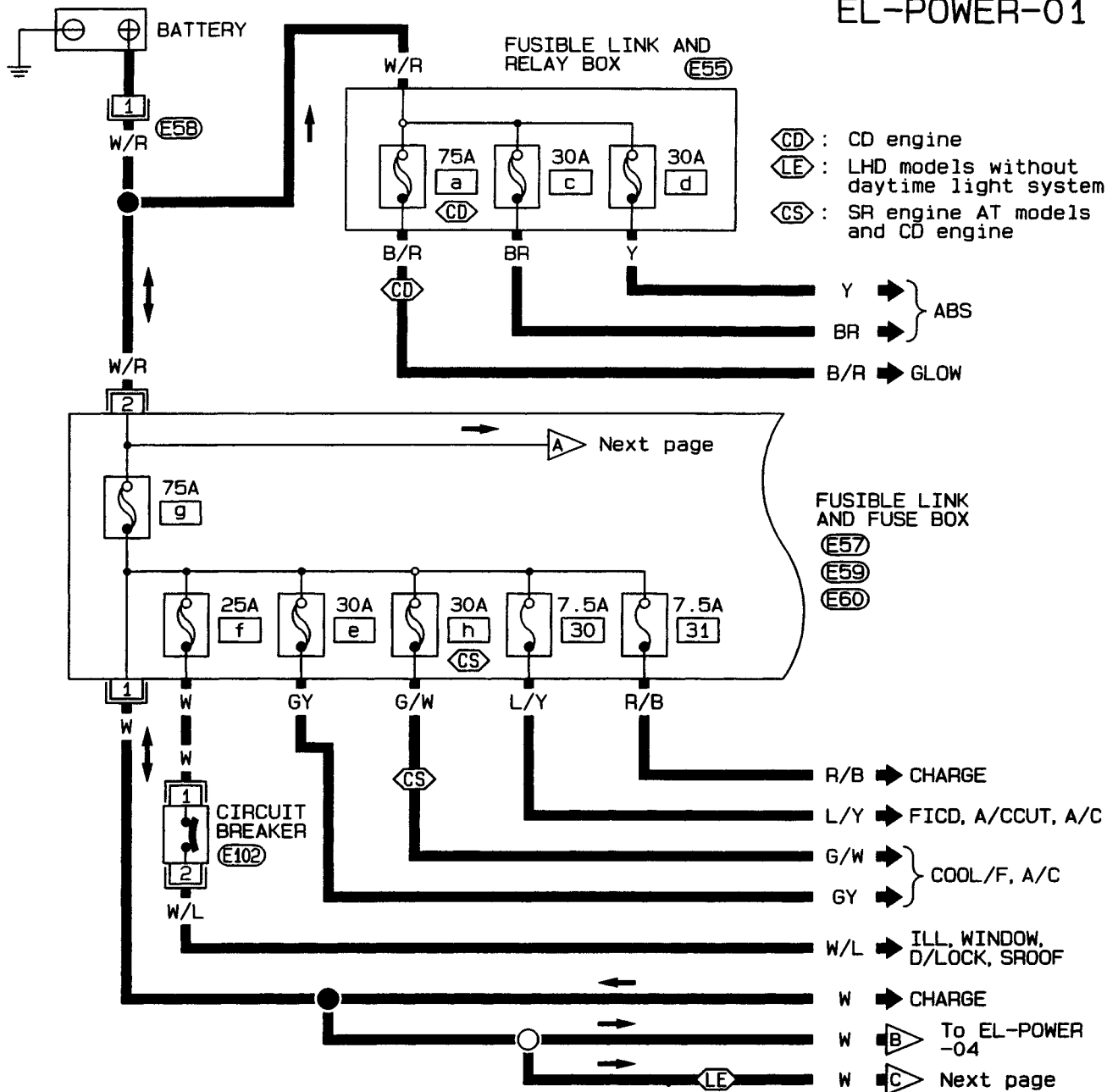


EL

POWER SUPPLY ROUTING

Wiring Diagram — POWER —

EL-POWER-01

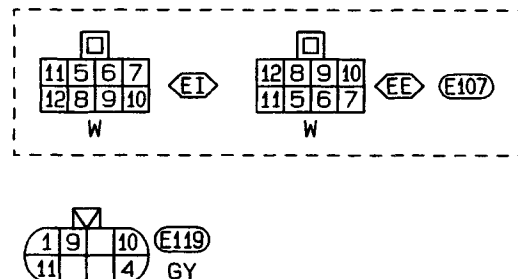
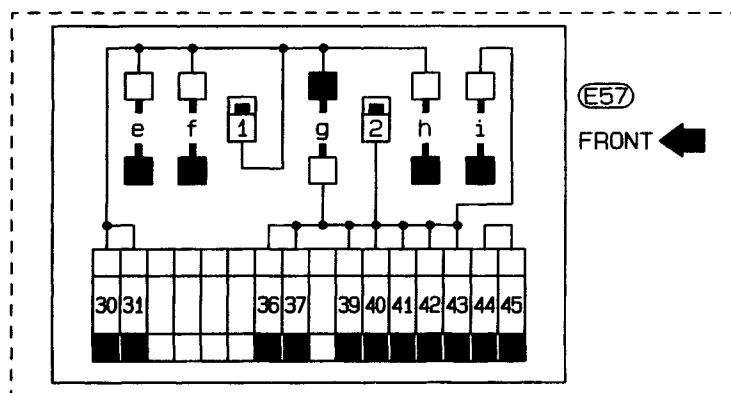
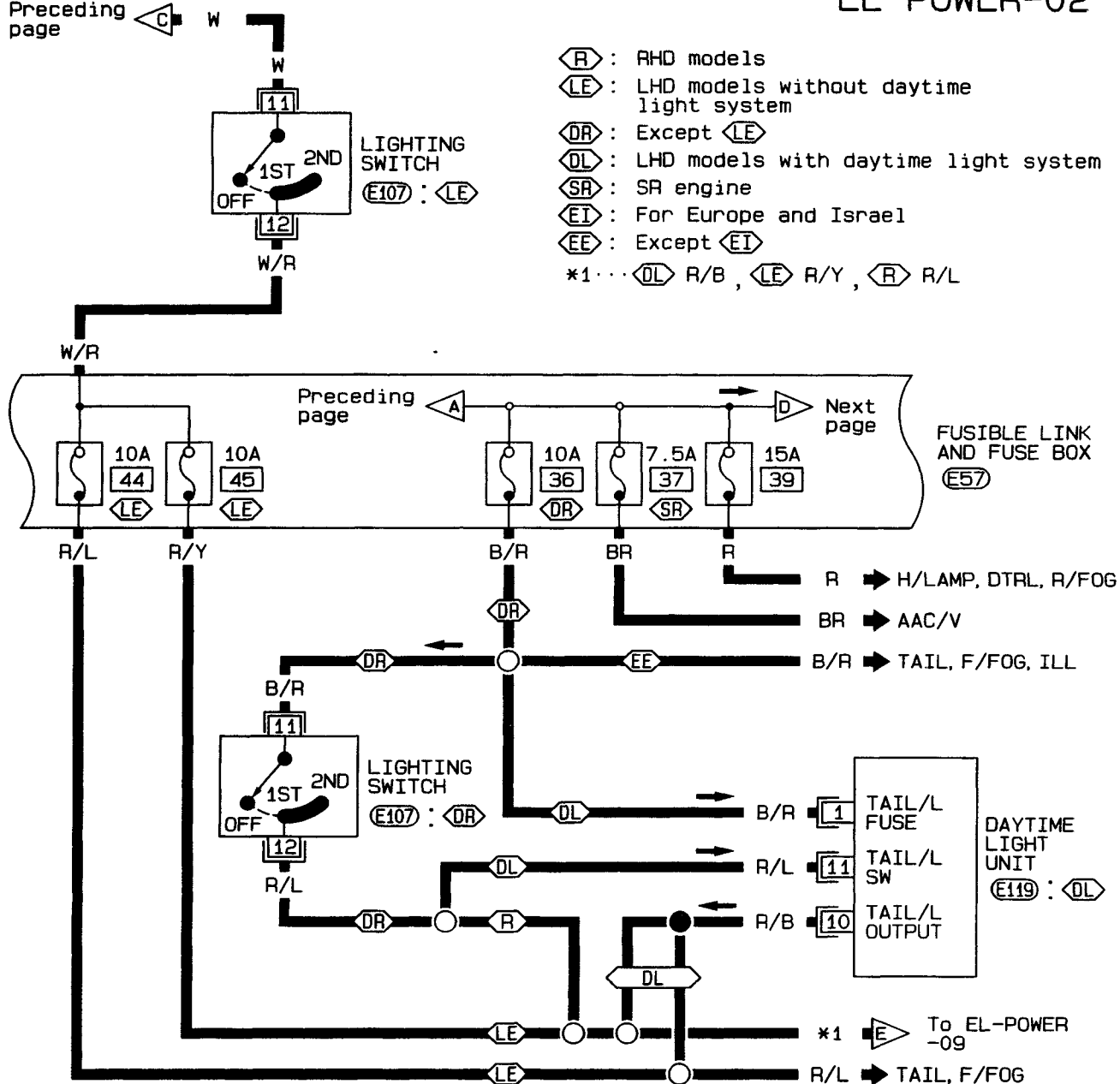


POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

EL-POWER-02

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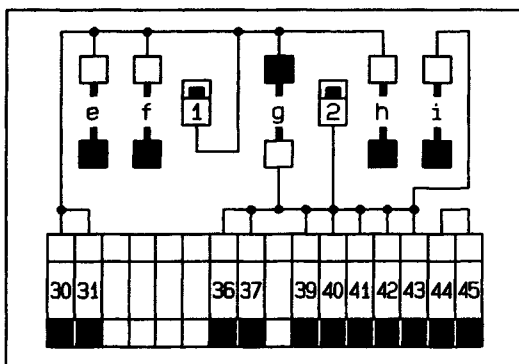
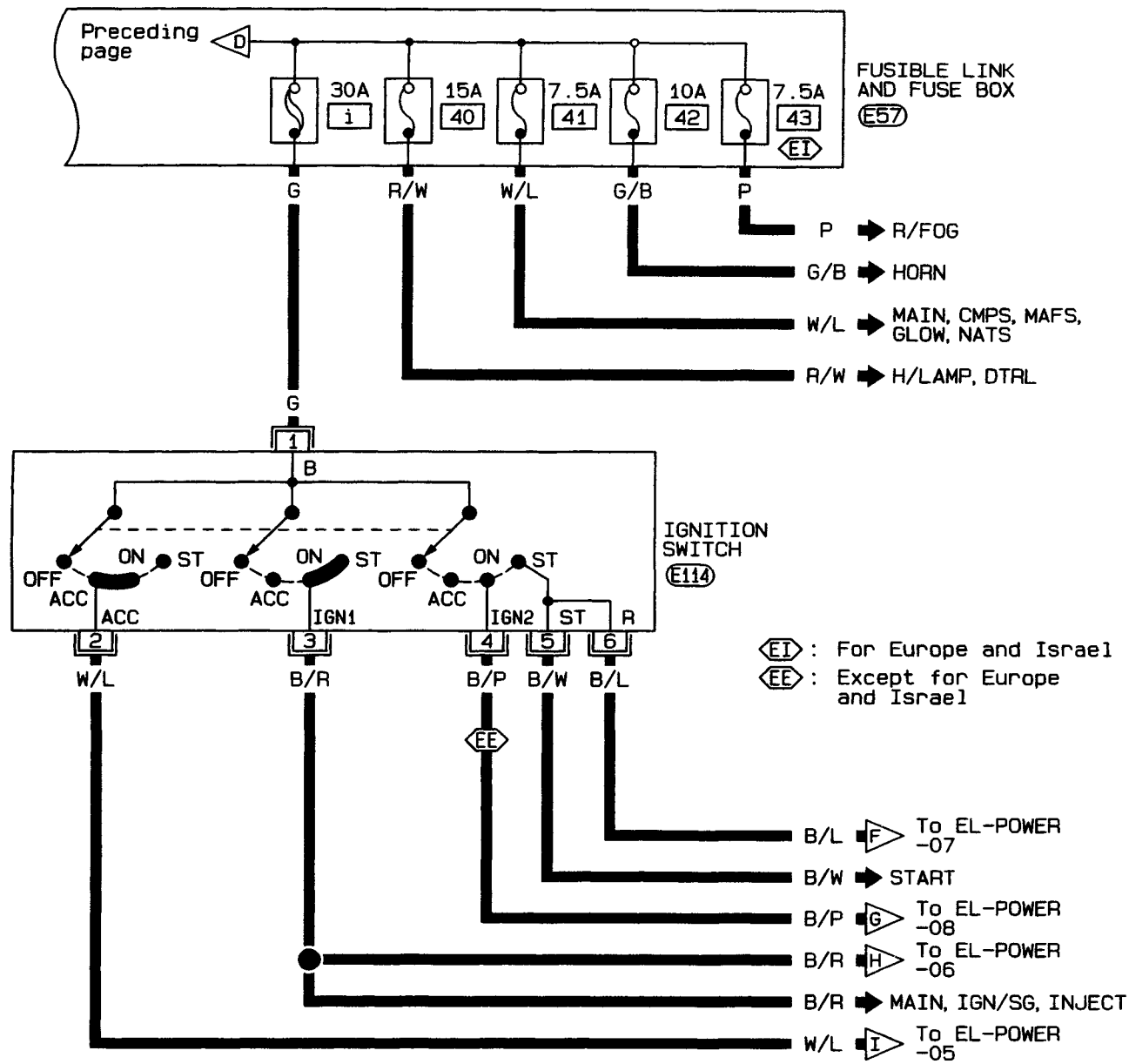


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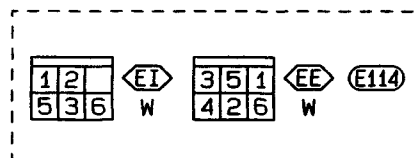
POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

EL-POWER-03



(E57)
FRONT



POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

EL-POWER-04

To EL-POWER
-01

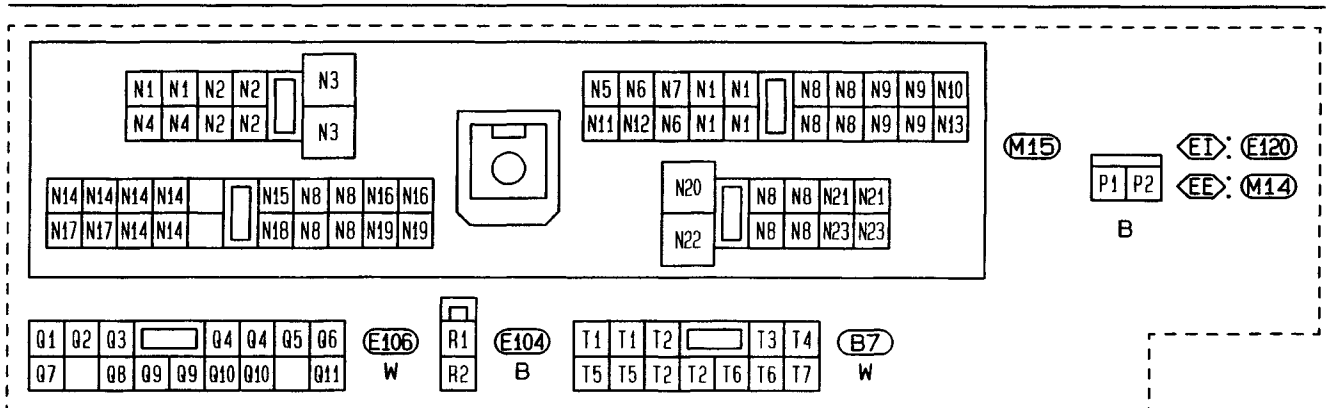
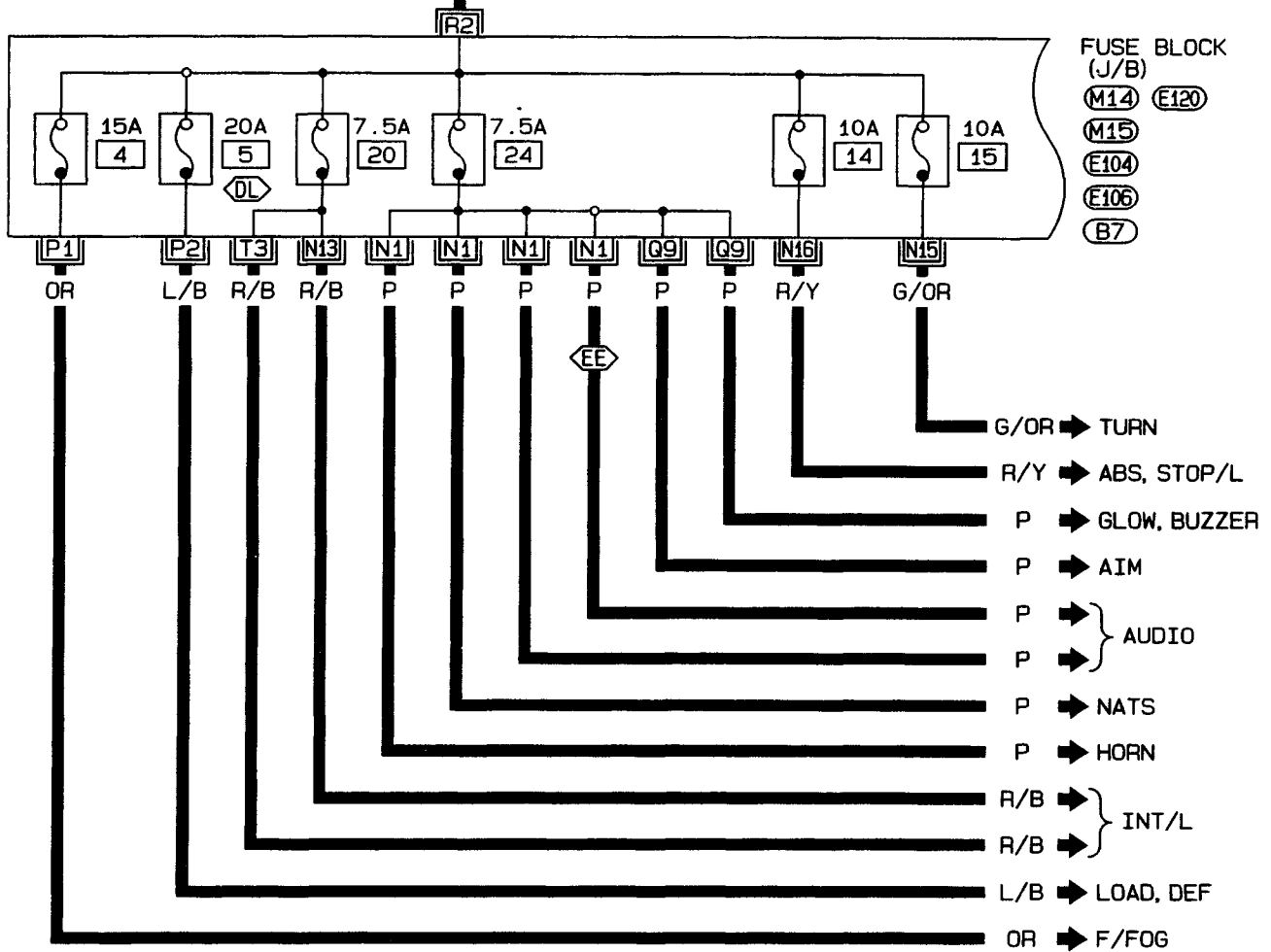


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Next page

- (DL) : LHD models with daytime light system
 (E1) : For Europe and Israel
 (EE) : Except (E1)

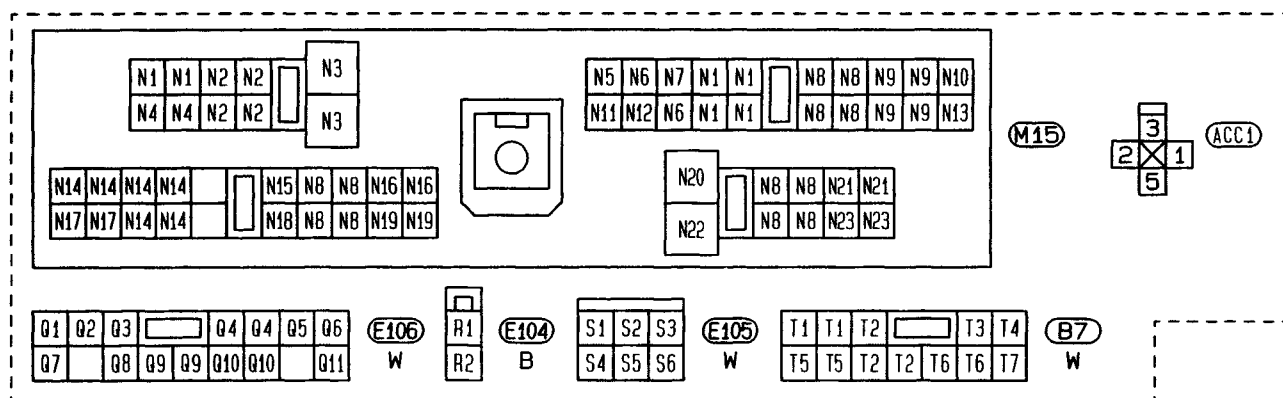
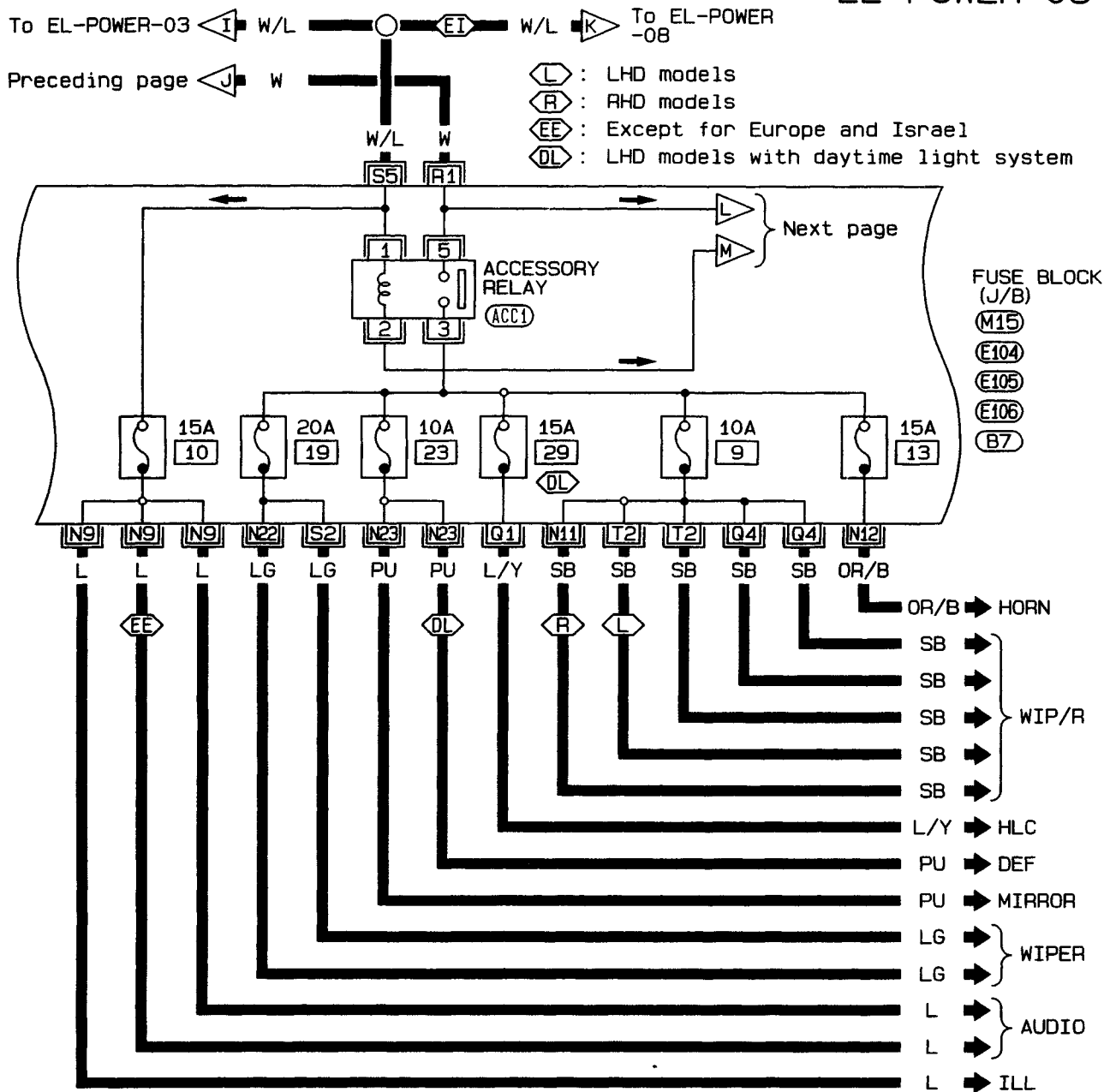


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POWER SUPPLY ROUTING

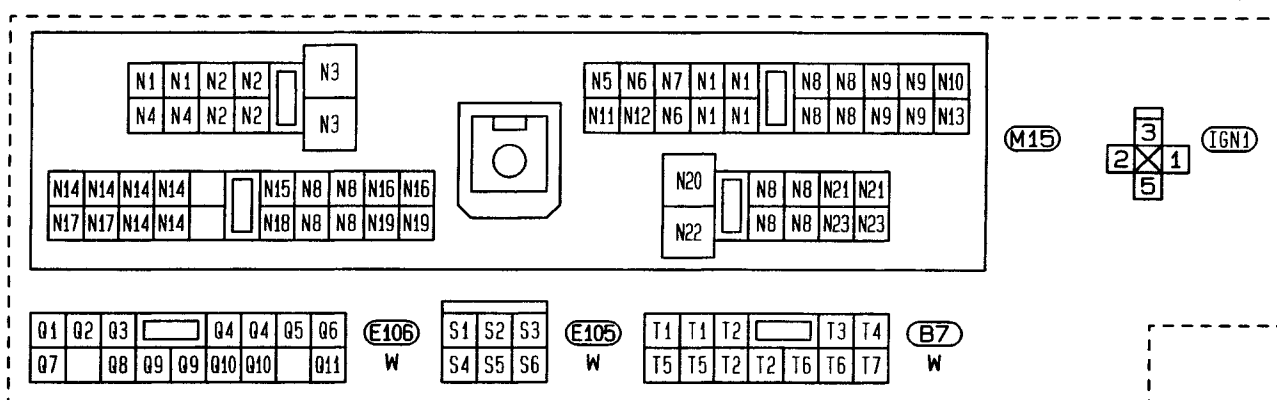
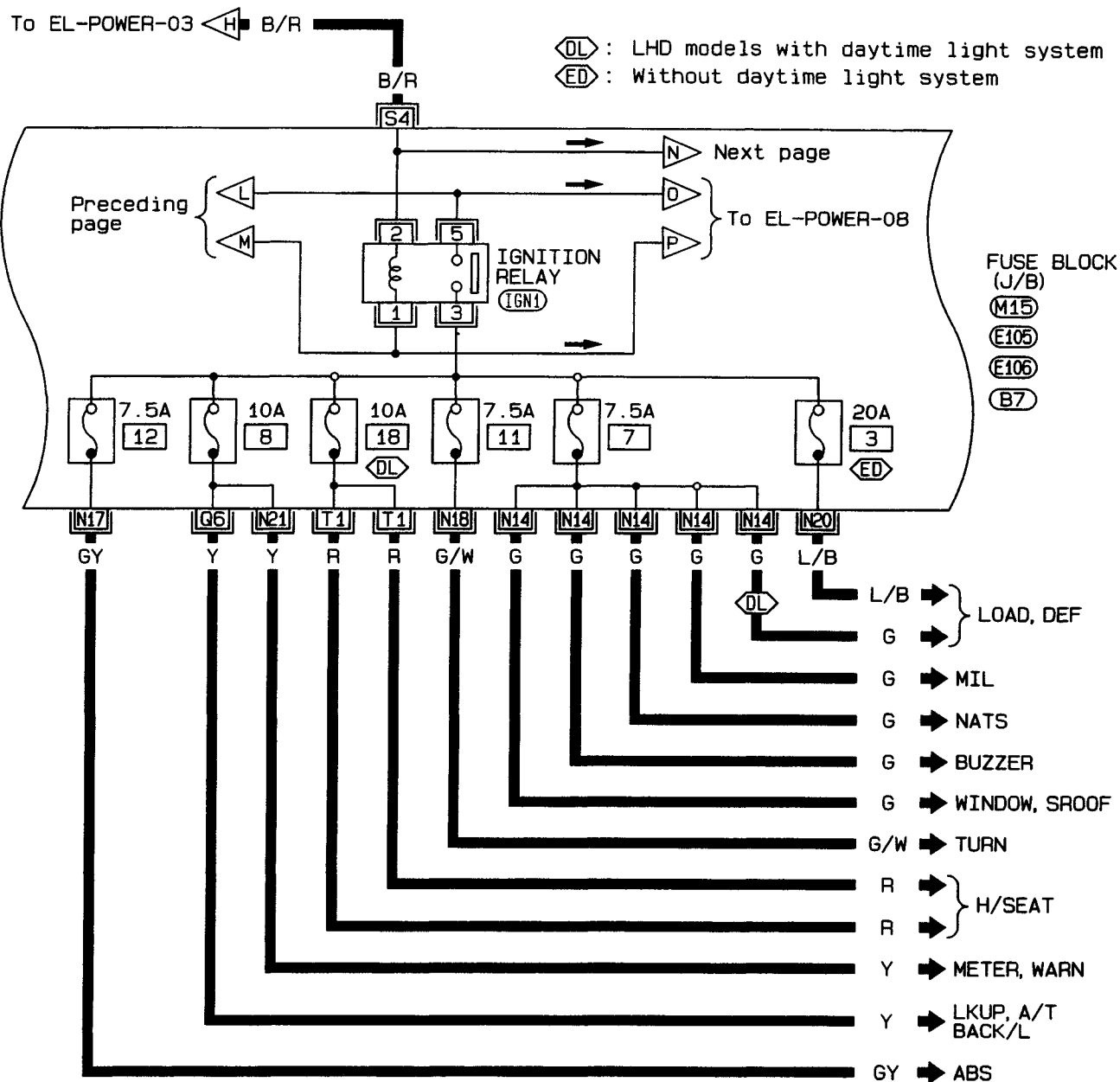
Wiring Diagram — POWER — (Cont'd)

EL-POWER-05



Wiring Diagram — POWER — (Cont'd)

EL-POWER-06



EL

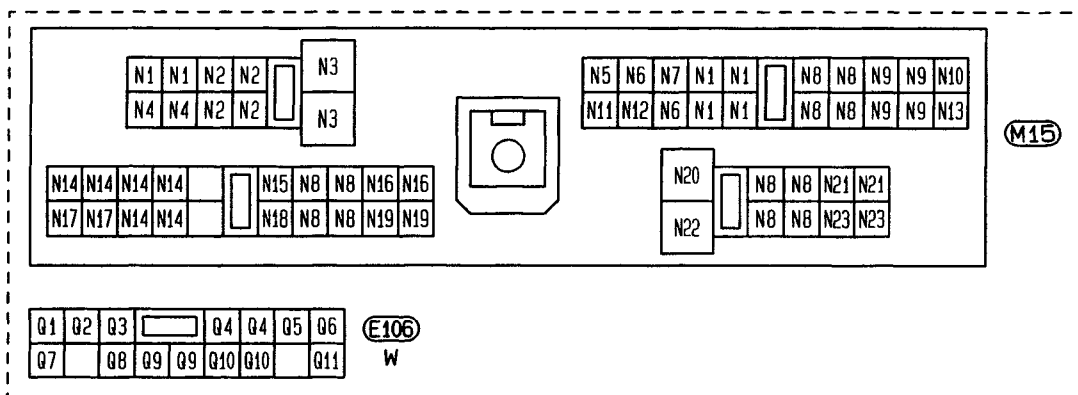
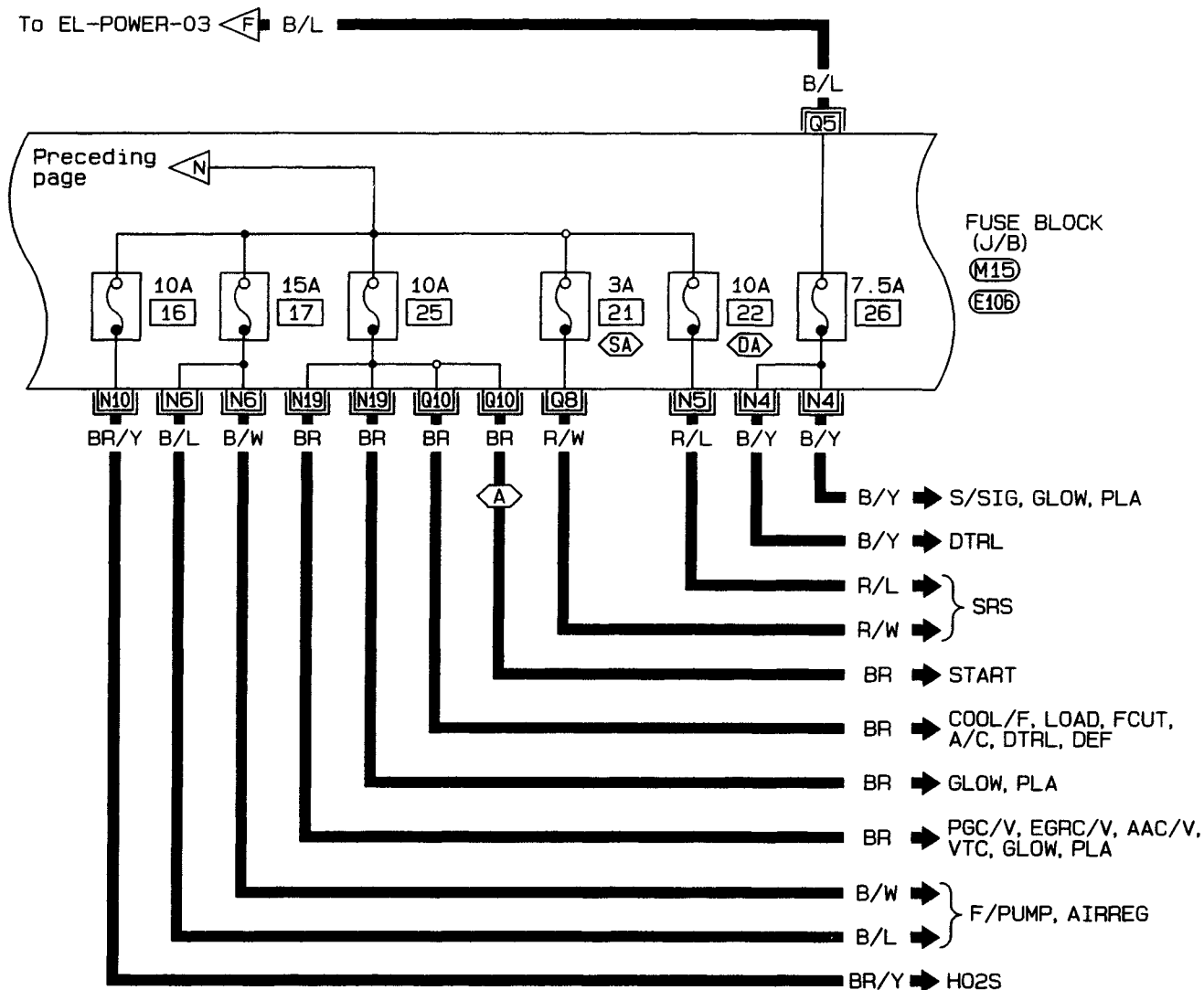
POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

EL-POWER-07

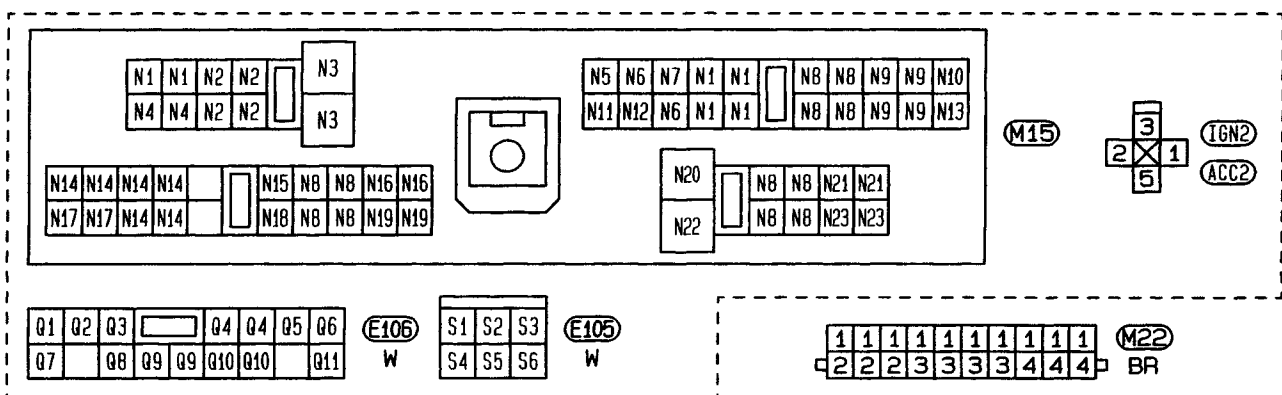
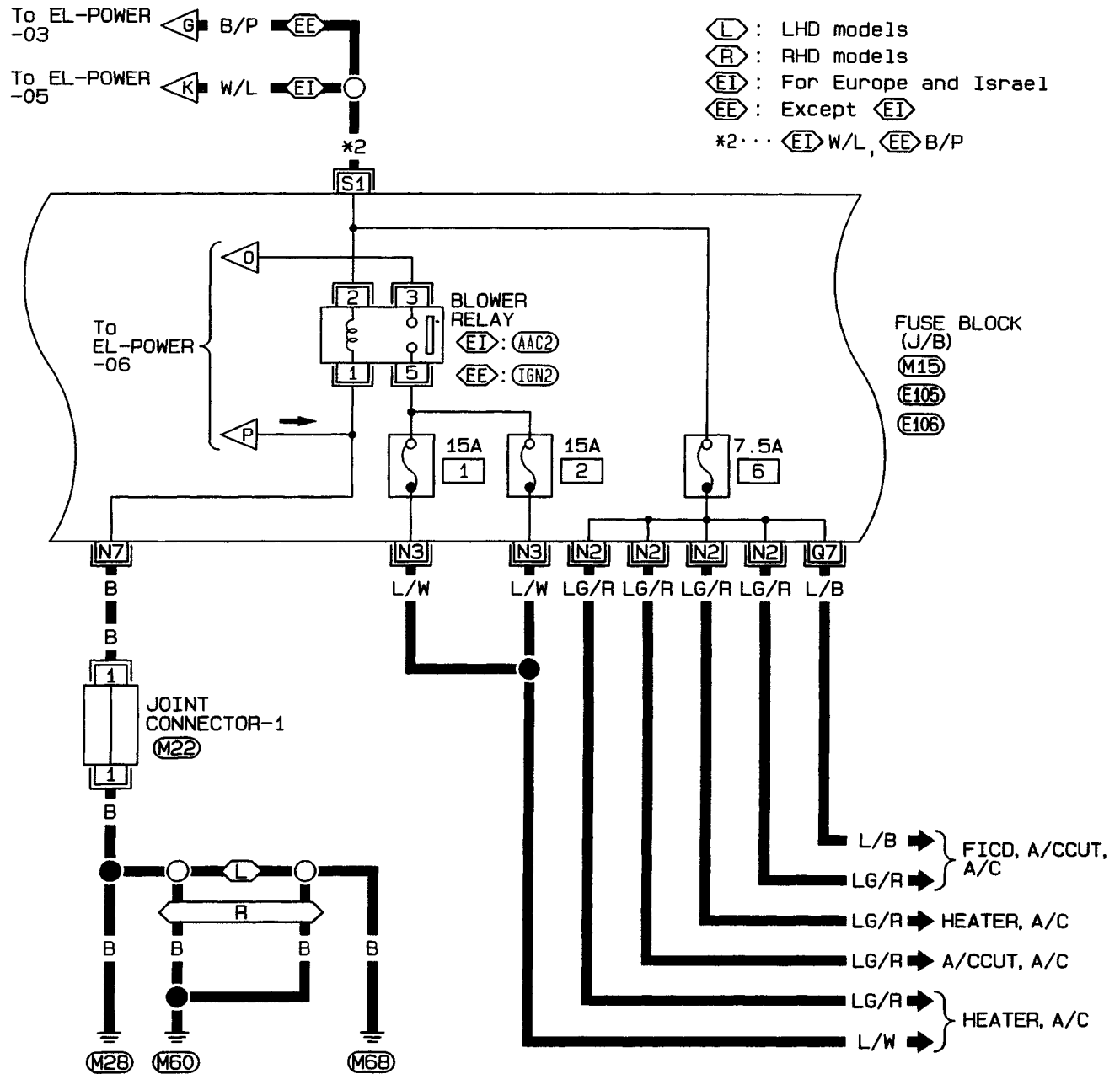
- (A) : A/T models
 (SA) : With single air bag system
 (DA) : With dual air bag system

To EL-POWER-03 ◀ F B/L



Wiring Diagram — POWER — (Cont'd)

EL-POWER-08

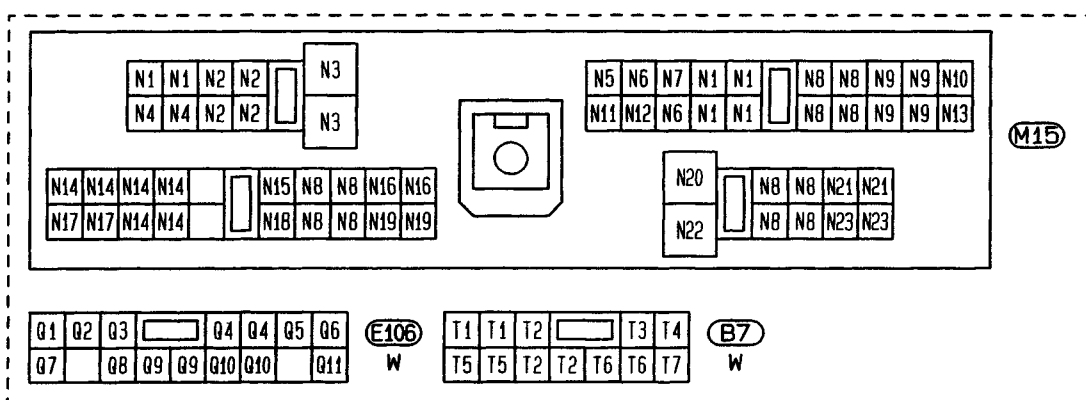
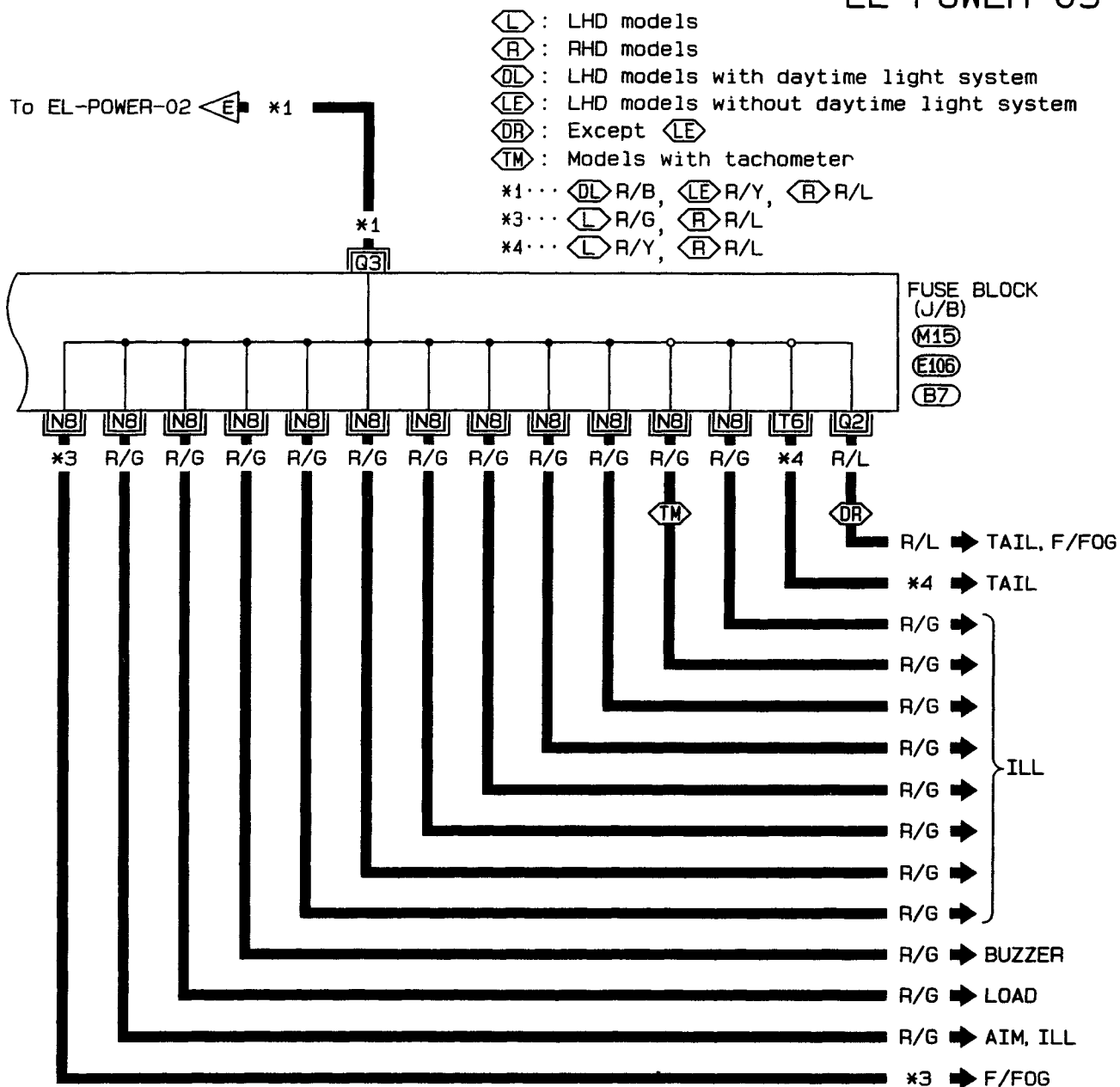


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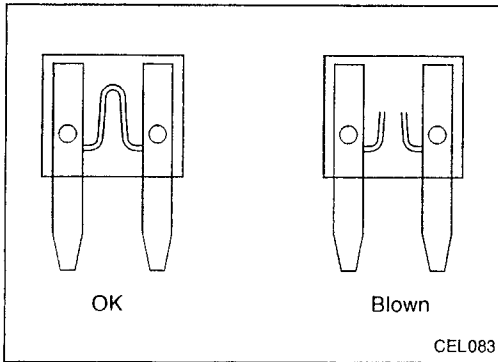
POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

EL-POWER-09

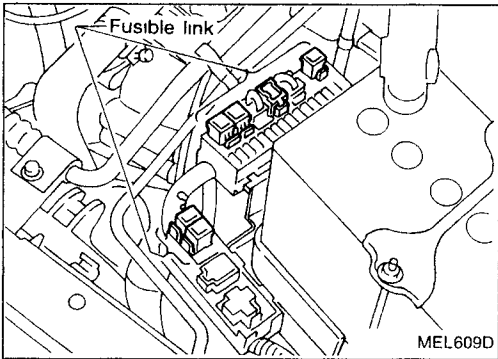


POWER SUPPLY ROUTING



Fuse

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

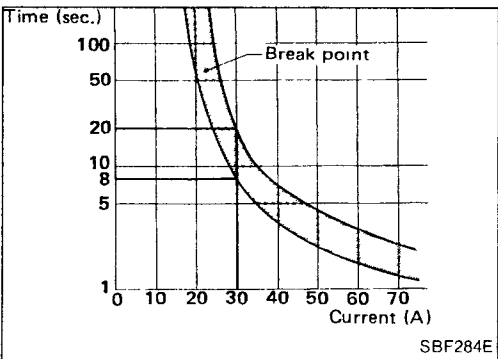


Fusible Link

A melted fusible link can be detected by visual inspection. 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 or vinyl or rubber parts.



Circuit Breaker

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

Circuit breakers are used in the following systems.

- Power window
- Power door lock
- Electric sun roof

GROUND DISTRIBUTION

GROUND	CONNECT TO	CONN. NO.	CELL CORD
E37/E51	AIR BAG DIAGNOSIS SENSOR UNIT (Single air bag system)	E108	RS-SRS
	BRAKE FLUID LEVEL SWITCH	E2	EL-WARN
	CLEARANCE LAMP LH	E50	EL-TAIL/L
	CLEARANCE LAMP RH	E33	EL-TAIL/L
	COOLING FAN MOTOR-1 (1-mode type)	E45	EC-COOL/F HA-A/C
	COOLING FAN MOTOR-1 (2-mode type—GA engine for Europe)	E66	EC-COOL/F HA-A/C
	COOLING FAN MOTOR-1 (2-mode type—except GA engine for Europe)	E46	EC-COOL/F HA-A/C
	COOLING FAN MOTOR-2 (1-mode type)	E39	EC-COOL/F HA-A/C
	COOLING FAN MOTOR-2 (2-mode type—GA engine for Europe)	E67	EC-COOL/F HA-A/C
	COOLING FAN MOTOR-2 (2-mode type—except GA engine for Europe)	E40	EC-COOL/F HA-A/C
	COOLING FAN RELAY-1	E12	EC-COOL/F HA-A/C
	COOLING FAN RELAY-2	E17	EC-COOL/F HA-A/C
	COOLING FAN RELAY-3	E18	EC-COOL/F HA-A/C
	DAYTIME LIGHT UNIT	E119	EL-DTRL
	FRONT FOG LAMP LH	E52	EL-F/FOG
	FRONT FOG LAMP RH	E36	EL-F/FOG
	FRONT TURN SIGNAL LAMP LH	E53	EC-TURN
	FRONT TURN SIGNAL LAMP RH	E32	EC-TURN
	FRONT WIPER AND WASHER SWITCH	E113	EL-WIPER
	FUEL FILTER SWITCH	E5	EL-WARN
	HEADLAMP AIMING MOTOR UNIT LH	E48	EL-AIM
	HEADLAMP AIMING MOTOR UNIT RH	E35	EL-AIM
	HEADLAMP LH	E49	EL-H/LAMP EL-DTRL
	HEADLAMP RH	E34	EL-H/LAMP EL-DTRL
	HEADLAMP WIPER MOTOR LH	E44	EL-HLC
	HEADLAMP WIPER MOTOR RH	E41	EL-HLC
	IACV-FICD SOLENOID VALVE (LHD models with CD20 engine)	E65	EC-A/CCUT HA-A/C
	INHIBITOR SWITCH	E222	EC-PNP/SW AT-A/T EL-START
	NEUTRAL POSITION SWITCH	E220	EC-PNP/SW
	POWER STEERING OIL PRESSURE SWITCH (RHD models with gasoline engine)	E3	EC-PST/SW
	REAR FOG LAMP RELAY	E20	EL-R/FOG
	REAR WIPER AND WASHER SWITCH	E112	EL-WIP/R
	REAR WIPER RELAY	E15	EL-WIP/R
	SIDE TURN SIGNAL LAMP (Driver side)	E1	EL-TURN
	WASHER FLUID LEVEL SWITCH	E30	EL-WARN

GROUND DISTRIBUTION

GROUND	CONNECT TO	CONN NO.	CELL CORD
M27	COMBINATION METER (TACHOMETER)	M31	EL-METER
	COMBINATION METER (AIR BAG WARNING LAMP)	M*1	RS-SRS EL-WARN
	COMBINATION METER (CLOCK ILLUMINATION) (For Europe and Israel)	M*1	EL-ILL EL-HORN
	COMBINATION METER (FUEL GAUGE)	M*1	EL-METER
	COMBINATION METER (HIGH BEAM INDICATOR)	M*1	EL-H/LAMP EL-DTRL
	COMBINATION METER (SPEEDOMETER)	M*1	EC-VSS EC-COOL/F EL-METER
	COMBINATION METER (TURN)	M*2	EL-TURN
	COMBINATION METER (WATER TEMP GAUGE)	M*1	EL-METER
M28/M68 (LHD models)	A/T CONTROL DEVICE (OD CONTROL SWITCH)	M42	AT-A/T
M28/M60/M68 (RHD models)	A/T CONTROL DEVICE (A/T INDICATOR ILLUMINATION)	M42	EL-ILL
	ACCESSORY RELAY (In fuse block)	M15	EL-POWER
	ASHTRAY ILLUMINATION	M44	EL-ILL
	BLOWER RELAY (In fuse block)	M15	EL-POWER
	CIGARETTE LIGHTER SOCKET	M43	EL-HORN
	COMBINATION FLASHER UNIT	M20	EL-TURN
	COMBINATION METER (METER ILLUMINATION) (For Europe and Israel)	M30 M32	EL-ILL
	DATA LINK CONNECTOR FOR CONSULT	M13	EC-MIL BR-ABS RS-SRS
	DOOR LOCK TIMER (Type-1)	M34	EL-D/LOCK
	DOOR LOCK TIMER (Type-2)	M35	EL-D/LOCK
	DOOR MIRROR REMOTE CONTROL SWITCH	M9	EL-MIRROR
	ECM (ENGINE CONTROL MODULE)	M39	EC-GLOW
	FAN SWITCH	M45	EC-A/CCUT EC-LOAD HA-A/C
	FAN SWITCH ILLUMINATION	M48	HA-A/C EL-ILL
	FRONT FOG LAMP SWITCH	M10	EL-F/FOG EL-ILL
	FRONT WIPER AMPLIFIER	M74	EL-WIPER
	FRONT WIPER MOTOR (With ABS, dual air bag or rear power window)	M83	EL-WIPER
	GLOVE BOX LAMP SWITCH	M66	EL-ILL
	HAZARD SWITCH	M54	EL-TURN EL-ILL
	HEADLAMP AIMING SWITCH	M11	EL-AIM
	HEADLAMP WIPER AND WASHER SWITCH	M56	EL-ILL EL-HLC
	IGNITION RELAY (In fuse block)	M15	EL-POWER
	ILLUMINATION CONTROL SWITCH	M21	EL-ILL
	MIRROR DEFOGGER RELAY	M17	EL-DEF
	NATS IMMU	M36	EL-NATS

*1 M30 (With tachometer), M32 (Without tachometer)

*2 M30 (Without tachometer), M31 (With tachometer)

GROUND DISTRIBUTION

GROUND	CONNECT TO	CONN. NO	CELL CORD
M28/M68 (LHD models) M28/M60/M68 (RHD models)	POWER STEERING OIL PRESSURE SWITCH (LHD models without ABS, dual air bag and rear power window)	M82	EC-PST/SW
	POWER WINDOW RELAY	M16	EL-ILL EL-WINDOW
	REAR FOG LAMP SWITCH	M55	EL-R/FOG EL-ILL EL-BUZZER
	REAR WINDOW DEFOGGER SWITCH	M53	EL-ILL EL-DEF
	REAR WINDOW DEFOGGER TIMER	M37	EL-DEF
	REAR WIPER AMPLIFIER (RHD models)	M21	EL-WIP/R
	RECIRCULATION SWITCH	M46	HA-A/C
	SIDE TURN SIGNAL LAMP (Passenger side) (GA engine without ABS, dual air bag and rear power window)	M81	EL-TURN
	SUN ROOF RELAY	M16	EL-SROOF
	WARNING BUZZER UNIT (For Australia)	M38	EL-BUZZER
	FRONT WIPER MOTOR (With ABS, dual air bag or rear power window)	B105	EL-WIPER
	REAR WIPER AMPLIFIER (LHD models)	B8	EL-WIP/R
	IACV-FICD SOLENOID VALVE (RHD models with CD engine)	B102	EC-A/CCUT HA-A/C
	POWER STEERING OIL PRESSURE SWITCH (LHD models with ABS, dual air bag or rear power window)	B102	EC-PST/SW
	SIDE TURN SIGNAL LAMP (Passenger side) (Except GA engine without ABS, dual air bag and rear power window)	B108	EL-TURN
	AIR BAG DIAGNOSIS SENSOR UNIT (Dual air bag system)	Z1	RS-SRS
	SPOT LAMP	R2	EL-INT/L
	DOOR LOCK ACTUATOR (Driver side)	D8	EL-D/LOCK
	DOOR LOCK ACTUATOR (Passenger side)	D38	EL-D/LOCK
	DOOR MIRROR DEFOGGER (Driver side)	D4	EL-DEF
	DOOR MIRROR DEFOGGER (Passenger side)	D34	EL-DEF
	LOCK KNOB SWITCH	D9	EL-D/LOCK
	POWER WINDOW MAIN SWITCH (Without rear power window)	D6	EL-WINDOW
	POWER WINDOW MAIN SWITCH (With rear power window)	D7	EL-WINDOW EL-D/LOCK

GROUND DISTRIBUTION

GROUND	CONNECT TO	CONN NO	CELL CORD
F13/F14	DISTRIBUTOR (CAMSHAFT POSITION SENSOR)	F24	EC-CMPS
	DISTRIBUTOR (POWER TRANSISTOR)	F24	EC-IGN/SG
	ECM (ECCS CONTROL MODULE)	F1	EC-MAIN
	IACV-FICD SOLENOID VALVE (GA16DE engine except for Europe and Israel)	F9	EC-FICD HA-A/C
	IACV-FICD SOLENOID VALVE (GA engine for Europe and Israel and GA15DE engine)	F11	EC-FICD HA-A/C
	SHIELD WIRE (CAMSHAFT POSITION SENSOR)	F24	EC-CMPS
	SHIELD WIRE (HEATED OXYGEN SENSOR)	F23	EC-HO2S
	SHIELD WIRE (KNOCK SENSOR) (GA engine)	F102	EC-KS
	SHIELD WIRE (MASS AIR FLOW SENSOR) (GA engine for Europe and Israel and GA15DE engine)	F12	EC-MAFS
	SHIELD WIRE (MASS AIR FLOW SENSOR) (GA16DE engine except for Europe and Israel and SR engine)	F27	EC-MAFS
	SHIELD WIRE (OXYGEN SENSOR)	F22	EC-O2S
	SHIELD WIRE (THROTTLE POSITION SENSOR)	F8	EC-TPS
	IACV-AIR REGULATOR	E214	EC-AIRREG
	IACV-FICD SOLENOID VALVE (SR engine)	E212	EC-FICD HA-A/C
	SHIELD WIRE (KNOCK SENSOR) (SR engine)	E215	EC-KS
E205	ALTERNATOR	E233	EL-CHARGE EL-WARN
B11/B32 (Sedan) B11/B32/D105 (Hatchback)	FRONT DOOR SWITCH (Driver side)	B9	RS-SRS EL-BUZZER
	FUEL PUMP	B17	EC-F/PUMP
	FUEL TANK GAUGE UNIT	B18	EL-METER EL-WARN
	HEATED SEAT LH	B12	EL-H/SEAT
	HEATED SEAT RH	B16	EL-H/SEAT
	HEATED SEAT SWITCH LH	B13	EL-H/SEAT
	HEATED SEAT SWITCH RH	B15	EL-H/SEAT
	REAR COMBINATION LAMP LH (TAIL AND STOP) (Hatchback)	B27	EL-TAIL/L EL-STOP/L
	REAR COMBINATION LAMP LH (TURN SIGNAL) (Hatchback)	B27	EL-TURN
	REAR COMBINATION LAMP RH (TAIL AND STOP) (Hatchback)	B28	EL-TAIL/L EL-STOP/L
	REAR COMBINATION LAMP RH (TURN SIGNAL) (Hatchback)	B28	EL-TURN
	HIGH-MOUNTED STOP LAMP (In rear air spoiler) (Hatchback)	D112	EL-STOP/L
	HIGH-MOUNTED STOP LAMP (On rear window) (Hatchback)	D108	EL-STOP/L
	LICENSE PLATE LAMP LH (Hatchback)	D107	EL-TAIL/L
	LICENSE PLATE LAMP RH (Hatchback)	D109	EL-TAIL/L

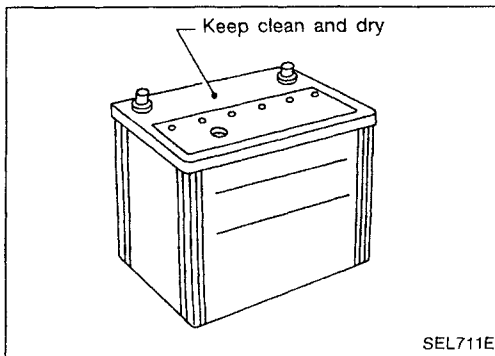
GROUND DISTRIBUTION

GROUND	CONNECT TO	CONN. NO.	CELL CORD
B11/B32 (Sedan) B11/B32/D105 (Hatchback)	LUGGAGE ROOM LAMP SWITCH	D110	EL-INT/L
	REAR COMBINATION LAMP LH (BACK-UP)	D103	EL-BACK/L
	REAR COMBINATION LAMP LH (REAR FOG) (LHD Hatchback models for Europe)	D103	EL-R/FOG
	REAR COMBINATION LAMP LH (TAIL) (Hatchback except for Europe and Australia)	D103	EL-TAIL/L
	REAR COMBINATION LAMP RH (BACK-UP)	D111	EL-BACK/L
	REAR COMBINATION LAMP RH (REAR FOG) (RHD Hatchback models for Europe)	D111	EL-R/FOG
	REAR COMBINATION LAMP RH (TAIL) (Hatchback except for Europe and Australia)	D111	EL-TAIL/L
T10/T11	HIGH-MOUNTED STOP LAMP (Sedan)	T6	EL-STOP/L
	LICENSE PLATE LAMP LH (Sedan)	T5	EL-TAIL/L
	LICENSE PLATE LAMP RH (Sedan)	T7	EL-TAIL/L
	REAR COMBINATION LAMP LH (BACK-UP) (LHD Sedan models)	T3	EL-BACK/L
	REAR COMBINATION LAMP LH (REAR FOG) (Sedan)	T3	EL-R/FOG
	REAR COMBINATION LAMP LH (TAIL AND STOP) (Sedan)	T2	EL-TAIL/L EL-STOP/L
	REAR COMBINATION LAMP LH (TAIL) (Sedan except for Europe and Australia)	T3	EL-TAIL/L
	REAR COMBINATION LAMP LH (TURN SIGNAL) (Sedan)	T2	EL-TURN
	REAR COMBINATION LAMP RH (BACK-UP) (Sedan)	T8	EL-BACK/L
	REAR COMBINATION LAMP RH (REAR FOG) (RHD Sedan models)	T8	EL-R/FOG
	REAR COMBINATION LAMP RH (TAIL AND STOP) (Sedan)	T9	EL-TAIL/L EL-STOP/L
	REAR COMBINATION LAMP RH (TAIL) (Sedan except for Europe and Australia)	T8	EL-TAIL/L
	REAR COMBINATION LAMP RH (TURN SIGNAL) (Sedan)	T9	EL-TAIL/L
	TRUNK ROOM LAMP SWITCH	T4	EL-INT/L
B110	SHIELD WIRE (WHEEL SPEED SENSOR FRONT LH) (LHD models)	E4	BR-ABS
	SHIELD WIRE (WHEEL SPEED SENSOR FRONT RH) (RHD models)	E11	BR-ABS
	SHIELD WIRE (WHEEL SPEED SENSOR FRONT LH) (RHD models)	B106	BR-ABS
	SHIELD WIRE (WHEEL SPEED SENSOR FRONT RH) (LHD models)	B107	BR-ABS
B112	ABS CONTROL UNIT	B111	BR-ABS
	ABS RELAY BOX	B104	BR-ABS
B204	REAR WINDOW DEFOGGER	B203	EL-DEF

BATTERY

CAUTION:

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

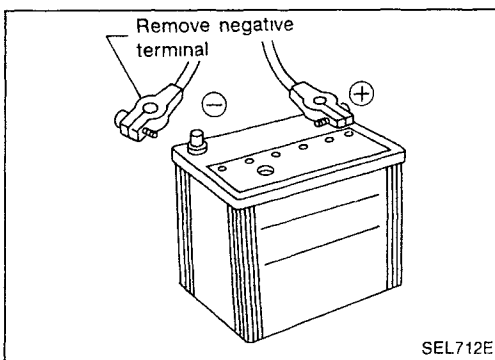


How to Handle Battery

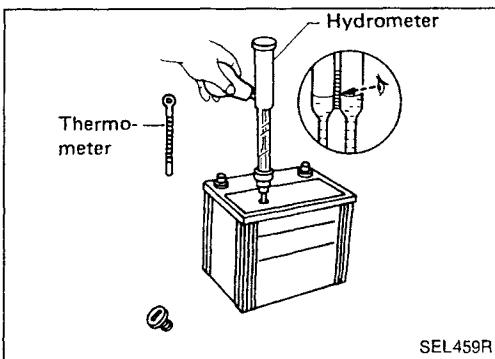
METHODS OF PREVENTING OVER-DISCHARGE

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

- The battery surface (particularly its top) should always be kept clean and dry.
- The terminal connections should be clean and tight.
- At every routine maintenance, check the electrolyte level.



- When the vehicle is not going to be used over a long period of time, disconnect the negative battery terminal. (If the vehicle has an extended storage switch, turn it off.)



- Check the charge condition of the battery. Periodically check the specific gravity of the electrolyte. Keep a close check on charge condition to prevent overdischarge.

CHECKING ELECTROLYTE LEVEL

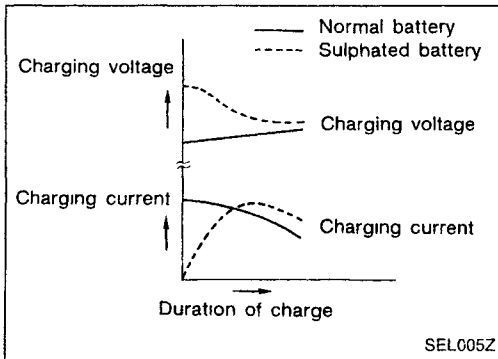
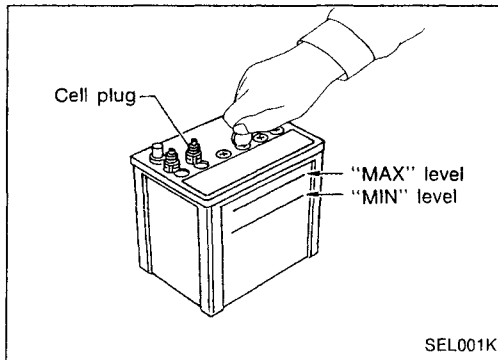
WARNING:

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

BATTERY

How to Handle Battery (Cont'd)

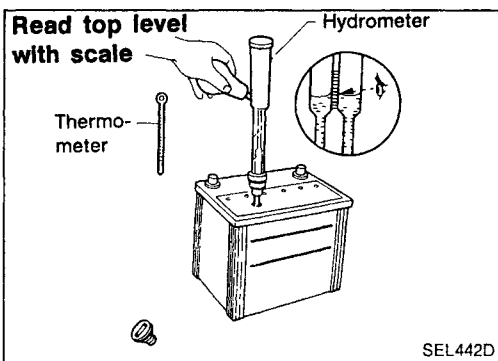
- Remove the cell plug using a suitable tool.
- Add distilled water up to the MAX level.



SULPHATION

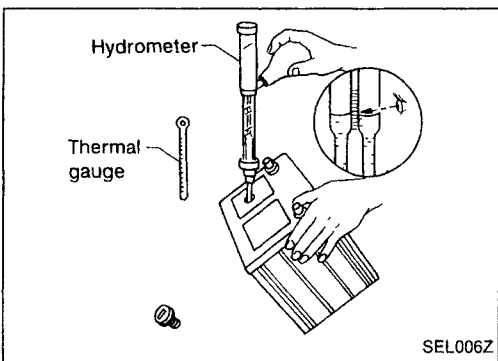
A battery will be completely discharged if it is left unattended for a long time and the specific gravity becomes less than 1.100. This may result in sulphation on the cell plates.

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



SPECIFIC GRAVITY CHECK

1. Read hydrometer and thermometer indications at eye level.



- When electrolyte level is too low, tilt battery case to raise it for easy measurement.

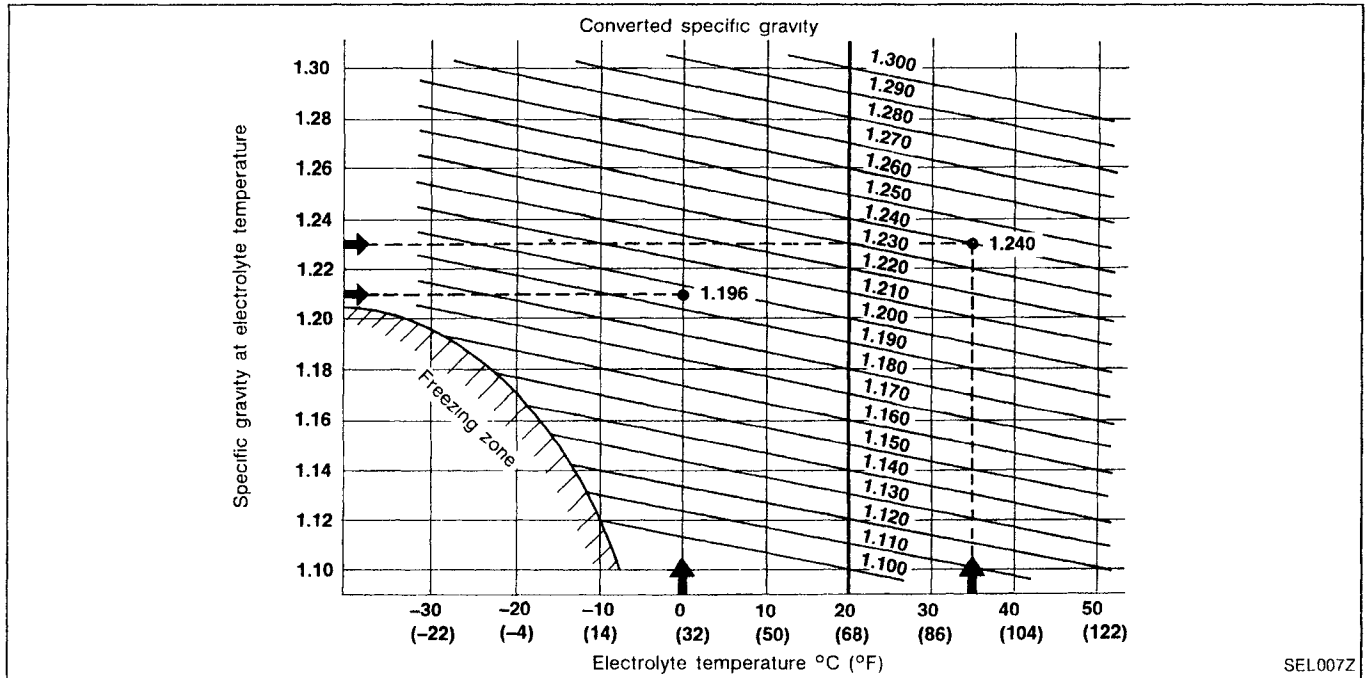
BATTERY

How to Handle Battery (Cont'd)

2. Convert into specific gravity at 20°C (68°F).

Example:

- When electrolyte temperature is 35°C (95°F) and specific gravity of electrolyte is 1.230, converted specific gravity at 20°C (68°F) is 1.240.
- When electrolyte temperature is 0°C (32°F) and specific gravity of electrolyte is 1.210, converted specific gravity at 20°C (68°F) is 1.196.

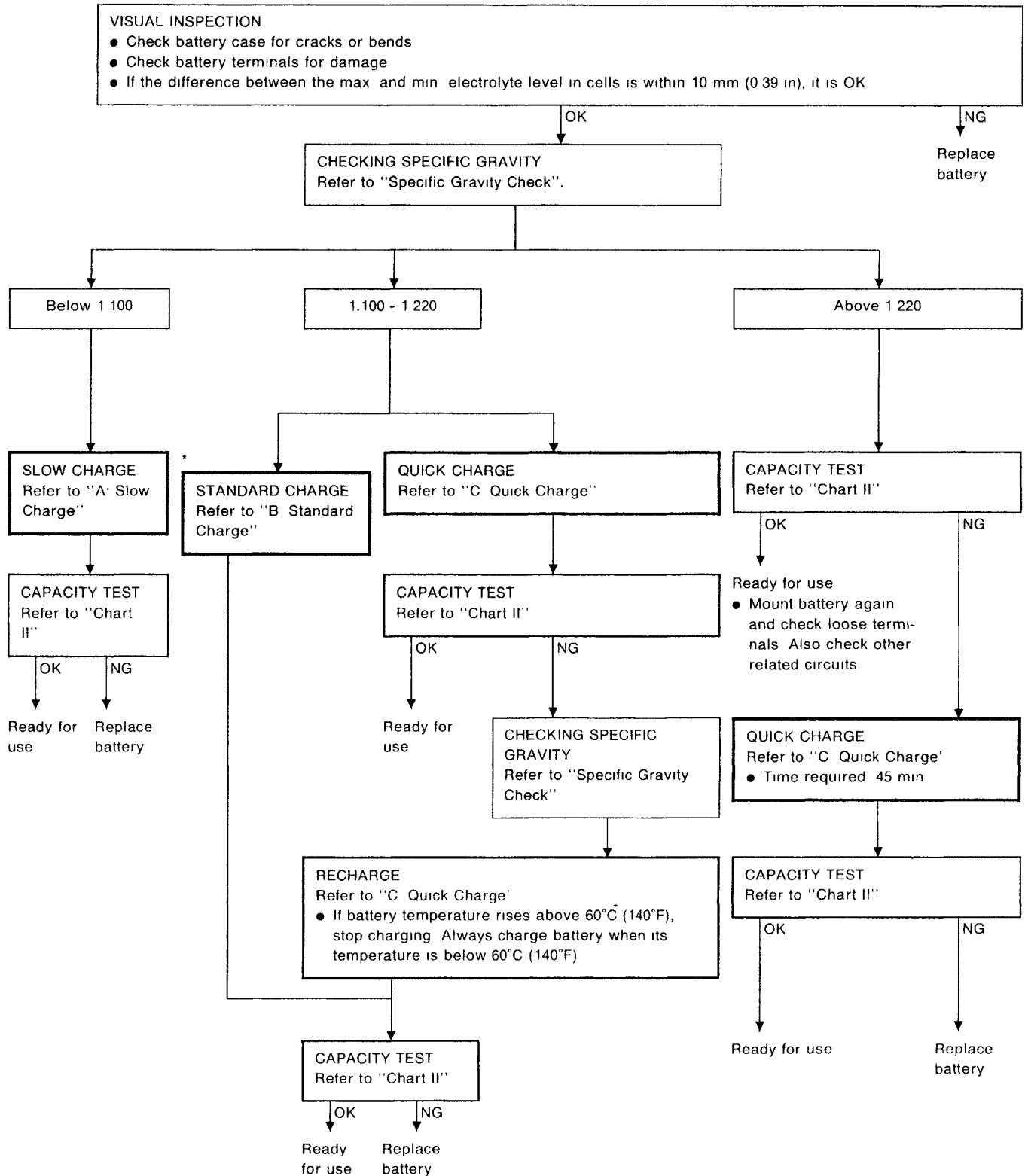


SEL007Z

BATTERY

Battery Test and Charging Chart

Chart I

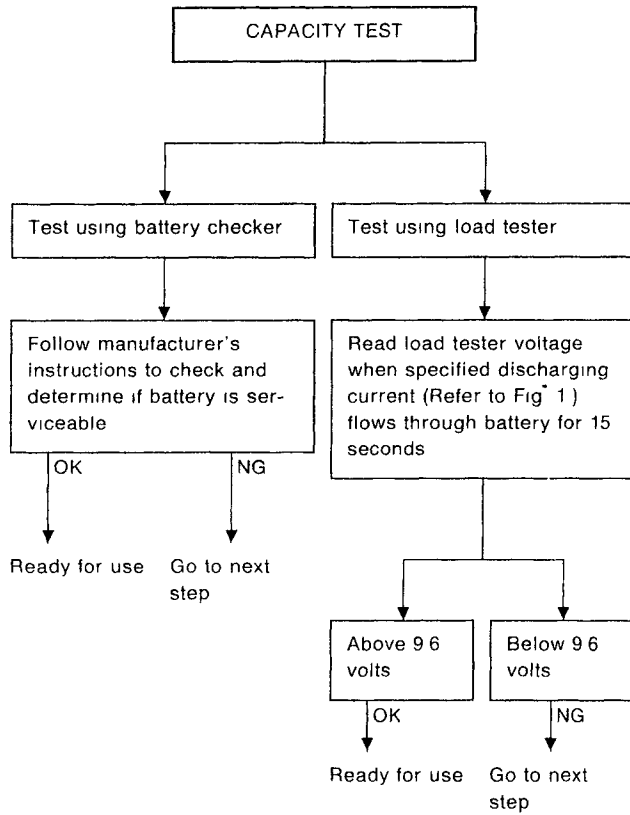


* "STANDARD CHARGE" is recommended if the vehicle is in storage after charging.

BATTERY

Battery Test and Charging Chart (Cont'd)

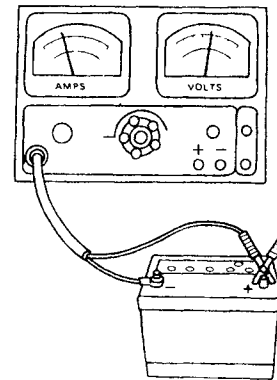
Chart II



- Check battery type and determine the specified current using the following table

Fig 1 DISCHARGING CURRENT
(Load Tester)

Type	Current (A)
28B19R(L)	90
34B19R(L)	99
46B24R(L)	135
55B24R(L)	135
50D23R(L)	150
55D23R(L)	180
65D26R(L)	195
80D26R(L)	195
75D31R(L)	210
95D31R(L)	240
115D31R(L)	240
95E41R(L)	300
130E41R(L)	330



SEL008Z

BATTERY

Battery Test and Charging Chart (Cont'd)

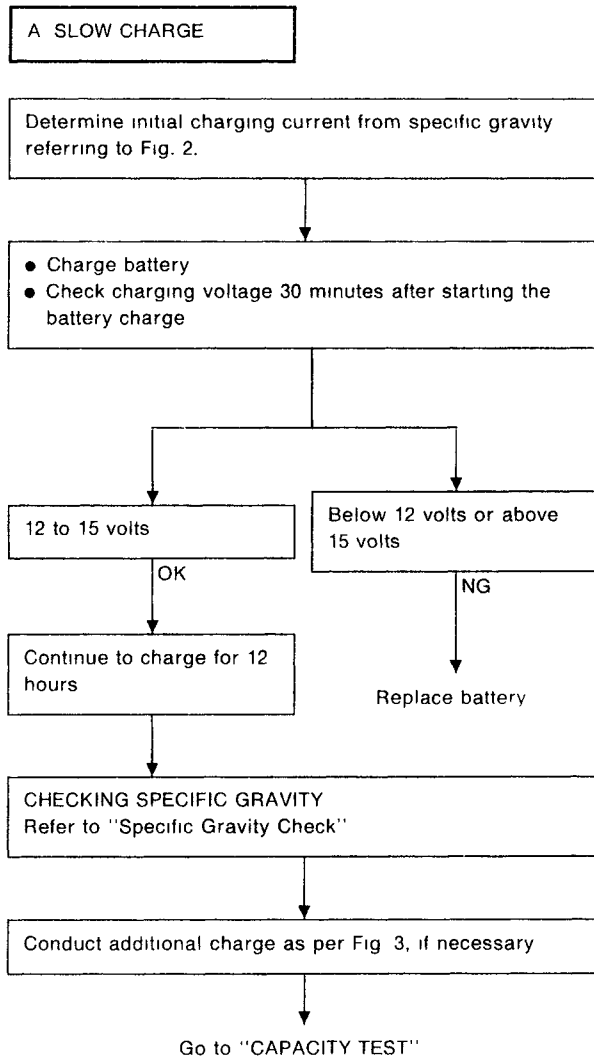
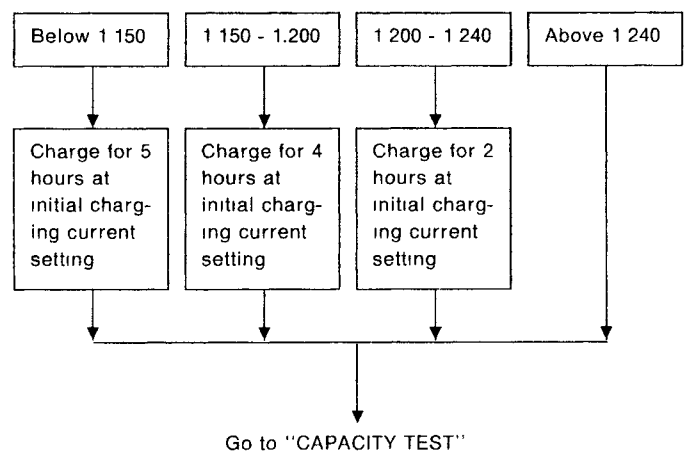


Fig 2 INITIAL CHARGING CURRENT SETTING (Slow charge)

CON- VERTED SPECIFIC GRAVITY	BATTERY TYPE										
	28B19R(L)	34B19R(L)	46B24R(L)	55B24R(L)	50D23R(L)	55D23R(L)	65D26R(L)	80D26R(L)	75D31R(L)	95D31R(L)	115D31R(L)
Below 1.100	4.0 (A)		5.0 (A)		7.0 (A)		8.0 (A)		9.0 (A)		10.0 (A)
											14.0 (A)

- Check battery type and determine the specified current using the table shown above.
- After starting charging, adjustment of charging current is not necessary

Fig 3 ADDITIONAL CHARGE (Slow charge)



CAUTION:

- Set charging current to value specified in Fig. 2. If charger is not capable of producing specified current value, set its charging current as close to that value as possible.
- Keep battery away from open flame while it is being charged.
- When connecting charger, connect leads first, then turn on charger. Do not turn on charger first, as this may cause a spark.
- If battery temperature rises above 60°C (140°F), stop charging. Always charge battery when its temperature is below 60°C (140°F).

BATTERY

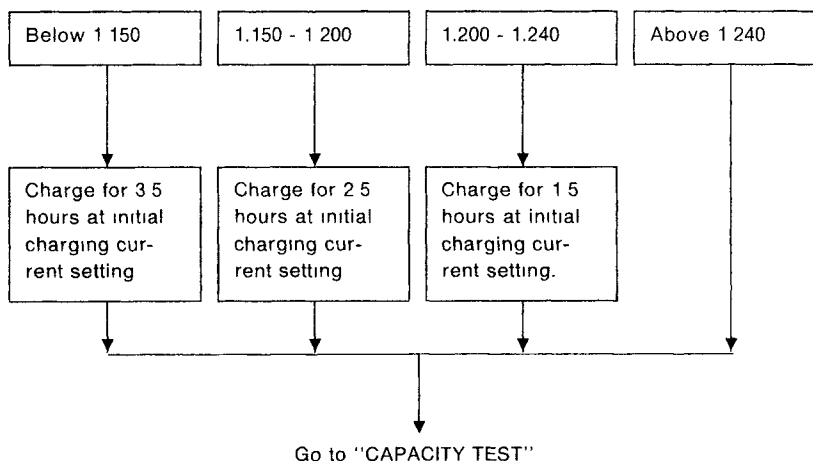
Battery Test and Charging Chart (Cont'd)

Fig 4 INITIAL CHARGING CURRENT SETTING
(Standard charge)

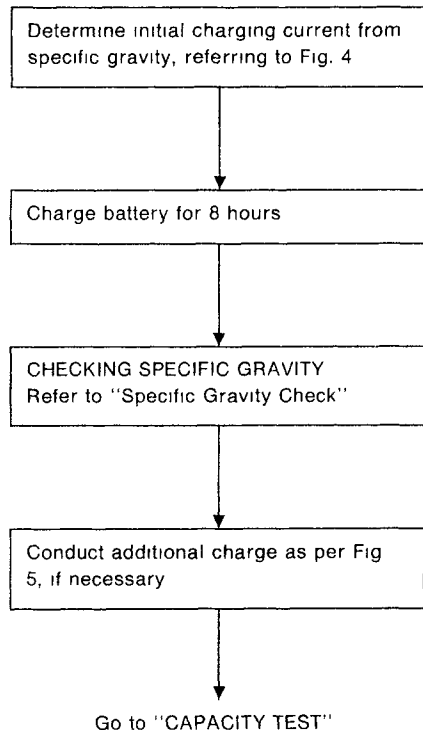
CON- VERTED SPECIFIC GRAVITY	BATTERY TYPE												
	28B19R(L)	34B19R(L)	46B24R(L)	55B24R(L)	50D23R(L)	55D23R(L)	65D26R(L)	80D26R(L)	75D31R(L)	95D31R(L)	115D31R(L)	95E41R(L)	130E41R(L)
1 100 - 1 130	4.0 (A)		5.0 (A)		6 0 (A)		7 0 (A)		8.0 (A)		9 0 (A)		13 0 (A)
1 130 - 1 160	3 0 (A)		4 0 (A)		5 0 (A)		6 0 (A)		7 0 (A)		8 0 (A)		11 0 (A)
1 160 - 1 190	2.0 (A)		3 0 (A)		4.0 (A)		5 0 (A)		6.0 (A)		7 0 (A)		9 0 (A)
1 190 - 1 220	2 0 (A)		2 0 (A)		3 0 (A)		4 0 (A)		5 0 (A)		5 0 (A)		7.0 (A)

- Check battery type and determine the specified current using the table shown above
- After starting charging, adjustment of charging current is not necessary

Fig 5 ADDITIONAL CHARGE (Standard charge)



B STANDARD CHARGE



CAUTION:

- Do not use standard charge method on a battery whose specific gravity is less than 1.100.
- Set charging current to value specified in Fig. 4. If charger is not capable of producing specified current value, set its charging current as close to that value as possible.
- Keep battery away from open flame while it is being charged.
- When connecting charger, connect leads first, then turn on charger. Do not turn on charger first, as this may cause a spark.
- If battery temperature rises above 60°C (140°F), stop charging. Always charge battery when its temperature is below 60°C (140°F).

BATTERY

Battery Test and Charging Chart (Cont'd)

C QUICK CHARGE

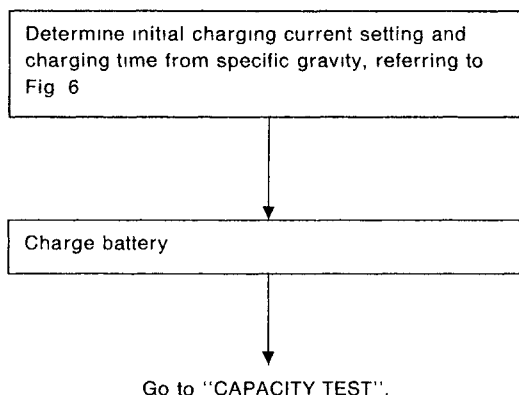


Fig. 6 INITIAL CHARGING CURRENT SETTING AND CHARGING TIME (Quick charge)

BATTERY TYPE		28B19R(L)	34B19R(L)	46B24R(L)	55B24R(L)	50D23R(L)	55D23R(L)	65D26R(L)	80D26R(L)	75D31R(L)	95D31R(L)	115D31R(L)	95E41R(L)	130E41R(L)
CURRENT [A]		10 (A)		15 (A)			20 (A)				30 (A)			40 (A)
CONVERTED SPECIFIC GRAVITY	1.100 - 1.130	2.5 hours												
	1.130 - 1.160	2.0 hours												
	1.160 - 1.190	1.5 hours												
	1.190 - 1.220	1.0 hours												
	Above 1.220	0.75 hours (45 min)												

- Check battery type and determine the specified current using the table shown above.
- After starting charging, adjustment of charging current is not necessary.

CAUTION:

- Do not use quick charge method on a battery whose specific gravity is less than 1.100.
- Set initial charging current to value specified in Fig. 6. If charger is not capable of producing specified current value, set its charging current as close to that value as possible.
- Keep battery away from open flame while it is being charged.
- When connecting charger, connect leads first, then turn on charger. Do not turn on charger first, as this may cause a spark.
- Be careful of a rise in battery temperature because a large current flow is required during quick-charge operation.
If battery temperature rises above 60°C (140°F), stop charging. Always charge battery when its temperature is below 60°C (140°F).
- Do not exceed the charging time specified in Fig. 6, because charging battery over the charging time can cause deterioration of the battery.

Service Data and Specifications (SDS)

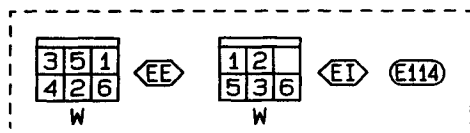
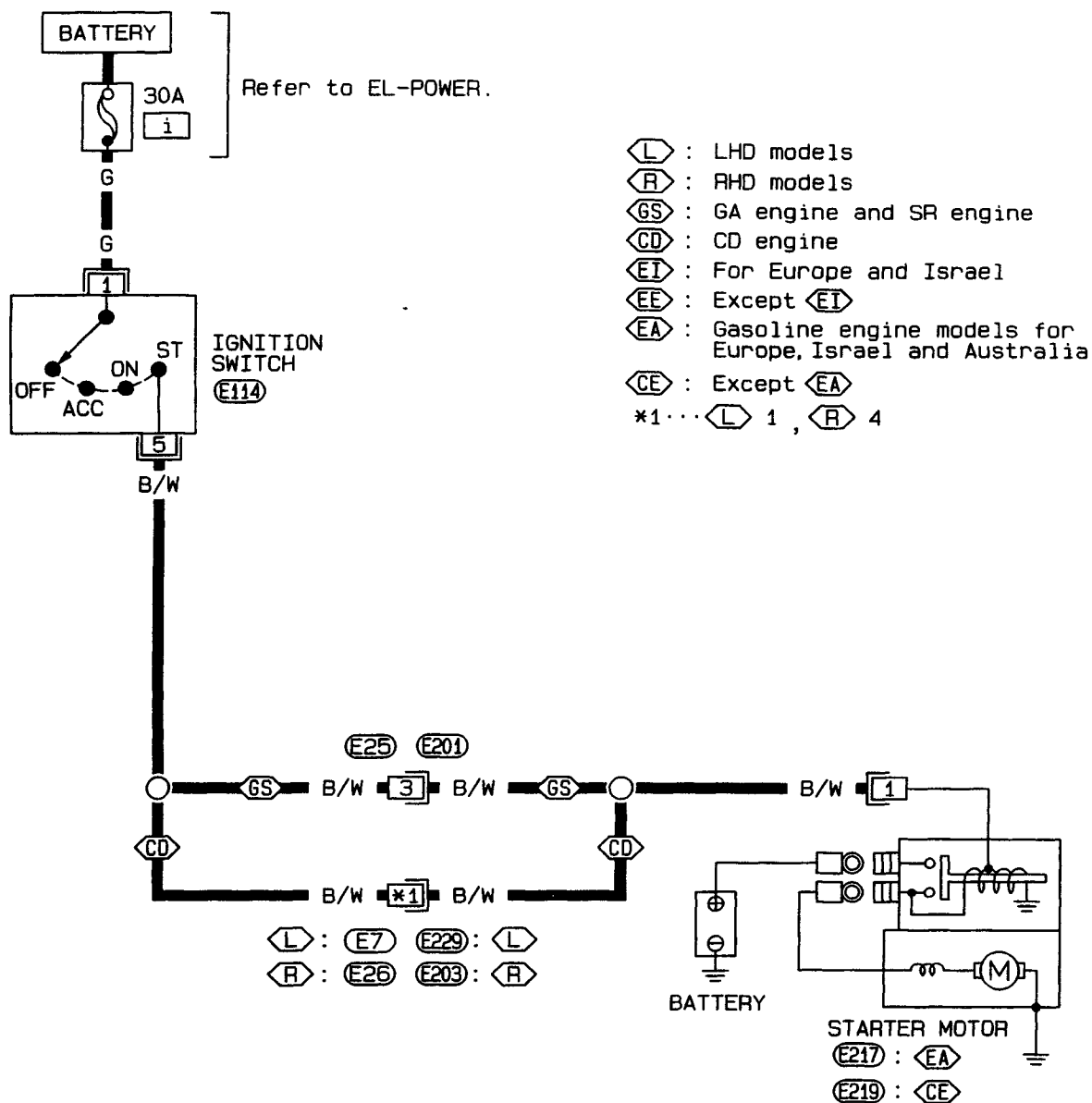
Applied model		GA engines			CD20	SR20DE
Type		28B19L	55D23L	65D26L	95D31L	34B19L
Capacity	V-AH	12 - 30	12 - 60	12 - 65	12 - 80	12 - 33

STARTING SYSTEM

Wiring Diagram — START —

M/T MODELS

EL-START-01



1 (E217), (E229) GY

1 (E219) B

1 2 3 (E201) B

1 2 3 4 (E203) GY

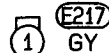
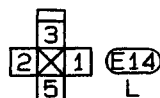
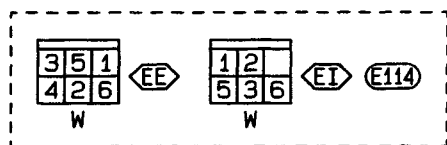
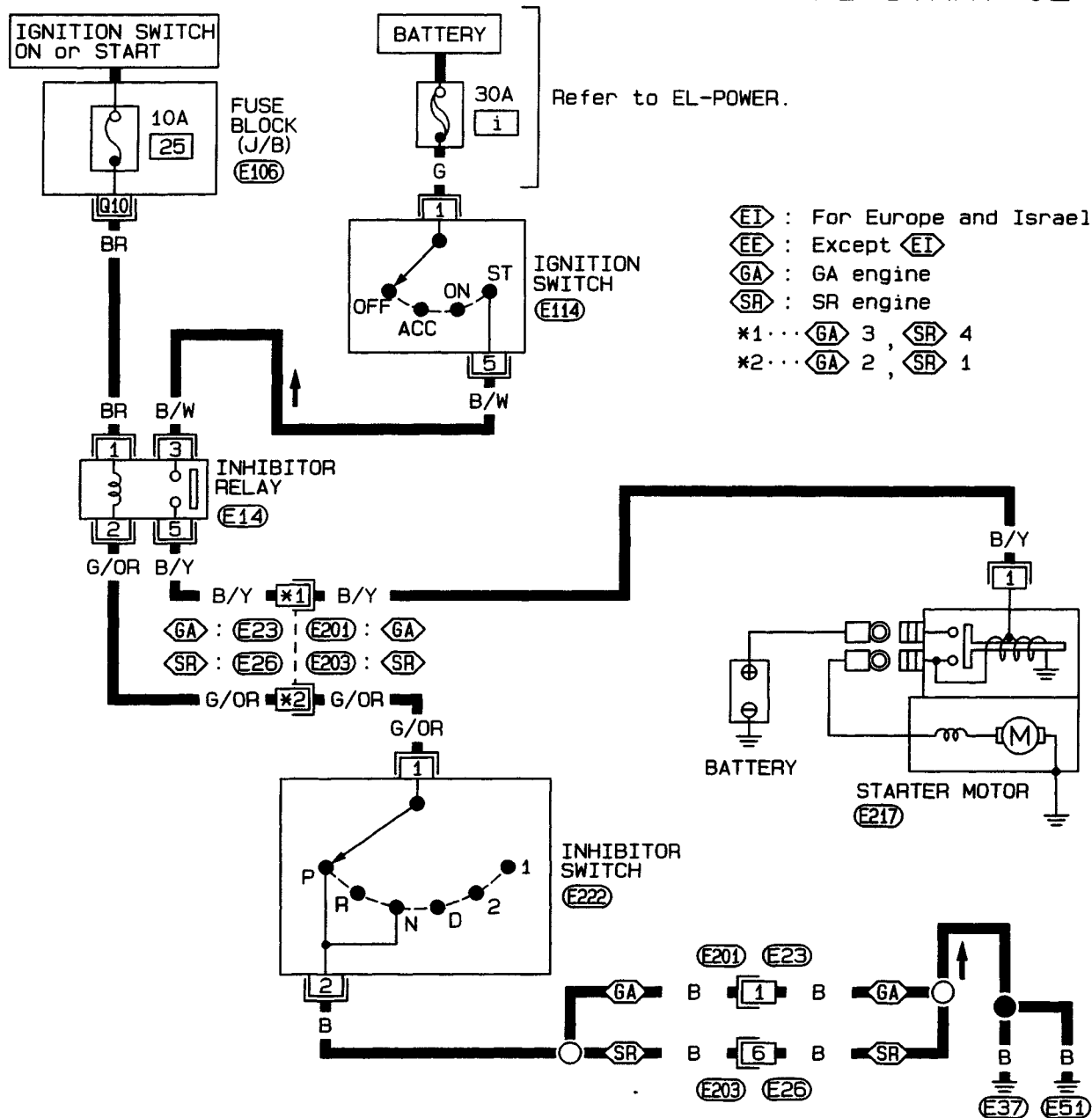
EL

STARTING SYSTEM

Wiring Diagram — START — (Cont'd)

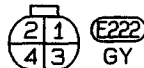
A/T MODELS

EL-START-02



Refer to last page (Foldout page).

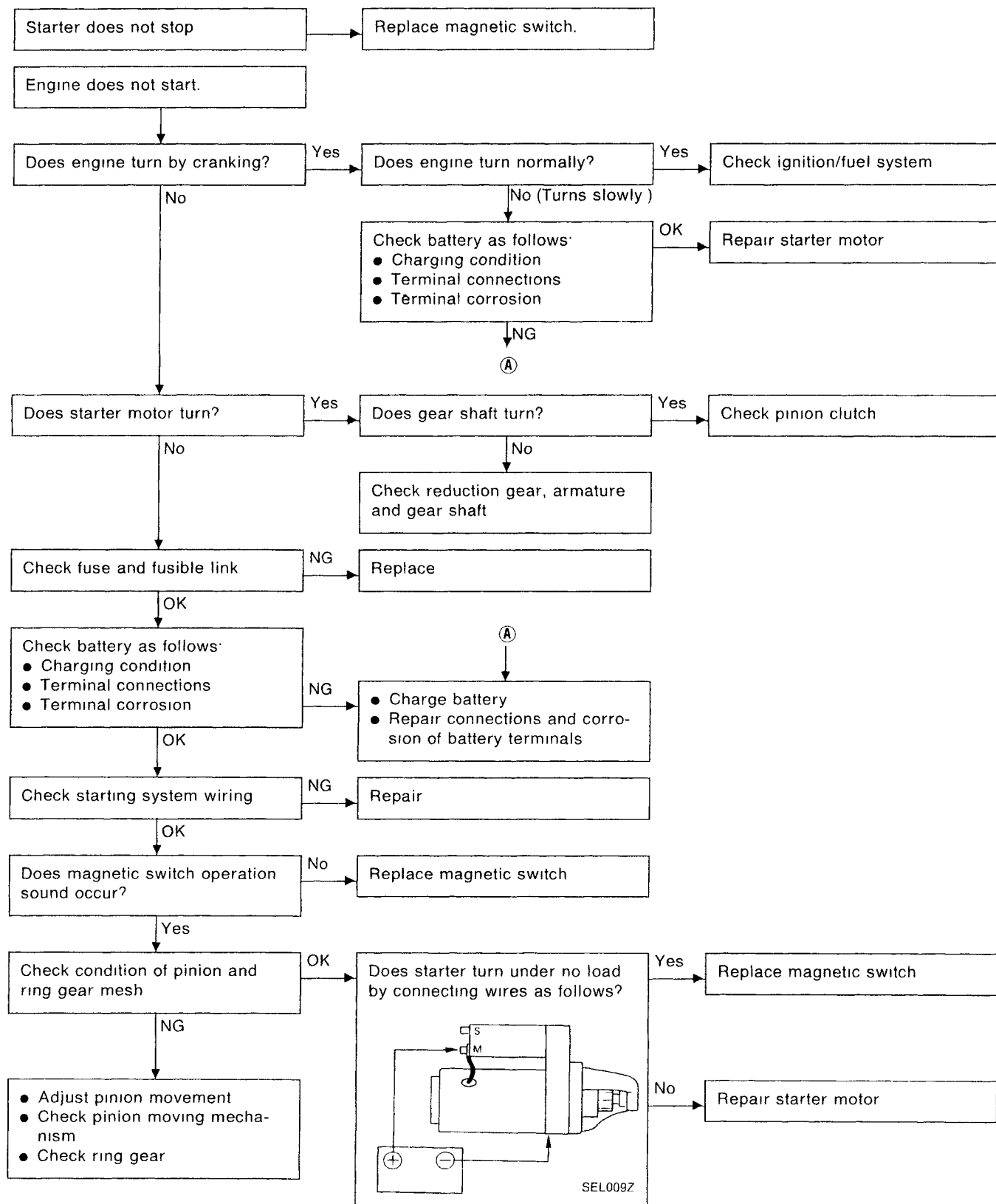
(E106)



STARTING SYSTEM

Trouble Diagnoses

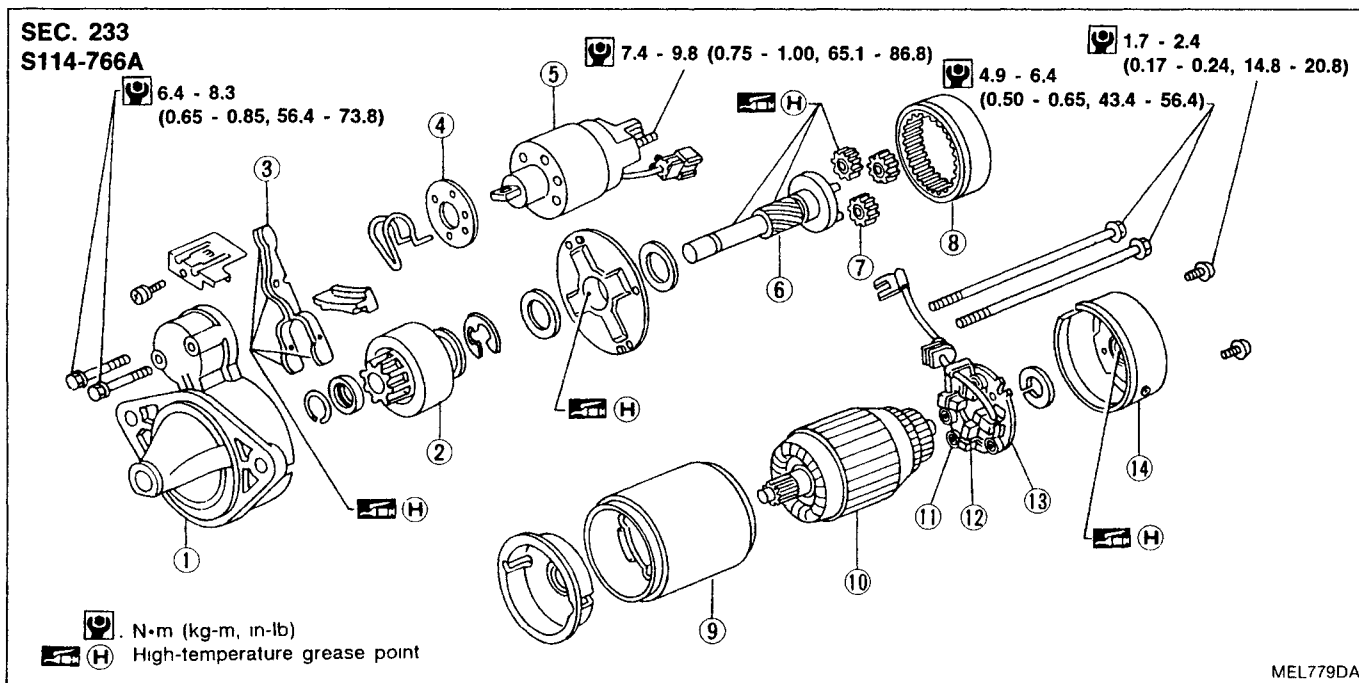
If any abnormality is found, immediately disconnect battery negative terminal.



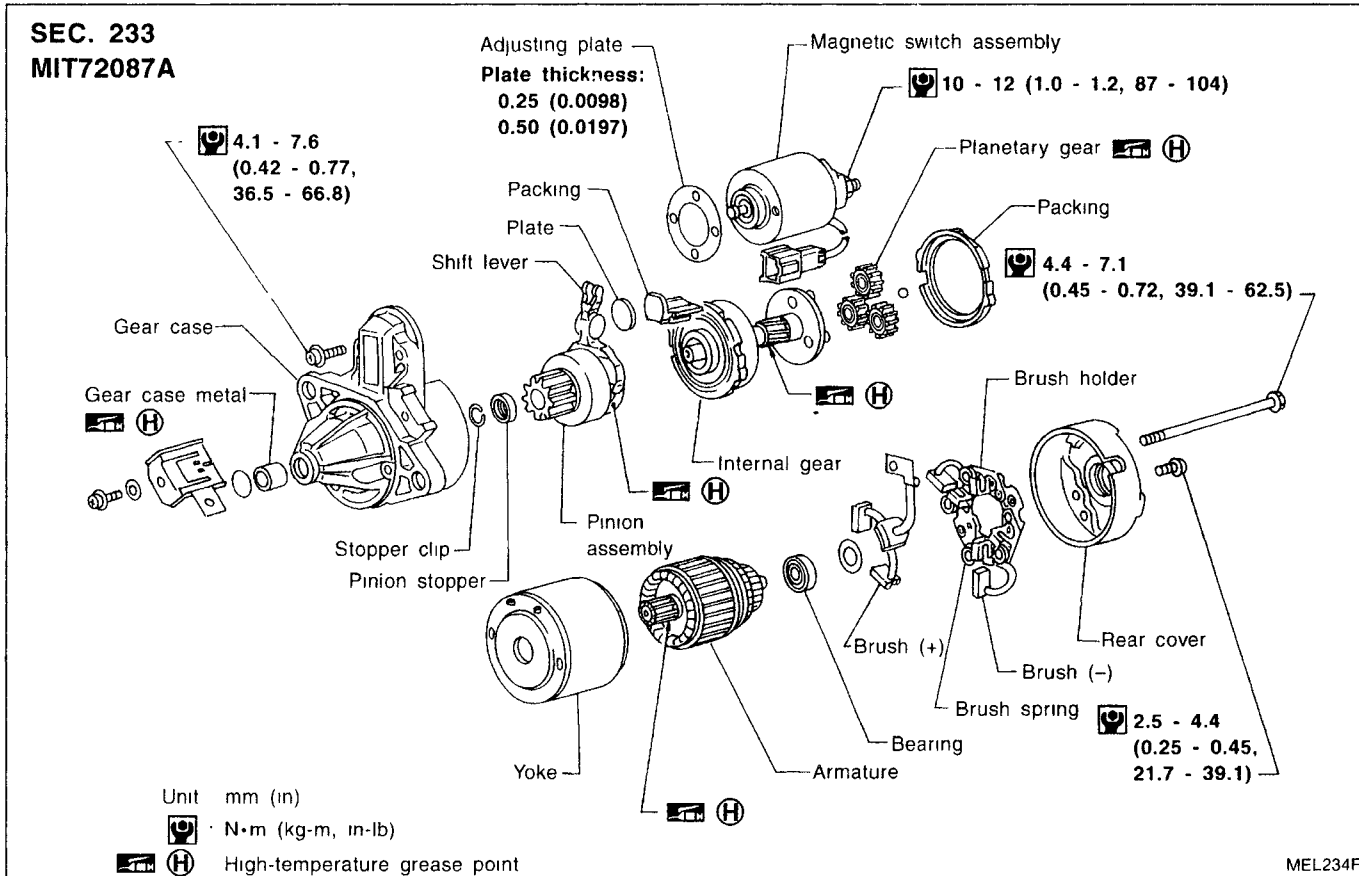
EL

STARTING SYSTEM

Construction



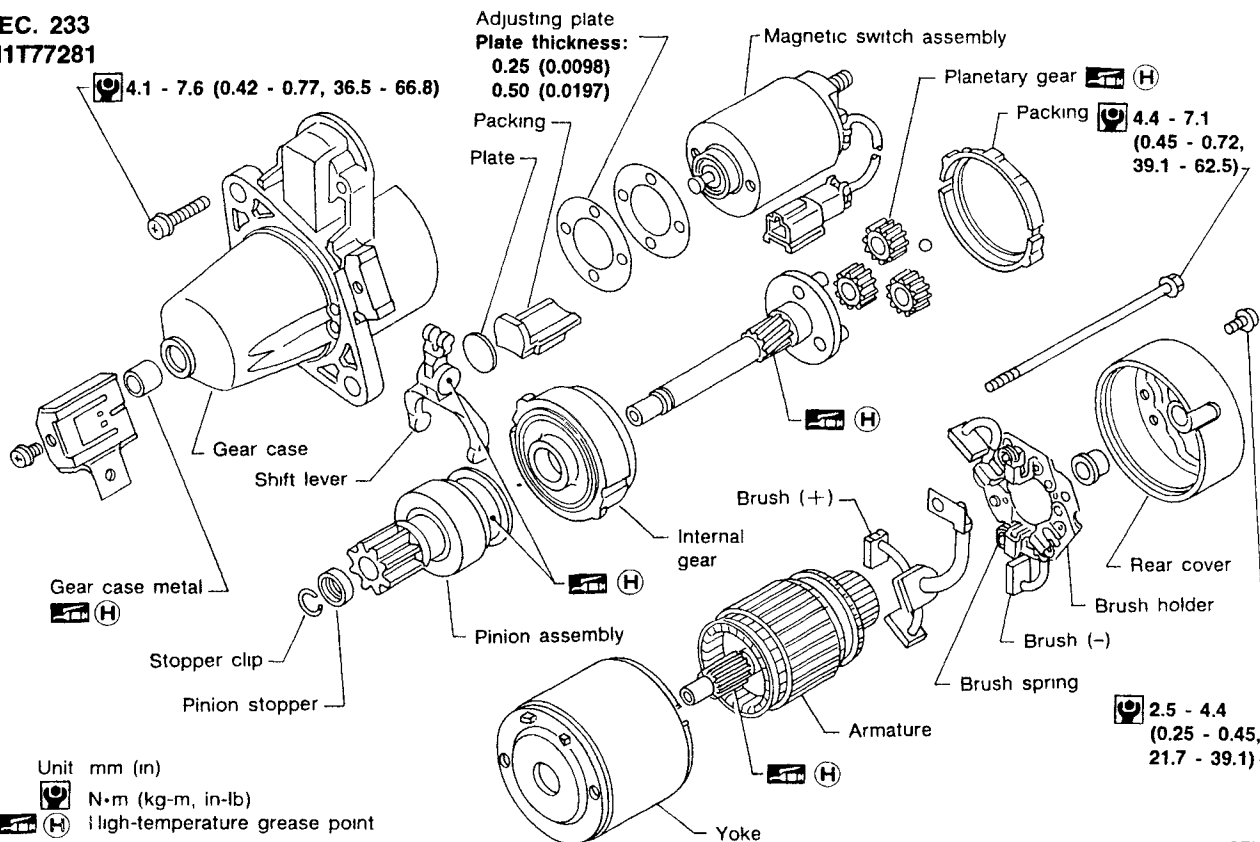
- | | | |
|----------------------------|------------------|----------------|
| ① Gear case | ⑥ Pinion shaft | ⑪ Brush spring |
| ② Pinion assembly | ⑦ Planetary gear | ⑫ Brush (-) |
| ③ Shift lever | ⑧ Internal gear | ⑬ Brush holder |
| ④ Adjusting plate | ⑨ Yoke | ⑭ Rear cover |
| ⑤ Magnetic switch assembly | ⑩ Armature | |



STARTING SYSTEM

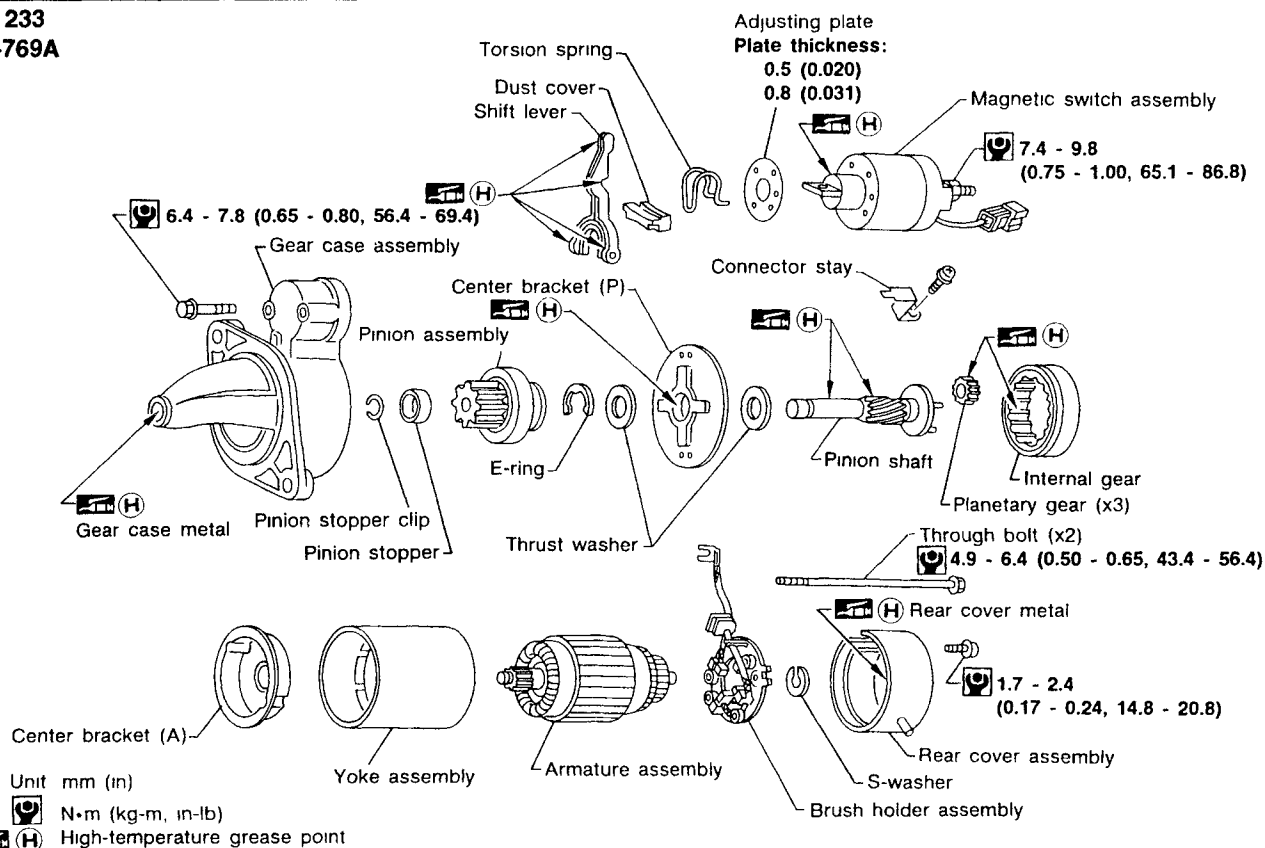
Construction (Cont'd)

SEC. 233 M1T77281



SEL151SA

SEC. 233 S114-769A

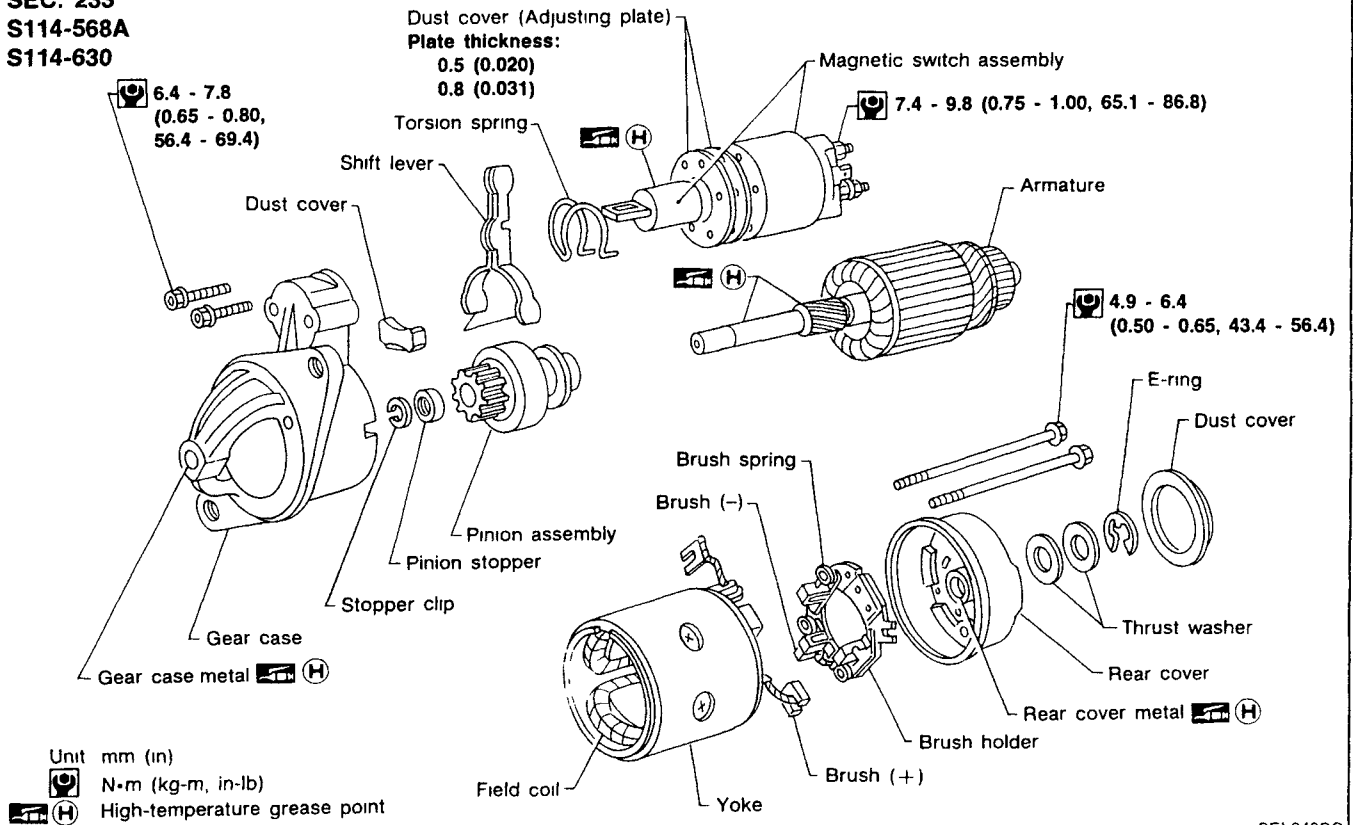


SEL902RA

STARTING SYSTEM

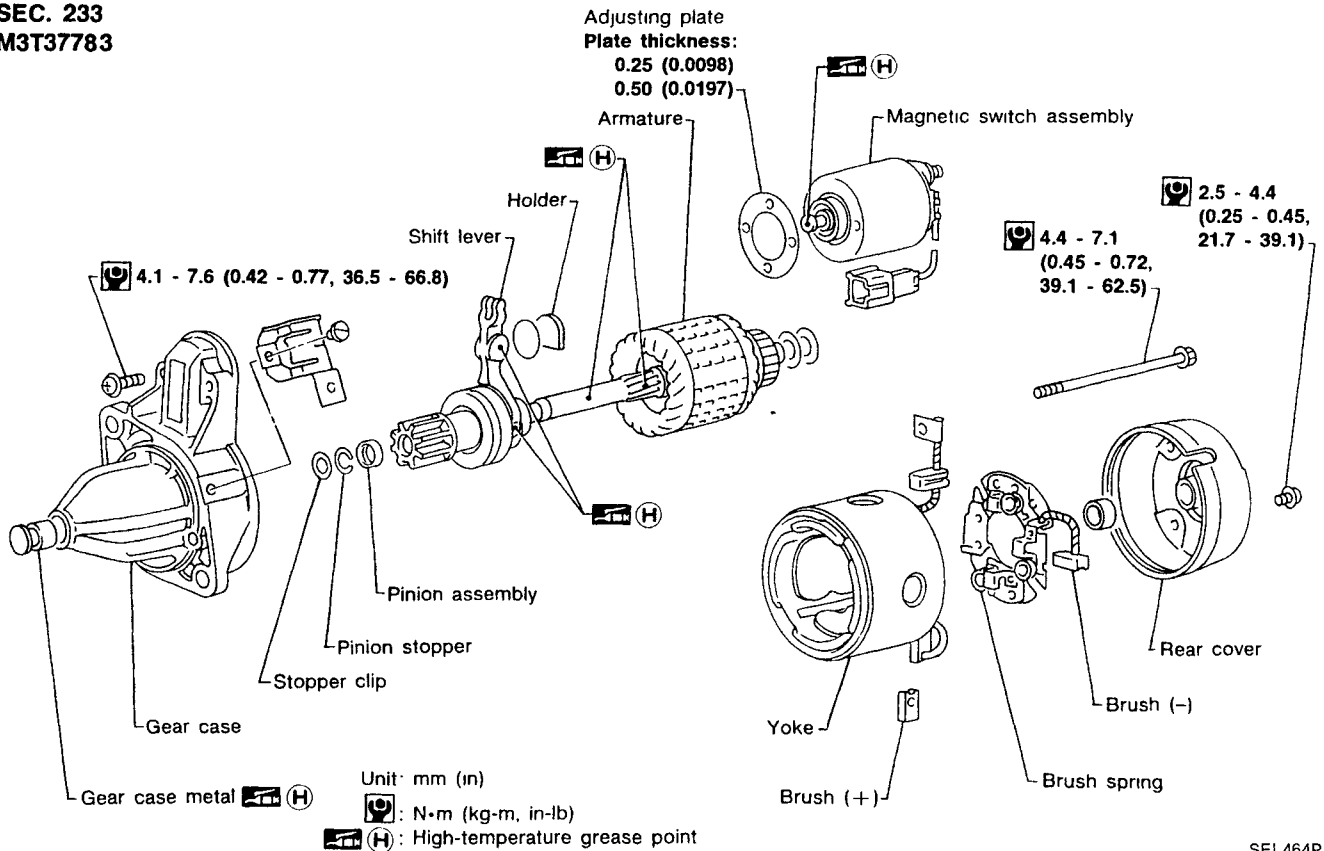
Construction (Cont'd)

SEC. 233
S114-568A
S114-630



SEL249SC

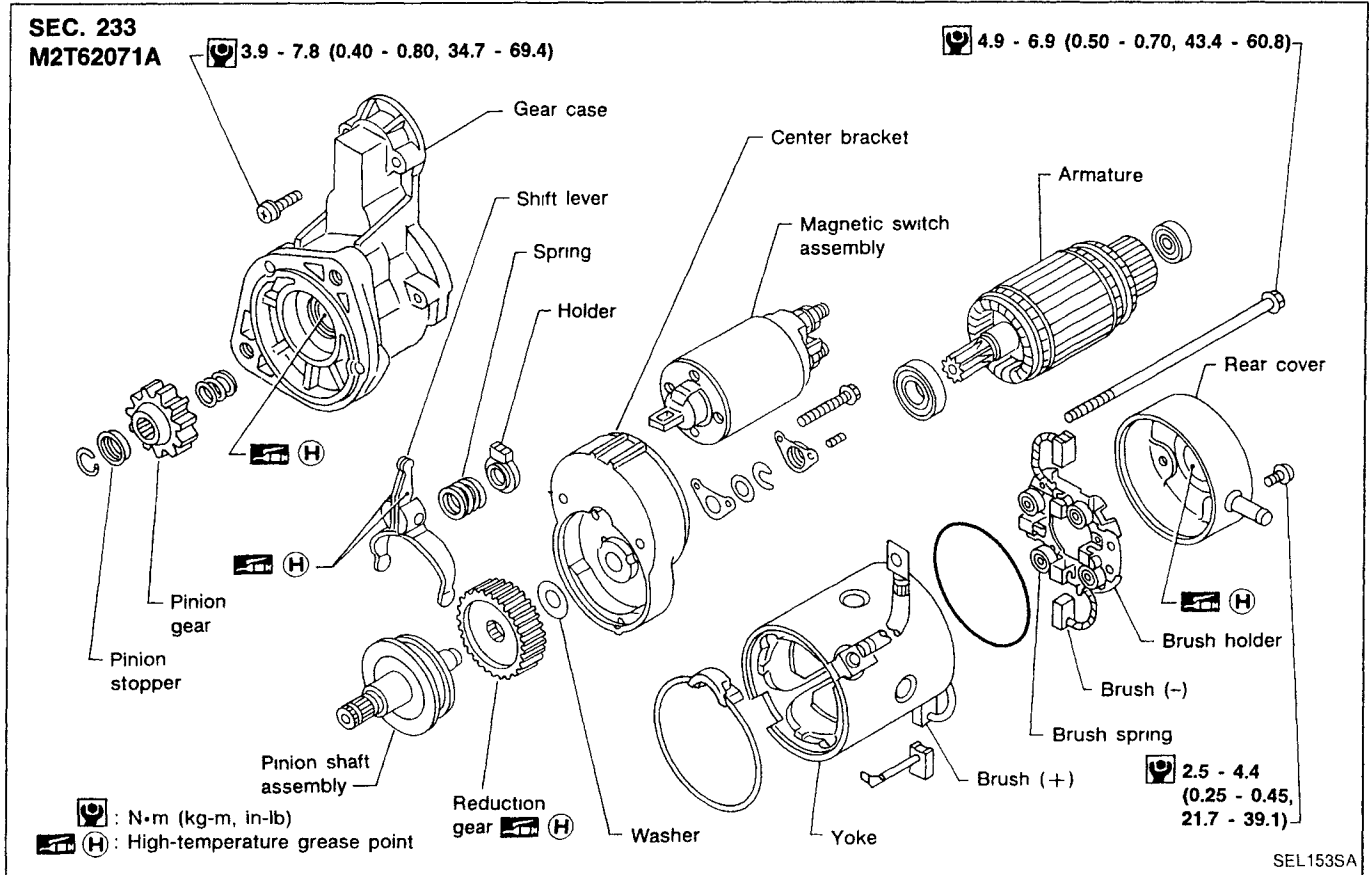
SEC. 233
M3T37783



SEL464PA

STARTING SYSTEM

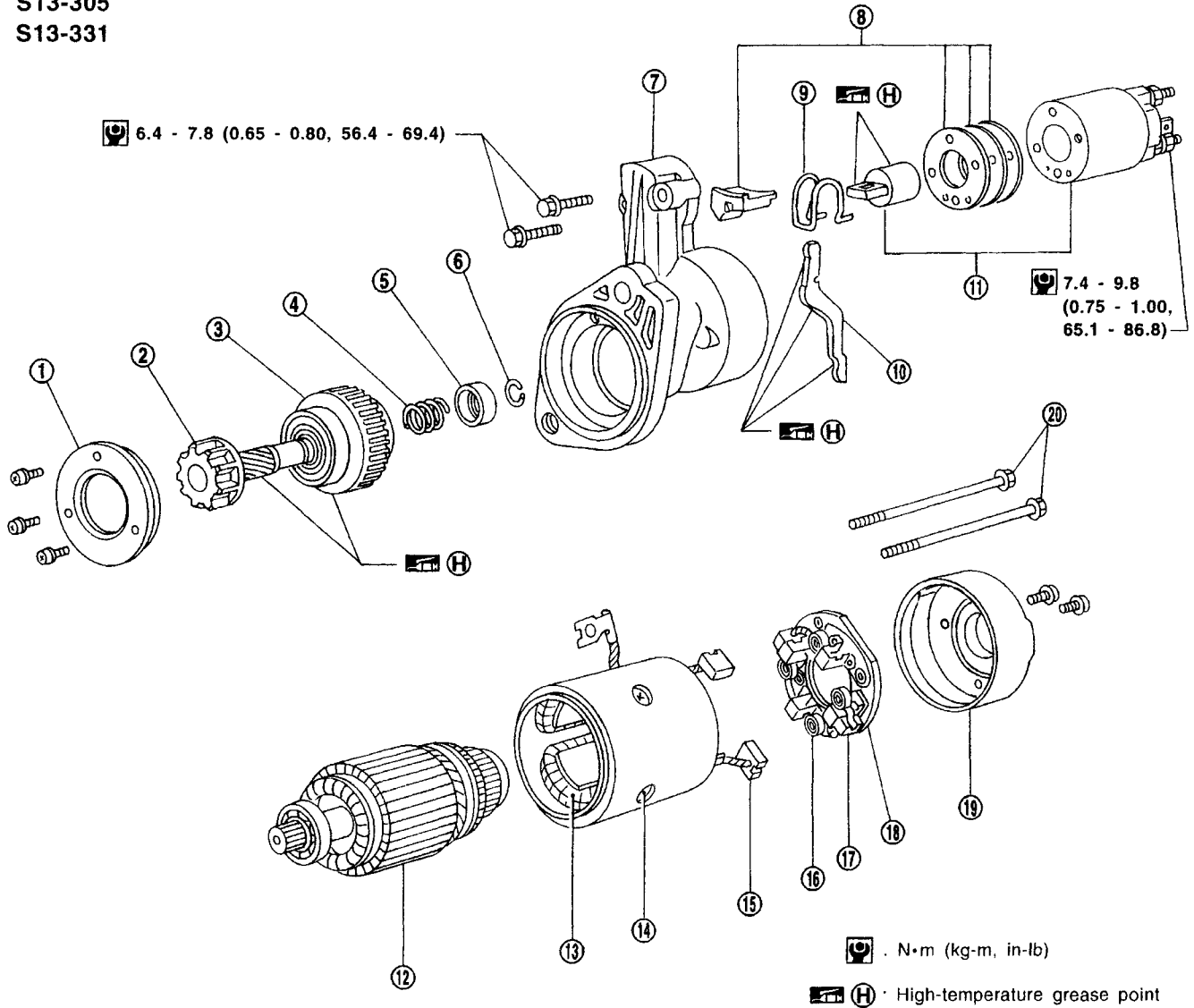
Construction (Cont'd)



STARTING SYSTEM

Construction (Cont'd)

SEC. 233
S13-305
S13-331



MEL233F

- ① Bearing retainer
- ② Pinion shaft
- ③ Clutch assembly
- ④ Return spring
- ⑤ Pinion stopper
- ⑥ Stopper clip
- ⑦ Gear case

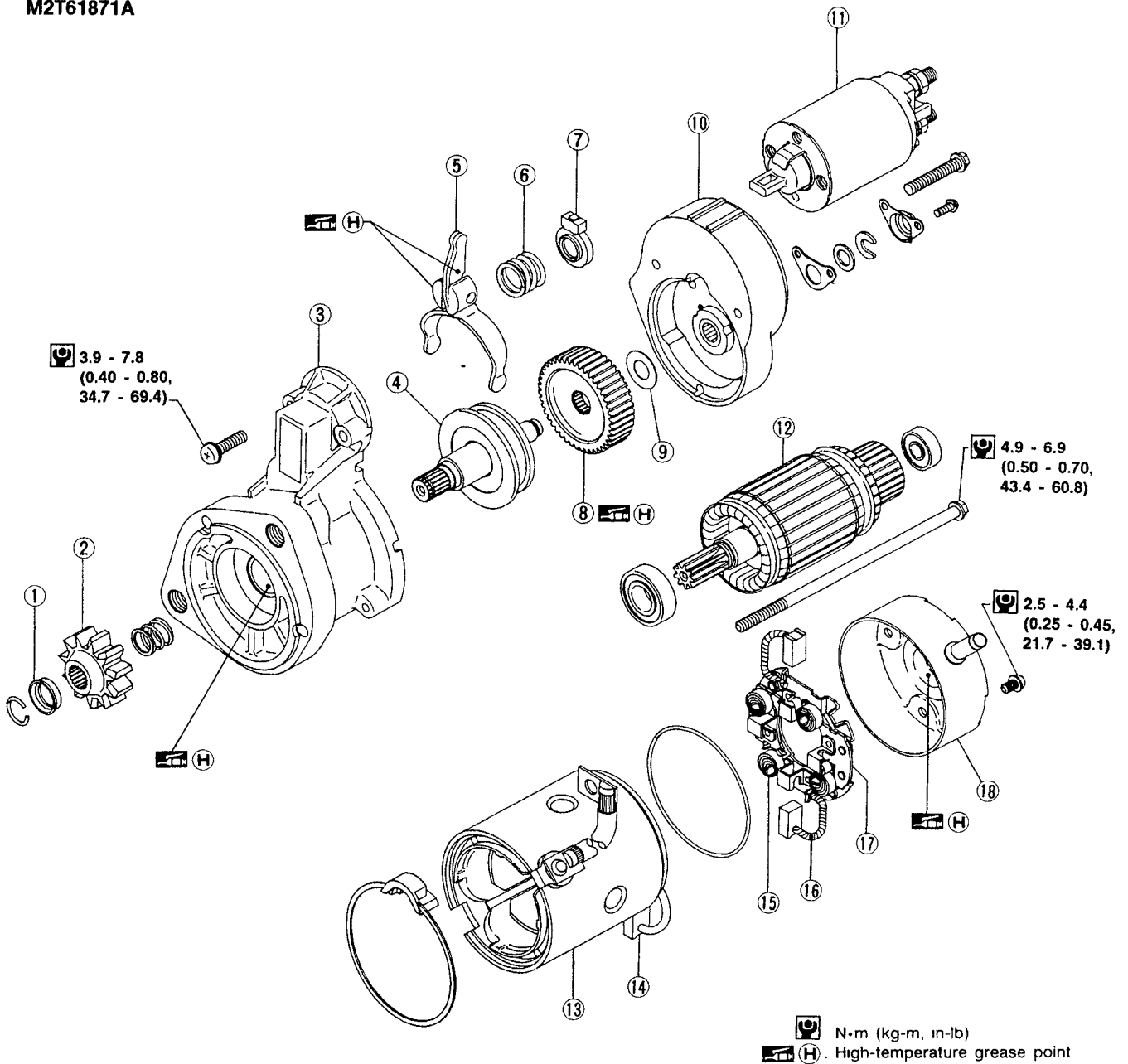
- ⑧ Dust cover
- ⑨ Torsion spring
- ⑩ Shift lever
- ⑪ Magnetic switch assembly
- ⑫ Armature assembly
- ⑬ Field coil
- ⑭ Yoke

- ⑮ Brush (+)
- ⑯ Brush spring
- ⑰ Brush (-)
- ⑱ Brush holder
- ⑲ Rear cover
- ⑳ Through-bolt

STARTING SYSTEM

Construction (Cont'd)

SEC. 233
M2T61871A



N·m (kg-m, in-lb)
 (H) . High-temperature grease point

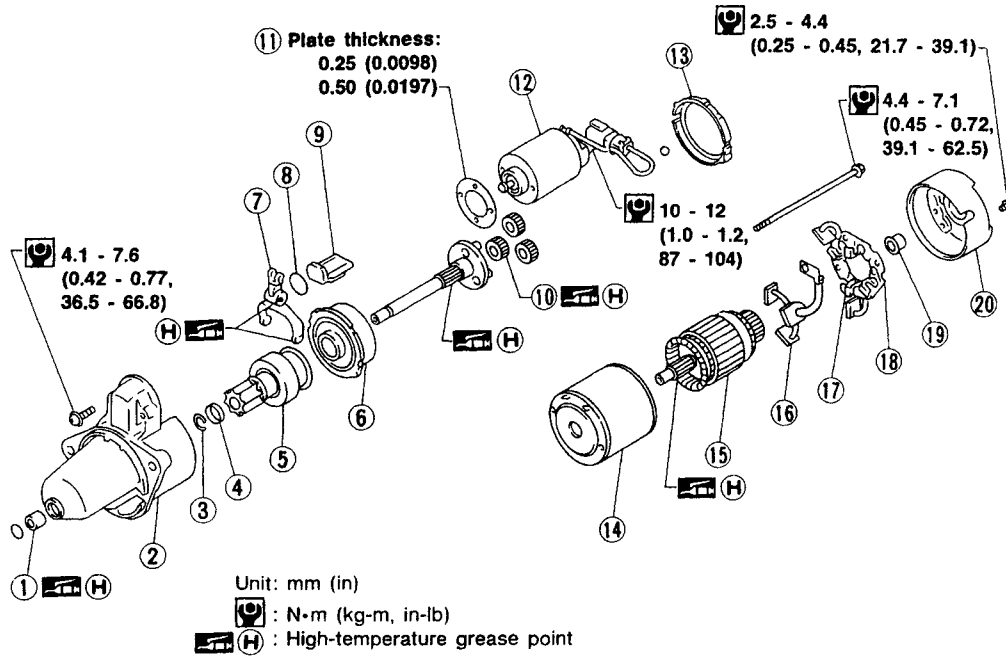
SEL554PA

- | | | |
|-------------------------|----------------------------|----------------|
| ① Pinion stopper | ⑦ Holder | ⑬ Yoke |
| ② Pinion assembly | ⑧ Reduction gear | ⑭ Brush (+) |
| ③ Gear case | ⑨ Washer | ⑮ Brush spring |
| ④ Pinion shaft assembly | ⑩ Center bracket | ⑯ Brush (-) |
| ⑤ Shift lever | ⑪ Magnetic switch assembly | ⑰ Brush holder |
| ⑥ Spring | ⑫ Armature | ⑱ Rear cover |

STARTING SYSTEM

Construction (Cont'd)

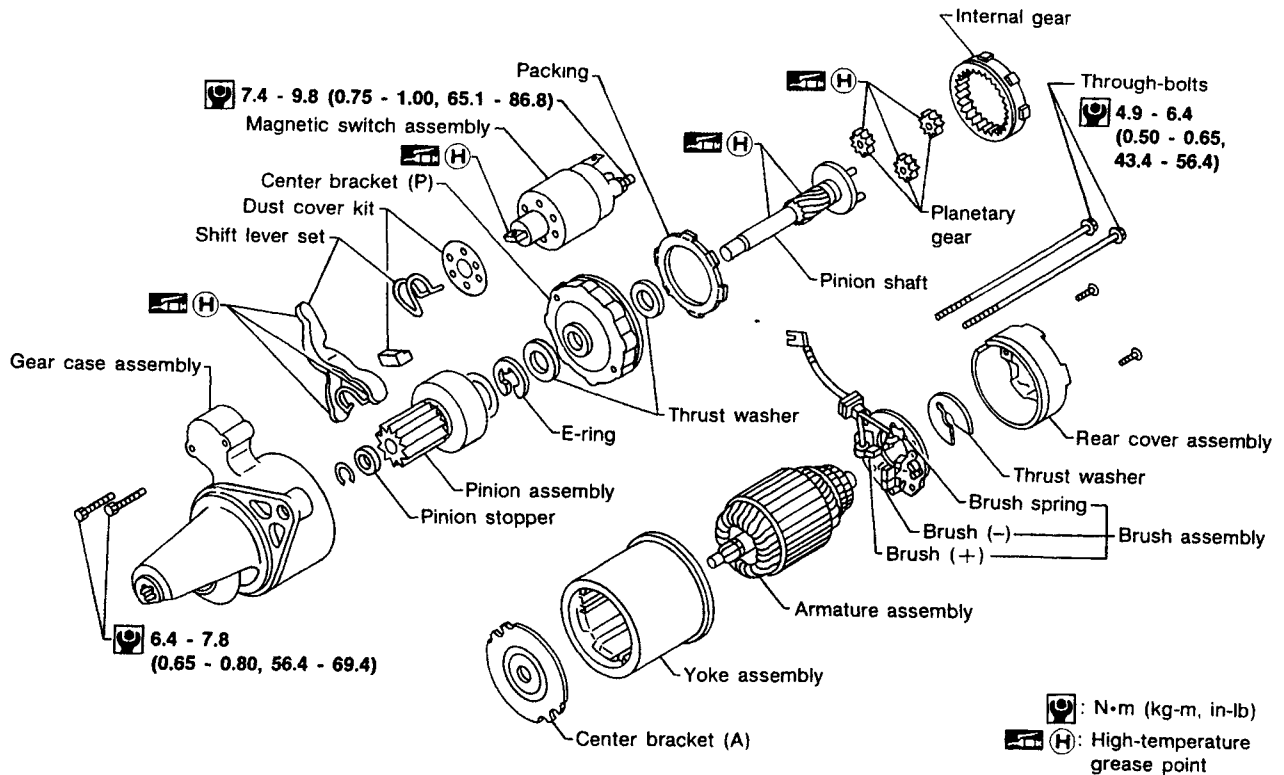
SEC. 233 M1T72985A



SEL663QA

- | | | |
|-------------------|----------------------------|----------------|
| ① Sleeve bearing | ⑧ Plate | ⑮ Armature |
| ② Gear case | ⑨ Packing | ⑯ Bush (+) |
| ③ Stopper clip | ⑩ Planetary gear | ⑰ Brush spring |
| ④ Pinion stopper | ⑪ Adjusting plate | ⑱ Brush holder |
| ⑤ Pinion assembly | ⑫ Magnetic switch assembly | ⑲ Bearing |
| ⑥ Internal gear | ⑬ Packing | ⑳ Rear cover |
| ⑦ Shift lever | ⑭ Yoke | |

SEC. 233 S114-806

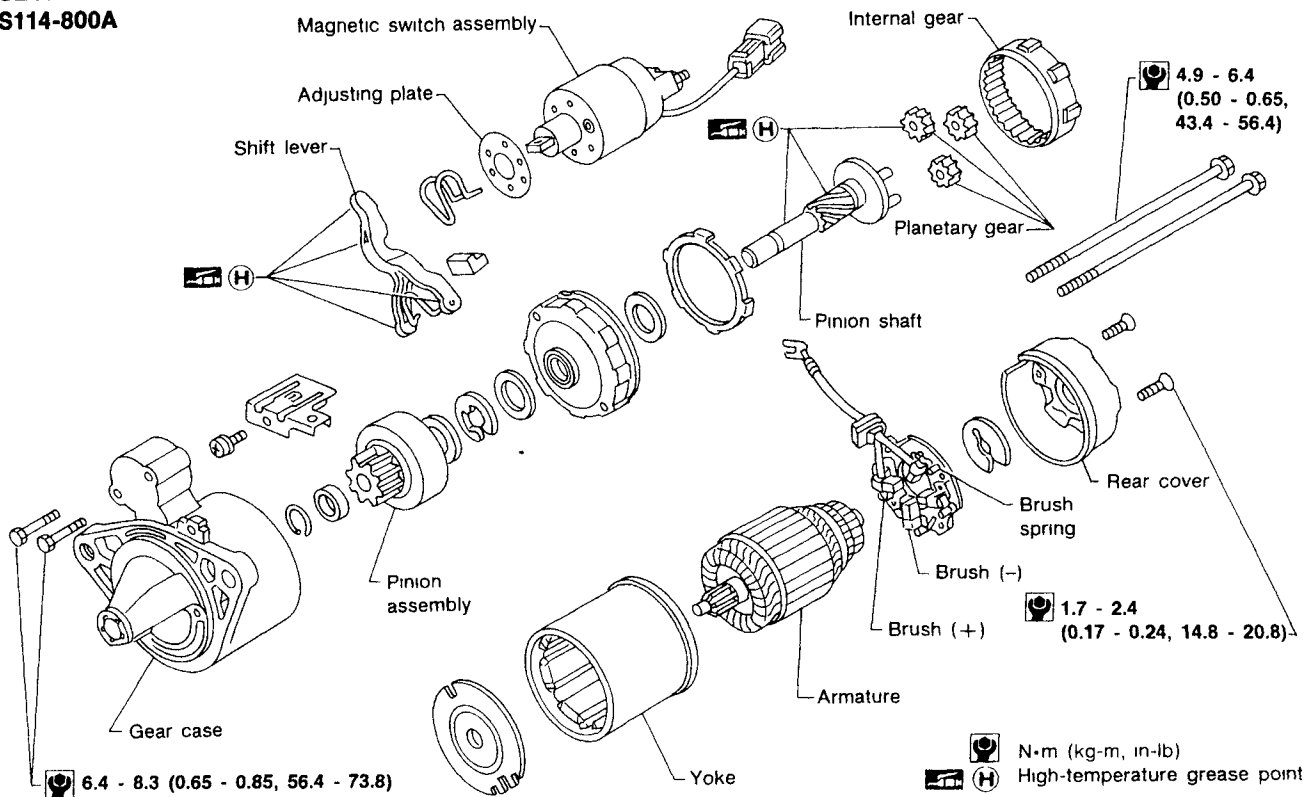


MEL675EA

STARTING SYSTEM

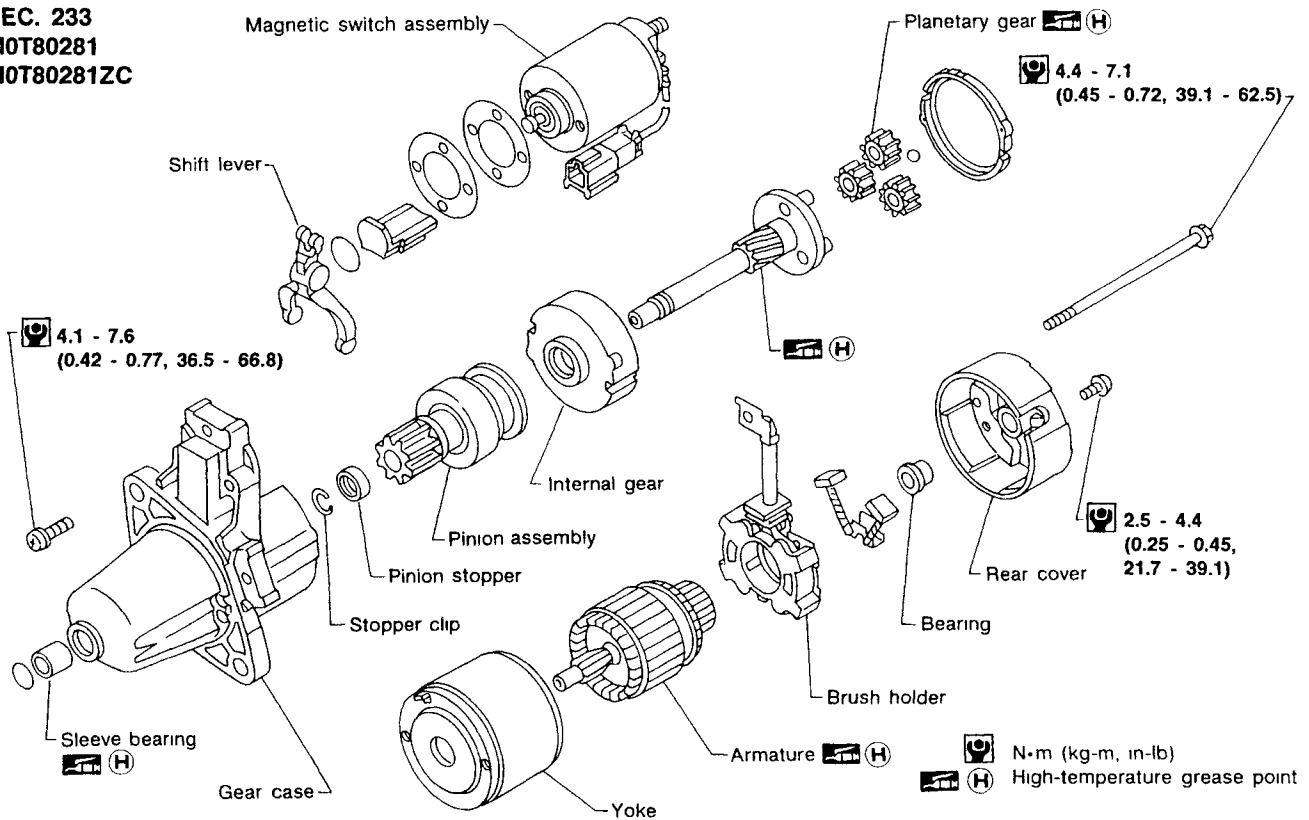
Construction (Cont'd)

SEC. 233 S114-800A



SEL027UA

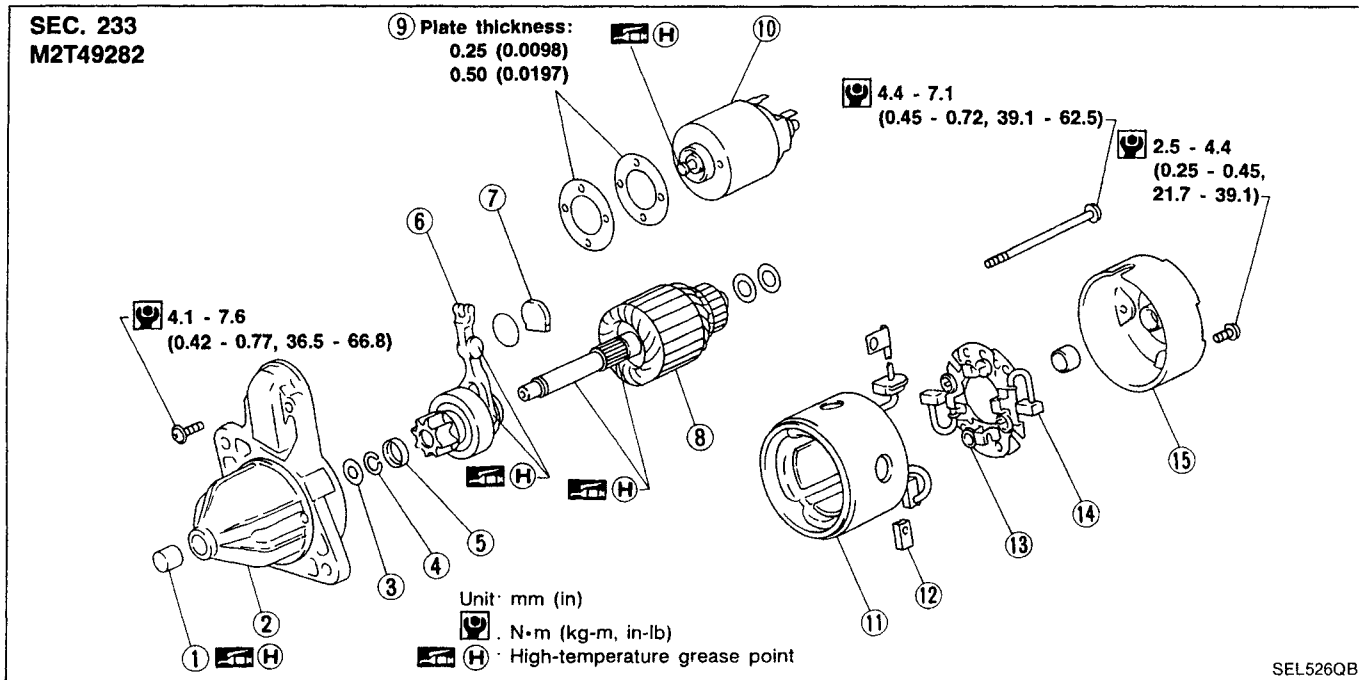
SEC. 233 MOT80281 MOT80281ZC



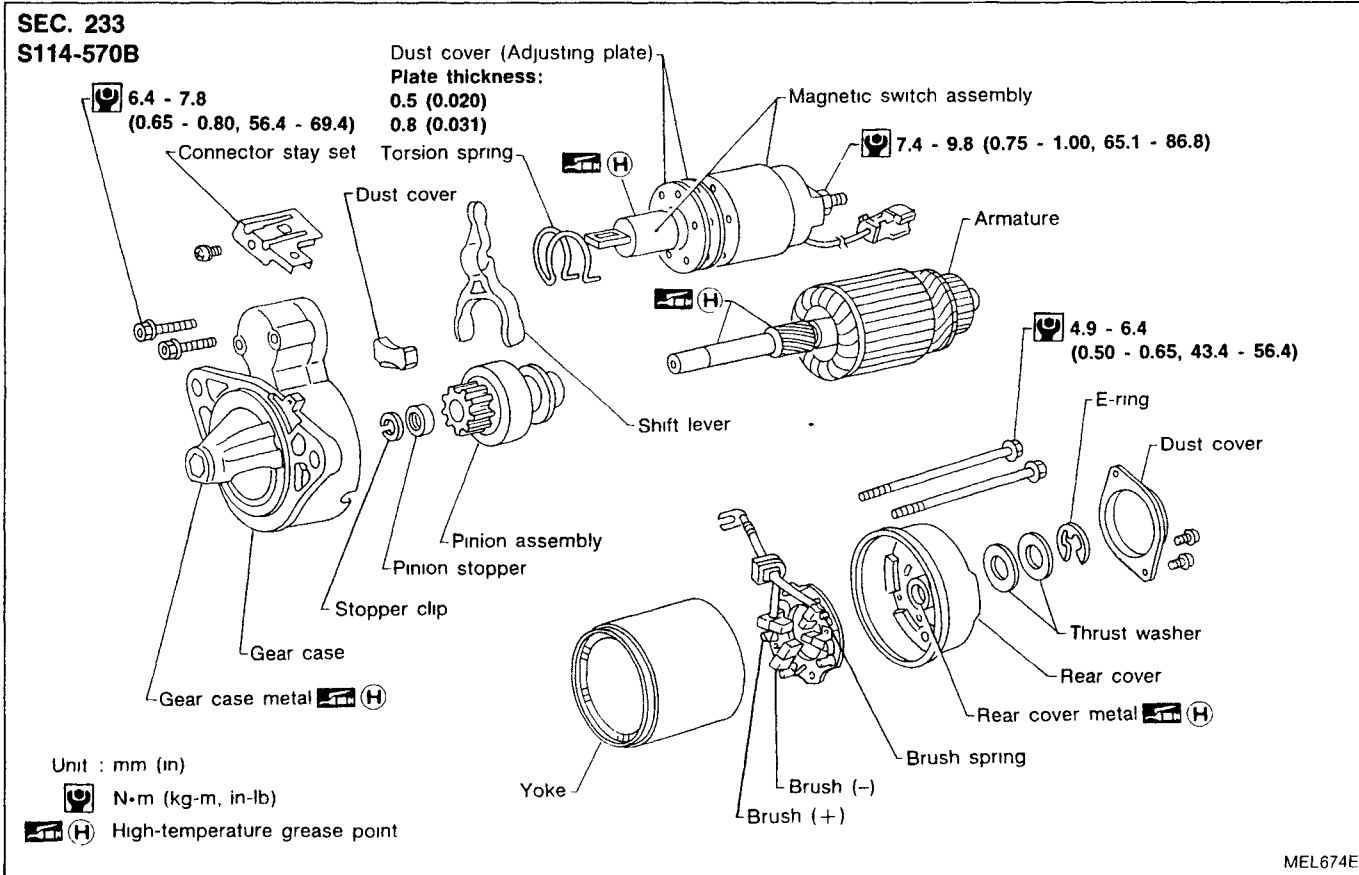
SEL026UA

STARTING SYSTEM

Construction (Cont'd)



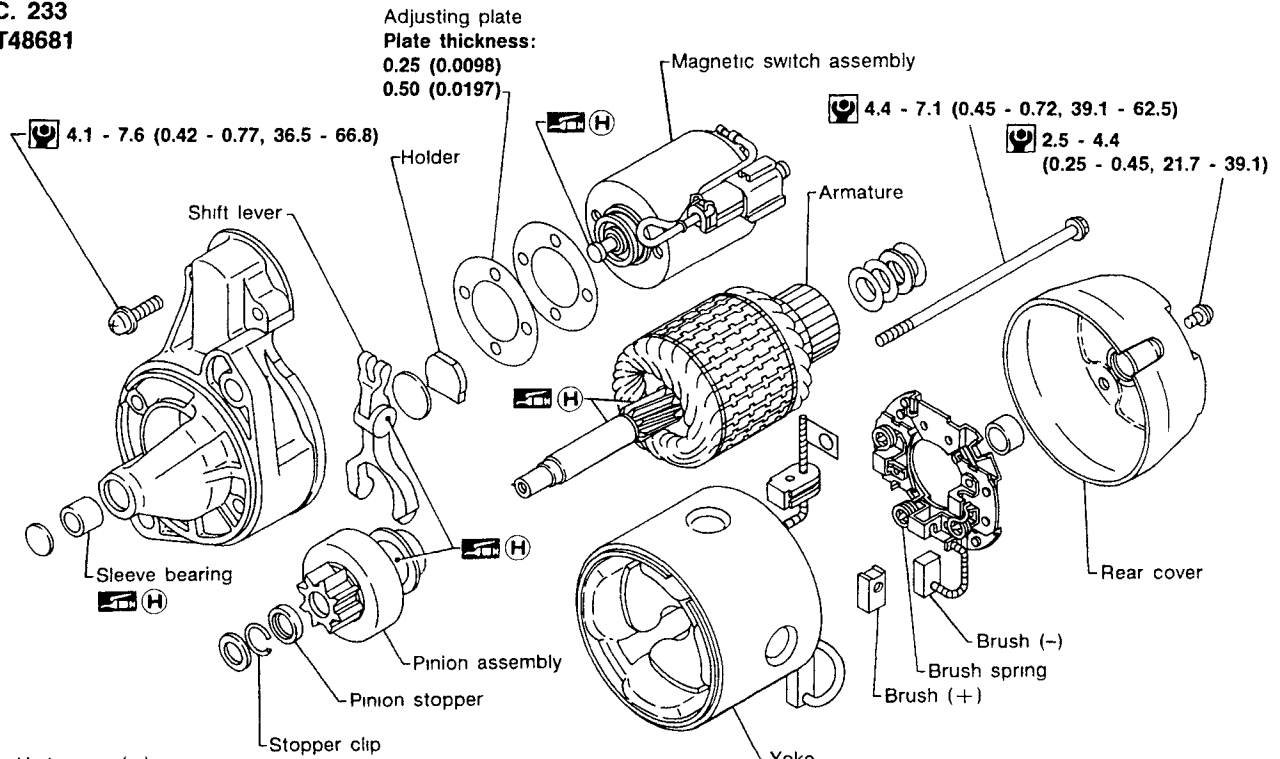
- | | | |
|-------------------|----------------------------|----------------|
| ① Gear case metal | ⑥ Shift lever | ⑪ Yoke |
| ② Gear case | ⑦ Holder | ⑫ Brush (+) |
| ③ Stopper clip | ⑧ Armature | ⑬ Brush spring |
| ④ Pinion stopper | ⑨ Adjusting plate | ⑭ Brush (-) |
| ⑤ Pinion assembly | ⑩ Magnetic switch assembly | ⑮ Rear cover |



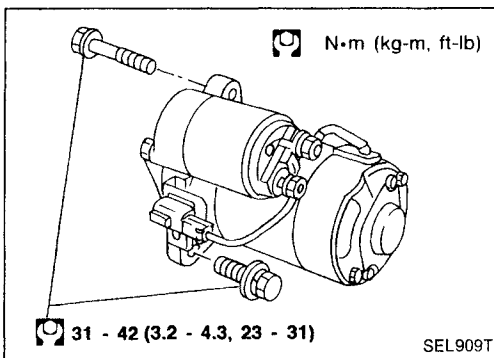
STARTING SYSTEM

Construction (Cont'd)

SEC. 233
M2T48681

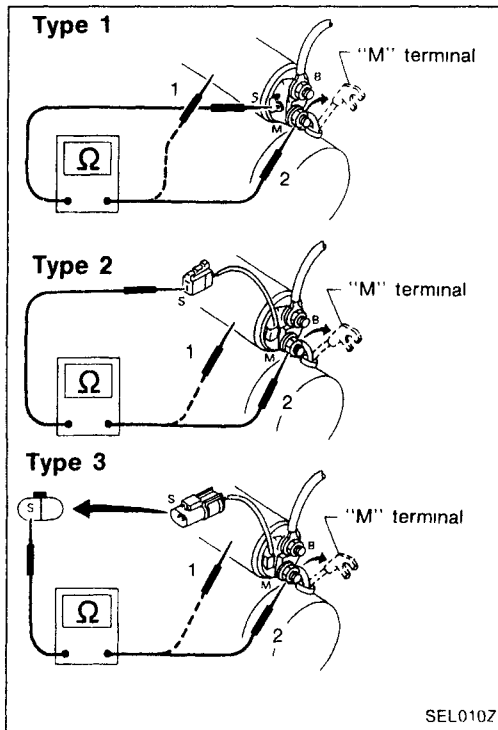


MEL673E



Removal and Installation

STARTING SYSTEM

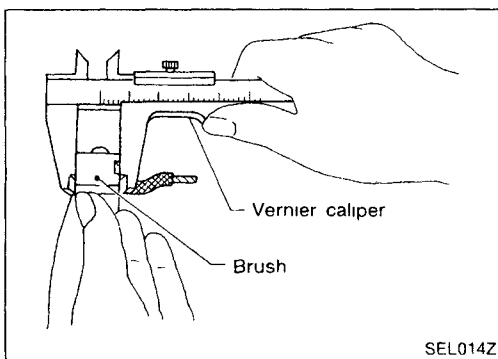
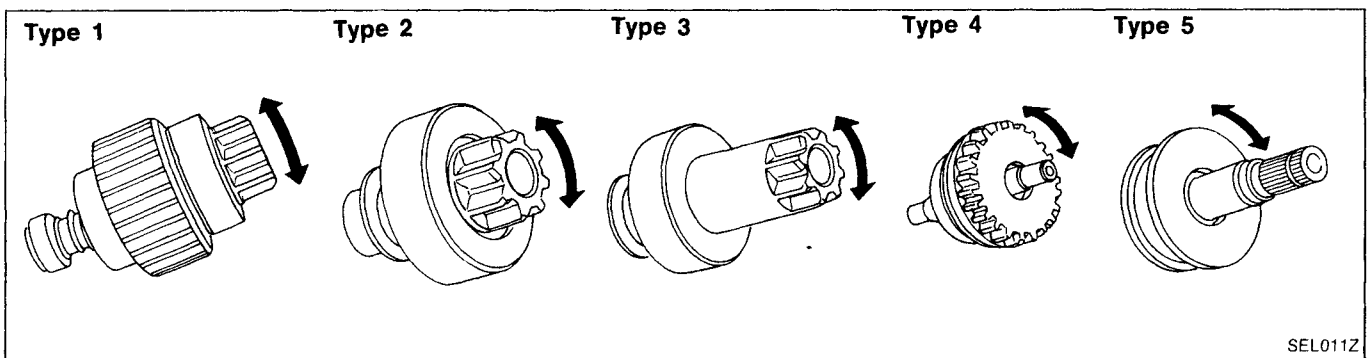


Magnetic Switch Check

- Before starting to check, disconnect battery ground cable.
- Disconnect "M" terminal of starter motor.
- 1. Continuity test (between "S" terminal and switch body).
- No continuity ... Replace.
- 2. Continuity test (between "S" terminal and "M" terminal).
- No continuity ... Replace.

Pinion/Clutch Check

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



Brush Check

BRUSH

Check wear of brush.

Wear limit length:

Refer to SDS (EL-50).

- Excessive wear ... Replace.

STARTING SYSTEM

Brush Check (Cont'd)

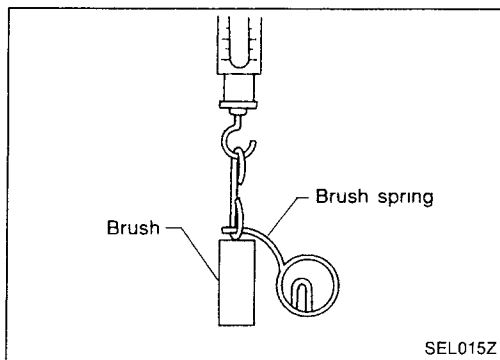
BRUSH SPRING PRESSURE

Check brush spring pressure with brush spring detached from brush.

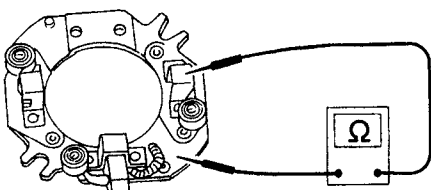
Spring pressure (with new brush):

Refer to SDS (EL-50).

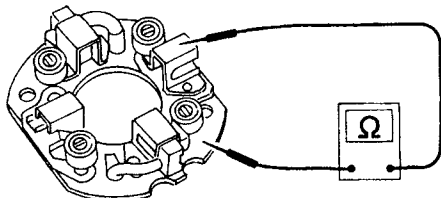
- Not within the specified values ... Replace.



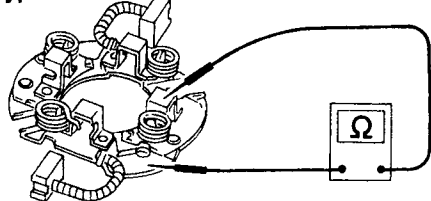
Type 1



Type 2



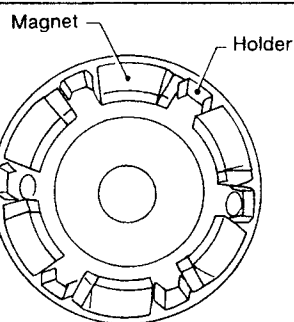
Type 3



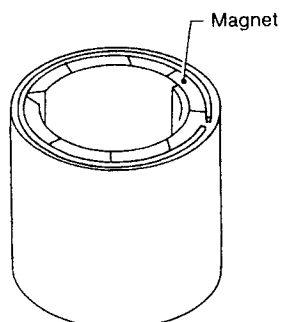
BRUSH HOLDER

1. Perform insulation test between brush holder (positive side) and its base (negative side).
- Continuity exists. ... Replace.
2. Check brush to see if it moves smoothly.
- If brush holder is bent, replace it; if sliding surface is dirty, clean.

Type 1



Type 2



Yoke Check

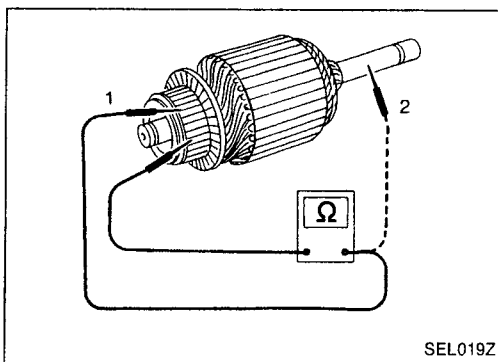
Magnet is secured to yoke by bonding agent. Check magnet to see that it is secured to yoke and for any cracks. Replace malfunctioning parts as an assembly.

Holder may move slightly as it is only inserted and not bonded.

CAUTION:

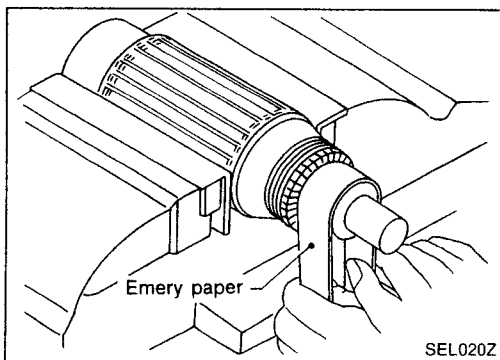
Do not clamp yoke in a vice or strike it with a hammer.

STARTING SYSTEM

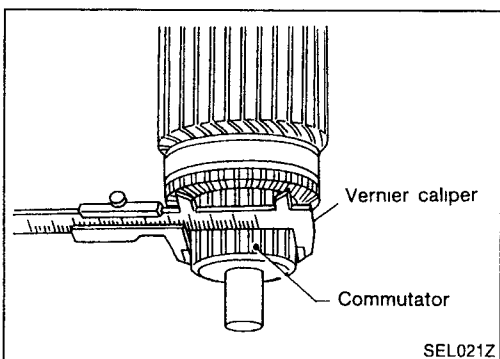


Armature Check

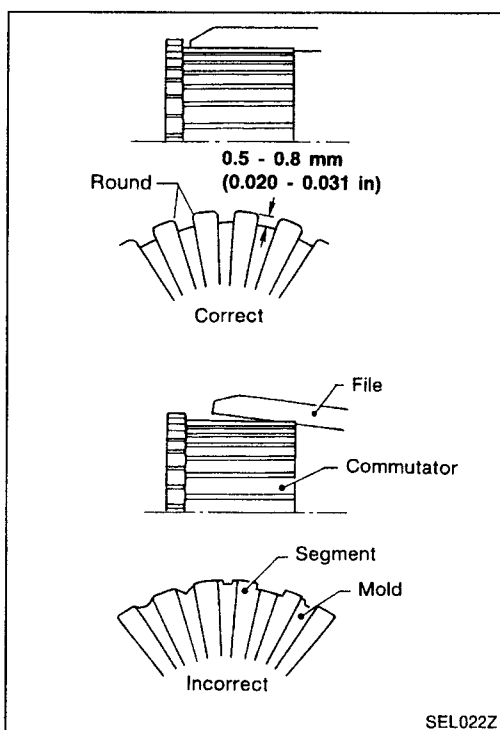
1. Continuity test (between two segments side by side).
 - No continuity ... Replace.
2. Insulation test (between each commutator bar and shaft).
 - Continuity exists. ... Replace.



3. Check commutator surface.
 - Rough ... Sand lightly with No. 500 - 600 emery paper.



4. Check diameter of commutator.
Commutator minimum diameter:
Refer to SDS (EL-50).
 - Less than specified value ... Replace.

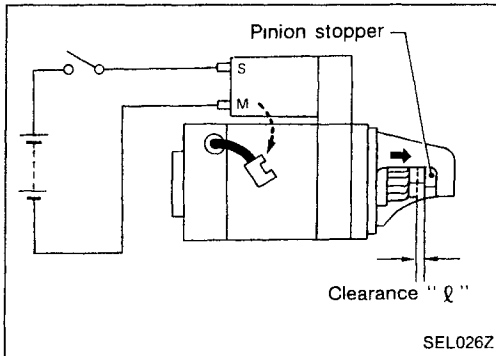


5. Check depth of insulating mold from commutator surface.
 - Less than 0.2 mm (0.008 in) ... Undercut to 0.5 to 0.8 mm (0.020 to 0.031 in)

STARTING SYSTEM

Assembly

Apply high-temperature grease to lubricate the bearing, gears and frictional surface when assembling the starter.
Carefully observe the following instructions.

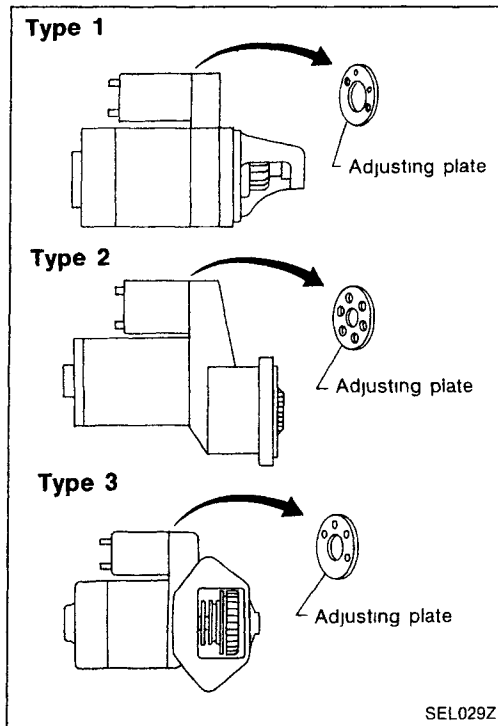


PINION PROTRUSION LENGTH ADJUSTMENT

With pinion driven out by magnetic switch, push pinion back to remove slack and measure clearance "ℓ" between the front edge of the pinion and the pinion stopper.

Clearance "ℓ":

Refer to SDS (EL-50).



- Not in the specified value ... Adjust by adjusting plate.

STARTING SYSTEM

Service Data and Specifications (SDS)

STARTER

Type	S114-766A	M1T72087A	M1T77281	S114-769A	S114-630	M3T37783	M2T62071A	S13-305	S13-331	M2T61871A
	HITACHI	MITSUBISHI		HITACHI		MITSUBISHI		HITACHI		MITSUB- ISHI
	Reduction				Non-reduction		Reduction			
Applied model	Europe									
	GA engines						CD20			
	A/T		M/T							
System voltage	V	12								
No-load										
Terminal voltage	V	11.0				11.5		11.0		
Current	A	Less than 85	50 - 75		Less than 85	Less than 60		Less than 105	Less than 140	Less than 110
Revolution	rpm	More than 2,950	3,000 - 4,000		More than 2,950	More than 7,000	More than 6,500	More than 4,030	More than 3,900	More than 4,100
Minimum diameter of commutator	mm (in)	28 0 (1,102)	28 8 (1.134)		28 0 (1,102)	39 0 (1 535)	31 4 (1 236)		35 5 (1 398)	31 4 (1 236)
Minimum length of brush	mm (in)	10 5 (0 413)	12 0 (0 472)		10.5 (0 413)	11 0 (0 433)	11 5 (0 453)		11 0 (0 433)	11 5 (0 453)
Brush spring tension	N (kg, lb)	16 2 (1 65, 3.64)	13 7 - 25 5 (1 4 - 2 6, 3 1 - 5.7)		14 7 - 17 7 (1 5 - 1 8, 3 3 - 4 0)	17 7 - 21 6 (1 8 - 2.2, 4 0 - 4 9)	13 7 - 25.5 (1 4 - 2 6, 3 1 - 5.7)		28 4 - 34 3 (2.90 - 3.50, 6 38 - 7 71)	13 7 - 25 5 (1.4 - 2.6, 3 1 - 5 7)
Clearance between bearing metal and armature shaft	mm (in)	Less than 0 2 (0.008)	—	Less than 0 2 (0 008)	—	Less than 0.2 (0 008)	—			
Clearance "ℓ" between pinion front edge and pinion stopper	mm (in)	0 3 - 2 5 (0 012 - 0 098)	0 5 - 2 0 (0 020 - 0.079)		0 3 - 2 5 (0.012 - 0 098)		0 5 - 2 0 (0 020 - 0 079)	—	0.3 - 2 0 (0 012 - 0 079)	0 3 - 0 8 (0 012 - 0 031)
Movement "ℓ" in height of pinion assembly	mm (in)	—						0.5 - 2 0 (0.020 - 0 079)	—	—
										0 3 - 1 5 (0.012 - 0 059)

STARTING SYSTEM

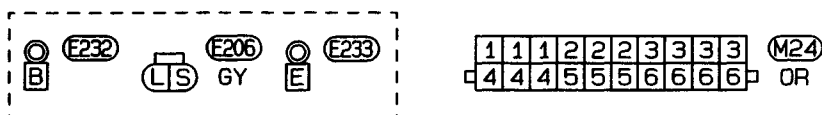
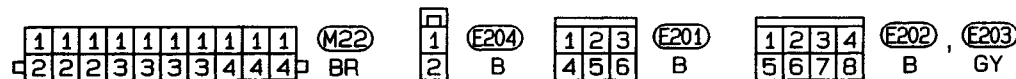
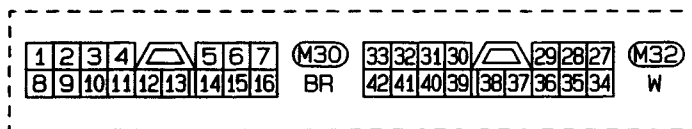
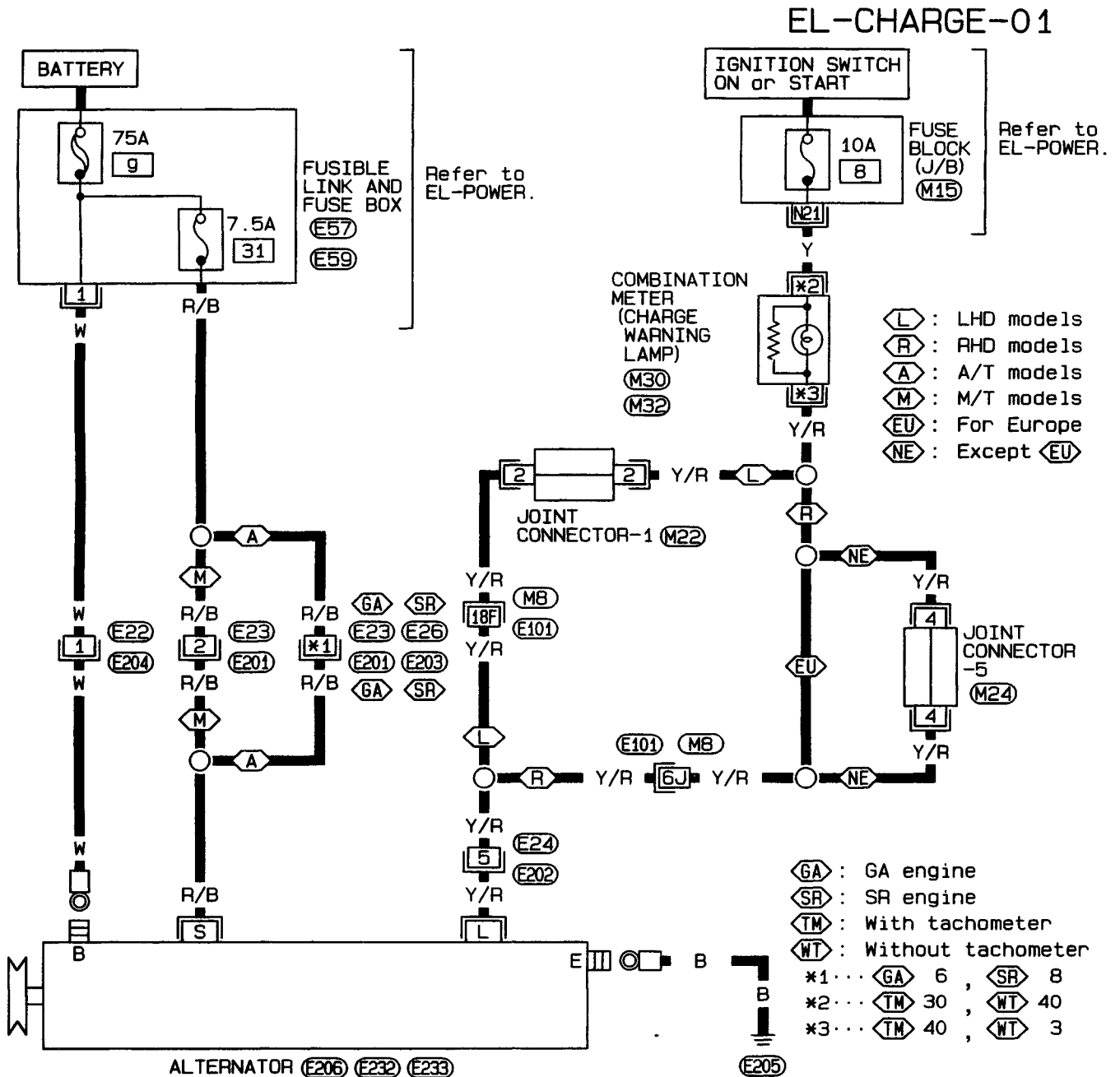
Service Data and Specifications (SDS) (Cont'd)

Type	M1T72985A	S114-806	S114-800A	M0T80281ZC	M0T80281	M2T49282	S114-568A	S114-570B	M2T48681
	MITSUB-ISHI	HITACHI		MITSUBISHI			HITACHI		MITSUB-ISHI
	Reduction			Non-reduction					
Applied model	Australia					RHD Except Europe and Australia			
	SR20DE	GA engines							
		A/T	M/T				A/T		
System voltage	V	12							
No-load									
Terminal voltage	V	11 0					11 5		
Current	A	50 - 75	Less than 90			Less than 53	Less than 60		Less than 53
Revolution	rpm	3,000 - 4,000	More than 2,700	More than 2,750		More than 6,000			
Minimum diameter of commutator	mm (in)	28 8 (1 134)	28 0 (1 102)		28 8 (1 134)		31 4 (1 236)	28 0 (1 102) 31 4 (1 236)	
Minimum length of brush	mm (in)	12 0 (0 472)	10 5 (0 413)		7 0 (0.276)		11 5 (0 453)	9 0 (0 354) 11 5 (0 453)	
Brush spring tension	N (kg, lb)	13 7 - 25 5 (1 4 - 2 6, 3 1 - 5 7)	12 7 - 17 7 (1 3 - 1 8, 2 9 - 4 0)		11 77 - 23 53 (1 2 - 2 4, 2 6 - 5 3)		13 7 - 25 5 (1 4 - 2 6, 3 1 - 5 7)	9 8 - 13 7 (1 0 - 1 4, 2 2 - 3 1) 13 7 - 25 5 (1 4 - 2 6, 3 1 - 5 7)	
Clearance between bearing metal and armature shaft	mm (in)	Less than 0 2 (0 008)							
Clearance "f" between pinion front edge and pinion stopper	mm (in)	0 5 - 2 0 (0 020 - 0 079)	0 3 - 2 5 (0 012 - 0 098)		0 5 - 2 0 (0 020 - 0 079)			0 3 - 2 5 (0 012 - 0 098) 0 5 - 2 0 (0 020 - 0 079)	
Movement "f" in height of pinion assembly	mm (in)	—							

CHARGING SYSTEM

Wiring Diagram — CHARGE —

GASOLINE ENGINE MODELS



Refer to last page (Foldout page).

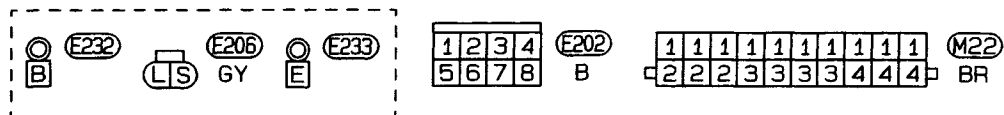
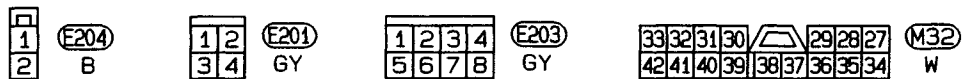
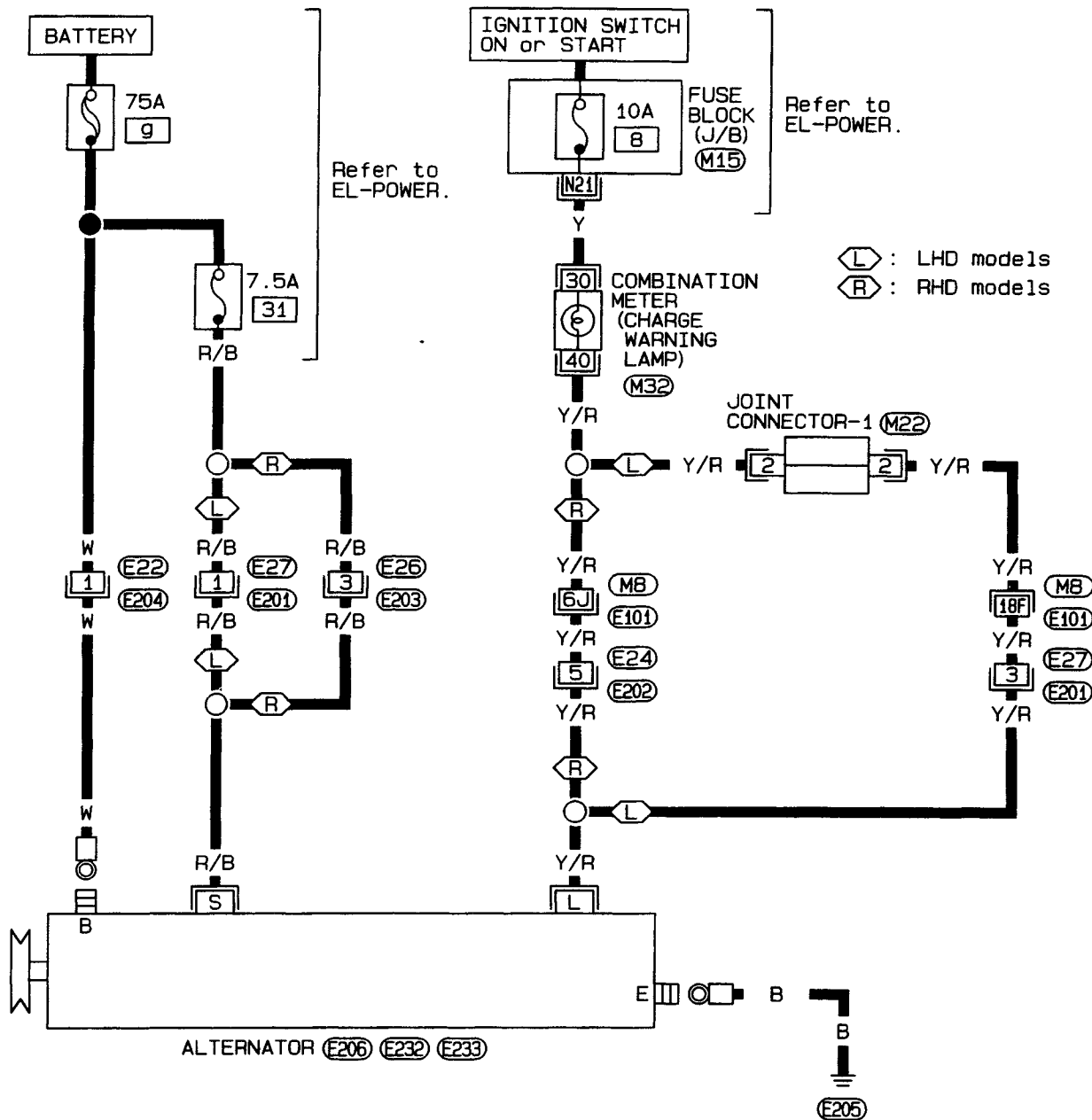
(M8, E101)
(M15)
(E57, E59)

CHARGING SYSTEM

Wiring Diagram — CHARGE — (Cont'd)

DIESEL ENGINE MODELS

EL-CHARGE-02



Refer to last page
(Foldout page).

(MB), (E101)
(M15)

EL

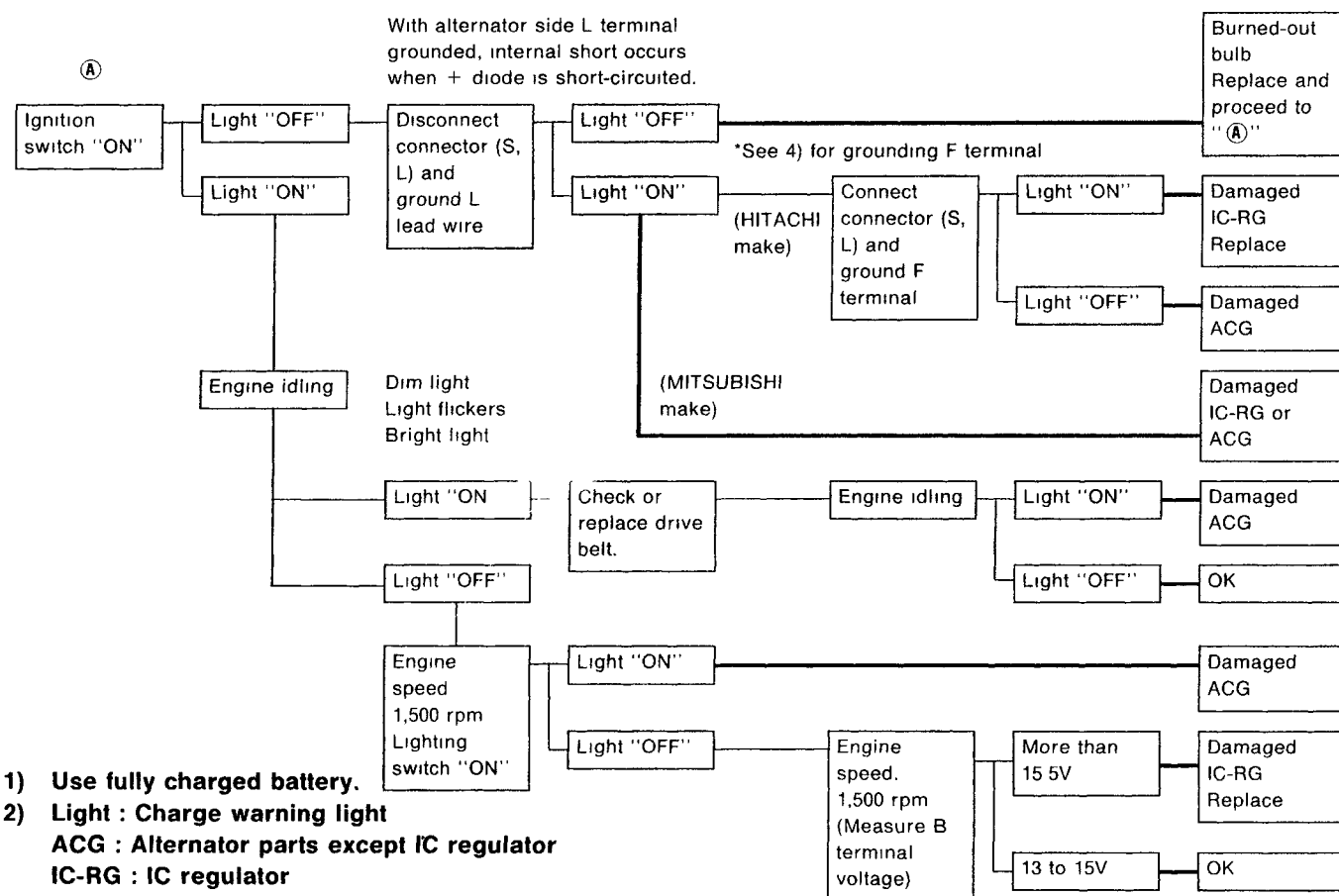
CHARGING SYSTEM

Trouble Diagnoses

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

Before starting, inspect the fusible link.

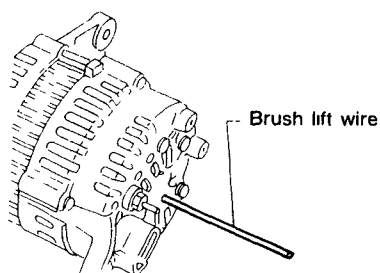
WITH IC REGULATOR



- 1) Use fully charged battery.
- 2) Light : Charge warning light
ACG : Alternator parts except IC regulator
IC-RG : IC regulator
OK : IC-alternator is in good condition.
- 3) When reaching "Damaged ACG", remove alternator from vehicle and disassembly, inspect and correct or replace faulty parts.
- 4) *Method of grounding F terminal (HITACHI make only)

Gasoline engine model

Contact tip of wire with brush and attach wire to alternator body.



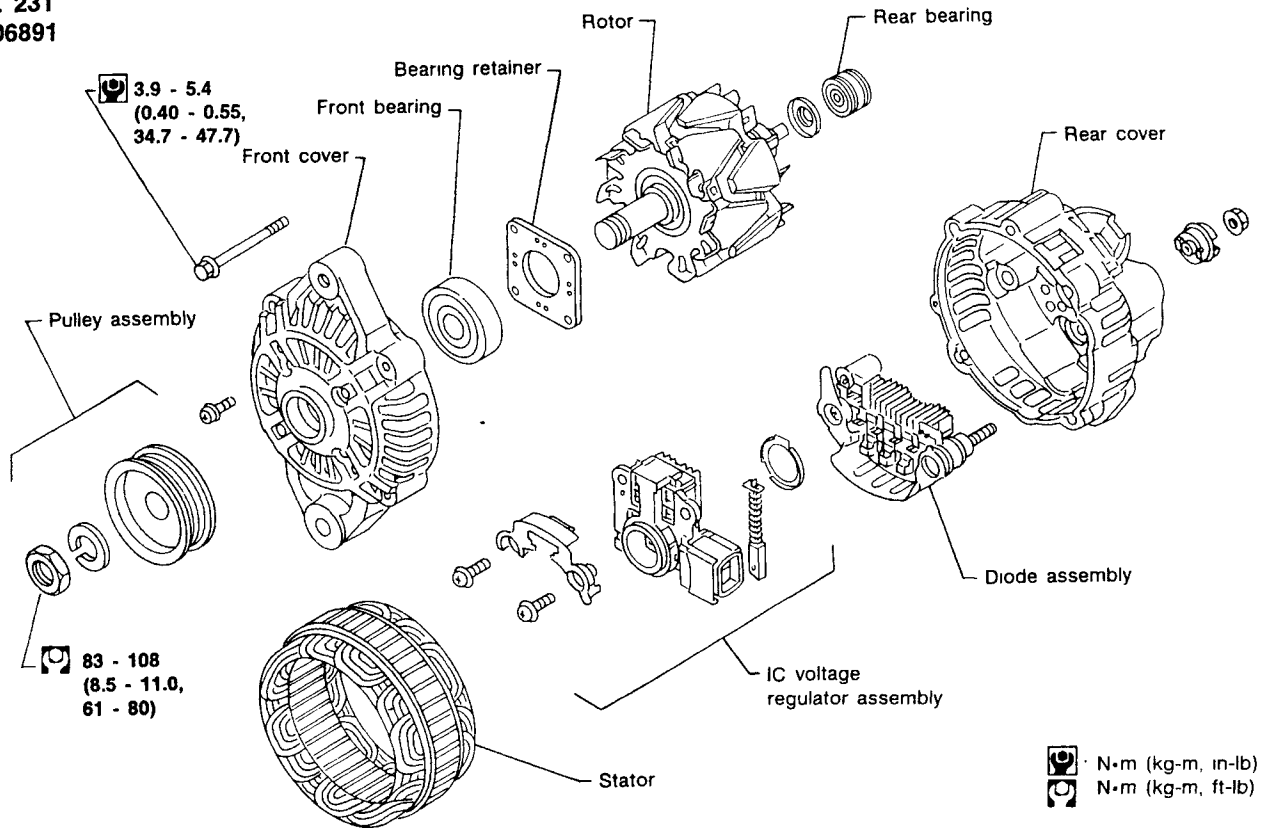
SEL030Z

- 5) Terminals "S", "L", "B" and "E" are marked on rear cover of alternator.

CHARGING SYSTEM

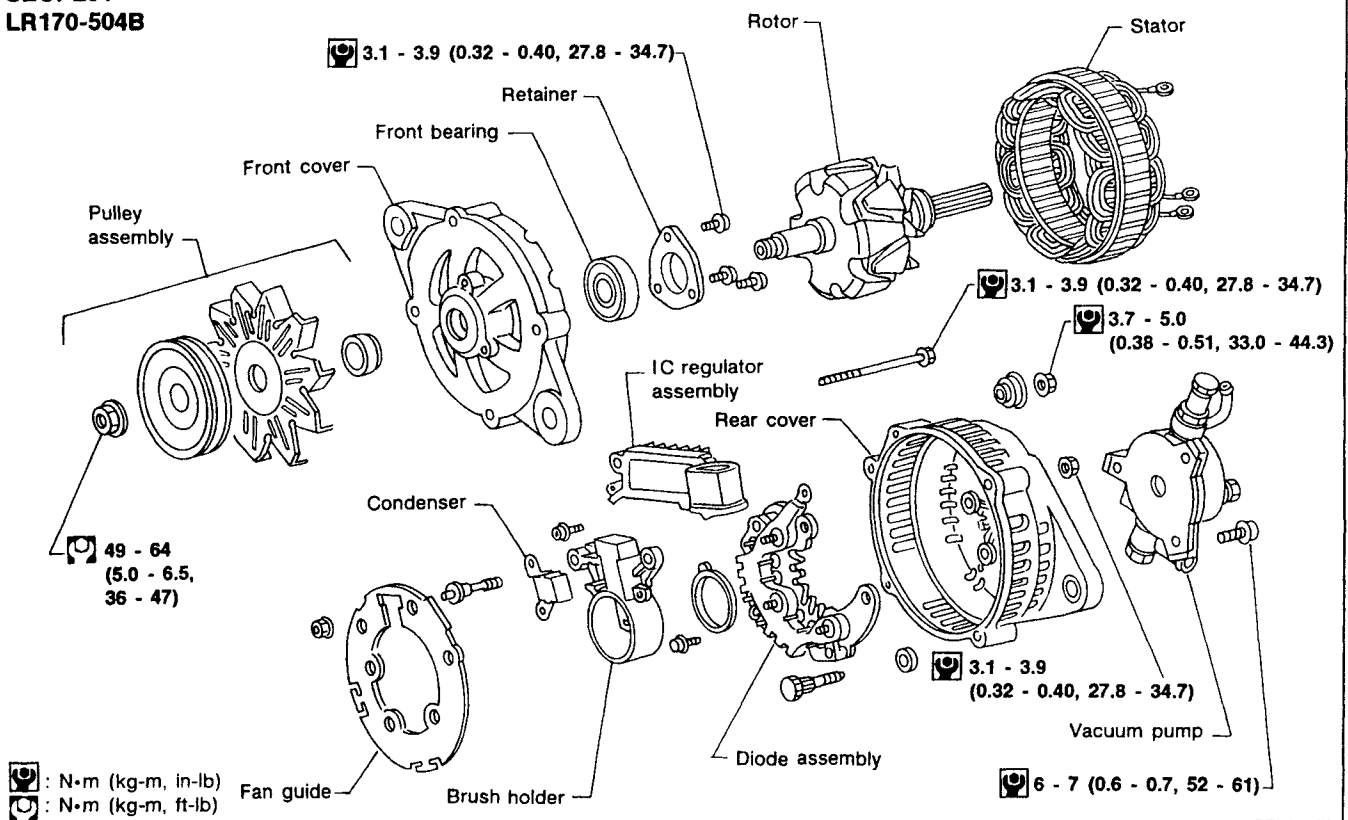
Construction

SEC. 231
A5T06891



SEL252SC

SEC. 231
LR170-504B

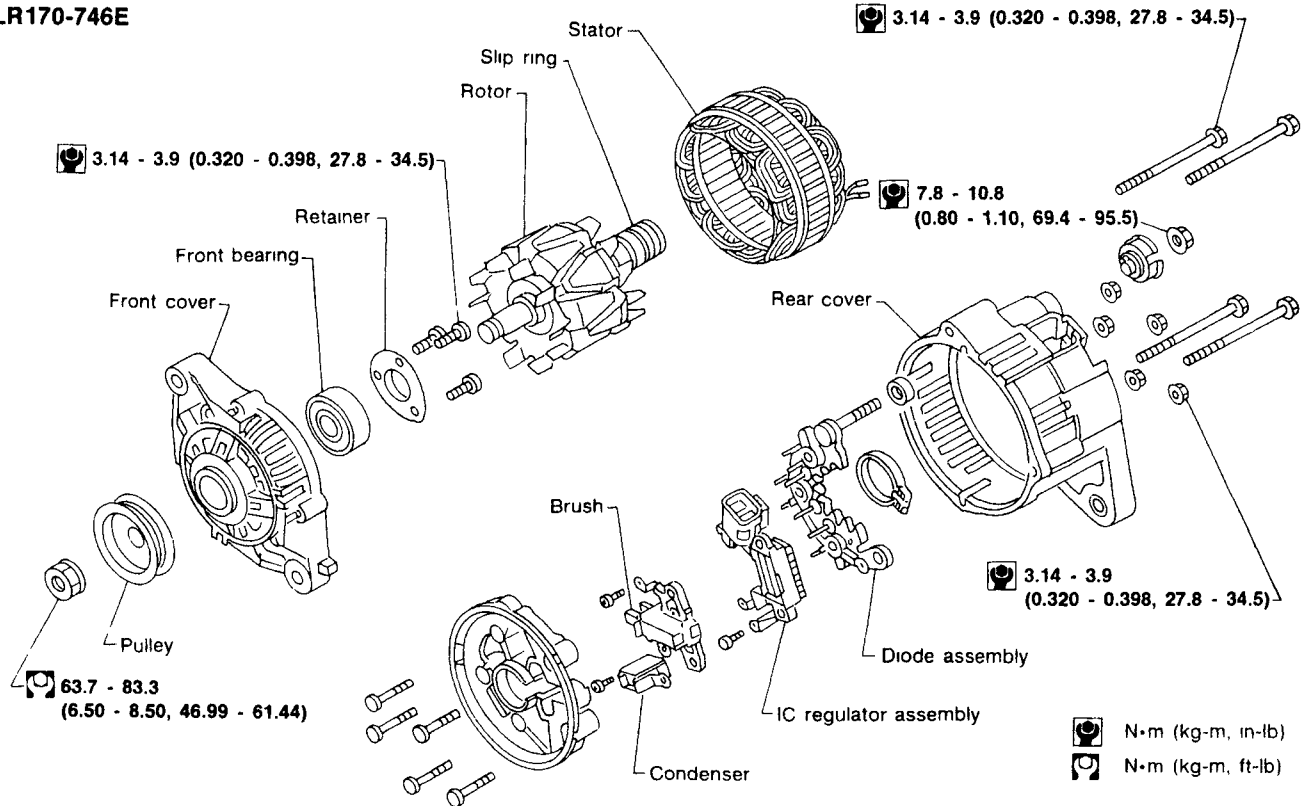


SEL156SB

CHARGING SYSTEM

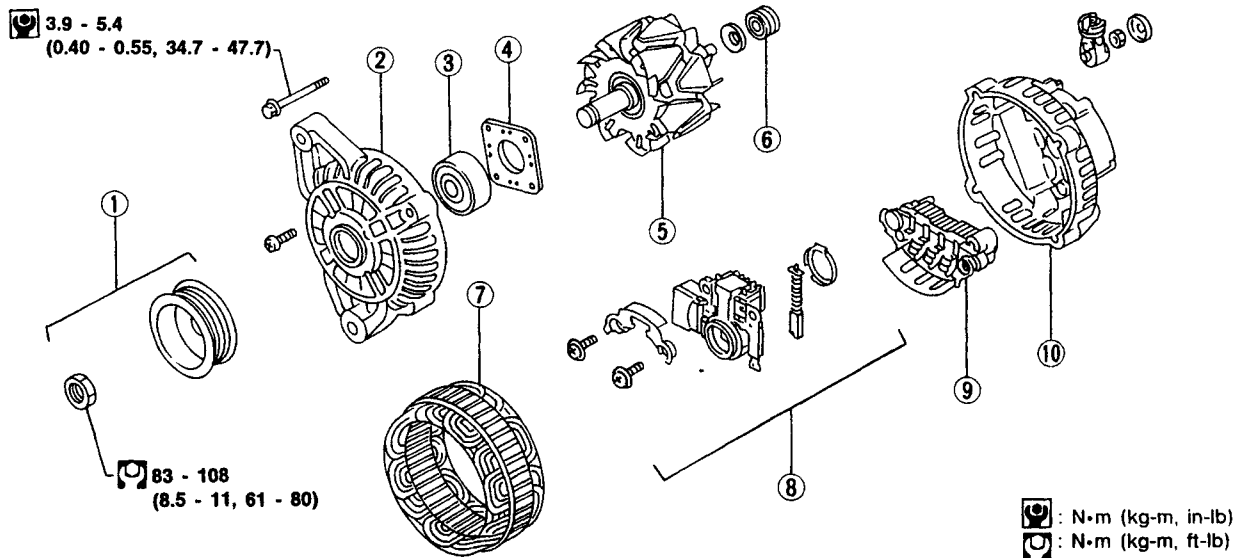
Construction (Cont'd)

SEC. 231 LR170-746E



SEL025UB

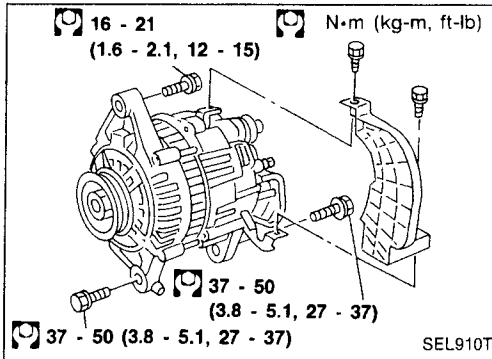
SEC. 231 A2T82491A



MEL782DB

- | | | |
|--------------------|----------------|---------------------------------|
| ① Pulley assembly | ⑤ Rotor | ⑧ IC voltage regulator assembly |
| ② Front cover | ⑥ Rear bearing | ⑨ Diode assembly |
| ③ Front bearing | ⑦ Stator | ⑩ Rear cover |
| ④ Bearing retainer | | |

CHARGING SYSTEM



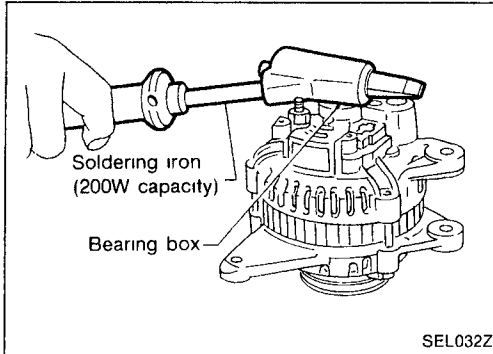
Removal and Installation

Disassembly

REAR COVER REMOVAL

CAUTION:

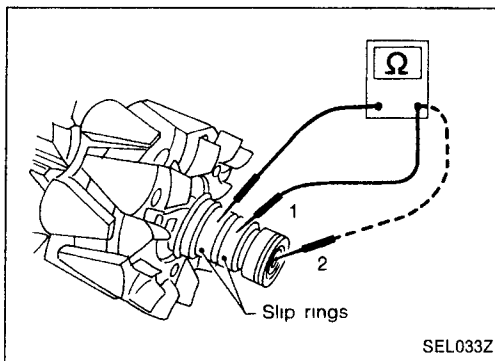
Rear cover may be hard to remove because a ring is used to lock outer race of rear bearing. To facilitate removal of rear cover, heat just bearing box section with a 200W soldering iron. Do not use a heat gun, as it can damage diode assembly.



REAR BEARING

CAUTION:

- Do not reuse rear bearing after removal. Replace with a new one.
- Do not lubricate rear bearing outer race.



Rotor Check

1. Resistance test

Resistance: Refer to SDS (EL-61).

- Not within the specified values ... Replace rotor.

2. Insulator test

- Continuity exists ... Replace rotor.

3. Check slip ring for wear.

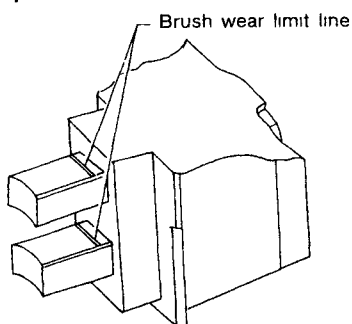
Slip ring minimum outer diameter:

Refer to SDS (EL-61).

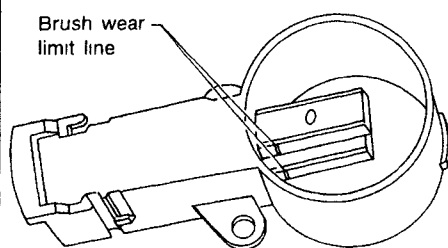
- Not within the specified values ... Replace rotor.

CHARGING SYSTEM

Type 1



Type 2

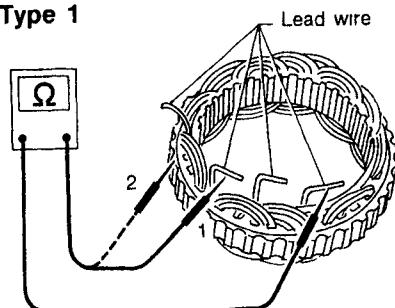


SEL034Z

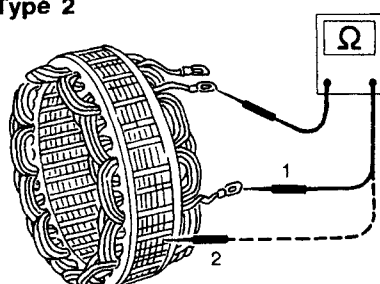
Brush Check

1. Check smooth movement of brush.
 - Not smooth ... Check brush holder and clean.
2. Check brush for wear.
 - Replace brush if it is worn down to the limit line.

Type 1



Type 2



SEL037Z

Stator Check

1. Continuity test
 - No continuity ... Replace stator.
2. Ground test
 - Continuity exists ... Replace stator.

CHARGING SYSTEM

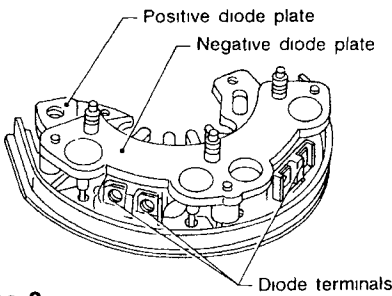
Diode Check

MAIN DIODES

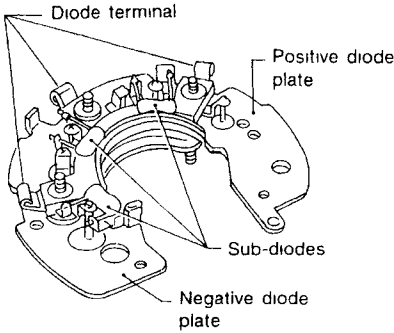
- Use an ohmmeter to check condition of diodes as indicated in chart below.
- If any of the test results is not satisfactory, replace diode assembly.

	Ohmmeter probes		Judgement
	Positive ⊕	Negative ⊖	
Diodes check (Positive side)	Positive diode plate	Diode terminals	Diode conducts in only one direction.
	Diode terminals	Positive diode plate	
Diodes check (Negative side)	Negative diode plate	Diode terminals	Diode conducts in only one direction.
	Diode terminals	Negative diode plate	

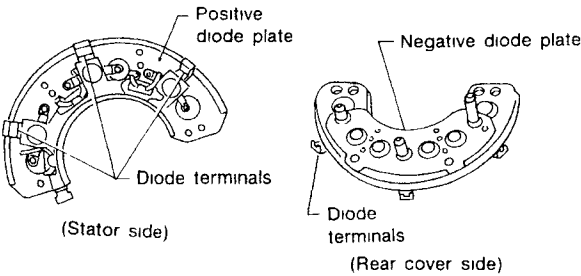
Type 1



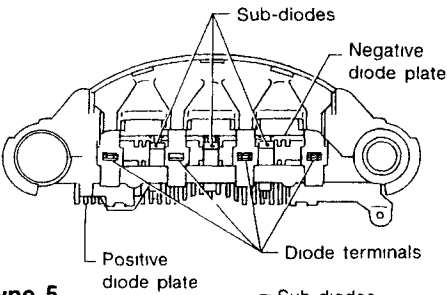
Type 2



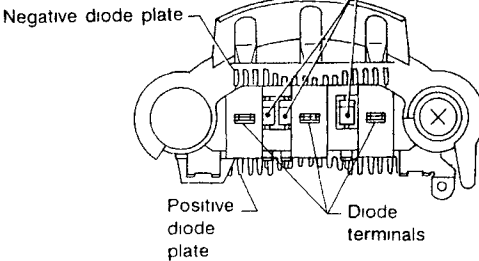
Type 3



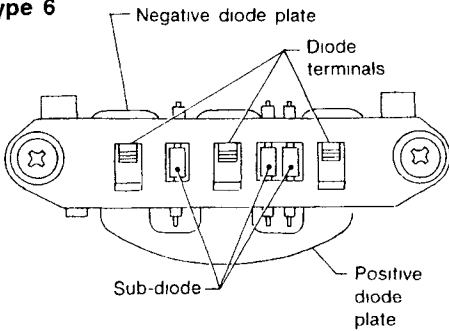
Type 4



Type 5



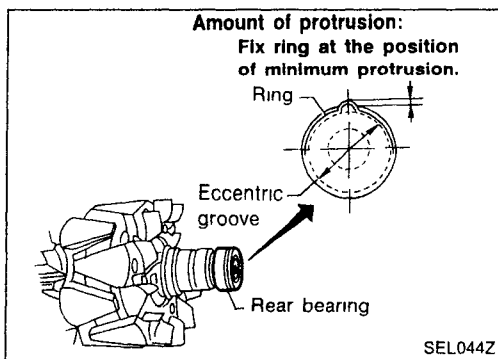
Type 6



SEL039Z

EL

CHARGING SYSTEM



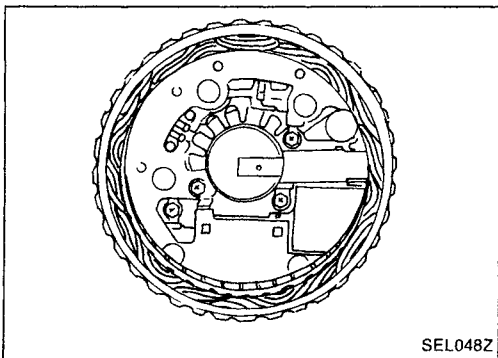
Assembly

RING FITTING IN REAR BEARING

- Fix ring into groove in rear bearing so that it is as close to the adjacent groove as possible.

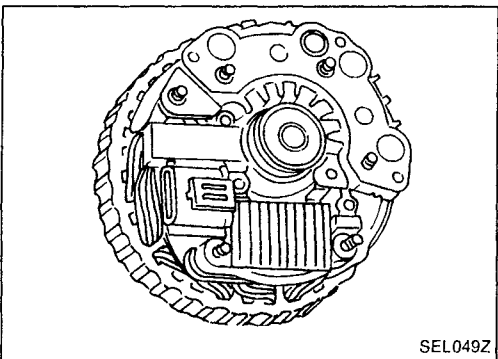
CAUTION:

Do not reuse rear bearing after removal.



REAR COVER INSTALLATION

- (1) Fit brush assembly, diode assembly, regulator assembly and stator.
 - (2) Push brushes up with fingers and install them to rotor.
- Take care not to damage slip ring sliding surface.**



CHARGING SYSTEM

Service Data and Specifications (SDS)

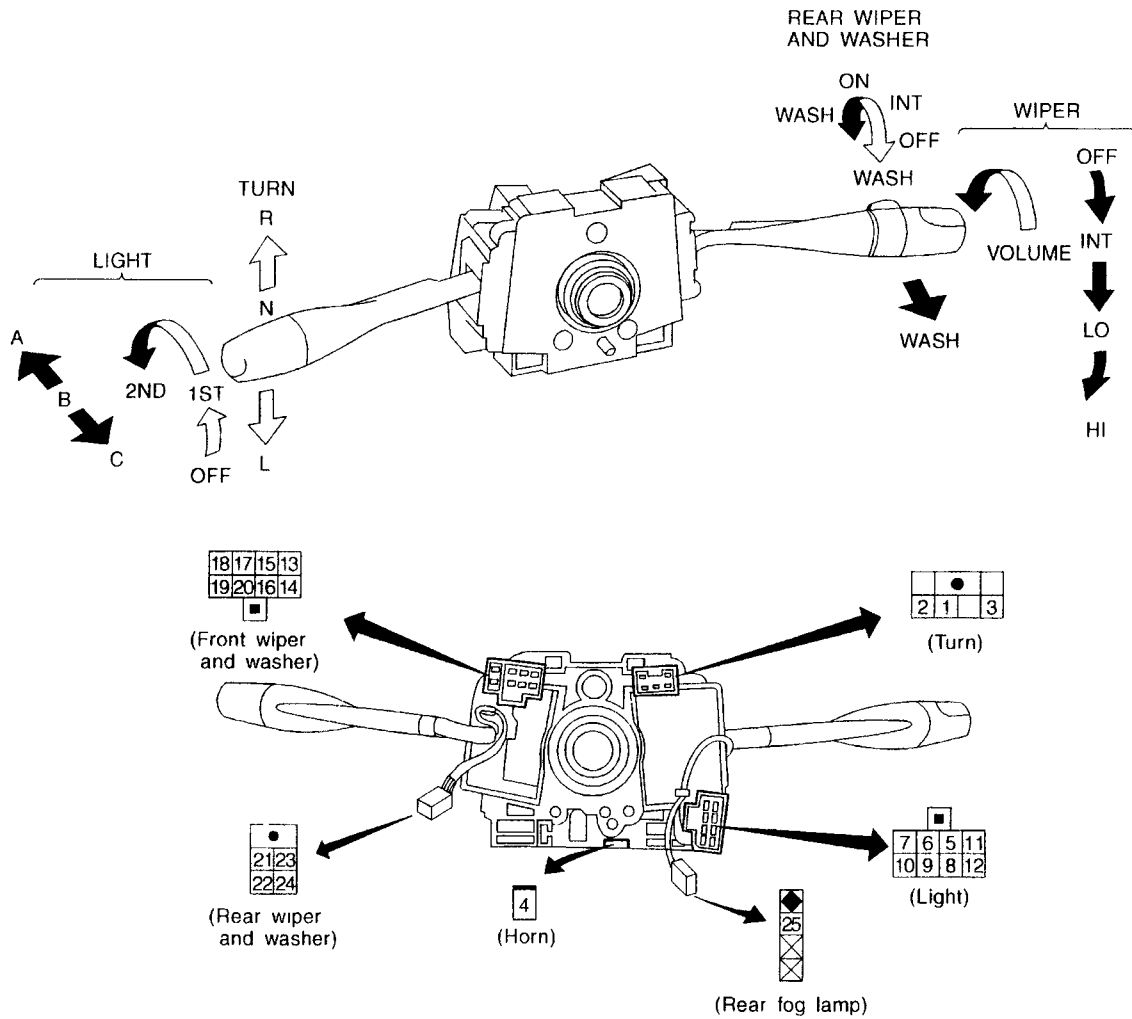
ALTERNATOR

Type	A5T06891	LR170-746E	LR170-504B	A2T82491A
	mitsubishi	HITACHI		mitsubishi
Applied model	GA engines		CD20	SR20DE
Nominal rating V-A	12-70			12-80
Ground polarity	Negative			
Minimum revolutions under no-load (when 13.5V is applied) rpm	Less than 1,300	Less than 1,000		Less than 1,300
Hot output current (When 13.5V is applied) A/rpm	More than 21/1,300 More than 50/2,500	More than 22/1,300 More than 50/2,500 More than 67/5,000	More than 27/1,300 More than 56/2,500 More than 66/5,000	More than 22/1,300 More than 65/2,500
Regulated output voltage V	14.1 - 14.7			
Minimum length of brush mm (in)	5.0 (0.197)	6.0 (0.236)		5.0 (0.197)
Brush spring pressure N (g, oz)	4.609 - 5.786 (470 - 590, 16.58 - 20.81)	1.0 - 3.43 (102 - 350, 3.60 - 12.34)	0.92 - 3.28 (94 - 334, 3.32 - 11.78)	4.609 - 5.786 (470 - 590, 16.58 - 20.81)
Slip ring minimum diameter mm (in)	22.1 (0.870)	26.0 (1.024)	31.6 (1.244)	22.1 (0.870)
Rotor coil resistance at 20°C (68°F) Ω	2.5 - 2.9	2.58	4.8	2.4 - 2.9

COMBINATION SWITCH

Combination Switch/Check

FOR EUROPE AND ISRAEL



LIGHTING SWITCH

	OFF			1ST			2ND		
	A	B	C	A	B	C	A	B	C
5									
6									
7									
8									
9									
10									
11									
12									
25									

FRONT WIPER AND WASHER SWITCH

	OFF	INT	LO	HI	WASH
13					
14					
15					
16					
17					
18					

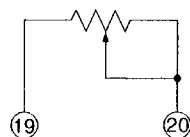
TURN SIGNAL SWITCH

	L	N	R
1			
2			
3			

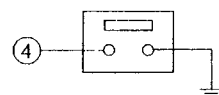
REAR WIPER AND WASHER SWITCH

	WASH	OFF	INT	ON	WASH
21					
22					
23					
24					

INTERMITTENT WIPER VOLUME



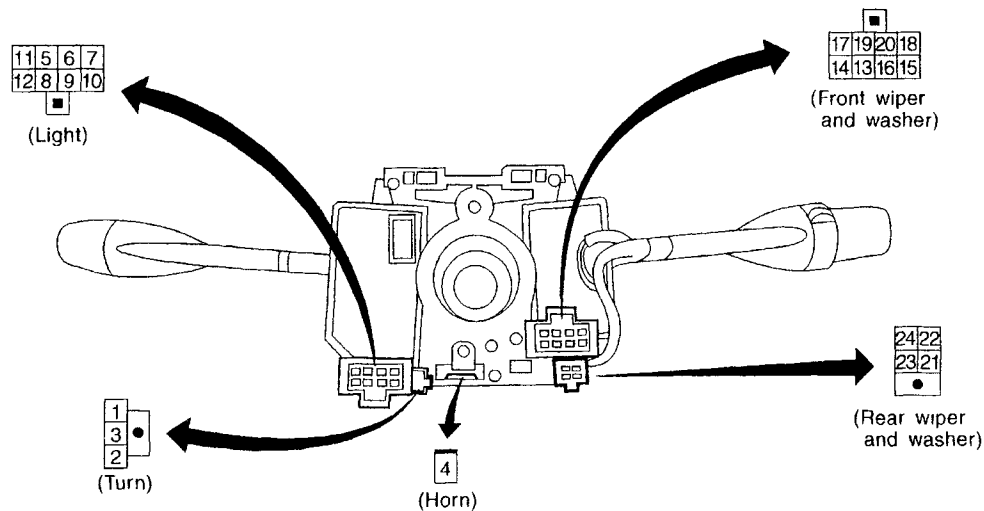
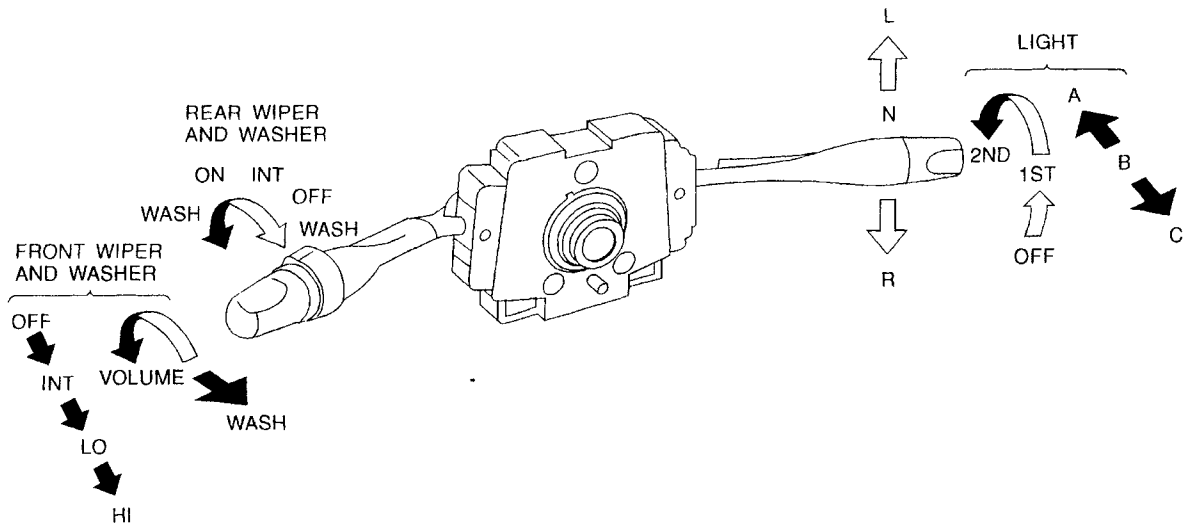
HORN SWITCH (Without air bag)



COMBINATION SWITCH

Combination Switch/Check (Cont'd)

EXCEPT FOR EUROPE AND ISRAEL



LIGHTING SWITCH

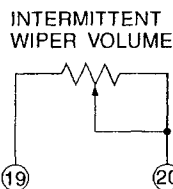
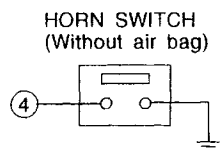
	OFF	1ST	2ND
A			
B			
C			
5			
6			
7			
8			
9			
10			
11			
12			

FRONT WIPER AND WASHER SWITCH

	OFF	INT	LO	HI	WASH
13					
14					
15					
16					
17					
18					

REAR WIPER AND WASHER SWITCH

	WASH	OFF	INT	ON	WASH
21					
22					
23					
24					

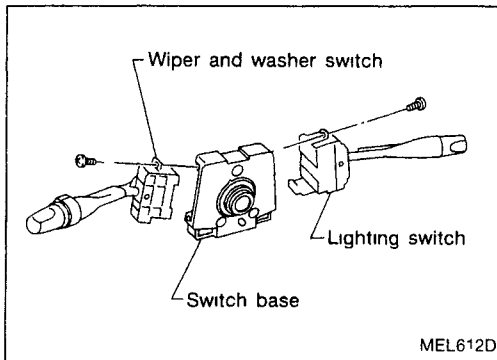


TURN SIGNAL SWITCH

	L	N	R
1			
2			
3			

EL

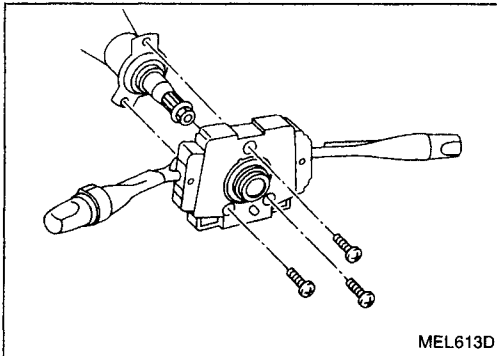
COMBINATION SWITCH



Replacement

For removing/installing air bag module and spiral cable, refer to RS section.

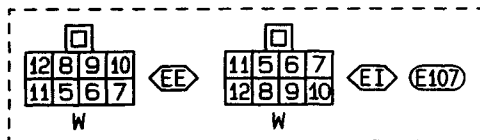
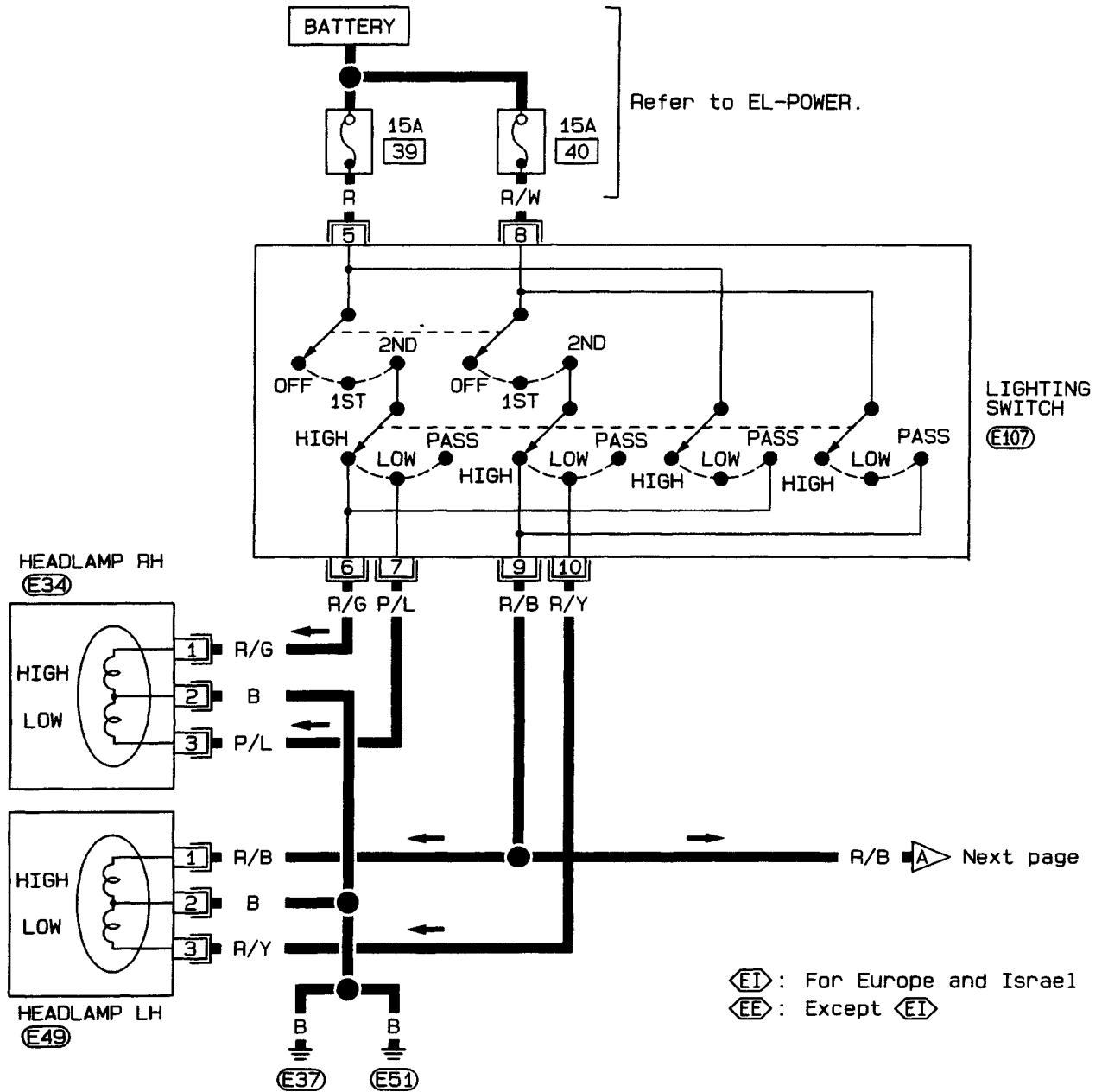
- Each switch can be replaced without removing combination switch base.
- To remove combination switch base, remove base attaching screw.



HEADLAMP — Without Daytime Light System —

Wiring Diagram — H/LAMP —

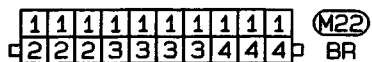
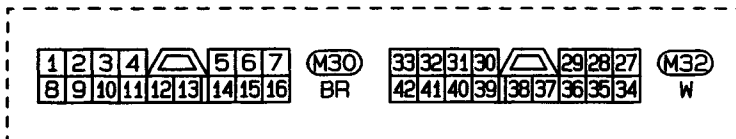
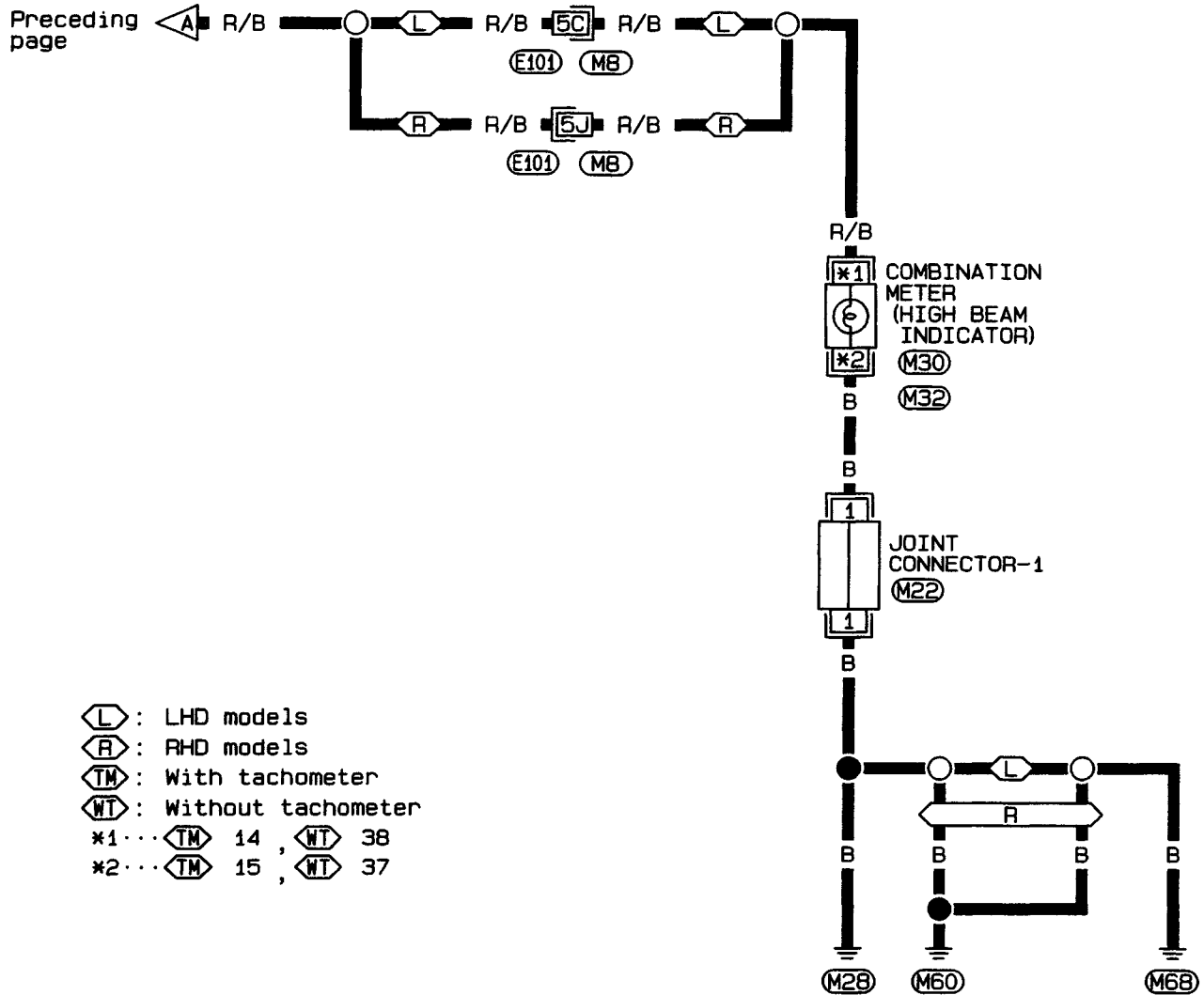
EL-H/LAMP-01



EL

HEADLAMP — Without Daytime Light System — **Wiring Diagram — H/LAMP — (Cont'd)**

EL-H/LAMP-02



Refer to last page
(Foldout page).

M8, E101

HEADLAMP — Without Daytime Light System —

Trouble Diagnoses

Symptom	Possible cause	Repair order
LH headlamps do not operate	1. Bulb 2. LH headlamp ground 3. 15A fuse 4. Lighting switch	1. Check bulb 2. Check LH headlamp ground (Terminal ②) 3. Check 15A fuse (No ④⑩), located in fusible link and fuse box). 4. Check lighting switch
RH headlamps do not operate	1. Bulb 2. RH headlamp ground 3. 15A fuse 4. Lighting switch	1. Check bulb. 2. Check RH headlamp ground. (Terminal ②) 3. Check 15A fuse (No ③⑨), located in fusible link and fuse box) 4. Check lighting switch
LH high beam does not operate, but LH low beam operates	1. Bulb 2. Open in LH high beam circuit 3. Lighting switch	1. Check bulb 2. Check R/B wire between lighting switch and LH headlamp for an open circuit. 3. Check lighting switch
LH low beam does not operate, but LH high beam operates	1. Bulb 2. Open in LH low beam circuit 3. Lighting switch	1. Check bulb 2. Check R/Y wire between lighting switch and LH headlamp for an open circuit 3. Check lighting switch
RH high beam does not operate, but RH low beam operates	1. Bulb 2. Open in RH high beam circuit 3. Lighting switch	1. Check bulb 2. Check R/G wire between lighting switch and RH headlamp for an open circuit 3. Check lighting switch
RH low beam does not operate, but RH high beam operates	1. Bulb 2. Open in RH low beam circuit 3. Lighting switch	1. Check bulb 2. Check P/L wire between lighting switch and RH headlamp for an open circuit 3. Check lighting switch
High beam indicator does not work	1. Bulb 2. High beam indicator ground 3. Open in high beam circuit	1. Check bulb in combination meter 2. Check combination meter ground [Terminal ⑮ (with tachometer) or ⑤⑦ (without tachometer)] 3. Check R/B wire between lighting switch and combination meter for an open circuit

HEADLAMP — Daytime Light System —

Operation (Daytime light system)

The headlamps' low beam and clearance, license, tail and illumination lamps automatically turn on after starting the engine with lighting switch in "OFF" position.

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	○	X	X	○	○	X	○	X	X	○	X	X	○	○	X	○
	Low beam	X	X	X	X	X	X	X	○	X	○	○	○	X	X	X	X	○	X
Clearance and tail lamp		X	X	X	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
License and instrument illumination lamp		X	X	X	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○: Lamp "ON"

X: Lamp "OFF"

□: Added functions

System Description

The headlamp system on vehicles for North Europe contains a daytime light unit. The unit activates the following whenever the engine is running with the lighting switch in the OFF position:

- Low beam headlamps
- Clearance, license, tail and illumination lamps

Power is supplied at all times

- through 15A fuse (No. [40], located in the fusible link and fuse box)
- to daytime light unit terminal ② and
- to lighting switch terminal ⑧.

Power is also supplied at all times

- through 15A fuse (No. [39], located in the fusible link and fuse box)
- to daytime light unit terminal ③ and
- to lighting switch terminal ⑤.

Power is also supplied at all times

- through 10A fuse (No. [36], located in the fusible link and fuse box)
- to daytime light unit terminal ① and
- to lighting switch terminal ⑪.

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

- through 10A fuse (No. [25], located in the fuse block)
- to daytime light unit terminal ⑦.

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

- through 7.5A fuse (No. [26], located in the fuse block)
- to daytime light unit terminal ⑥.

Ground is supplied to daytime light unit terminal ⑨ through body grounds (E37) and (E51).

HEADLAMP OPERATION (Daytime light cancel operation)

Power is supplied at all times

- through 10A fuse (No. [36], located in the fuse and fusible link box)
- to lighting switch terminal ⑪.

When the lighting switch is turned to the 1st or 2nd position

- through lighting switch terminal ⑫,
- to daytime light unit terminal ⑪.

Then daytime light will be canceled. And the lighting system operation will be the same as no daytime light system.

DAYTIME LIGHT OPERATION

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

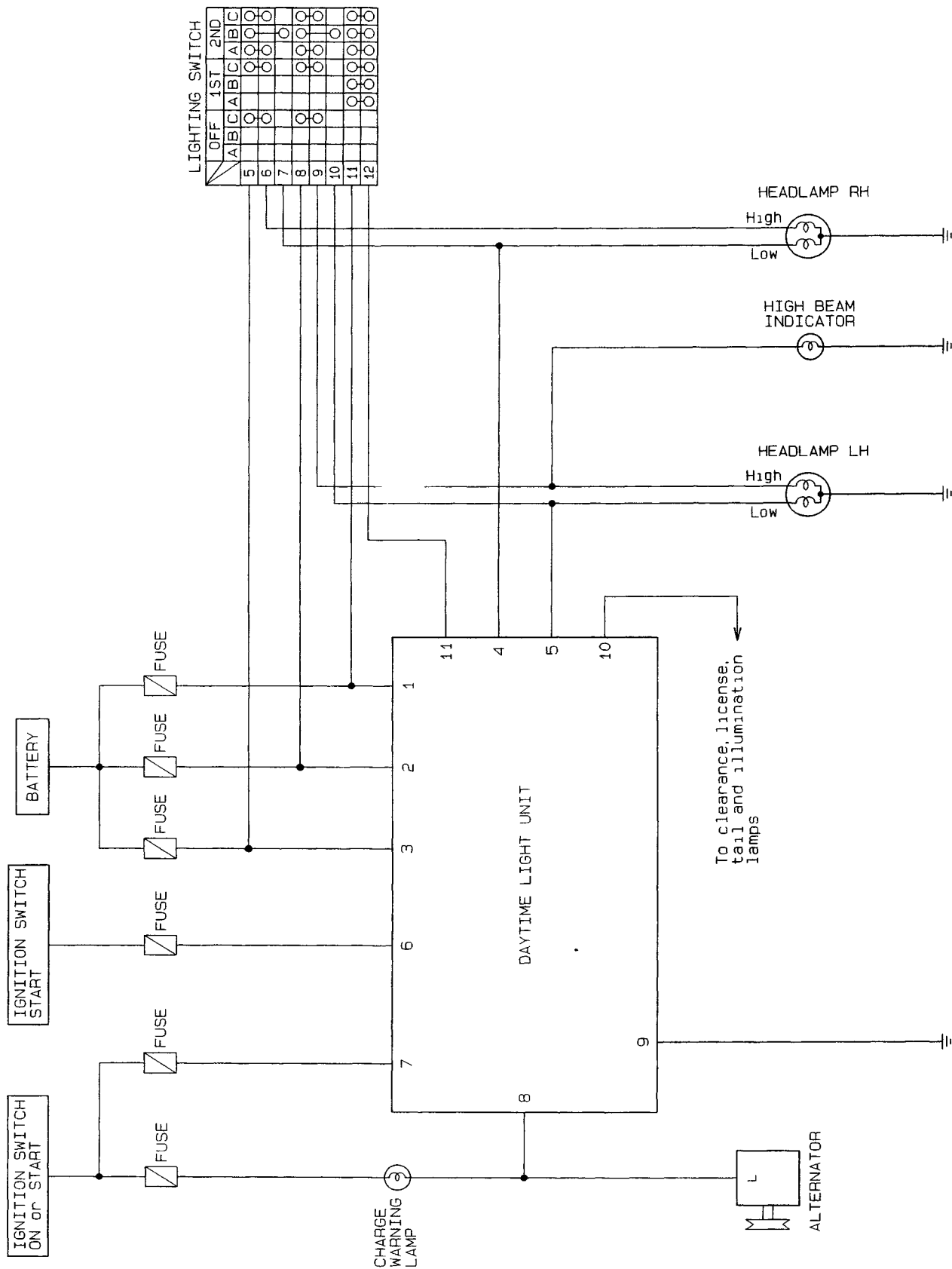
- from alternator terminal ①
- to daytime light unit terminal ⑧
- to daytime light unit terminal ②
- through daytime light unit terminal ⑤
- to terminal ③ of LH headlamp
- to daytime light unit terminal ③
- through daytime light unit terminal ④
- to terminal ③ of RH headlamp
- to daytime light unit terminal ①
- through daytime light unit terminal ⑩
- to tail lamp and illumination.

Ground is supplied to terminal ② of each headlamp through body grounds (E37) and (E51).

Ground is also supplied to terminal ⑨ of daytime light unit through body grounds (E37) and (E51).

HEADLAMP — Daytime Light System —

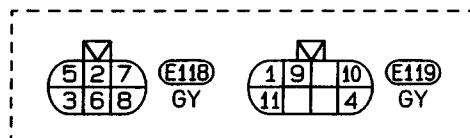
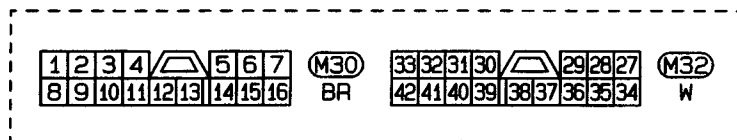
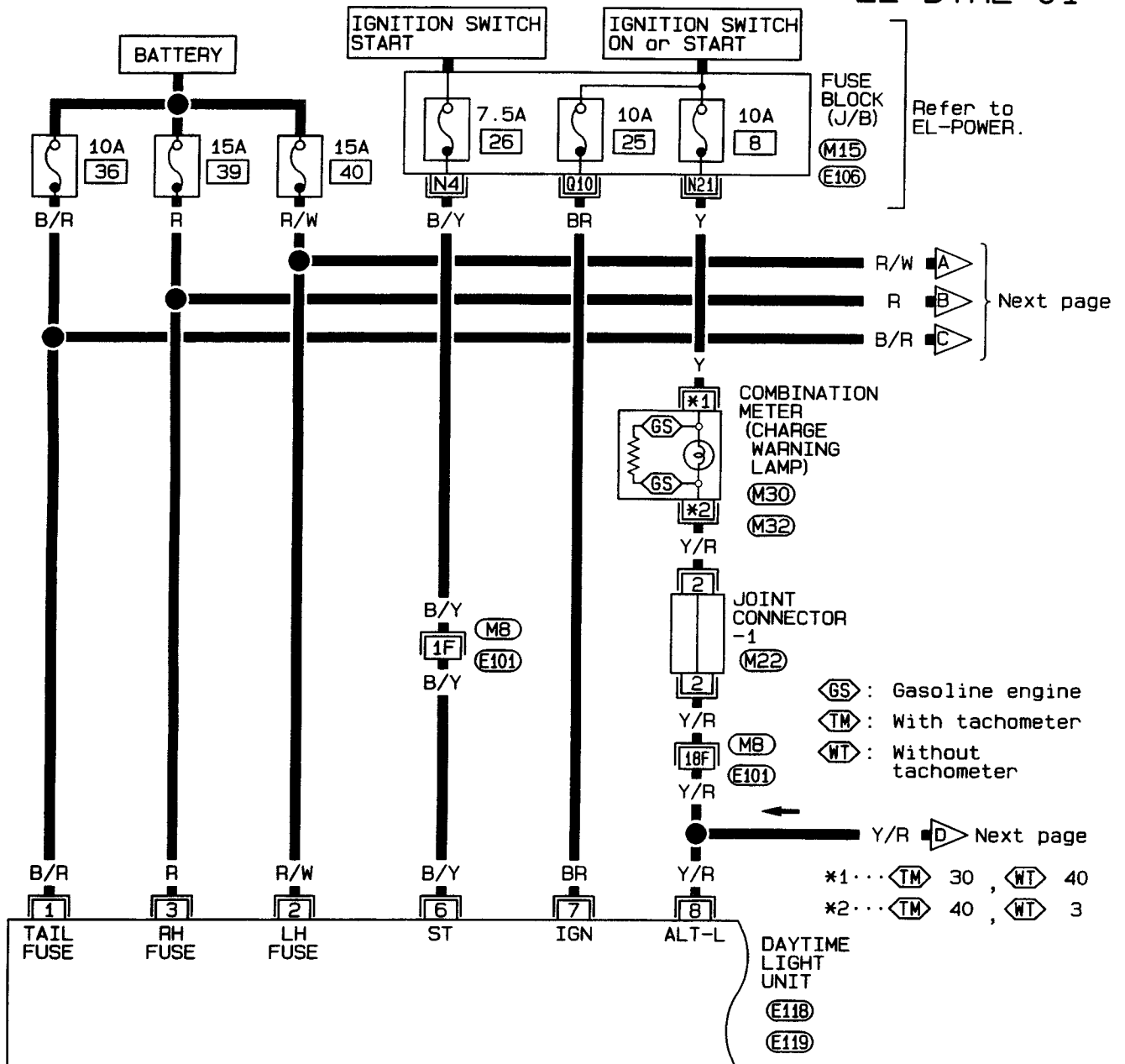
Schematic



HEADLAMP — Daytime Light System —

Wiring Diagram — DTRL —

EL-DTRL-01



Refer to last page (Foldout page).

M8, E101

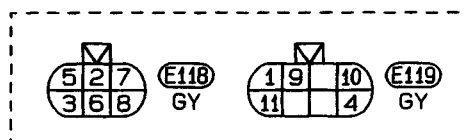
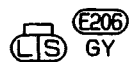
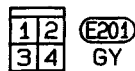
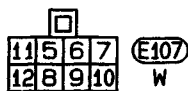
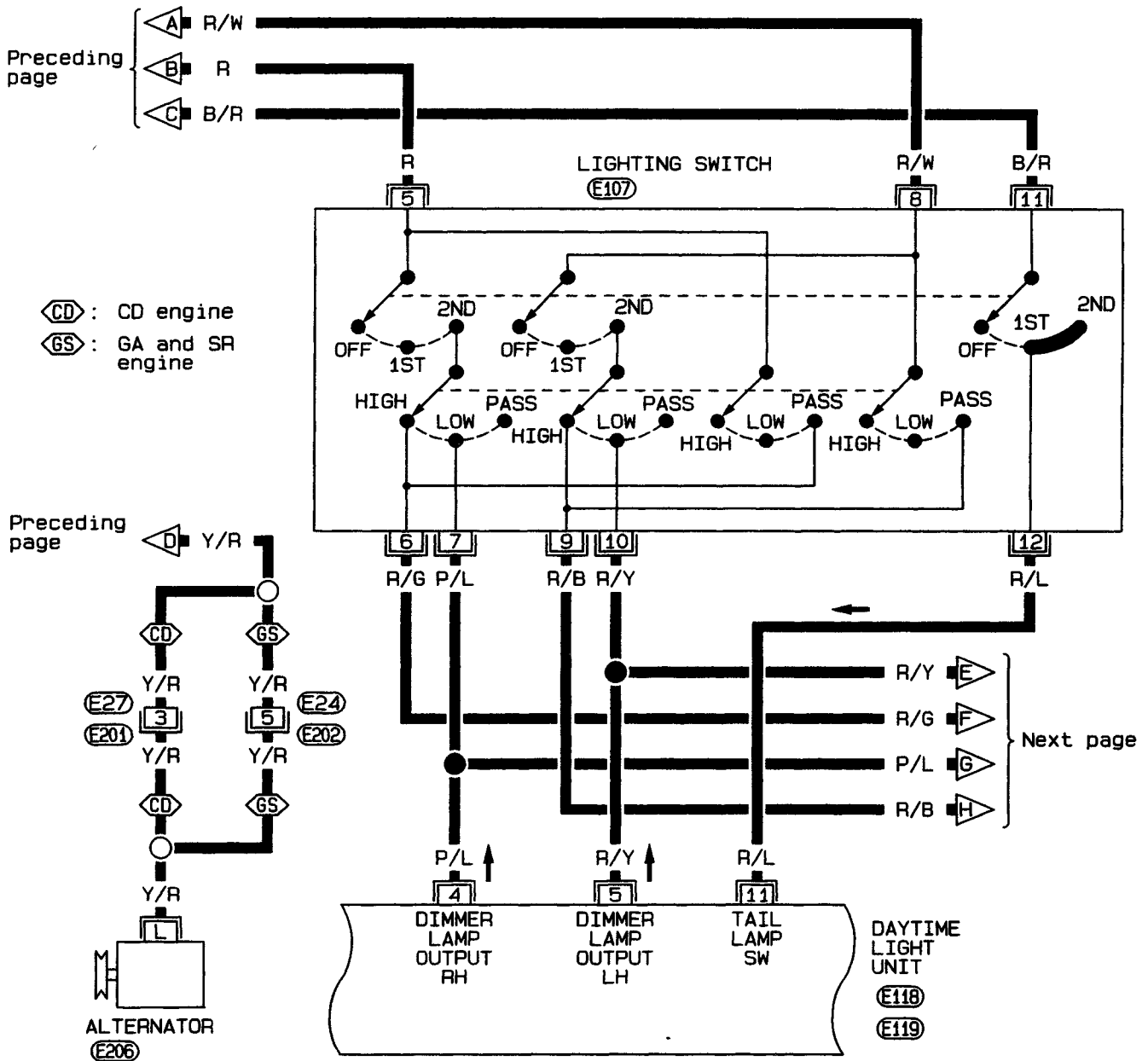
M15, E106

EL

HEADLAMP — Daytime Light System —

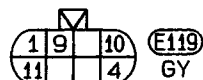
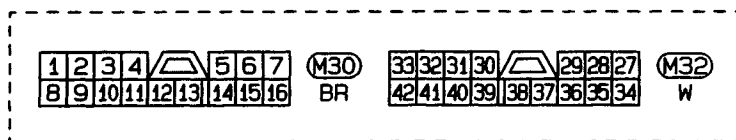
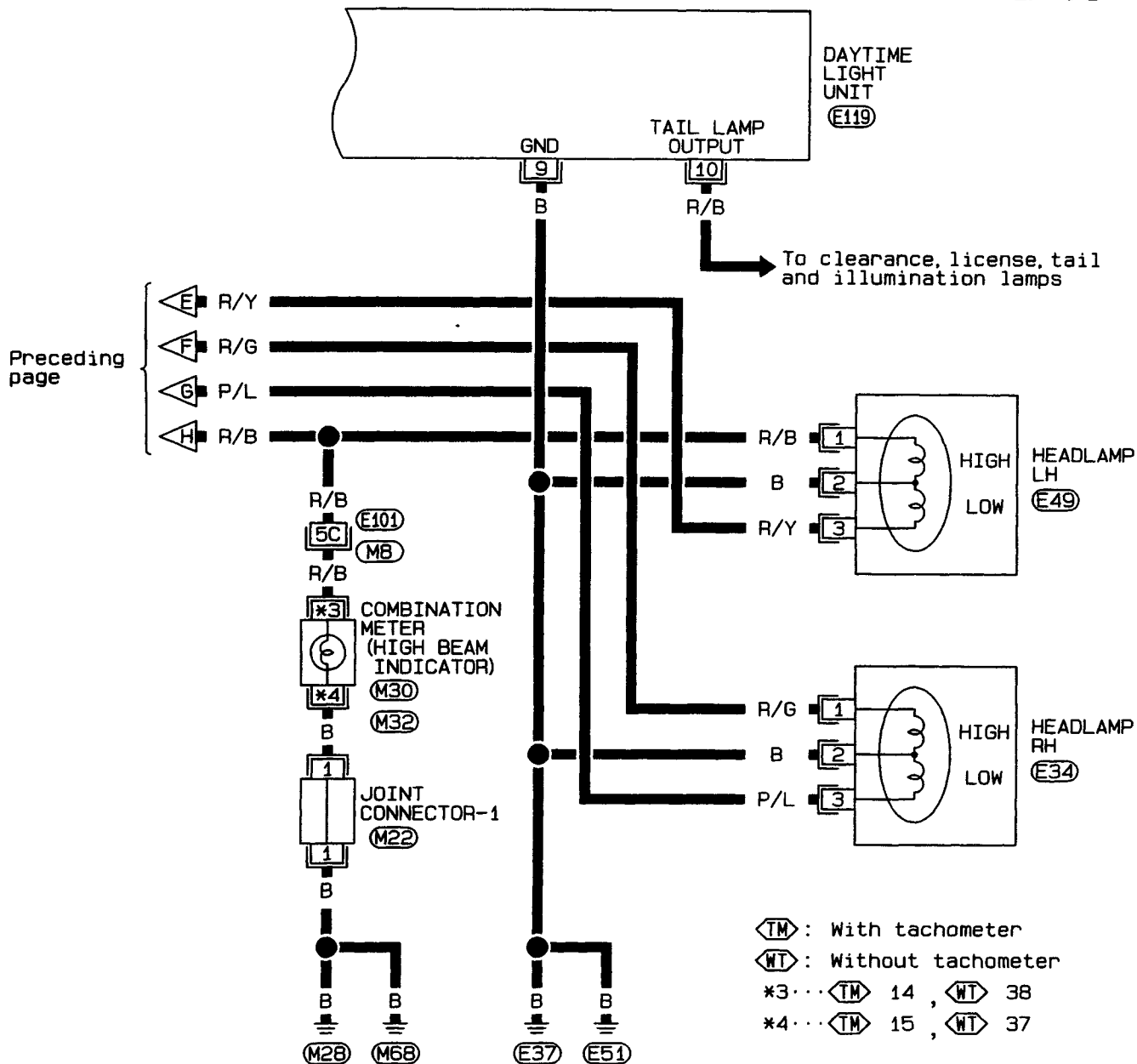
Wiring Diagram — DTRL — (Cont'd)

EL-DTRL-02



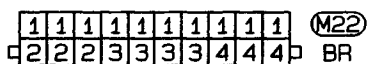
HEADLAMP — Daytime Light System — **Wiring Diagram — DTRL — (Cont'd)**

EL-DTRL-03



Refer to last page (Foldout page).

MB, E101



HEADLAMP — Daytime Light System —

Trouble Diagnoses (Daytime Light)

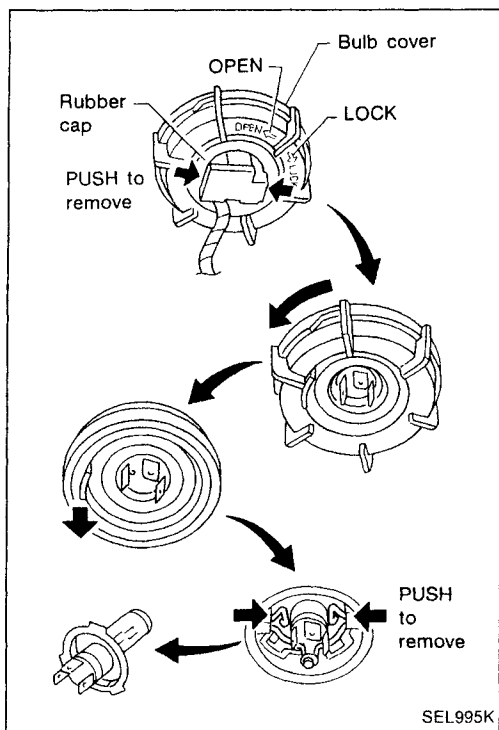
DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

(Input/output operation signal)

Terminal No.	Connections	INPUT (I)/ OUTPUT (O)	Operated condition		Voltage (V) (Approximate values)
1	Power source for illumination & tail lamp	—	—		12
2	Power source for headlamp LH	—	—		12
3	Power source for headlamp RH	—	—		12
4	Headlamp RH	O	ON (daytime light operating*)		12
			OFF		0
5	Headlamp LH	O	ON (daytime light operating*)		12
			OFF		0
6	Start signal	I	Ignition switch	START	12
				ON, ACC or OFF	0
7	Power source	—	Ignition switch	ON or START	12
				ACC or OFF	0
8	Alternator "L" ter- minal	I	Engine	Running	12
				Stopped	0
9	Ground	—	—		—
10	Illumination & tail lamp	O	ON (daytime light operating*)		12
			OFF		0
11	Lighting switch	I	1ST·2ND position		12
			OFF		0

*: Daytime light operating: Lighting switch in "OFF" position with engine running.

HEADLAMP



Bulb Replacement

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

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

1. Disconnect the battery cable.
2. Disconnect the harness connector from the back side of the bulb.
3. Turn the bulb retaining ring counterclockwise until it is free from the headlamp reflector, and then remove it.
4. Pull off the rubber cap.
5. Remove the headlamp bulb carefully. Do not shake or rotate the bulb when removing it.
6. 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.**

Bulb Specifications

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

Aiming Adjustment

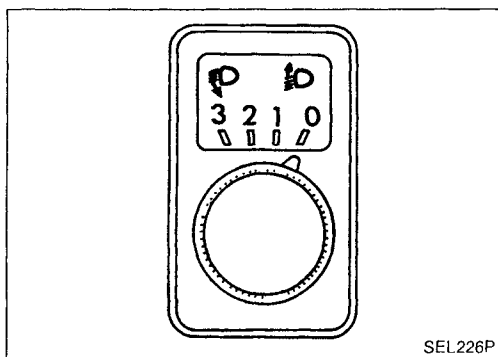
When performing headlamp aiming adjustment, use an aiming machine, aiming wall screen or headlamp tester. Aimers should be in good repair, calibrated and operated in accordance with respective operation manuals.

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

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

CAUTION:

- **Keep all tires inflated to correct pressures.**
- **Place vehicle and tester on one and same flat surface.**
- **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.**



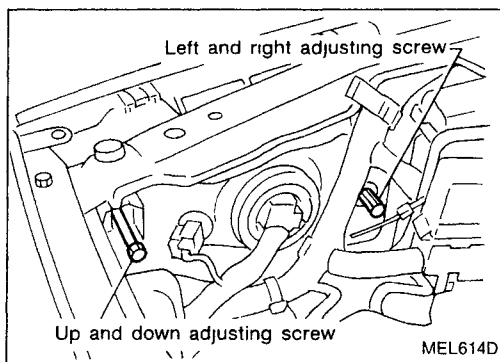
CAUTION:

Be sure aiming switch is set to "0" when performing aiming adjustment on vehicles equipped with headlamp aiming control.

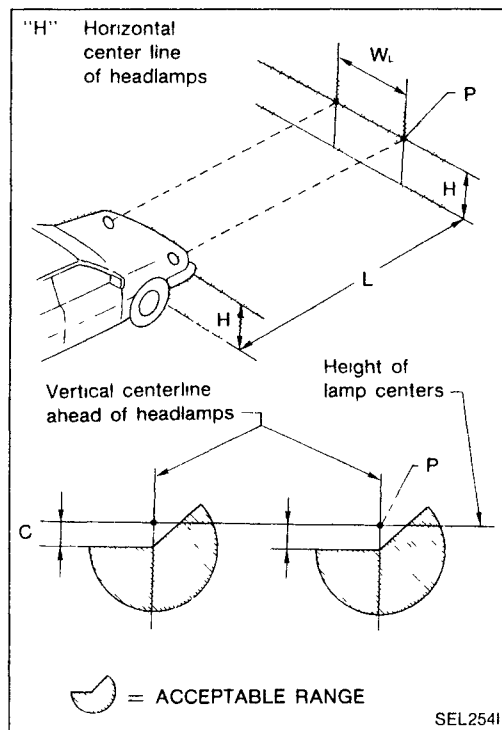
HEADLAMP

Aiming Adjustment (Cont'd)

LOW BEAM



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



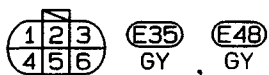
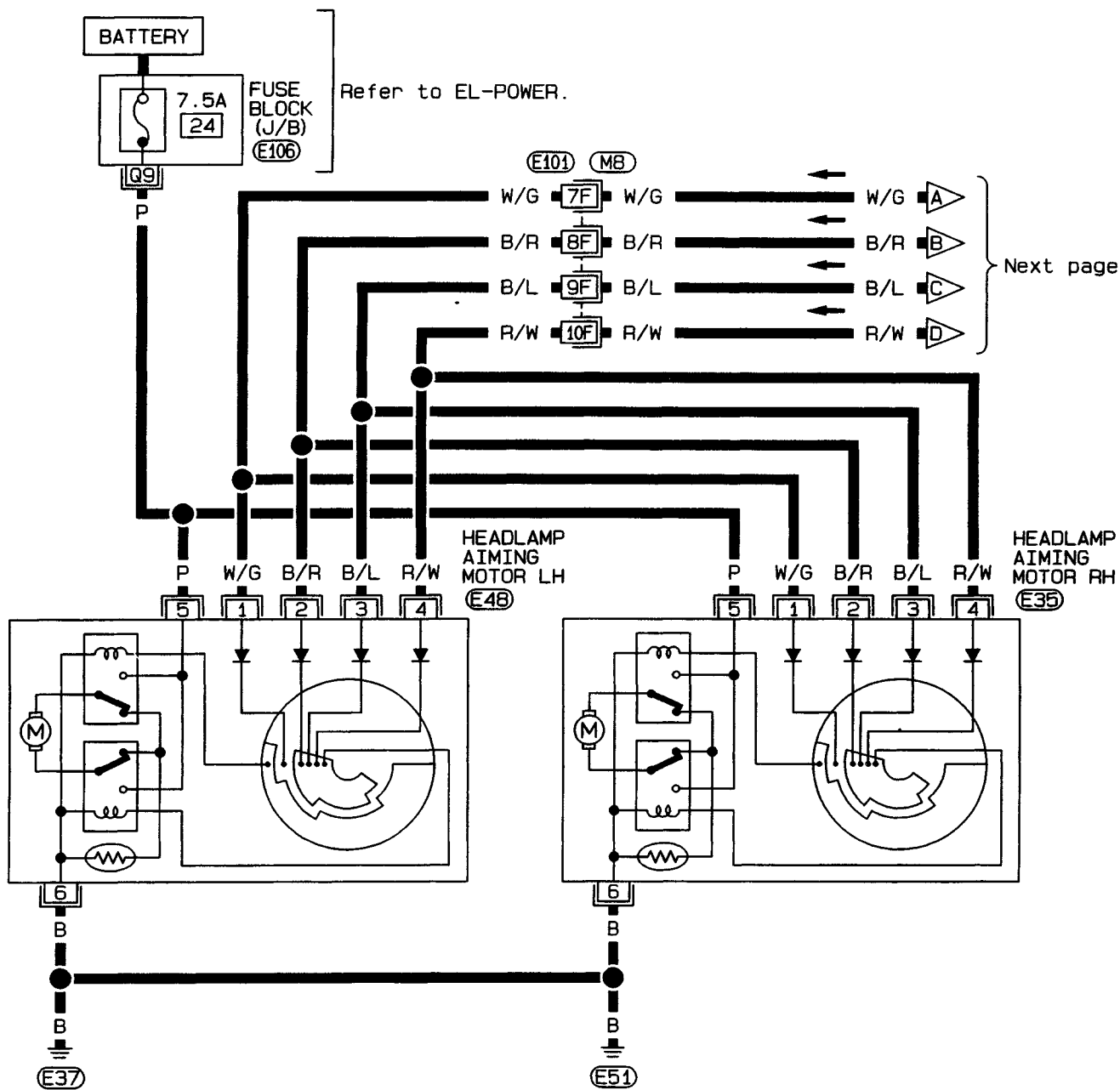
- Adjust headlamps so that main axis of light is parallel to center line of body and is aligned with point P shown in illustration.
- Figure to the left shows headlamp aiming pattern for driving on right side of road; for driving on left side of road, aiming pattern is reversed.
- Dotted lines in illustration show center of headlamp.
- "H": Horizontal center line of headlamps
- " W_L ": Distance between each headlamp center
- "L": 5,000 mm (196.85 in)
- "C": 65 mm (2.56 in)

HEADLAMP — Headlamp Aiming Control —

Wiring Diagram — AIM —

LHD MODELS

EL-AIM-01



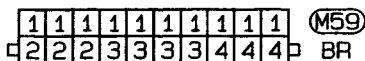
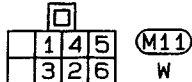
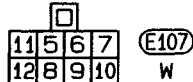
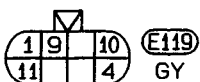
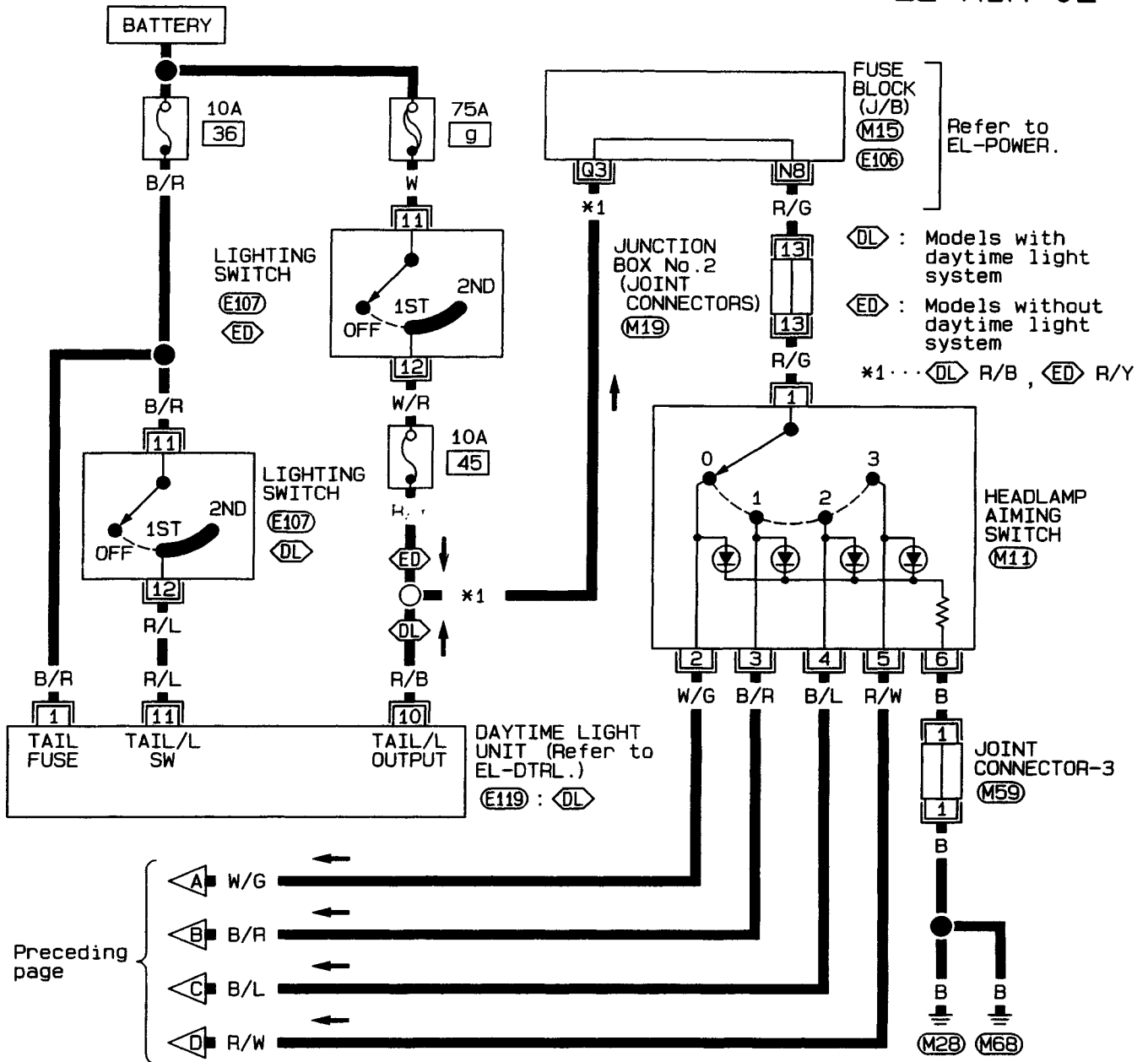
Refer to last page (Foldout page) .

(M8) , (E101)
(E106)

EL

HEADLAMP — Headlamp Aiming Control — Wiring Diagram — AIM — (Cont'd)

EL-AIM-02



Refer to last page (Foldout page).

(M15), (E106)

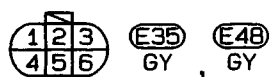
(M19)

RHD MODELS

The diagram illustrates the electrical wiring for the EL-POWER system. It begins with a BATTERY connected to a FUSE BLOCK (J/B) labeled E106, which contains a 7.5A 24 fuse. The wiring then branches out to various components:

- Headlamp Aiming Motor LH (E48):** This motor is connected to the battery through a series of switches and relays. The wiring includes a common line (P) and four individual lines (W/G, B/R, B/L, R/W) that connect to the motor's internal components.
- Headlamp Aiming Motor RH (E35):** This motor is similarly connected to the battery through a series of switches and relays. The wiring includes a common line (P) and four individual lines (W/G, B/R, B/L, R/W) that connect to the motor's internal components.
- Other Components:** The diagram also shows connections to a HEADLAMP AIMING MOTOR LH (E48) and a HEADLAMP AIMING MOTOR RH (E35). The wiring for these motors is shown as a series of switches and relays connected to the battery.

The diagram includes a reference to "Refer to EL-POWER." and a note "Next page" indicating that the wiring continues on the following page.



Refer to last page
(Foldout page) .

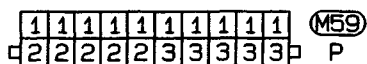
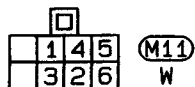
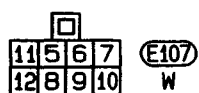
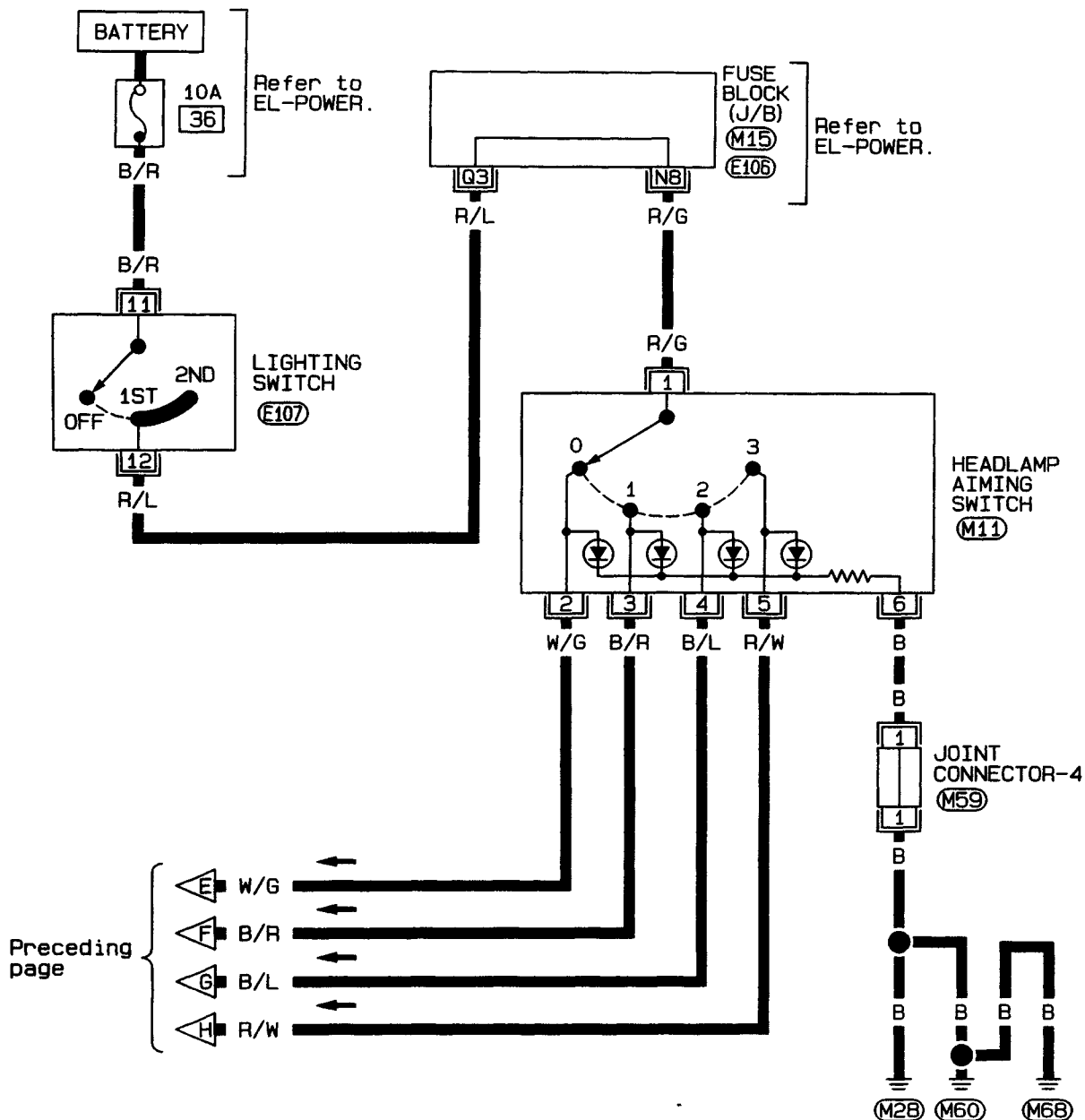
M8 E101

(E106)

EL

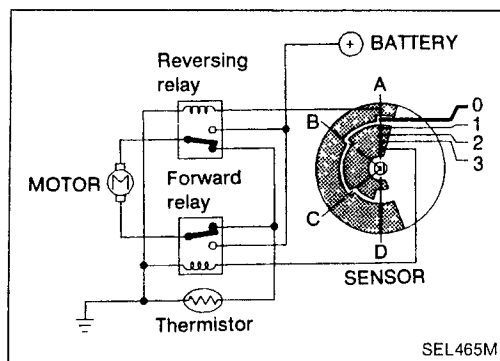
HEADLAMP — Headlamp Aiming Control — Wiring Diagram — AIM — (Cont'd)

EL-AIM-04



Refer to last page
(Foldout page).

(M15) , (E106)



SEL465M

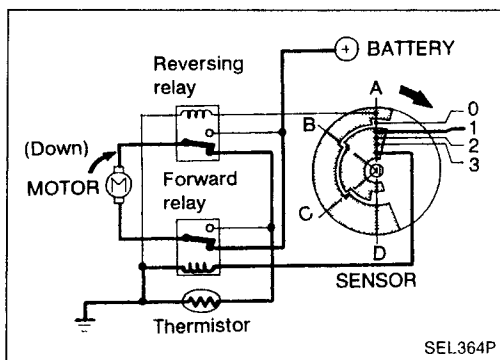
Description

CIRCUIT OPERATION

[Example]

Aiming switch "0"

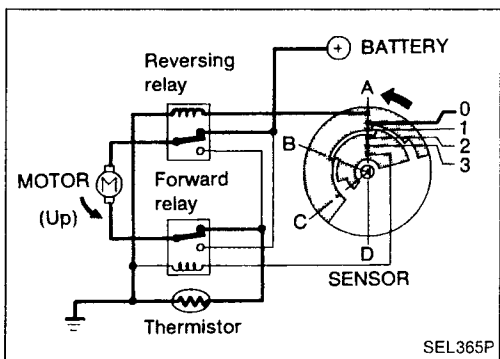
- When the aiming switch is set to "0", the motor will not start. This is because the power terminals are positioned at the nonconductive section of the sensor's rotary unit.



SEL364P

Aiming switch "0" → "1"

- When the aiming switch is moved from "0" to "1", the sensor's conductive section activates the relay. Power is supplied through the relay to the motor. The headlamps will then move in the "DOWN" direction.
- The motor continues to rotate while the rotary unit of the sensor moves from point A to point B.
- The power terminals will then be positioned at the nonconductive section, disconnecting the power to the motor. The motor will then stop.



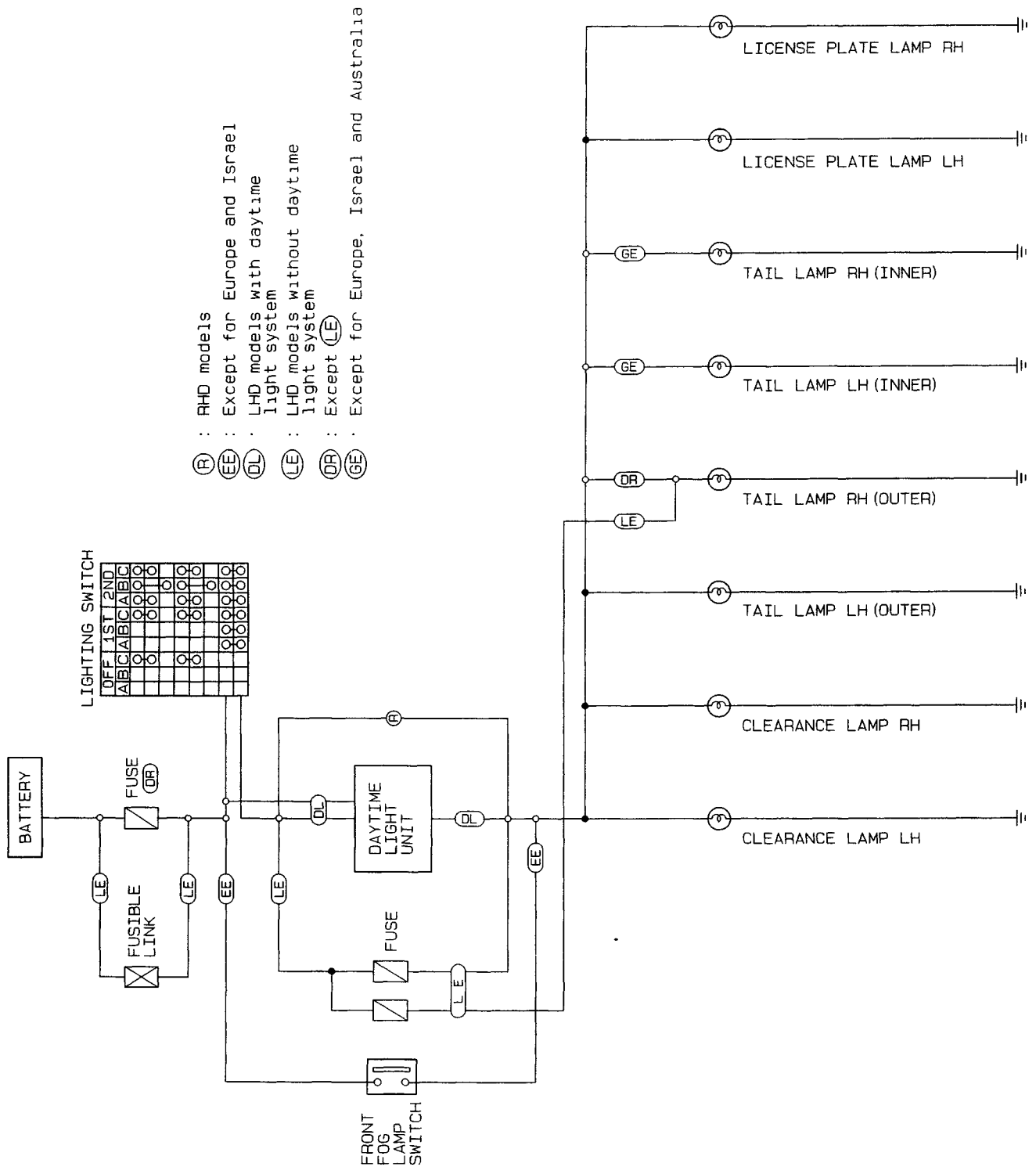
SEL365P

Aiming switch "1" → "0"

- When the aiming switch is moved from "1" to "0", the sensor's conductive section activates the relay. Power is supplied through the relay to the motor. The motor will rotate to move the headlamps in the "UP" direction.
- When the rotary unit of the sensor moves from point B to point A, the motor will stop.

EXTERIOR LAMP

Clearance, License and Tail Lamps/Schematic

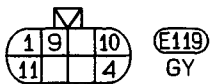
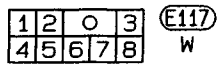
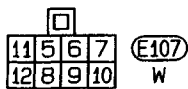
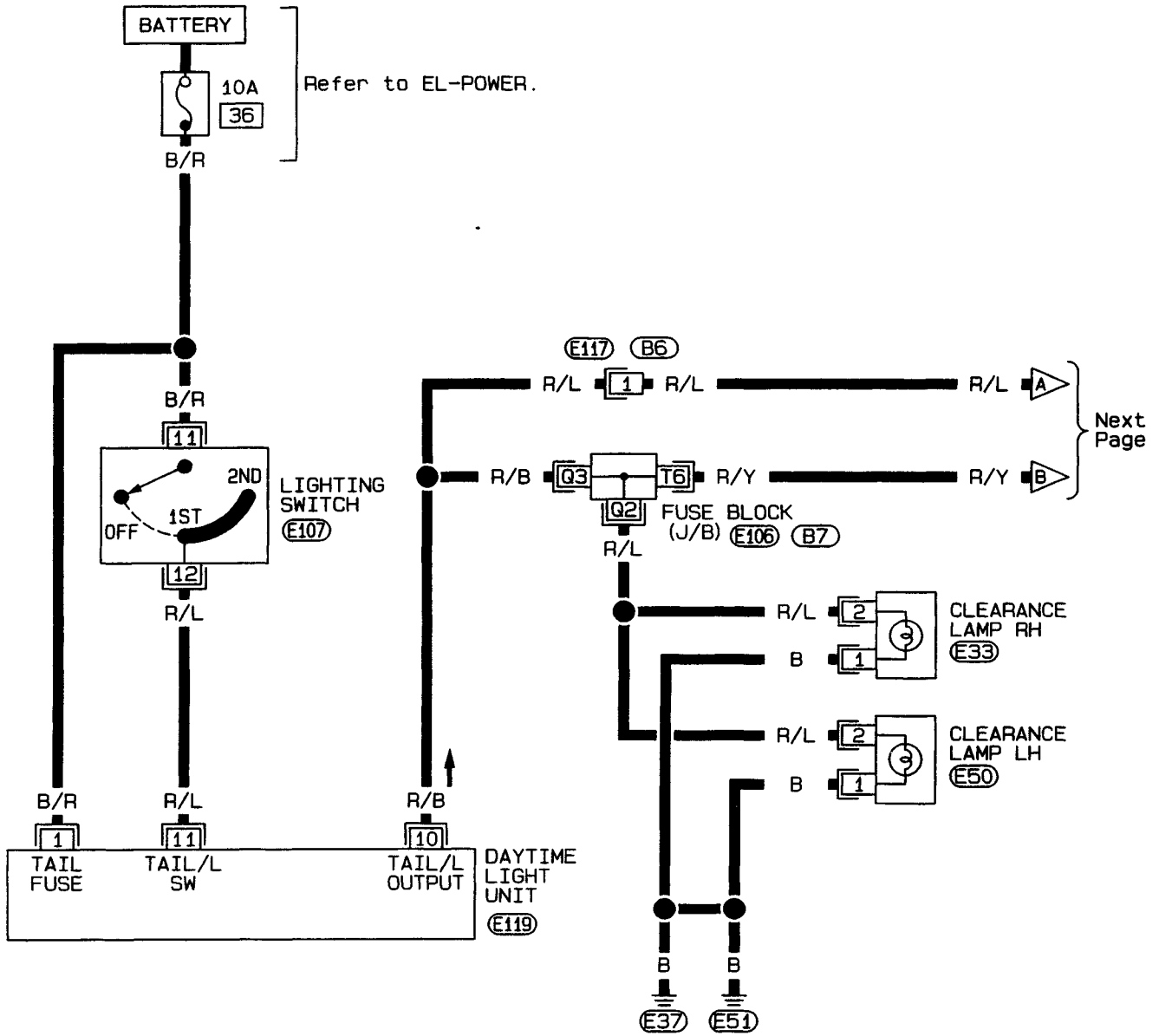


EXTERIOR LAMP

Clearance, License and Tail Lamps/Wiring Diagram — TAIL/L —

LHD MODELS WITH DAYTIME LIGHT SYSTEM

EL-TAIL/L-01



Refer to last page
(Foldout page).

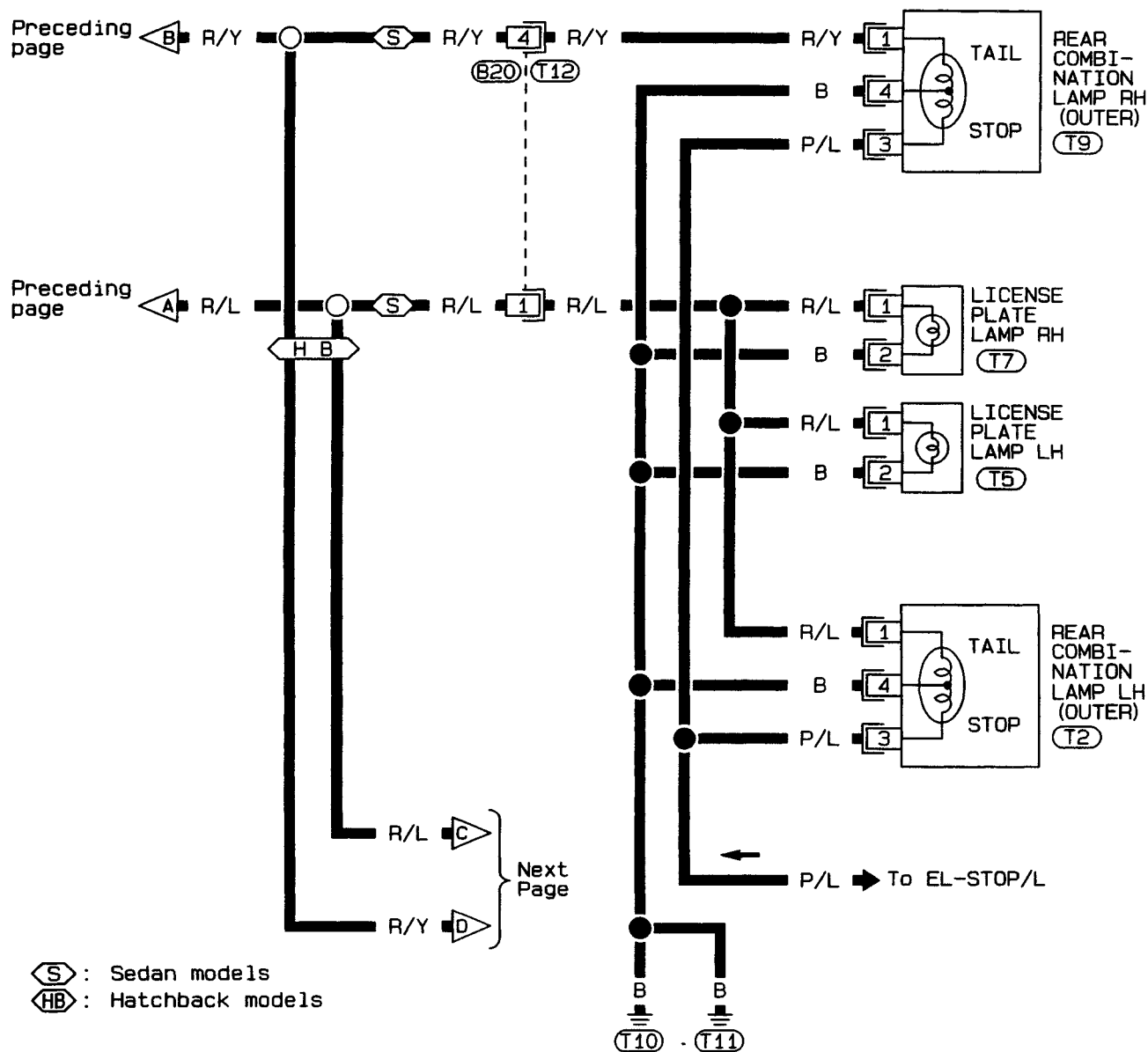
E106, B7

EL

EXTERIOR LAMP

Clearance, License and Tail Lamps/Wiring Diagram — TAIL/L — (Cont'd)

EL-TAIL/L-02



1	2	0	3
4	5	6	7

(T12)
W

	0
1	2
3	4

(T2), (T9)
W, W

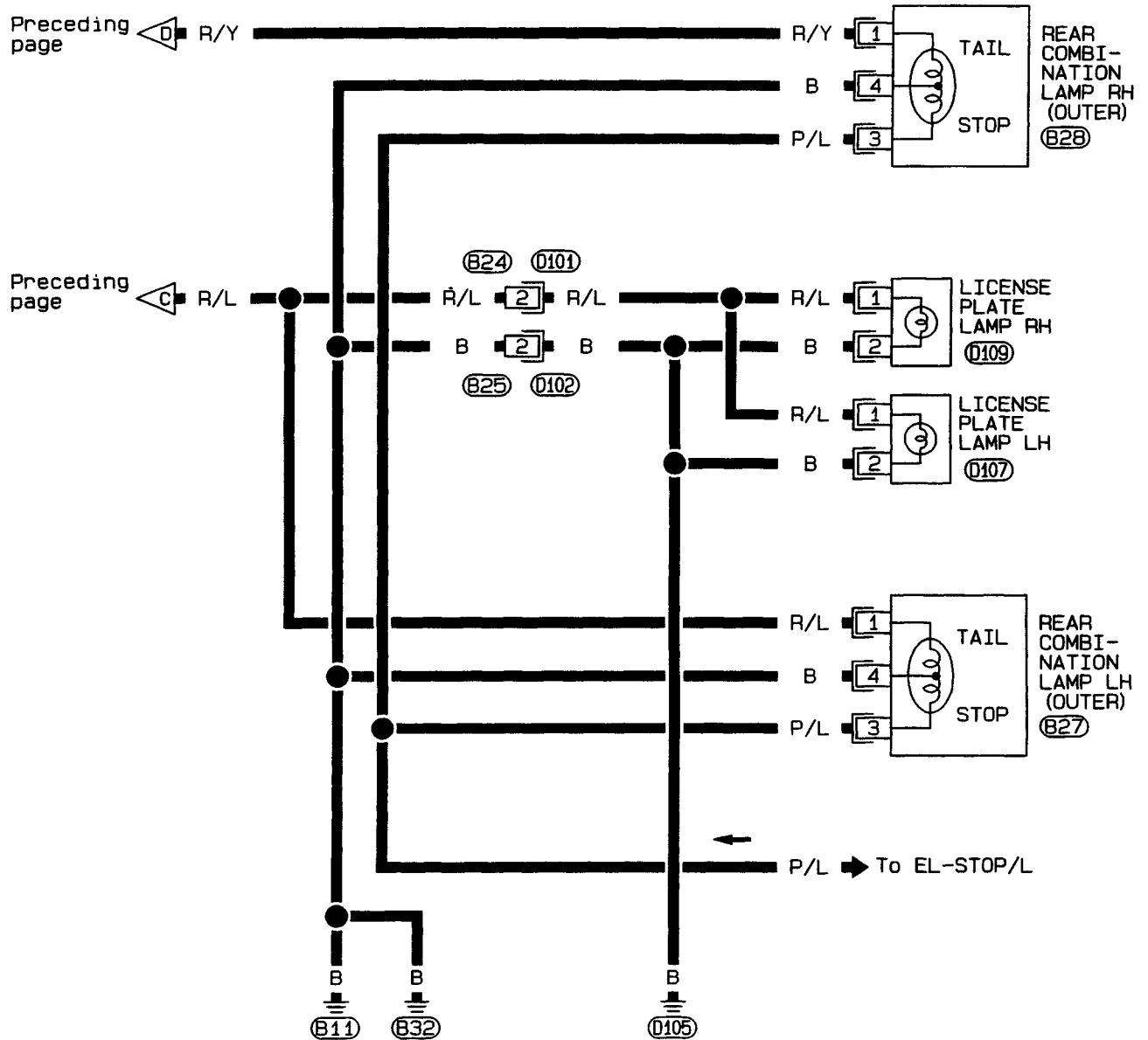
0
1
2

(T5), (T7)
W, W

EXTERIOR LAMP

Clearance, License and Tail Lamps/Wiring Diagram — TAIL/L — (Cont'd)

EL-TAIL/L-03



1 2 3 4 5 6 7 8 (D101) W

1 2 (D102) W

1 2 3 4 (B27), (B28) W W

1 2 (D107), (D109) W W

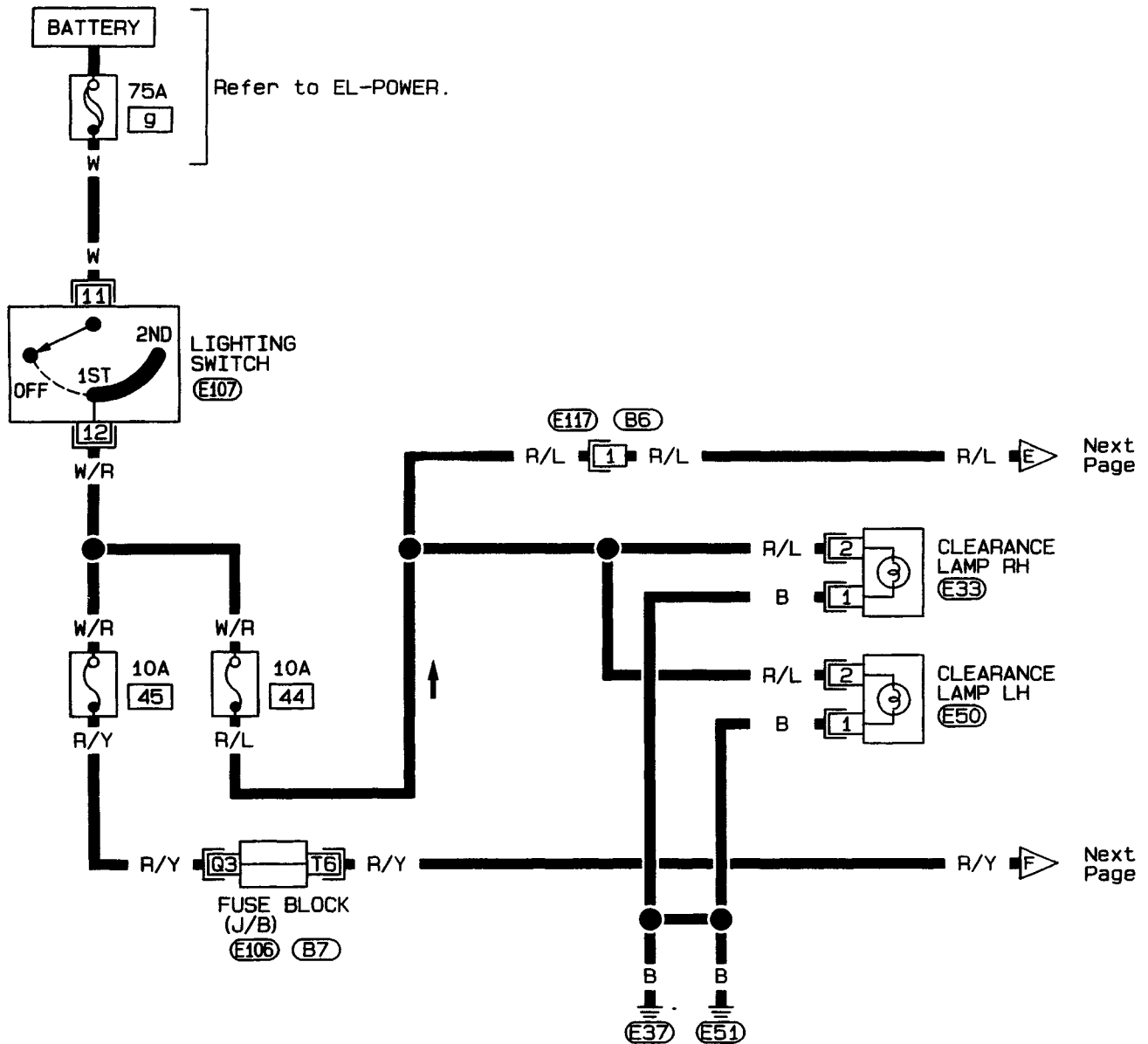
EL

EXTERIOR LAMP

Clearance, License and Tail Lamps/Wiring Diagram — TAIL/L — (Cont'd)

LHD MODELS WITHOUT DAYTIME LIGHT SYSTEM

EL-TAIL/L-04



11	5	6	7
12	8	9	10

(E107) W

1	2	0	3
4	5	6	7

(E117) W

1	2
---	---

(E33) (E50)
B , B

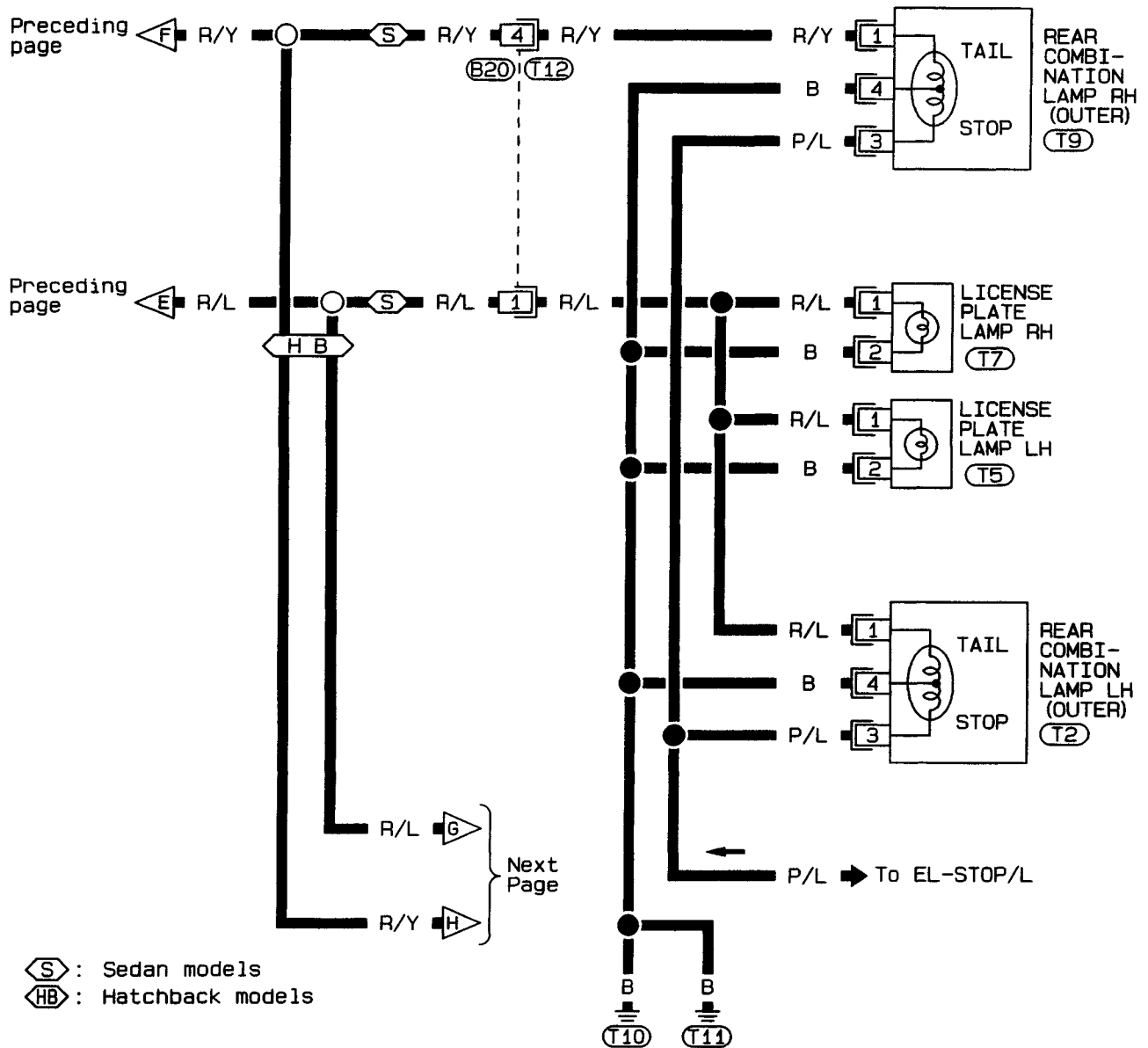
Refer to last page
(Foldout page).

(E106) , (B7)

EXTERIOR LAMP

Clearance, License and Tail Lamps/Wiring Diagram — TAIL/L — (Cont'd)

EL-TAIL/L-05



1	2	0	3	(T12)
4	5	6	7	W

	0	(T2)	(T9)
1	2	3	4

W, W

0	(T5)	(T7)
1	2	W

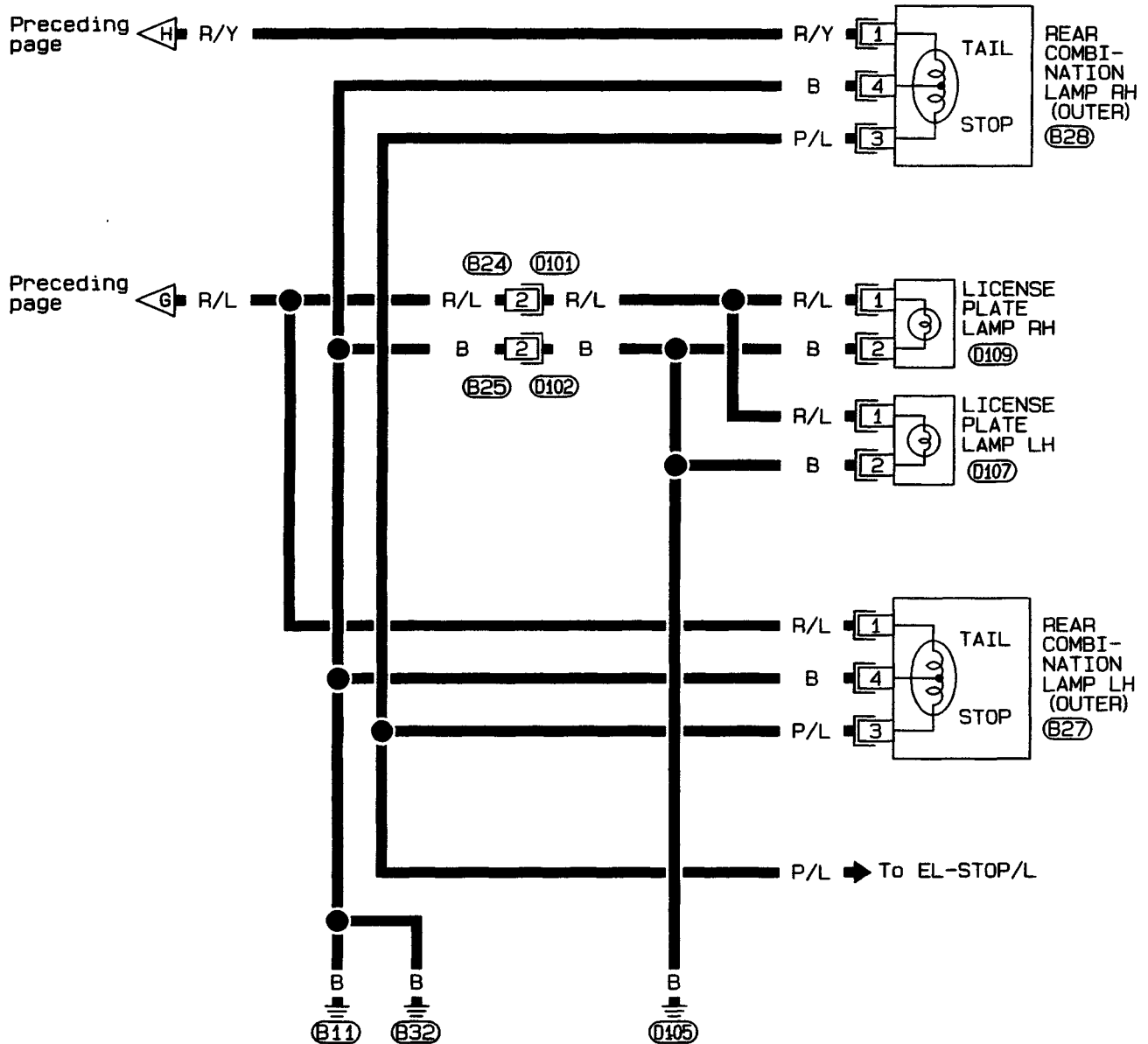
W

EL

EXTERIOR LAMP

Clearance, License and Tail Lamps/Wiring Diagram — TAIL/L — (Cont'd)

EL-TAIL/L-06



1 2 3 4 5 6 7 8 D101 W

1 2 D102 W

1 2 3 4 B27, B28 W, W

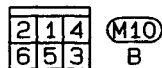
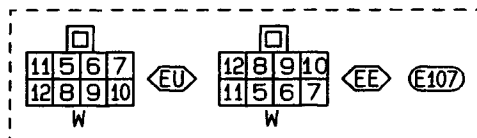
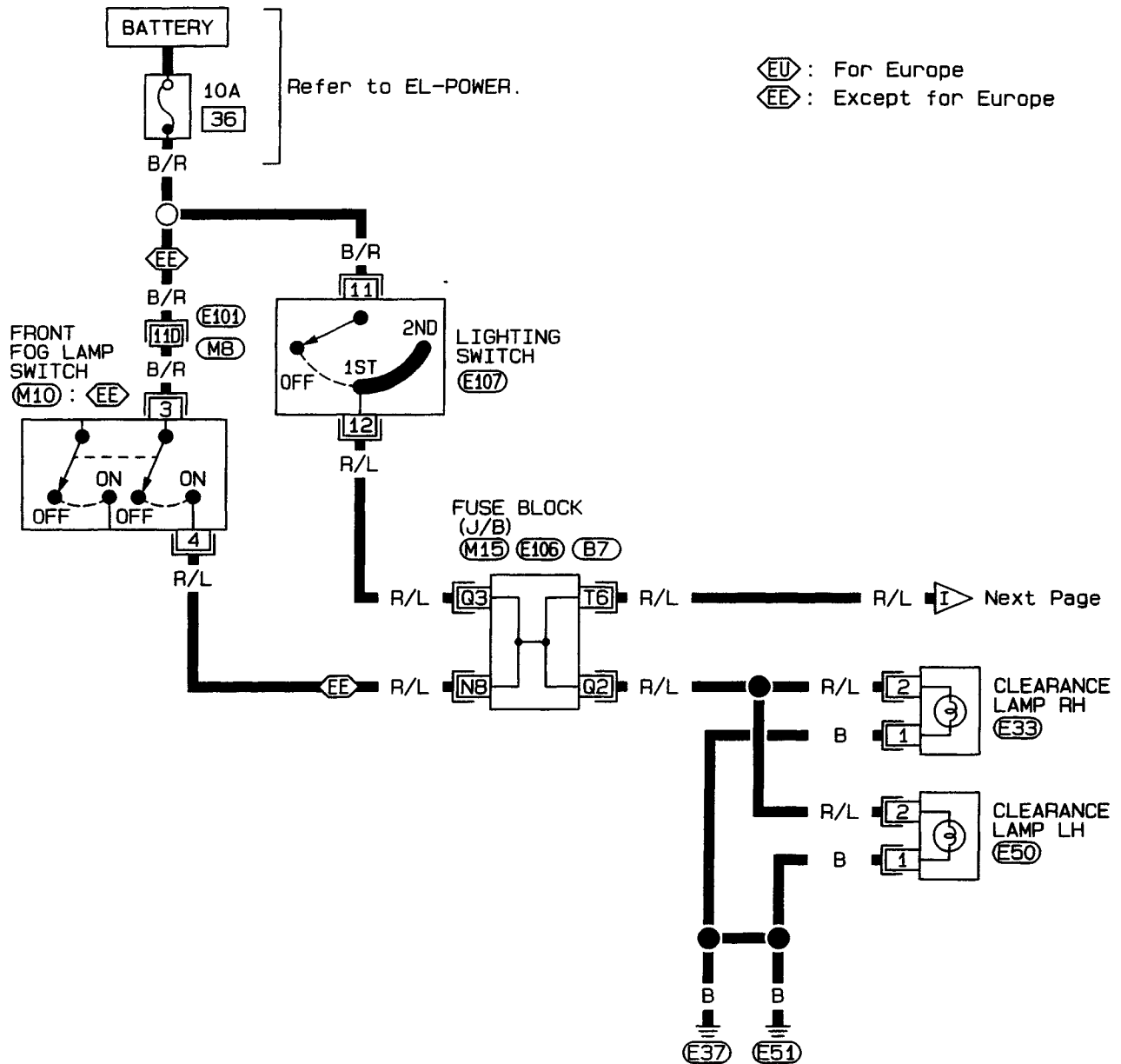
1 2 D107, D109 W, W

EXTERIOR LAMP

Clearance, License and Tail Lamps/Wiring Diagram — TAIL/L — (Cont'd)

RHD MODELS

EL-TAIL/L-07



Refer to last page
(Foldout page).

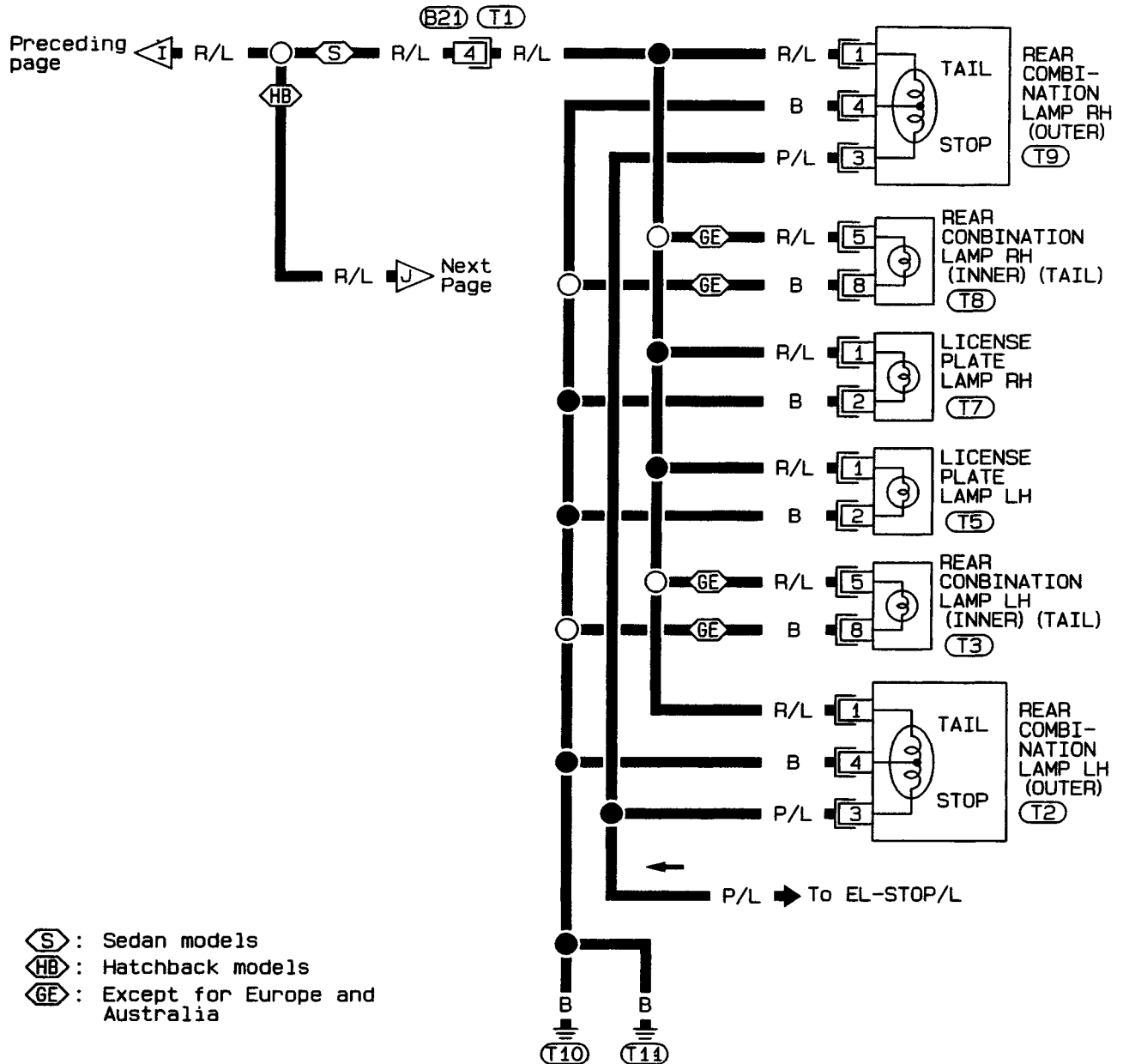
M8, E101
M15, E106, B7

EL

EXTERIOR LAMP

Clearance, License and Tail Lamps/Wiring Diagram — TAIL/L — (Cont'd)

EL-TAIL/L-08



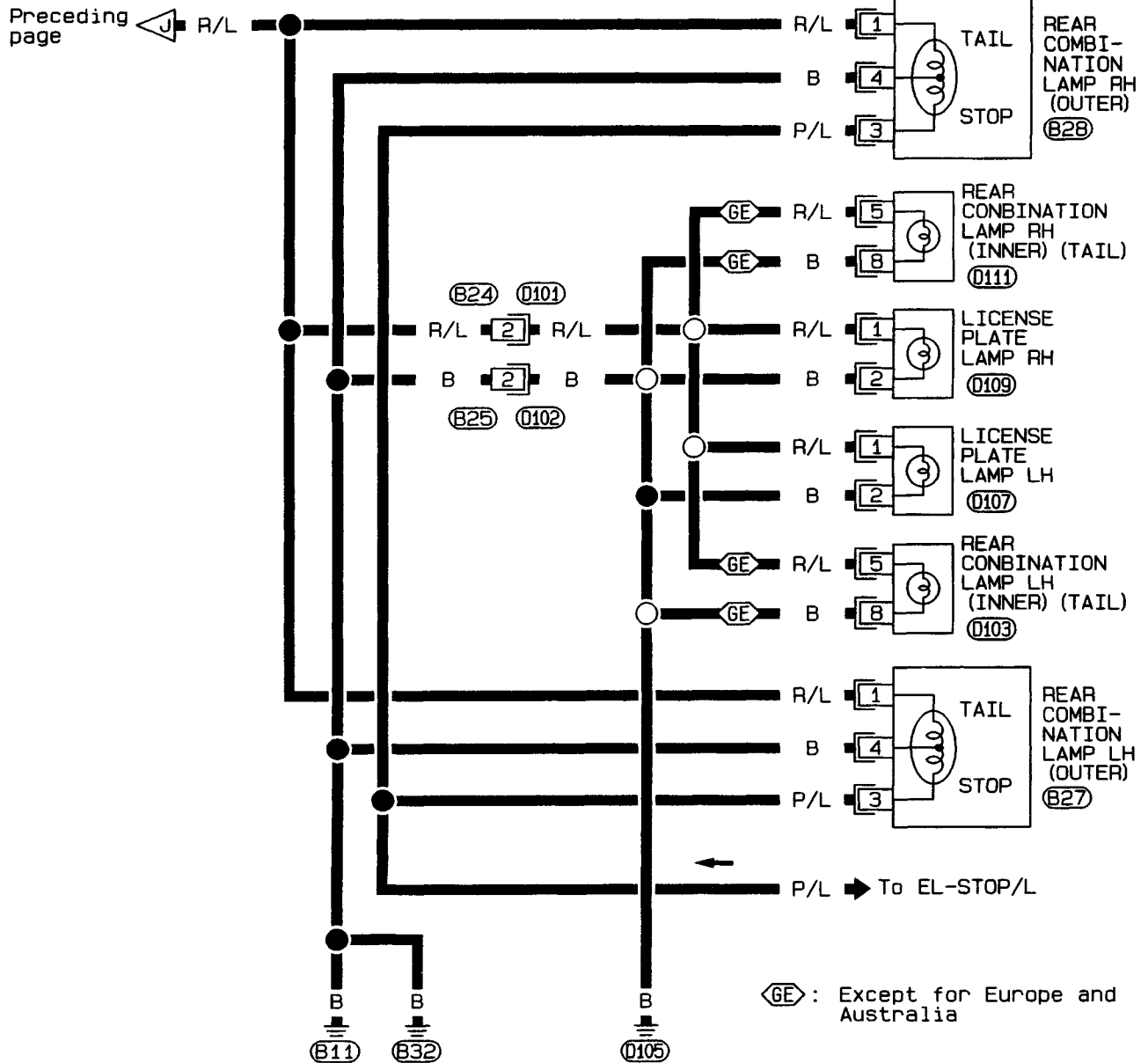
- (S) : Sedan models
- (HB) : Hatchback models
- (GE) : Except for Europe and Australia



EXTERIOR LAMP

Clearance, License and Tail Lamps/Wiring Diagram — TAIL/L — (Cont'd)

EL-TAIL/L-09



1 2 3 0101
4 5 6 7 8 W

1 0102
2 W

1 2 3 4 B27, B28
W, W

5 7 8 0103, 0111
W, W

1 2 0107, 0109
W, W

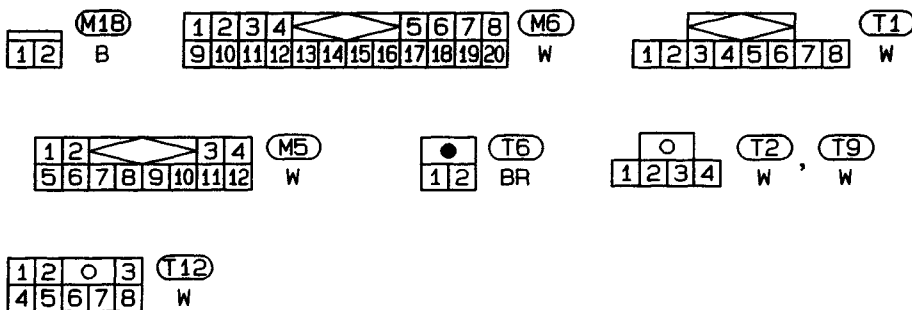
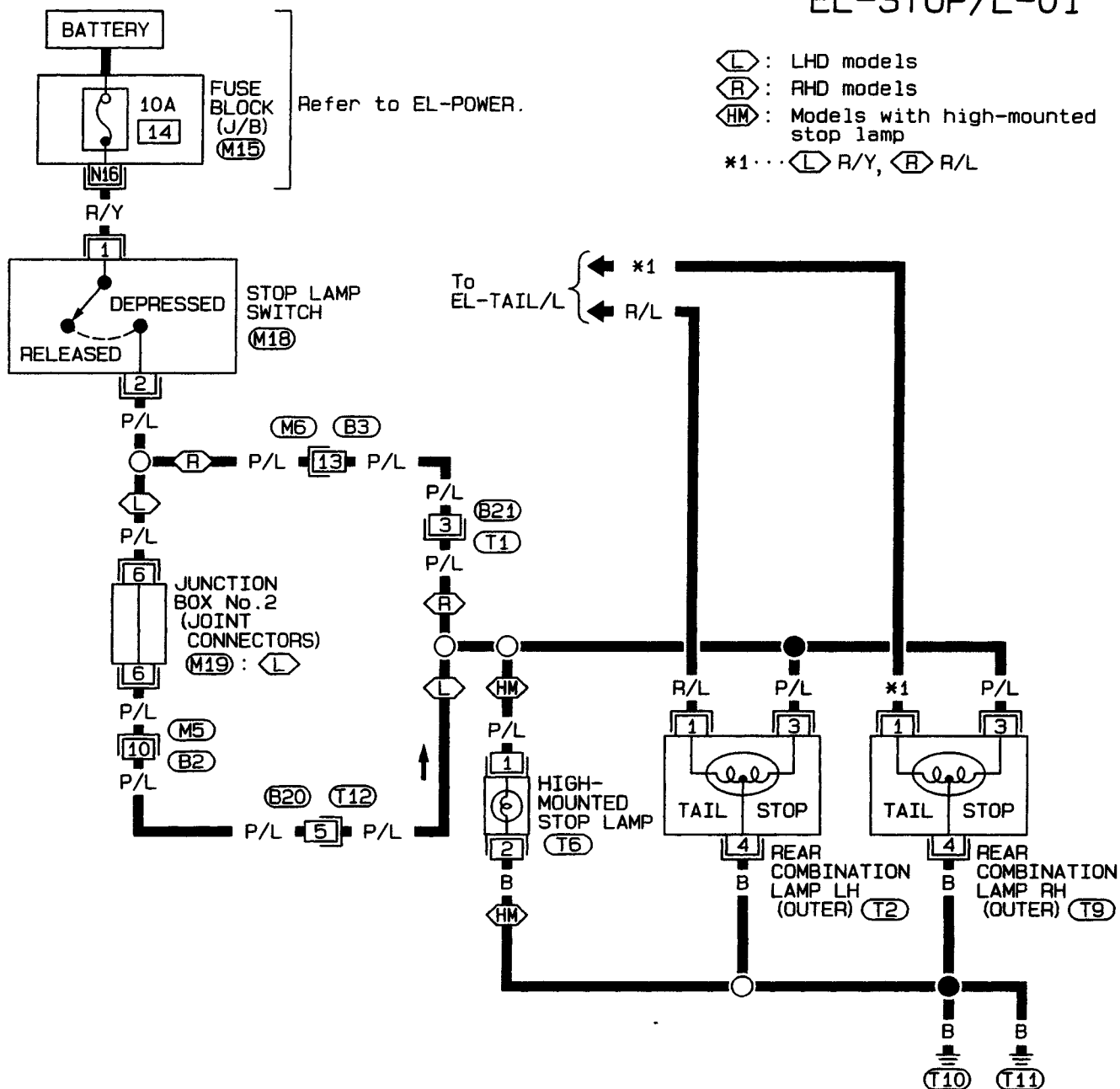
EL

EXTERIOR LAMP

Stop Lamp/Wiring Diagram — STOP/L —

SEDAN MODELS

EL-STOP/L-01



Refer to last page
(Foldout page).

(M15)

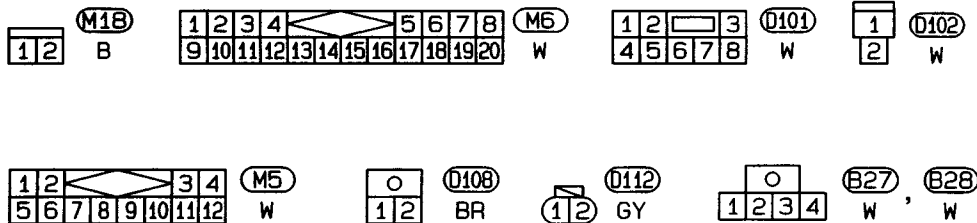
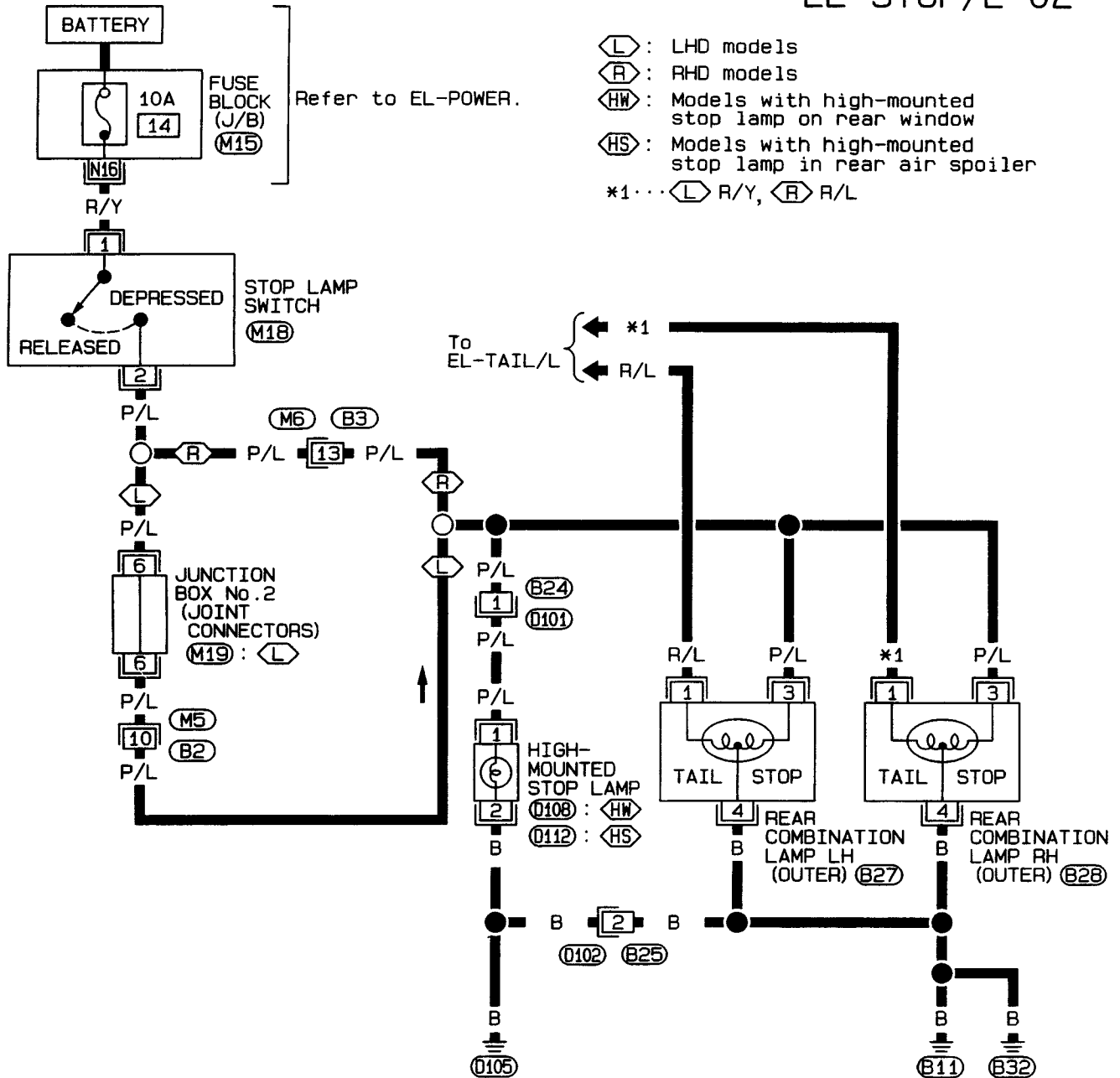
(M19)

EXTERIOR LAMP

Stop Lamp/Wiring Diagram — STOP/L — (Cont'd)

HATCHBACK MODELS

EL-STOP/L-02



Refer to last page
(Foldout page).

(M15)

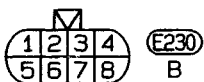
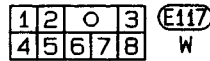
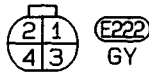
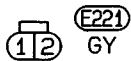
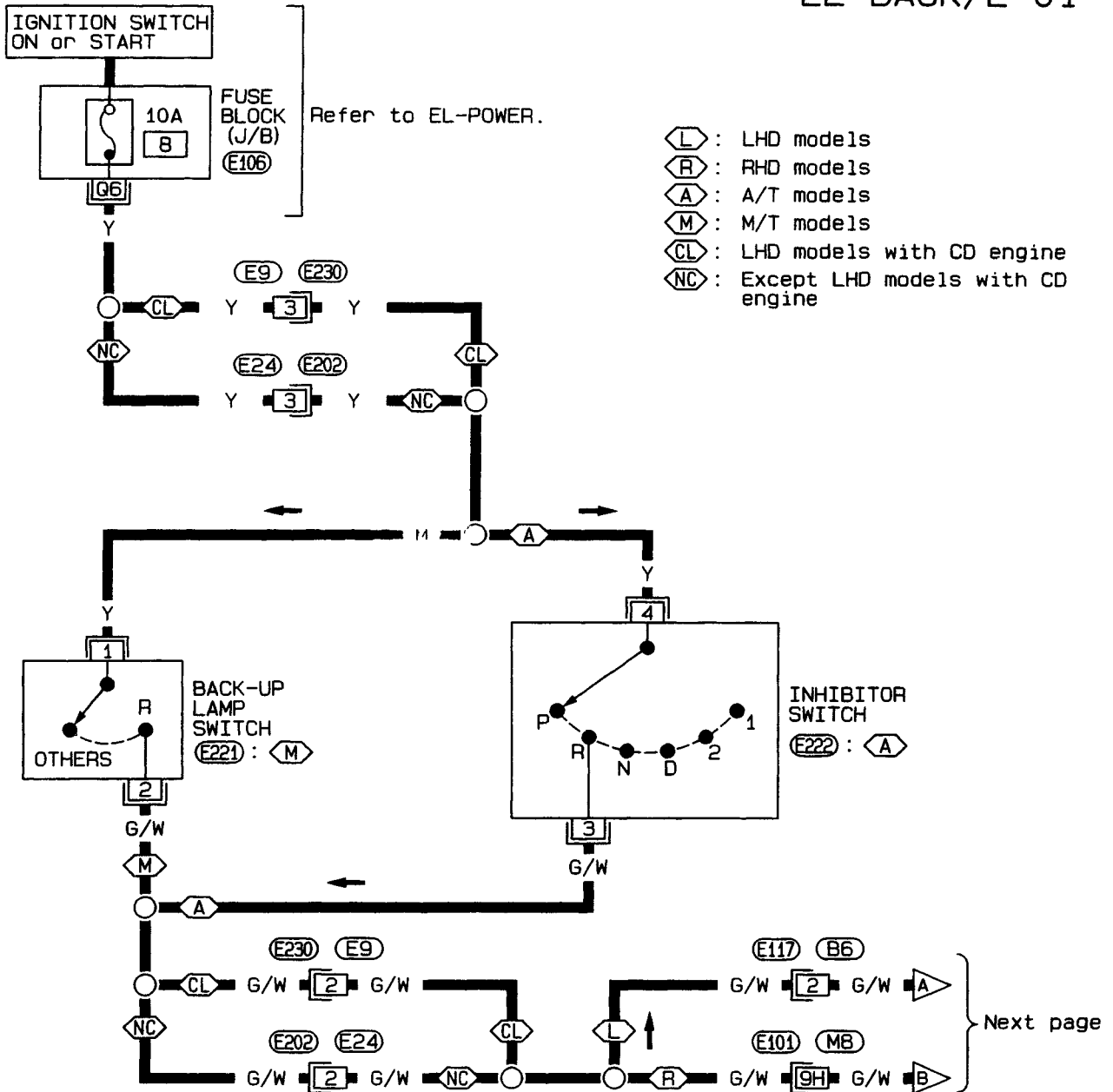
(M19)

EL

EXTERIOR LAMP

Back-up Lamp/Wiring Diagram — BACK/L —

EL-BACK/L-01



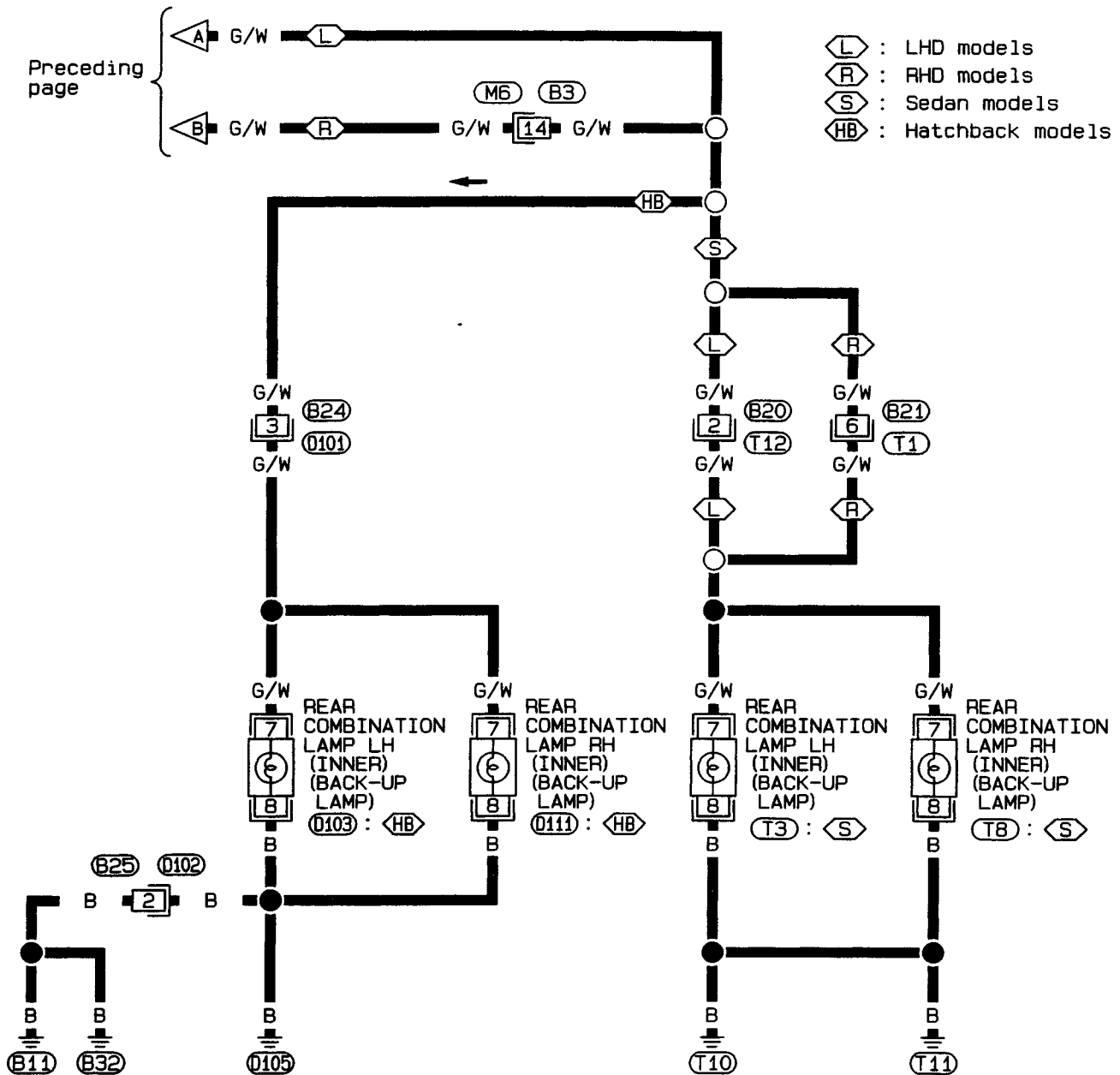
Refer to last page (Foldout page).

(MB), (E101)
(E106)

EXTERIOR LAMP

Back-up Lamp/Wiring Diagram — BACK/L — (Cont'd)

EL-BACK/L-02



1	2	3	4	5	6	7	8	M6
9	10	11	12	13	14	15	16	W

1	2	3	0101
4	5	6	W

1	2	3	4	5	6	7	8	T1
9	10	11	12	13	14	15	16	W

1	2	3	0	T12
4	5	6	7	W

5	7	8	T3	T8	0103	0111
9	10	11	W	W	W	W

1	0102
2	W

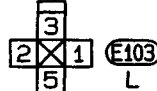
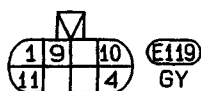
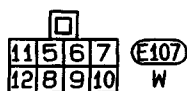
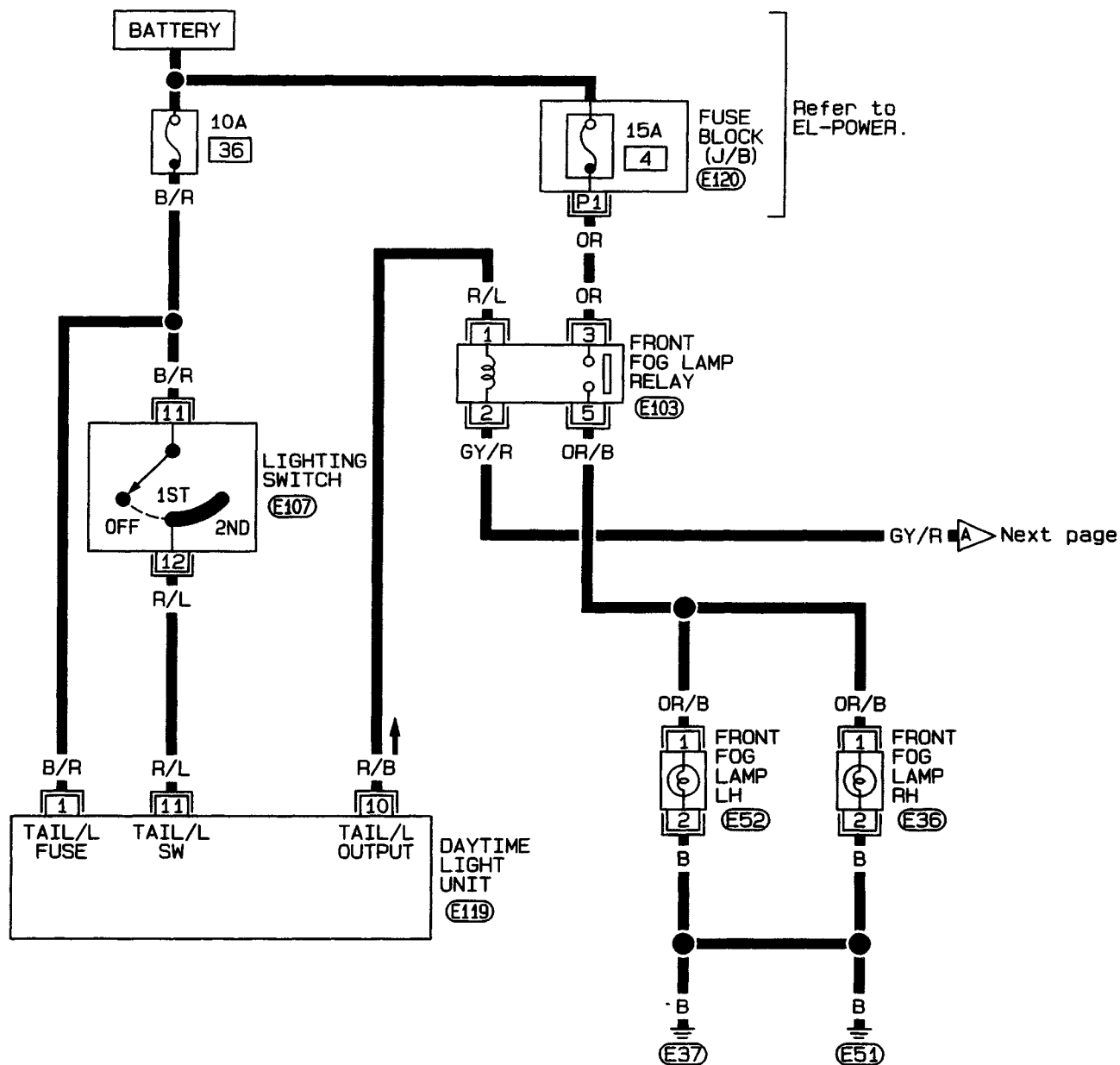
EL

EXTERIOR LAMP

Front Fog Lamp/Wiring Diagram — F/FOG —

LHD MODELS WITH DAYTIME LIGHT SYSTEM

EL-F/FOG-01



Refer to last page (Foldout page).

E120

EL-F/FOG-02

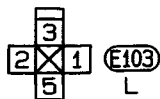
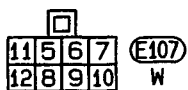
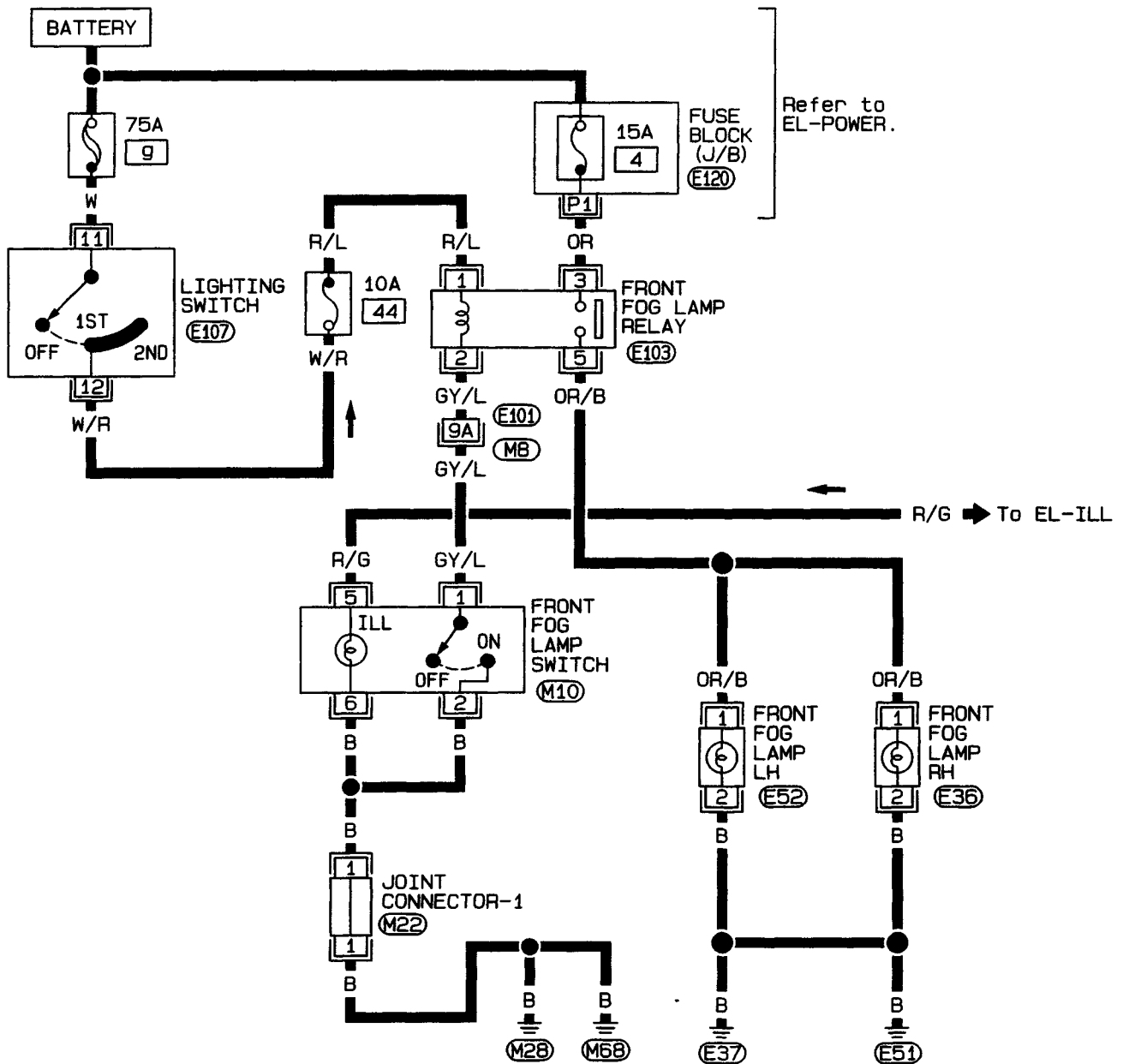


EXTERIOR LAMP

Front Fog Lamp/Wiring Diagram — F/FOG — (Cont'd)

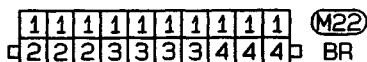
LHD MODELS WITHOUT DAYTIME LIGHT SYSTEM

EL-F/FOG-03



Refer to last page
(Foldout page).

(MB), (E101)
(E120)

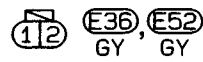
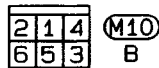
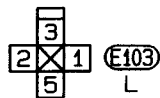
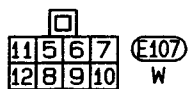
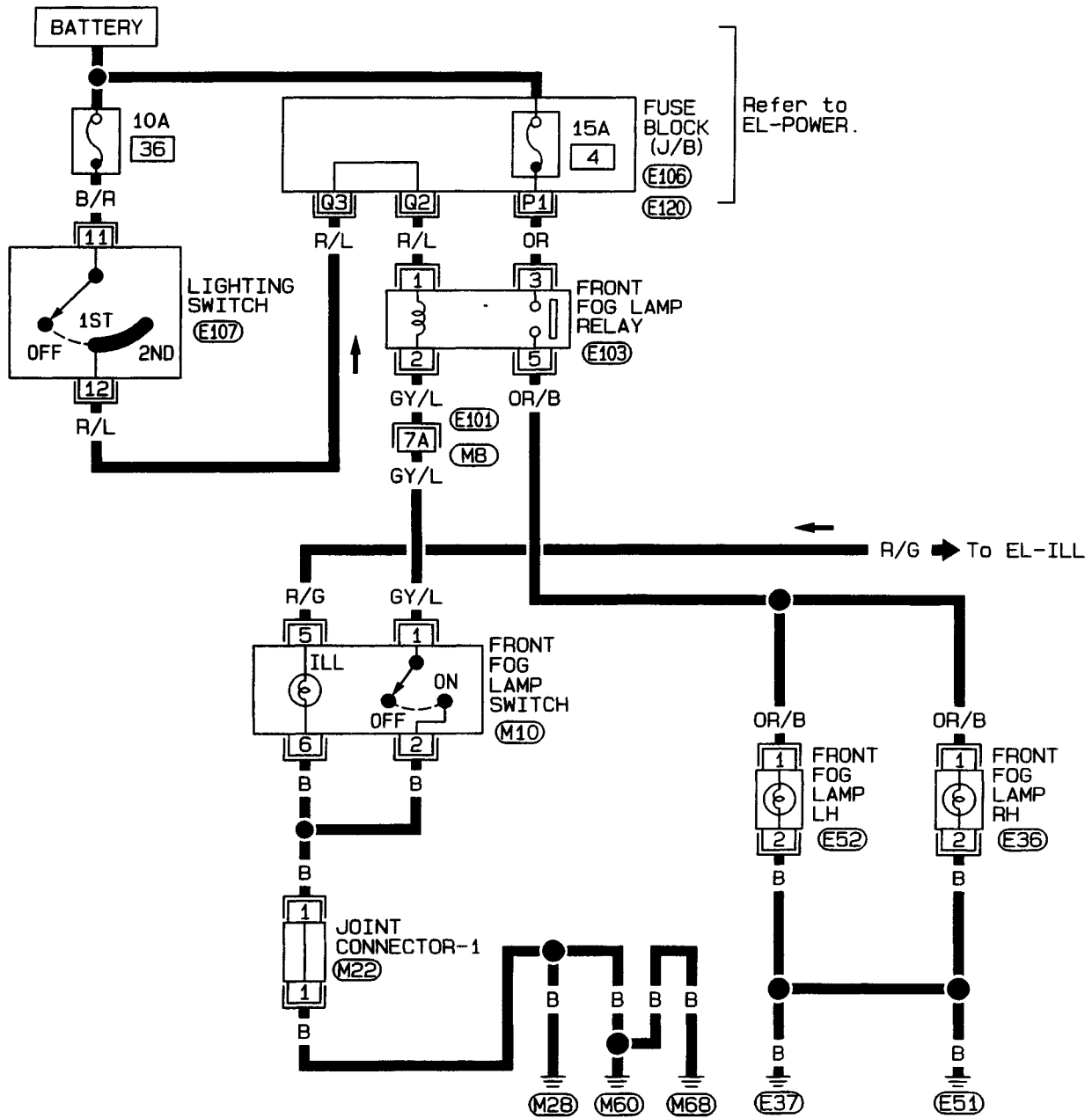


EXTERIOR LAMP

Front Fog Lamp/Wiring Diagram — F/FOG — (Cont'd)

RHD MODELS FOR EUROPE

EL-F/FOG-04

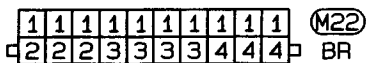


Refer to last page
(Foldout page).

(MB), (E101)

(E106), (E120)

EL

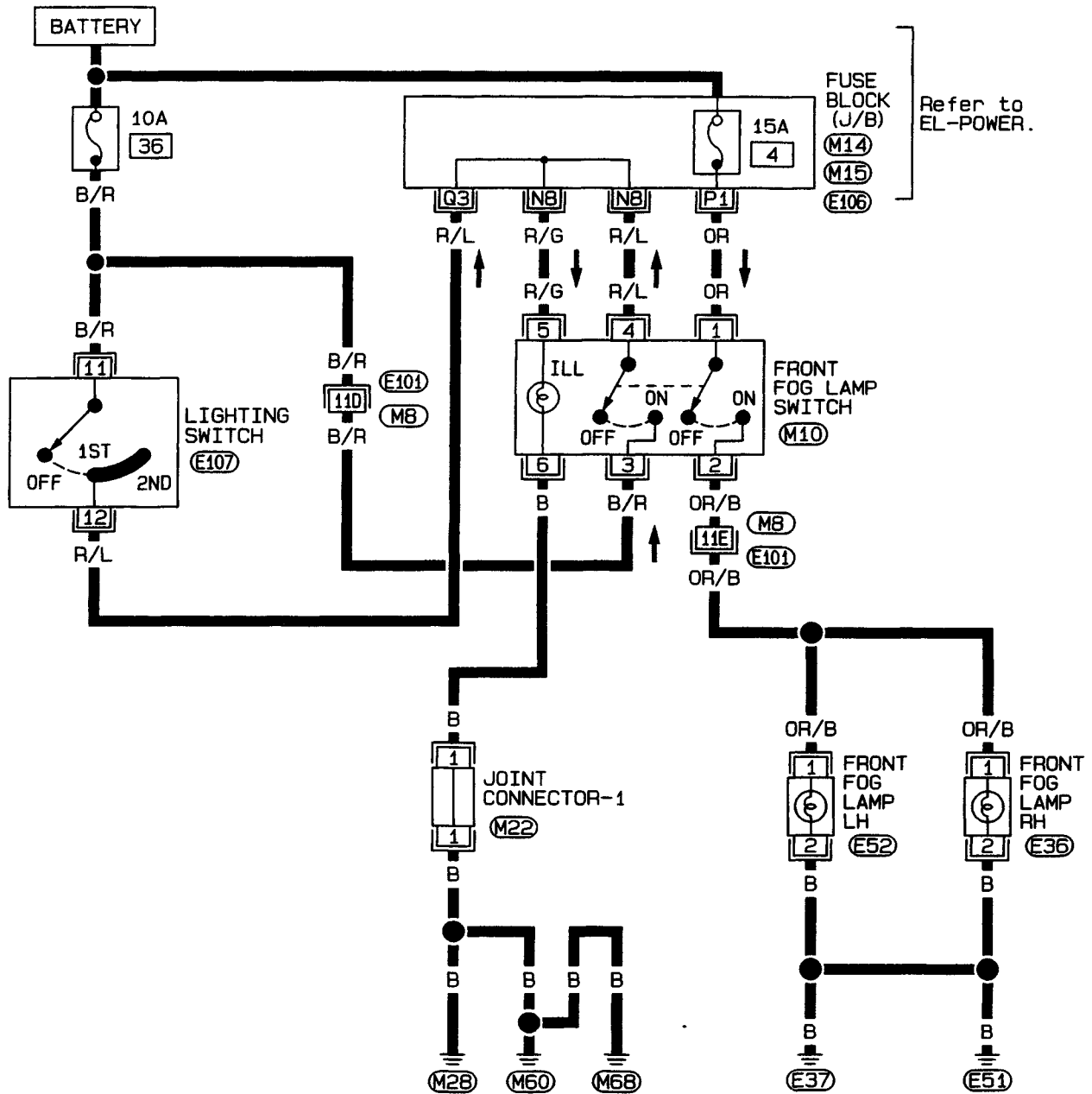


EXTERIOR LAMP

Front Fog Lamp/Wiring Diagram — F/FOG — (Cont'd)

RHD MODELS EXCEPT FOR EUROPE

EL-F/FOG-05



12	8	9	10
11	5	6	7

(E107) W

2	1	4
6	5	3

(M10) B

1	1	1	1	1	1	1	1	1	1
2	2	2	3	3	3	3	4	4	4

(M22) BR

1	2
---	---

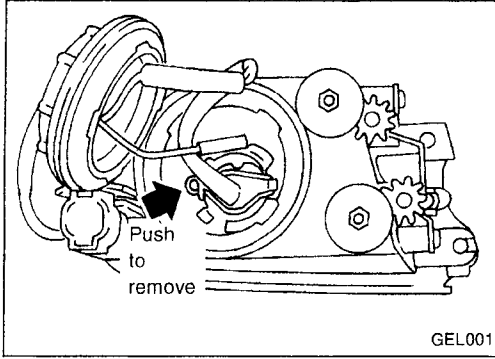
(E36, E52) GY GY

Refer to last page
(Foldout page).

(M8) , (E101)

(M14) , (M15) , (E106)

EXTERIOR LAMP



Front Fog Lamp Bulb Replacement

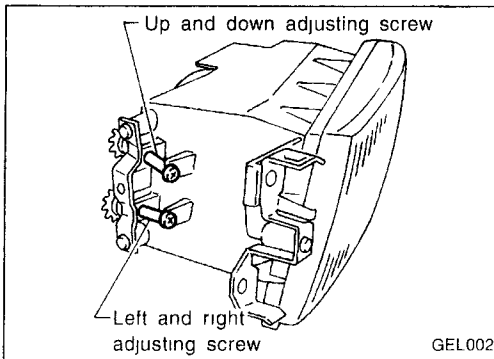
The front fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb.

- **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. Turn the bulb retaining ring counterclockwise until it is free from the front fog lamp reflector, and then remove it.
4. Pull off the rubber cap.
5. Remove the front fog lamp bulb carefully. Do not shake or rotate the bulb when removing it.
6. Install in the reverse order of removal.

CAUTION:

- **Do not leave front fog lamp reflector without bulb for a long period of time. Dust, moisture, smoke, etc. entering front fog lamp body may affect the performance of the front fog lamp. Remove front fog lamp bulb from the front fog lamp reflector just before a replacement bulb is installed.**



Front Fog Lamp Aiming Adjustment

Before performing aiming adjustment, make sure of the following.

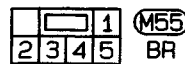
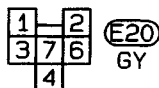
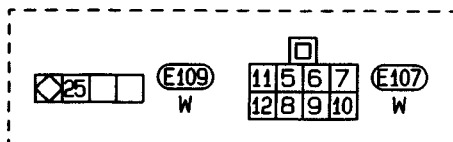
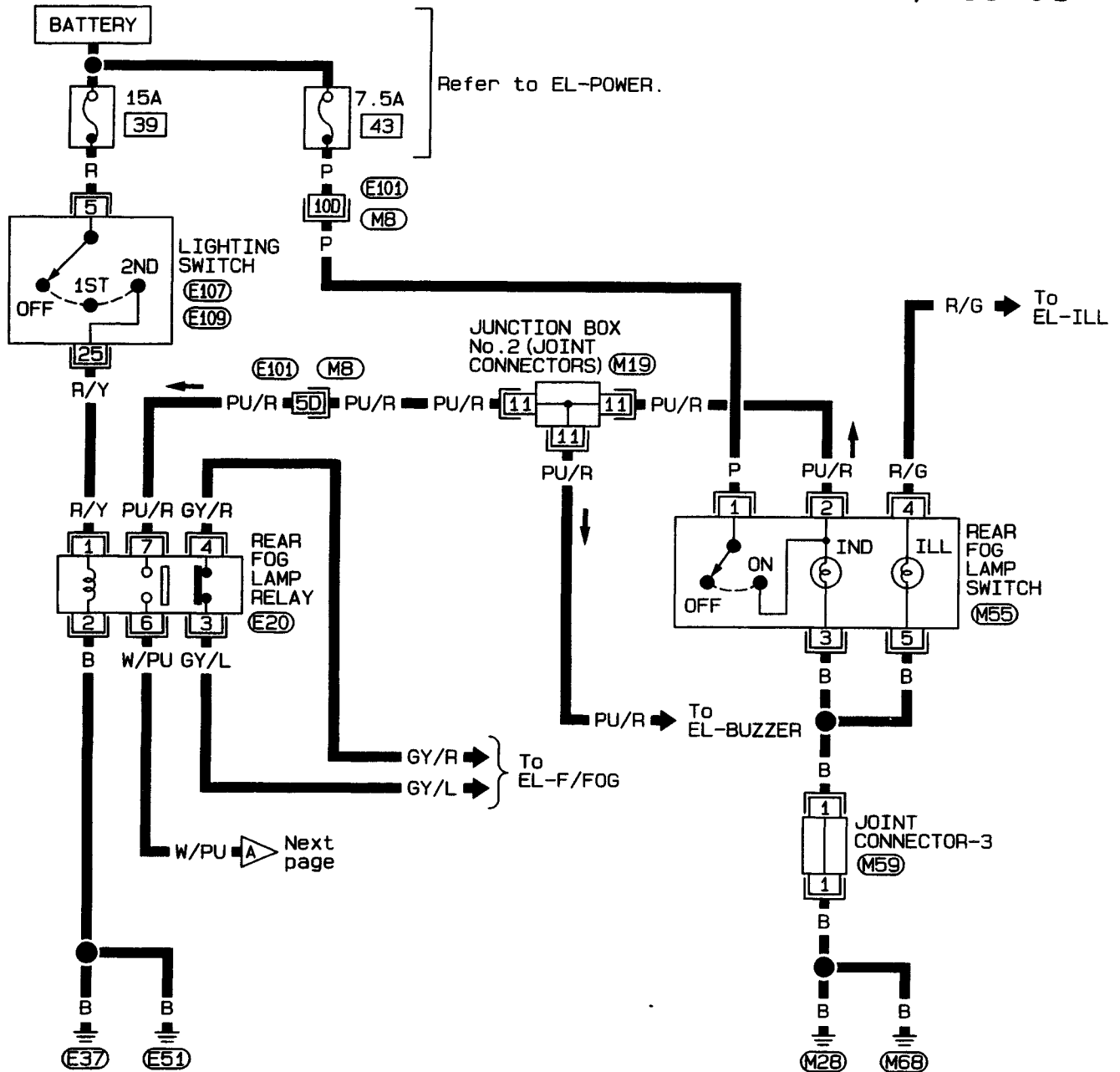
- a. Keep all tires inflated to correct pressure.
- b. Place vehicle on level ground.
- c. See that vehicle is unloaded (except for full levels of coolant, engine oil and fuel, and spare tire, jack, and tools). Have the driver or equivalent weight placed in driver's seat. Adjust aiming by turning the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

EXTERIOR LAMP

Rear Fog Lamp/Wiring Diagram — R/FOG —

WITH DAYTIME LIGHT SYSTEM

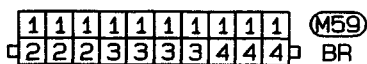
EL-R/FOG-01



Refer to last page (Foldout page).

(MB), (E101)

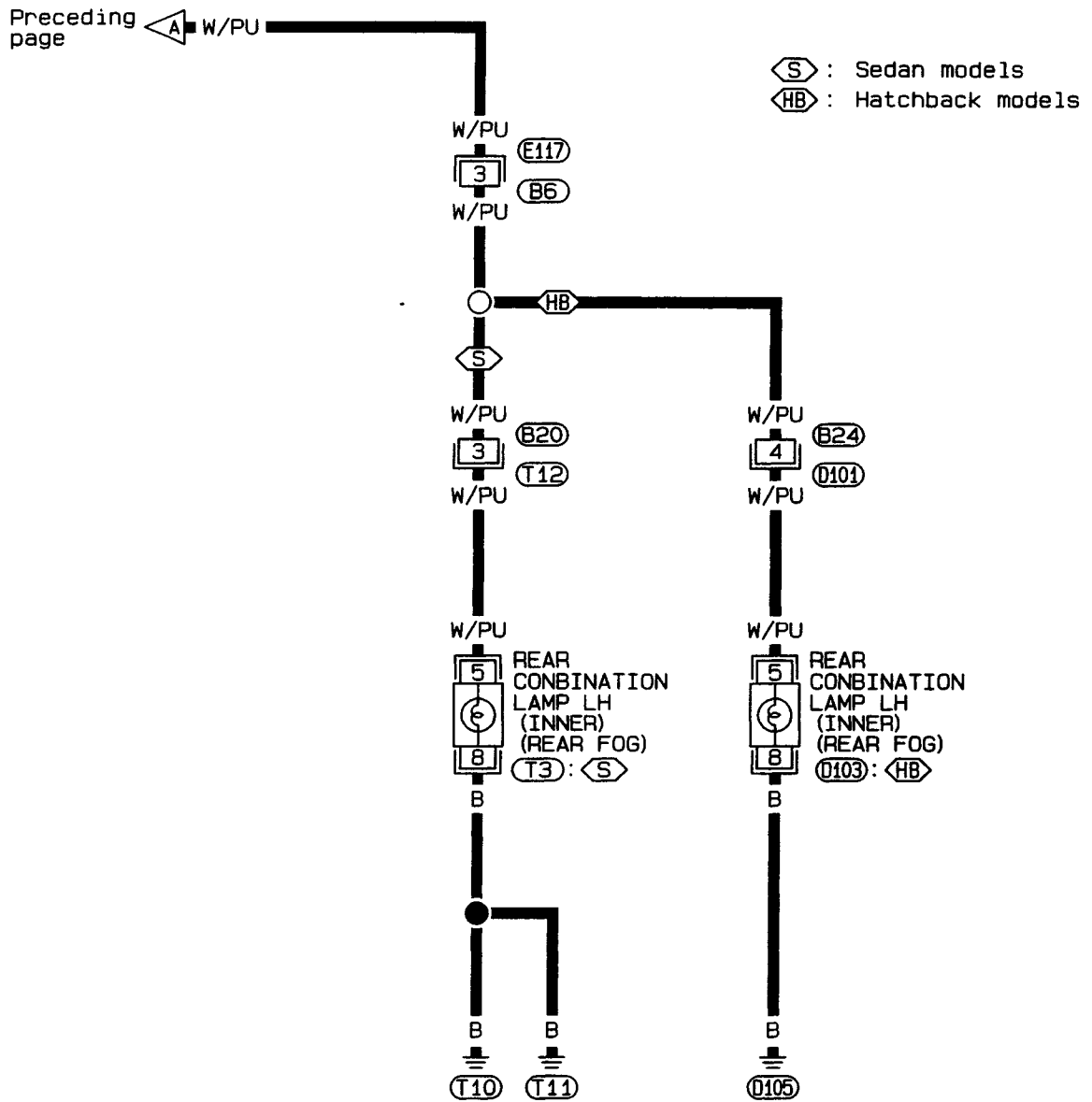
(M19)



EXTERIOR LAMP

Rear Fog Lamp/Wiring Diagram — R/FOG — (Cont'd)

EL-R/FOG-02



1	2	0	3
4	5	6	7

(E117), (T12)
W W

1	2	□	3
4	5	6	7

(D101)
W

□	7	8
5	7	8

(T3), (D103)
W W

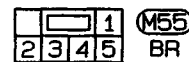
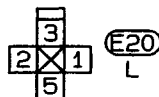
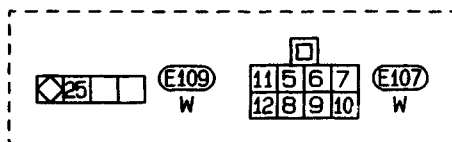
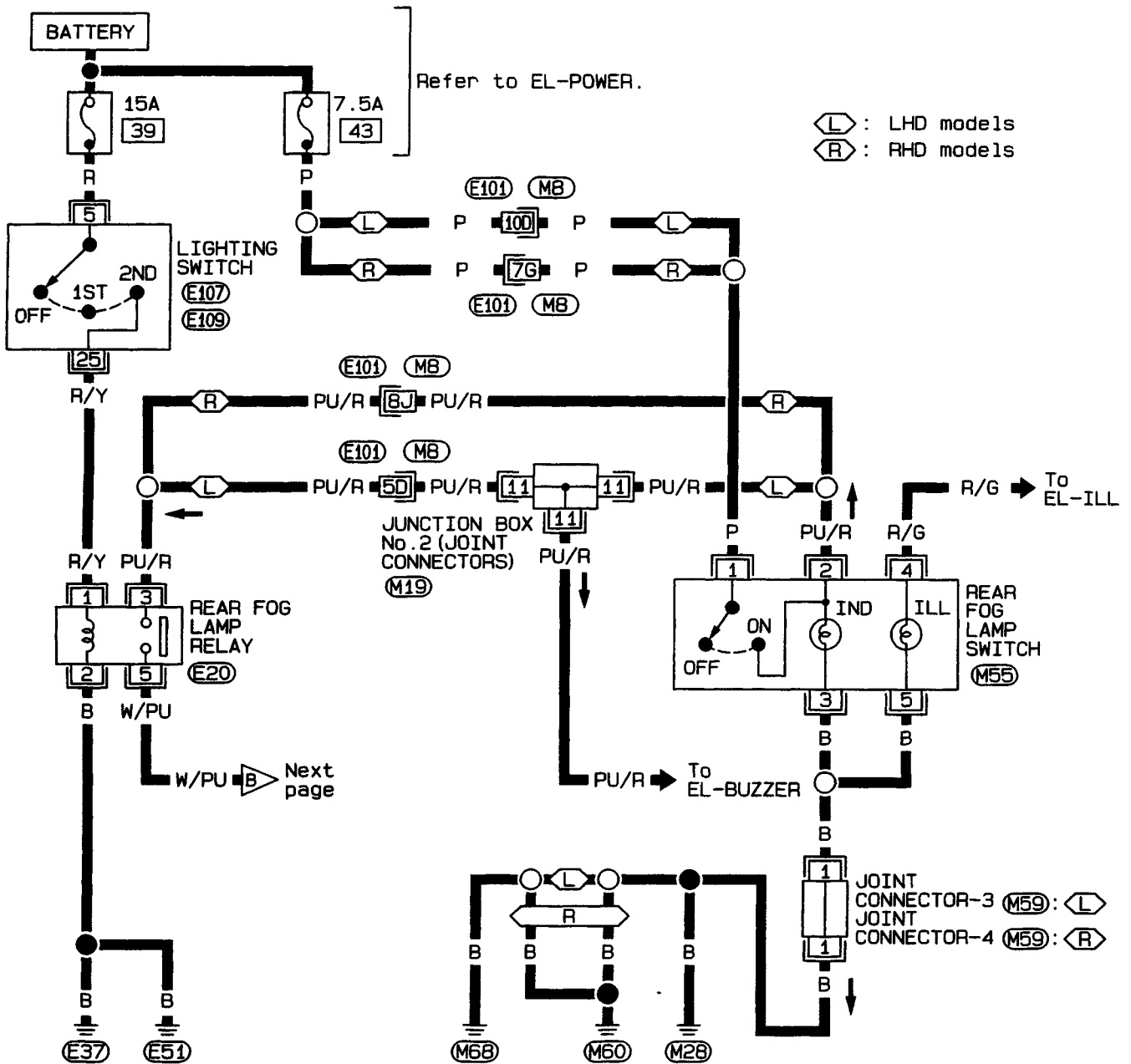
EL

EXTERIOR LAMP

Rear Fog Lamp/Wiring Diagram — R/FOG — (Cont'd)

WITHOUT DAYTIME LIGHT SYSTEM

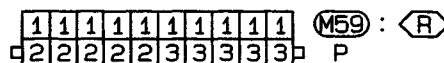
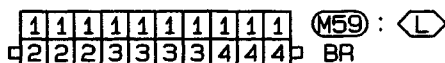
EL-R/FOG-03



Refer to last page
(Foldout page).

(M8, E101)

(M19)

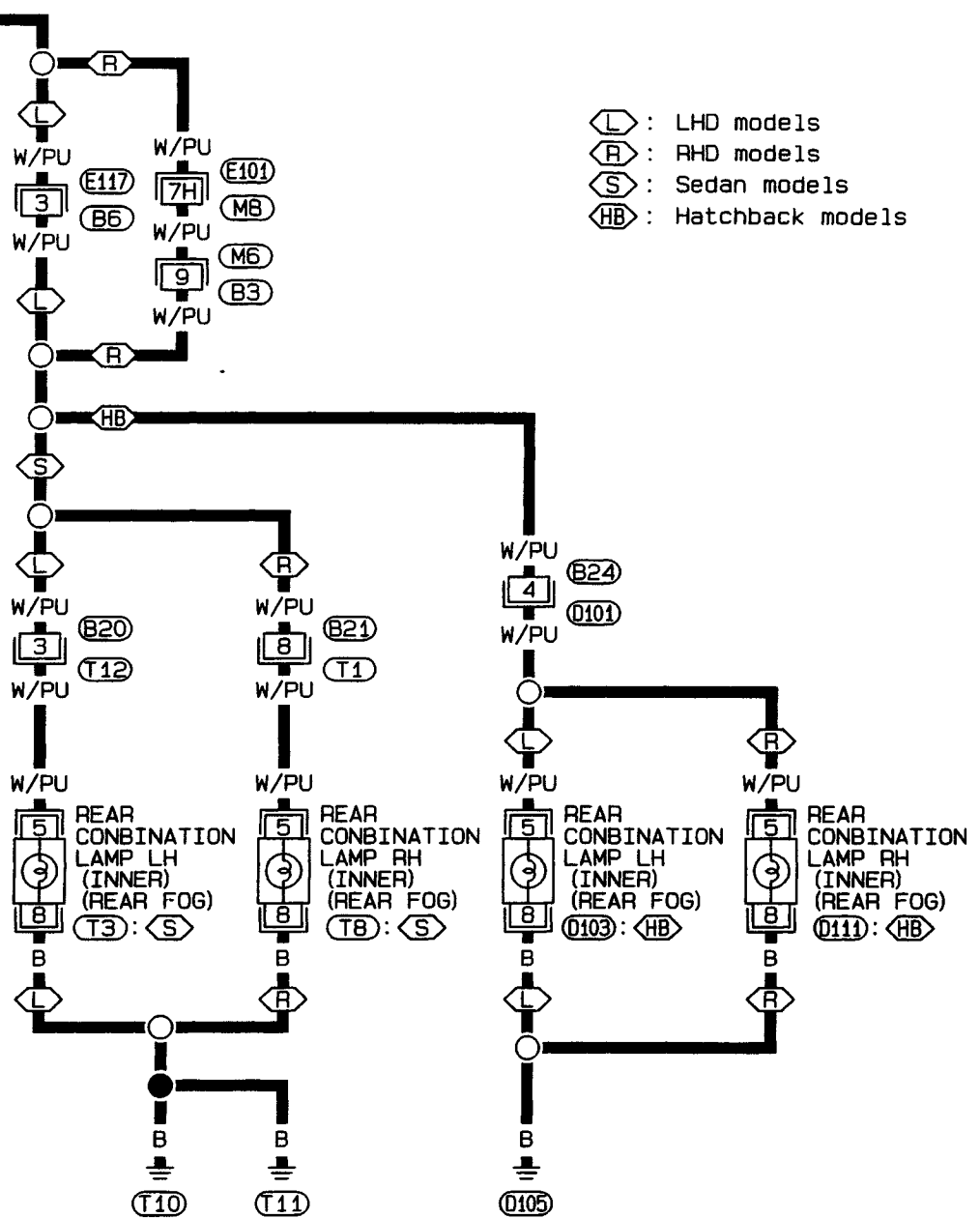


EXTERIOR LAMP

Rear Fog Lamp/Wiring Diagram — R/FOG — (Cont'd)

EL-R/FOG-04

Preceding
page



1	2	0	3
4	5	6	7

(E117), (T12)
W W

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16

(M6)
W

1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---

(T1)
W

1	2	3
4	5	6

(B101)
W

5	7	8
---	---	---

(T3), (T8), (B103), (B111)
W W W W

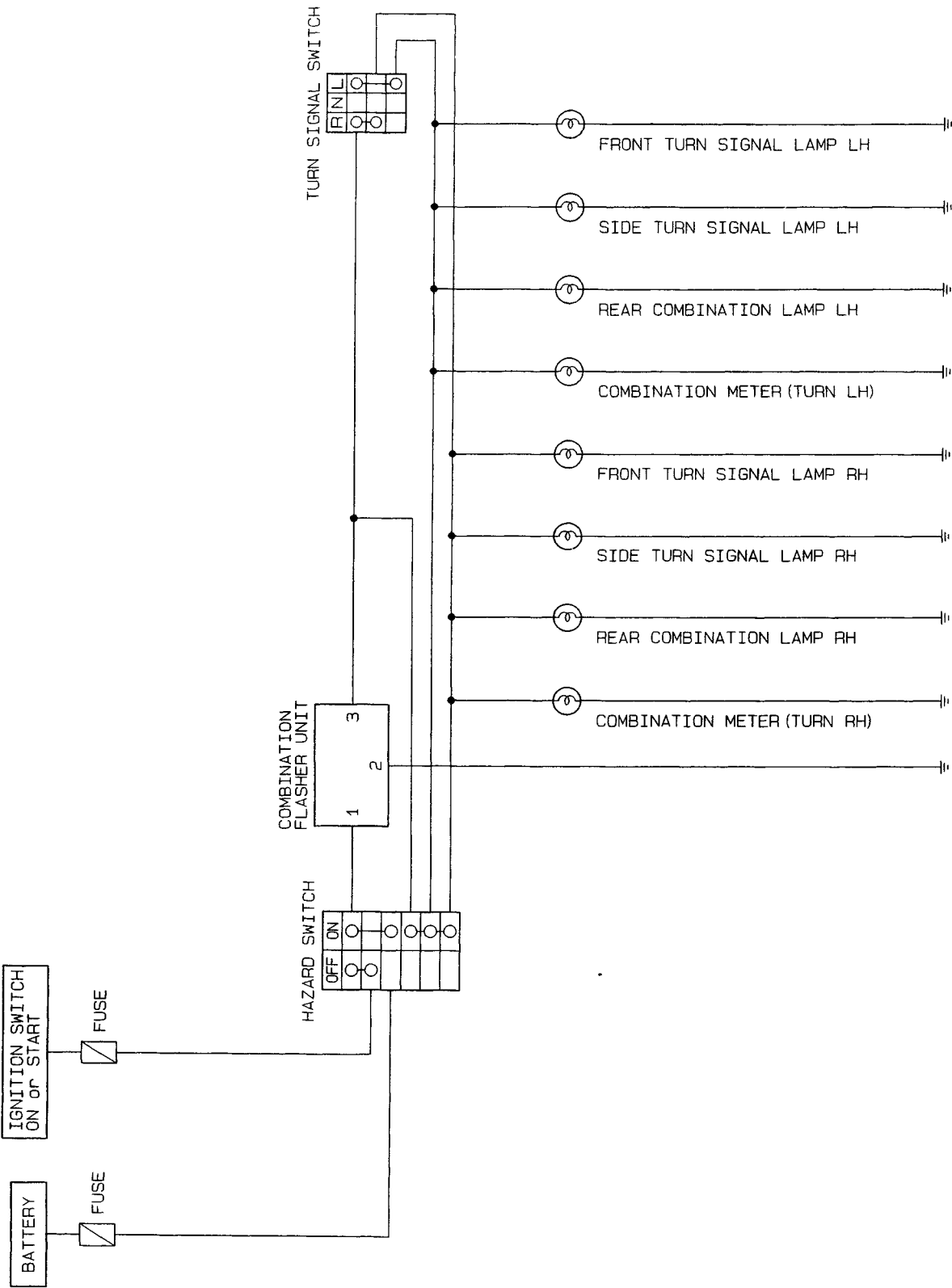
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(Foldout page).

(M6), (E101)

EL

EXTERIOR LAMP

Turn Signal and Hazard Warning Lamps/
Schematic

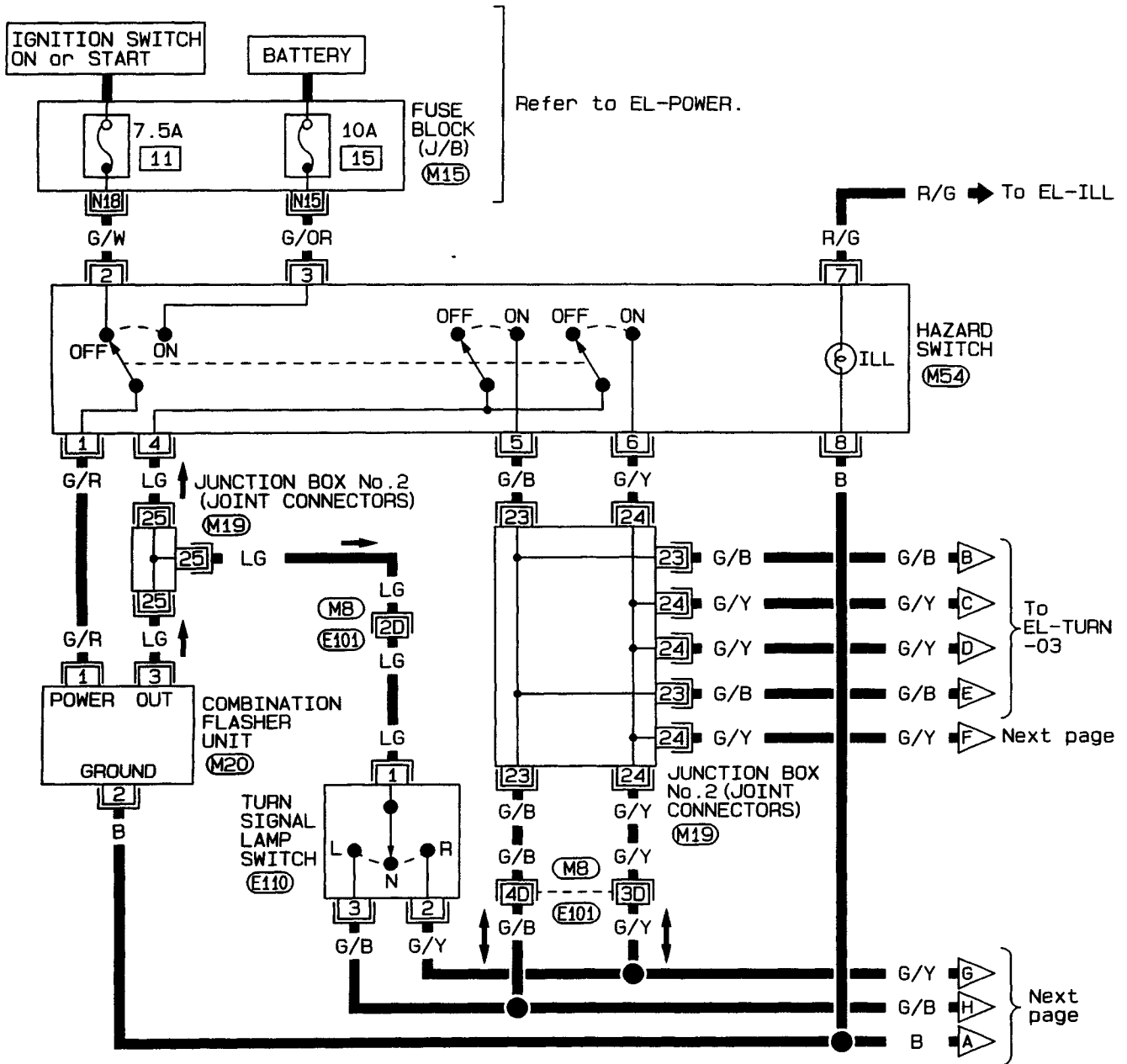


EXTERIOR LAMP

Turn Signal and Hazard Warning Lamps/Wiring Diagram — TURN —

LHD MODELS

EL-TURN-01



8	7	6	M54
5	4	2	1
3			W

1	2	M20
3		B

	O	E110
3	1	2
		W

Refer to last page (Foldout page).

MB, E101

M15

M19

EL

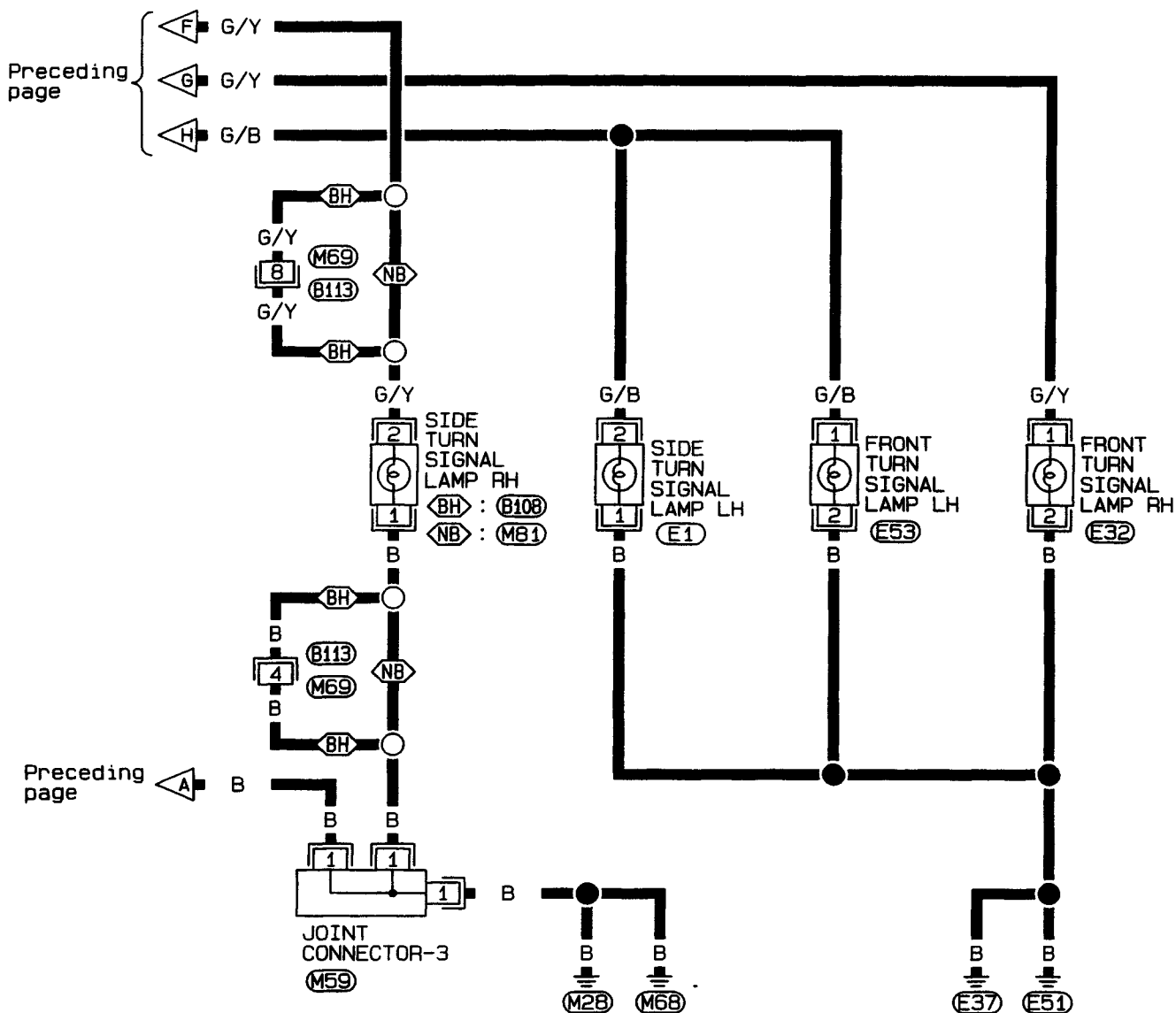
HEL046

EXTERIOR LAMP

Turn Signal and Hazard Warning Lamps/Wiring Diagram — TURN — (Cont'd)

EL-TURN-02

(NB) : GA engine without dual
air bag system and ABS
(BH) : Except (NB)



(1) (2) (M81) (E1) (B108)
GY GY GY

(1) (2) (E32) (E53)
B B

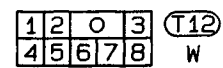
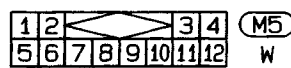
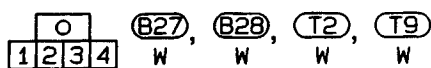
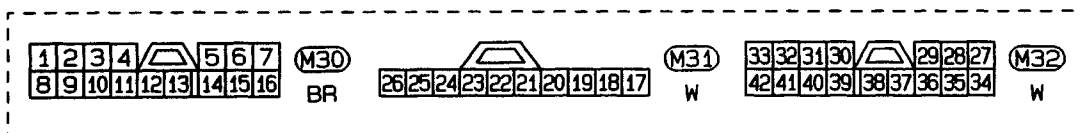
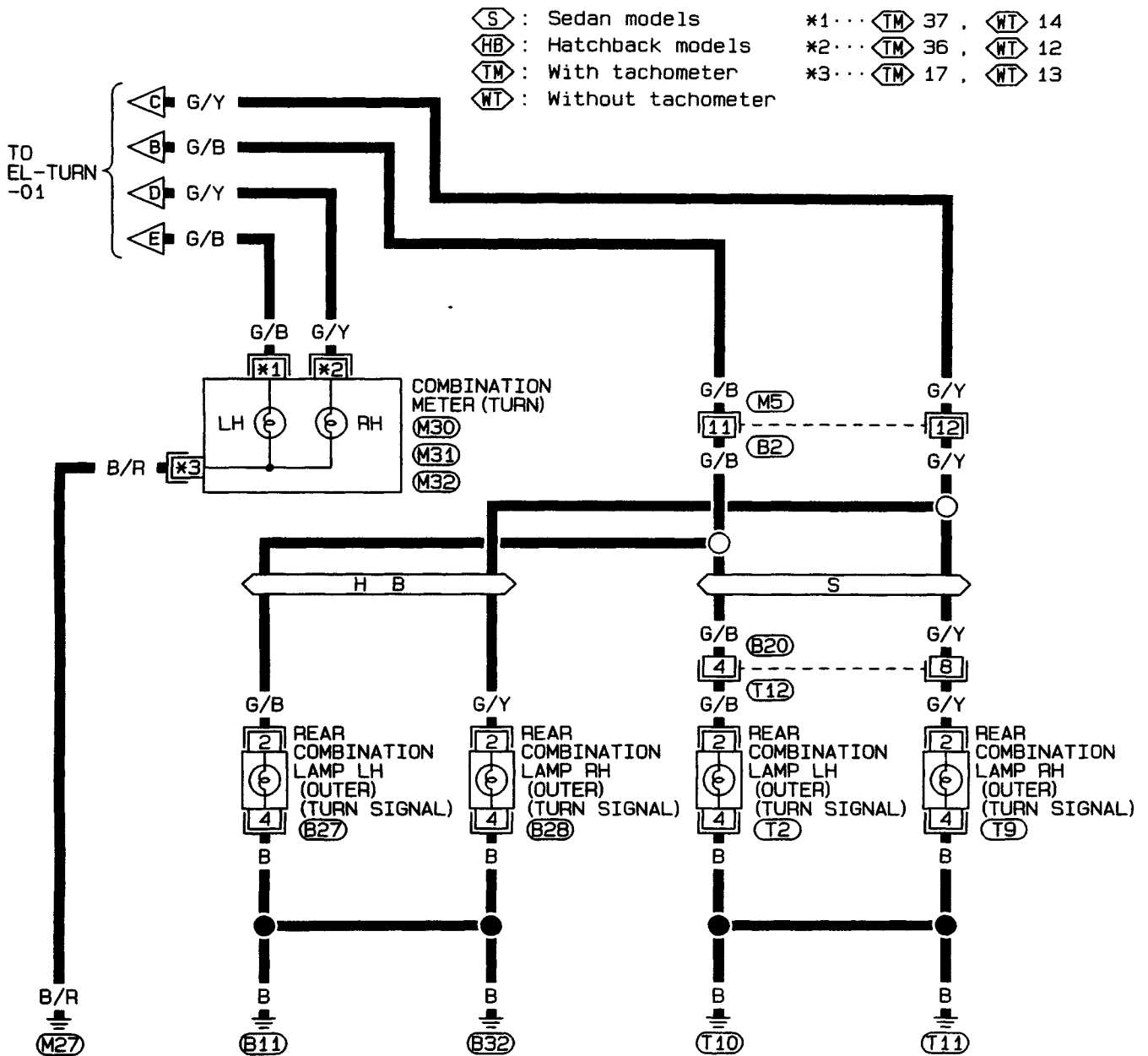
(1) (2) (3) (B113)
4 5 6 7 8 W

(1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (M59)
2 2 2 3 3 3 3 4 4 4 BR

EXTERIOR LAMP

Turn Signal and Hazard Warning Lamps/Wiring Diagram — TURN — (Cont'd)

EL-TURN-03



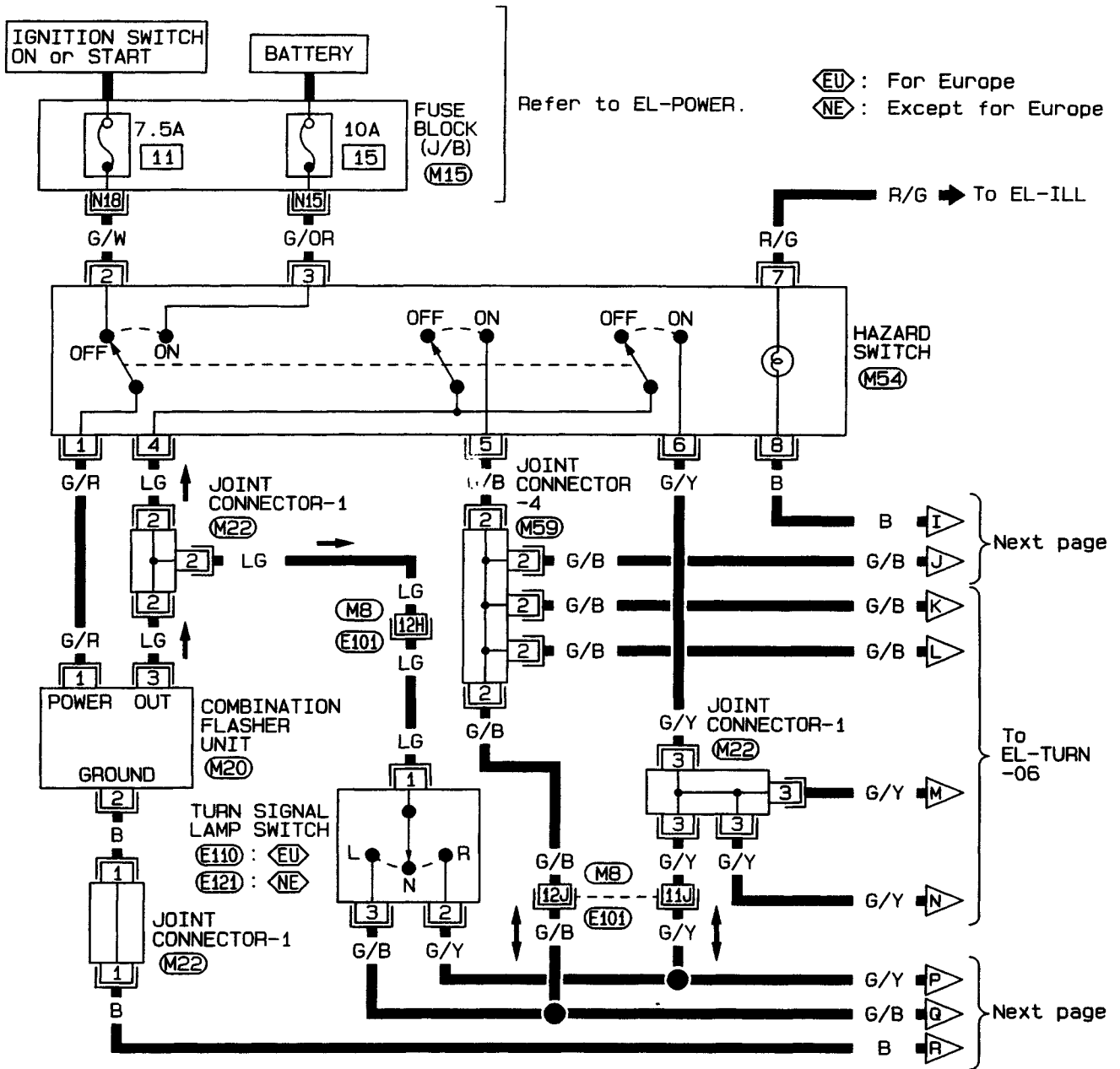
EL

EXTERIOR LAMP

Turn Signal and Hazard Warning Lamps/Wiring Diagram — TURN — (Cont'd)

RHD MODELS

EL-TURN-04



8 7 6 (M54)
5 4 2 1 3 W

1 2 (M20)
3 B

3 1 2
3 1 2 W

(E110 : ⊗EU)

2 3 1 (E121 : ⊗NE)
W

1 1 1 1 1 1 1 1 1 (M22)
2 2 2 3 3 3 3 4 4 4 BR

1 1 1 1 1 1 1 1 1 (M59)
2 2 2 2 2 3 3 3 3 3 P

Refer to last page
(Foldout page).

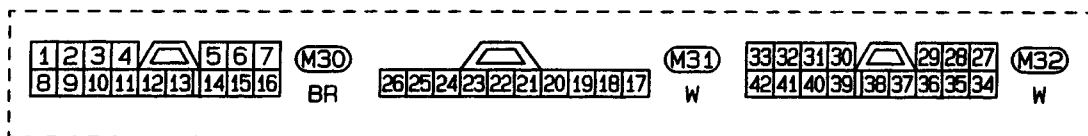
(MB), (E101)

(M15)

Turn Signal and Hazard Warning Lamps/Wiring Diagram — TURN — (Cont'd)

Turn Signal and Hazard Warning Lamps/Wiring Diagram — TURN — (Cont'd)

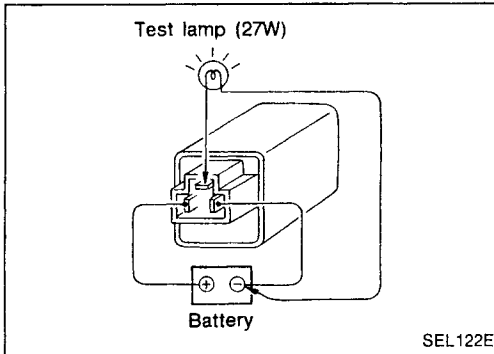
S	: Sedan models	*1...	TM 37 ,	WT 14
HB	: Hatchback models	*2...	TM 36 ,	WT 12
TM	: With tachometer	*3...	TM 17 ,	WT 13
WT	: Without tachometer			



EXTERIOR LAMP

Turn Signal and Hazard Warning Lamps/Trouble Diagnoses

Symptom	Possible cause	Repair order
Turn signal and hazard warning lamps do not operate	1. Hazard switch 2. Combination flasher unit 3. Open in combination flasher unit circuit	1. Check hazard switch 2. Refer to combination flasher unit check 3. Check wiring to combination flasher unit for open circuit.
Turn signal lamps do not operate but hazard warning lamps operate.	1. 7.5A fuse 2. Hazard switch 3. Turn signal switch 4. Open in turn*signal switch circuit	1. Check 7.5A fuse (No. 11, located in fuse block) Turn ignition switch ON and verify battery positive voltage is present at terminal 2 of hazard switch 2. Check hazard switch 3. Check turn signal switch 4. Check harness between combination flasher unit terminal 3 and turn signal switch terminal 1 for open circuit
Hazard warning lamps do not operate but turn signal lamps operate.	1. 10A fuse 2. Hazard switch 3. Open in hazard switch circuit	1. Check 10A fuse (No. 15, located in fuse block) Verify battery positive voltage is present at terminal 3 of hazard switch. 2. Check hazard switch. 3. Check harness between combination flasher unit terminal 3 and hazard switch terminal 4 for open circuit
Individual turn signal lamp or turn indicators do not operate.	1. Bulb 2. Grounds	1. Check bulb. 2. Check ground circuit for the bulb.



Combination Flasher Unit Check

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

EXTERIOR LAMP

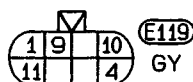
Bulb Specifications

	Wattage (W)
Front turn signal lamp	21
Clearance lamp	5
Front fog lamp	55
Side turn signal lamp	5
Rear combination lamp	
Turn signal	21
Stop/Tail	21/5
Tail	5
Back-up	21
Rear fog	21
License plate lamp	5
High-mounted stop lamp	
Bulb type (Sedan)	5 (x6)
Bulb type (Hatchback)	21
LED type	4.6

EL

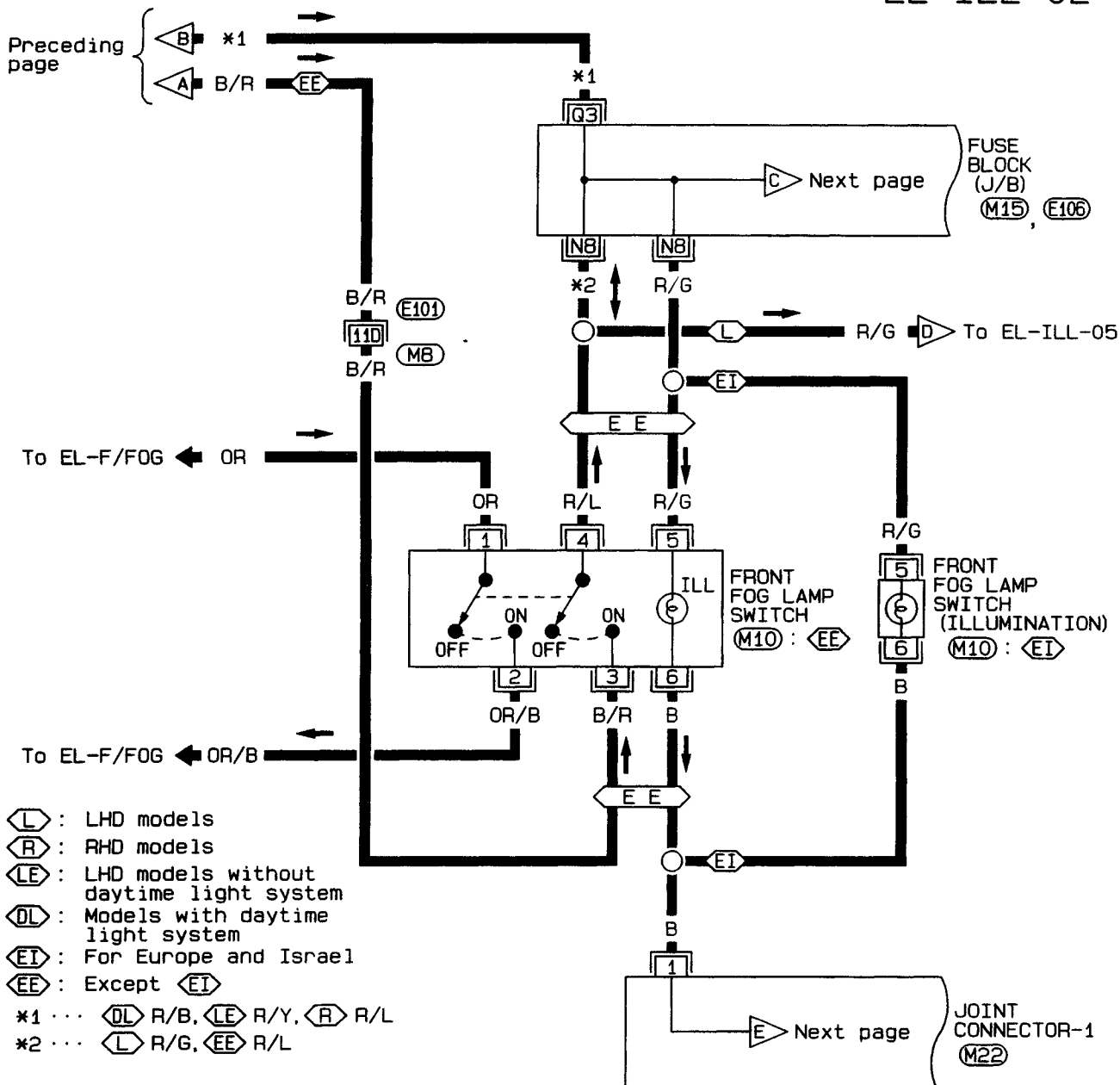
EL





Illumination/Wiring Diagram — ILL — (Cont'd)

EL-ILL-02



2	1	4
6	5	3

M10

 B

1	1	1	1	1	1	1	1	1
2	2	2	3	3	3	3	4	4

M22

BR

Refer to last page
(Foldout page) .

M8 E101

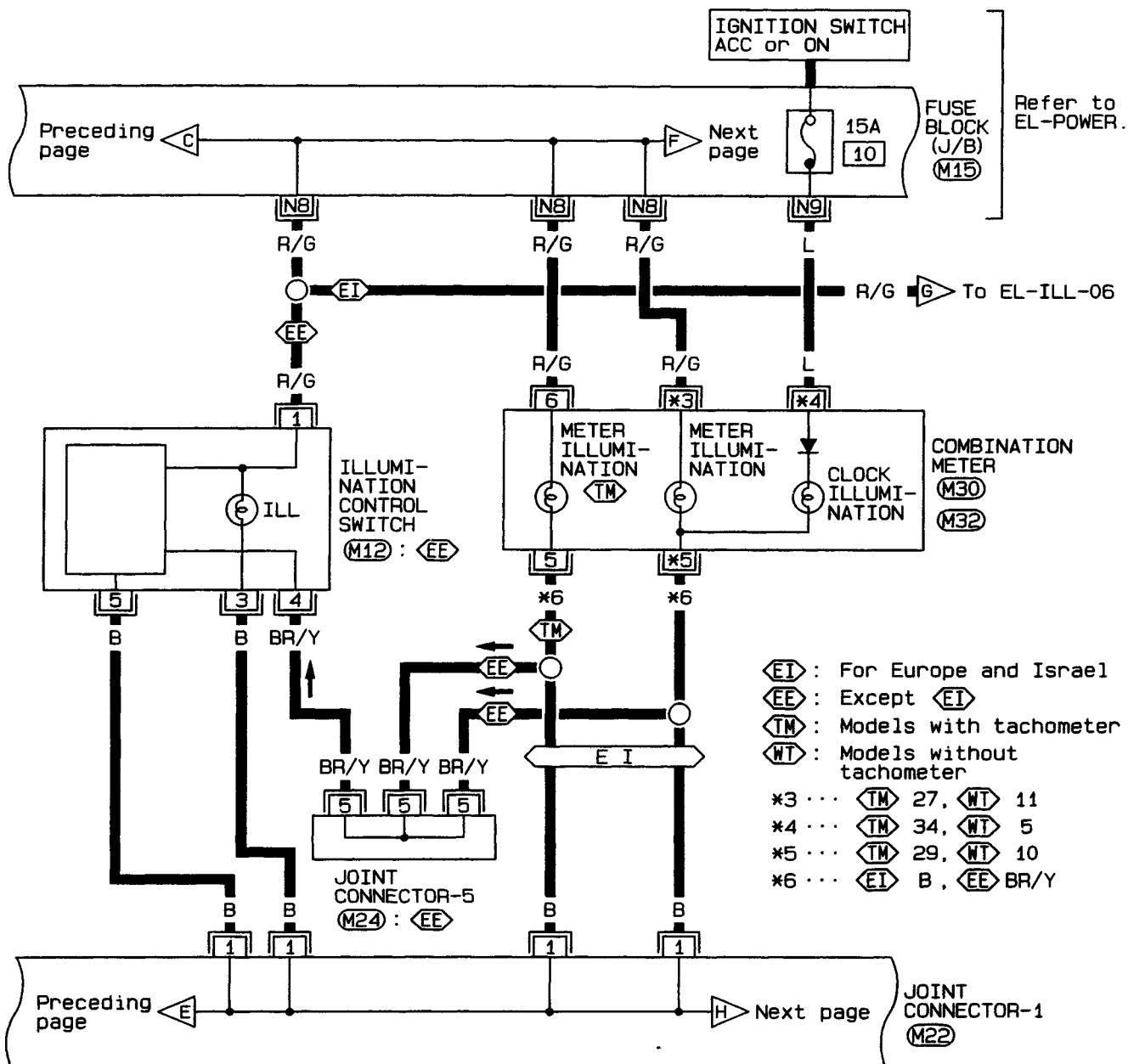
(M15), (E106)

EL

INTERIOR LAMP

Illumination/Wiring Diagram — ILL — (Cont'd)

EL-ILL-03



1	2	3	4	(M12)
3	1	5	W	

1	2	3	4		5	6	7	(M30)	33	32	31	30		29	28	27	(M32)		
8	9	10	11	12	13	14	15	16	BR	42	41	40	39	38	37	36	35	34	W

1	1	1	2	2	2	3	3	3	3	(M24)
4	4	4	5	5	5	6	6	6	6	OR

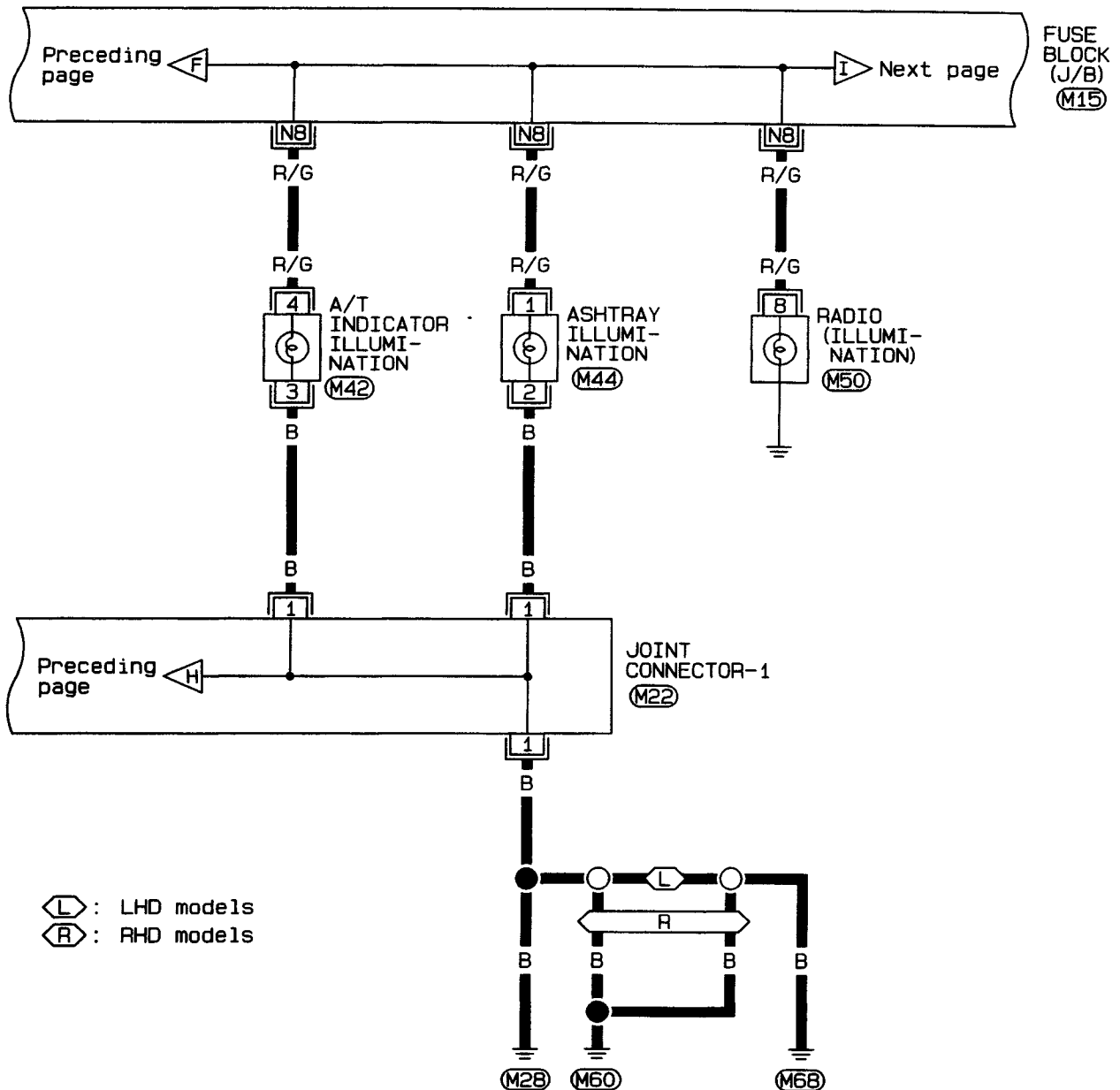
1	1	1	1	1	1	1	1	1	1	(M22)
2	2	2	3	3	3	3	4	4	4	BR

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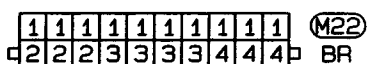
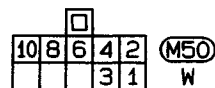
(M15)

INTERIOR LAMP Illumination/Wiring Diagram — ILL — (Cont'd)

EL-ILL-04



L : LHD models
R : RHD models



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(Foldout page).

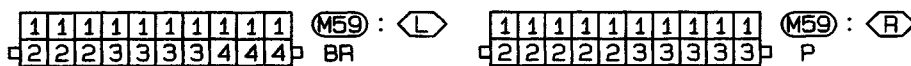
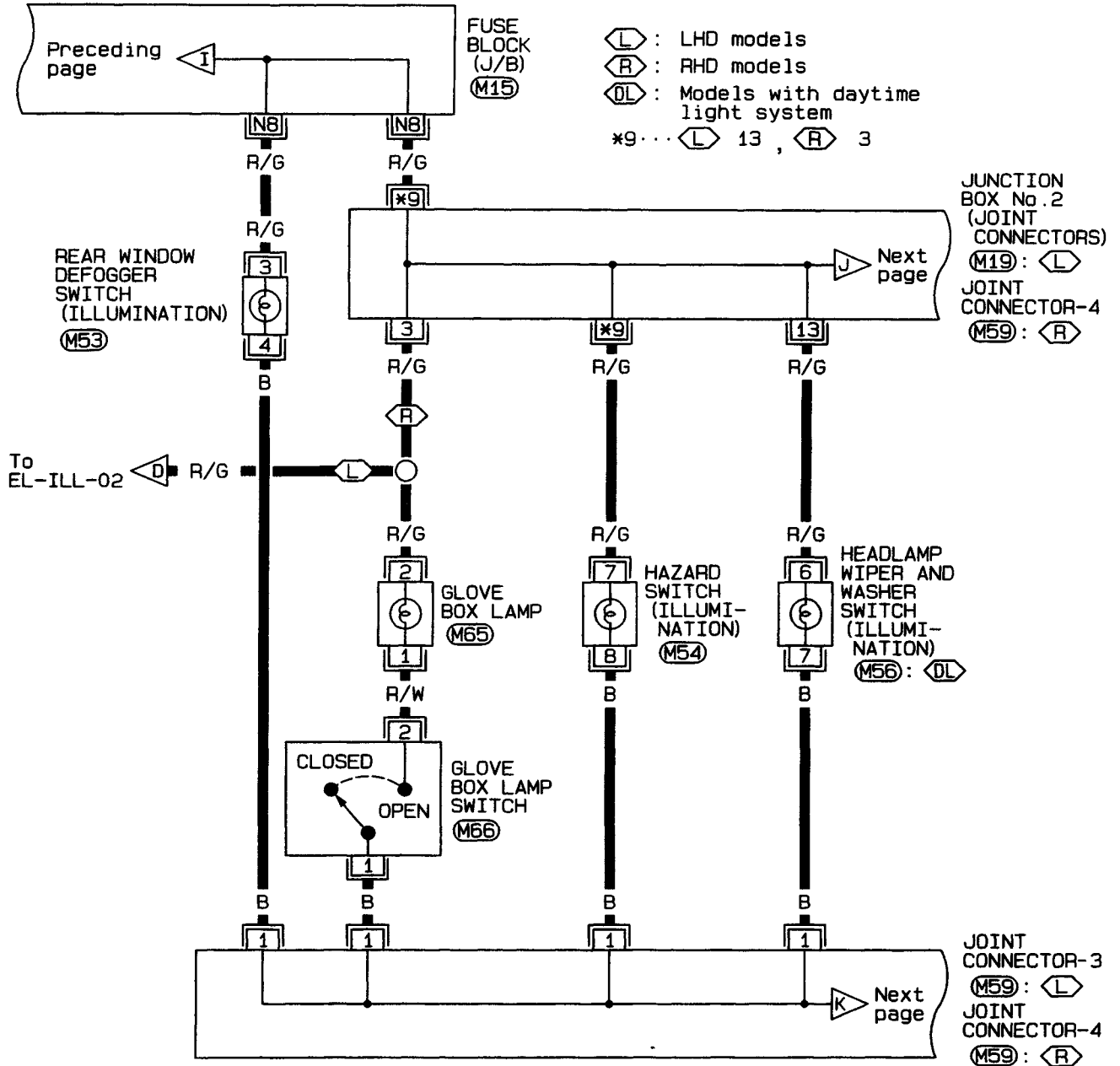
(M15)

EL

INTERIOR LAMP

Illumination/Wiring Diagram — ILL — (Cont'd)

EL-ILL-05



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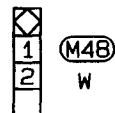
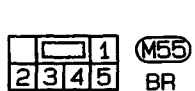
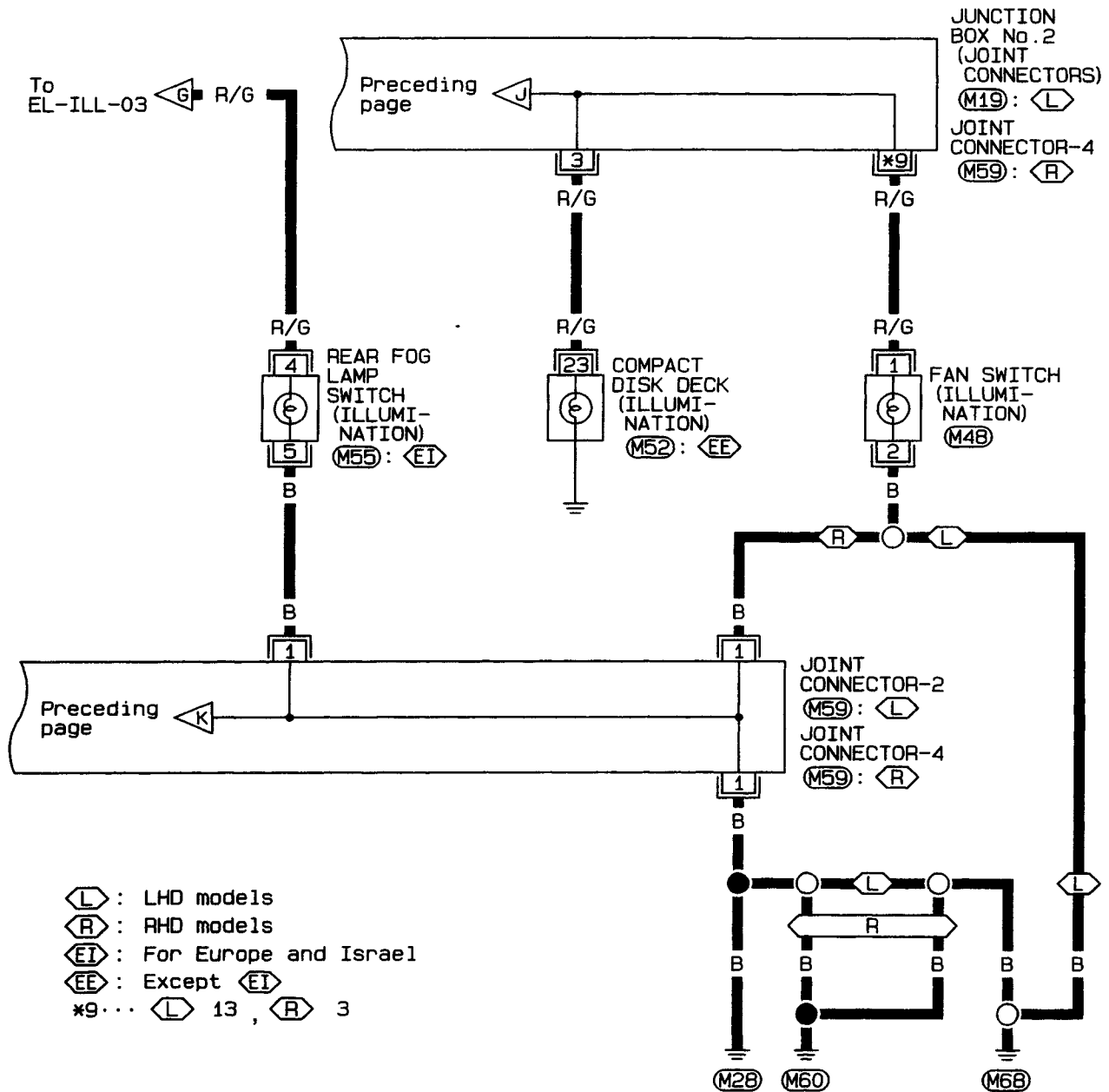
(M15)

(M19)

INTERIOR LAMP

Illumination/Wiring Diagram — ILL — (Cont'd)

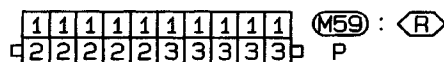
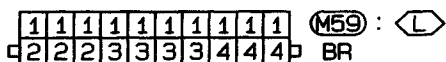
EL-ILL-06



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(M19)

EL

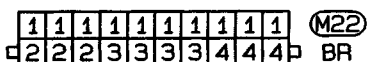
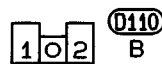
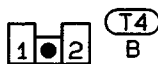
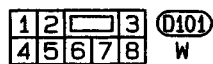
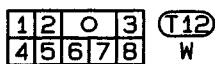
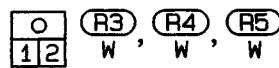
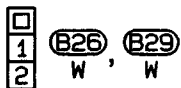
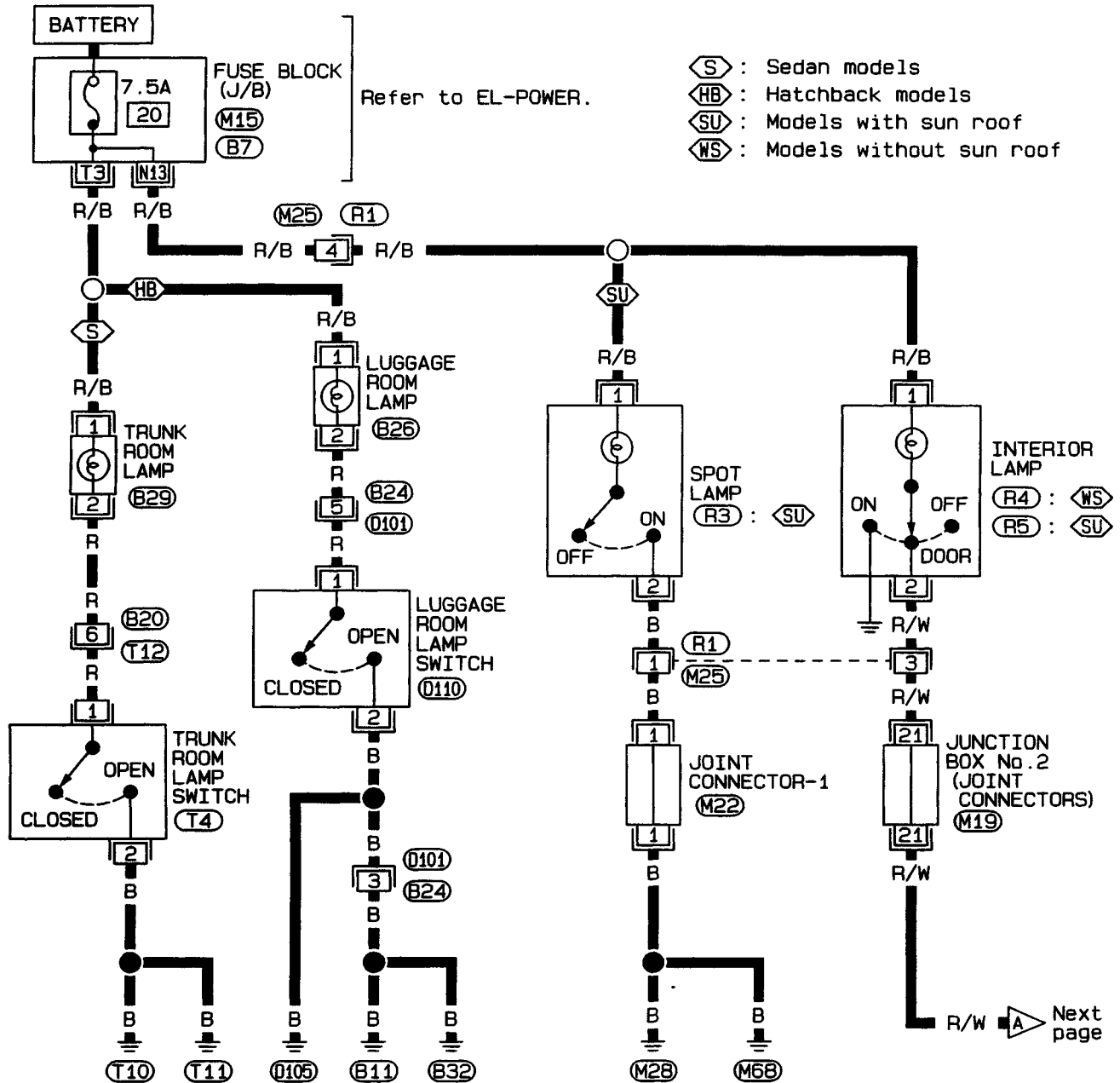


INTERIOR LAMP

Interior, Spot, Trunk Room and Luggage Room Lamps/Wiring Diagram — INT/L —

LHD MODELS

EL-INT/L-01



Refer to last page (Foldout page).

(M15, B7)
(M19)

HEL061

INTERIOR LAMP

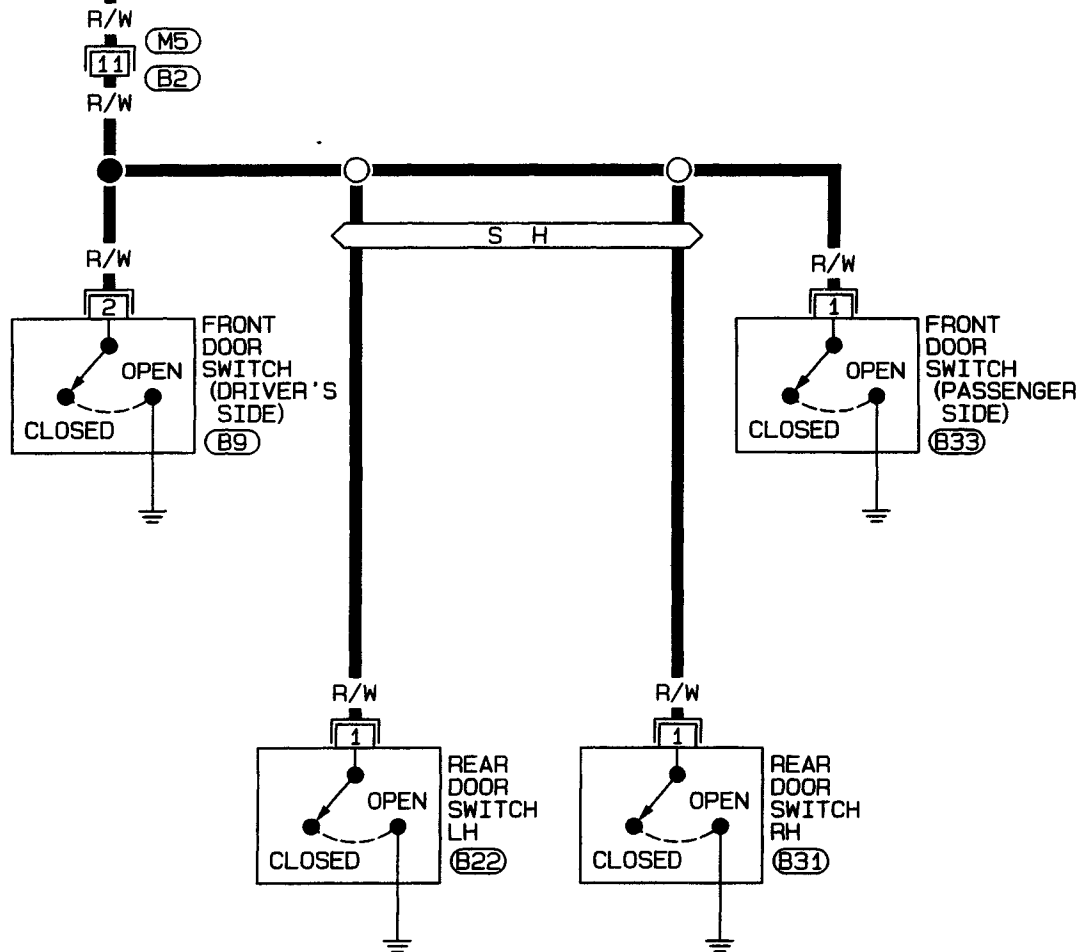
Interior, Spot, Trunk Room and Luggage Room Lamps/Wiring Diagram — INT/L — (Cont'd)

EL-INT/L-02

Preceding
page

A R/W

SH : Sedan and 5-door
Hatchback models



1	2	3	4
5	6	7	8
9	10	11	12

(M5) W

1	2
3	

(B9) B

1

(B22), (B31), (B33)
BR, BR, BR

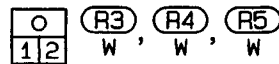
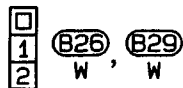
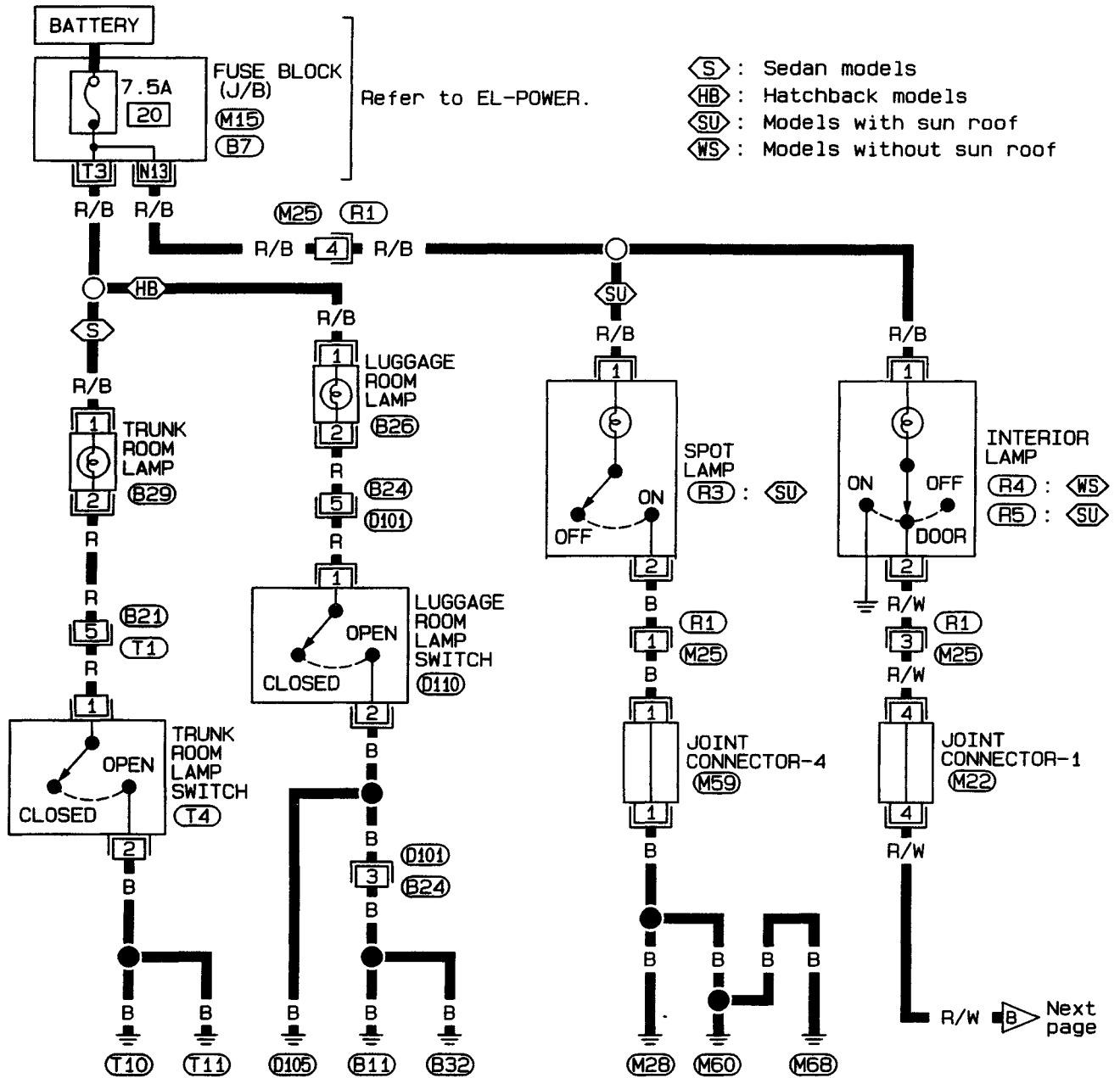
EL

INTERIOR LAMP

Interior, Spot, Trunk Room and Luggage Room Lamps/Wiring Diagram — INT/L — (Cont'd)

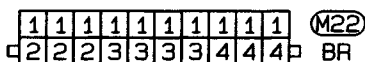
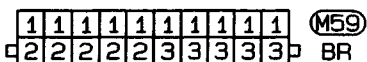
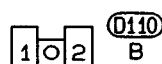
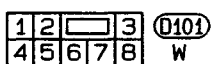
RHD MODELS

EL-INT/L-03



Refer to last page (Foldout page).

(M15, B7)



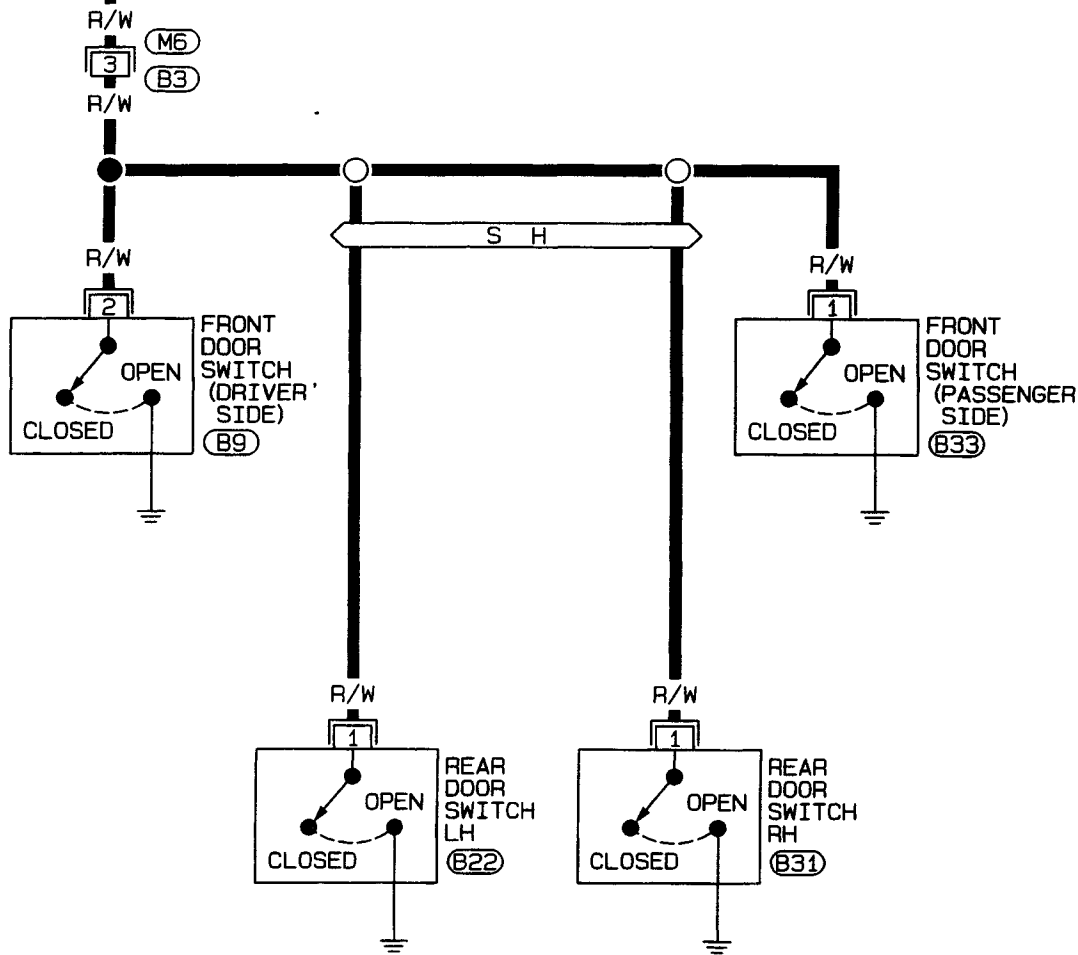
INTERIOR LAMP

Interior, Spot, Trunk Room and Luggage Room Lamps/Wiring Diagram — INT/L — (Cont'd)

EL-INT/L-04

Preceding page  R/W

 : Sedan and 5-door Hatchback models



1	2	3	4	5	6	7	8	M6
9	10	11	12	13	14	15	16	W

1	2	B9
3		B

1	B22	B31	B33
	BR	BR	BR

EL

INTERIOR LAMP

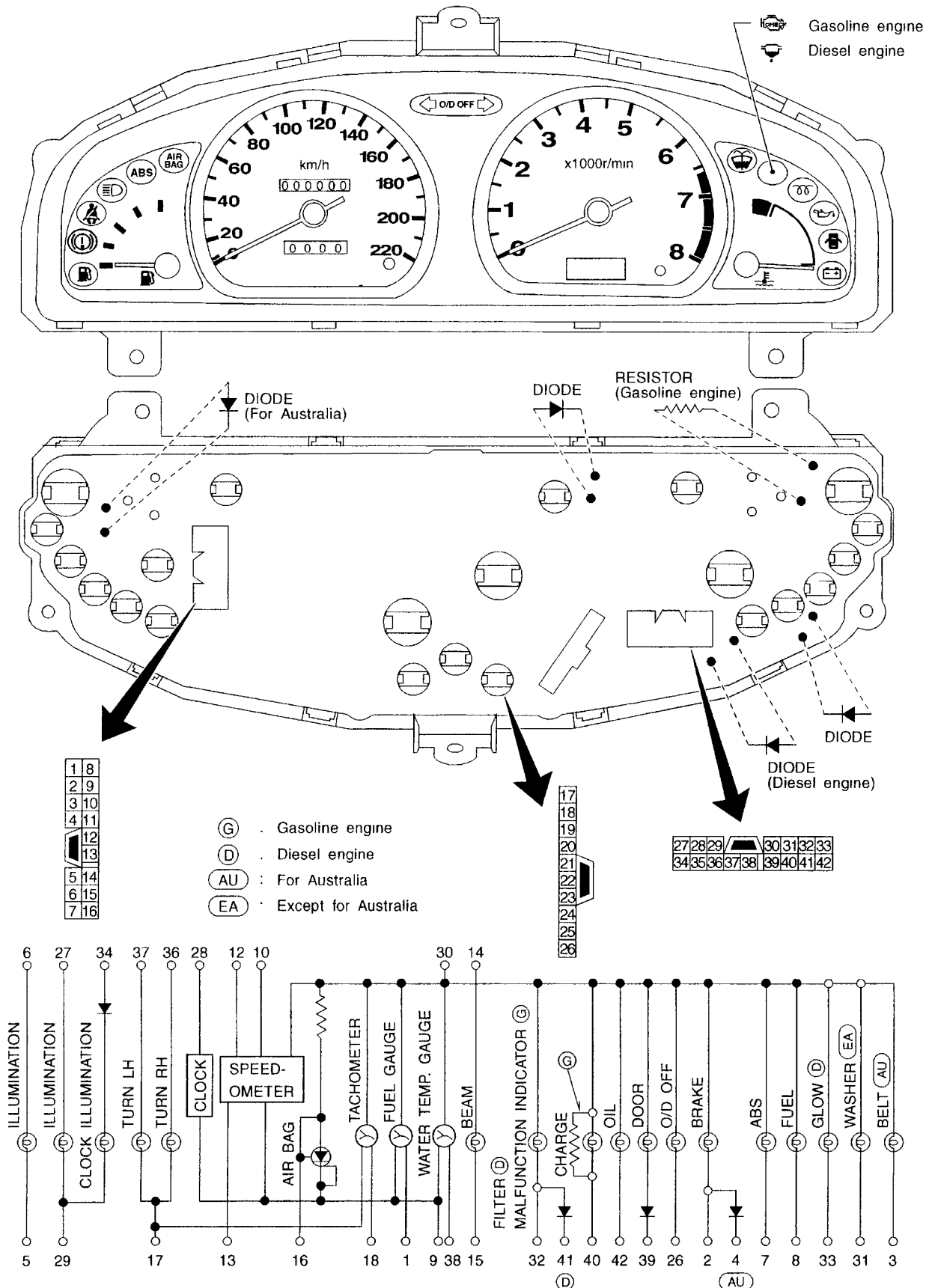
Bulb Specifications

	Wattage (W)
Interior lamp	10
Spot lamp	10
Turn room lamp	3.4
Luggage room lamp	3.4

METER AND GAUGES

Combination Meter

WITH TACHOMETER

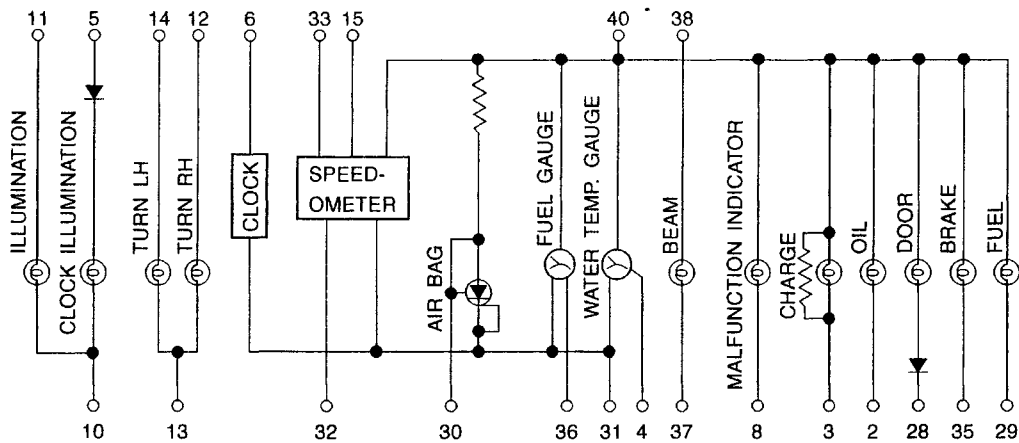
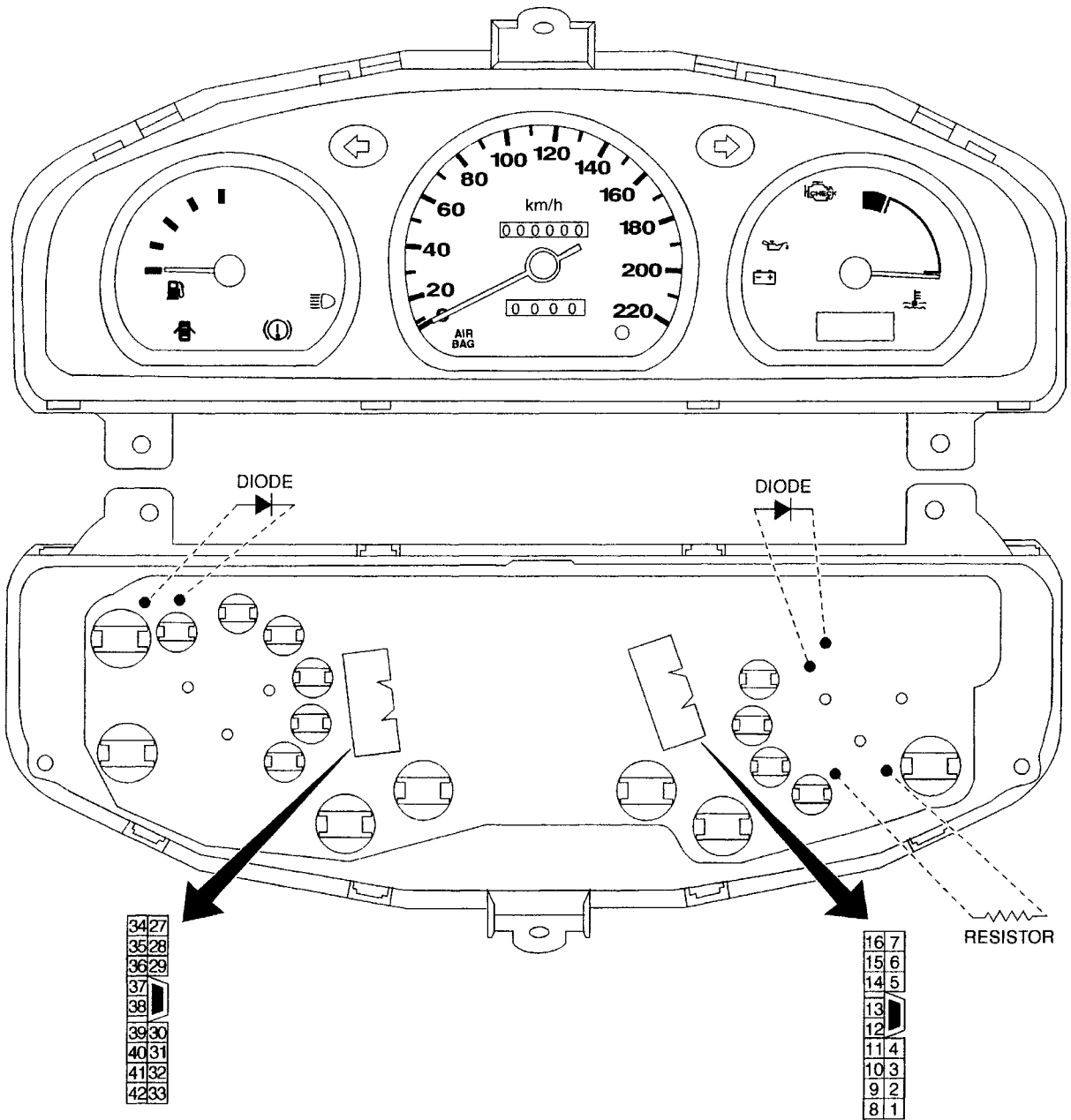


EL

METER AND GAUGES

Combination Meter (Cont'd)

WITHOUT TACHOMETER

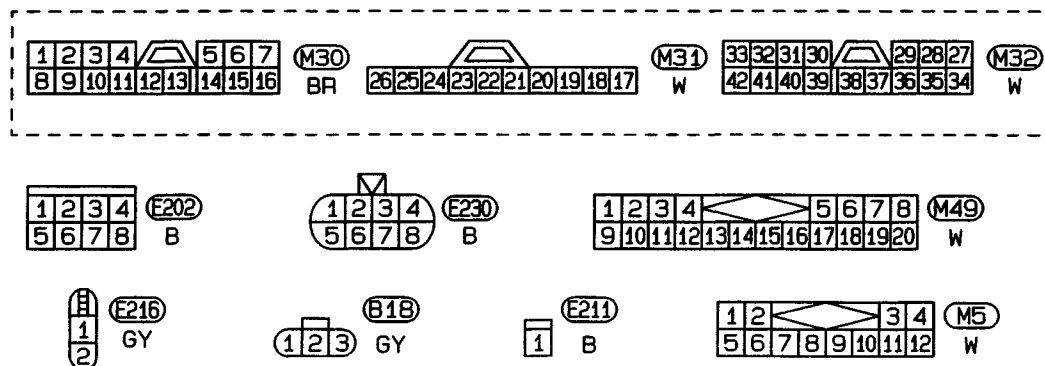
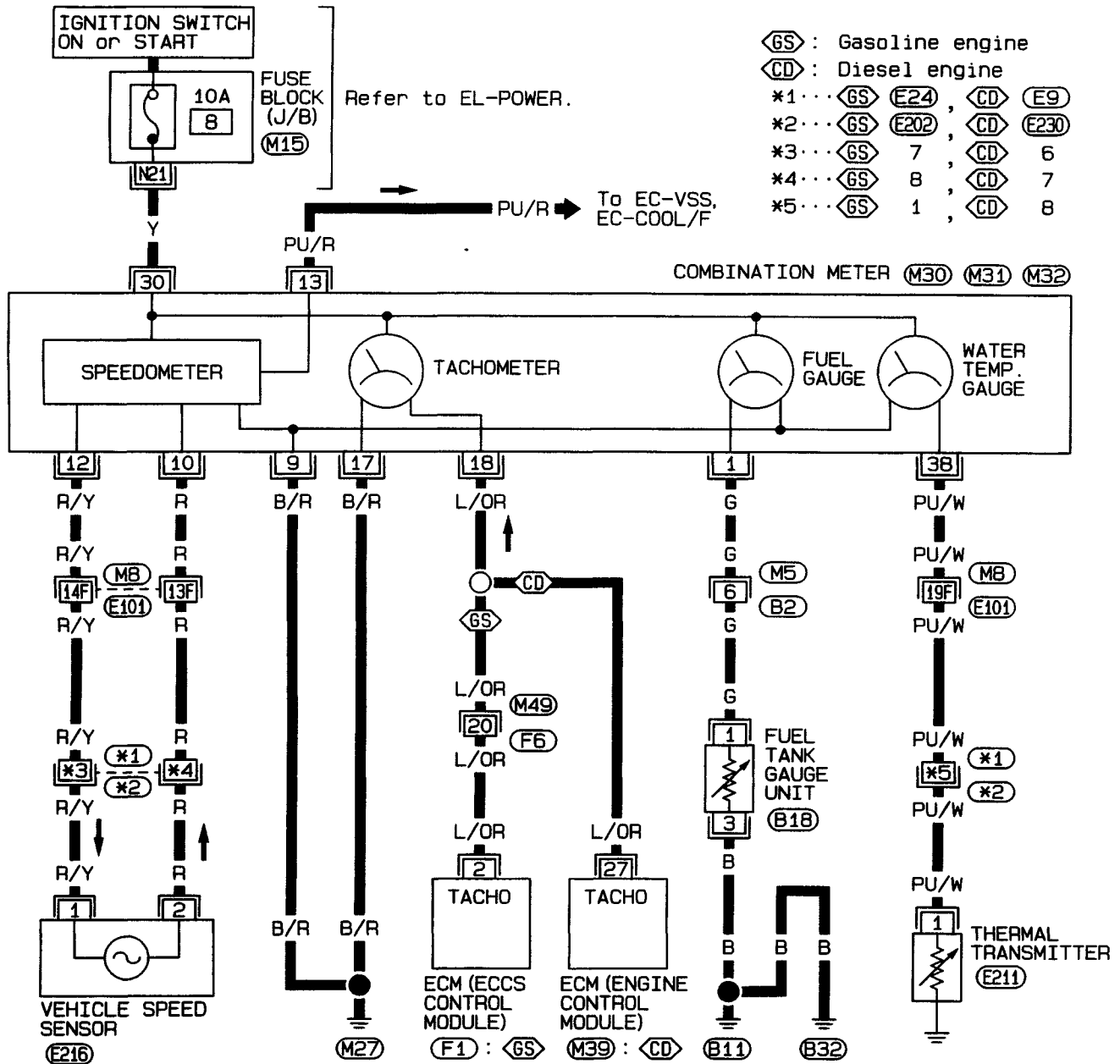


METER AND GAUGES

Speedometer, Tachometer, Temp. and Fuel Gauges/Wiring Diagram — METER —

LHD MODELS WITH TACHOMETER

EL-METER-01



Refer to last page (Foldout page).

(M8), (E101)

(M15)

(F1)

(M39)

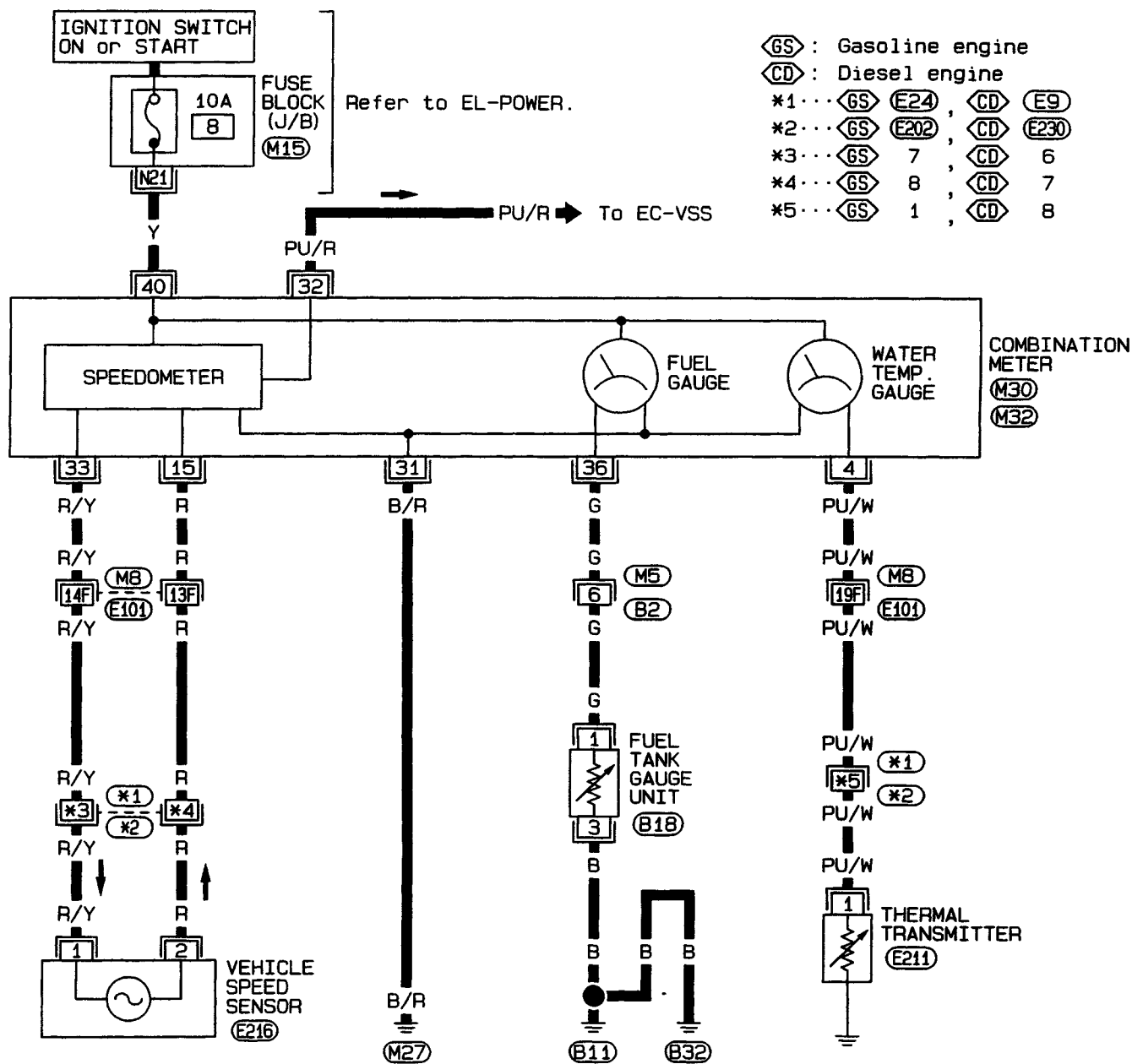
HEL067

METER AND GAUGES

Speedometer, Tachometer, Temp. and Fuel Gauges/Wiring Diagram — METER — (Cont'd)

LHD MODELS WITHOUT TACHOMETER

EL-METER-02



GS : Gasoline engine

CD : Diesel engine

*1... GS E24, CD E9

*2... GS E202, CD E230

*3... GS 7, CD 6

*4... GS 8, CD 7

*5... GS 1, CD 8

1 2 3 4 5 6 7 M30 BR

33 32 31 30 29 28 27 M32 W

1 2 3 4 E202 B

1 2 3 4 E230 B

1 2 3 4 M5 W

1 2 E216 GY

1 2 3 B18 GY

1 E211 B

Refer to last page (Foldout page).

M8, E101

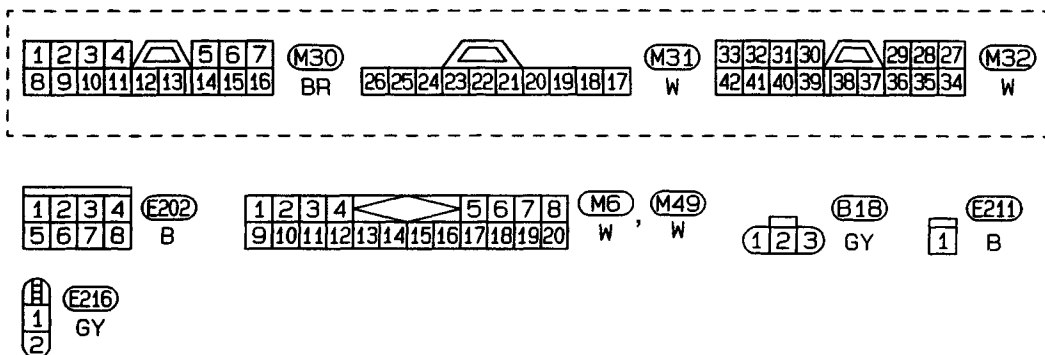
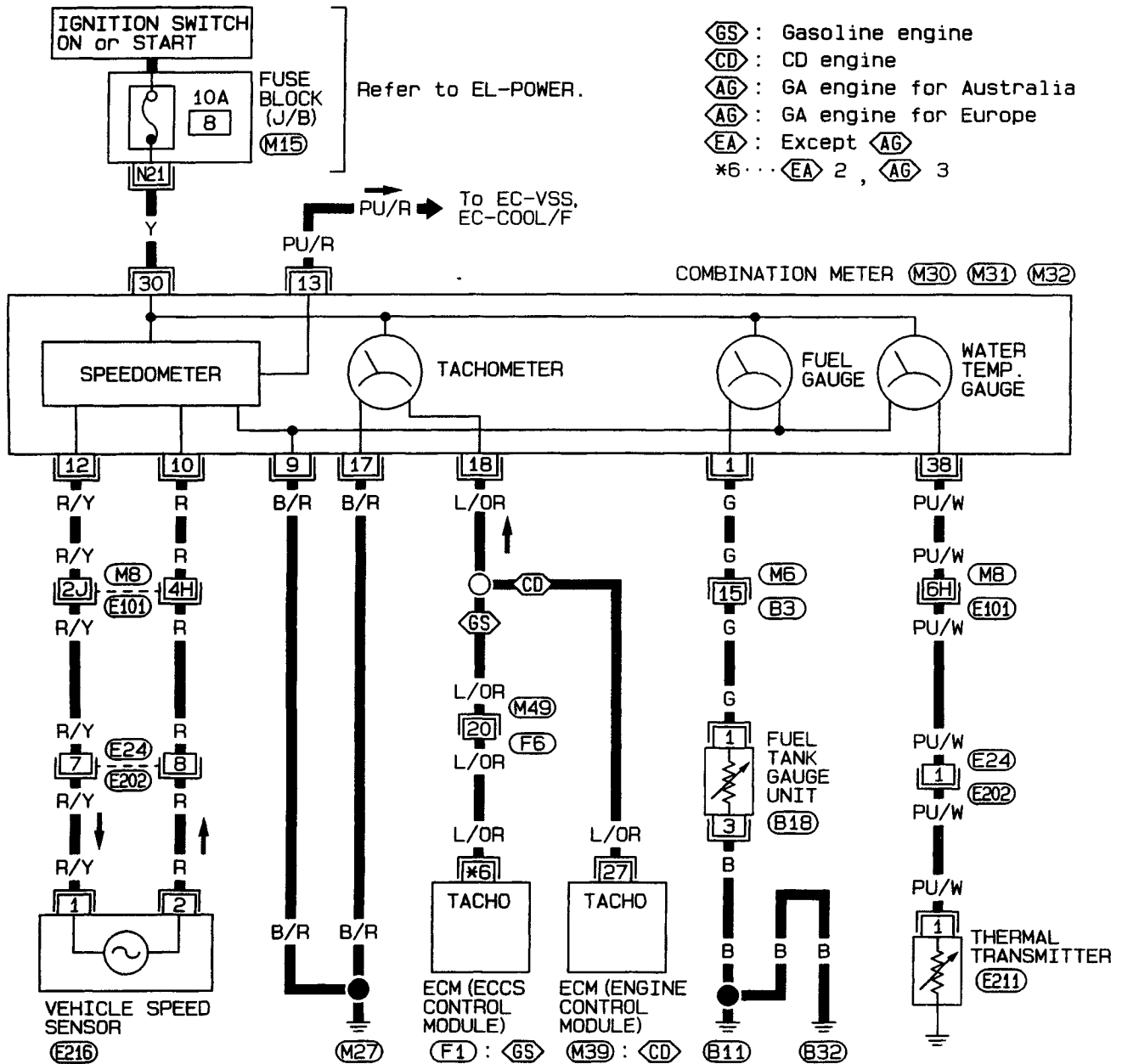
M15

METER AND GAUGES

Speedometer, Tachometer, Temp. and Fuel Gauges/Wiring Diagram — METER — (Cont'd)

RHD MODELS WITH TACHOMETER

EL-METER-03



Refer to last page (Foldout page).

(M8), (E101)
(M15)
(F1)
(M39)

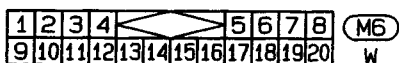
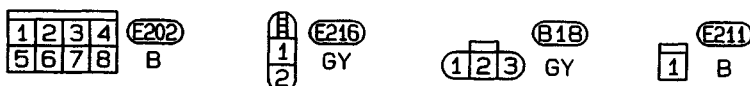
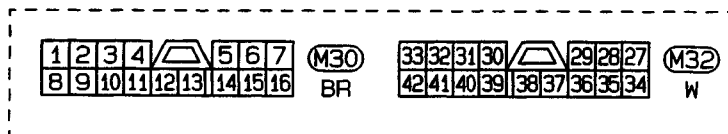
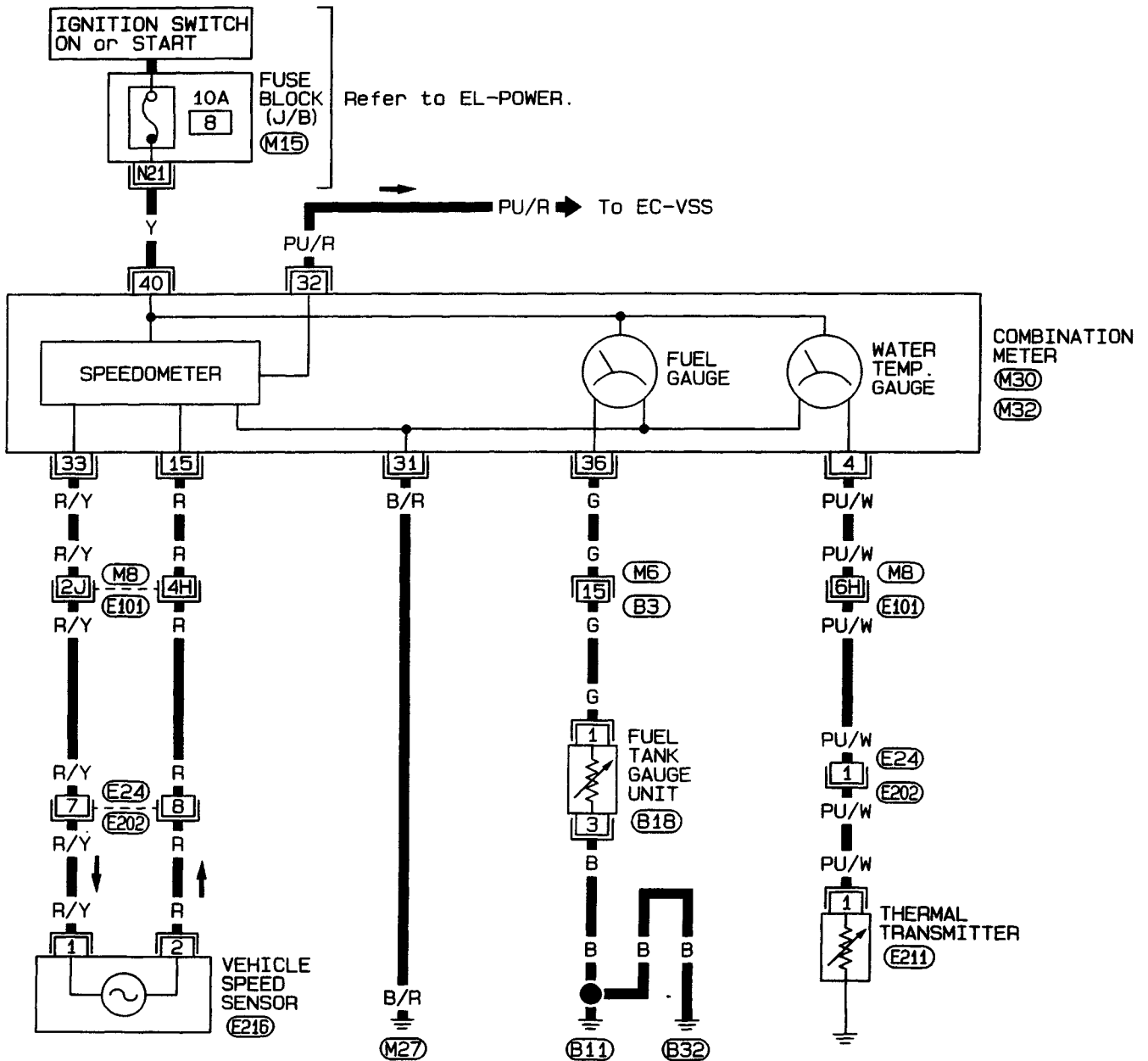
EL

METER AND GAUGES

Speedometer, Tachometer, Temp. and Fuel Gauges/Wiring Diagram — METER — (Cont'd)

RHD MODELS WITHOUT TACHOMETER

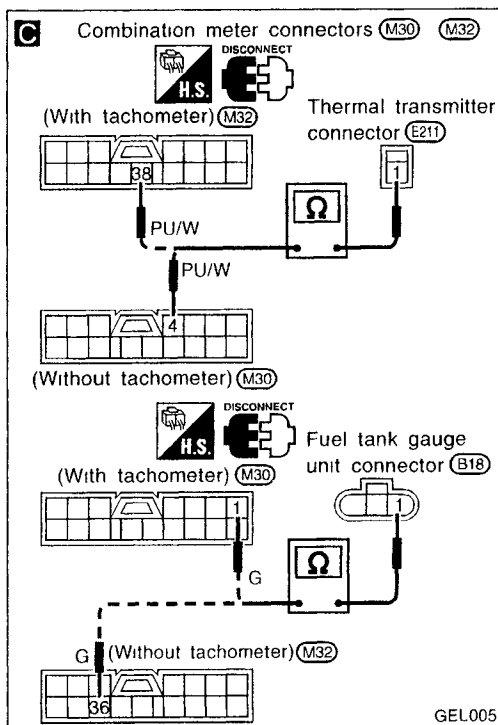
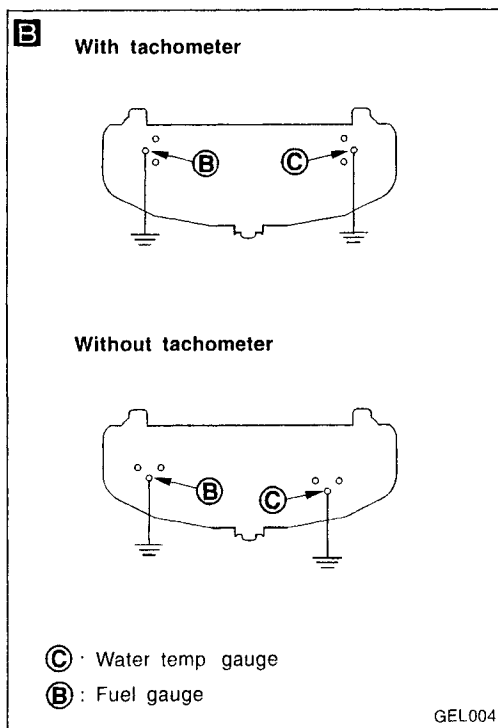
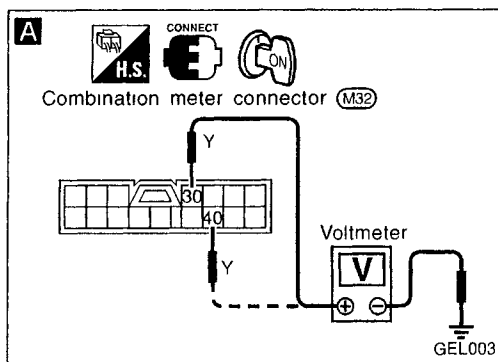
EL-METER-04



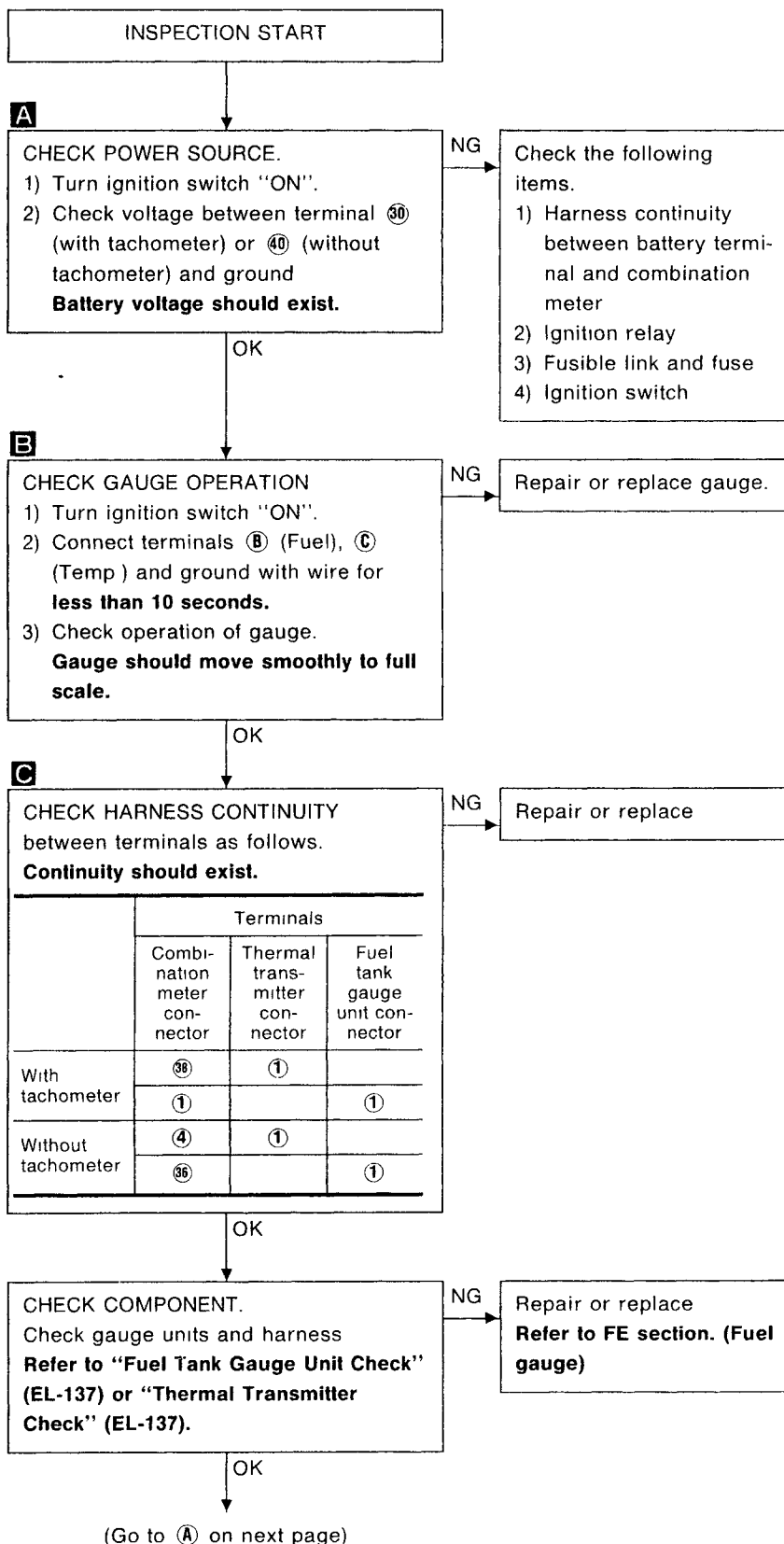
Refer to last page (Foldout page).

(M8), (E101)

(M15)

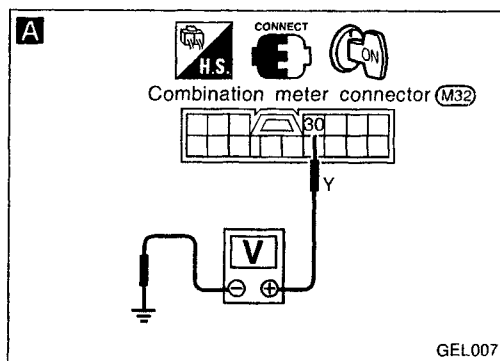
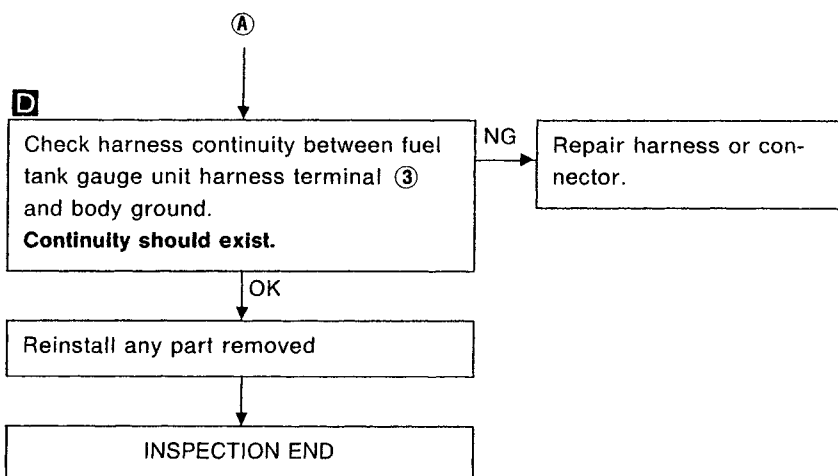
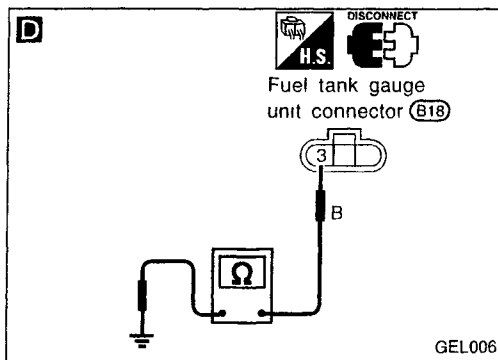


Inspection/Fuel Gauge and Water Temperature Gauge

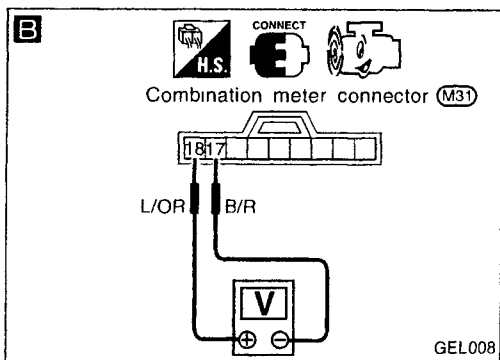
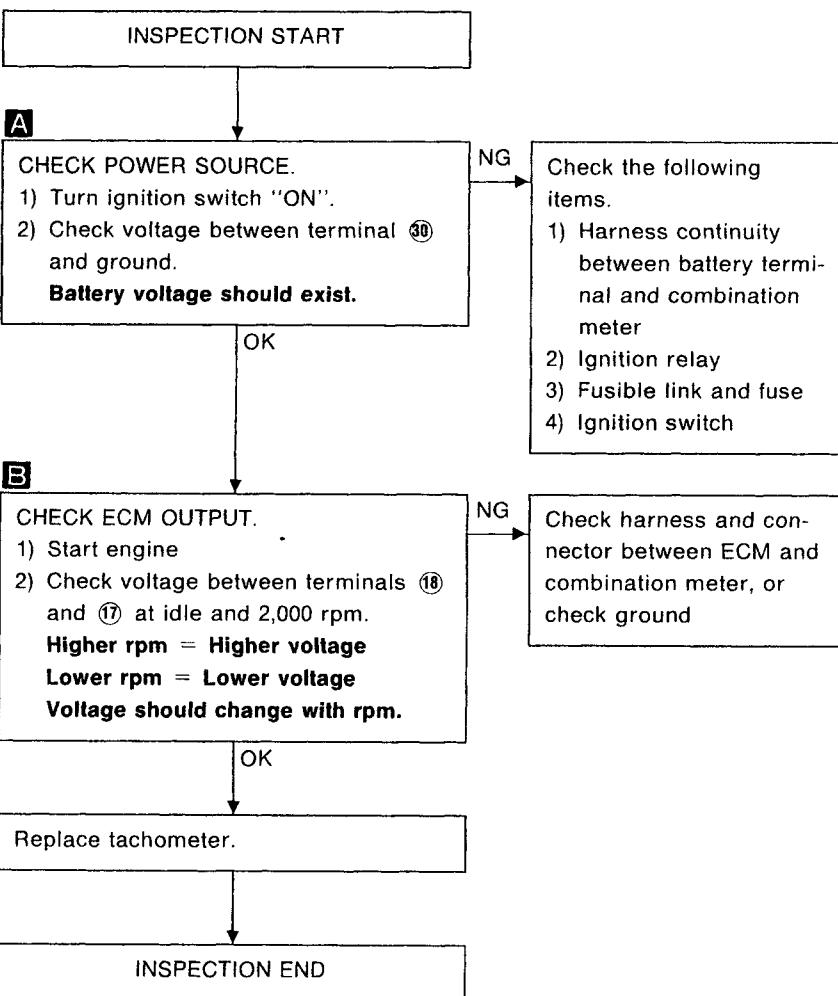


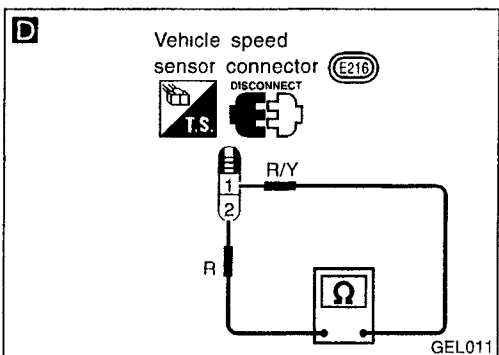
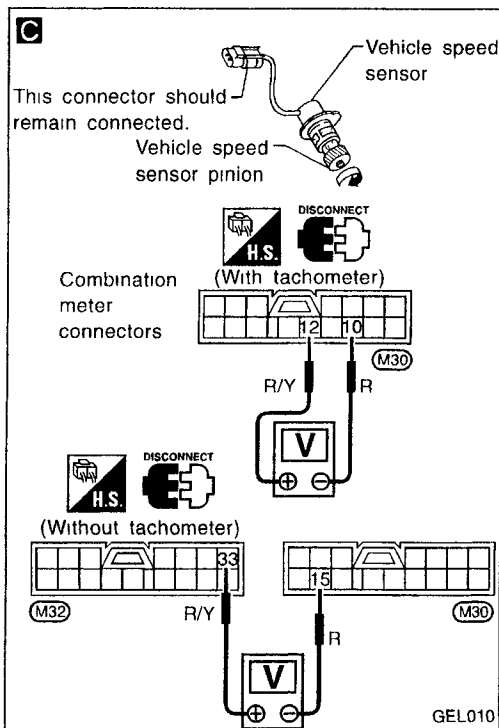
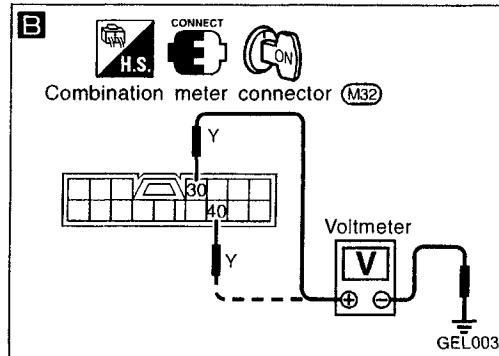
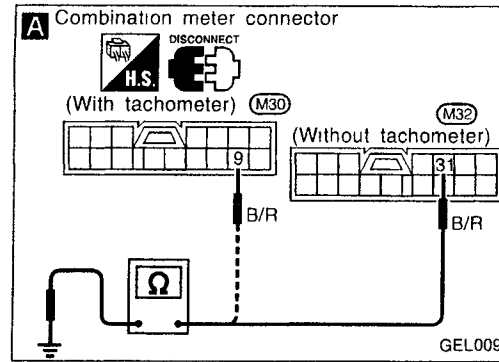
METER AND GAUGES

Inspection/Fuel Gauge and Water Temperature Gauge (Cont'd)



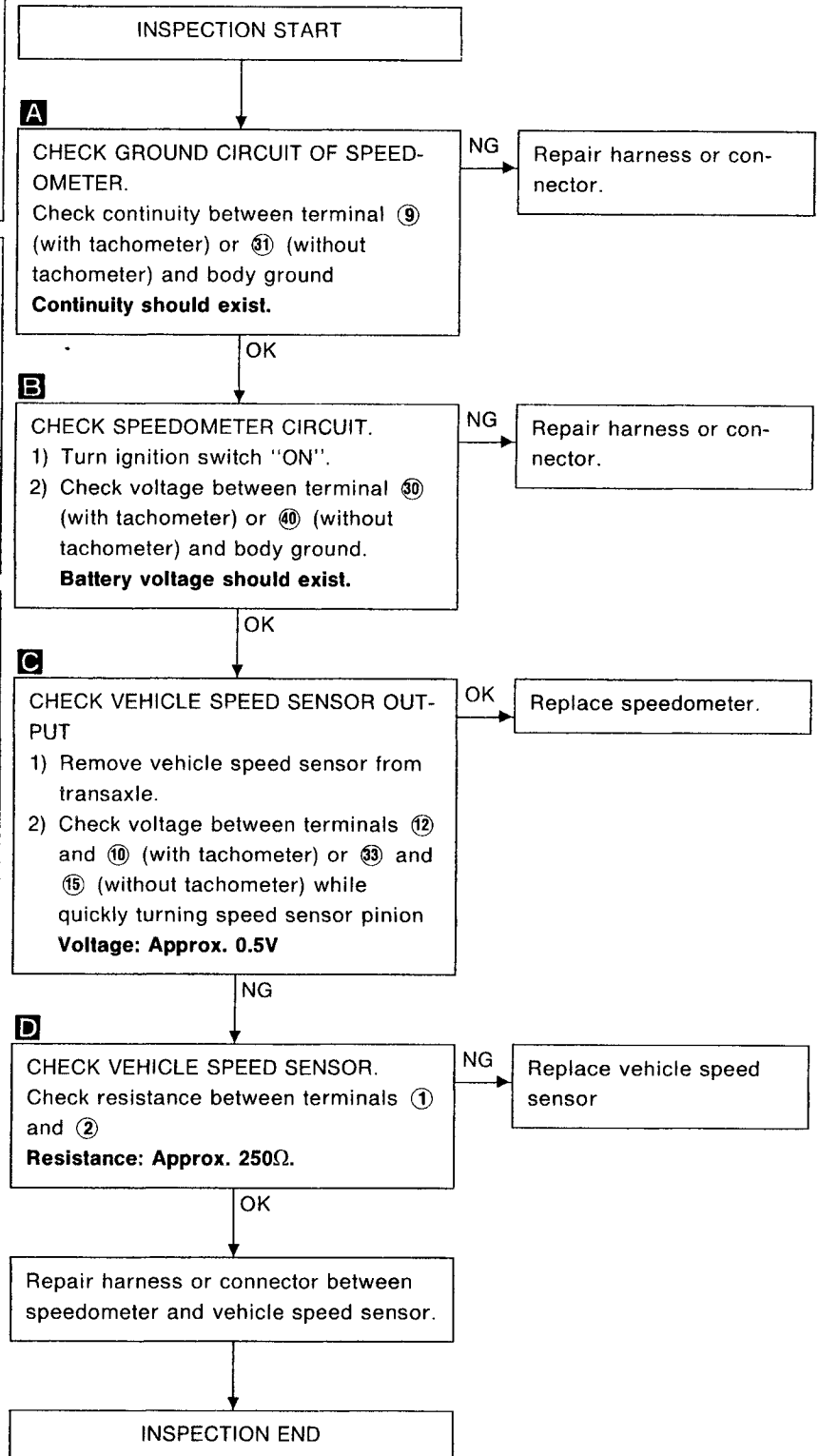
Inspection/Tachometer





Inspection/Speedometer and Vehicle Speed Sensor

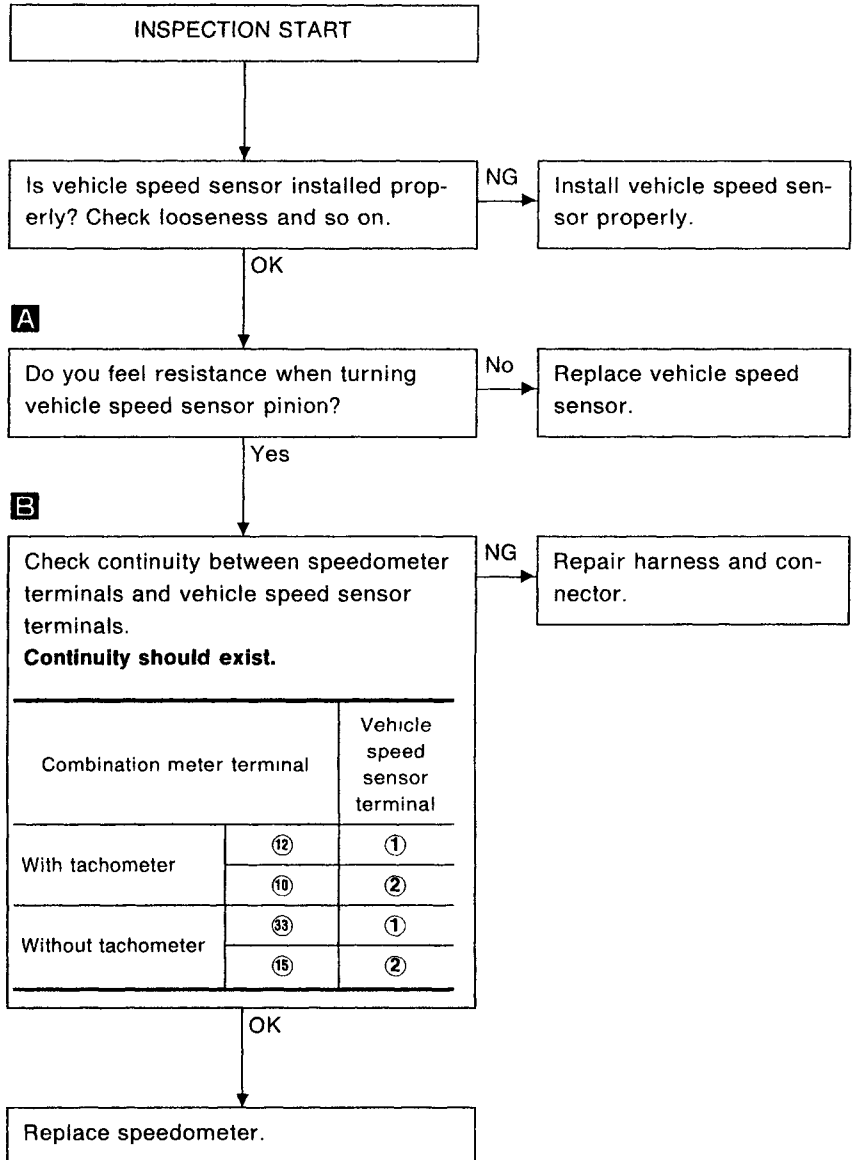
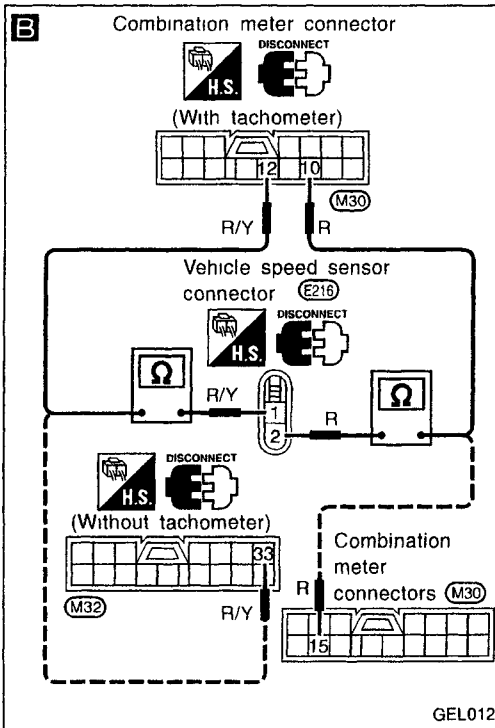
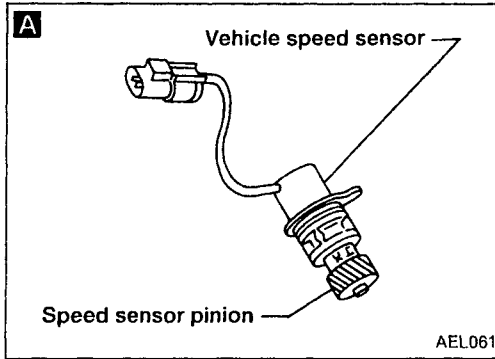
SYMPTOM: Speedometer stays at 0 km/h (0 MPH).

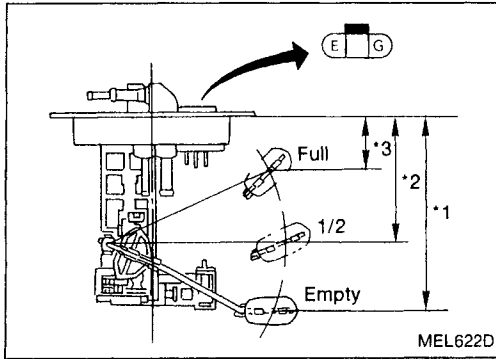


METER AND GAUGES

Inspection/Speedometer and Vehicle Speed Sensor (Cont'd)

SYMPTOM: Speedometer indication flutters.





Fuel Tank Gauge Unit Check

- For removal, refer to FE section ("FUEL SYSTEM"). Check the resistance between terminals (G) and (E).

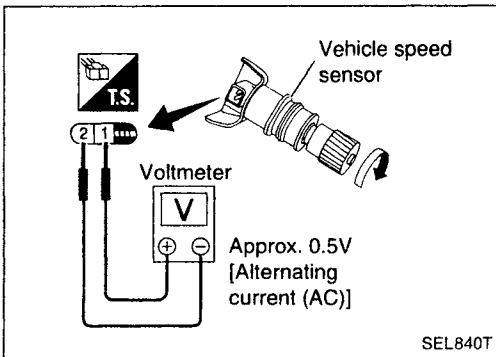
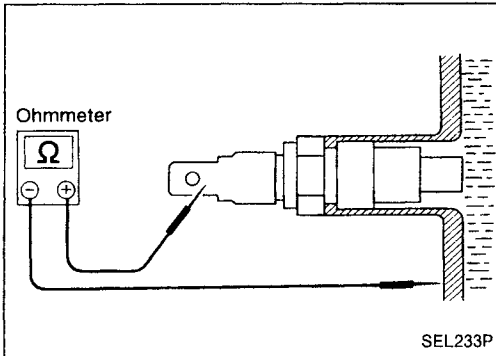
Ohmmeter		Float position mm (in)			Resistance value (Ω)
(+)	(-)				
G	E	*3	Full	36 (1.42)	Approx. 4 - 6
		*2	1/2	86 (3.39)	27 - 35
		*1	Empty	131 (5.16)	78 - 85

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

Thermal Transmitter Check

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

Water temperature	Resistance
60°C (140°F)	Approx. 70 - 90Ω
100°C (212°F)	Approx. 21 - 24Ω

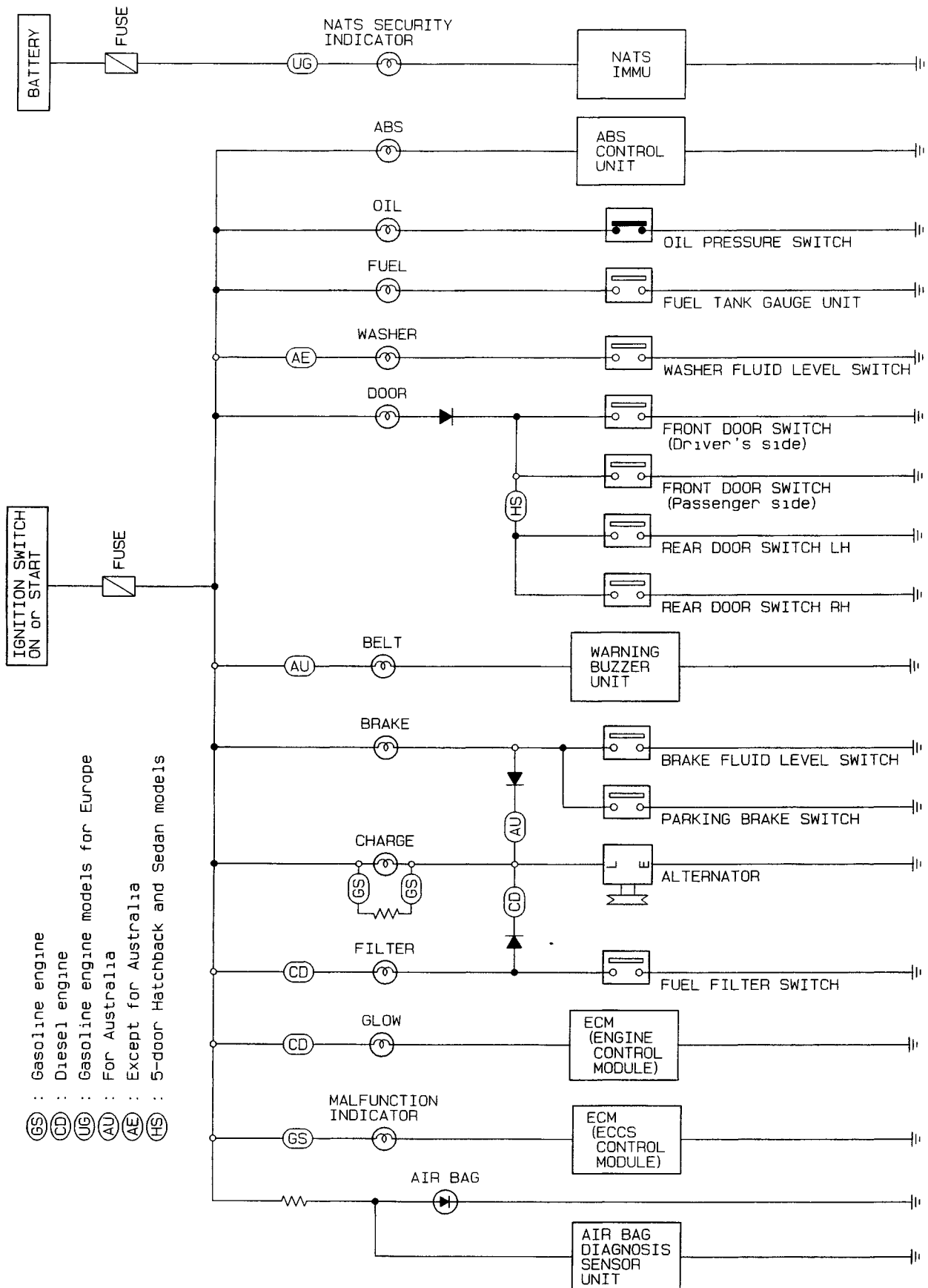


Vehicle Speed Sensor Signal Check

- Remove vehicle speed sensor from transaxle.
- Turn speedometer pinion quickly and measure voltage across ① and ②.

WARNING LAMPS AND BUZZER

Warning Lamps/Schematic

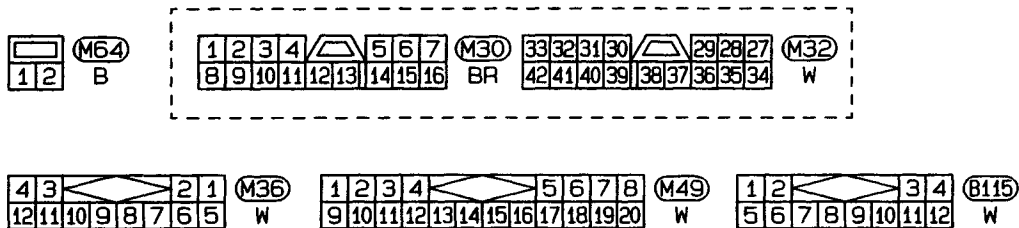
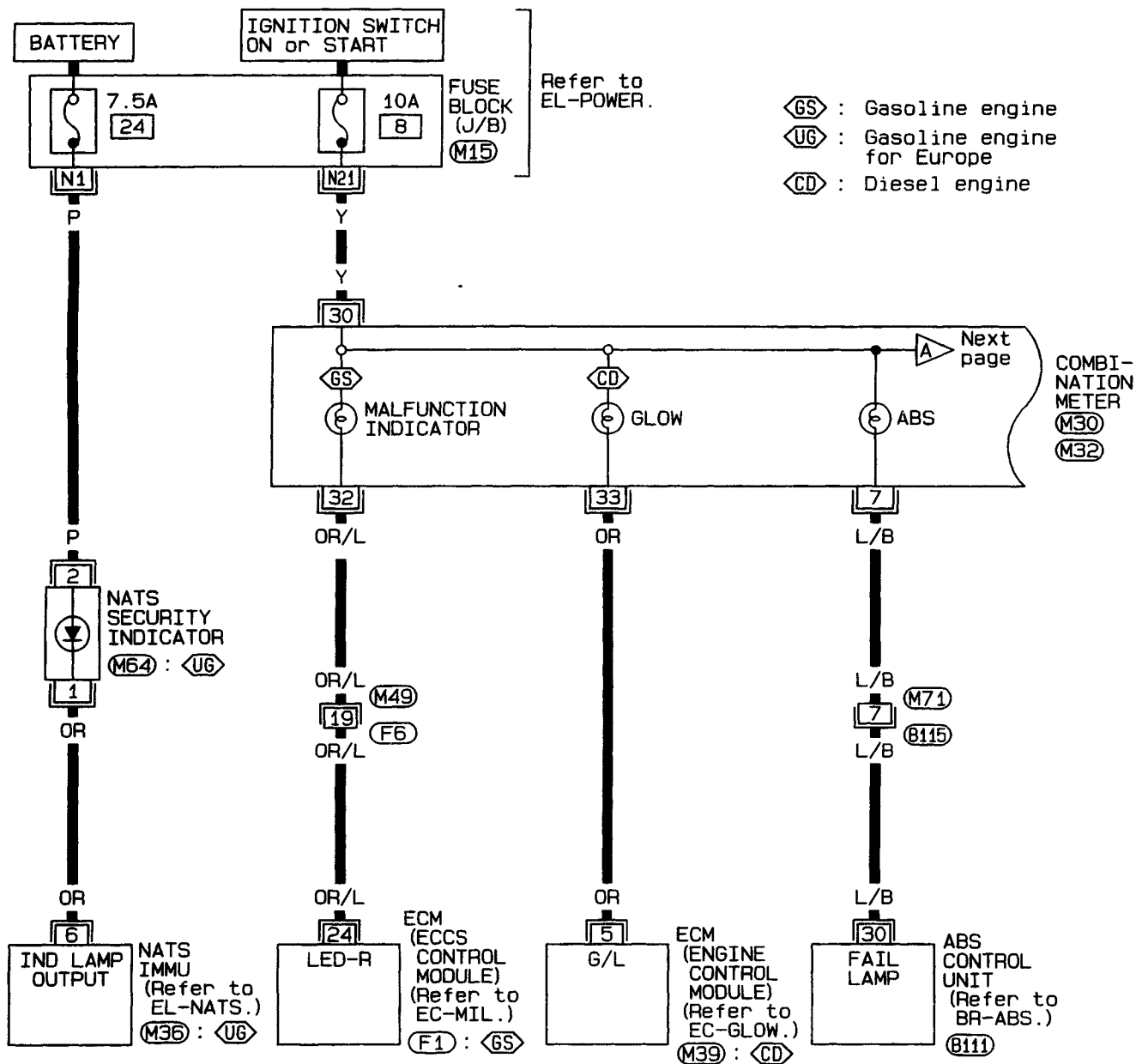


WARNING LAMPS AND BUZZER

Warning Lamps/Wiring Diagram — WARN —

LHD MODELS WITH TACHOMETER

EL-WARN-01



Refer to last page (Foldout page).

(M15)
(F1)
(M39)
(B111)

EL

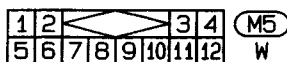
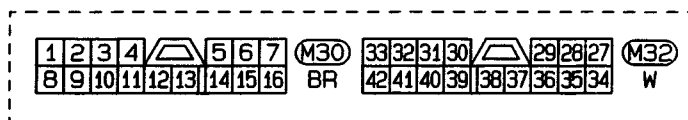
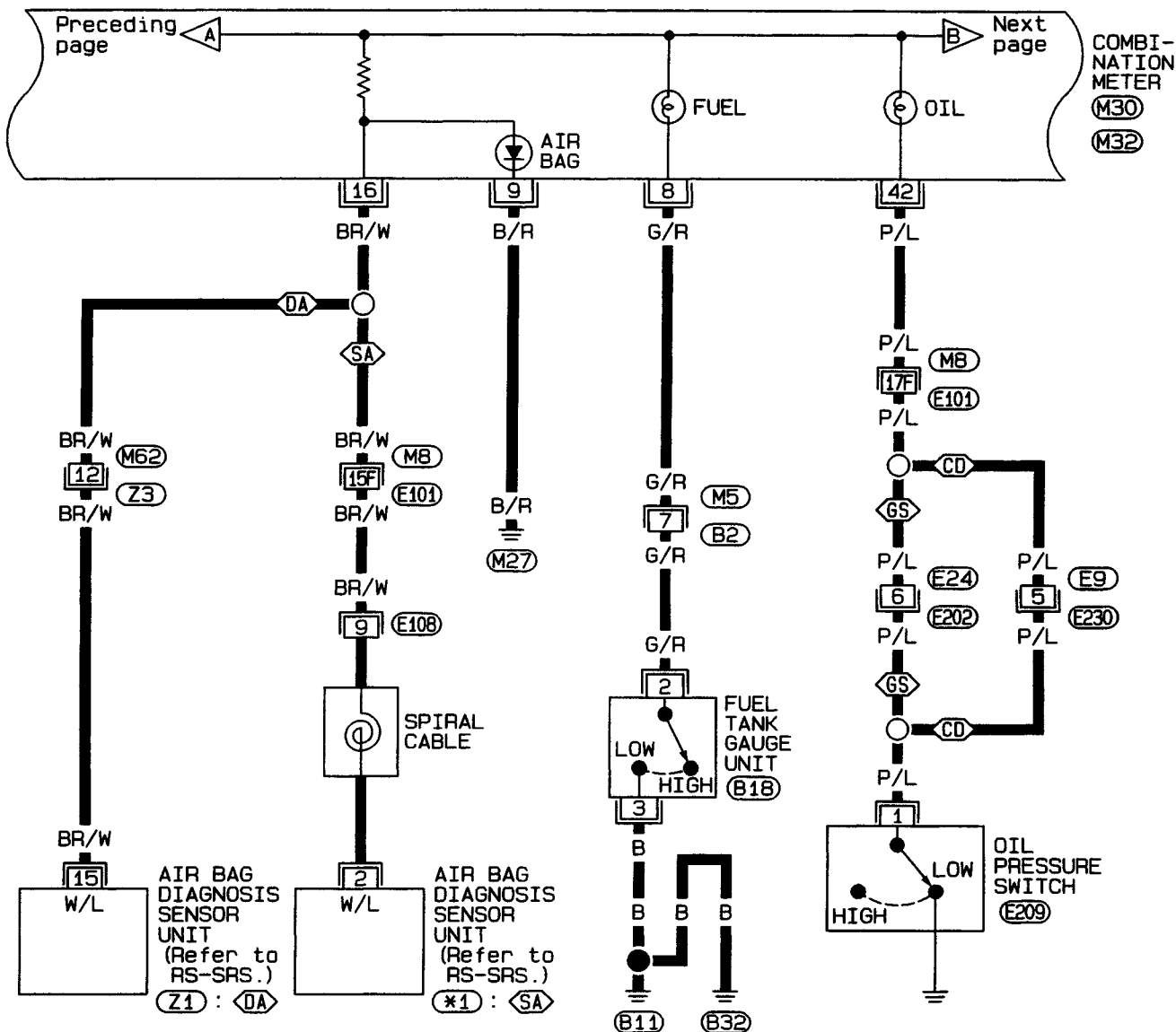
WARNING LAMPS AND BUZZER

Warning Lamps/Wiring Diagram — WARN — (Cont'd)

EL-WARN-02

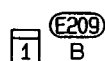
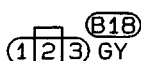
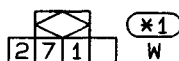
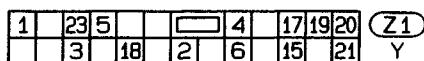
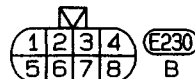
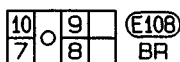
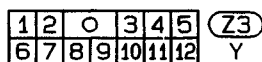
GS : Gasoline engine
CD : Diesel engine

DA : Models with dual air bag system
SA : Models with single air bag system



Refer to last page
(Foldout page).

(M8), (E101)



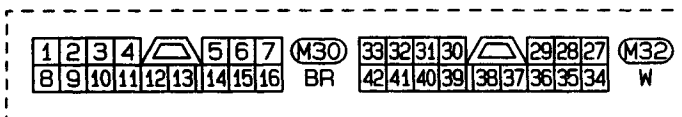
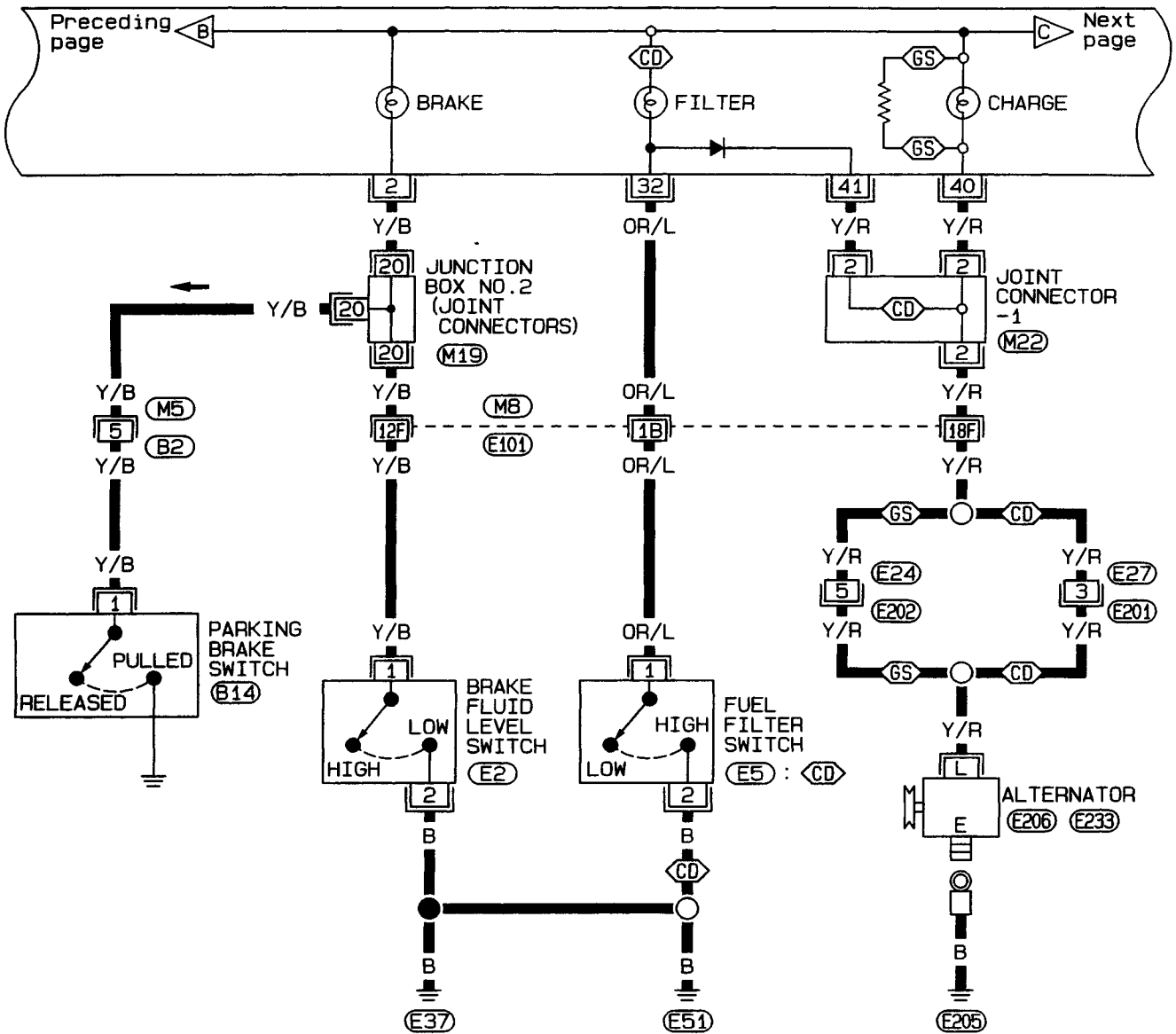
WARNING LAMPS AND BUZZER

Warning Lamps/Wiring Diagram — WARN — (Cont'd)

EL-WARN-03

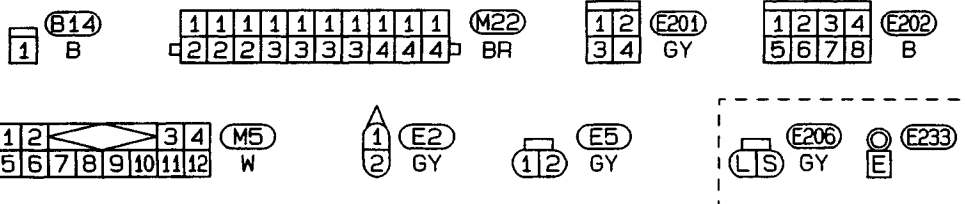
GS : Gasoline engine
CD : Diesel engine

COMBINATION METER (M30) (M32)



Refer to last page
(Foldout page).

(M8) , (E101)
(M19)



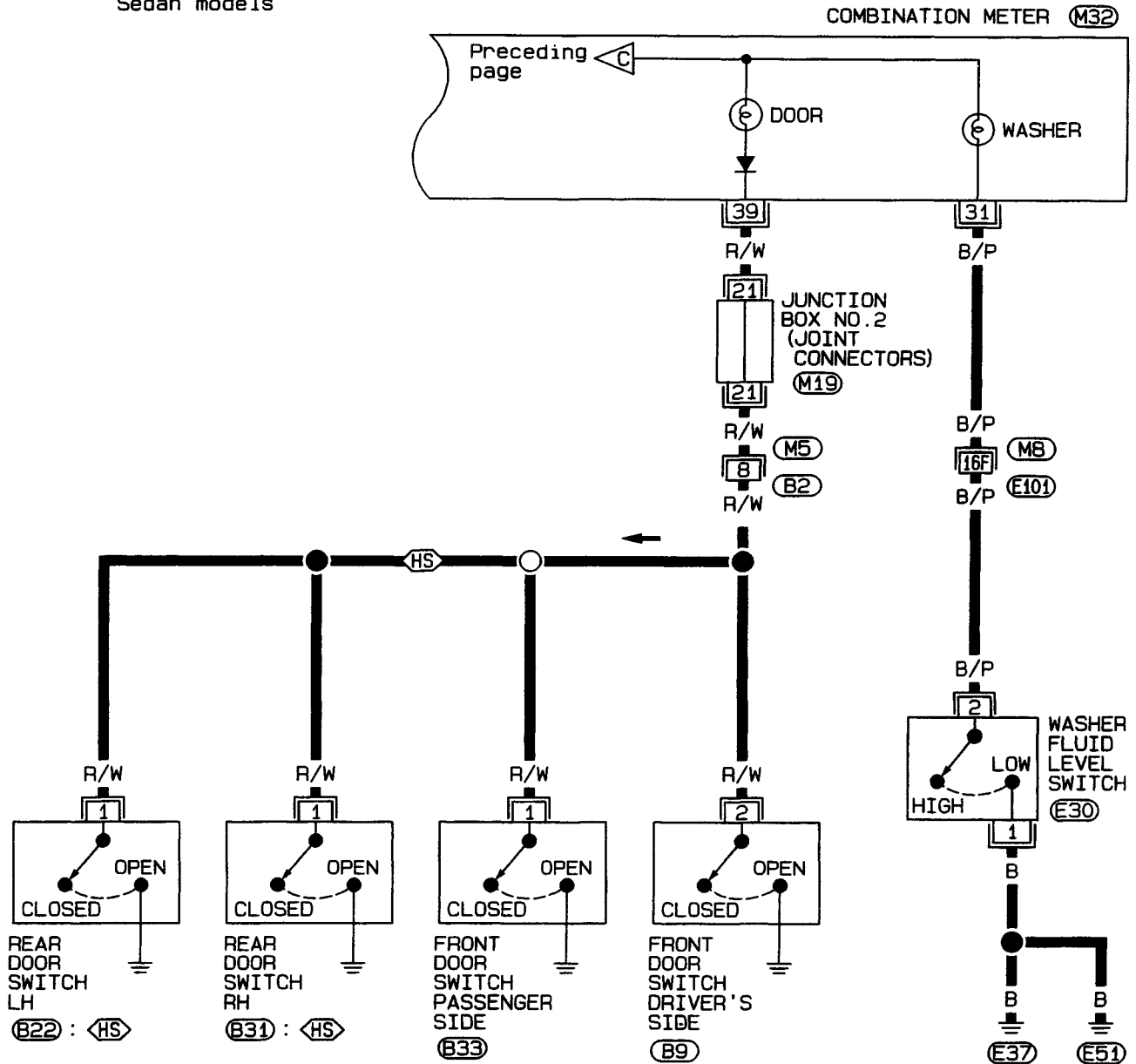
EL

WARNING LAMPS AND BUZZER

Warning Lamps/Wiring Diagram — WARN — (Cont'd)

EL-WARN-04

(HS) : 5-door Hatchback and Sedan models



33	32	31	30	29	28	27	(M32)
42	41	40	39	38	37	36	W

1	2	3	4	(M5)
5	6	7	8	W

1	2	(E30)
		B

1	(B22)	(B31)	(B33)
	BR	BR	BR

1	2	(B9)
3		B

Refer to last page (Foldout page).

(M8), (E101)

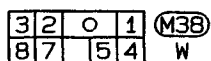
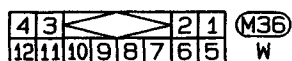
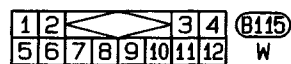
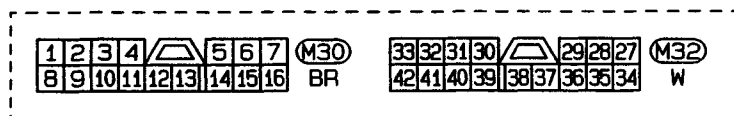
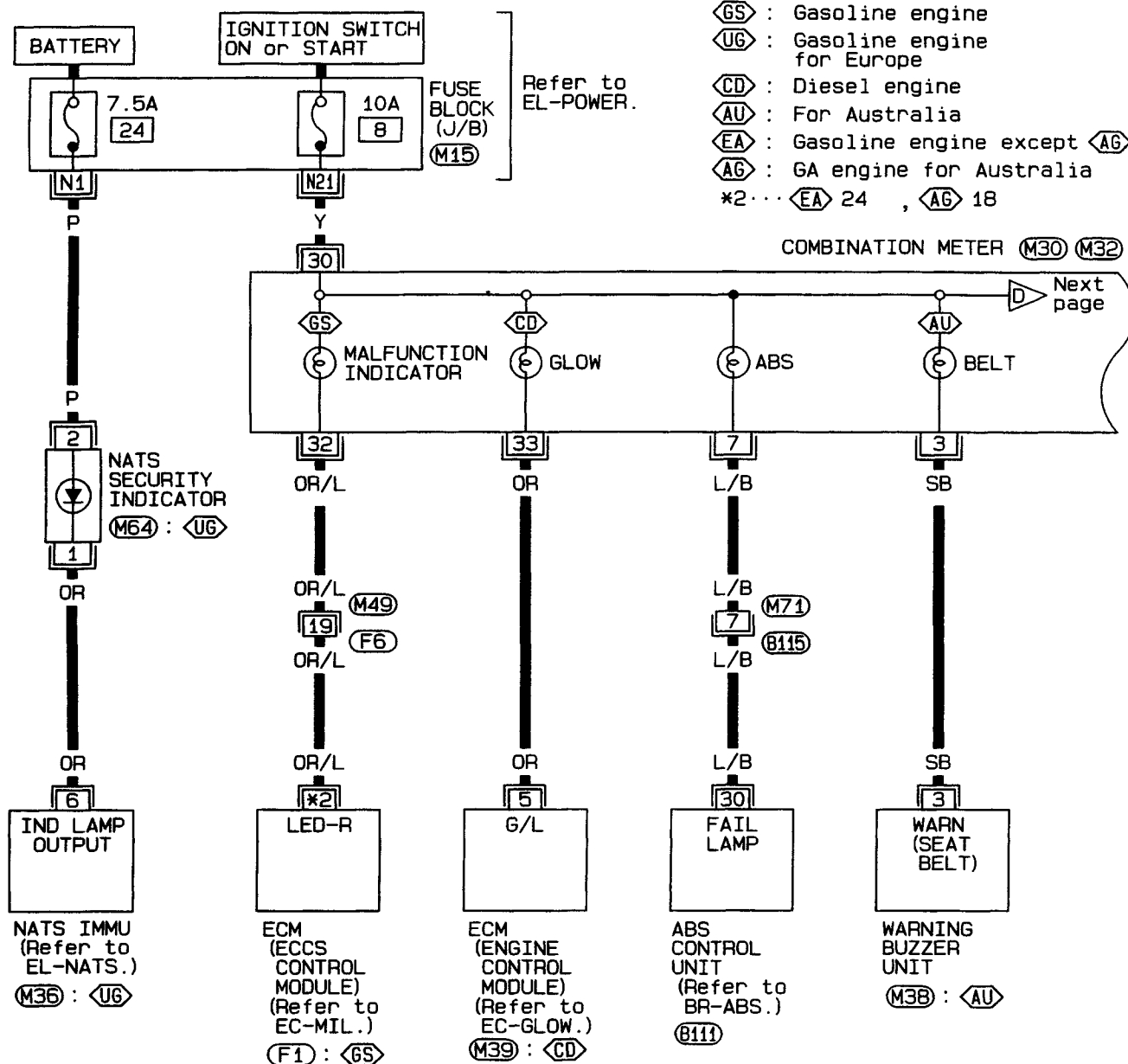
(M19)

WARNING LAMPS AND BUZZER

Warning Lamps/Wiring Diagram — WARN — (Cont'd)

RHD MODELS WITH TACHOMETER

EL-WARN-05



Refer to last page
(Foldout page).

(M15)

(F1)

(M39)

(811)

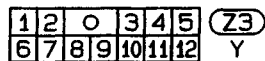
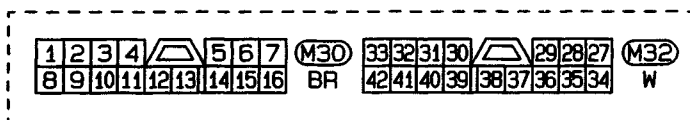
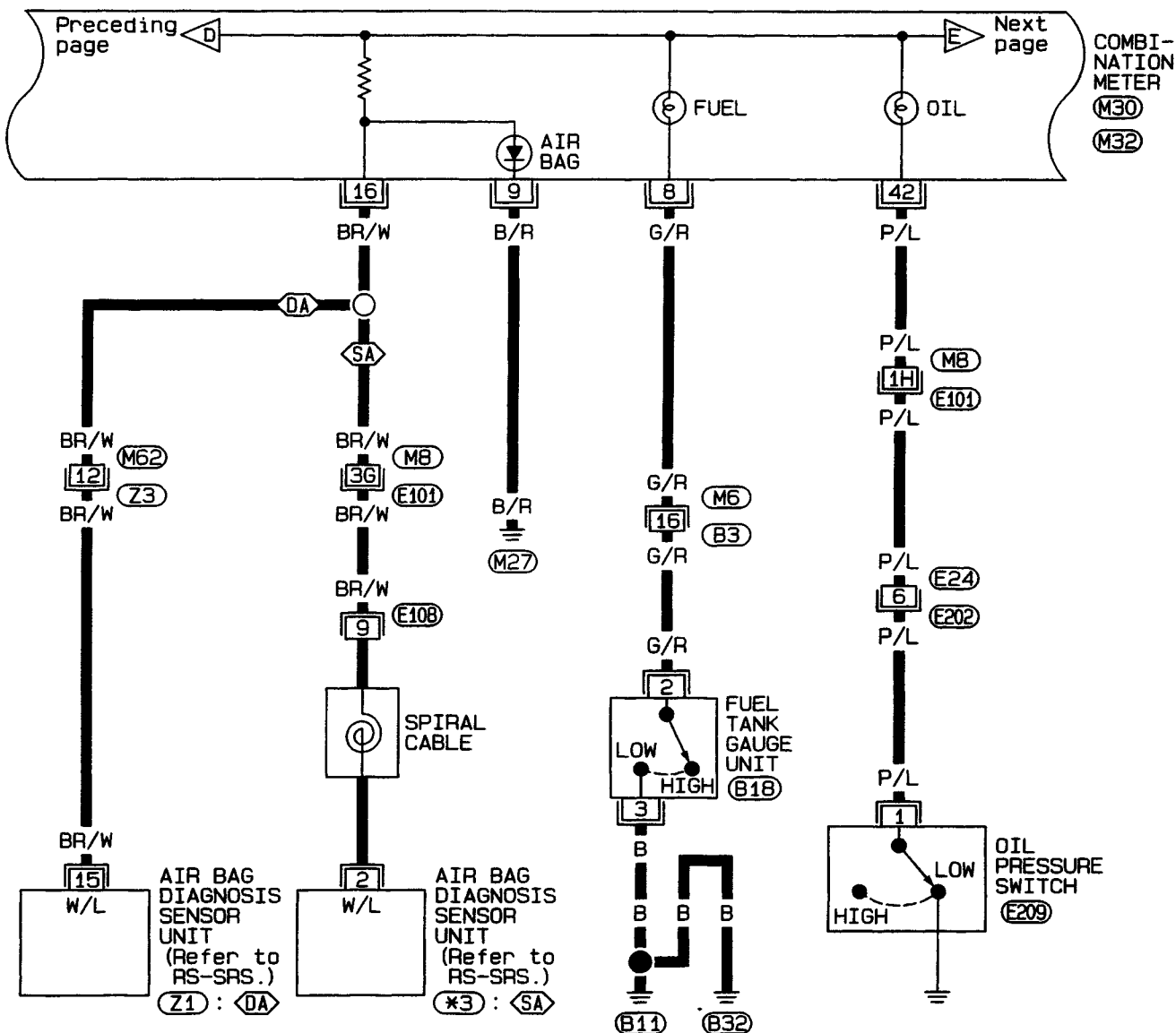
EL

WARNING LAMPS AND BUZZER

Warning Lamps/Wiring Diagram — WARN — (Cont'd)

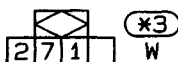
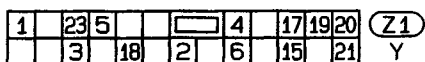
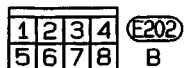
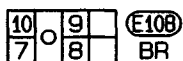
EL-WARN-06

- (DA) : Models with dual air bag system
 (SA) : Models with single air bag system



Refer to last page
(Foldout page).

(M6), (E101)

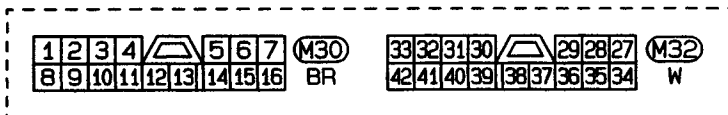
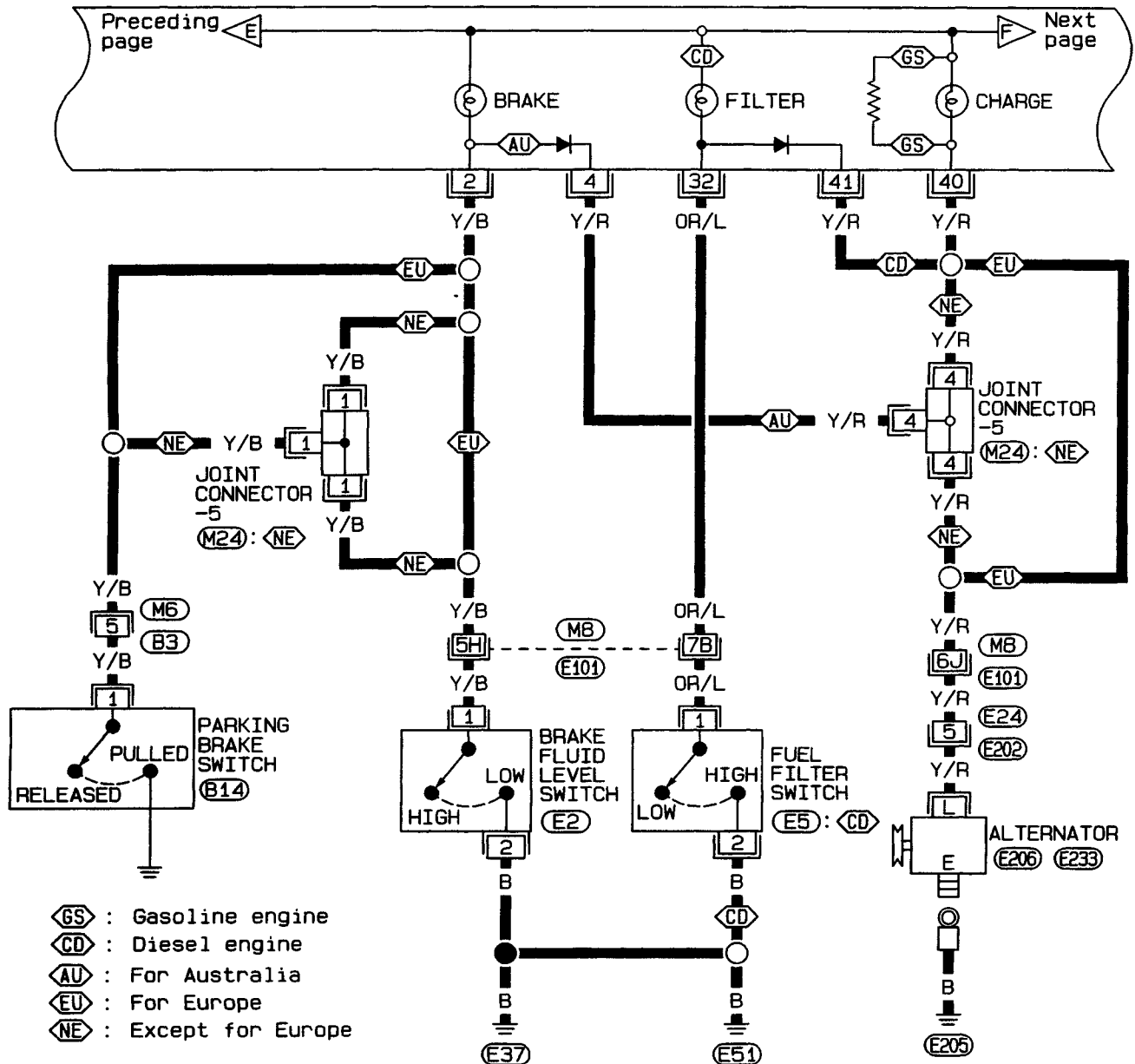


WARNING LAMPS AND BUZZER

Warning Lamps/Wiring Diagram — WARN — (Cont'd)

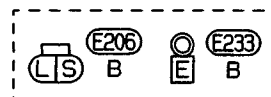
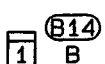
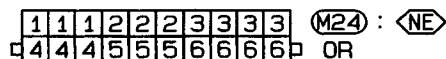
EL-WARN-07

COMBINATION METER (M30) (M32)



Refer to last page
(Foldout page).

(MB), (E101)

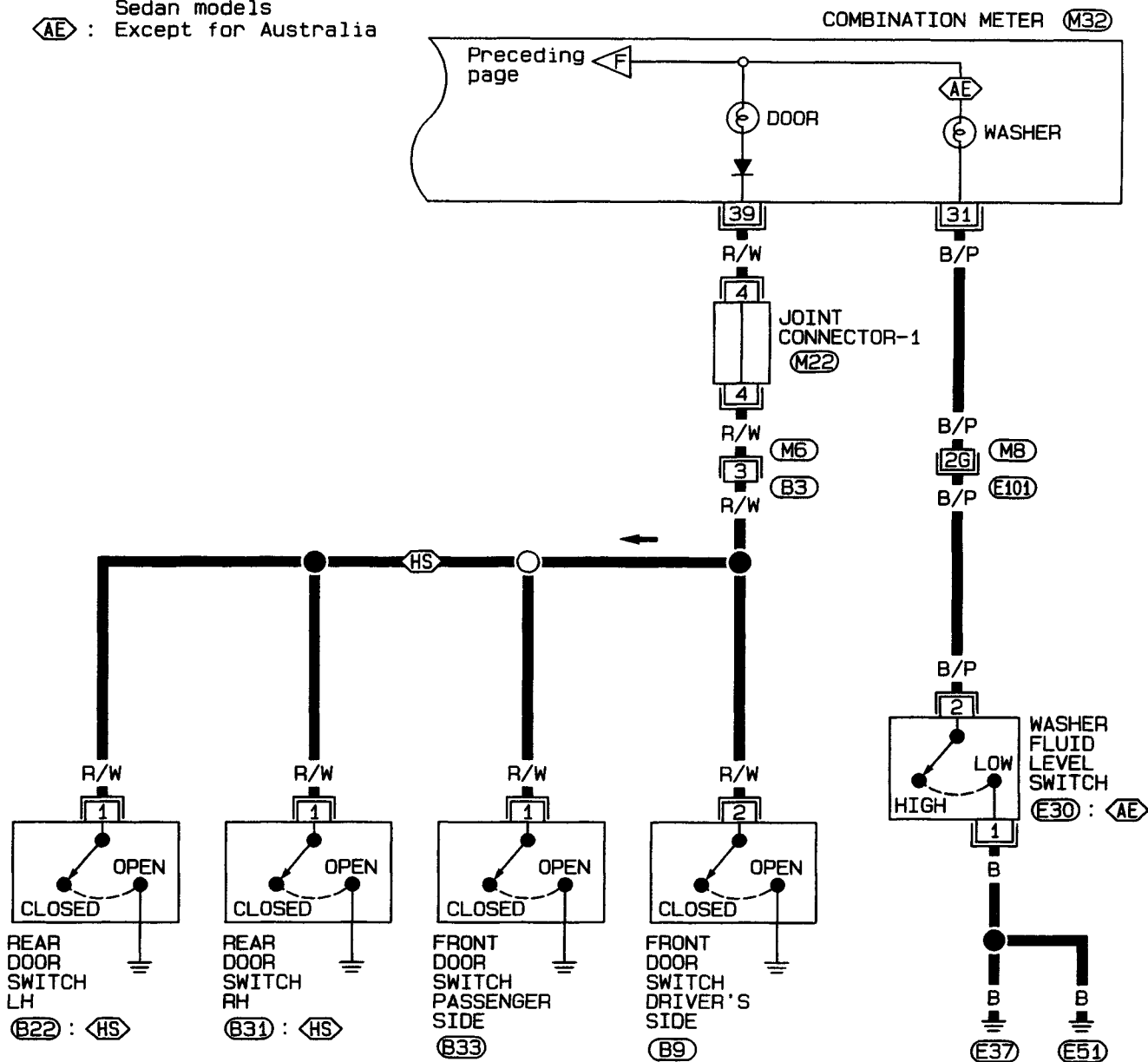


WARNING LAMPS AND BUZZER

Warning Lamps/Wiring Diagram — WARN — (Cont'd)

EL-WARN-08

- ◊HS : 5-door Hatchback and Sedan models
◊AE : Except for Australia



33	32	31	30		29	28	27	(M32)	
42	41	40	39	38	37	36	35	34	W

1	2	3	4					5	6	7	8	(M6)
9	10	11	12	13	14	15	16	17	18	19	20	W

1	2	(E30)
B	B	B

Refer to last page (Foldout page).

(M6), (E101)

1	(B22)	(B31)	(B33)
BR	BR	BR	BR

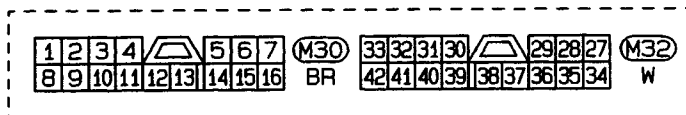
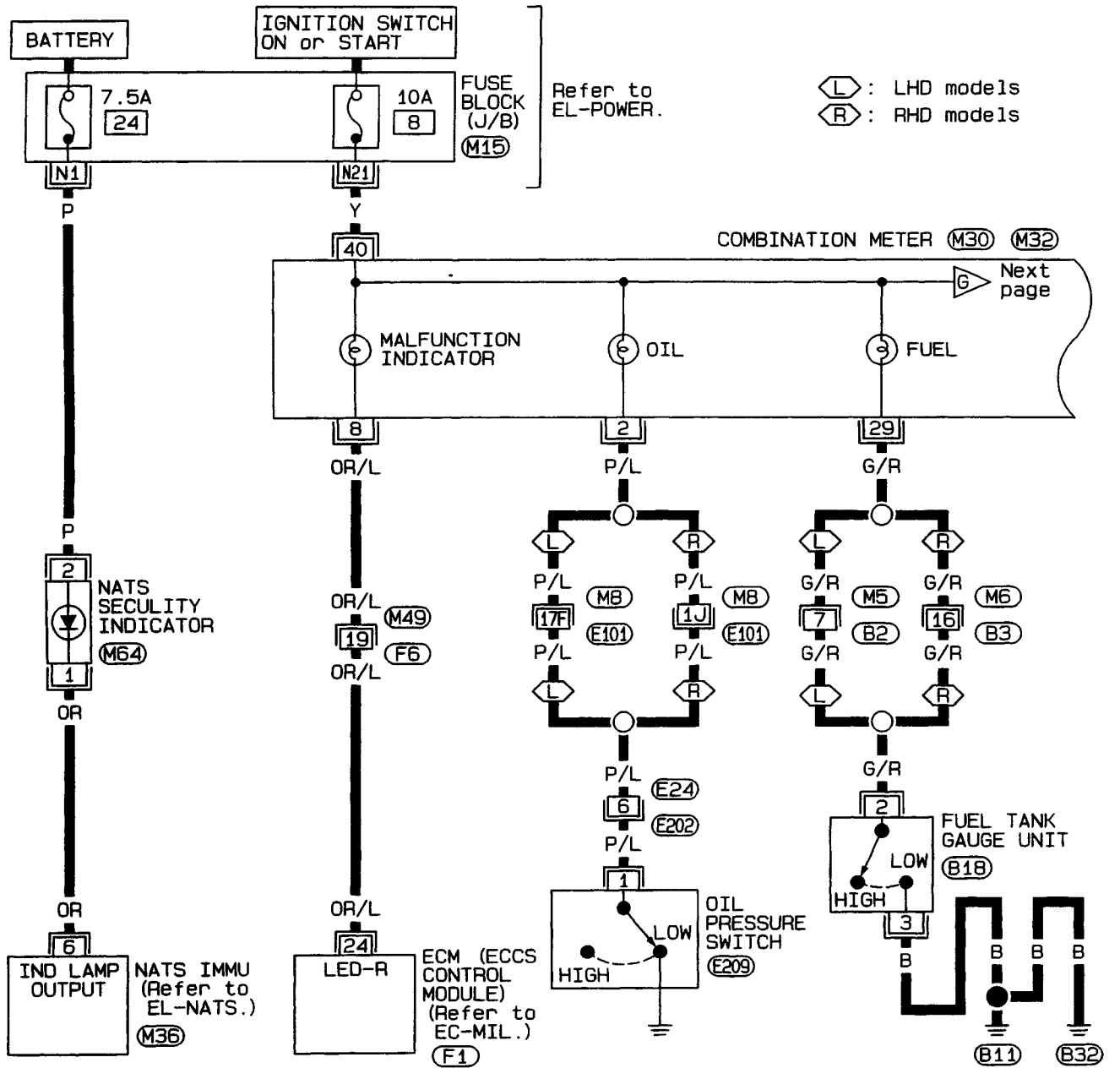
1	2	(B9)
3	B	B

WARNING LAMPS AND BUZZER

Warning Lamps/Wiring Diagram — WARN — (Cont'd)

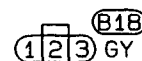
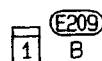
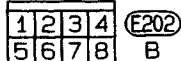
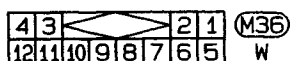
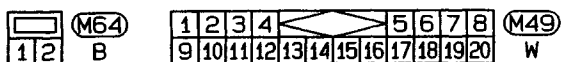
WITHOUT TACHOMETER

EL-WARN-09



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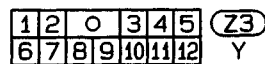
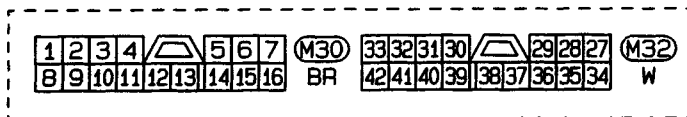
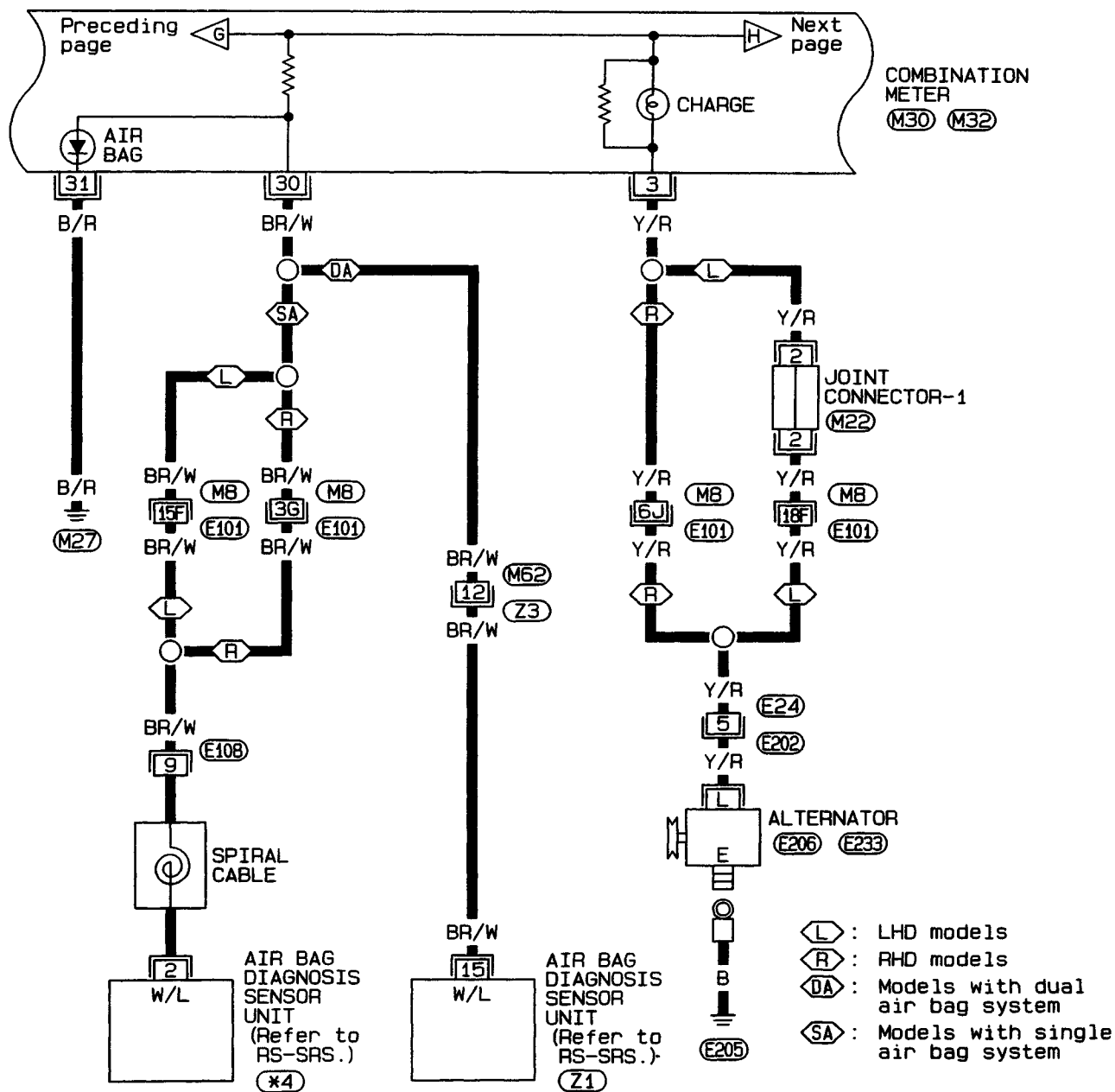
(M8), (E101)
(F1)



WARNING LAMPS AND BUZZER

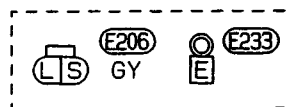
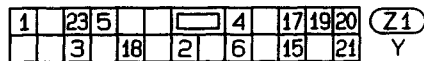
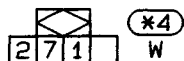
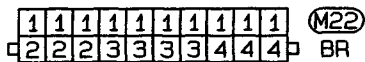
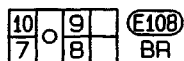
Warning Lamps/Wiring Diagram — WARN — (Cont'd)

EL-WARN-10



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(MB), (E101)



Warning Lamps/Wiring Diagram — WARN — (Cont'd)

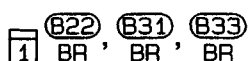
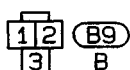
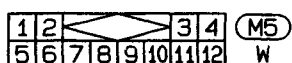
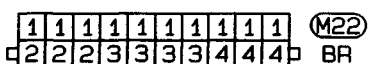
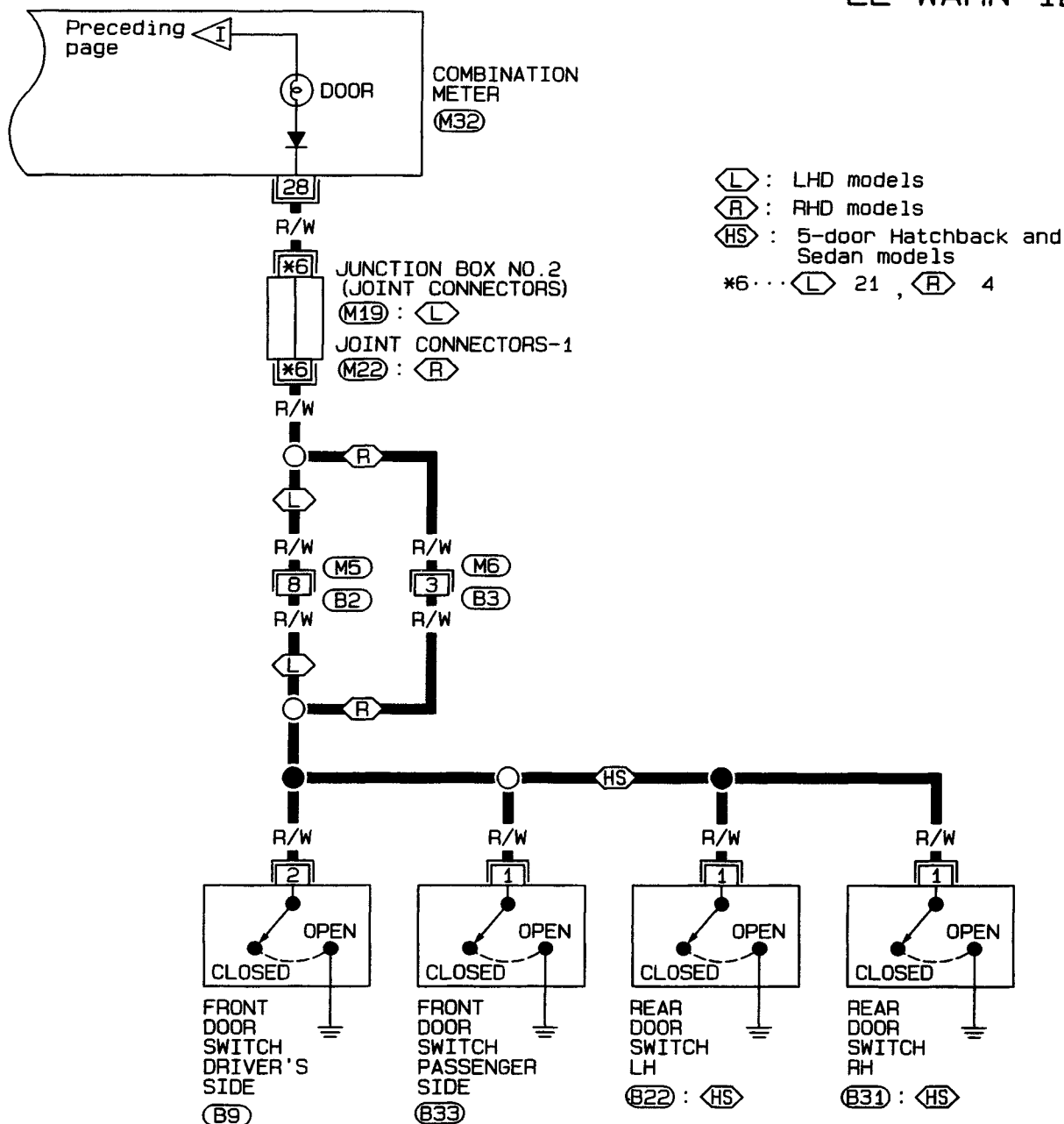
[illegible]

(M8) , (E101)
(M19)

HEL081

Warning Lamps/Wiring Diagram — WARN — (Cont'd)

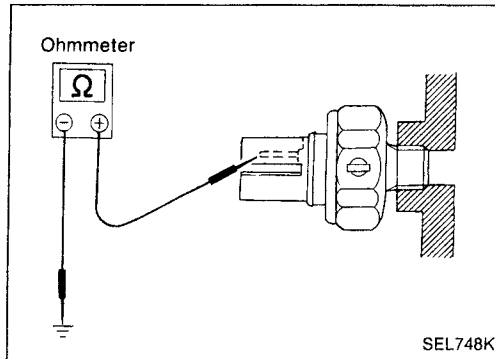
EL-WARN-12



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(M19)

WARNING LAMPS AND BUZZER



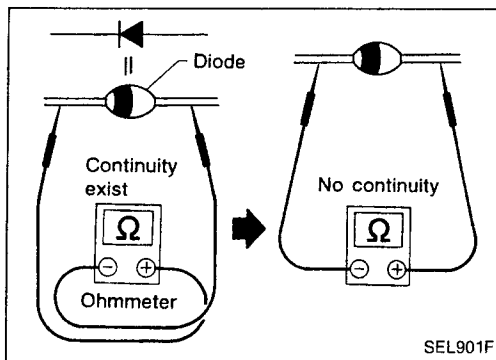
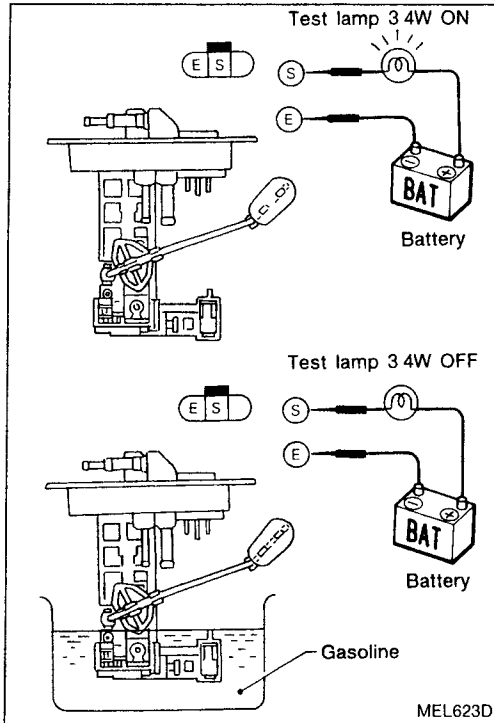
Oil Pressure Switch Check

	Oil pressure kPa (bar, kg/cm ² , psi)	Continuity
Engine start	More than 10 - 20 (0.10 - 0.20, 0.1 - 0.2, 1.4 - 2.8)	NO
Engine stop	Less than 10 - 20 (0.10 - 0.20, 0.1 - 0.2, 1.4 - 2.8)	YES

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

Fuel Warning Lamp Sensor Check

- It will take a short time for the bulb to light.



Diode Check

- 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.

Refer to "Combination Meter" (EL-127).

Warning Buzzer Unit

- Seat belt warning lamp is controlled by the warning buzzer unit.

Refer to "Warning Buzzer" (EL-152).

WARNING LAMPS AND BUZZER

Warning Buzzer/System Description

The warning buzzer is controlled by the warning buzzer unit.

Power is supplied at all times

(RHD models except for Europe)

- through 7.5A fuse (No. **24** , located in the fuse block)
- to key switch terminal **①** .

Power is supplied at all times

(LHD models without daytime light system)

- through 7.5A fusible link (letter **9** , located in the fusible link and fuse box).
- to lighting switch terminal **11** .

(LHD models with daytime light system and RHD models)

- through 10A fuse (No. **36** , located in the fuse block)
- to lighting switch terminal **11** .

Power is supplied at all times

(Except for Australia)

- through 7.5A fuse (No. **43** , located in the fusible link and fuse box)
- to rear fog lamp switch terminal **①** .

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

- through 7.5A fuse (No. **7** , located in the fuse block)
- to warning buzzer unit terminal **11** (LHD models except for Australia) or **①** (For Australia).

When driver's door is opened, ground is supplied

- through body grounds **811** and **832**
- to driver's side door switch terminal **③**
- through driver's side door switch terminal **①**
- to warning buzzer unit terminal **④** (Except for Australia) or **⑦** (For Australia).

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

Ignition key warning buzzer (RHD models except for Europe)

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

- from key switch terminal **②**
- to warning buzzer unit terminal **⑨** (Except for Australia) or **⑤** (For Australia).

Ground is supplied

- from driver side door switch terminal **①**
- to warning buzzer unit terminal **④** (Except for Australia) or **⑦** (For Australia).

Driver side door switch terminal **③** is grounded through body grounds **811** and **832**.

Light warning buzzer

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

(LHD models without daytime light system)

- from lighting switch terminal **12**
- through 10A fuse (No. **45** , located in the fusible link and fuse box)
- to warning buzzer unit terminal **10** .

(LHD models with daytime light system)

- from lighting switch terminal **12**
- to daytime light unit terminal **11**
- through daytime light unit terminal **10**
- to warning buzzer unit terminal **10**

(RHD models)

- from lighting switch terminal **12**
- to warning buzzer unit terminal **10** (Except for Australia) or **④** (For Australia).

Ground is supplied

- from driver side door switch terminal **①**
 - to warning buzzer unit terminal **④** (Except for Australia) or **⑦** (For Australia).
- Driver side door switch terminal **③** is grounded through body grounds **811** and **832**.

Rear fog lamp switch warning buzzer (For Europe models)

With ignition switch OFF, driver's door open, and rear fog lamp switch ON, warning buzzer will sound. A battery positive voltage is supplied

WARNING LAMPS AND BUZZER

Warning Buzzer/System Description (Cont'd)

- from rear fog lamp switch terminal ②
- to warning buzzer unit terminal ⑨.

Ground is supplied

- from driver side door switch terminal ①
- to warning buzzer unit terminal ④.

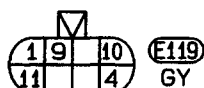
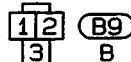
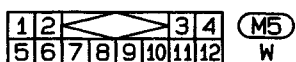
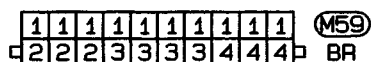
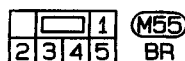
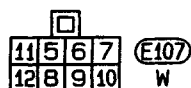
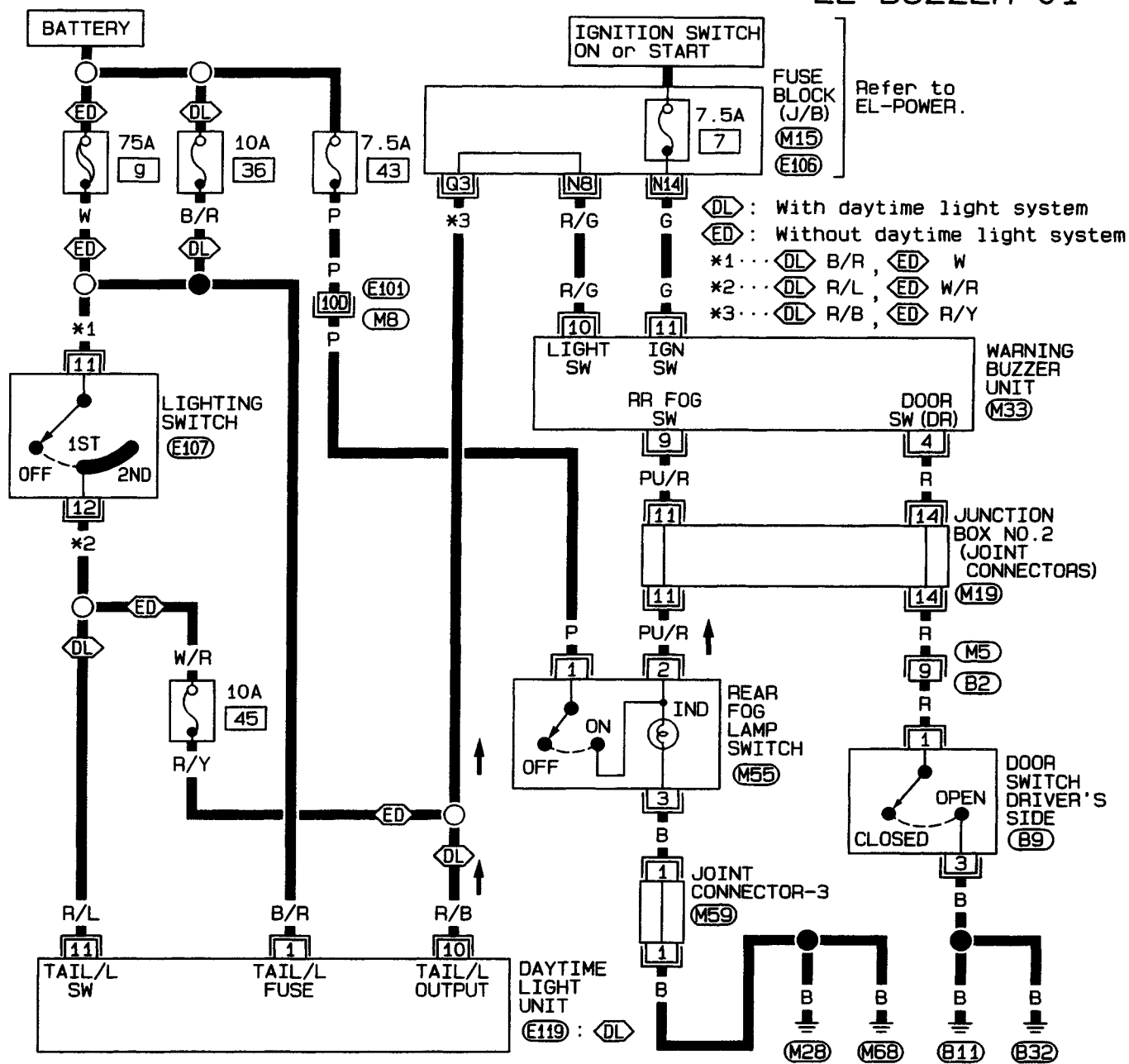
Driver side door switch terminal ③ is grounded through body grounds ⑧11 and ⑧32.

WARNING LAMPS AND BUZZER

Warning Buzzer/Wiring Diagram — BUZZER —

LHD MODELS

EL-BUZZER-01



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(M8), (E101)

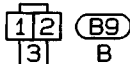
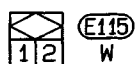
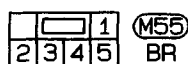
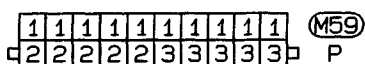
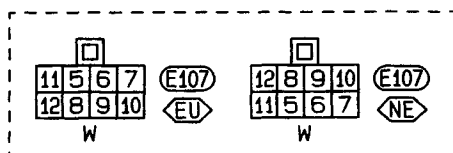
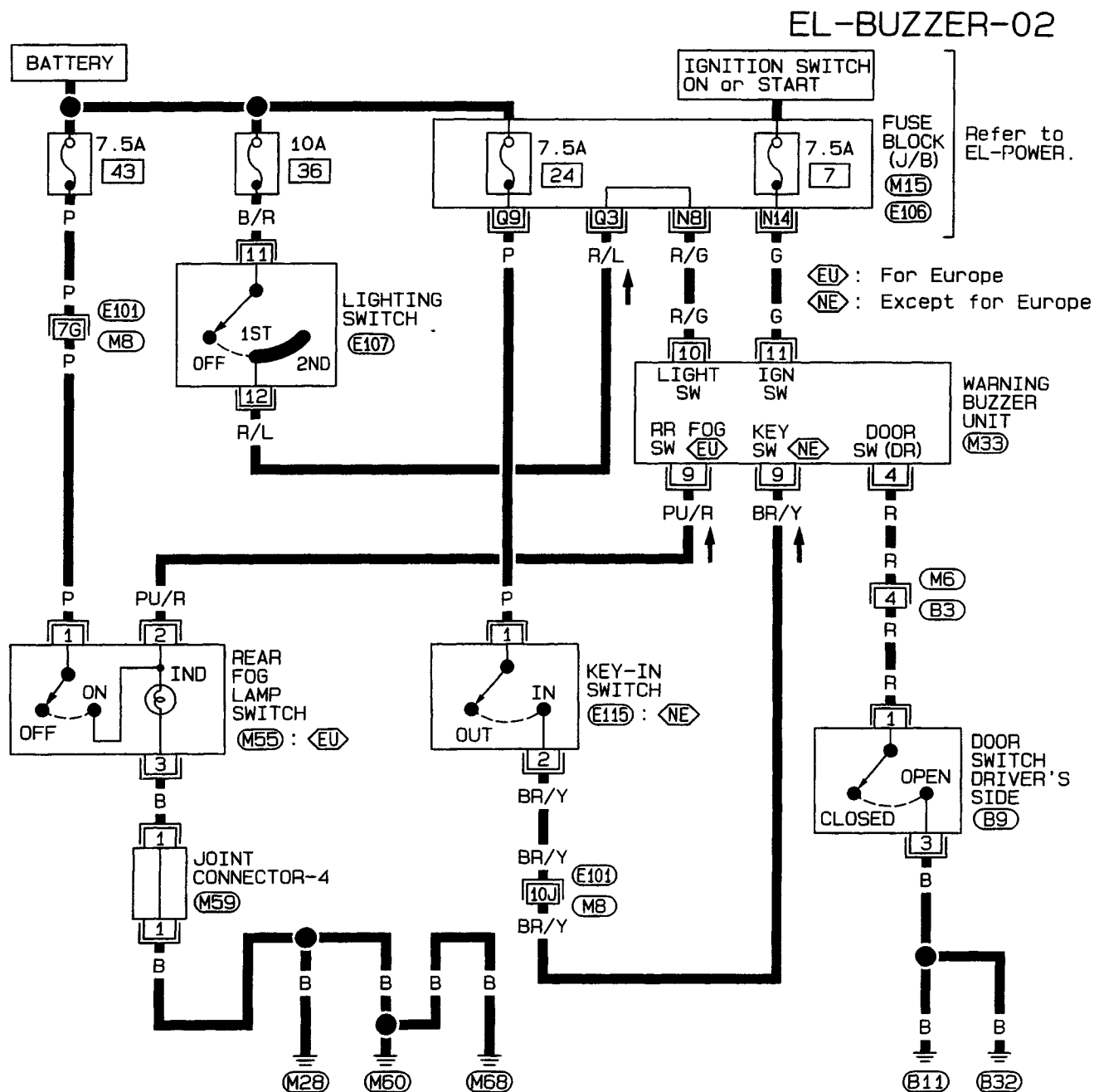
(M15), (E106)

(M19)

WARNING LAMPS AND BUZZER

Warning Buzzer/Wiring Diagram — BUZZER — (Cont'd)

RHD MODELS EXCEPT FOR AUSTRALIA



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(Foldout page).

(M8), (E101)

(M15), (E106)

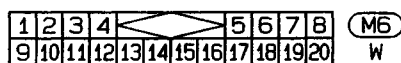
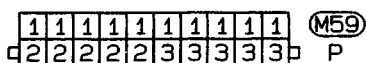
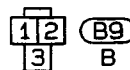
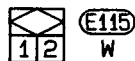
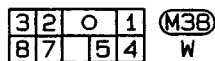
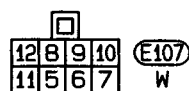
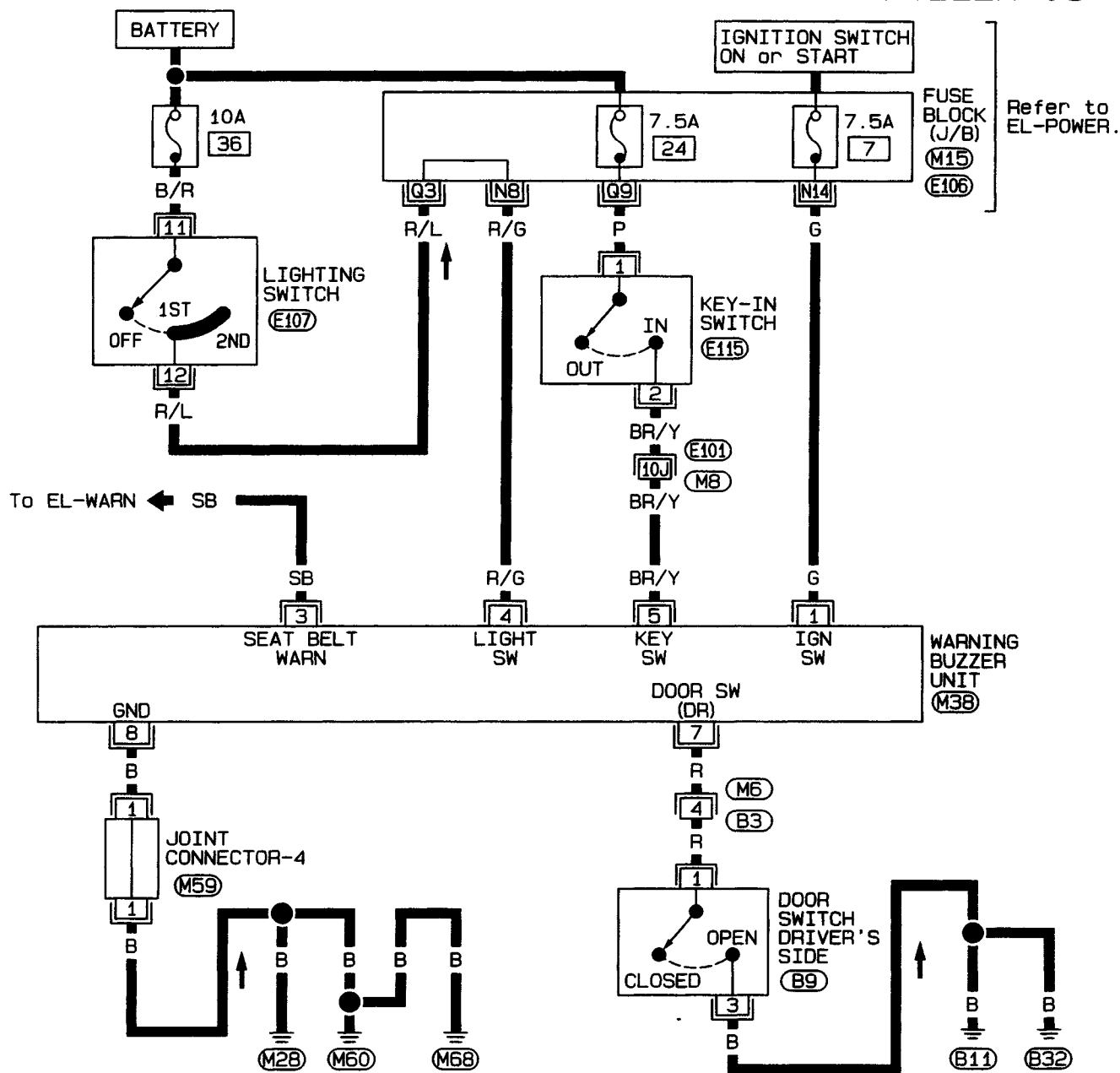
EL

WARNING LAMPS AND BUZZER

Warning Buzzer/Wiring Diagram — BUZZER — (Cont'd)

FOR AUSTRALIA

EL-BUZZER-03

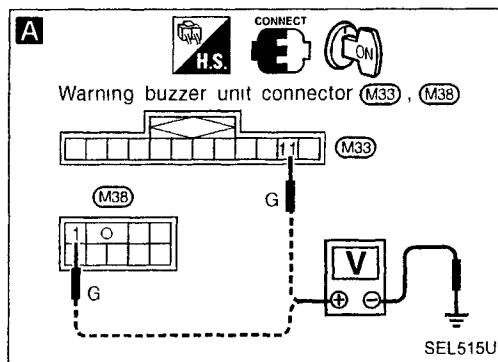


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M8 E101

(M15) (E106)

WARNING LAMPS AND BUZZER



Components Inspection — Warning Buzzer

IGNITION POWER SUPPLY CHECK

A

IGNITION POWER SUPPLY CHECK

- 1) Turn ignition switch to "ON"
- 2) Measure voltage between warning buzzer unit connector and body ground.

NG

Check the following

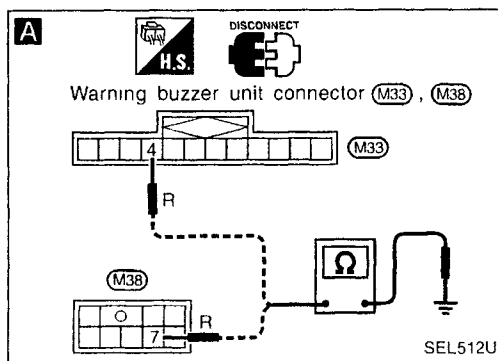
- 1) 7.5A fuse (No. 7, located in fuse block [J/B])
- 2) Harness

Destination	Connector No	Terminal No
For Australia	(M38)	(1)
Except for Australia	(M33)	(11)

Battery voltage should exist.

OK

Ignition power supply is OK.



DRIVER'S DOOR SWITCH CHECK

A

DOOR SWITCH INPUT SIGNAL CHECK

Check continuity between warning buzzer unit connector and body ground.

NG

Check the following

- 1) Driver's door switch
- 2) Driver's door switch ground circuit
- 3) Harness (continuity and ground short)

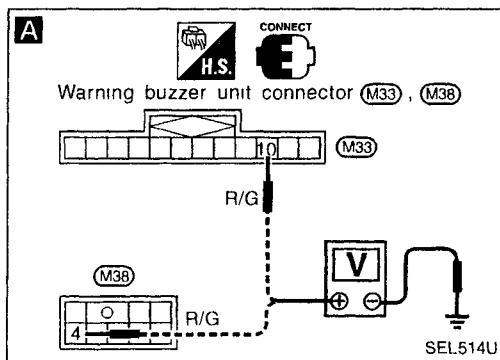
Destination	Connector No	Terminal No	Door switch condition and continuity	
			Open	Close
For Australia	(M38)	(7)	Yes	No
Except for Australia	(M33)	(4)		

OK

Driver's door switch is OK

WARNING LAMPS AND BUZZER

Components Inspection — Warning Buzzer (Cont'd) LIGHTING SWITCH CHECK



A

LIGHTING SWITCH INPUT SIGNAL CHECK
Measure voltage between warning buzzer unit connector and body ground.

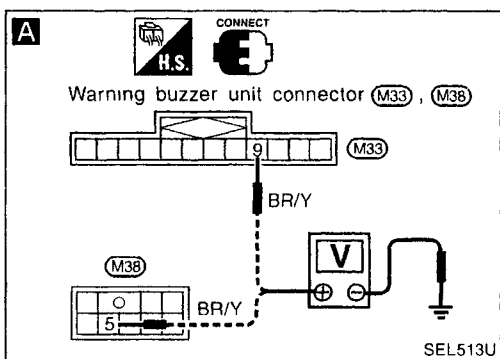
Destination	Connector No	Terminal No	Lighting switch condition and voltage [V]	
			1st or 2nd	OFF
For Australia	(M38)	(4)	Approx 12	0
Except for Australia	(M33)	(10)		

NG

Check the following.
1) 10A fuse (No. 36),
and 75A fuse (No. 9)
2) Lighting switch
3) Harness

OK

Lighting switch is OK



A

KEY-IN SWITCH INPUT SIGNAL CHECK
Measure voltage between warning buzzer unit connector and body ground

Destination	Connector No	Terminal No	Ignition key condition and voltage [V]	
			Inserted	Removed
For Australia	(M38)	(5)	Approx 12	0
RHD models except for Australia	(M33)	(9)		

NG

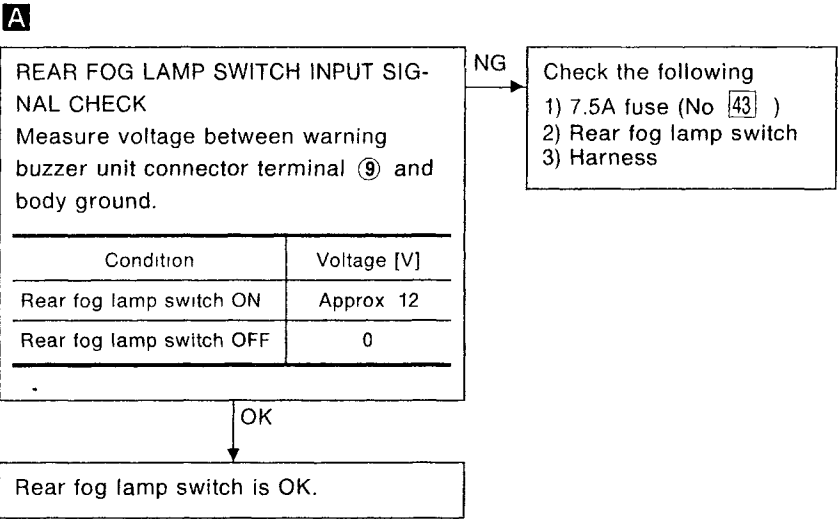
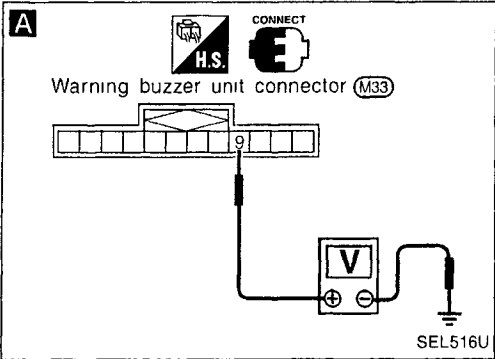
Check the following
1) 7.5A fuse (No. 24),
located in fuse block [J/B])
2) Ignition key switch
3) Harness

OK

Ignition key switch is OK

WARNING LAMPS AND BUZZER

Components Inspection — Warning Buzzer
(Cont'd)
REAR FOG LAMP SWITCH CHECK — For Europe
models



WIPER AND WASHER

Front Wiper and Washer/System Description

WIPER OPERATION

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)
- to wiper motor terminal ⑥.

Low and high speed wiper operation

Ground is supplied to wiper switch terminal ⑰ through body grounds E37 and E51.

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

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 M28, M60 and M68.

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

Intermittent operation

With variable intermittent

The wiper motor operates the wiper arms at a set interval of approximately 2 to 20 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 E37 and E51.
- 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 M28, M60 and M68.

The desired interval time is input

- to wiper amplifier terminal ⑧
- from wiper switch terminal ⑱.

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

WIPER AND WASHER

Front Wiper and Washer/System Description (Cont'd)

Without variable intermittent

The wiper motor operates the wiper arms at an interval of approximately 7 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 (E37) and (E51)
- 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 (M28), (M60) and (M68).

WASHER OPERATION

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

- through 20A fuse (No. 19, located in the fuse block)
- 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 ⑮ of the wiper switch
- through terminal ⑰ of the wiper switch, and
- through body grounds (E37) and (E51).

With power and ground supplied, the washer motor operates.

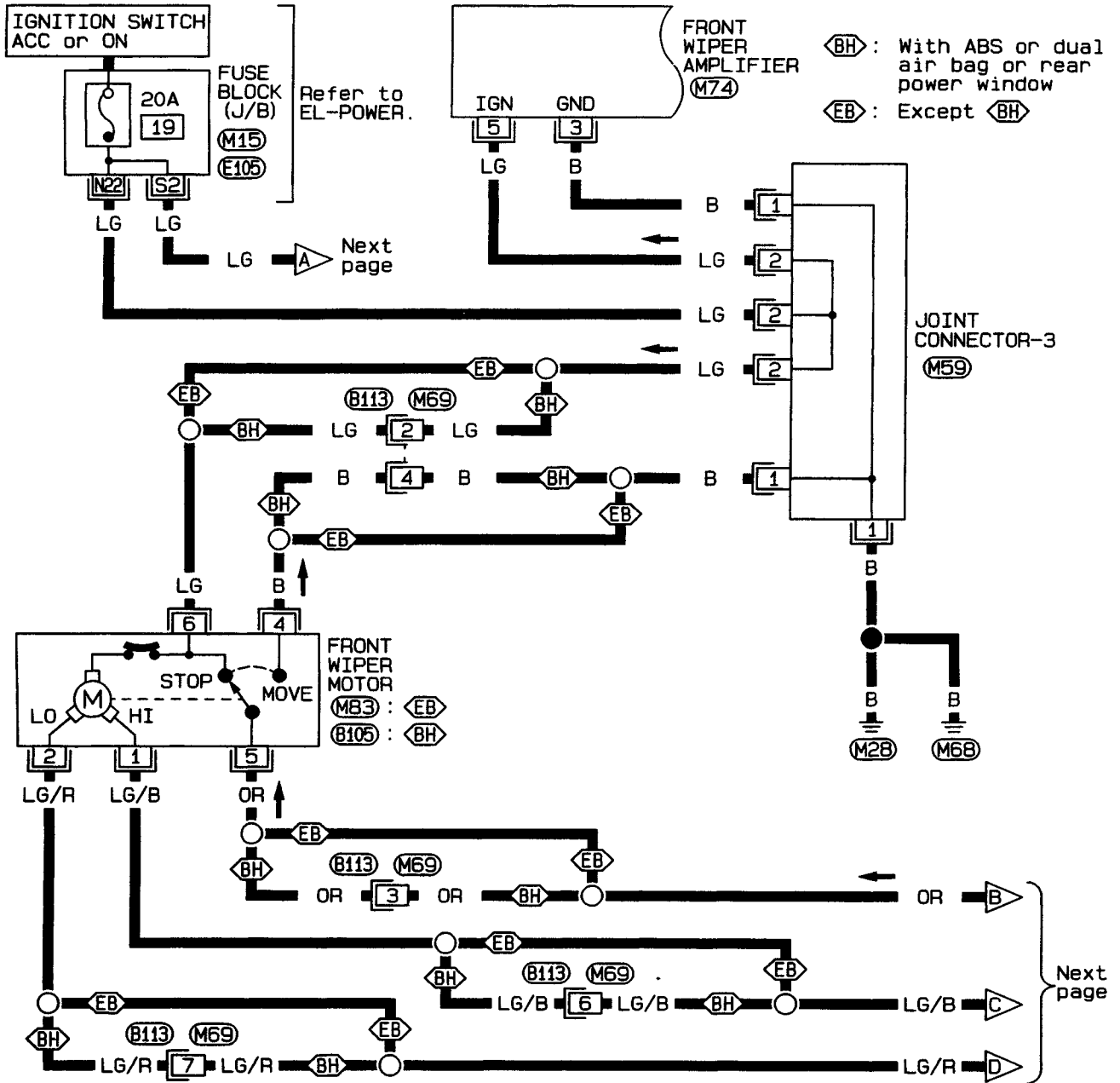
When the lever is pulled to the WASH position for one second or more, the wiper motor operates at low speed for approximately 3 seconds to clean windshield. This feature is controlled by the wiper amplifier in the same manner as the intermittent operation.

WIPER AND WASHER

Front Wiper and Washer/Wiring Diagram — WIPER —

LHD MODELS

EL-WIPER-01



3	2	1	M74
8	7	6	W

1	2	3	B113
4	5	6	W

1	1	1	1	1	1	1	1	1	1	M59
2	2	2	3	3	3	3	4	4	4	BR

1	2	M83 : EB
4	5	B105 : BH
GY		

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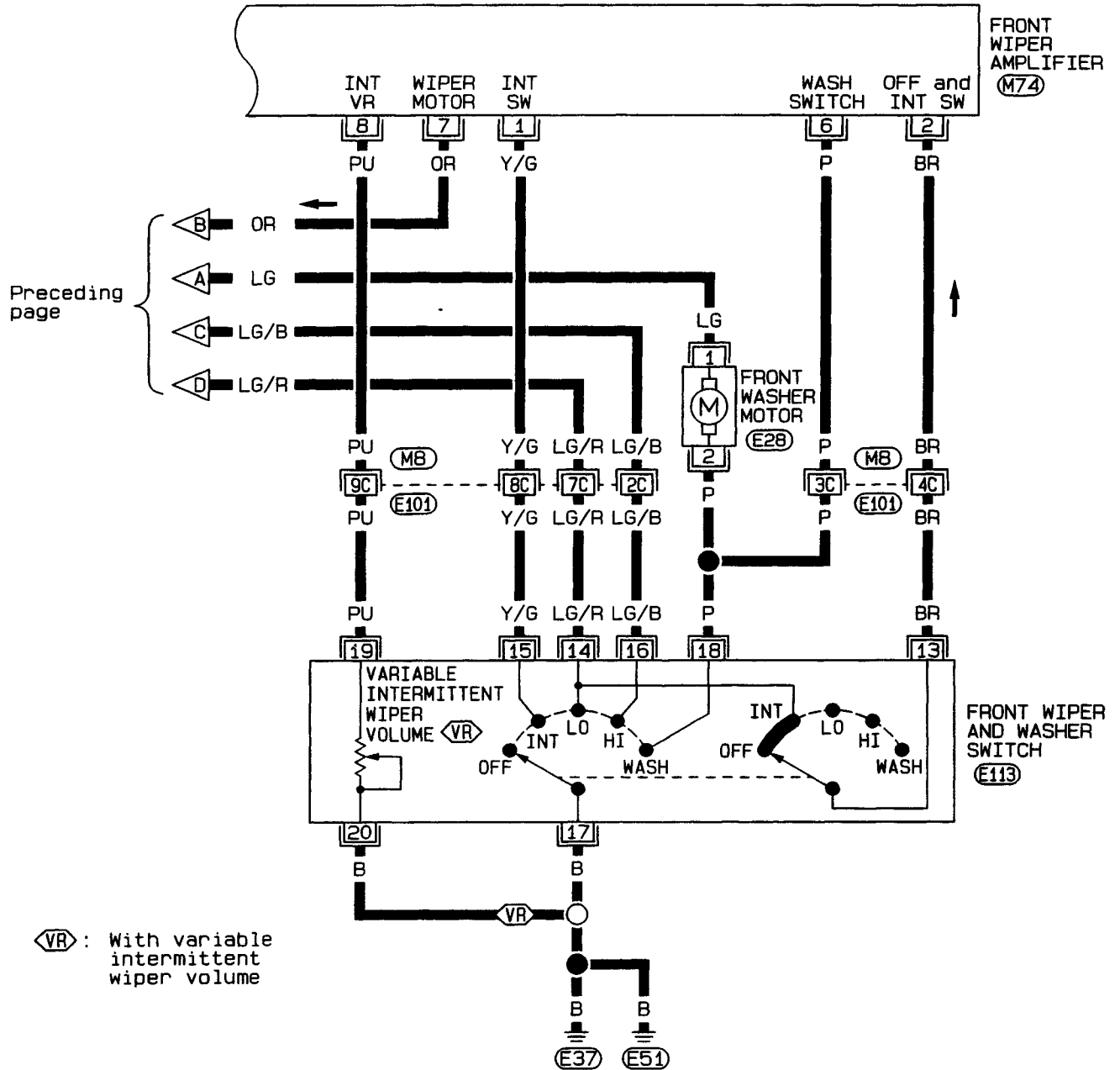
M15 , E105

HEL086

WIPER AND WASHER

Front Wiper and Washer/Wiring Diagram — WIPER — (Cont'd)

EL-WIPER-02



19	20	16	14
18	17	15	13

(E113) L

3	2	1
8	7	6

(M74) W

1
2

(E28) W

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(MB), (E101)

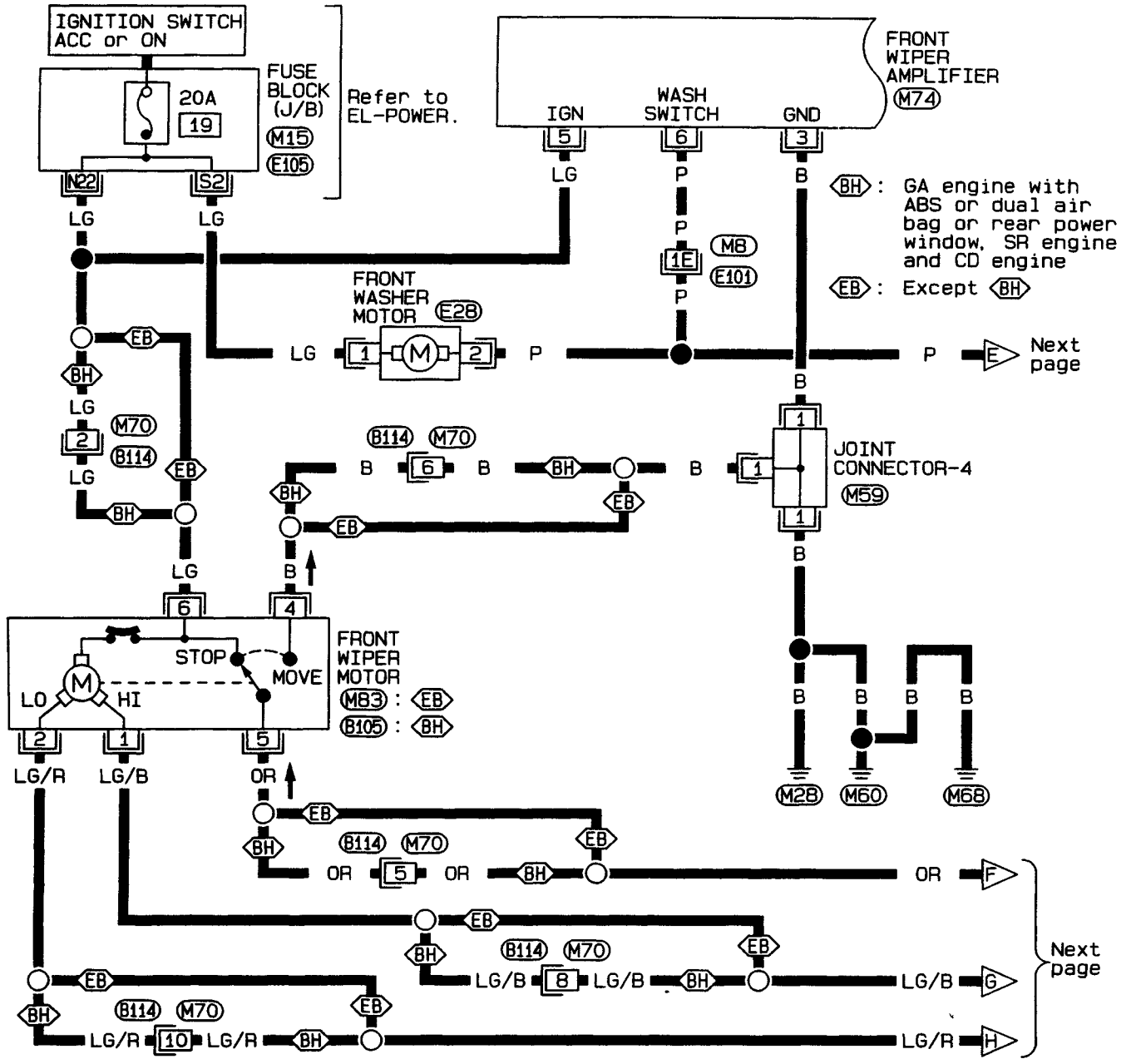
EL

WIPER AND WASHER

Front Wiper and Washer/Wiring Diagram — WIPER — (Cont'd)

RHD MODELS

EL-WIPER-03



3	2	1
8	7	6

M74
W

1
2

E2B
W

1	2	3	4	5
6	7	8	9	10

B114
W

2	1
6	5

M83 : EB
M105 : BH

GY

1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	3	3	3	3	3

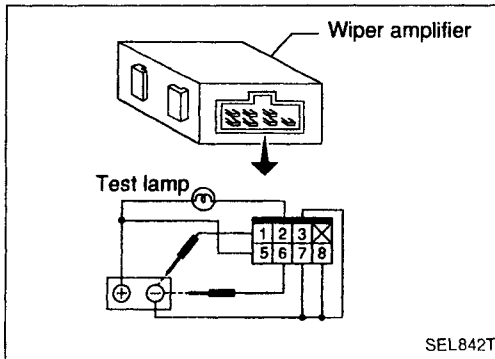
M59
P

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M8 , E101

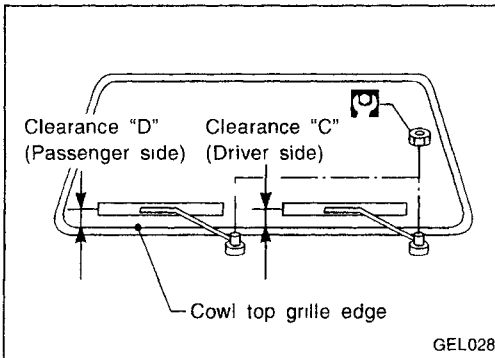
M15 , E105

WIPER AND WASHER



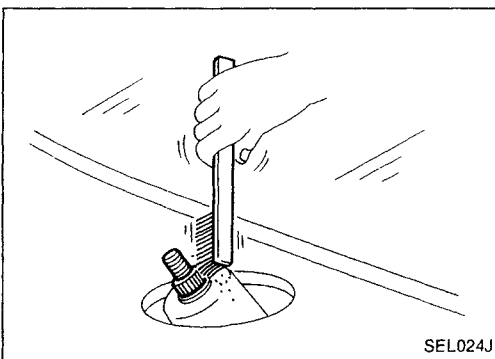
Front Wiper Amplifier Check

1. Connect as shown in the figure at left.
2. If test lamp comes on when connected to terminal ① or ⑥ and battery ground, wiper amplifier is normal.



Front Wiper Installation and Adjustment

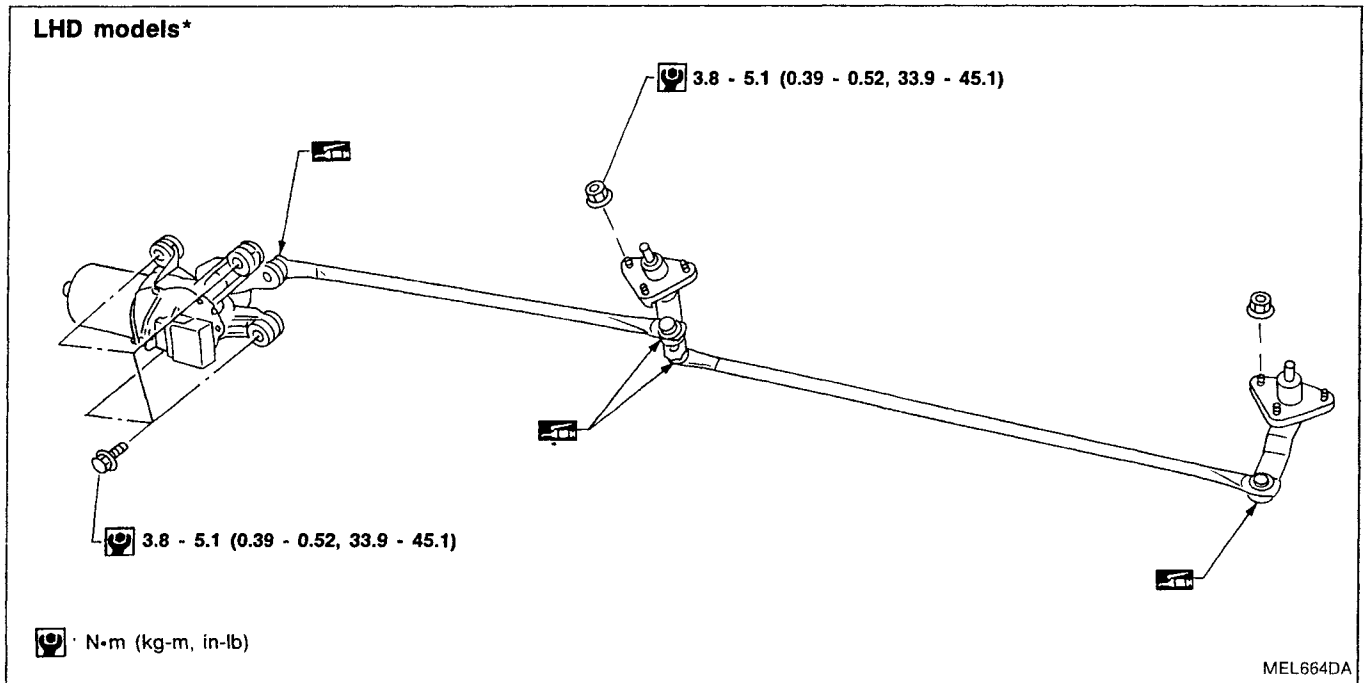
1. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it "OFF" (Auto Stop).
 2. Lift the blade up and then set it down onto glass surface. Set the blade center to clearance "C" & "D" immediately before tightening nut.
 3. Eject washer fluid. Turn on wiper switch to operate wiper motor and then turn it "OFF".
 4. Ensure that wiper blades stop within clearance "C" & "D".
Clearance "C": 23 - 38 mm (0.91 - 1.50 in)
Clearance "D": 27 - 42 mm (1.06 - 1.65 in)
- Tighten windshield wiper arm nuts to specified torque.
[Torque symbol]: 21 - 26 N·m (2.1 - 2.7 kg-m, 15 - 20 ft-lb)



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

WIPER AND WASHER

Front Wiper Linkage



*Structure is basically the opposite for RHD models.

REMOVAL

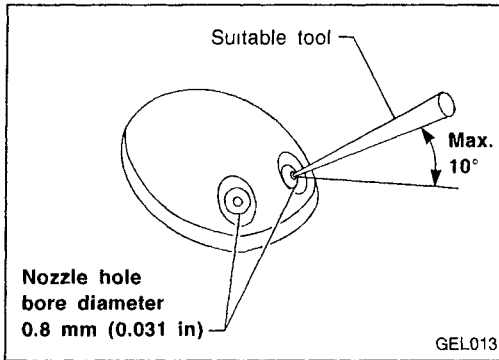
1. Remove 4 bolts that secure wiper motor.
2. Detach wiper motor from wiper linkage at ball joint.
3. Remove wiper linkage.

Be careful not to break ball joint rubber boot.

INSTALLATION

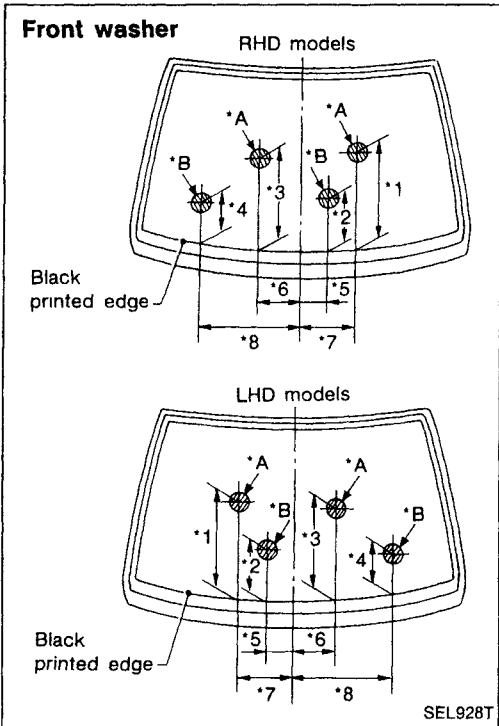
- Grease ball joint portion before installation.
1. Installation is the reverse order of removal.

WIPER AND WASHER



Front Washer Nozzle Adjustment

- Adjust washer nozzle with suitable tool as shown in the figure at left.
- Adjustable range: $\pm 10^\circ$ (In any direction)**

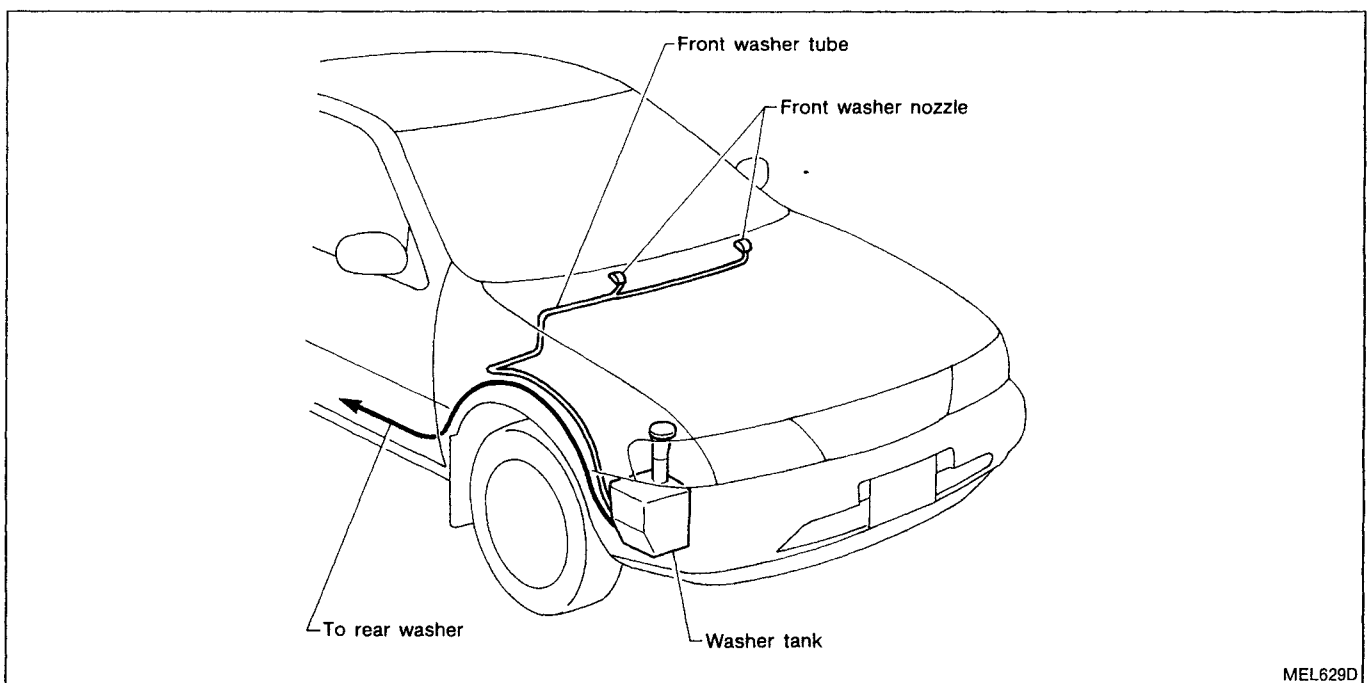


Unit: mm (in)			
*1	310 (12.20)	*5	160 (6.30)
*2	265 (10.43)	*6	170 (6.69)
*3	365 (14.37)	*7	345 (13.58)
*4	175 (6.89)	*8	410 (16.14)

*A: The diameters of these circles are less than 140 mm (5.51 in).

*B: The diameters of these circles are less than 80 mm (3.15 in)

Front Washer Tube Layout



Rear Wiper and Washer/System Description

WIPER OPERATION

The rear wiper switch is controlled by a ring built into the combination switch.

There are two wiper switch positions:

- ON (LO speed)
- INT (Intermittent)

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

- through 10A fuse (No. 9), located in the fuse block)
- to rear wiper motor terminal ④, and
- to rear wiper relay terminal ①.

Low speed wiper operation

Ground is supplied to rear wiper switch terminal ②④ through body grounds E37 and E51.

When the rear wiper is placed in the ON position, ground is supplied

- through rear wiper switch terminal ②④
- to rear wiper relay terminal ②.

The rear wiper relay is energized and ground is supplied

- to rear wiper motor terminal ①
- through rear wiper relay terminal ③
- to rear wiper relay terminal ⑤
- through body grounds E37 and E51.

Auto stop operation

With the rear wiper switch turned OFF, rear wiper motor will continue to operate until wiper arm reaches rear window base.

When wiper arm is not located at base of rear window with rear wiper switch OFF, rear wiper relay is not energized and ground is supplied

- to rear wiper motor terminal ①
- through rear wiper relay terminal ③
- to rear wiper relay terminal ④
- through rear wiper motor terminal ③, in order to continue rear wiper motor operation at low speed.

Ground is also supplied

- to rear wiper motor terminal ②
- through body grounds B11, B32 and D105.

When wiper arm reaches base of rear window, rear wiper motor terminals ① and ④ are connected instead of terminals ① and ③. Rear wiper motor will then stop wiper arm at the PARK position.

Intermittent operation

The rear wiper motor operates the wiper arm one time at low speed at an interval of approximately 7 seconds. This feature is controlled by rear wiper amplifier.

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

- through 10A fuse (No. 9), located in the fuse block)
- to rear wiper relay terminal ①.

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

- to rear wiper amplifier terminal ②
- from rear wiper switch terminal ②①
- through body grounds E37 and E51.

Ground is also supplied

- to rear wiper relay terminal ②
- through rear wiper amplifier terminal ⑥
- to rear wiper amplifier terminal ⑤
- through body grounds M28, M60 and M68.

Then the rear wiper relay is energized and ground is supplied

- to rear wiper motor terminal ①
- through rear wiper relay terminal ③
- to rear wiper relay terminal ⑤

WIPER AND WASHER

Rear Wiper and Washer/System Description (Cont'd)

- through body grounds (E37) and (E51).

With power and ground supplied, the rear wiper motor operates intermittently.

WASHER OPERATION

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

- through 10A fuse (No. 9, located in the fuse block)
- to rear washer motor terminal ①.

When the ring is turned WASH position, ground is supplied

- to rear washer motor terminal ②, and
- to rear wiper amplifier terminal ①
- from terminal ②③ of rear wiper switch
- through terminal ②④ of rear wiper switch, and
- through body grounds (E37) and (E51).

With power and ground is supplied, the rear washer motor operates.

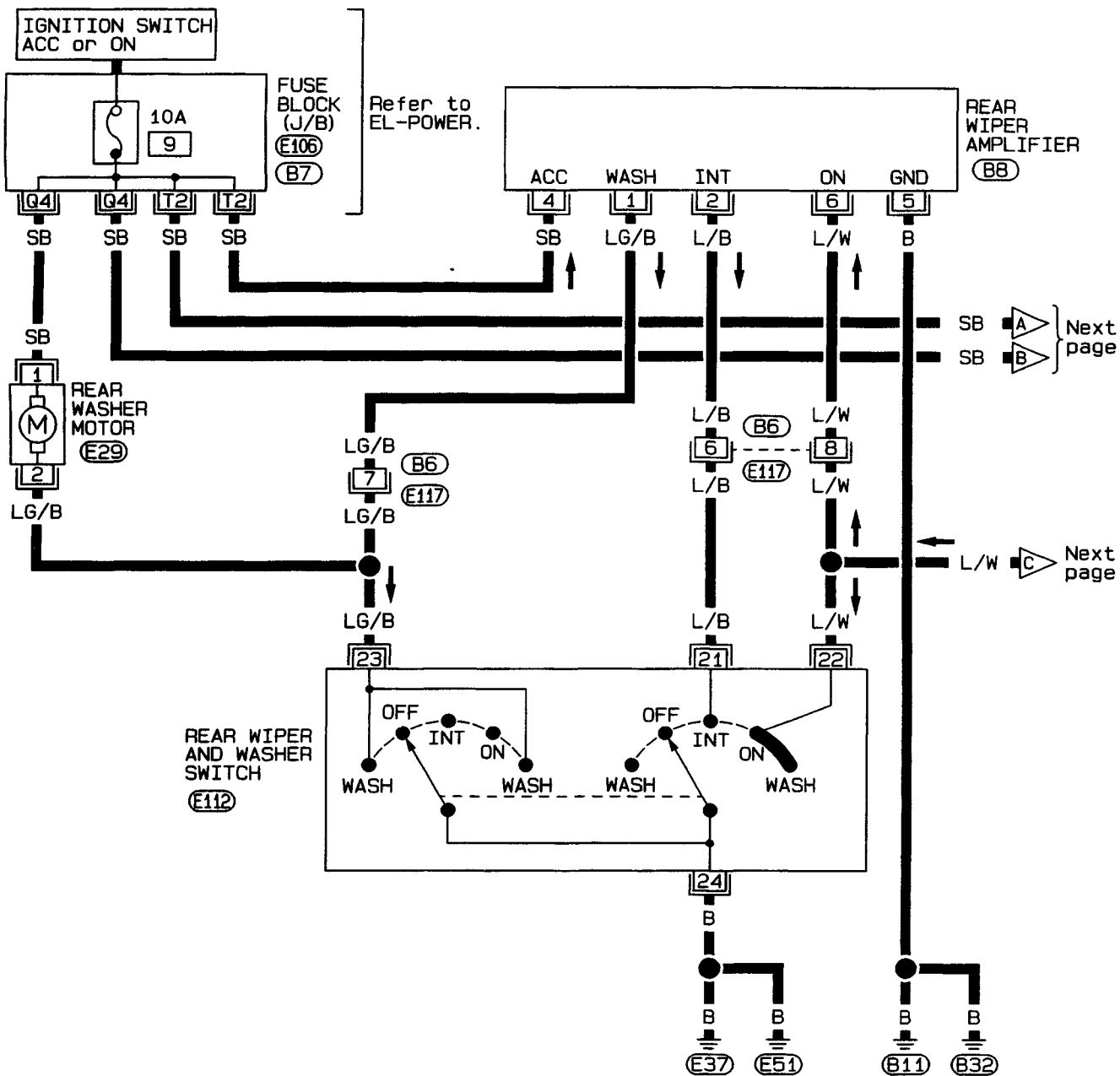
The rear wiper motor operates when the ring is turned to WASH position for one second or more and for approximately 3 seconds after the ring is released. This feature is controlled by the rear wiper amplifier in the same manner as the intermittent operation.

WIPER AND WASHER

Rear Wiper and Washer/Wiring Diagram — WIP/R —

LHD MODELS

EL-WIP/R-01



1 (E29)
2 G

5 0 1 (B8)
6 4 2 W

1 2 0 3 (E117)
4 5 6 7 8 W

0 (E112)
23 21 BR
24 22

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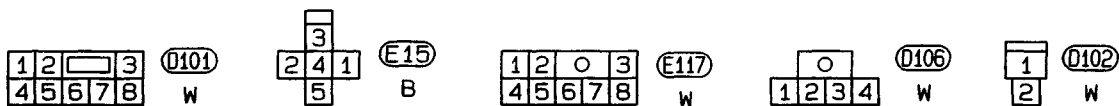
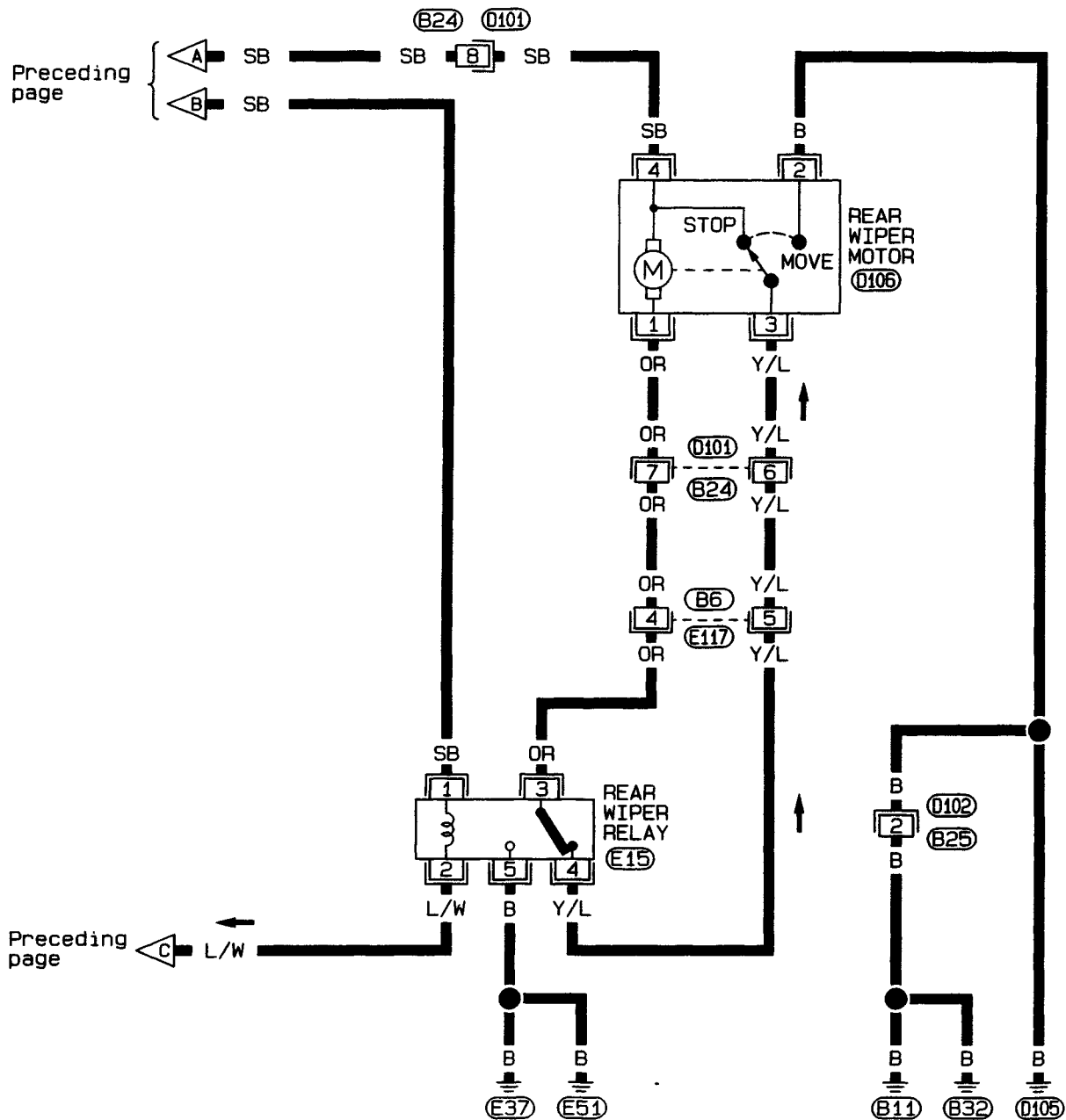
(E106), (B7)

EL

WIPER AND WASHER

Rear Wiper and Washer/Wiring Diagram — WIP/R — (Cont'd)

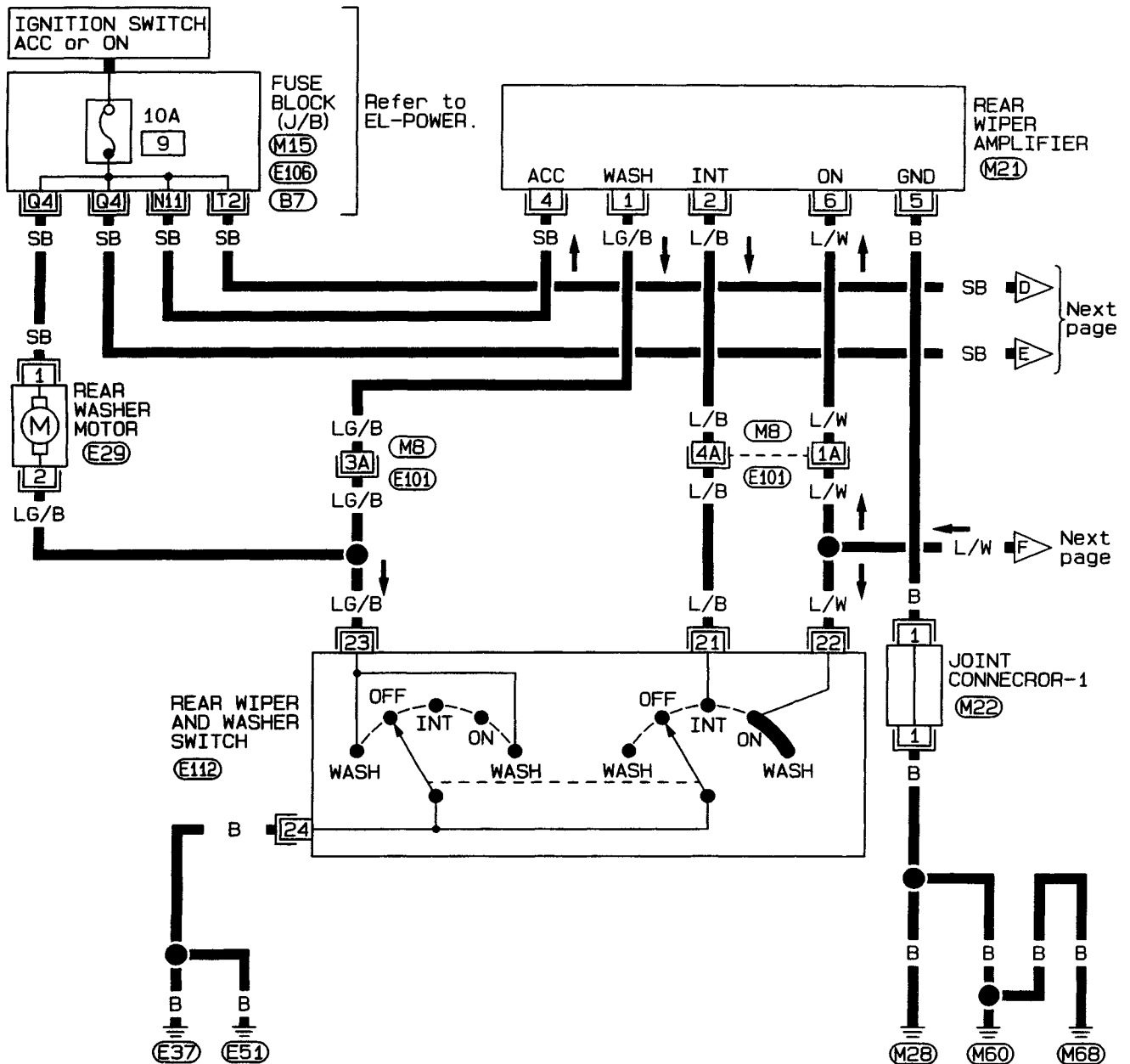
EL-WIP/R-02



Rear Wiper and Washer/Wiring Diagram — WIP/R — (Cont'd)

RHD MODELS

EL-WIP/R-03








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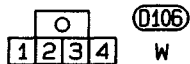
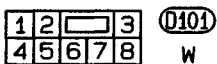
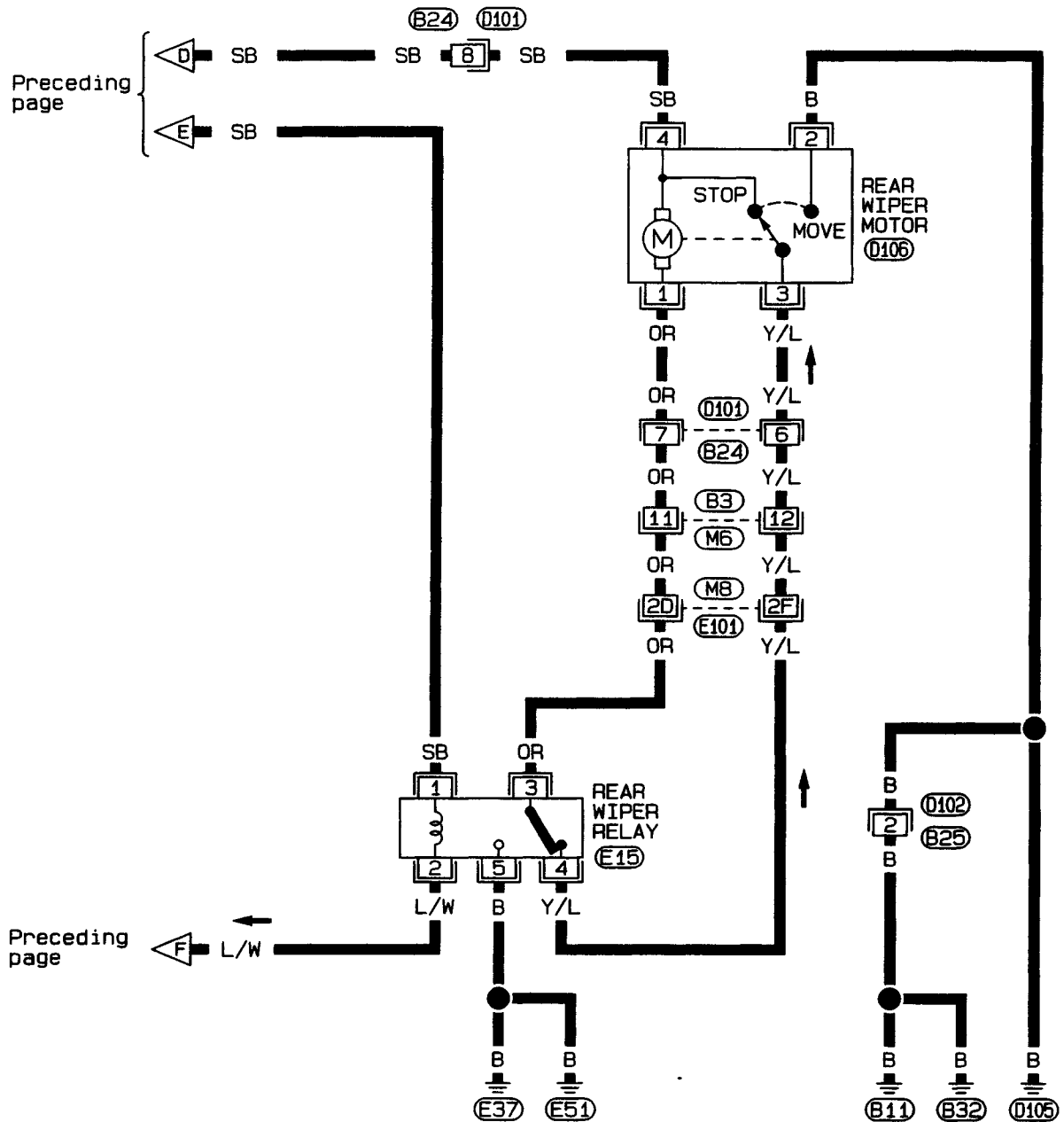
(M8) (E101)
(M15) (E106) (B7)

EL

WIPER AND WASHER

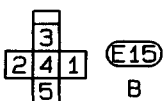
Rear Wiper and Washer/Wiring Diagram — WIP/R — (Cont'd)

EL-WIP/R-04

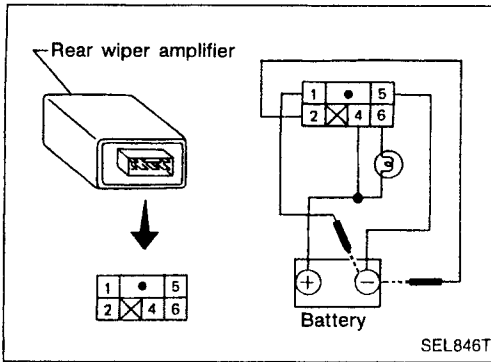


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M8, E101

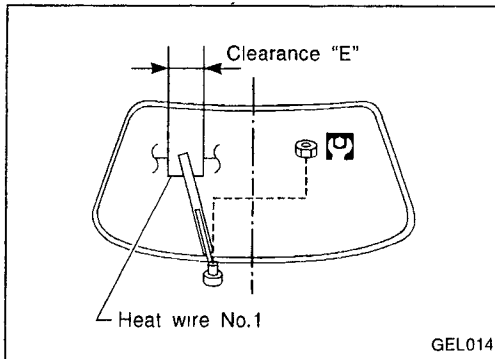


WIPER AND WASHER



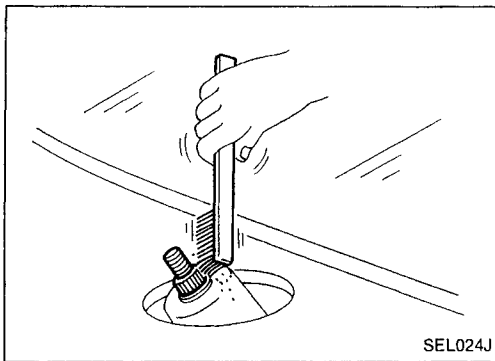
Rear Wiper Amplifier Check

1. Connect as shown in the figure at left.
2. If test lamp illuminates when connected to terminal ① or ② and battery ground, wiper amplifier is normal.

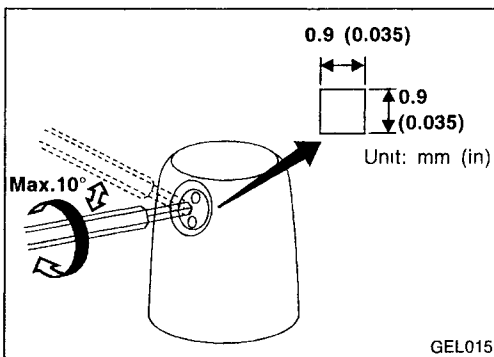


Rear Wiper Installation and Adjustment

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. Set the blade center to clearance "E" 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 "E".
Clearance "E": 20 mm (0.79 in)
 - Tighten windshield wiper arm nuts to specified torque.
⚙️: 13 - 18 N·m (1.3 - 1.8 kg-m, 9 - 13 ft-lb)



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



Rear Washer Nozzle Adjustment

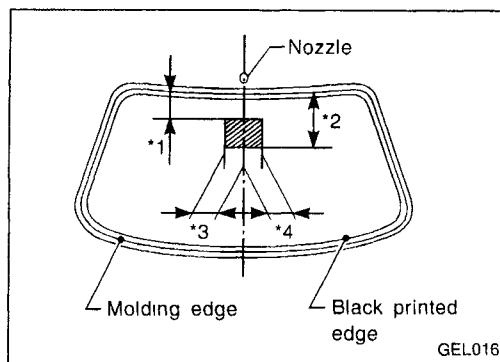
- Adjust washer nozzle with suitable tool as shown in the figure at left.
Adjustable range: $\pm 10^\circ$ (In any direction)

WIPER AND WASHER

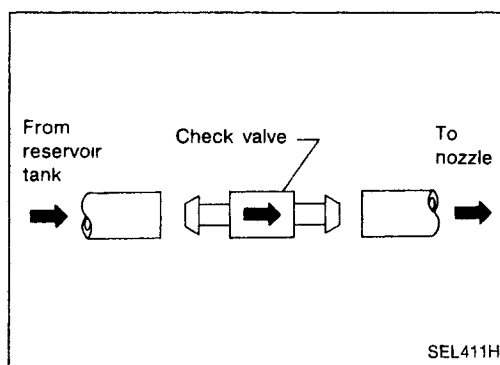
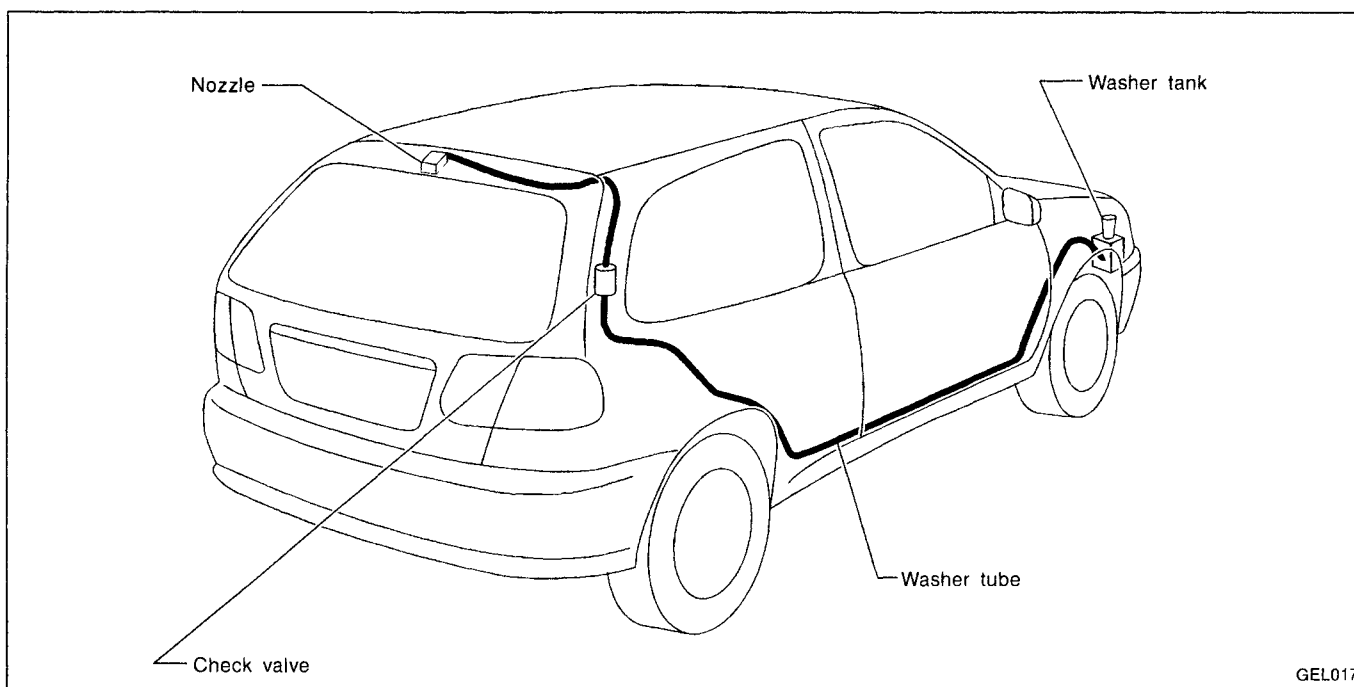
Rear Washer Nozzle Adjustment (Cont'd)

Unit: mm (in)

*1	40 (1.57)	*3	35 (1.38)
*2	95 (3.74)	*4	35 (1.38)



Rear Washer Tube Layout



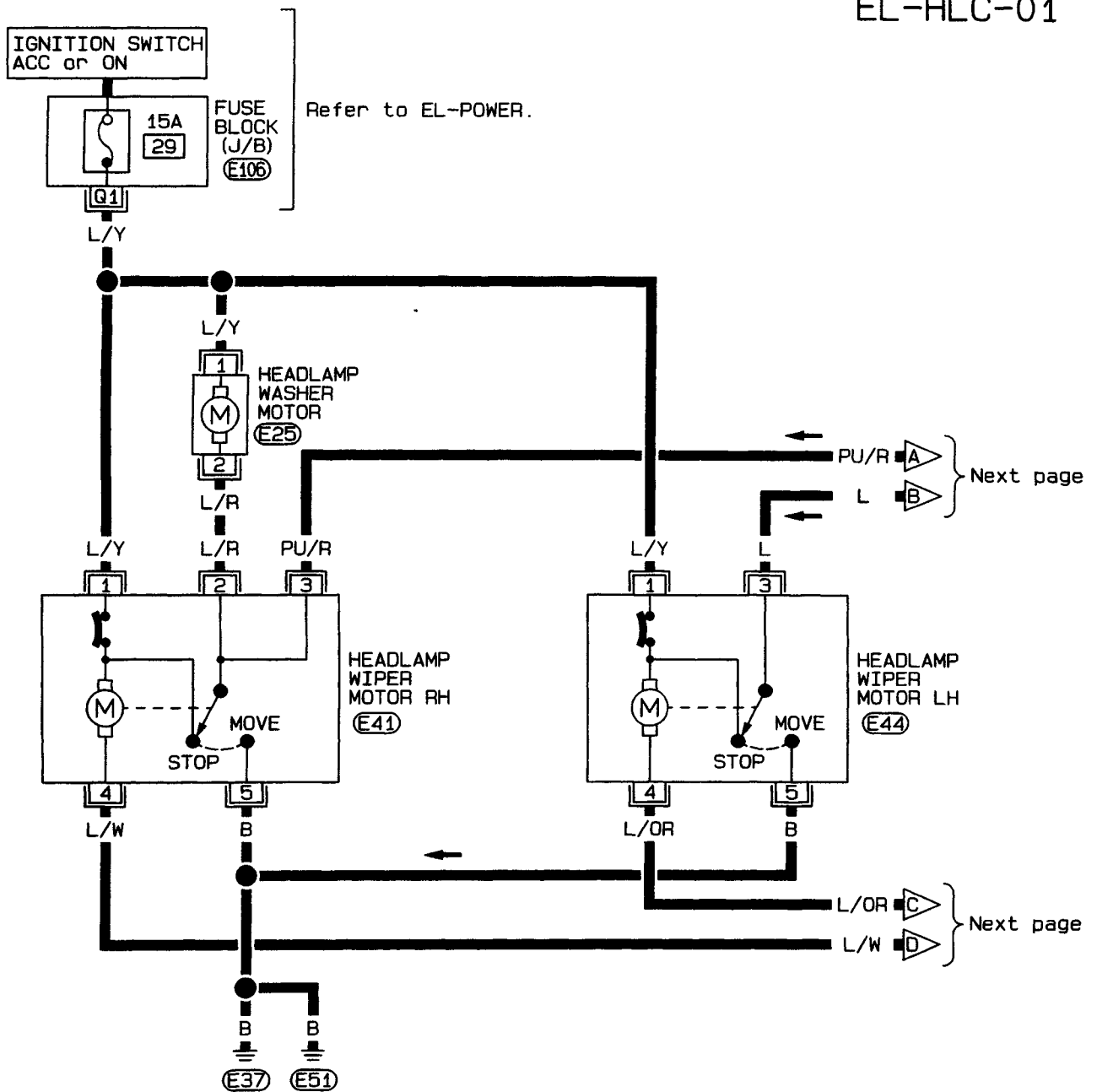
Check Valve (for rear washer)

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

WIPER AND WASHER

Headlamp Wiper and Washer/Wiring Diagram — HLC —

EL-HLC-01



1 2 3
4 5

E41, E44
GY, GY

1
2

E25
W

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(Foldout page).

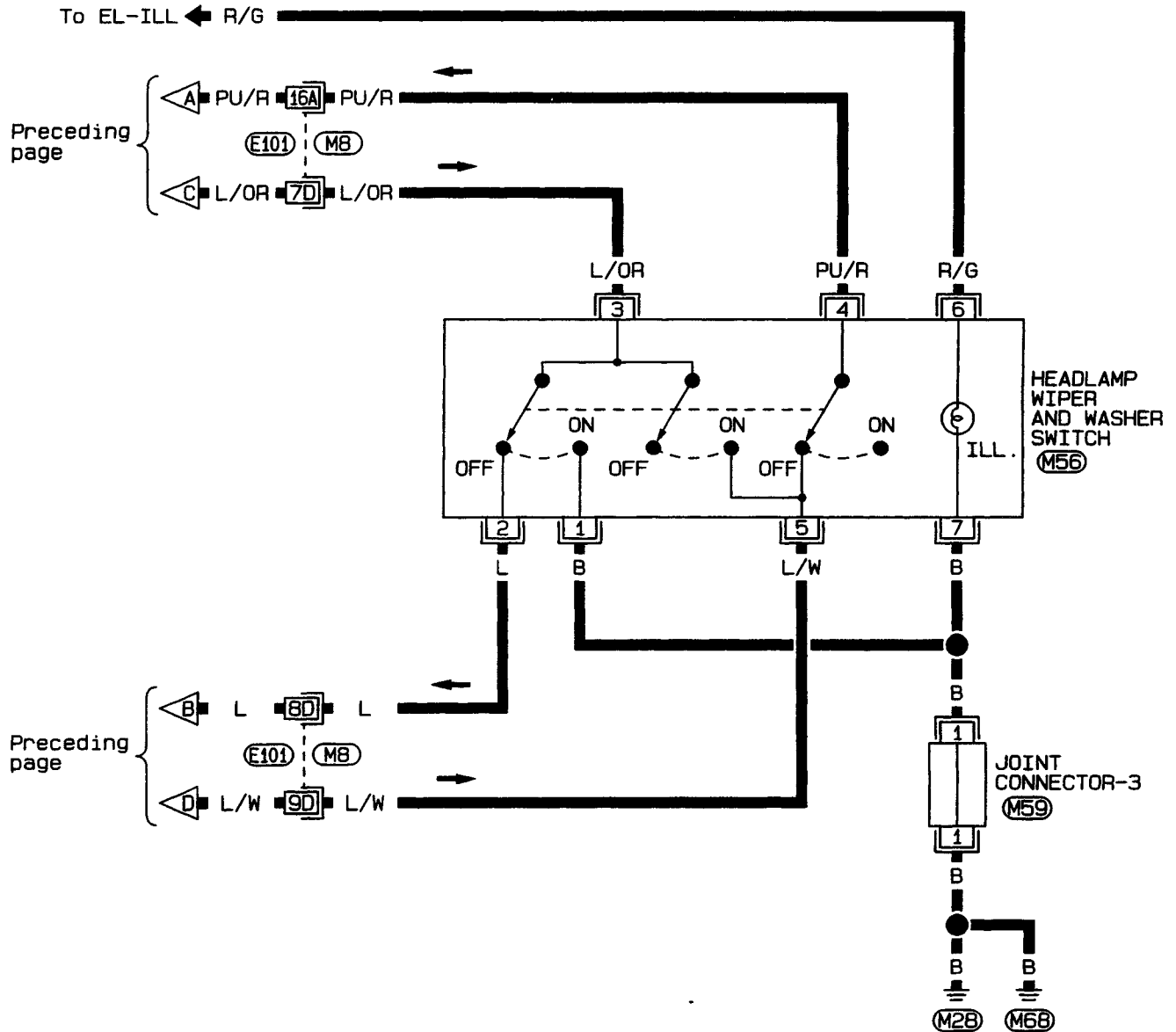
E106

EL

WIPER AND WASHER

Headlamp Wiper and Washer/Wiring Diagram — HLC — (Cont'd)

EL-HLC-02



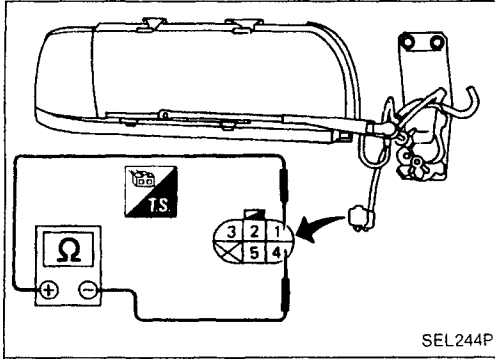
7	6				(M56)
4	5	2	3	1	BR

1	1	1	1	1	1	1	1	1	1	(M59)
2	2	2	3	3	3	3	4	4	4	BR

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(Foldout page).

(M56) , (E101)

WIPER AND WASHER

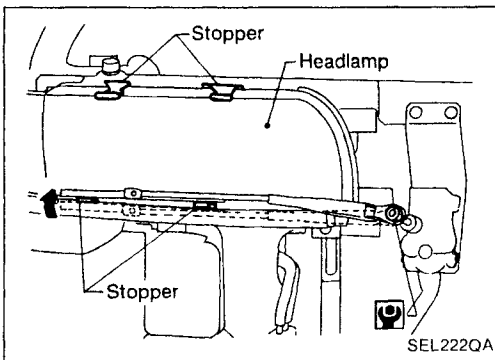


Headlamp Wiper Motor Check

When wiper motor is locked, a protective circuit built into wiper motor activates to stop wiper motor. If wiper motor will not restart even after cause of problems has been eliminated, turn ignition switch OFF and leave it off for approx. 1 to 3 minutes.

1. Turn headlamp wiper switch OFF.
2. Connect ohmmeter and check continuity.

Headlamp wiper motor	Ohmmeter probe		Continuity
	(+)	(-)	
Stop position	①	④	Yes
	①	②	Yes
	①	③	Yes
	③	⑤	No

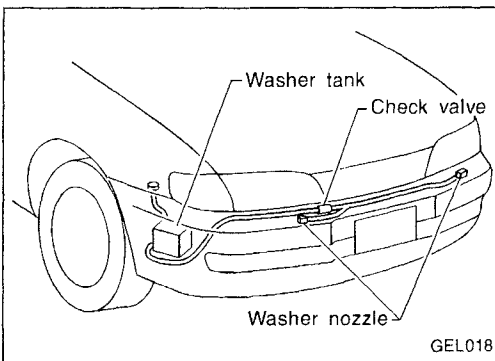


Headlamp Wiper Installation

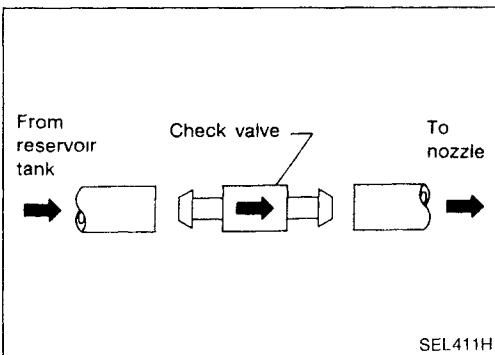
Tighten nut to secure wiper arm with wiper blade held below lower stopper.

After installing wiper arm, position wiper blade on stopper upper surface.

- Tighten headlamp wiper arm nut to the specified torque.
 Ⓐ : 2.3 - 3.0 N·m (0.23 - 0.31 kg-m, 20.0 - 26.9 in-lb)



Headlamp Washer Tube Layout



Check Valve (For headlamp washer)

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

POWER WINDOW

System Description

Power is supplied at all times

- from 25A fusible link (Letter **f**, located in the fusible link and fuse 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. **7**) located in the fuse block)
- to power window relay terminal **①**.

Ground is supplied to power window relay terminal **②**

- through body grounds **(M28)**, **(M60)** and **(M68)**.

The power window relay is energized and power is supplied

- through power window relay terminal **⑤**
- to power window main switch terminals **①** and **②**,
- to passenger side power window sub-switch terminals **⑤** and **⑥**,
- to rear power window sub-switch LH terminal **⑥**,
- to rear power window sub-switch RH terminal **⑥**.

MANUAL OPERATION

Driver's door

Ground is supplied

- to front power window main switch terminals **③** and **④**
- through body grounds **(M28)**, **(M60)** and **(M68)**.

WINDOW UP

When a driver side switch in the power window main switch is pressed in the up position, power is supplied

- to driver side power window regulator terminal **②**
- through power window main switch terminal **⑨**.

Ground is supplied

- to driver side power window regulator terminal **①**
- through power window main switch terminal **⑧**.

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

WINDOW DOWN

When a driver side switch in the power window main switch is pressed in the down position, power is supplied

- to driver side power window regulator terminal **①**
- through power window main switch terminal **⑧**

Ground is supplied

- to driver side power window regulator terminal **②**
- through power window main switch terminal **⑨**

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

Except driver's door

Ground is supplied

- to power window main switch terminal **③**
- through body grounds **(M28)**, **(M60)** and **(M68)**.

PASSENGER'S DOOR

NOTE:

Figures in parentheses () refer to terminal Nos. arranged in order when the UP or DOWN section of power window switch is pressed.

Operation by main switch

Power is supplied

- through power window main switch (**⑤**, **⑥**)
- to passenger side power window sub-switch (**④**, **③**).

POWER WINDOW

System Description (Cont'd)

The subsequent operations are the same as those outlined under "Operation by sub-switches".

Operation by sub-switches

Power is supplied

- through passenger side power window sub-switch (②, ①)
- to passenger side power window regulator (②, ①).

Ground is supplied

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

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

REAR DOOR LH

NOTE:

Figures in parentheses () refer to terminal Nos. arranged in order when the UP or DOWN section of power window switch is pressed.

Operation by main switch

Power is supplied

- through power window main switch (⑮, ⑯)
- to rear power window sub-switch LH (④, ③).

The subsequent operations are the same as those outlined under "Operation by sub-switches".

Operation by sub-switches

Power is supplied

- through rear power window sub-switch LH (②, ①)
- to rear power window regulator LH (②, ①).

Ground is supplied

- to rear power window regulator LH (①, ②)
- through rear power window sub-switch LH (①, ②)
- to rear power window sub-switch LH (③, ④)
- through power window main switch LH (⑯, ⑮).

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

REAR DOOR RH

NOTE:

Figures in parentheses () refer to terminal Nos. arranged in order when the UP or DOWN section of power window switch is pressed.

Operation by main switch

Power is supplied

- through power window main switch (⑩, ⑪)
- to rear power window sub-switch RH (④, ③).

The subsequent operations are the same as those outlined under "Operation by sub-switches".

Operation by sub-switches

Power is supplied

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

Ground is supplied

- to rear power window regulator RH (①, ②)
- through rear power window sub-switch RH (①, ②)
- to rear power window sub-switch RH (③, ④)
- through power window main switch (⑪, ⑩)

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

AUTO OPERATION

The power window AUTO feature enables the driver to open or close the driver's window without holding the window switch in the respective position.

When the AUTO switch in the main switch is pressed and released, the driver's window will travel to the fully open or closed position.

POWER WINDOW

System Description (Cont'd)

POWER WINDOW LOCK

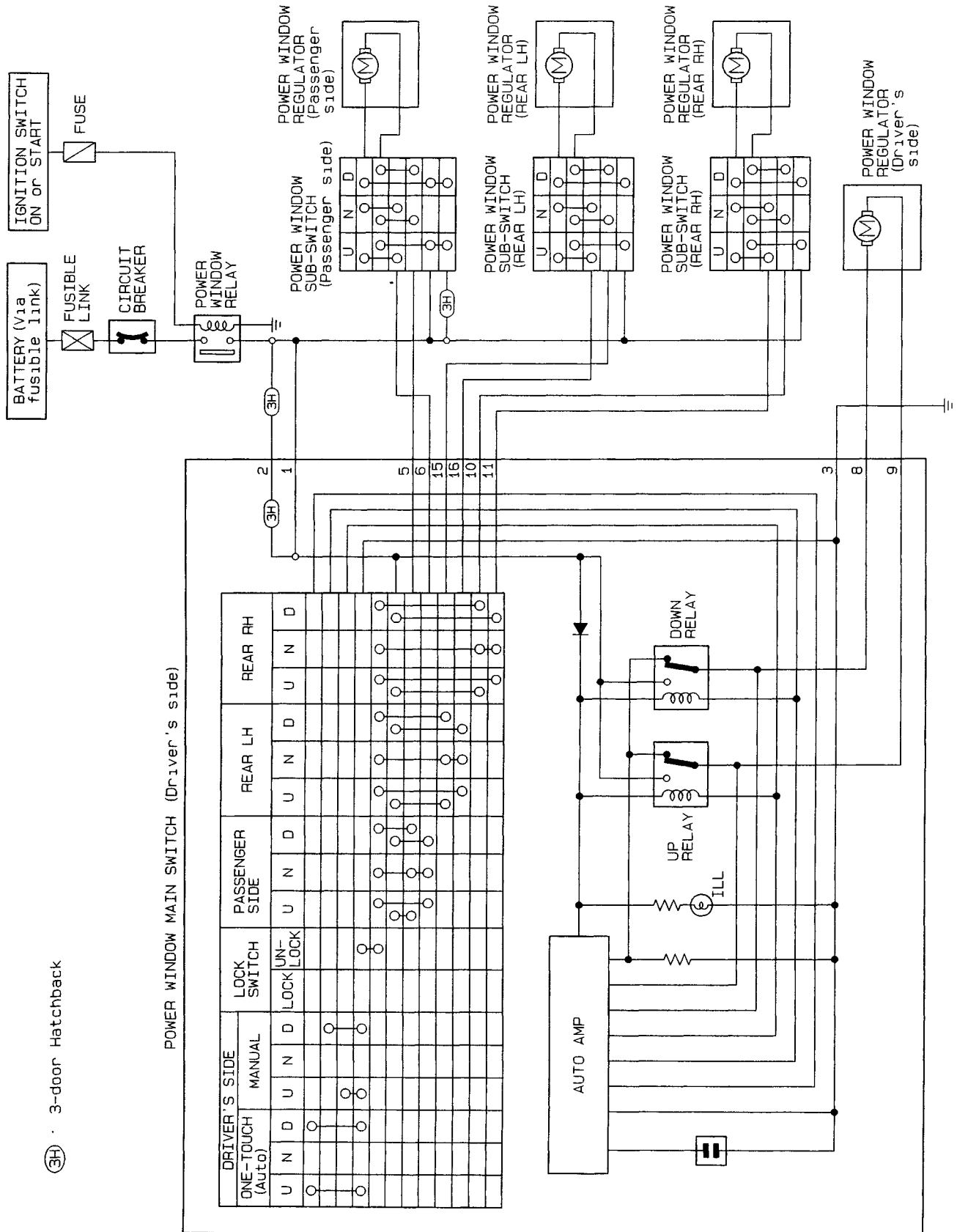
The power window lock is designed to lock-out window operation to all windows except the driver's door window.

When the lock switch is pressed to lock position, ground of the passenger side switch, rear RH switch and rear LH switch in the power window main switch is disconnected. This prevents the power window motors from operating.

POWER WINDOW

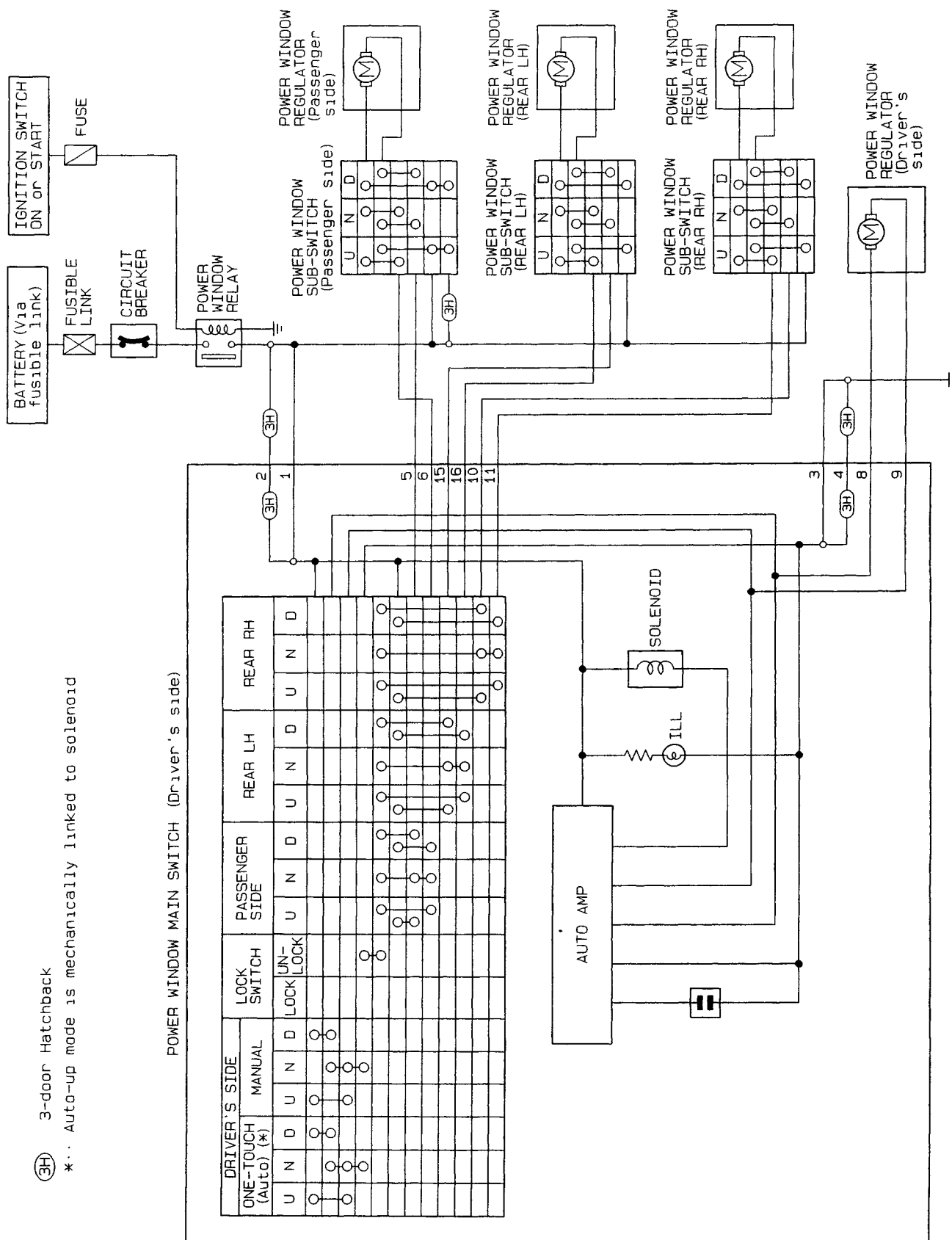
Schematic

LHD MODELS AND RHD MODELS EXCEPT FOR EUROPE AND AUSTRALIA



Schematic (Cont'd)

RHD MODELS FOR EUROPE AND AUSTRALIA

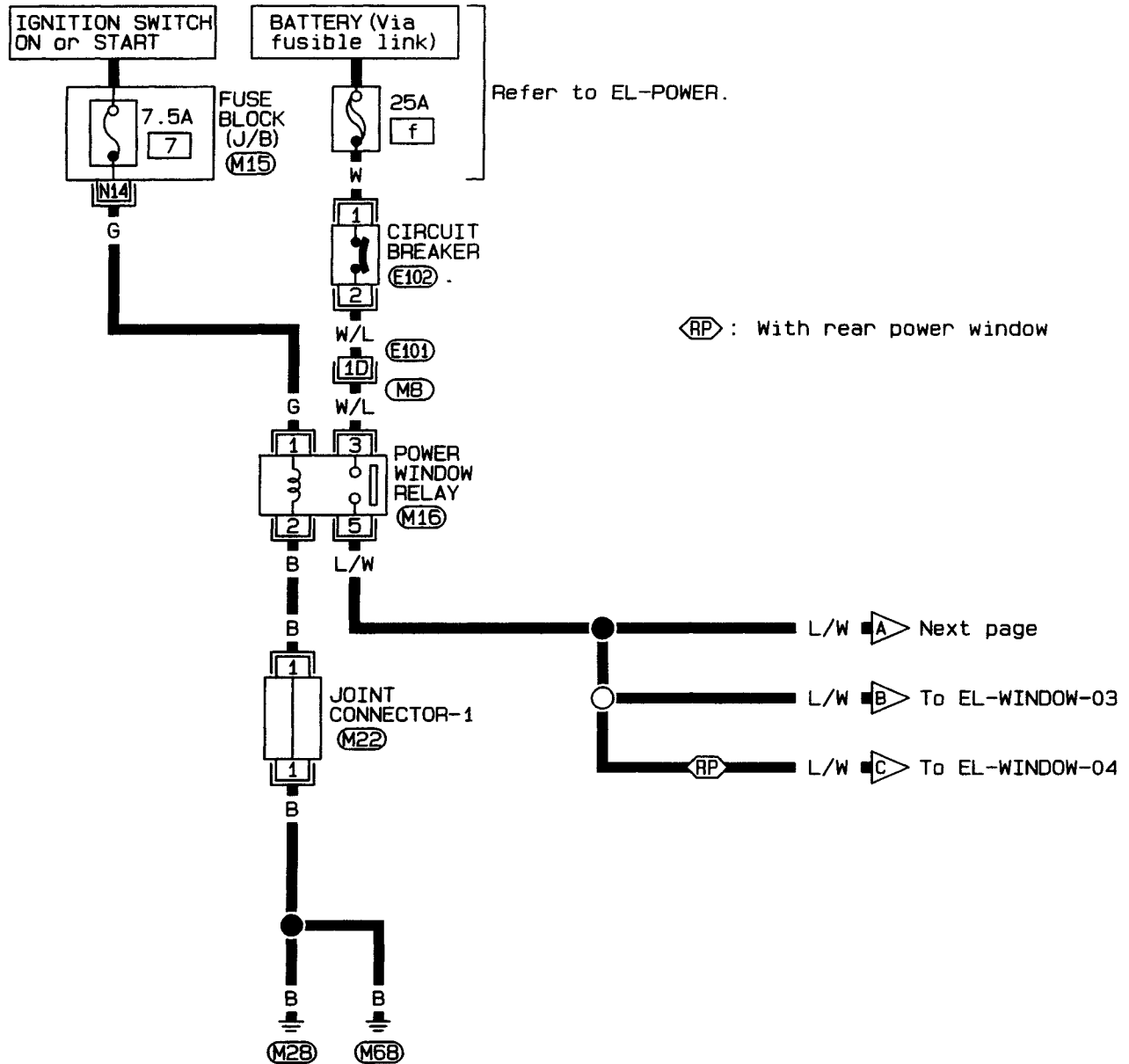


POWER WINDOW

Wiring Diagram — WINDOW —

LHD MODELS

EL-WINDOW-01



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(MB), (E101)
(M15)

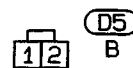
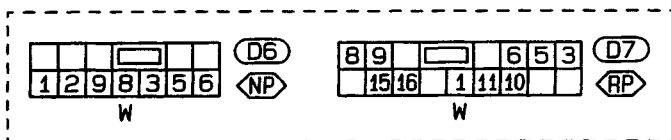
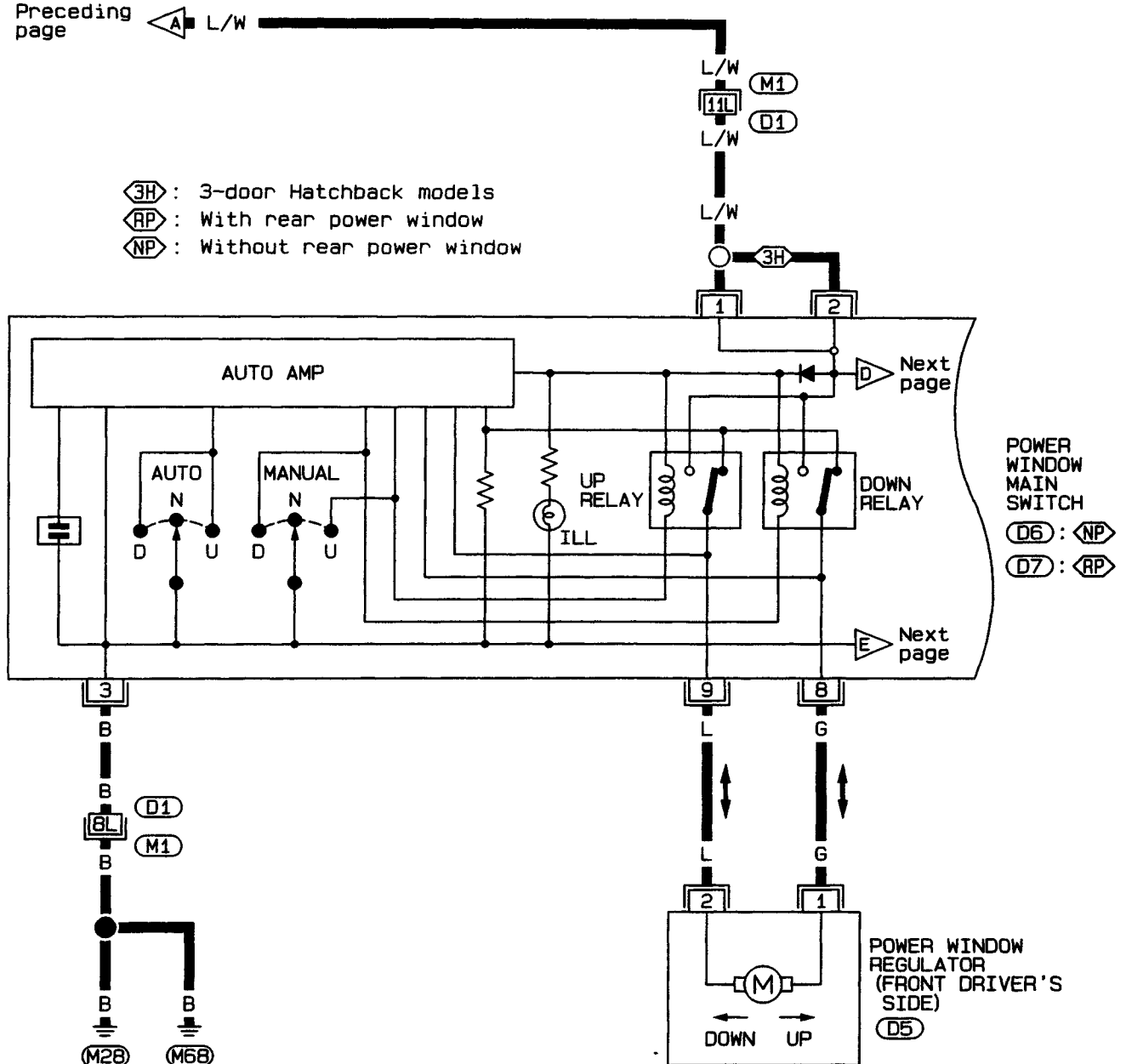
EL

POWER WINDOW

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-02

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page



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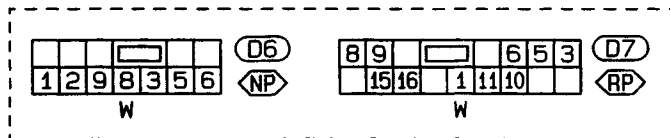
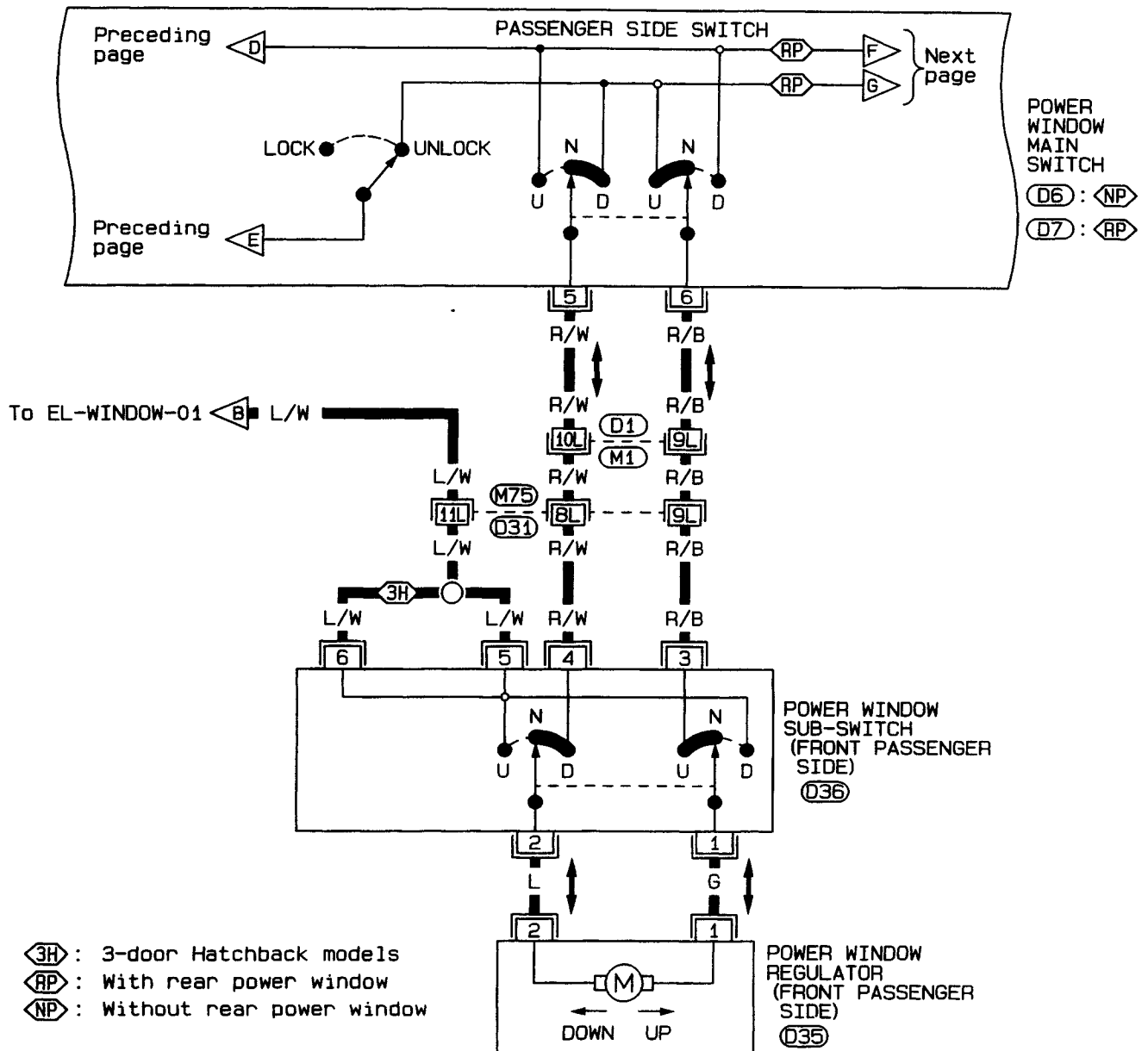
(M1), (D1)

CAUTION: Don't attempt to repair, splice or modify the flexible flat circuit (FFC). If the FFC is damaged, replace with a new one.

POWER WINDOW

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-03



CAUTION : Don't attempt to repair, splice or modify the flexible flat circuit (FFC). If the FFC is damaged, replace with a new one.

Refer to last page (Foldout page).

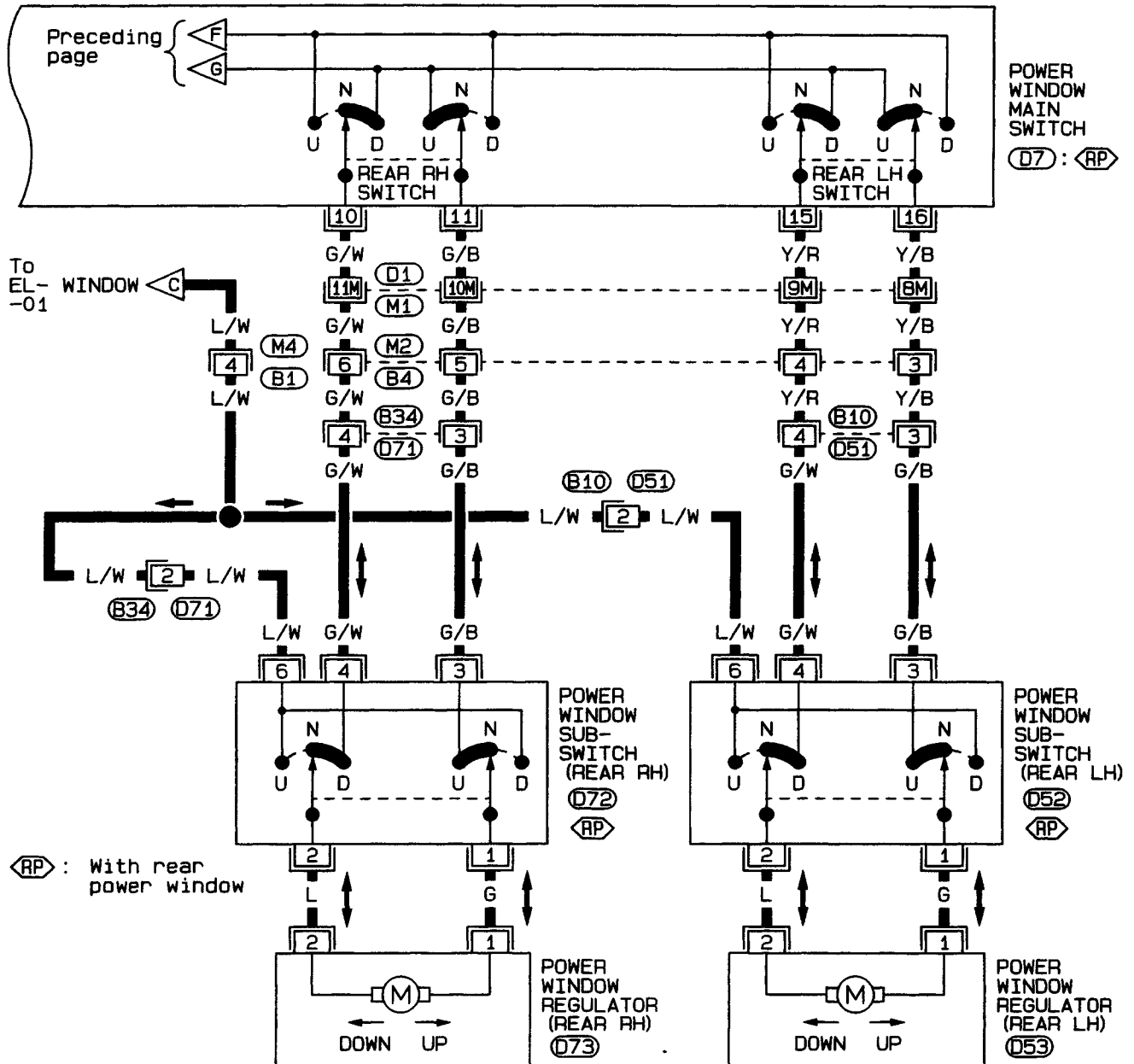
M1, D1
 M75, D31

EL

POWER WINDOW

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-04



8 9 10 11 12 13 14 15 16 (D7) W

1 2 3 4 5 6 (M2) (B10) (B34) W W W

1 2 3 4 (M4) W

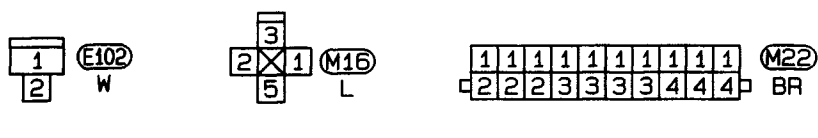
4 1 3 2 5 (D52) (D72) W W

1 2 (D53) (D73) B B

Refer to last page (Foldout page).

(M1) (D1)

RHD MODELS EXCEPT FOR EUROPE AND AUSTRALIA

[illegible]

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(Foldout page) .

(M8), (E101)
(M15)

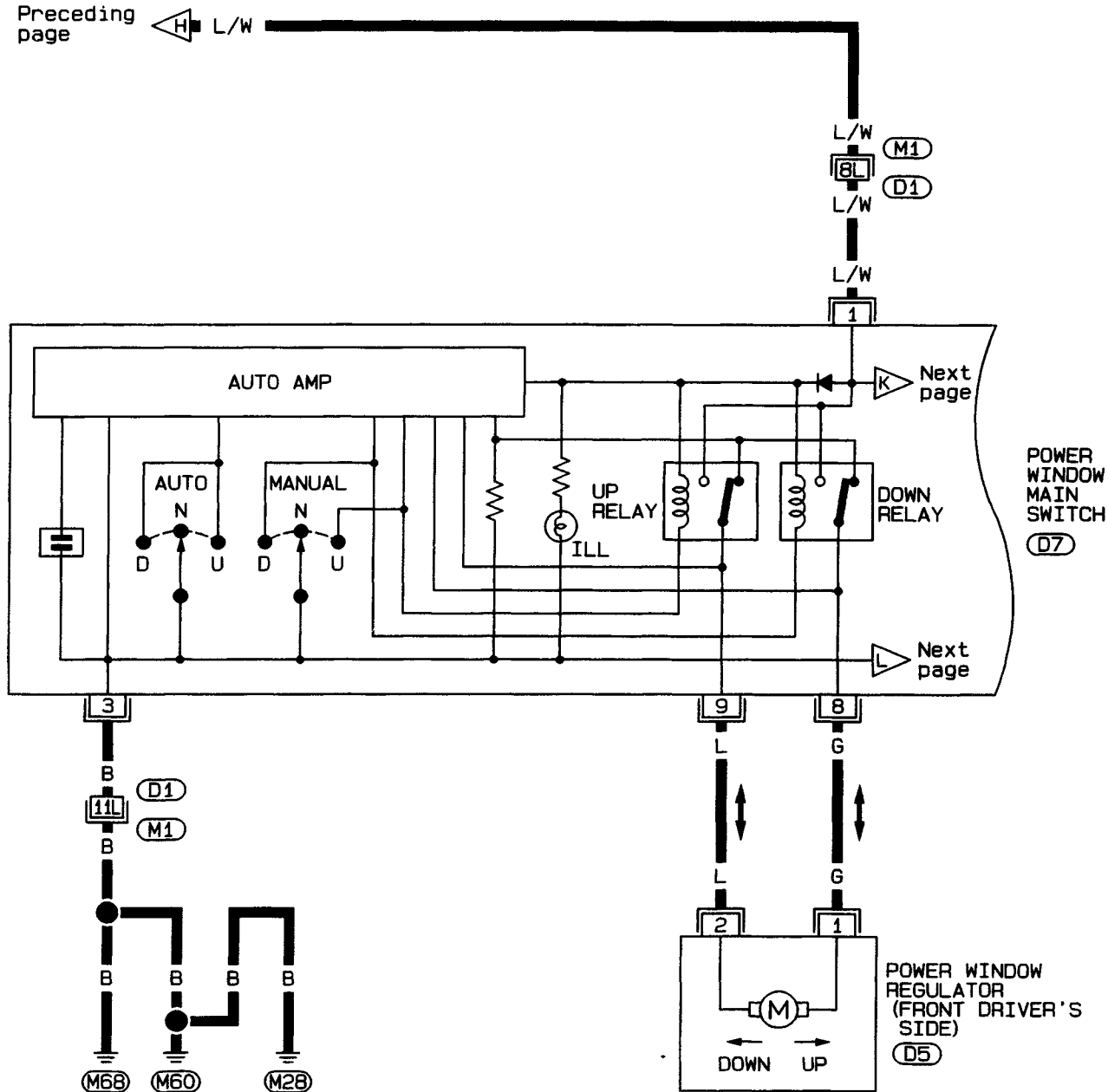
EL

POWER WINDOW

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-06

Preceding
page



3	6	5	1	(D7)
14	7	15	16	11
10	9	8		W

1	2	(D5)
		B

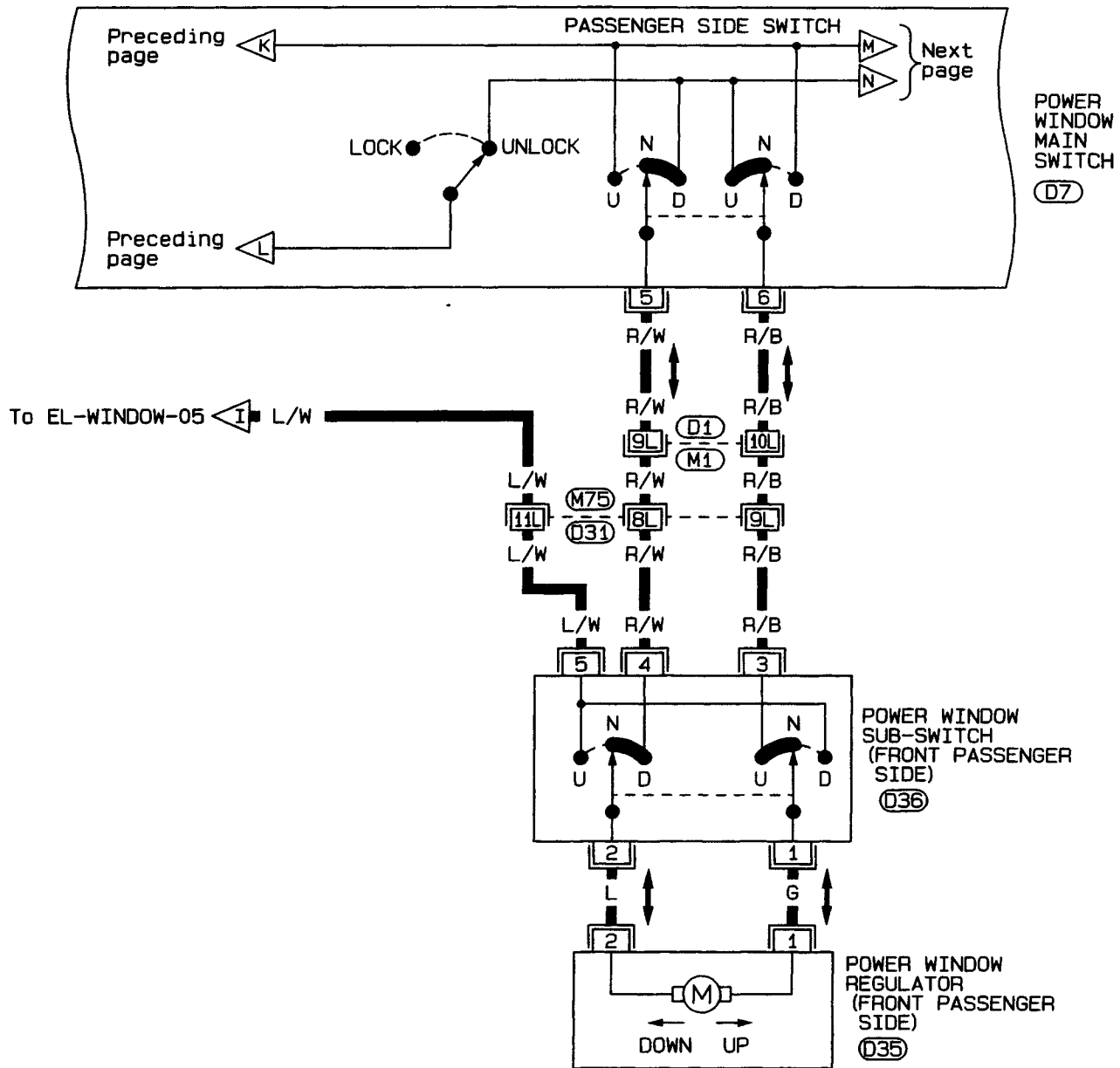
Refer to last page
(Foldout page).

(M1), (D1)

POWER WINDOW

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-07



3	6	5	1
14	7	15	16

(D7) W

4	1	3	2	5
---	---	---	---	---

(036) W

1	2
---	---

(035) B

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(M1), (D1)

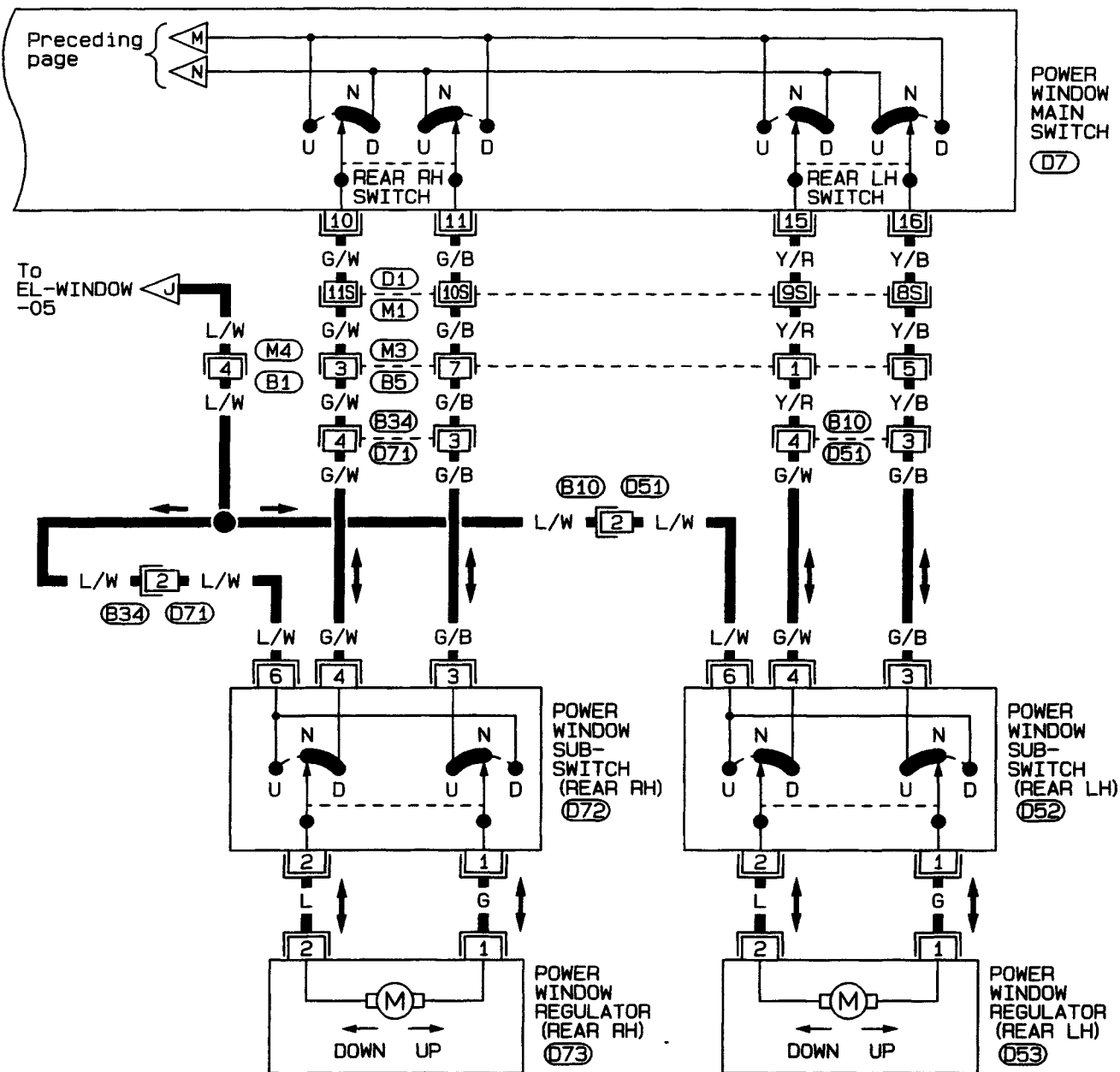
(M75), (D31)

EL

POWER WINDOW

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-08



	3	6		5			1	
14	7	15		16	11	10	9	8

D7

W

1	2	(M4)
3	4	W

1	2		3	
4	5	6	7	8

M3

W

Refer to last page (Foldout page).

(M1), (D1)

			6
4	1	3	2
5			

(D52), (D72)
W, W

12	(D53) B	,	(D73) B
---------------	------------------------	---	------------------------

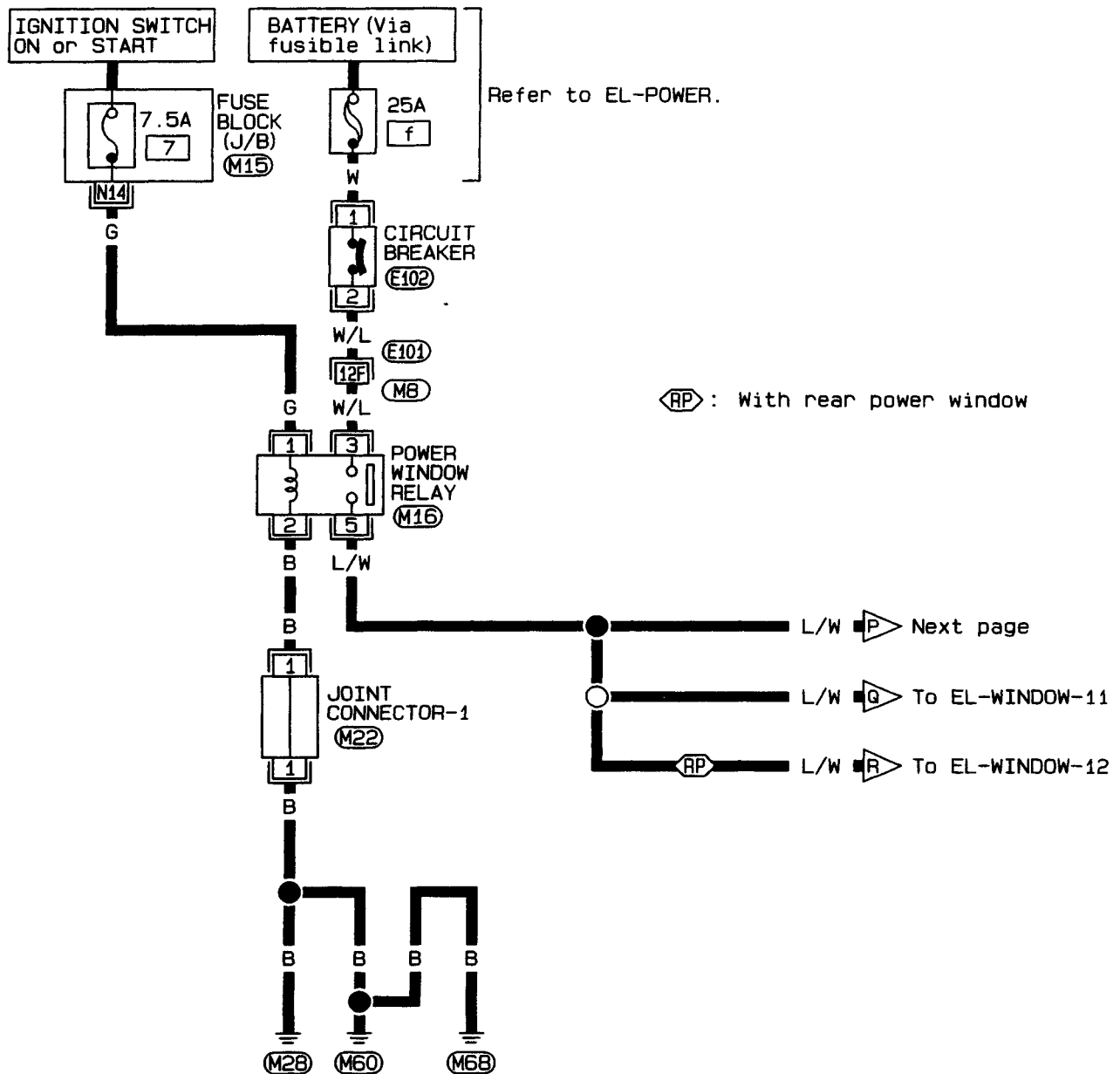
1		2	
3	4	5	6

(B10) (B34)
W W

Wiring Diagram — WINDOW — (Cont'd)

RHD MODELS FOR EUROPE AND AUSTRALIA

EL-WINDOW-09



Refer to last page
(Foldout page) .

M8, E101
M15

EL

POWER WINDOW

Wiring Diagram — WINDOW — (Cont'd)

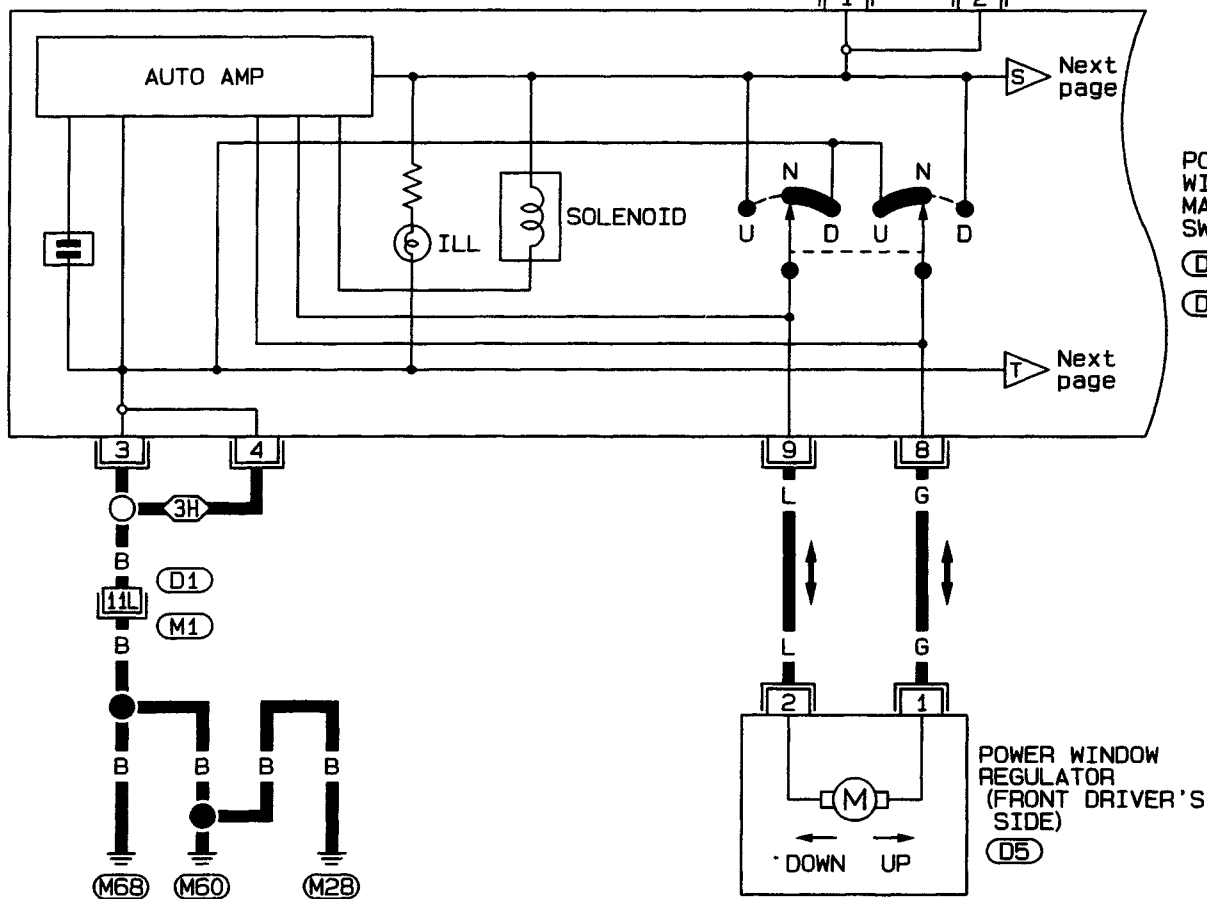
EL-WINDOW-10

Preceding
page



L/W

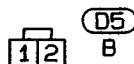
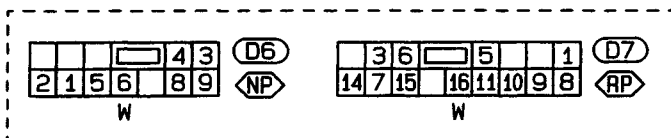
- ◁3H: 3-door Hatchback models
- ◁AP: With rear power window
- ◁NP: Without rear power window



POWER
WINDOW
MAIN
SWITCH

- D6 : ◁NP
- D7 : ◁AP

POWER WINDOW
REGULATOR
(FRONT DRIVER'S
SIDE)
D5



Refer to last page
(Foldout page).

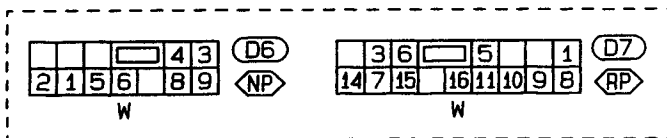
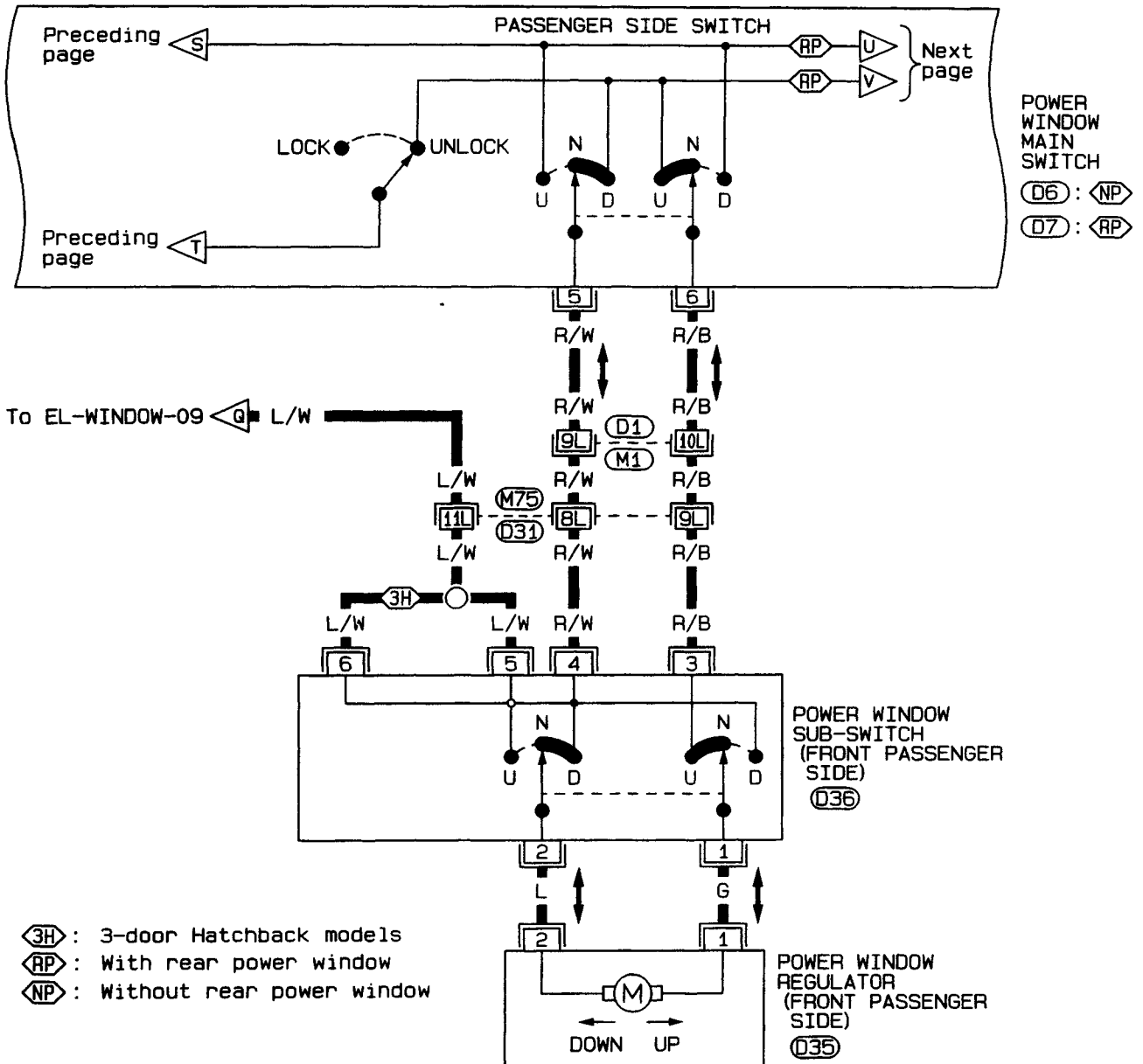
- M1 , D1

CAUTION : Don't attempt to repair, splice or modify the flexible flat circuit (FFC). If the FFC is damaged, replace with a new one.

POWER WINDOW

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-11



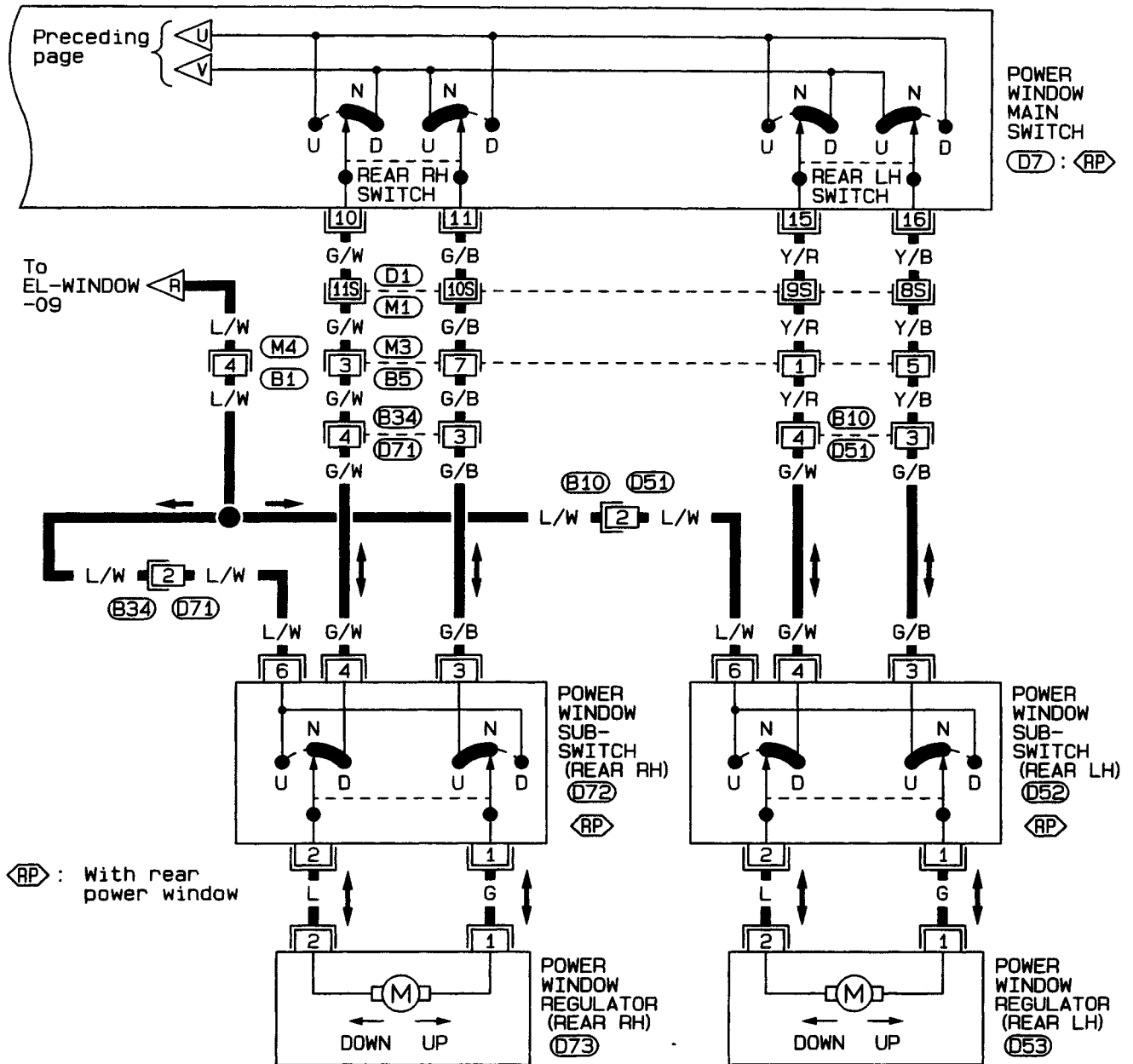
CAUTION : Don't attempt to repair, splice or modify the flexible flat circuit (FFC). If the FFC is damaged, replace with a new one.

EL

POWER WINDOW

Wiring Diagram — WINDOW — (Cont'd)

EL-WINDOW-12



	3	6		5			1	
14	7	15		16	11	10	9	8

D7

W

1	2	(M4)
3	4	W

1	2		3	
4	5	6	7	8

M3

W

			6
4	1	3	2

052	072
W	W

1	2	(D53)	(D73)
3	4	B	B

1		2
3	4	5 6

(B10) , (B34)
W W

Refer to last page (Foldout page).

(M1), (D1)

POWER WINDOW

Trouble Diagnoses

Symptom	Possible cause	Repair order																																	
None of the power windows can be operated using any switch.	1. 7.5A fuse, 25A fusible link and (E102) circuit breaker	1 Check 7.5A fuse (No. 7), located in fuse block [J/B]), 25A fusible link (letter f , located in fuse and fusible link box) and (E102) circuit breaker Turn ignition switch "ON" and verify battery positive voltage is present at terminals ① and ② of power window main switch, and other switches as follows. <table><tr><th>Models</th><th colspan="3">Terminals</th></tr><tr><th>Location of sub-switch</th><th>LHD models</th><th>RHD models except for Europe and Australia</th><th>RHD models for Europe and Australia</th></tr><tr><td>Passenger</td><td></td><td></td><td></td><td></td></tr><tr><td>3H*</td><td>⑤ and ⑥</td><td>—</td><td></td><td>⑤ and ⑥</td></tr><tr><td>Other</td><td>⑤</td><td>⑤</td><td></td><td>⑤</td></tr><tr><td>Rear RH</td><td>⑥</td><td>⑥</td><td></td><td>⑥</td></tr><tr><td>Rear LH</td><td>⑥</td><td>⑥</td><td></td><td>⑥</td></tr></table>	Models	Terminals			Location of sub-switch	LHD models	RHD models except for Europe and Australia	RHD models for Europe and Australia	Passenger					3H*	⑤ and ⑥	—		⑤ and ⑥	Other	⑤	⑤		⑤	Rear RH	⑥	⑥		⑥	Rear LH	⑥	⑥		⑥
	Models	Terminals																																	
Location of sub-switch	LHD models	RHD models except for Europe and Australia	RHD models for Europe and Australia																																
Passenger																																			
3H*	⑤ and ⑥	—		⑤ and ⑥																															
Other	⑤	⑤		⑤																															
Rear RH	⑥	⑥		⑥																															
Rear LH	⑥	⑥		⑥																															
	2 Grounds (M28) , (M60) and (M68) 3 Power window relay 4 Open/short in power window main switch circuit	2 Check grounds (M28) , (M60) and (M68) . 3 Check power window relay 4. Check L/W wire between power window relay and power window main switch for open/short circuit																																	
Driver's side power window cannot be operated but other windows can be operated	1 Driver's side power window regulator circuit 2 Driver's side power window regulator	1 Check driver's side power window regulator circuit 2 Check driver's side power window regulator																																	
One or more passenger power windows cannot be operated.	1 Power window switches (front sub-switch, rear sub-switch RH, rear sub-switch LH) 2 Power window regulators (front sub-switch, rear sub-switch RH, rear sub-switch LH) 3 Power window main switch 4 Power window circuit	1 Check power window switches (front sub-switch, rear sub-switch RH, rear sub-switch LH) 2 Check power window regulators (front sub-switch, rear sub-switch RH, rear sub-switch LH) 3 Check power window main switch 4-1 Check harnesses between power window main switch and power window sub-switches for open/short circuit 4-2 Check harnesses between power window sub-switches and power window regulators for open/short circuit																																	
One or more passenger power windows cannot be operated using power window main switch but can be operated by power window sub-switches	1 Power window main switch	1 Check power window main switch																																	
Driver's side power window auto function cannot be operated using power window main switch.	1 Power window main switch	1 Check power window main switch																																	

*3-door Hatchback models

POWER DOOR LOCK

System Description

NISSAN model N15 has two types of power door lock system:

- Type 1: For Europe and Australia
- Type 2: Except for Europe and Australia

Power is supplied at all times

- through 25A fusible link (letter **f**, located in the fusible link and fuse box)
- to circuit breaker terminal ①
- through circuit breaker terminal ②
- to door lock timer terminal ⑪ (Type-1) or ③ (Type-2).

Ground is supplied to door lock timer terminal ⑩ (Type-1) or ① (Type-2) through body grounds **M28**, **M60** and **M68**.

POWER DOOR LOCK OPERATION

When one of the following input signals is supplied:

- driver side door is locked/unlocked using key or lock knob,
- passenger side door is locked/unlocked using key or lock knob (Only for type-1);
- door lock & unlock switch in the power window main switch is locked/unlocked (Only for RHD models type-2)

Door lock timer locks/unlocks driver side door (Only for type-1) and other doors.

Input (Type-1)

Unlock signal

When the driver side door is unlocked using key or lock knob, ground is supplied

- to door lock timer terminal ④
- through driver side door lock actuator (door unlock sensor) terminal ④
- to driver side door lock actuator (door unlock sensor) terminal ②
- through body grounds **M28**, **M60** and **M68**.

When the passenger side door is unlocked using key or lock knob, ground is supplied

- to door lock timer terminal ⑤
- through passenger side door lock actuator (door unlock sensor) terminal ④
- to passenger side door lock actuator (door unlock sensor) terminal ②
- through body grounds **M28**, **M60** and **M68**.

Lock signal

The door lock timer terminal ④ or ⑤ receives lock signal when the unlock signal is shut off.

Input (Type-2)

When the lock knob switch is in UNLOCKED position, ground is supplied

- to door lock timer terminal ⑥
- through lock knob switch terminal ②
- to lock knob switch terminal ①
- through body grounds **M28**, **M60** and **M68**.

The door lock timer terminal ⑥ receives lock signal when the unlock signal is shut off.

Input (Only for RHD models type-2)

When the door lock & unlock switch in the power window main switch is in LOCKED position, ground is supplied

- to door lock timer terminal ⑤
- through door lock & unlock switch in the power window main switch terminal ⑭
- to door lock & unlock switch in the power window main switch terminal ③
- through body grounds **M28**, **M60** and **M68**.

When the door lock & unlock switch in the power window main switch is in UNLOCKED position, ground is supplied

- to door lock timer terminal ⑧
- through door lock & unlock switch in the power window main switch terminal ⑦
- to door lock & unlock switch in the power window main switch terminal ③
- through body grounds **M28**, **M60** and **M68**.

POWER DOOR LOCK

System Description (Cont'd)

Output (Type-1)

Unlock signal

Ground is supplied

- to each door lock actuator terminal ③
- through door lock timer terminal ⑮.

Power is supplied

- to each door lock actuator terminal ①
- through door lock timer terminal ⑭.

Then, the door is unlocked.

Lock signal

Ground is supplied

- to each door lock actuator terminal ①
- through door lock timer terminal ⑭.

Power is supplied

- to each door lock actuator terminal ③.
- through door lock timer terminal ⑮.

Then, the door is locked.

Output (Type-2)

Unlock signal

Ground is supplied

- to each door lock actuator terminal ①
- through door lock timer terminal ②.

Power is supplied

- to each door lock actuator terminal ③
- through door lock timer terminal ④.

Then, the door is unlocked.

Lock signal

Ground is supplied

- to each door lock actuator terminal ③
- through door lock timer terminal ④.

Power is supplied

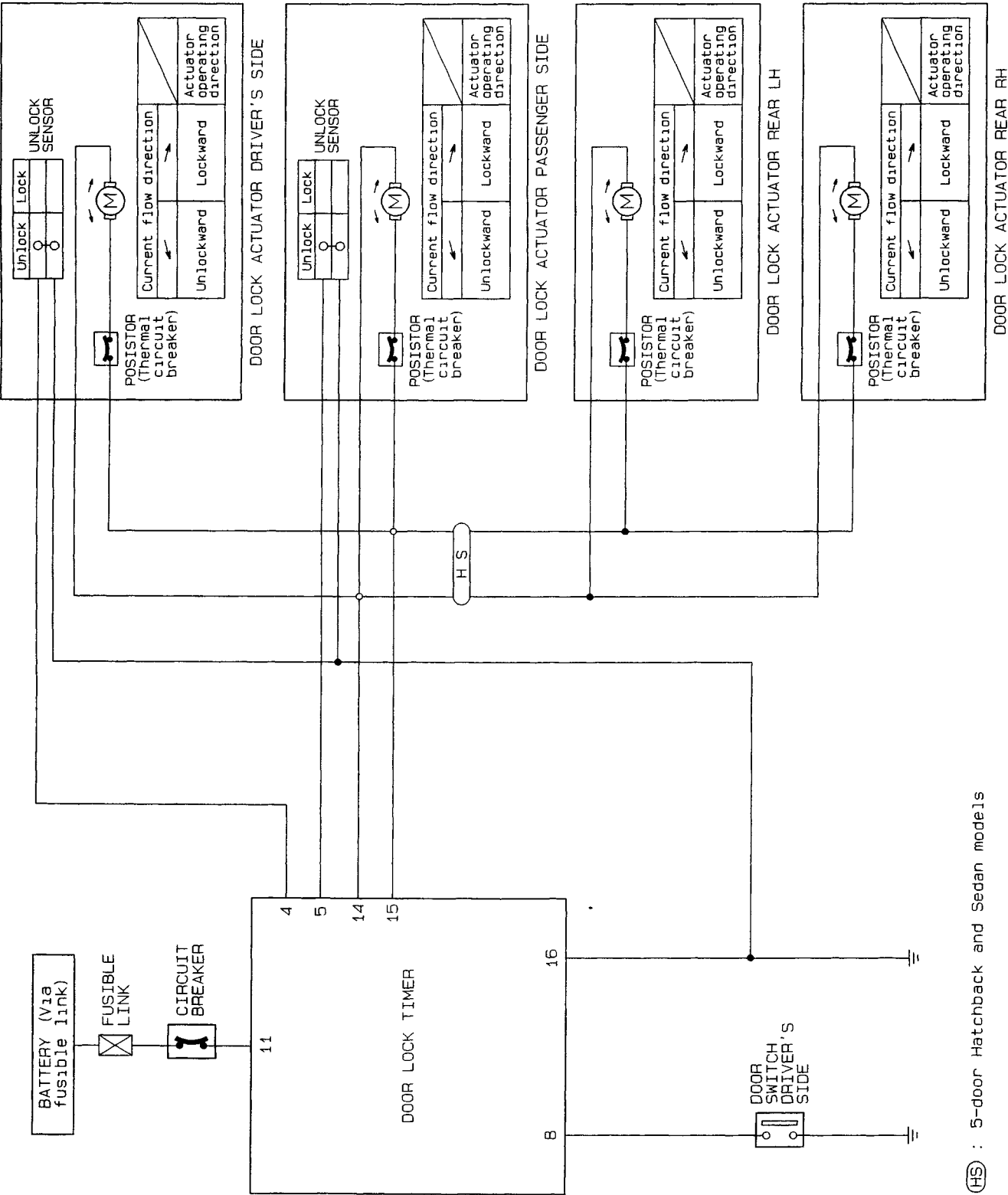
- to each door lock actuator terminal ①
- through door lock timer terminal ②.

Then, the door is locked.

POWER DOOR LOCK

Schematic

TYPE-1 (For Europe and Australia)

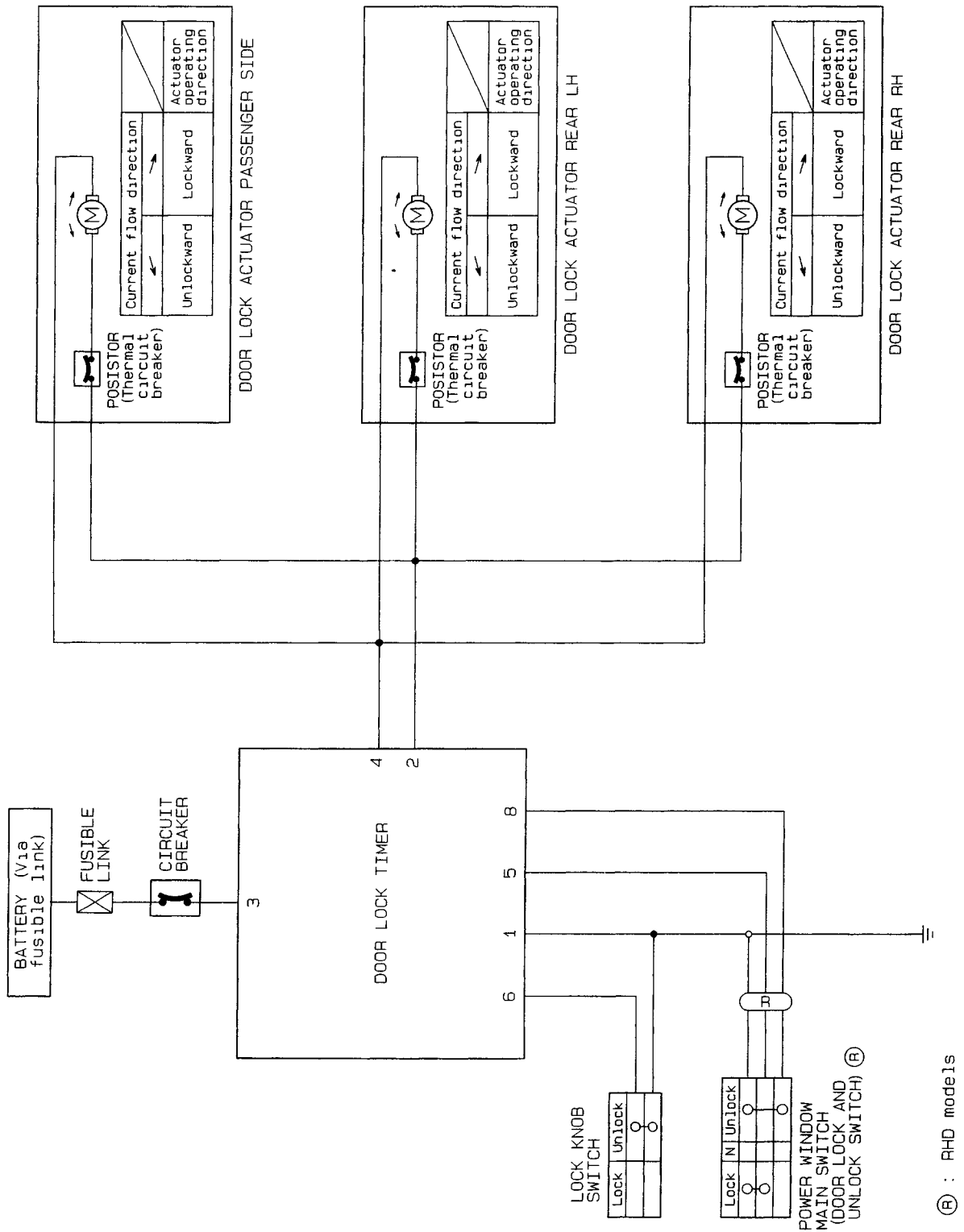


(HS) : 5-door Hatchback and Sedan models

POWER DOOR LOCK

Schematic (Cont'd)

TYPE-2 (Except for Europe and Australia)



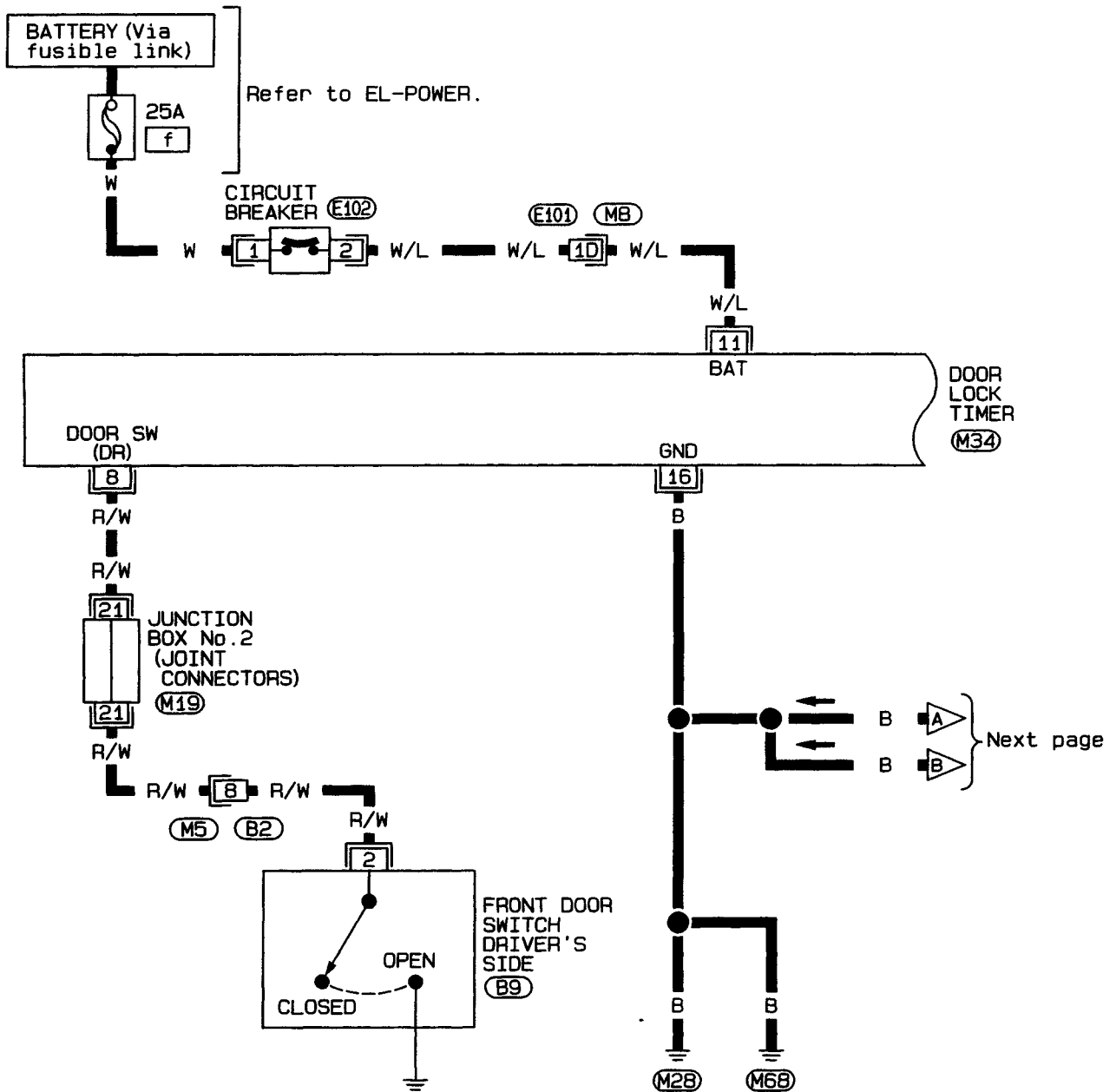
(R) : RHD models

POWER DOOR LOCK

Wiring Diagram — D/LOCK —

TYPE-1 (LHD models for Europe)

EL-D/LOCK-01

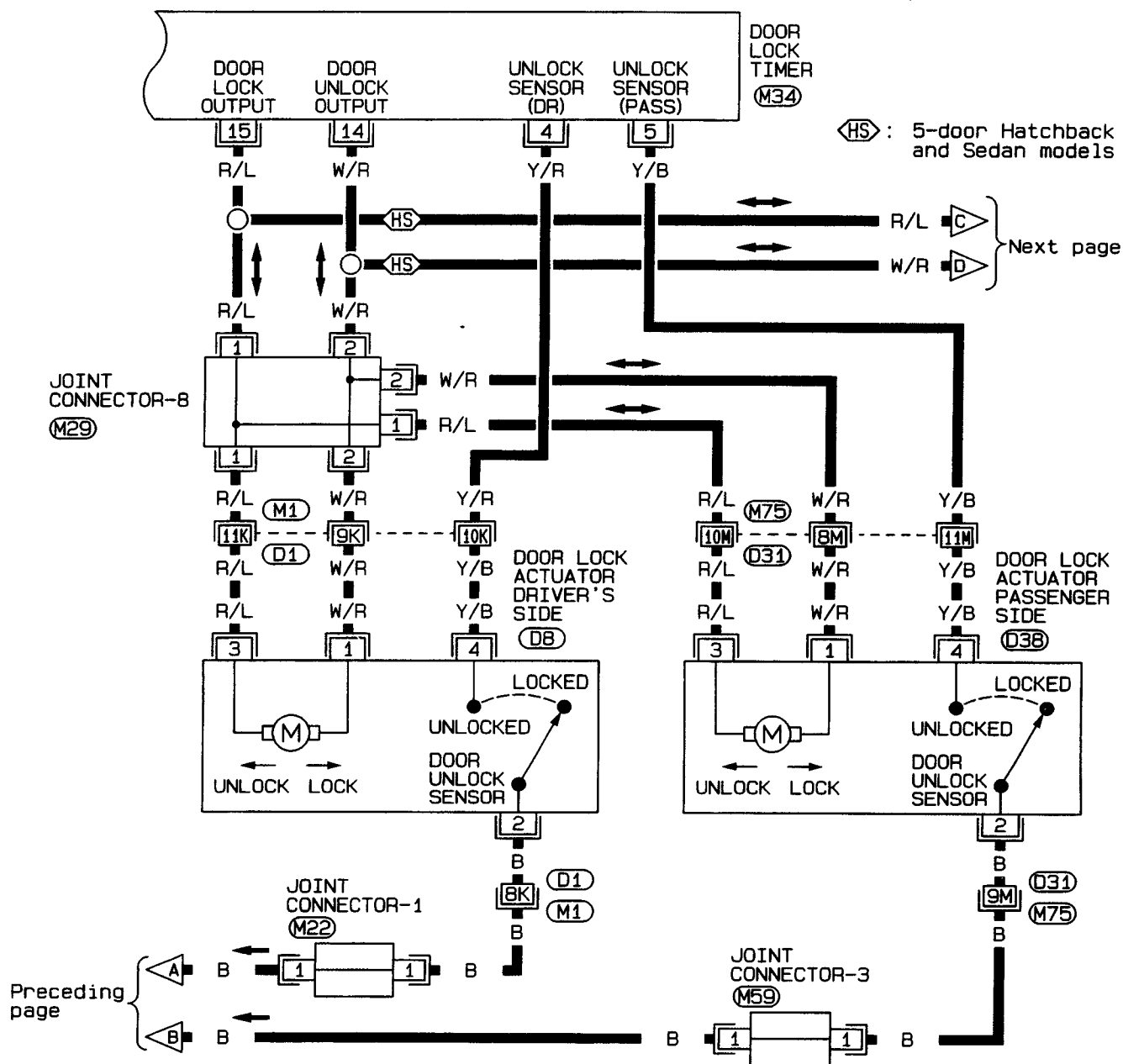


Refer to last page (Foldout page).

(MB), (E101)
(M19)

Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-02



		8			5	4		
		16	15	14				11

M34

W





Refer to last page
(Foldout page) .

M1 . D1

(M75) (D31)

1	1	1	1	1	1	1	1	1	1
2	2	2	3	3	3	3	4	4	4

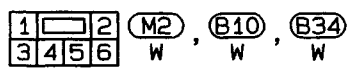
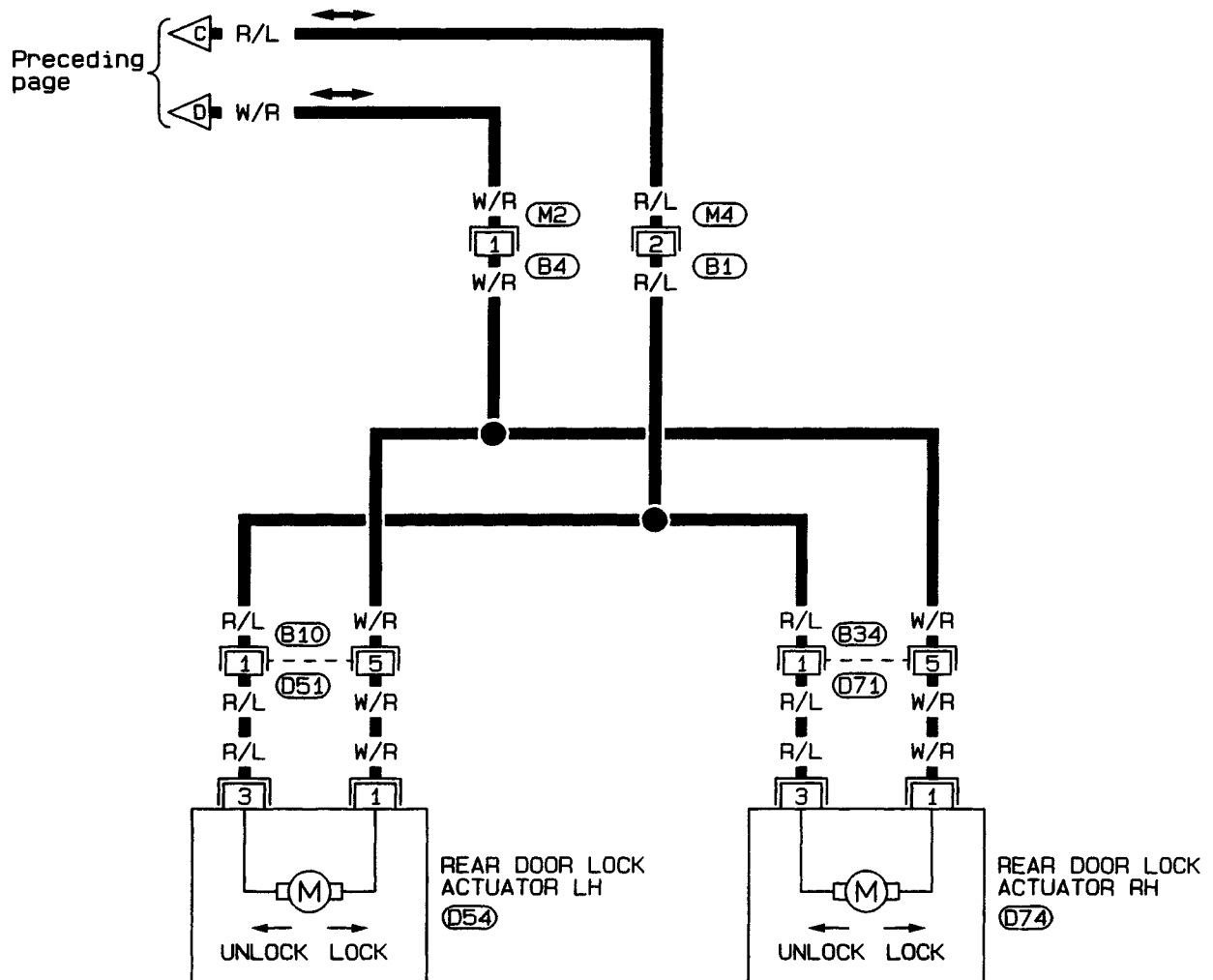
M22 , M59
BR , BR

CAUTION : Don't attempt to repair, splice or modify the flexible flat circuit (FFC). If the FFC is damaged, replace with a new one.

POWER DOOR LOCK

Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-03

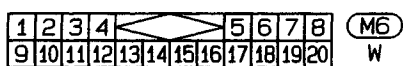
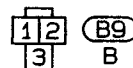
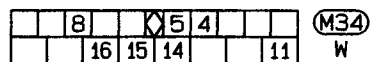
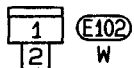
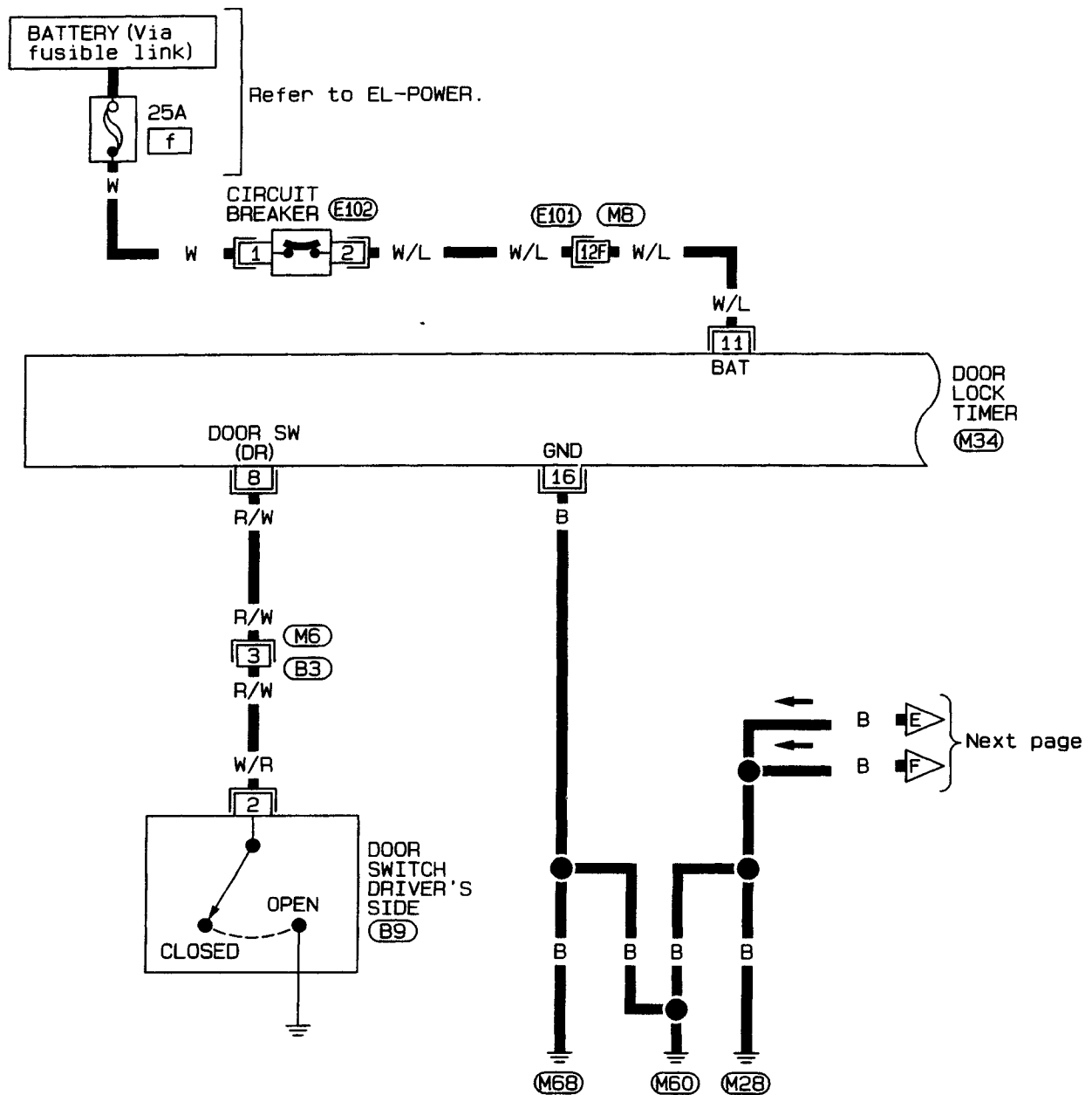


POWER DOOR LOCK

Wiring Diagram — D/LOCK — (Cont'd)

TYPE-1 (RHD models for Europe and Australia)

EL-D/LOCK-04



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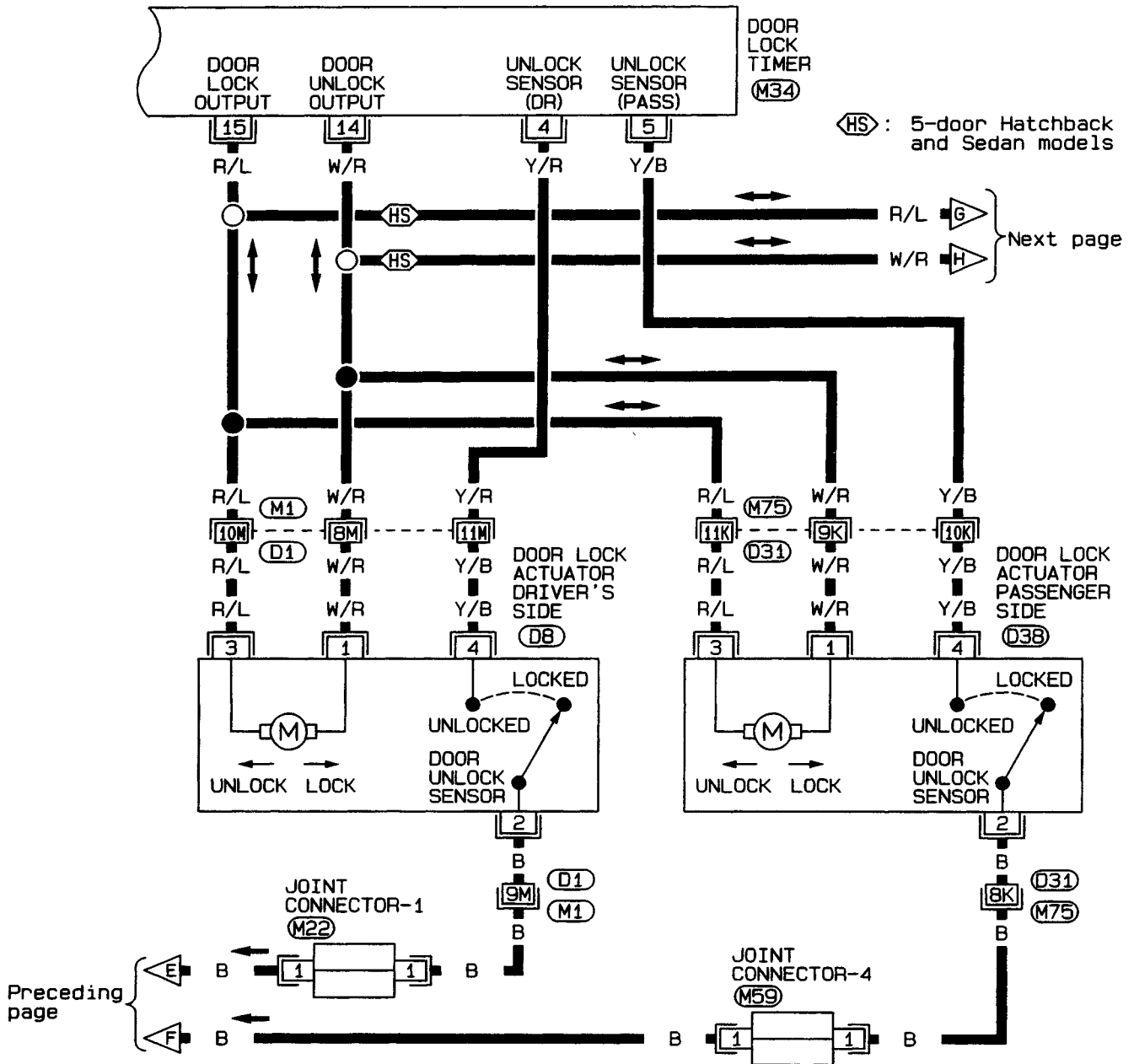
(MB), (E101)

EL

POWER DOOR LOCK

Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-05



		8		5	4					(M34)
		16	15	14						W

3	4									(D8), (D38)
1	2									GY, GY

1	1	1	1	1	1	1	1	1	1	(M22)
2	2	2	3	3	3	3	4	4	4	BR

1	1	1	1	1	1	1	1	1	1	(M59)
2	2	2	2	2	3	3	3	3	3	P

Refer to last page (Foldout page).

(M1), (D1)

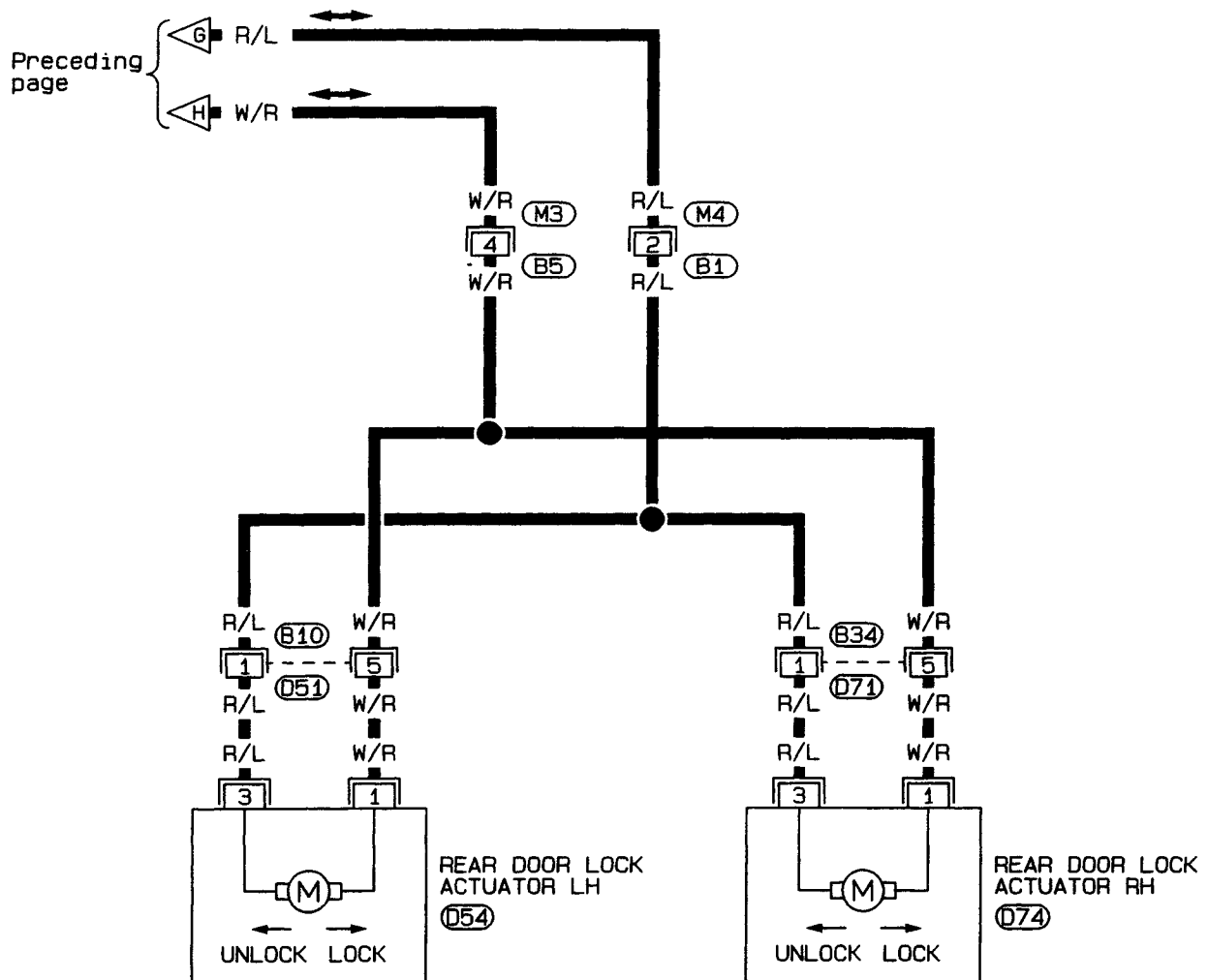
(M75), (D31)

CAUTION : Don't attempt to repair, splice or modify the flexible flat circuit (FFC). If the FFC is damaged, replace with a new one.

POWER DOOR LOCK

Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-06

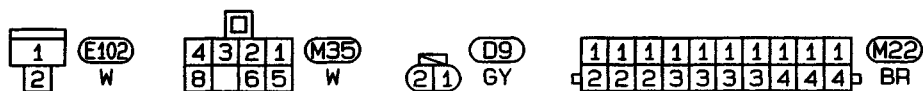
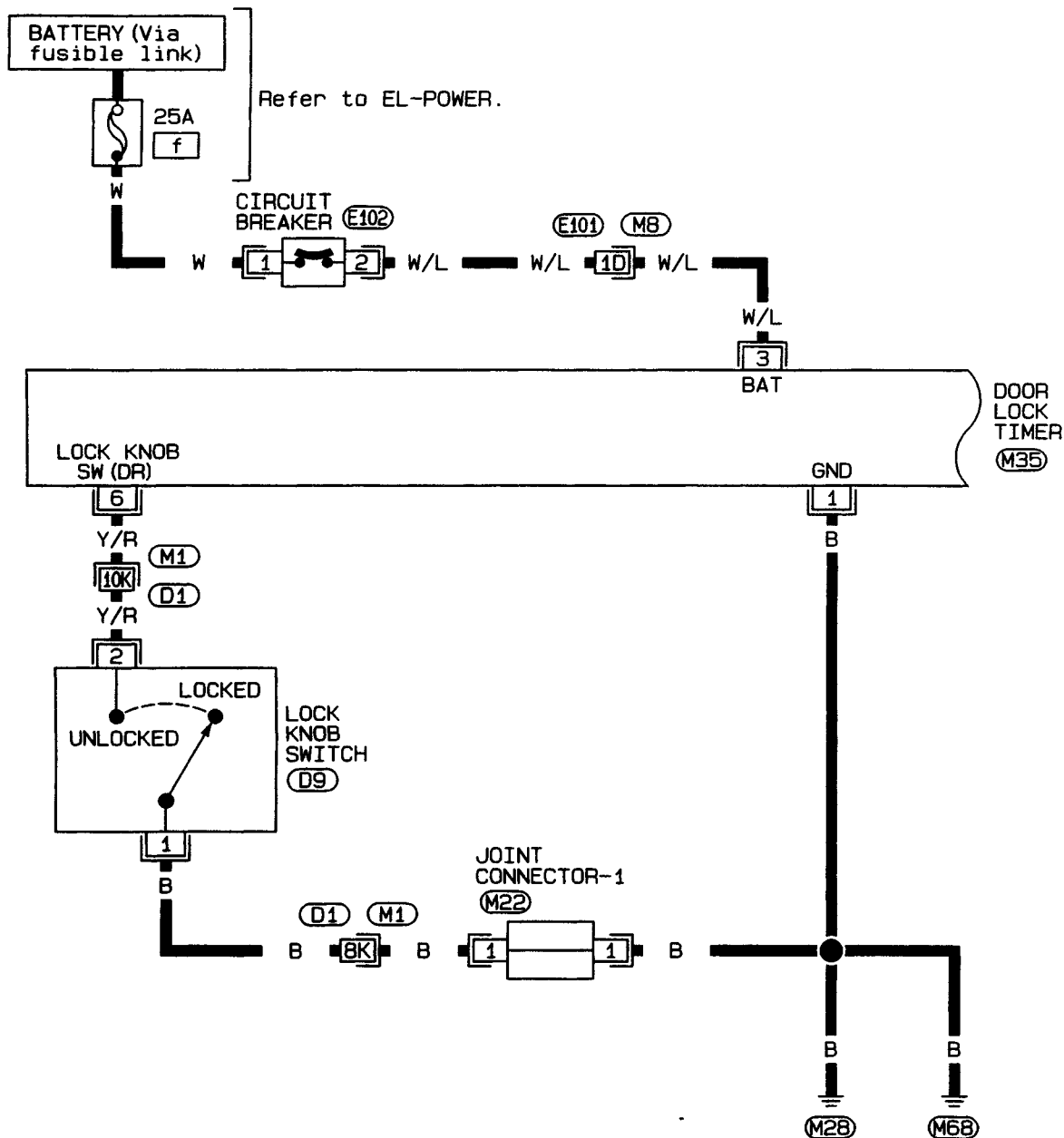


EL

Wiring Diagram — D/LOCK — (Cont'd)

TYPE-2 (LHD models except for Europe)

EL-D/LOCK-07



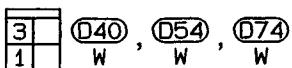
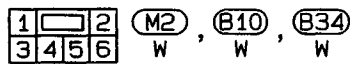
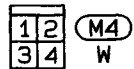
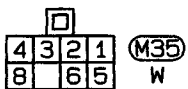
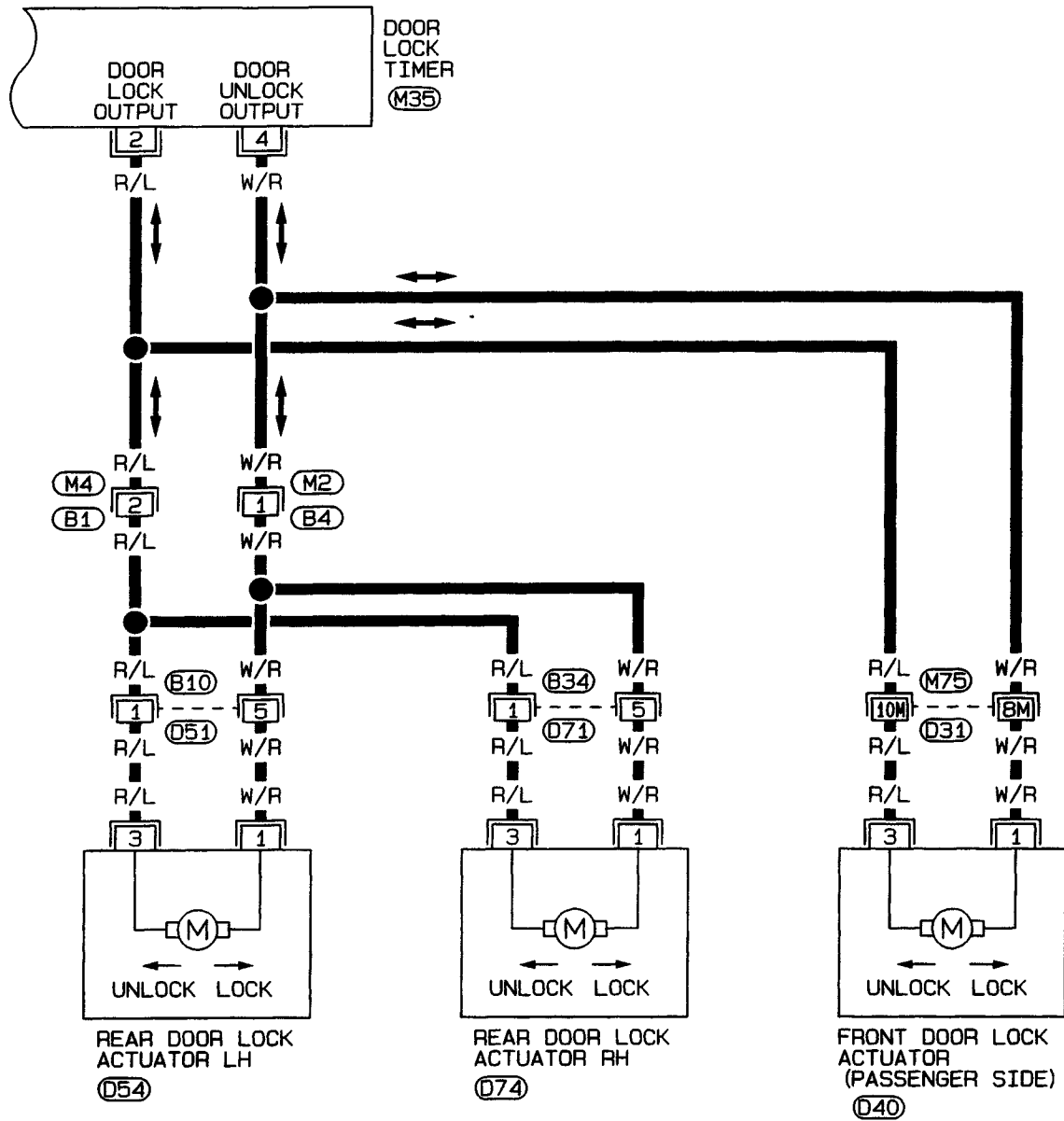
Refer to last page
(Foldout page) .

M8, E101
M1, D1

POWER DOOR LOCK

Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-08



Refer to last page (Foldout page).

(M75), (D31)

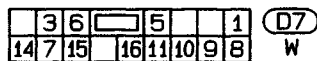
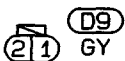
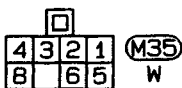
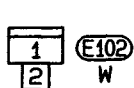
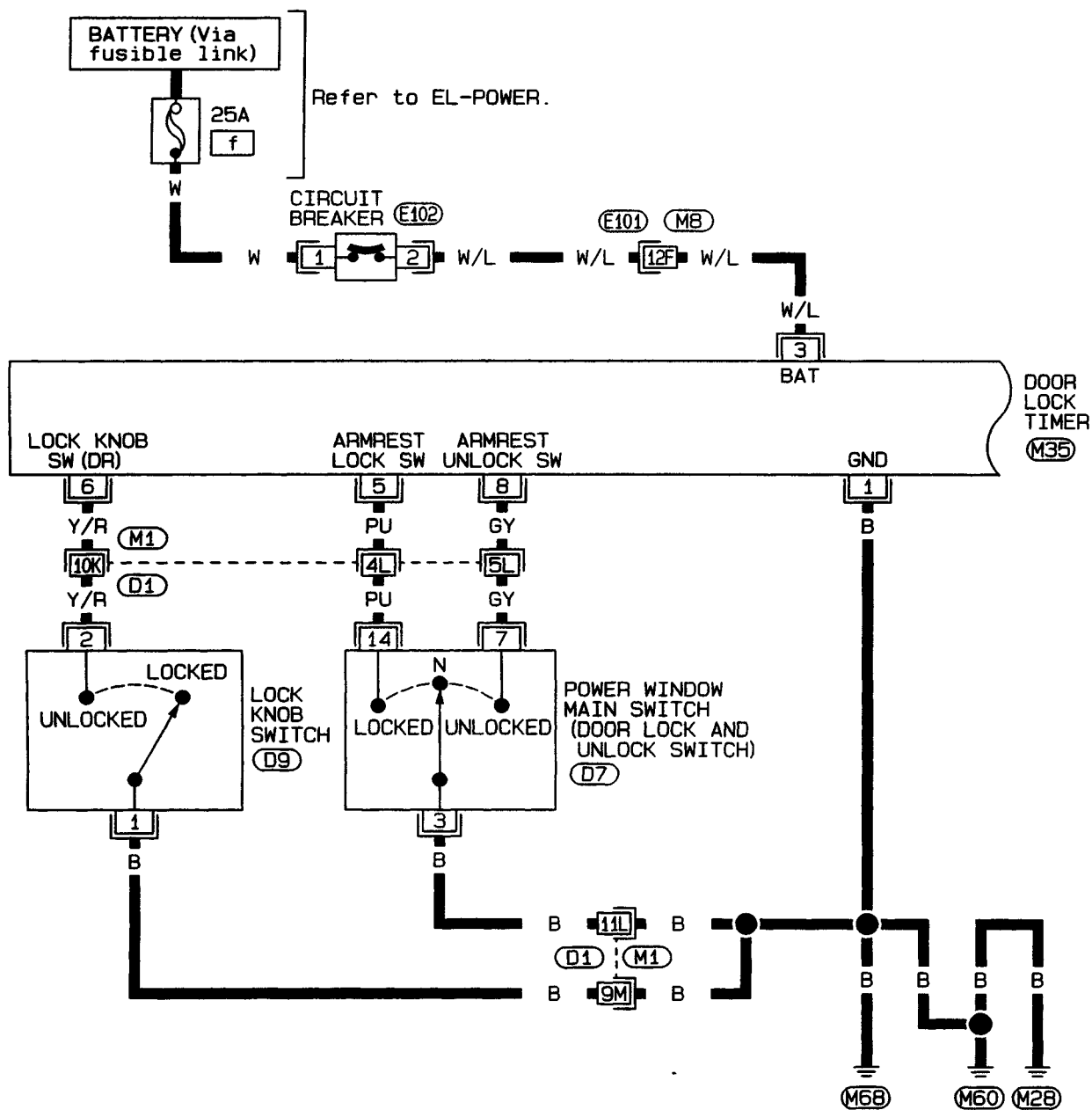
EL

POWER DOOR LOCK

Wiring Diagram — D/LOCK — (Cont'd)

TYPE-2 (RHD models except for Europe and Australia)

EL-D/LOCK-09



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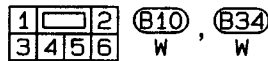
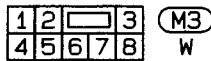
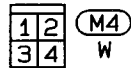
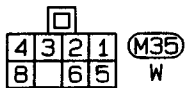
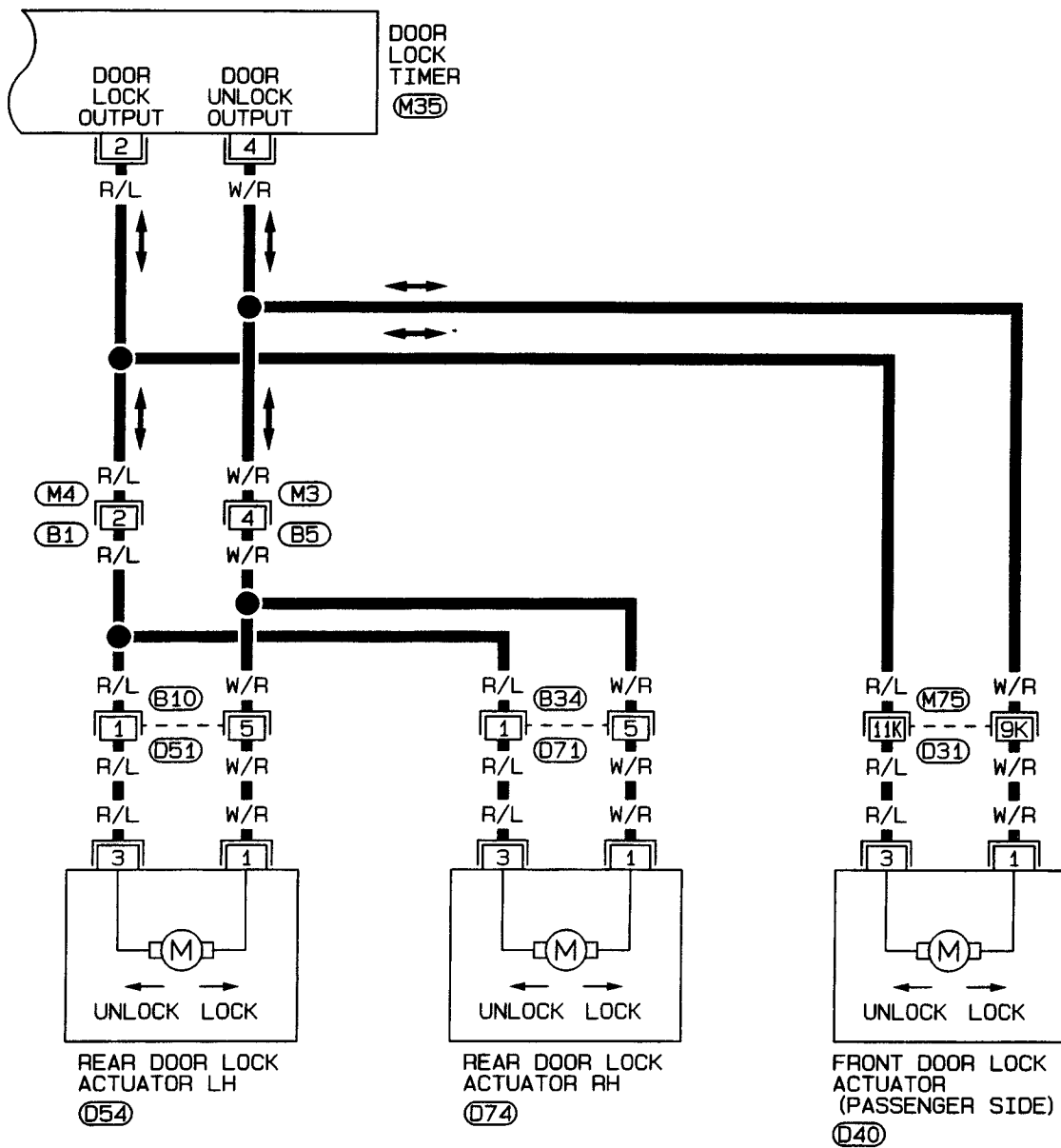
(M8), (E101)

(M1), (D1)

POWER DOOR LOCK

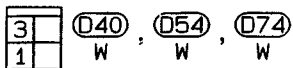
Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-10



Refer to last page (Foldout page).

(M75), (031)



EL

POWER DOOR LOCK

Trouble Diagnoses — Type 1 (For Europe and Australia)

SYMPTOM CHART

PROCEDURE	Diagnostic Procedure		
REFERENCE PAGE	EL-213	EL-214	EL-215
SYMPTOM	Power supply and ground circuit check	Procedure 1 (Unlock sensor check)	Procedure 2 (Door lock actuator check)
Power door lock does not operate with driver's side lock knob switch and driver door key cylinder	①		②
Power door lock does not operate with door lock and unlock switch on power window main switch	①	②	③
Specific door lock actuator does not operate			①

Perform Diagnostic Procedures in numerical order shown in the symptom chart. Carry out functional tests whenever each step is finished. If the trouble remains after performing all Diagnostic Procedures, replace the door lock timer.

POWER DOOR LOCK

Trouble Diagnoses — Type 1 (For Europe and Australia) (Cont'd)

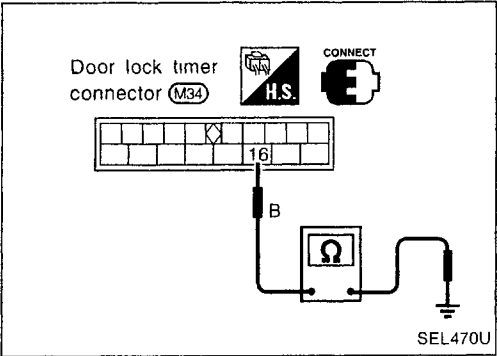
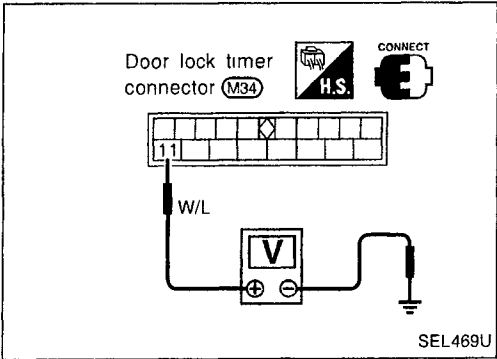
POWER SUPPLY AND GROUND CIRCUIT CHECK

Power supply check

Terminals	Ignition switch operation			
	OFF	ACC	ON	START
⑪ - Ground	Battery voltage			

Ground circuit check

Terminals	Continuity
⑩ - Ground	Yes

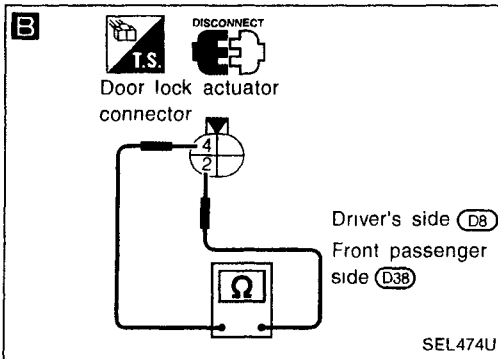
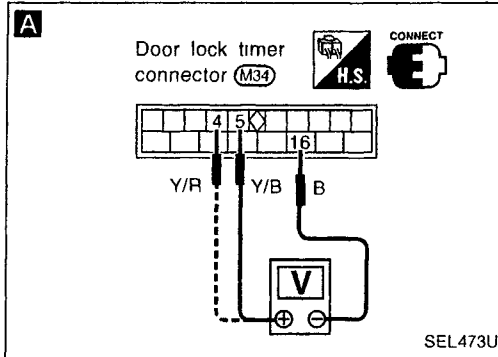


POWER DOOR LOCK

Trouble Diagnoses — Type 1 (For Europe and Australia) (Cont'd)

PROCEDURE 1

(Unlock sensor check)



A

UNLOCK SENSOR SIGNAL CHECK
Measure voltage between door lock timer harness terminals ④ and ①⑥, ⑤ and ①⑥.

Terminals		Condition of unlock sensor and voltage [V]	
⊕	⊖	Lock	Unlock
④	①⑥	0	Approx 12
⑤	①⑥		

OK

Unlock sensor signal is OK.

NG

B

UNLOCK SENSOR CHECK
Check continuity between door lock actuator connector terminals ④ and ②

Terminals	Condition of door lock actuator	Continuity
④ and ②	Lock	Yes
	Unlock	Yes

NG

Replace door lock actuator.

OK

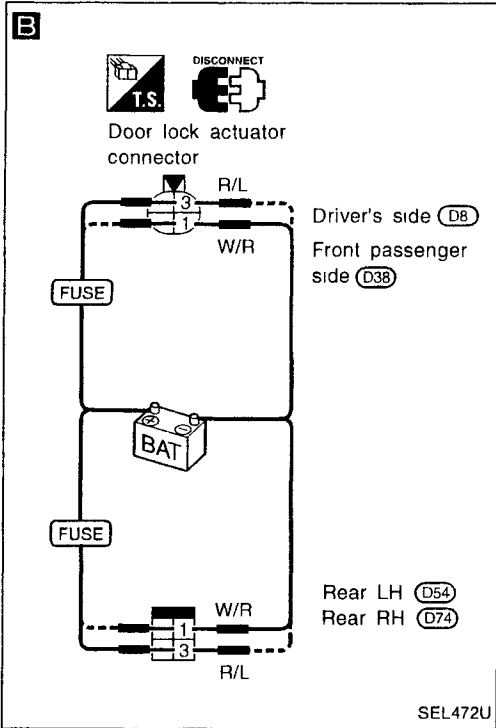
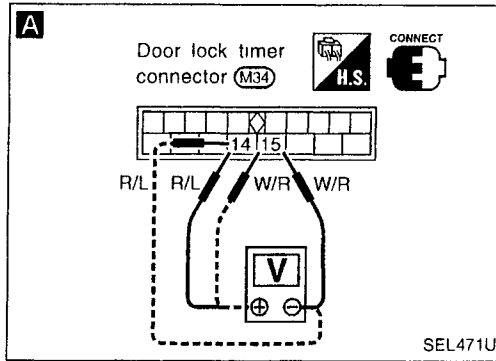
Check the following.

- 1) Harness between door lock timer and door lock actuator for open/short circuit
- 2) Door lock actuator ground circuit

POWER DOOR LOCK

Trouble Diagnoses — Type 1 (For Europe and Australia) (Cont'd) PROCEDURE 2

(Door lock actuator check)



A

DOOR LOCK ACTUATOR OUTPUT SIGNAL CHECK

Measure voltage between door lock timer harness terminals ⑭ and ⑮.

Terminals		Condition of door lock & unlock switch	Voltage [V]
⊕	⊖		
⑭	⑮	Neutral → Unlock	0 → 12 → 0 (Approx 1.0 sec)
⑮	⑭	Neutral → Lock	0 → 12 → 0 (Approx 1.0 sec)

* The voltage values are approximate

NG

Replace door lock timer.

OK

B

DOOR LOCK ACTUATOR CHECK

Apply 12V direct current to terminals and check operation

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

NG

Replace door lock actuator

OK

Check harness between door lock timer and door lock actuator for open/short circuit.

POWER DOOR LOCK

Trouble Diagnoses — Type 2 (Except for Europe and Australia)

SYMPTOM CHART

PROCEDURE	Diagnostic Procedure			
REFERENCE PAGE	EL-217	EL-217	EL-218	EL-219
SYMPTOM	Power supply and ground circuit check	Procedure 1 (Lock knob switch check)	Procedure 2 (Door lock & unlock switch check)	Procedure 3 (Door lock actuator check)
Power door lock does not operate with driver's side lock knob switch and driver door key cylinder.	①	②		③
Power door lock does not operate with door lock and unlock switch on power window main switch.	①		②	③
Specific door lock actuator does not operate.				①

Perform Diagnostic Procedures in numerical order shown in the symptom chart. Carry out functional tests whenever each step is finished. If the trouble remains after performing all Diagnostic Procedures, replace the door lock timer.

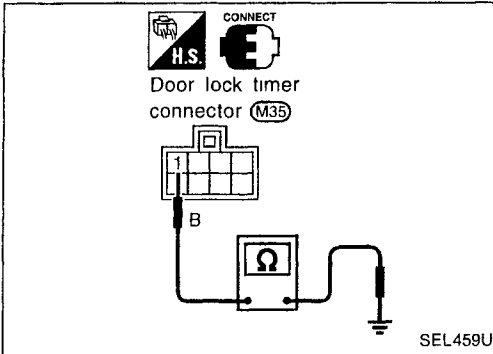
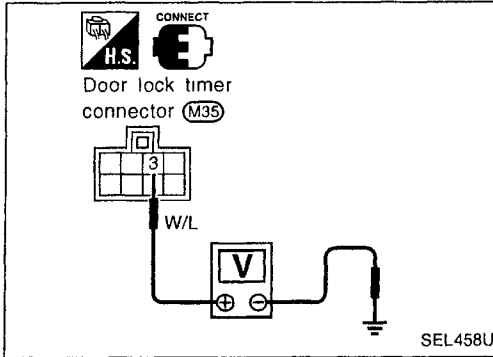
POWER DOOR LOCK

Trouble Diagnoses — Type 2 (Except for Europe and Australia) (Cont'd)

POWER SUPPLY AND GROUND CIRCUIT CHECK

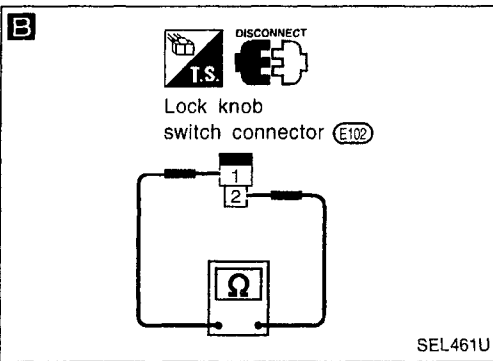
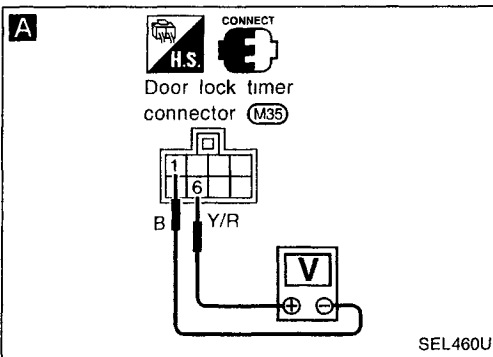
Power supply check

Terminals	Ignition switch operation			
	OFF	ACC	ON	START
③ - Ground	Battery voltage			



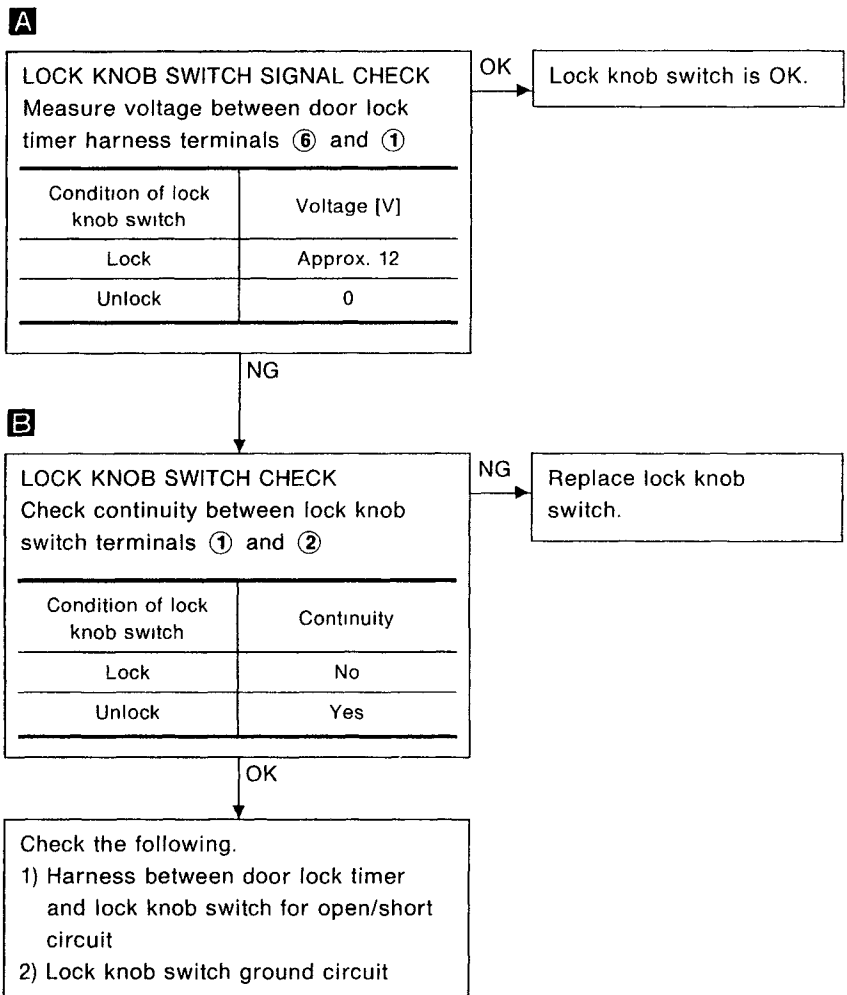
Ground circuit check

Terminals	Continuity
① - Ground	Yes



PROCEDURE 1

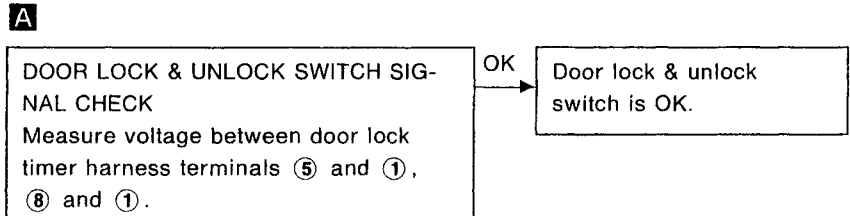
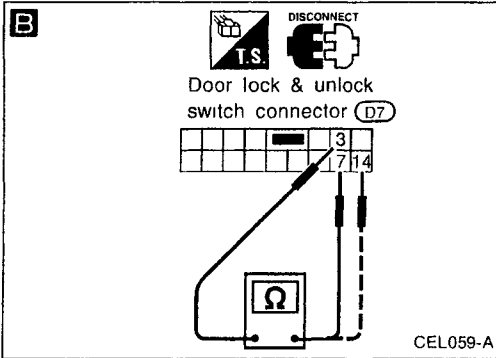
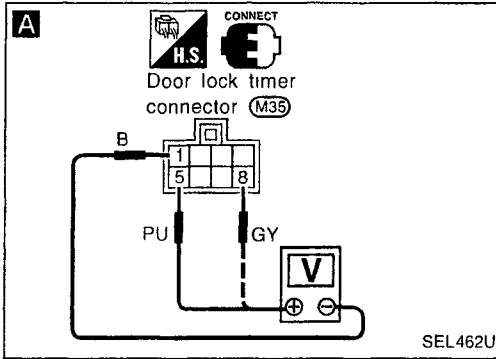
(Lock knob switch check)



POWER DOOR LOCK

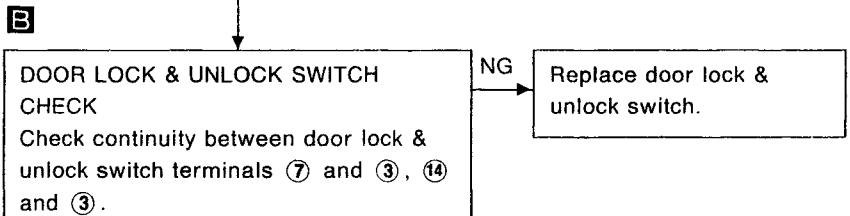
Trouble Diagnoses — Type 2 (Except for Europe and Australia) (Cont'd) PROCEDURE 2

(Door lock & unlock switch check)



Terminals		Condition of door lock & unlock switch	Voltage [V]
⊕	⊖		
⑤	①	Lock	Approx 12
⑧	①	Unlock	Approx 12

NG



Terminals	Condition of door lock & unlock switch	Continuity
⑦ and ③	Lock	Yes
⑭ and ③	Unlock	Yes

OK

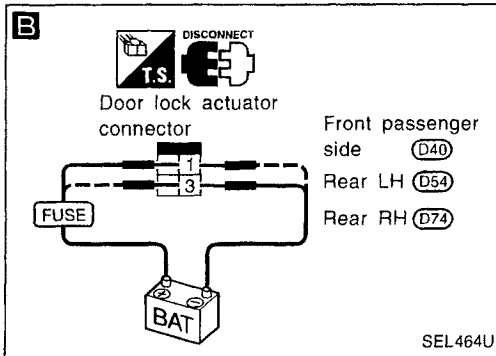
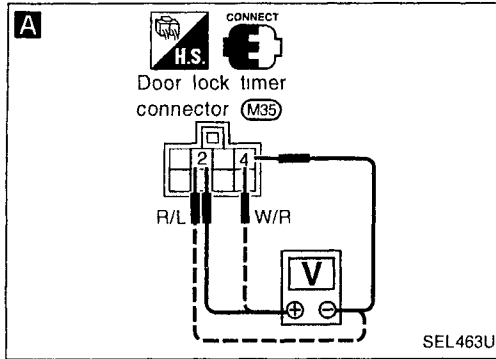
Check the following.

- 1) Harness between door lock timer and door lock & unlock switch for open/short circuit
- 2) Door lock & unlock switch ground circuit

POWER DOOR LOCK

Trouble Diagnoses — Type 2 (Except for Europe and Australia) (Cont'd) PROCEDURE 3

(Door lock actuator check)



A

DOOR LOCK ACTUATOR OUTPUT SIGNAL CHECK

Measure voltage between door lock timer harness terminals ② and ④.

Terminals		Condition of door lock & unlock switch	Voltage [V]
⊕	⊖		
②	④	Neutral → Lock	0 → 12 → 0 (Approx 1.0 sec)
④	②	Neutral → Unlock	0 → 12 → 0 (Approx 1.0 sec)

* The voltage values are approximate.

NG

Replace door lock timer

OK

B

DOOR LOCK ACTUATOR CHECK

Apply 12V direct current to terminals and check operation

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

NG

Replace door lock actuator.

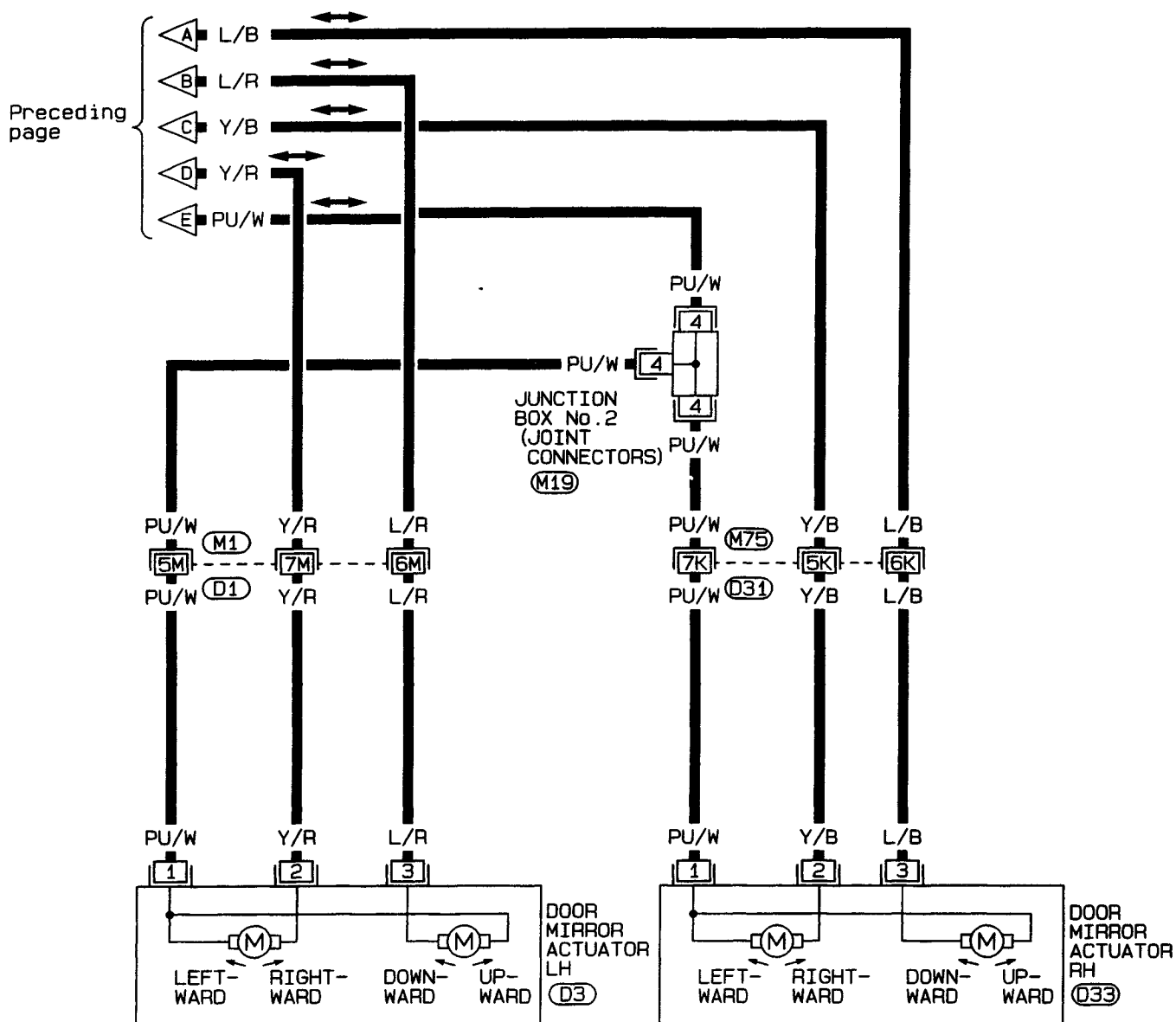
OK

Check harness between door lock timer and door lock actuator for open/short circuit

POWER DOOR MIRROR

Wiring Diagram — MIRROR — (Cont'd)

EL-MIRROR-02



1 2 3 D3, D33
BR, BR

Refer to last page
(Foldout page).

M1, D1
M75, D31
M19

CAUTION : Don't attempt to repair, splice or modify the flexible flat circuit (FFC). If the FFC is damaged, replace with a new one.

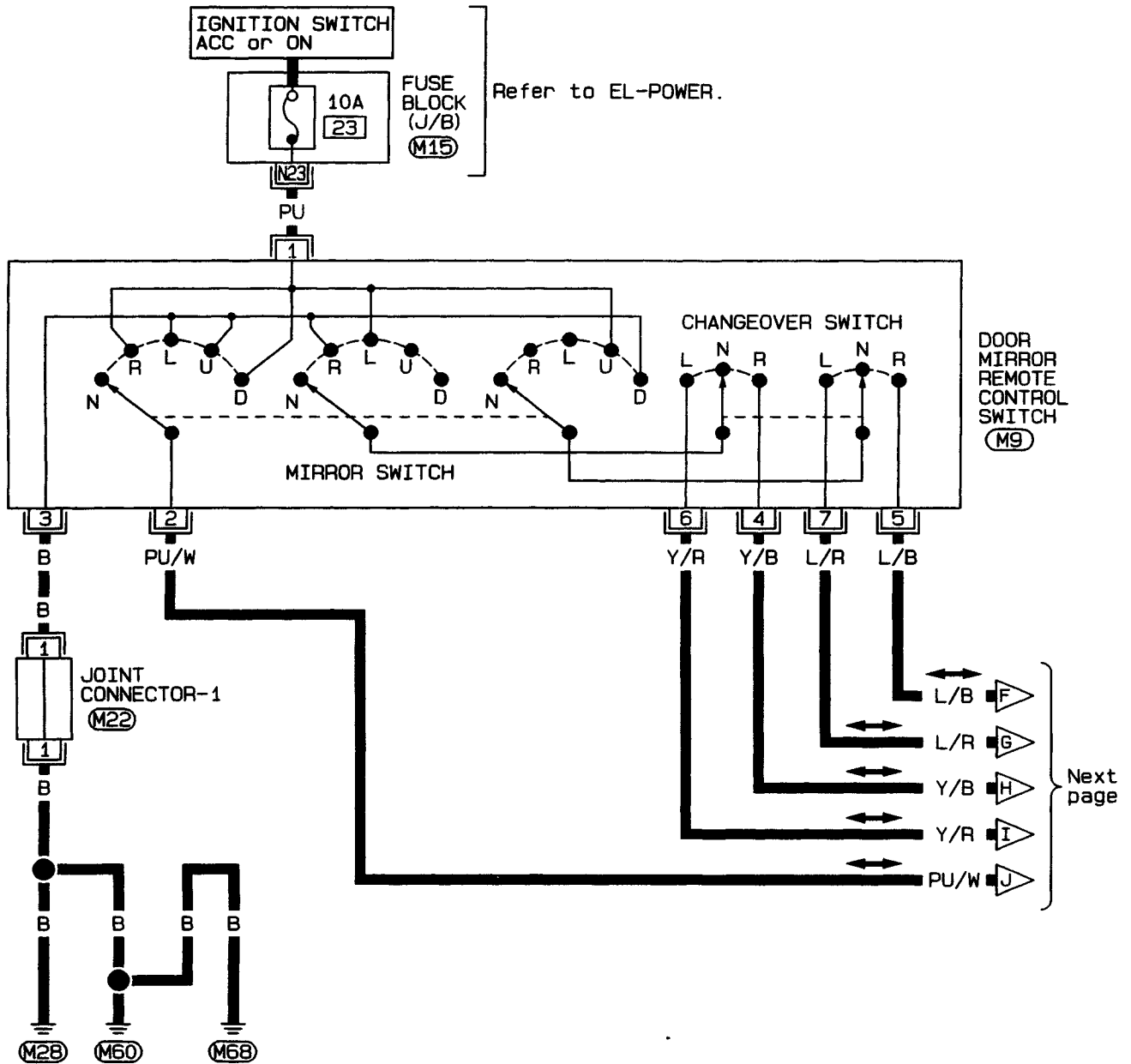
EL

POWER DOOR MIRROR

Wiring Diagram — MIRROR — (Cont'd)

RHD MODELS

EL-MIRROR-03



2	3			1	(M9)
5	7	4		6	GY

1	1	1	1	1	1	1	1	1	1	(M22)
2	2	2	3	3	3	3	4	4	4	BR

Refer to last page
(Foldout page).

(M15)

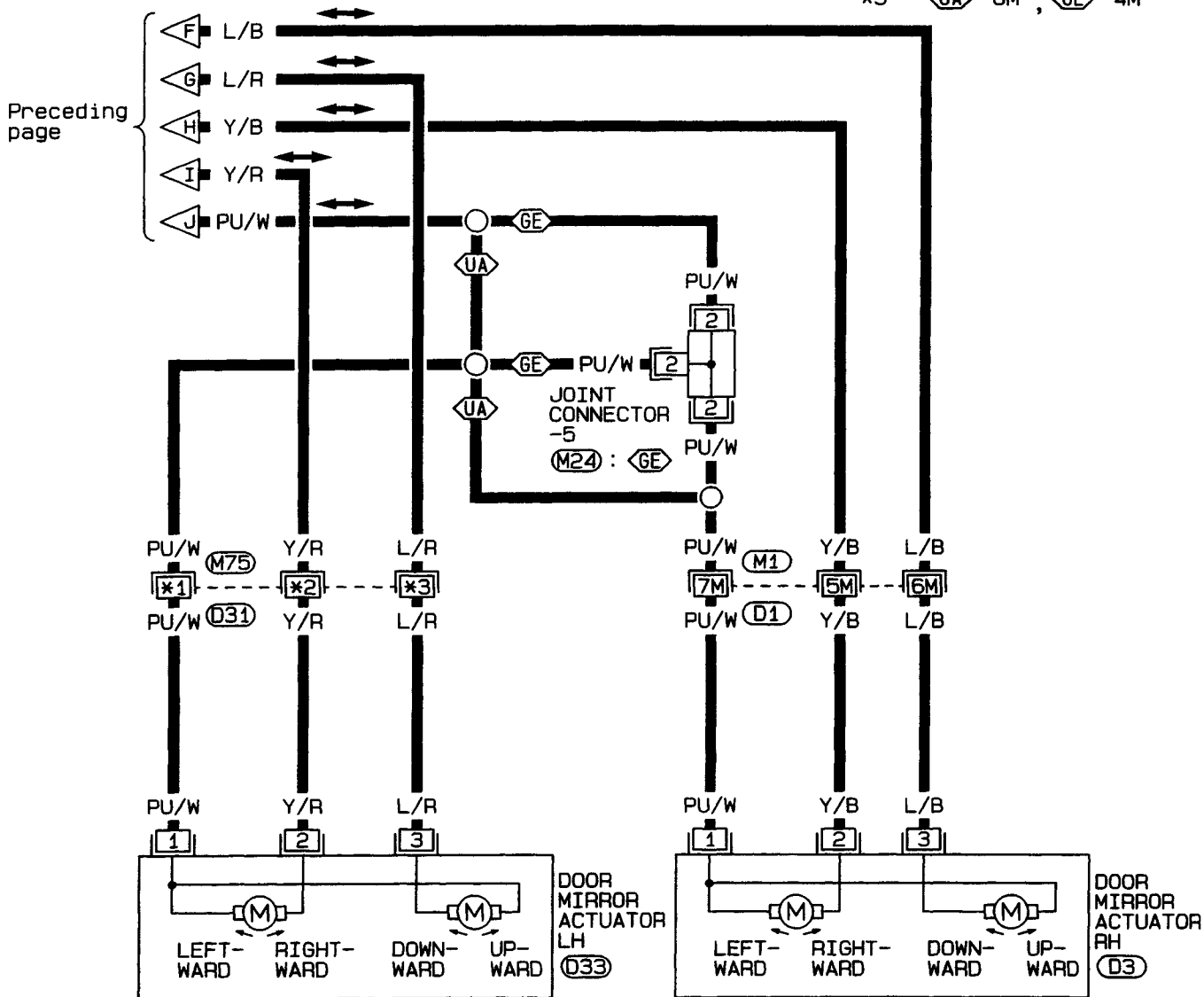
POWER DOOR MIRROR

Wiring Diagram — MIRROR — (Cont'd)

EL-MIRROR-04

UA : For Europe and Australia
GE : Except for Europe and Australia

*1... UA 5M , GE 3M
*2... UA 7M , GE 5M
*3... UA 6M , GE 4M



1 2 3 (D3) , (D33) BR , BR

1 1 1 2 2 2 3 3 3 3 (M24) OR
4 4 4 5 5 5 6 6 6 6

Refer to last page (Foldout page) .

(M1) , (D1)

(M75) , (D31)

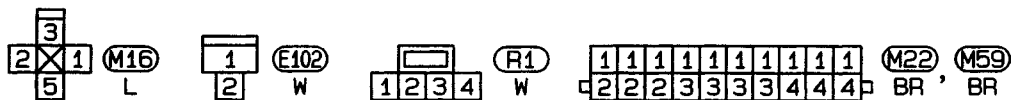
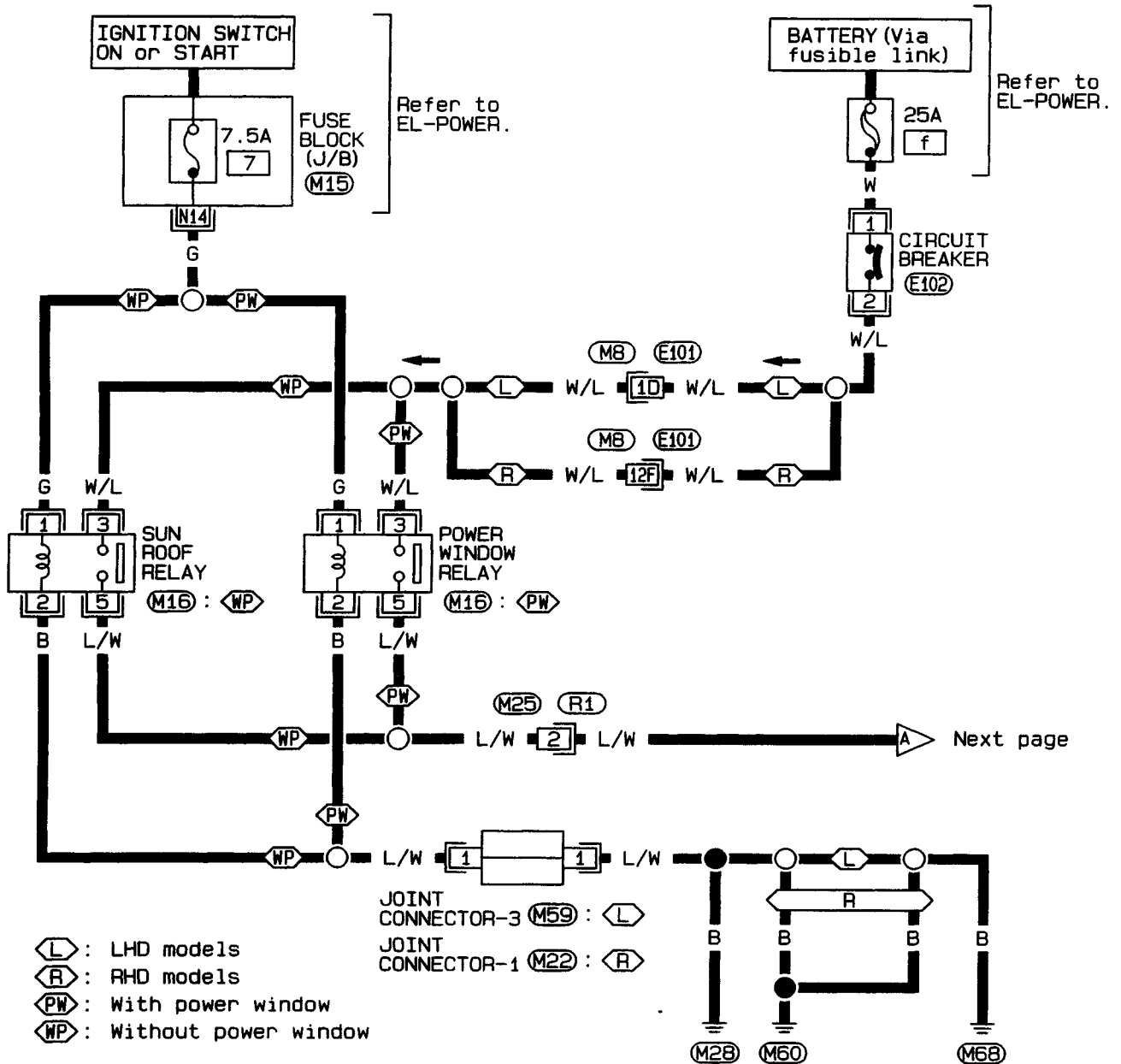
CAUTION : Don't attempt to repair, splice or modify the flexible flat circuit (FFC) . If the FFC is damaged, replace with a new one .

ELECTRIC SUN ROOF

★ For removal and adjustment of sun roof, refer to "SUN ROOF" in BT section.

Wiring Diagram — SROOF —

EL-SROOF-01

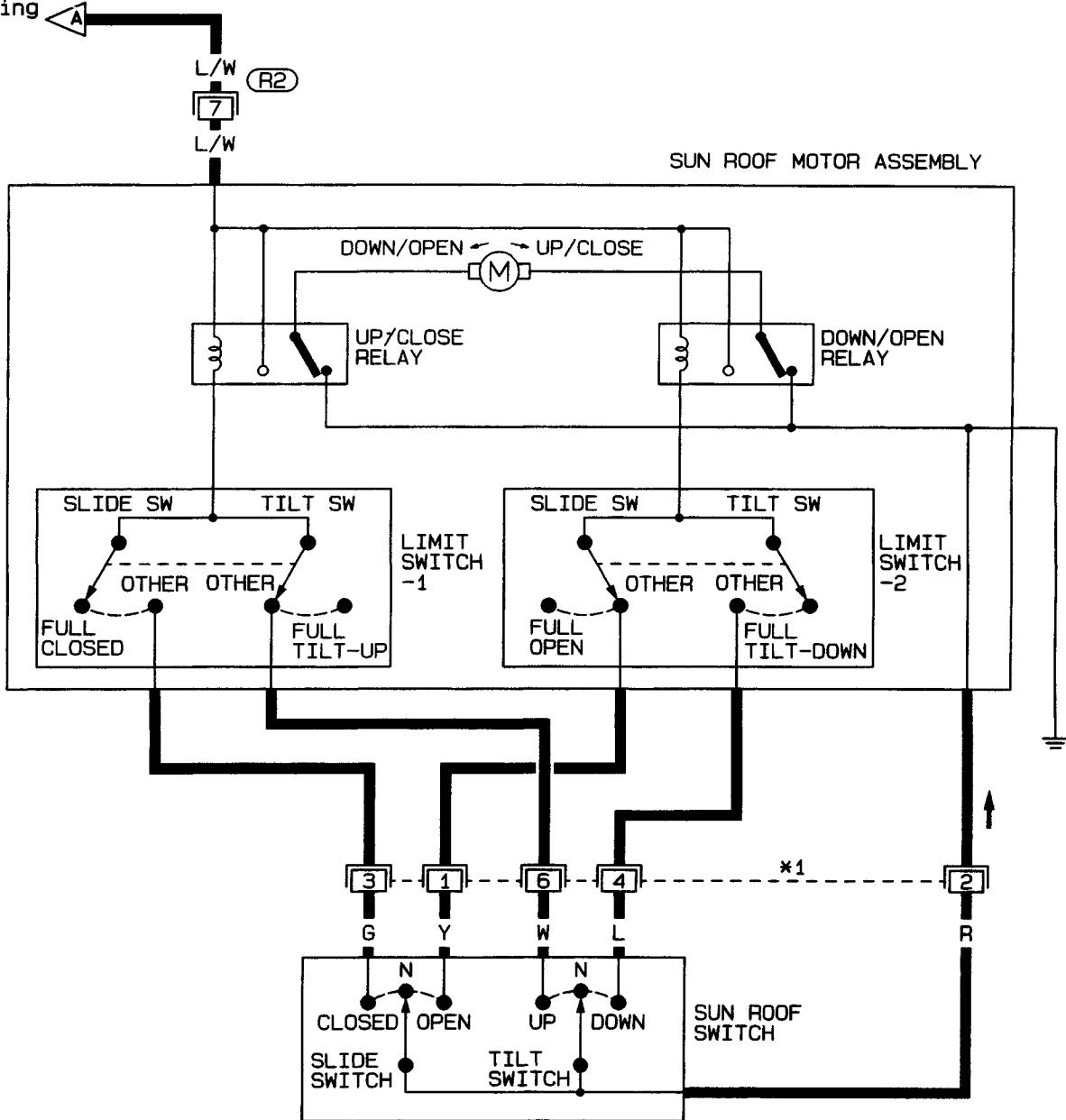


ELECTRIC SUN ROOF

Wiring Diagram — SROOF — (Cont'd)

EL-SROOF-02

Preceding
page



4	1	*1
2	6	3

BR

7	(R2)
	W

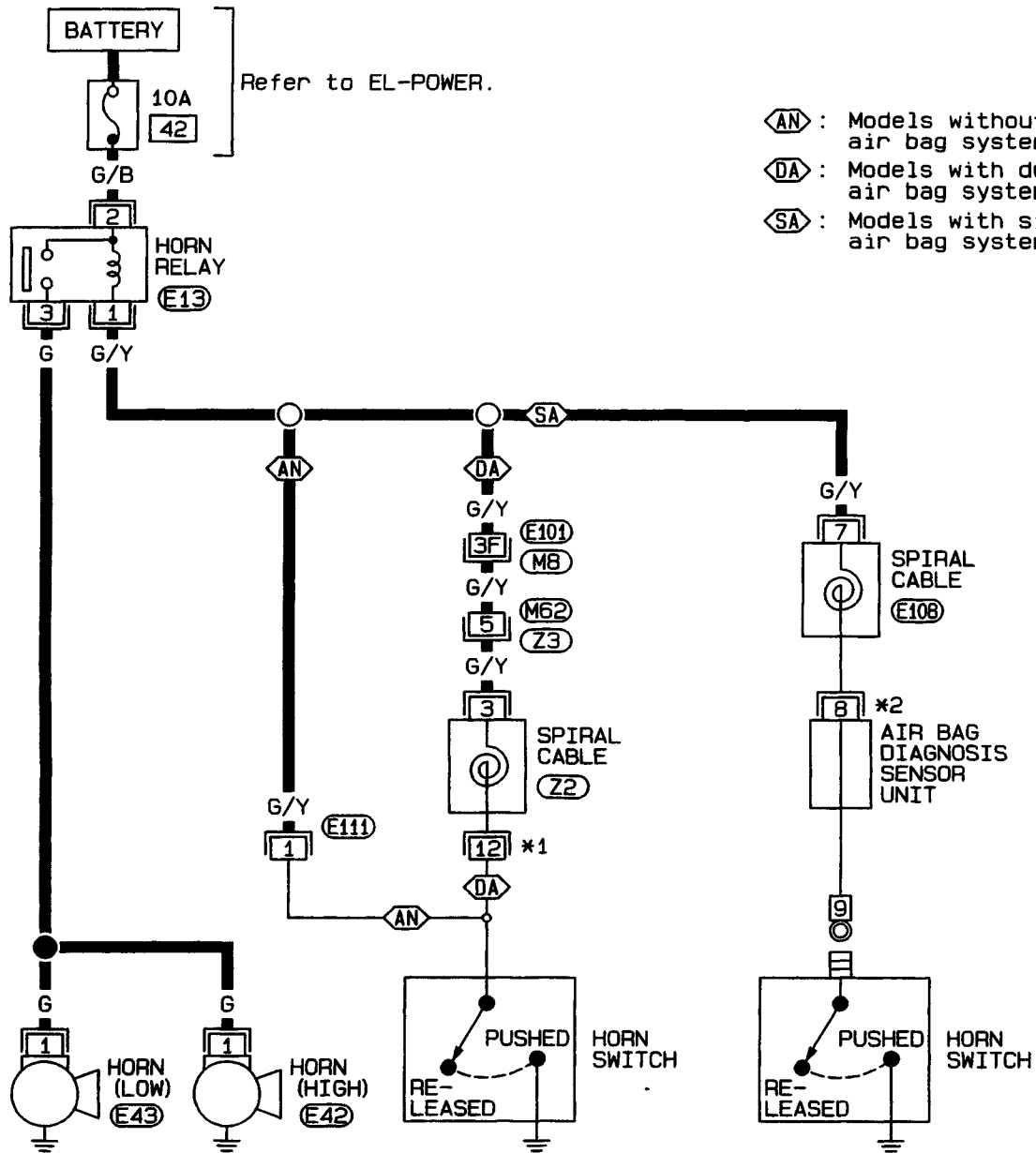
EL

HORN, CIGARETTE LIGHTER AND CLOCK

Wiring Diagram — HORN —

LHD MODELS

EL-HORN-01



2	(E13)
1 3	W

1 2 0 3 4 5	(Z3)
6 7 8 9 10 11 12	W

1 0 3	(Z2)
2 5 4	W

8 7	(E108)
9 10	BR

Refer to last page (Foldout page).

(MB), (E101)

1	(E42), (E43), (E111)
B	B, B, B

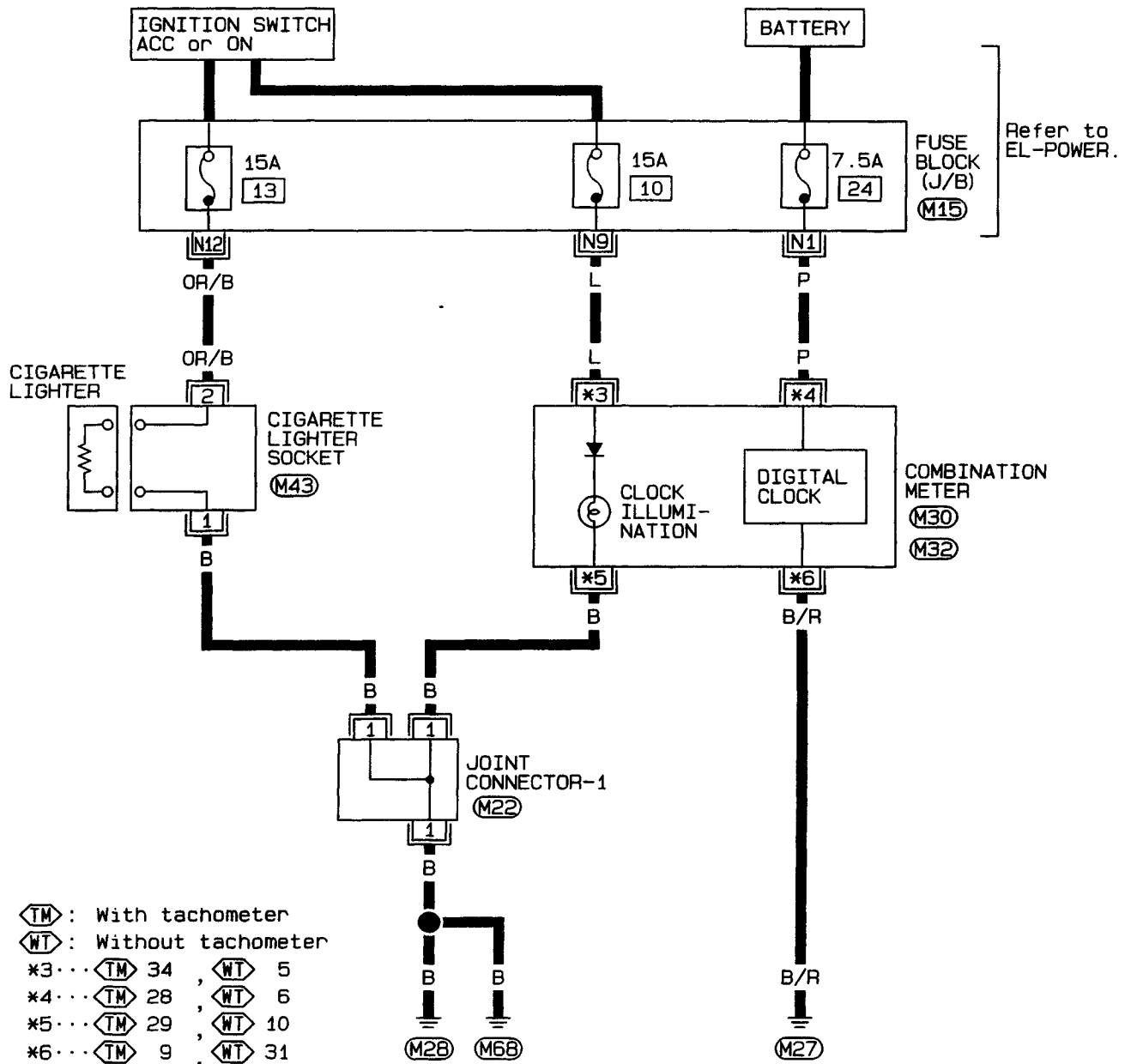
	*1
12	B

	*2
2 7 1 8	W

HORN, CIGARETTE LIGHTER AND CLOCK

Wiring Diagram — HORN — (Cont'd)

EL-HORN-02



1	M43
2	B

1	2	3	4		5	6	7	M30	
8	9	10	11	12	13	14	15	16	BR

33	32	31	30		29	28	27	M32	
42	41	40	39	38	37	36	35	34	W

1	1	1	1	1	1	1	1	1	1	M22
2	2	2	3	3	3	3	4	4	4	BR

Refer to last page (Foldout page).

M15

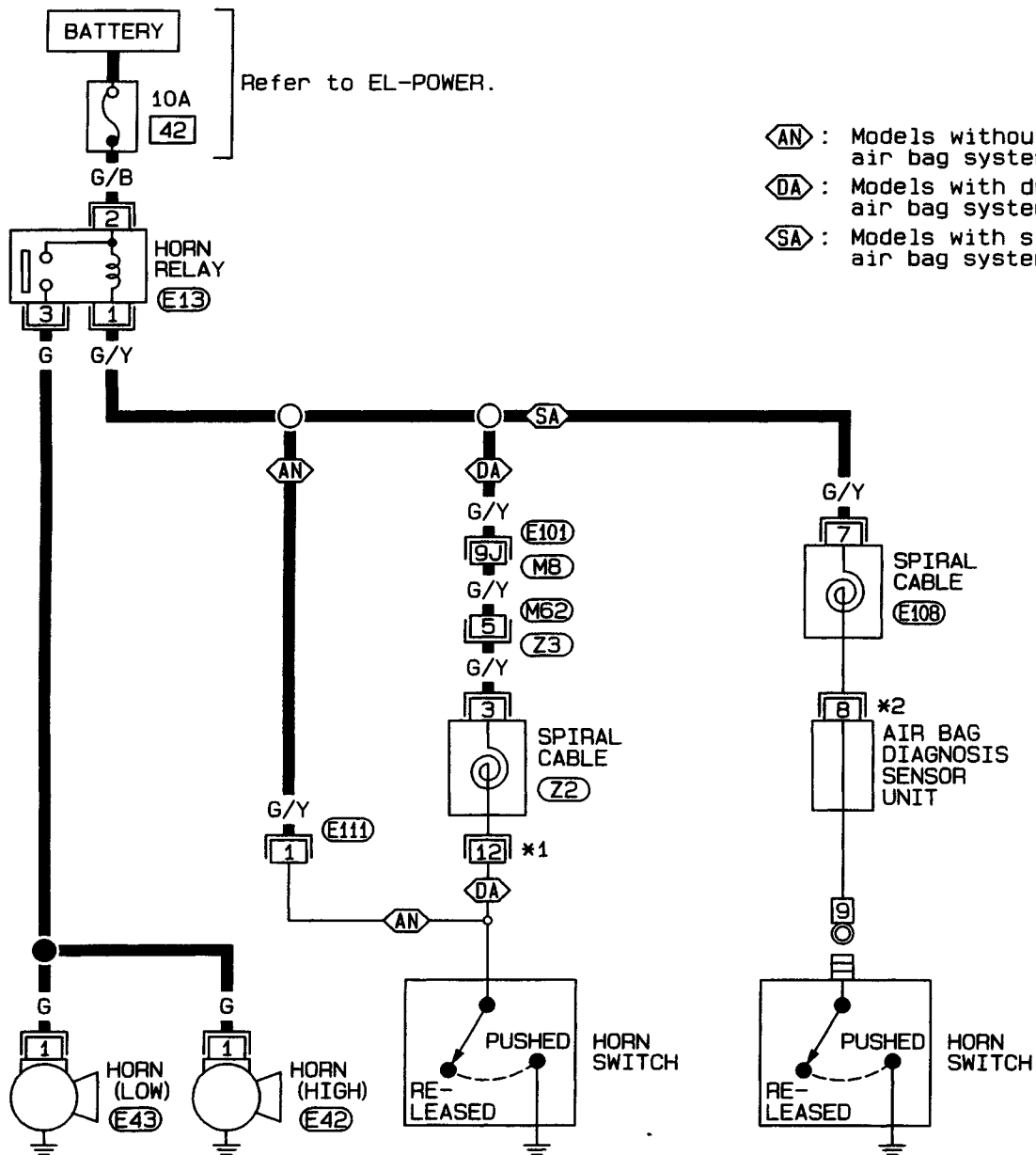
EL

HORN, CIGARETTE LIGHTER AND CLOCK

Wiring Diagram — HORN — (Cont'd)

RHD MODELS

EL-HORN-03



2	E13
1 3	W

1 2 0 3 4 5	Z3
6 7 8 9 10 11 12	W

1 0 3	Z2
2 5 4	W

8 7	E108
9 10	BR

Refer to last page (Foldout page).

MB, E101

1	E42, E43, E111
B	B, B, B

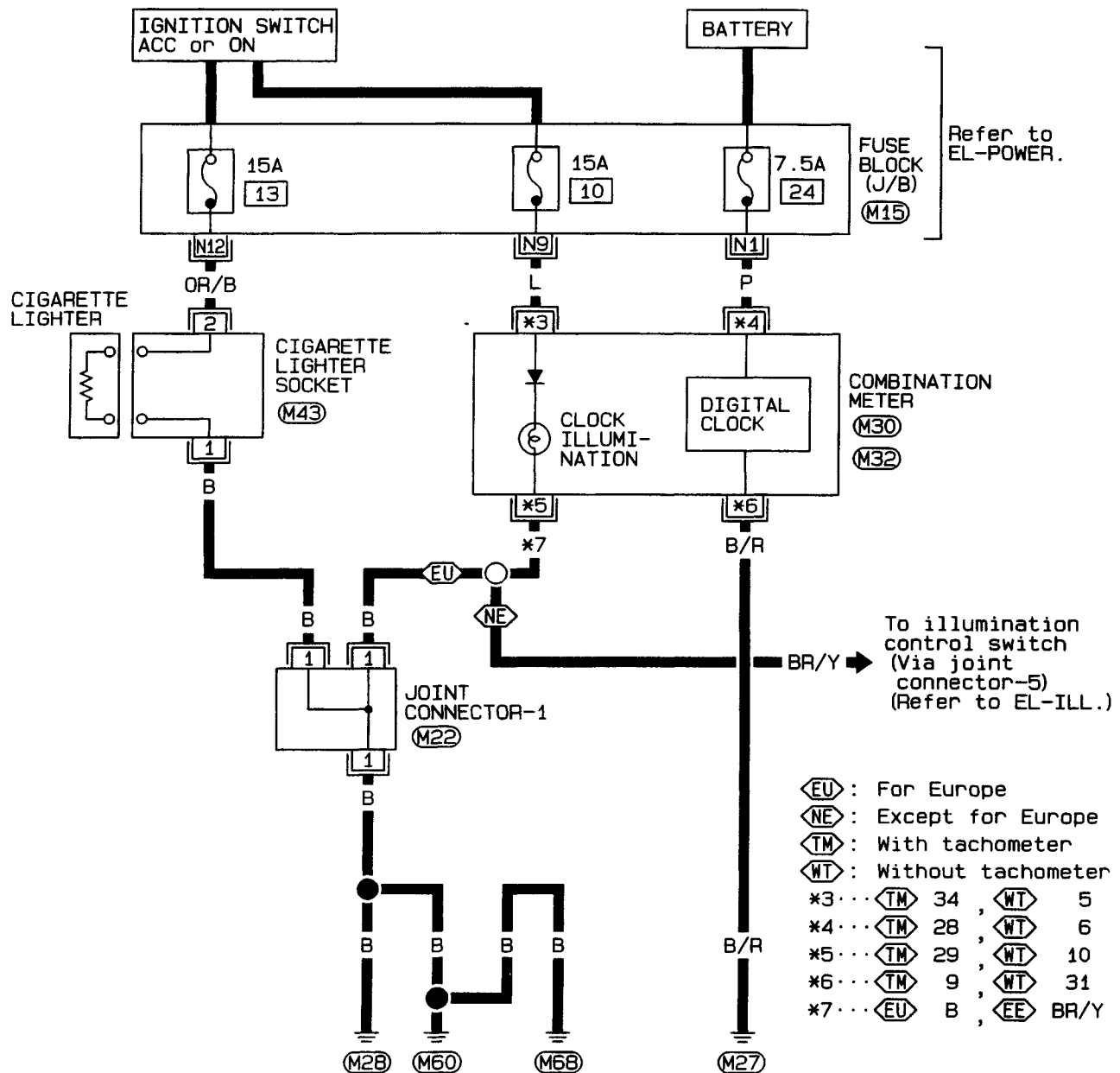
	*1
	B

	*2
	W

HORN, CIGARETTE LIGHTER AND CLOCK

Wiring Diagram — HORN — (Cont'd)

EL-HORN-04



1 2 (M43) B

1 2 3 4 5 6 7 (M30) BR
8 9 10 11 12 13 14 15 16

33 32 31 30 29 28 27 (M32) W
42 41 40 39 38 37 36 35 34

1 1 1 1 1 1 1 1 1 (M22) BR
2 2 2 2 3 3 3 3 4 4 4 4

Refer to last page (Foldout page).

(M15)

EL

REAR WINDOW DEFOGGER AND DOOR MIRROR DEFOGGER

System Description (For models with daytime light system)

For models without daytime light system, refer to wiring diagrams, EL-233 and 234.

The rear window and door mirror defogger system is controlled by the rear window defogger timer. Power is supplied at all times

- to rear window defogger relay terminal ③
- through 20A fuse (No. ⑤, located in the fuse block).

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

- to mirror defogger relay terminal ③
- through 10A fuse (No. ②③, located in the fuse block).

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

- to rear window defogger relay terminal ①
- through 10A fuse (No. ②⑤, located in the fuse block)
- to rear window defogger timer terminal ①
- through 7.5A fuse (No. ⑦, located in the fuse block).

Ground is supplied

- to rear window defogger switch terminal ② and
- to rear window defogger timer terminal ④
- through body grounds (M28) and (M68).

Operation

The ignition switch must be in the ON or START position for defogger operation.

With the rear window defogger switch in the ON position and for approximately 12 - 16 minutes after the rear window defogger switch has turned to OFF from ON, ground is supplied

- through terminal ① of the rear window defogger switch
- to rear window defogger timer terminal ③.

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

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

For rear window defogger system, power is supplied

- through terminal ⑤ of the rear window defogger relay
- to condenser terminal ①
- through terminal ② of the condenser
- to the rear window defogger terminal ①.

For mirror defogger system, power is supplied

- through terminal ⑤ of the rear window defogger relay
- to mirror defogger relay terminal ①.

Ground is supplied

- through body grounds (M28) and (M68)
- to mirror defogger relay terminal ②.

With power and ground supplied, mirror defogger relay is energized.

- through mirror defogger relay terminal ⑤
- to each door mirror defogger terminal ②.

Ground is supplied

- to rear window defogger terminal ②
- through body ground (B204), and
- to each door mirror defogger terminal ①
- through body grounds (M28) and (M68).

With power and ground supplied, each defogger filament heats and defogs the rear window and door mirror.

When the system is activated, the rear window defogger indicator illuminates in the rear window defogger switch.

Power is supplied

- to terminal ⑤ of the rear window defogger switch
- from terminal ⑤ of the rear window defogger relay.

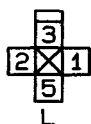
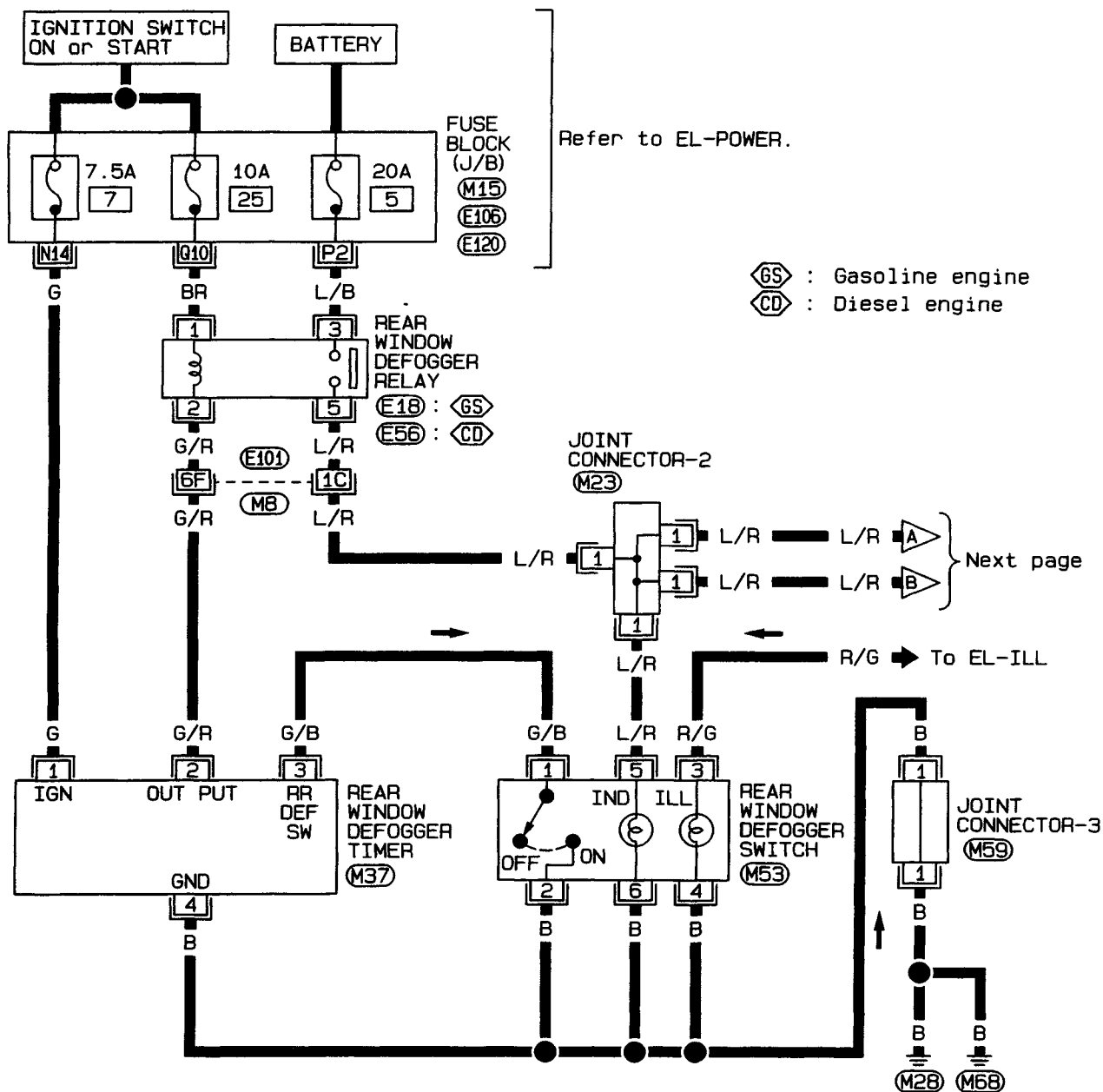
Terminal ⑥ of the rear window defogger switch is grounded through body grounds (M28) and (M68).

REAR WINDOW DEFOGGER AND DOOR MIRROR DEFOGGER

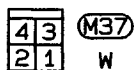
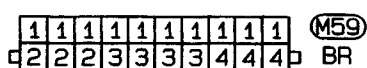
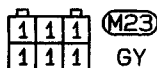
Wiring Diagram — DEF —

LHD MODELS WITH DAYTIME LIGHT SYSTEM

EL-DEF-01



(E18) : GS
(E56) : CD



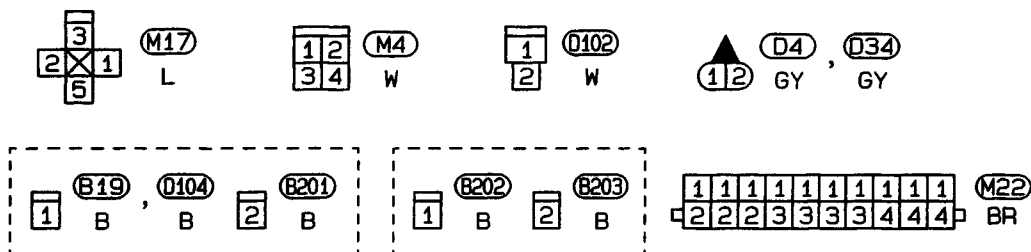
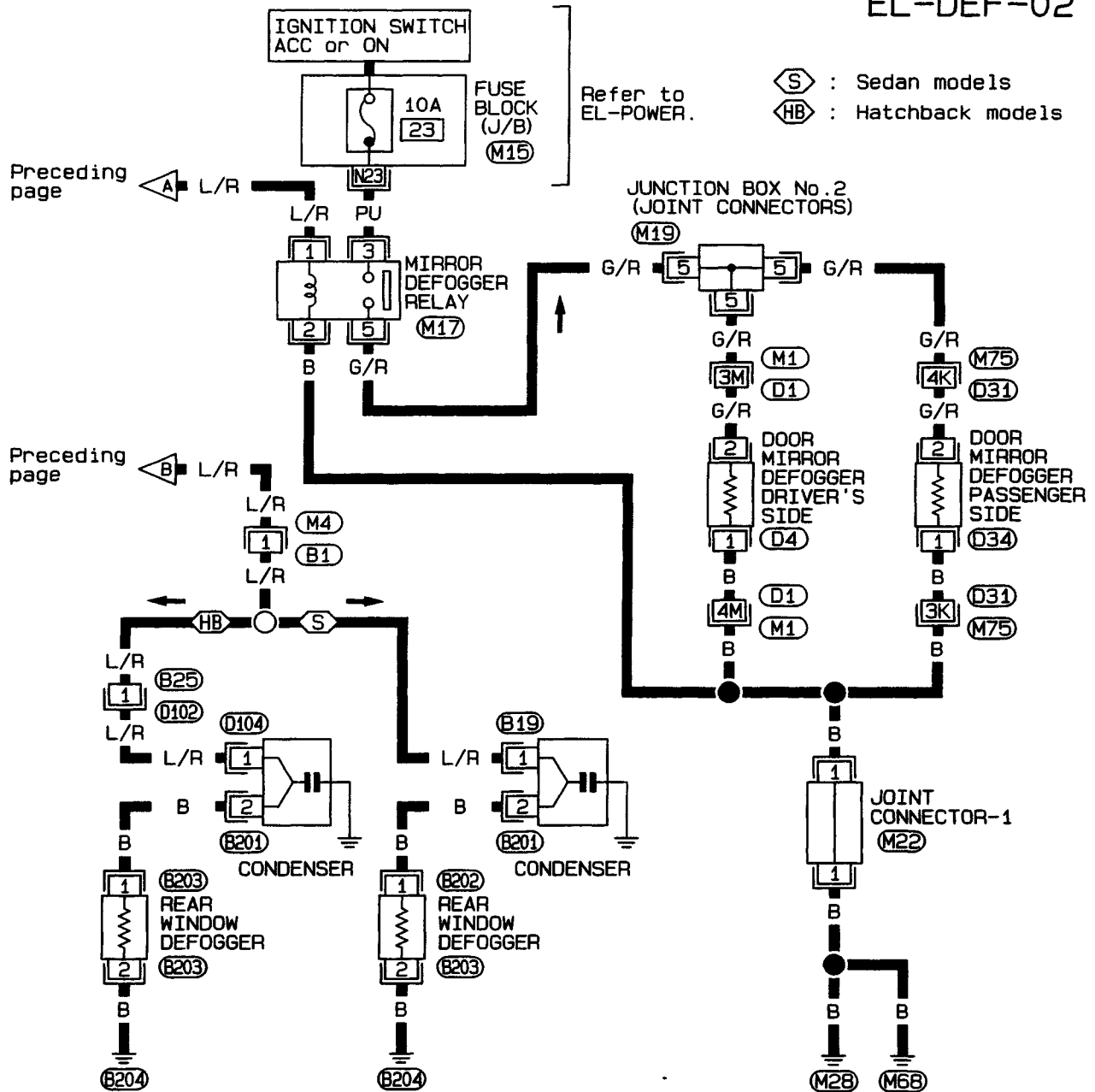
Refer to last page
(Foldout page).

(M8), (E101)
(M15), (E106), (E120)

EL

Wiring Diagram — DEF — (Cont'd)

EL-DEF-02



Refer to last page
(Foldout page).

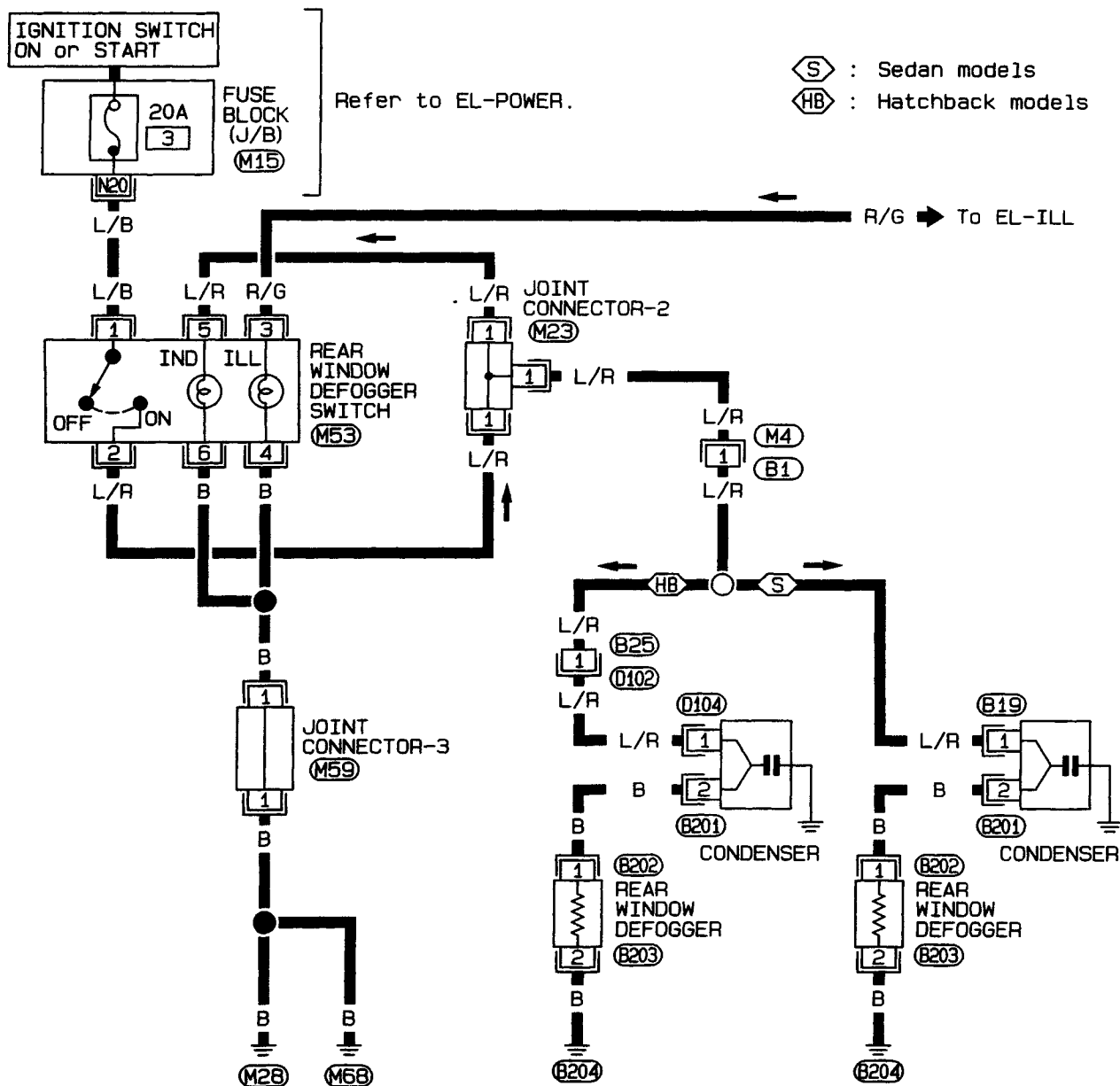
M1, D1
M75, D31
M15
M19

CAUTION : Don't attempt to repair, splice or modify the flexible flat circuit (FFC) . If the FFC is damaged, replace with a new one.

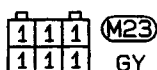
Wiring Diagram — DEF — (Cont'd)

LHD MODELS WITHOUT DAYTIME LIGHT SYSTEM

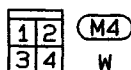
EL-DEF-03



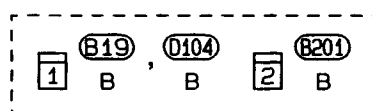
M53
W



M23
GY



M4
W

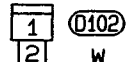


Refer to last page
(Foldout page) .

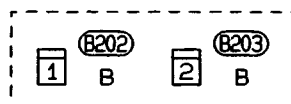
(M15)



(M59)
BR



0102
W



202
B

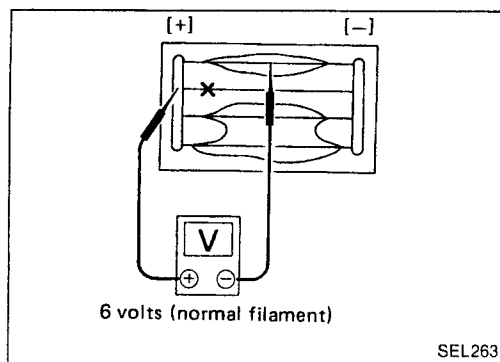
(B203)

Wiring Diagram — DEF — (Cont'd)

EL-DEF-04

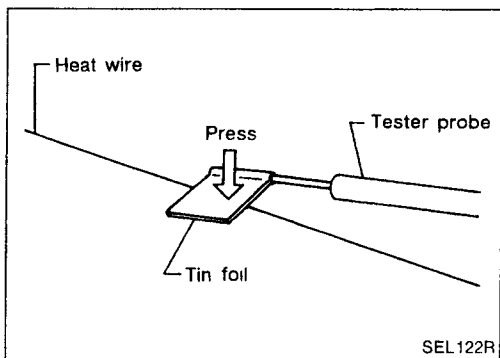


REAR WINDOW DEFOGGER AND DOOR MIRROR DEFOGGER

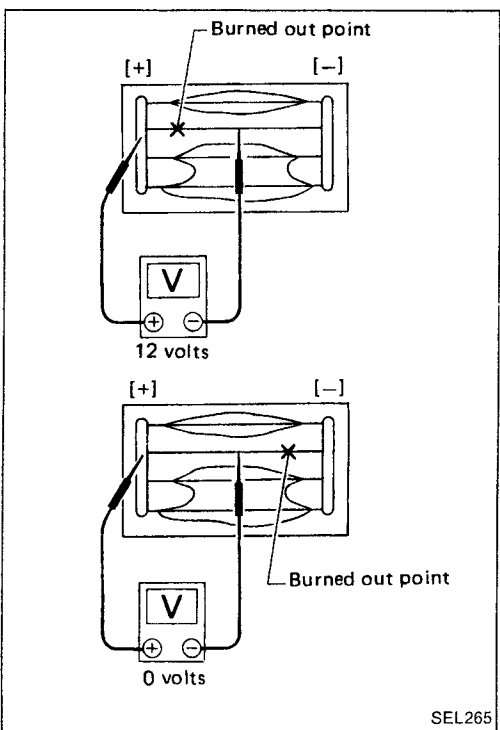


Filament Check

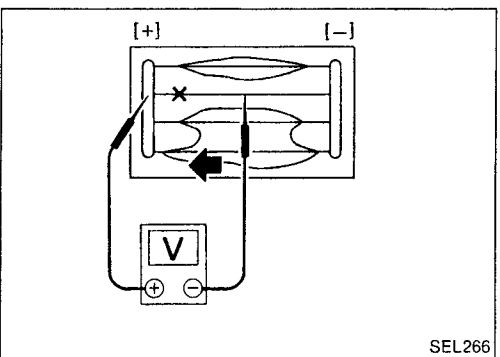
1. Attach probe circuit tester (in volt range) to middle portion of each filament.



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



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



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

EL

REAR WINDOW DEFOGGER AND DOOR MIRROR DEFOGGER

Filament Repair

REPAIR EQUIPMENT

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

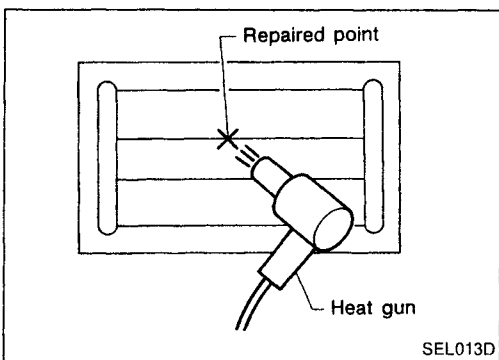
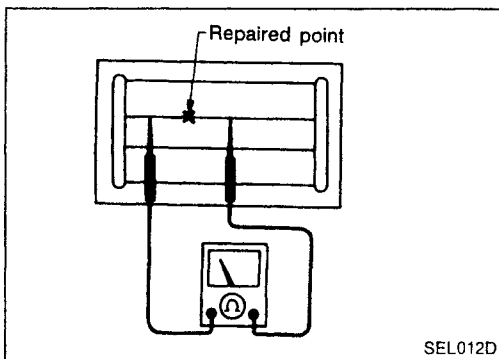
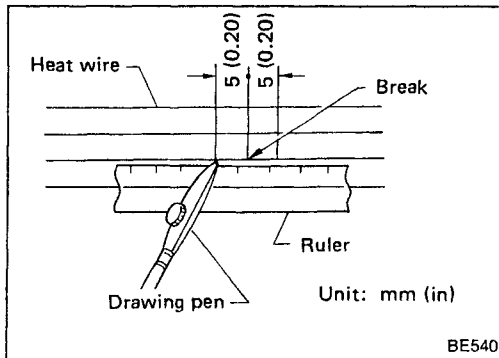
REPAIRING PROCEDURE

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

Shake silver composition container before use.

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

Do not touch repaired area while test is being conducted.



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

AUDIO AND ANTENNA

Audio/System Description

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

Power is supplied at all times

- through 7.5A fuse (No. 24, located in the fuse block)
- to radio terminal ⑥, and
- to compact disk deck terminal 24.

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

- through 15A fuse (No. 10, located in the fuse block)
- to radio terminal 10, and
- to compact disk deck terminal 21.

Ground is supplied through the case of the radio.

When the radio power knob is pushed to the ON position, audio signals are supplied

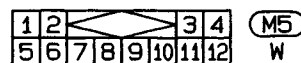
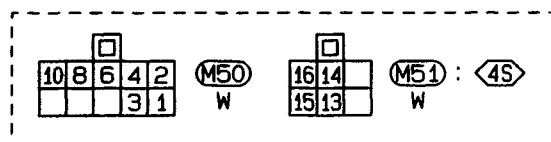
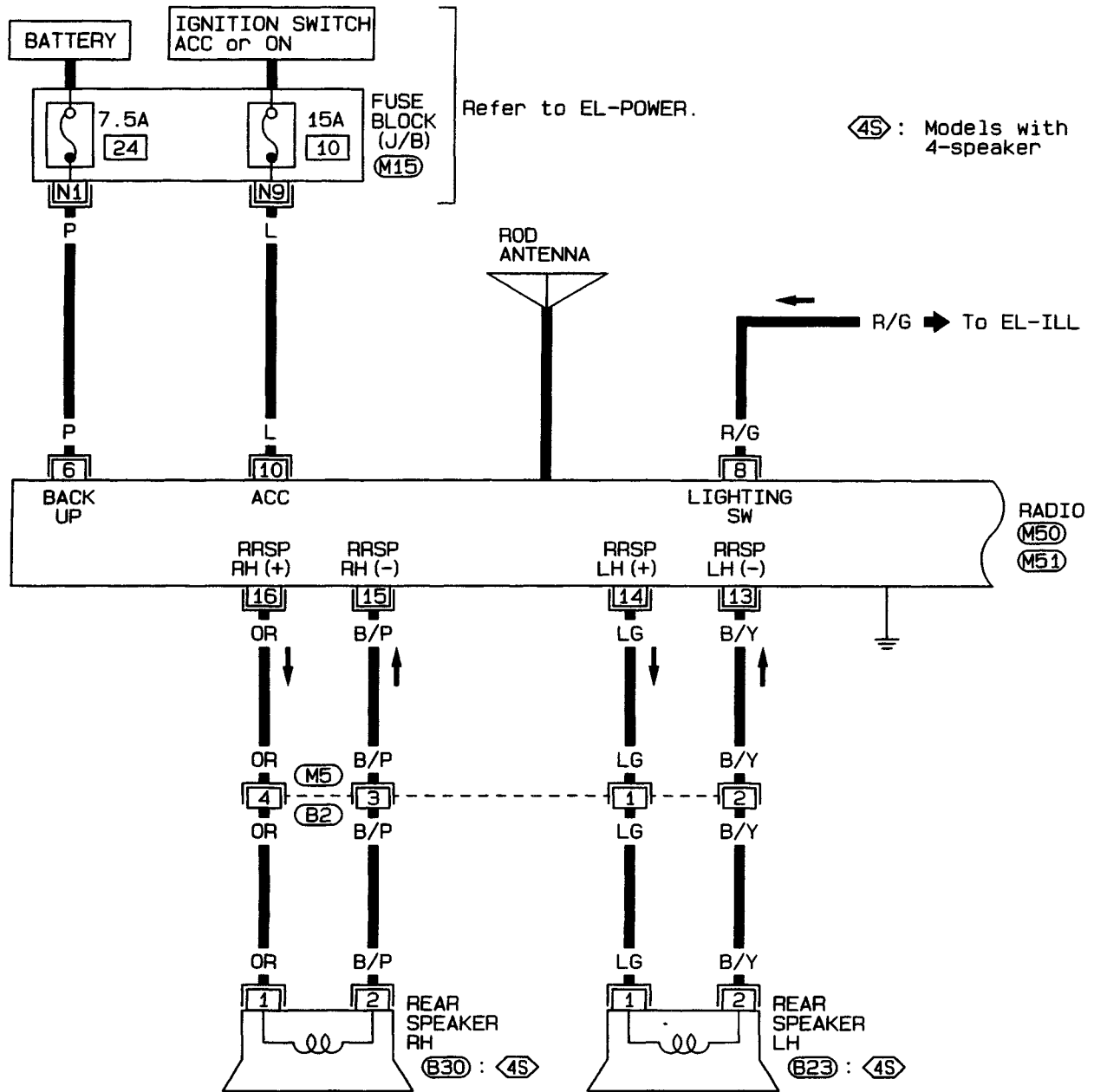
- through radio terminals 1, 2, 3, 4, 13, 14, 15 and 16
- to the door, pillar and rear speakers.

AUDIO AND ANTENNA

Wiring Diagram — AUDIO —

LHD MODELS

EL-AUDIO-01



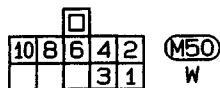
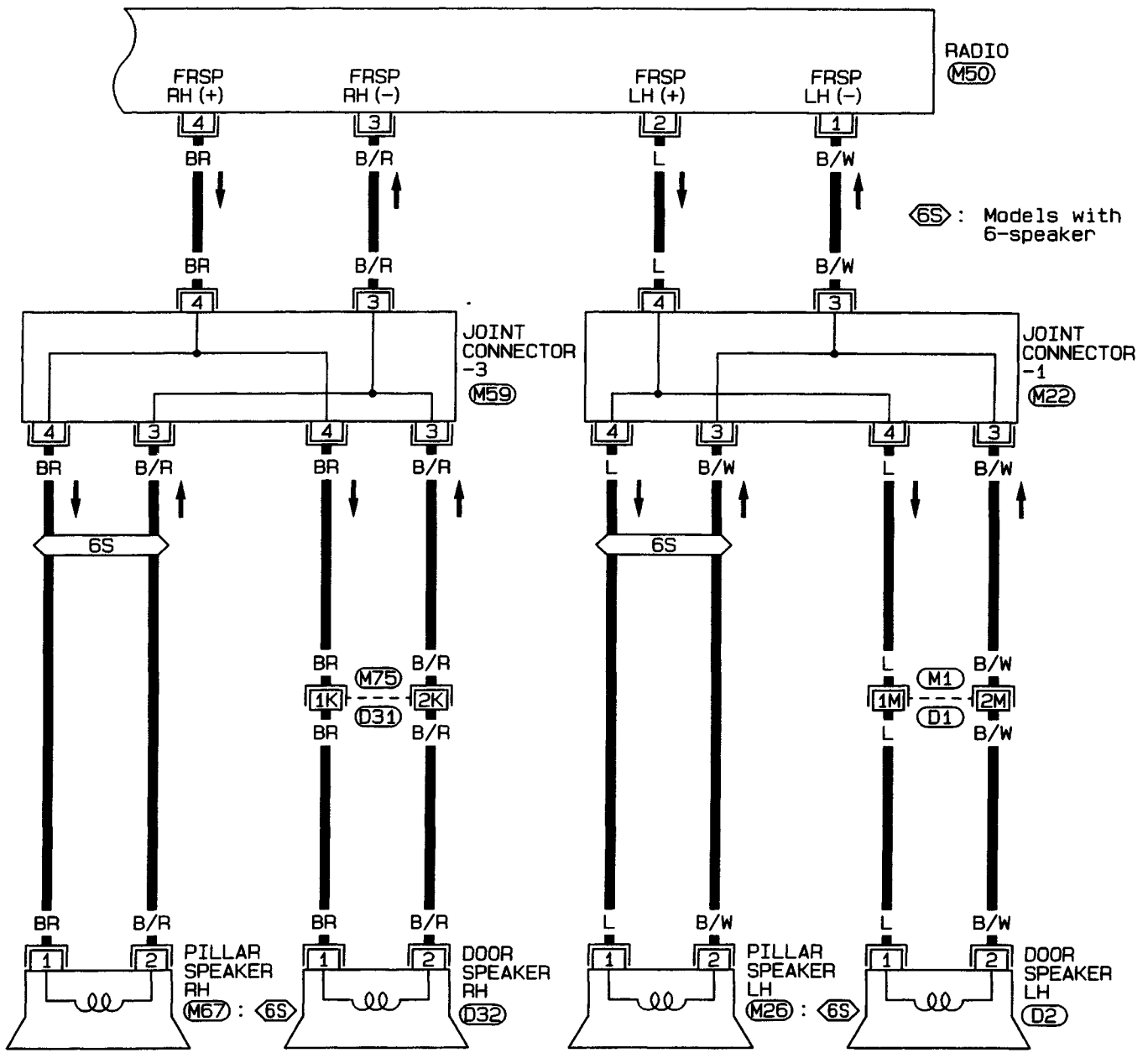
Refer to last page
(Foldout page).

M15



Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-02



Refer to last page
(Foldout page) .

(M1), (D1)

(M75) , (D31)

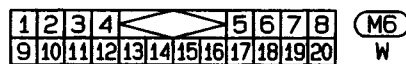
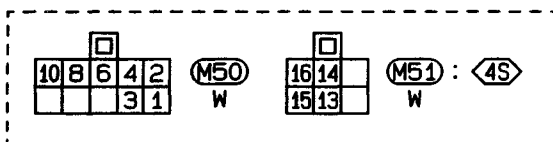
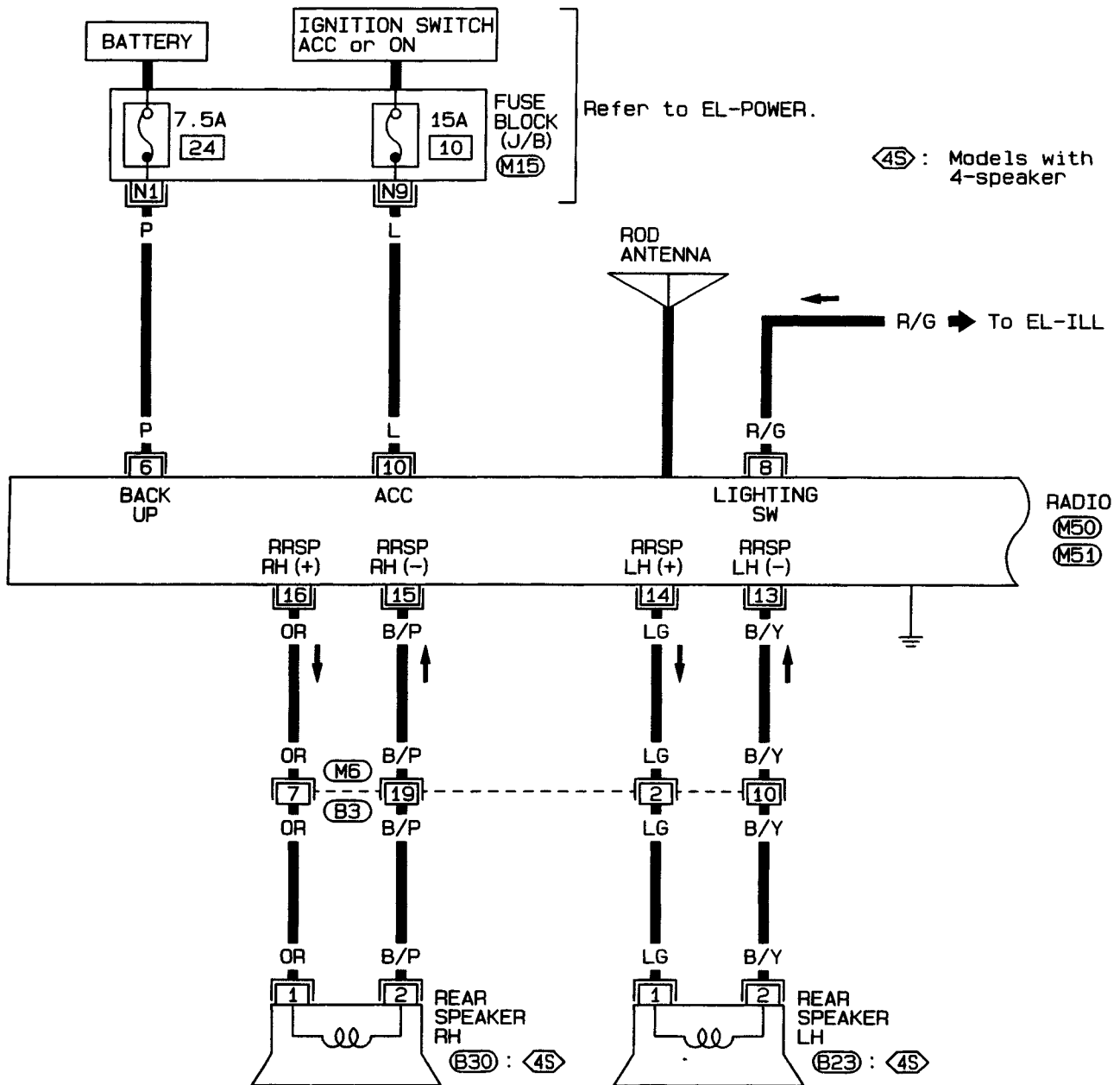
CAUTION : Don't attempt to repair, splice or modify the flexible flat circuit (FFC) . If the FFC is damaged, replace with a new one.

AUDIO AND ANTENNA

Wiring Diagram — AUDIO — (Cont'd)

RHD MODELS FOR EUROPE

EL-AUDIO-03



Refer to last page
(Foldout page).

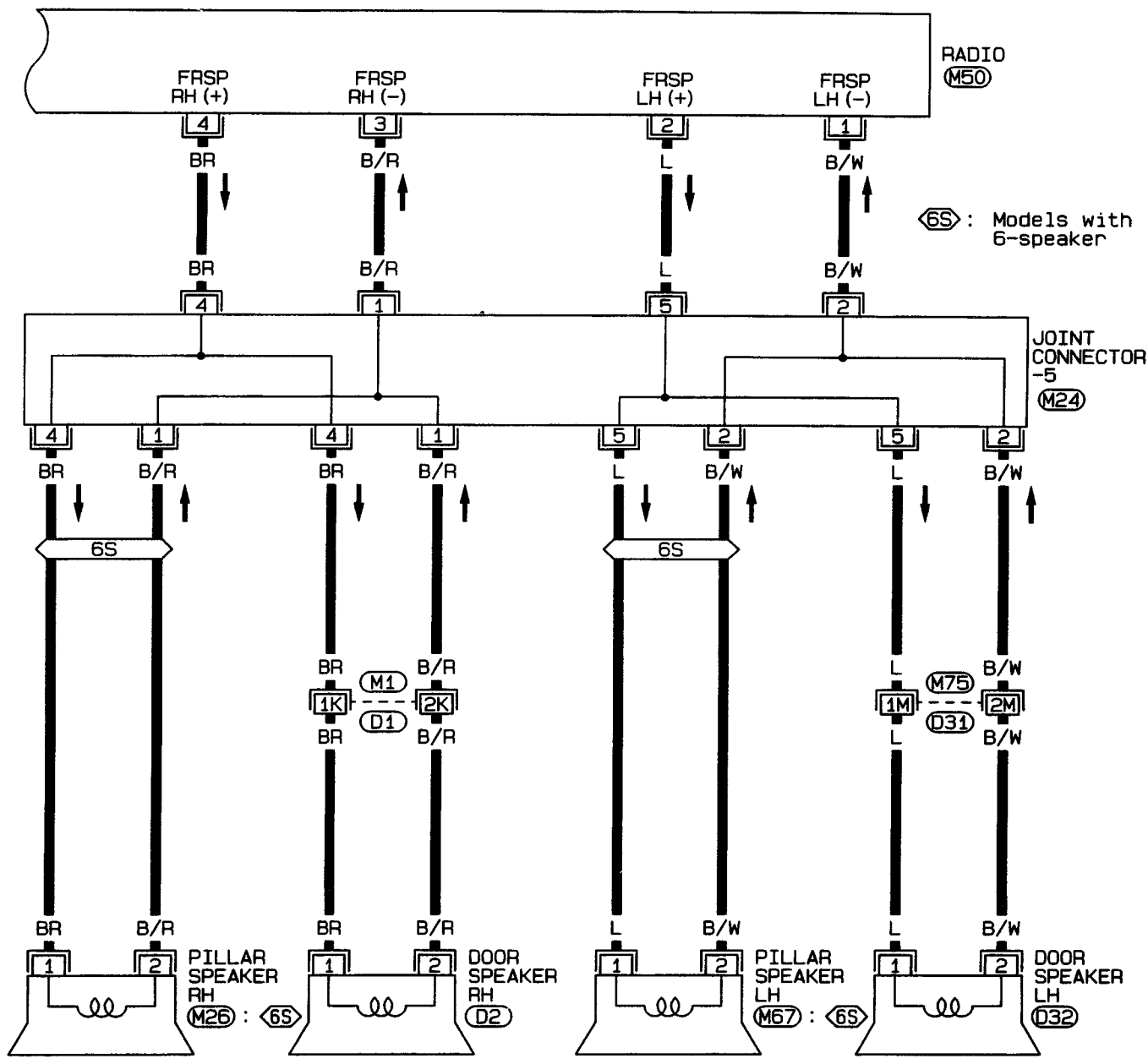
(M15)



AUDIO AND ANTENNA

Wiring Diagram — AUDIO — (Cont'd)

EL-AUDIO-04



10	8	6	4	2
			3	1

(M50)
W

1	1	1	2	2	2	3	3	3
4	4	4	5	5	5	6	6	6

(M24)
OR

O	M26	M67	D2	D32
1	2	BR	BR	BR

Refer to last page
(Foldout page).

(M1), (D1)
(M75), (D31)

CAUTION : Don't attempt to repair, splice or modify the flexible flat circuit (FFC). If the FFC is damaged, replace with a new one.

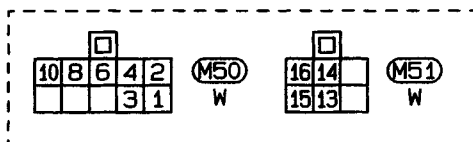
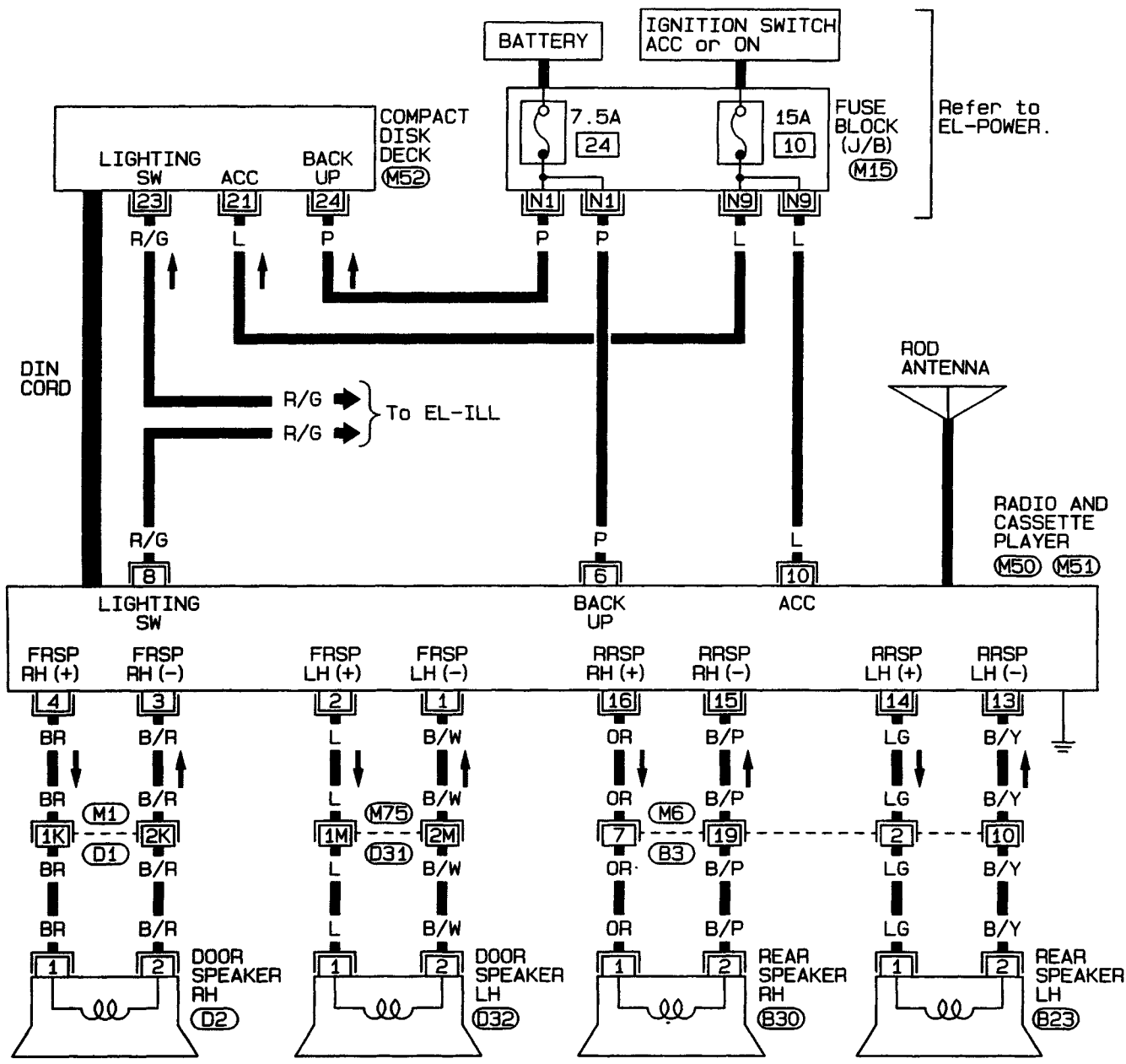
EL

AUDIO AND ANTENNA

Wiring Diagram — AUDIO — (Cont'd)

RHD MODELS EXCEPT FOR EUROPE

EL-AUDIO-05



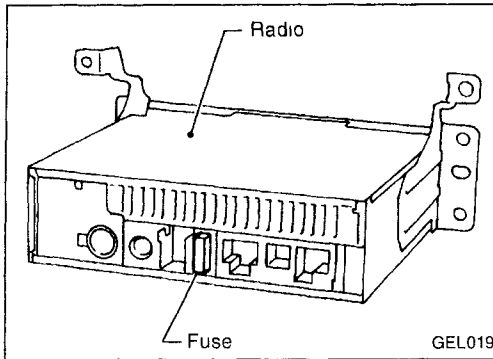
Refer to last page (Foldout page).

(M1), (D1)

(M75), (D31)

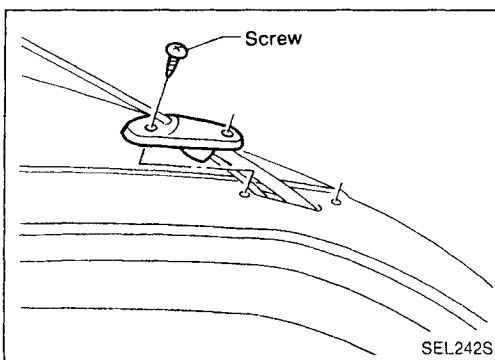
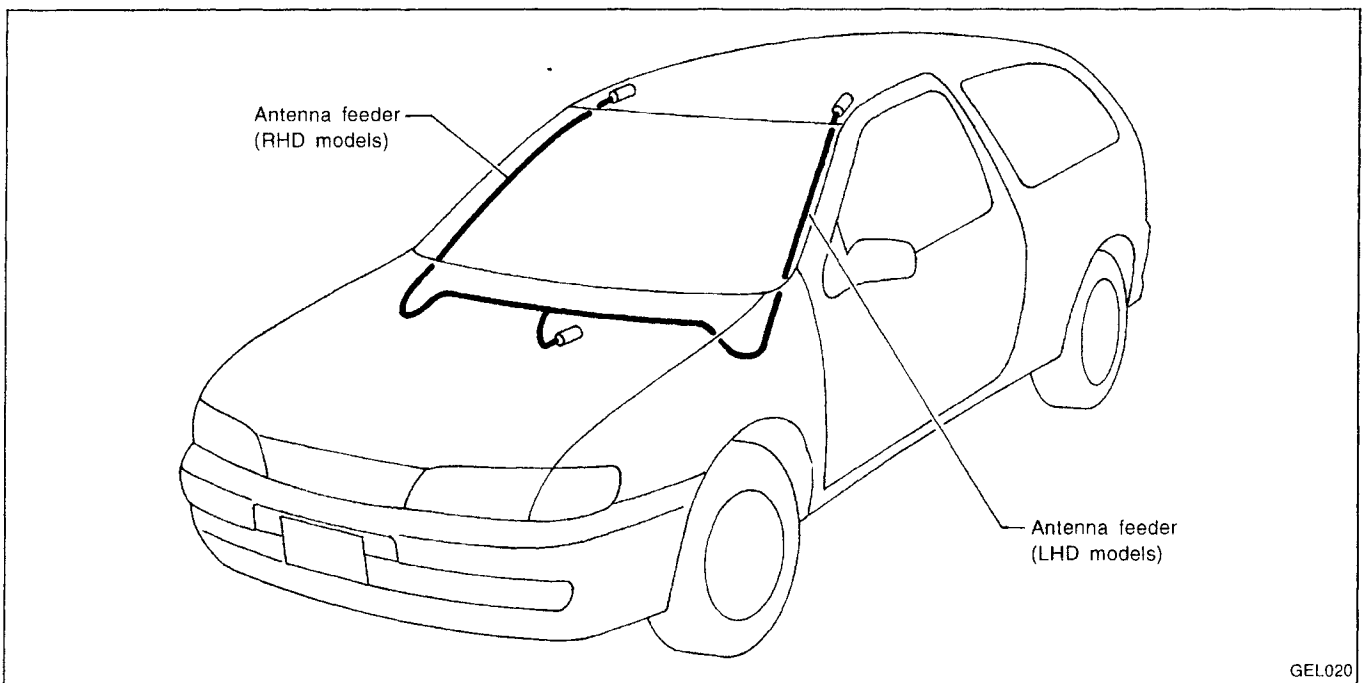
(M15)

AUDIO AND ANTENNA



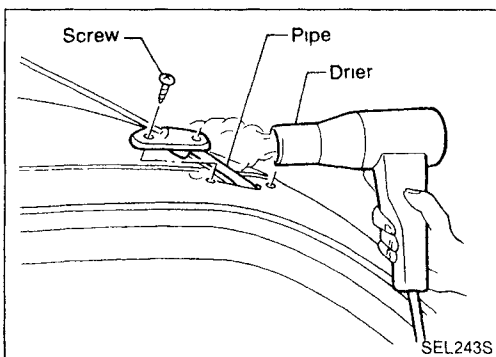
Radio Fuse Check

Location of Antenna



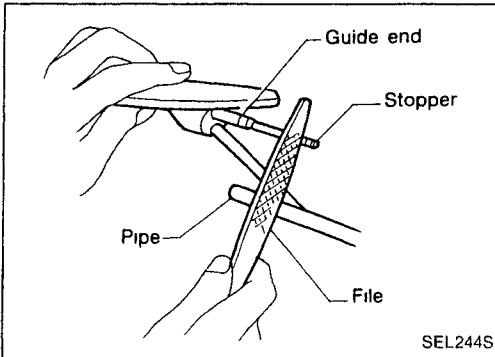
Antenna Rod Replacement

1. Loosen screws securing antenna base.
2. Pull out pipe from antenna base.
Heating the pipe with a drier makes it easier.

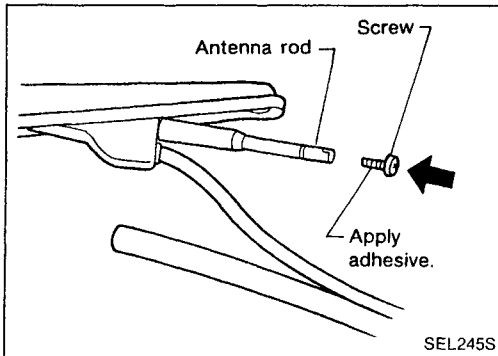


AUDIO AND ANTENNA

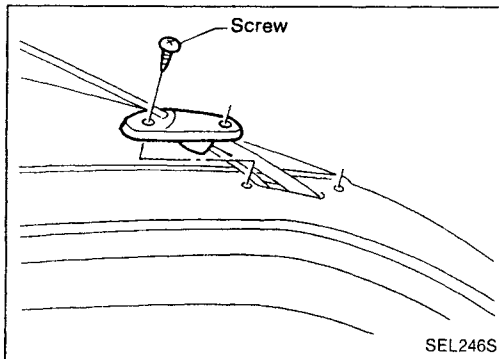
Antenna Rod Replacement (Cont'd)



3. Cut off stopper at end of antenna rod using a file.
4. Pull out antenna rod from antenna base.



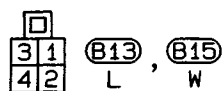
5. Insert new antenna rod to antenna base.
6. Apply adhesive to screw thread and tighten screw.



7. Tighten screws to antenna base.

★ For location of heating unit, refer to “SEAT” in BT section.

EL-H/SEAT-01



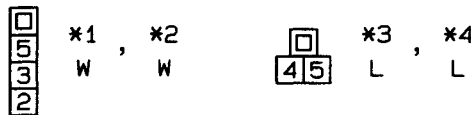
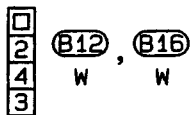
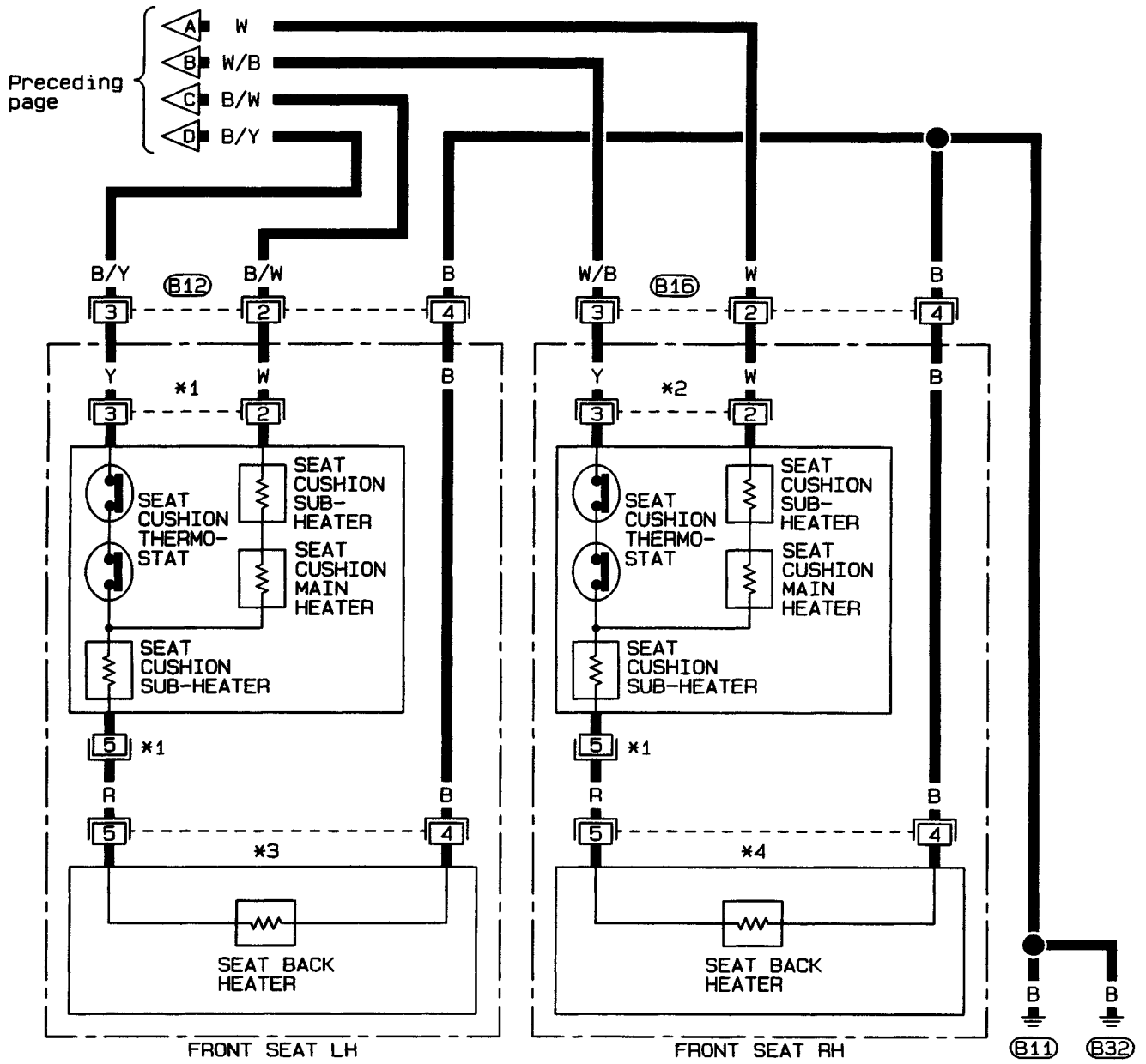
(B7)

EL

HEATED SEAT

Wiring Diagram — H/SEAT — (Cont'd)

EL-H/SEAT-02



NATS (Nissan Anti-Theft System)

System Description

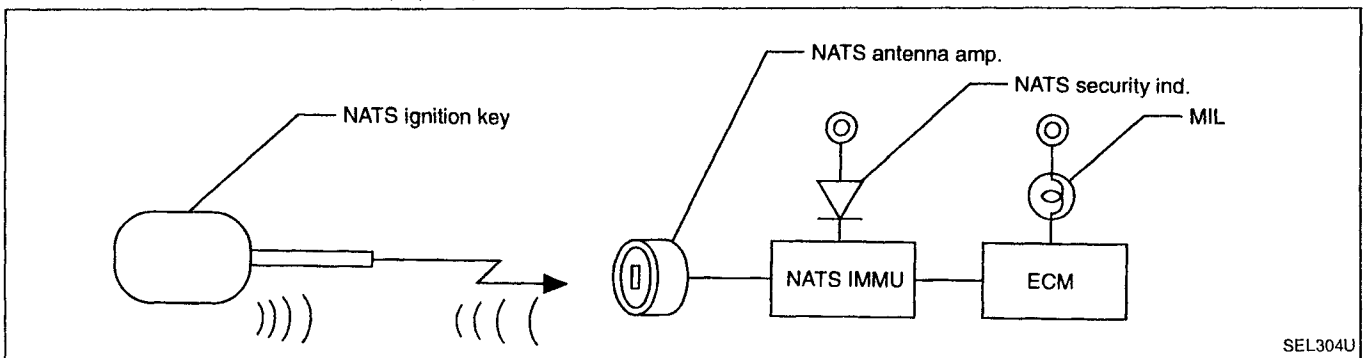
NATS V2.0 for Nissan model N15 has the following immobiliser functions:

- 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 V2.0 will immobilize the engine if someone tries to start it without the registered key of NATS V2.0.
- Both of the originally supplied ignition key IDs have been NATS registered.
If requested by the vehicle owner, a maximum of four key IDs can be registered into the NATS components.
- The NATS security indicator (NATS security ind.) blinks when the ignition switch is in "OFF" or "ACC" position. Therefore, NATS warns outsiders that the vehicle is equipped with the anti-theft system.
- When NATS detects trouble, the malfunction indicator lamp (MIL) blinks.
- NATS trouble diagnoses, system initialisation and additional registration of other NATS ignition key IDs must be carried out using CONSULT hardware and CONSULT NATS software.
When NATS initialisation 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 initialisation and NATS ignition key ID registration, refer to CONSULT operation manual, NATS V2.0.
- When diagnosing NATS V2.0 using CONSULT, adapter and adapter harness for NATS V1.0 are not necessary, although a direct DDL cable connection between CONSULT and DDL connector is required.
- When servicing a malfunction of the NATS V2.0 (indicated by flashing of Malfunction Indicator Lamp) or registering another NATS ignition key ID no., it may be necessary to re-register original key identification. Therefore, be sure to receive all keys from vehicle owner.

System Composition

The immobiliser function of the NATS for Nissan model N15 consists of the following:

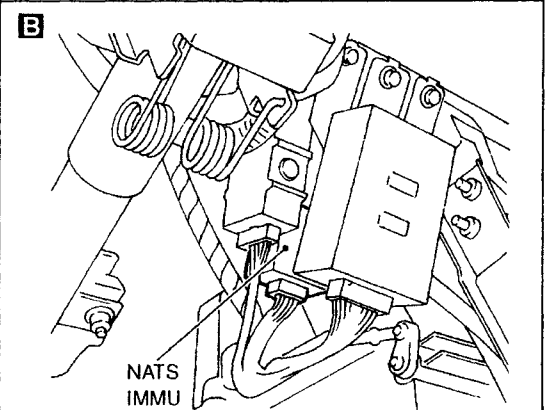
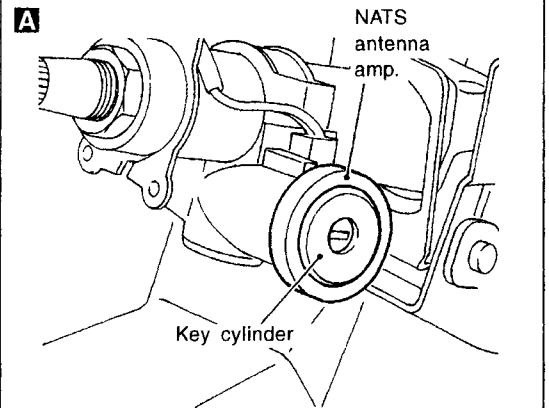
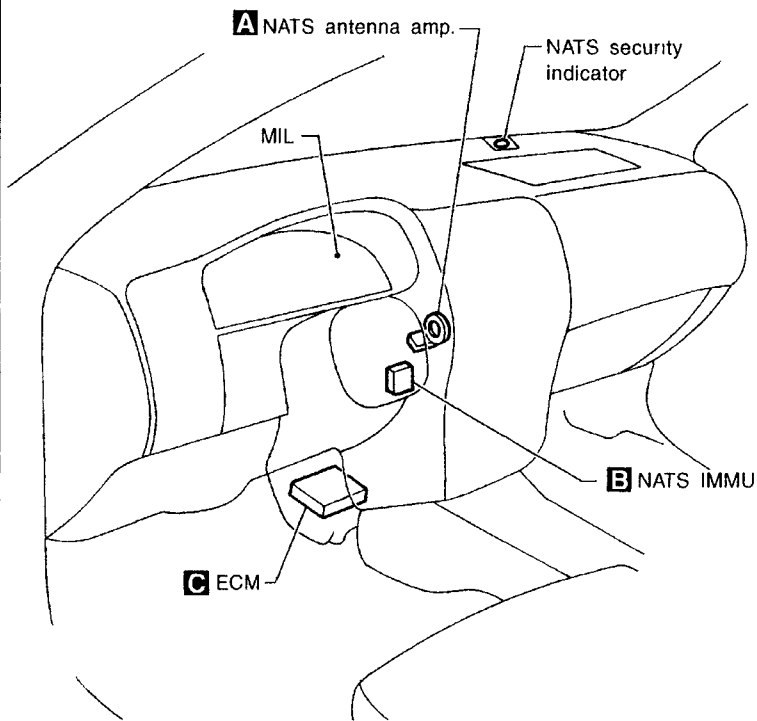
- NATS ignition key
- NATS antenna amp. located in the ignition key cylinder
- NATS immobiliser control unit (NATS IMMU)
- Engine control module (ECM)
- NATS security indicator located under the center cluster (NATS security ind.)
- Malfunction indicator lamp (MIL)



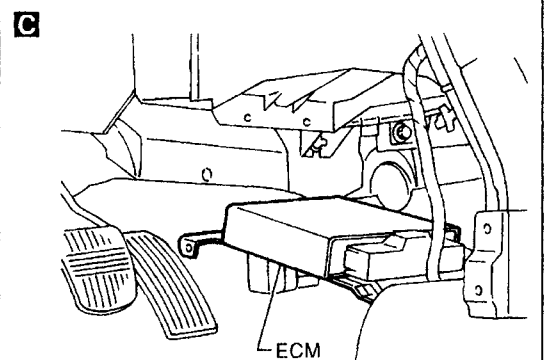
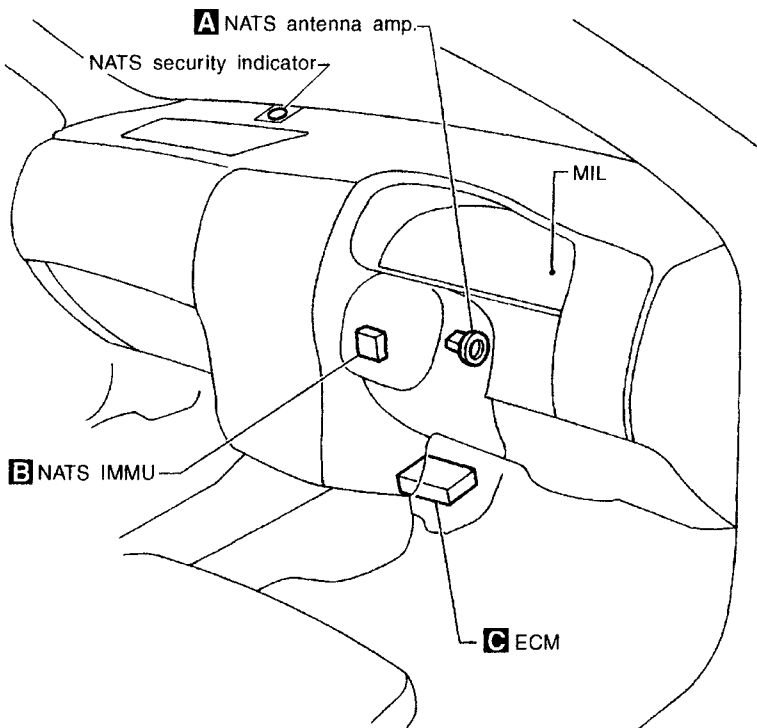
NATS (Nissan Anti-Theft System)

Component Parts Location

LHD models



RHD models

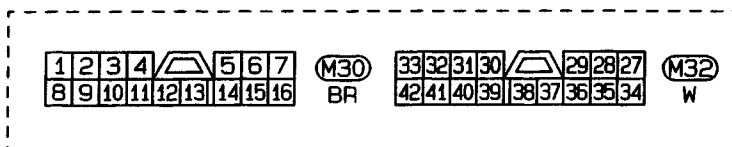
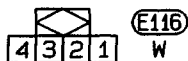
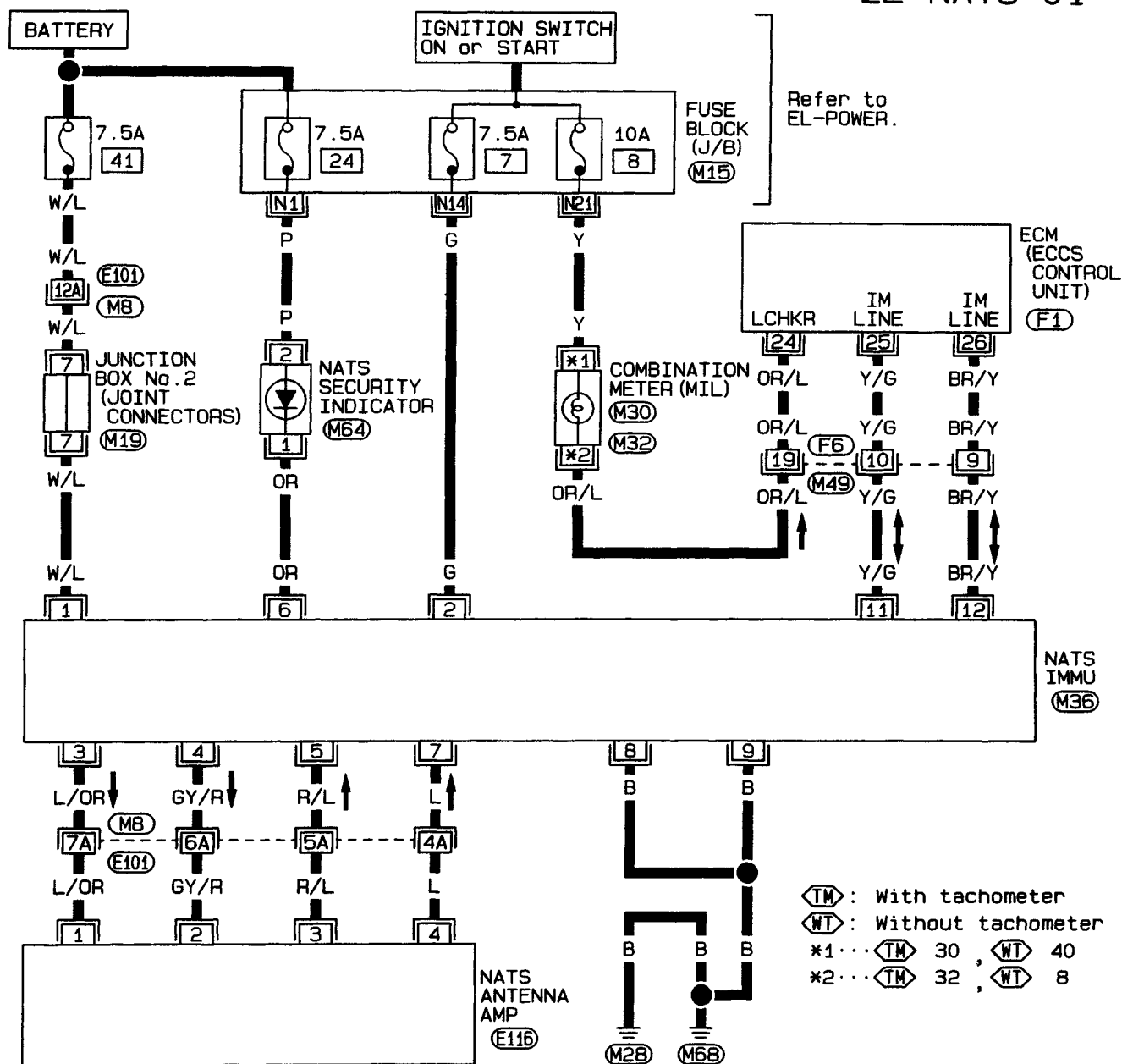


NATS (Nissan Anti-Theft System)

Wiring Diagram — NATS —

LHD MODELS

EL-NATS-01



Refer to last page (Foldout page).

- (M8), (E101)
- (M15)
- (M19)
- (F1)

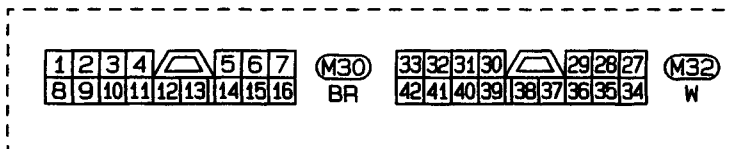
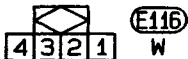
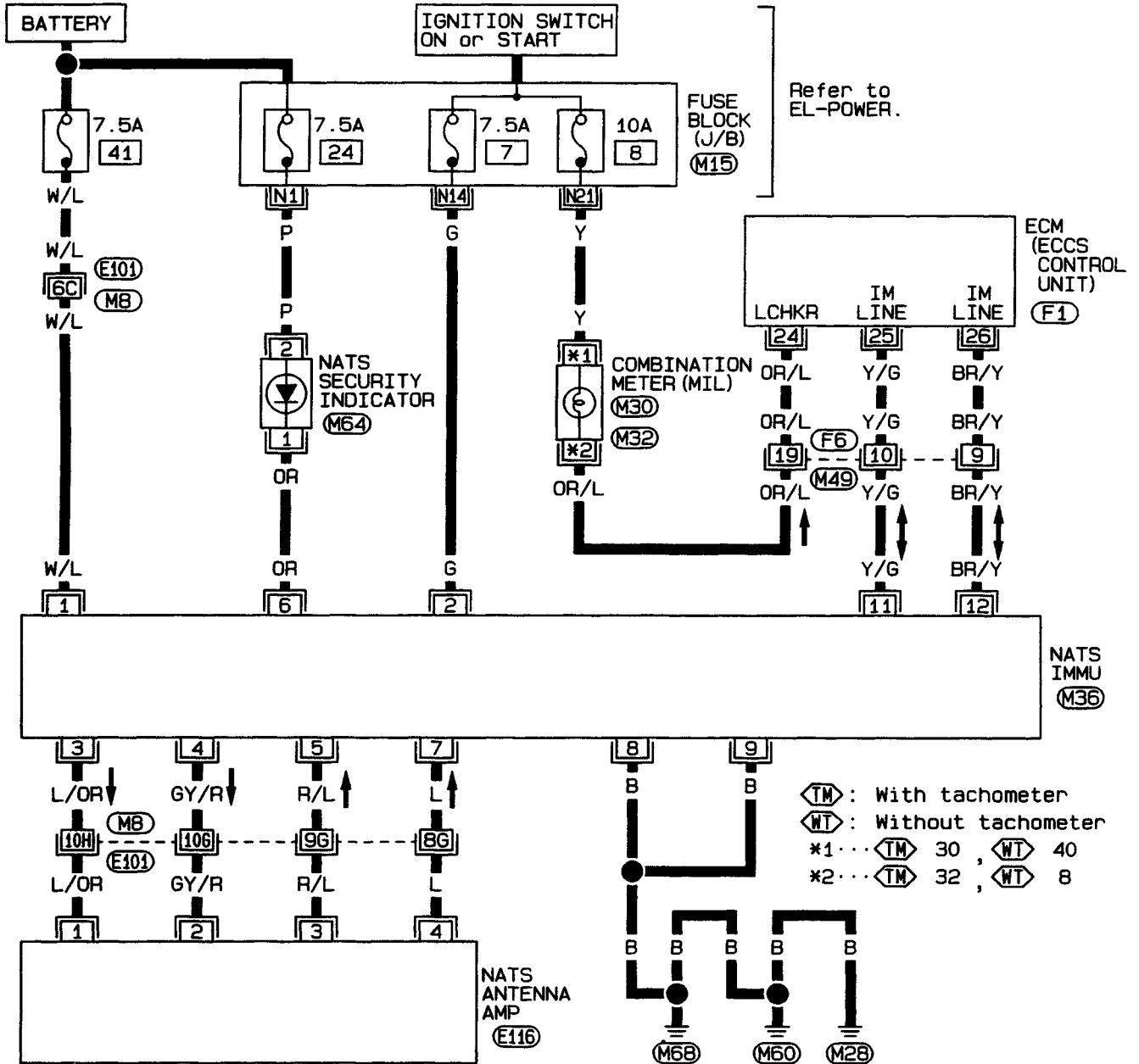
EL

NATS (Nissan Anti-Theft System)

Wiring Diagram — NATS — (Cont'd)

RHD MODELS

EL-NATS-02



Refer to last page (Foldout page).

(M3), (E101)

(M15)

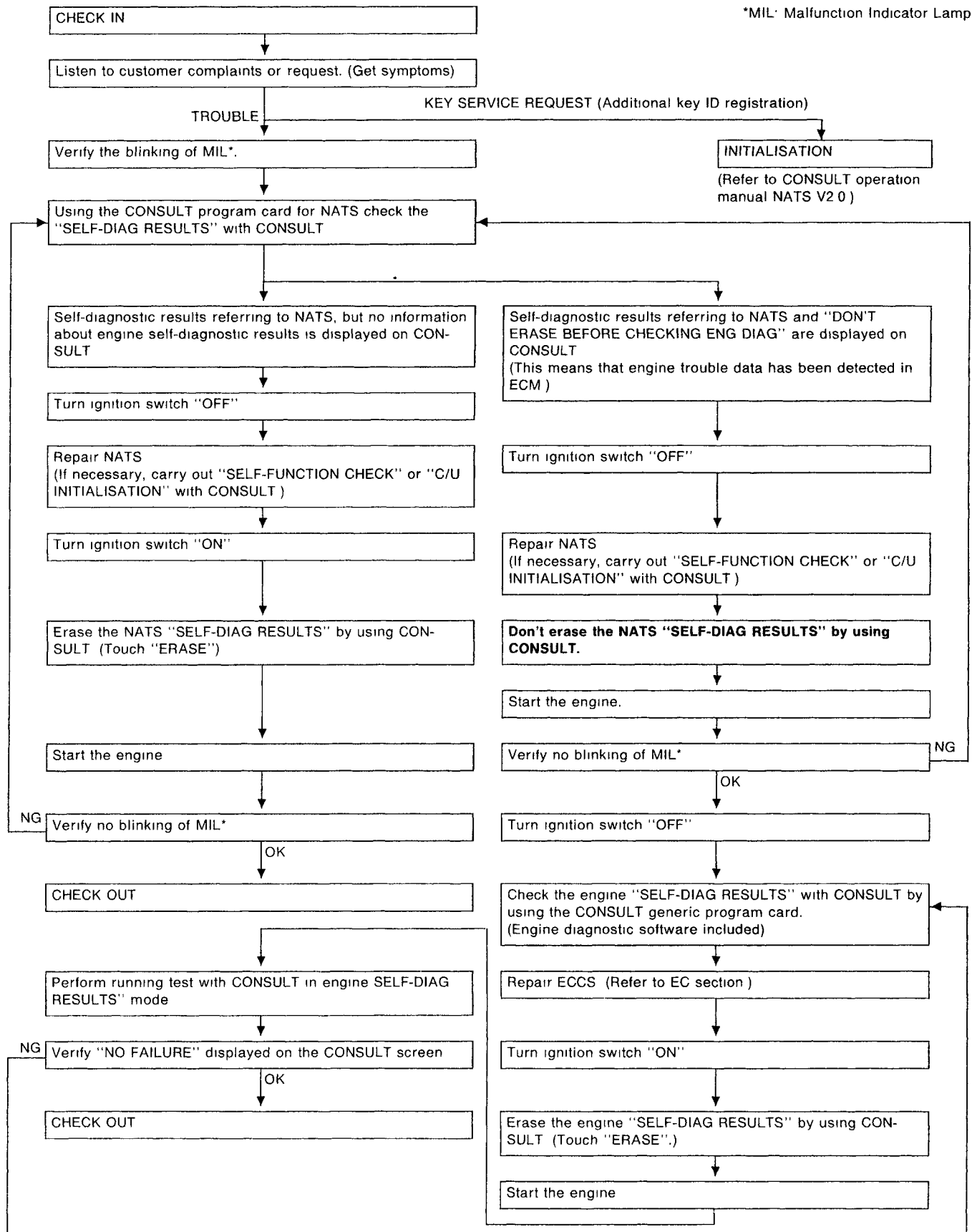
(F1)

NATS (Nissan Anti-Theft System)

Trouble Diagnoses

WORK FLOW

*MIL: Malfunction Indicator Lamp

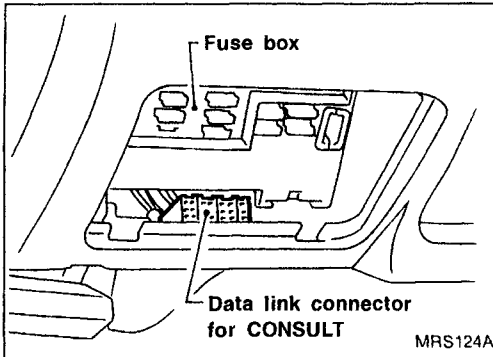


EL

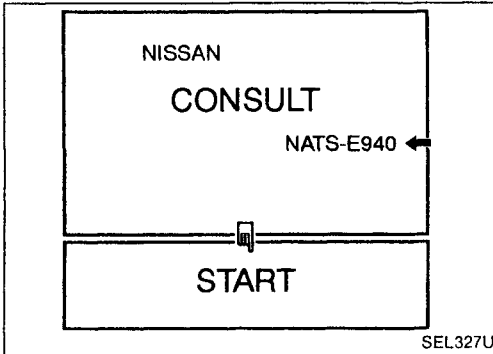
NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)

CONSULT INSPECTION PROCEDURE



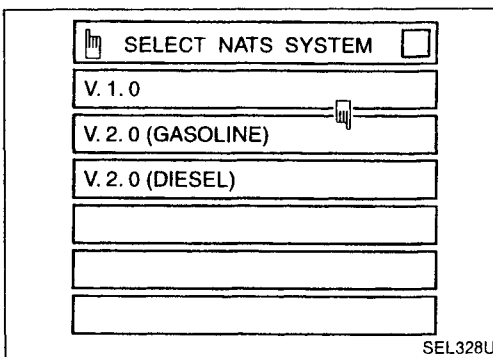
1. Turn off ignition switch.
2. Connect "CONSULT" to Data link connector for CONSULT. (Data link connector for CONSULT is located behind the fuse box cover.)



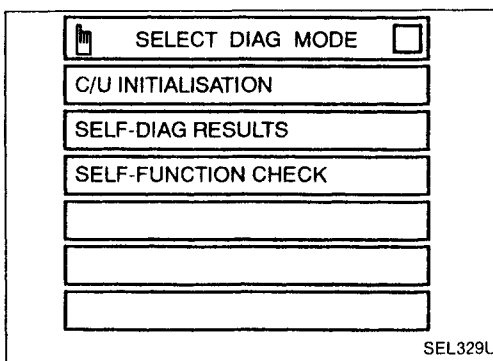
3. Insert NATS program card into CONSULT.

←: Program card
NATS-E940

4. Turn on ignition switch.
5. Touch "START".



6. Touch "V.2.0 (GASOLINE)".



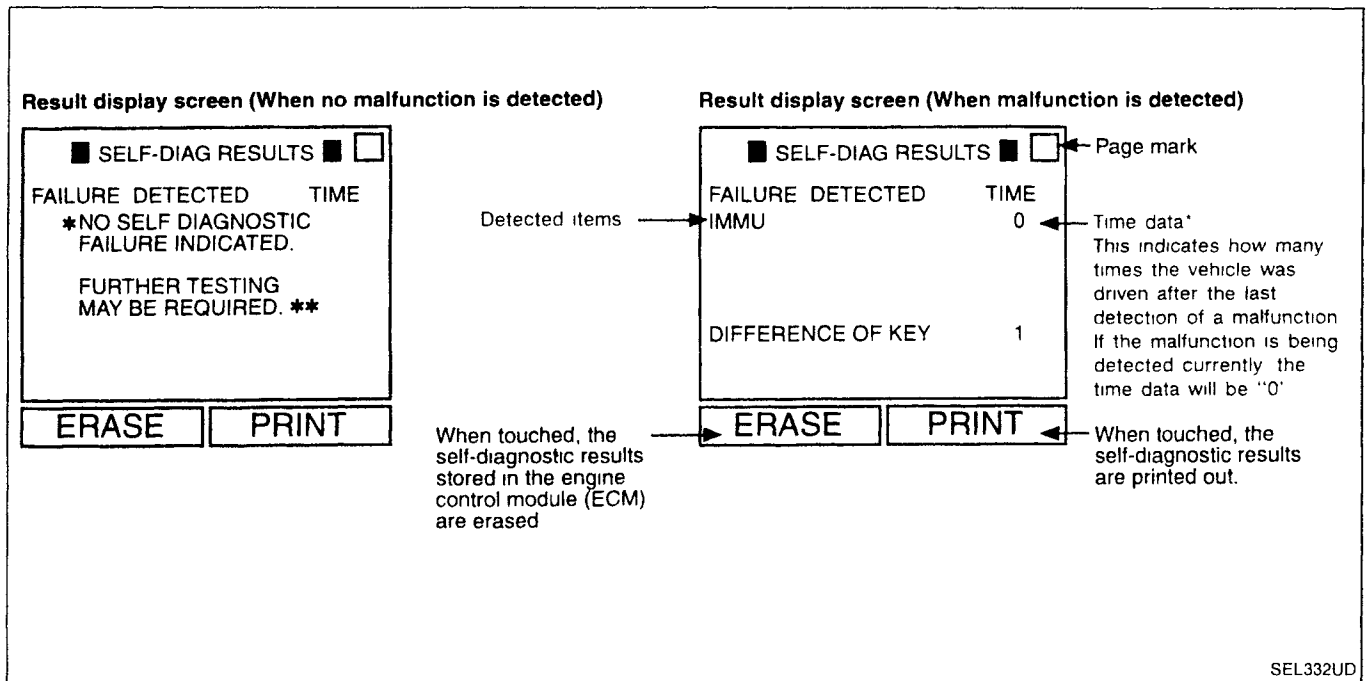
7. Perform each diagnostic test mode according to each service procedure.

For further information, see the CONSULT Operation Manual, NATS V2.0.

NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)

HOW TO READ SELF-DIAGNOSTIC RESULTS



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

NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)

CONSULT DIAGNOSTIC TEST MODE FUNCTION

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

SELF-DIAGNOSTIC RESULTS ITEM CHART

Detected items (Screen terms)	Description	Reference page
IMMU	ECM received the signal from IMMU that IMMU is malfunctioning.	EL-257
ECM	ECM is malfunctioning	EL-257
CHAIN OF ECM-IMMU	Communication impossible between ECM and IMMU	EL-258
DIFFERENCE OF KEY	IMMU can receive the key ID signal but the result of ID verification between key ID and IMMU is NG.	EL-260
CHAIN OF IMMU-KEY	IMMU cannot receive the key ID signal	EL-261
ID DISCORD, IMM-ECM	The result of ID verification between IMMU and ECM is NG. System initialisation is required	EL-263
MINGLE NOISE	Noise (interference) mingled into NATS communication lines during communicating	EL-264
DON'T ERASE BEFORE CHECK-ING ENG DIAG	Engine trouble data and NATS trouble data have been detected in ECM	EL-264

NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)

SYMPTOM MATRIX CHART 1 (Self-diagnosis related item)

X Possibility item, *MIL Malfunction Indicator Lamp

SYSTEM (Malfunctioning part or mode)	REFERENCE PART NO OF ILLUSTRATION ON NEXT PAGE	SYMPTOM		Displayed "SELF-DIAG RESULTS" on CONSULT screen	DIAGNOSTIC PROCEDURE (Reference page)
		● Blinking of MIL* ● Engine will start	● Blinking of MIL* ● Hard to start engine		
IMMU	A	X		IMMU	PROCEDURE 1 (EL-257)
ECM	B	X		ECM	PROCEDURE 2 (EL-257)
Open circuit in battery voltage line of IMMU circuit	C1		X	CHAIN OF ECM-IMMU	PROCEDURE 3 (EL-258)
Open circuit in ignition line of IMMU circuit	C2		X		
Open circuit in ground line of IMMU circuit	C3		X		
Open circuit in communication line between IMMU and ECM	C4		X		
Short circuit between IMMU and ECM communication line and battery voltage line	C4		X		
Short circuit between IMMU and ECM communication line and ground line	C4		X		
Open circuit in power source line of ANT/AMP circuit	E3		X		
ECM	B		X	DIFFERENCE OF KEY	PROCEDURE 4 (EL-260)
IMMU	A		X		
Unregistered key	D		X	CHAIN OF IMMU-KEY	PROCEDURE 5 (EL-261)
IMMU	A		X		
Communication line between ANT/AMP and IMMU.	E1		X		
Open circuit or short circuit of battery voltage line or short circuit of ground line	E2		X		
Open circuit in power source line of ANT/AMP circuit	E3		X		
Open circuit in ground line of ANT/AMP circuit	E4		X		
Malfunction of key ID chip	E5		X		
IMMU	A		X		
Antenna amp.	E6		X		

NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)

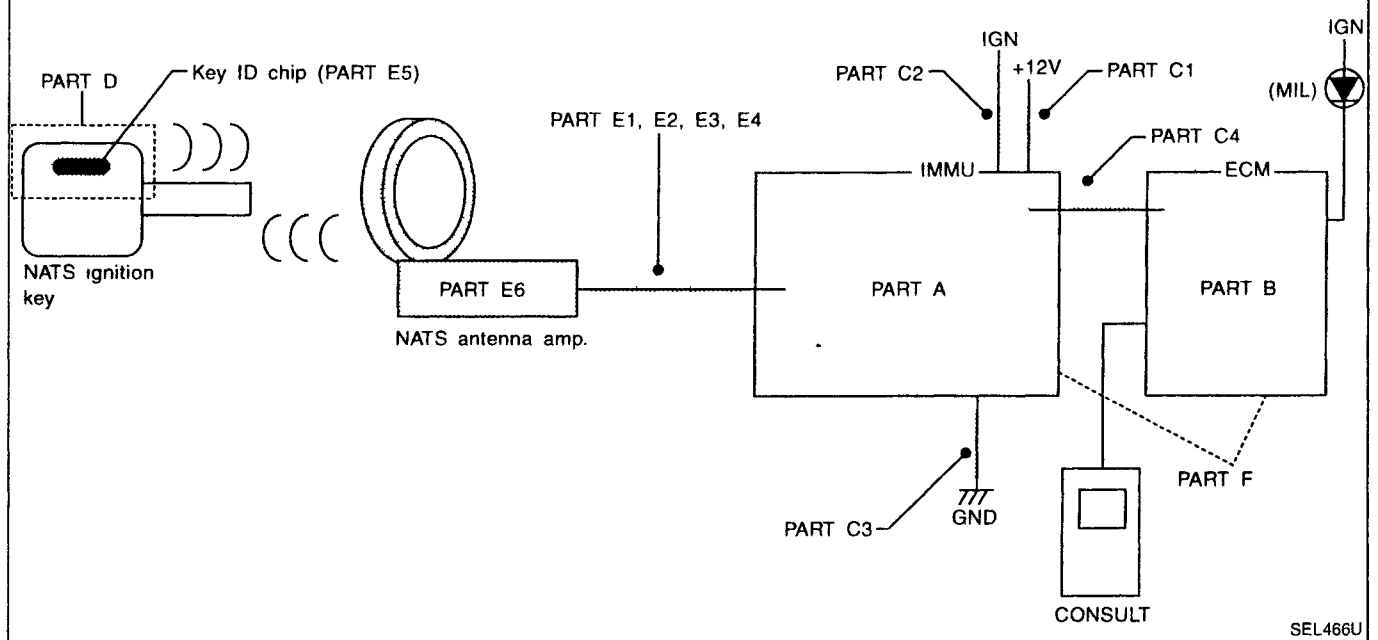
SYSTEM (Malfunctioning part or mode)	REFERENCE PART NO OF ILLUSTRATION ON NEXT PAGE	SYMPTOM		Displayed "SELF-DIAG RESULTS" on CONSULT screen.	DIAGNOSTIC PROCEDURE (Reference page)
		- Blinking of MIL* - Engine will start	- Blinking of MIL* - Hard to start engine		
System initialisation has not yet been completed	F		X	ID DISCORD, IMM-ECM	PROCEDURE 6 (EL-263)
ECM	F		X		
Noise interference in communication line			X	MINGLE NOISE	PROCEDURE 7 (EL-264)
Engine trouble data and NATS trouble data have been detected in ECM		X	X	DON'T ERASE BEFORE CHECKING ENG DIAG	WORK FLOW (EL-251)

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

X: Possibility item

SYSTEM (Malfunctioning part or mode)	SYMPTOM	DIAGNOSTIC PROCEDURE (Reference page)
	NATS security ind does not light up.	
NATS security ind	X	PROCEDURE 8 (EL-264)
Open circuit between Fuse and NATS IMMU		
Continuation of initialisation mode		
NATS IMMU		

DIAGNOSTIC SYSTEM DIAGRAM



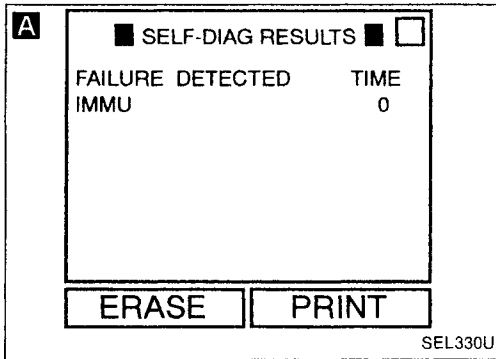
NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

Self-diagnostic results:

"IMMU" displayed on CONSULT screen



A



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

Ref. part No.* A

Yes

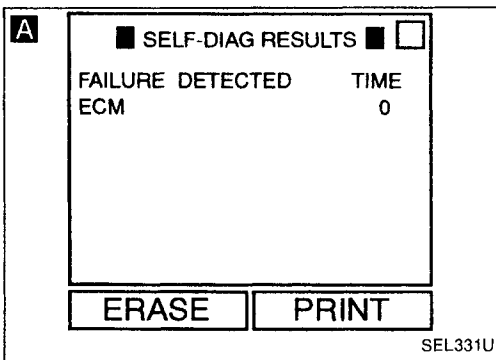
Replace IMMU.



Perform initialisation with CONSULT

For the operation of initialisation, refer to "CONSULT operation manual NATS V2.0".

* Ref. part No. reference part No. of Diagnostic System Diagram on EL-255



DIAGNOSTIC PROCEDURE 2

Self-diagnostic results:

"ECM" displayed on CONSULT screen

A



Confirm SELF-DIAGNOSTIC RESULTS "ECM" displayed on CONSULT screen

Ref. part No. B.

Replace ECM.



Perform initialisation with CONSULT.

For the operation of initialisation, refer to "CONSULT operation manual NATS V2.0".

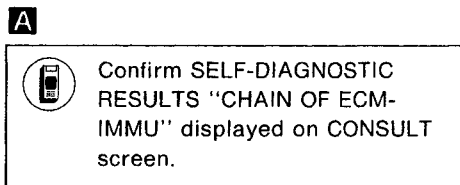
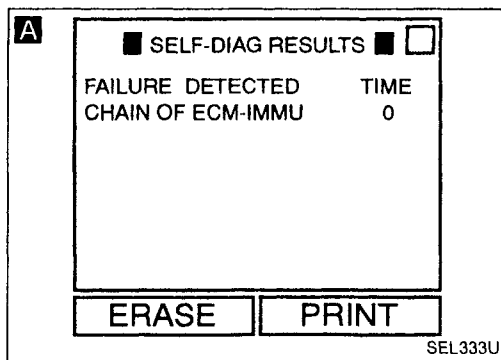
NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)

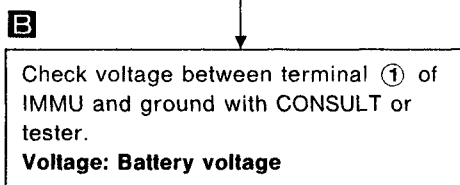
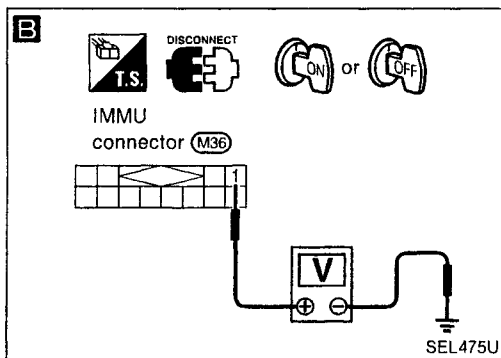
DIAGNOSTIC PROCEDURE 3

Self-diagnostic results:

"CHAIN OF ECM-IMMU" displayed on CONSULT screen



OK



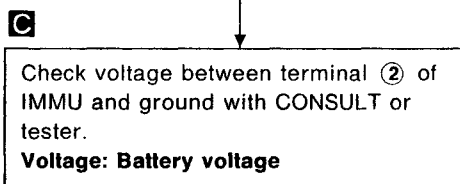
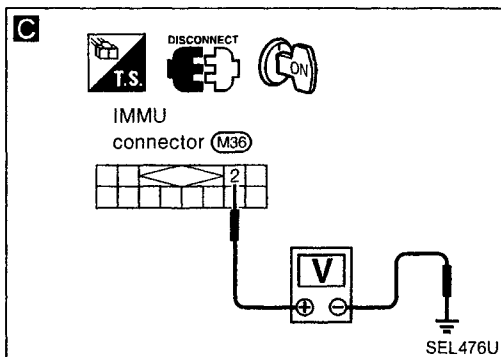
NG

Check the following:

- 7.5A fuse
- Harness continuity between fuse and IMMU connector (M36)

If NG, repair harness or connector.
Ref. part No. C1

OK



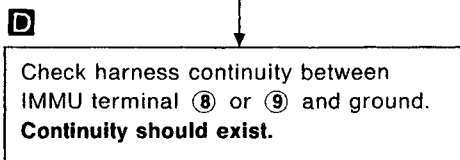
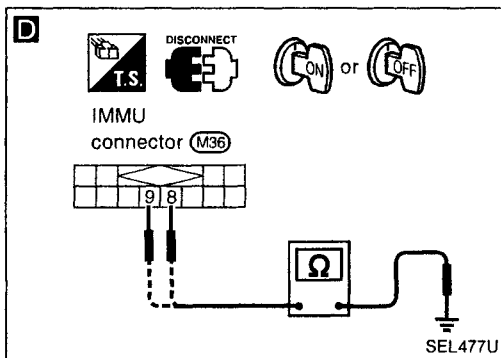
NG

Check the following:

- 7.5A fuse
- Harness continuity between fuse and IMMU connector (M36), or between ignition switch and fuse.

If NG, repair harness or connectors.
Ref. part No. C2

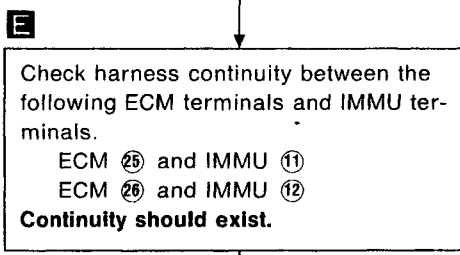
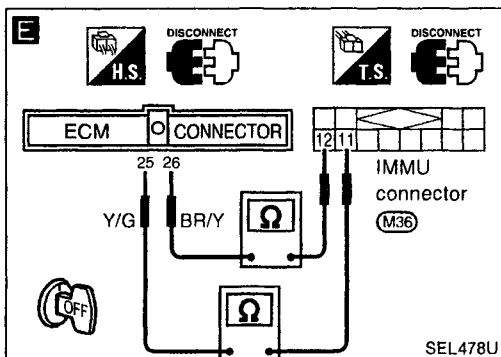
OK



NG

Repair harness or check the body ground screws (M28), (M60) and (M68).
Ref. part No. C3

OK



NG

Check the following:

- Harness connectors (M49), (F6)
- Harness continuity between ECM and IMMU.

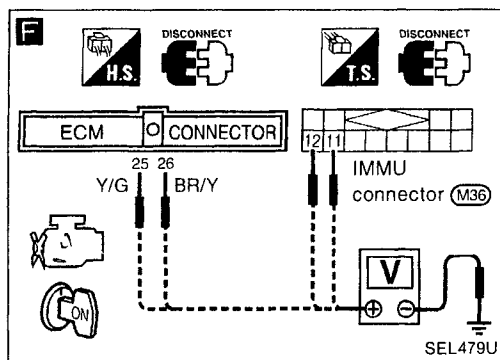
If NG, repair harness or connectors.
Ref. part No. C4

OK

Ⓐ

NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)

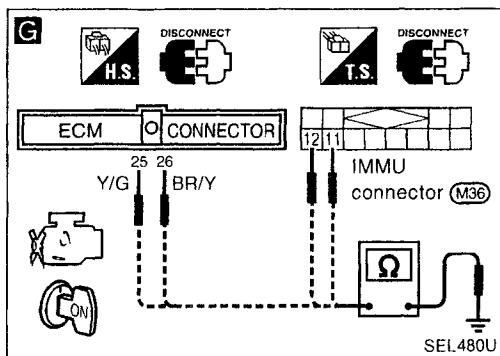


F

CHECK COMMUNICATION LINE CIRCUIT.

- 1) Disconnect ECM connector and IMMU connector.
- 2) Check voltage between the following terminals and ground
ECM ②⑤, ECM ②⑥, IMMU ①① and IMMU ①②
Voltage: 0V

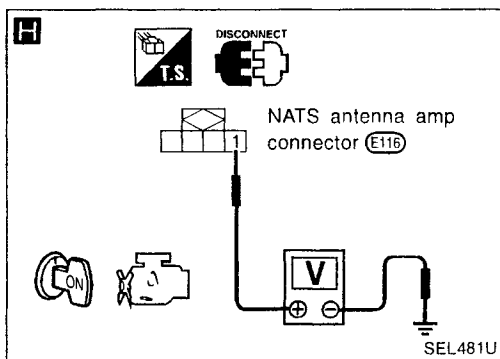
NG → Communication line is short-circuited with battery voltage line or ignition switch ON line.
Repair harness or connectors.
Ref. part No. C4



G

Check continuity between the following terminals and ground
ECM ②⑤, ECM ②⑥, IMMU ①① and IMMU ①②
Continuity should not exist.

NG → Communication line is short-circuited with ground line.
Repair harness or connectors.
Ref. part No. C4

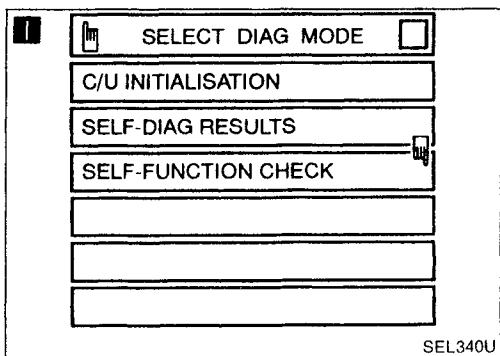


H

CHECK NATS ANTENNA AMP. CIRCUIT.

- 1) Disconnect NATS antenna amp connector.
- 2) Turn ignition switch "ON"
- 3) Check voltage between antenna amp terminal ① and ground
Voltage: More than 4.7V

NG → NATS antenna amp. +5V line is short-circuited with battery voltage line or ground line
Repair harness or connectors
Ref. part No. E3



I

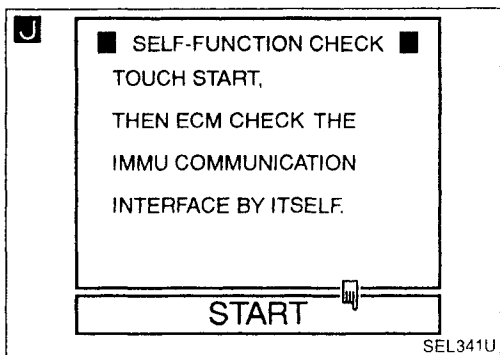
SELF-FUNCTION CHECK

- 1) Connect ECM connector and disconnect IMMU connector.
- 2) Turn ignition switch "ON"
- 3) Touch "SELF-FUNCTION CHECK" on CONSULT "SELECT DIAG MODE" screen

J

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

NG → **K** (See next page)
ECM is malfunctioning
Replace ECM.
Ref. part No. B



OK → **L** (See next page)

Perform initialisation with CONSULT
For the operation of initialisation, refer to "CONSULT operation manual NATS V2.0"

NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)

K

SELF-FUNCTION CHECK

ECM's IMMU COMMUNICATION INTERFACE

***** **NG** *****

PRINT

SEL342U

L

SELF-FUNCTION CHECK

ECM's IMMU COMMUNICATION INTERFACE

***** **OK** *****

PRINT

SEL343U

A

SELF-DIAG RESULTS

FAILURE DETECTED TIME

DIFFERENCE OF KEY 0

ERASE PRINT

SEL344U

B

C/U INITIALISATION

INITIALISATION STOPPED or FAILED

TURN IGN KEY SW "OFF" AND "ON", AFTER CONFIRMING SELF-DIAG RESULTS, PERFORM C/U INITIALISATION AGAIN

ERASE PRINT

SEL372U

B

IMMU is malfunctioning
Replace IMMU.
Ref. part No. A

 Perform initialisation with CONSULT.
For the operation of initialisation, refer to "CONSULT operation manual NATS V2.0".

DIAGNOSTIC PROCEDURE 4

Self-diagnostic results:

"DIFFERENCE OF KEY" displayed on CONSULT screen

A

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

OK

 Perform initialisation with CONSULT.
Re-register all NATS ignition key IDs.
For the operation of initialisation, refer to "CONSULT operation manual NATS V2.0".

Initialisation completed

Start engine

END
(Ignition key ID was unregistered.)
Ref. part No. D

Initialisation
incompleted
or failed
with CON-
SULT

B

IMMU is mal-
functioning.
Replace IMMU
Ref. part No. A

 Perform initialisa-
tion with CON-
SULT.
For the operation
of initialisation,
refer to "CON-
SULT operation
manual NATS
V2.0"

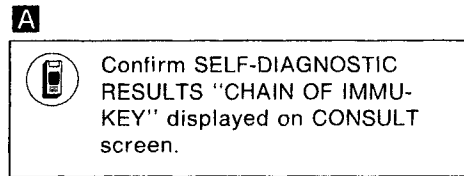
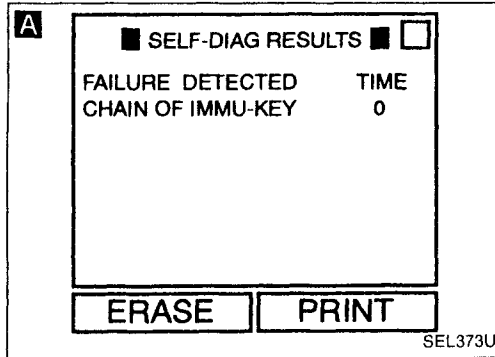
NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)

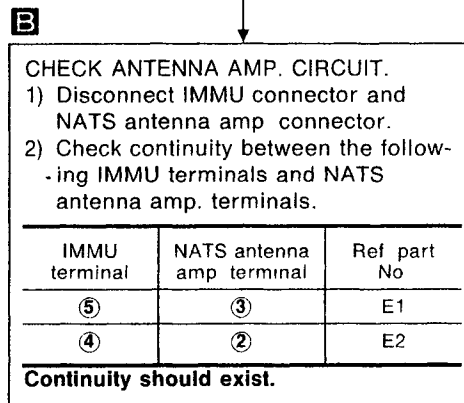
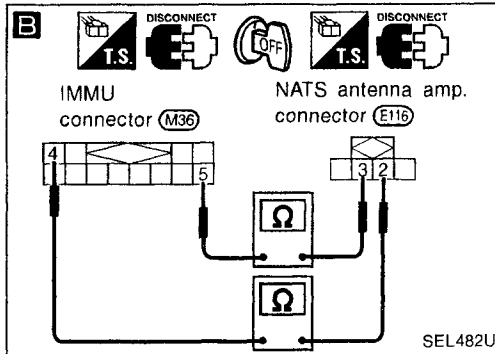
DIAGNOSTIC PROCEDURE 5

Self-diagnostic results:

"CHAIN OF IMMU-KEY" displayed on CONSULT screen



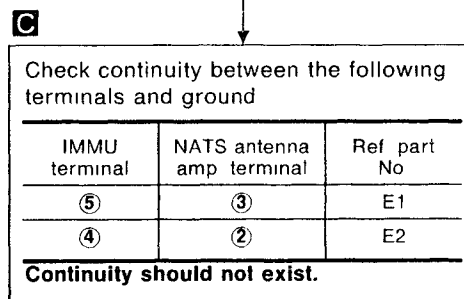
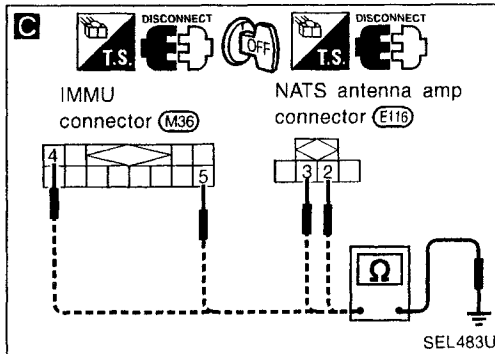
OK



NG

Check harness and connectors
If NG, repair harness or connectors.

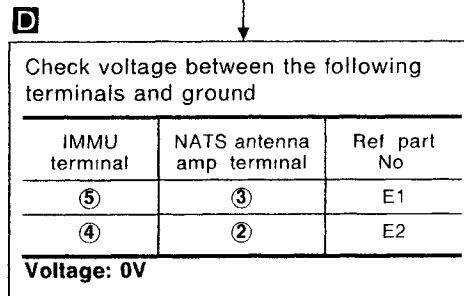
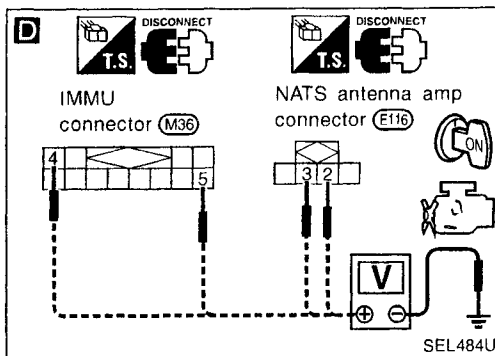
OK



NG

Communication line is short-circuited with ground line.
Repair harness or connectors

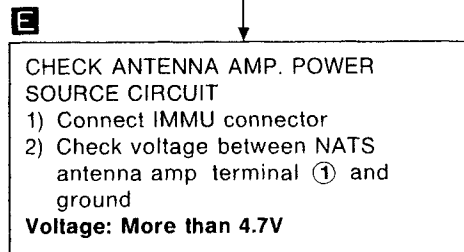
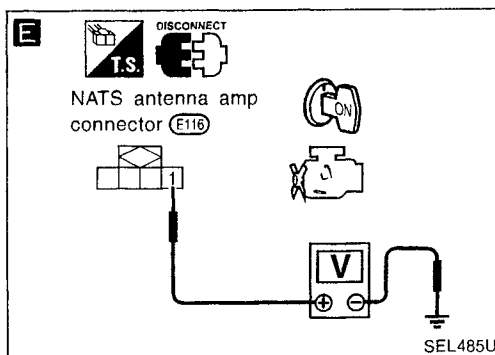
OK



NG

Communication line is short-circuited with battery voltage line or ignition switch "ON" line.
Repair harness or connectors

OK



NG

Power source line is open circuit
Repair harness or connector.
Ref. part No. E3

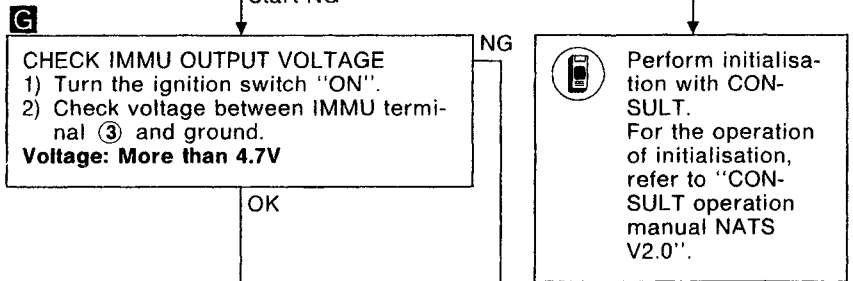
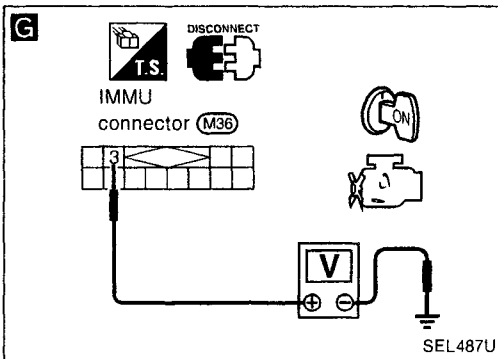
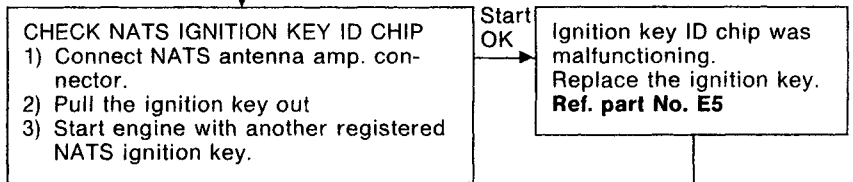
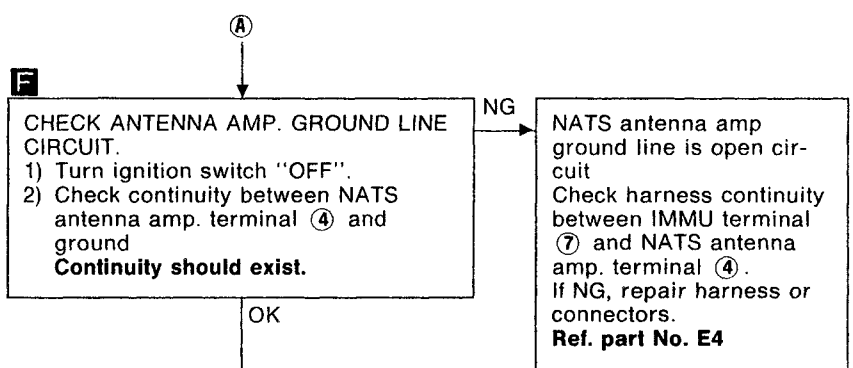
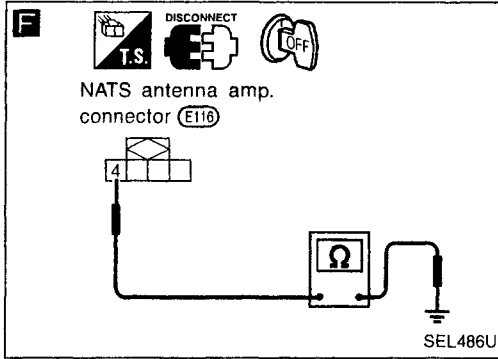
OK

Ⓐ

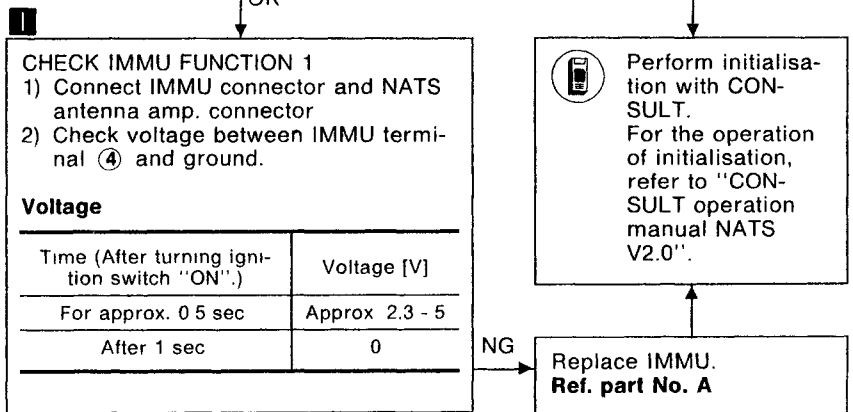
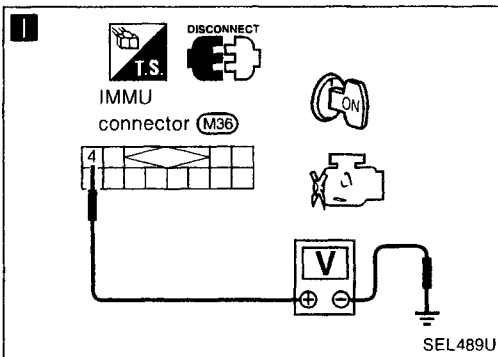
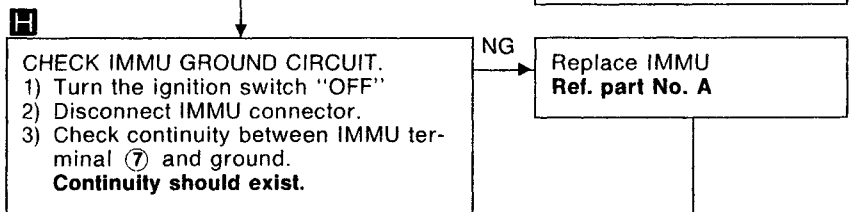
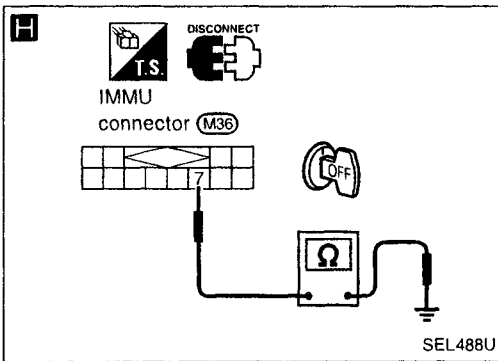
EL

NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)



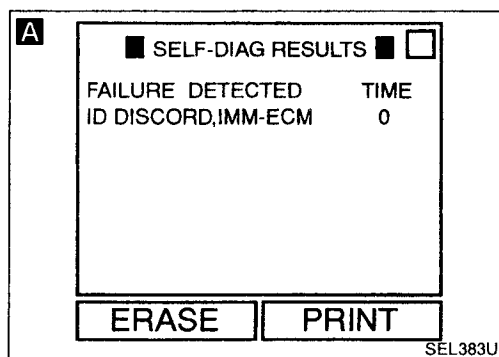
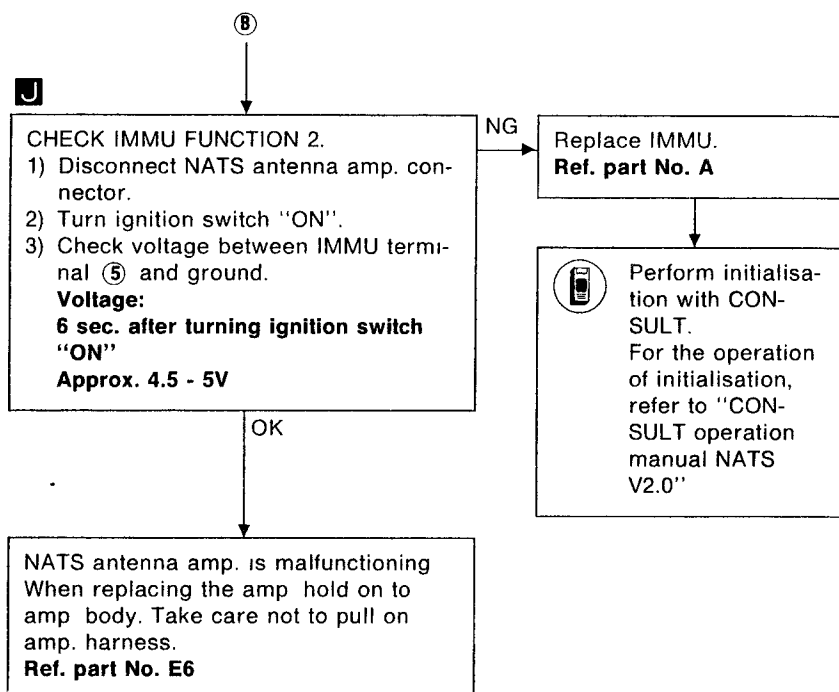
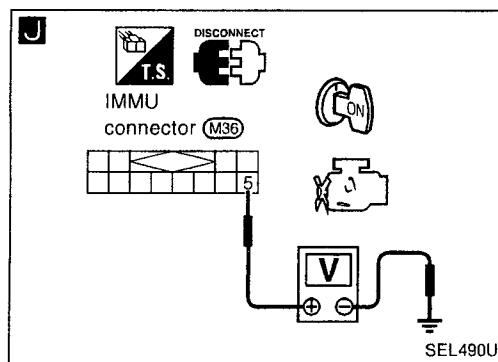
Replace IMMU.
Ref. part No. A



Replace IMMU.
Ref. part No. A

NATS (Nissan Anti-Theft System)

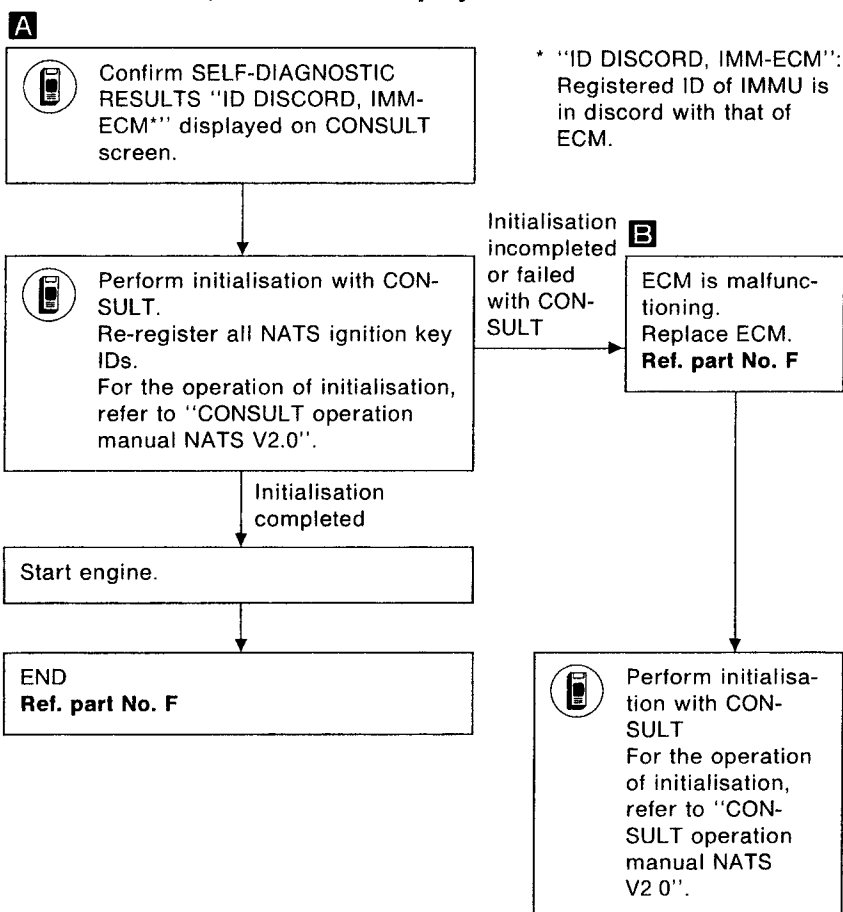
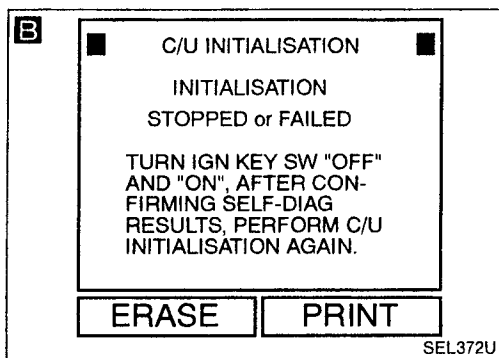
Trouble Diagnoses (Cont'd)



DIAGNOSTIC PROCEDURE 6

Self-diagnostic results:

"ID DISCORD, IMM-ECM" displayed on CONSULT screen



EL

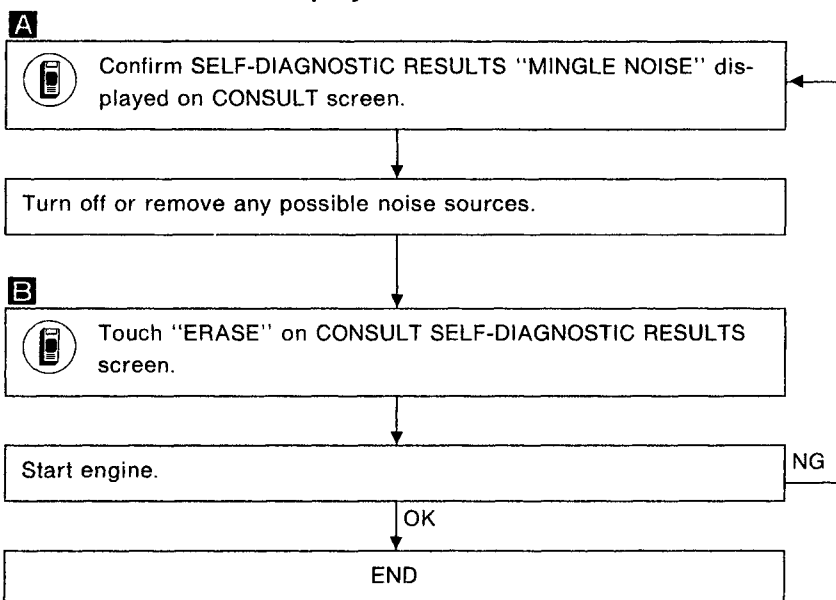
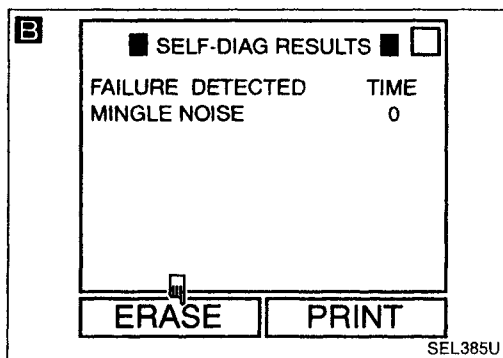
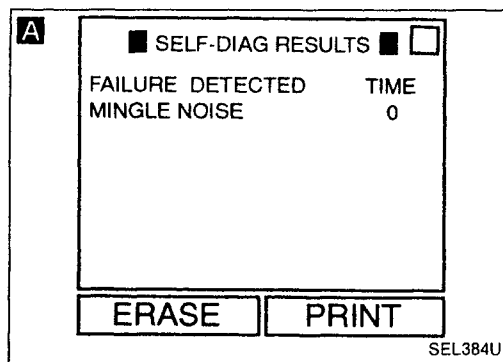
NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

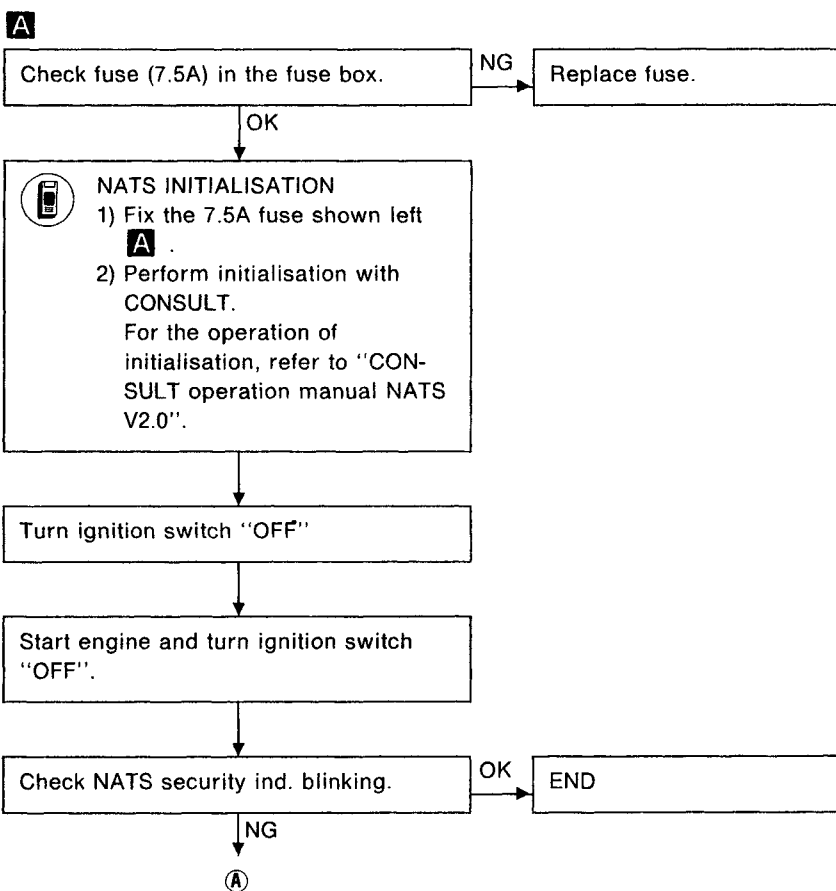
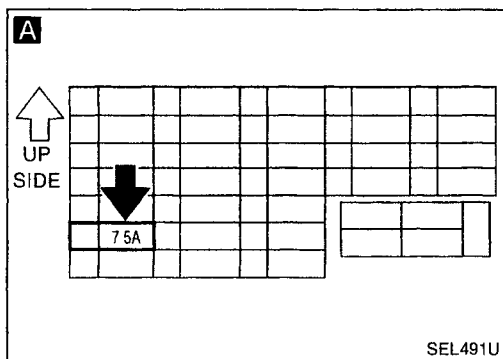
Self-diagnostic results:

"MINGLE NOISE" displayed on CONSULT screen



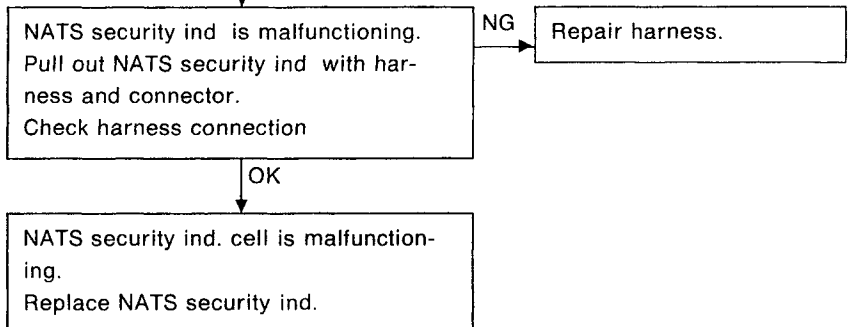
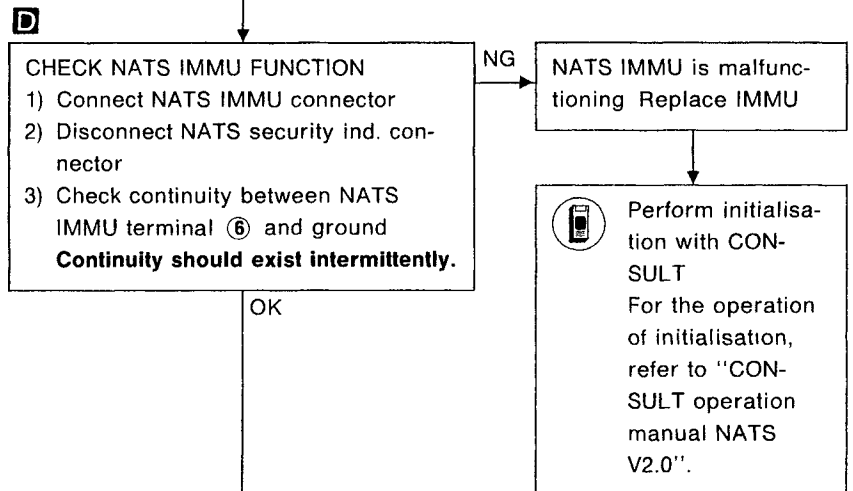
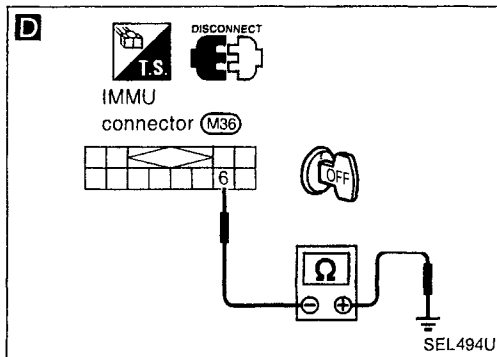
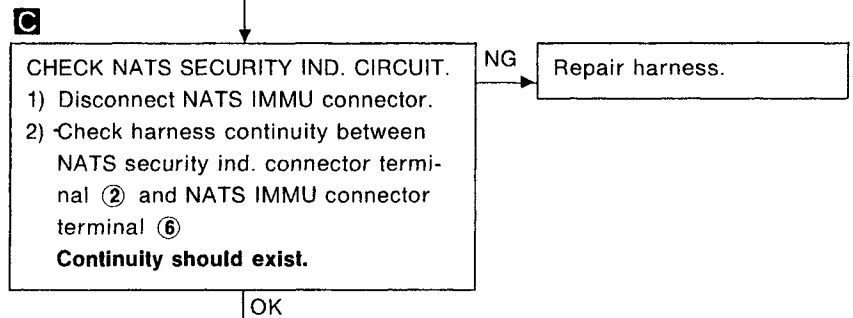
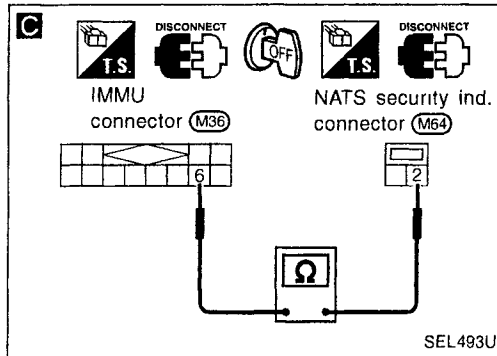
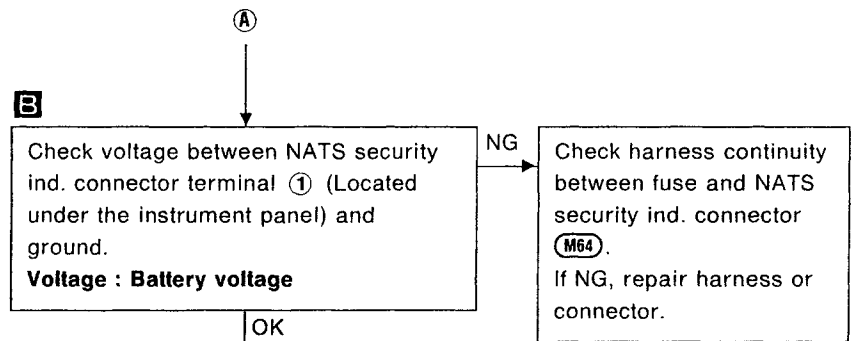
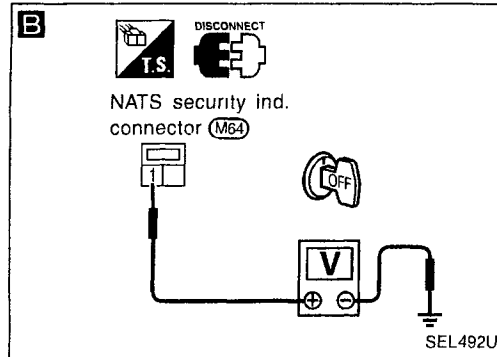
DIAGNOSTIC PROCEDURE 8

"NATS SECURITY IND. DOES NOT LIGHT UP"



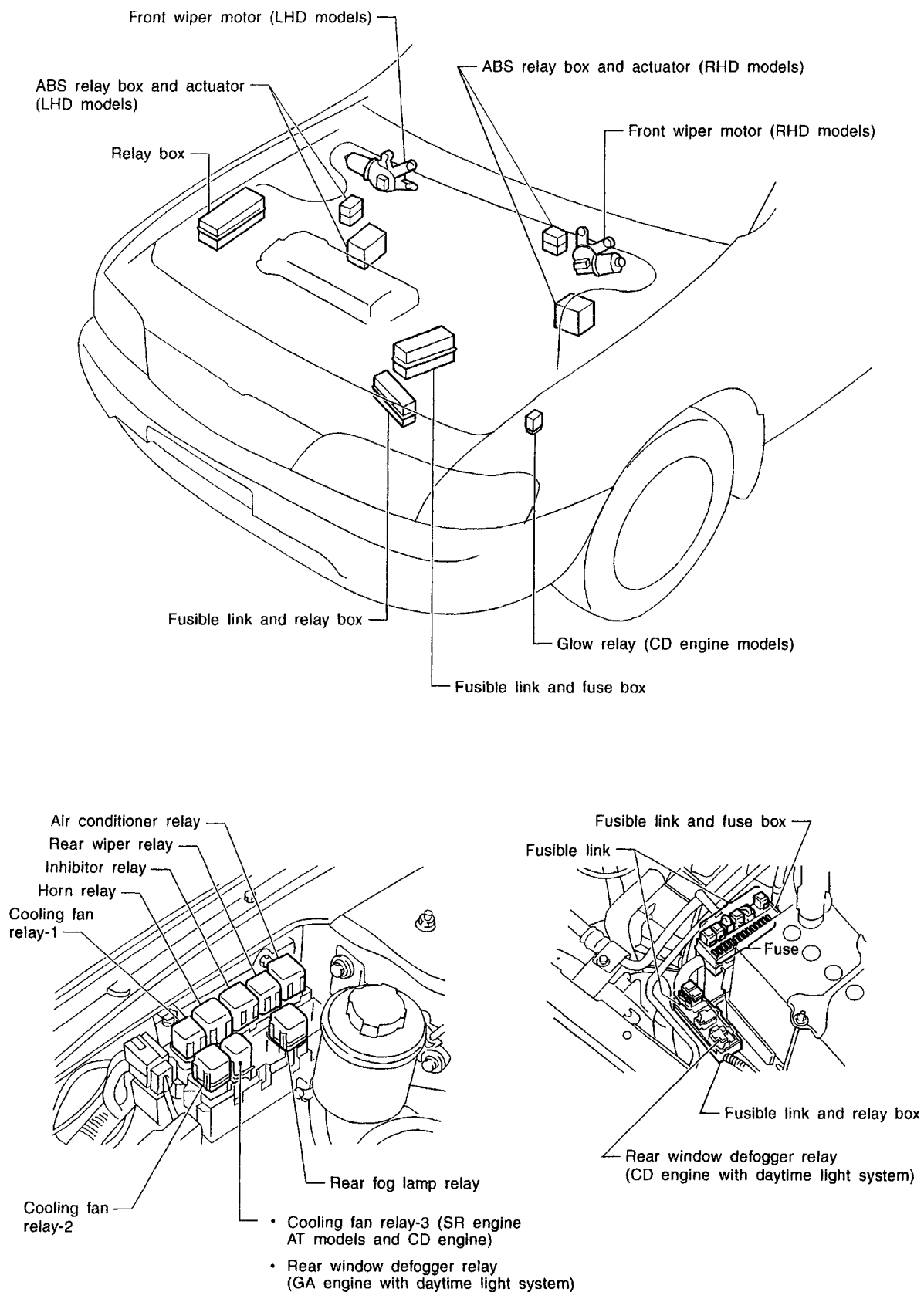
NATS (Nissan Anti-Theft System)

Trouble Diagnoses (Cont'd)



LOCATION OF ELECTRICAL UNITS

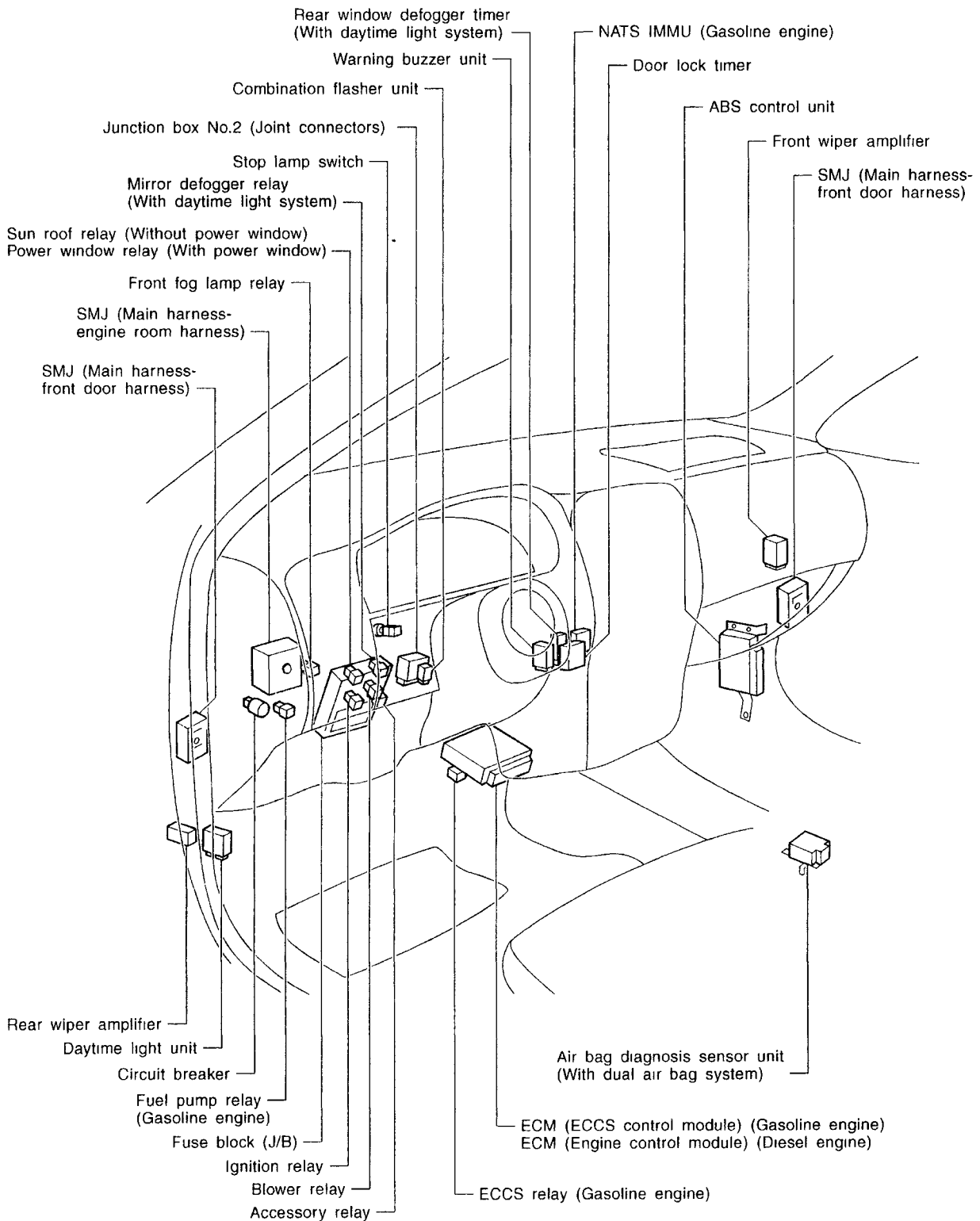
Engine Compartment



LOCATION OF ELECTRICAL UNITS

Passenger Compartment

LHD MODELS

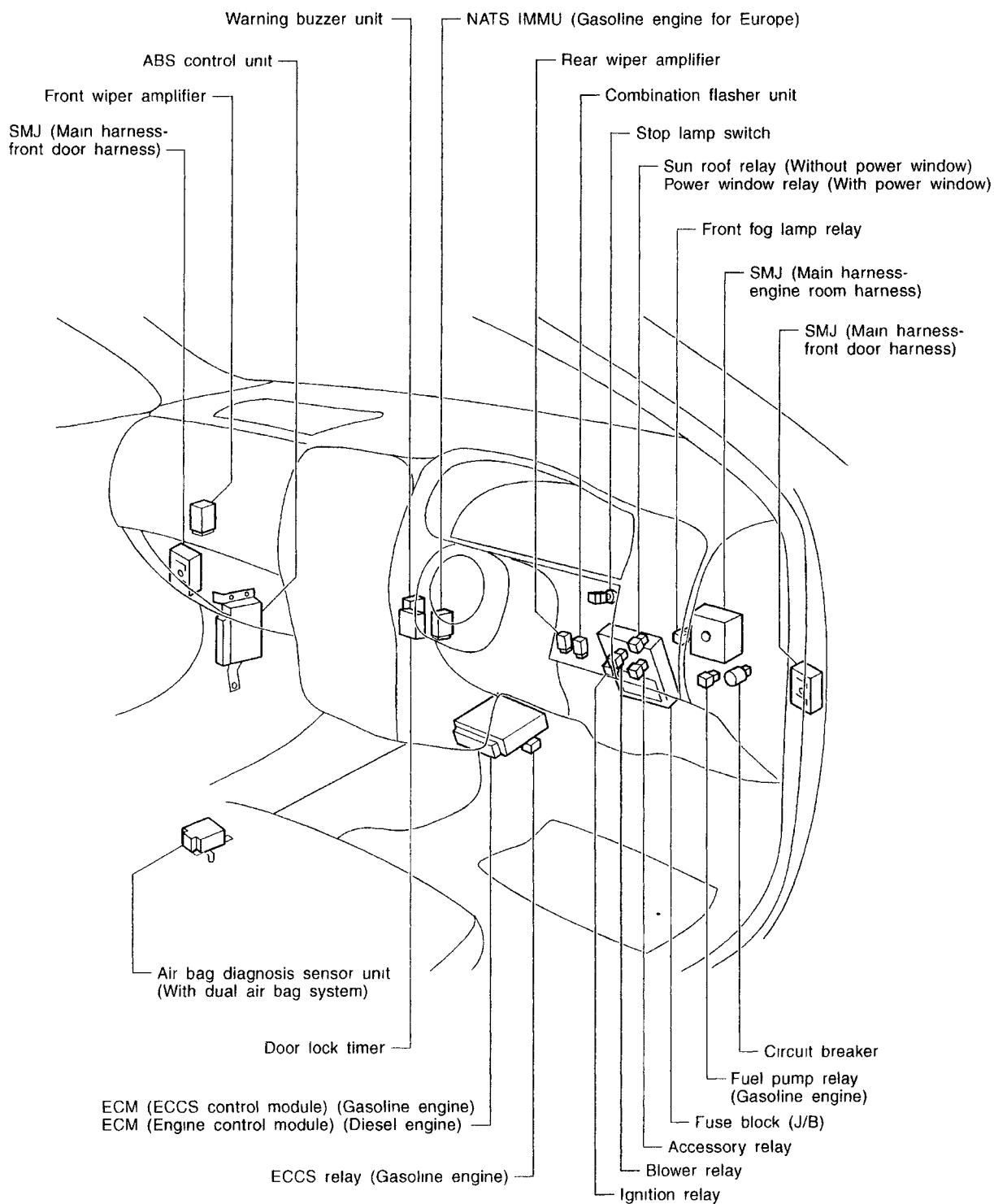


EL

LOCATION OF ELECTRICAL UNITS

Passenger Compartment (Cont'd)

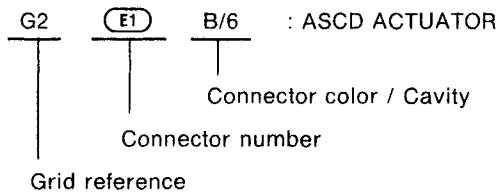
RHD MODELS



HARNESS LAYOUT

How to Read Harness Layout

Example:



The following Harness Layouts use a map style grid to help locate connectors on the drawings:

- Engine Room Harness (Engine Compartment)
- Main Harness
- Body Harness

To use the grid reference

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

CONNECTOR SYMBOL

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

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

FFC (FLAT FLEXIBLE CIRCUIT)

An FFC (Flat Flexible Circuit) has been adopted for door harness of 3-door Hatchback models for Europe.

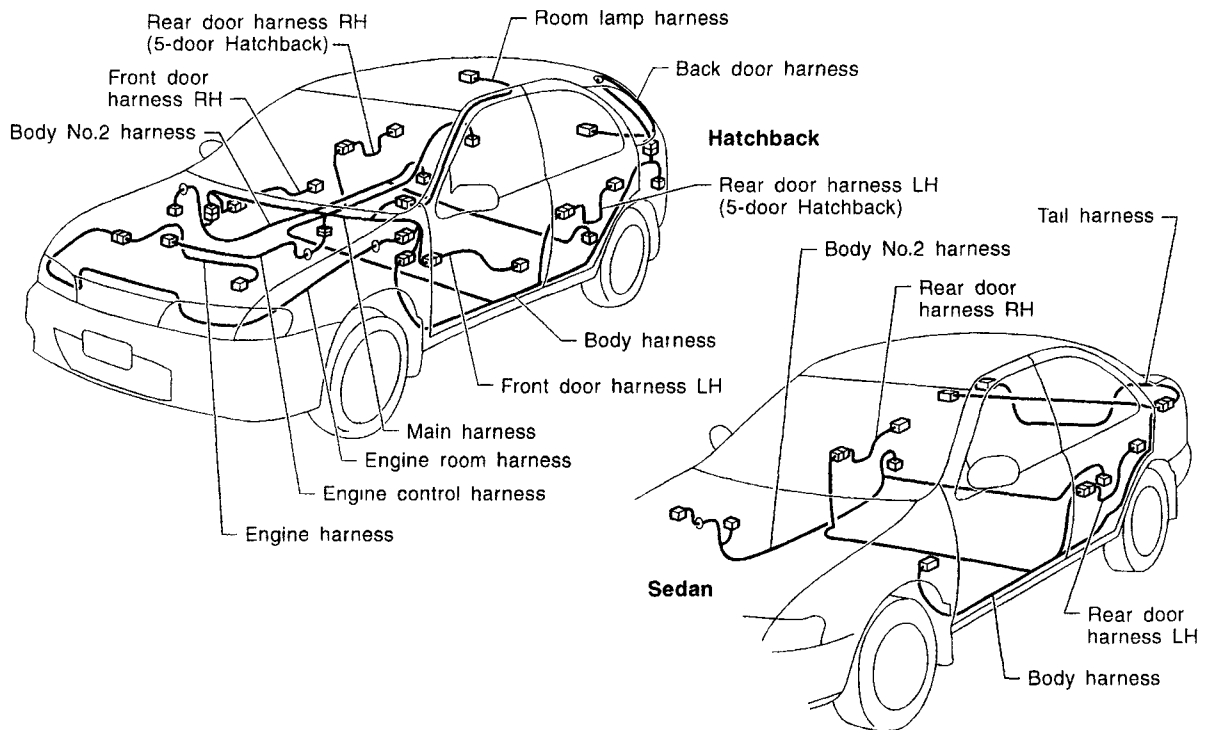
CAUTION:

- Do not attempt to repair, splice or modify the FFC. If the FFC is damaged, replace with a new one.
- Do not force the FFC in the opposite direction to which it is bent.

HARNESS LAYOUT

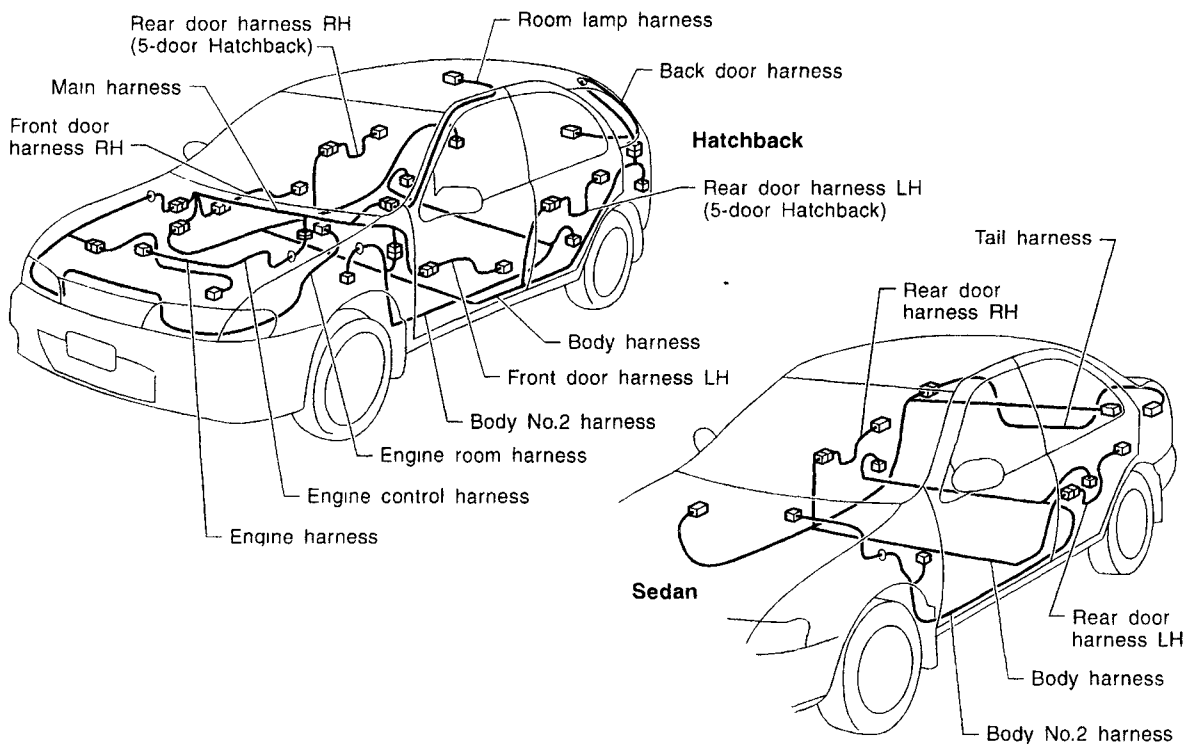
Outline

LHD MODELS



HEL152

RHD MODELS

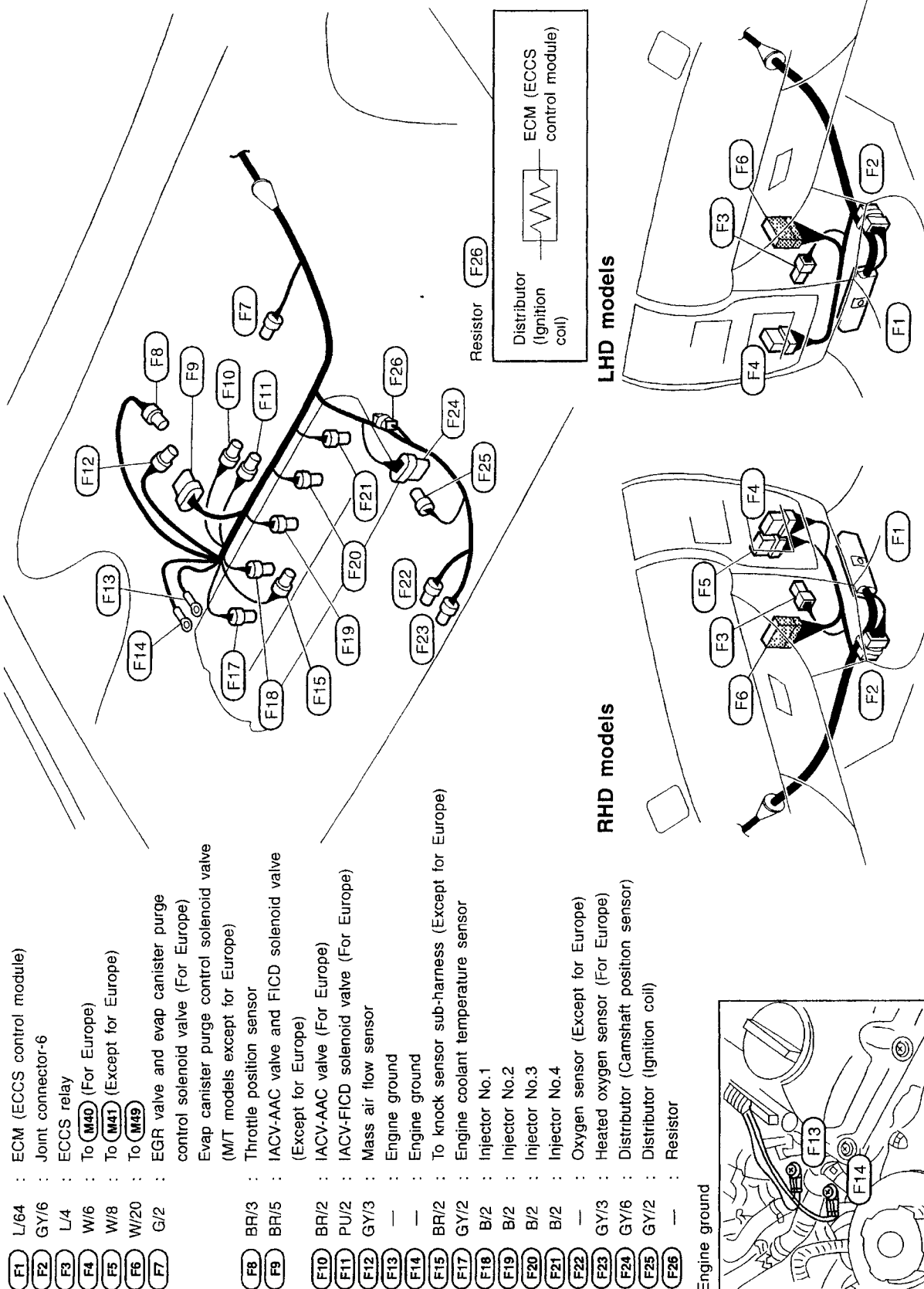


HEL153

HARNESS LAYOUT

Engine Control Harness

GA14DE, 16DE ENGINE FOR EUROPE AND GA15DE ENGINE

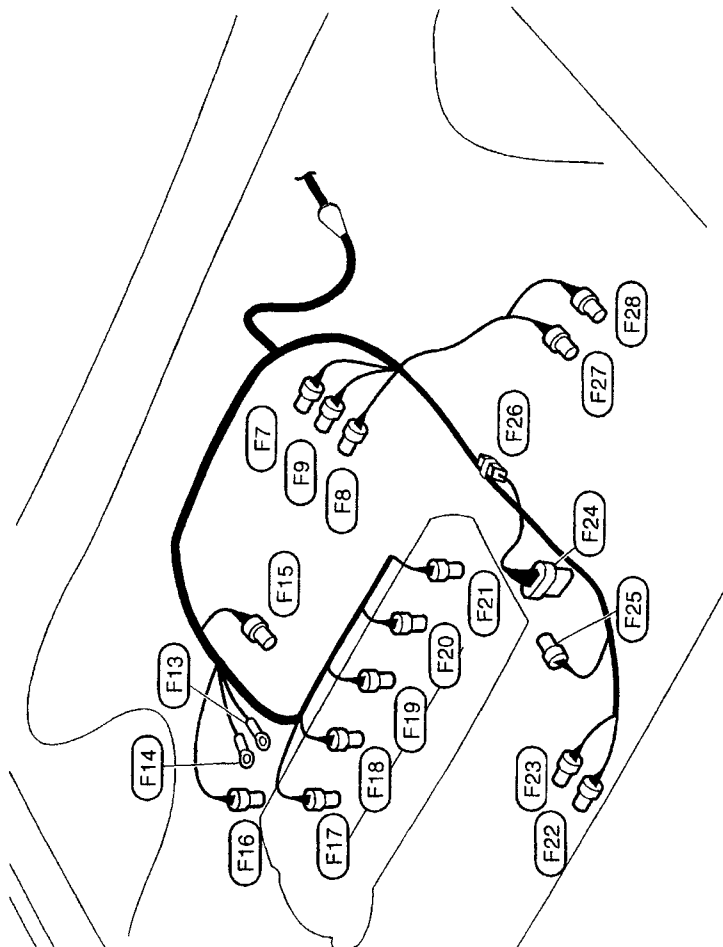


EL

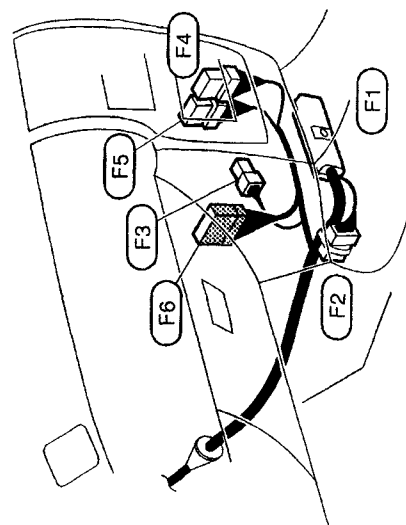
HARNESS LAYOUT

Engine Control Harness (Cont'd)

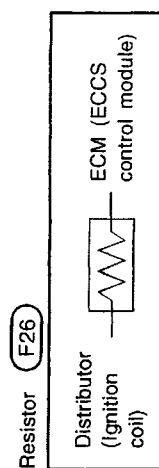
GA16DE ENGINE EXCEPT FOR EUROPE



F1	L/64	ECM (ECSS control module) (Except for Australia)
F2	W/88	ECM (ECSS control module) (For Australia)
F3	GY/6	Joint connector-6
F4	L/4	ECSS relay
F5	W/6	To (M40) (For Australia)
F6	W/8	To (M41) (Except for Australia)
F7	W/20	To (M49)
F8	G/2	EGR valve and evap canister purge control solenoid valve (For Australia)
F9		Evap canister purge control solenoid valve (Except for Australia)
F10	BR/3	Throttle position sensor
F11	BR/5	IACV-AAC valve and FICD solenoid valve
F12	—	Engine ground
F13	—	Engine ground
F14	BR/2	To knock sensor sub-harness
F15	B/2	VTC solenoid valve
F16	GY/2	Engine coolant temperature sensor
F17	B/2	Injector No.1
F18	B/2	Injector No.2
F19	B/2	Injector No.3
F20	B/2	Injector No.4
F21	—	Oxygen sensor (Except A/T models for Australia)
F22	GY/3	Heated oxygen sensor (A/T models for Australia)
F23	GY/6	Distributor (Camshaft position sensor)
F24	GY/2	Distributor (Ignition coil)
F25	—	Resistor
F26	BR/4	Mass air flow sensor
F27	GY/2	Intake air temperature sensor (For Australia)
F28		



Engine ground



Resistor

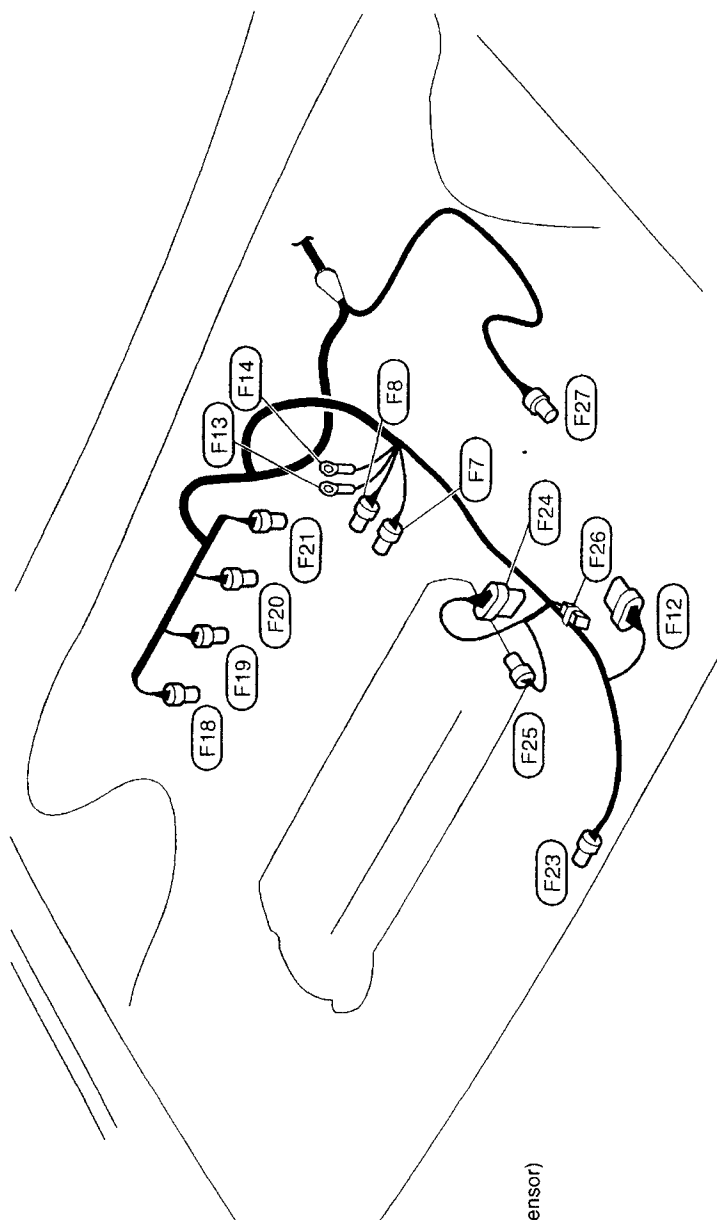
Distributor (ignition coil)

ECM (ECSS control module)

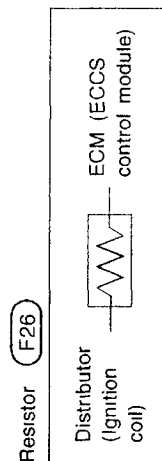
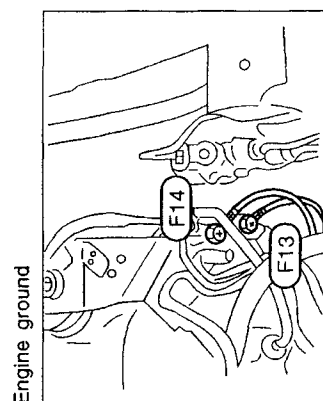
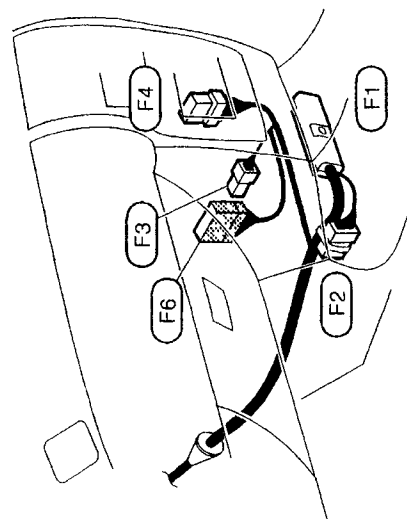
HARNESS LAYOUT

Engine Control Harness (Cont'd)

SR20DE ENGINE



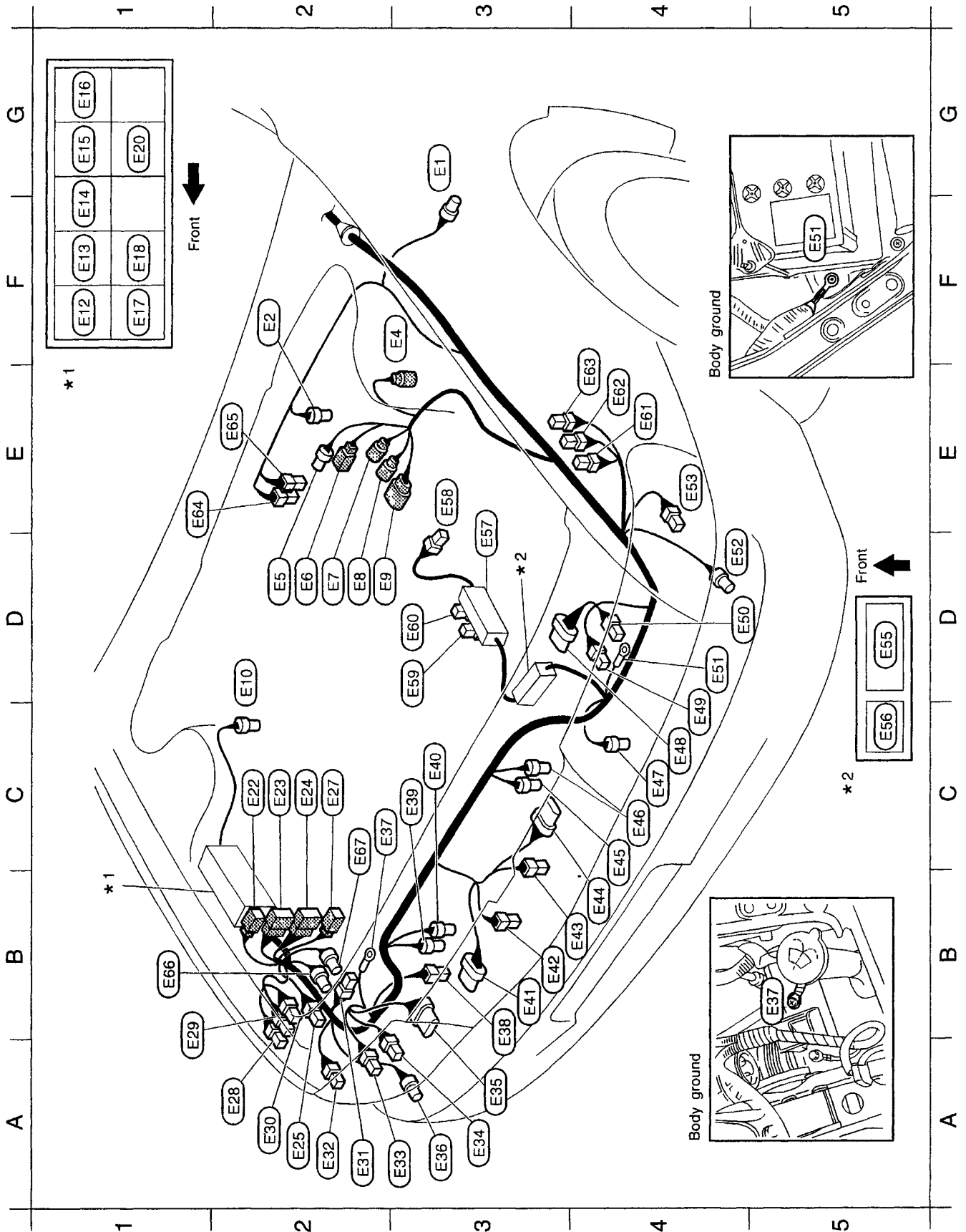
F1	L/64	: ECM (ECCS control module)
F2	GY/6	: Joint connector-6
F3	L/4	: ECCS relay
F4	W/6	: To M40
F6	W/20	: To M49
F7	B/2	: EGR valve and evap canister purge control solenoid valve
F8	BR/3	: Throttle position sensor
F12	GY/6	: To E227
F13	—	: Engine ground
F14	—	: Engine ground
F18	B/2	: Injector No.1
F19	B/2	: Injector No.2
F20	B/2	: Injector No.3
F21	B/2	: Injector No.4
F23	GY/3	: Heated oxygen sensor
F24	GY/6	: Distributor (Camshaft position sensor)
F25	GY/2	: Distributor (ignition coil)
F26	—	: Resistor
F27	BR/4	: Mass air flow sensor



HARNESS LAYOUT

Engine Room Harness

ENGINE COMPARTMENT — LHD models



HARNESS LAYOUT

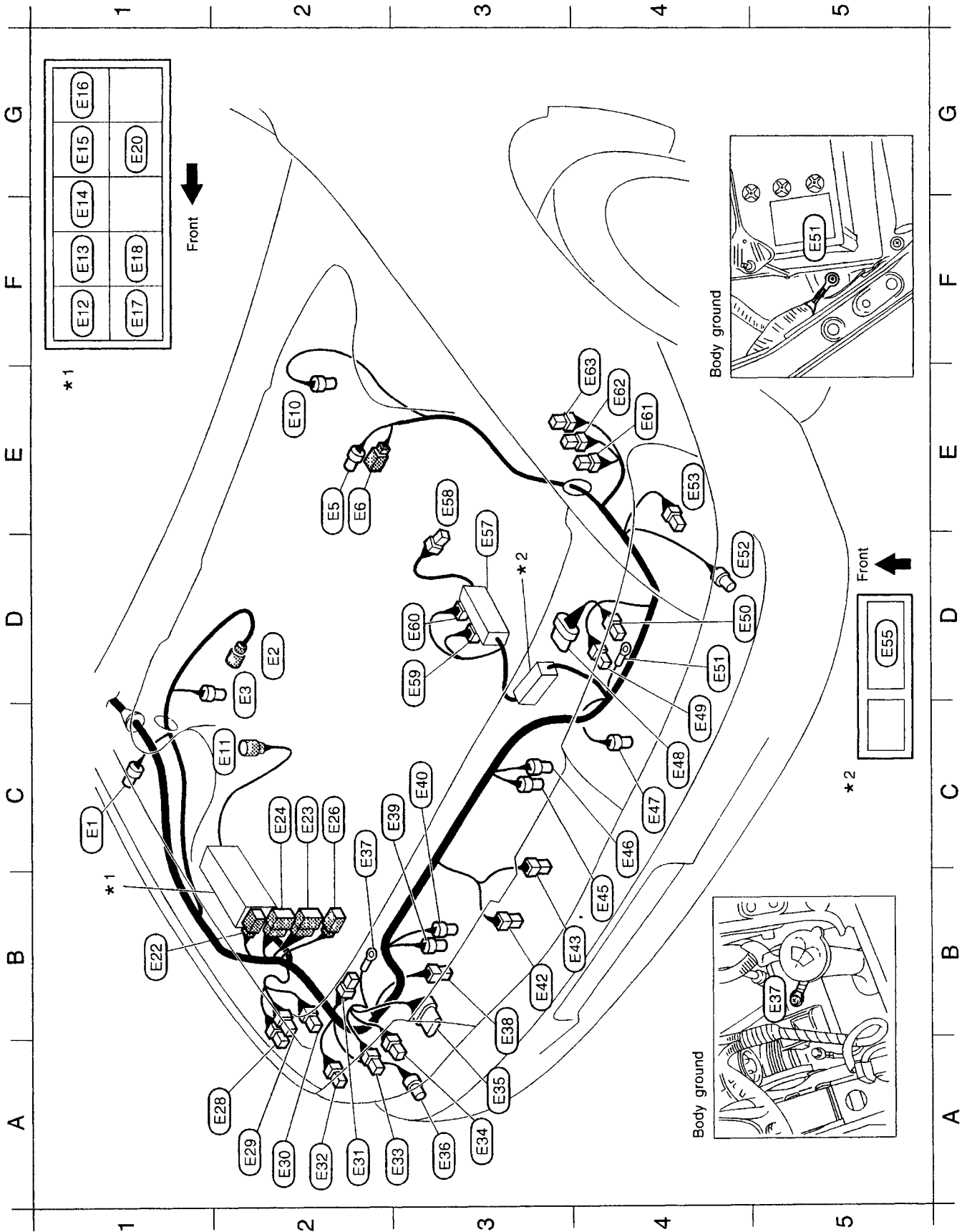
Engine Room Harness (Cont'd)

G3 E1	GY/2	: Side turn signal lamp LH	A3 E36	GY/2	: Front fog lamp RH (GA engine M/T models)
F2 E2	GY/2	: Brake fluid level switch	C2 E37	—	: Body ground
F3 E4	BR/2	: Front wheel speed sensor LH (For ABS)	B3 E38	GY/1	: Brake vacuum switch (CD engine)
D2 E5	GY/2	: Fuel filter sensor (CD engine)	C3 E39	GY/2	: Cooling fan motor-2 (1-mode type)
D2 E6	B/1	: To E228 (CD engine)	C3 E40	GY/4	: Cooling fan motor-2 (2-mode type with CD engine)
D2 E7	GY/1	: To E229 (CD engine)	B3 E41	GY/6	: Headlamp wiper motor RH (With daytime light system)
D2 E8	GY/4	: To E231 (CD engine)	B3 E42	B/1	: Horn high
D2 E9	B/8	: To E230 (CD engine)	B4 E43	B/1	: Horn low
D2 E10	GY/2	: ABS relay box	B4 E44	GY/6	: Headlamp wiper motor LH (With daytime light system)
F1 E12	L/4	: Cooling fan relay-1 (Gasoline engine)	C4 E45	GY/2	: Cooling fan motor-1 (1-mode type)
	BR/6	: Cooling fan relay-1 (CD engine)	C4 E46	GY/4	: Cooling fan motor-1 (2-mode type with CD engine)
F1 E13	W/3	: Horn relay	C4 E47	B/2	: Dual-pressure switch
F1 E14	L/4	: Inhibitor relay	C4 E48	GY/6	: Headlamp aiming motor unit LH
G1 E15	B/5	: Rear wiper relay	D4 E49	B/3	: Headlamp LH
G1 E16	L/4	: A/C relay	D4 E50	B/2	: Clearance lamp LH
F1 E17	BR/6	: Cooling fan relay-2 (GA engine A/T models for Europe without daytime light system and CD engine)	D4 E51	—	: Body ground
F1 E18	BR/6	: Cooling fan relay-3 (CD engine)	D4 E52	GY/2	: Front fog lamp LH (GA engine M/T models)
F1 E18	L/4	: Rear window defogger relay	E4 E53	B/2	: Front turn signal lamp LH
		(GA engine with daytime light system)	D5 E55	—	: Fusible link
G1 E20	L/4	: Rear fog lamp relay (Without daytime light system)	C5 E56	L/4	: Rear window defogger relay (CD engine with daytime light system)
	GY/6	: Rear fog lamp relay (With daytime light system)	E3 E57	—	: Fusible link and fuse box
C2 E22	B/2	: To E204	E3 E58	B/1	: Battery
C2 E23	B/6	: To E201 (Gasoline engine)	D3 E59	B/1	: Fusible link and fuse box
C2 E24	B/8	: To E202 (Gasoline engine)	D3 E60	W/1	: Fusible link and fuse box
A2 E25	W/2	: Headlamp washer motor (With daytime light system)	E4 E61	G/2	: Glow relay (CD engine)
C2 E27	GY/4	: To E201 (CD engine)	E4 E62	W/1	: Glow relay (CD engine)
A2 E28	W/2	: Front washer motor	E4 E63	W/1	: Glow relay (CD engine)
B1 E29	G/2	: Rear washer motor	E1 E64	B/1	: IACV-FICD solenoid valve (CD engine)
A2 E30	B/2	: Washer fluid level switch	E2 E65	B/1	: IACV-FICD solenoid valve (CD engine)
A2 E31	GY/2	: To front fog lamp sub-harness	B1 E66	GY/4	: Cooling fan motor-1 (GA engine A/T models without daytime light system)
A2 E32	B/2	: Front turn signal lamp RH			: Cooling fan motor-2 (GA engine A/T models without daytime light system)
A3 E33	B/2	: Clearance lamp RH	C2 E67	GY/4	
A3 E34	B/3	: Headlamp RH			
A3 E35	GY/6	: Headlamp aiming motor unit RH			

HARNESS LAYOUT

Engine Room Harness (Cont'd)

ENGINE COMPARTMENT — RHD models



HARNESS LAYOUT

Engine Room Harness (Cont'd)

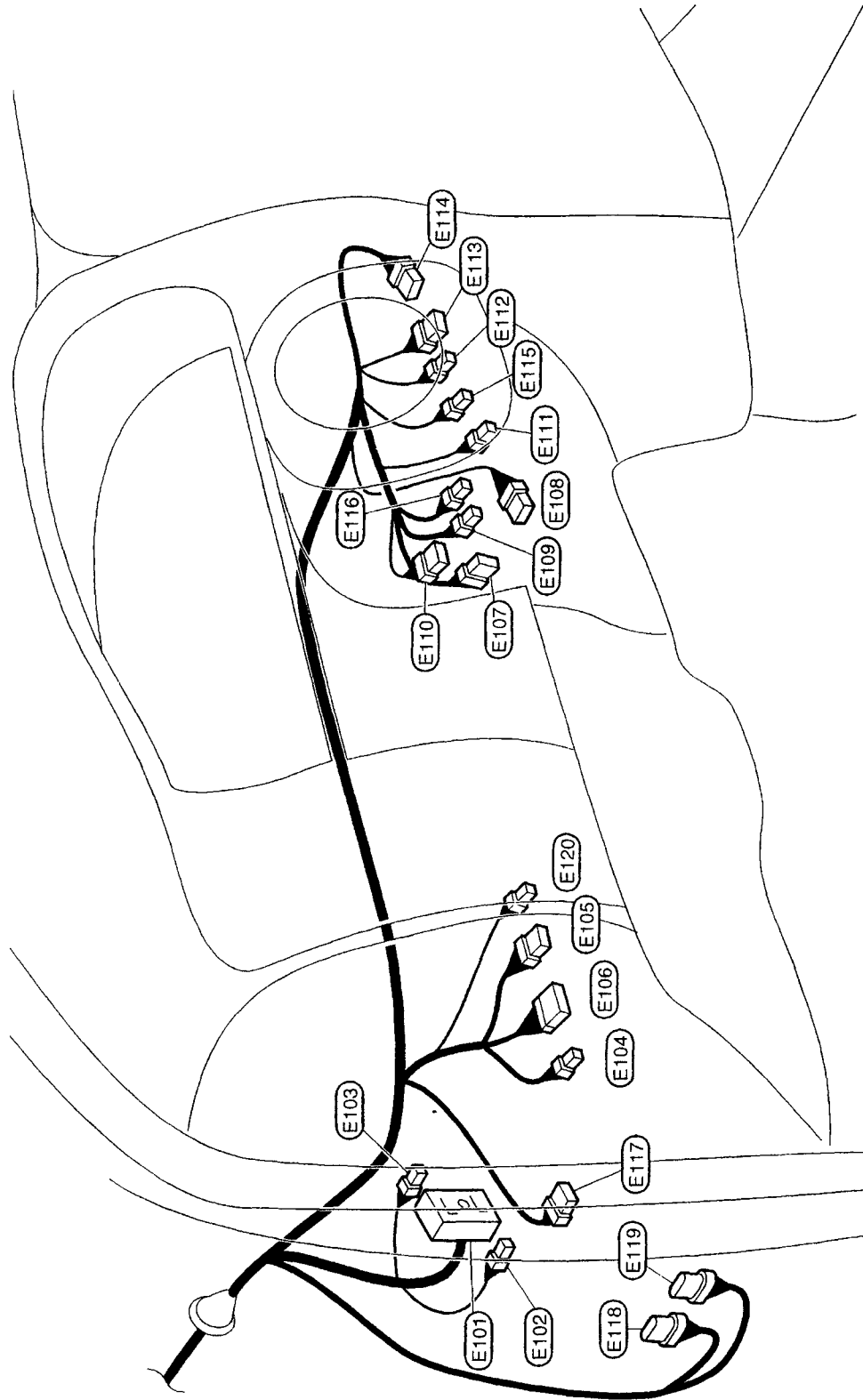
C1 E1	GY/2	· Side turn signal lamp RH	A3 E33	B/2	: Clearance lamp RH
D2 E2	GY/2	· Brake fluid level switch	A3 E34	B/3	: Headlamp RH
D2 E3	GY/2	· Power steering oil pressure switch	A3 E35	GY/6	: Headlamp aiming motor unit RH (For Europe)
E2 E5	GY/2	· Fuel filter sensor (CD engine)	A3 E36	GY/2	: Front fog lamp RH
E2 E6	B/1	· To E228 (CD engine)	C2 E37	—	: Body ground
E2 E10	GY/2	· ABS relay box (For ABS)	B3 E38	GY/1	: Brake vacuum switch (CD engine)
C2 E11	GY/2	· Front wheel speed sensor RH (For ABS)	C3 E39	GY/2	: Cooling fan motor-2 (1-mode type)
F1 E12	L/4	: Cooling fan relay-1	C3 E40	GY/4	: Cooling fan motor-2 (2-mode type)
		(SR engine M/T models and GA engine)	B3 E42	B/1	: Horn high
	BR/6	Cooling fan relay-1	B4 E43	B/1	: Horn low (Except for New Zealand, LX and Q grade for Australia)
		(SR engine A/T models and CD engine)	B4 E45	GY/2	: Cooling fan motor-1 (1-mode type)
F1 E13	W/3	: Horn relay	C4 E46	GY/4	: Cooling fan motor-1 (2-mode type)
F1 E14	L/4	: Inhibitor relay (A/T models)	C4 E47	B/2	: Dual-pressure switch
G1 E15	B/5	· Rear wiper relay	C4 E48	GY/6	: Headlamp aiming motor unit LH (For Europe)
G1 E16	L/4	: A/C relay	C4 E49	B/3	: Headlamp LH
F1 E17	BR/6	Cooling fan relay-2	D4 E50	B/2	: Clearance lamp LH
		(A/T models for Australia and CD engine)	D4 E51	—	: Body ground
F1 E18	BR/6	: Cooling fan relay-3	D4 E52	GY/2	: Front fog lamp LH
		(SR engine A/T models and CD engine)	E4 E53	B/2	: Front turn signal lamp LH
G1 E20	L/4	· Rear fog lamp relay (For Europe)	D5 E55	—	: Fusible link
B1 E22	B/2	: To E204	E3 E57	—	: Fusible link and fuse box
C2 E23	B/6	: To E201 (SR engine M/T models and GA engine)	E3 E58	B/1	: Battery
C2 E24	B/8	: To E202 (Gasoline engine)	D3 E59	B/1	: Fusible link and fuse box
C2 E26	GY/8	: To E203 (SR engine A/T models and CD engine)	D3 E60	W/1	: Fusible link and fuse box
A2 E28	W/2	: Front washer motor	E4 E61	G/2	: Glow relay (CD engine)
A2 E29	G/2	: Rear washer motor	E4 E62	W/1	: Glow relay (CD engine)
A2 E30	B/2	· Washer fluid level switch (Except for Australia)	E4 E63	W/1	: Glow relay (CD engine)
A2 E31	GY/2	To front fog lamp sub-harness			
A2 E32	B/2	: Front turn signal lamp RH			

HARNESS LAYOUT

Engine Room Harness (Cont'd)

PASSENGER COMPARTMENT — LHD models

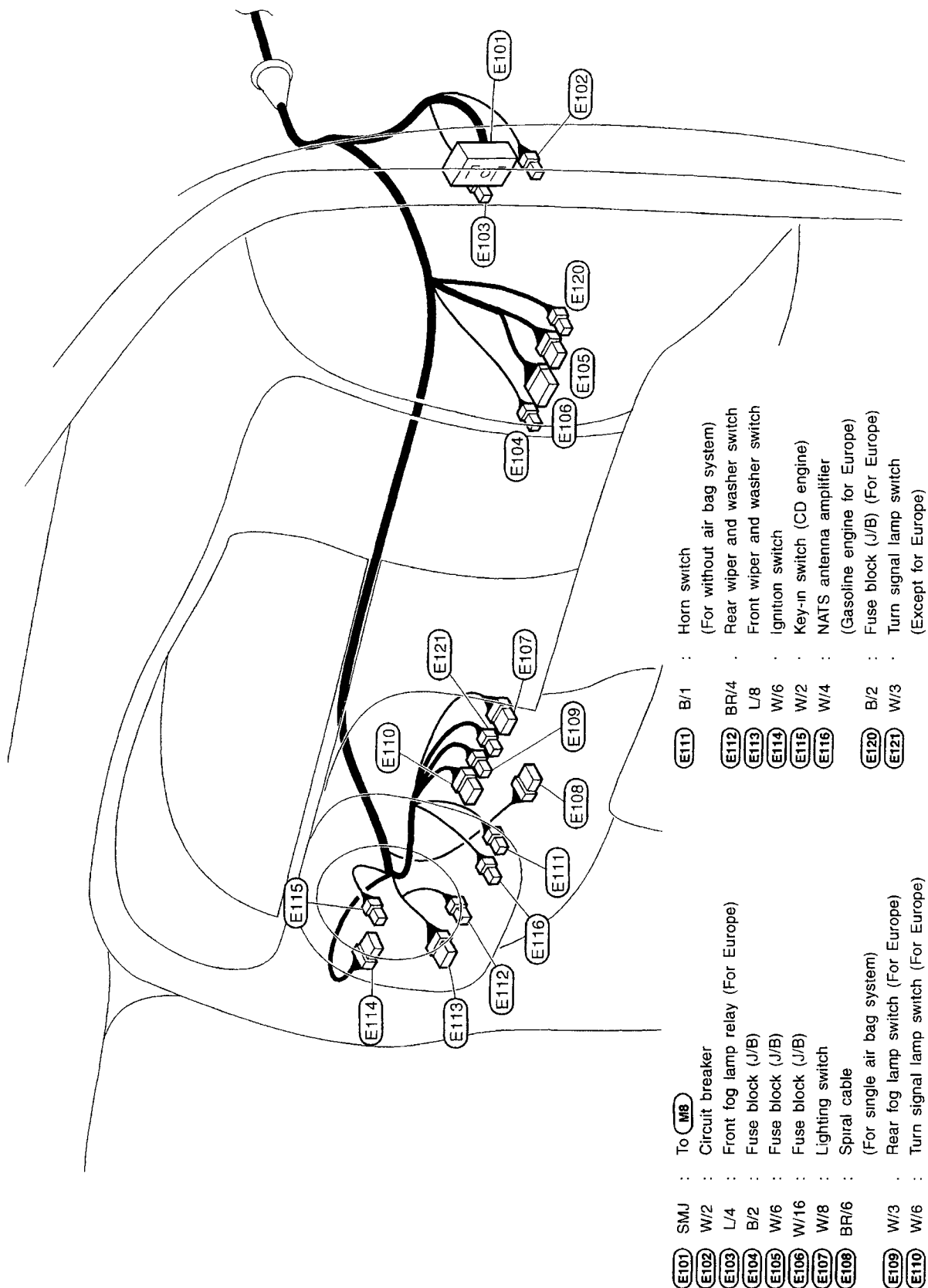
(E101)	SMJ	·	To (M8)	(E108)	BR/6	Spiral cable	(E114)	W/6	·	Ignition switch
(E102)	W/2	·	Circuit breaker	(E109)	W/3	(For single air bag system)	(E115)	W/2	·	Key-in switch (CD engine)
(E103)	L/4	·	Front fog lamp relay	(E110)	W/6	Rear fog lamp switch	(E116)	W/4	·	NATS antenna amplifier
(E104)	B/2	·	Fuse block (J/B)	(E111)	B/1	Turn signal lamp switch	(E117)	W/8	·	(Gasoline engine for Europe)
(E105)	W/6	·	Fuse block (J/B)	(E112)	BR/4	Horn switch	(E118)	GY/6	·	To (B6)
(E106)	W/16	·	Fuse block (J/B)	(E113)	L/8	(For without air bag system)	(E119)	GY/8	·	Daytime light unit
(E107)	W/8	·	Lighting switch	(E113)	L/8	Rear wiper and washer switch	(E120)	B/2	·	Daytime light unit
						Front wiper and washer switch				Fuse block (J/B)



HARNESS LAYOUT

Engine Room Harness (Cont'd)

PASSENGER COMPARTMENT — RHD models

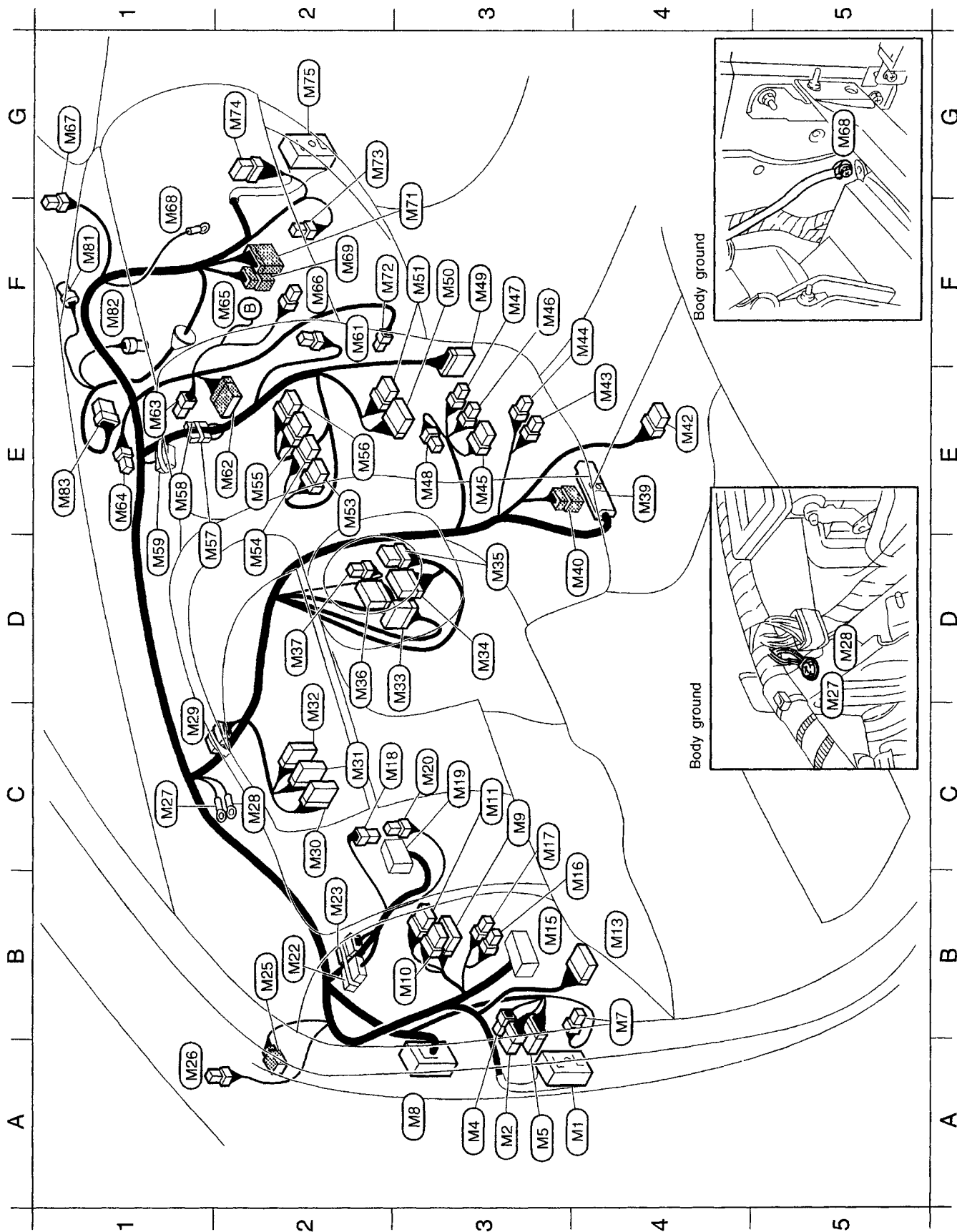


EL

HARNESS LAYOUT

Main Harness

LHD MODELS



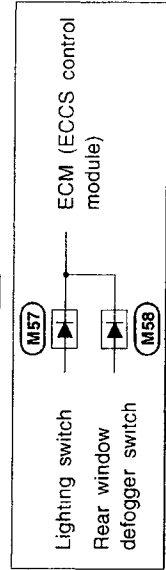
HEL160

HARNESS LAYOUT

Main Harness (Cont'd)

A4 (M1)	SMJ	: To (D1)	E3 (M45)	W/6	: Fan switch
A3 (M2)	W/6	: To (B4) (With power door lock)	F3 (M46)	W/4	: Recirculation switch
A3 (M4)	W/4	: To (B1)	F3 (M47)	W/3	: A/C switch
A3 (M5)	W/12	: To (B2)	E3 (M48)	W/3	: Fan switch illumination
B4 (M7)	L/4	: Fuel pump relay (Gasoline engine)	F3 (M49)	W/20	: To (F6) (Gasoline engine)
A3 (M8)	SMJ	: To (E101)	F3 (M50)	W/10	: Radio
C3 (M9)	GY/12	: Door mirror remote control switch	F3 (M51)	W/6	: Radio (For rear speaker)
B3 (M10)	B/6	: Front fog lamp switch	E2 (M53)	W/6	: Rear window defogger switch
C3 (M11)	W/8	: Headlamp aiming switch	D2 (M54)	W/8	: Hazard switch
B4 (M13)	GY/14	: Data link connector for CONSULT	E2 (M55)	BR/6	: Rear fog lamp switch
B3 (M15)	—	: Fuse block (J/B)	E2 (M56)	BR/8	: Headlamp wiper and washer switch
B4 (M16)	L/4	: Power window relay (With power window)			(With daytime light system)
C3 (M17)	L/4	: Sun roof relay (Without power window)	D1 (M57)	—	: Diode-1 (GA engine)
		: Mirror defogger relay	E1 (M58)	—	: Diode-2 (GA engine)
		(With daytime light system)	D1 (M59)	BR/20	: Joint connector-3
C2 (M18)	B/2	: Stop lamp switch	F2 (M61)	W/3	: Thermo control amplifier
C3 (M19)	—	: Junction box No.2 (Joint connectors)	E2 (M62)	Y/12	: To (Z3) (For dual air bag system)
C3 (M20)	B/3	: Combination flasher unit	E1 (M63)	W/4	: Intake door mptor
B2 (M22)	BR/20	: Joint connector-1	E1 (M64)	B/2	: NATS security indicator
B2 (M23)	GY/6	: Joint connector-2			(Gasoline engine for Europe)
B2 (M25)	W/4	: To (R1)	F2 (M65)	Bulb	: Glove box lamp
A1 (M26)	BR/2	: Pillar speaker LH (For 6-speaker system)	F2 (M66)	BR/2	: Glove box lamp switch
C1 (M27)	—	: Body ground	G1 (M67)	BR/2	: Pillar speaker RH (For 6-speaker system)
C2 (M28)	—	: Body ground	F1 (M68)	—	: Body ground
C1 (M29)	W/6	: Joint connector-8	F2 (M69)	W/8	: To (B113)
C2 (M30)	BR/16	: Combination meter	F3 (M71)	W/12	: To (B115)
C2 (M31)	W/10	: Combination meter (With tachometer)	F2 (M72)	BR/4	: Fan resistor
C2 (M32)	W/16	: Combination meter	G2 (M73)	W/2	: Blower motor
D3 (M33)	B/12	: Warning buzzer unit	G2 (M74)	W/8	: Front wiper amplifier
D3 (M34)	W/18	: Door lock timer (For Europe)	G2 (M75)	SMJ	: To (D31)
D3 (M35)	W/8	: Door lock timer (Except for Europe)	F1 (M81)	GY/2	: Side turn signal lamp RH (Without ABS, dual air bag, daytime light system and rear power window)
D2 (M36)	W/12	: NATS IMMU (Gasoline engine for Europe)	F1 (M82)	GY/2	: Power steering oil pressure switch (GA engine without ABS, dual air bag, daytime light system and rear power window)
D2 (M37)	W/4	: Rear window defogger timer	E1 (M83)	GY/6	: Front wiper motor (Without ABS, dual air bag, daytime light system and rear power window)
		(With daytime light system)			
E4 (M39)	L/48	: ECM (Engine control module) (Diesel engine)			
D4 (M40)	W/6	: To (F4) (Gasoline engine)			
E4 (M42)	W/6	: Overdrive control switch • A/T illumination			
E4 (M43)	B/2	: Cigarette lighter			
F4 (M44)	W/2	: Ashtray illumination			

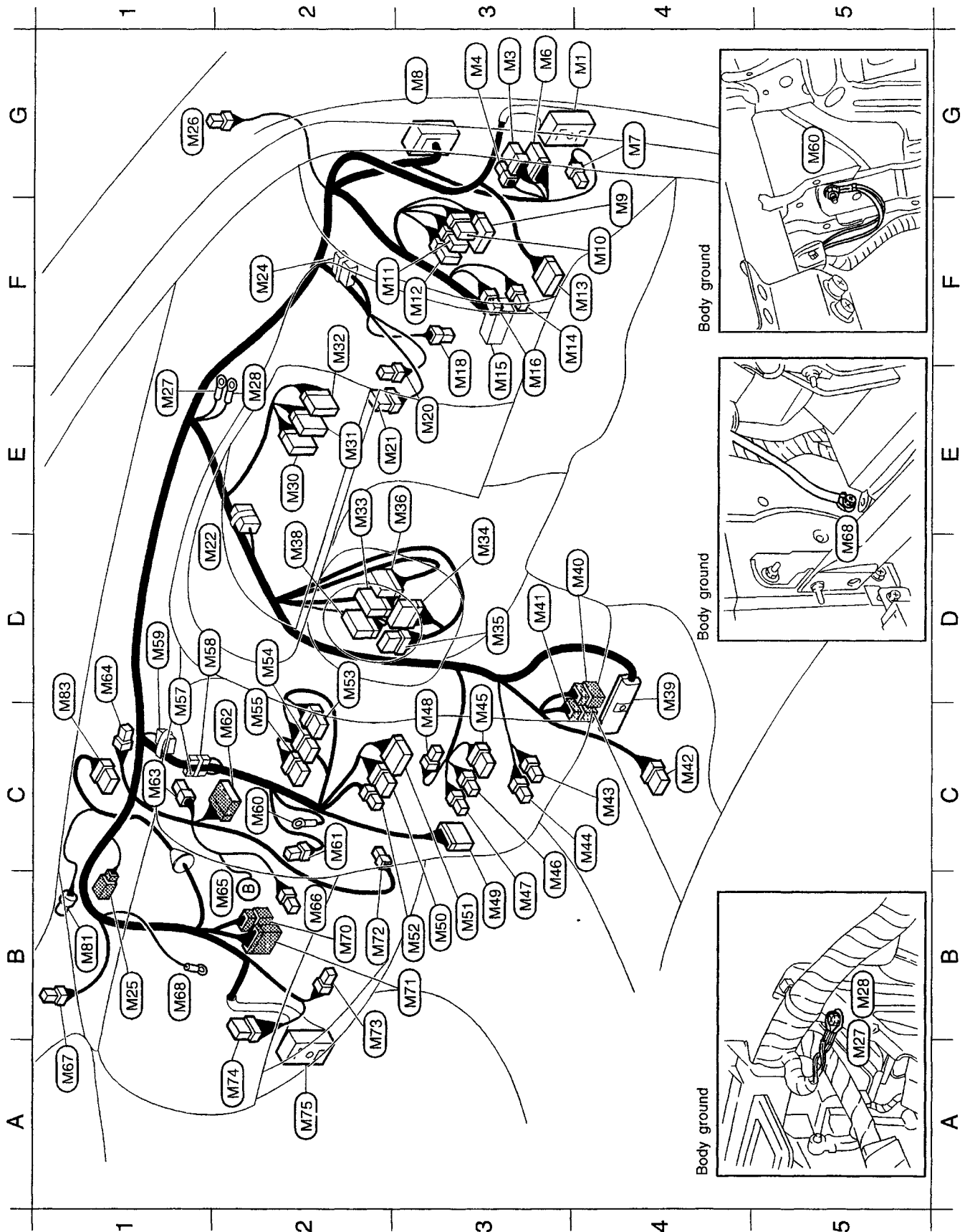
Diode-1 (M57), Diode-2 (M58)



HARNESS LAYOUT

Main Harness (Cont'd)

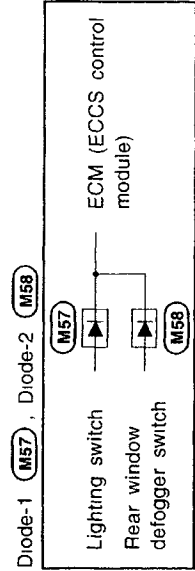
RHD MODELS



HARNESS LAYOUT

Main Harness (Cont'd)

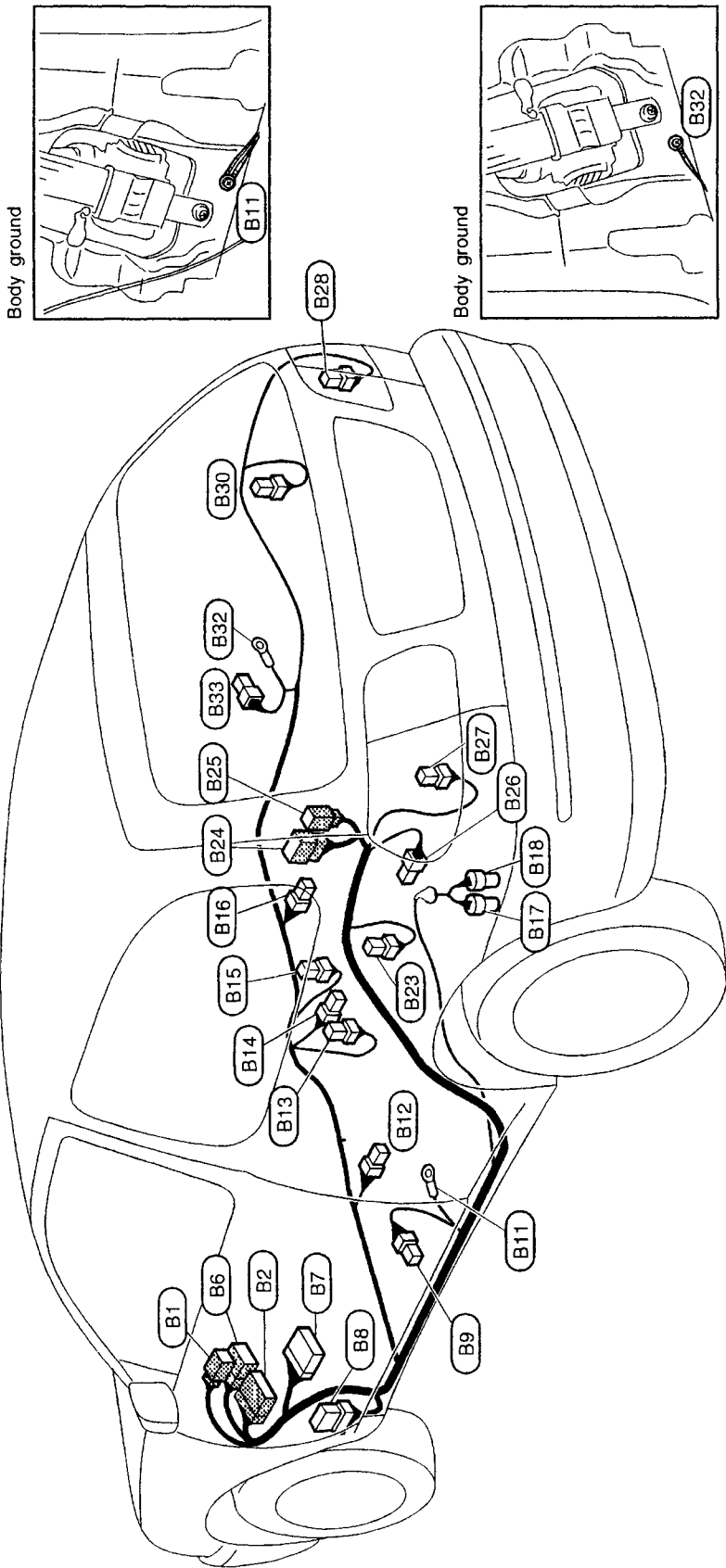
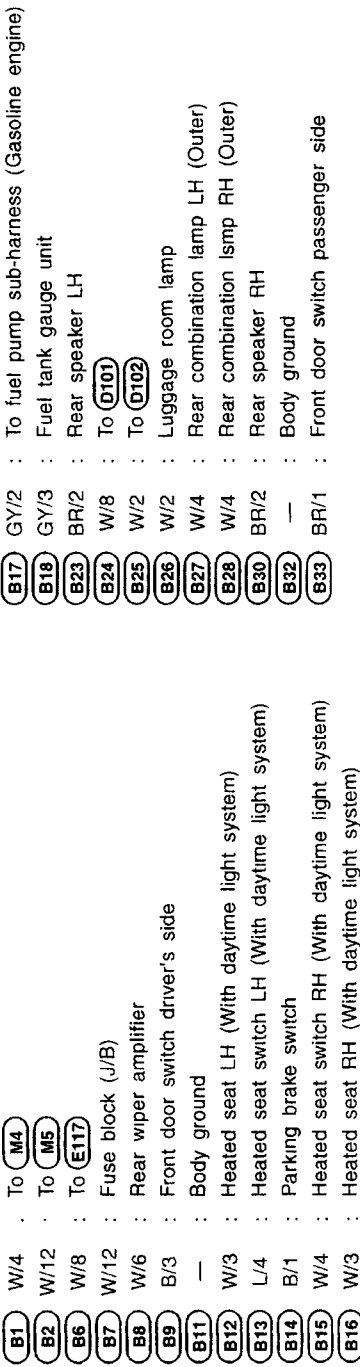
G4 (M1)	SMJ	: To (D1)	C4 (M43)	B/2	: Cigarette lighter
G3 (M3)	W/8	: To (B5) (With power door lock)	C4 (M44)	W/2	: Ashtray illumination
G3 (M4)	W/4	: To (B1)	C3 (M45)	W/6	: Fan switch
G3 (M6)	W/20	: To (B3)	B3 (M46)	W/4	: Recirculation switch
G4 (M7)	L/4	: Fuel pump relay (Gasoline engine)	B3 (M47)	W/3	: A/C switch
G3 (M8)	SMJ	: To (E101)	C3 (M48)	W/3	: Fan switch illumination
F4 (M9)	GY/12	: Door mirror remote control switch	B3 (M49)	W/20	: To (F6) (Gasoline engine)
F4 (M10)	B/6	: Front fog lamp switch	B3 (M50)	W/10	: Radio
F2 (M11)	W/8	: Headlamp aiming switch (For Europe)	B3 (M51)	W/6	: Radio (For rear speaker)
F3 (M12)	W/6	: Illumination control switch (Except for Europe)	B3 (M52)	W/4	: Compact disk deck (Except for Europe)
F4 (M13)	GY/14	: Data link connector for CONSULT	D2 (M53)	W/6	: Rear window defogger switch
F3 (M14)	B/2	: Fuse block (J/B) (Except for Europe)	D2 (M54)	W/8	: Hazard switch
E3 (M15)	—	: Fuse block (J/B)	C2 (M55)	BR/6	: Rear fog lamp switch (For Europe)
E3 (M16)	L/4	: Power window relay (With power window)	D1 (M57)	—	: Diode-1 (GA engine except for Australia)
E3 (M18)	B/2	: Sun roof relay (Without power window)	D1 (M58)	—	: Diode-2 (GA engine except for Australia)
E3 (M20)	B/3	: Stop lamp switch	D1 (M59)	P/20	: Joint connector-4
E2 (M21)	W/6	: Combination flasher unit	C2 (M60)	—	: Body ground
D1 (M22)	BR/20	: Rear wiper amplifier	C2 (M61)	W/3	: Thermo control amplifier
F2 (M24)	OR/20	: Joint connector-1	C2 (M62)	Y/12	: To (Z3) (For dual air bag system)
B1 (M25)	W/4	: Joint connector-5	C1 (M63)	W/4	: Intake door motor
G1 (M26)	BR/2	: To (R1)	D1 (M64)	B/2	: NATS security indicator (Gasoline engine for Europe)
E1 (M27)	—	: Pillar speaker RH (For 6-speaker system)	B2 (M65)	Bulb	: Glove box lamp
E2 (M28)	—	: Body ground	B2 (M66)	BR/2	: Glove box lamp switch
E2 (M30)	BR/16	: Body ground	A1 (M67)	BR/2	: Pillar speaker LH (For 6-speaker system)
E2 (M31)	W/10	: Combination meter	B1 (M68)	—	: Body ground
F2 (M32)	W/16	: Combination meter (With tachometer)	B2 (M70)	W/12	: To (B114)
E2 (M33)	B/12	: Combination meter	B3 (M71)	W/12	: To (B115)
D3 (M34)	W/18	: Warning buzzer unit (Except for Australia)	B2 (M72)	BR/4	: Fan resistor
D3 (M35)	W/8	: Door lock timer (For Europe and Australia)	B2 (M73)	W/2	: Blower motor
E3 (M36)	W/12	: Door lock timer (Except for Europe and Australia)	A2 (M74)	W/8	: Front wiper amplifier
D2 (M38)	W/8	: (Except for Europe)	A2 (M75)	SMJ	: To (D31)
D4 (M39)	L/48	: NATS IMM (Gasoline engine for Europe)	B1 (M81)	GY/2	: Side turn signal lamp LH (GA engine without ABS, dual air bag and rear power window)
D4 (M40)	W/6	: Warning buzzer unit (For Australia)	D1 (M83)	GY/6	: Front wiper motor (GA engine without ABS, dual air bag and rear power window)
D3 (M41)	W/8	: ECM (Engine control module) (Diesel engine)			
C4 (M42)	W/6	: To (F4) (Gasoline engine for Europe and Australia)			
		: (Except for Europe and Australia)			
		: To (F5) (Except for Europe and Australia)			
		: Overdrive control switch • A/T illumination			



HARNESS LAYOUT

Body Harness

3-DOOR HATCHBACK — LHD models

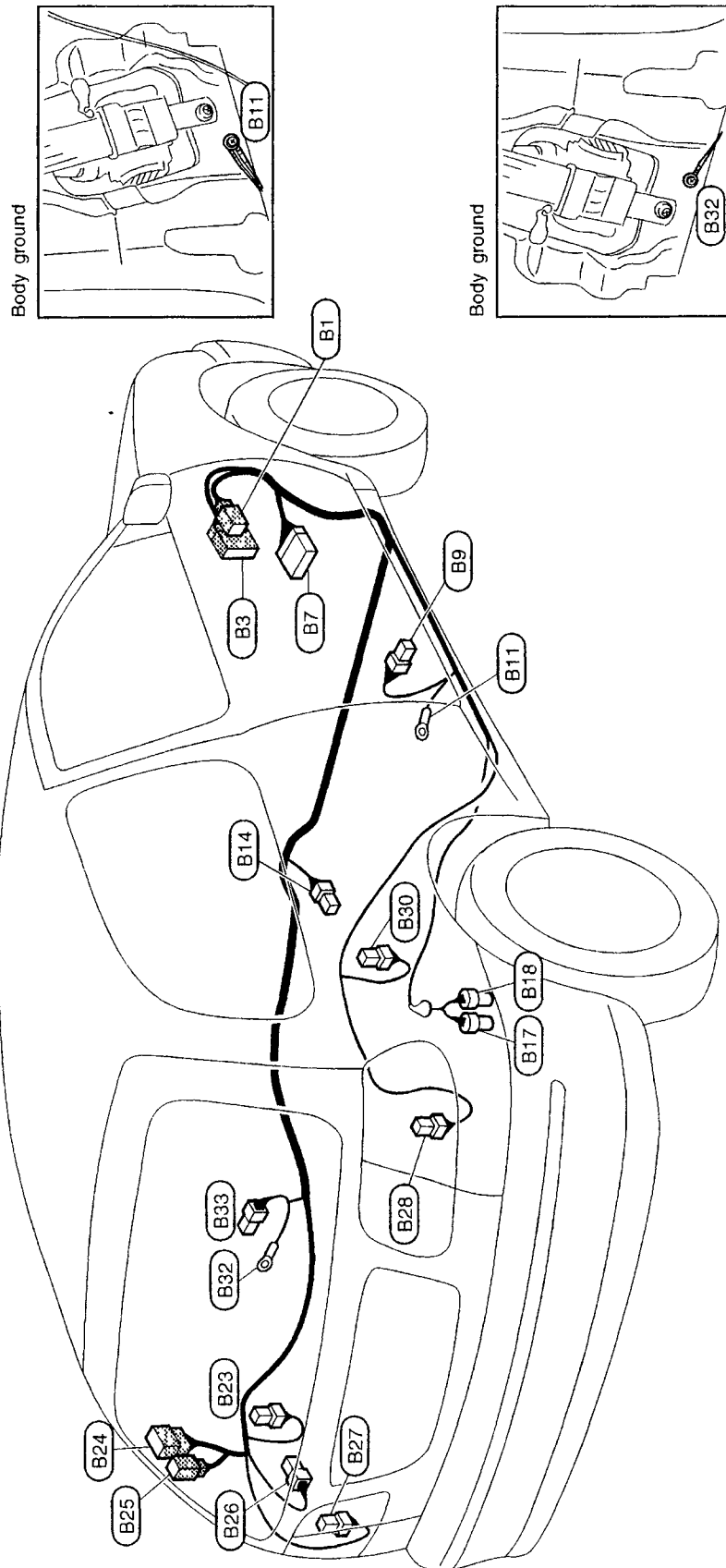


HARNESS LAYOUT

Body Harness (Cont'd)

3-DOOR HATCHBACK — RHD models

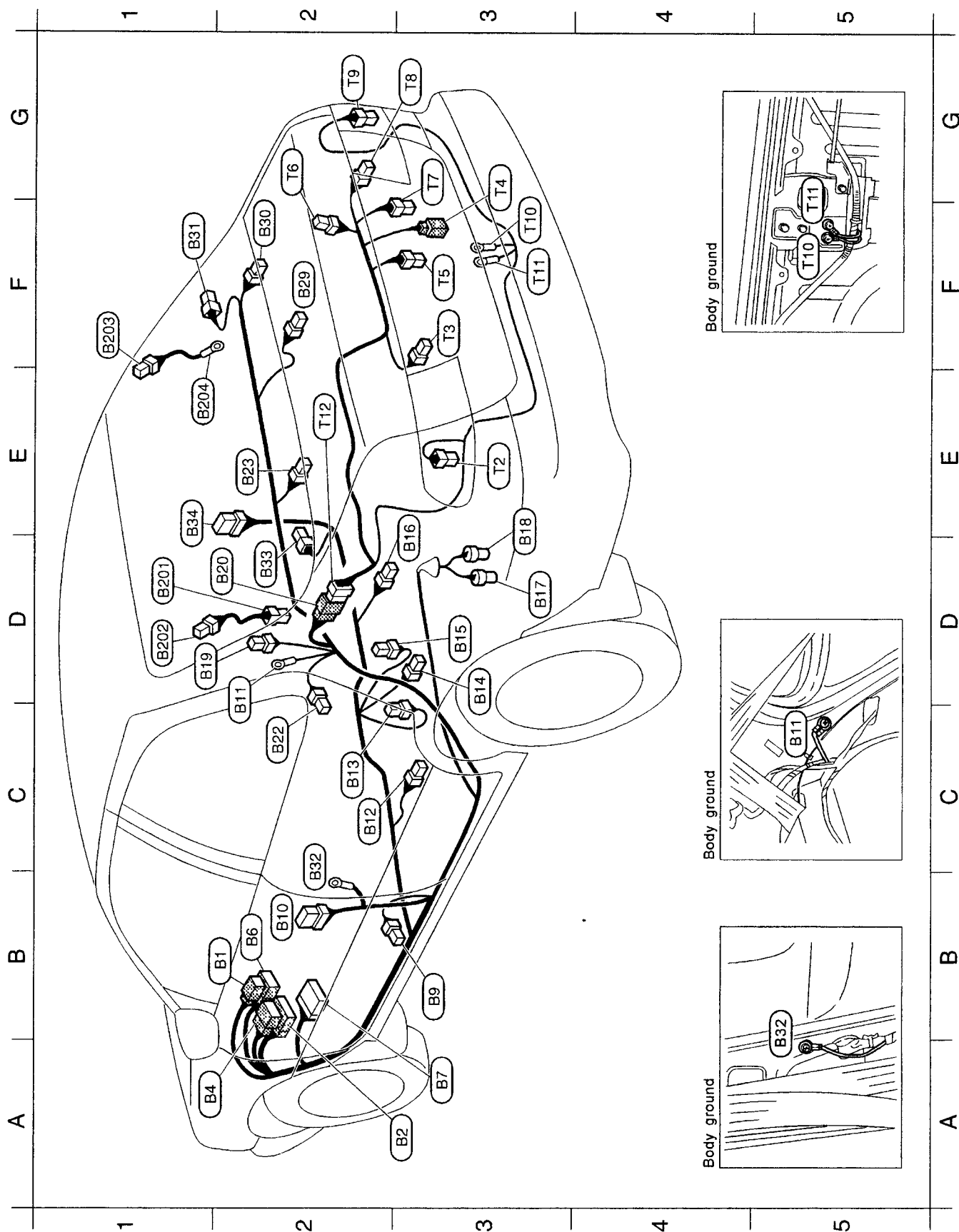
B1	W/4	:	To M4	B24	W/8	:	To O101
B3	W/20	:	To M6	B25	W/2	:	To O102
B7	W/12	:	Fuse block (J/B)	B26	W/2	:	Luggage room lamp
B9	B/3	:	Front door switch driver's side	B27	W/4	:	Rear combination lamp LH (Outer)
B11	—	:	Body ground	B28	W/4	:	Rear combination lamp RH (Outer)
B14	B/1	:	Parking brake switch	B30	BR/2	:	Rear speaker RH
B17	GY/2	:	To fuel pump sub-harness	B32	—	:	Body ground
B18	GY/3	:	Fuel tank gauge unit	B33	BR/1	:	Front door switch passenger side
B23	BR/2	:	Rear speaker LH				



HARNESS LAYOUT

Body Harness (Cont'd)

SEDAN — LHD models



HARNESS LAYOUT

Body Harness (Cont'd)

Body harness

B2 (B1)	W/4	: To (M4)
A3 (B2)	W/12	: To (M5)
A1 (B4)	W/6	: To (M2) (With power door lock)
B2 (B6)	W/8	: To (E117)
A3 (B7)	W/12	: Fuse block (J/B)
B3 (B9)	B/3	: Front door switch driver's side
B2 (B10)	W/6	: To (D51) (With power door lock)
D2 (B11)	—	: Body ground
C2 (B12)	W/3	: Heated seat LH (With daytime light system)
C2 (B13)	L/4	: Heated seat switch LH (With daytime light system)
D3 (B14)	B/1	: Parking brake switch
D3 (B15)	W/4	: Heated seat switch RH (With daytime light system)
D3 (B16)	W/3	: Heated seat RH (With daytime light system)
D3 (B17)	GY/2	: To fuel pump sub-harness (Gasoline engine)
D3 (B18)	GY/3	: Fuel tank gauge unit
D2 (B19)	B/1	: Condenser (For rear window defogger)
D2 (B20)	W/8	: To (T12)
C2 (B22)	BR/1	: Rear door switch LH
E2 (B23)	BR/2	: Rear speaker LH
F2 (B29)	W/2	: Trunk room lamp
F2 (B30)	BR/2	: Rear speaker RH
F1 (B31)	BR/1	: Rear door switch RH
C2 (B32)	—	: Body ground
D2 (B33)	BR/1	: Front door switch passenger side
E1 (B34)	W/6	: To (D71) (With power door lock)

Tail harness

E3 (T2)	W/4	: Rear combination lamp LH (Outer)
F3 (T3)	W/4	: Rear combination lamp LH (Inner)
G3 (T4)	B/2	: Trunk room lamp switch
F3 (T5)	W/2	: License plate lamp LH
G2 (T6)	BR/2	: High-mounted stop lamp
G3 (T7)	W/2	: License plate lamp RH
G3 (T8)	W/4	: Rear combination lamp RH (Inner)
G2 (T9)	W/4	: Rear combination lamp RH (Outer)
F3 (T10)	—	: Body ground
F3 (T11)	—	: Body ground
E2 (T12)	W/8	: To (B20)

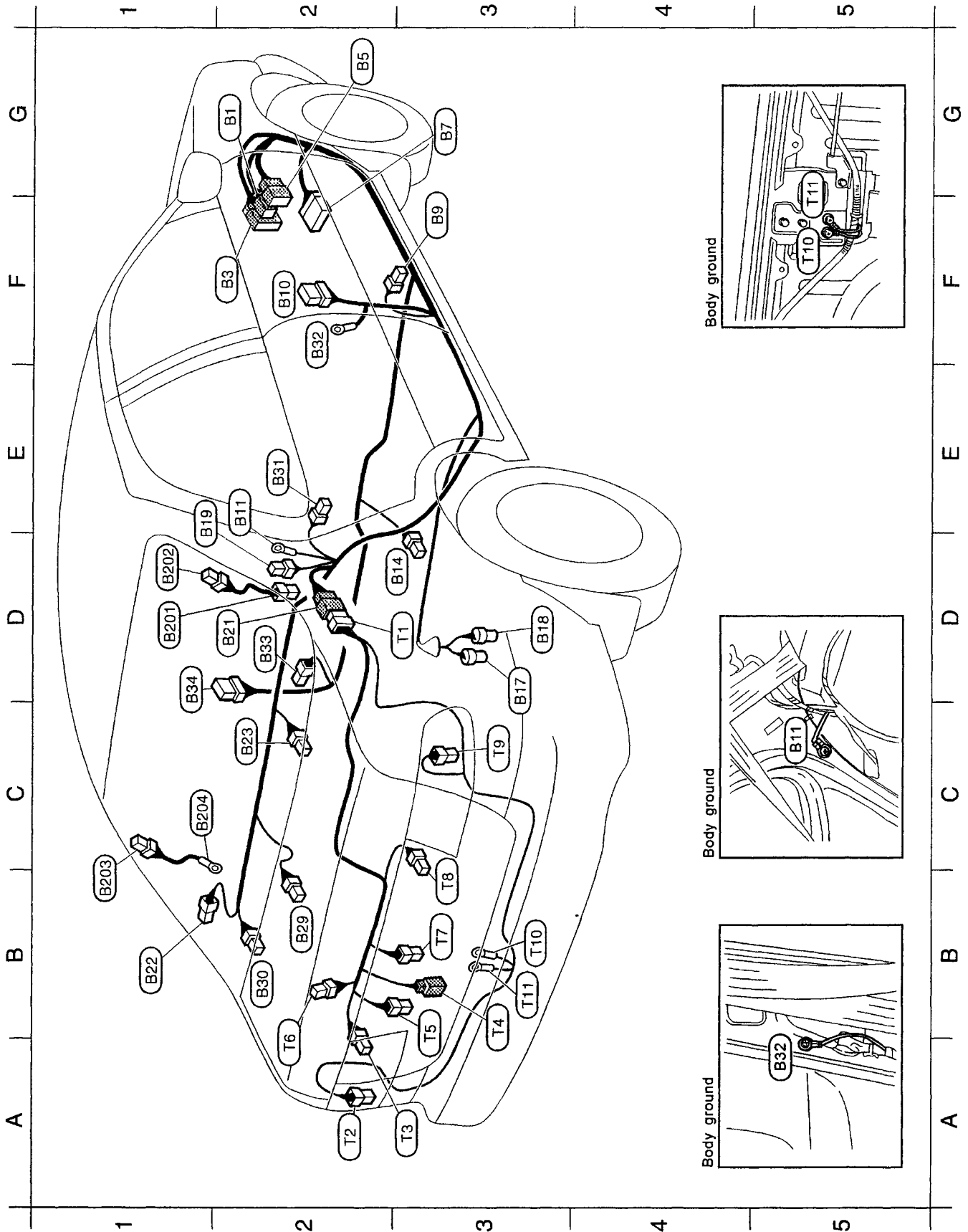
Sub-harness

D1 (B201)	B/1	: Condenser
D1 (B202)	B/1	: Rear window defogger (+)
F1 (B203)	B/1	: Rear window defogger (-)
E1 (B204)	—	: Body ground

HARNESS LAYOUT

Body Harness (Cont'd)

SEDAN — RHD models



HARNESS LAYOUT

Body Harness (Cont'd)

Body harness

G2 (B1)	W/4	: To (M4)
F2 (B3)	W/20	: To (M6)
G2 (B5)	W/8	: To (M3) (With power door lock)
G3 (B7)	W/12	: Fuse block (J/B)
F3 (B9)	B/3	: Front door switch driver's side
F2 (B10)	W/6	: To (D51) (With power door lock)
E2 (B11)	—	: Body ground
D3 (B14)	B/1	: Parking brake switch
D3 (B17)	GY/2	: To fuel pump sub-harness (Gasoline engine)
D3 (B18)	GY/3	: Fuel tank gauge unit
E1 (B19)	B/1	: Condenser(For rear window defogger)
D2 (B21)	W/8	: To (T1)
B1 (B22)	BR/1	: Rear door switch LH
C2 (B23)	BR/2	: Rear speaker LH
B2 (B29)	W/2	: Trunk room lamp
B2 (B30)	BR/2	: Rear speaker RH
E2 (B31)	BR/1	: Rear door switch RH
F2 (B32)	—	: Body ground
D2 (B33)	BR/1	: Front door switch passenger side
D1 (B34)	W/6	: To (D71) (With power door lock)

Tail harness

D3 (T1)	W/8	: To (B21)
A2 (T2)	W/4	: Rear combination lamp LH (Outer)
A3 (T3)	W/4	: Rear combination lamp LH (Inner)
B3 (T4)	B/2	: Trunk room lamp switch
B3 (T5)	W/2	: License plate lamp LH
A2 (T6)	BR/2	: High-mounted stop lamp
B3 (T7)	W/2	: License plate lamp RH
B3 (T8)	W/4	: Rear combination lamp RH (Inner)
C3 (T9)	W/4	: Rear combination lamp RH (Outer)
B3 (T10)	—	: Body ground
B3 (T11)	—	: Body ground

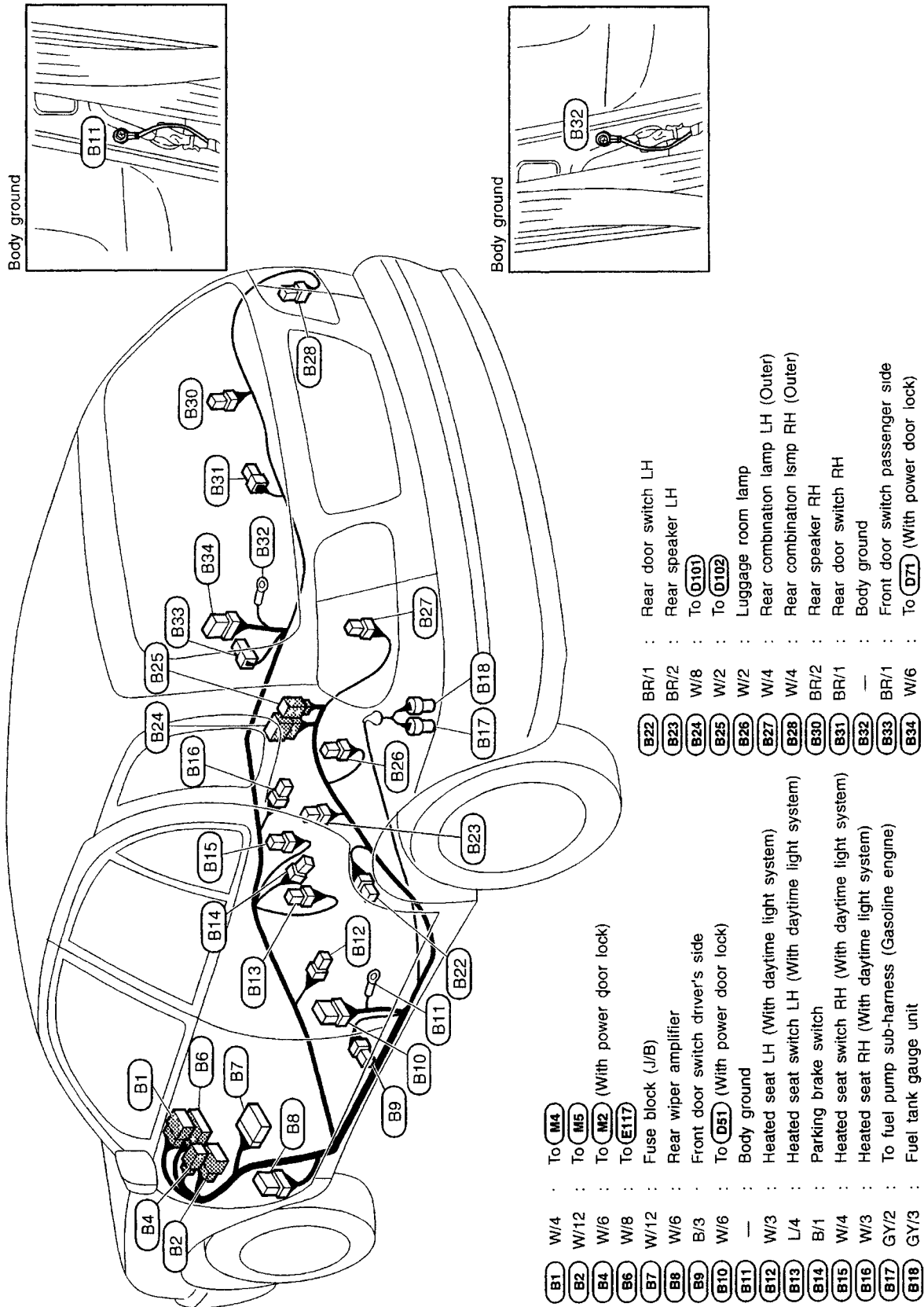
Sub-harness

D1 (B201)	B/1	: Condenser
D1 (B202)	B/1	: Rear window defogger (+)
B1 (B203)	B/1	: Rear window defogger (-)
C1 (B204)	—	: Body ground

HARNESS LAYOUT

Body Harness (Cont'd)

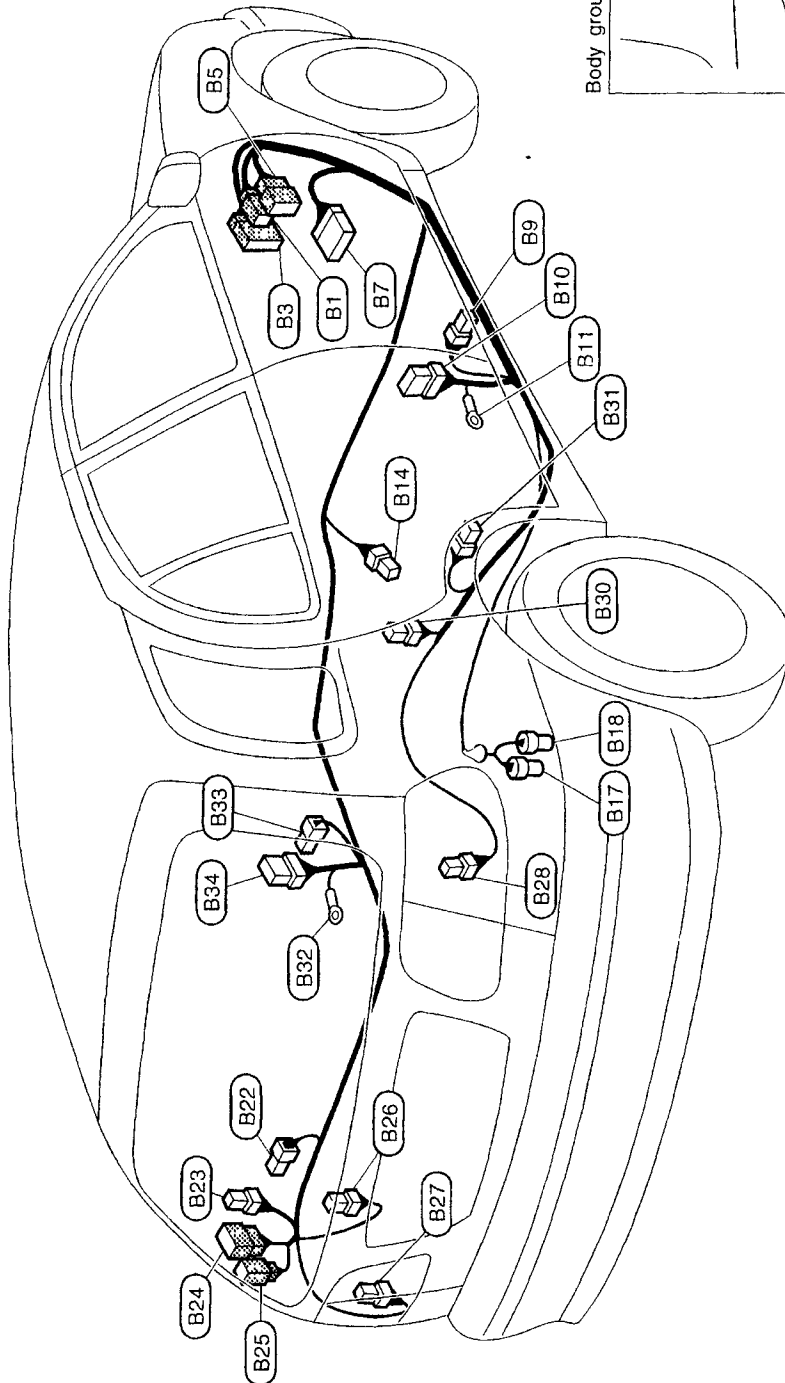
5-DOOR HATCHBACK — LHD models



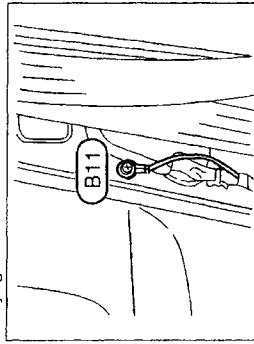
HARNESS LAYOUT

Body Harness (Cont'd)

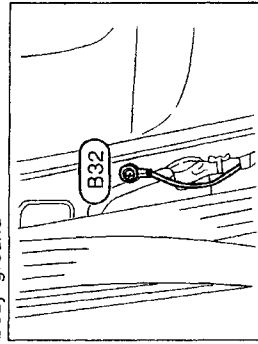
5-DOOR HATCHBACK — RHD models



Body ground



Body ground

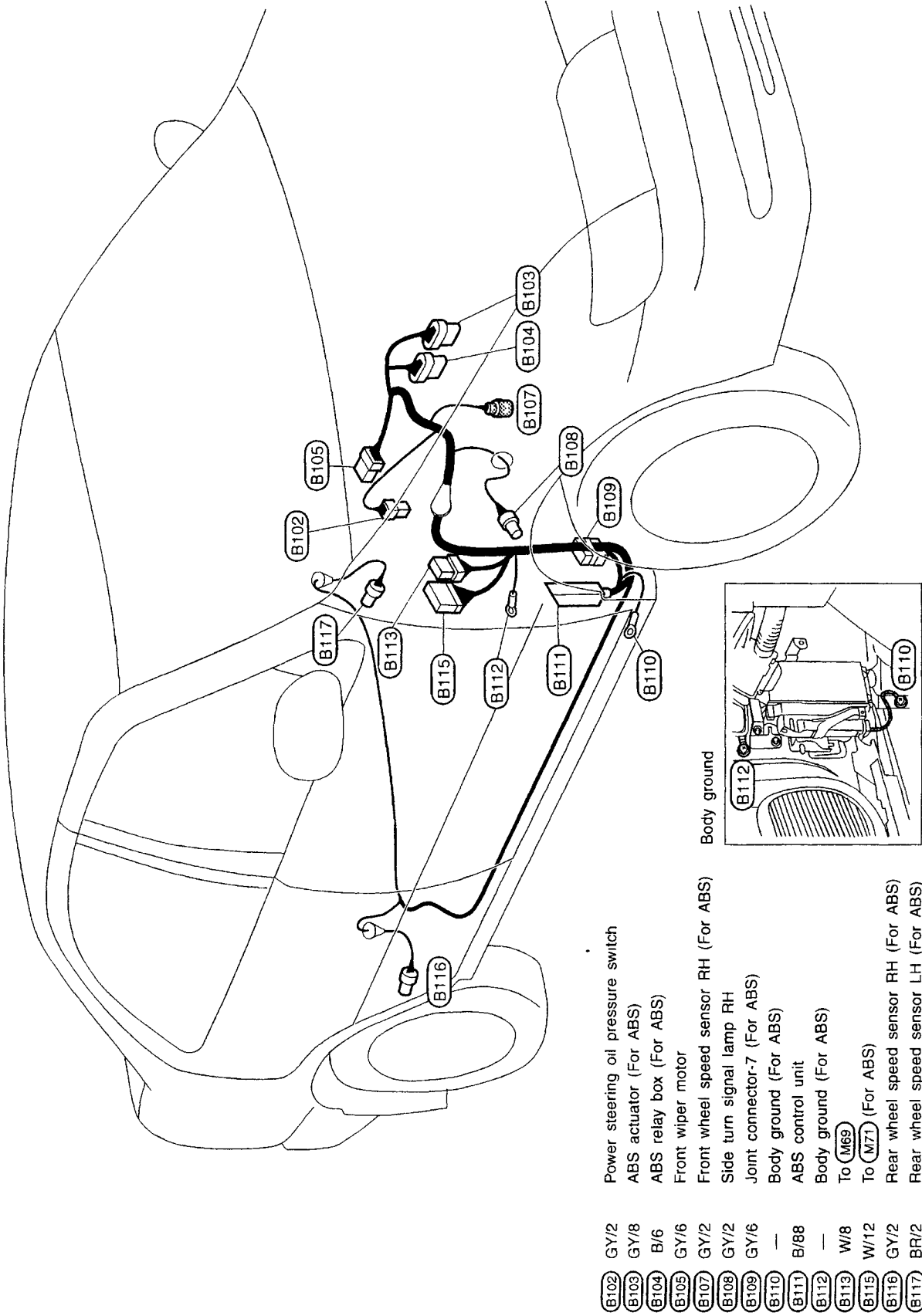


B1	W/4	:	To M4	B23	BR/2	:	Rear speaker LH
B3	W/20	:	To M6	B24	W/8	:	To D101
B5	W/8	:	To M3 (With power door lock)	B25	W/2	:	To D102
B7	W/12	:	Fuse block (J/B)	B26	W/2	:	Luggage room lamp
B9	B/3	:	Front door switch driver's side	B27	W/4	:	Rear combination lamp LH (Outer)
B10	W/6	:	To D51 (With power door lock)	B28	W/4	:	Rear combination lamp RH (Outer)
B11	—	:	Body ground	B30	BR/2	:	Rear speaker RH
B14	B/1	:	Parking brake switch	B31	BR/1	:	Rear door switch RH
B17	GY/2	:	To fuel pump sub-harness (Gasoline engine)	B32	—	:	Body ground
B18	GY/3	:	Fuel tank gauge unit	B33	BR/1	:	Front door switch passenger side
B22	BR/1	:	Rear door switch LH	B34	W/6	:	To D71 (With power door lock)

HARNESS LAYOUT

Body No. 2 Harness

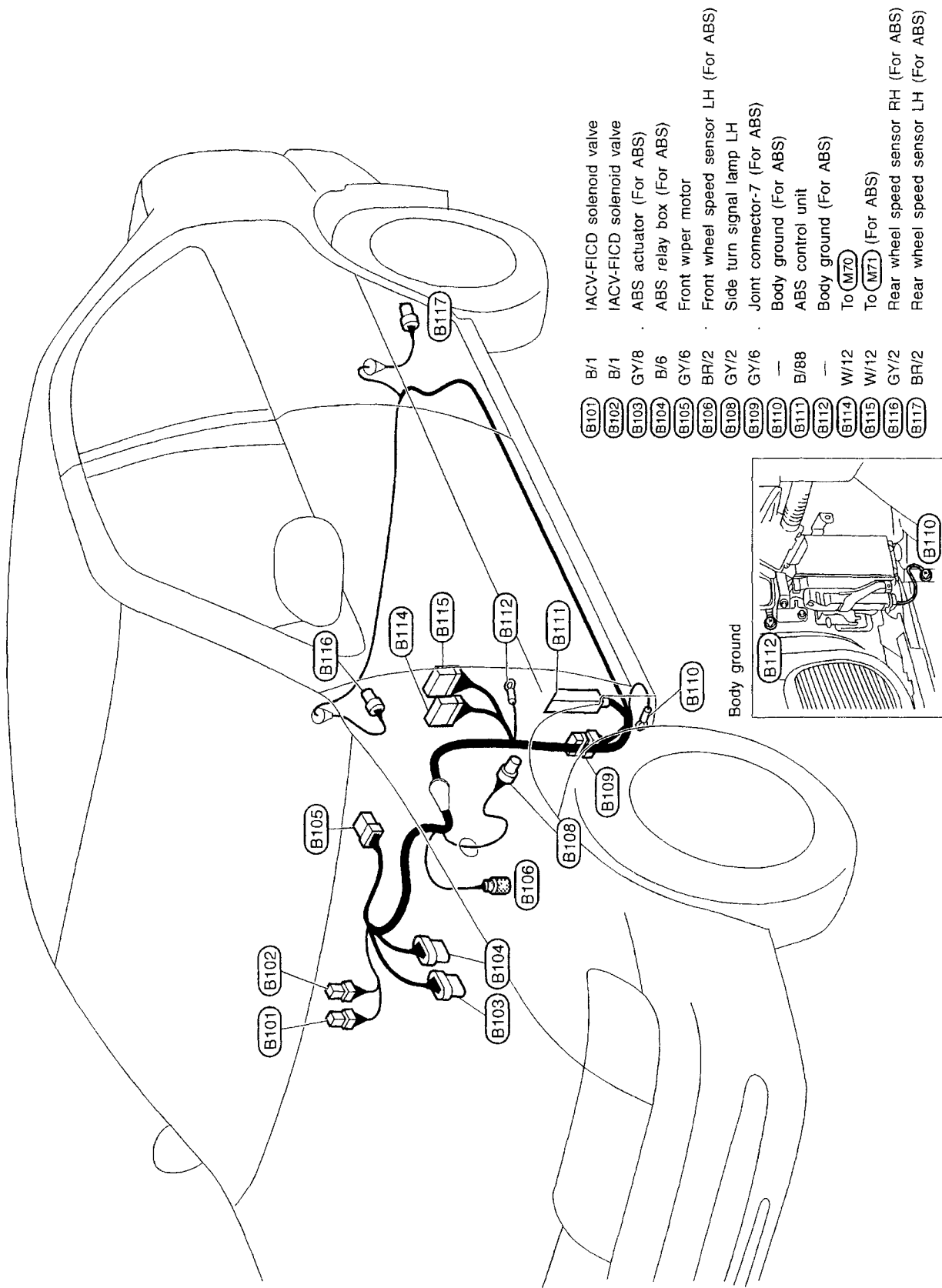
LHD MODELS



HARNESS LAYOUT

Body No. 2 Harness (Cont'd)

RHD MODELS

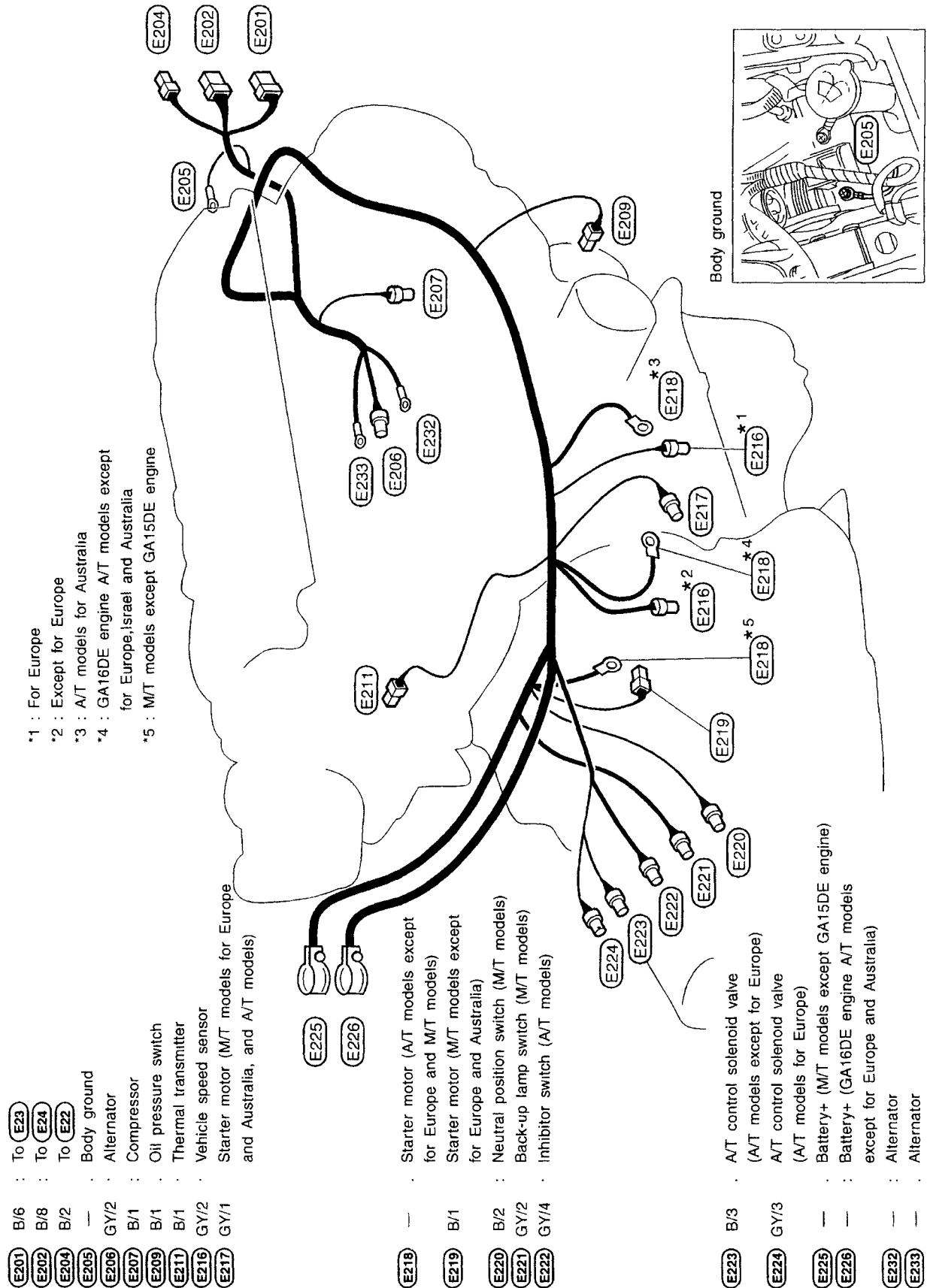


EL

HARNESS LAYOUT

Engine Harness

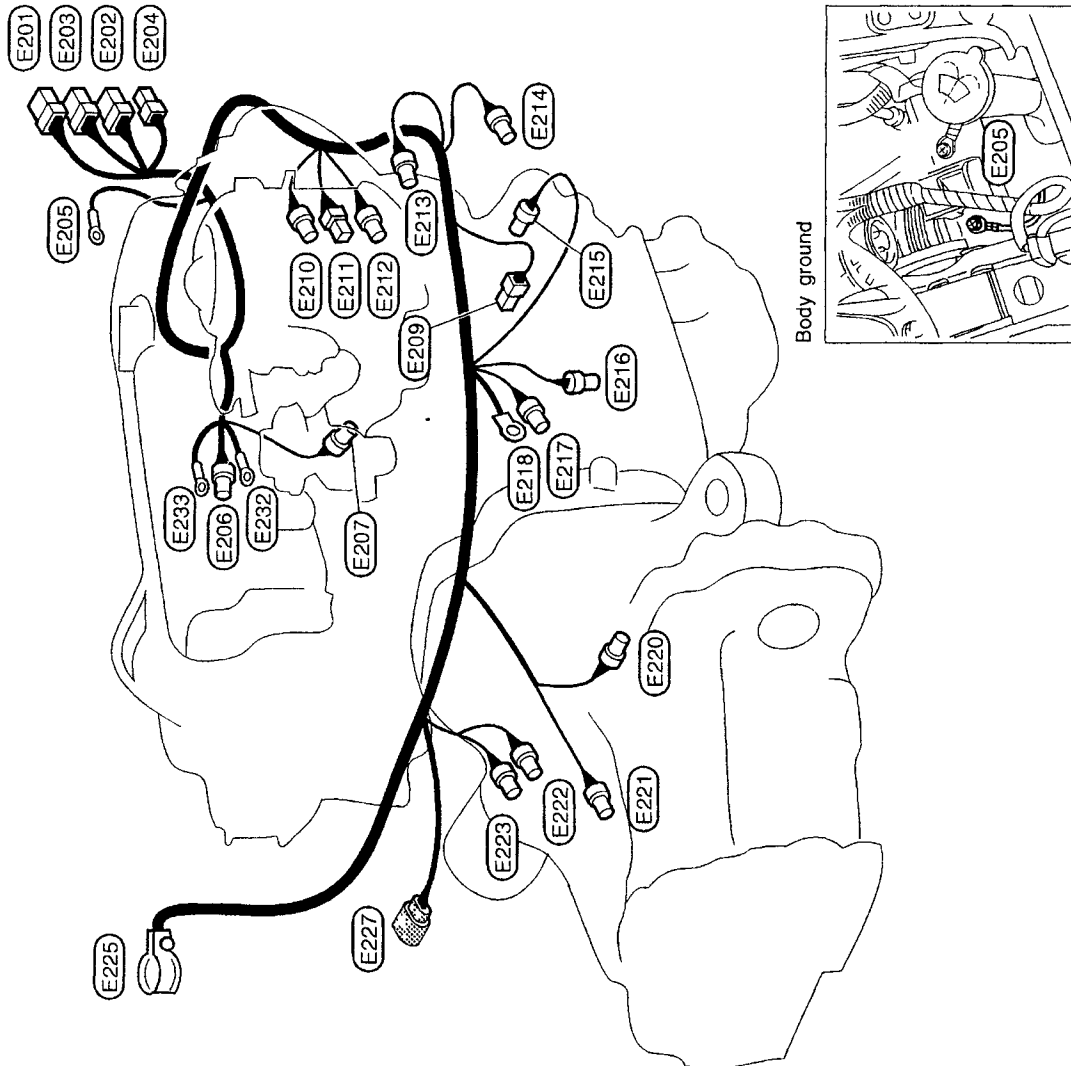
GA ENGINE



HARNESS LAYOUT

Engine Harness (Cont'd)

SR ENGINE

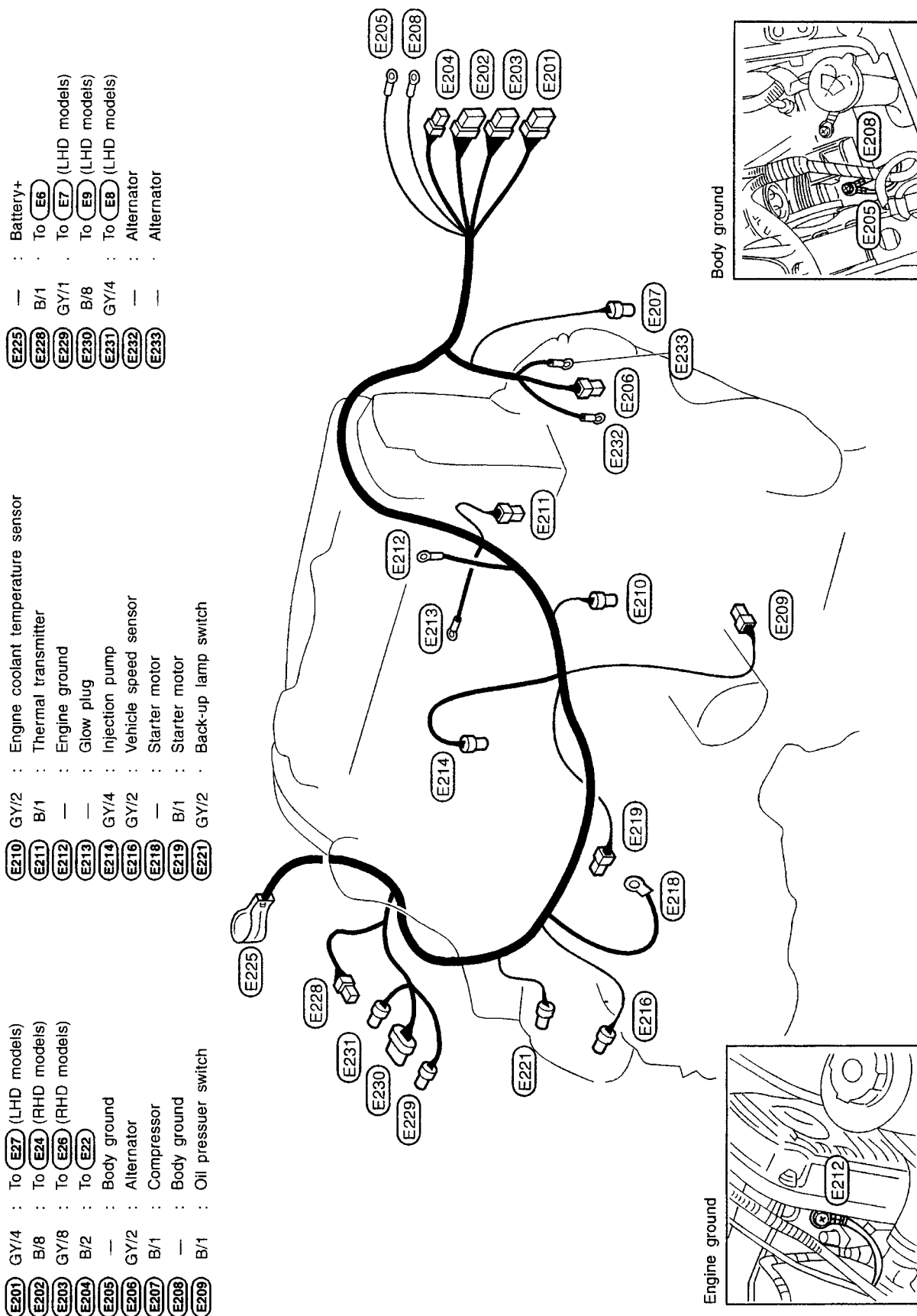


E201	B/6	: To E23 (M/T models)
E202	B/8	: To E24
E203	GY/8	: To E26 (A/T models)
E204	B/2	: To E22
E205	—	: Body ground
E206	GY/2	: Alternator
E207	B/1	: Compressor
E209	B/1	: Oil pressure switch
E210	L/2	: Engine coolant temperature sensor
E211	B/1	: Thermal transmitter
E212	GY/2	: IACV-FICD solenoid valve
E213	BR/2	: IACV-AAC valve
E214	GY/2	: IACV-Air regulator
E215	B/2	: Knock sensor
E216	GY/2	: Vehicle speed sensor
E217	GY/1	: Starter motor
E218	—	: Starter motor
E220	B/2	: Neutral position switch (M/T models)
E221	GY/2	: Back-up lamp switch (M/T models)
E222	GY/4	: Inhibitor switch (A/T models)
E223	B/3	: A/T control solenoid valve (A/T models)
E225	—	: Battery+
E227	GY/6	: To F12
E232	—	: Alternator
E233	—	: Alternator

HARNESS LAYOUT

Engine Harness (Cont'd)

CD ENGINE

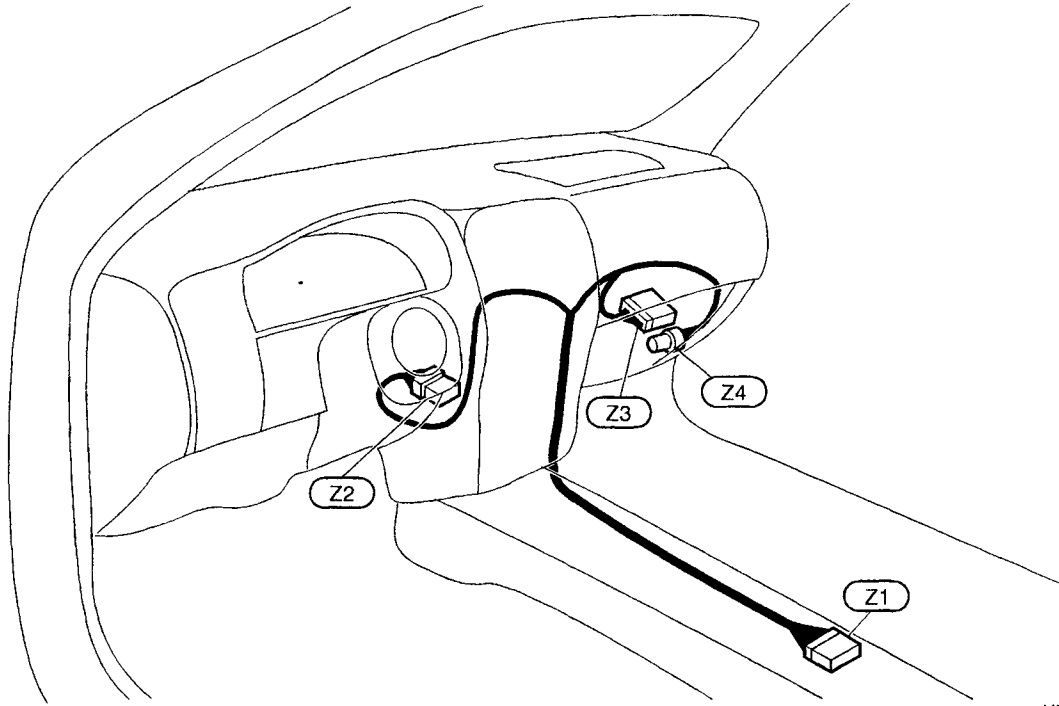


HARNESS LAYOUT

Air Bag Harness

LHD MODELS

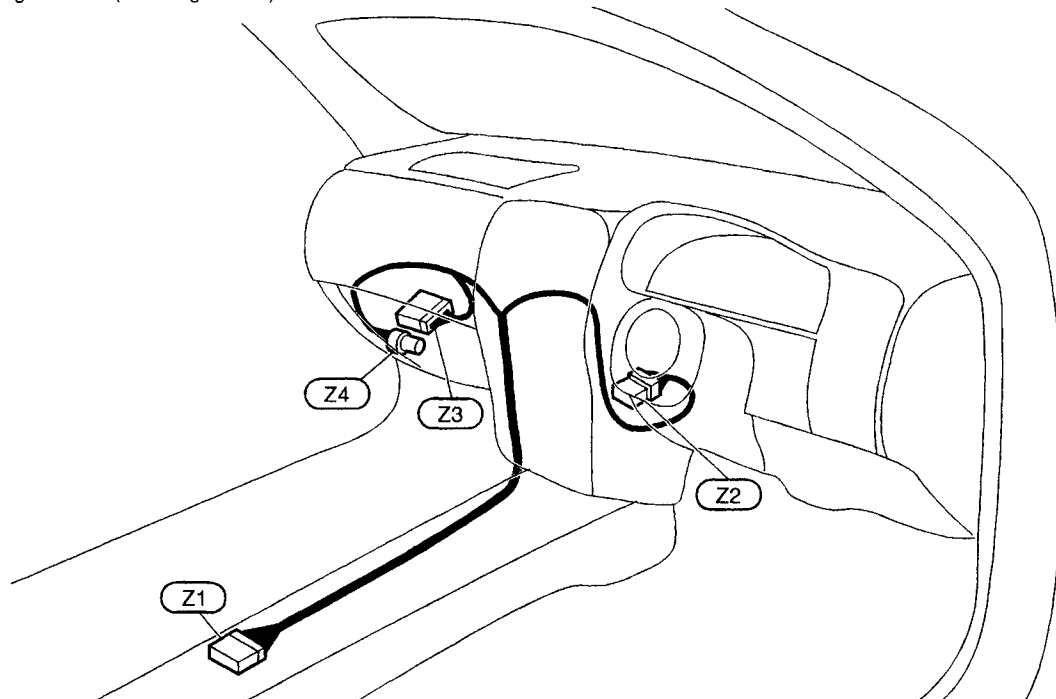
- (Z1) Y/24 : Air bag diagnosis sensor unit
- (Z2) Y/6 : Spiral cable
- (Z3) Y/12 : To (M62)
- (Z4) Y/2 : Air bag module (Passenger side)



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RHD MODELS

- (Z1) Y/24 : Air bag diagnosis sensor unit
- (Z2) Y/6 : Spiral cable
- (Z3) Y/12 : To (M62)
- (Z4) Y/2 : Air bag module (Passenger side)

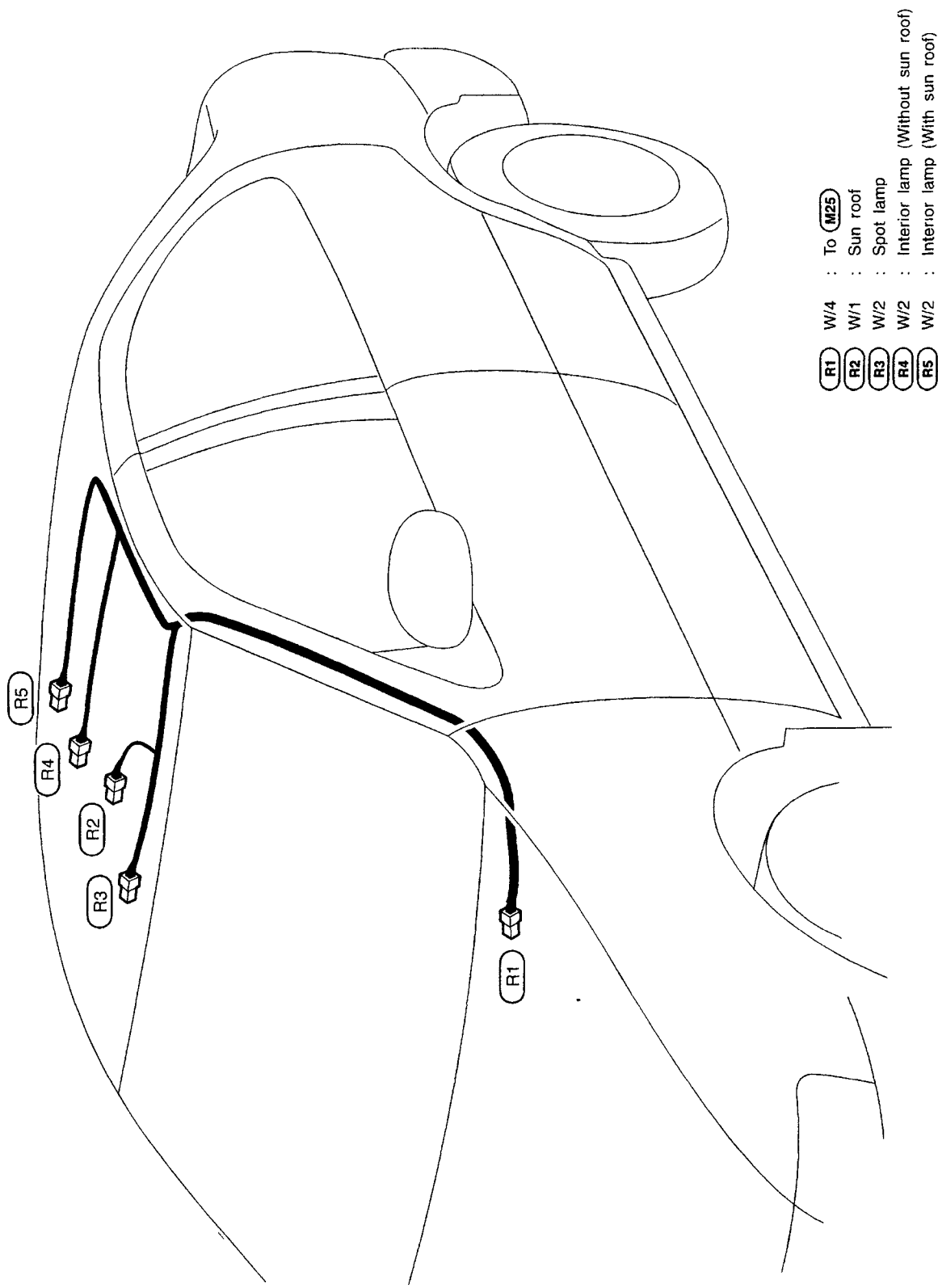


HEL181

EL

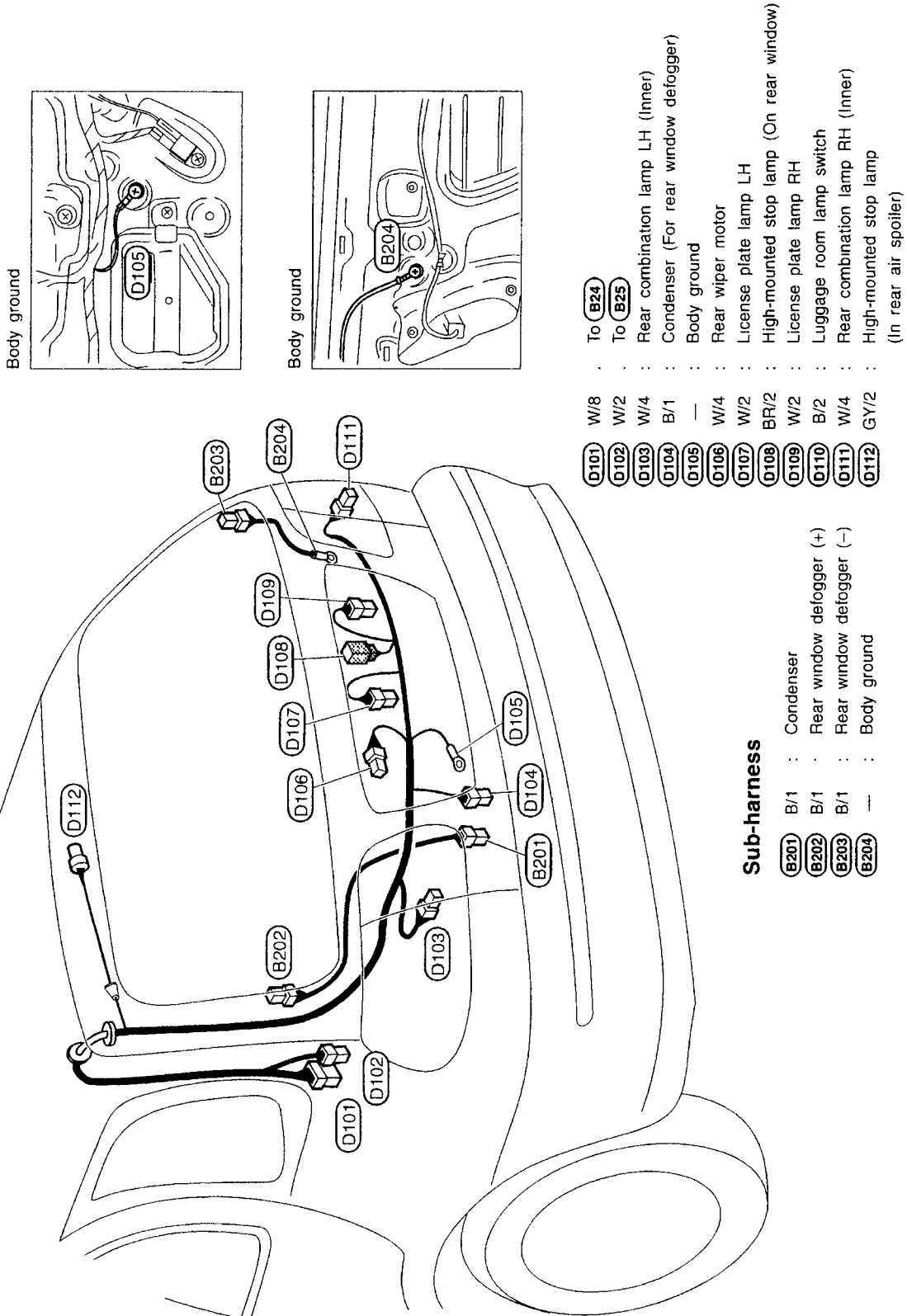
HARNESS LAYOUT

Room Lamp Harness



HARNESS LAYOUT

Back Door Harness

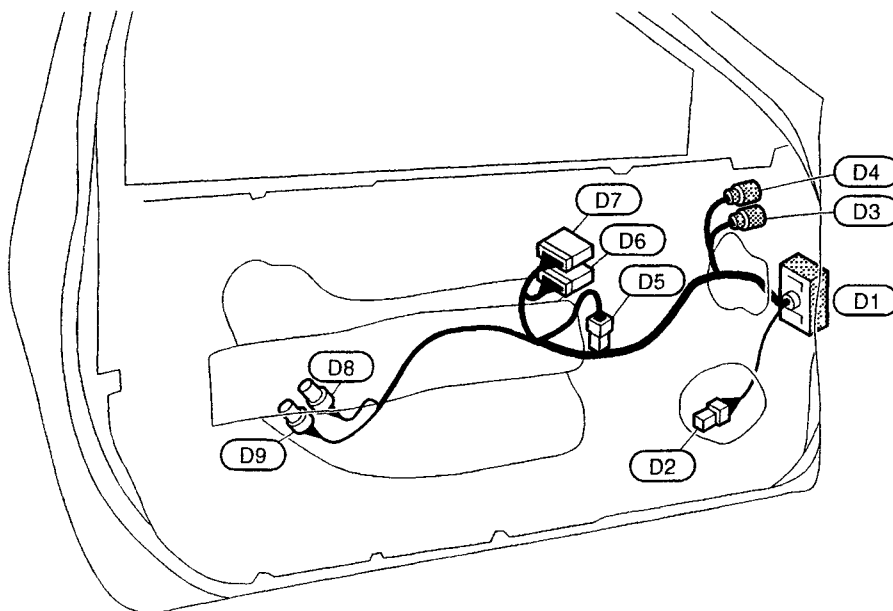


HARNESS LAYOUT

Front Door Harness (LH side)

LHD MODELS (Standard type)

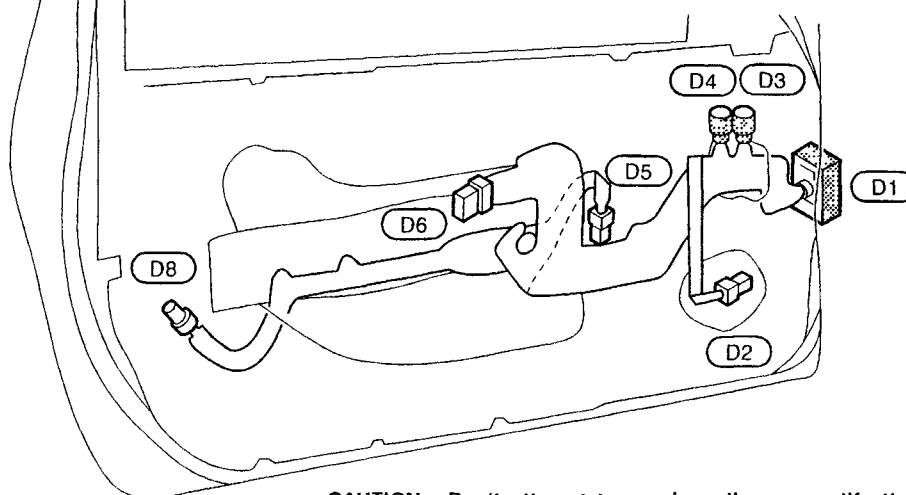
- | | | | | | |
|-----------|---|------------------------|-----------|---|---|
| (D1) SMJ | : | To (M1) | (D6) W/12 | : | Power window main switch
(With front door power window) |
| (D2) BR/2 | : | Door speaker | (D7) W/16 | : | Power window main switch
(With front and rear door power window) |
| (D3) BR/3 | : | Door mirror actuator | (D8) GY/4 | : | Door lock actuator (With power door lock type-1) |
| (D4) GY/2 | : | Door mirror defogger | (D9) GY/2 | : | Lock knob switch (With power door lock type-2) |
| (D5) B/2 | : | Power window regulator | | | |



HEL184

LHD MODELS (FFC type)

- | | | | | | |
|-----------|---|----------------------|-----------|---|---|
| (D1) SMJ | : | To (M1) | (D5) B/2 | : | Power window regulator |
| (D2) BR/2 | : | Door speaker | (D6) W/12 | : | Power window main switch |
| (D3) BR/3 | : | Door mirror actuator | (D8) GY/4 | : | Door lock actuator
(With power door lock type-1) |
| (D4) GY/2 | : | Door mirror defogger | | | |



CAUTION : Don't attempt to repair, splice or modify the flexible flat circuit (FFC). If the FFC is damaged, replace with a new one.

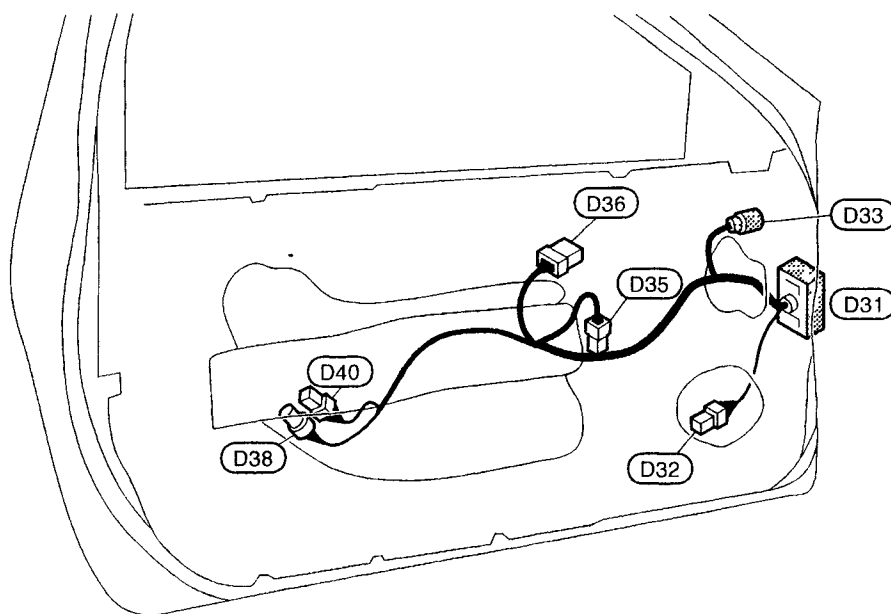
HEL185

HARNESS LAYOUT

Front Door Harness (LH side) (Cont'd)

RHD MODELS (Standard type)

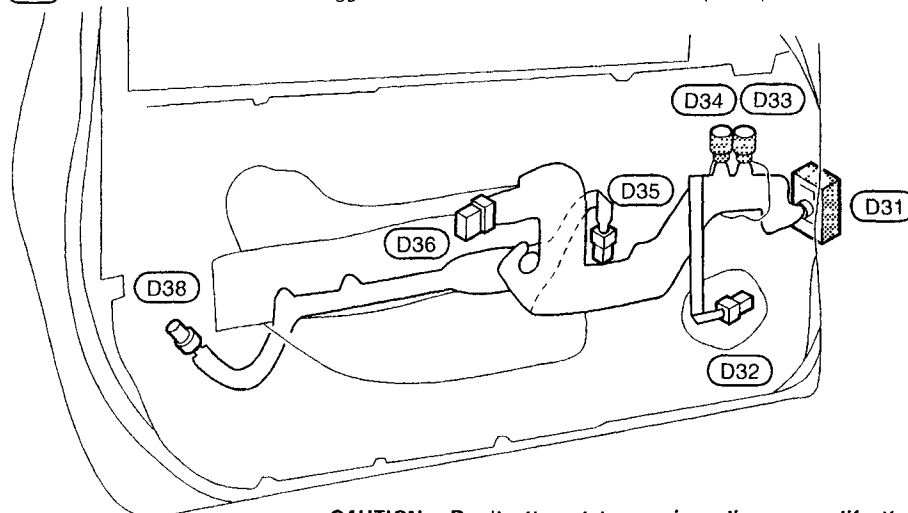
- | | | | | | |
|------------|---|------------------------|------------|---|--|
| (D31) SMJ | : | To (M75) | (D36) W/8 | : | Power window sub-switch |
| (D32) BR/2 | : | Door speaker | (D38) GY/4 | : | Door lock actuator (With power door lock type-1) |
| (D33) BR/3 | : | Door mirror actuator | (D40) W/4 | : | Door lock actuator (With power door lock type-2) |
| (D35) B/2 | : | Power window regulator | | | |



HEL186

RHD MODELS (FFC type)

- | | | | | |
|------------|----------------------|------------|---|--|
| (D31) SMJ | To (M75) | (D35) B/2 | : | Power window regulator |
| (D32) BR/2 | Door speaker | (D36) W/8 | : | Power window sub-switch |
| (D33) BR/3 | Door mirror actuator | (D38) GY/4 | : | Door lock actuator (With power door lock type-1) |
| (D34) GY/2 | Door mirror defogger | | | |



CAUTION : Don't attempt to repair, splice or modify the flexible flat circuit (FFC). If the FFC is damaged, replace with a new one.

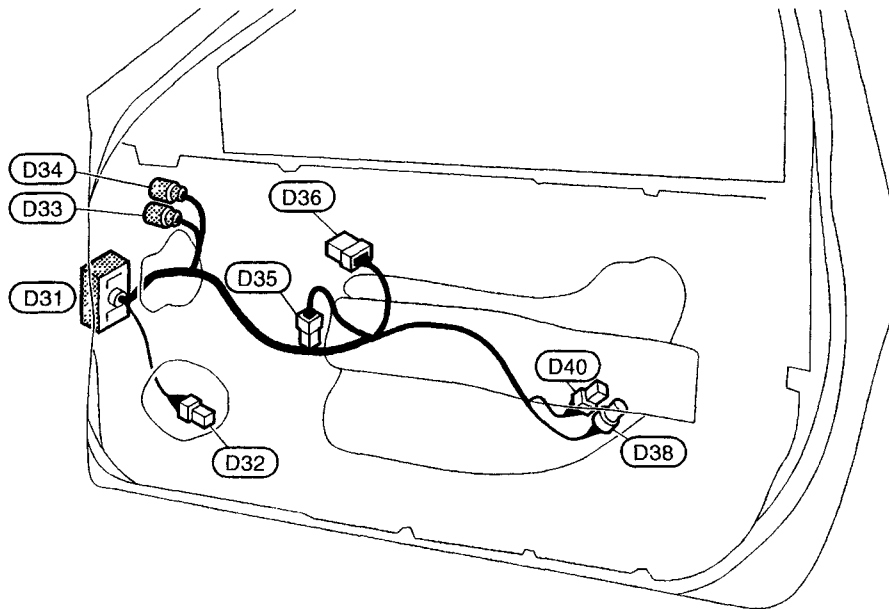
HEL187

HARNESS LAYOUT

Front Door Harness (RH side)

LHD MODELS (Standard type)

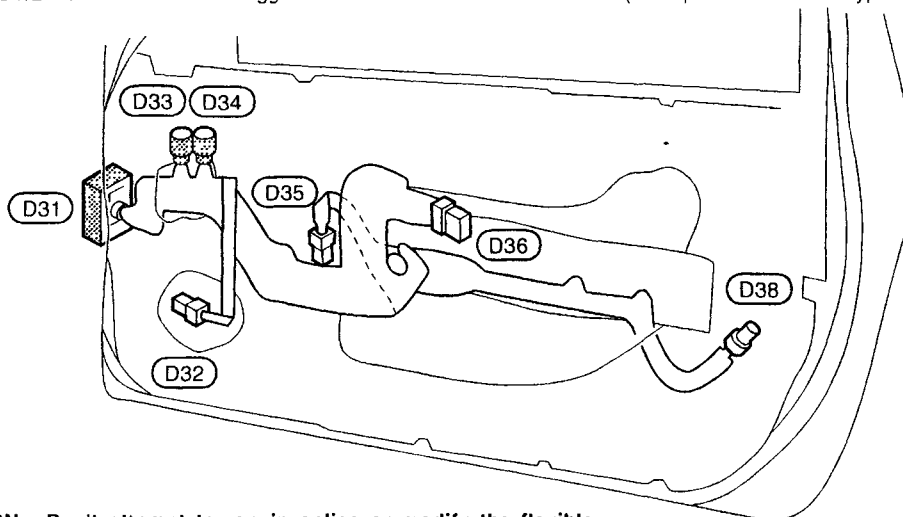
- | | | | | | |
|------------|---|----------------------|------------|---|--|
| (D31) SMJ | : | To (M75) | (D35) B/2 | : | Power window regulator |
| (D32) BR/2 | : | Door speaker | (D36) W/8 | : | Power window sub-switch |
| (D33) BR/3 | : | Door mirror actuator | (D38) GY/4 | : | Door lock actuator (With power door lock type-1) |
| (D34) GY/2 | : | Door mirror defogger | (D40) W/4 | : | Door lock actuator (With power door lock type-2) |



HEL188

LHD MODELS (FFC type)

- | | | | | | |
|------------|---|----------------------|------------|---|-------------------------------|
| (D31) SMJ | : | To (M75) | (D35) B/2 | : | Power window regulator |
| (D32) BR/2 | : | Door speaker | (D36) W/8 | : | Power window sub-switch |
| (D33) BR/3 | : | Door mirror actuator | (D38) GY/4 | : | Door lock actuator |
| (D34) GY/2 | : | Door mirror defogger | | | (With power door lock type-1) |



CAUTION : Don't attempt to repair, splice or modify the flexible flat circuit (FFC). If the FFC is damaged, replace with a new one.

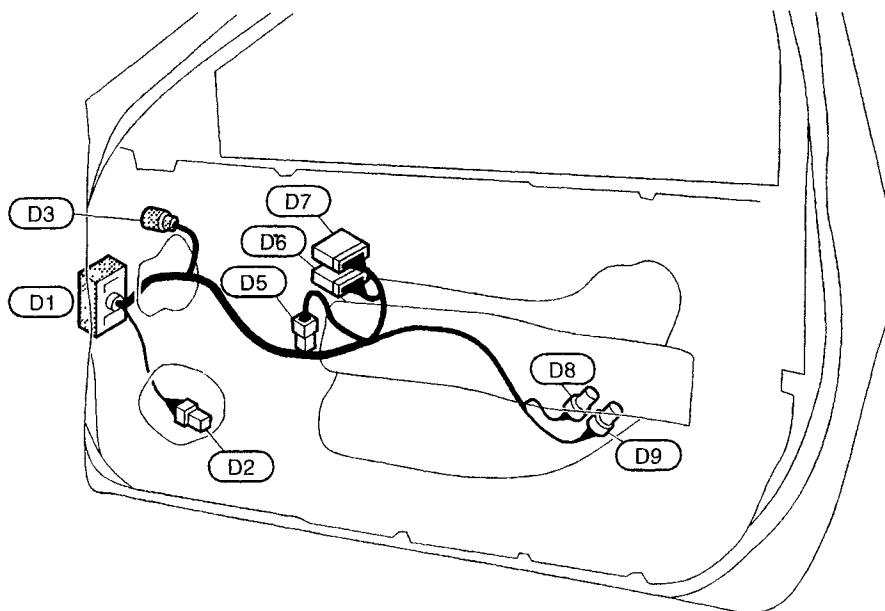
HEL189

HARNESS LAYOUT

Front Door Harness (RH side) (Cont'd)

RHD MODELS (Standard type)

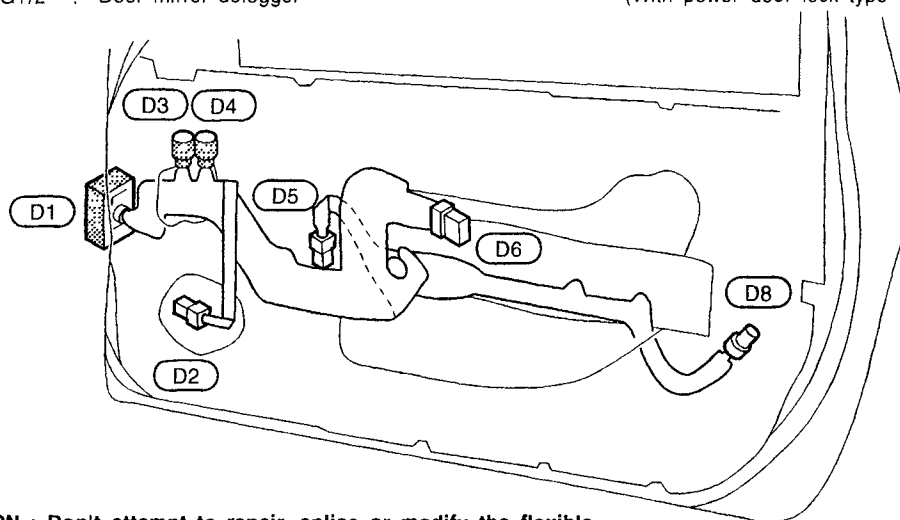
- | | | | | | |
|-----------|---|--|-----------|---|---|
| (D1) SMJ | : | To (M1) | (D7) W/16 | : | Power window main switch
(With front and rear door power window) |
| (D2) BR/2 | : | Door speaker | (D8) GY/4 | : | Door lock actuator (With power door lock type-1) |
| (D3) BR/3 | : | Door mirror actuator | (D9) GY/2 | : | Lock knob switch (With power door lock type-2) |
| (D5) B/2 | : | Power window regulator | | | |
| (D6) W/12 | : | Power window main switch
(With front door power window) | | | |



HEL190

RHD MODELS (FFC type)

- | | | | | | |
|-----------|---|----------------------|-----------|---|---|
| (D1) SMJ | : | To (M1) | (D5) B/2 | : | Power window regulator |
| (D2) BR/2 | : | Door speaker | (D6) W/12 | : | Power window main switch |
| (D3) BR/3 | : | Door mirror actuator | (D8) GY/4 | : | Door lock actuator
(With power door lock type-1) |
| (D4) GY/2 | : | Door mirror defogger | | | |



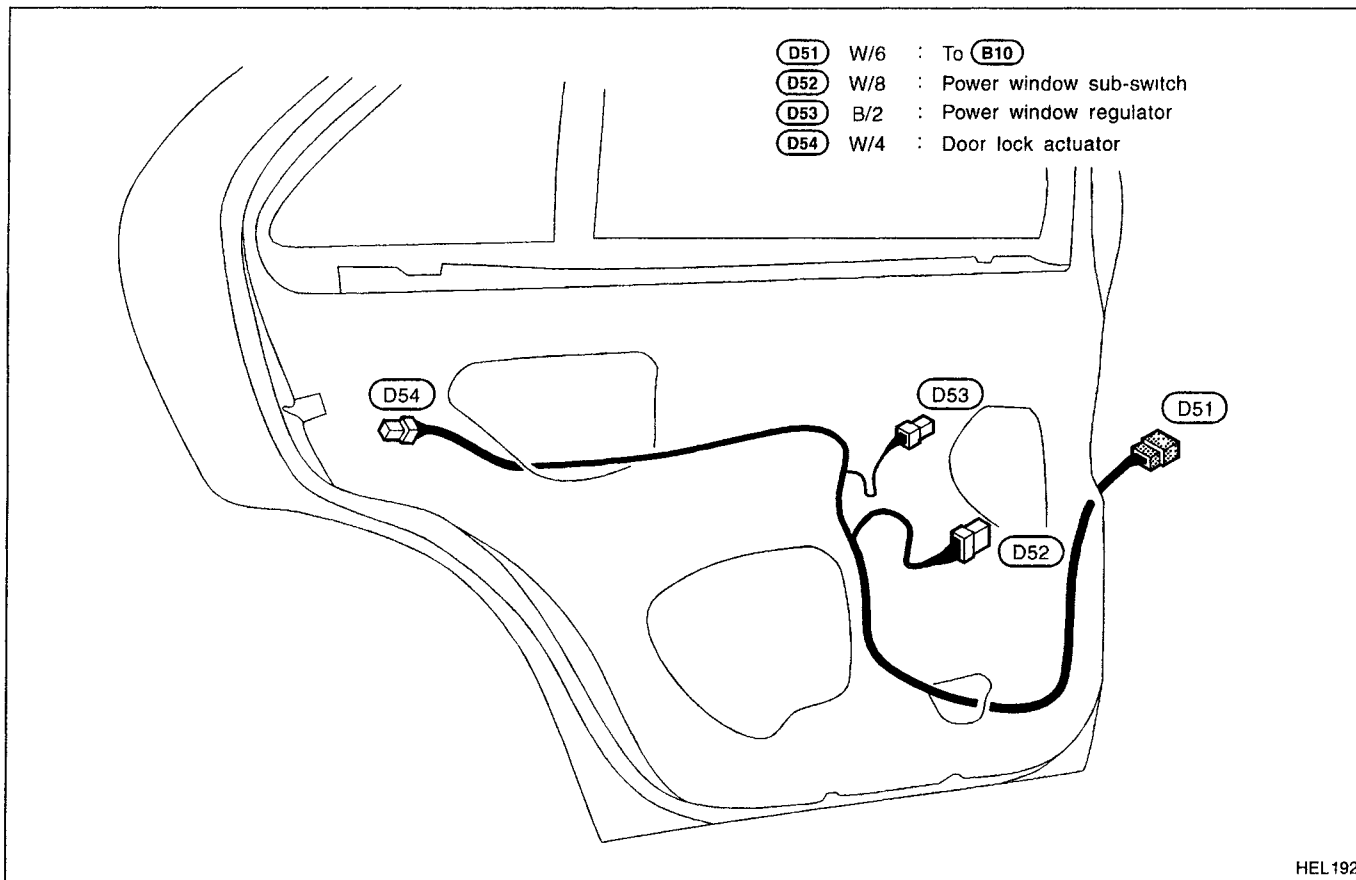
CAUTION : Don't attempt to repair, splice or modify the flexible flat circuit (FFC). If the FFC is damaged, replace with a new one.

HEL191

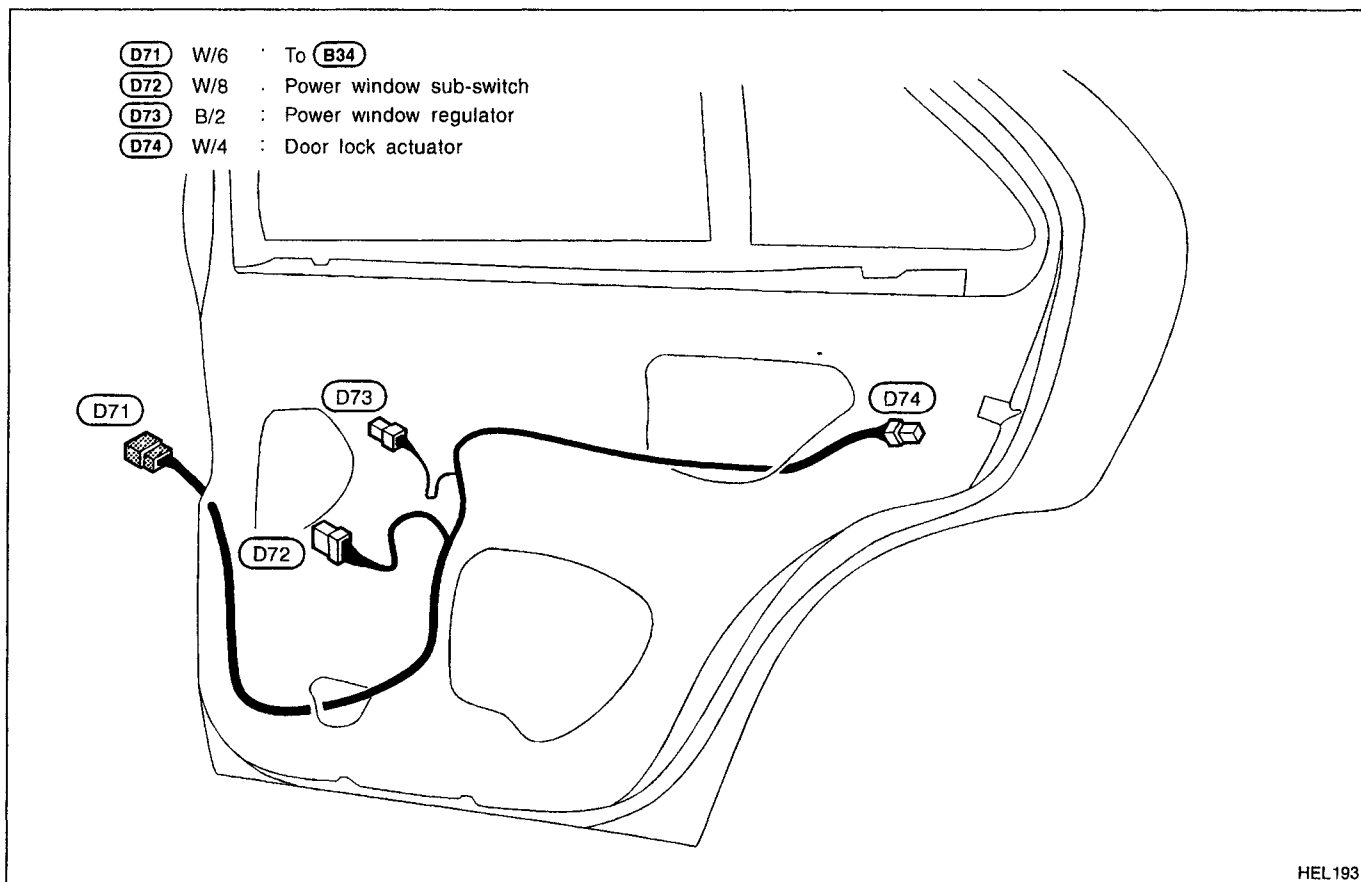
HARNESS LAYOUT

Rear Door Harness

LH SIDE



RH SIDE



SUPER MULTIPLE JUNCTION (SMJ)

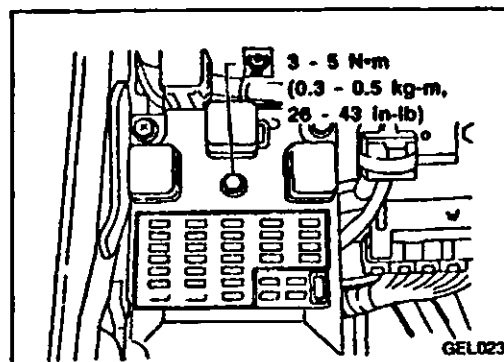
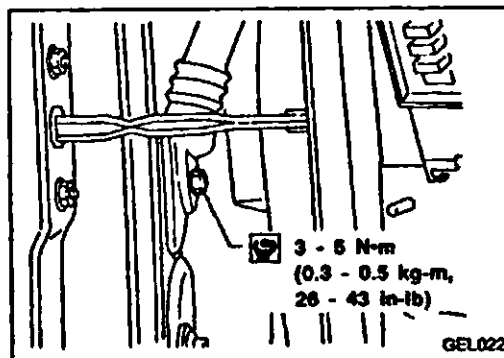
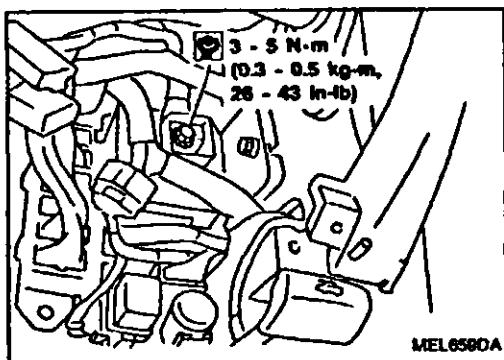
INSTALLATION

To install SMJ and FUSE BLOCK (J/B), tighten bolts until orange "fulltight" mark appears and then retighten to specified torque as required.

 : 3 - 5 N·m
(0.3 - 0.5 kg-m, 26 - 43 in-lb)

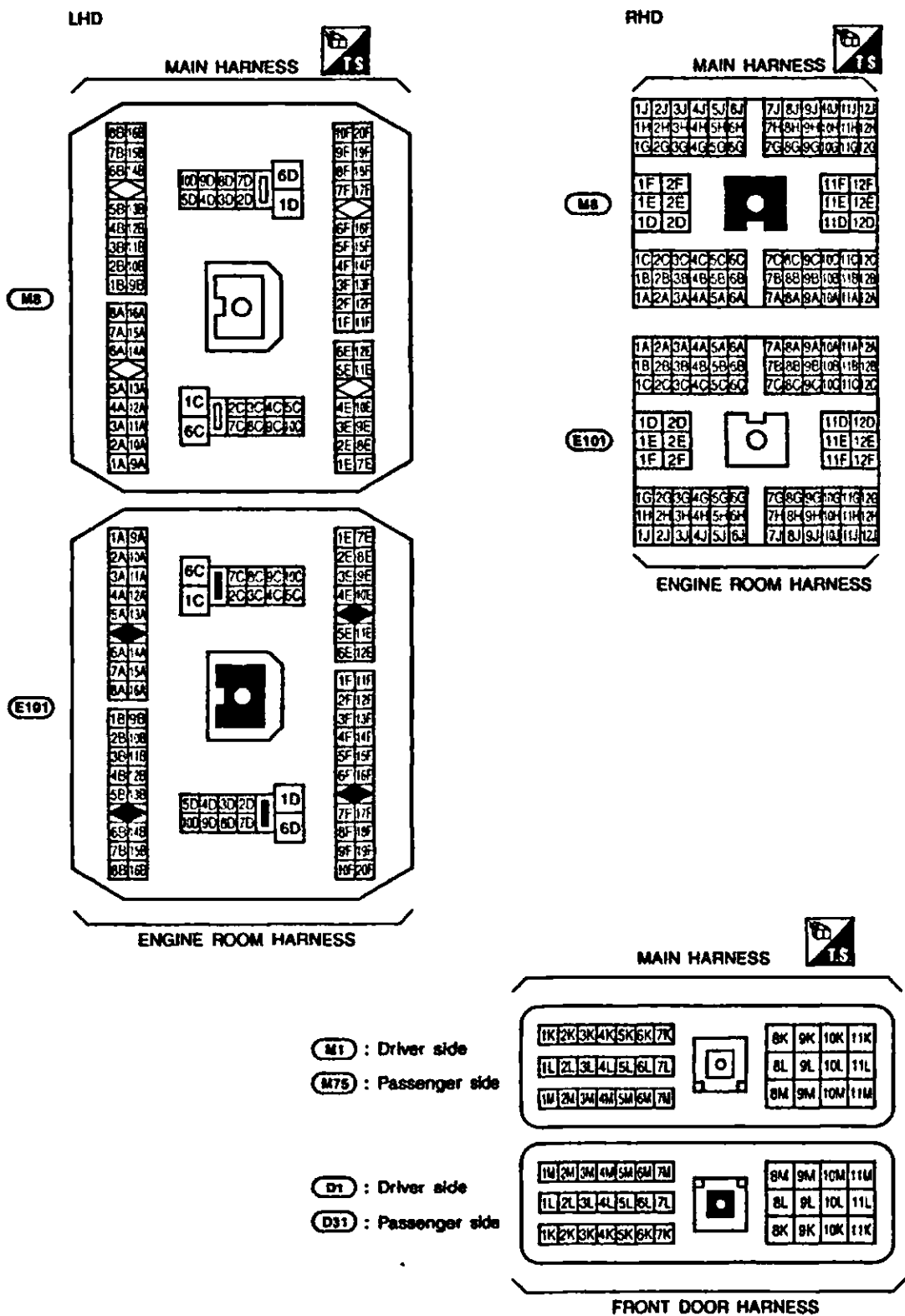
CAUTION:

Do not overtighten bolts, otherwise, they may be damaged.



SUPER MULTIPLE JUNCTION (SMJ)

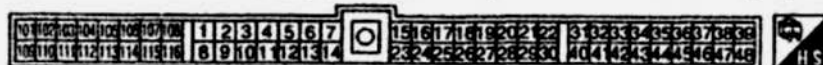
Terminal Arrangement



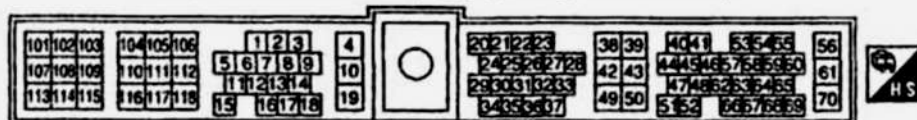
ELECTRICAL UNITS

Terminal Arrangement

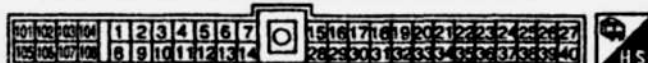
ECM (ECCS control module) (F1) (GA engine except for Australia and SF engine)



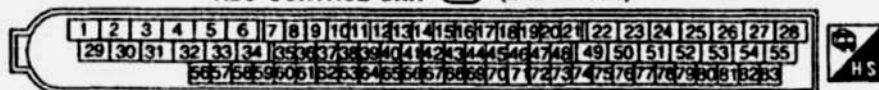
ECM (ECCS control module) (F1) (GA engine for Australia)



ECM (Engine control module) (K39) (CD engine)



ABS CONTROL UNIT (B11) (LHD models)



ABS CONTROL UNIT (B11) (RHD models)



ELECTRICAL UNITS

Terminal Arrangement

ECM (ECCS control module) (F1) (GA engine except for Australia and SR engine)

01	02	23	04	05	06	07	08	1	2	3	4	5	6	7	8	15	16	17	18	19	20	22	3	32	33	40	53	63	73	89		
09	10	11	12	13	14	15	16	8	9	10	11	12	13	14	2	22	42	52	62	72	82	93	40	4	14	24	34	44	54	64	74	8





ECM (ECCS control module) (F1) (GA engine for Australia)
(M38) (CD engine)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----



ABS CONTROL UNIT (811) (LHD models)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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ABS CONTROL UNIT (811) (RHD models)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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JOINT CONNECTOR (J/C)

Terminal Arrangement

