<SUPPLEMENT-III>

ELECTRICAL SYSTEM

SECTION EL

MODIFICATION NOTICE:

- Wiring diagrams have been changed.
- Combination meter has been changed.
- Headlamp has been changed.
- Headlamp aiming control has been added.
- Headlamp washer has been added.
- A hazard reminder feature has been added to the multi-remote control system.
- NATS (Nissan Anti-Theft System) has been changed.

CONTENTS

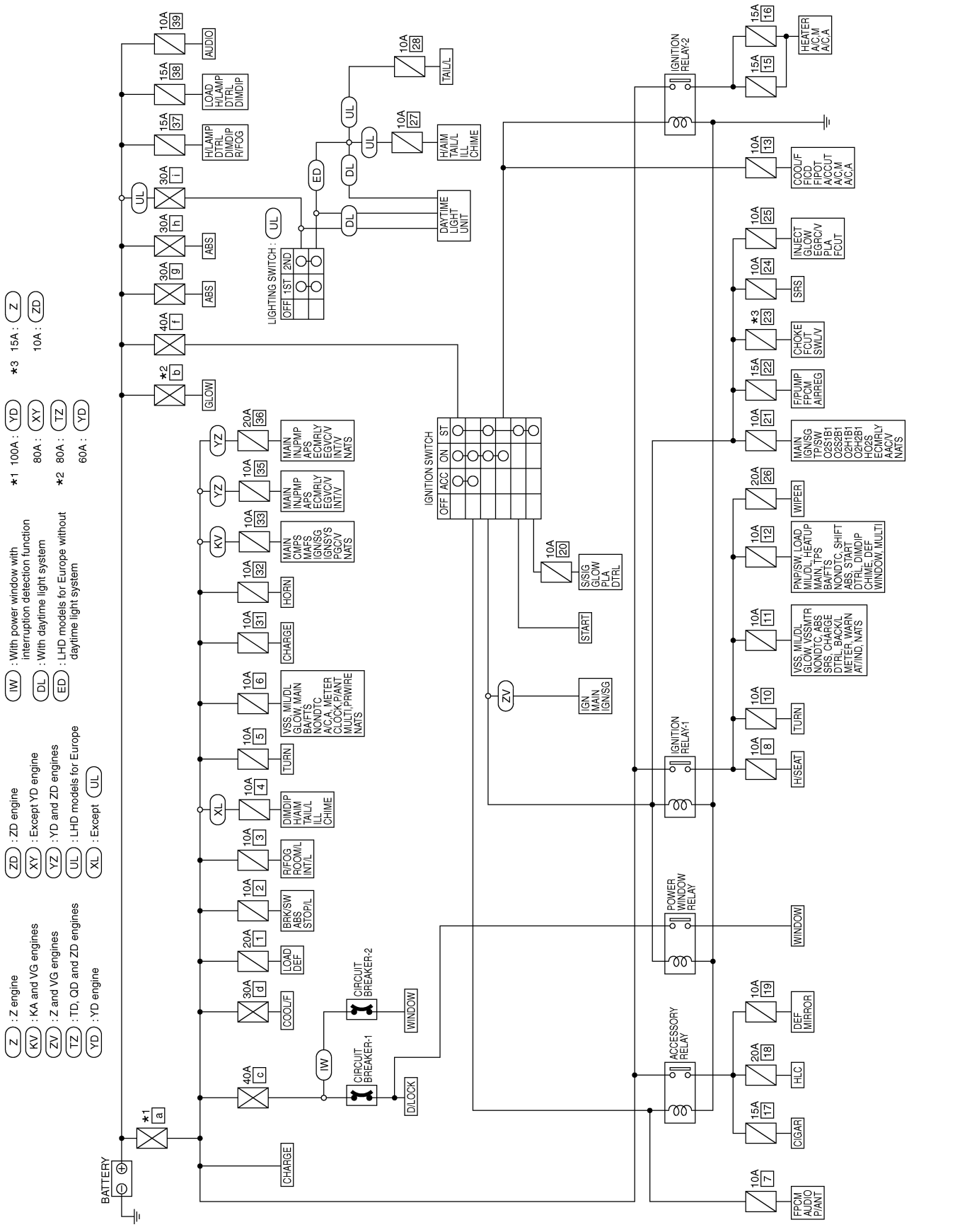
Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER” used along with a seat belt, helps to reduce the risk or severity of injury to the driver and front passenger in a frontal collision. The SRS system composition which is available to NISSAN MODEL D22 is as follows (The composition varies according to the destination and optional equipment.):
Driver air bag module (located in the center of the steering wheel), front passenger air bag module (located on the instrument panel on passenger side), seat belt pre-tensioner, 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. For removal of Spiral Cable and Air Bag Module, see the RS section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow harness connector.**

Schematic

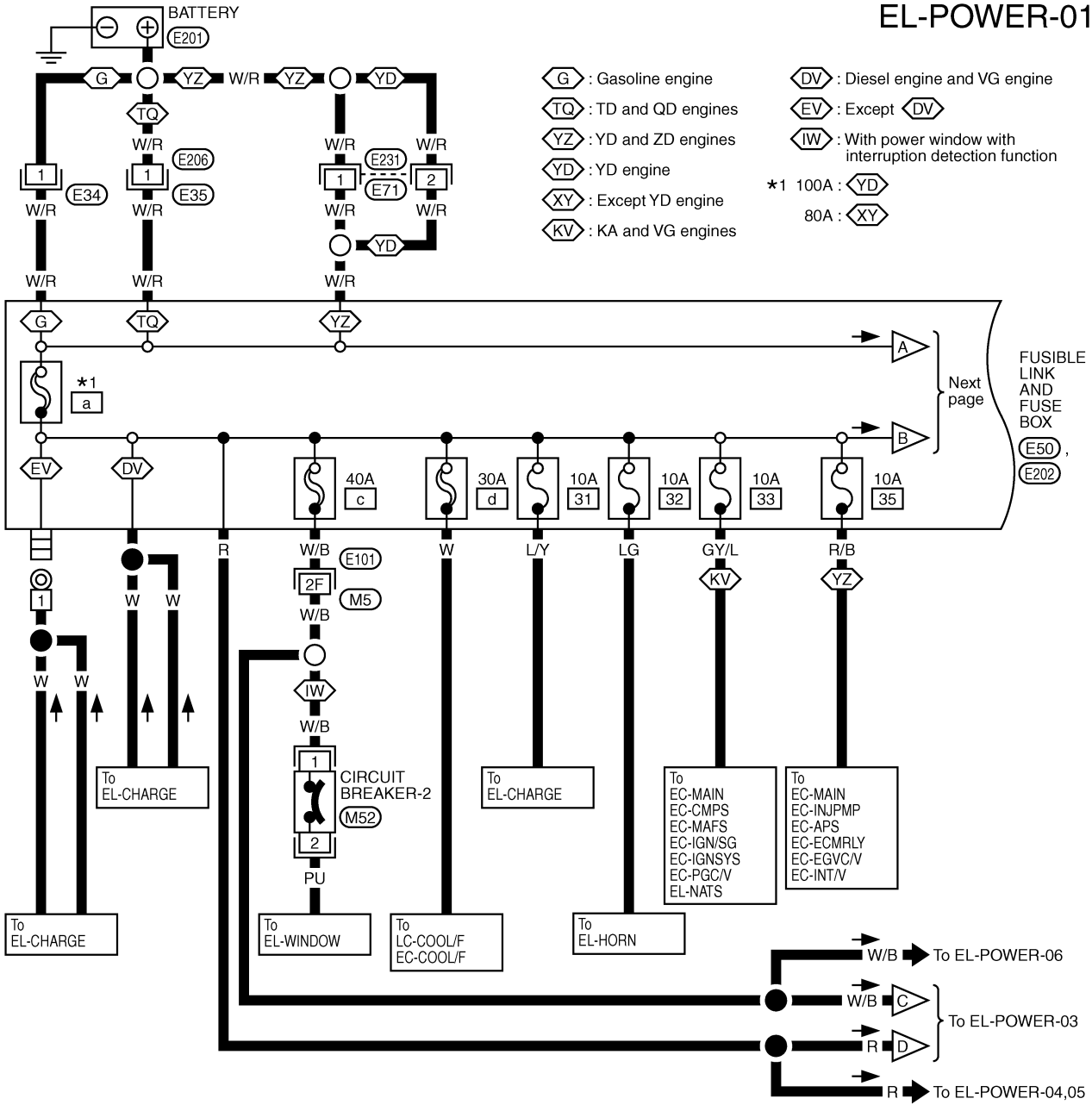


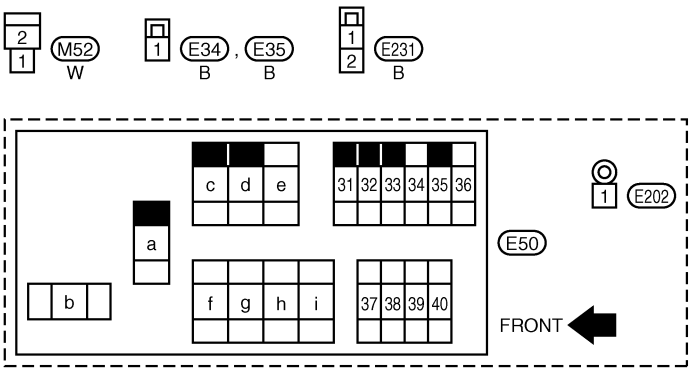
GEL358A

Wiring Diagram — POWER —

BATTERY POWER SUPPLY — IGNITION SWITCH IN ANY POSITION

EL-POWER-01





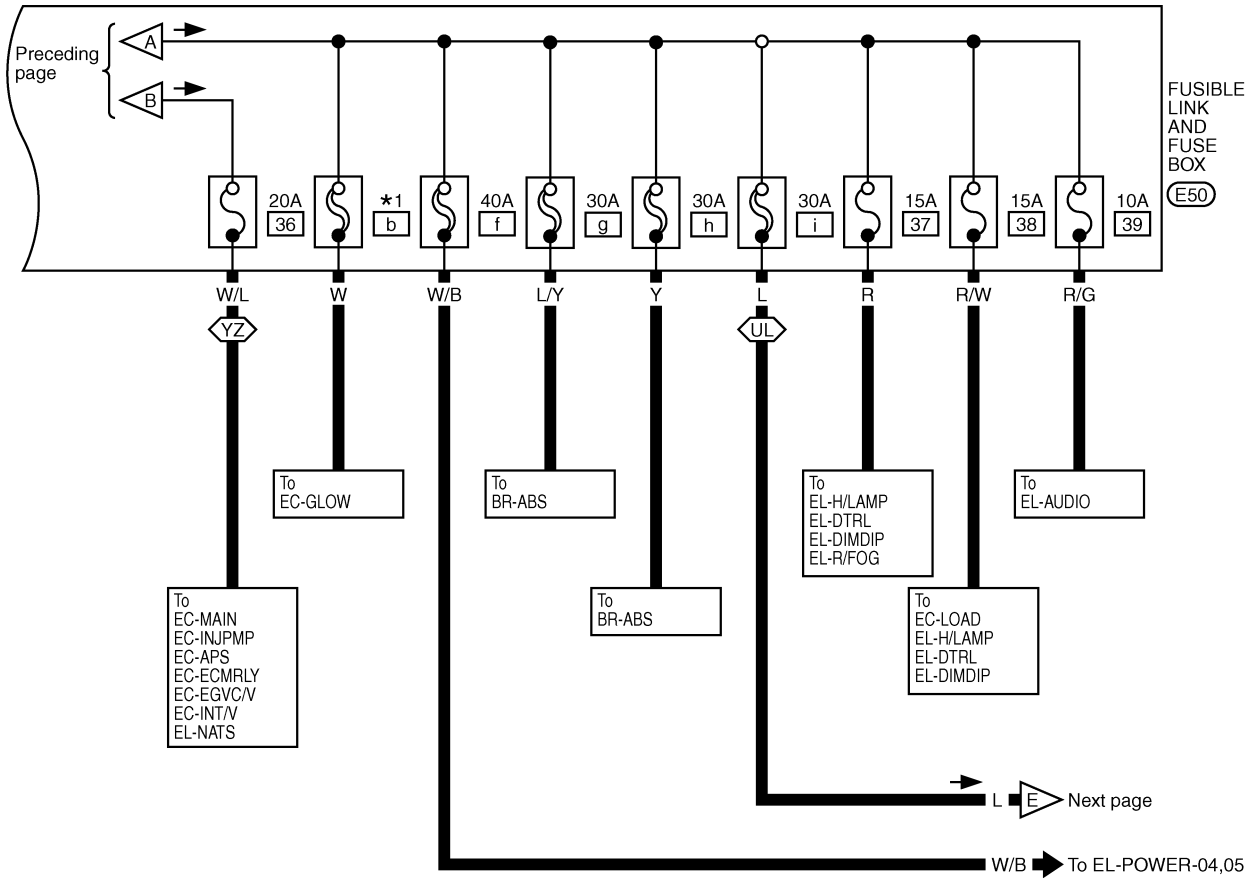
Refer to last page (Foldout page).
M5, E101

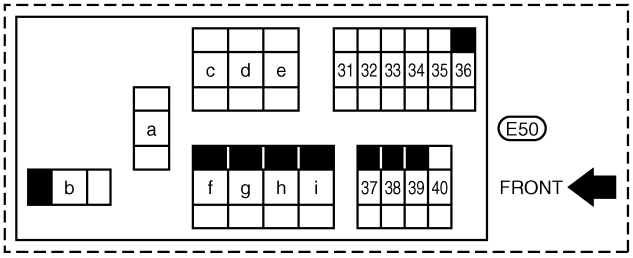
GEL359A

Wiring Diagram — POWER — (Cont'd)

EL-POWER-02

YZ : YD and ZD engines
UL : LHD models for Europe
YD : YD engine
TZ : TD, QD and ZD engines
*1 80A : TZ
60A : YD

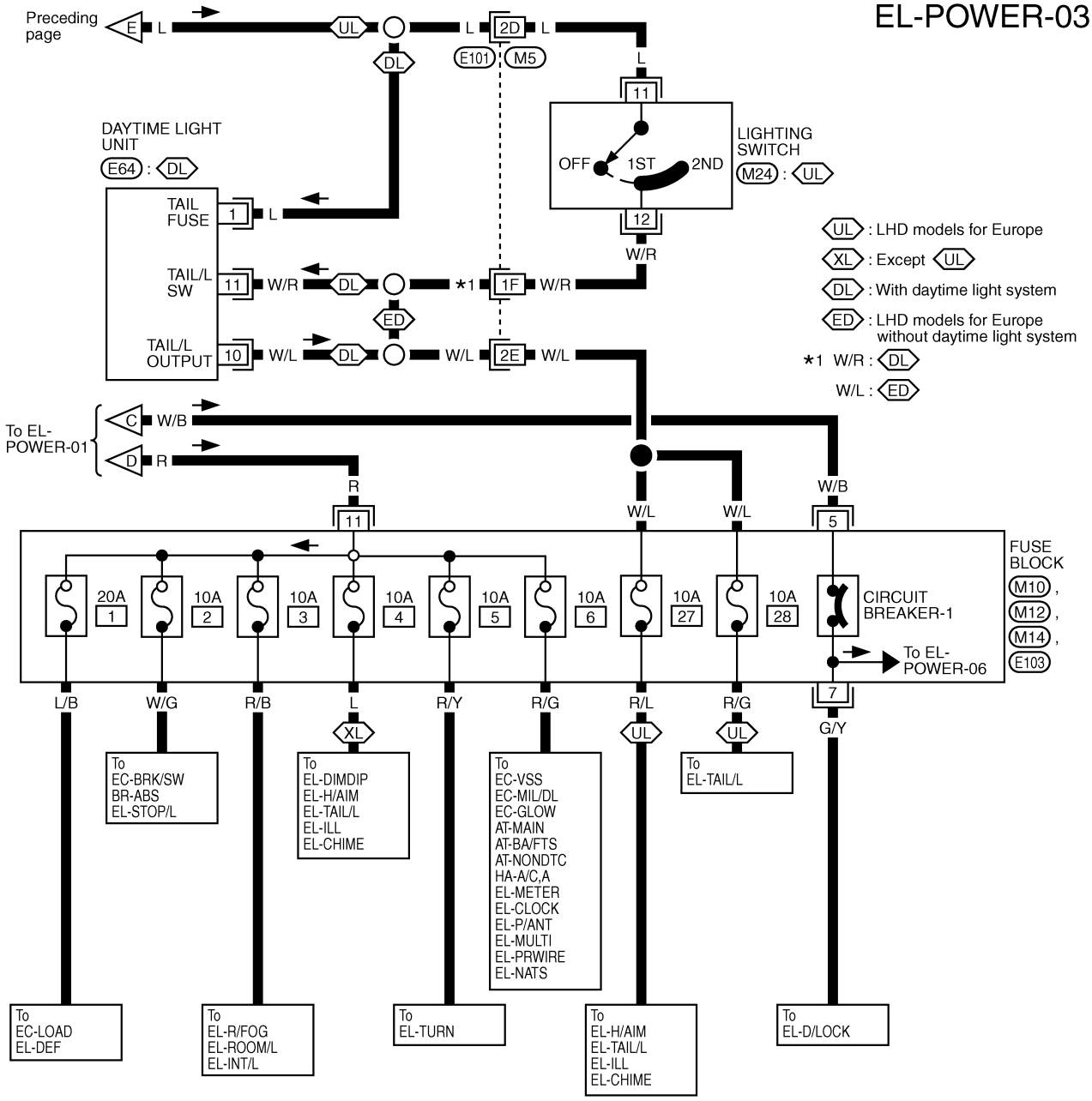


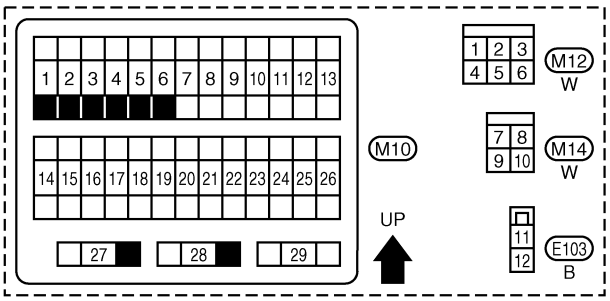


GEL360A

Wiring Diagram — POWER — (Cont'd)

EL-POWER-03





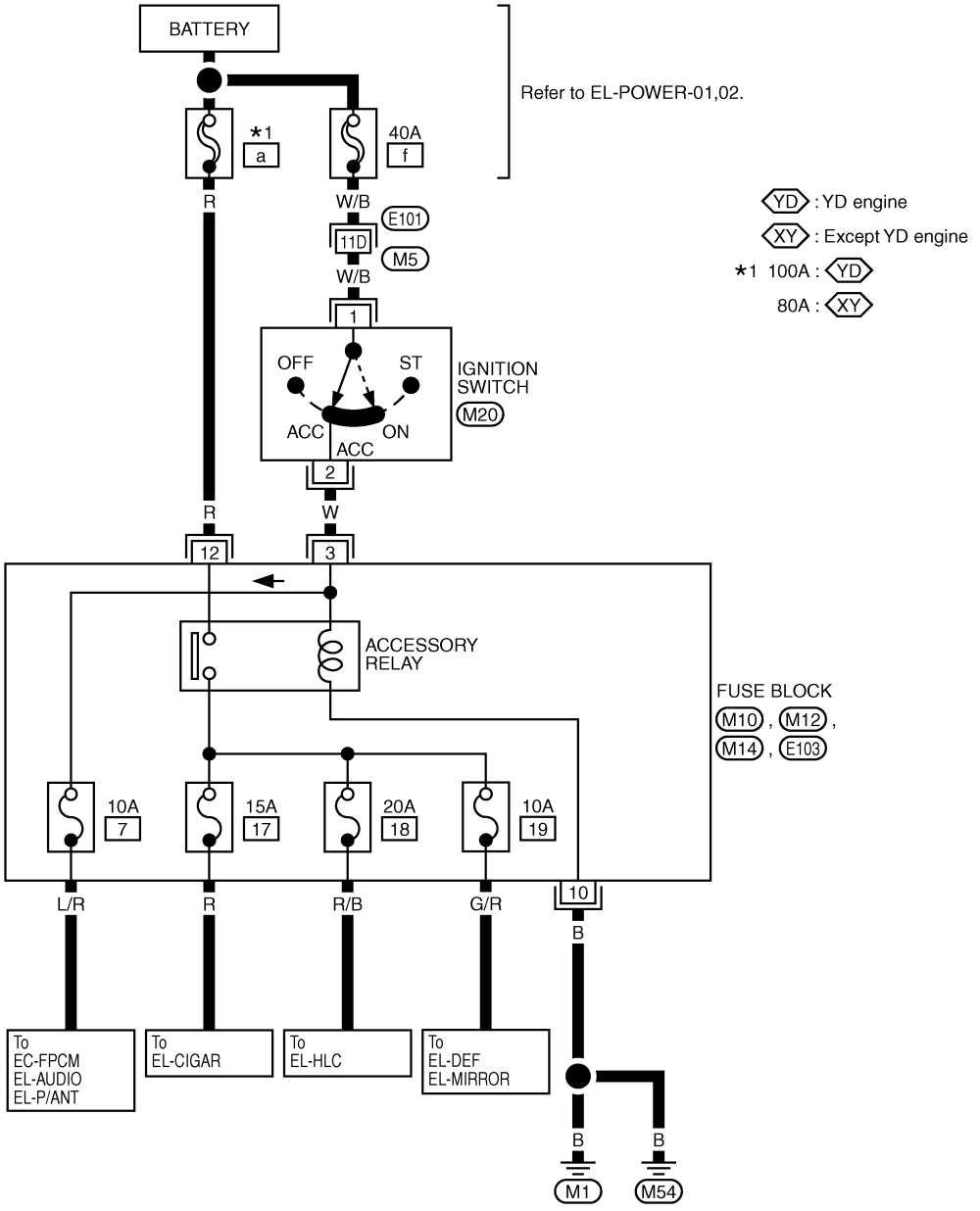
Refer to last page (Foldout page).
M5 , E101

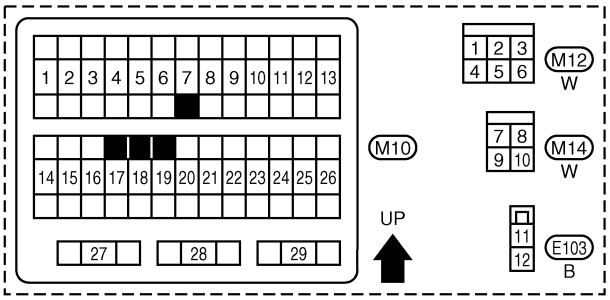
GEL361A

Wiring Diagram — POWER — (Cont'd)

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

EL-POWER-04



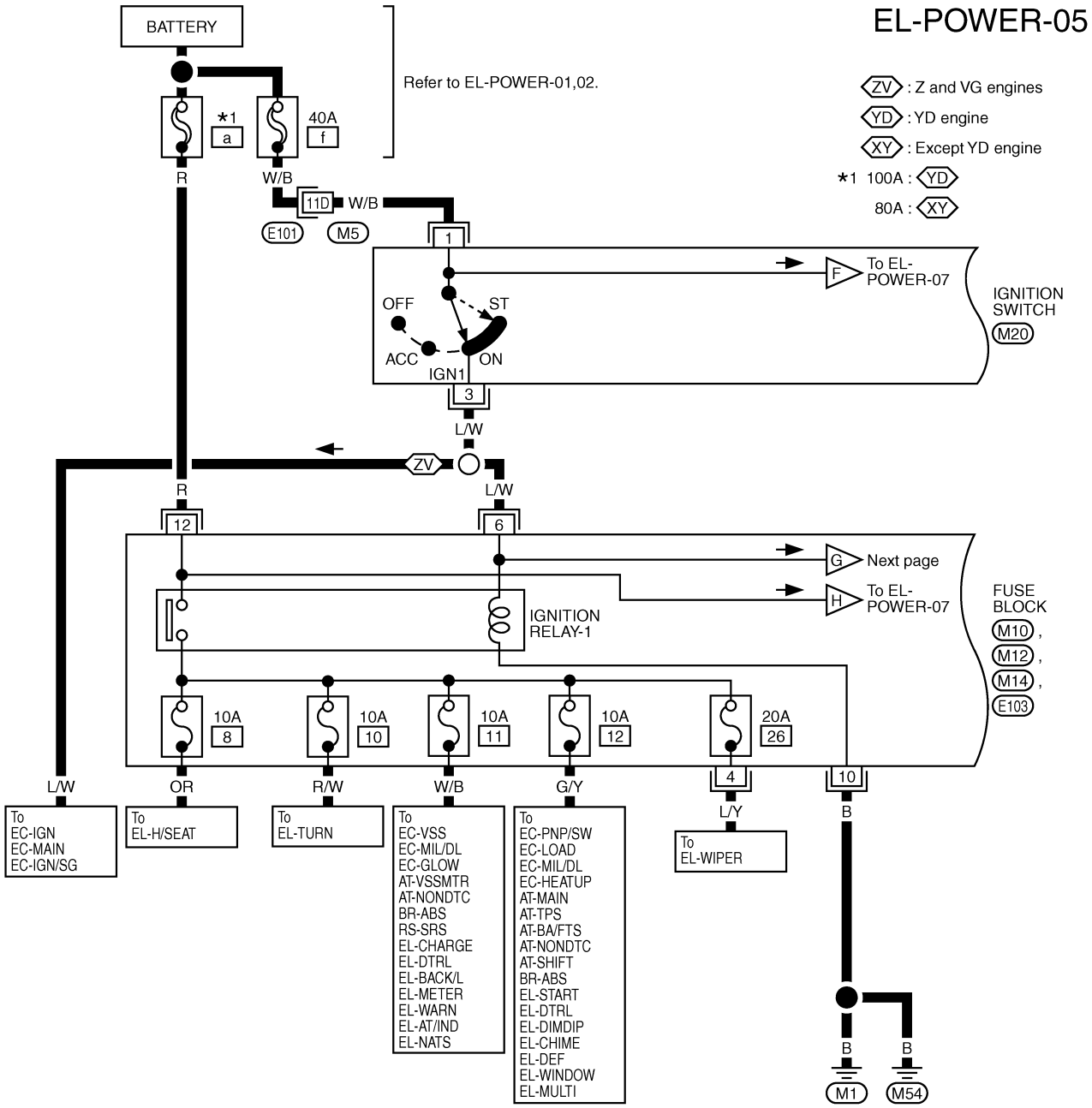


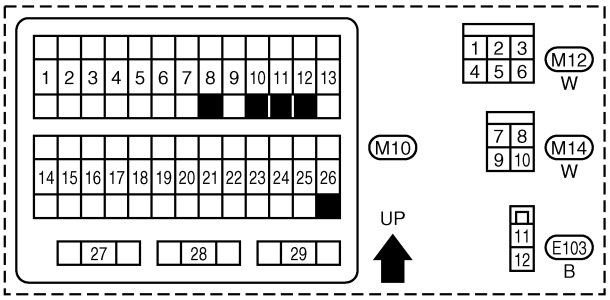
Refer to last page (Foldout page).
M5 , E101

GEL362A

Wiring Diagram — POWER — (Cont'd)

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



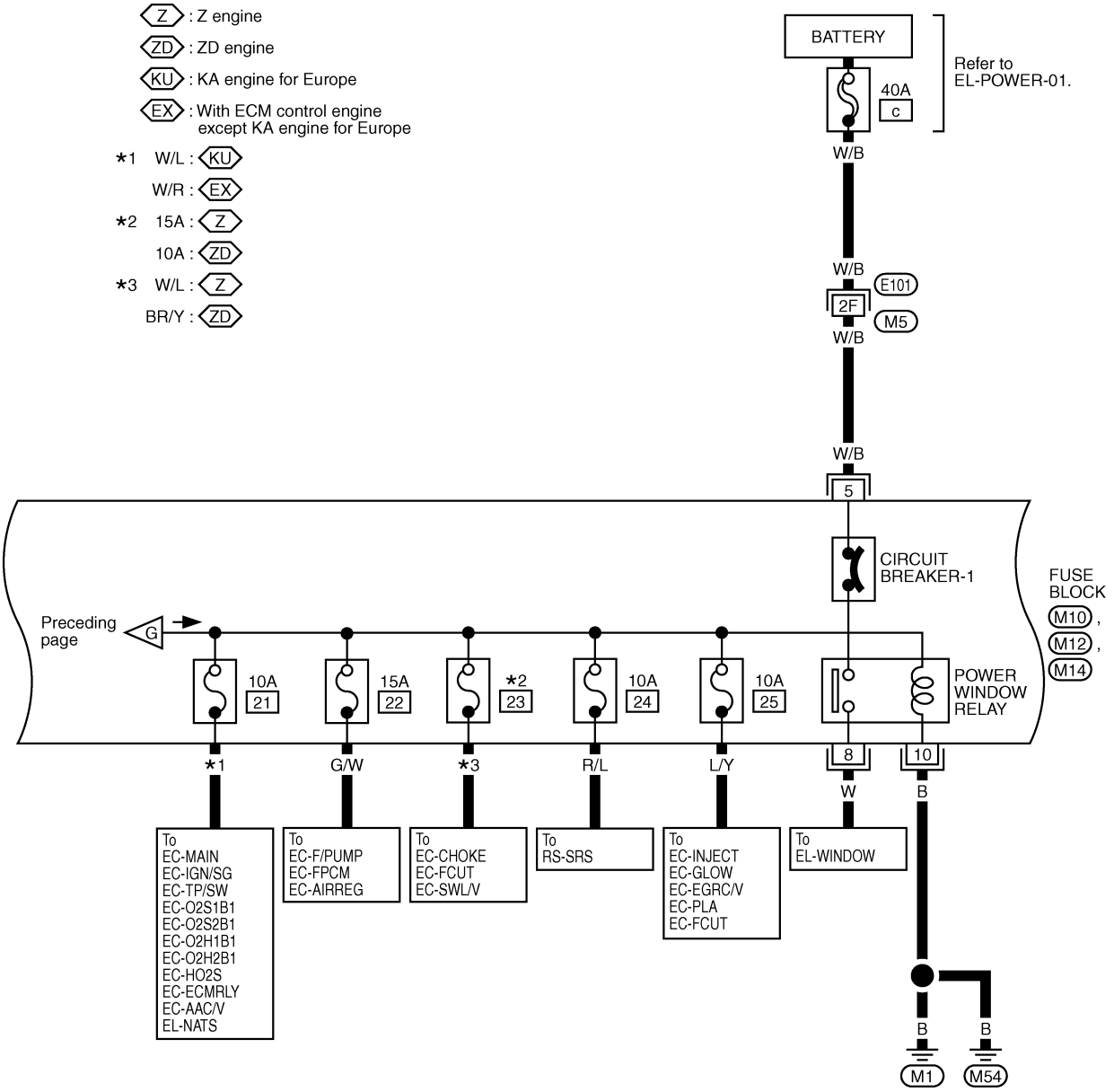


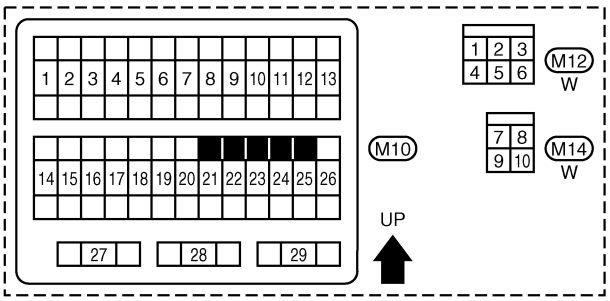
Refer to last page (Foldout page).
M5 , E101

GEL363A

Wiring Diagram — POWER — (Cont'd)

EL-POWER-06

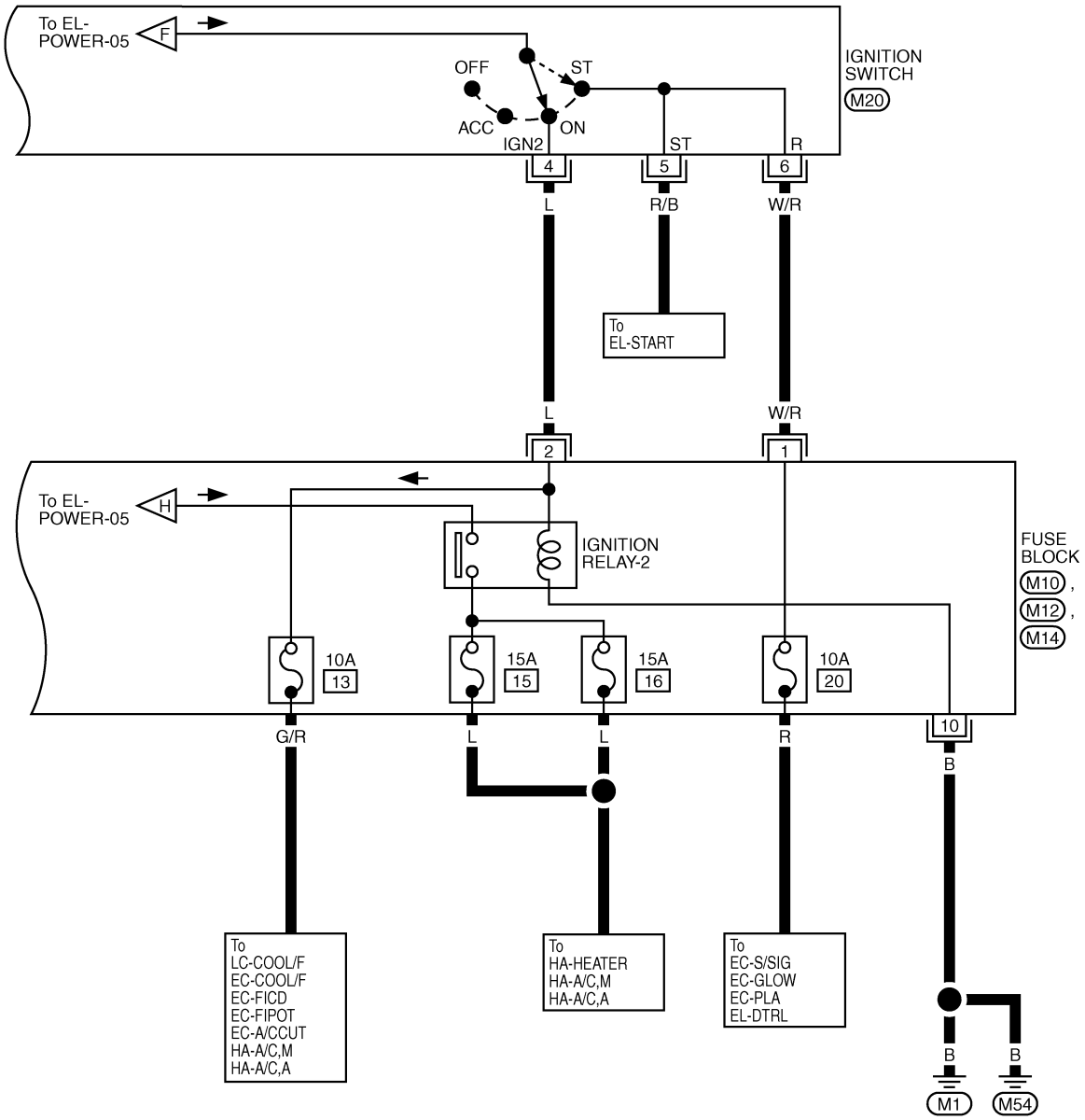


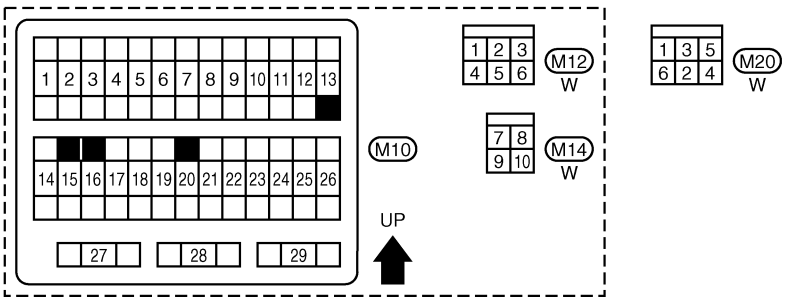


Refer to last page (Foldout page).
M5, E101

Wiring Diagram — POWER — (Cont'd)

EL-POWER-07





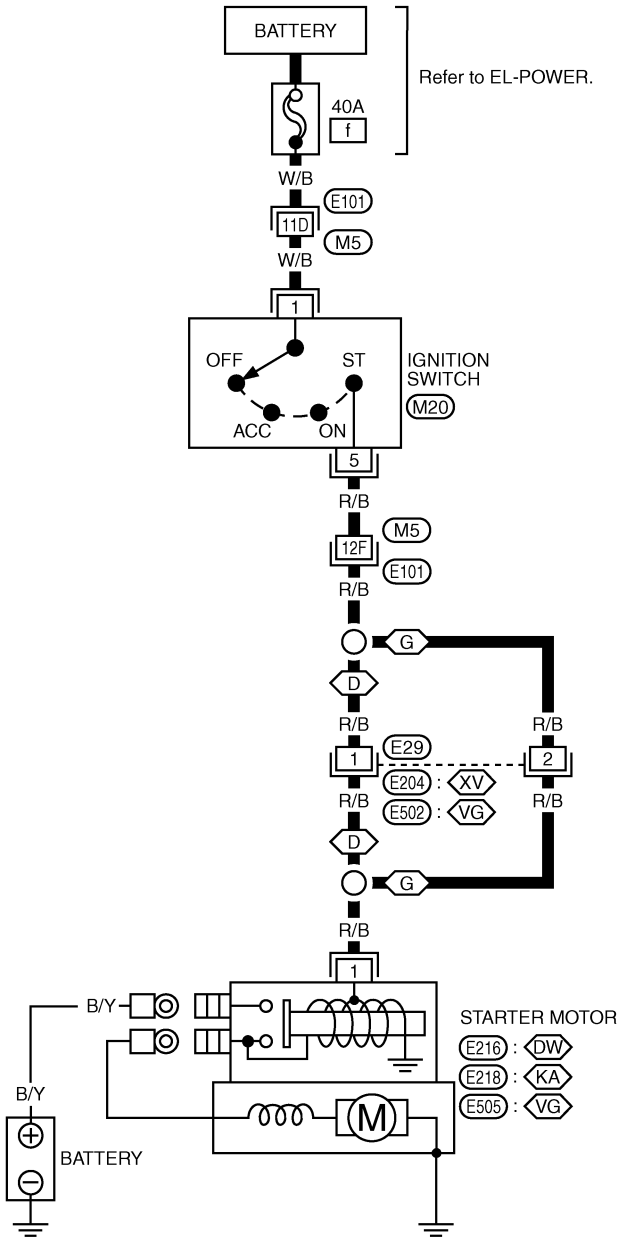
GEL365A

Service Data and Specifications (SDS)

Applied model		Europe
		YD25
		Standard
Type		110D26R
Capacity	V-AH	12-64

Wiring Diagram — START —/M/T Models

EL-START-01



G : Gasoline engine
D : Diesel engine
KA : KA engine
VG : VG engine
XV : Except VG
DW : Diesel engine and carburetor engine

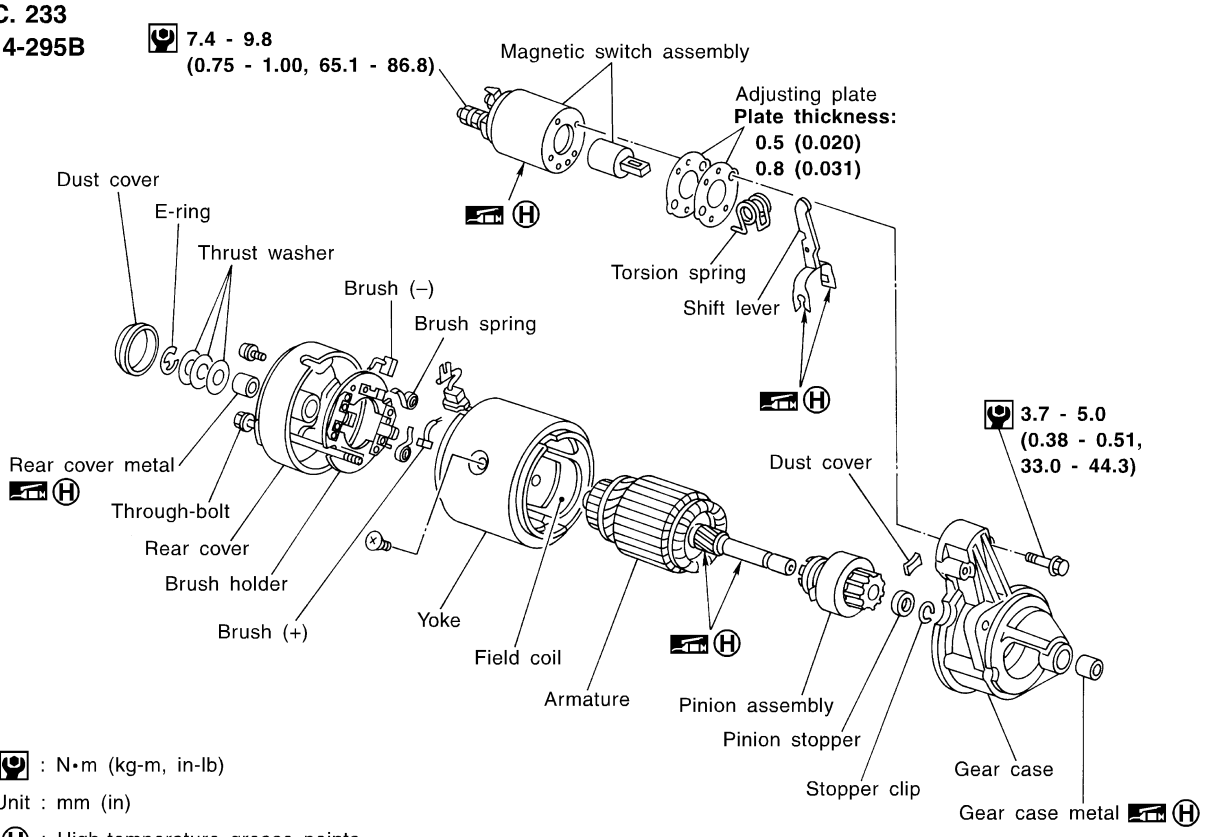
M20 W
E204 , E502 GY GY
E216 B
E218 , E505 GY GY

Refer to last page (Foldout page).
M5 , E101

GEL366A

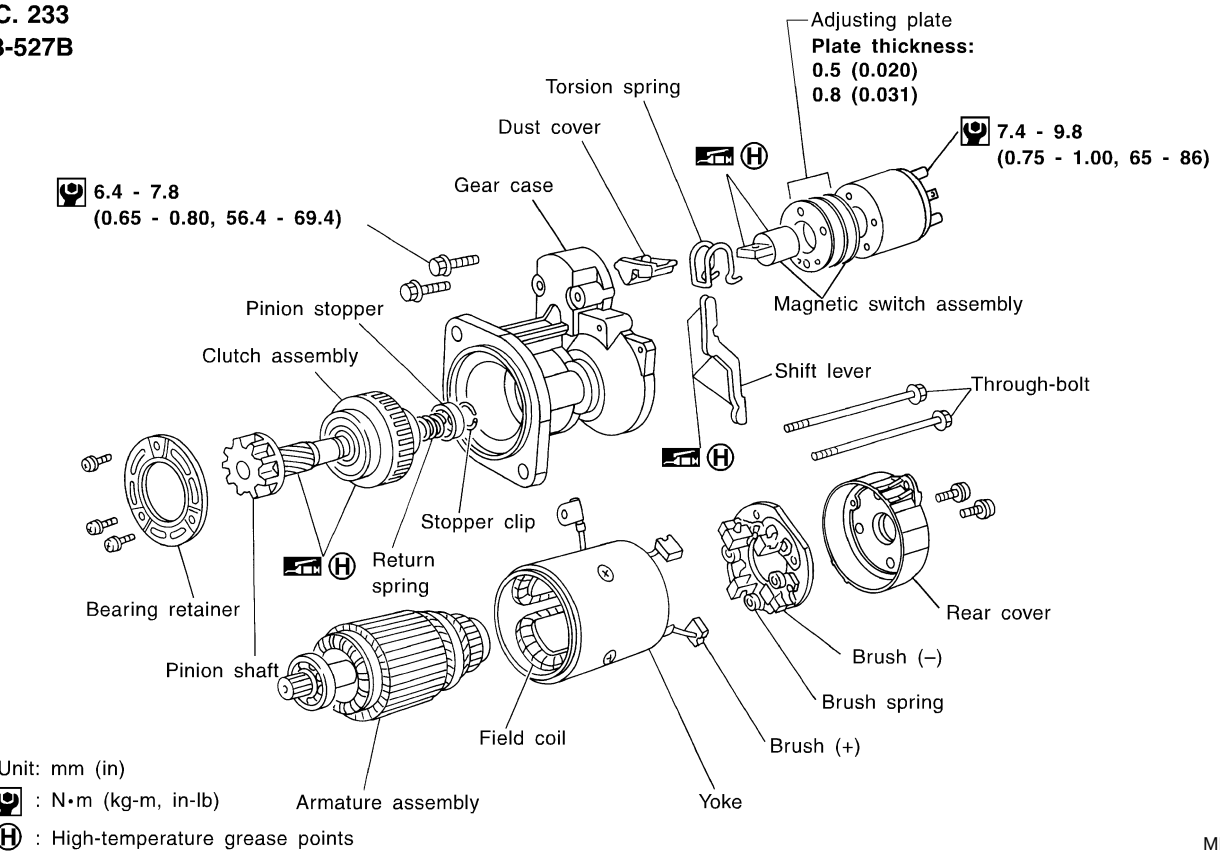
Construction

SEC. 233
S114-295B



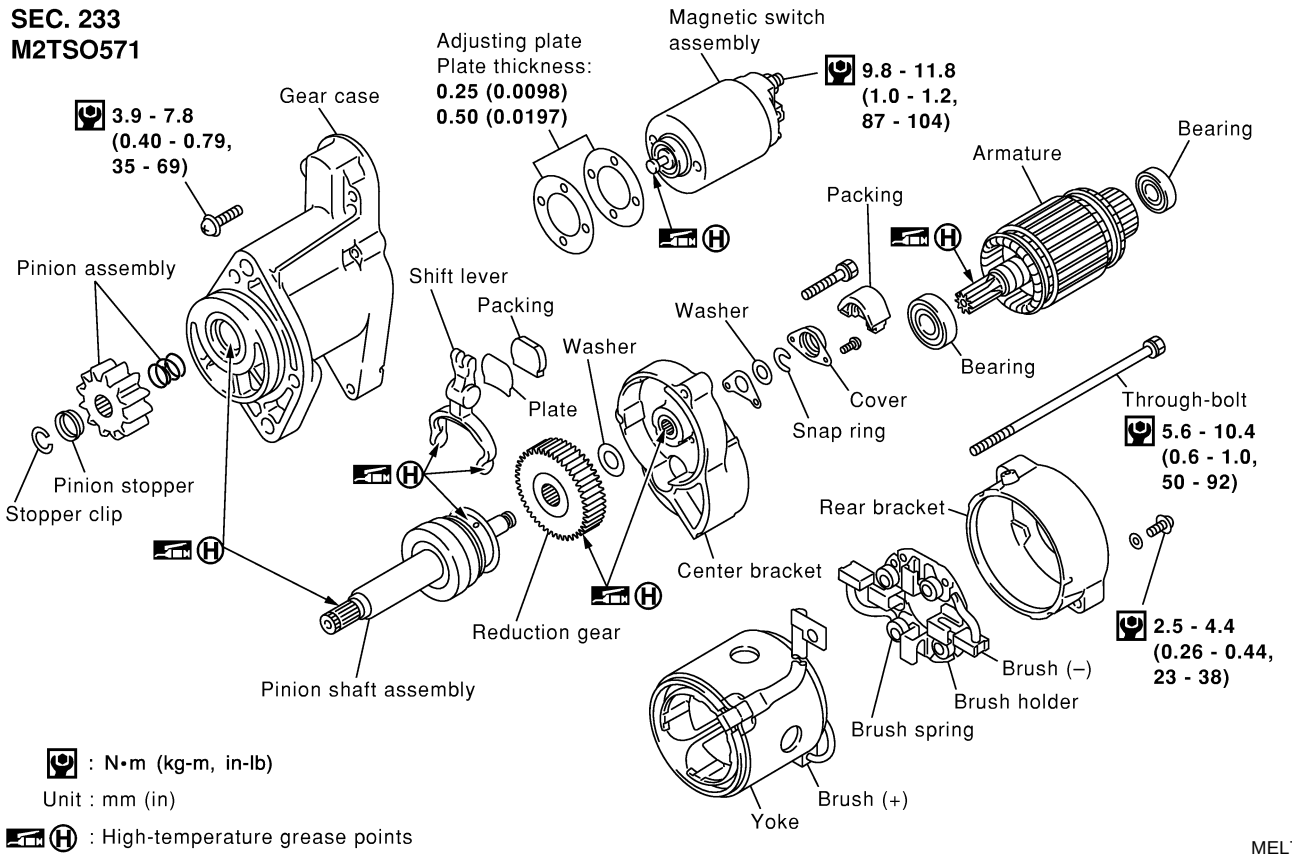
MEL700P

SEC. 233
S13-527B



MEL701P

Construction (Cont'd)



Service Data and Specifications (SDS)

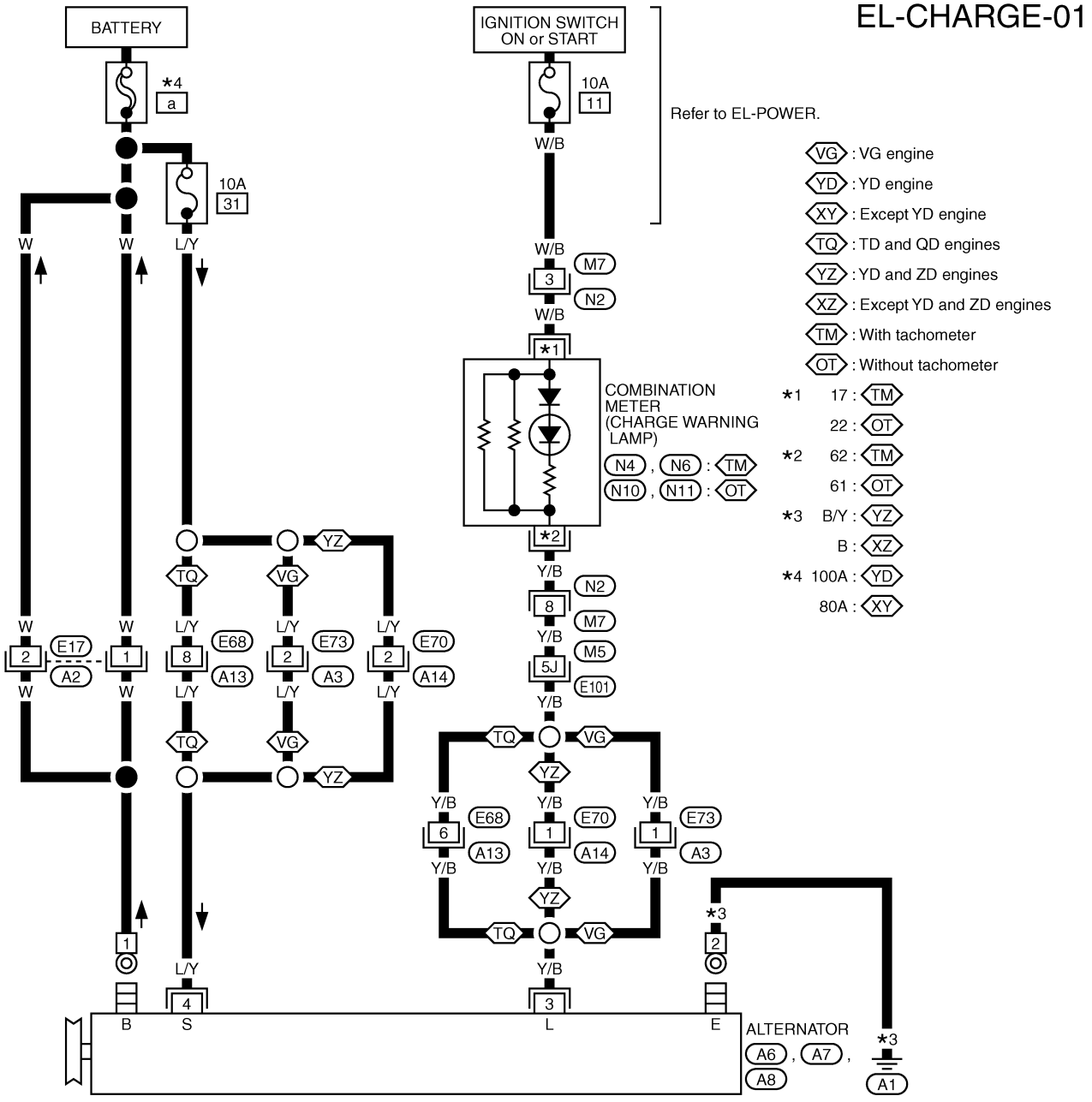
STARTER

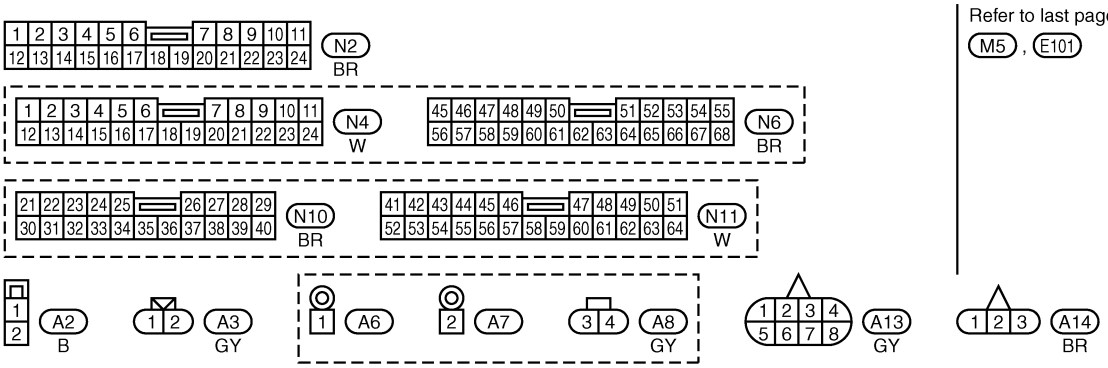
Type		M2TS0571		M3T29482D	S114-348A	S114-295B	S13-527B
		MITSUBISHI			HITACHI		
		Reduction		Non-reduction			Reduction
Applied model		2WD	4WD	2WD			4WD
		YD25		Z24			ZD30
		Standard		Standard		Option	Standard
System voltage	V	12					
No-load							
	Terminal voltage V	11.0		11.5			11.0
	Current A	Less than 145		Less than 60			Less than 160*
	Revolution rpm	More than 3,200		More than 6,500	More than 7,000	More than 6,000	More than 3,300
Minimum diameter of commutator	mm (in)	31.4 (1.236)			39.0 (1.535)		35.5 (1.398)
Minimum length of brush	mm (in)	11.0 (0.433)		11.5 (0.453)	12.0 (0.472)	11.0 (0.433)	
Brush spring tension	N (kg, lb)	26.7 - 36.1 (2.7 - 3.7, 6.0 - 8.2)		13.7 - 25.5 (1.4 - 2.6, 3.1 - 5.7)	17.7 - 21.6 (1.8 - 2.2, 4.0 - 4.9)	17.6 - 21.6 (1.8 - 2.2, 4.0 - 4.9)	28.4 - 34.3 (2.9 - 3.5, 6.4 - 7.7)
Clearance between bearing metal and armature shaft	mm (in)	Less than 0.2 (0.008)					—
Clearance "ℓ" 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)		—
Movement "ℓ" in height of pinion assembly	mm (in)	0.5 - 2.0 (0.020 - 0.079)		—			0.3 - 2.0 (0.01 - 0.079)

*: Includes magnet switch current.

Wiring Diagram — CHARGE —/Diesel Engine

EL-CHARGE-01



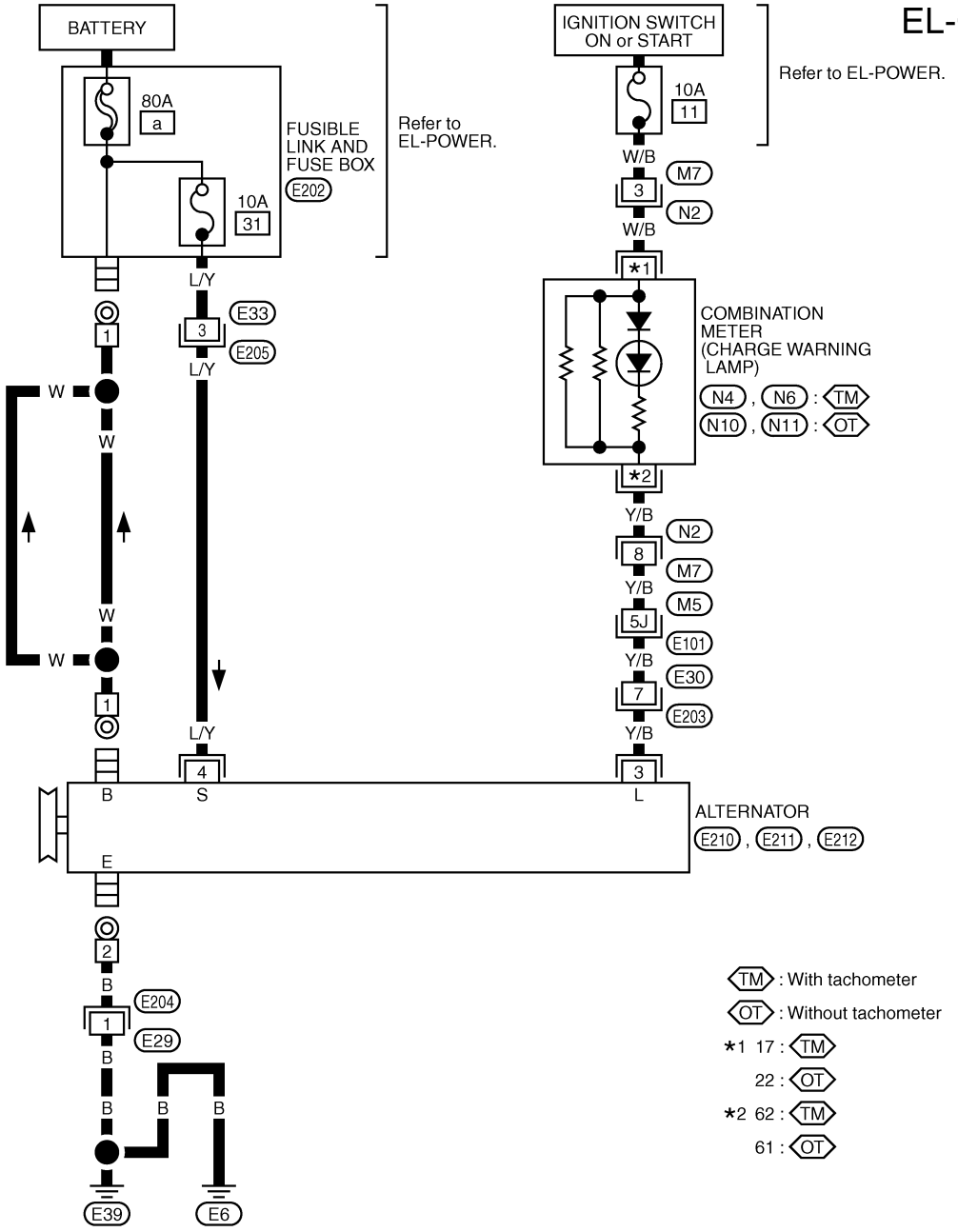


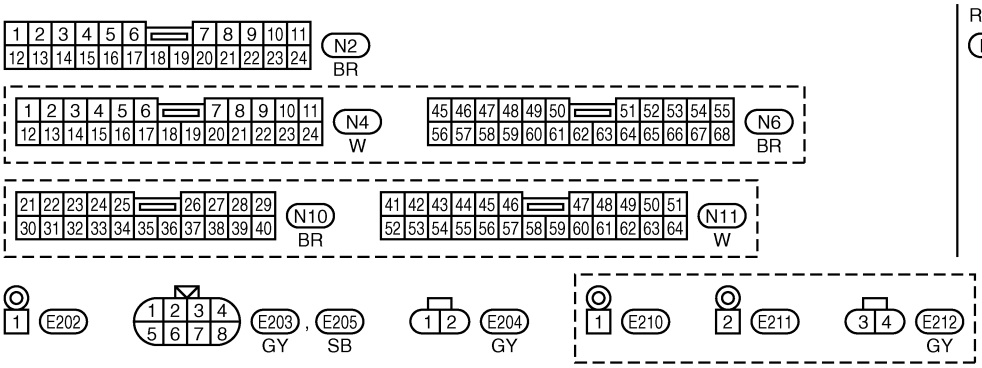
Refer to last page (Foldout page).
M5 , E101

GEL368A

Wiring Diagram — CHARGE — (KA engine)

EL-CHARGE-02

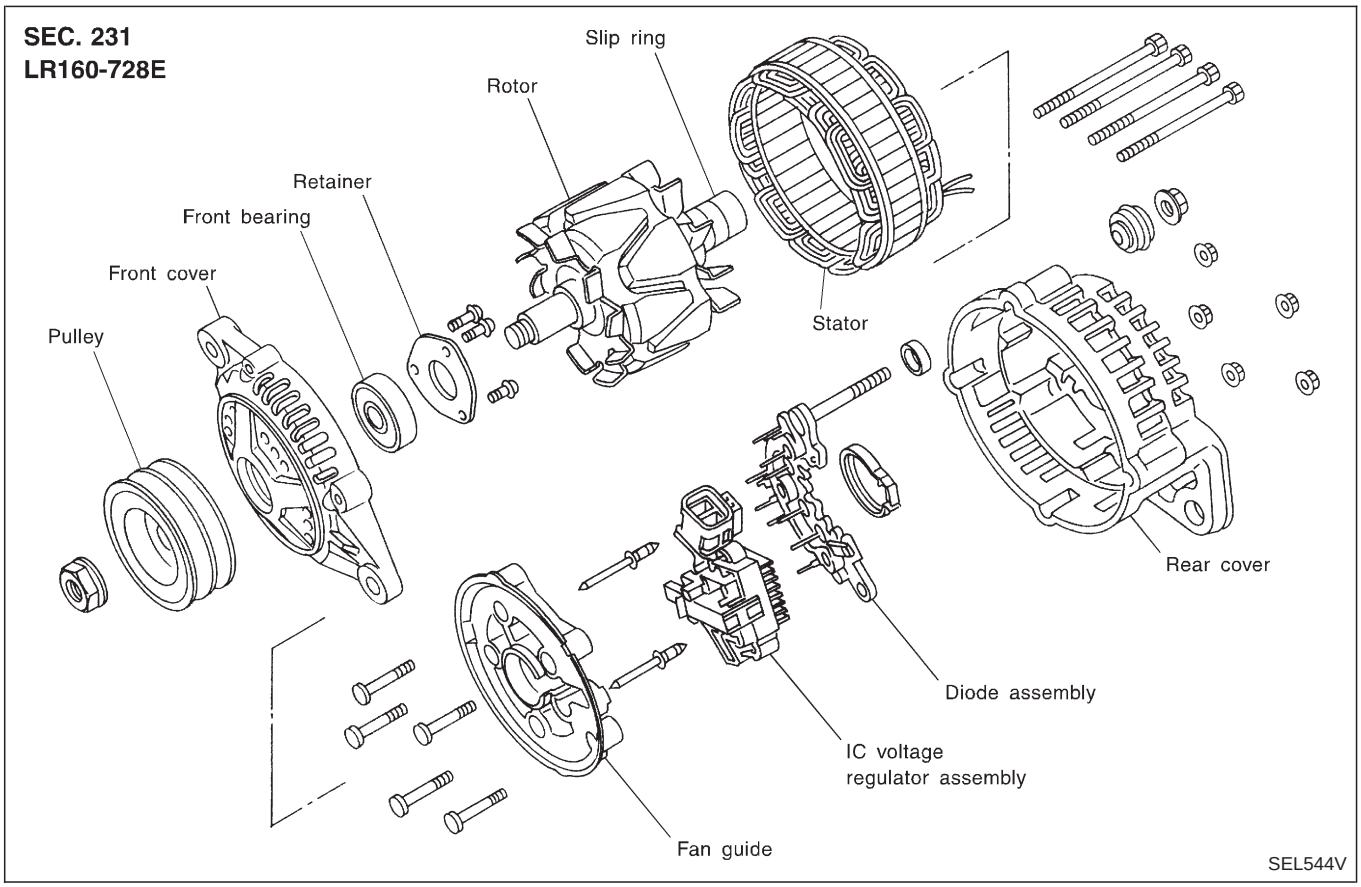


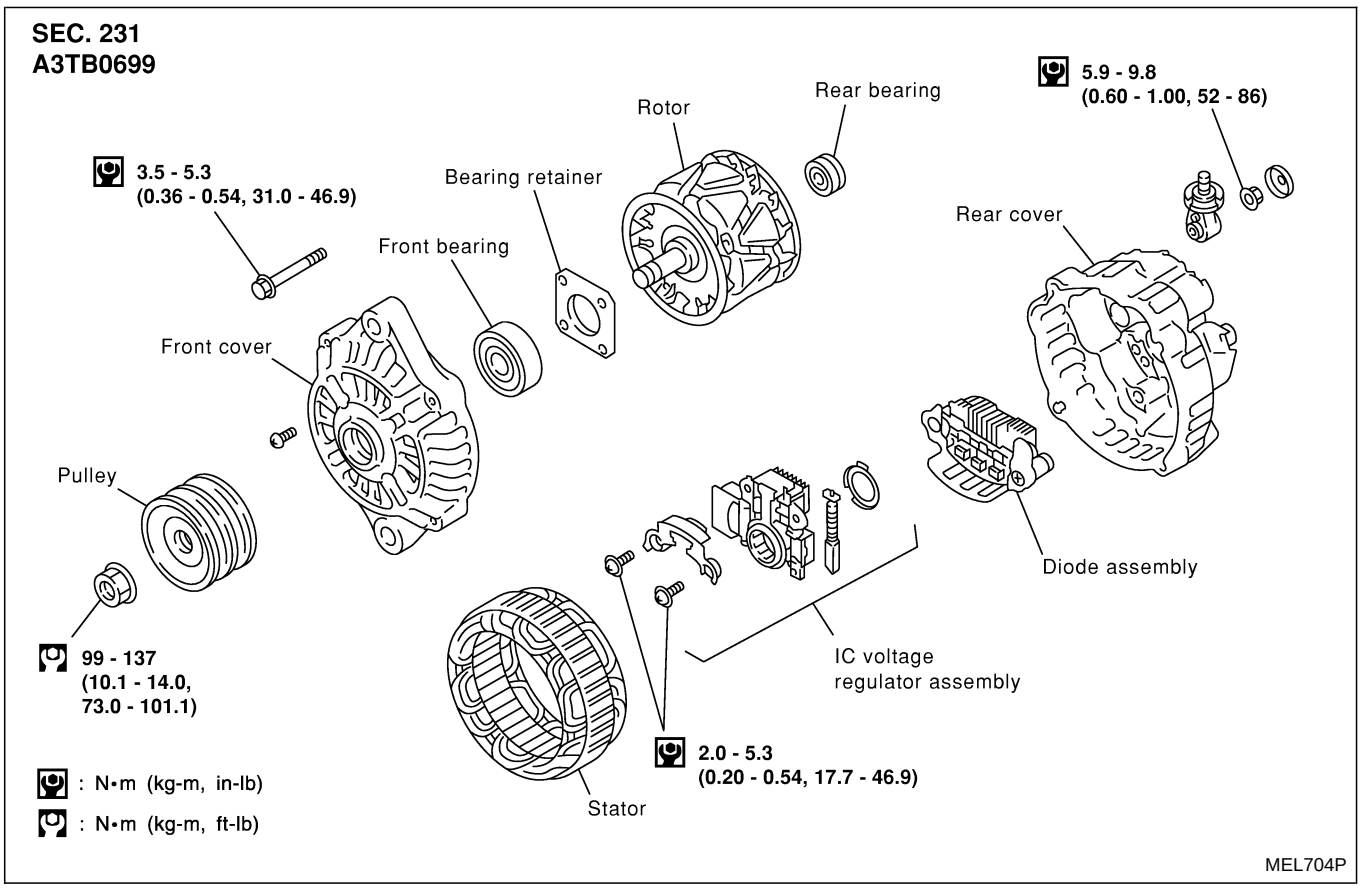


Refer to last page (Foldout page).
M5 , E101

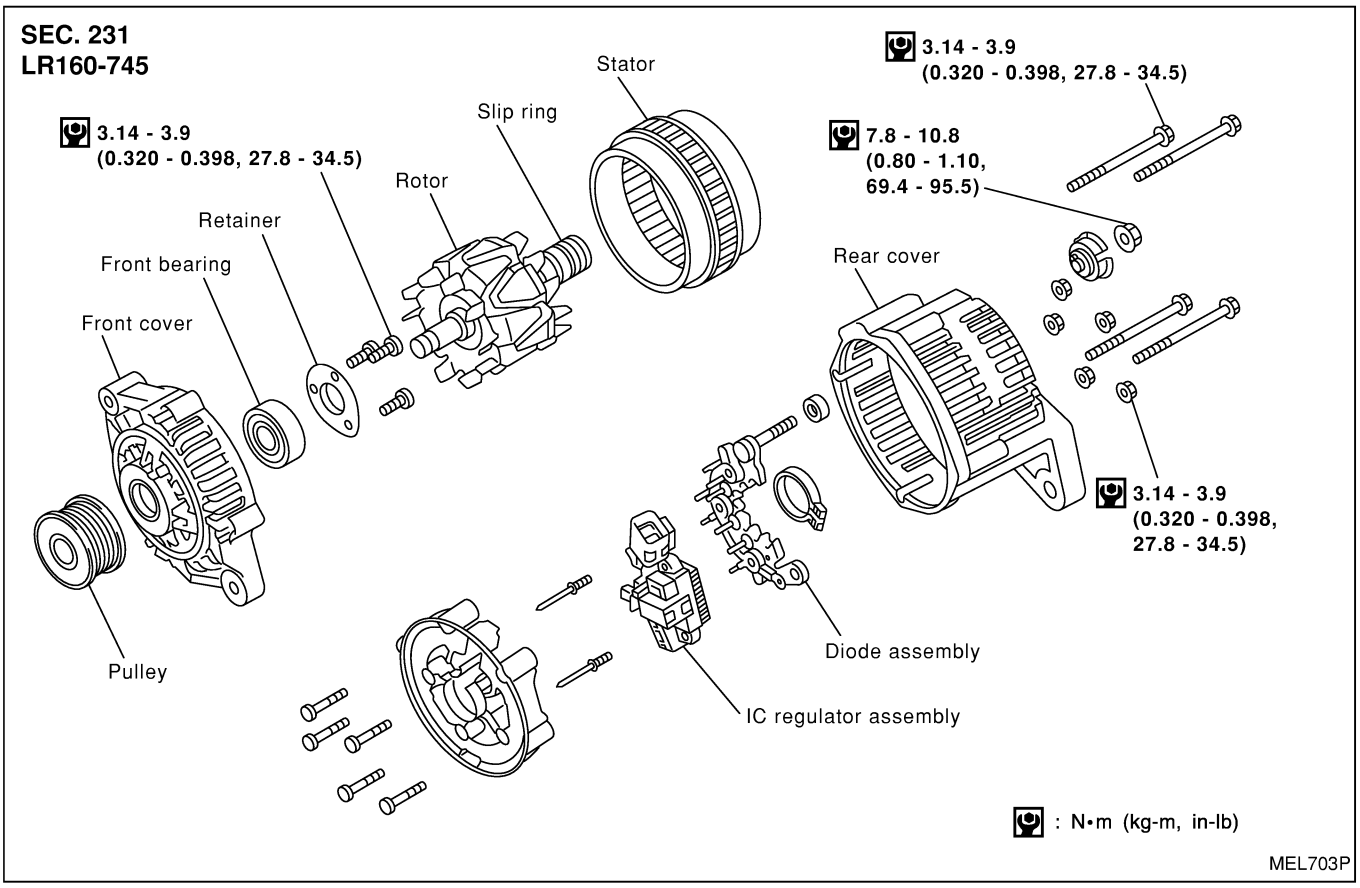
GEL238A

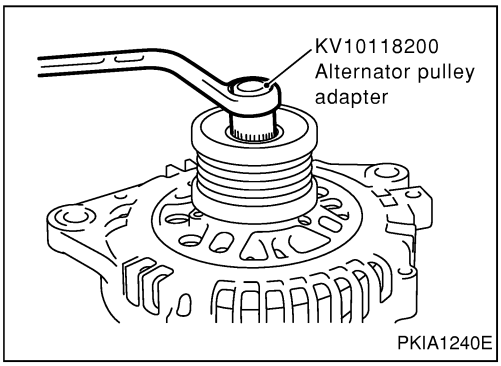
Construction





Construction (Cont'd)





Disassembly (For LR160-745)

- When removing alternator pulley, use special service tool (KV10118200).

Service Data and Specifications (SDS)

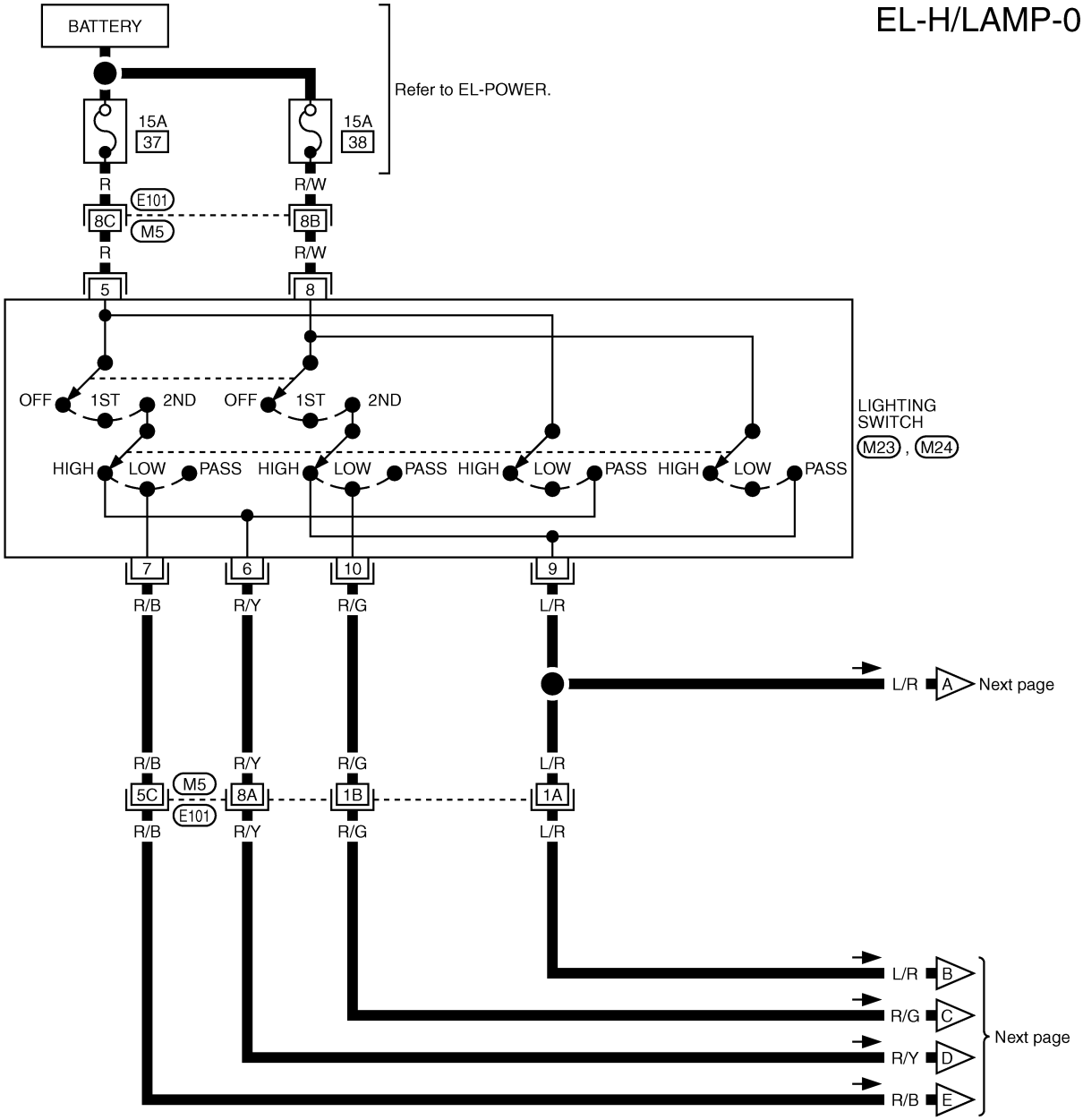
ALTERNATOR

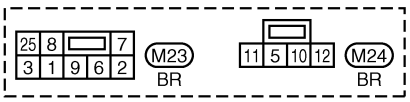
Type	A5TA5271	A7TA8471	A5TA5372	A3TB0699	LR160-745	LR160-728E
	MITSUBISHI				HITACHI	
Applied model	KA24DE	Z24		YD25	ZD30	TD27, QD32
		Standard	Option*			
Nominal rating V-A	12-70	12-35	12-70	12-90	12-60	
Ground polarity	Negative					
Minimum revolution under no-load (When 13.5V is applied) rpm	Less than 1,300				Less than 1,000	
Hot output current (When 13.5V is applied) A/rpm	More than 14/1,300 More than 54/2,500	More than 27/2,500	More than 18/1,300 More than 51/2,500	More than 29/1,300 More than 76/2,500 More than 88/5,000	More than 17/1,300 More than 48/2,500 More than 57/5,000	
Regulated output voltage V	14.1 - 14.7					
Minimum length of brush mm (in)	5.0 (0.20)				6.0 (0.236)	
Brush spring pressure N (g, oz)	4.8 - 6.0 (487 - 612, 17.25 - 21.59)				1.0 - 3.43 (102 - 350, 3.60 - 12.34)	
Slip ring minimum outer diameter mm (in)	22.1 (0.870)				26.0 (1.024)	
Rotor (Field coil) resistance Ω	2.5 - 2.9	2.7 - 3.2	2.5 - 2.9	2.1 - 2.5	2.6	2.58

*: Models with power steering and air conditioner

Wiring Diagram — H/LAMP —/LHD Models

EL-H/LAMP-01





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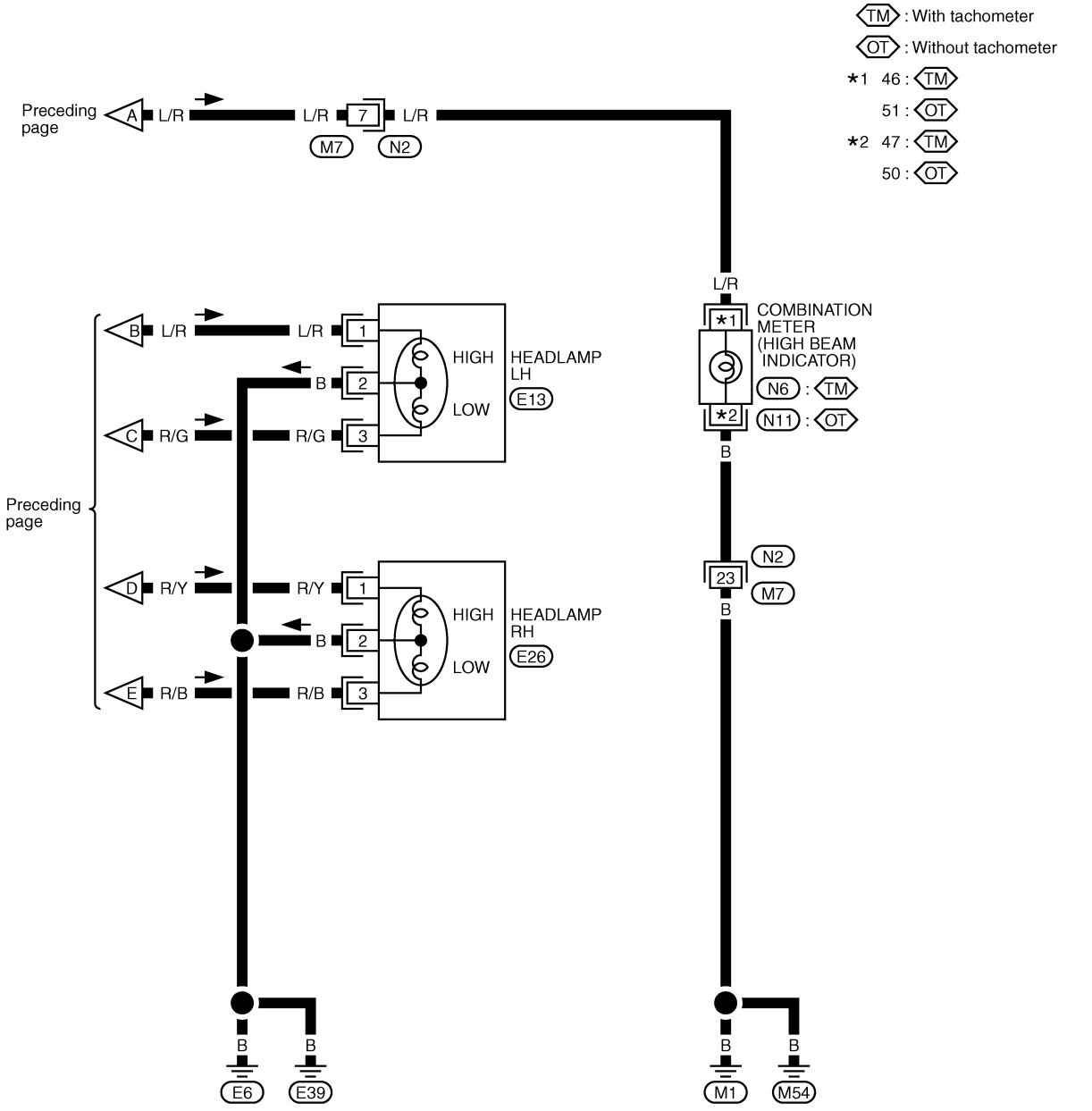
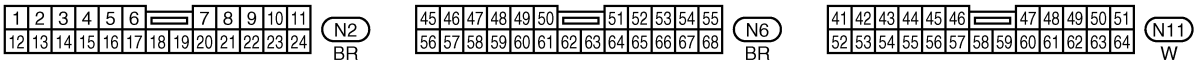
M5 , E101

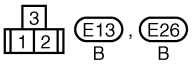
GEL239A

Wiring Diagram — H/LAMP —/LHD Models (Cont'd)

EL-H/LAMP-02



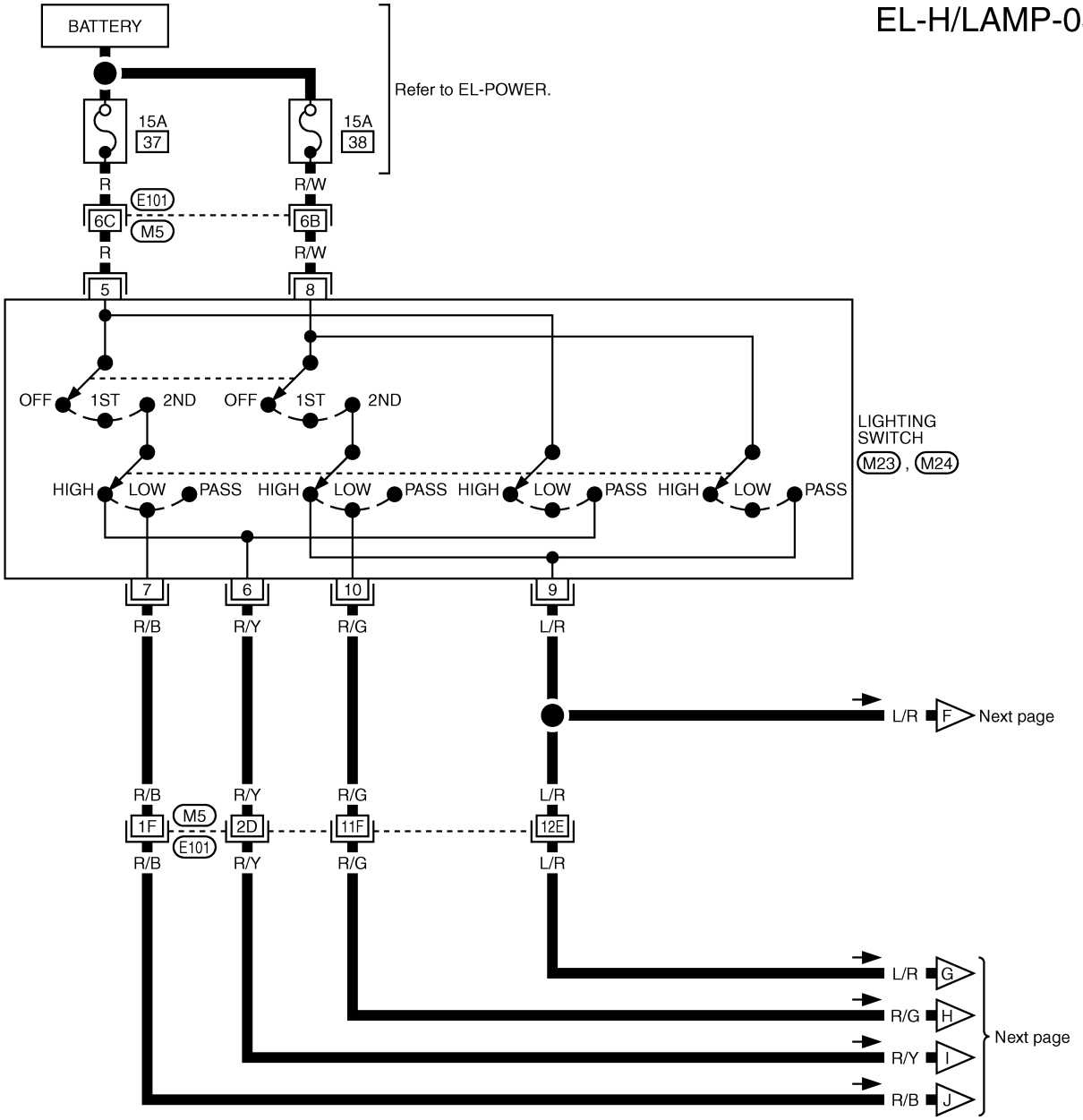


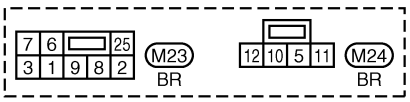


GEL240A

Wiring Diagram — H/LAMP —/RHD Models

EL-H/LAMP-03





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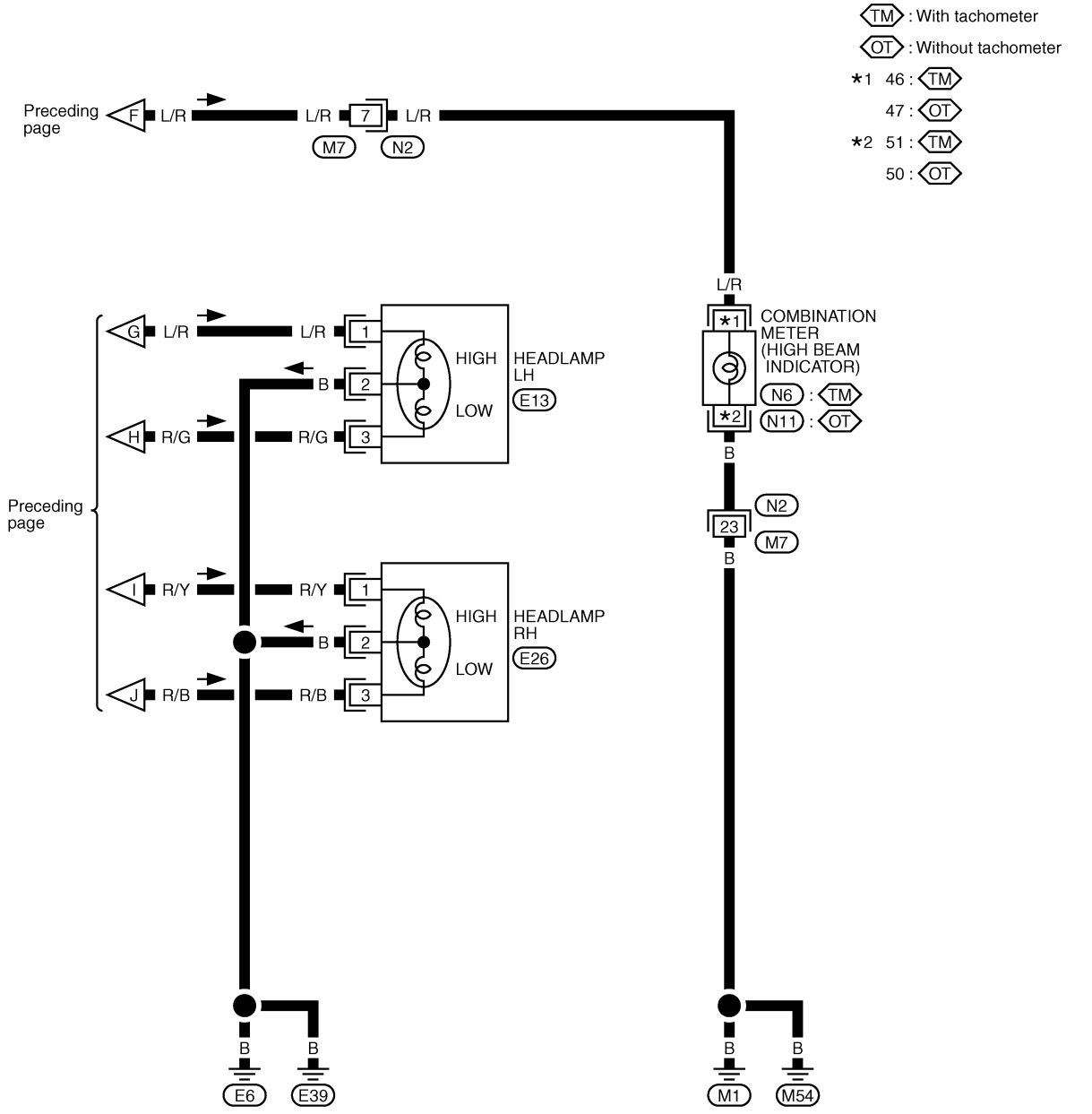
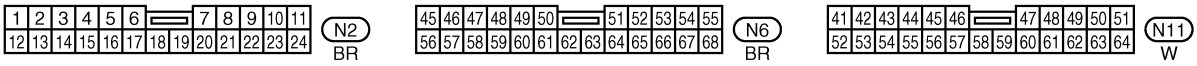
M5 , E101

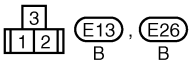
GEL369A

Wiring Diagram — H/LAMP —/RHD Models (Cont'd)

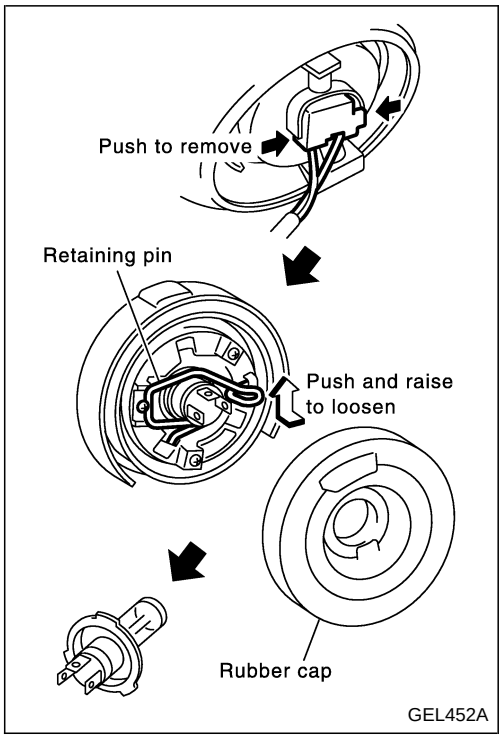
EL-H/LAMP-04







GEL370A



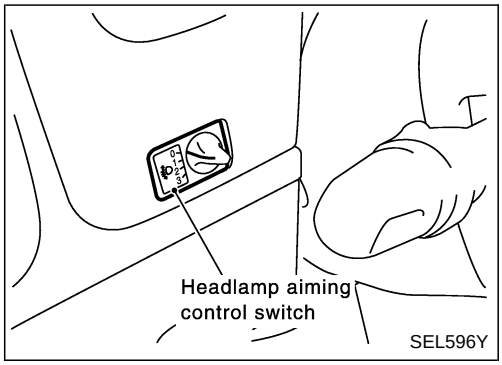
Bulb Replacement

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. Pull off the rubber cap.
4. Push and raise retaining pin to loosen it.
5. Remove the headlamp bulb carefully. Do not shake or rotate the bulb when removing it.
6. Install in the reverse order of removal.

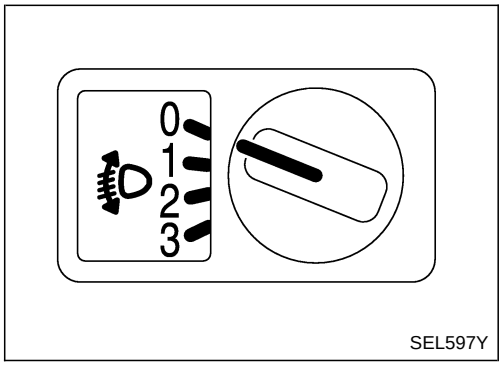
CAUTION:
Do not leave headlamp reflector without bulb for a long period of time. Dust, moisture, smoke, etc. entering headlamp body may affect the performance of the headlamp. Remove headlamp bulb from the headlamp reflector just before a replacement bulb is installed.



Aiming Adjustment

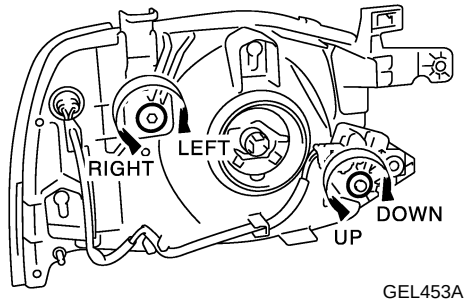
When performing headlamp aiming adjustment, use an aiming machine, aiming wall screen or headlamp tester. Aimers should be in good repair, calibrated and operated in accordance with respective operation manuals.
If any aimer is not available, aiming adjustment can be done as follows:
For details, refer to the regulations in your own country.

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



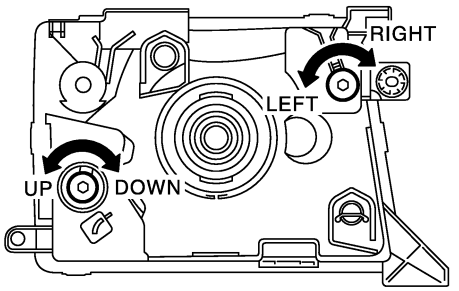
CAUTION:
Be sure aiming switch is set to "0" when performing aiming adjustment on vehicles equipped with headlamp aiming control.

Multi-beam type headlamp

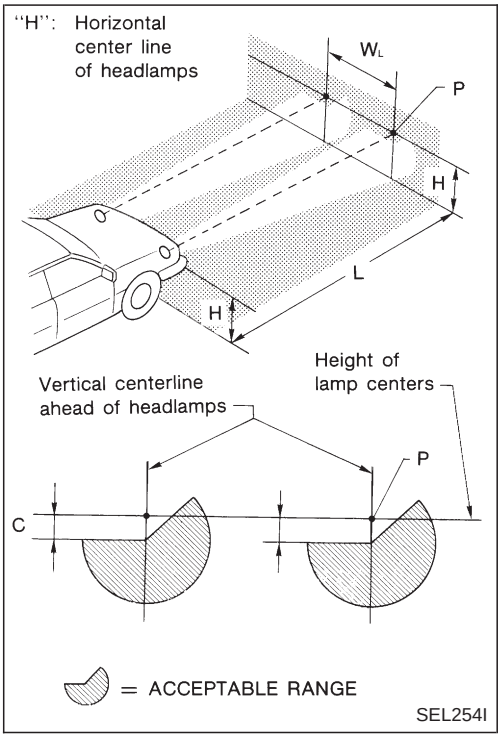


GEL453A

Non-multi-beam type headlamp



GEL454A



SEL254I

Low Beam

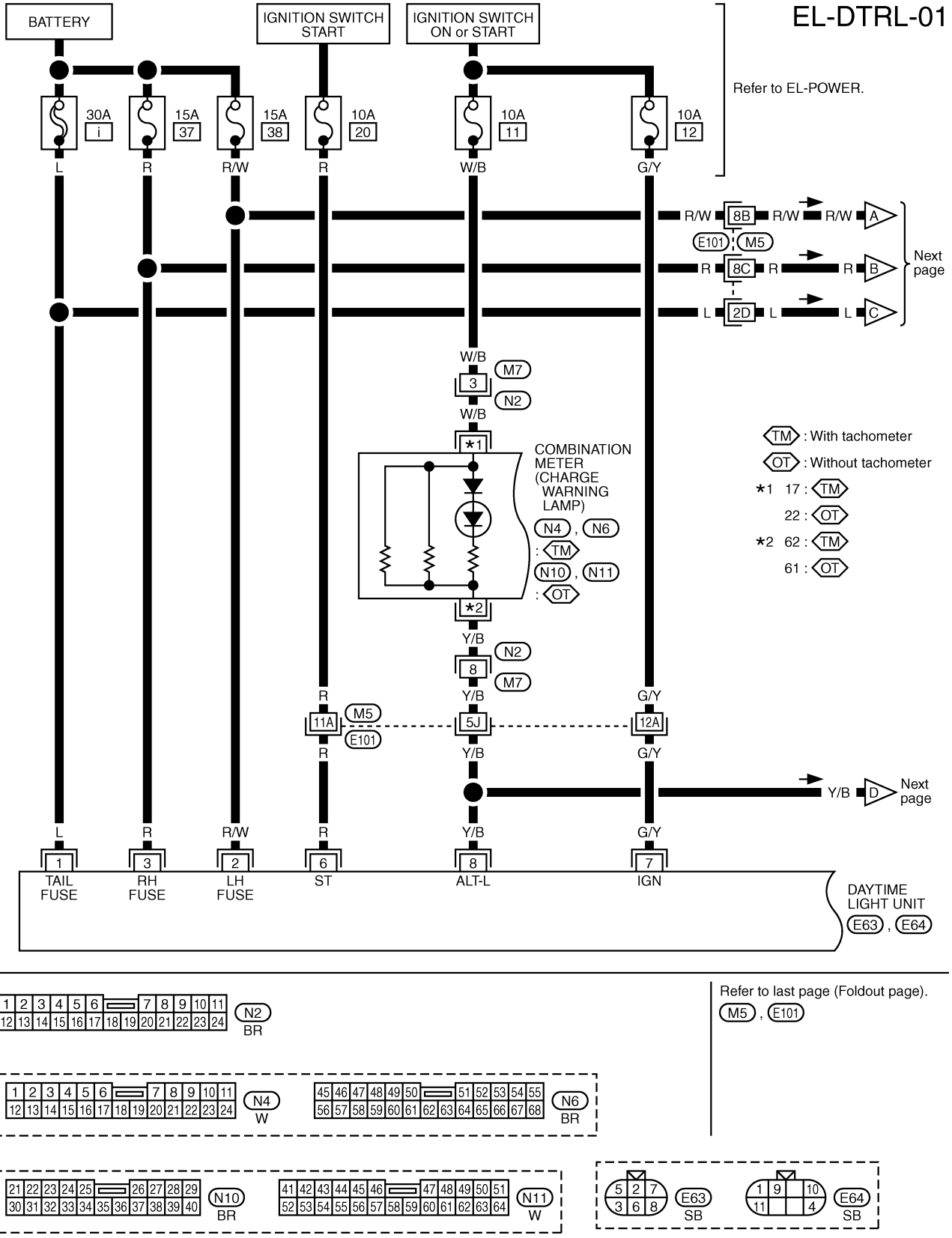
1. Turn headlamp low beam on.
2. Use adjusting screws to perform aiming adjustment.

- **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)

Wiring Diagram — DTRL —

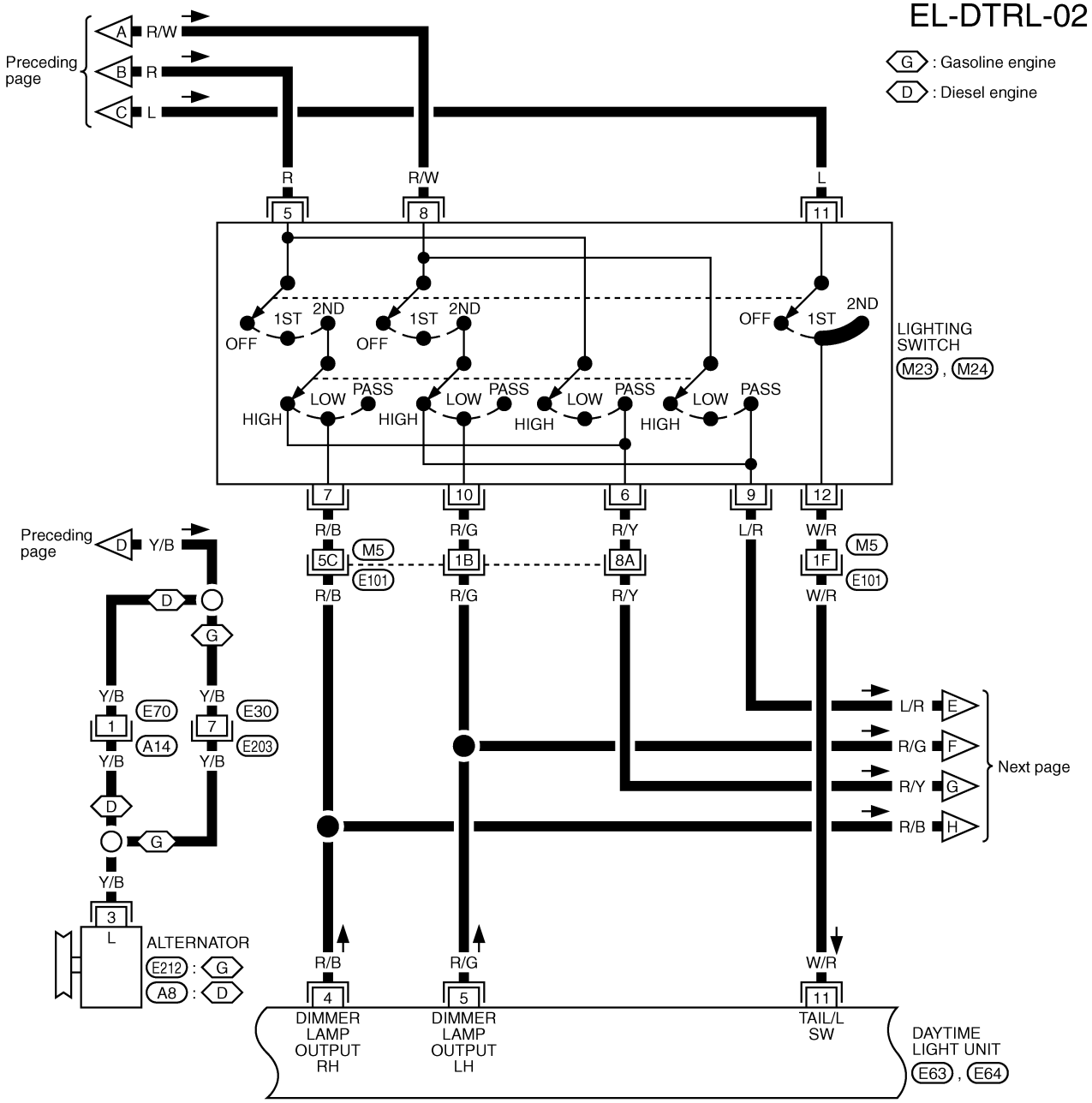


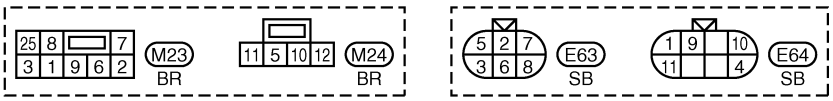
Refer to last page (Foldout page).
M5 , E101

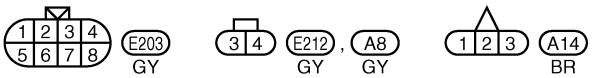
GEL371A

Wiring Diagram — DTRL — (Cont'd)

EL-DTRL-02





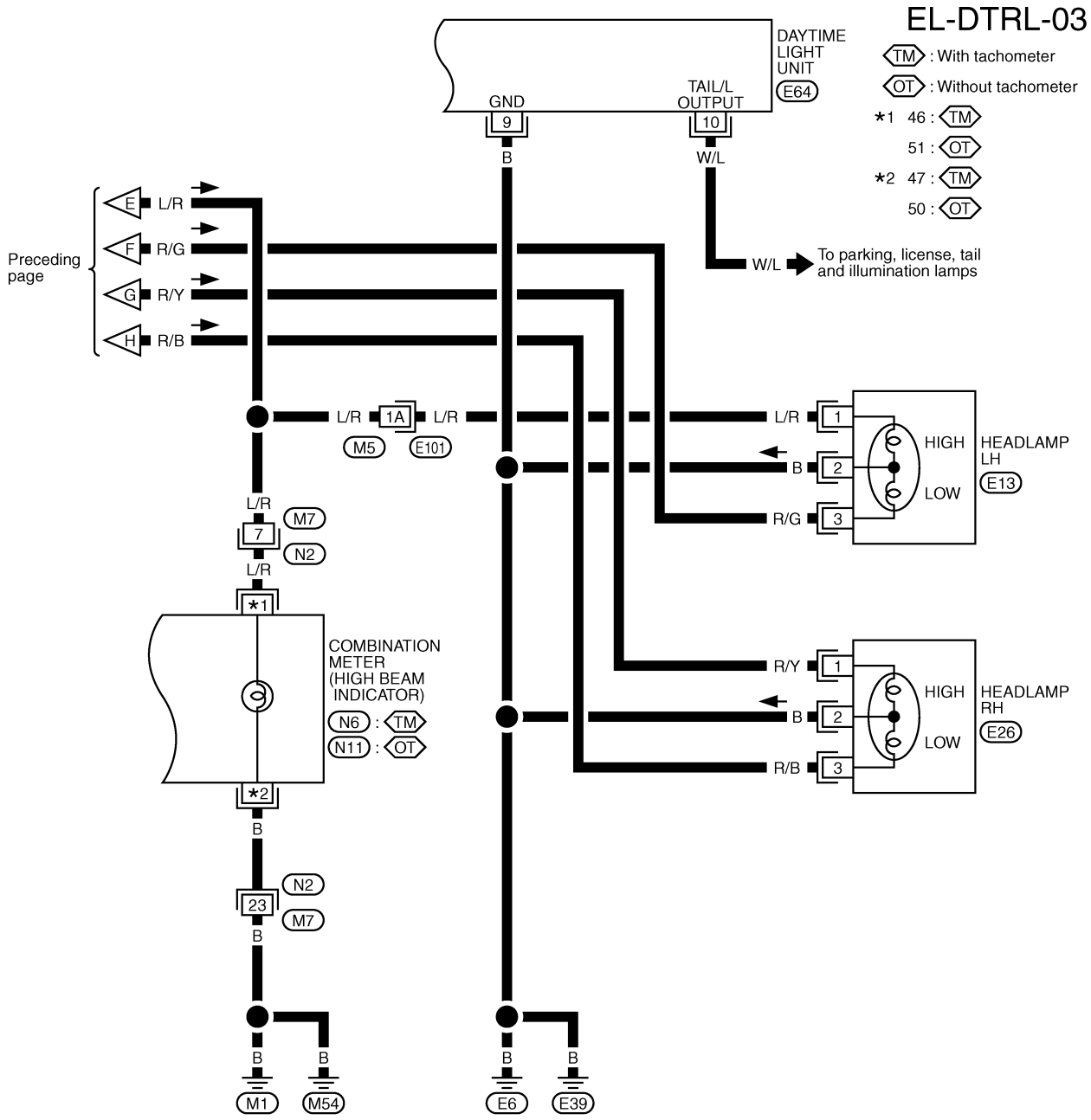


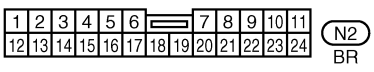
Refer to last page (Foldout page).

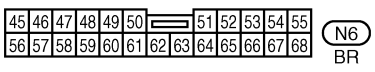
M5 , E101

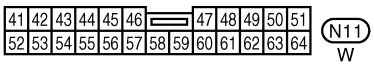
GEL372A

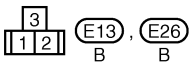
Wiring Diagram — DTRL — (Cont'd)

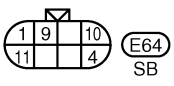












Refer to last page (Foldout page).
M5 , E101

GEL373A

Bulb Replacement

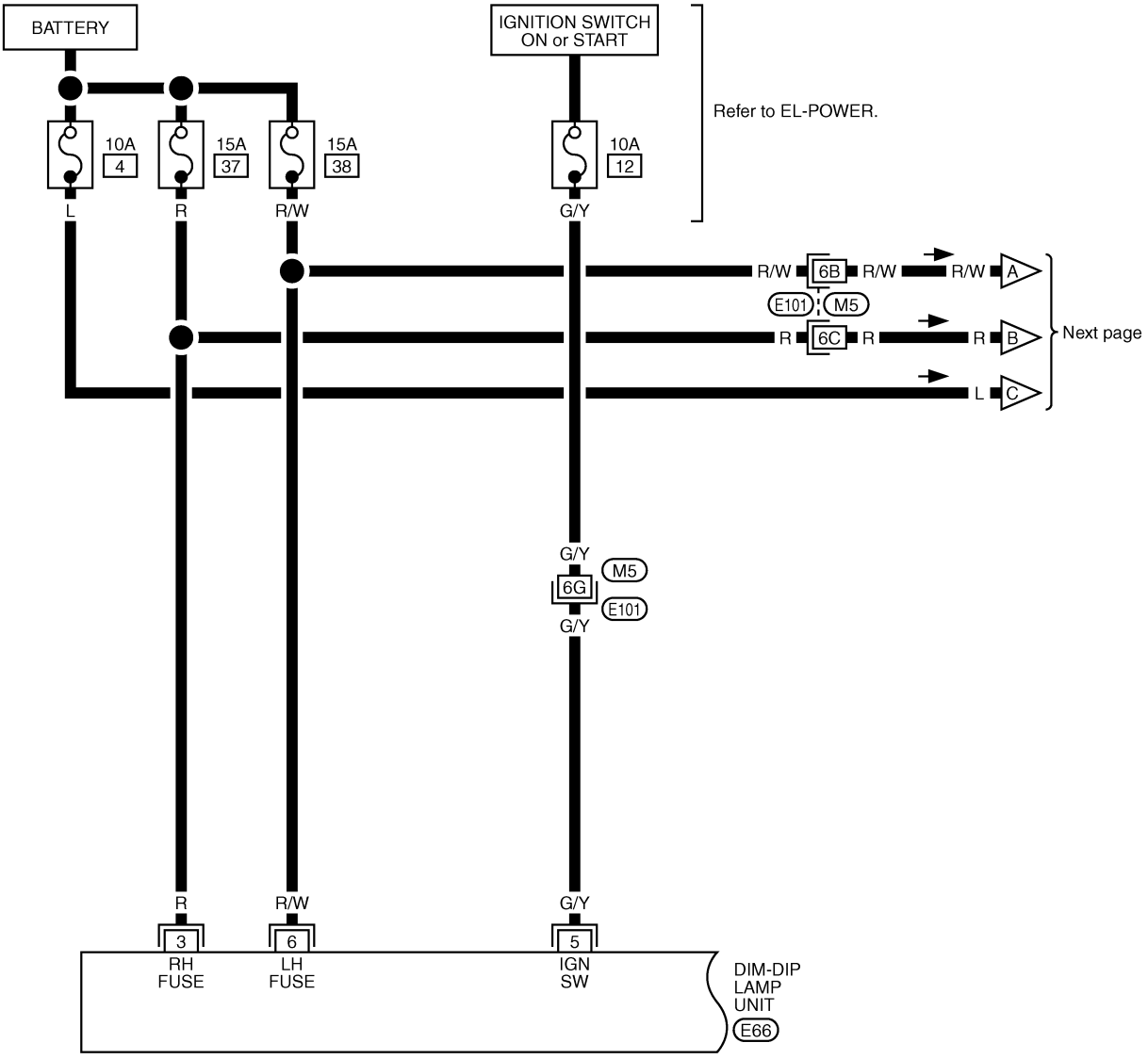
For bulb replacement, refer to “HEADLAMP — Conventional Type —” EL-3027.

Aiming Adjustment

For aiming adjustment, refer to “HEADLAMP — Conventional Type —” EL-3027.

Wiring Diagram — DIMDIP —

EL-DIMDIP-01



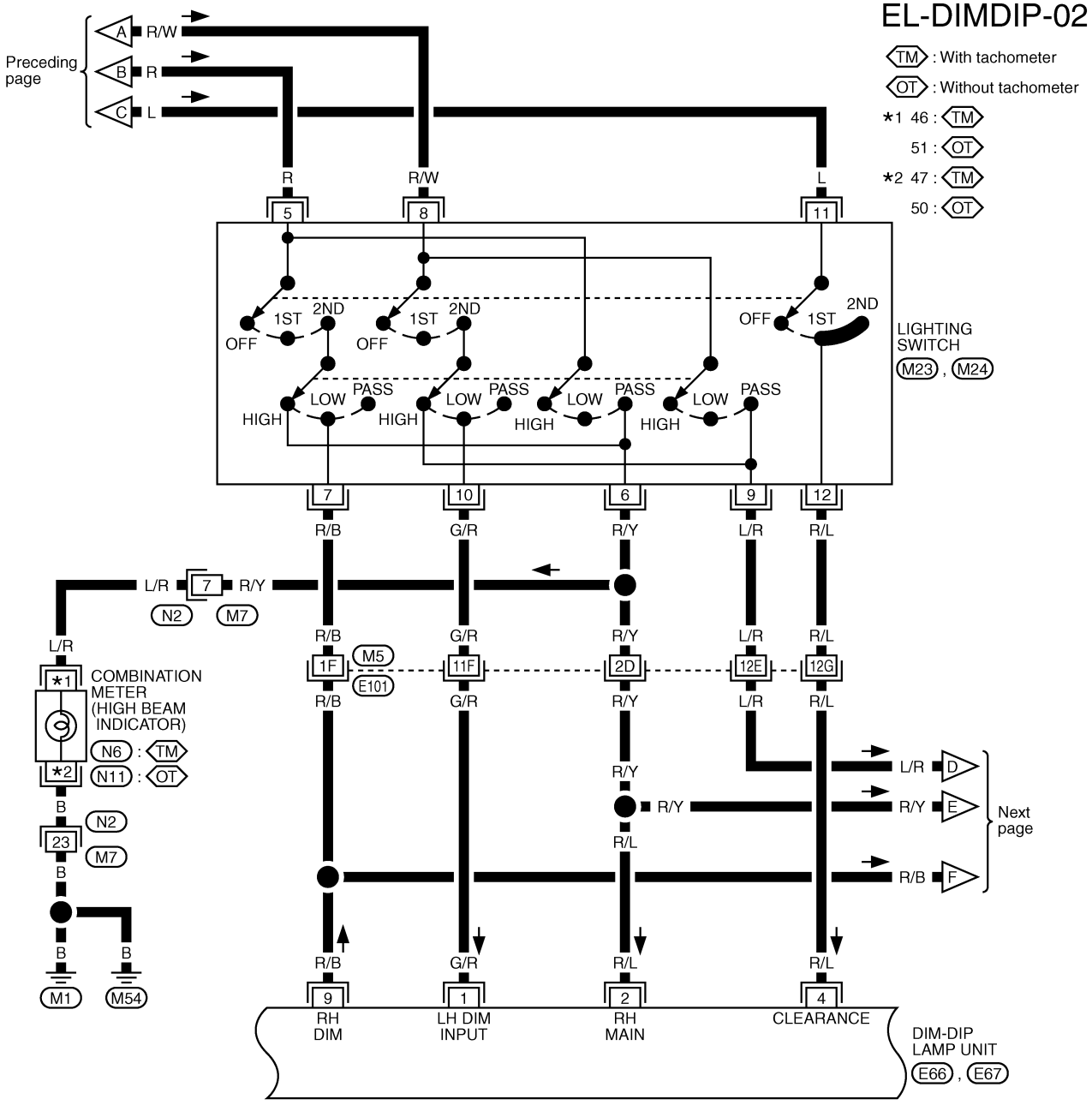
8 7 6
2 5 3
E66
GY

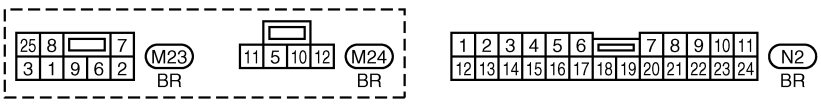
Refer to last page (Foldout page).
M5 , E101

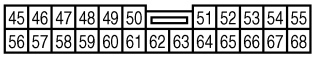
GEL374A

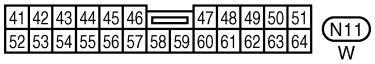
Wiring Diagram — DIMDIP — (Cont'd)

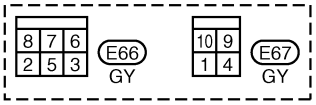
EL-DIMDIP-02











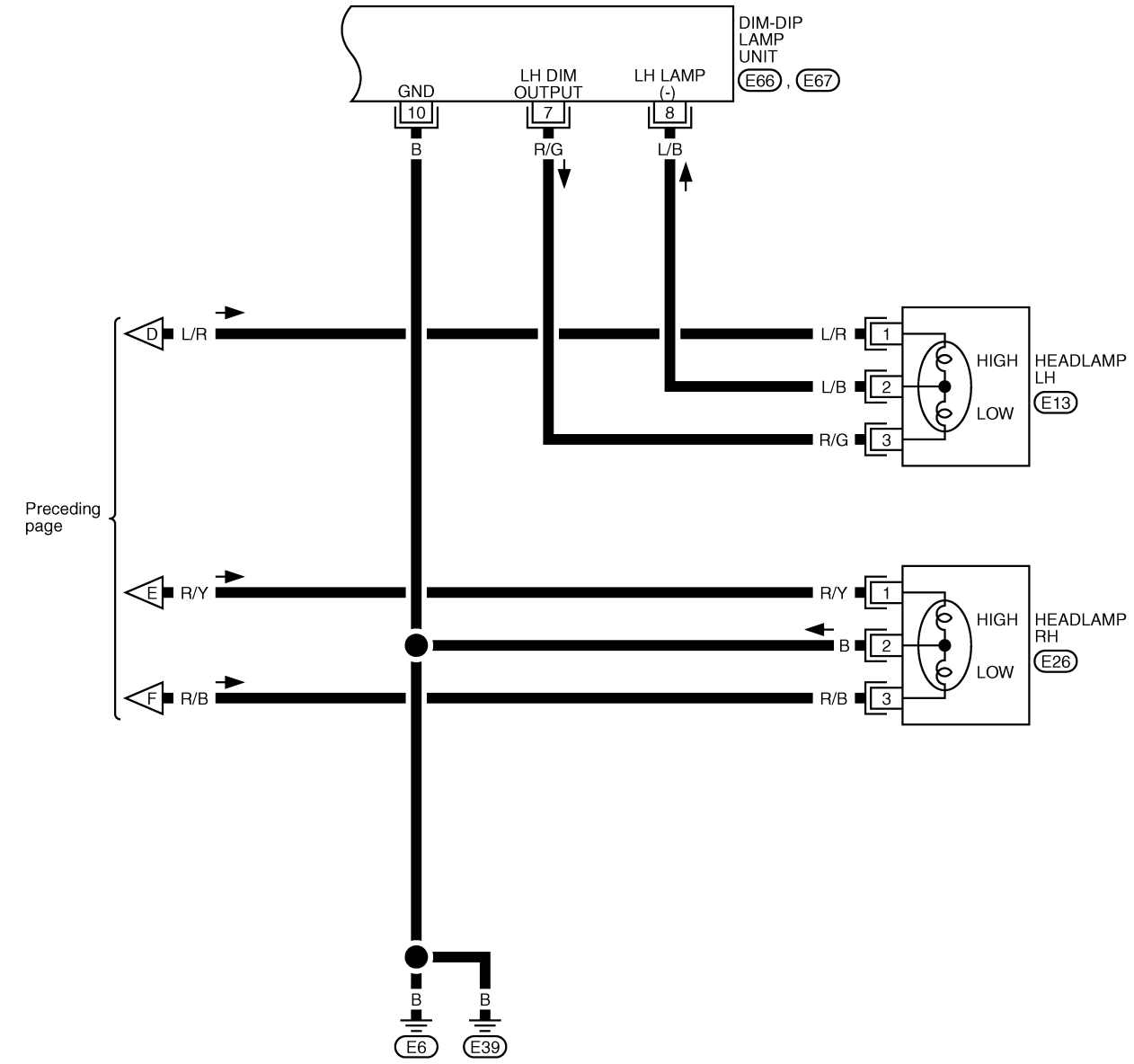
Refer to last page (Foldout page).

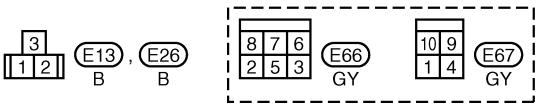
M5 , E101

GEL375A

Wiring Diagram — DIMDIP — (Cont'd)

EL-DIMDIP-03





GEL376A

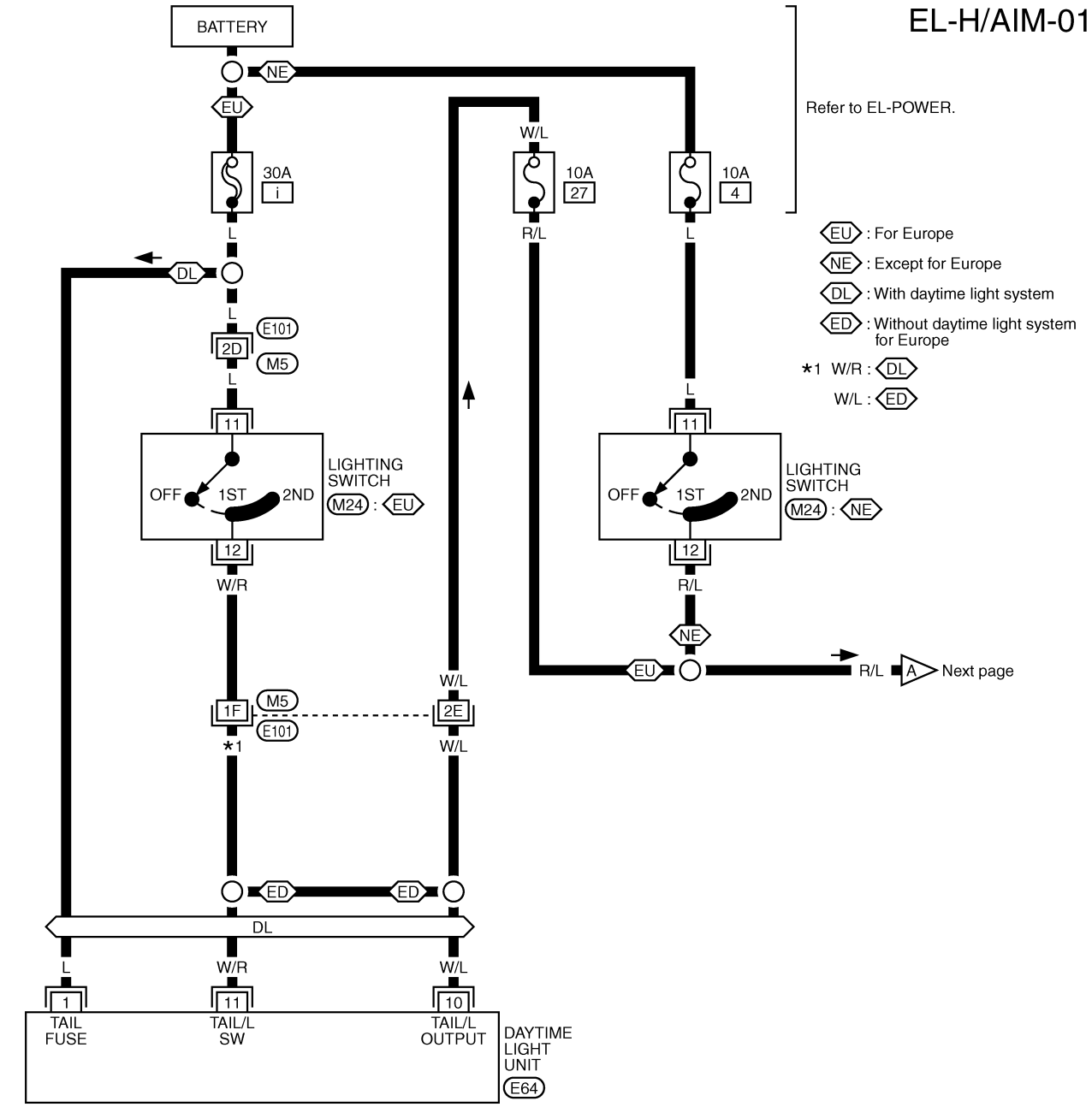
Bulb Replacement

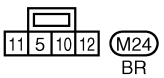
For bulb replacement, refer to EL-3027.

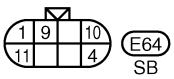
Aiming Adjustment

For aiming adjustment, refer to EL-3027.

Wiring Diagram — H/AIM —





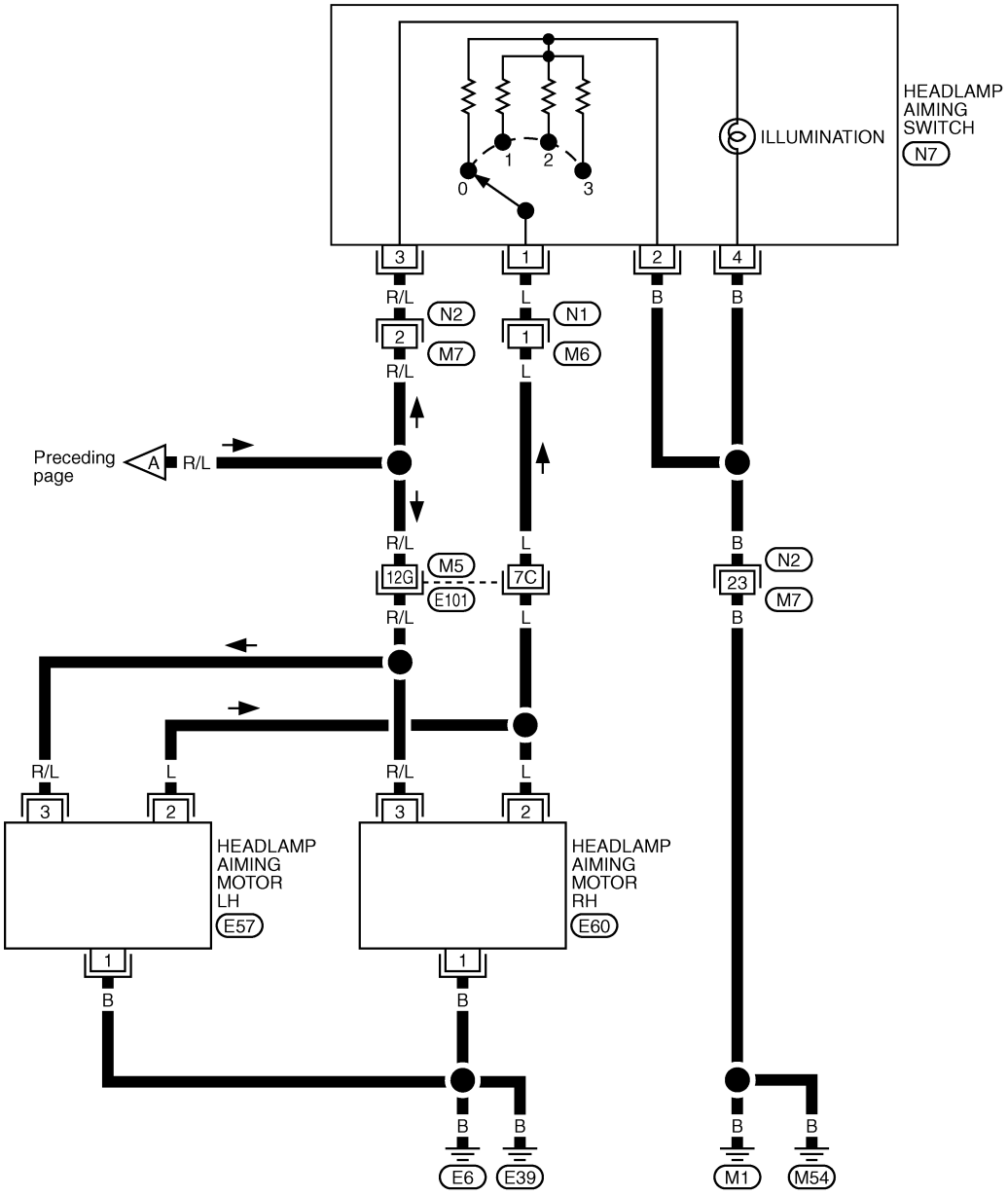


Refer to last page (Foldout page).
M5 , E101

GEL377A

Wiring Diagram — H/AIM — (Cont'd)

EL-H/AIM-02



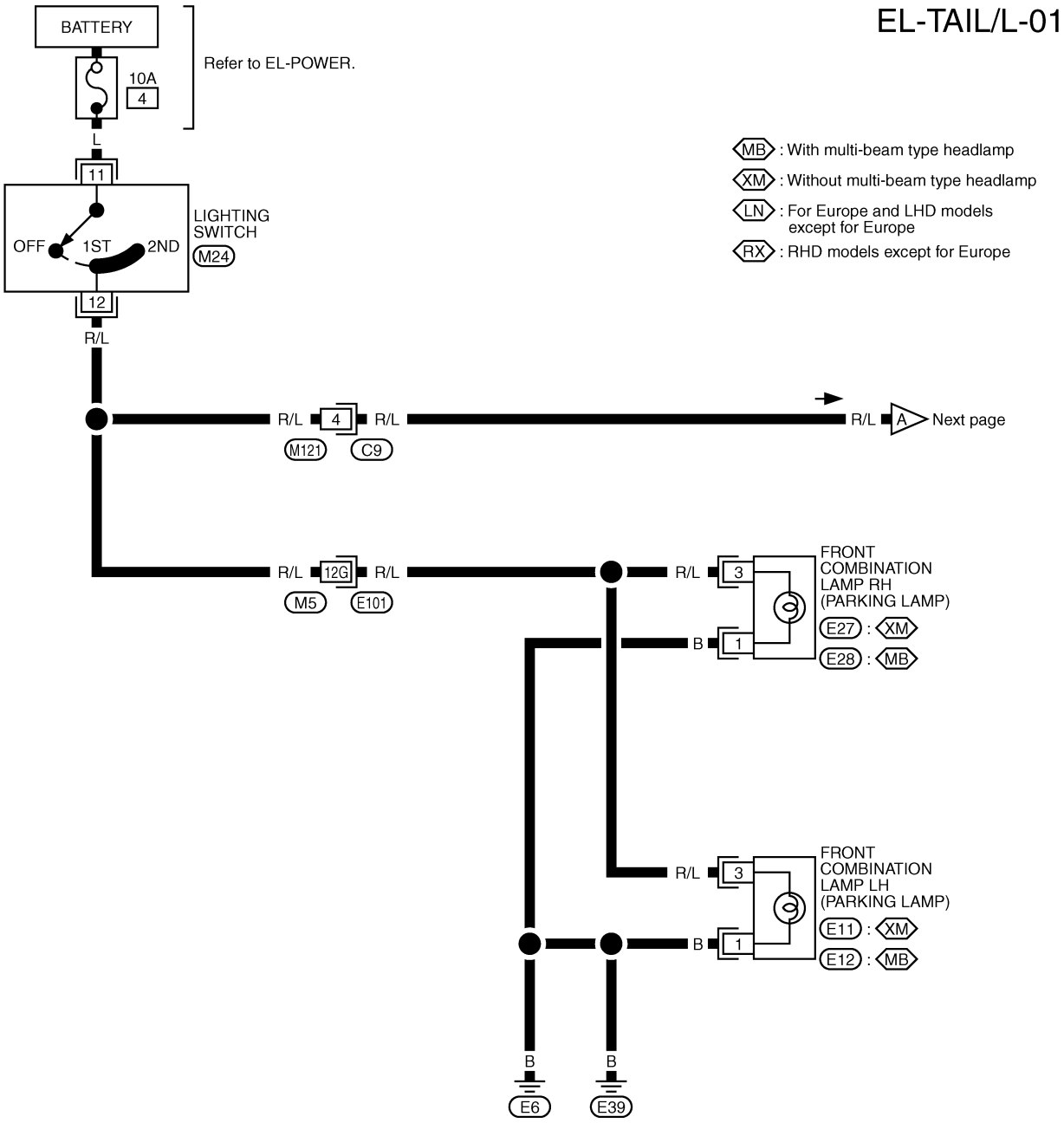
Refer to last page (Foldout page).

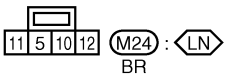
M5 , E101

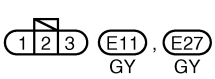
GEL378A

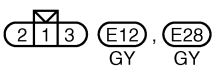
Wiring Diagram — TAIL/L —/Except LHD Models for Europe

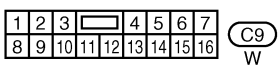
EL-TAIL/L-01









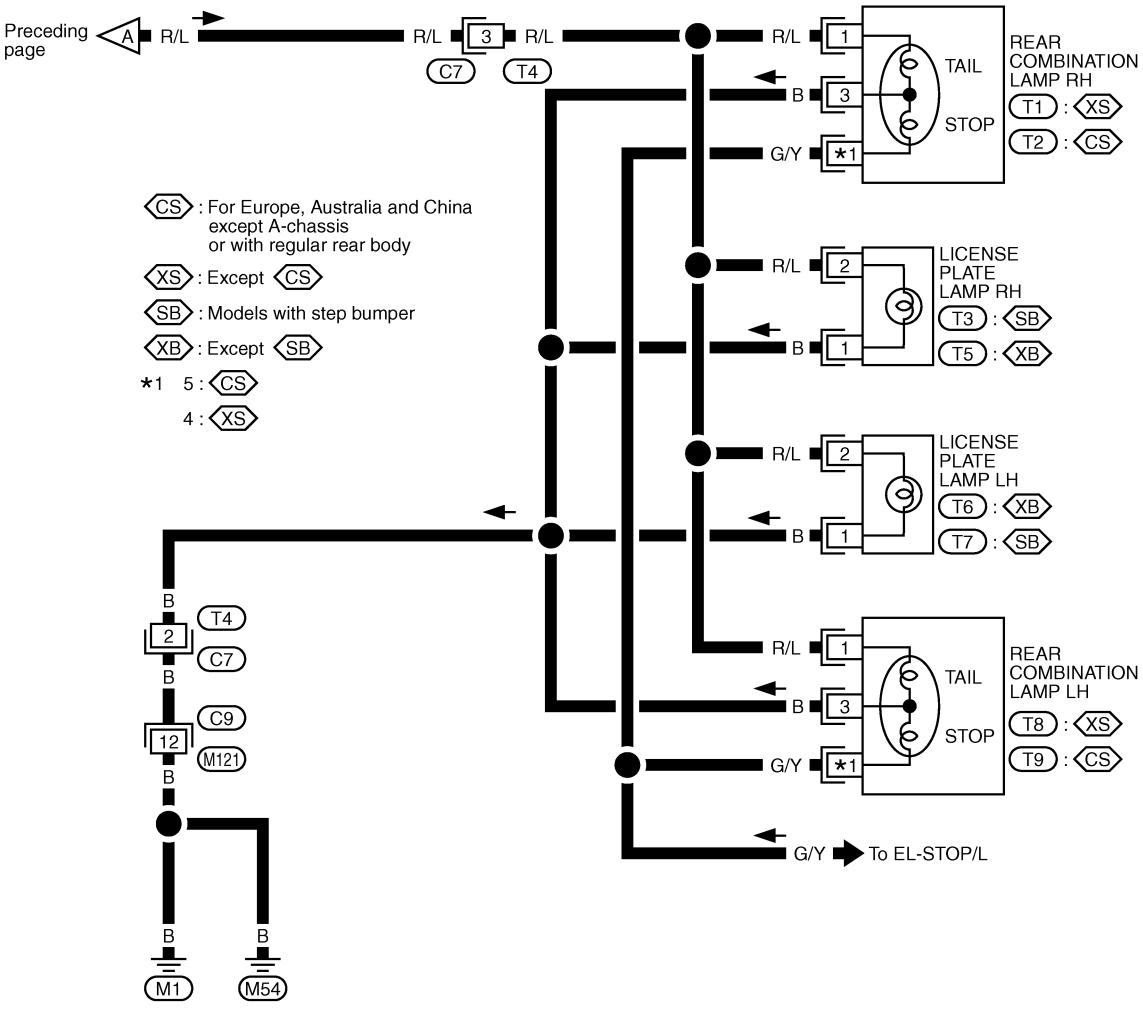


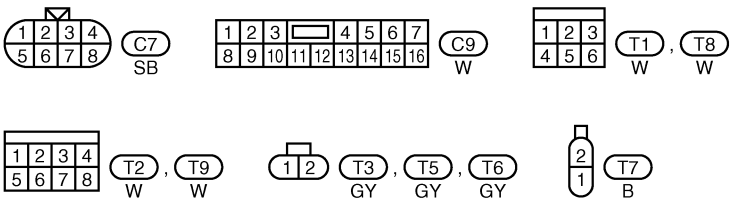
Refer to last page (Foldout page).
M5 , E101

GEL242A

Wiring Diagram — TAIL/L —/Except LHD Models for Europe (Cont'd)

EL-TAIL/L-02

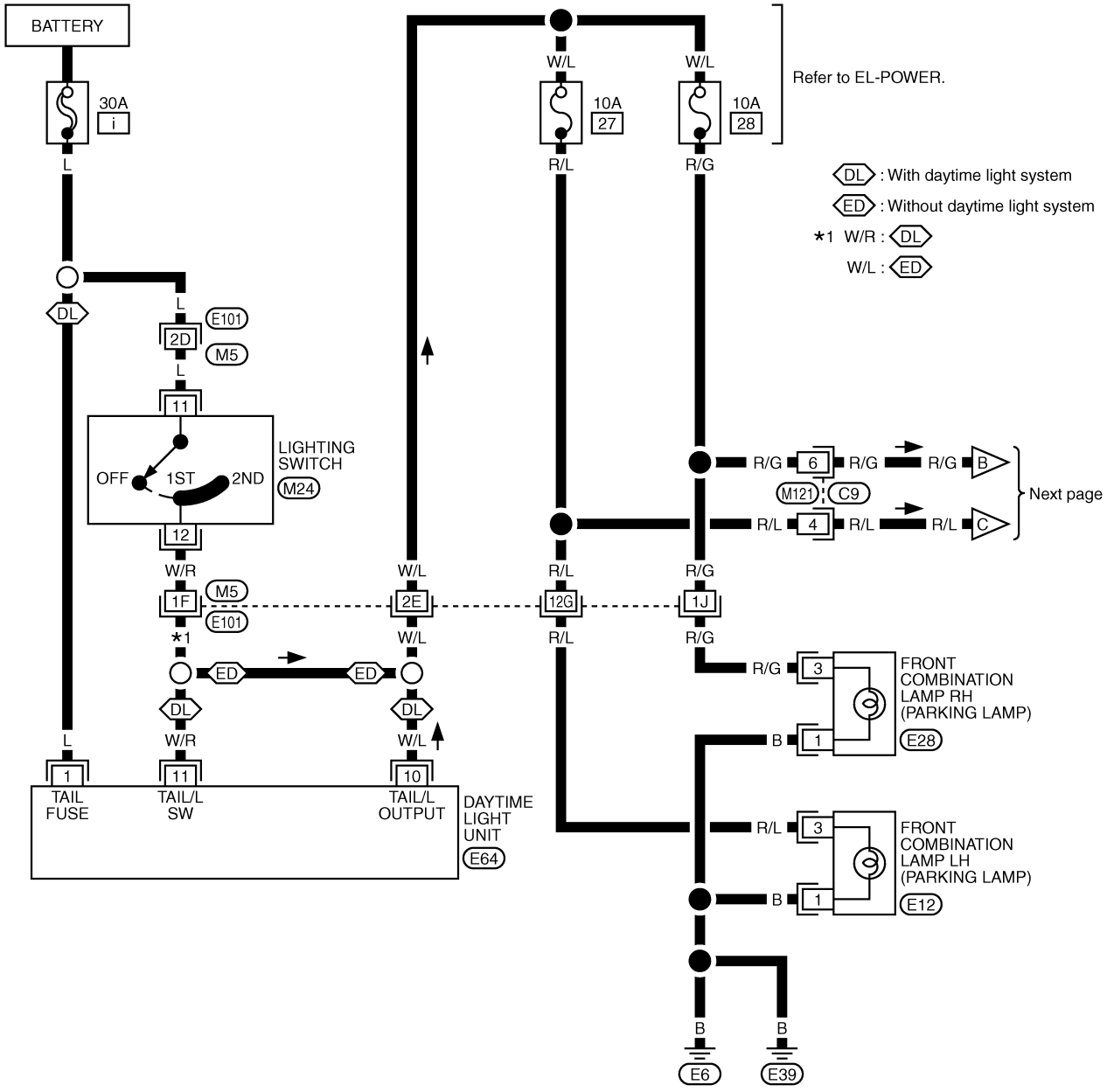


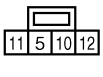


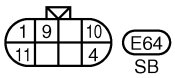
GEL460A

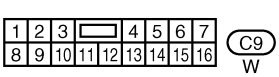
Wiring Diagram — TAIL/L —/LHD Models for Europe

EL-TAIL/L-03









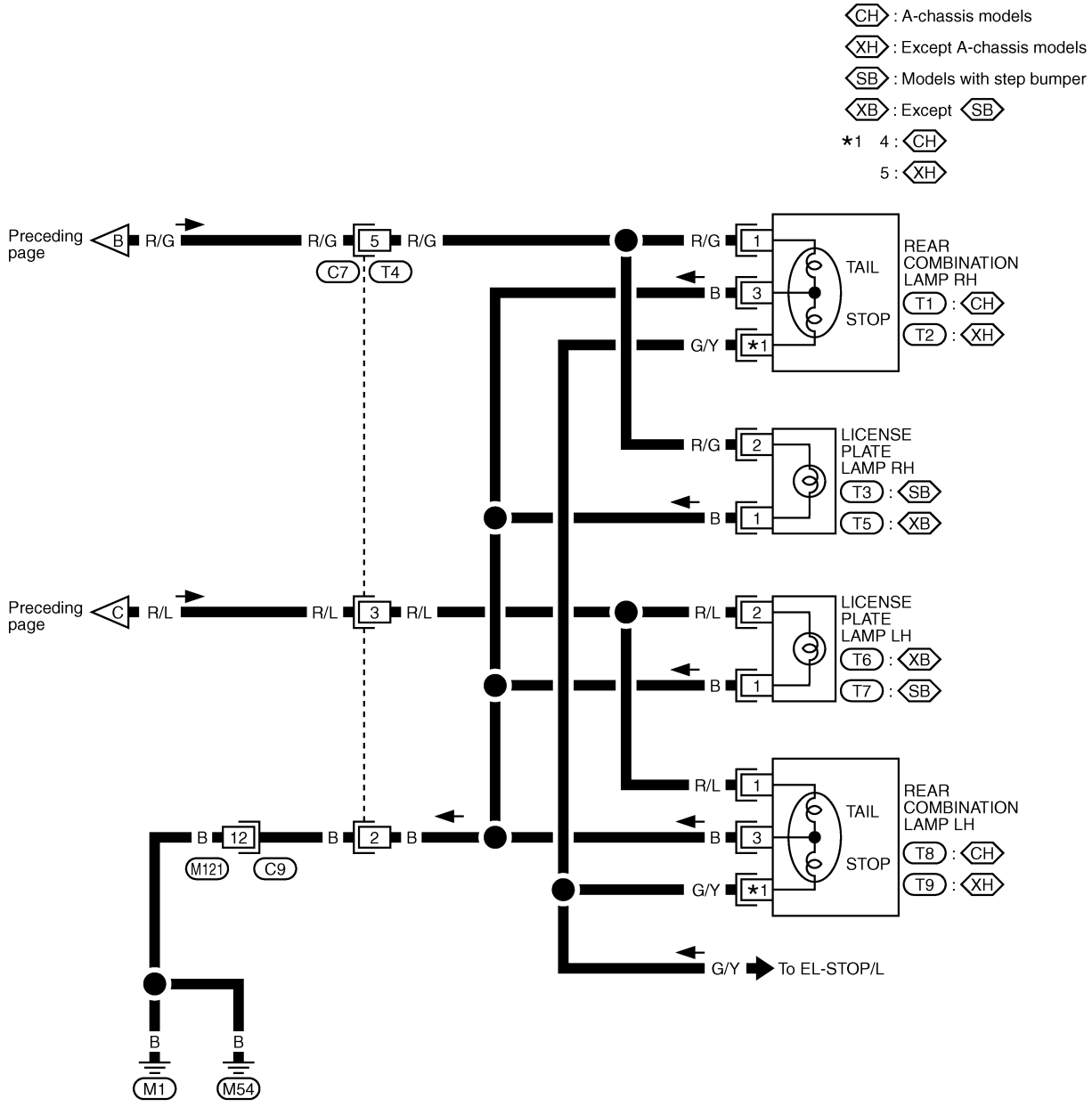
Refer to last page (Foldout page).

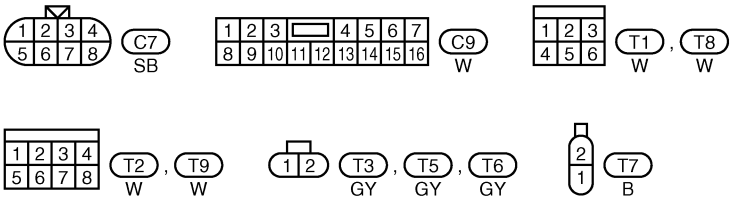
M5 , E101

GEL379A

Wiring Diagram — TAIL/L —/LHD Models for Europe (Cont'd)

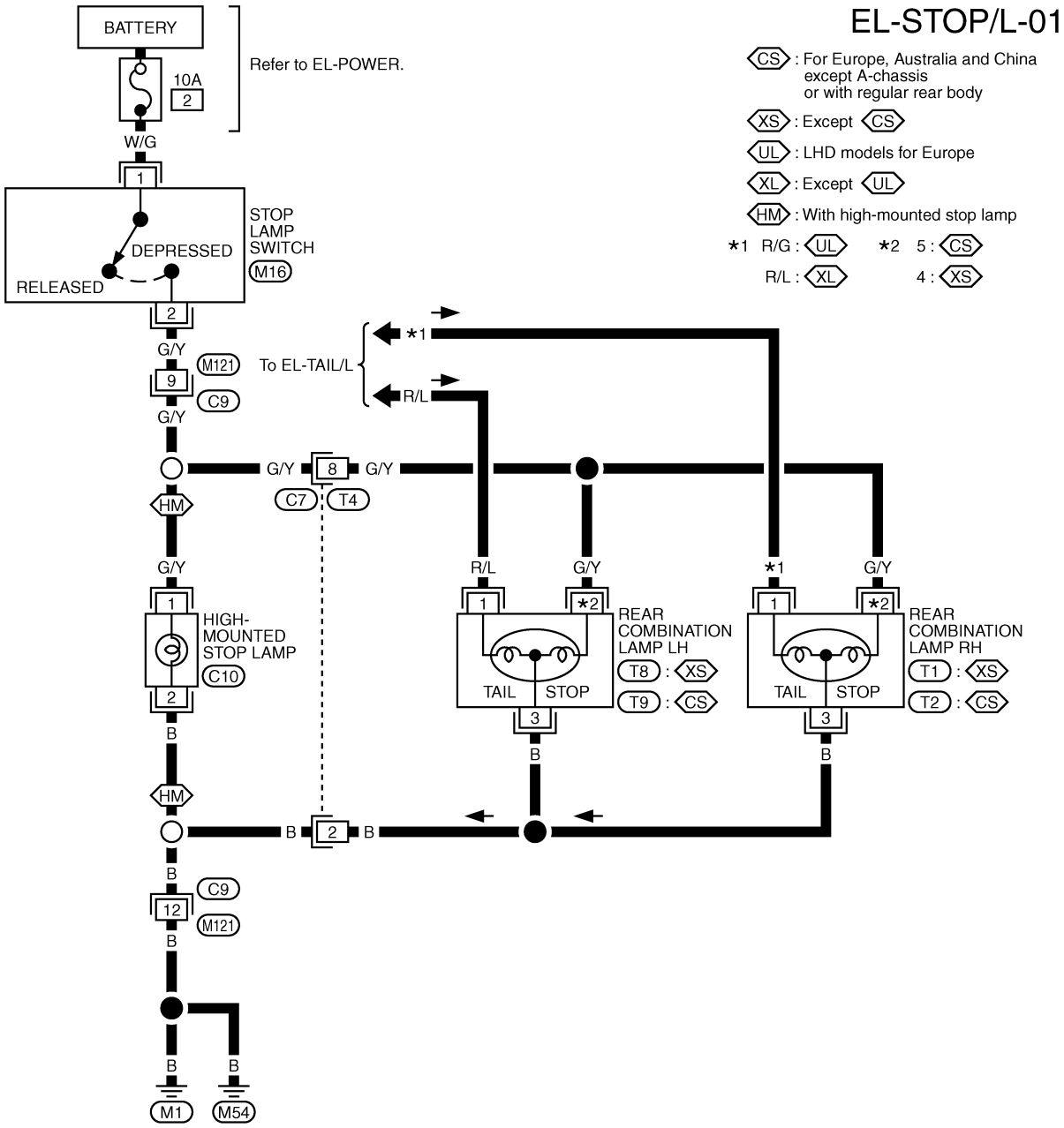
EL-TAIL/L-04

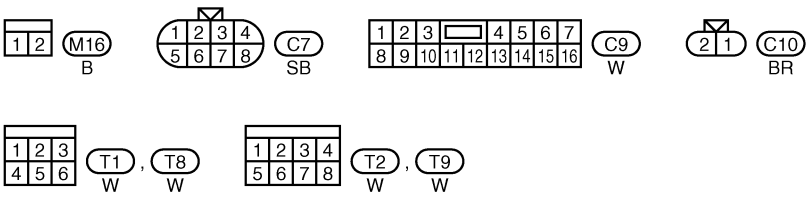




GEL380A

Wiring Diagram — STOP/L —

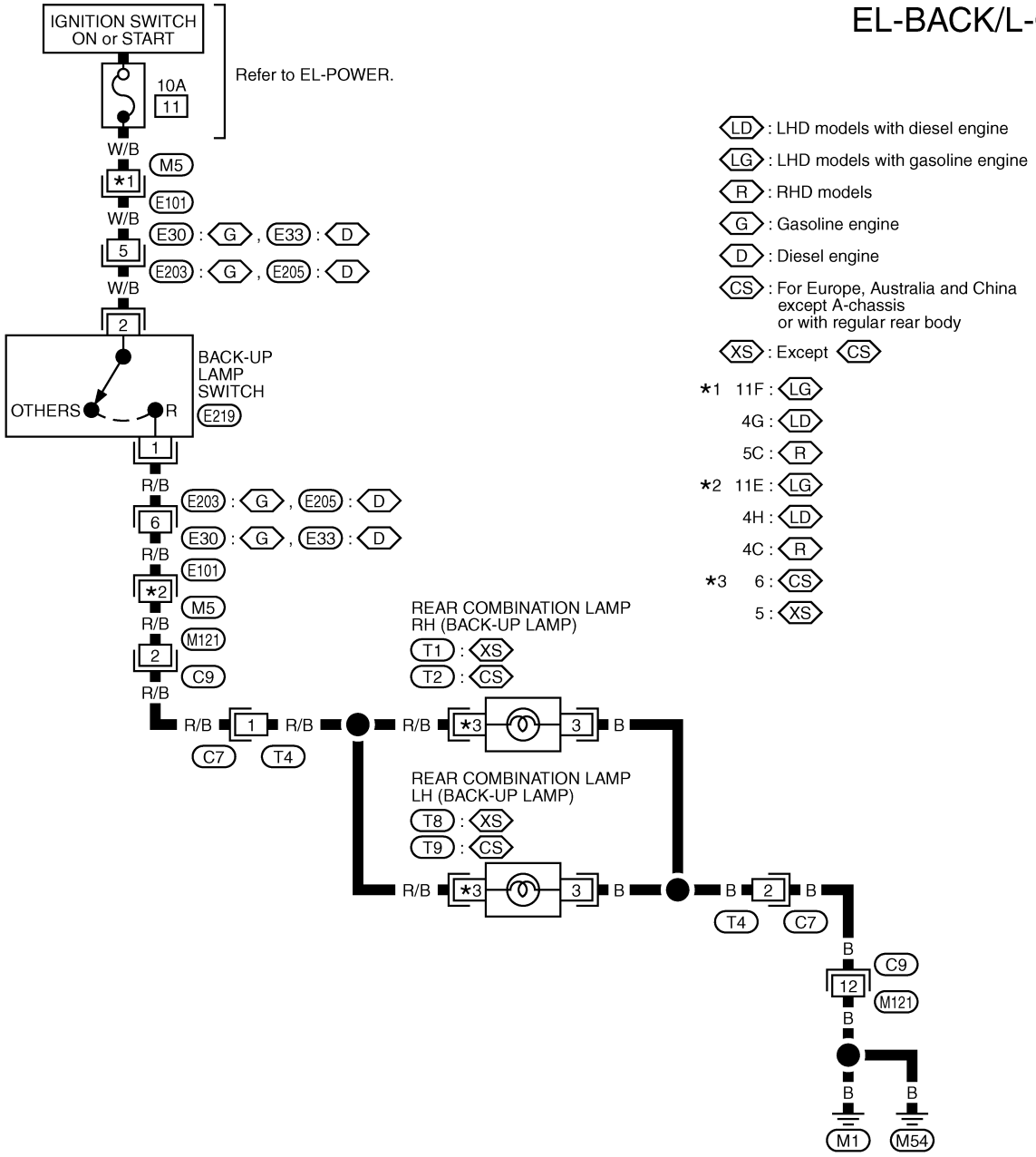


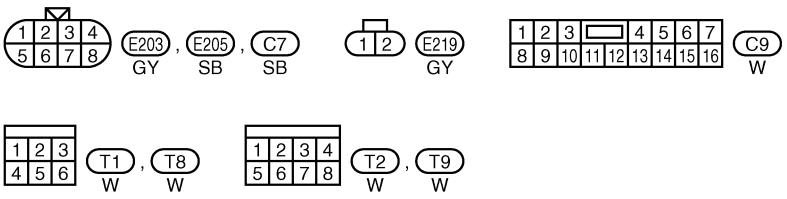


GEL461A

Wiring Diagram — BACK/L —/M/T Models

EL-BACK/L-01





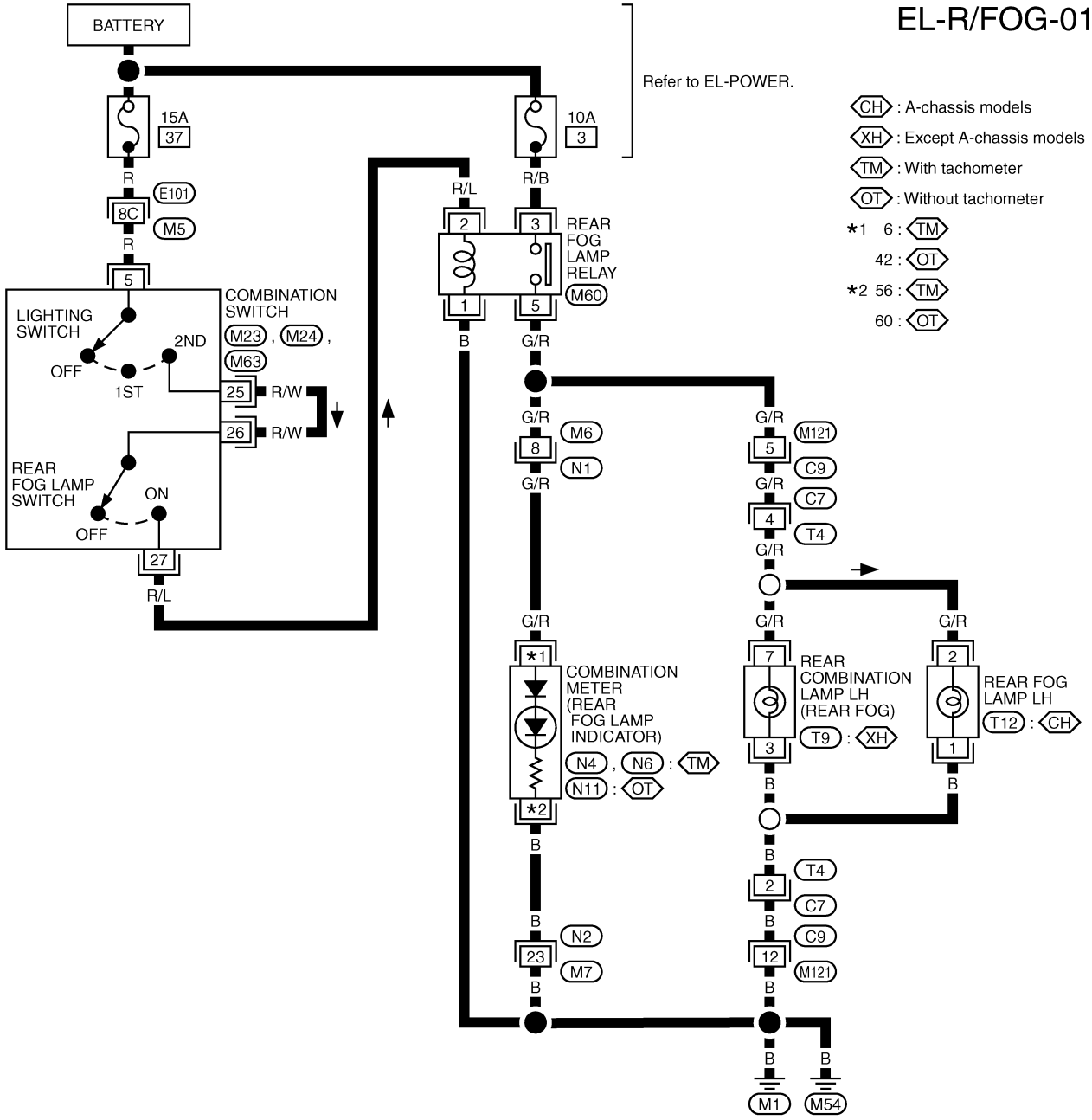
Refer to last page (Foldout page).

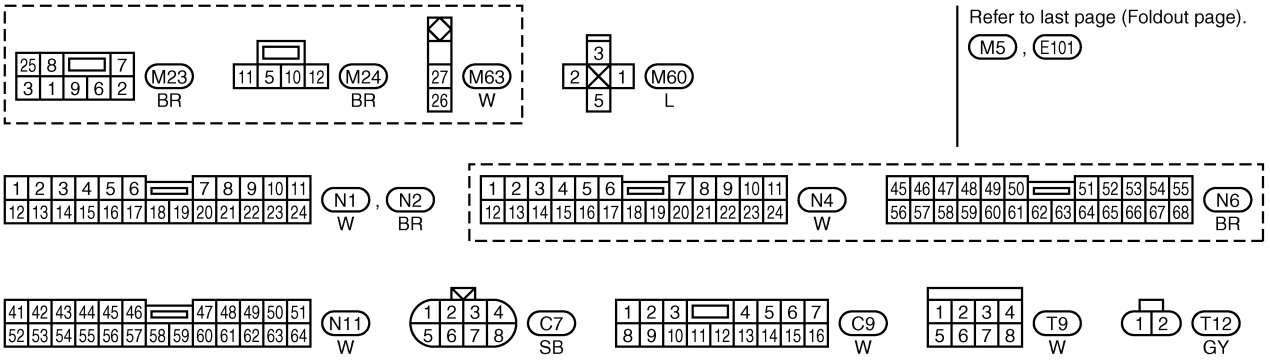
M5 , E101

GEL462A

Wiring Diagram — R/FOG —/LHD Models

EL-R/FOG-01

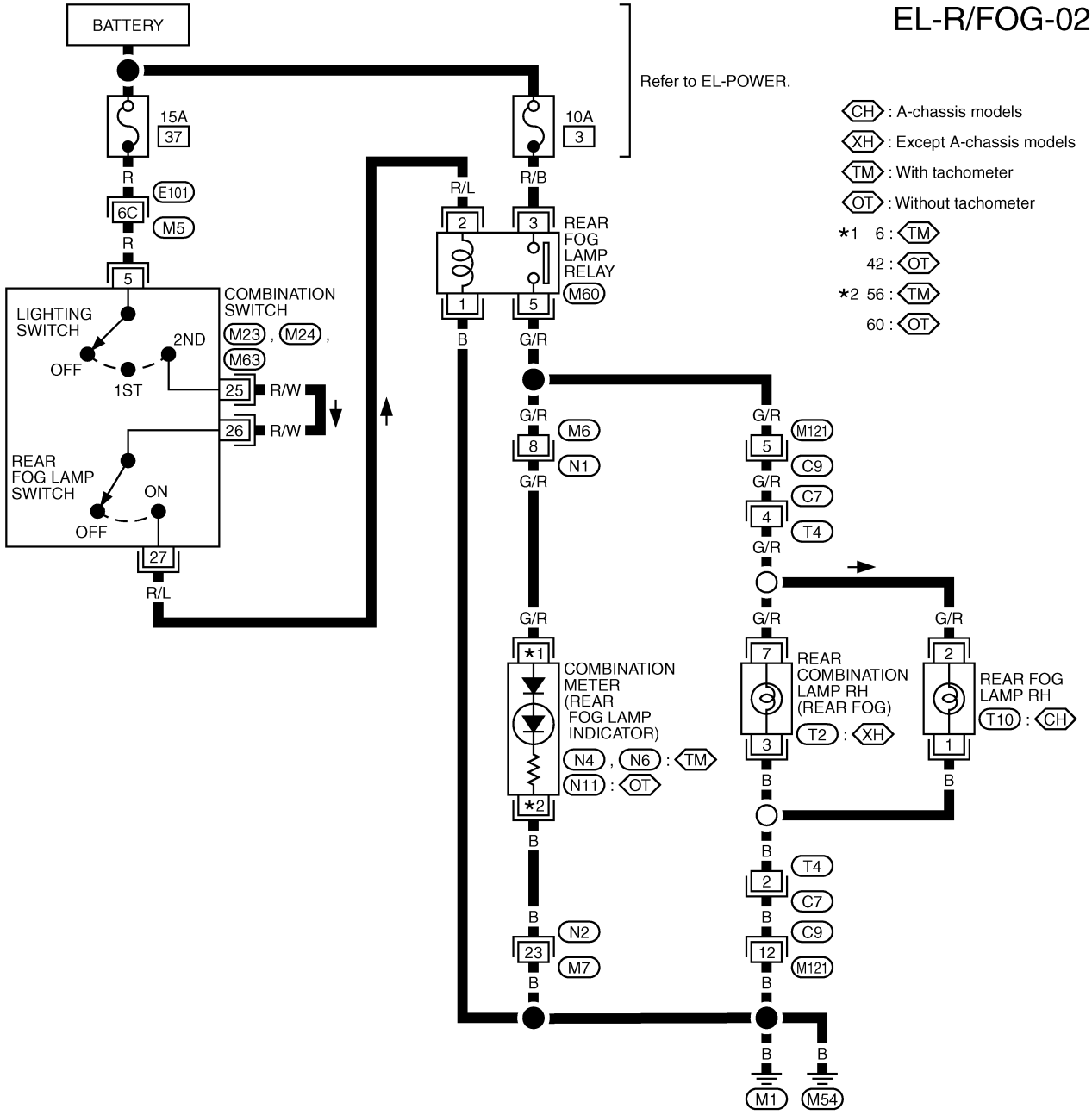


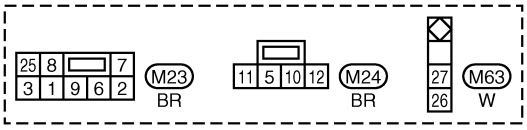


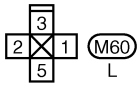
GEL383A

Wiring Diagram — R/FOG —/RHD Models

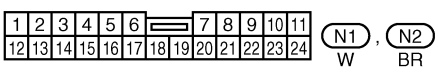
EL-R/FOG-02

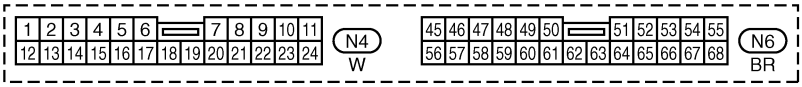


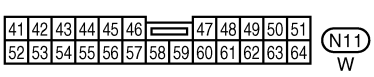


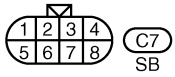


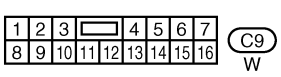
Refer to last page (Foldout page).
M5 , E101

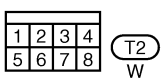


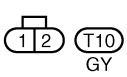






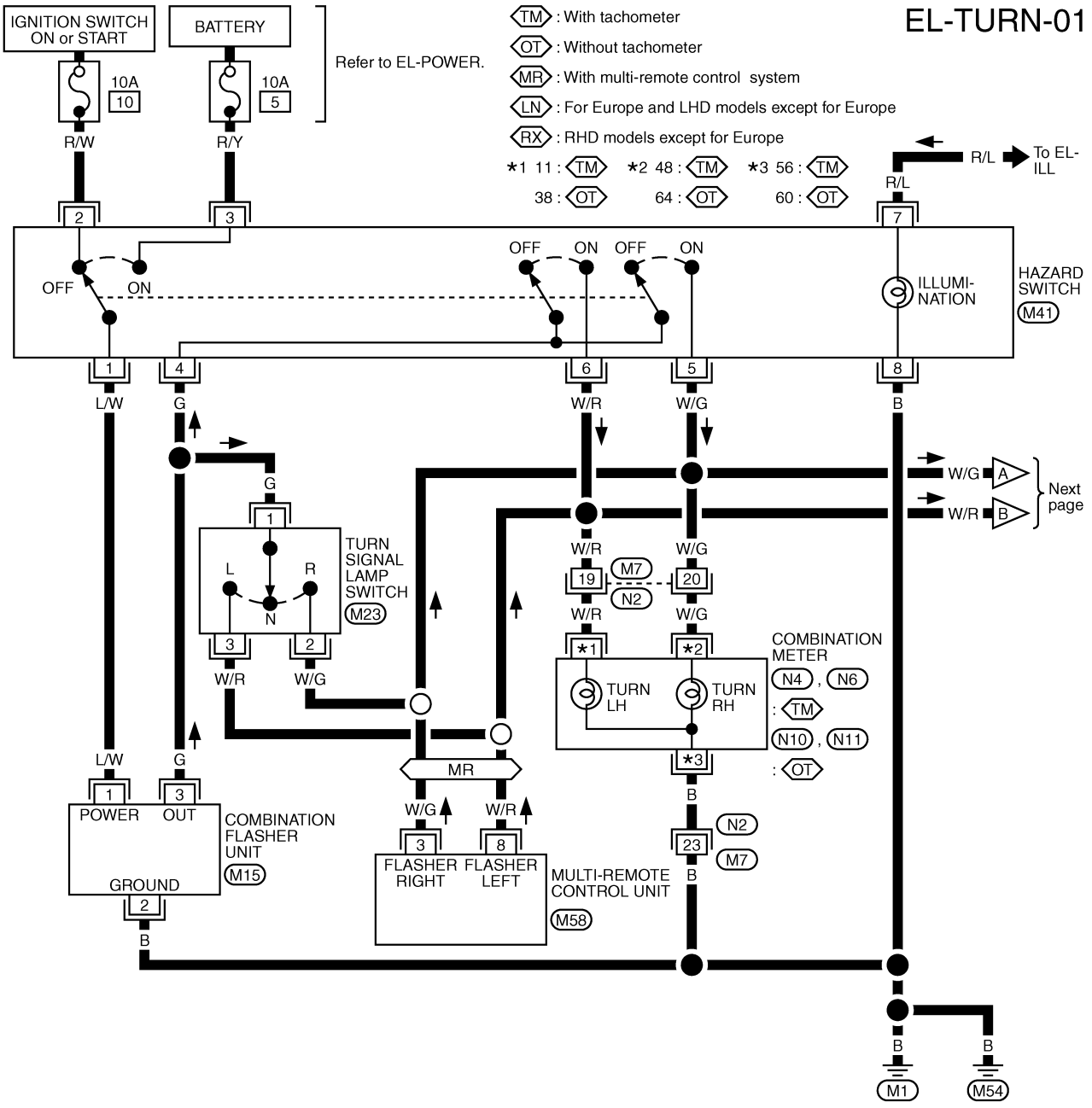


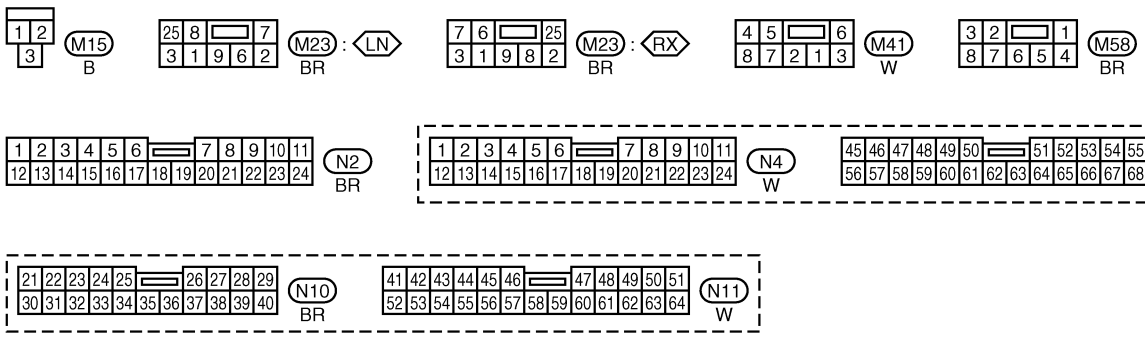




GEL384A

Wiring Diagram — TURN —

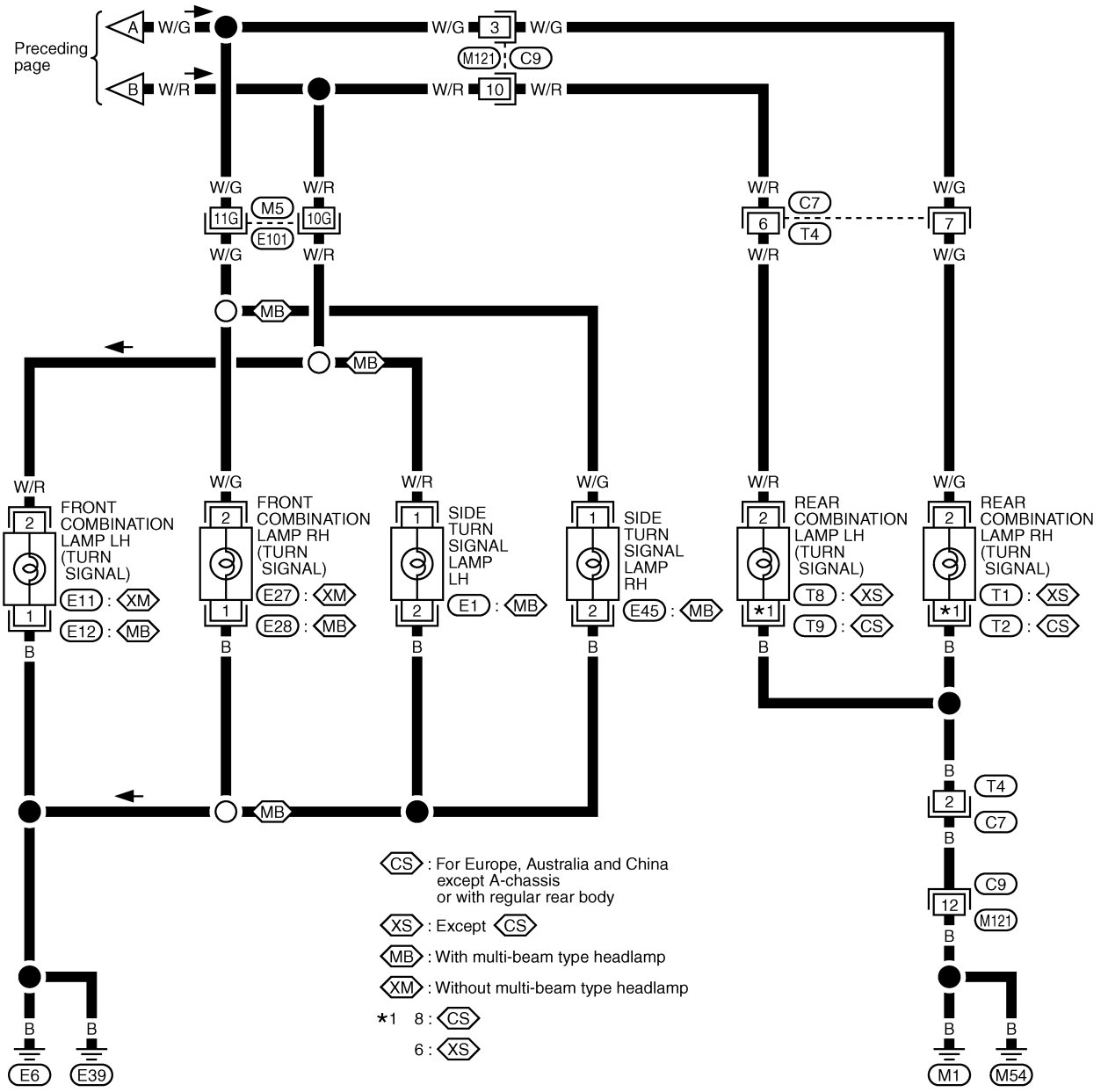


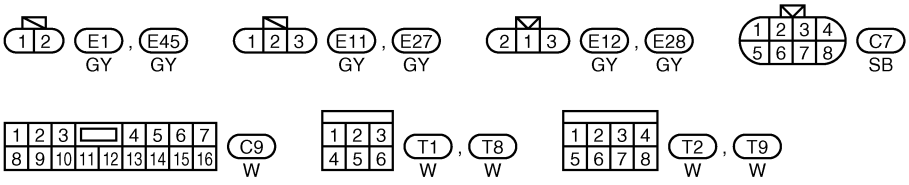


GEL385A

Wiring Diagram — TURN — (Cont'd)

EL-TURN-02





Refer to last page (Foldout page).

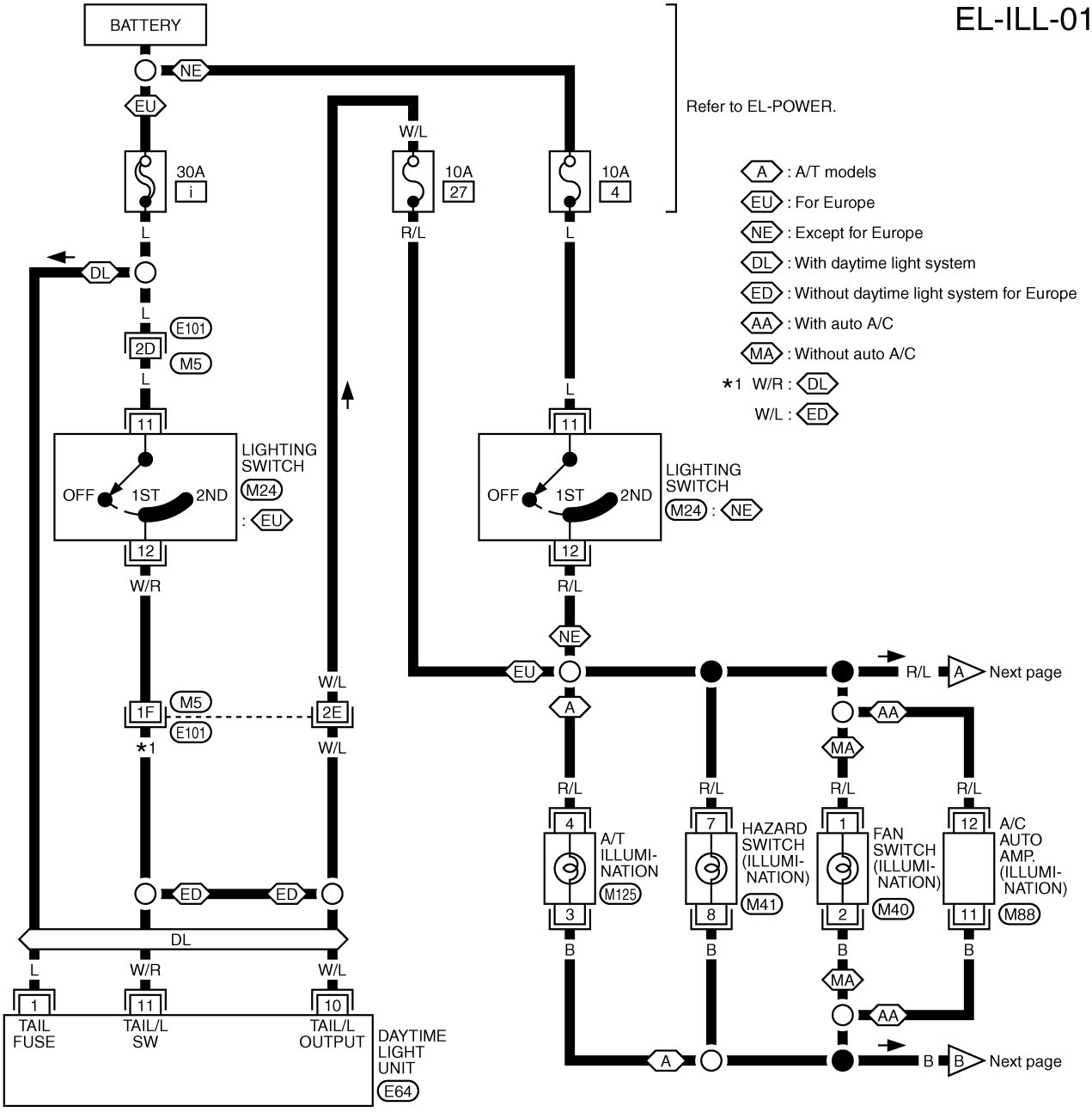
M5 , E101

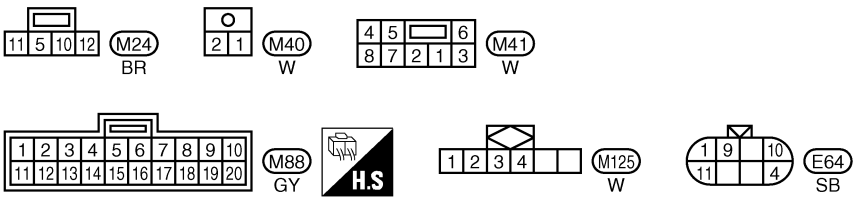
GEL463A

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. 10A fuse 2. Hazard switch 3. Turn signal switch 4. Open in turn signal switch circuit	1. Check 10A fuse (No. 10, located in fuse block). Turn ignition switch ON and verify battery positive voltage is present at terminal ② (R/W) of hazard switch. 2. Check hazard switch. 3. Check turn signal switch. 4. Check G wire between combination flasher unit and turn signal switch for open circuit.
Hazard warning lamps do not operate but turn signal lamps operate.	1. 10A fuse 2. Hazard switch 3. Open in hazard switch circuit	1. Check 10A fuse (No. 5, located in fuse block). Verify battery positive voltage is present at terminal ③ (R/Y) of hazard switch. 2. Check hazard switch. 3. Check G wire between combination flasher unit and hazard switch for open circuit.
Front or side turn signal lamp LH or RH does not operate.	1. Bulb 2. Grounds E6 and E39	1. Check bulb. 2. Check grounds E6 and E39.
Rear turn signal lamp LH or RH does not operate.	1. Bulb 2. Grounds M1 and M54	1. Check bulb. 2. Check grounds M1 and M54.
LH and RH turn indicators do not operate.	1. Ground	1. Check grounds M1 and M54.
LH or RH turn indicator does not operate.	1. Bulb	1. Check bulb in combination meter.

Wiring Diagram — ILL —/LHD Models



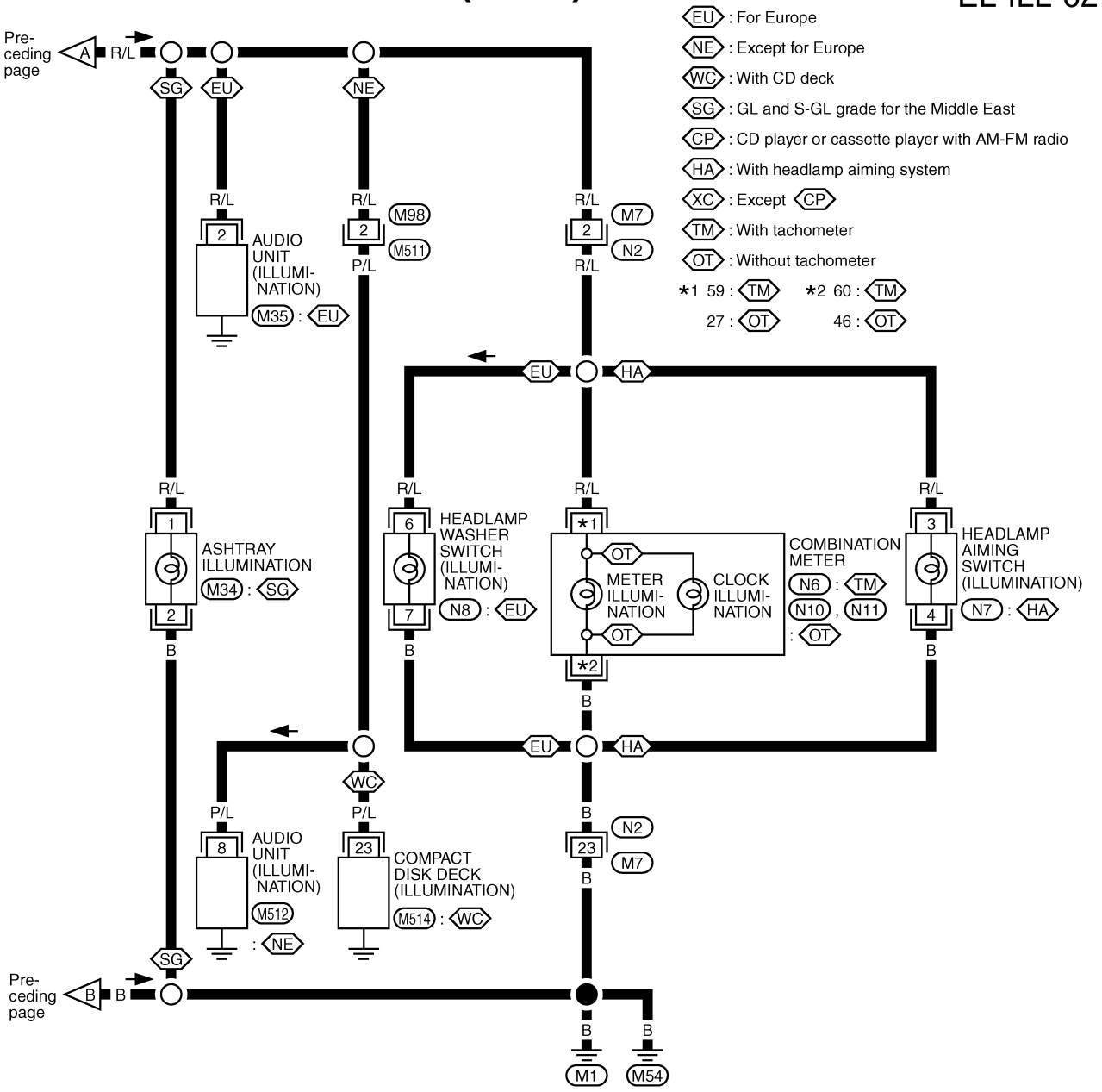


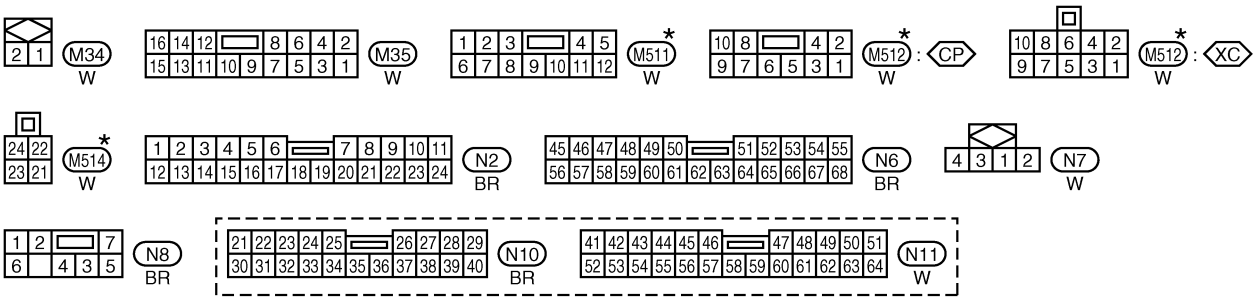
Refer to last page (Foldout page).
M5 , E101

GEL249A

Wiring Diagram — ILL —/LHD Models (Cont'd)

EL-ILL-02



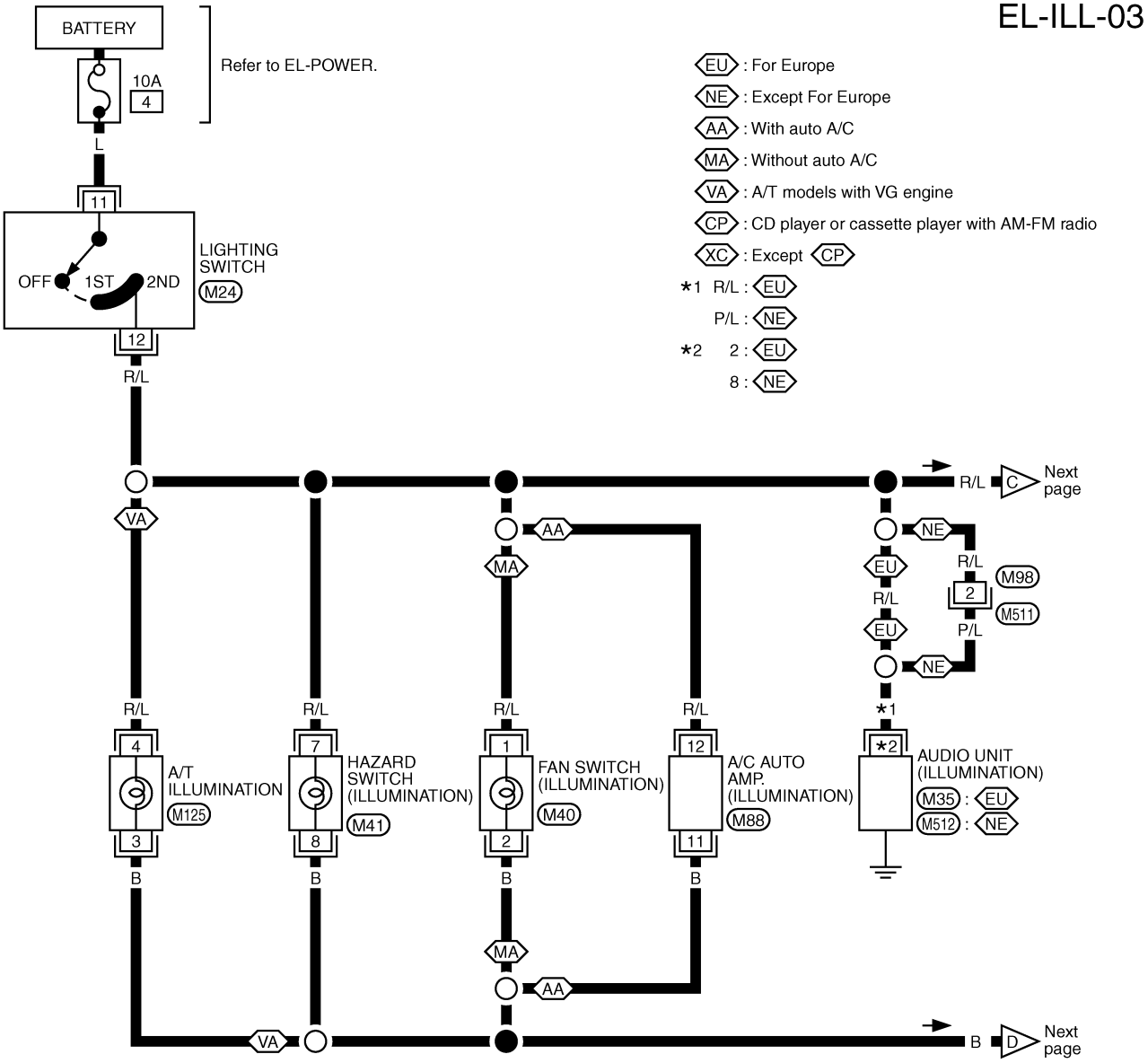


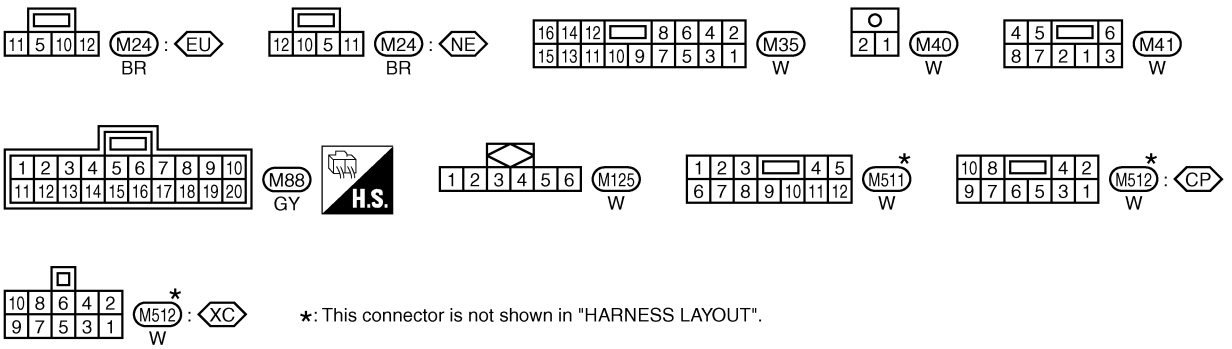
*: This connector is not shown in "HARNESS LAYOUT".

GEL386A

Wiring Diagram — ILL —/RHD Models

EL-ILL-03

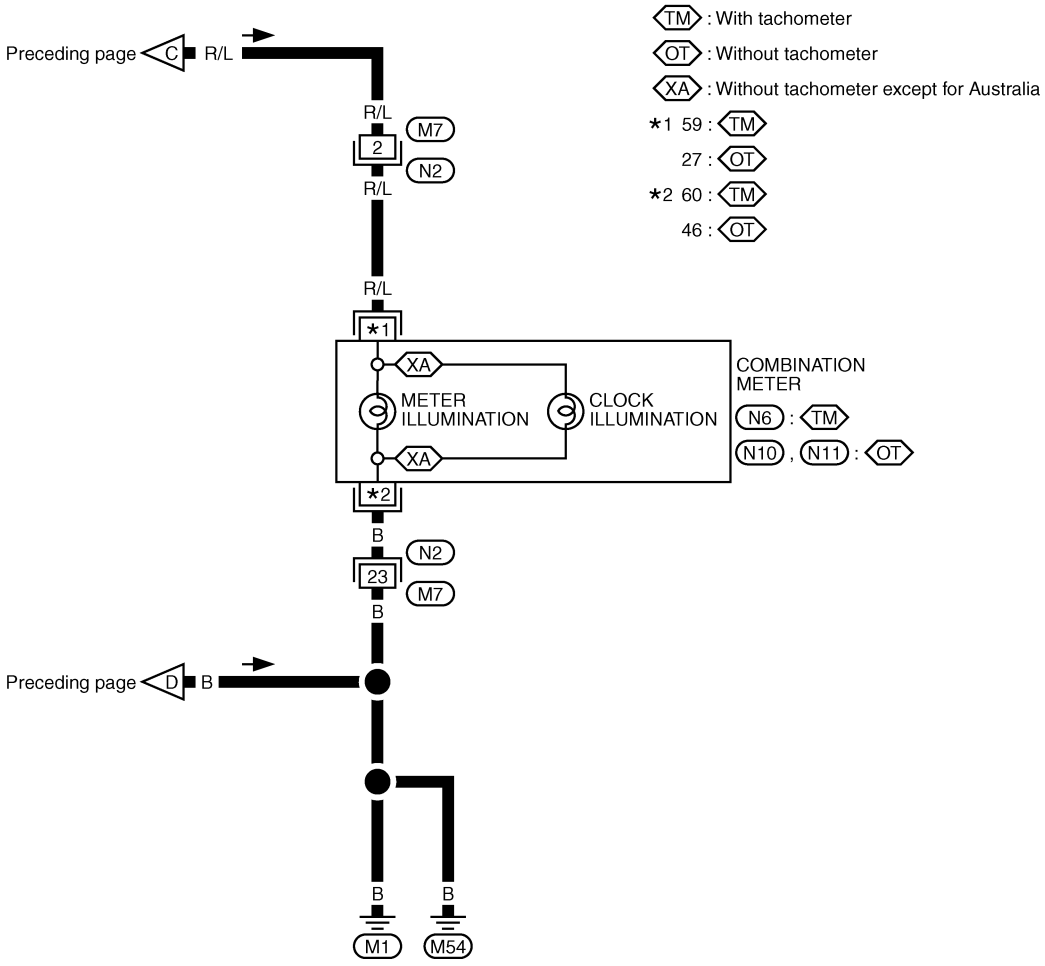


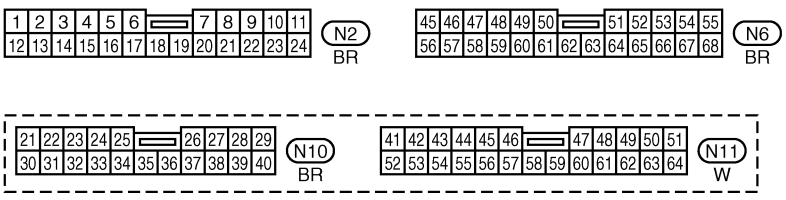


*: This connector is not shown in "HARNESS LAYOUT".

GEL387A

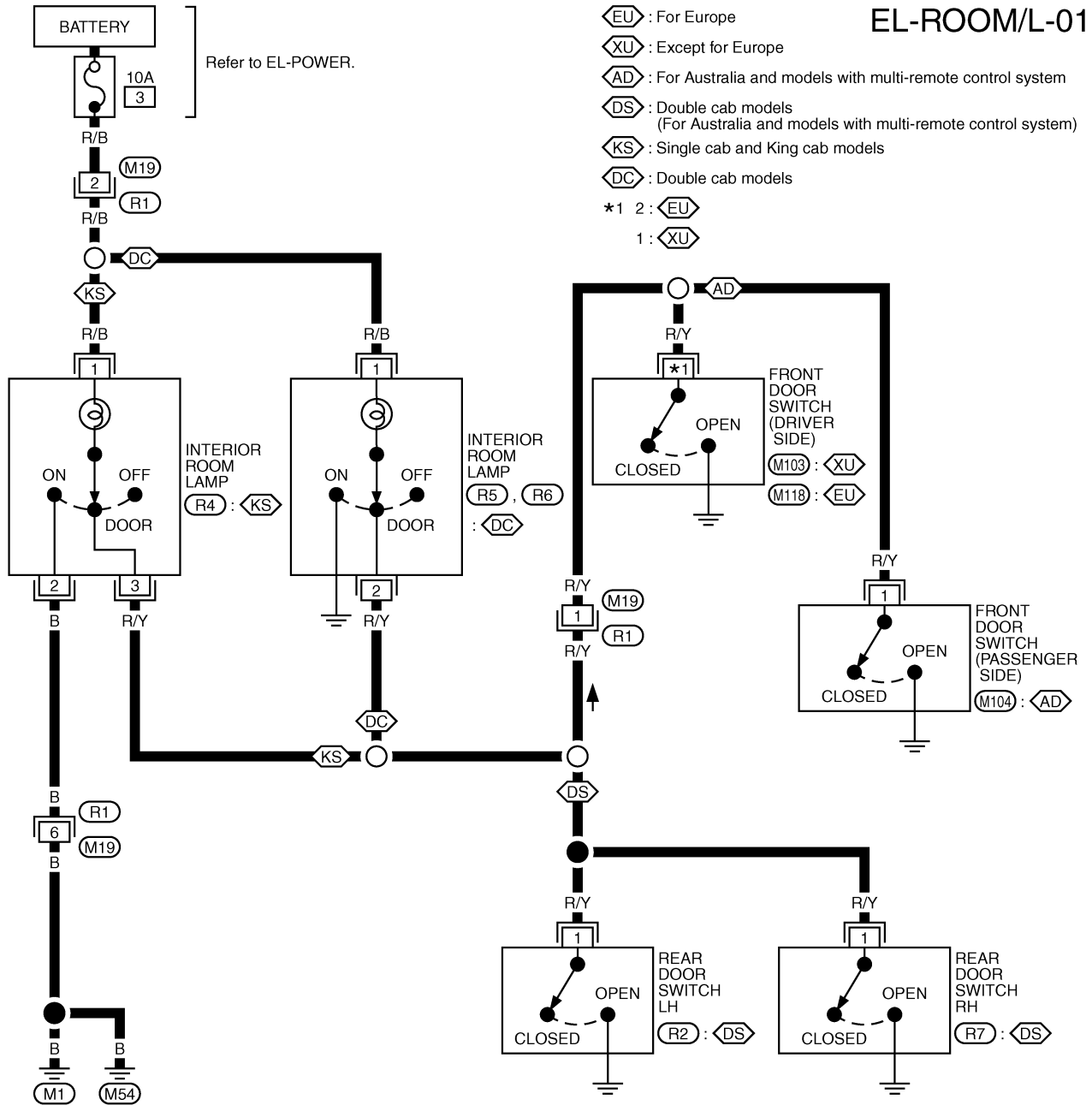
Wiring Diagram — ILL —/RHD Models (Cont'd)

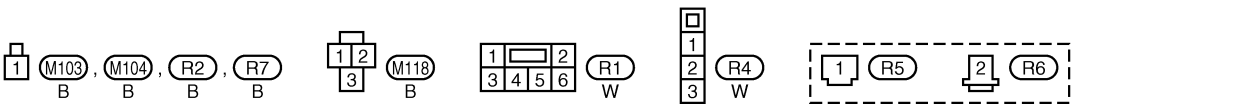




GEL388A

Wiring Diagram — ROOM/L —

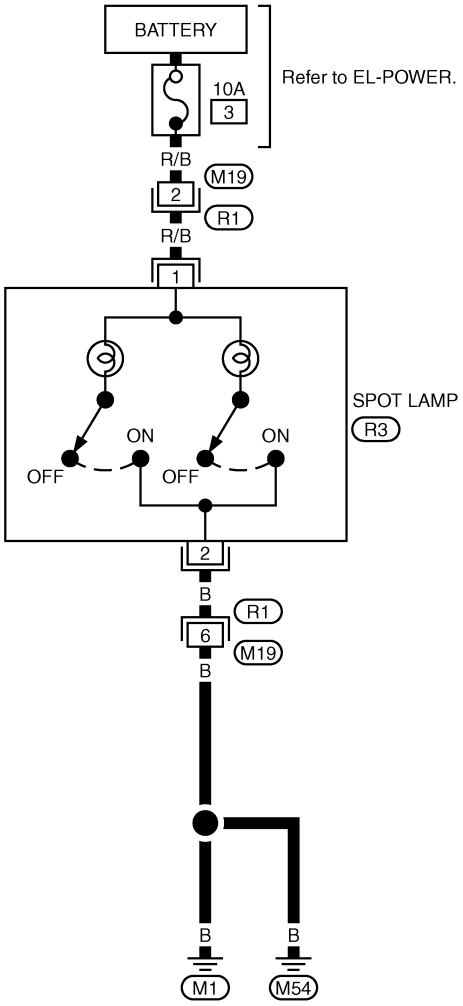




GEL389A

Wiring Diagram — INT/L —

EL-INT/L-01



GEL252A

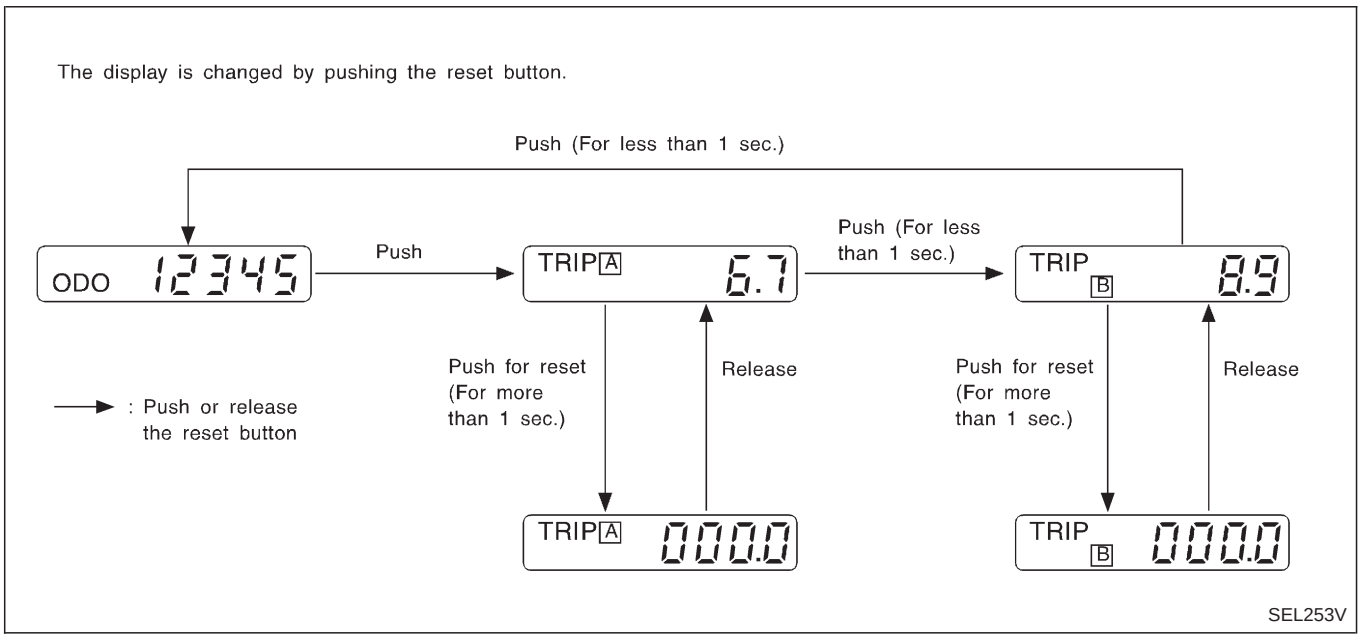
System Description

UNIFIED CONTROL METER

●Speedometer, odo/trip meter, tachometer, fuel gauge and water temperature gauge are controlled totally by control unit.

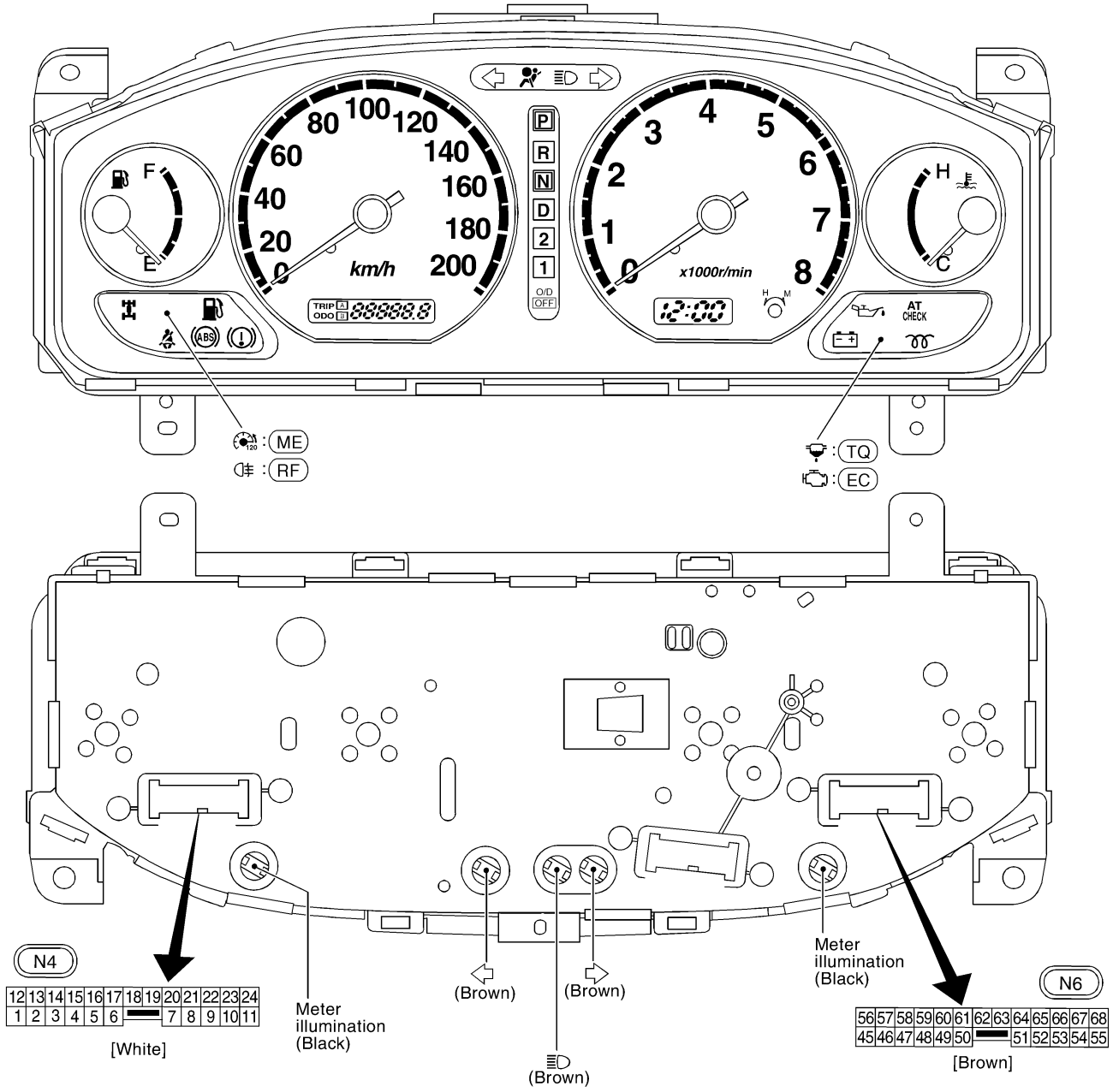
- Digital meter is adopted for odo/trip meter.*
  *The record of the odo meter is kept even if the battery cable is disconnected. The record of the trip meter is erased when the battery cable is disconnected.
- Odo/trip meter segment can be checked in diagnosis mode.
- Meter/gauge can be checked in diagnosis mode.

HOW TO CHANGE THE DISPLAY FOR ODO/TRIP METER



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

Combination Meter/With Tachometer



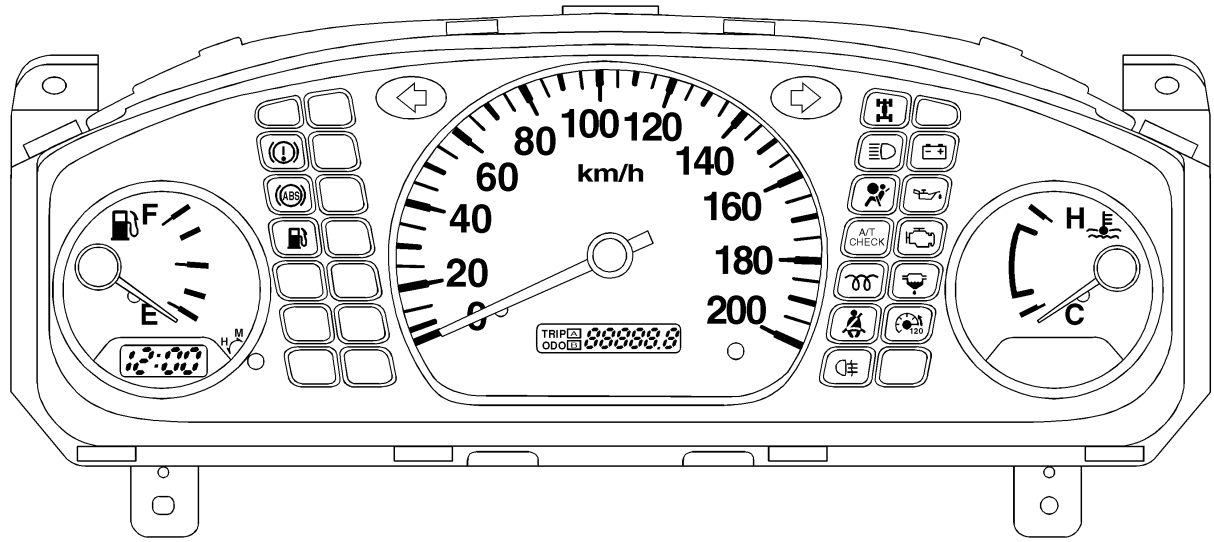
Bulb socket color	Bulb wattage
Brown	1.4W
Black	3.0W

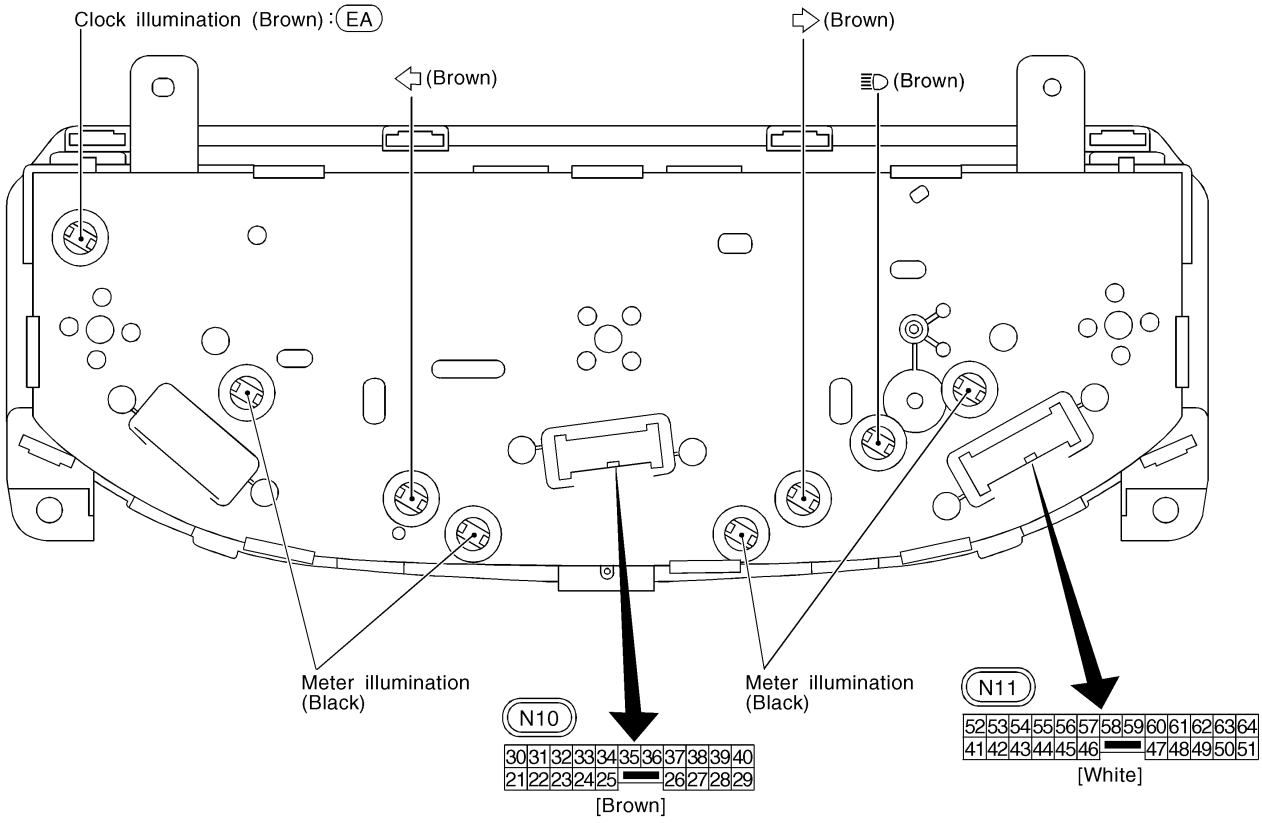
( ) : Bulb socket color

(ME) : For the Middle East
(RF) : With rear fog lamp
(TQ) : TD and QD engines
(EC) : With ECM control engine

HEL890B

Combination Meter/Without Tachometer





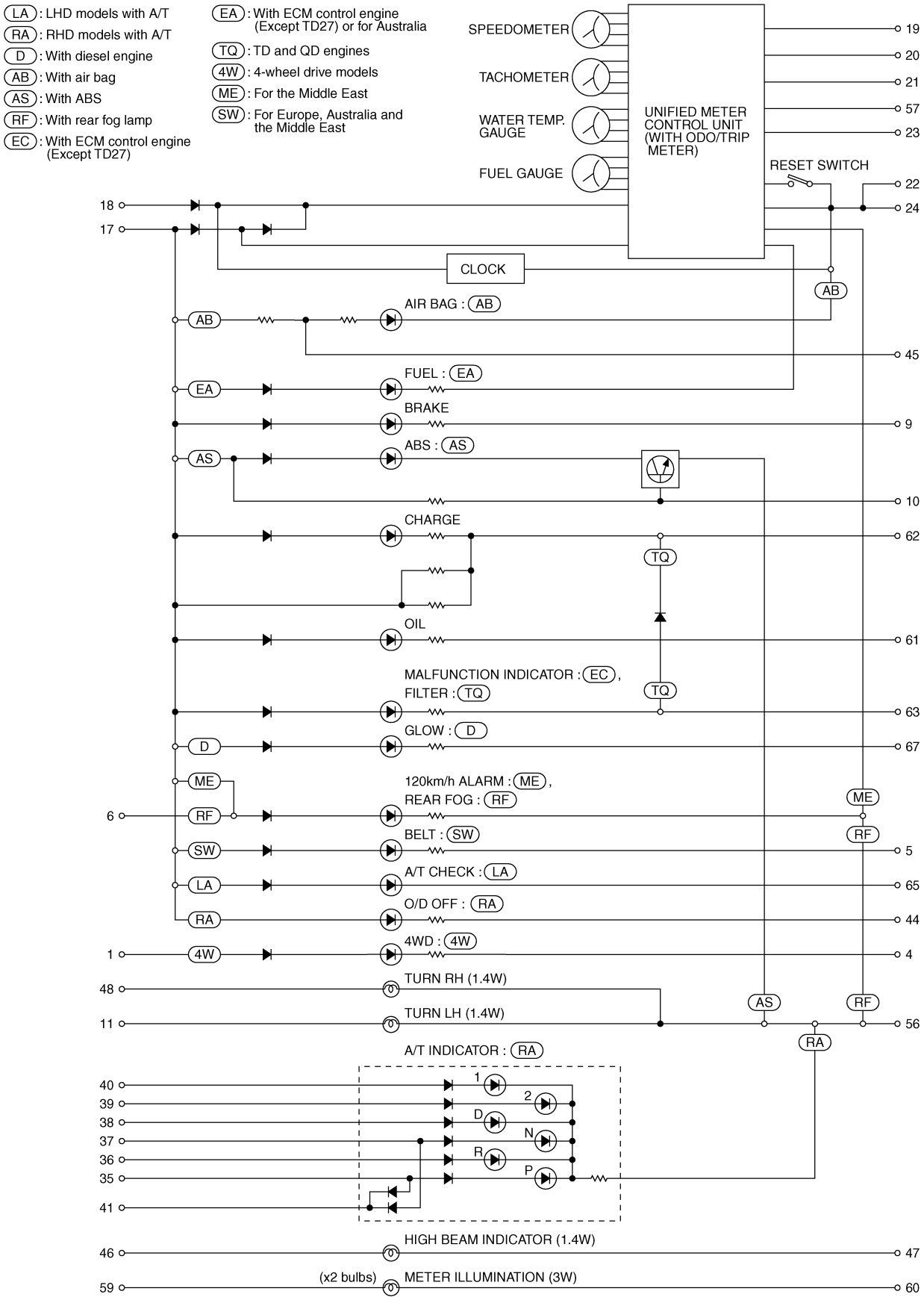
EA : Except for Australia

Bulb socket color	Bulb wattage
Brown	1.4W
Black	3.0W

( ) : Bulb socket color

HEL891B

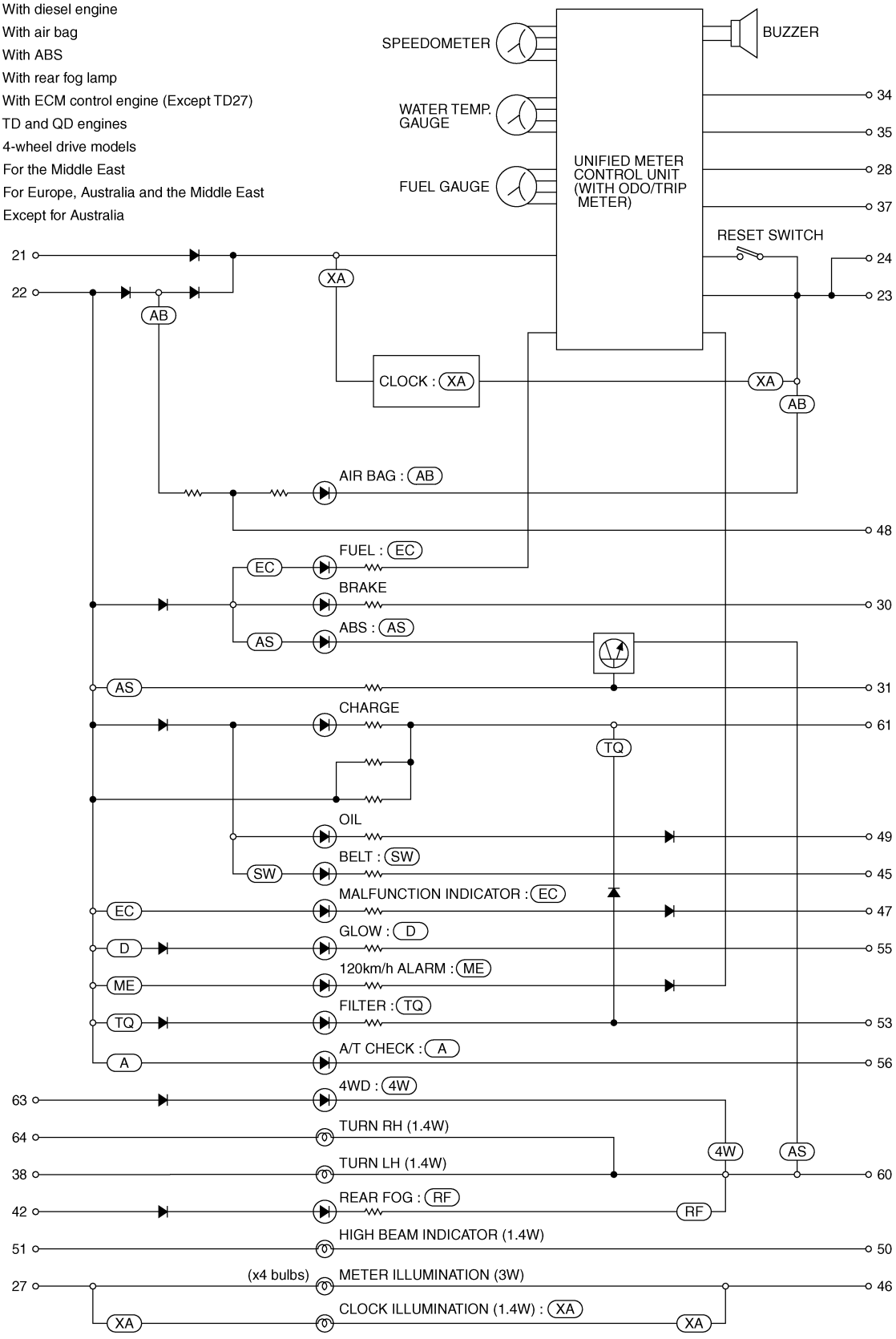
Schematic/With Tachometer



GEL390A

Schematic/Without Tachometer

(A) : A/T models
(D) : With diesel engine
(AB) : With air bag
(AS) : With ABS
(RF) : With rear fog lamp
(EC) : With ECM control engine (Except TD27)
(TQ) : TD and QD engines
(4W) : 4-wheel drive models
(ME) : For the Middle East
(SW) : For Europe, Australia and the Middle East
(XA) : Except for Australia

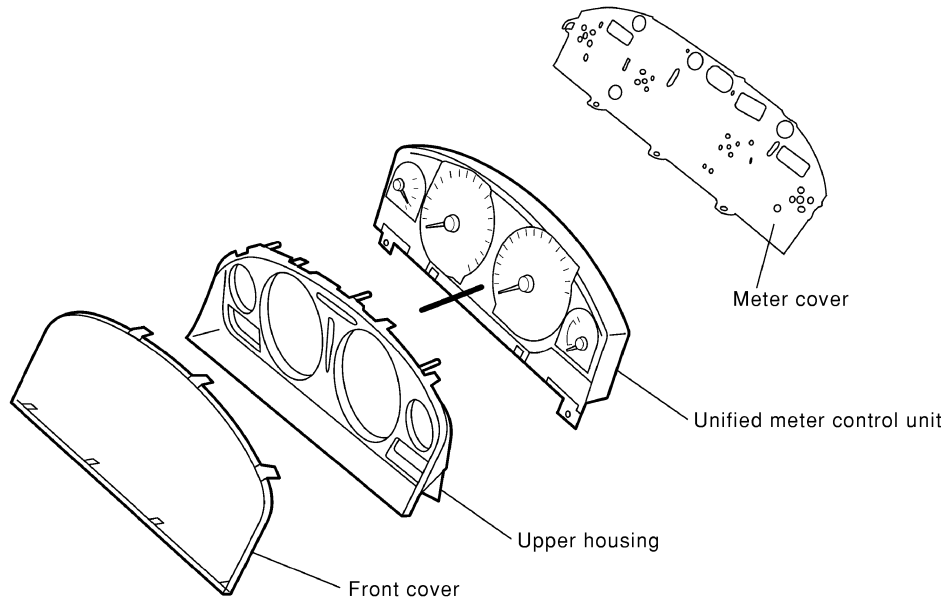


GEL391A

Construction

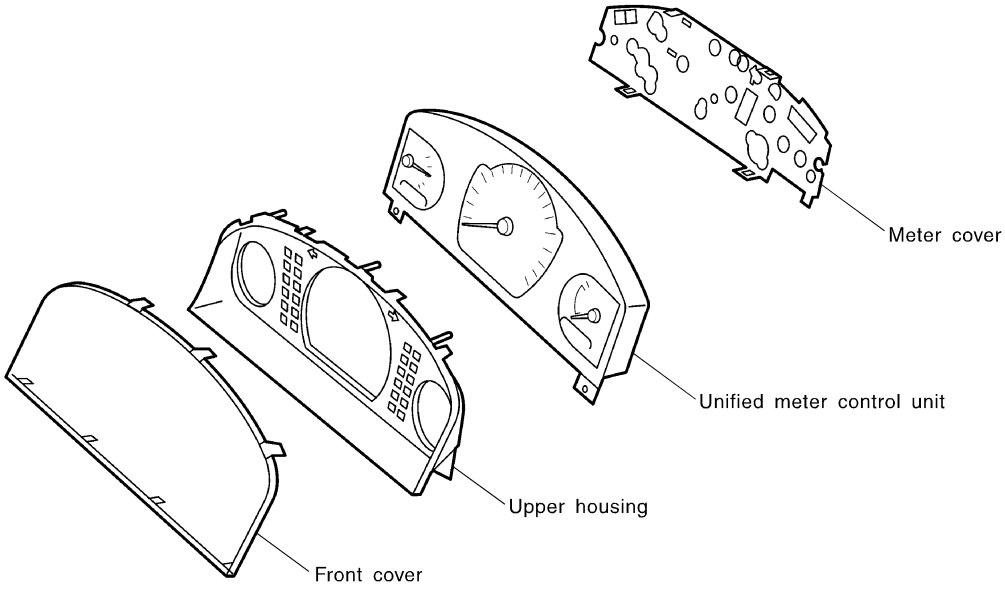
WITH TACHOMETER

SEC. 248



SEL450Y

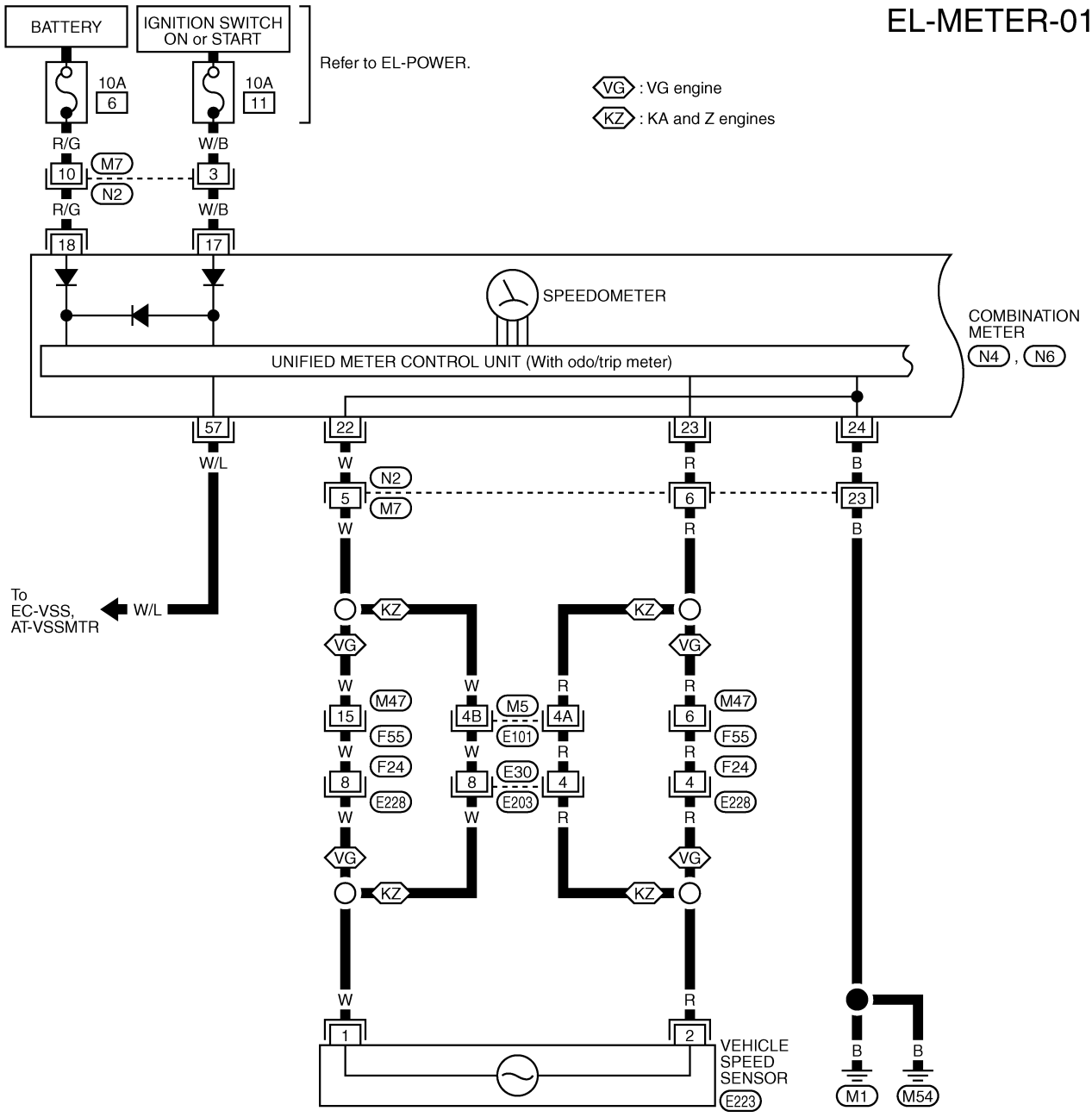
WITHOUT TACHOMETER

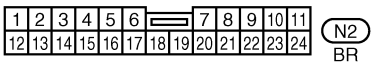


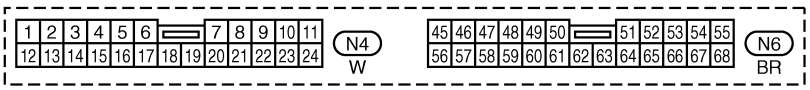
JEL268Y

Wiring Diagram — METER —/Gasoline Engine with Tachometer

EL-METER-01







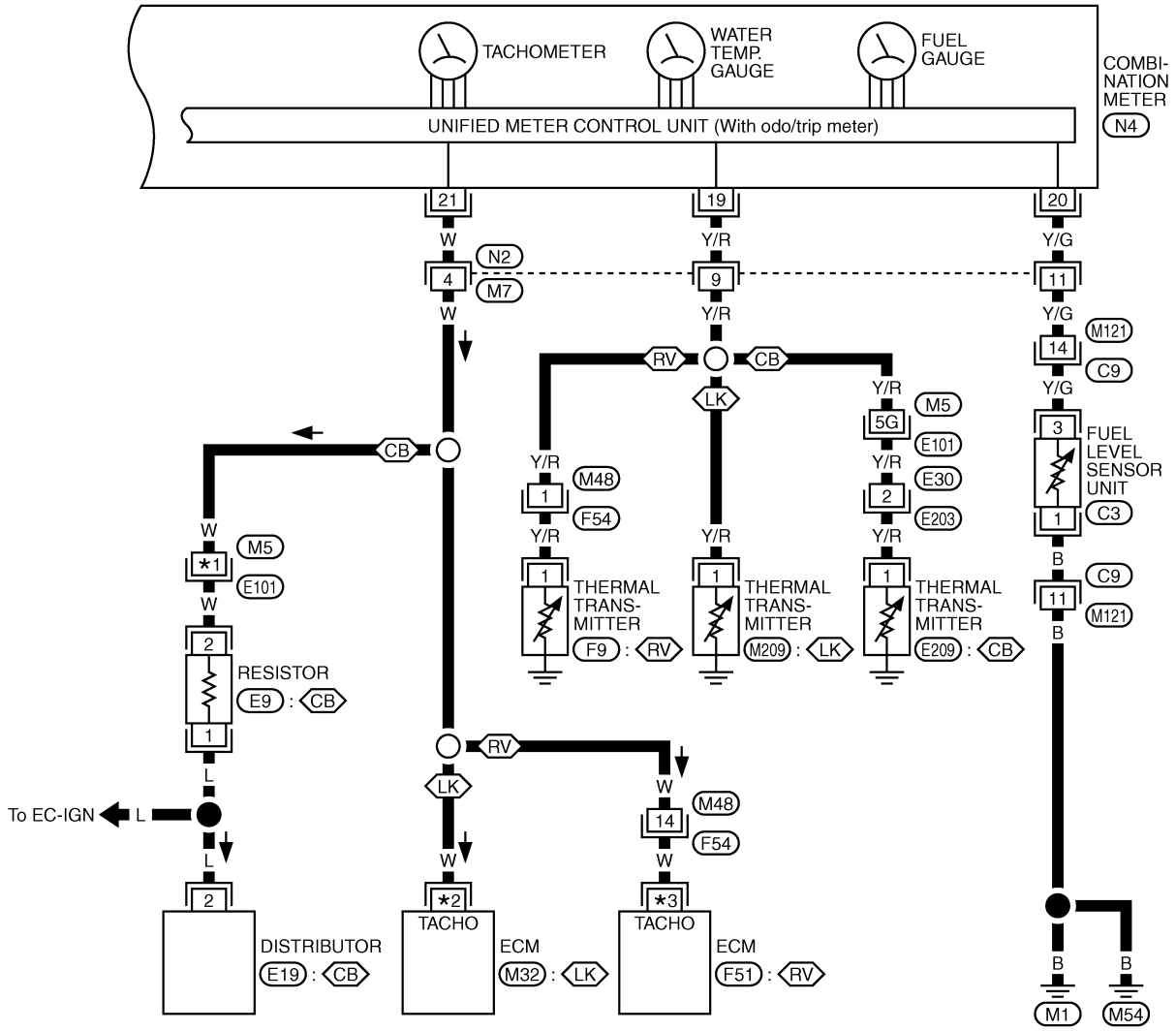
Refer to last page (Foldout page).
M5 , E101

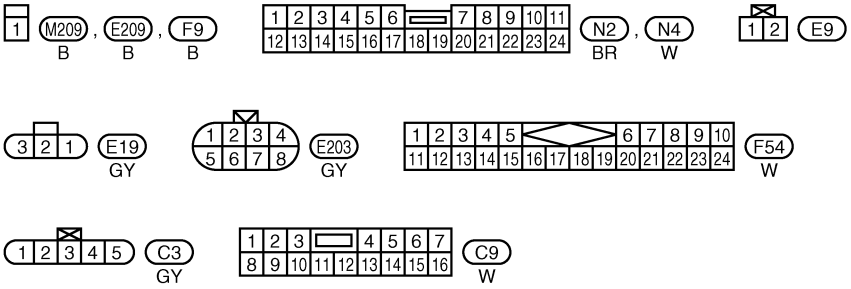
GEL392A

Wiring Diagram — METER —/Gasoline Engine with Tachometer (Cont'd)

EL-METER-02

(L) : LHD models
(R) : RHD models
(EU) : For Europe
(NE) : Except for Europe
(CB) : Carburetor engine
(VG) : VG engine
(LK) : LHD models with KA engine
(RK) : RHD models with KA engine
(RV) : RHD models with KA engine and VG engine
*1 3C : (L) 6A : (R)
*2 3 : (EU) 18 : (NE)
*3 18 : (RK) 7 : (VG)



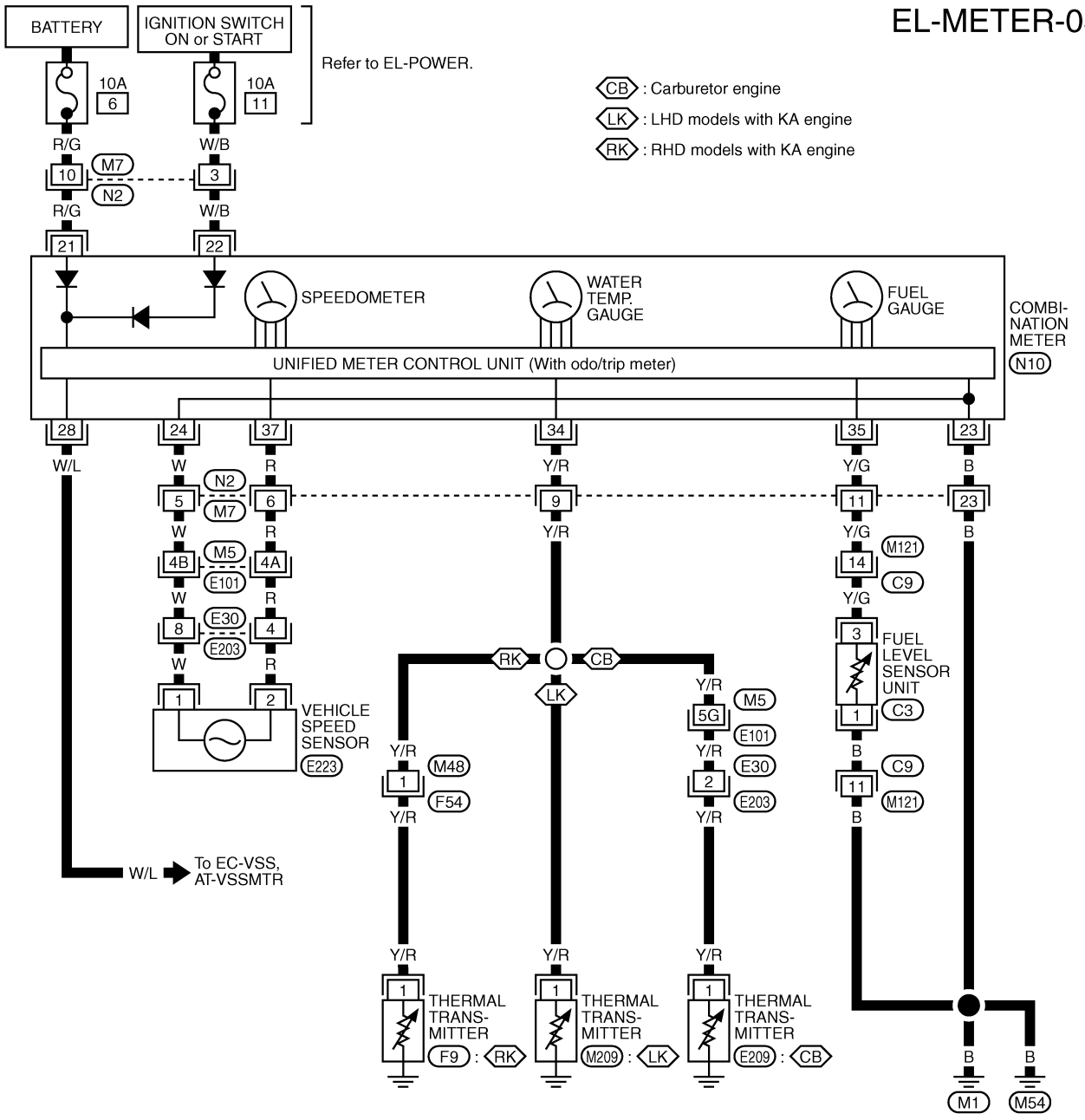


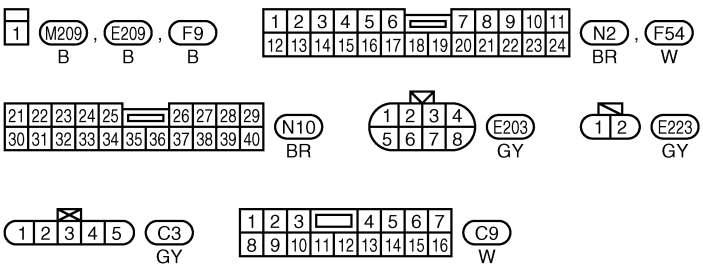
Refer to last page (Foldout page).
(M5) , (E101)
(M32)
(F51)

GEL256A

Wiring Diagram — METER —/Gasoline Engine without Tachometer

EL-METER-03



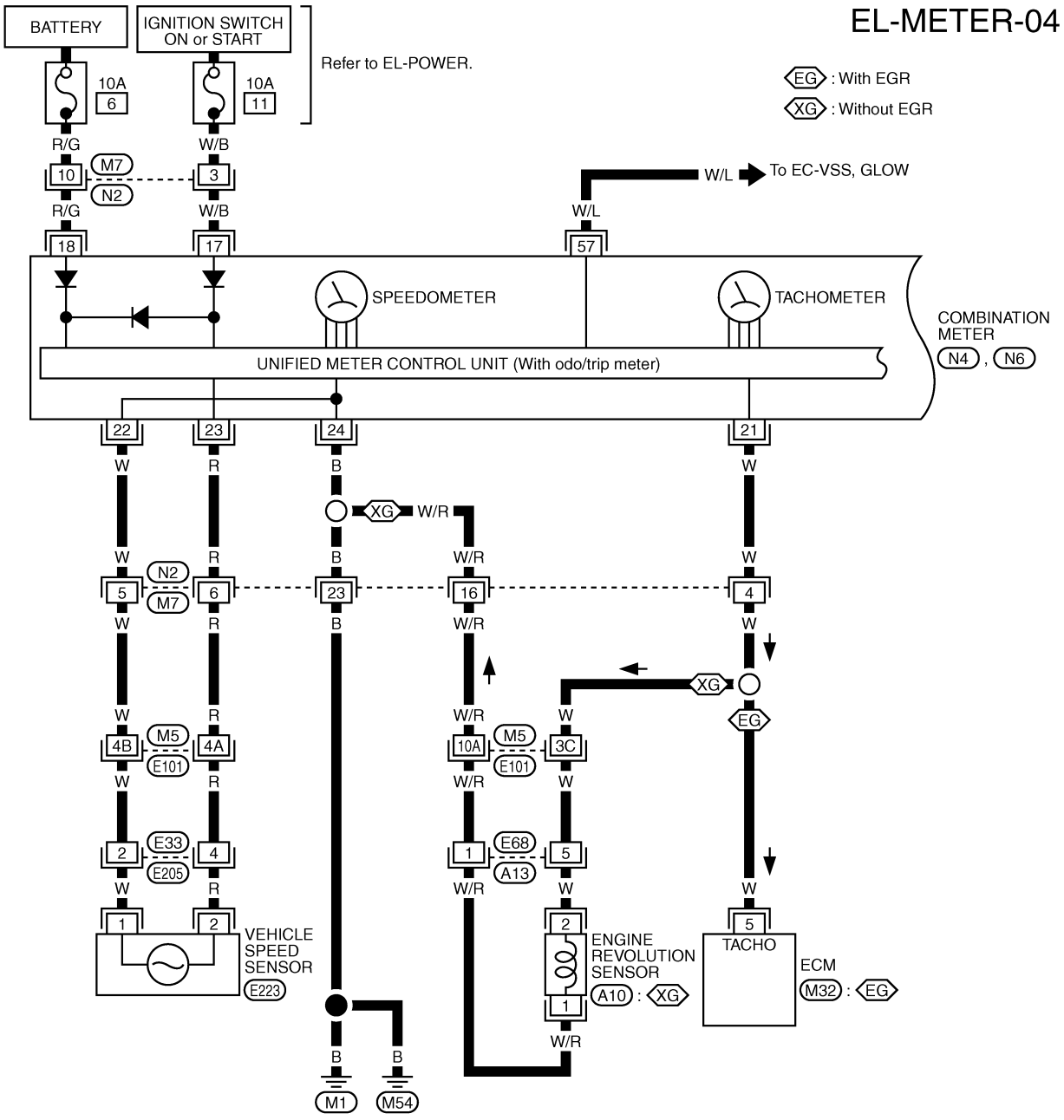


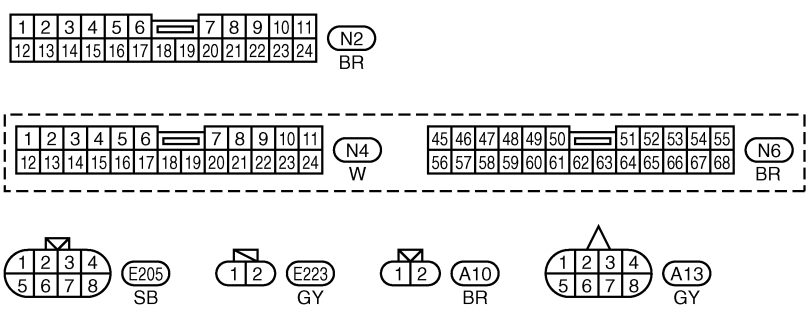
Refer to last page (Foldout page).
M5 , E101

GEL397A

Wiring Diagram — METER —/LHD Diesel Engine Models with Tachometer

EL-METER-04





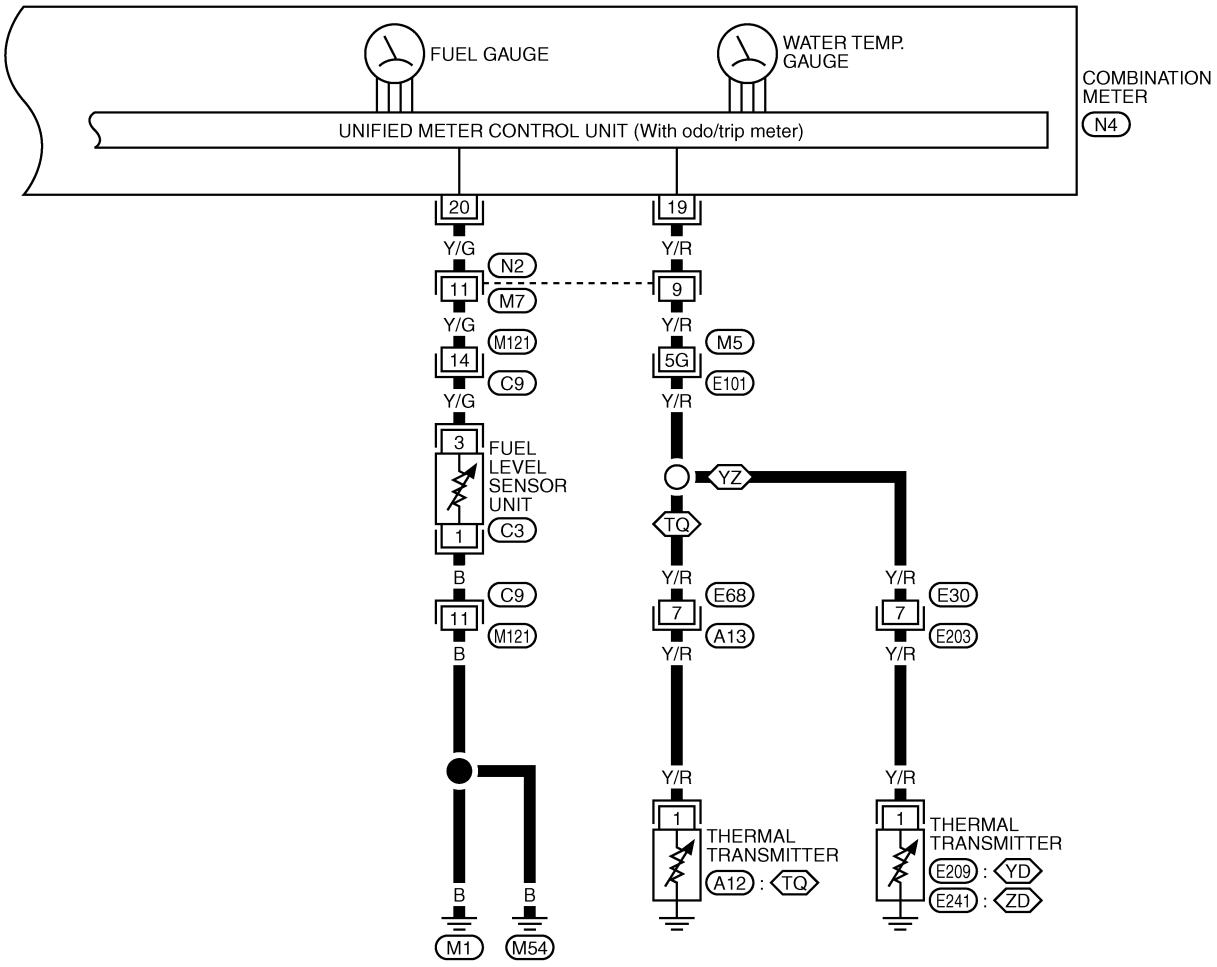
Refer to last page (Foldout page).
M5 , E101
M32

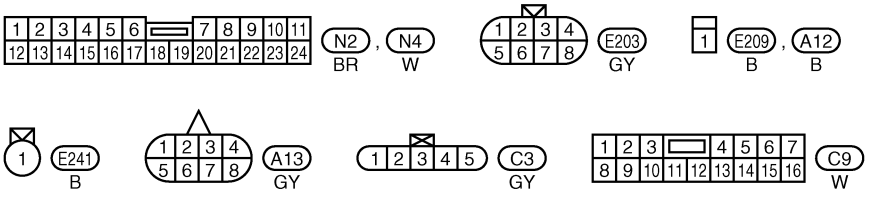
GEL393A

Wiring Diagram — METER —/LHD Diesel Engine Models with Tachometer (Cont'd)

EL-METER-05

YD : YD engine
ZD : ZD engine
YZ : YD and ZD engines
TQ : TD and QD engines



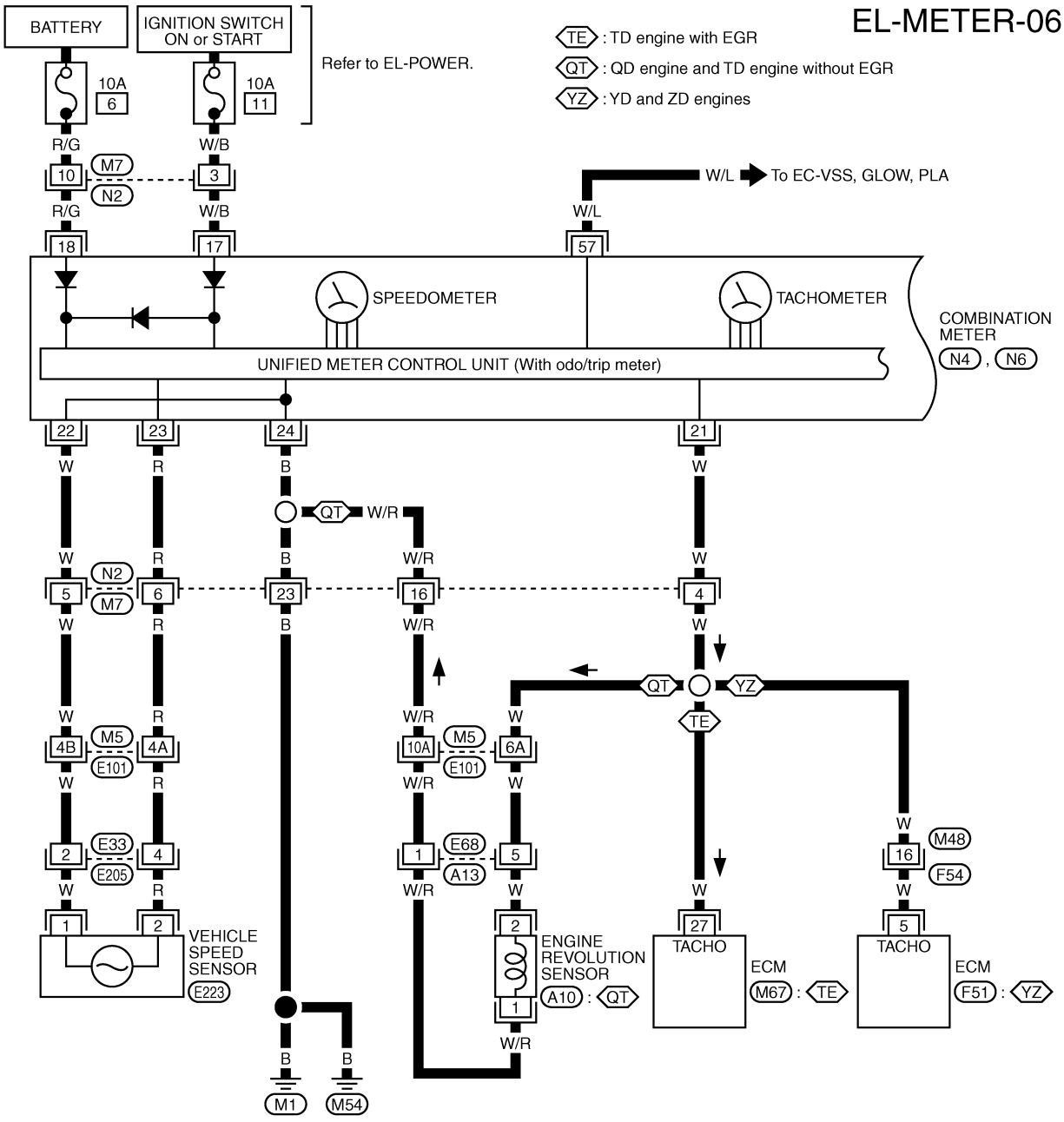


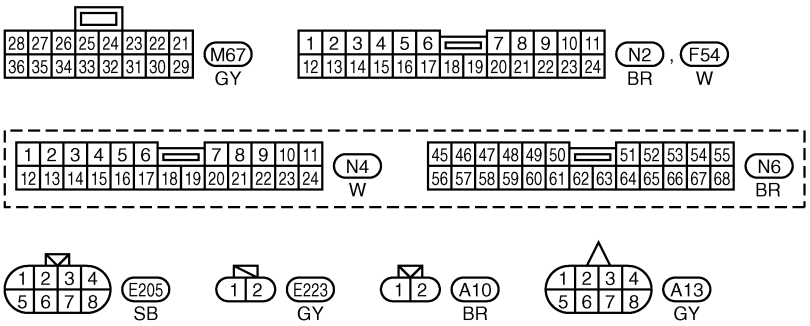
Refer to last page (Foldout page).
M5 , E101

GEL394A

Wiring Diagram — METER —/RHD Diesel Engine Models with Tachometer

EL-METER-06





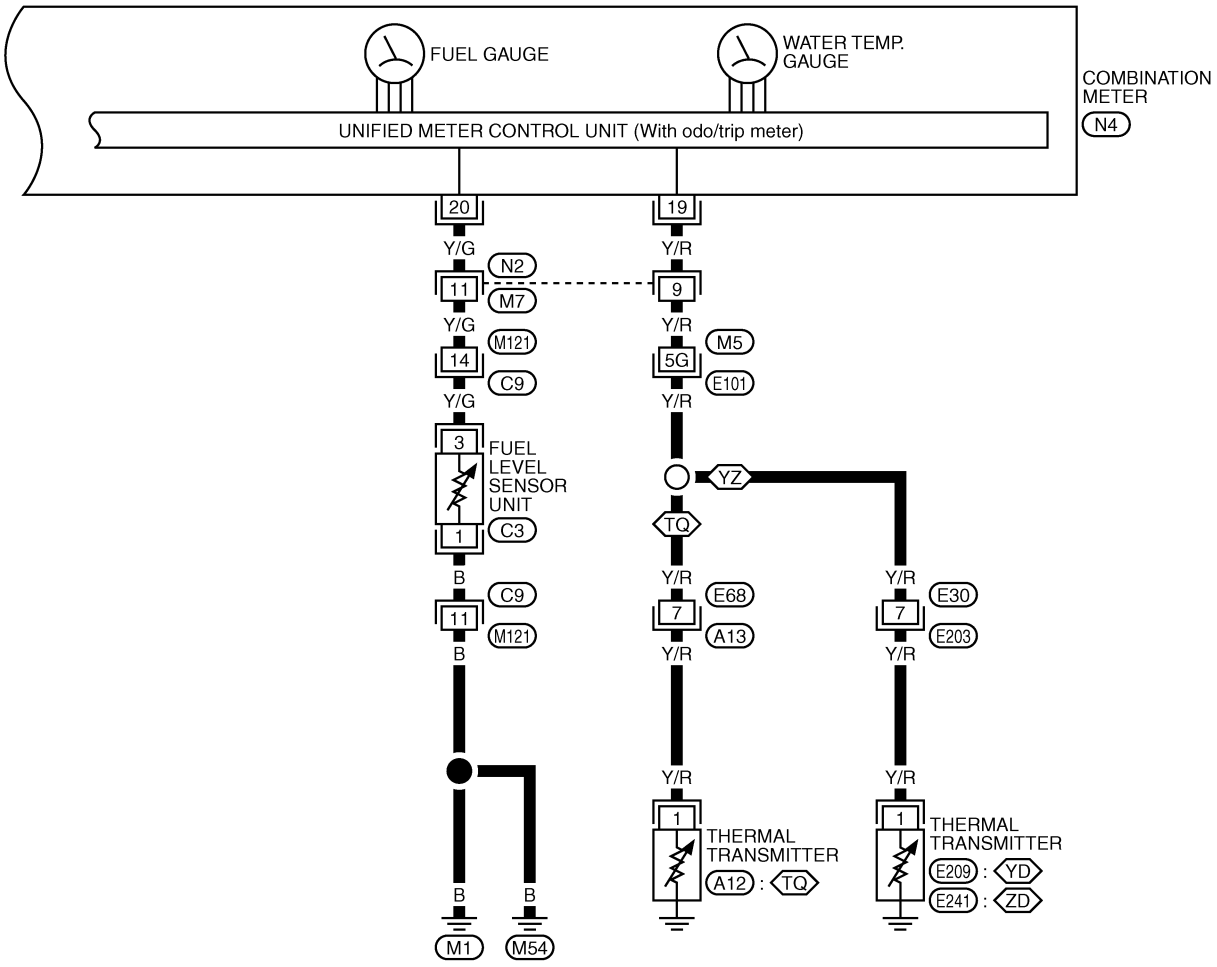
Refer to last page (Foldout page).
M5 , E101
F51

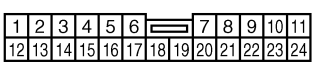
GEL395A

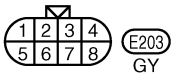
Wiring Diagram — METER —/RHD Diesel Engine Models with Tachometer (Cont'd)

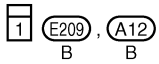
EL-METER-07

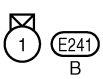
YD : YD engine
ZD : ZD engine
YZ : YD and ZD engines
TQ : TD and QD engines

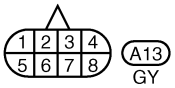


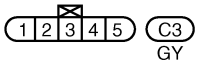


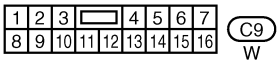










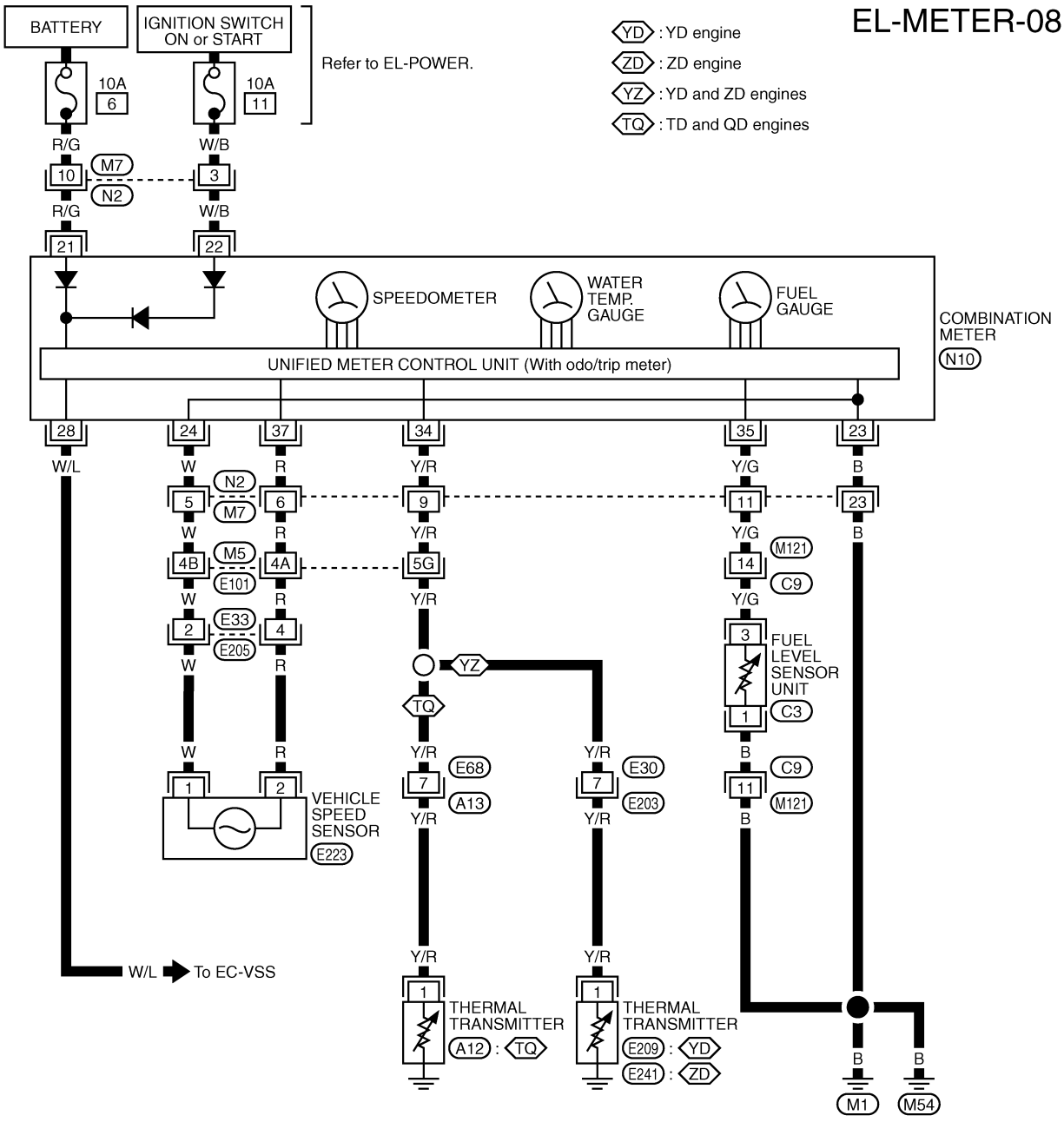


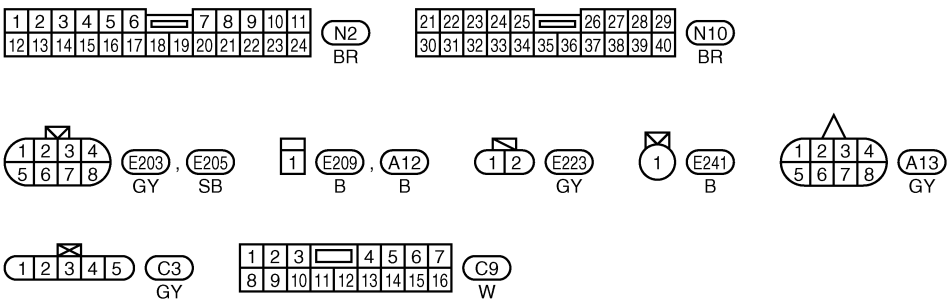
Refer to last page (Foldout page).
M5 , E101

GEL396A

Wiring Diagram — METER —/Diesel Engine without Tachometer

EL-METER-08





Refer to last page (Foldout page).
M5 , E101

GEL398A

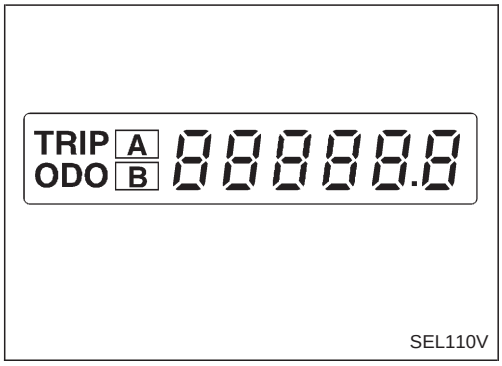
Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode

DIAGNOSIS FUNCTION

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

HOW TO ALTERNATE DIAGNOSIS MODE

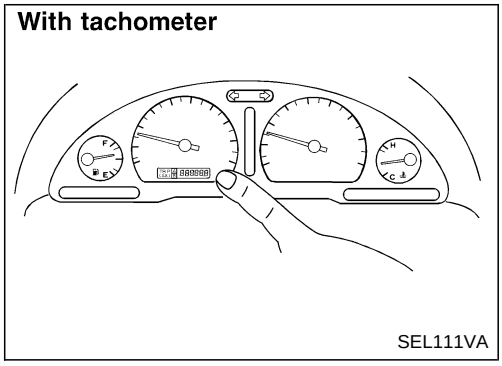
1. Turn ignition switch to ON and change odo/trip meter to “TRIP A” or “TRIP B”.
2. Turn ignition switch to OFF.
3. Turn ignition switch to ON when pushing odo/trip meter switch.
4. Confirm that trip meter indicates “000.0”.
5. Push odo/trip meter switch more than three times within 5 seconds.



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

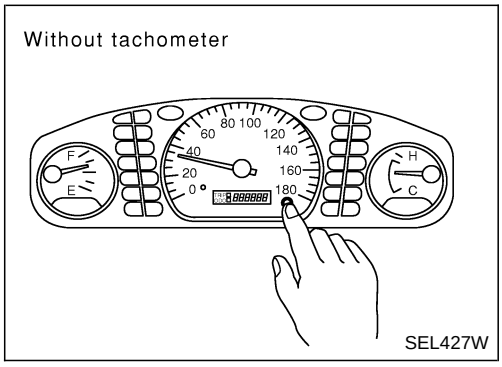
NOTE: If some segments are not turned on, unified meter control unit with odo/trip meter should be replaced.

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



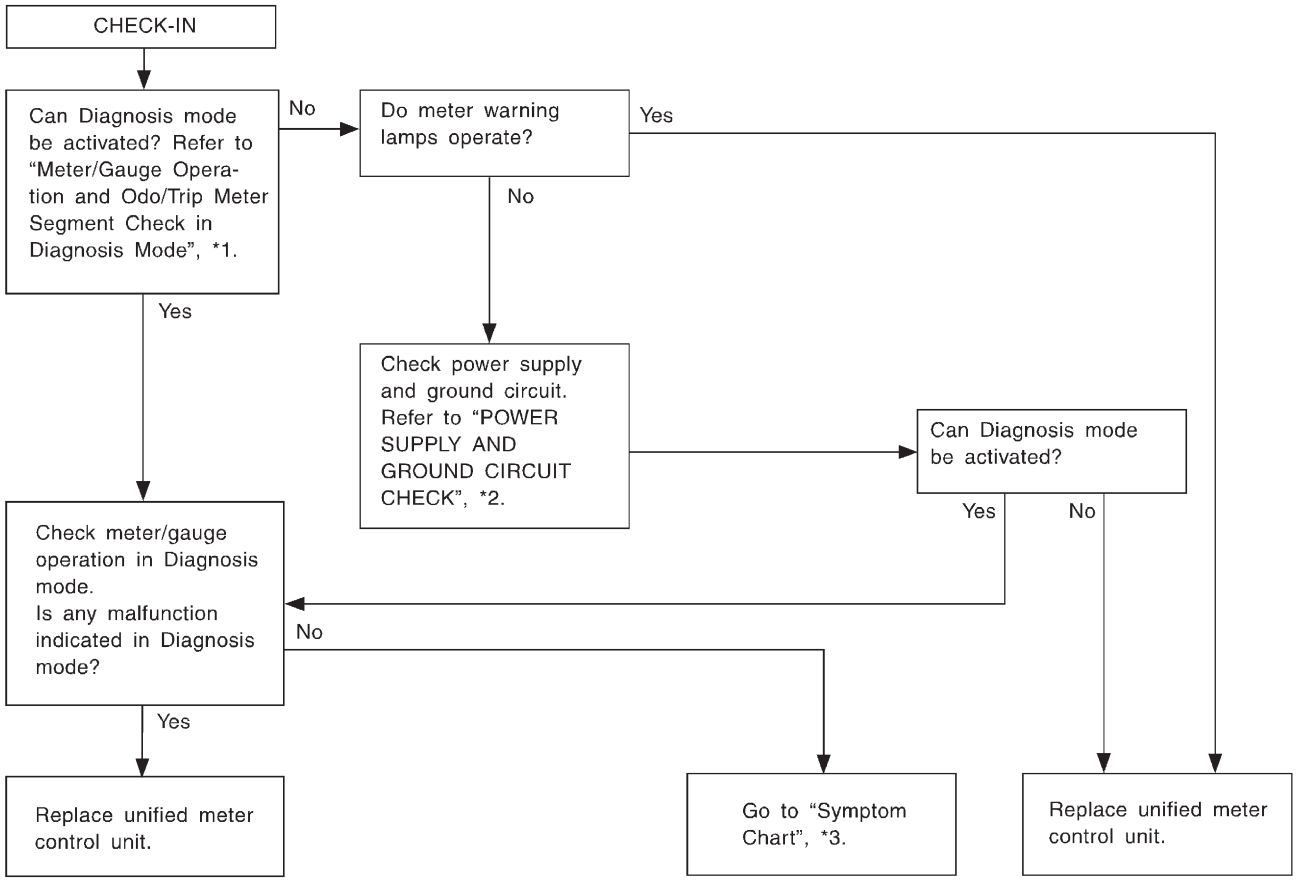
7. Push odo/trip meter switch. Indication of each meter/gauge should be as shown left during pushing odo/trip meter switch if it is no malfunctioning.

NOTE: It takes about a few seconds for indication of fuel gauge to become stable.



Trouble Diagnoses/With Tachometer

PRELIMINARY CHECK



SEL269Y

*1:Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode (EL-3070)

*2:POWER SUPPLY AND GROUND CIRCUIT CHECK (EL-3072)

*3:Symptom Chart (EL-3071)

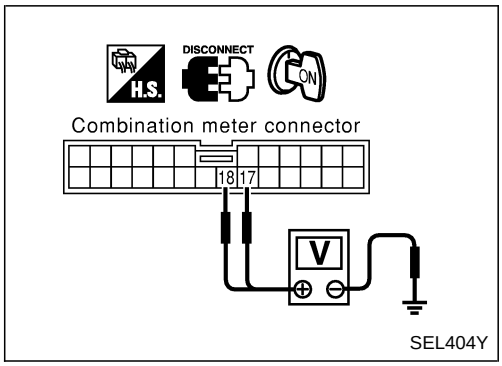
SYMPTOM CHART

Symptom	Possible causes	Repair order
One of speedometer/fuel gauge/water temp. gauge is malfunctioning.	1. Sensor signal - Vehicle speed signal - Fuel gauge - Water temp. gauge 2. Unified meter control unit	1. Check the sensor for malfunctioning meter/gauge. INSPECTION/VEHICLE SPEED SIGNAL (Refer to EL section "Vehicle speed signal" in original Service Manual.) INSPECTION/FUEL LEVEL SENSOR UNIT INSPECTION/THERMAL TRANSMITTER 2. Replace unified meter control unit.
Multiple meter/gauge are malfunctioning. (except odo/trip meter)		

Before starting trouble diagnoses below, perform PRELIMINARY CHECK, EL-3071.

Trouble Diagnoses/With Tachometer (Cont'd)

POWER SUPPLY AND GROUND CIRCUIT CHECK

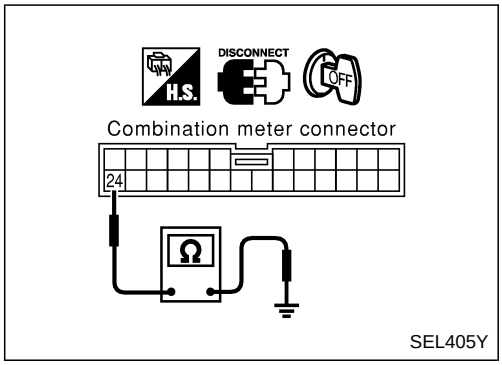


Power supply circuit check

Terminals		Ignition switch position		
⊕	⊖	OFF	ACC	ON
⑱ (R/G)	Ground	Battery voltage	Battery voltage	Battery voltage
⑰ (W/B)	Ground	0V	0V	Battery voltage

If NG, check the following.

- 10A fuse [No. 11, located in fuse block (J/B)]
- 10A fuse [No. 6, located in fuse block (J/B)]
- Harness for open or short between fuse and combination meter



Ground circuit check

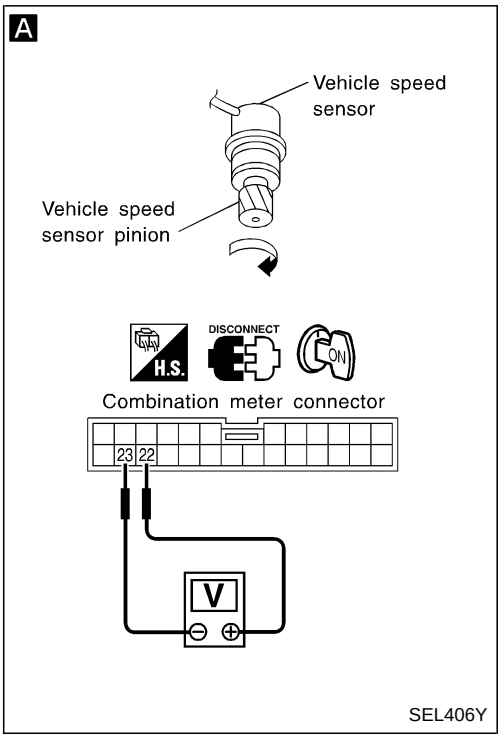
Terminals	Continuity
㉔ - Ground (B)	Yes

Trouble Diagnoses/With Tachometer (Cont'd)

INSPECTION/VEHICLE SPEED SENSOR

Without ABS for the Middle East and Except for the Middle East

A

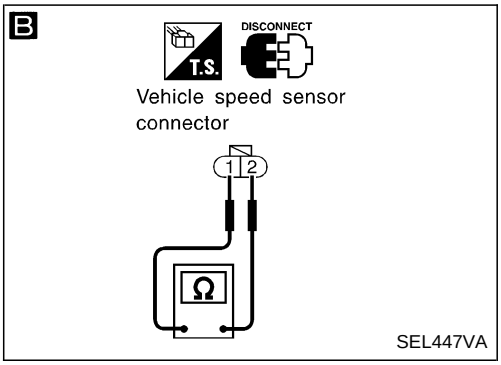


CHECK VEHICLE SPEED SENSOR OUTPUT.
1. Remove vehicle speed sensor from transmission.
2. Check voltage between combination meter connector (N4) terminals ㉒ (W) and ㉓ (R) while quickly turning speed sensor pinion.
   Voltage: Approx. 0.5V

OK → Vehicle speed sensor is OK.

NG ↓

B



CHECK VEHICLE SPEED SENSOR.
Check resistance between vehicle speed sensor connector (E223) terminals ① (W) and ② (R).
Resistance: Approx. 250Ω

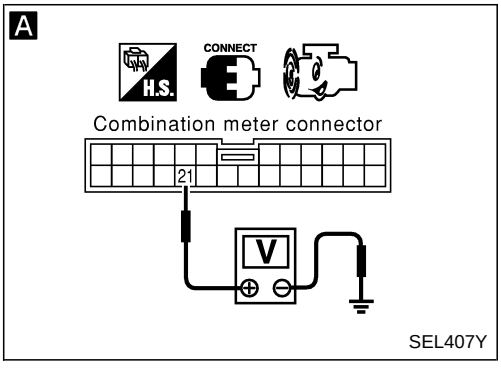
NG → Replace vehicle speed sensor.

OK ↓

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

INSPECTION/ENGINE REVOLUTION SIGNAL

A



CHECK ECM OUTPUT.
1. Start engine.
2. Check voltage between combination meter terminal ㉑ (W) and ground at idle and 2,000 rpm.
   Higher rpm = Higher voltage
   Lower rpm = Lower voltage
   Voltage should change with rpm.

OK → Engine revolution signal is OK.

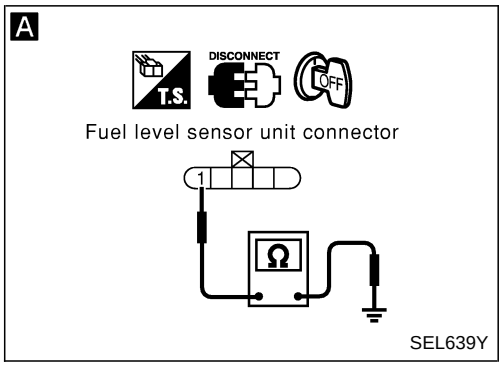
NG ↓

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

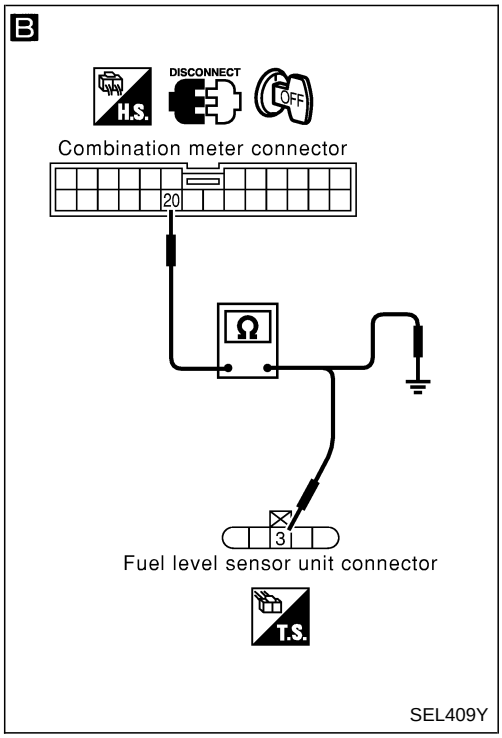
Trouble Diagnoses/With Tachometer (Cont'd)

INSPECTION/FUEL LEVEL SENSOR UNIT

A



B



A

CHECK GROUND CIRCUIT FOR FUEL LEVEL SENSOR UNIT.
Check harness continuity between fuel level sensor unit connector (C3) terminal ① (B) and ground.
Continuity should exist.

NG → Repair harness or connector.

OK ↓

CHECK GAUGE UNITS.
Refer to EL section "FUEL LEVEL SENSOR UNIT" in original Service Manual Pub. No. SM7E-0D22G1.

NG → Repair or replace.
Refer to FE section of Service Manual Pub. No. SM7E-0D22G1.

OK ↓

B

CHECK HARNESS FOR OPEN OR SHORT.
1. Disconnect combination connector and fuel level sensor unit connector.
2. Check continuity between combination meter terminal ⑳ (Y/G) and fuel level sensor unit connector (C3) terminal ③ (Y/G).

Continuity should exist.

3. Check continuity between combination meter terminal ⑳ (Y/G) and ground.

Continuity should not exist.

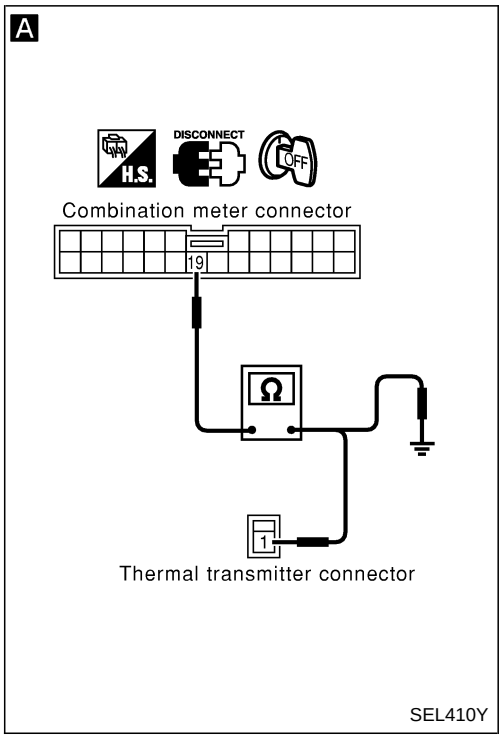
NG → Repair harness or connector.

OK ↓

Fuel level sensor unit is OK.

Trouble Diagnoses/With Tachometer (Cont'd)

INSPECTION/THERMAL TRANSMITTER



CHECK THERMAL TRANSMITTER.
Refer to EL section "THERMAL TRANSMITTER" in original Service Manual Pub. No. SM7E-0D22G1.

NG → Repair or replace.

OK ↓

A

CHECK HARNESS FOR OPEN OR SHORT.

1. Disconnect combination connector and thermal transmitter connector.
2. Check continuity between combination meter terminal ⑲ (Y/R) and thermal transmitter connector E9, M209, E209 terminal ①.

Continuity should exist.

3. Check continuity between combination meter terminal ⑲ (Y/R) and ground.

Continuity should not exist.

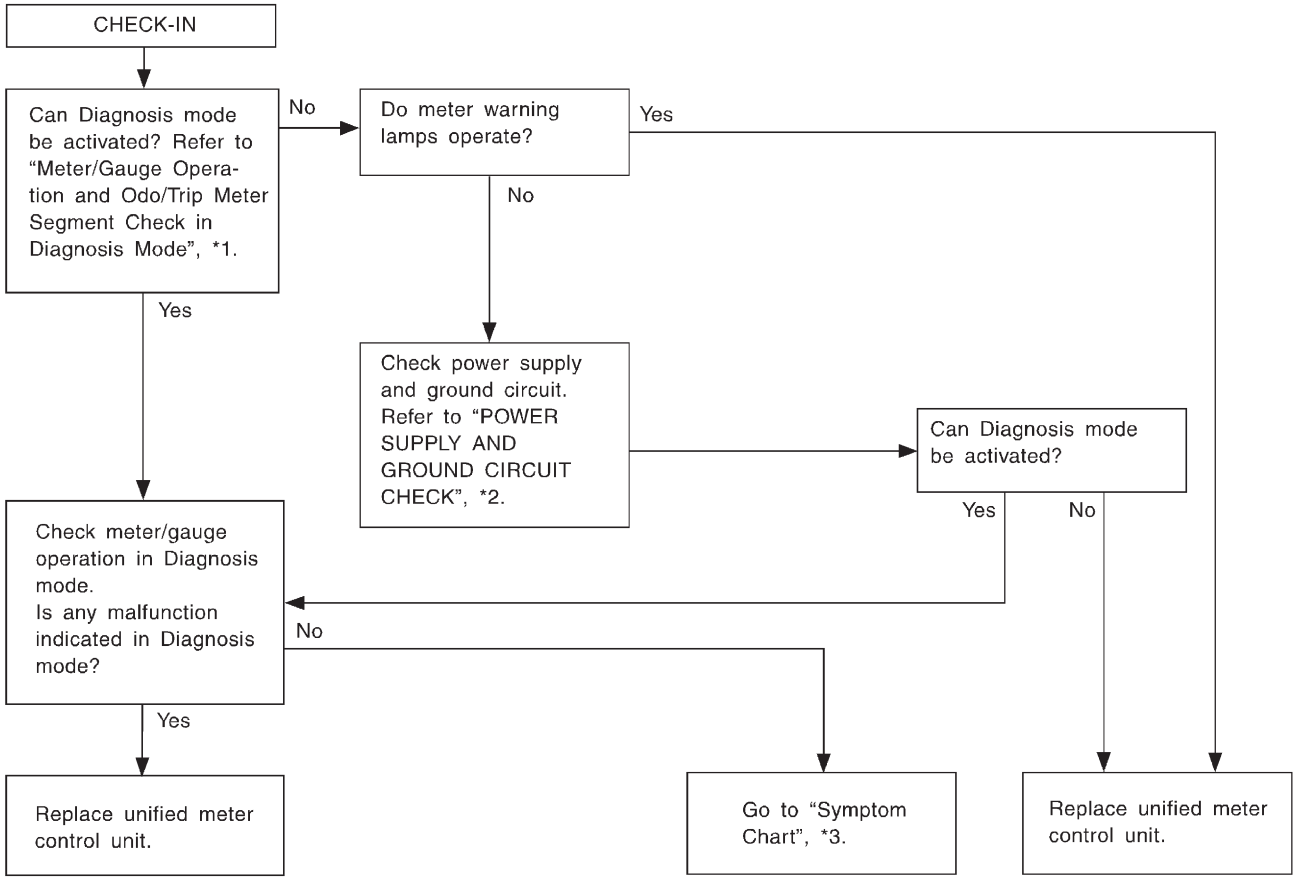
NG → Repair harness or connector.

OK ↓

Thermal transmitter is OK.

Trouble Diagnoses/Without Tachometer

PRELIMINARY CHECK



SEL269Y

*1:Meter/Gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode (EL-3070)

*2:POWER SUPPLY AND GROUND CIRCUIT CHECK (EL-3077)

*3:Symptom Chart (EL-3076)

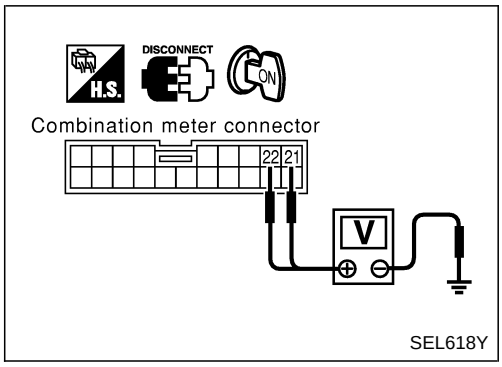
SYMPTOM CHART

Symptom	Possible causes	Repair order
One of speedometer/fuel gauge/water temp. gauge is malfunctioning.	1. Sensor signal - Vehicle speed signal - Fuel gauge - Water temp. gauge 2. Unified meter control unit	1. Check the sensor for malfunctioning meter/gauge. INSPECTION/VEHICLE SPEED SIGNAL (Refer to EL section "Vehicle speed signal" in original Service Manual.) INSPECTION/FUEL LEVEL SENSOR UNIT INSPECTION/THERMAL TRANSMITTER 2. Replace unified meter control unit.
Multiple meter/gauge are malfunctioning. (except odo/trip meter)		

Before starting trouble diagnoses below, perform PRELIMINARY CHECK, EL-3076.

Trouble Diagnoses/Without Tachometer (Cont'd)

POWER SUPPLY AND GROUND CIRCUIT CHECK

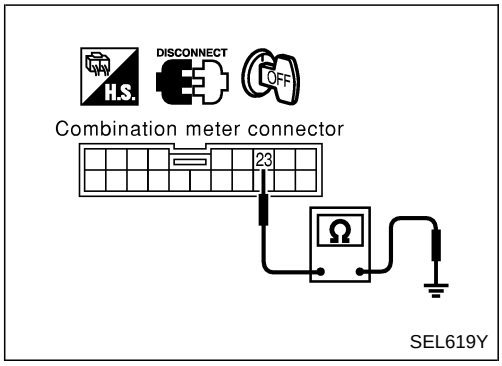


Power supply circuit check

Terminals		Ignition switch position		
⊕	⊖	OFF	ACC	ON
㉑ (R/G)	Ground	Battery voltage	Battery voltage	Battery voltage
㉒ (W/B)	Ground	0V	0V	Battery voltage

If NG, check the following.

- 10A fuse [No. 6, located in fuse block (J/B)]
- 10A fuse [No. 11, located in fuse block (J/B)]
- Harness for open or short between fuse and combination meter



Ground circuit check

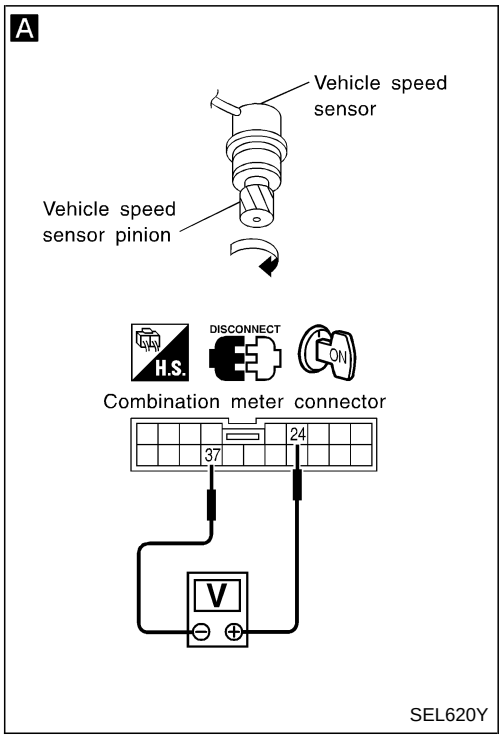
Terminals	Continuity
㉓ - Ground (B)	Yes

Trouble Diagnoses/Without Tachometer (Cont'd)

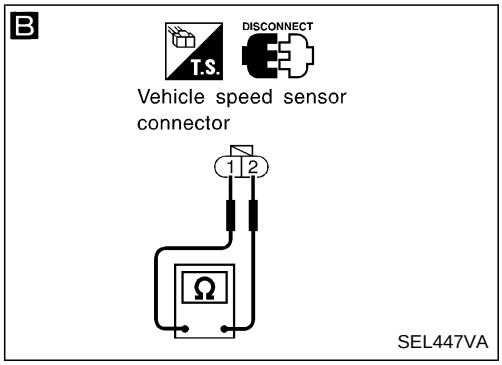
INSPECTION/VEHICLE SPEED SENSOR

Without ABS for the Middle East and Except for the Middle East

A



B



A

CHECK VEHICLE SPEED SENSOR OUTPUT.
1. Remove vehicle speed sensor from transmission.
2. Check voltage between combination meter connector (N10) terminals (24) (W) and (37) (R) while quickly turning speed sensor pinion.
   Voltage: Approx. 0.5V

OK → Vehicle speed sensor is OK.

NG ↓

B

CHECK VEHICLE SPEED SENSOR.
Check resistance between vehicle speed sensor connector (E223) terminals ① (W) and ② (R).
Resistance: Approx. 250Ω

NG → Replace vehicle speed sensor.

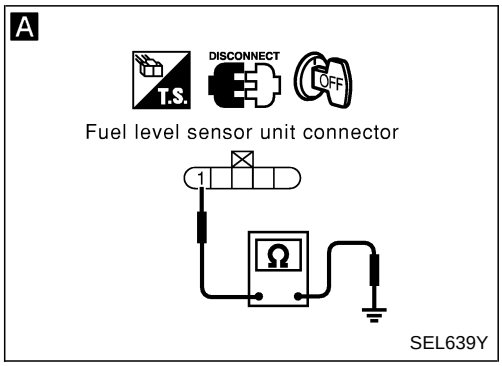
OK ↓

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

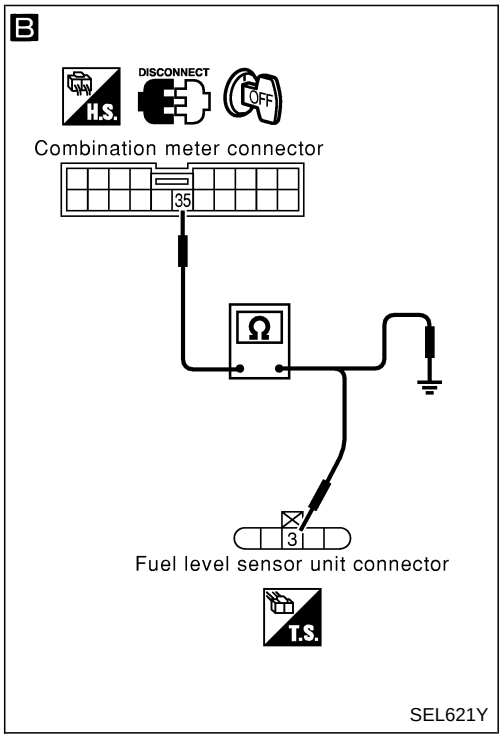
Trouble Diagnoses/Without Tachometer (Cont'd)

INSPECTION/FUEL LEVEL SENSOR UNIT

A



B



A

CHECK GROUND CIRCUIT FOR FUEL LEVEL SENSOR UNIT.
Check harness continuity between fuel level sensor unit connector (C3) terminal ① (B) and ground.
Continuity should exist.

NG → Repair harness or connector.

OK ↓

CHECK GAUGE UNITS.
Refer to EL section "FUEL LEVEL SENSOR UNIT" in original Service Manual Pub. No. SM7E-0D22G1.

NG → Repair or replace.
Refer to FE section of Service Manual Pub. No. SM7E-0D22G1.

OK ↓

B

CHECK HARNESS FOR OPEN OR SHORT.
1. Disconnect combination connector and fuel level sensor unit connector.
2. Check continuity between combination meter terminal ㉟ (Y/G) and fuel level sensor unit connector (C3) terminal ③ (Y/G).

Continuity should exist.

3. Check continuity between combination meter terminal ㉟ (Y/G) and ground.

Continuity should not exist.

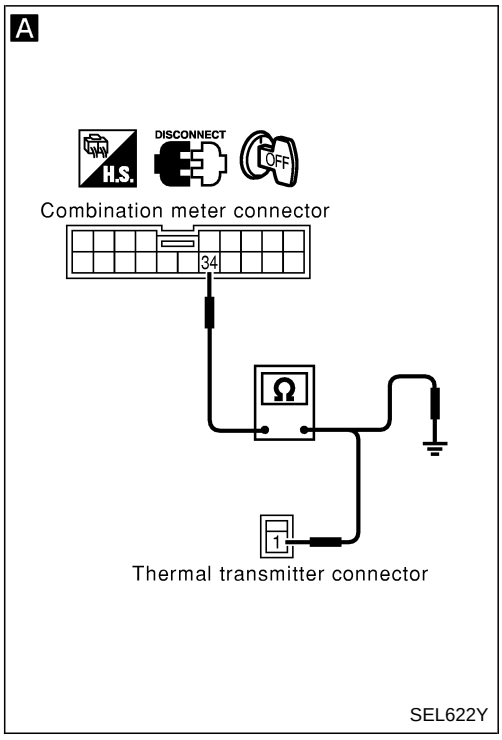
NG → Repair harness or connector.

OK ↓

Fuel level sensor unit is OK.

Trouble Diagnoses/Without Tachometer (Cont'd)

INSPECTION/THERMAL TRANSMITTER



CHECK THERMAL TRANSMITTER.
Refer to EL section "THERMAL TRANSMITTER" in original Service Manual Pub. No. SM7E-0D22G1.

NG → Repair or replace.

OK ↓

A

CHECK HARNESS FOR OPEN OR SHORT.

1. Disconnect combination connector and thermal transmitter connector.
2. Check continuity between combination meter terminal ㉞ (Y/R) and thermal transmitter connector (E9), (M209), (E209) terminal ①.

Continuity should exist.

3. Check continuity between combination meter terminal ㉞ (Y/R) and ground.

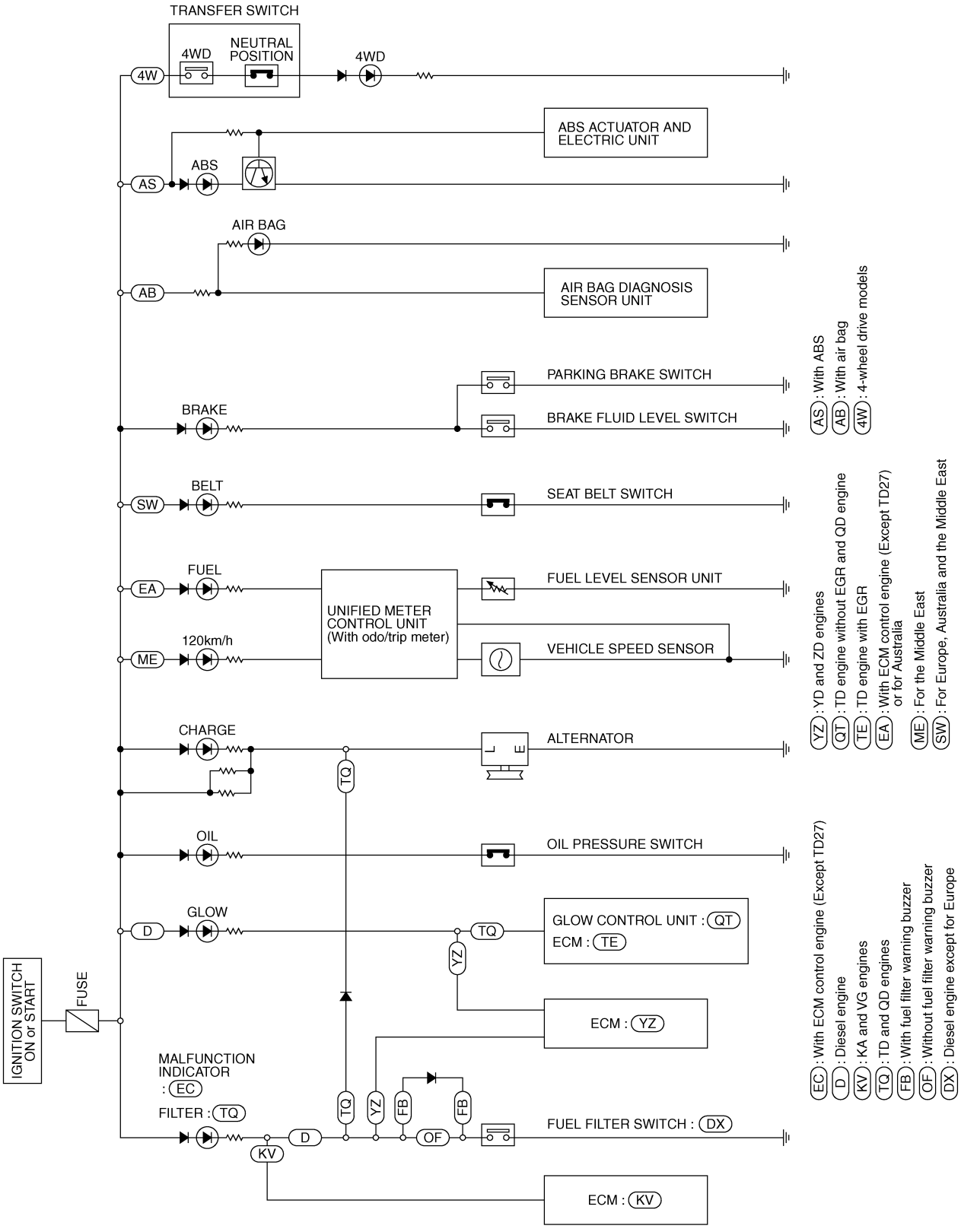
Continuity should not exist.

NG → Repair harness or connector.

OK ↓

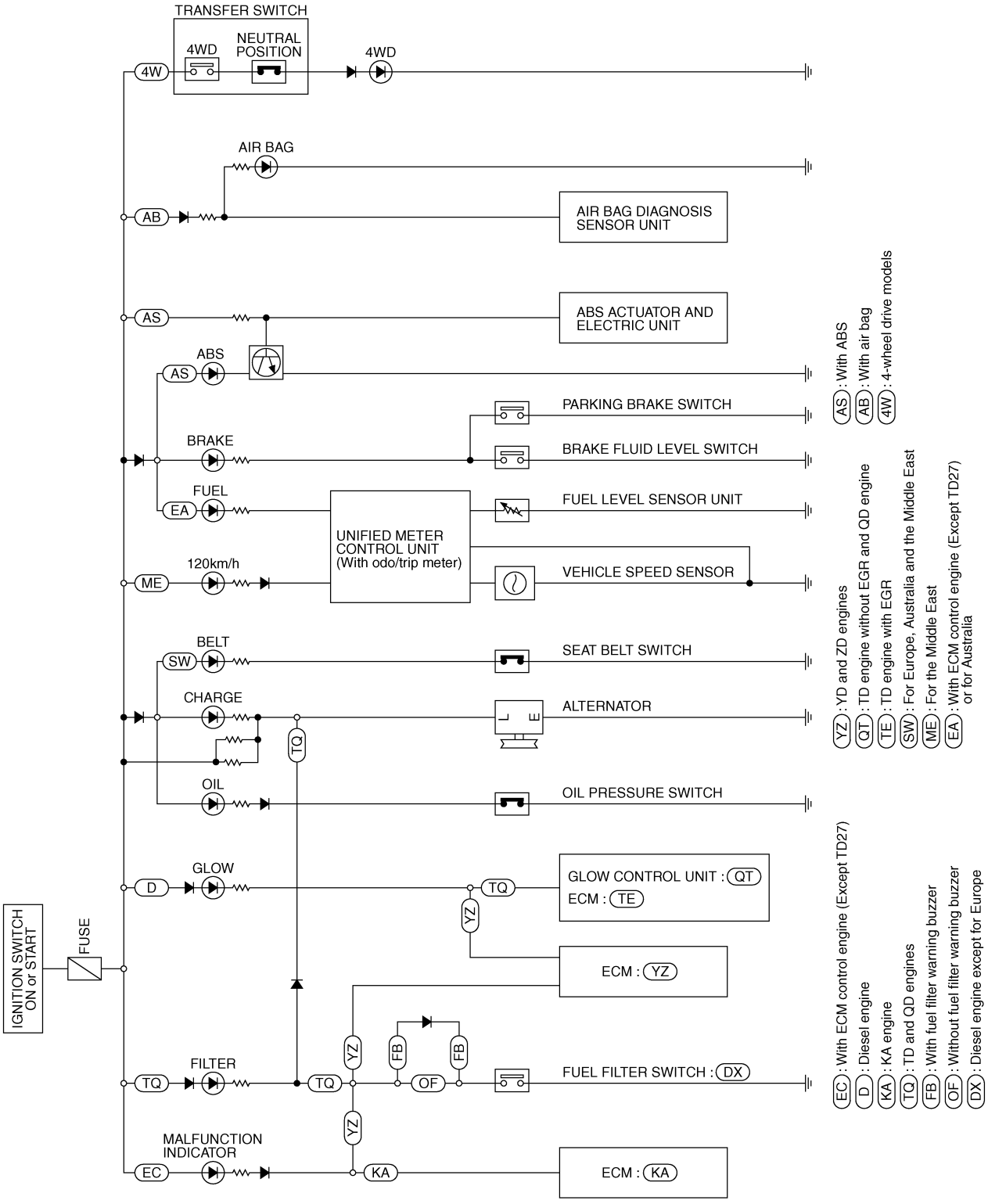
Thermal transmitter is OK.

Schematic/With Tachometer



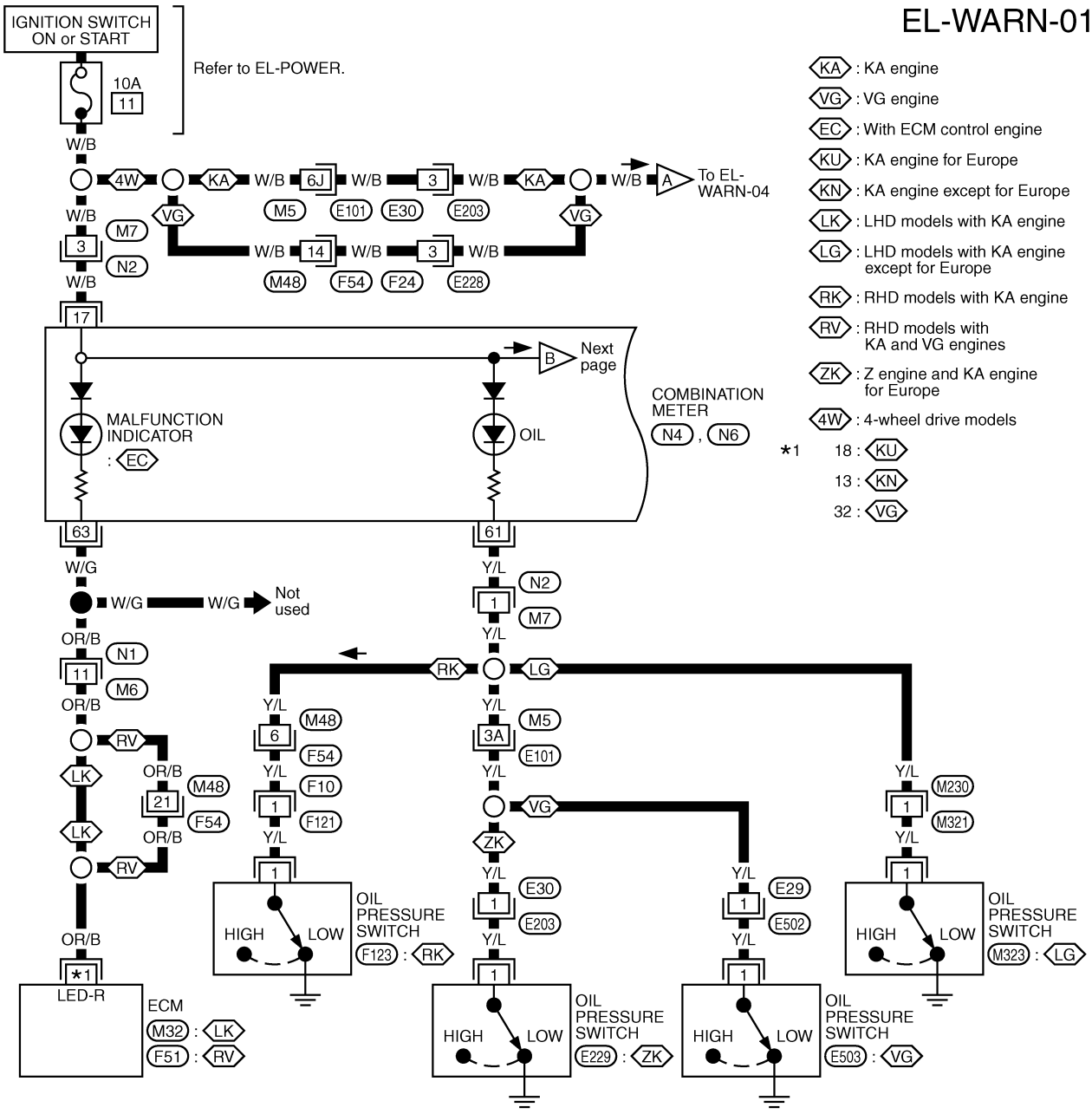
GEL399A

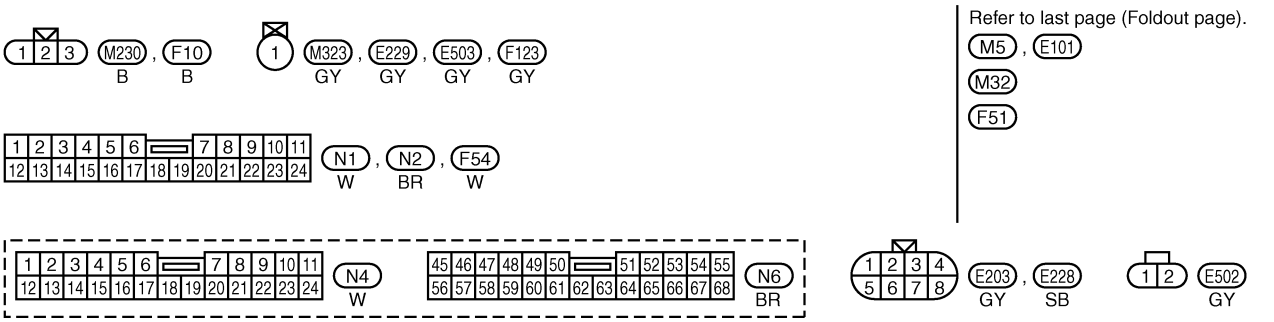
Schematic/Without Tachometer



GEL408A

Wiring Diagram — WARN —/Gasoline Engine with Tachometer



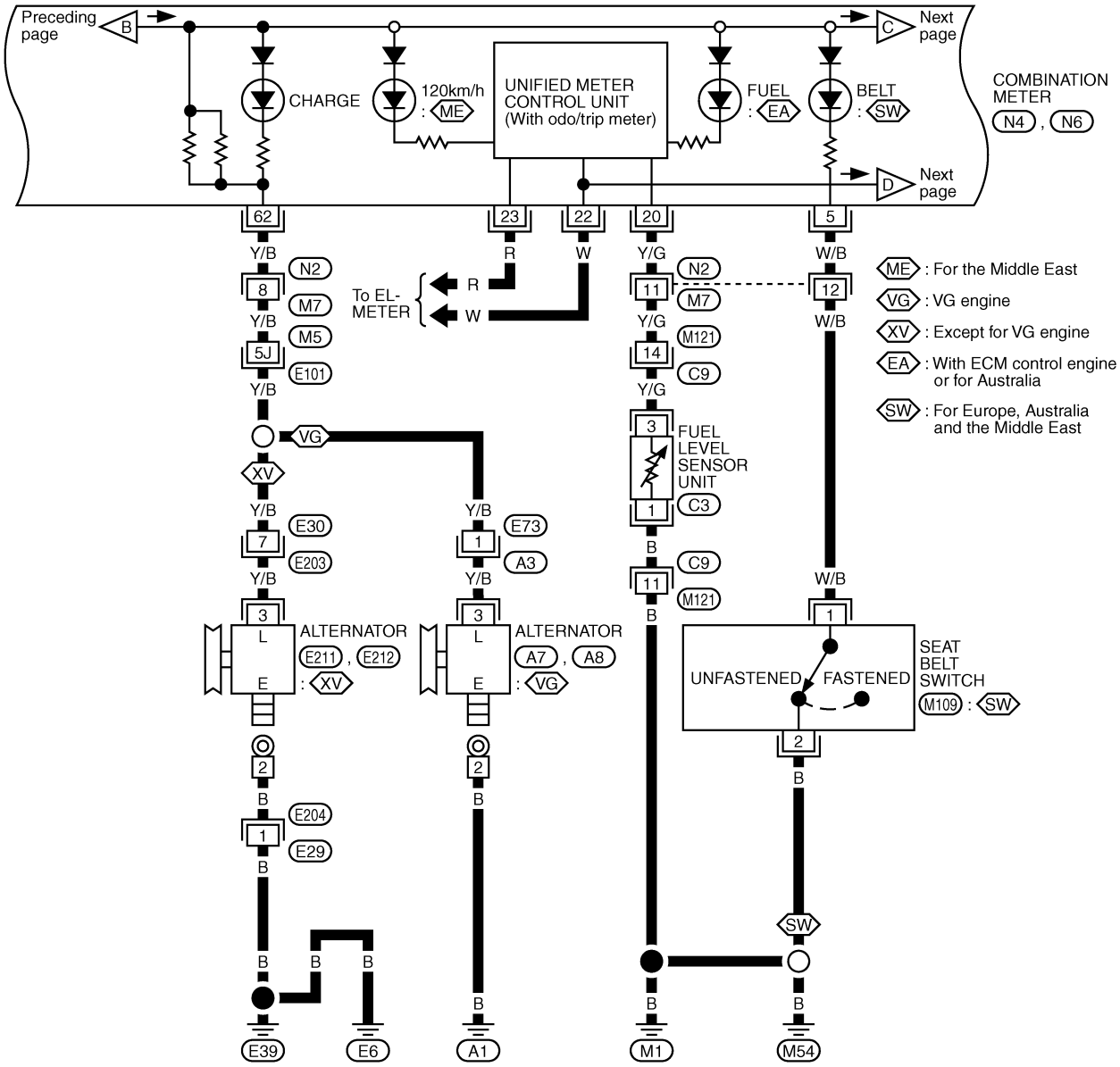


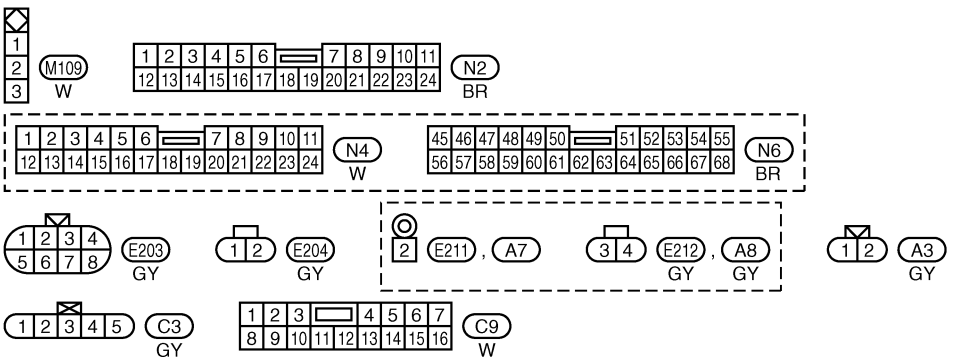
Refer to last page (Foldout page).
M5 , E101
M32
F51

GEL400A

Wiring Diagram — WARN —/Gasoline Engine with Tachometer (Cont'd)

EL-WARN-02



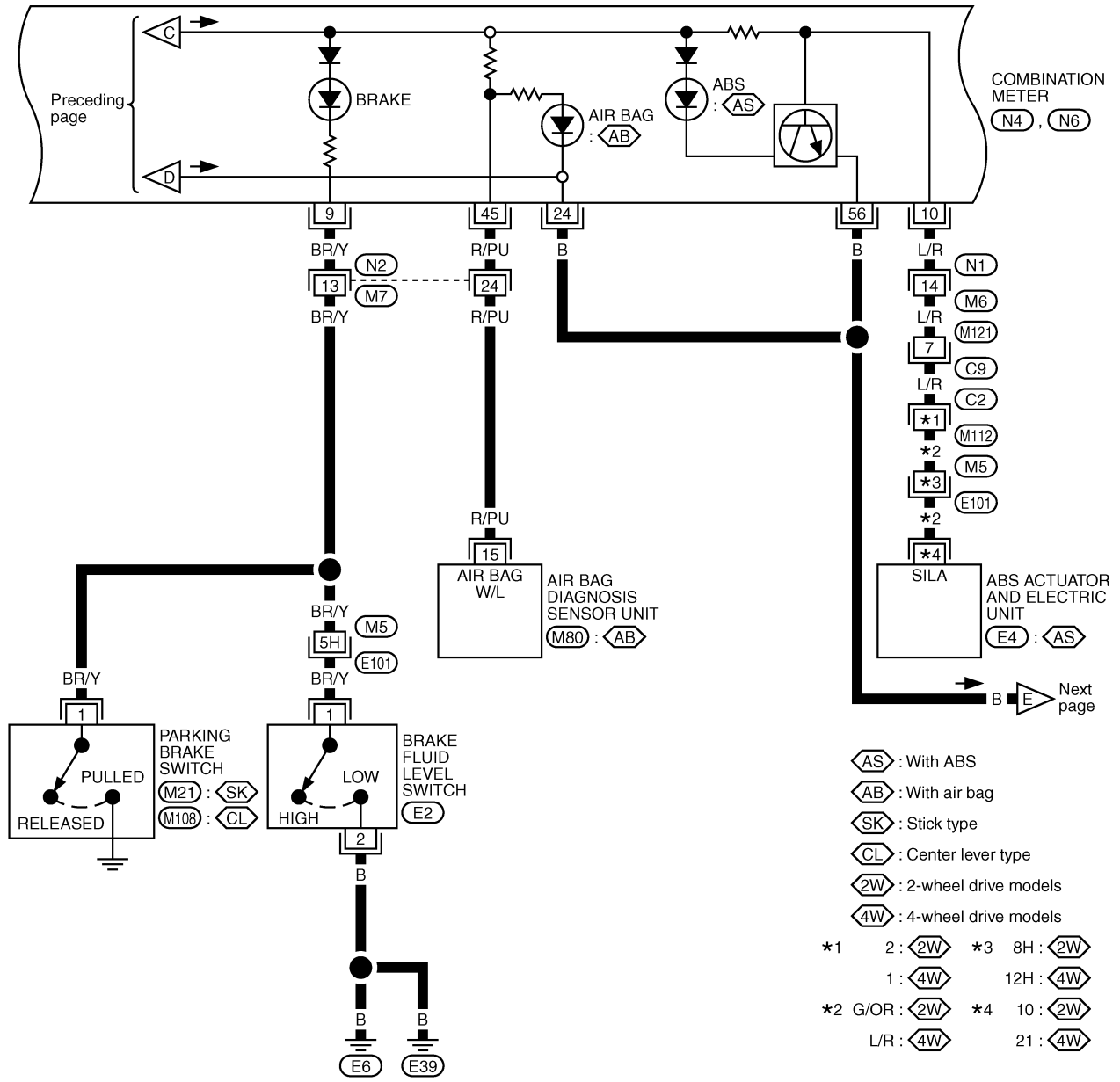


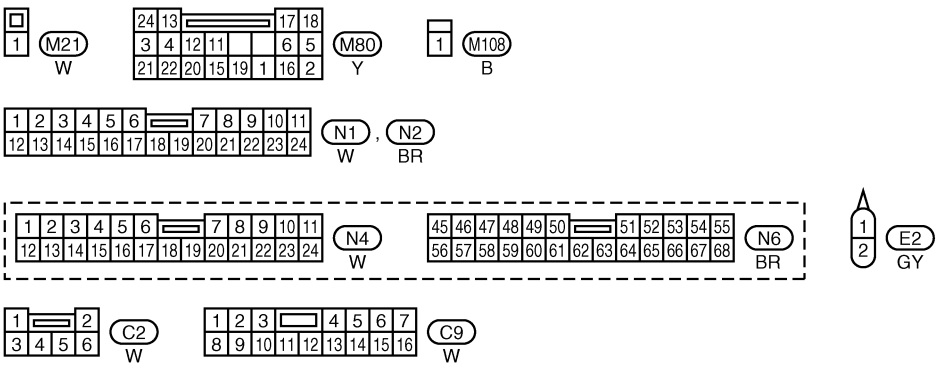
Refer to last page (Foldout page).
M5 , E101

GEL401A

Wiring Diagram — WARN —/Gasoline Engine with Tachometer (Cont'd)

EL-WARN-03





Refer to last page (Foldout page).

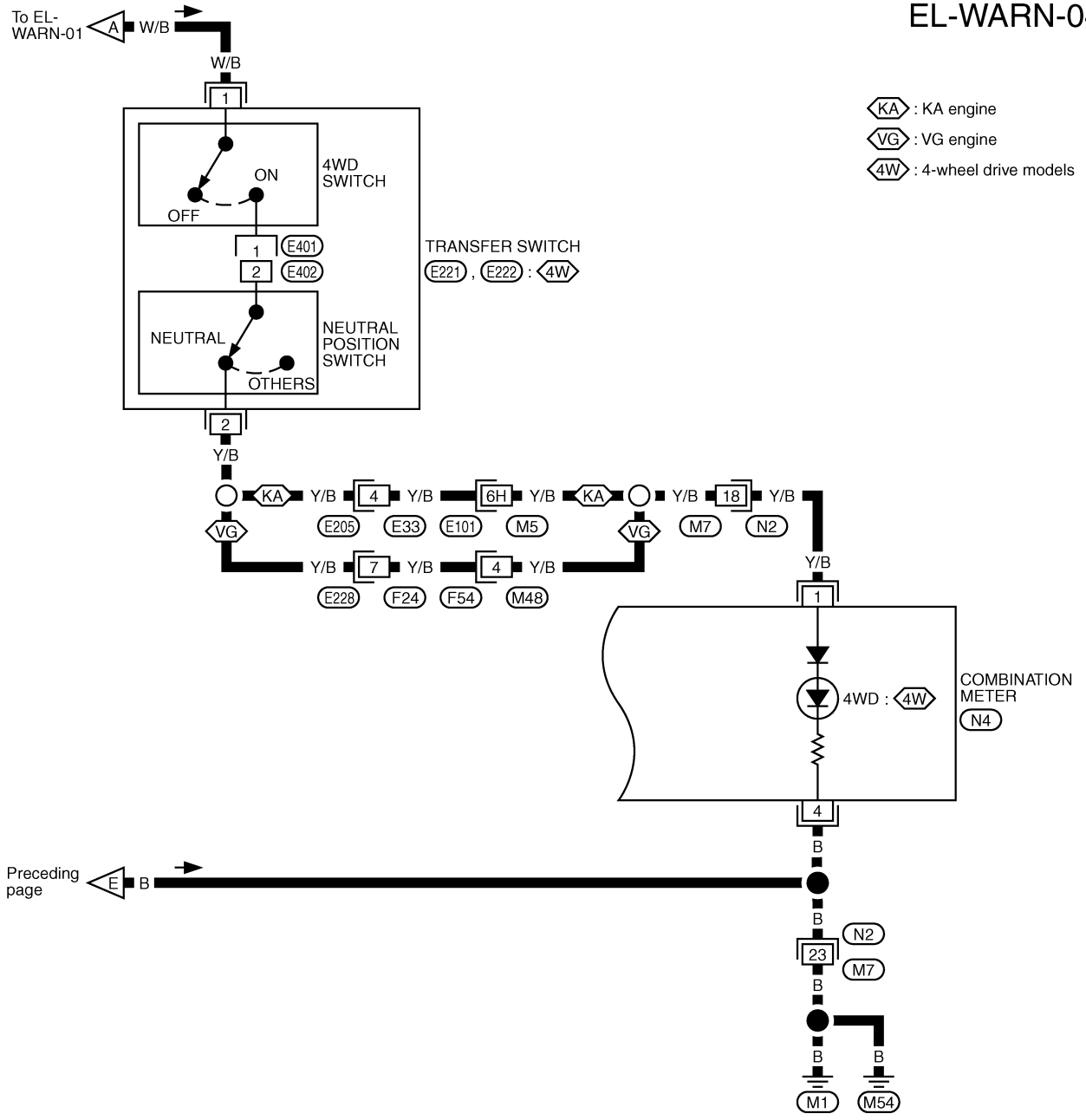
M5 , E101

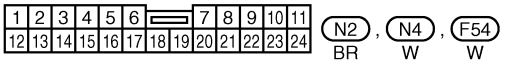
E4

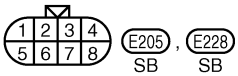
GEL402A

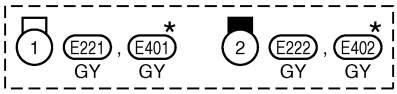
Wiring Diagram — WARN —/Gasoline Engine with Tachometer (Cont'd)

EL-WARN-04







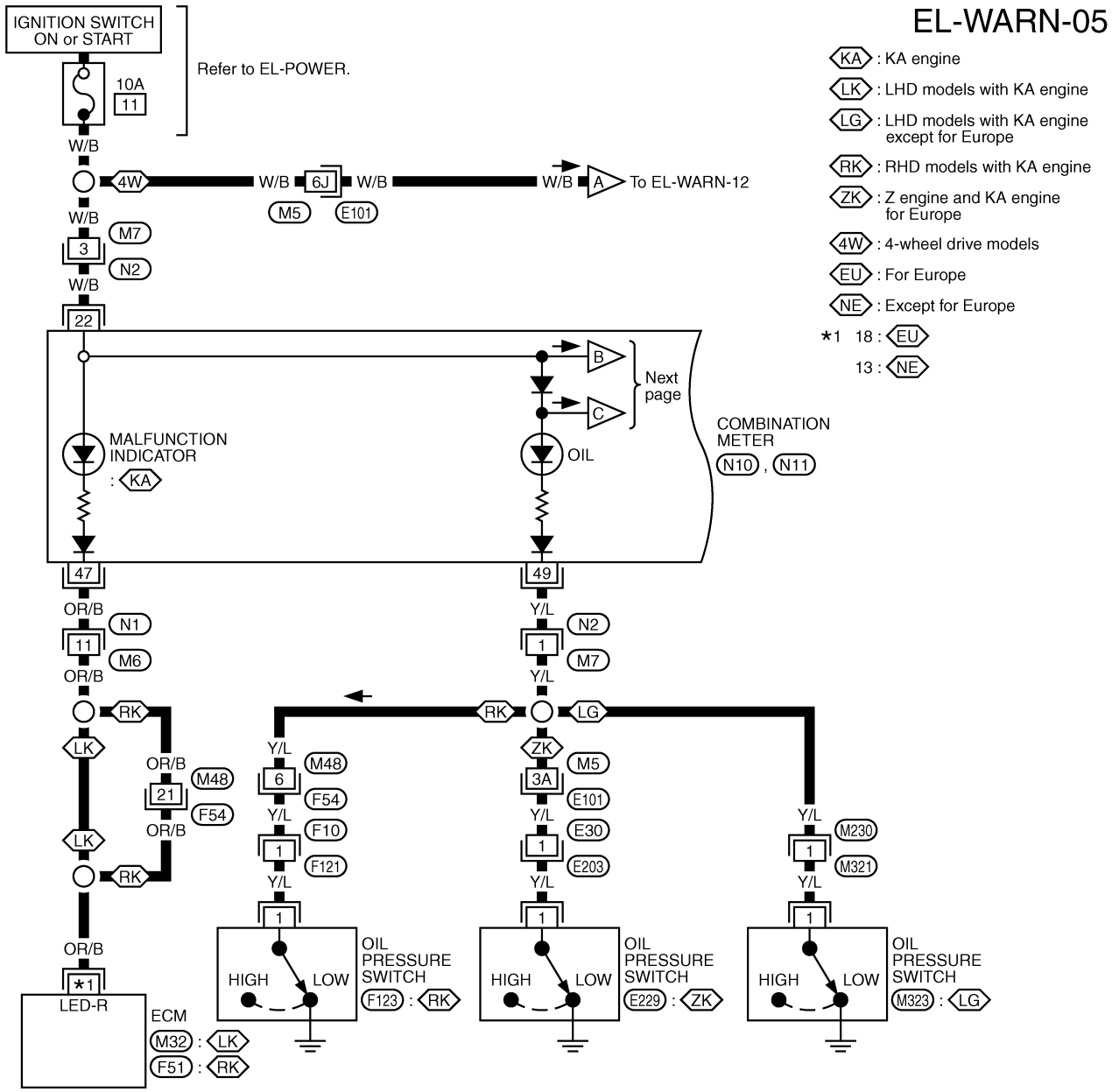


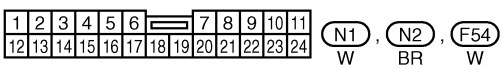
*: This connector is not shown in "HARNESS LAYOUT".

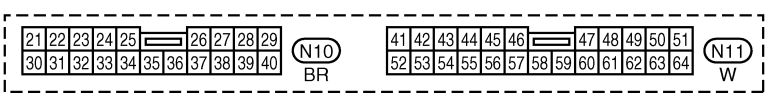
Refer to last page (Foldout page).
M5 , E101

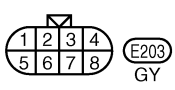
GEL403A

Wiring Diagram — WARN —/Gasoline Engine without Tachometer







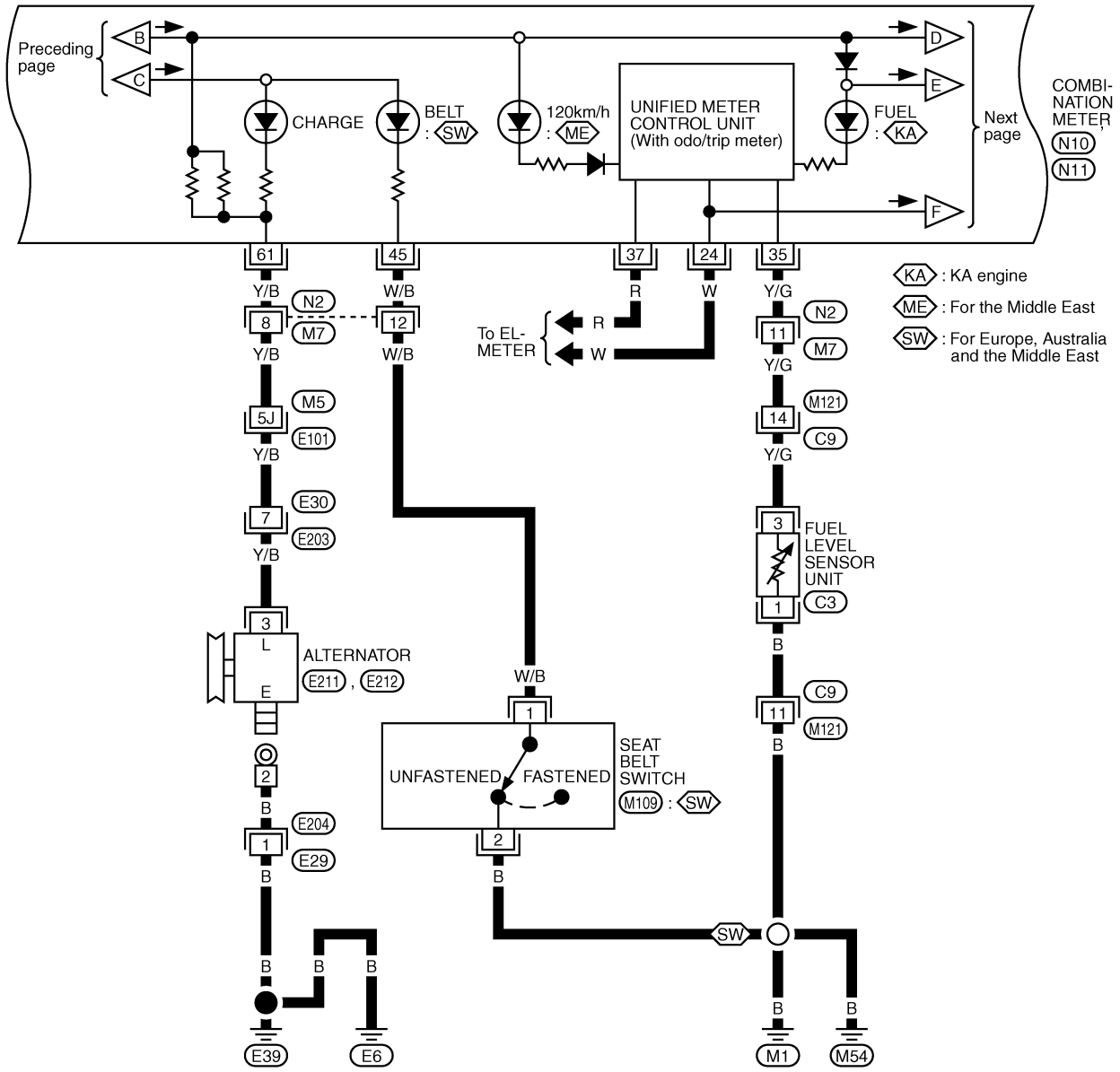


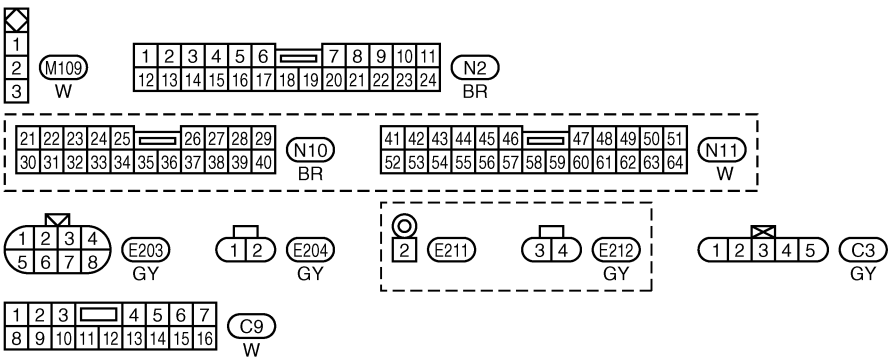
Refer to last page (Foldout page).
M5 , E101
M32
F51

GEL409A

Wiring Diagram — WARN —/Gasoline Engine without Tachometer (Cont'd)

EL-WARN-06



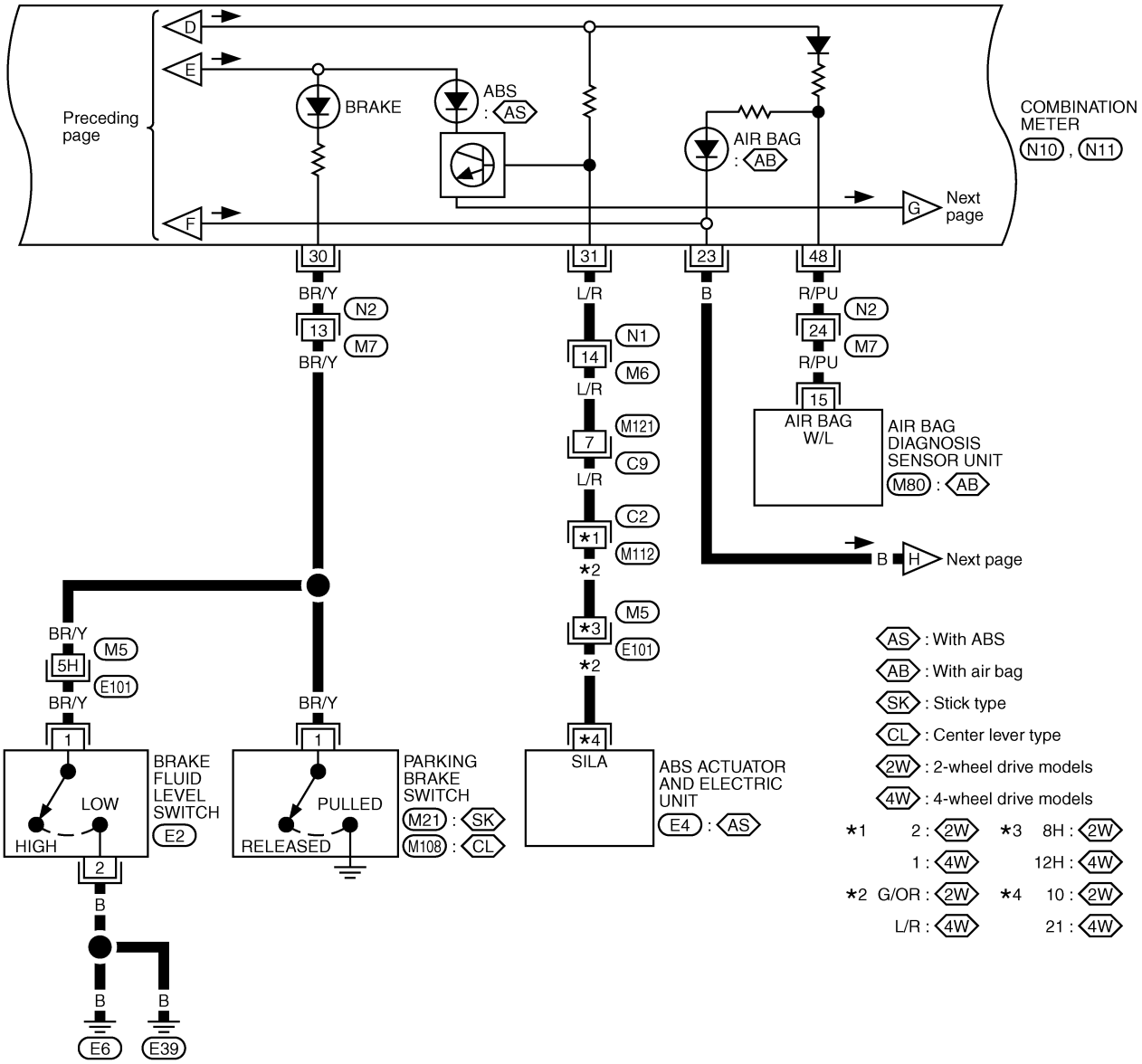


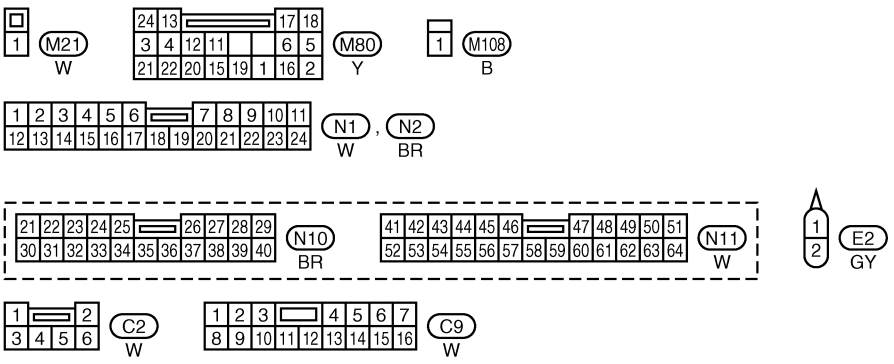
Refer to last page (Foldout page).
M5 , E101

GEL410A

Wiring Diagram — WARN —/Gasoline Engine without Tachometer (Cont'd)

EL-WARN-07



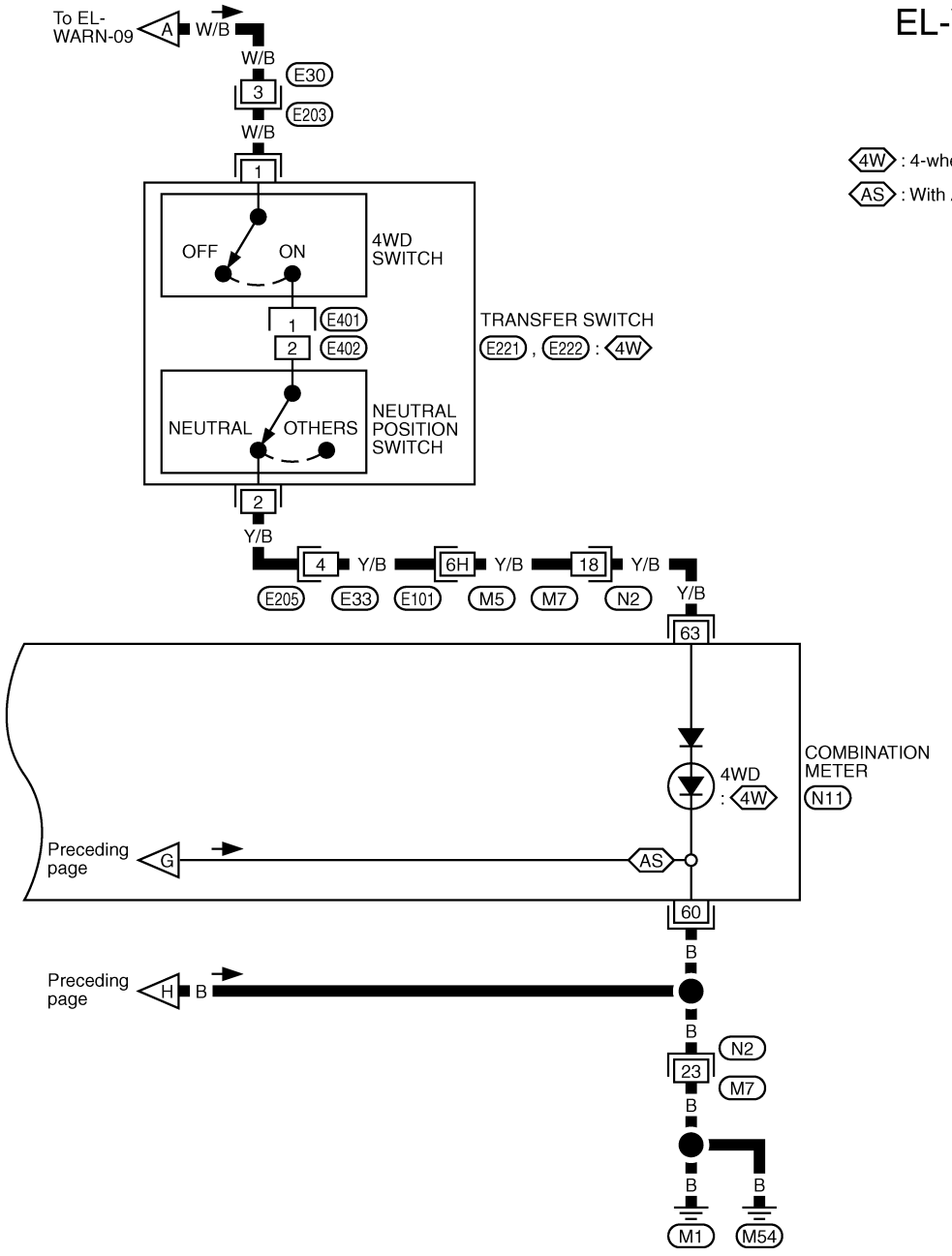


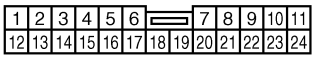
Refer to last page (Foldout page).
M5 , E101
E4

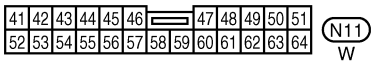
GEL411A

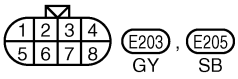
Wiring Diagram — WARN —/Gasoline Engine without Tachometer (Cont'd)

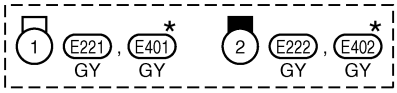
EL-WARN-08











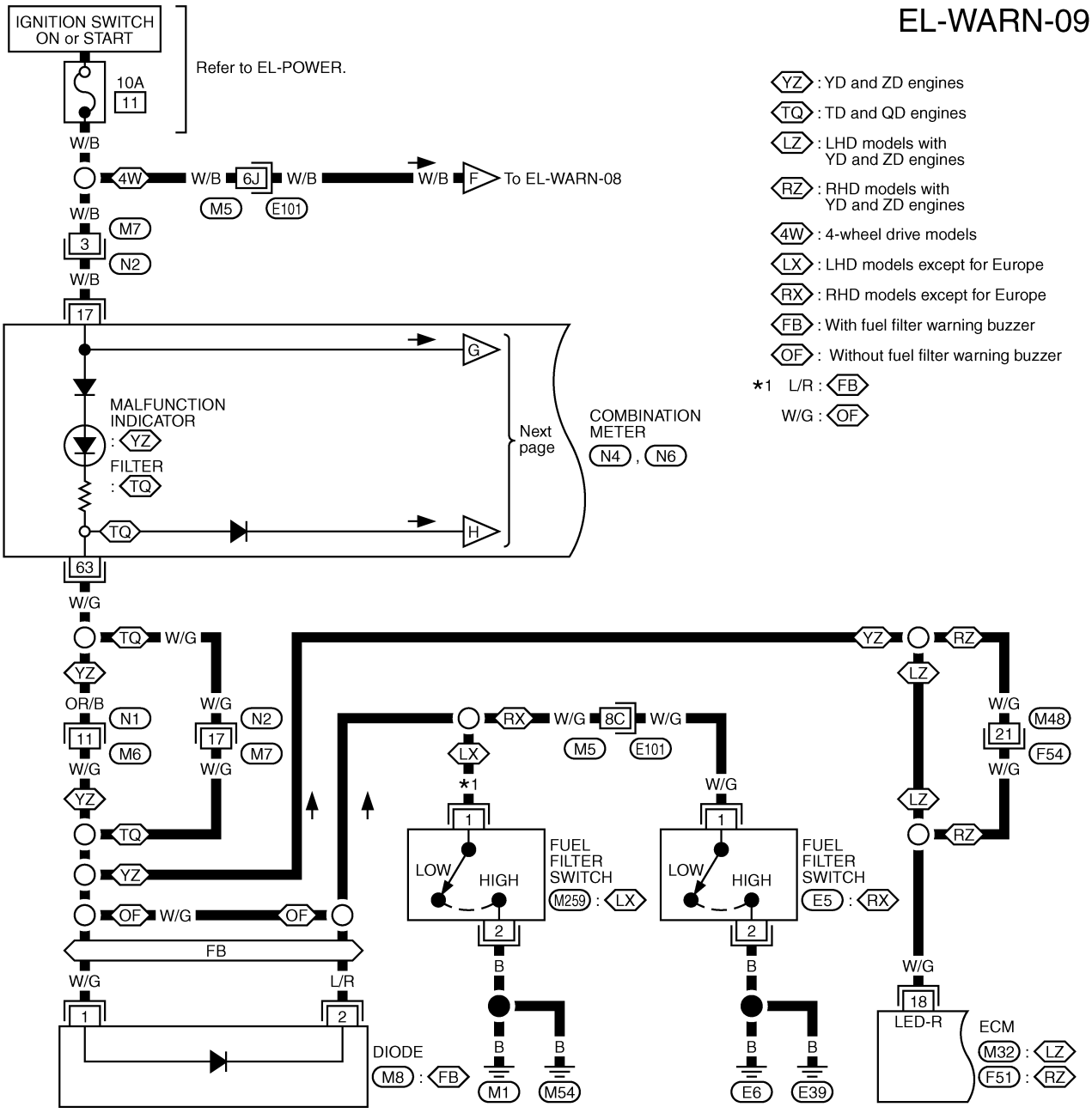
*: This connector is not shown in "HARNESS LAYOUT".

Refer to last page (Foldout page).
M5 , E101

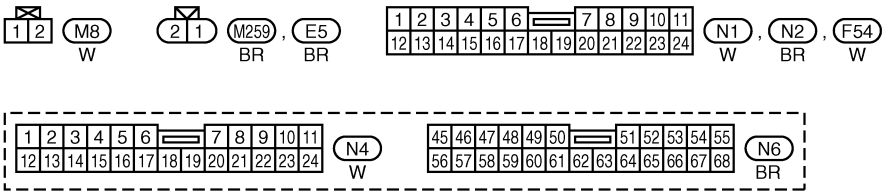
GEL412A

Wiring Diagram — WARN —/Diesel Engine with Tachometer

EL-WARN-09



YZ : YD and ZD engines
TQ : TD and QD engines
LZ : LHD models with YD and ZD engines
RZ : RHD models with YD and ZD engines
4W : 4-wheel drive models
LX : LHD models except for Europe
RX : RHD models except for Europe
FB : With fuel filter warning buzzer
OF : Without fuel filter warning buzzer
*1 L/R : FB
W/G : OF

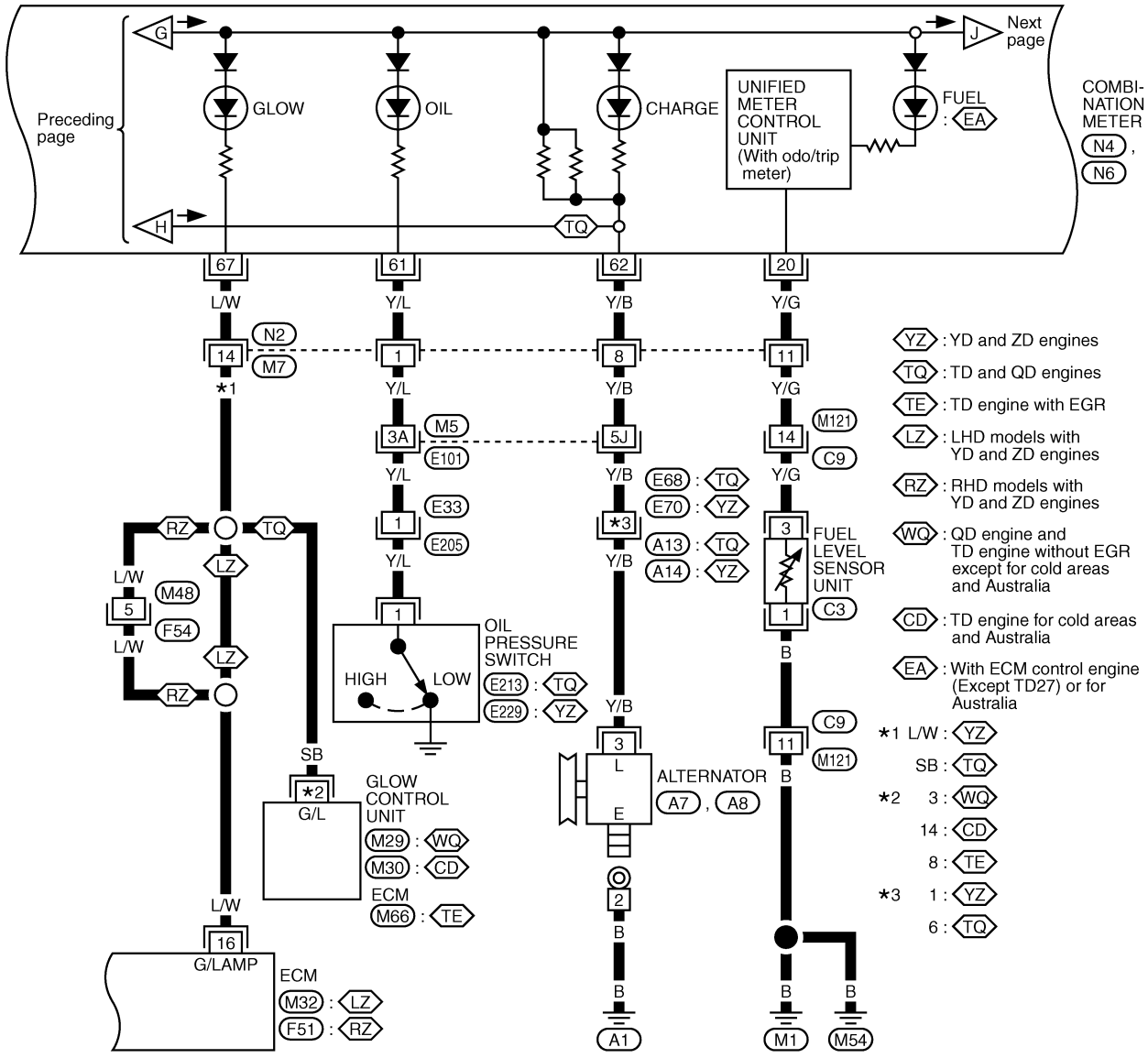


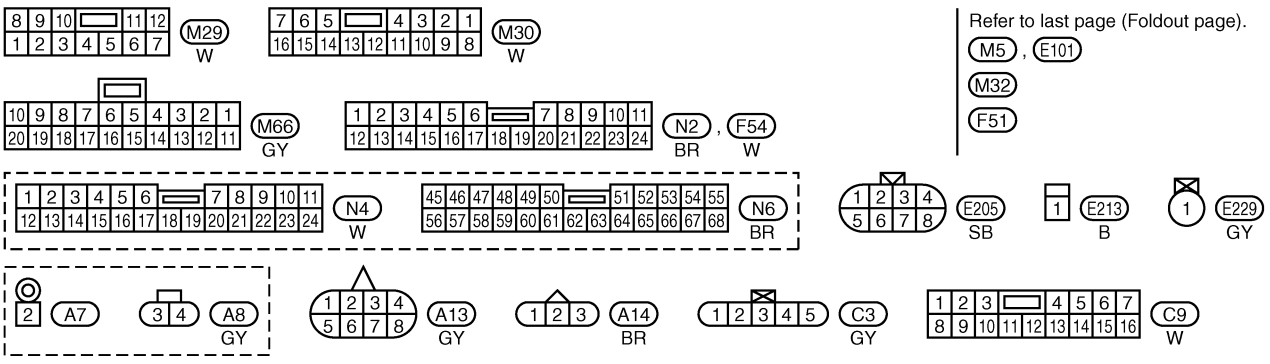
Refer to last page (Foldout page).
M5 , E101
M32
F51

GEL404A

Wiring Diagram — WARN —/Diesel Engine with Tachometer (Cont'd)

EL-WARN-10

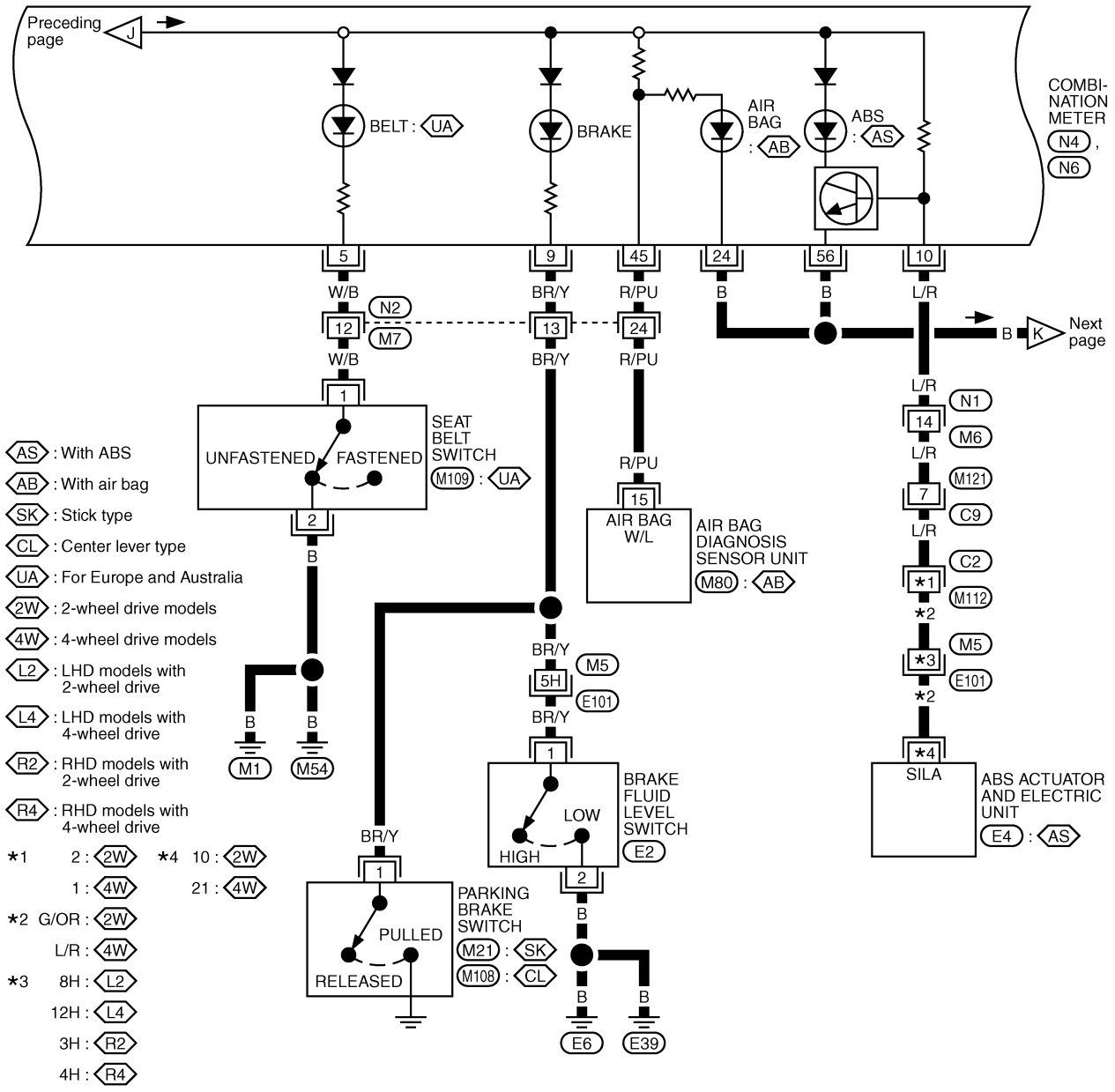


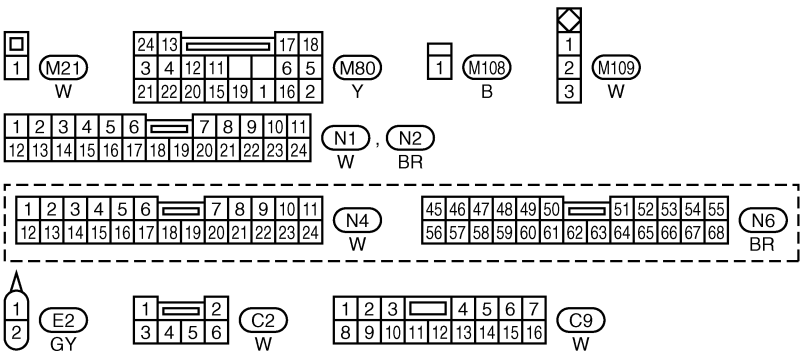


GEL405A

Wiring Diagram — WARN —/Diesel Engine with Tachometer (Cont'd)

EL-WARN-11

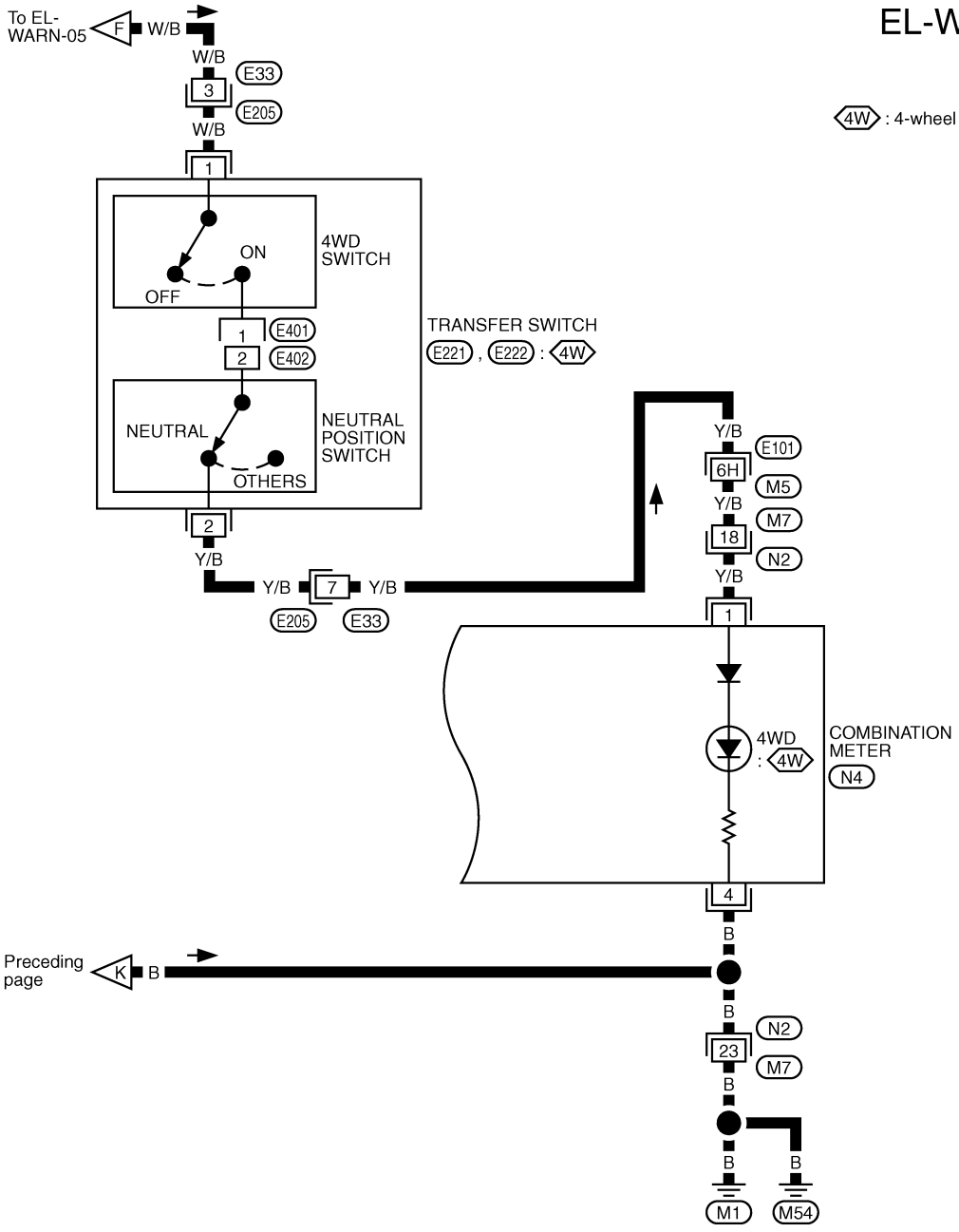




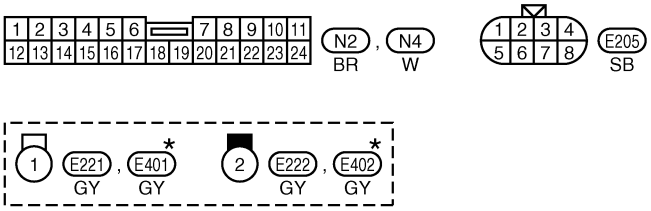
Refer to last page (Foldout page).
M5, E101
E4

Wiring Diagram — WARN —/Diesel Engine with Tachometer (Cont'd)

EL-WARN-12



4W : 4-wheel drive models



Refer to last page (Foldout page).

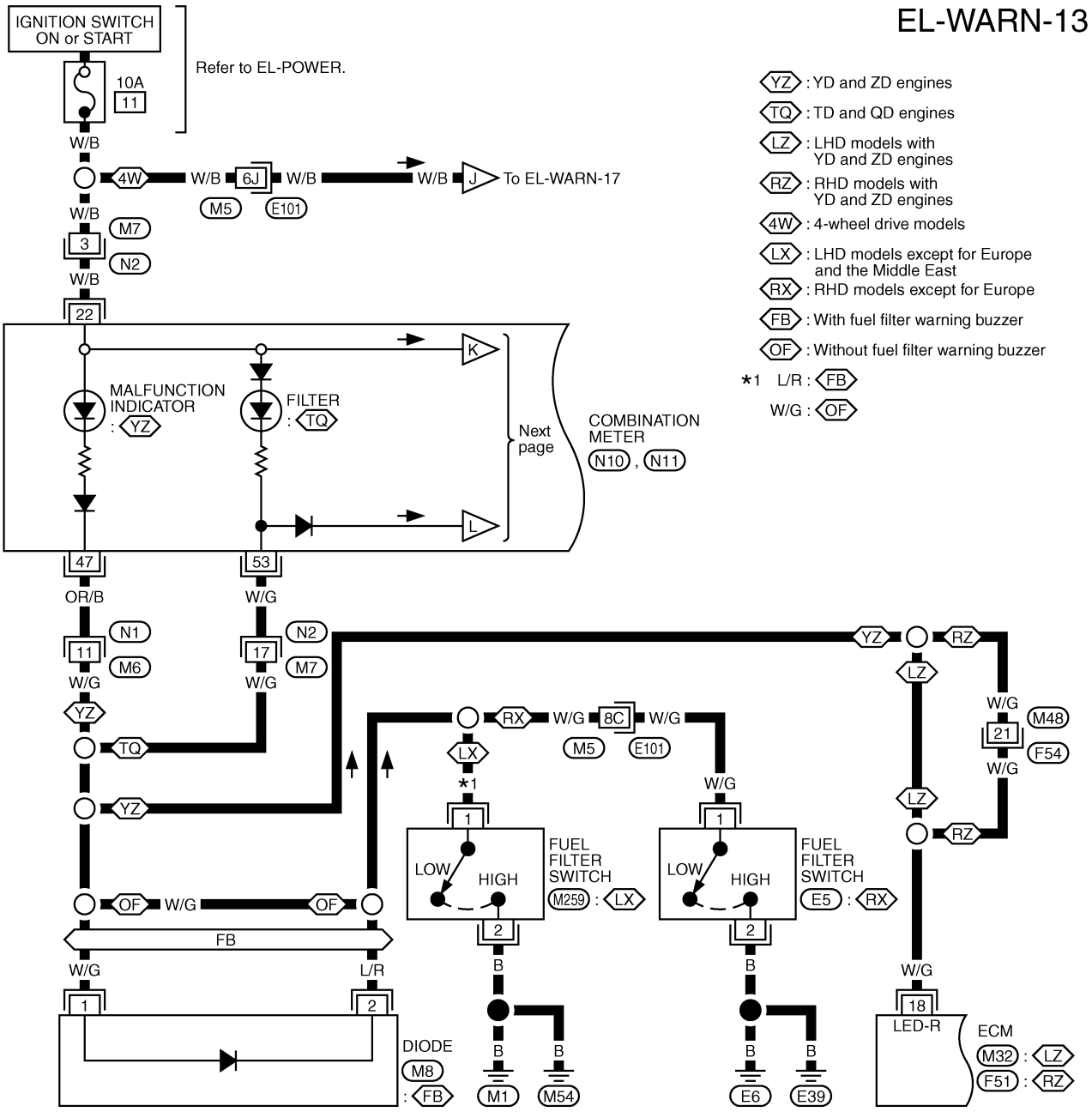
M5 , E101

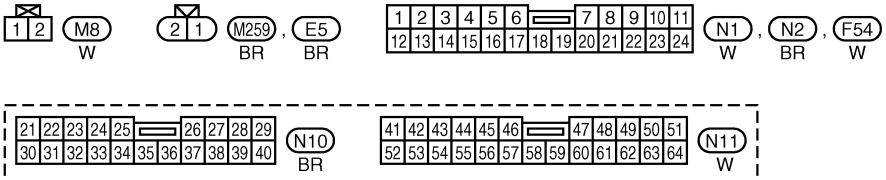
*: This connector is not shown in "HARNESS LAYOUT".

GEL407A

Wiring Diagram — WARN —/Diesel Engine without Tachometer

EL-WARN-13





Refer to last page (Foldout page).

M5 , E101

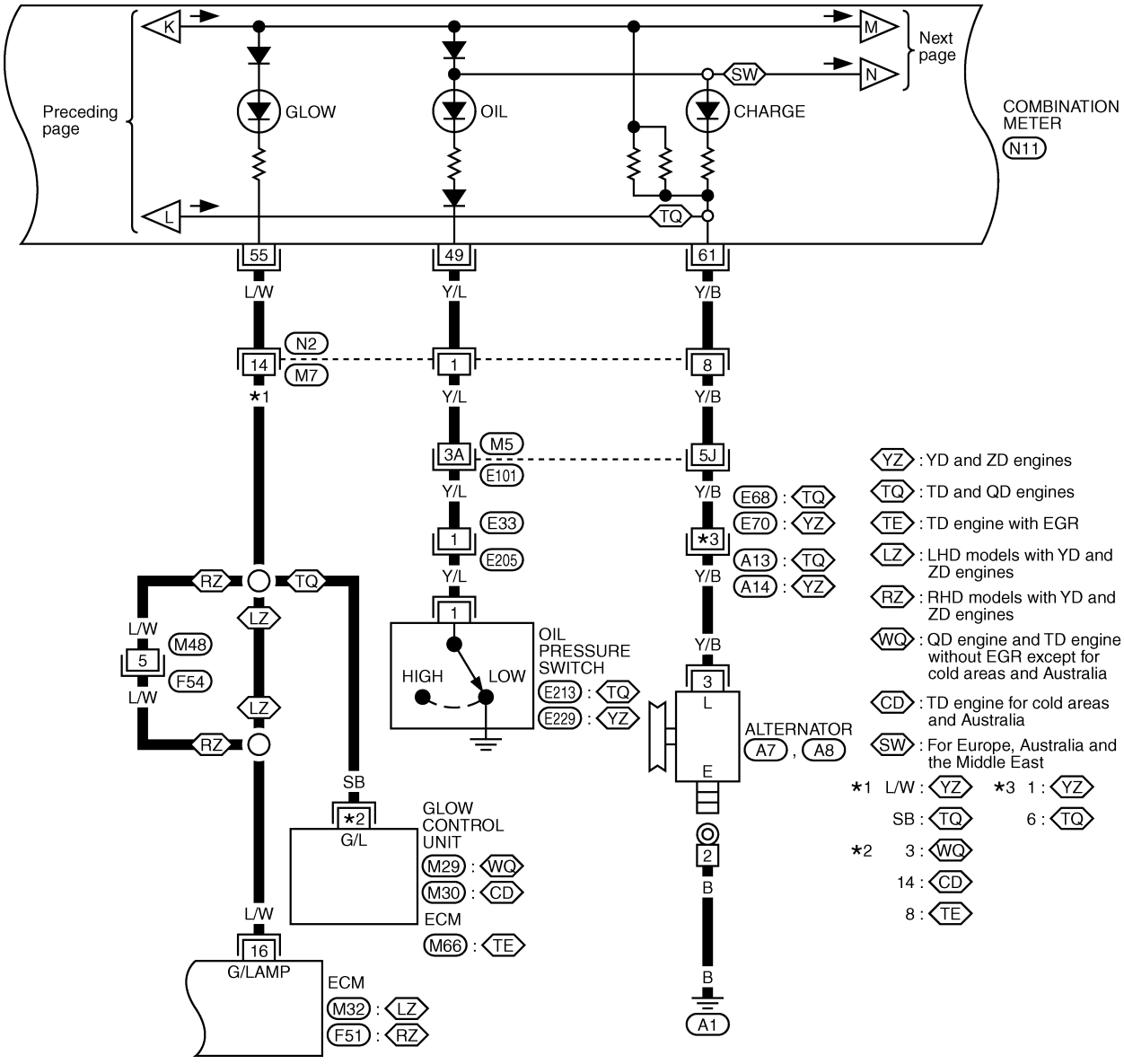
M32

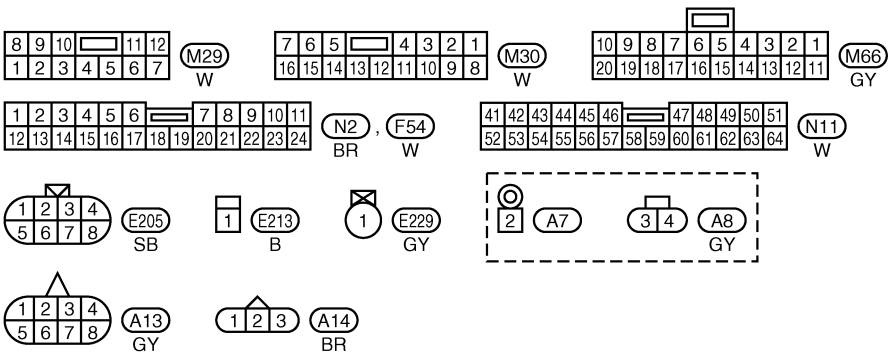
F51

GEL413A

Wiring Diagram — WARN —/Diesel Engine without Tachometer (Cont'd)

EL-WARN-14





Refer to last page (Foldout page).

M5 , E101

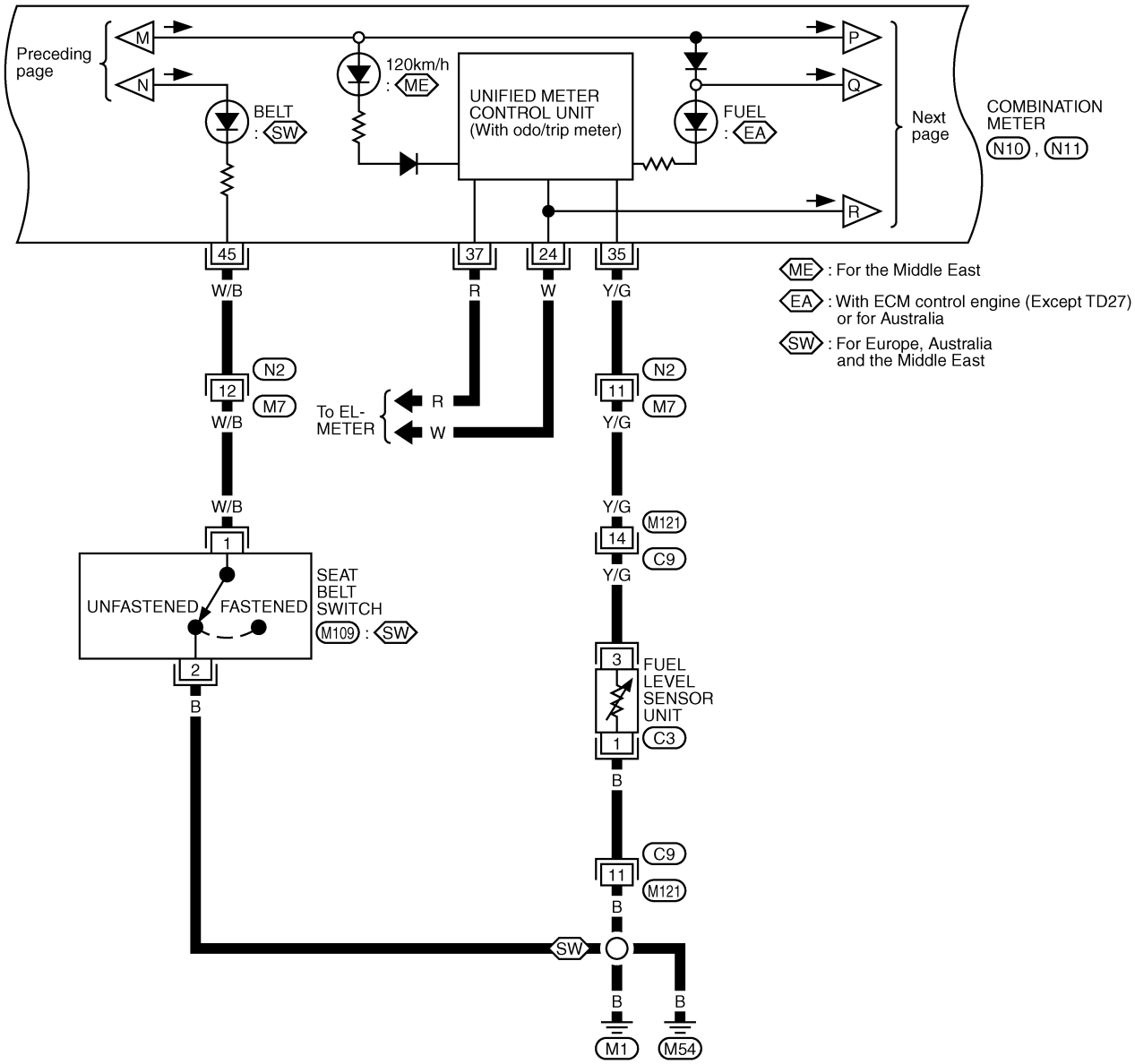
M32

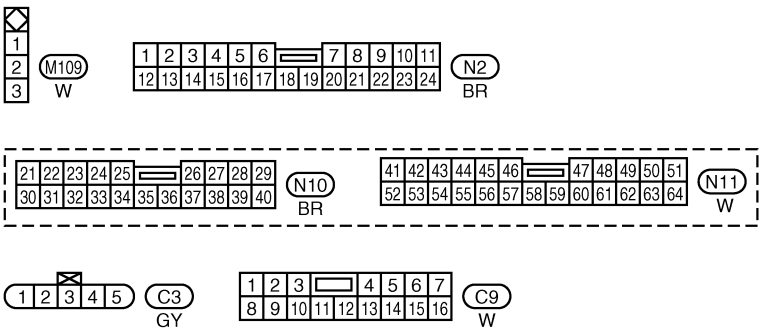
F51

GEL414A

Wiring Diagram — WARN —/Diesel Engine without Tachometer (Cont'd)

EL-WARN-15

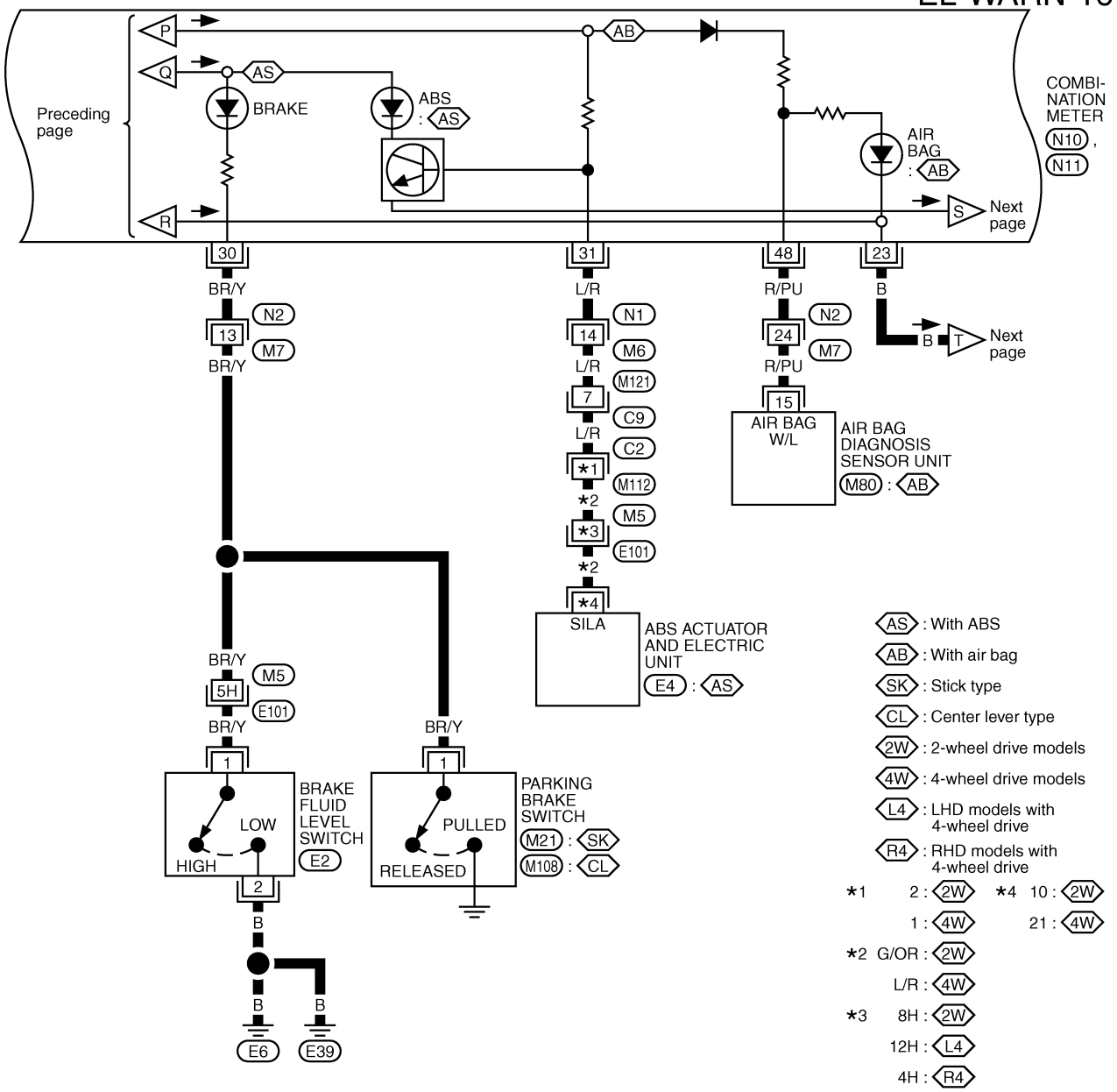


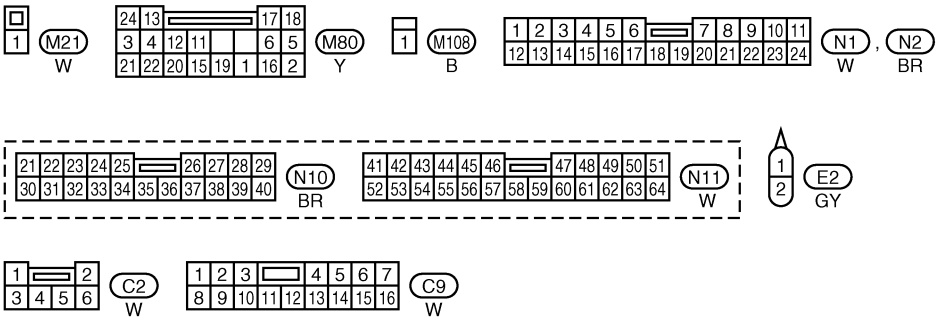


GEL415A

Wiring Diagram — WARN —/Diesel Engine without Tachometer (Cont'd)

EL-WARN-16



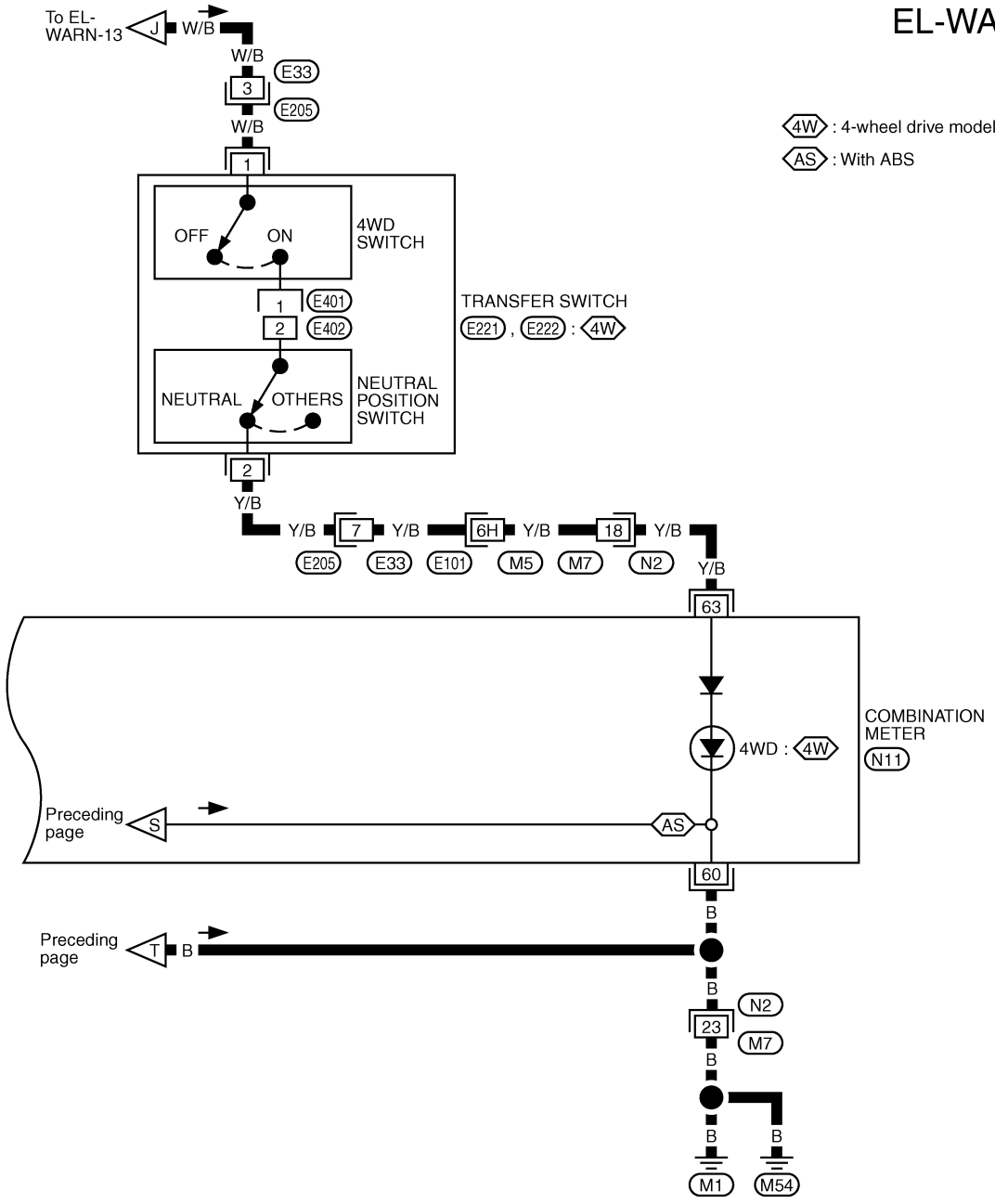


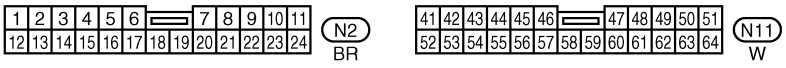
Refer to last page (Foldout page).
M5 , E101
E4

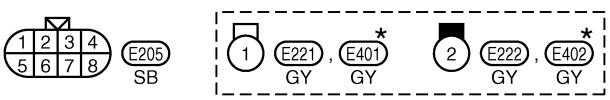
GEL416A

Wiring Diagram — WARN —/Diesel Engine without Tachometer (Cont'd)

EL-WARN-17







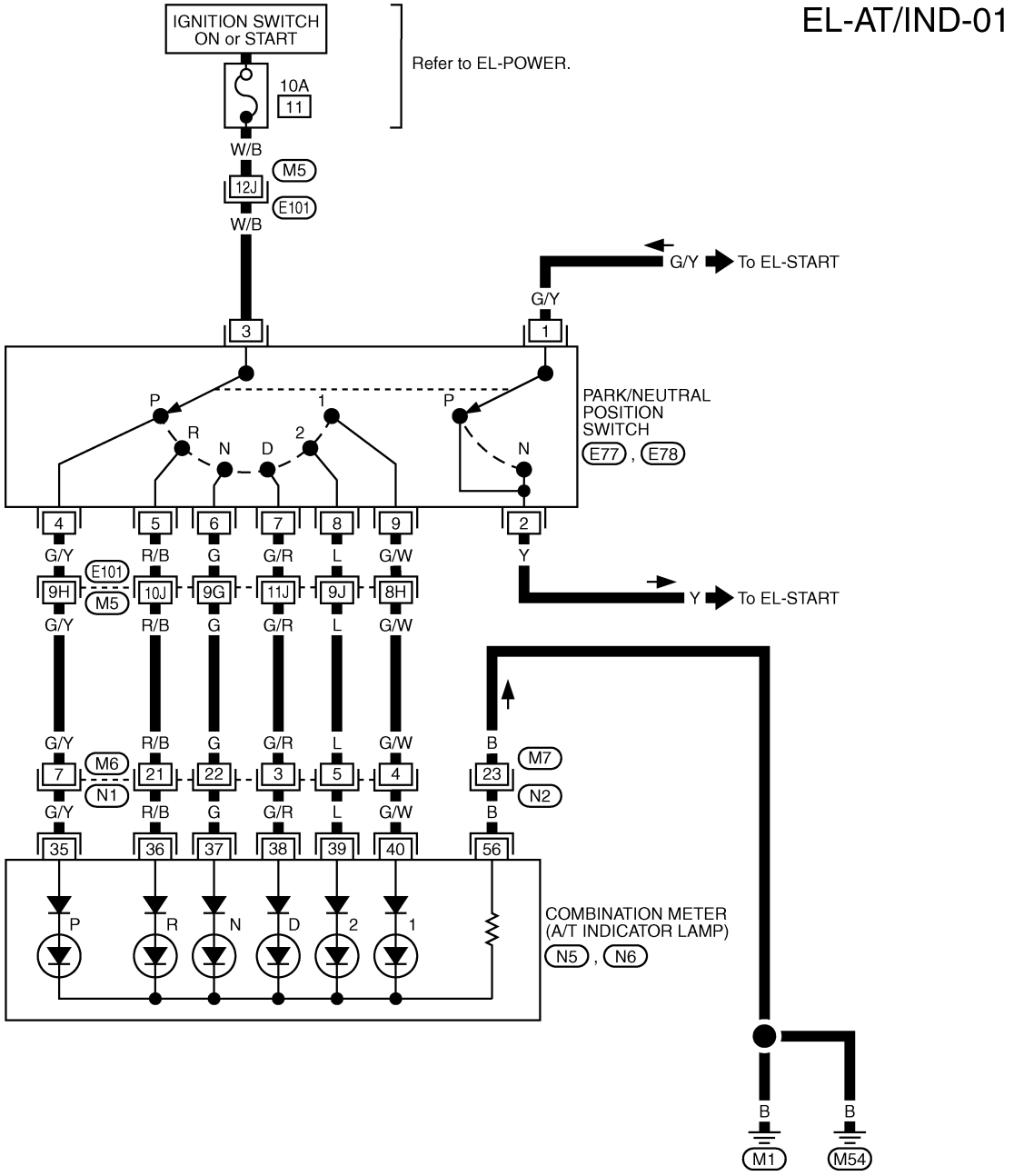
*: This connector is not shown in "HARNESS LAYOUT".

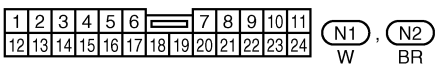
Refer to last page (Foldout page).
M5 , E101

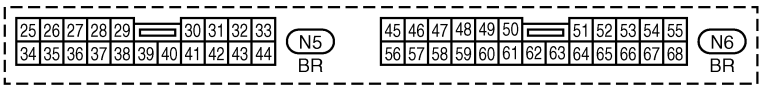
GEL417A

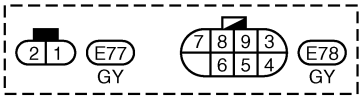
Wiring Diagram — AT/IND —/RHD Models

EL-AT/IND-01







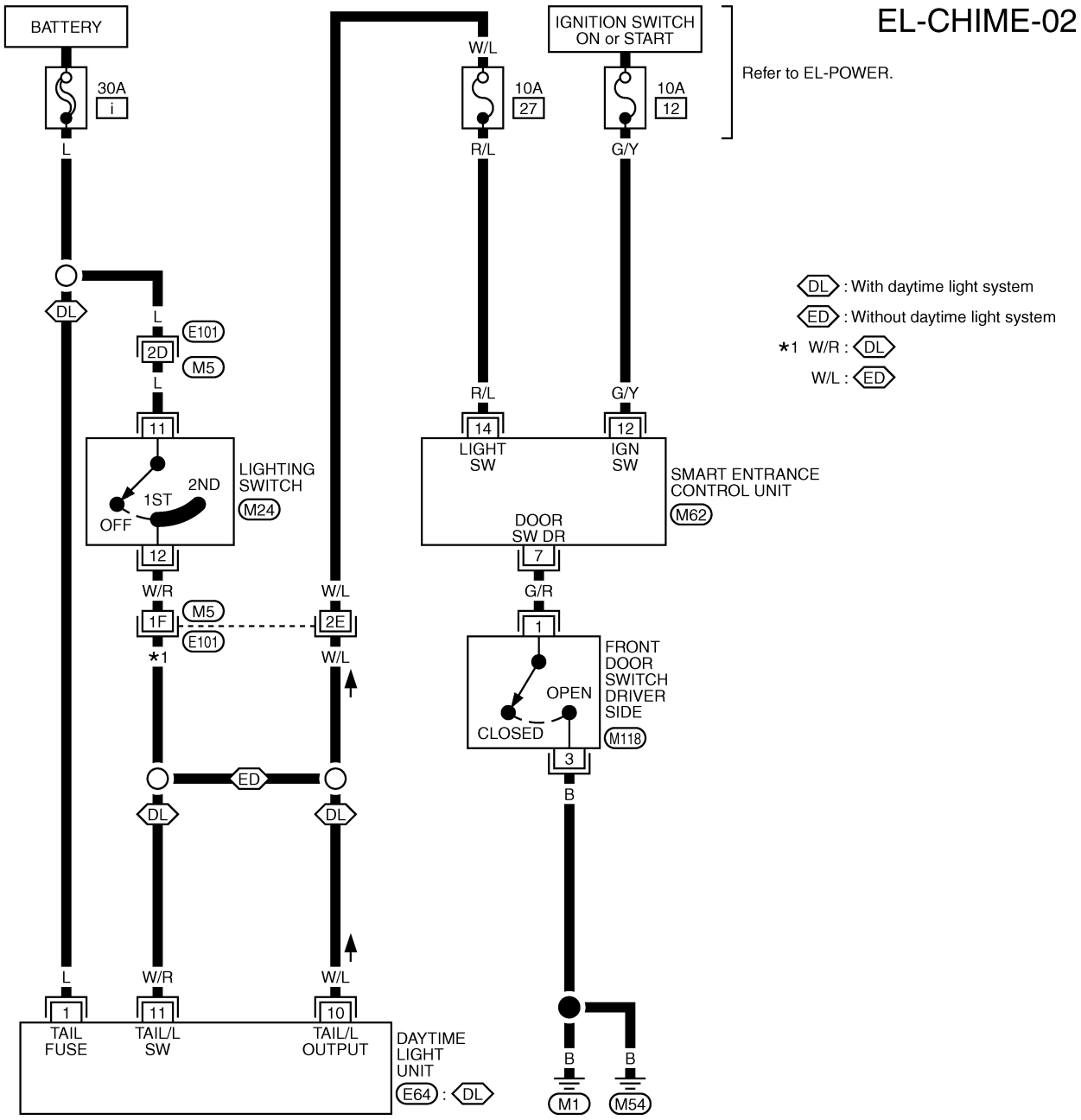


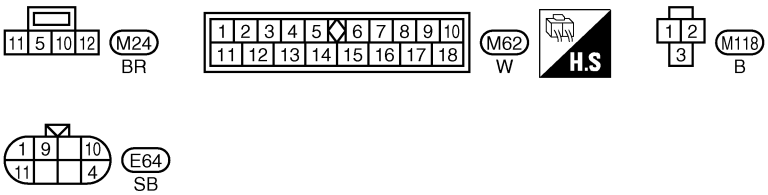
Refer to last page (Foldout page).
M5 , E101

GEL418A

Wiring Diagram — CHIME —/LHD Models

LIGHT WARNING BUZZER





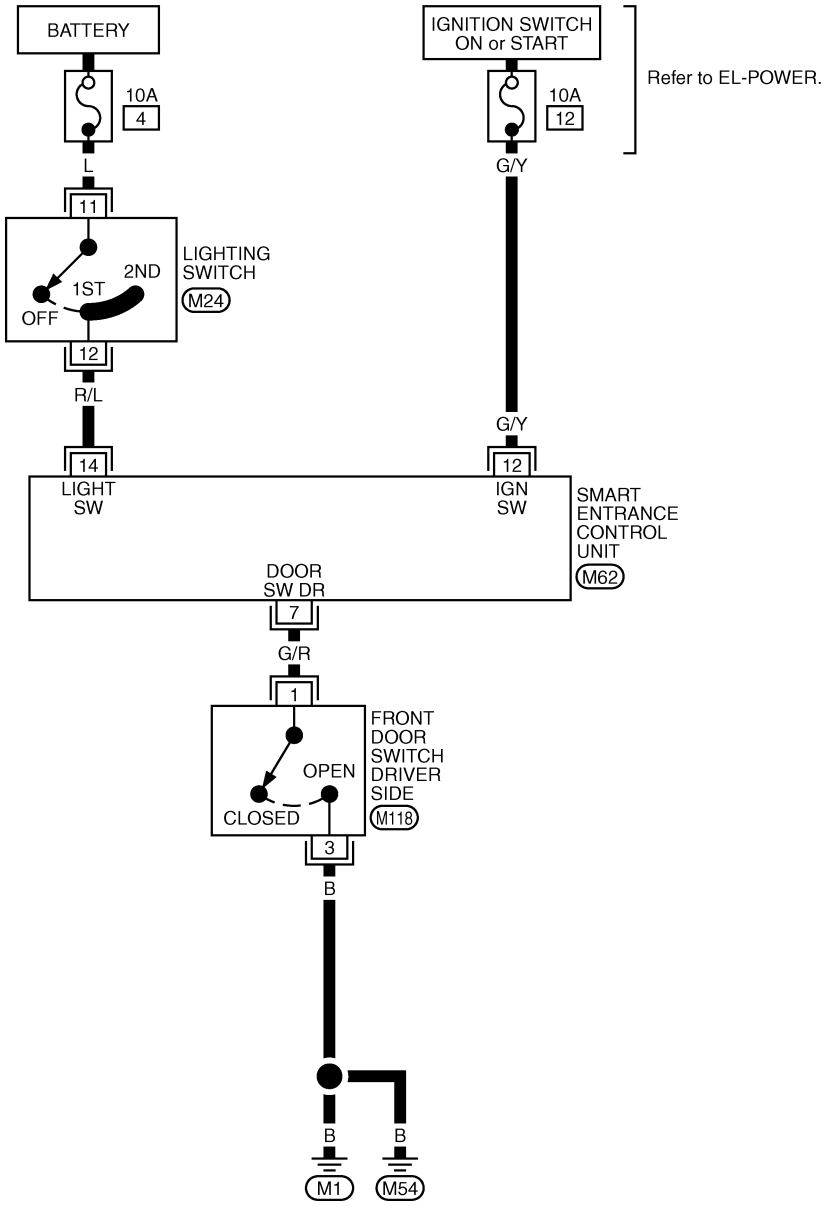
Refer to last page (Foldout page).
M5 , E101

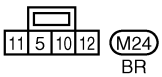
GEL420A

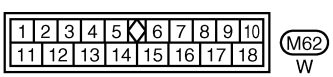
Wiring Diagram — CHIME —/RHD Models

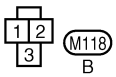
LIGHT WARNING BUZZER

EL-CHIME-03







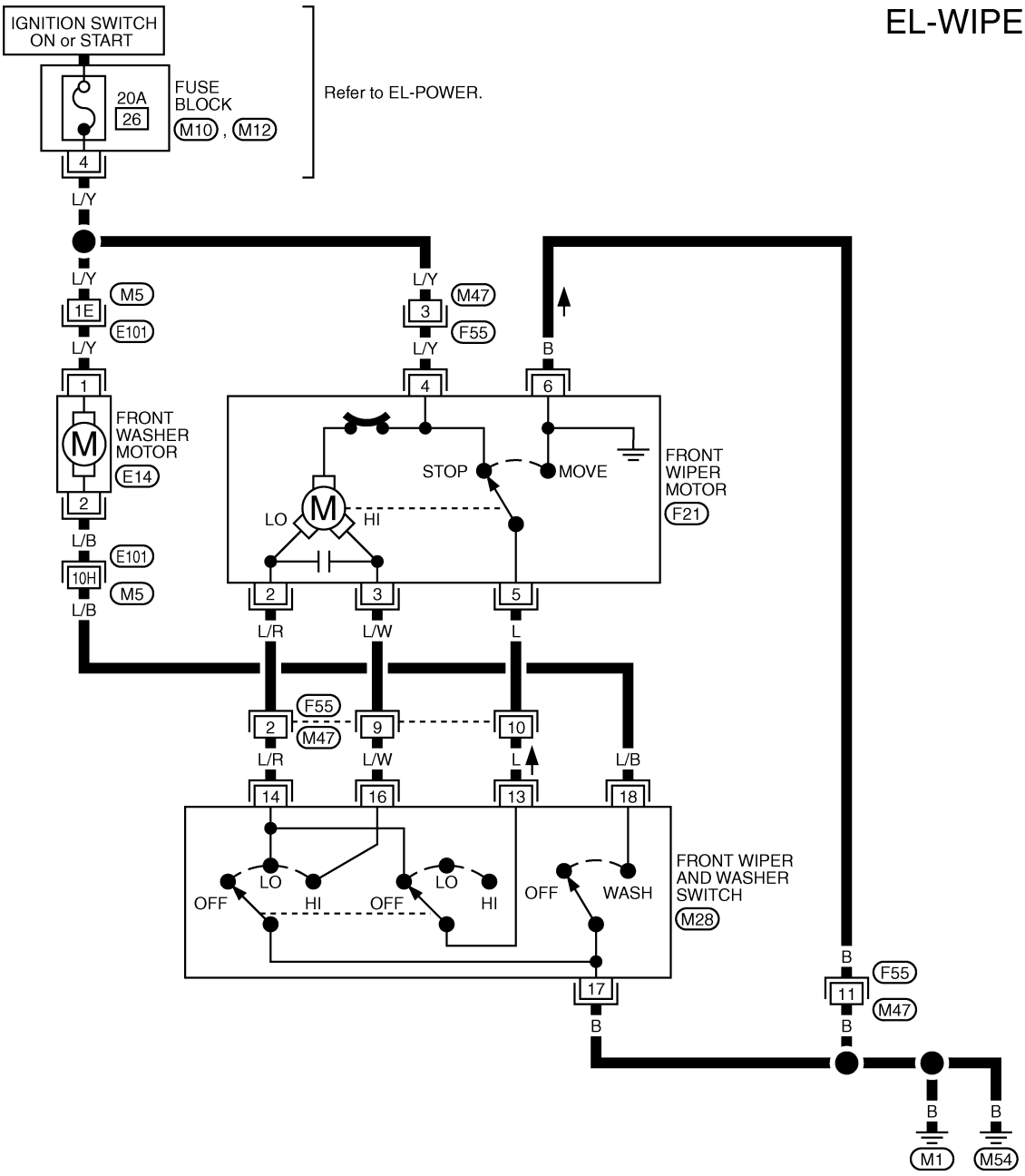


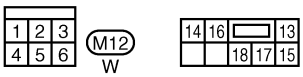
GEL421A

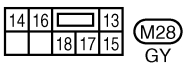
RHD MODELS KA ENGINE

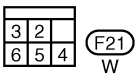
Wiring Diagram — WIPER —/Without Intermittent for Floor-shift

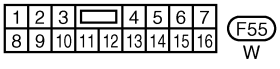
EL-WIPER-03











Refer to last page (Foldout page).

M5 , E101

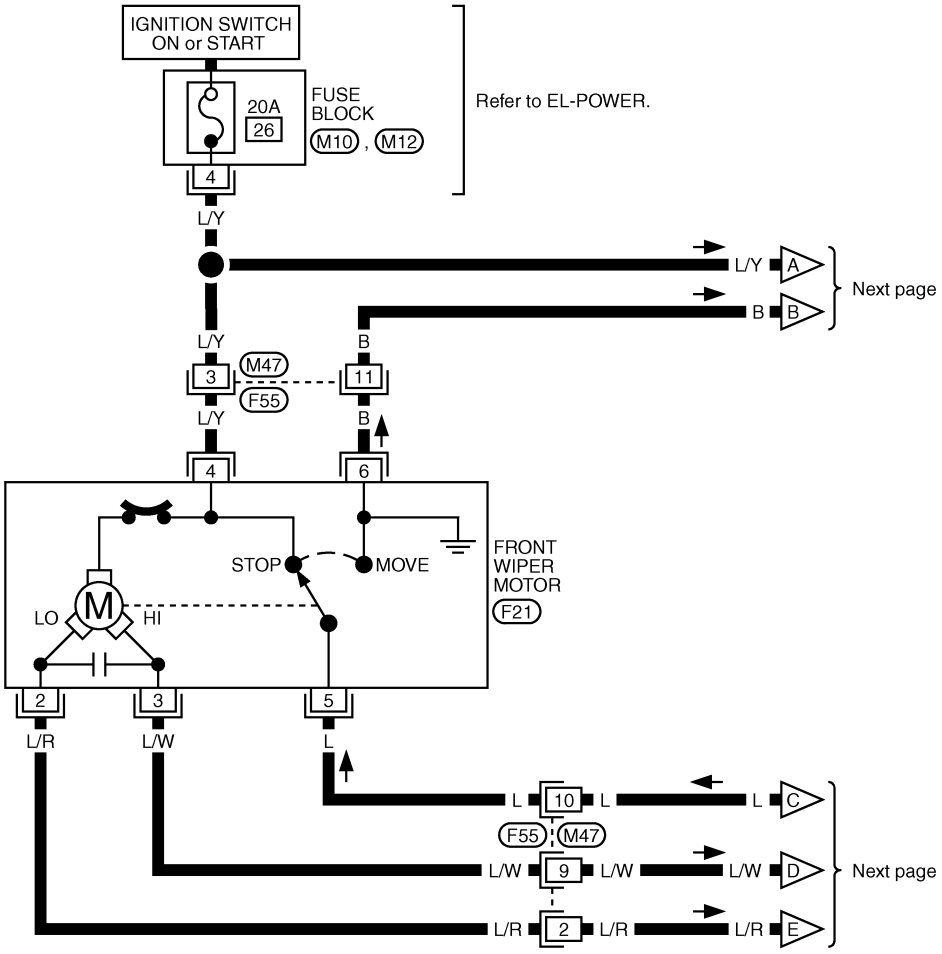
M10

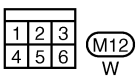
GEL423A

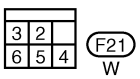
Wiring Diagram — WIPER —/Without Intermittent for Floor-shift (Cont'd)

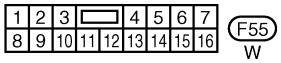
RHD MODELS

EL-WIPER-04







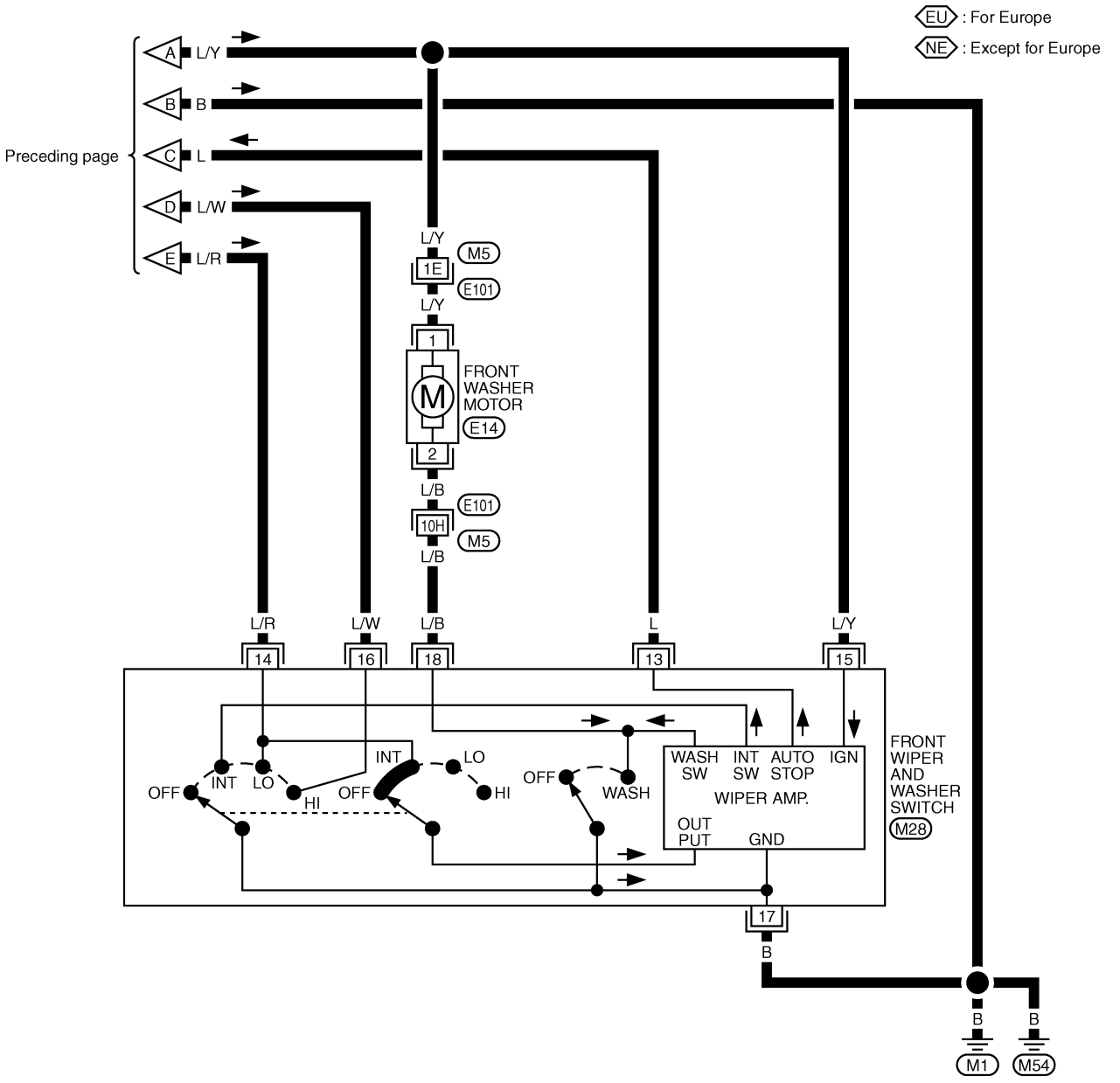


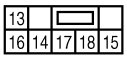
Refer to last page (Foldout page).
M10

GEL425A

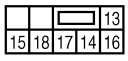
Wiring Diagram — WIPER —/Without Intermittent for Floor-shift (Cont'd)

EL-WIPER-05





M28 : EU
GY



M28 : NE
GY

E14
GY

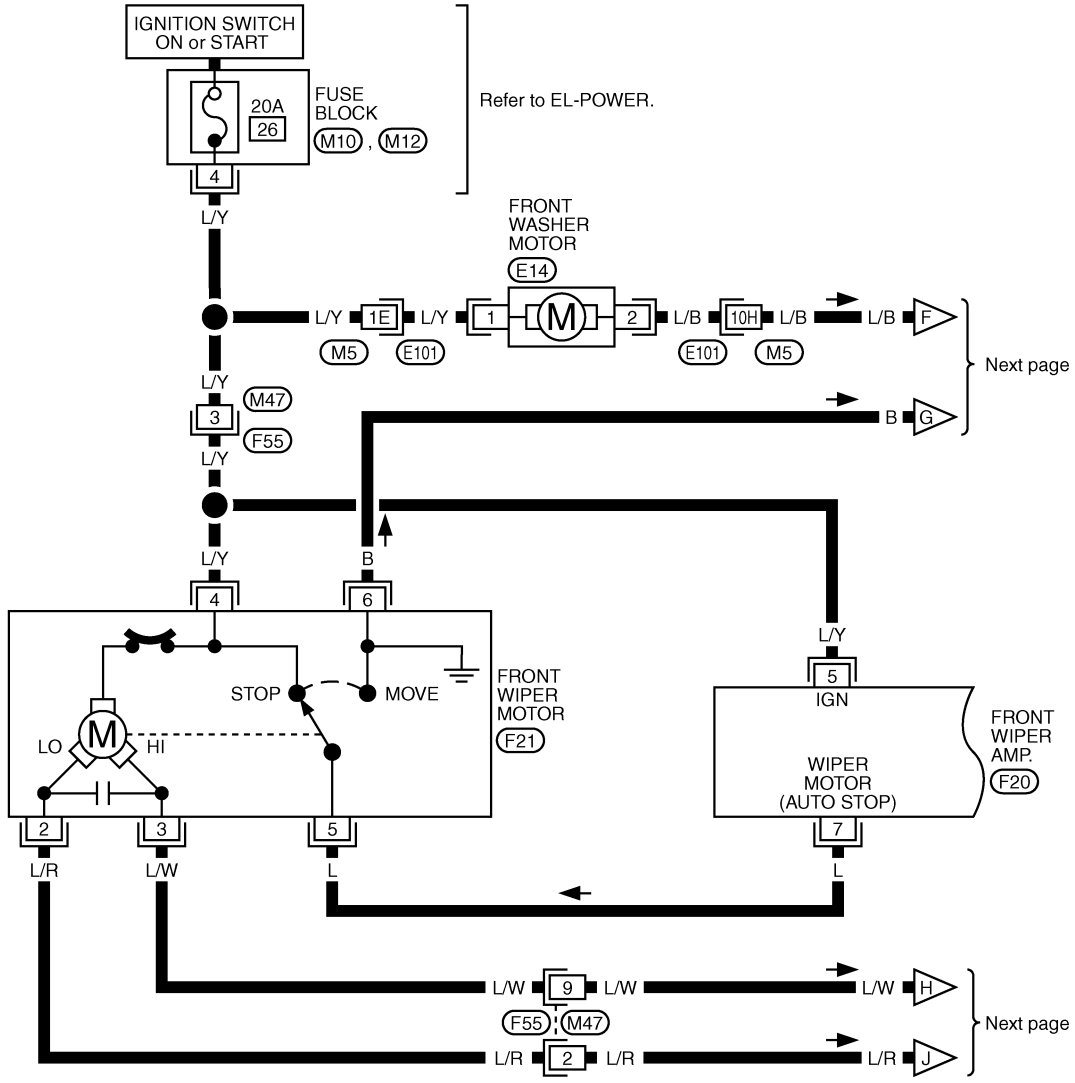
Refer to last page (Foldout page).

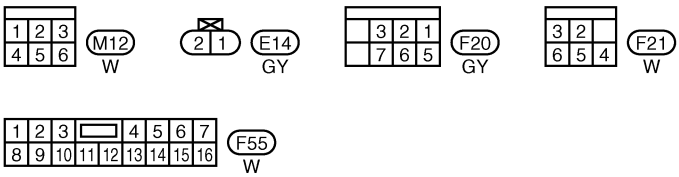
M5 , E101

GEL426A

Wiring Diagram — WIPER —/Without Intermittent for RHD Column-shift Models

EL-WIPER-06



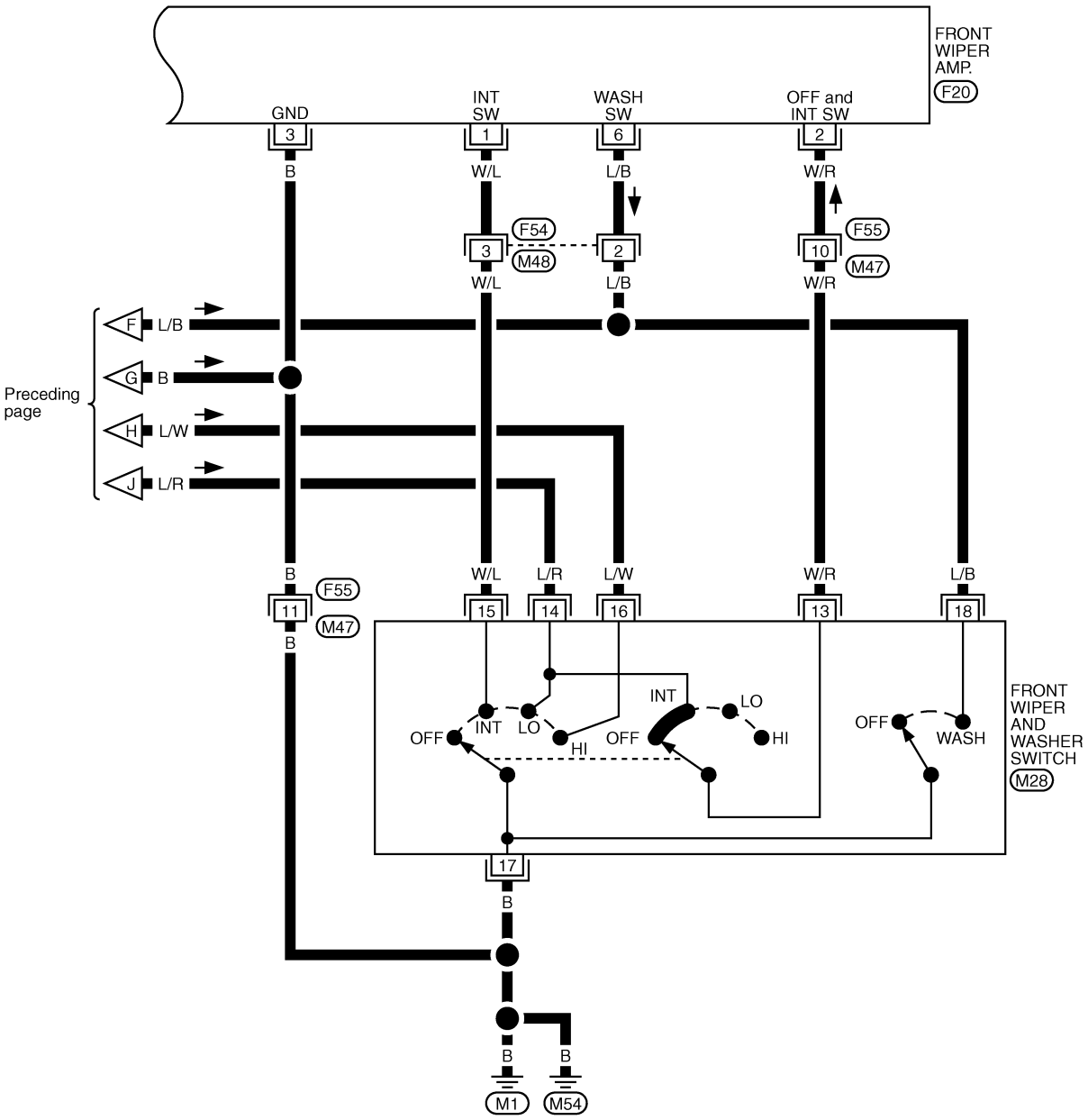


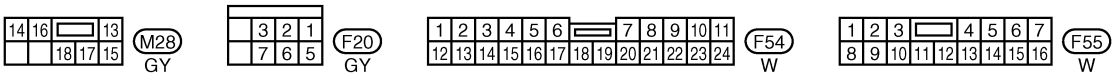
Refer to last page (Foldout page).
M5 , E101
M10

GEL427A

Wiring Diagram — WIPER —/Without Intermittent for RHD Column-shift Models (Cont'd)

EL-WIPER-07

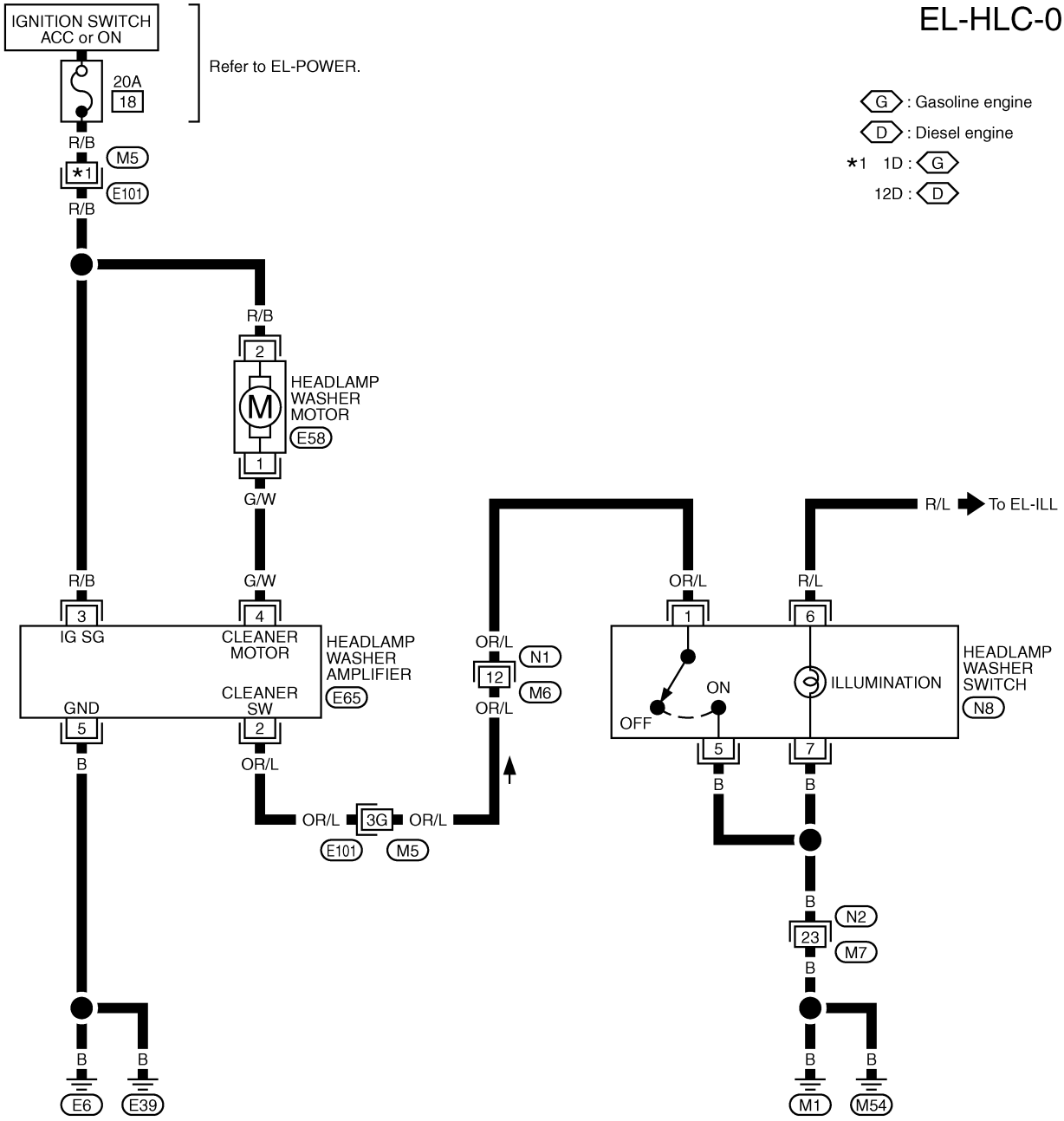


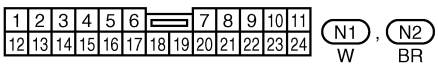


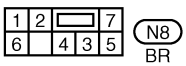
GEL428A

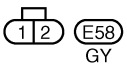
Wiring Diagram — HLC —

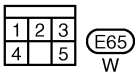
EL-HLC-01









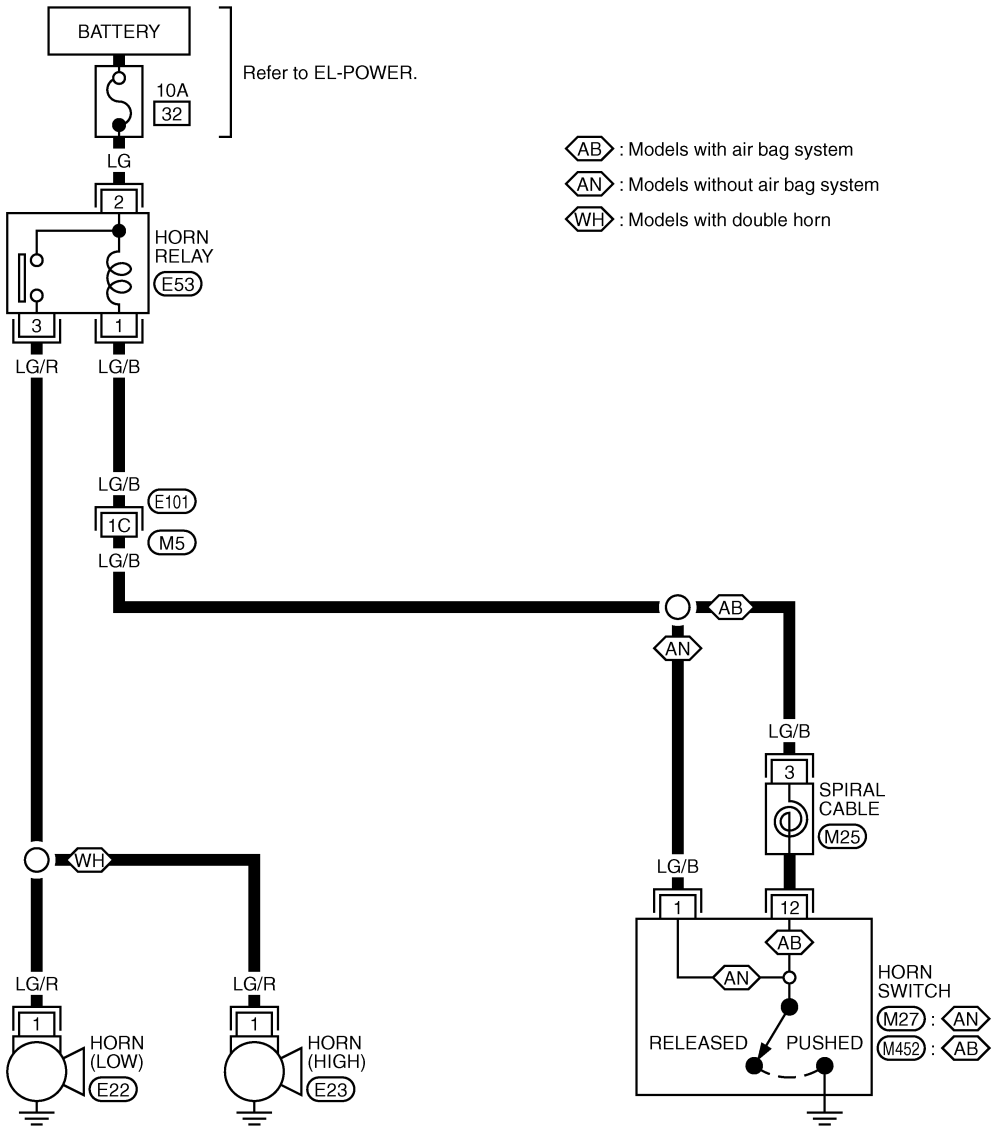


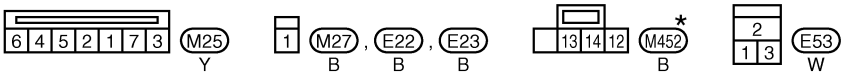
Refer to last page (Foldout page).
M5 , E101

GEL429A

Wiring Diagram — HORN —

EL-HORN-01



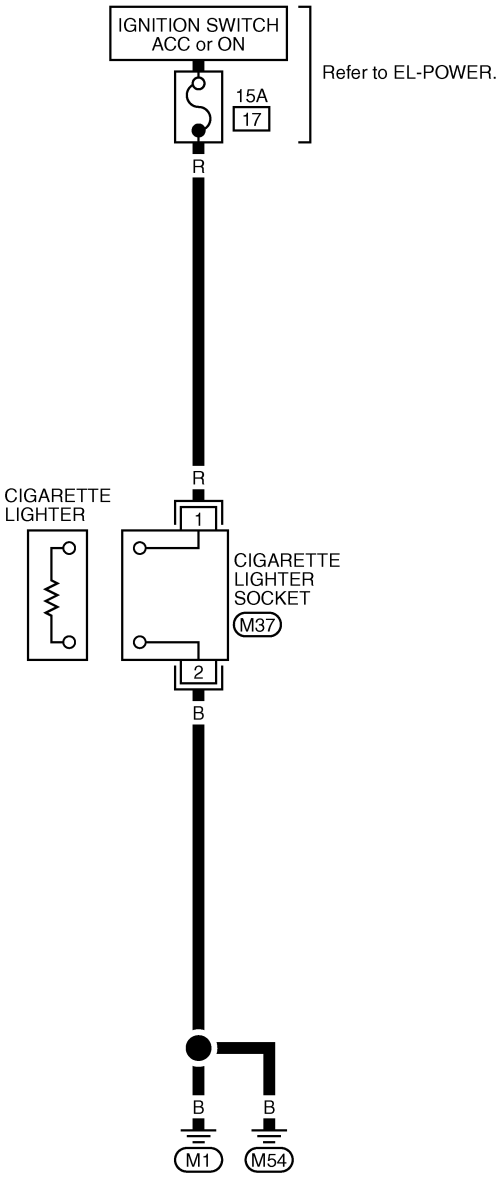


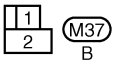
*: This connector is not shown in "HARNESS LAYOUT".

Refer to last page (Foldout page).
M5 , E101

Wiring Diagram — CIGAR —

EL-CIGAR-01

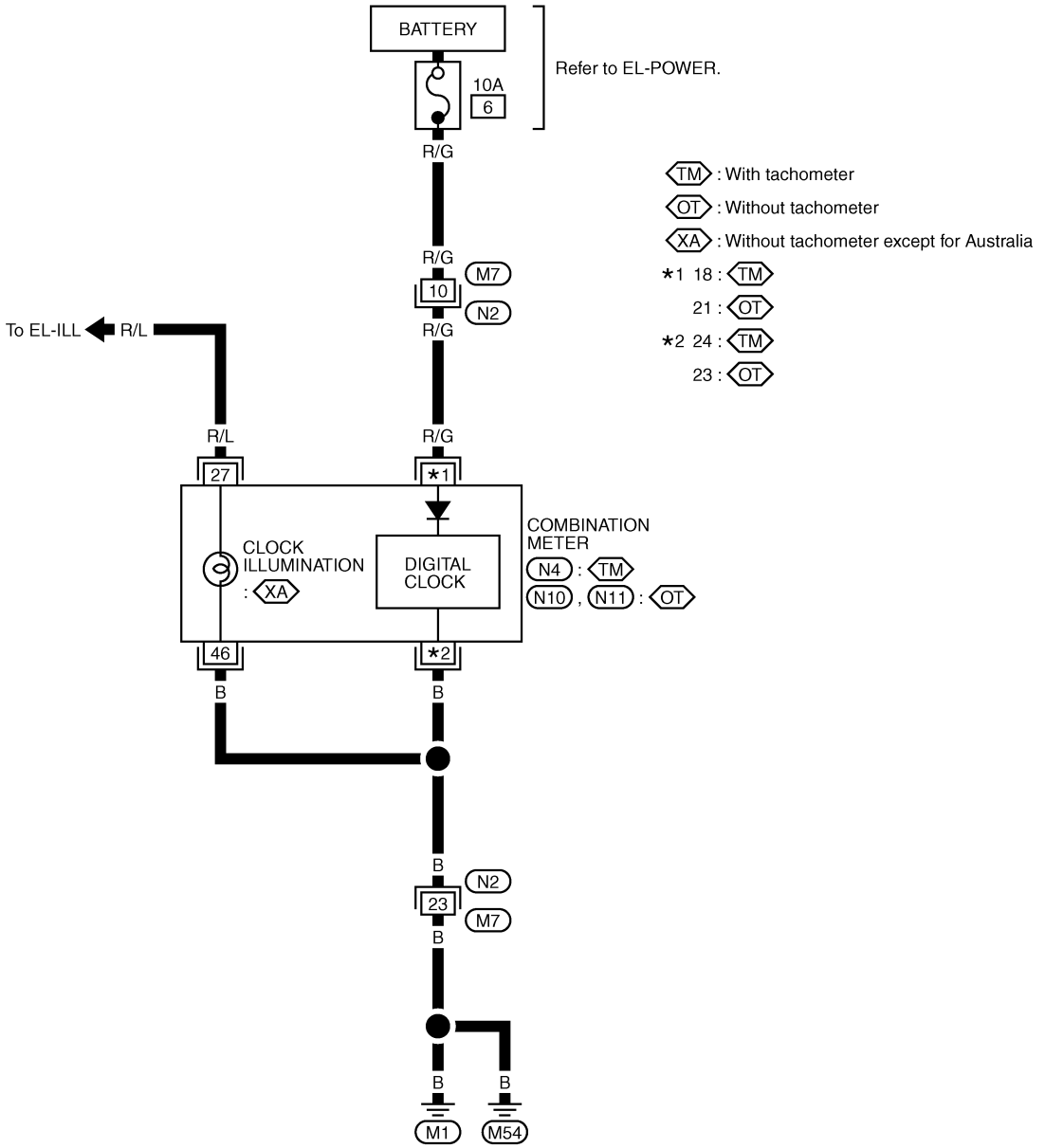


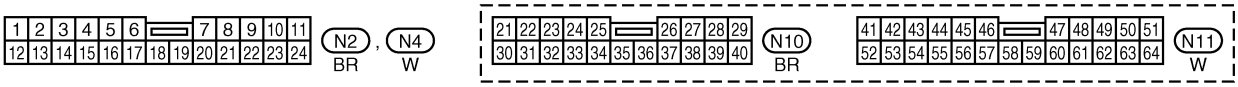


GEL275A

Wiring Diagram — CLOCK —

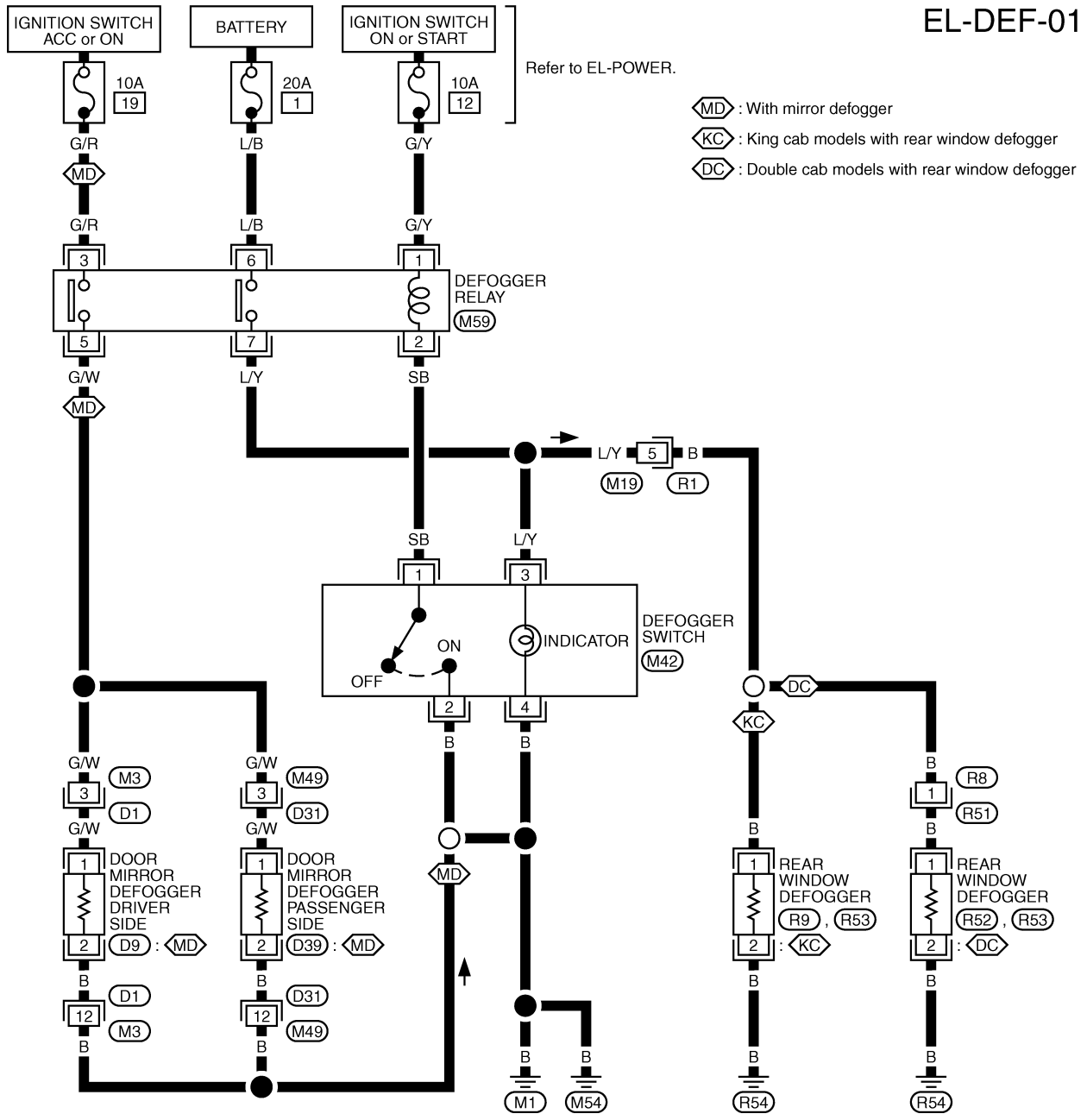
EL-CLOCK-01

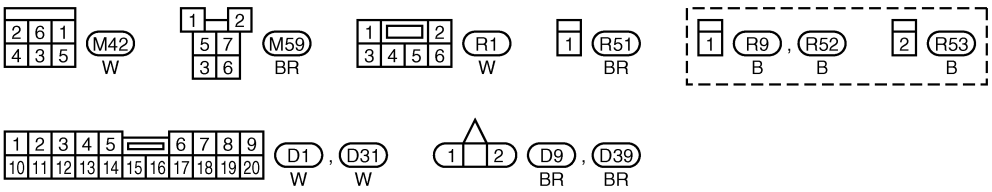




GEL430A

Wiring Diagram — DEF —

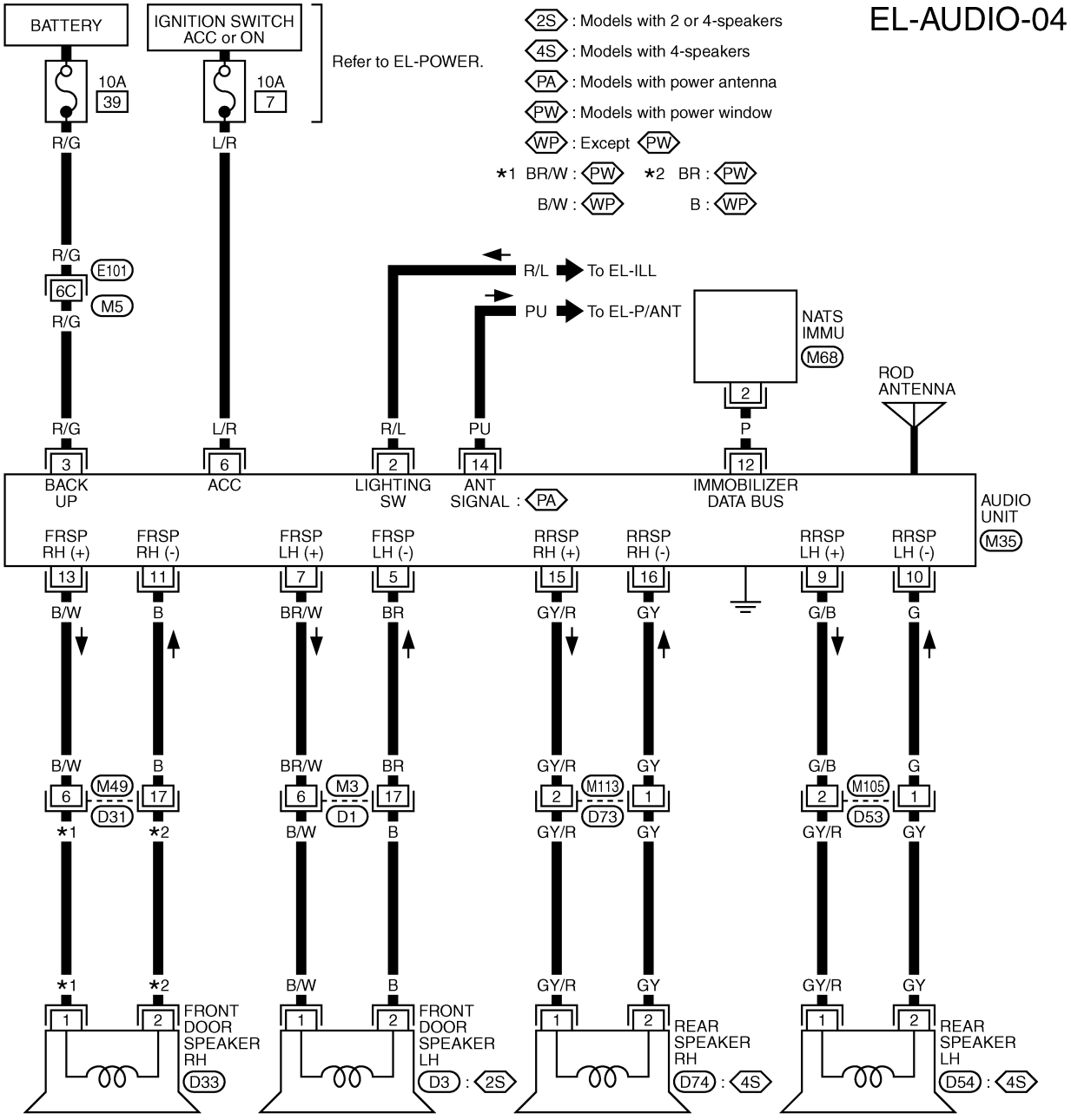


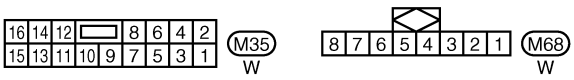


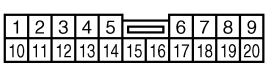
GEL431A

Wiring Diagram — AUDIO —/LHD Models

EL-AUDIO-04





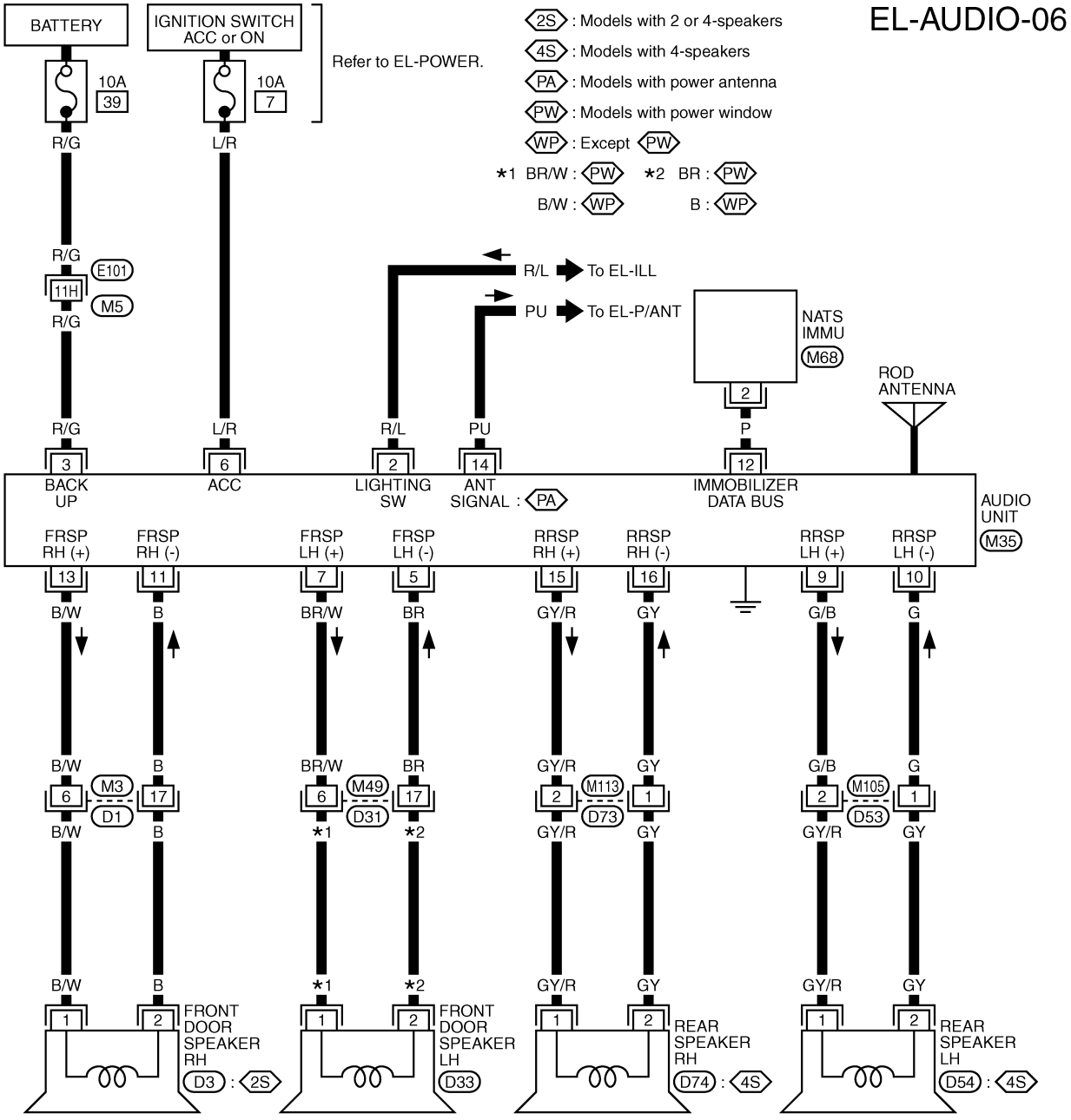


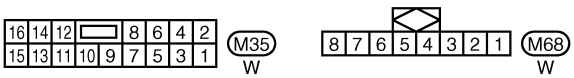
Refer to last page (Foldout page).
M5 , E101

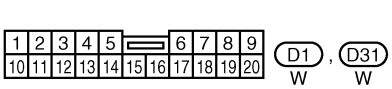
GEL435A

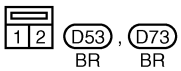
Wiring Diagram — AUDIO —/RHD Models

EL-AUDIO-06





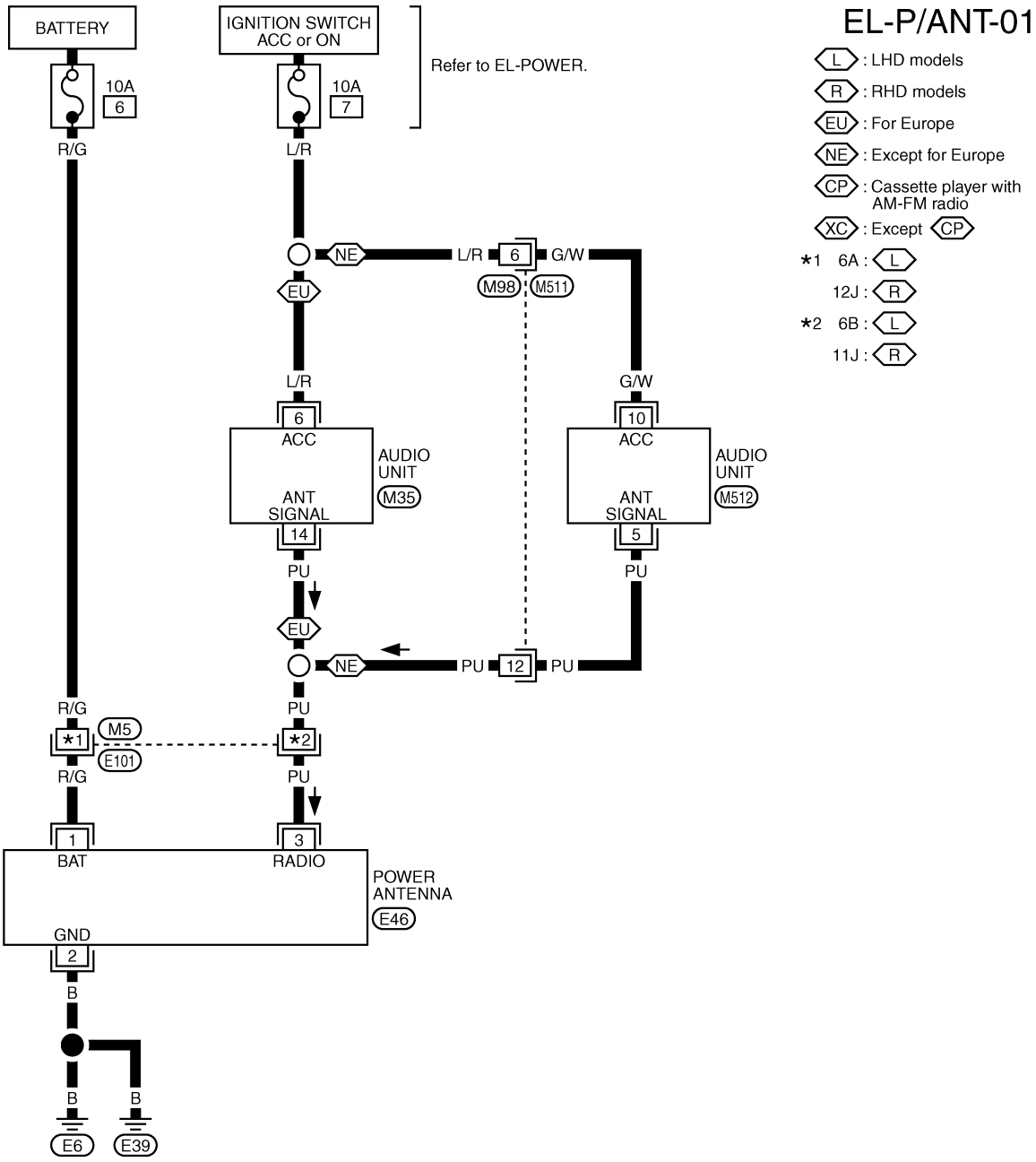


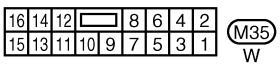


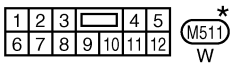
Refer to last page (Foldout page).
M5 , E101

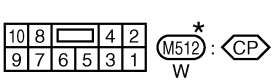
GEL437A

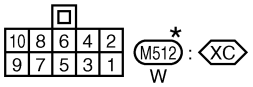
Power Antenna/Wiring Diagram — P/ANT —

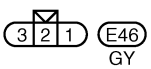












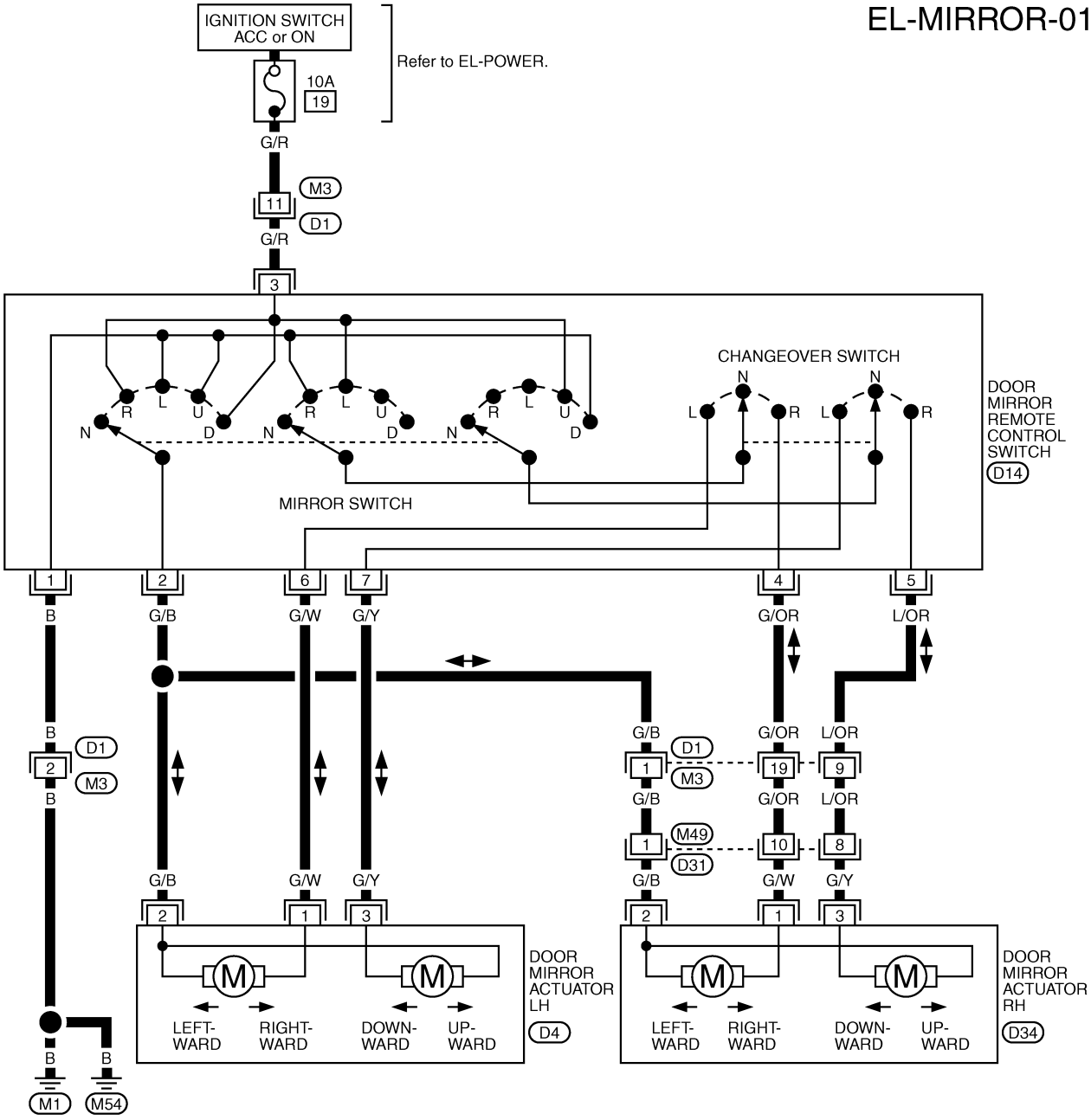
*: This connector is not shown in "HARNESS LAYOUT".

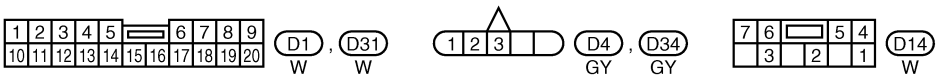
Refer to last page (Foldout page).
M5 , E101

GEL438A

Wiring Diagram — MIRROR —/LHD Models

EL-MIRROR-01

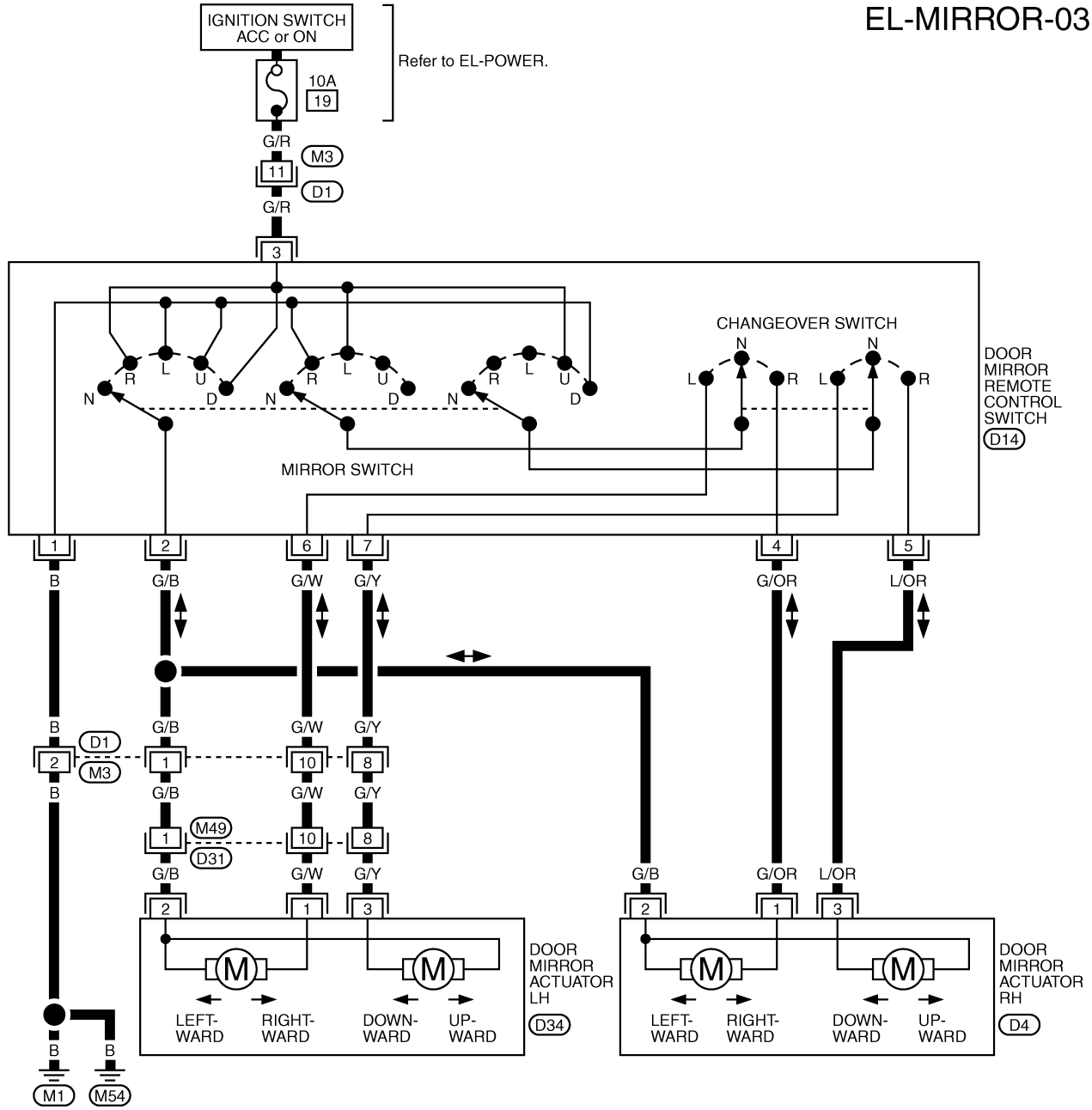


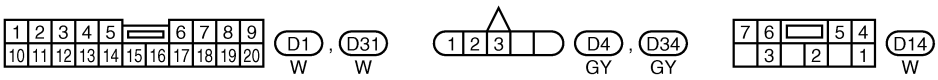


GEL439A

Wiring Diagram — MIRROR —/RHD Models

EL-MIRROR-03

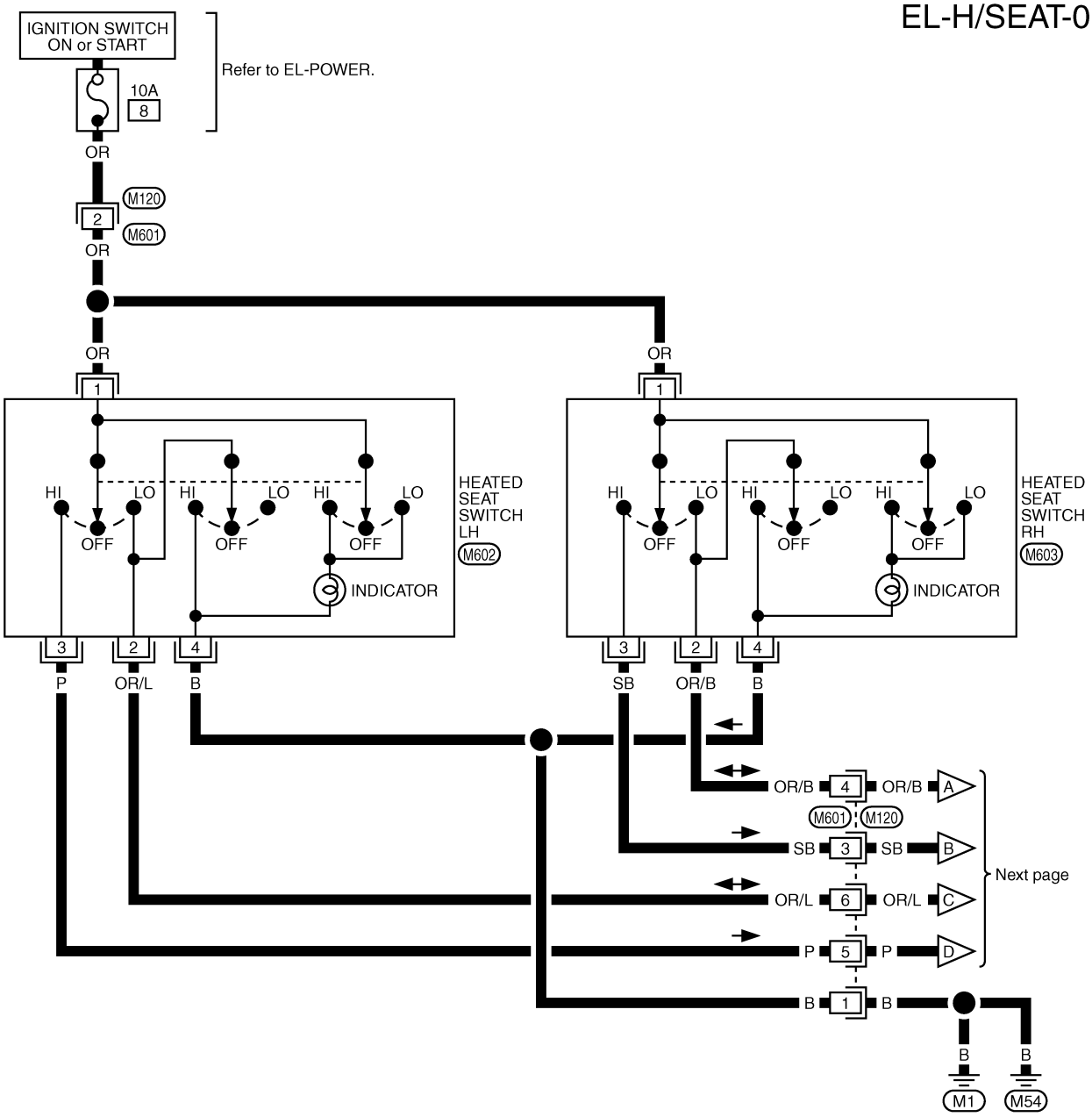


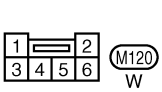


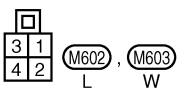
GEL440A

Wiring Diagram — H/SEAT —

EL-H/SEAT-01



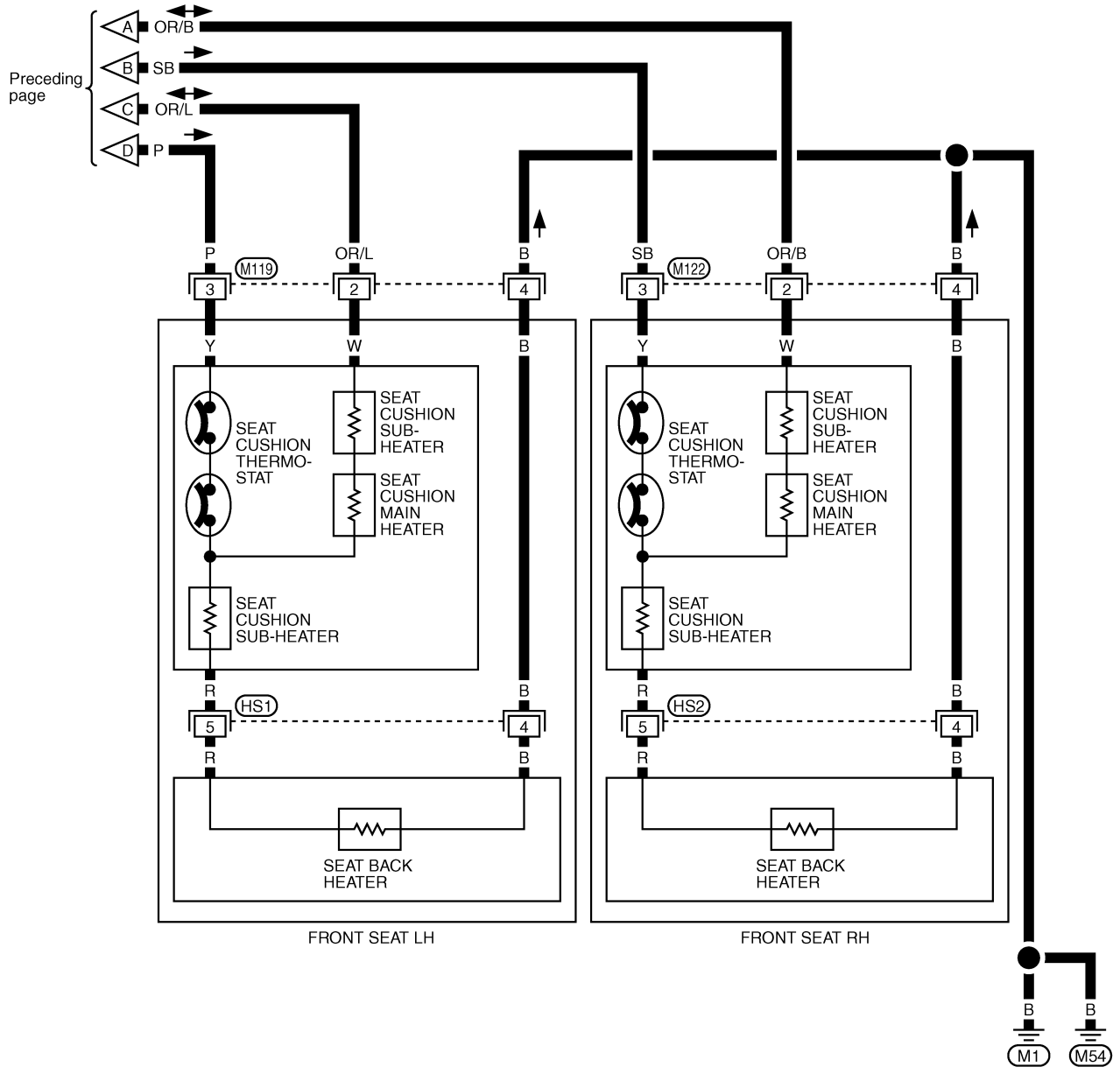




GEL441A

Wiring Diagram — H/SEAT — (Cont'd)

EL-H/SEAT-02



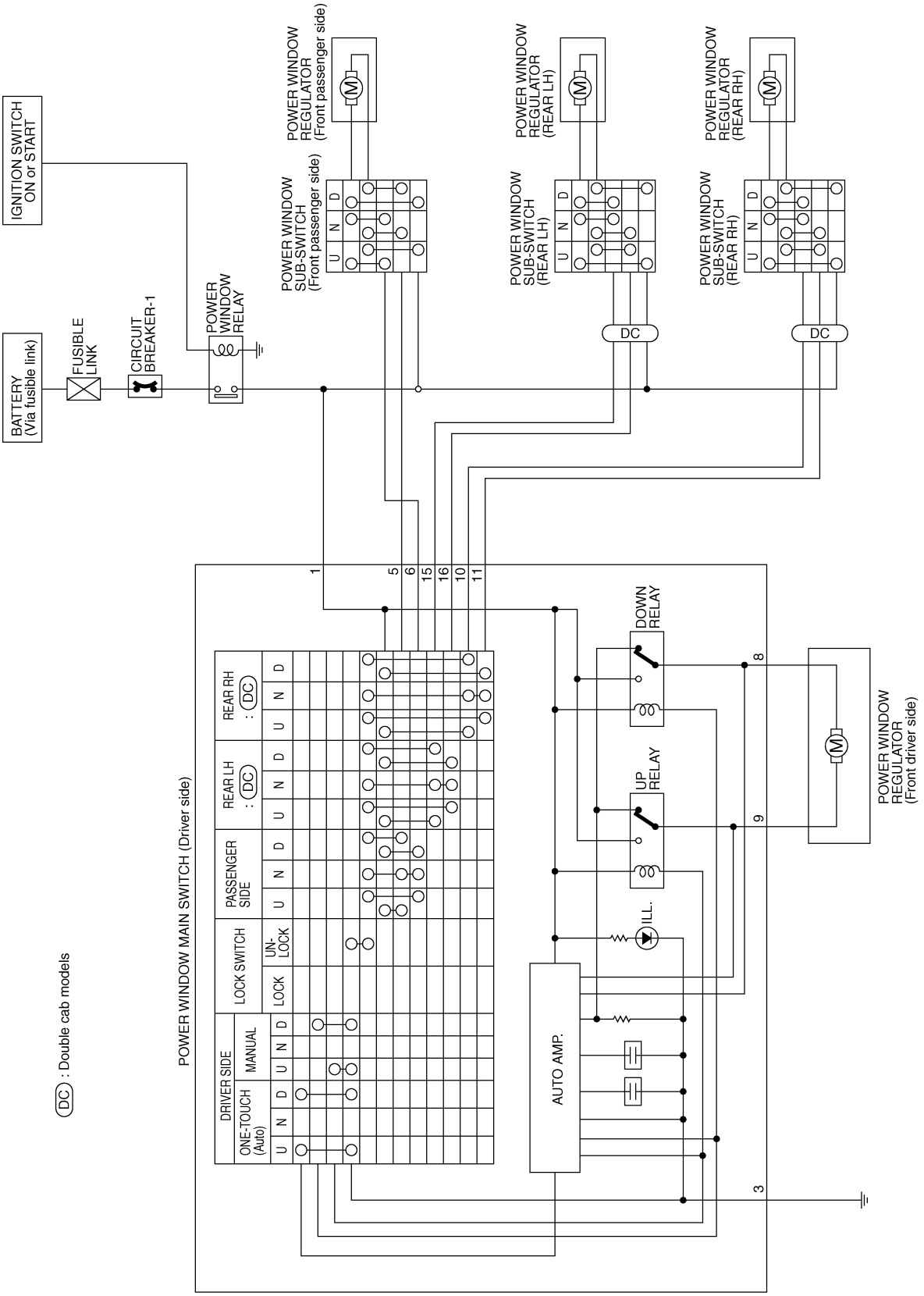
3 4 2 M119 W, M122 W

4 5 *HS1 L, *HS2 L

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

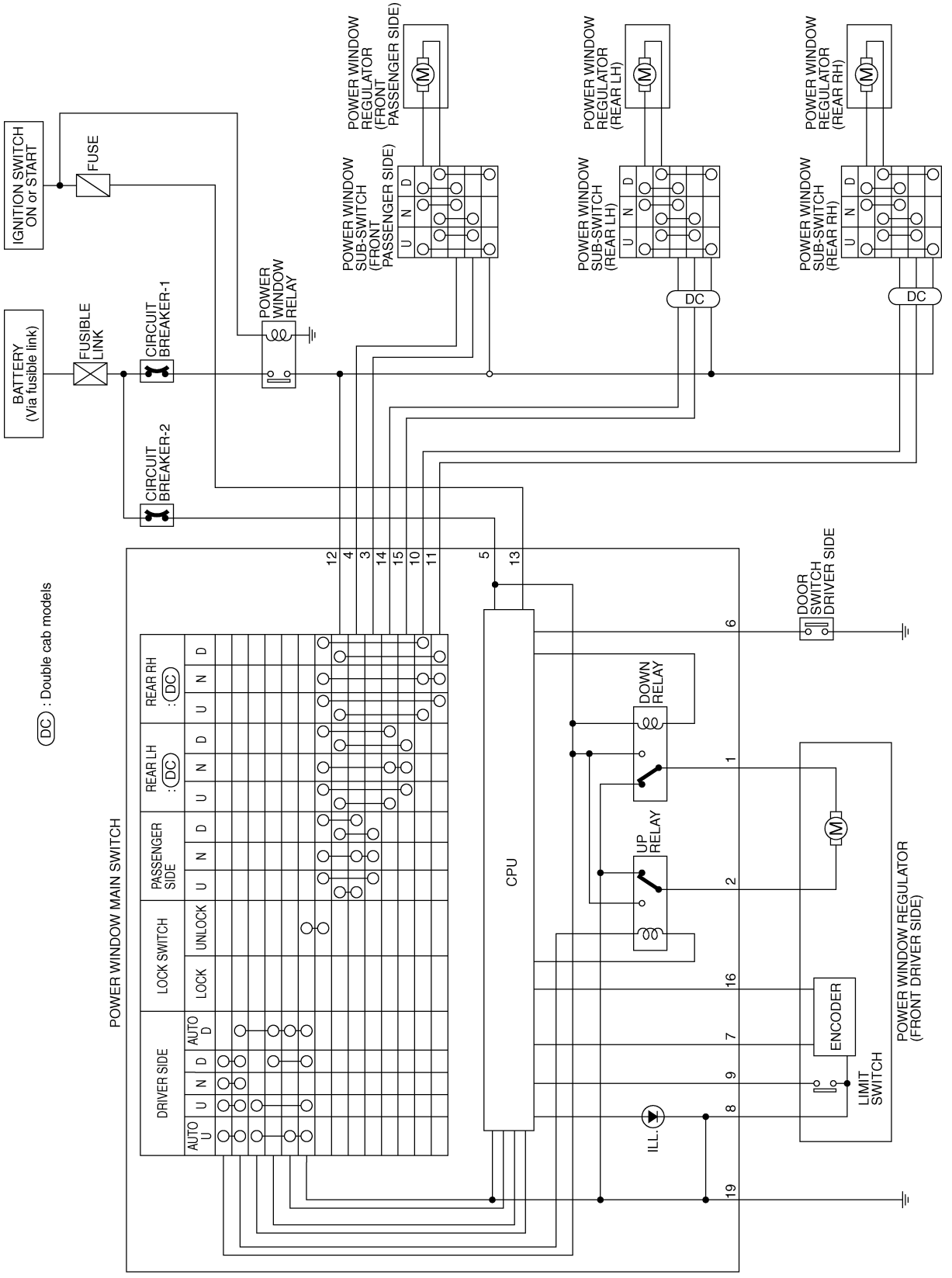
GEL442A

Schematic/Without Interruption Detection Function



GEL281A

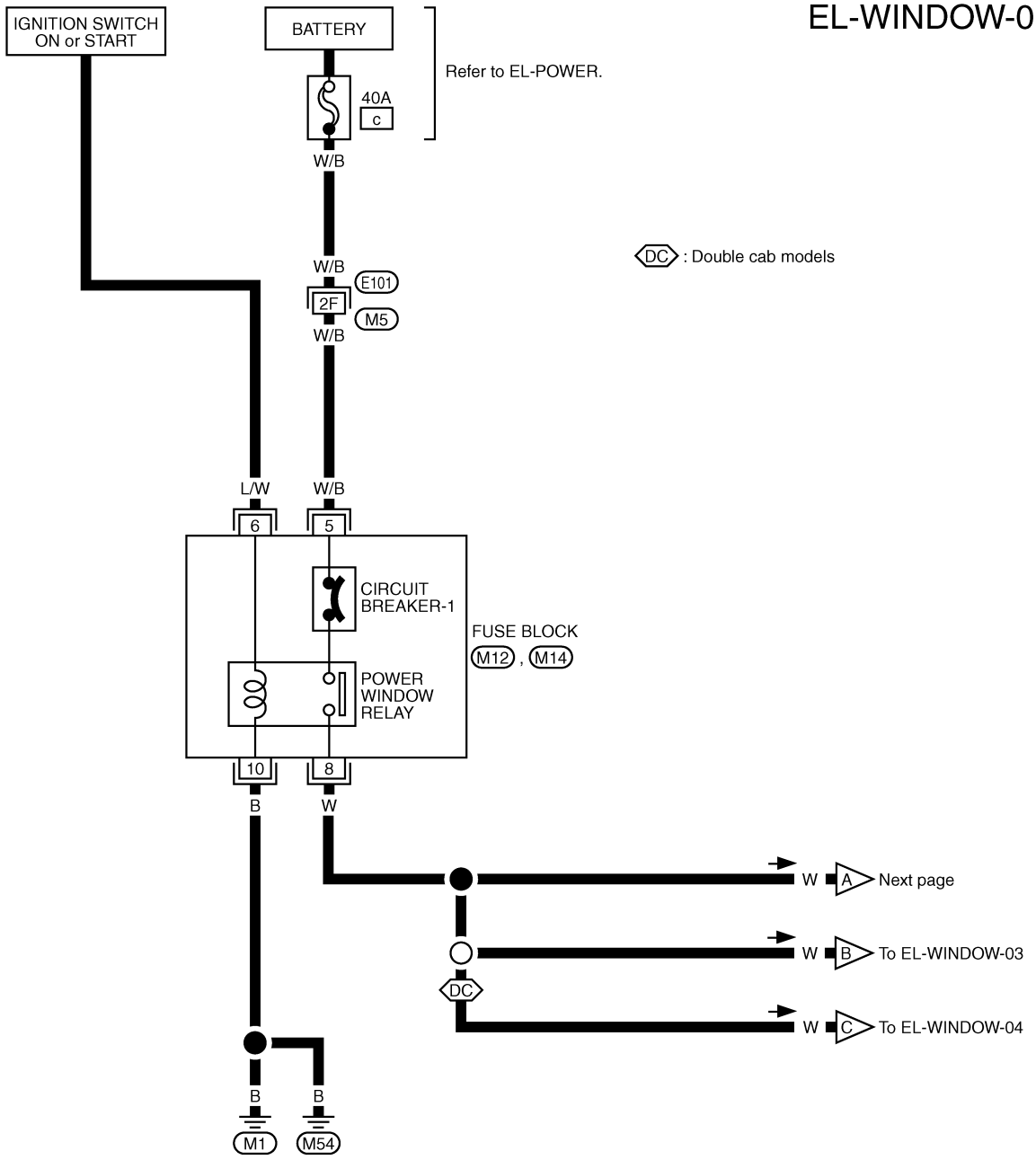
Schematic/With Interruption Detection Function

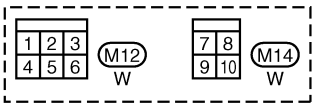


GEL286A

Wiring Diagram — WINDOW —/Without Interruption Detection Function

EL-WINDOW-01



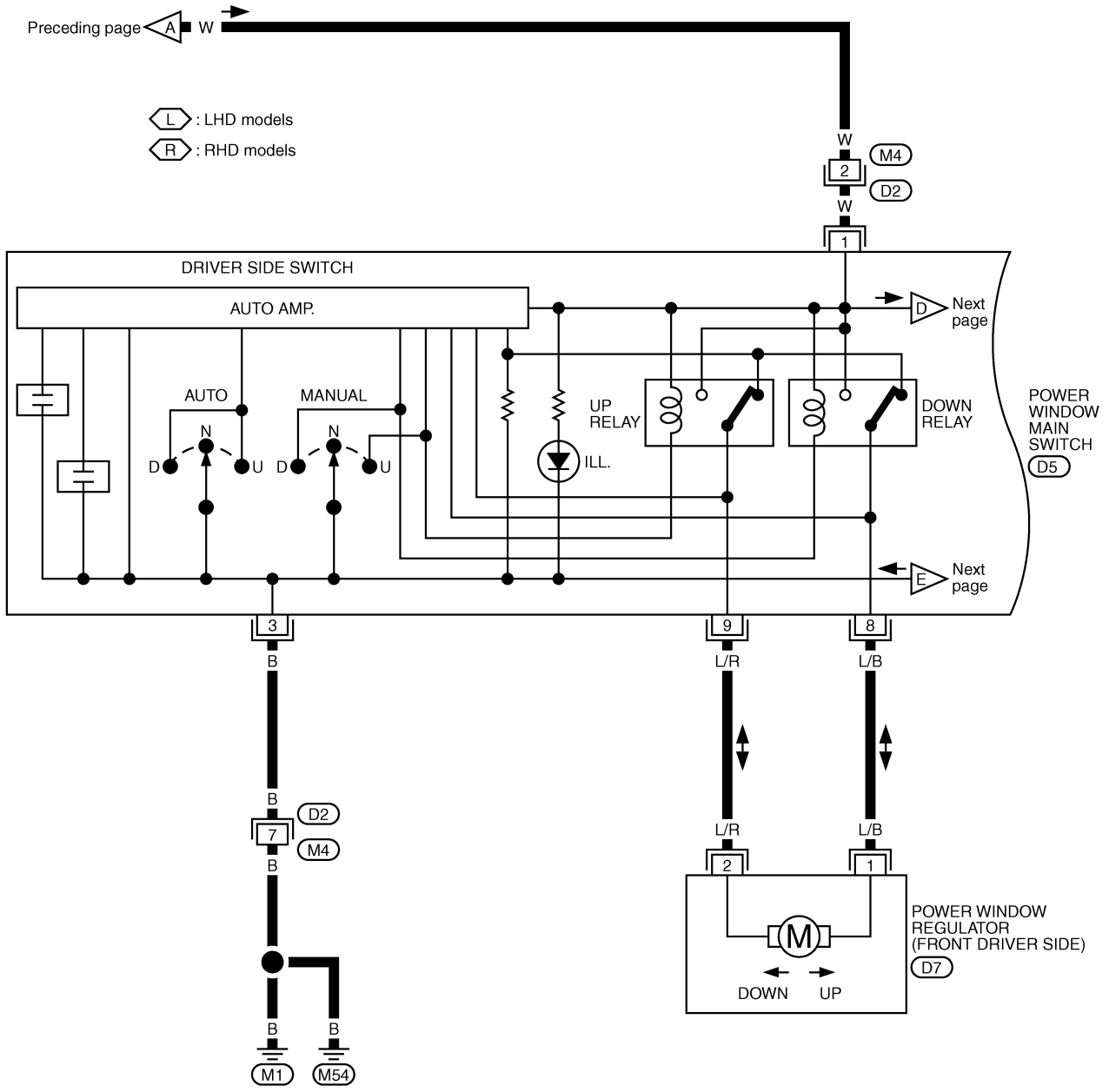


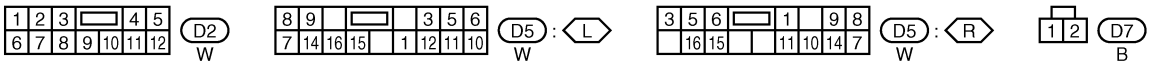
Refer to last page (Foldout page).
M5 , E101

GEL282A

Wiring Diagram — WINDOW —/Without Interruption Detection Function (Cont'd)

EL-WINDOW-02

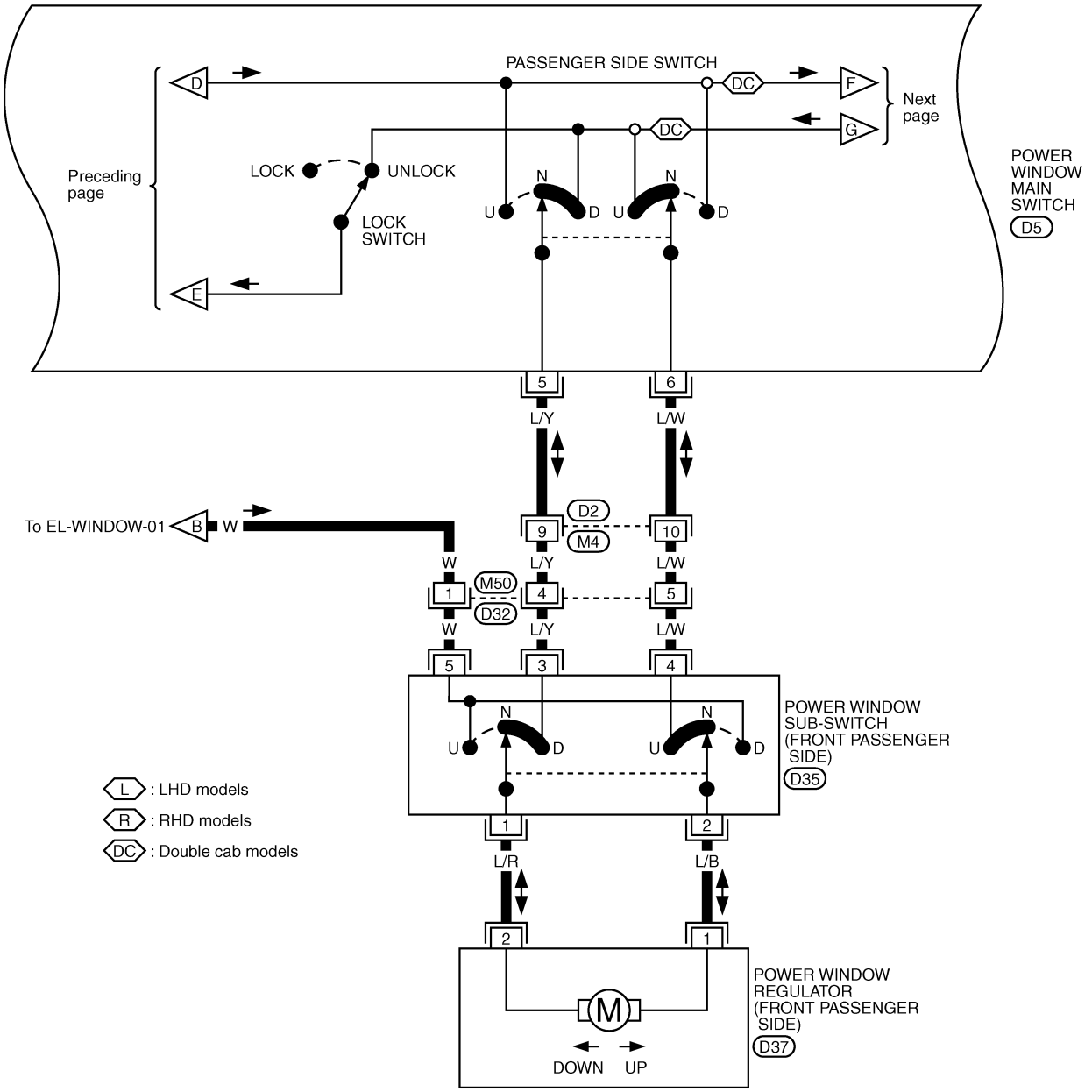


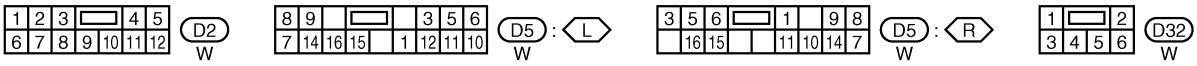


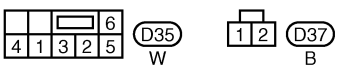
GEL283A

Wiring Diagram — WINDOW —/Without Interruption Detection Function (Cont'd)

EL-WINDOW-03



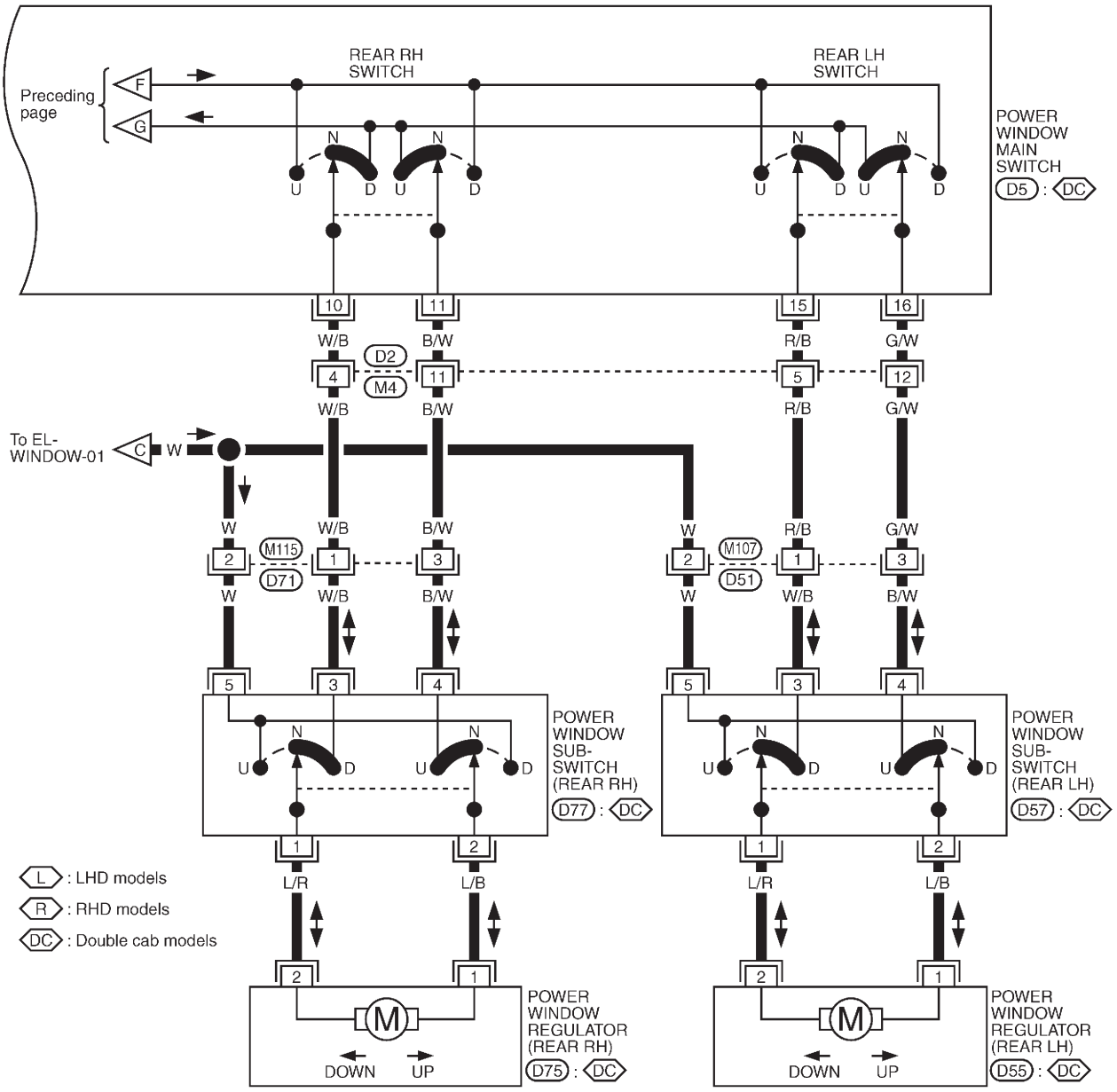


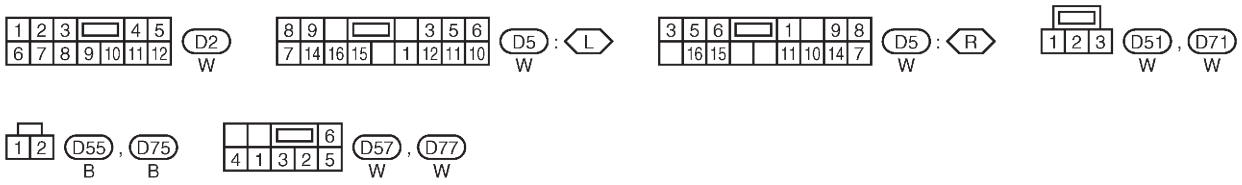


GEL284A

Wiring Diagram — WINDOW —/Without Interruption Detection Function (Cont'd)

EL-WINDOW-04

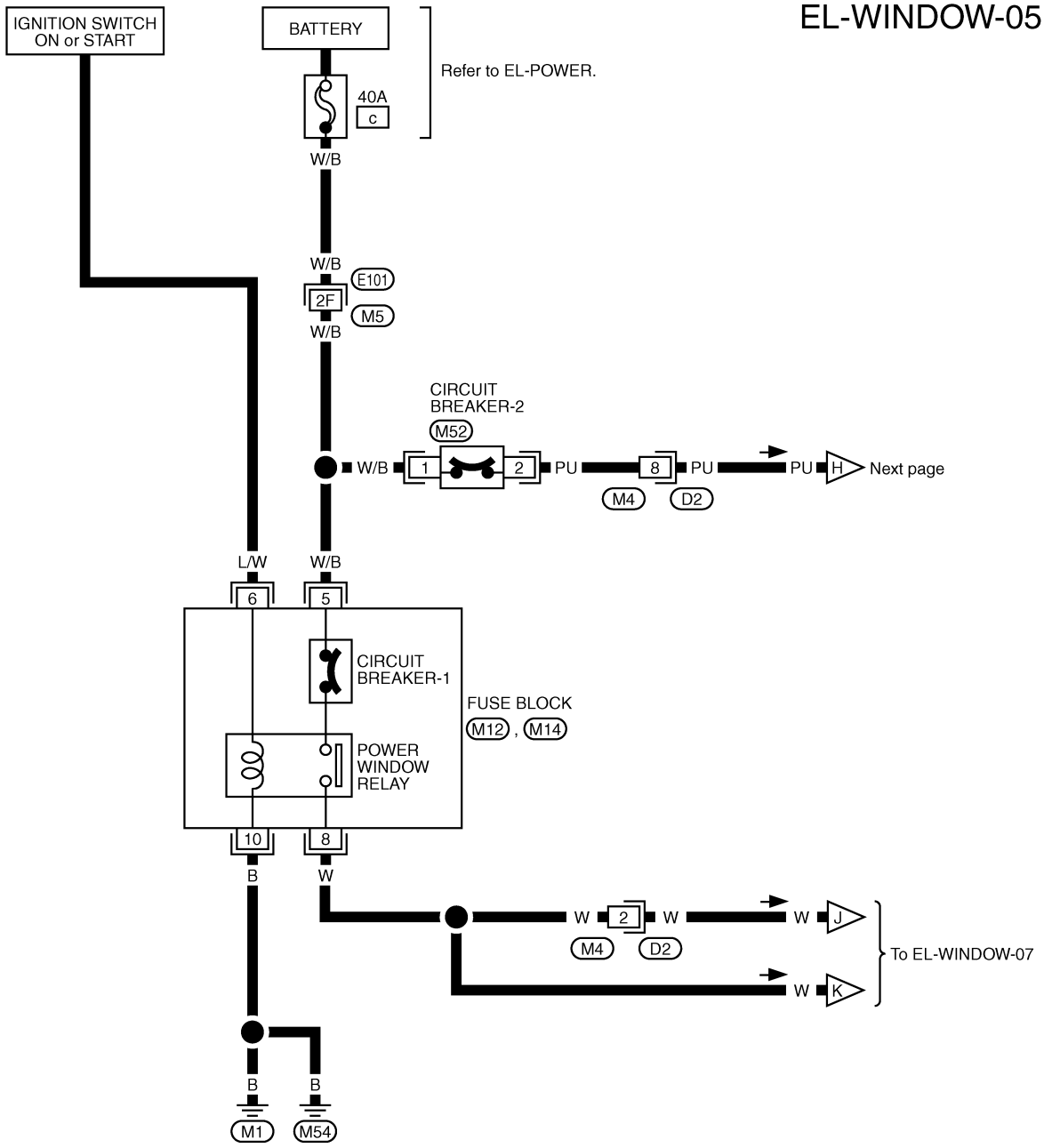


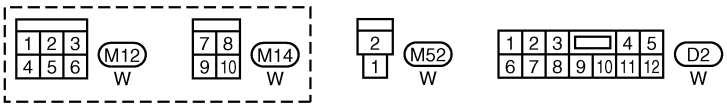


GEL285A

Wiring Diagram — WINDOW —/With Interruption Detection Function

EL-WINDOW-05

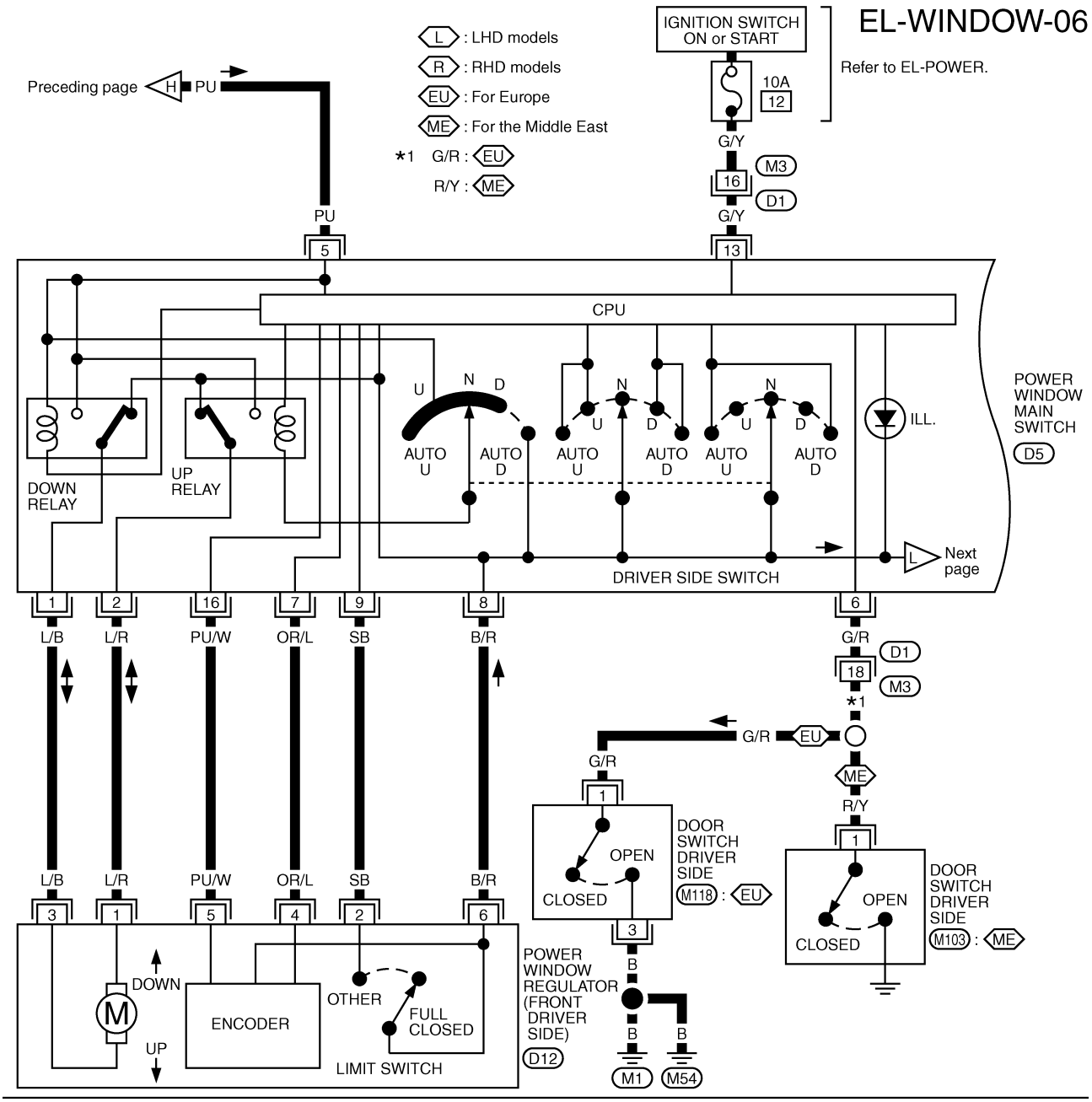


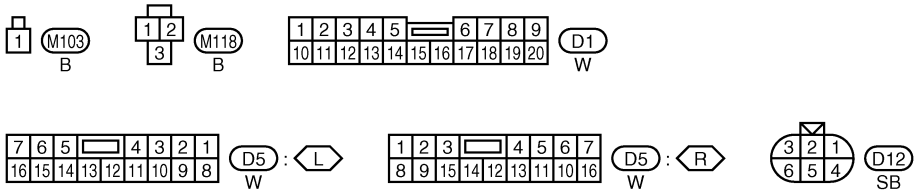


Refer to last page (Foldout page).
M5 , E101

GEL287A

Wiring Diagram — WINDOW —/With Interruption Detection Function (Cont'd)

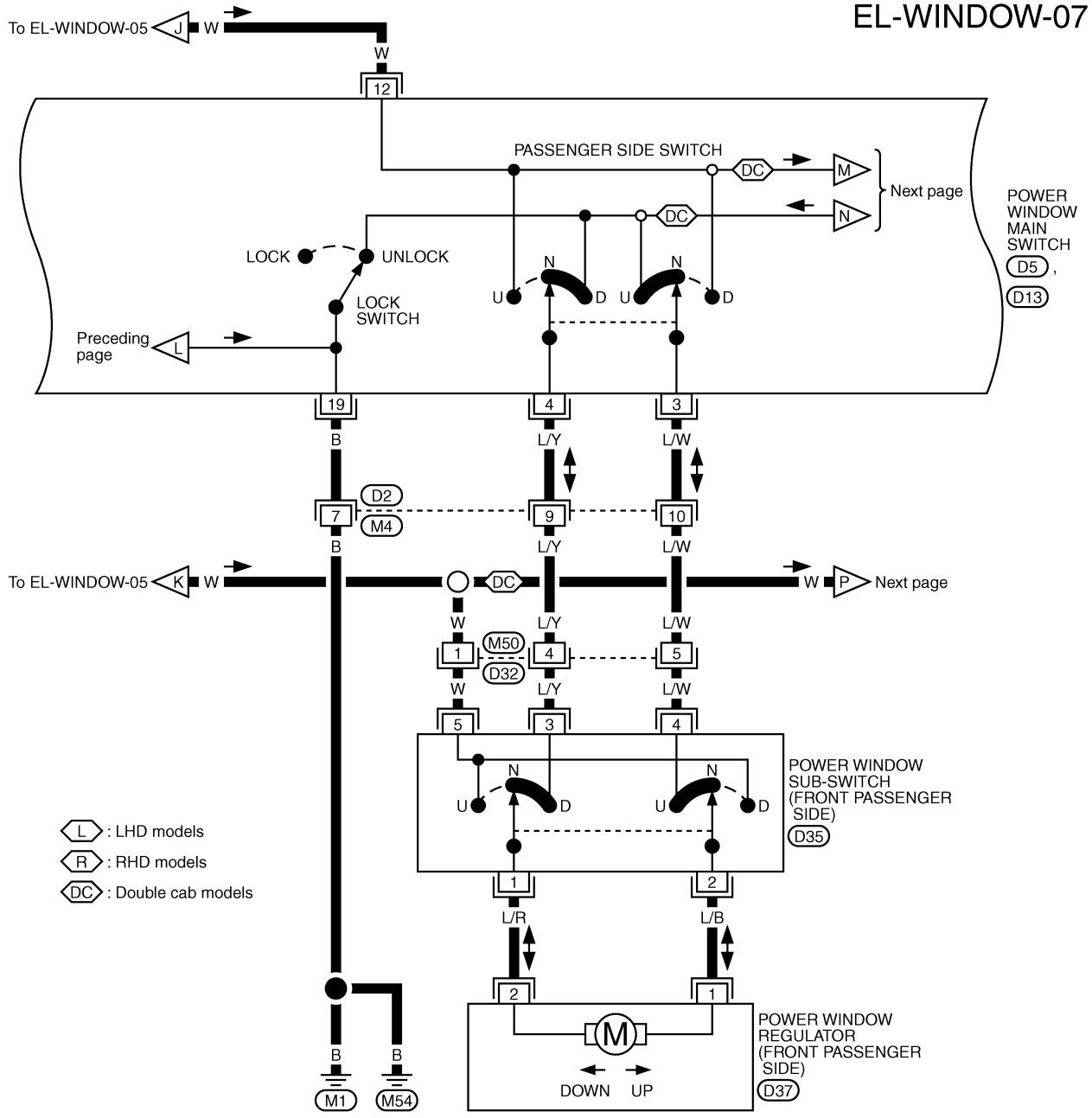


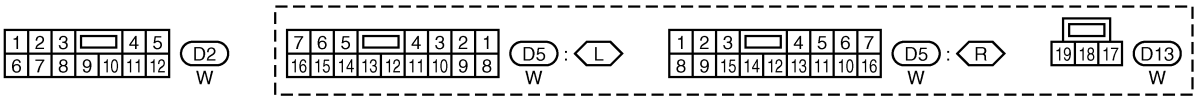


GEL288A

Wiring Diagram — WINDOW —/With Interruption Detection Function (Cont'd)

EL-WINDOW-07

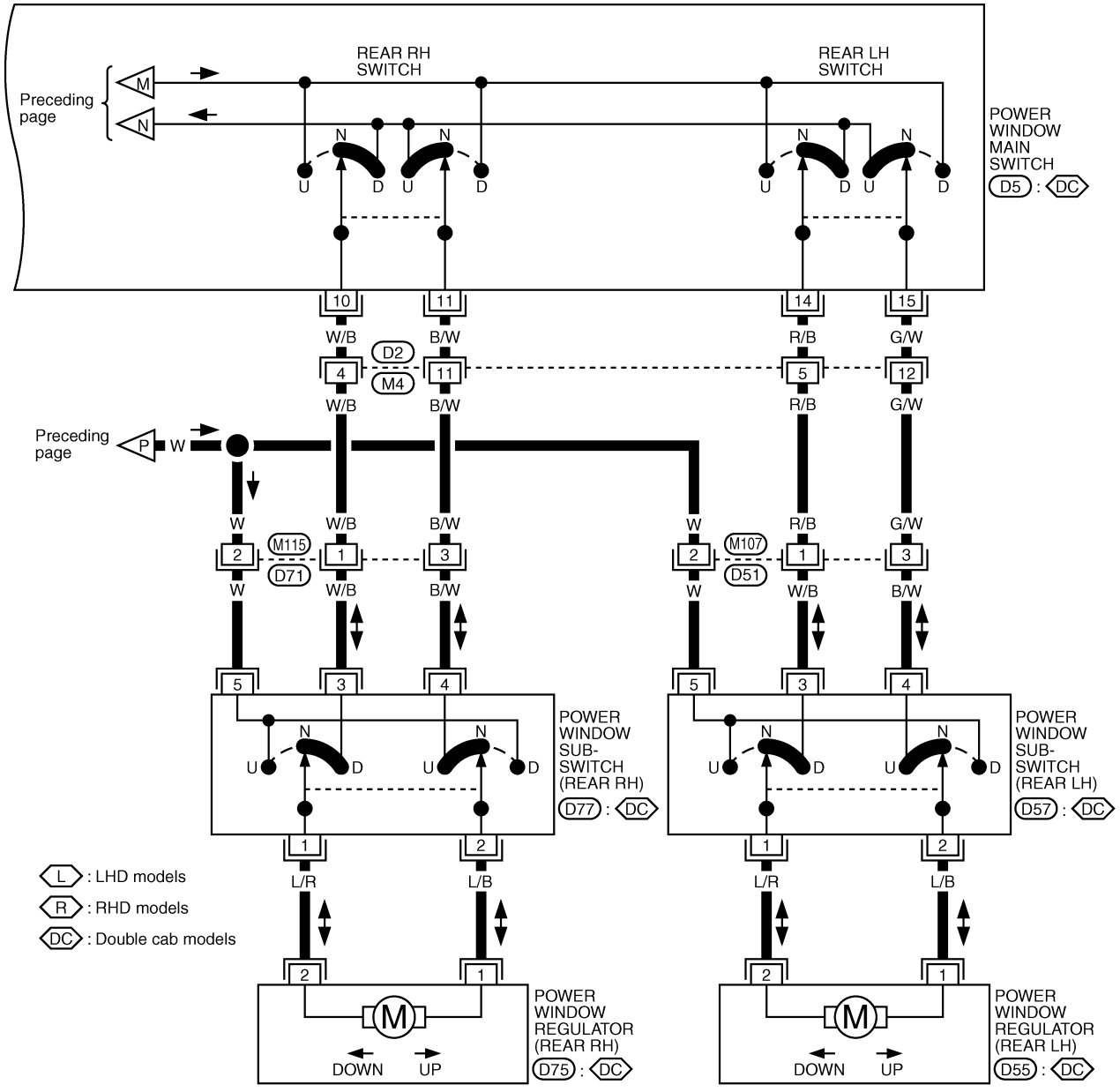


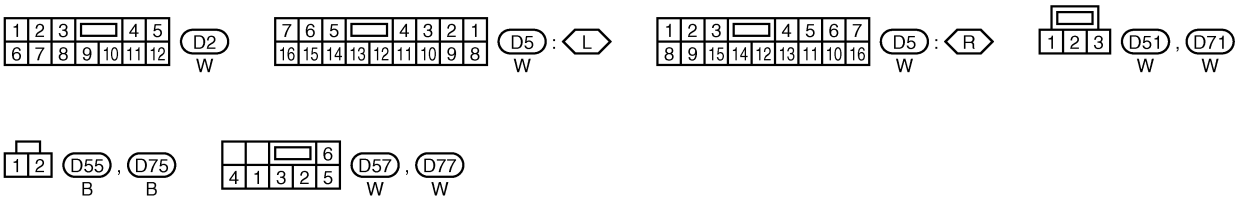


GEL289A

Wiring Diagram — WINDOW —/With Interruption Detection Function (Cont'd)

EL-WINDOW-08





GEL290A

Trouble Diagnoses/Without Interruption Detection Function

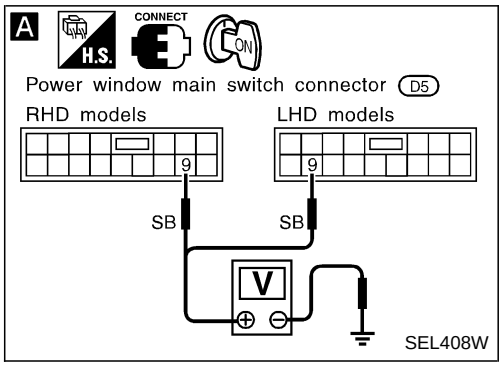
Symptom	Possible cause	Repair order
None of the power windows can be operated using any switch.	1. 40A fusible link and circuit breaker-1 2. Grounds (M1) and (M54) 3. Power window relay 4. Open/short in power window main switch circuit	1. Check 40A fusible link (letter C, located in fusible link and fuse box) and circuit breaker-1, located in fuse block. Turn ignition switch “ON” and verify battery positive voltage is present at terminal ① of power window main switch and terminal ⑤ of sub-switch. 2. Check grounds (M1) and (M54). 3. Check power window relay. 4. Check harness between power window relay and power window main switch for open/short circuit.
Driver side power window cannot be operated but other windows can be operated.	1. Driver side power window regulator circuit 2. Driver side power window regulator	1. Check harness between power window main switch and power window regulator for open or short circuit. 2. Check driver side power window regulator.
One or some of power window except driver side power window cannot be operated.	1. Power window sub-switch 2. Passenger side power window regulator 3. Power window main switch 4. Power window circuit	1. Check power window sub-switch. 2. Check power window regulator of malfunctioning power window. 3. Check power window main switch. 4-1. Check harnesses between power window main switch and power window sub-switch for open/short circuit. 4-2. Check harnesses between power window sub-switch and power window regulator for open/short circuit.
Passenger power window cannot be operated using power window main switch but can be operated by power window sub-switch.	1. Power window main switch	1. Check power window main switch.
Driver side power window auto function cannot be operated using power window main switch.	1. Power window main switch	1. Check power window main switch.

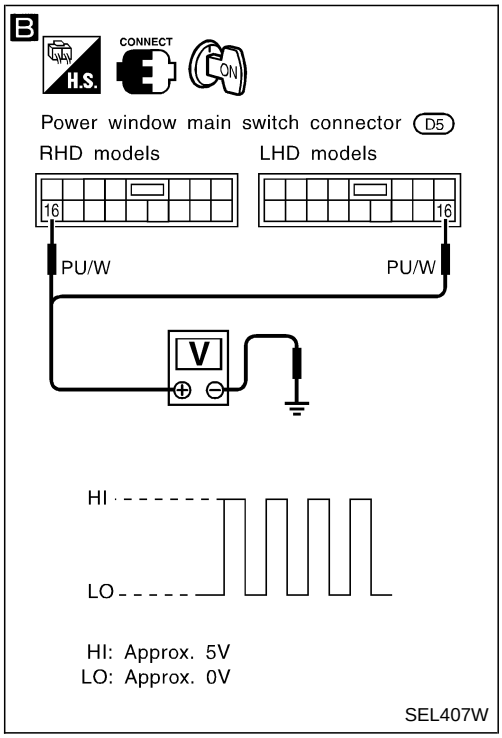
Trouble Diagnoses/With Interruption Detection Function

Symptom	Possible cause	Repair order
None of the power windows can be operated using any switch.	1. 10A fuse, 40A fusible link	1. Check 10A fuse [No. 12, located in fuse block (J/B)], 40A fusible link (letter C , located in fuse and fusible link box).
	2. Ground circuit	2. Check ground circuit of power window main switch terminal ⑲.
	3. Power window main switch	3. Check power window main switch.
Driver side power window cannot be operated but other windows can be operated.	1. Driver side power window regulator circuit	1. Check harness between power window main switch and driver side power window regulator for open or short circuit.
	2. Driver side power window regulator	2. Check driver side power window regulator.
	3. (M52) circuit breaker-2	3. Check (M52) circuit breaker-2.
	4. (M52) circuit breaker-2 circuit	4. Check harness between (M52) circuit breaker-2 and 40A fusible link (letter C , located in fuse and fusible link box).
	5. Power window main switch circuit	5-1. Check harness between power window main switch terminal ⑬ and 10A fuse [No. 12, located in fuse block (J/B)].
		5-2. Check harness between power window main switch terminal ⑤ and (M52) circuit breaker.
One or more power windows except driver's side window cannot be operated.	1. Power window sub-switches	1. Check power window sub-switch.
	2. Power window regulators	2. Check power window regulator.
	3. Power window main switch	3. Check power window main switch.
	4. Power window circuit	4-1. Check harnesses between power window main switch and power window sub-switch for open/short circuit.
		4-2. Check harnesses between power window sub-switch and power window regulator for open/short circuit.
Power windows except driver's side window cannot be operated using power window main switch but can be operated by power window sub-switch.	1. Power window main switch	1. Check power window main switch.
Driver side power window automatic operation does not function properly.	1. Power window main switch	1. Check power window main switch.
	2. Encoder and limit switch	2. Check encoder and limit switch. (EL-3132)
Timer control for supplying power after turning ignition switch to "OFF" does not operate properly. (Except models for Europe)	1. Driver side door switch circuit	1. Check harness between driver side door switch and power window main switch.
	2. Driver side door switch	2. Check driver side door switch.
	3. Ignition switch ON signal circuit	3. Check ignition switch ON signal circuit to power window main switch.
	4. Power window main switch	4. Check power window main switch.

Trouble Diagnoses/With Interruption Detection Function (Cont'd)

ENCODER AND LIMIT SWITCH CHECK





CHECK DOOR WINDOW SLIDE MECHANISM
Check the following.
- Obstacles in window, glass molding, etc.
- Worn or deformed glass molding
- Door sash tilted too far inward or outward
- Door window regulator

NG → Remove obstacles or repair door window slide mechanism.

OK ↓

A

CHECK POWER SUPPLY TO LIMIT SWITCH
1. Disconnect driver side power window regulator connector.
2. Turn ignition switch ON.
3. Check voltage between power window main switch terminal ⑨ and ground.
Approx. 5V should exist.

NG → Replace power window main switch.

OK ↓

CHECK LIMIT SWITCH OPERATION
1. Turn ignition switch OFF.
2. Connect driver side power window regulator connector.
3. Turn ignition switch ON.
4. Check voltage between power window main switch terminal ⑨ and ground during power window closing operation.

Terminal No.	Condition	Voltage (DCV)
⑨	Approx. 15 mm (0.59 in) below the full closed position to full closed position	Approx. 5
	Other positions	Approx. 0

OK → B

CHECK ENCODER
Measure voltage between power window main switch terminal ⑯ and ground with oscilloscope when power window is in automatic closing operation.
If check result is NG, replace power window regulator motor (front driver side).
If check result is OK, replace power window main switch.

NG ↓

RESET LIMIT SWITCH
Reset limit switch. Refer to BT section. Then check voltage between power window main switch terminal ⑨ and ground during power window closing operation at least ten times.

Terminal No.	Condition	Voltage (DCV)
⑨	Approx. 15 mm (0.59 in) below the full closed position to full closed position	Approx. 5
	Other positions	Approx. 0

NG → Replace power window regulator motor (front driver side).

OK ↓

B

CHECK ENCODER
Measure voltage between power window main switch terminal ⑯ and ground with oscilloscope when power window is in automatic closing operation.

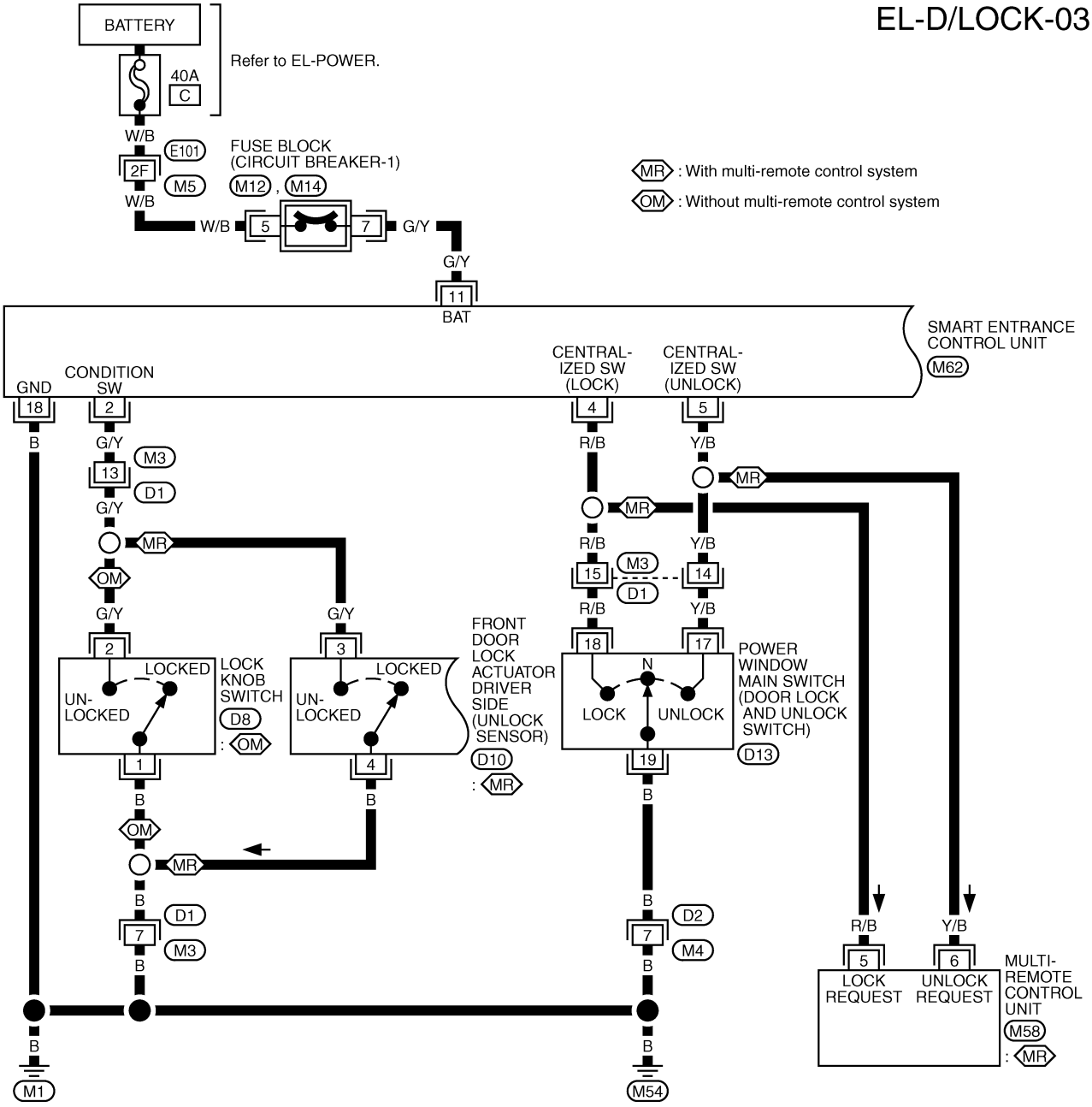
NG → Replace power window regulator motor (front driver side).

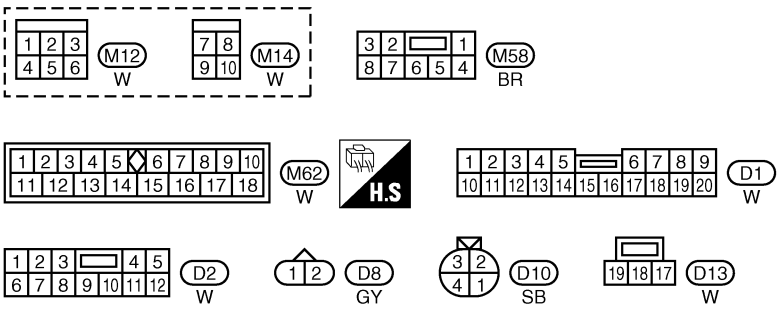
OK ↓

Replace power window main switch.

Wiring Diagram — D/LOCK —

EL-D/LOCK-03



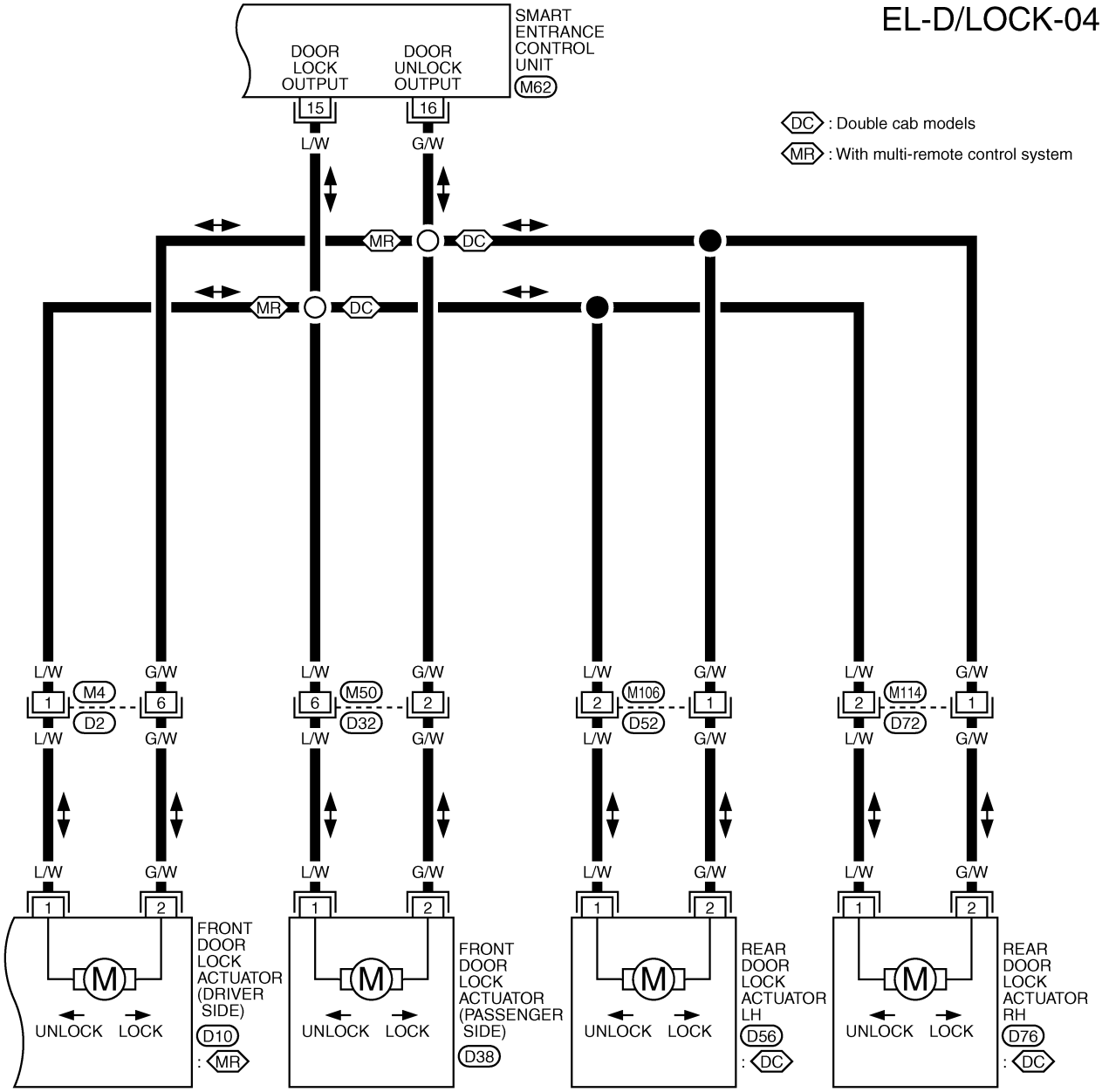


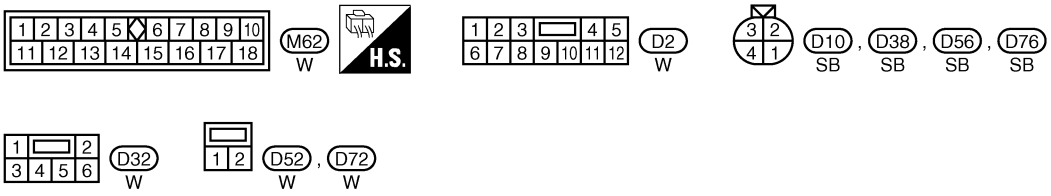
Refer to last page (Foldout page).
M5 , E101

GEL443A

Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-04





GEL444A

System Description

FUNCTION

Multi-remote control system has the following function.

- Door lock
- Door unlock
- Hazard reminder

LOCK OPERATION

When the LOCK signal is input to multi-remote control unit (the antenna of the system is combined with multi-remote control unit), ground is supplied

- through multi-remote control unit terminal ⑤
- to smart entrance control unit terminal ④.

Then smart entrance control unit supplies power and ground to each door lock actuator.

UNLOCK OPERATION

When the UNLOCK signal is input to multi-remote control unit (the antenna of the system is combined with multi-remote control unit), ground is supplied

- through multi-remote control unit terminal ⑥
- to smart entrance control unit terminal ⑤.

Then smart entrance control unit supplies power and ground to each door lock actuator.

HAZARD REMINDER

When the doors are locked or unlocked (signal from driver's door unlock sensor) by multi-remote controller, power is supplied

- through multi-remote control unit terminals ③ and ⑧
- to the hazard warning lamps

Then hazard warning lamp flash as follows.

- Lock operation: Flash once
- Unlock operation: Flash twice

MULTI-REMOTE CONTROLLER ID CODE ENTRY

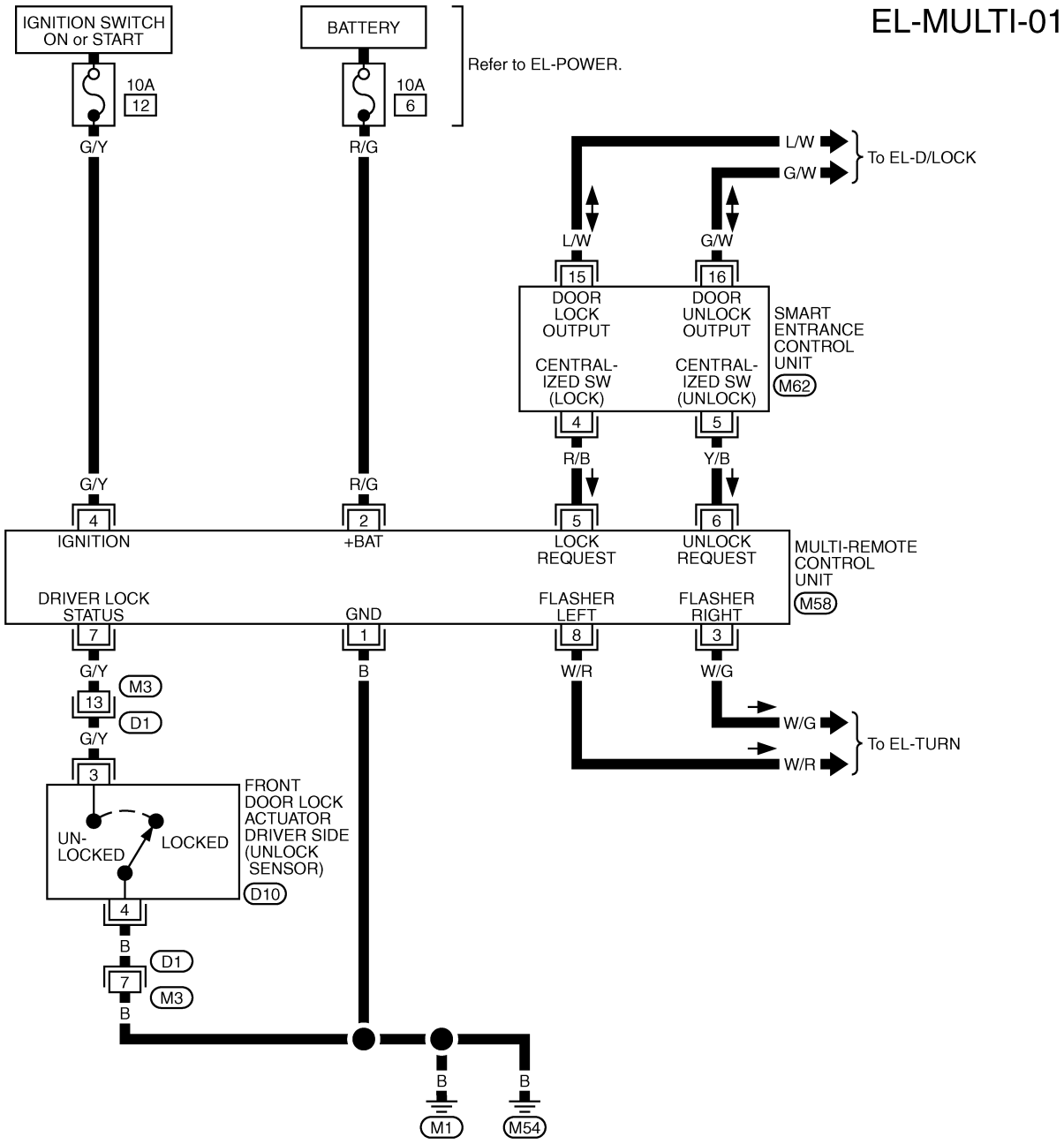
A maximum of four remote controllers can be entered. Any attempt to enter a remote controller will erase all ID codes previously entered. Therefore, be sure to receive all remote controllers from the vehicle owner when any ID code entry is performed.

To enter ID code entry, the following signals must be input to the multi-remote control unit.

- Ignition switch ON signal
- Battery power supply
- Signal from remote controller

For detailed procedure, refer to "ID Code Entry Procedure" in EL-3139.

Wiring Diagram — MULTI —



GEL445A

Trouble Diagnoses

SYMPTOM CHART

Symptom	Possible cause	Diagnoses/service order
No doors can be locked or unlocked by remote control operation. (See NOTE.)	1. Power door lock system 2. Remote controller battery 3. Door lock/unlock circuit 4. Ignition power supply circuit for multi-remote control unit 5. Power supply circuit for multi-remote control unit 6. Ground circuit for multi-remote control unit 7. Remote controller	1. Check power door lock operation. 2. Check remote controller battery. Refer to EL-3140. 3. Check harness for open or short between multi-remote control unit and smart entrance control unit. 4. Make sure battery voltage is present at terminal ④ of multi-remote control unit while ignition switch is in IGN position. 5. Make sure battery voltage is present at terminal ② of multi-remote control unit. 6. Check continuity between terminal ① of multi-remote control unit and ground. 7. Replace remote controller. Refer to EL-3139.
Hazard reminder does not operate properly.	1. Hazard reminder output to hazard warning lamps 2. Hazard reminder circuit 3. Driver's door unlock sensor	1. Check hazard reminder output to hazard warning lamps at terminals ③ and ⑧ of multi-remote control unit. 2. Check the harness for open or short between hazard warning lamps and multi-remote control unit. 3. Check driver's door unlock sensor signal at terminal ⑦ of multi-remote control unit.
The new ID of remote controller cannot be entered.	1. Remote controller battery 2. Ignition power supply circuit for multi-remote control unit 3. Driver's door unlock sensor 4. Remote controller	1. Check remote controller battery. Refer to EL-3140. 2. Make sure battery voltage is present at terminal ④ of multi-remote control unit while ignition switch is in IGN position. 3. Check driver's door unlock sensor signal at terminal ⑦ of multi-remote control unit. 4. Replace remote controller. Refer to EL-3139.

Refer to "MULTI-REMOTE CONTROL UNIT INSPECTION TABLE" on next page to check the control unit signals.

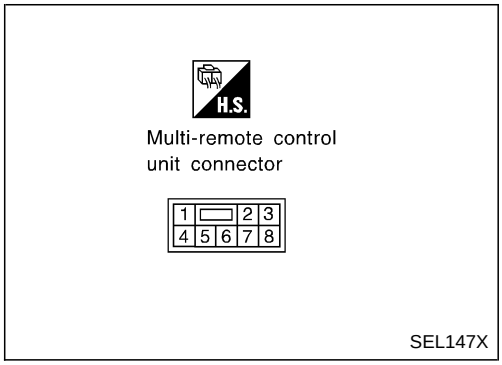
NOTE:

- The lock operation of multi-remote control system does not activate with the ignition key ON position.

Trouble Diagnoses (Cont'd)

MULTI-REMOTE CONTROL UNIT INSPECTION TABLE

Terminal No.	Connections	Condition		Voltage (V) (approximate values)
1	Ground	—		—
2	Power source (BAT)	—		12
3	Hazard warning lamp RH	Remote controller LOCK/UNLOCK button is pushed (All doors are closed and key is not in ignition key cylinder.)		12
		Other than above condition		0
4	Ignition power supply	Ignition switch	OFF	0
			ON or START	12
5	Lock signal	Remote controller LOCK button is pushed (All doors are closed and key is not in ignition key cylinder.)		0
		Other than above condition		5
6	Unlock signal	Remote controller UNLOCK button is pushed (Key is not in ignition key cylinder.)		0
		Other than above condition		5
7	Driver side door unlock sensor	Driver side door	Locked	5
			Unlocked	0
8	Hazard warning lamp LH	Remote controller LOCK/UNLOCK button is pushed (All doors are closed and key is not in ignition key cylinder.)		12
		Other than above condition		0



ID Code Entry Procedure

Activation of the registration mode:

The vehicle must have been unlocked by either the multi-remote controller or a transponder OK signal (TPOK) from the vehicle's immobilizer.
Preparation: - Make sure all doors unlock.
- Make sure all multi-remote controllers to be registered are available.
- Make sure the batteries of all multi-remote controllers are in a good condition.
- Make sure all transmitting sources are out of the neighbourhood of the vehicle.
- Make sure the battery of the vehicle is in a good condition.

↓

Switch ignition-switch exactly six times from the "LOCK" to the "ON" position within 10 seconds and return the ignition switch to the "LOCK" position (leaving the key in the ignition switch).

↓

After 2 seconds the registration mode is activated. The turn signal lamps will flash twice.

NG → Switch ignition-switch exactly six times from the "LOCK" to the "ON" position within 10 seconds and return the ignition switch to the "LOCK" position (leaving the key in the ignition switch).

↓ OK

Proceed with the registration mode.

NOTE
The registration mode is operated when:
- The ignition-switch is turned to the "ON" position.
- 4 multi remote controllers have been learned.
- No multi-remote controller or ignition switch input is received within 120 seconds.

Registration mode

Press and hold the "UNLOCK" button of the multi-remote controller.

↓

Press the "LOCK" button 3 times.

↓

Release the "UNLOCK" button.

→ If the multi-remote controller code is registered correctly, the turn signal lamp will flash once.

NG → Press and hold the "UNLOCK" button of the multi-remote controller.

↓

Do you want to register another multi-remote controller? (max. 4)

OK ← If the multi-remote controller code is registered correctly, the turn signal lamp will flash once.

No ↓

Yes → Press and hold the "UNLOCK" button of the multi-remote controller.

After registration of the requested No. of multi-remote controller(s), confirm the ID-code(s) by switching the ignition switch to the "ON" position.

→ If the multi-remote controller registration is performed correctly, the turn signal lamp will flash twice.

OK ↓

Take the ignition key out of the ignition switch and confirm the functioning of all multi-remote controllers by locking and unlocking the vehicle with each of the multi-remote controllers.

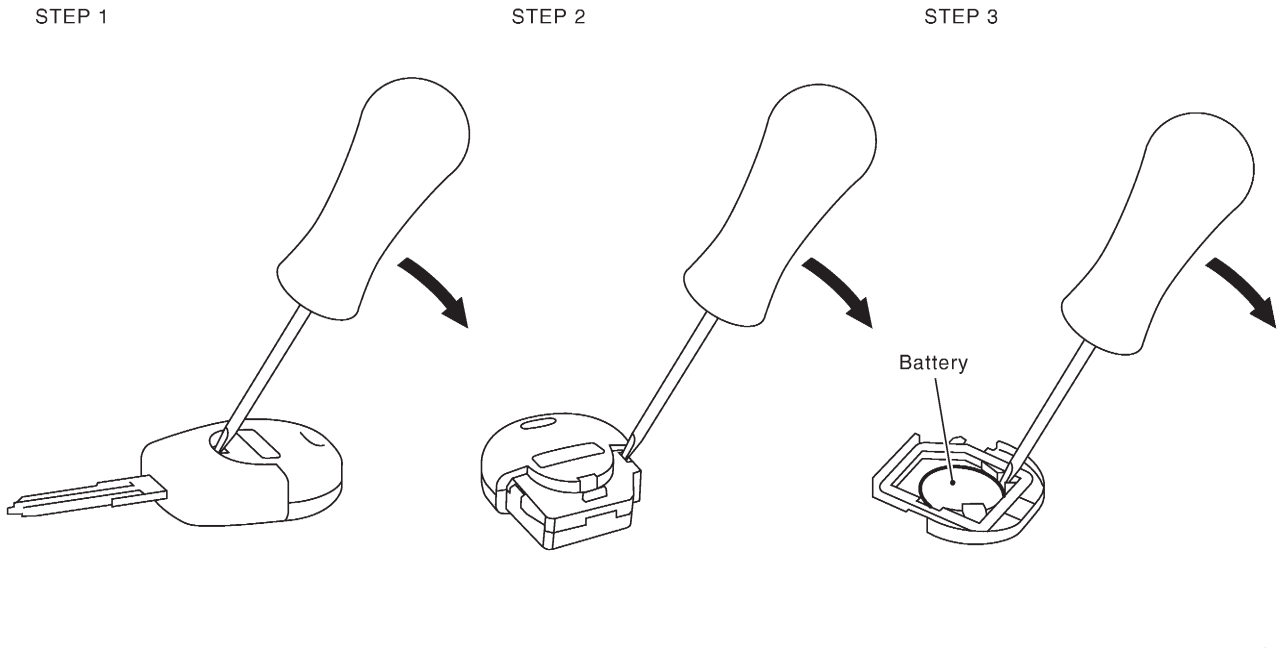
NG → Press and hold the "UNLOCK" button of the multi-remote controller.

↓

End

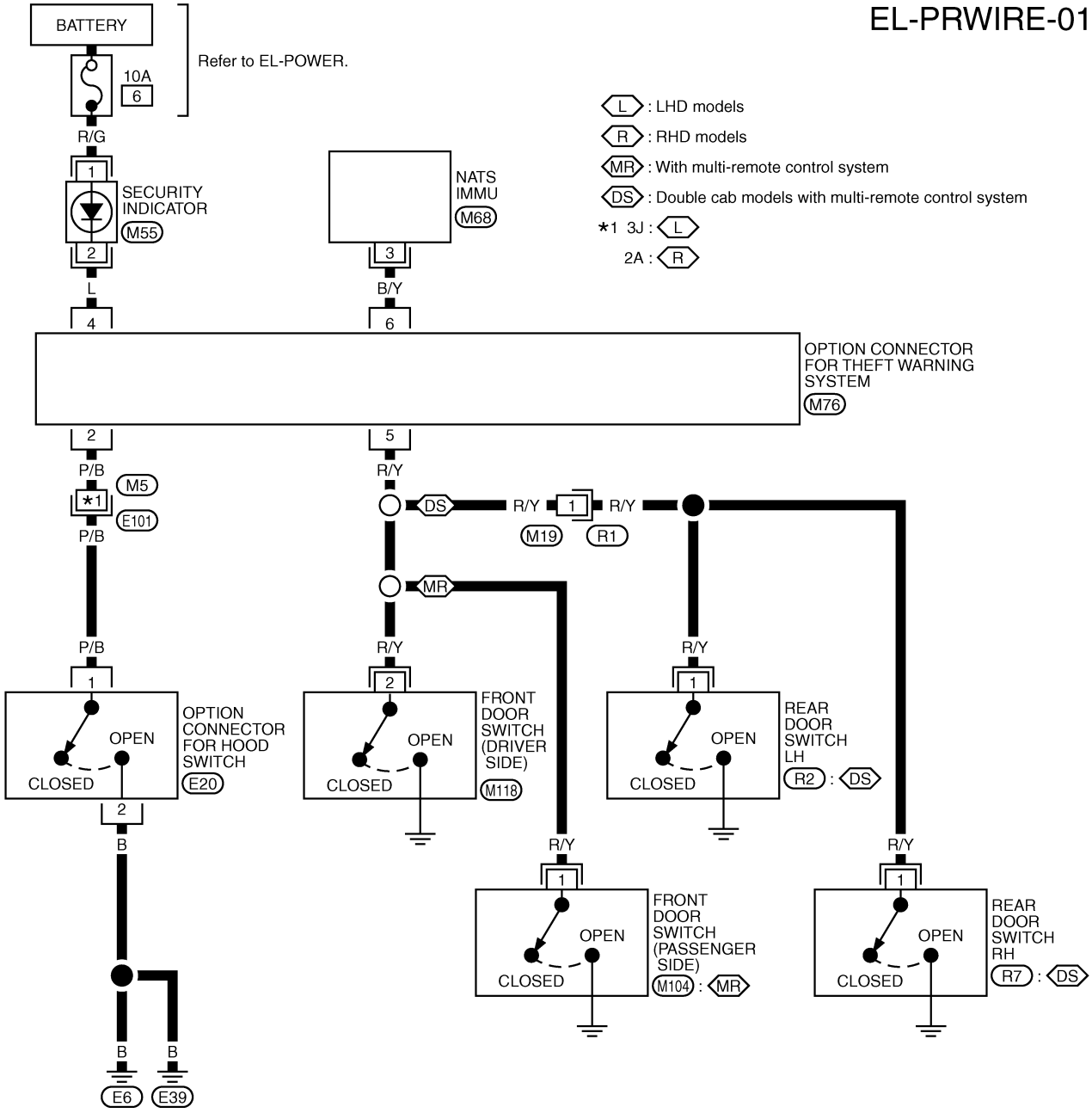
Remote Controller Battery Replacement

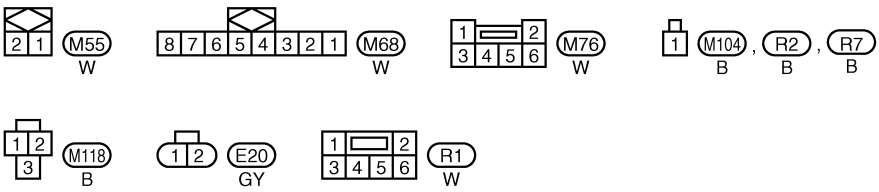
NOTE:
- **Be careful not to touch the circuit board or battery terminal.**
- **The remote controller is water-resistant. However, if it does get wet, immediately wipe it dry.**
- **Push the remote controller button two or three times to check its operation after replacing battery.**



Wiring Diagram — PRWIRE —

EL-PRWIRE-01

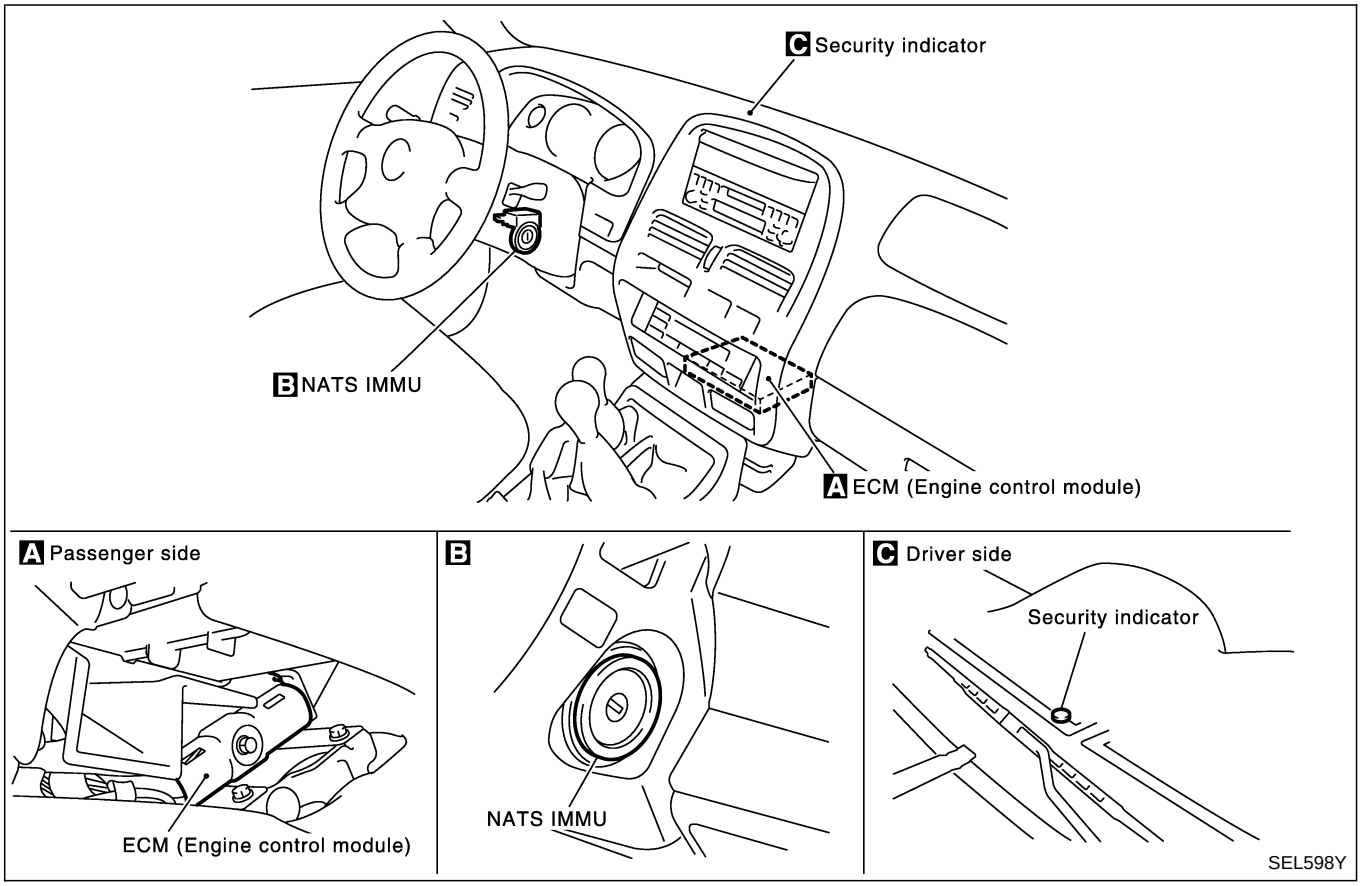




Refer to last page (Foldout page).
M5 , E101

GEL446A

Component Parts and Harness Connector Location



NOTE:
If customer reports a “No Start” condition, request ALL KEYS to be brought to the Dealer is case of a NATS malfunction.

System Description

NATS has the following immobilizer functions:

- Since only NATS ignition keys, whose ID nos. have been registered into the ECM and IMMU of NATS, allow the engine to run, operation of a stolen vehicle without a NATS registered key is prevented by NATS.
  That is to say, NATS will immobilize the engine if someone tries to start it without the registered key of NATS.
- This version of NATS has dongle unit to improve its anti-theft performance (RHD models for Europe). Dongle unit has its own ID which is registered into NATS IMMU. So it dongle unit is replaced, initialization must be carried out.
- When malfunction of dongle unit is detected:
  — The security indicator lamp illuminates for about 15 minutes after ignition switch is turned to ON.
  — When dongle unit has a malfunction and the indicator lamp is illuminated, engine can not be started. However, engine can be started only one time when security indicator turns off in about 15 minutes after ignition switch is turned to ON.
- Both of the originally supplied ignition key IDs have been NATS registered.
  If requested by the vehicle owner, a maximum of five key IDs can be registered into the NATS components.
- The 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 security indicator lamp lights up as follows.

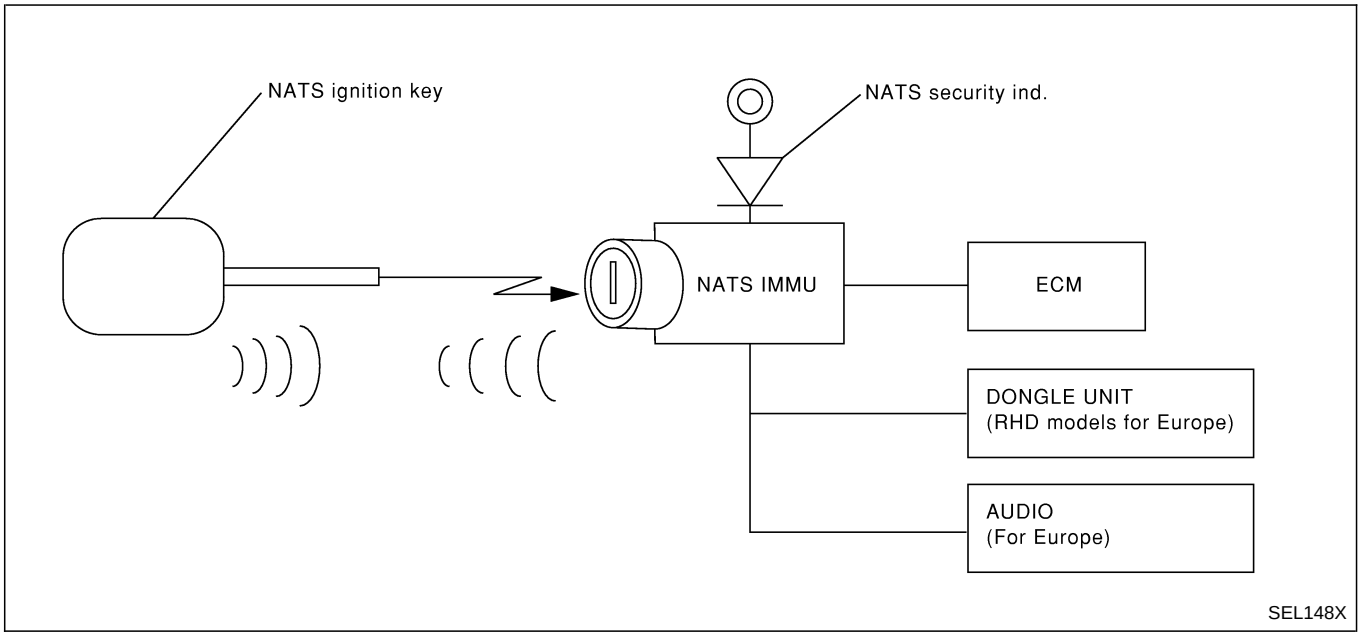
Condition IGN ON and	With Dongle	Without Dongle
	Security Indicator	Security Indicator
NATS malfunction (except dongle unit) is detected	1. 6 times blinking 2. Staying ON after ignition switch is turned ON	Staying ON
Only malfunction of dongle unit is detected.	Staying ON **for about 15 minutes** after ignition switch is turned ON.	—
Malfunction of NATS and engine related parts are detected	1. 6 times blinking 2. Staying ON after ignition switch is turned ON	Staying ON
Just after initialization of NATS	6 times blinking	—

- NATS trouble diagnoses, system initialization and additional registration of other NATS ignition key IDs must be carried out using CONSULT-II hardware and CONSULT-II NATS software.
  Regarding the procedures of NATS initialization and NATS ignition key ID registration, refer to CONSULT-II operation manual, NATS.
- **When servicing a malfunction of the NATS (indicated by lighting up of security Indicator Lamp) or registering another NATS ignition key ID no., it is necessary to re-register original key identification. Therefore, be sure to receive ALL KEYS from vehicle owner.**

System Composition

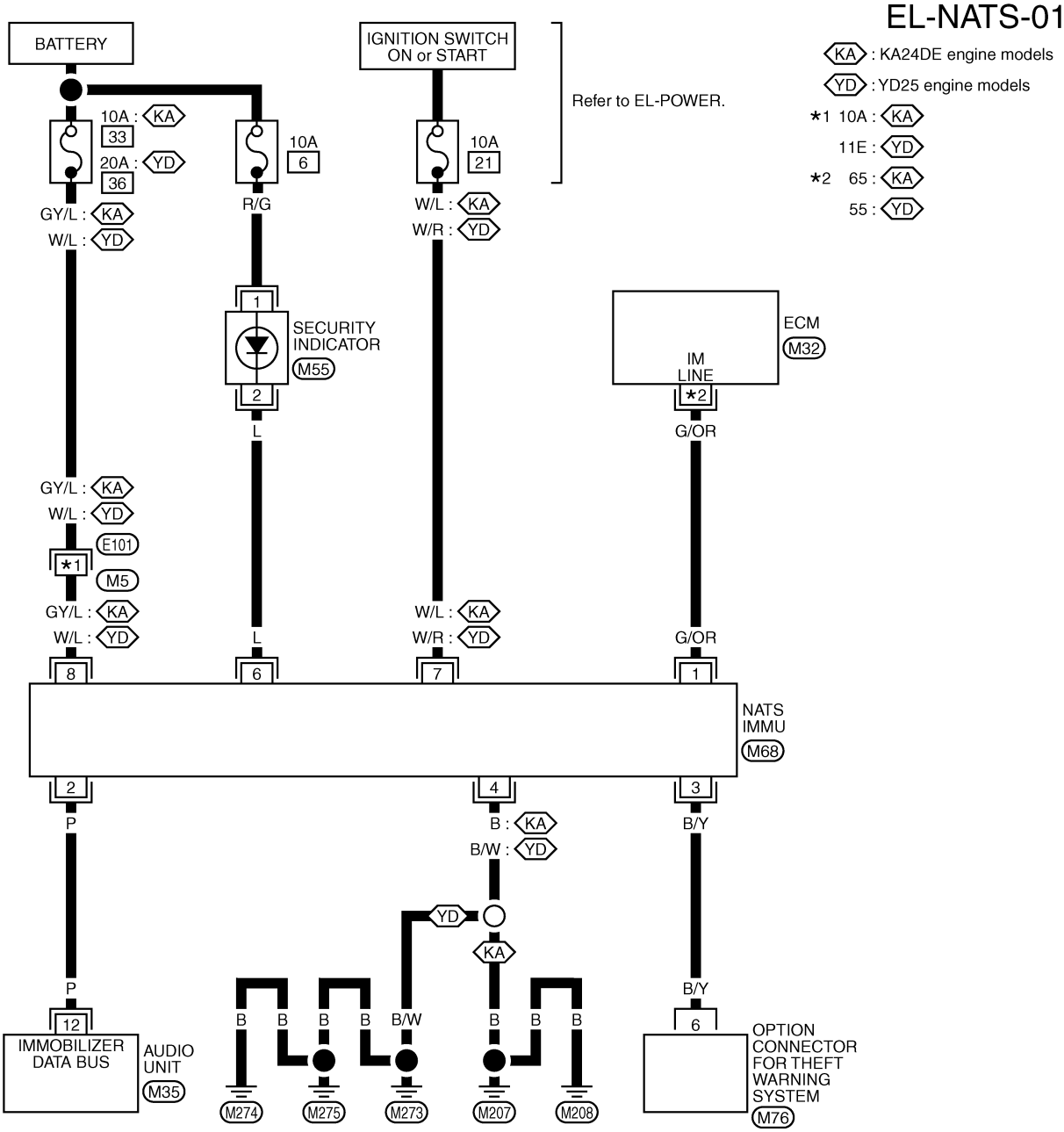
The immobilizer function of the NATS consists of the following:

- NATS ignition key
- NATS immobilizer control unit (NATS IMMU), located in the ignition key cylinder
- Engine control module (ECM)
- Dongle unit (RHD models for Europe)
- NATS security indicator



Wiring Diagram — NATS —/LHD Models

EL-NATS-01



M35 W

M55 W

M68 W

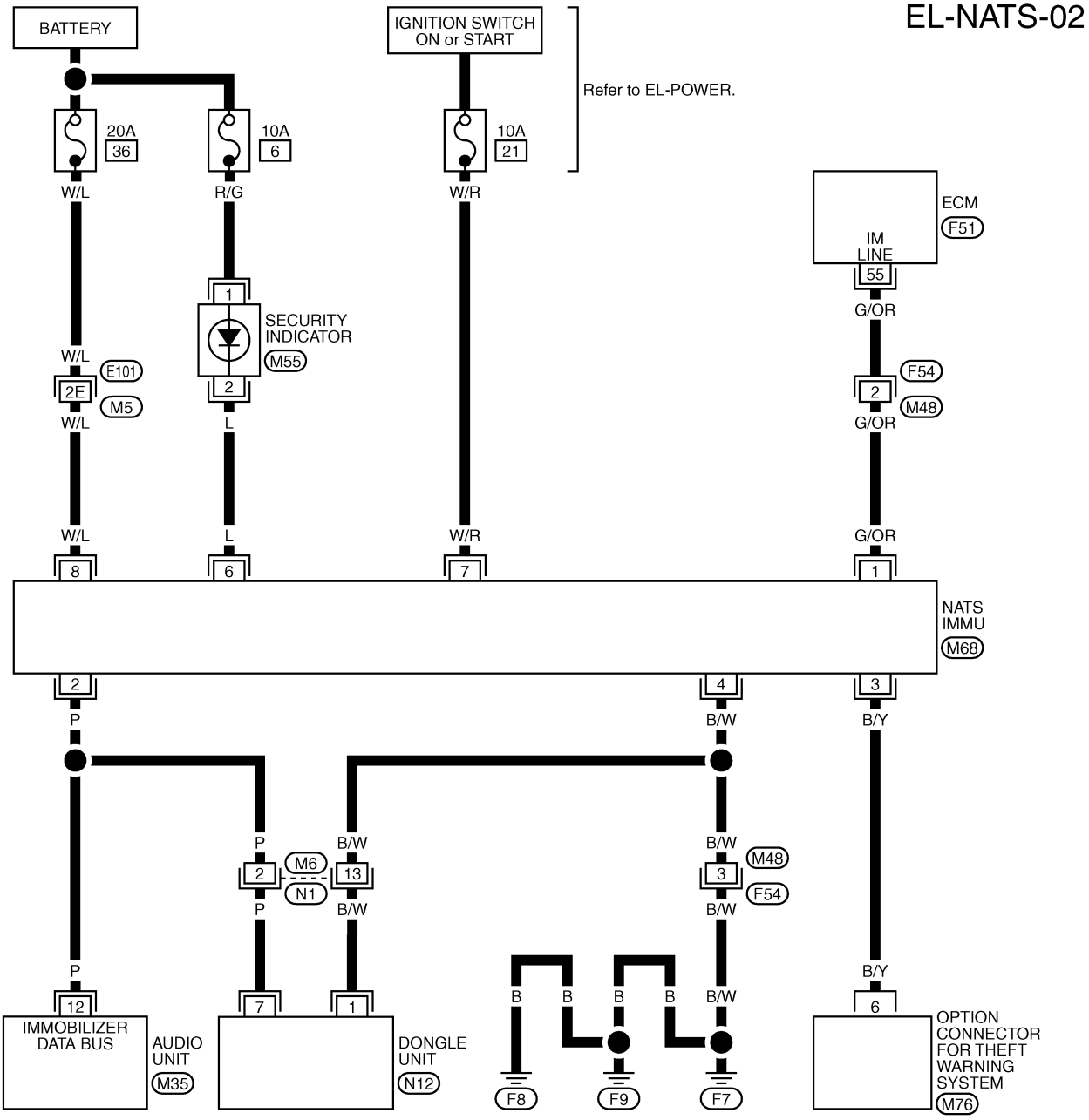
M76 W

Refer to last page (Foldout page).
M5 , E101
M32

GEL447A

Wiring Diagram — NATS —/RHD Diesel Engine Models

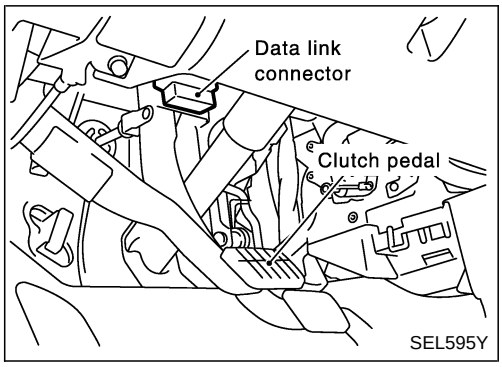
EL-NATS-02



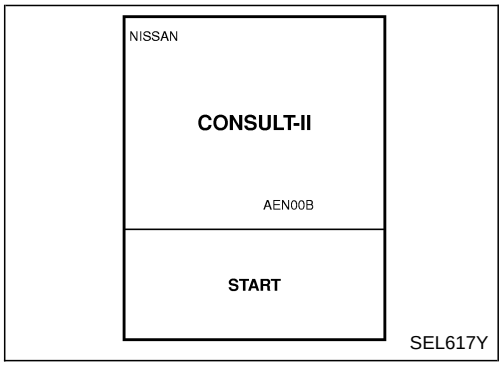
M35 W
M55 W
M68 W
M76 W
N1 W , F54 W
N12 BR

Refer to last page (Foldout page).
M5 , E101
F51

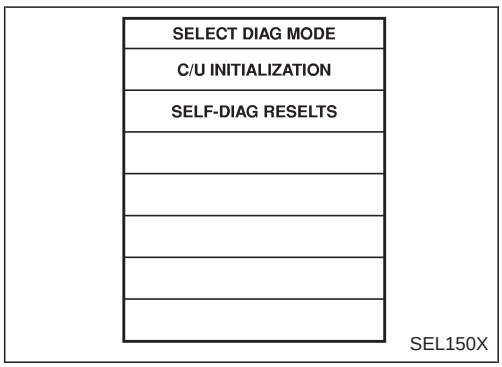
GEL449A



SEL595Y



SEL617Y



SEL150X

CONSULT-II

CONSULT-II INSPECTION PROCEDURE

1. Turn ignition switch OFF.
2. Insert NATS program card into CONSULT-II.

Program card
AEN00A/B

3. Connect CONSULT-II to Data link connector which is located behind the fuse box cover.
4. Turn ignition switch ON.
5. Touch “START”.
6. Perform each diagnostic test mode according to each service procedure.

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

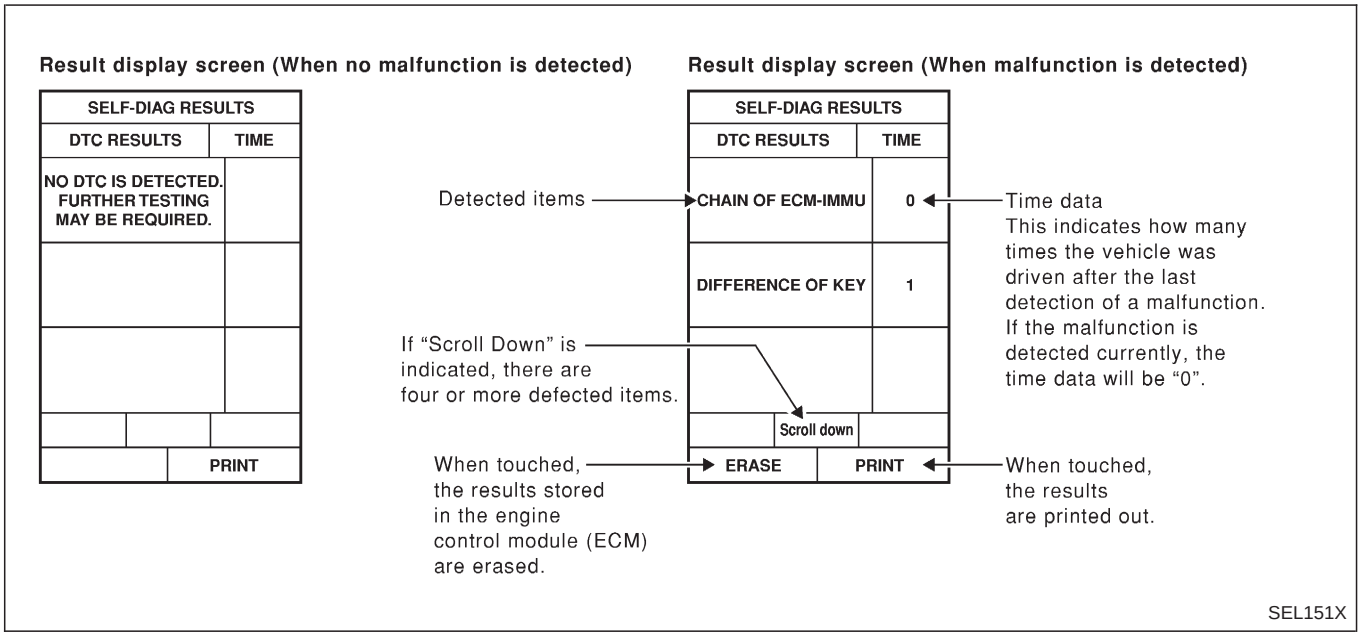
CONSULT-II (Cont'd)

CONSULT-II DIAGNOSTIC TEST MODE FUNCTION

CONSULT-II DIAGNOSTIC TEST MODE	Description
C/U INITIALIZATION	When replacing any of the following components, C/U initialization is necessary. [NATS ignition key/IMMU/ECM/Dongle unit]
SELF-DIAG RESULTS	Detected items (screen terms) are as shown in the chart below.

NOTE:
When any initialization is performed, all ID previously registered will be erased. So all NATS ignition keys must be registered again.
The engine cannot be started with an unregistered key. In this case, the system may show "DIFFERENCE OF KEY" or "LOCK MODE" as a self-diagnostic result on the CONSULT-II screen.
When initialization is performed (for RHD models), security indicator will flash six times to demonstrate recognition of dongle unit ID.

HOW TO READ SELF-DIAGNOSTIC RESULTS



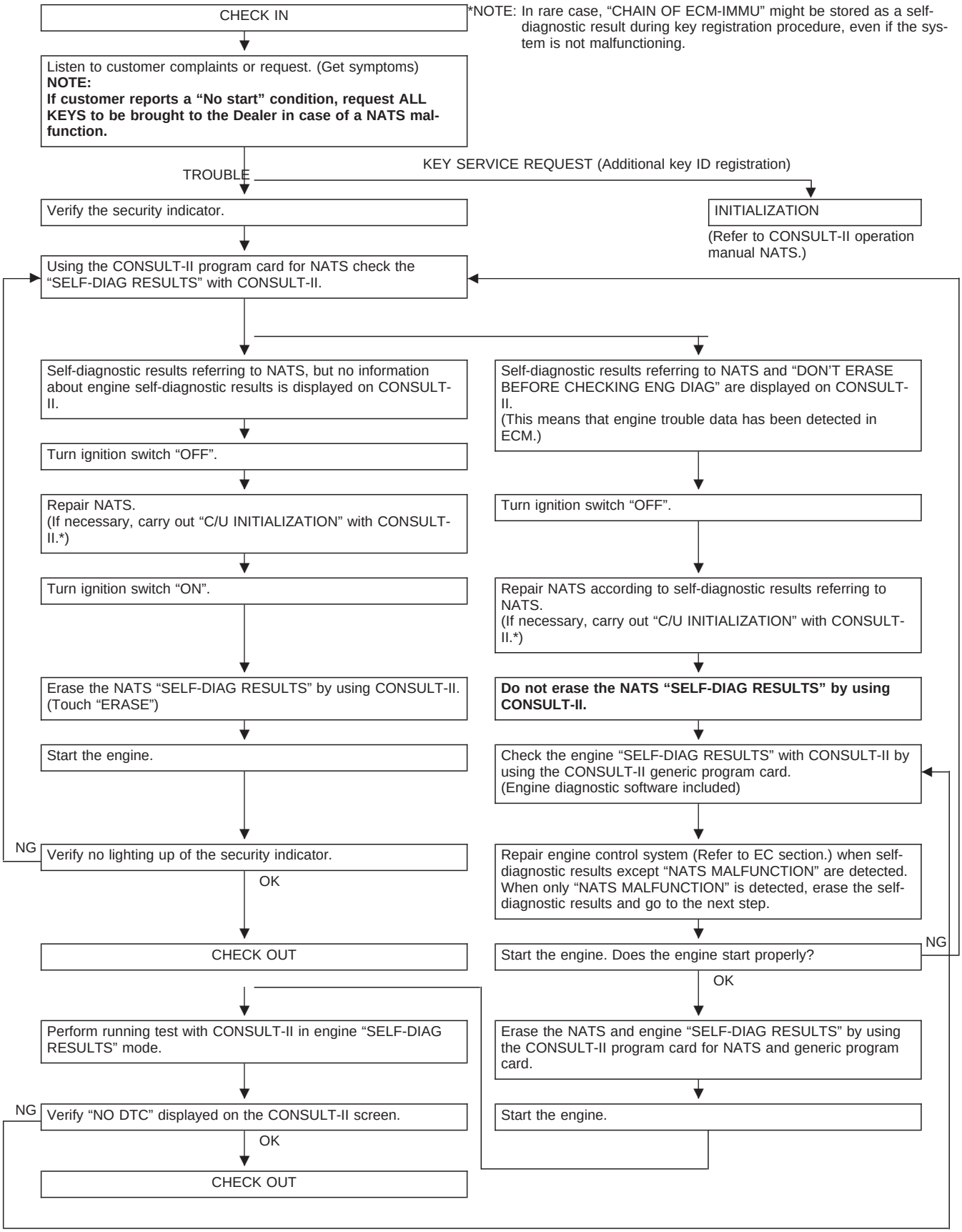
SEL151X

SELF-DIAGNOSTIC RESULTS ITEM CHART

Detected items (Screen terms)	Description	Reference page
ECM INT CIRC-IMMU	The malfunction of ECM internal circuit of IMMU communication line is detected.	EL-3152
CHAIN OF ECM-IMMU	Communication impossible between ECM and IMMU. (In rare case, "CHAIN OF ECM-IMMU" might be stored during key registration procedure, even if the system is not malfunctioning.)	EL-3153
DIFFERENCE OF KEY	IMMU can receive the key ID signal but the result of ID verification between key ID and IMMU is NG.	EL-3155
CHAIN OF IMMU-KEY	IMMU cannot receive the key ID signal. Otherwise, the registered ID signal from dongle unit cannot be received when the IMMU requests the ID.	EL-3156
ID DISCORD, IMM-ECM	The result of ID verification between IMMU and ECM is NG. System initialization is required.	EL-3157
DON'T ERASE BEFORE CHECKING ENG DIAG	Engine trouble data and NATS trouble data have been detected in ECM.	EL-3149
LOCK MODE	When the starting operation is carried out 5 or more times consecutively under the following conditions, NATS will shift the mode to one which prevents the engine from being started. ● unregistered ignition key is used ● IMMU or ECM malfunctioning	EL-3158

Trouble Diagnoses

WORK FLOW



SYMPTOM MATRIX CHART 1 (Self-diagnosis related item)

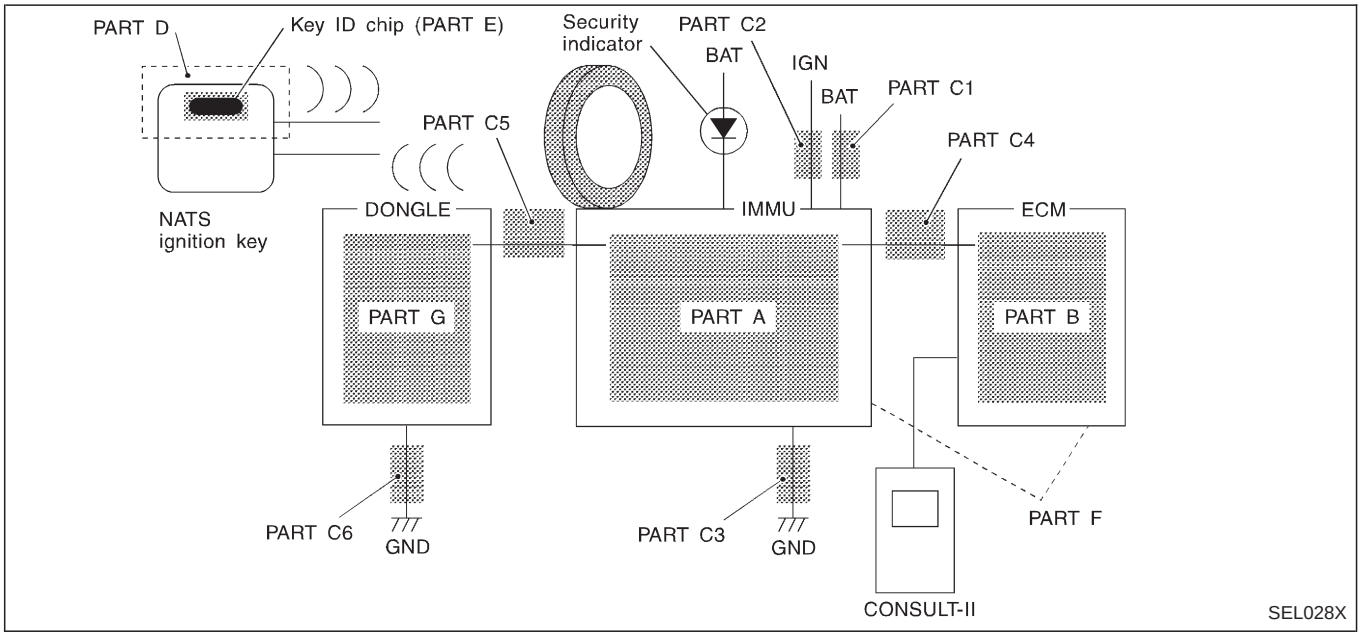
SYMPTOM	Displayed "SELF-DIAG RESULTS" on CONSULT-II screen.	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)	REFERENCE PART NO. OF ILLUSTRATION ON DIAGNOSTIC SYSTEM DIAGRAM
• Security indicator lighting up* • Engine does not start	ECM INT CIRC-IMMU	PROCEDURE 1 (EL-3152)	ECM	B
	CHAIN OF ECM-IMMU	PROCEDURE 2 (EL-3153)	In rare case, "CHAIN OF ECM-IMMU might be stored during key registration procedure, even if the system is not malfunctioning.	—
			Open circuit in battery voltage line of IMMU circuit	C1
			Open circuit in ignition line of IMMU circuit	C2
			Open circuit in ground line of IMMU circuit	C3
			Open circuit in communication line between IMMU and ECM	C4
			Short circuit between IMMU and ECM communication line and battery voltage line	C4
			Short circuit between IMMU and ECM communication line and ground line	C4
			ECM	B
			IMMU	A
	DIFFERENCE OF KEY	PROCEDURE 3 (EL-3155)	Unregistered key	D
			IMMU	A
	CHAIN OF IMMU-KEY	PROCEDURE 4 (EL-3156)	Malfunction of key ID chip	E
			IMMU	A
			Open circuit in ground line of dongle unit circuit	C6
			Open or short circuit in communication line between IMMU and dongle unit	C5
			Dongle unit	G
• Security indicator lighting up* • Engine hard to start	ID DISCORD, IMM-ECM	PROCEDURE 5 (EL-3157)	System initialization has not yet been completed.	F
			ECM	B
	LOCK MODE	PROCEDURE 6 (EL-3158)	LOCK MODE	D

*: When NATS detects trouble, the security indicator lights up while ignition key is in the "ON" position.
*: When the vehicle is equipped with dongle unit, the security indicator blinks 6 times just after ignition switch is turned to ON. Then the security indicator will light up while ignition key is in the ON position.

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

SYMPTOM	DIAGNOSTIC PROCEDURE (Reference page)	SYSTEM (Malfunctioning part or mode)	REFERENCE PART NO. OF ILLUSTRATION ON DIAGNOSTIC SYSTEM DIAGRAM
Security ind. does not light up.	PROCEDURE 7 (EL-3159)	Security ind.	—
		Open circuit between Fuse and NATS IMMU	—
		Continuation of initialization mode	—
		NATS IMMU	A
Security ind. does not blink just after initialization even if the vehicle is equipped with dongle unit.	PROCEDURE 8 (EL-3160)	NATS might be initialized without connecting dongle unit properly.	—
		Open circuit in ground line of dongle unit circuit	C6
Security ind. does not blink just after ignition switch is turned to ON when some malfunction related to NATS is detected even if the vehicle is equipped with dongle unit.		Open or short circuit in communication line between IMMU and dongle unit	C5
		Dongle unit	G

DIAGNOSTIC SYSTEM DIAGRAM



Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 1

Self-diagnostic results: "ECM INT CIRC-IMMU" displayed on CONSULT-II screen

A

SELF-DIAG RESULTS	
DTC RESULTS	TIME
ECM INT CIRC-IMMU	0

SEL152X

A

Confirm SELF-DIAGNOSTIC RESULTS "ECM INT CIRC-IMMU" displayed on CONSULT-II screen.
Ref. part No. B.

↓

Replace ECM.

↓

Perform initialization with CONSULT-II.
For the operation of initialization, refer to "CONSULT-II operation manual NATS".

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 2

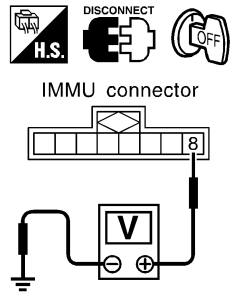
Self-diagnostic results: "CHAIN OF ECM-IMMU" displayed on CONSULT-II screen

A

SELF-DIAG RESULTS	
DTC RESULTS	TIME
ECM INT CIRC-IMMU	0

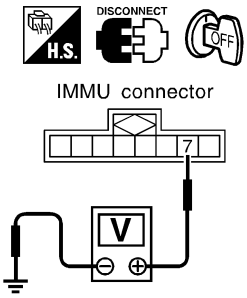
SEL153X

B



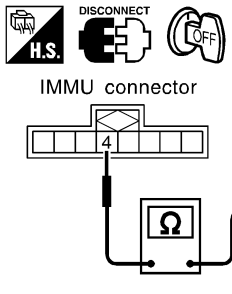
SEL154XC

C



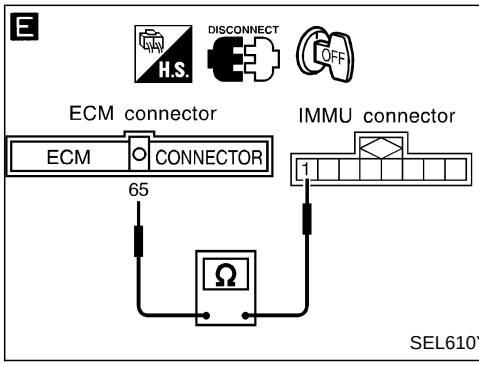
SEL155XC

D



SEL156XB

E



SEL610Y

A

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

*: In rare case, "CHAIN OF ECM-IMMU" might be stored during key registration procedure, even if the system is not malfunctioning.

OK

B

CHECK POWER SUPPLY CIRCUIT FOR IMMU.
Check voltage between IMMU connector (M68) terminal ⑧ (W/L) and ground.
Voltage: Battery voltage

NG

Check the following:
- 20A fuse (No. 36, located in the fuse and fusible link box) (Diesel engine models)
- 10A fuse (No. 33, located in the fuse and fusible link box) (Gasoline engine models)
- Harness for open or short between fuse and IMMU connector

Ref. part No. C1

OK

C

CHECK IGN SW. ON SIGNAL.
Check voltage between IMMU connector (M68) terminal ⑦ (W/R) and ground while ignition switch is in the "ON" position.
Voltage: Battery voltage

NG

Check the following:
- 10A fuse [No. 21, located in the fuse block (J/B)]
- Harness for open or short between fuse and IMMU connector

Ref. part No. C2

OK

D

CHECK GROUND CIRCUIT FOR IMMU.
Check harness continuity between IMMU connector (M68) terminal ④ (B) and ground.
Continuity should exist.

NG

Repair harness.
Ref. part No. C3

OK

E

CHECK COMMUNICATION ON OPEN CIRCUIT.
Check harness continuity between the following ECM terminal and IMMU terminal.
ECM connector (M32) terminal ⑥⑤ (G/OR) or IMMU connector (M68) terminal ① (G/OR)
Continuity should exist.

NG

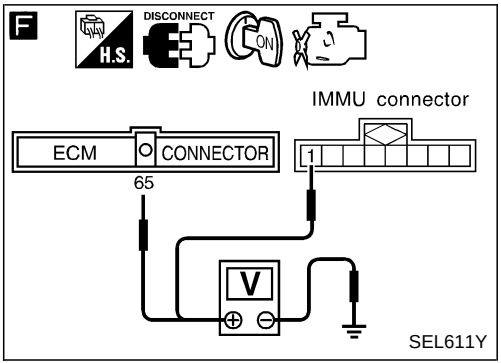
Repair harness.
Ref. part No. C4

OK

Ⓐ

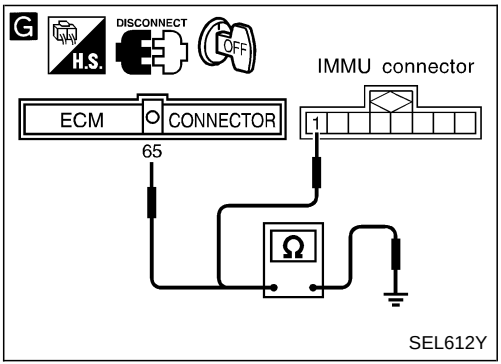
Trouble Diagnoses (Cont'd)

F



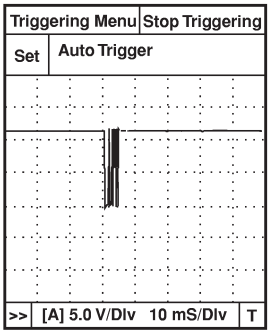
SEL611Y

G



SEL612Y

H



SEL193X

Ⓐ

F

CHECK COMMUNICATION LINE BATTERY SHORT CIRCUIT.

1. Disconnect ECM connector and IMMU connector.
2. Turn ignition switch to ON.
3. Check voltage between ECM connector (M32) terminal 65 (G/OR) or IMMU connector (M68) terminal 1 (G/OR) and ground.
   No voltage should exist.

NG → Repair harness.
Ref. part No. C4

OK ↓

G

CHECK COMMUNICATION LINE GROUND SHORT CIRCUIT.

1. Disconnect ECM connector and IMMU connector.
2. Turn ignition switch OFF.
3. Check continuity between ECM connector (M32) terminal 65 (G/OR) or IMMU connector (M68) terminal 1 (G/OR) and ground.
   Continuity should not exist.

NG → Repair harness.
Ref. part No. C4

OK ↓

H

SIGNAL FROM ECM TO IMMU CHECK

1. Check the signal between ECM connector (M32) terminal 65 (G/OR) and ground with CONSULT-II or oscilloscope when ignition switch is turned "ON".
2. Make sure signals which are shown in the figure below can be detected during 750 msec. just after ignition switch is turned "ON".

NG →
- ECM is malfunctioning.
1. Replace ECM. **Ref. part No. B**
2. Perform initialization with CONSULT-II. For the initialization procedure, refer to "CONSULT-II operation manual NATS".

OK ↓

- IMMU is malfunctioning.
  1. Replace IMMU. **Ref. part No. A**
  2. Perform initialization with CONSULT-II. For the initialization procedure, refer to "CONSULT-II operation manual NATS".

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 3

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

A

SELF DIAG RESULTS	
DTC RESULTS	TIME
DIFFERENCE OF KEY	0

SEL163X

B

IMMU INITIALIZATION
INITIALIZATION FAIL
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.

SEL566W

A

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

OK

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

Initialization with CONSULT-II incomplete or failed → B

- IMMU is malfunctioning.

1. Replace IMMU. **Ref. part No. A**
2. Perform initialization with CONSULT-II. For the initialization procedure, refer to "CONSULT-II operation manual NATS".

Initialization completed

Start engine.

END.
(The ignition key was unregistered.)
Ref. part No. D

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 4

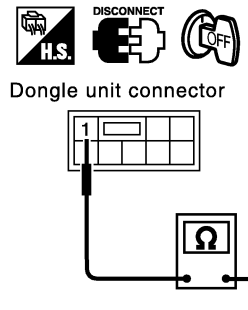
Self-diagnostic results: "CHAIN OF IMMU-KEY" displayed on CONSULT-II screen

A

SELF DIAG RESULTS	
DTC RESULTS	TIME
CHAIN OF IMMU-KEY	0

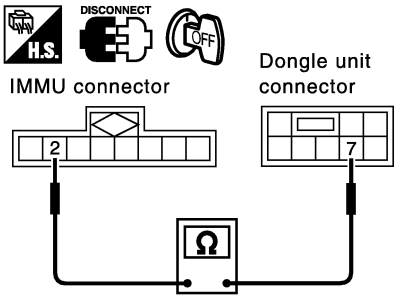
SEL165X

B



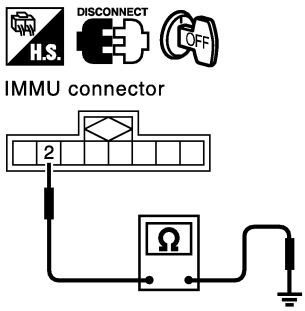
SEL160XA

C



SEL161XA

D



SEL162XA

A

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

OK

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

Yes →
- Ignition key ID chip is malfunctioning.
1. Replace the ignition key.
   Ref. part No. E
2. Perform initialization with CONSULT-II.
   For the initialization procedure, refer to "CONSULT-II operation manual NATS".

No

Is this vehicle equipped with dongle unit (RHD models for Europe)?

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

Yes

CHECK HARNESS CONNECTOR CONNECTION.
Check the following harness connector connection. (M68), (N12)
Does the engine start?

Yes → System is OK.
(The malfunction is caused by improper connector connection.)

No

B

CHECK GROUND CIRCUIT FOR DONGLE UNIT.
Check continuity between dongle unit terminal ① (B/W) and ground.
Continuity should exist.

No → Repair harness.
Ref. part No. C6

Yes

C D

CHECK INTERFACE CIRCUIT.
1. Check continuity between IMMU connector (M68) terminal ② (P) and dongle unit terminal ⑦ (P) (Open circuit check)
   Continuity should exist.
2. Check continuity between IMMU connector (M68) terminal ② (P) and ground. (Short circuit check)
   Continuity should not exist.

No → Repair harness.
Ref. part No. C5

Yes

Dongle unit is malfunctioning.
1. Replace dongle unit. **Ref. part No. G**
2. Perform initialization with CONSULT-II.
   For the initialization procedure, refer to "CONSULT-II operation manual NATS".

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 5

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

A

SELF-DIAG RESULTS	
DTC RESULTS	TIME
ID DISCORD, IMM-ECM	0

SEL166X

B

IMMU INITIALIZATION
INITIALIZATION FAIL
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.

SEL566W

A

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

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

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

Initialization with CONSULT-II incomplete or failed → B

- ECM is malfunctioning.
1. Replace ECM. **Ref. part No. B**
2. Perform initialization with CONSULT-II. For the initialization procedure, refer to "CONSULT-II operation manual NATS".

Initialization completed

Start engine. (END)
(System initialization was not completed. **Ref. part No. F**)

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 6

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

A

SELF DIAG RESULTS	
DTC RESULTS	TIME
LOCK MODE	0

SEL167X

B

IMMU INITIALIZATION
INITIALIZATION FAIL
THEN IGN KEY SW 'OFF' AND 'ON', AFTER CONFIRMING SELF-DIAG AND PASSWORD, PERFORM C/U INITIALIZATION AGAIN.

SEL566W

A

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

↓

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

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

No ↓

CHECK NATS IMMU INSTALLATION. Refer to "How to Replace NATS IMMU" in EL-3160.

NG → Reinstall NATS IMMU correctly.

OK ↓

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

Yes → System is OK.

No ↓

Go to DIAGNOSTIC PROCEDURE 4, EL-3156 to check "CHAIN OF IMMU-KEY".

Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 7

"SECURITY IND. DOES NOT LIGHT UP"

Check 10A fuse [No. 6, located in the fuse block (J/B)].

NG → Replace fuse.

OK ↓

NATS INITIALIZATION
1) Install the 10A fuse.
2) Perform initialization with CONSULT-II.
For the operation of initialization, refer to "CONSULT-II operation manual NATS".

↓

Turn ignition switch "OFF".

↓

Start engine and turn ignition switch "OFF".

↓

Check the security ind. lighting.

OK → END

NG ↓

A

Check voltage between security ind. connector M55 terminal 1 (R/G) and ground.
Voltage: Battery voltage

NG → Check harness for open or short between fuse and security ind.

OK ↓

CHECK INDICATOR LAMP.

NG → Repair harness.

OK ↓

B

CHECK NATS IMMU FUNCTION.
1. Connect NATS IMMU connector M68.
2. Disconnect security ind. connector M55.
3. Check continuity between NATS IMMU connector M68 terminal 6 (L) and ground.
Continuity should exist intermittently.

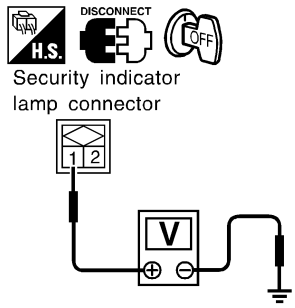
NG → NATS IMMU is malfunctioning. Replace IMMU.

Perform initialization with CONSULT-II.
For the operation of initialization, refer to "CONSULT-II operation manual NATS".

OK ↓

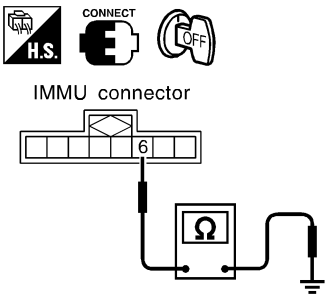
Check harness for open or short between security indicator and NATS IMMU.

A



SEL931UC

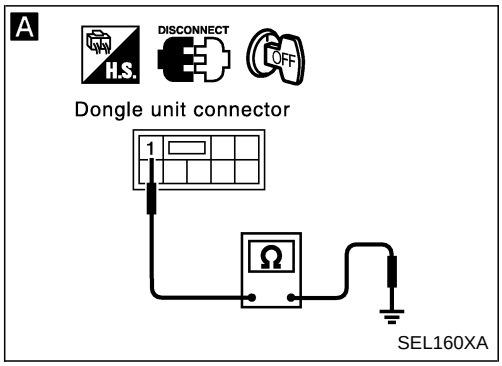
B

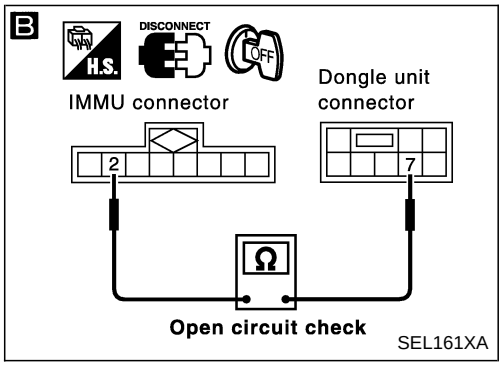


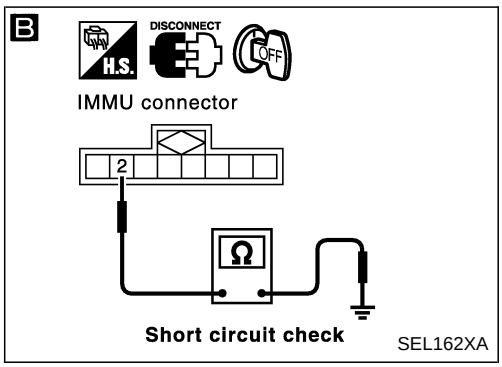
SEL164XA

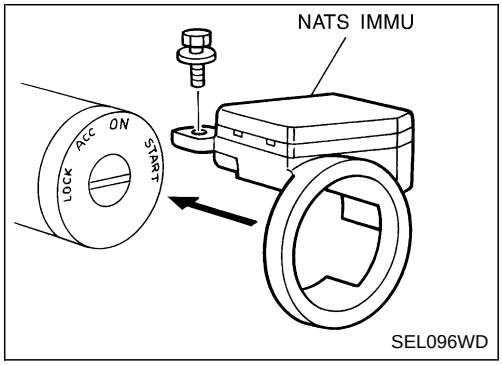
Trouble Diagnoses (Cont'd)

DIAGNOSTIC PROCEDURE 8









A

CHECK GROUND CIRCUIT FOR DONGLE UNIT.
Check continuity between dongle unit connector (N12) terminal ① (B/W) and ground.
Continuity should exist.

No → Repair harness.
Ref. part No. C6

Yes ↓

B

CHECK INTERFACE CIRCUIT.
1. Check continuity between IMMU connector (M68) terminal ② (P) and dongle unit connector (N12) terminal ⑦ (P).
   (Open circuit check)
   Continuity should exist.
2. Check continuity between IMMU connector (M68) terminal ② (P) and ground. (Short circuit check)
   Continuity should exist.

No → Repair harness.
Ref. part No. C5

Yes ↓

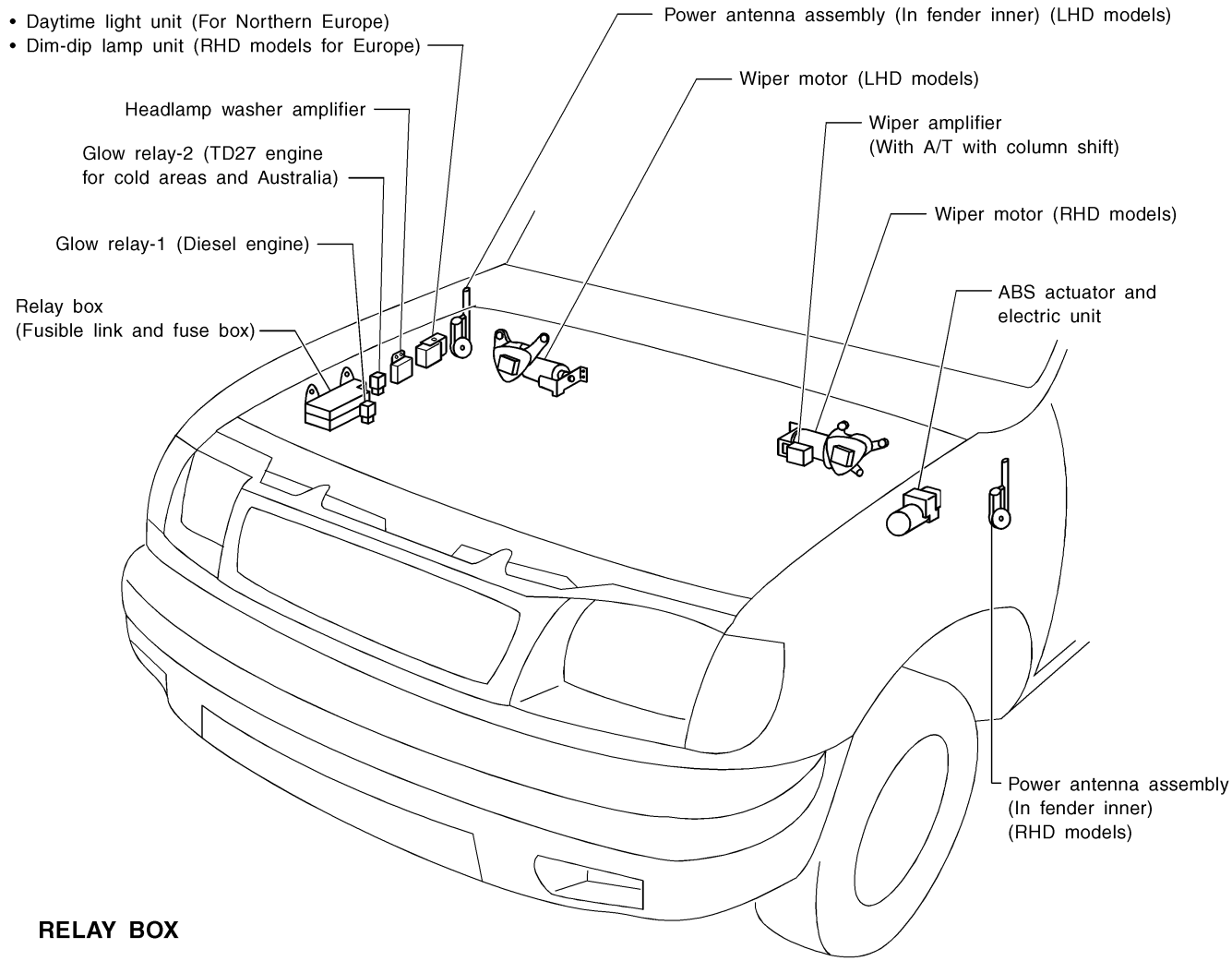
Dongle unit is malfunctioning.
1. Replace dongle unit.
   Ref. part No. G
2. Perform initialization with CONSULT-II. For the initialization procedure, refer to "CONSULT-II operation manual NATS".

How to Replace NATS IMMU

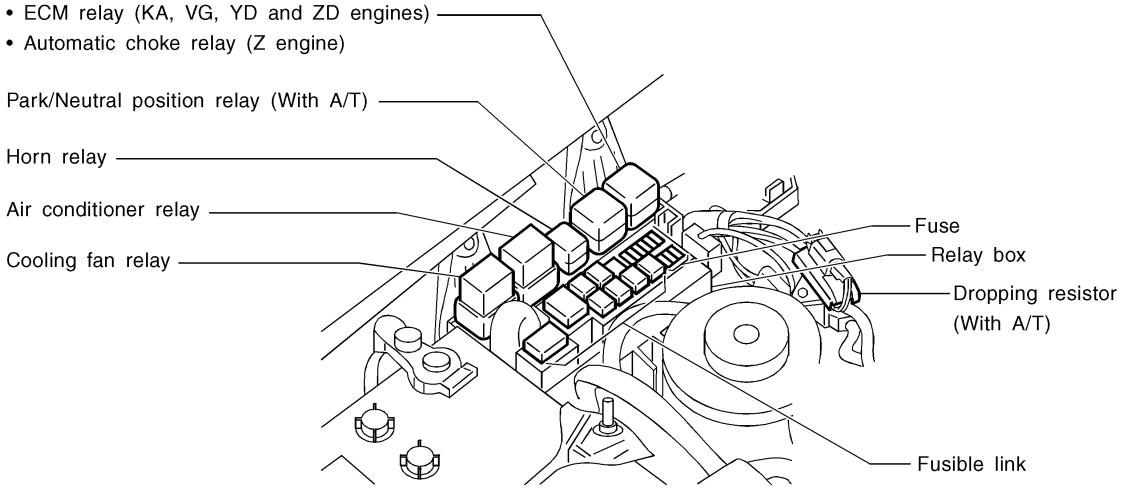
NOTE:

- **If NATS IMMU is not installed correctly, NATS system will not operate properly and SELF-DIAG RESULTS on CONSULT-II screen will show "LOCK MODE".**

Engine Compartment

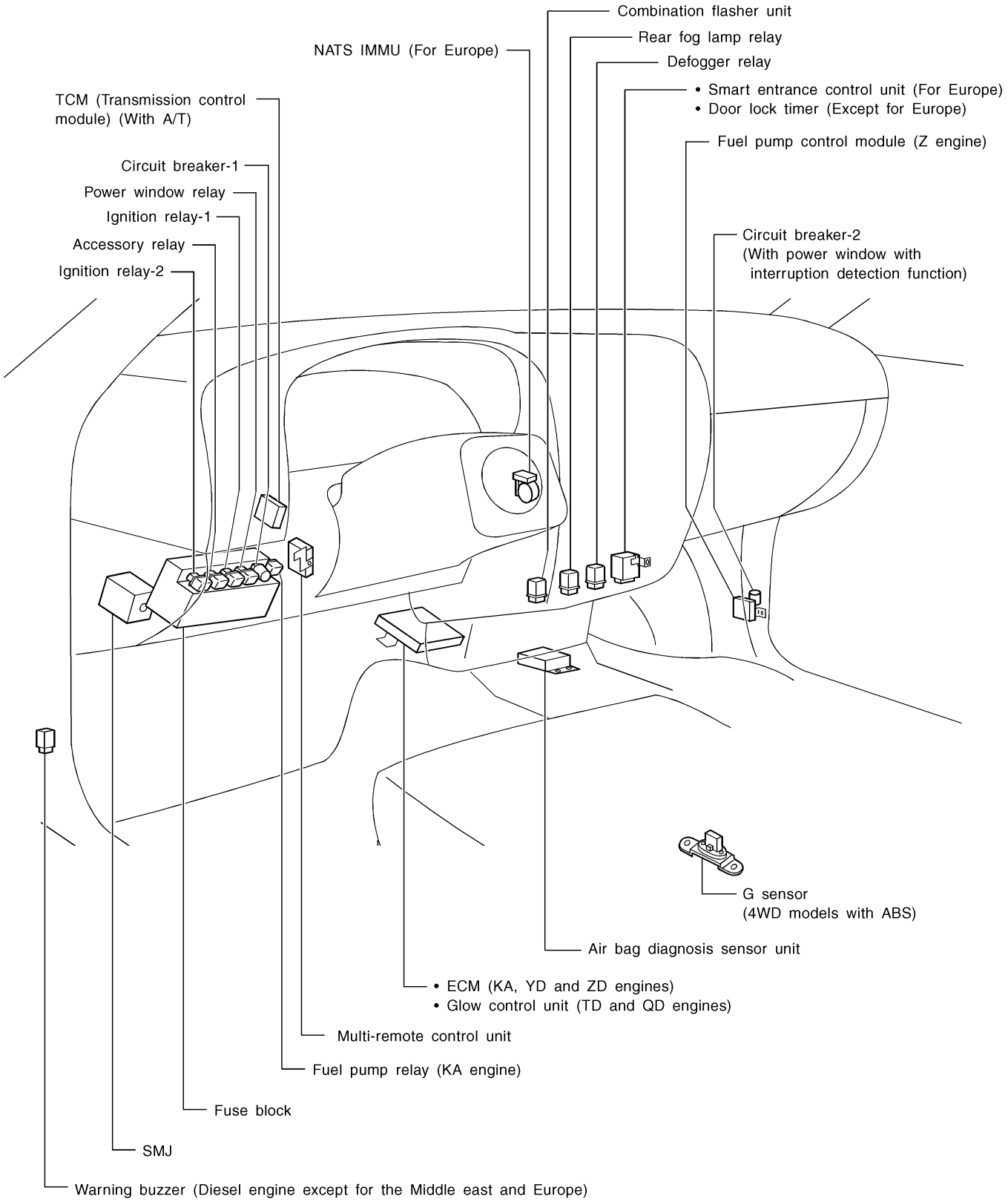


RELAY BOX



HEL848B

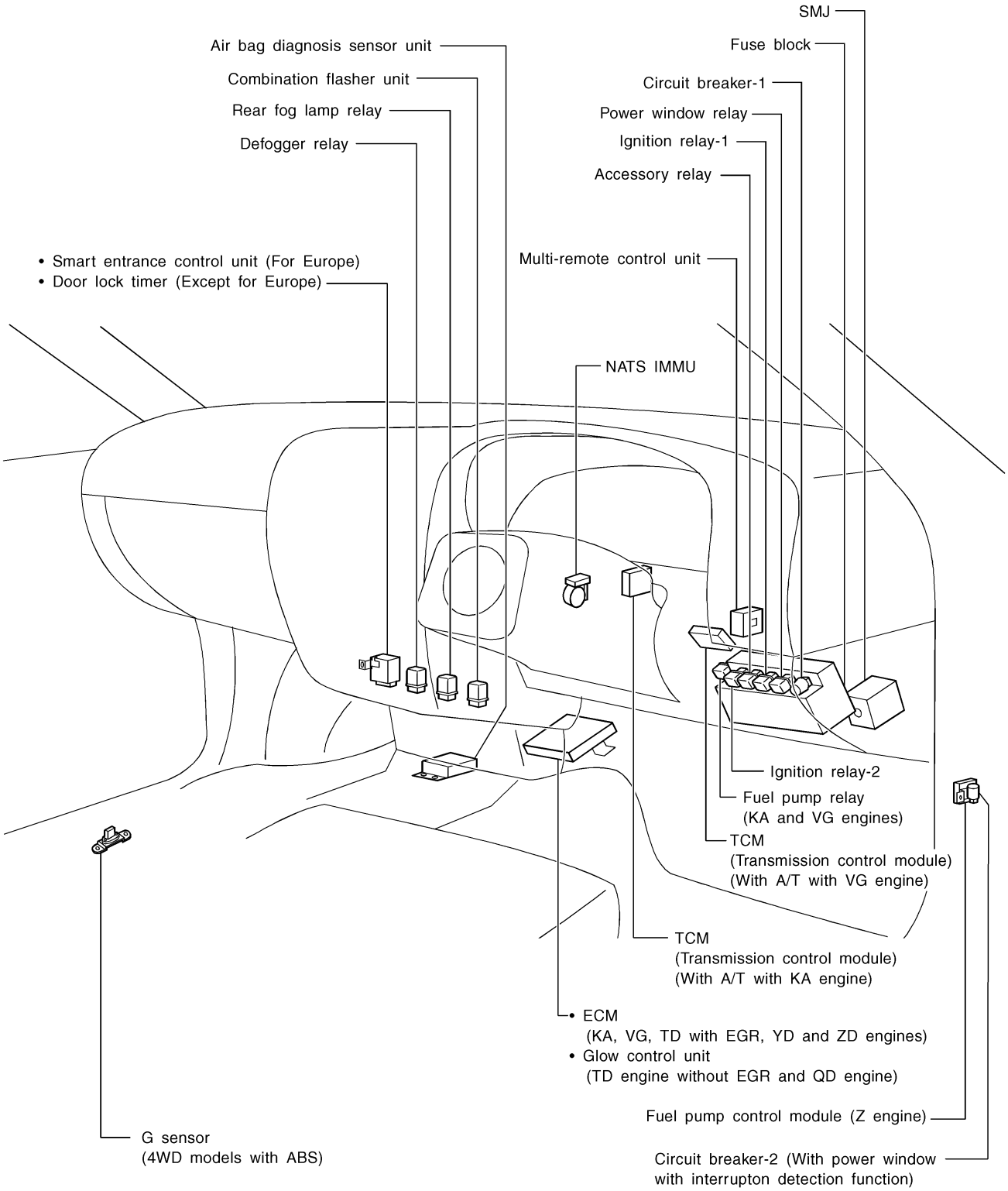
Passenger Compartment



HEL849B

Passenger Compartment (Cont'd)

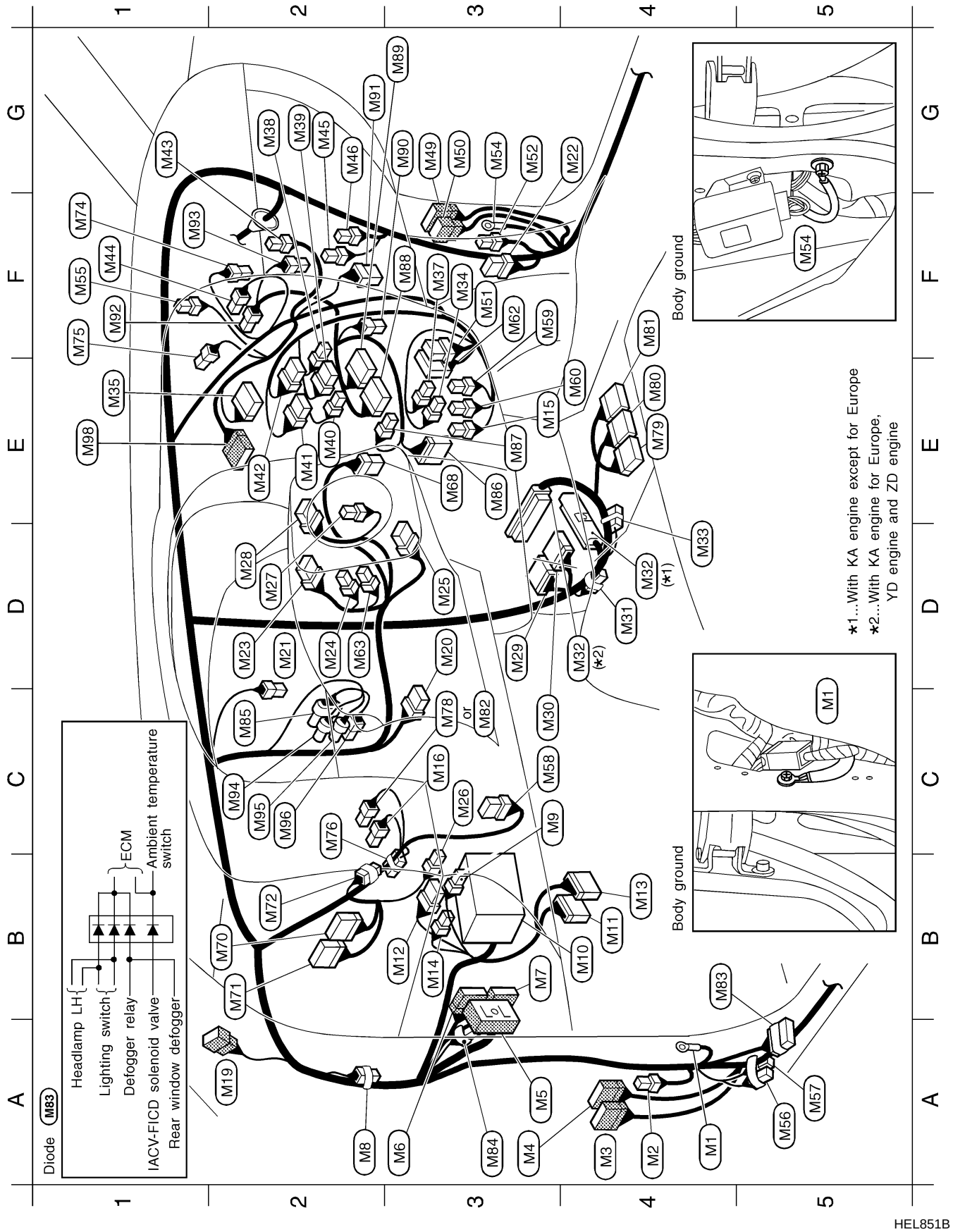
RHD MODELS



HEL850B

Main Harness

INSTRUMENT PANEL — LHD MODELS



HEL851B

Main Harness (Cont'd)

A4 (M1) — : Body ground
A4 (M2) W/2 : Warning buzzer (Diesel engine except for Europe and the Middle East)
A4 (M3) W/20 : To (D1)
A3 (M4) W/12 : To (D2) (With power window)
A3 (M5) SMJ : To (E101)
A3 (M6) W/24 : To (N1)
B3 (M7) BR/24 : To (N2)
A2 (M8) –/2 : Diode (Diesel engine except for Europe and the Middle East)
C3 (M9) L/4 : Fuel pump relay (KA engine)
B4 (M10) — : Fuse block
B4 (M11) W/16 : Data link connector
B3 (M12) W/6 : Fuse block
B4 (M13) B/10 : Check connector (Z24S)
B3 (M14) W/4 : Fuse block
E3 (M15) B/3 : Combination flasher unit
C3 (M16) B/2 : Stop lamp switch
A2 (M19) W/6 : To (R1)
D3 (M20) W/6 : Ignition switch
D2 (M21) W/1 : Parking brake switch (Stick type)
G4 (M22) W/6 : Fuel pump control module (Z24S)
D2 (M23) BR/8 : Lighting switch • Turn signal lamp switch
D2 (M24) BR/4 : Lighting switch
D3 (M25) Y/7 : Spiral cable (With air bag)
C3 (M26) L/2 : A/T check switch (With A/T)
D2 (M27) B/1 : Horn switch (Without air bag)
D2 (M28) GY/8 : Wiper and washer switch
D3 (M29) W/12 : Glow control unit (TD engine except for cold areas and QD engine)
C3 (M30) W/16 : Glow control unit (TD engine for cold areas)
D4 (M31) GY/6 : Joint connector-1 (KA engine)
D4 (M32) SMJ : ECM (KA, YD and ZD engines)
D4 (M33) — : Joint connector-3 (KA engine for Europe)
F3 (M34) W/2 : Ashtray illumination (With gasoline engine for the Middle East)
E1 (M35) W/10 : Audio unit (For Europe)

F3 (M37) B/2
G2 (M38) W/3
G2 (M39) W/6
E2 (M40) W/2
E2 (M41) W/8
E2 (M42) W/6
G1 (M43) Y/2
F1 (M44) BR/4
G2 (M45) BR/4
G2 (M46) W/2
G3 (M49) W/20
G3 (M50) W/6
F3 (M51) W/8
G3 (M52) W/2
G3 (M54) —
F1 (M55) W/2
A5 (M56) –/2
A5 (M57) –/2
C3 (M58) BR/8
F3 (M59) BR/6
E4 (M60) L/4
F3 (M62) W/18
D2 (M63) W/3
E3 (M68) W/8
B2 (M70) W/24
B2 (M71) GY/24
B2 (M72) –/6

: Cigarette lighter
: A/C switch (Without auto A/C)
: Fan switch (Without auto A/C)
: Fan switch illumination (Without auto A/C)
: Hazard switch
: Defogger switch (Except for the Middle East except Single cab with TD engine)
: Front passenger air bag module
: Thermo control amplifier
: Fan resistor (Without auto A/C)
: Blower motor
: To (D31)
: To (D32) (With power window)
: Door lock timer (With power window except for Europe)
: Circuit breaker-2 (For Europe and with gasoline engine for the Middle East)
: Body ground
: Security indicator (With NATS)
: Diode (Z24S)
: Diode (Z24S)
: Multi-remote control unit (For Europe)
: Defogger relay (Except for the Middle East)
: Rear fog lamp relay (For Europe and with KA engine except for the Middle East)
: Smart entrance control unit (For Europe)
: Rear fog lamp switch (For Europe and with KA engine except for the Middle East)
: NATS IMMU (For Europe)
: TCM (Transmission control module) (With A/T)
: TCM (Transmission control module) (With A/T)
: Joint connector-2 (With A/T)

F1 (M74) W/2 : Intake air temperature sensor (With auto A/C)
F1 (M75) B/2 : Sunload sensor (With auto A/C)
C2 (M76) W/6 : Option connector (For Europe) (For theft warning system)
C3 (M78) L/2 : Shift lock brake switch (With A/T)
E4 (M79) Y/12 : Air bag diagnosis sensor unit (For pre-tensioner seat belt)
E4 (M80) Y/20 : Air bag diagnosis sensor unit
F4 (M81) Y/12 : Air bag diagnosis sensor unit (For pre-tensioner seat belt)
C3 (M82) B/2 : Brake pedel position switch (YD25)
B4 (M83) L/10 : Diode (KA24DE)
A3 (M84) BR/2 : Resistor (With A/T)
C2 (M85) GY/6 : Accelerator work unit (YD25)
E3 (M86) BR/10 : Mode door motor (With auto A/C)
E3 (M87) W/2 : In-vehicle sensor (With auto A/C)
F3 (M88) GY/20 : A/C auto amp. (With auto A/C)
G3 (M89) GY/16 : A/C auto amp. (With auto A/C)
G3 (M90) L/2 : Aspirator motor (With auto A/C)
G2 (M91) B/6 : Air mix door motor (With auto A/C)
F1 (M92) W/4 : Fan control amp. (With auto A/C)
F1 (M93) W/4 : Intake door motor (With auto A/C)
C2 (M94) BR/3 : Accelerator position sensor (ZD30)
C2 (M95) GY/3 : Accelerator position switch (ZD30)
C2 (M96) W/3 : Accelerator switch (F/C) (ZD30)
E1 (M98) W/12 : Audio unit (Via sub-harness) (Except for Europe)

Diode (M8)

FILTER warning lamp — Fuel filter switch, Warning buzzer

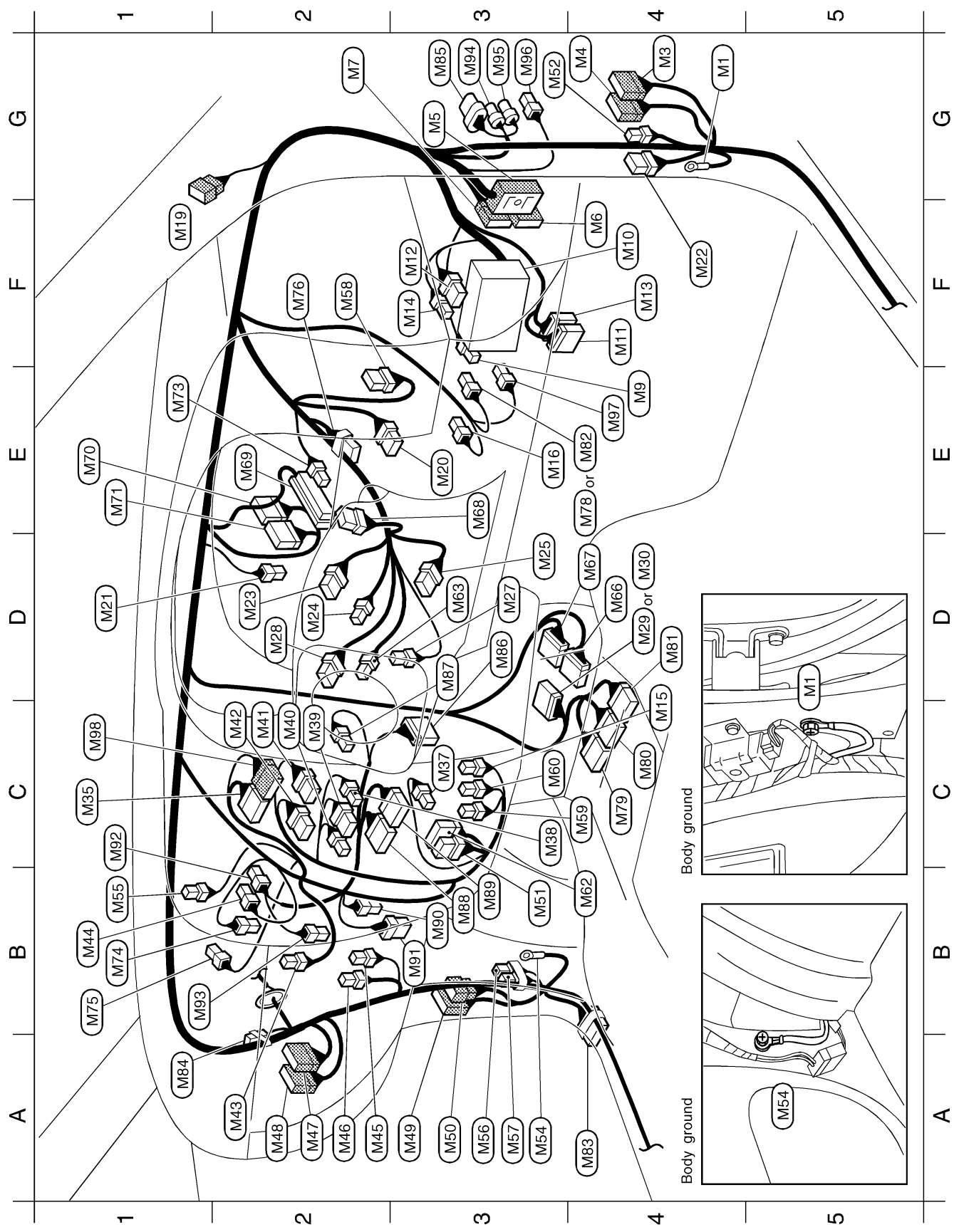
Diode (M56), (M57)

Fuel pump control module — (M56) CHARGE warning lamp, Alternator (L); (M57) OIL warning lamp, OIL pressure switch

HEL852B

Main Harness (Cont'd)

INSTRUMENT PANEL — RHD MODELS



HEL853B

Main Harness (Cont'd)

G4 (M1) — : Body ground
G4 (M3) W/20 : To (D1)
G4 (M4) W/12 : To (D2) (With power window)
G3 (M5) SMJ : To (E101)
F4 (M6) W/24 : To (N1)
G2 (M7) BR/24 : To (N2)
E4 (M9) L/4 : Fuel pump relay (KA and VG engines)
F4 (M10) — : Fuse block
F4 (M11) W/16 : Data link connector
F3 (M12) W/6 : Fuse block
F4 (M13) B/10 : Check connector (Z engine)
F3 (M14) W/4 : Fuse block
C4 (M15) B/3 : Combination flasher unit
E3 (M16) B/2 : Stop lamp switch
F1 (M19) W/6 : To (R1)
E3 (M20) W/6 : Ignition switch
D1 (M21) W/1 : Parking brake switch (Stick type)
F4 (M22) W/6 : Fuel pump control module (Z engine)
D2 (M23) BR/8 : Lighting switch
• Turn signal lamp switch
D2 (M24) BR/4 : Lighting switch
D3 (M25) Y/7 : Spiral cable (With air bag)
D3 (M27) B/1 : Horn switch (Without air bag)
D2 (M28) GY/8 : Wiper and washer switch
D4 (M29) W/12 : Glow control unit (TD27 engine without EGR except for Australia and QD engine)
D4 (M30) W/16 : Glow control unit (TD27 engine for Australia)
C1 (M35) W/16 : Audio unit (For Europe)
C3 (M37) B/2 : Cigarette lighter
C3 (M38) W/3 : A/C switch (Without auto A/C)
C2 (M39) W/6 : Fan switch (Without auto A/C)
C2 (M40) W/2 : Fan switch illumination (Without auto A/C)
C2 (M41) W/8 : Hazard switch
C2 (M42) W/6 : Defogger switch (Except models without intermittent wiper for Australia)
A2 (M43) Y/2 : Air bag module passenger side
B1 (M44) BR/4 : Thermo control amplifier
A2 (M45) BR/4 : Fan resistor (Without auto A/C)

A2 (M46) W/2 : Blower motor
A2 (M47) W/16 : To (F55) (KA, VG, YD and ZD engines)
A2 (M48) W/24 : To (F54) (KA, VG, YD and ZD engines)
A3 (M49) W/20 : To (D31)
A3 (M50) W/6 : To (D32) (With power window)
B3 (M51) W/8 : Door lock timer (With power window except for Europe)
G3 (M52) W/2 : Circuit breaker-2 (For Europe)
A3 (M54) — : Body ground
B1 (M55) W/2 : Security indicator (For Europe)
A3 (M56) –/2 : Diode (Z engine)
A3 (M57) –/2 : Diode (Z engine)
F2 (M58) BR/8 : Multi-remote control unit (For Europe)
C4 (M59) BR/6 : Defogger relay (Except models without intermittent wiper for Australia)
C3 (M60) L/4 : Rear fog lamp relay (For Europe)
B4 (M62) W/18 : Smart entrance control unit (For Europe)
D3 (M63) W/3 : Rear fog lamp switch (For Europe)
D4 (M66) GY/20 : ECM (Diesel engine with EGR)
D4 (M67) GY/16 : ECM (Diesel engine with EGR)
E3 (M68) W/8 : NATS IMMU (For Europe)
E2 (M69) W/48 : TCM (Transmission control module) (With A/T with VG engine)
E1 (M70) W/24 : TCM (Transmission control module) (With A/T with KA engine)
E1 (M71) GY/24 : TCM (Transmission control module) (With A/T with KA engine)
E1 (M73) W/4 : A/T device (With A/T with column shift)
B1 (M74) W/2 : Intake air temperature sensor (With auto A/C)
B1 (M75) B/2 : Sunload sensor (With auto A/C)
F2 (M76) W/6 : Option connector for theft warning system (For Europe)
E4 (M78) L/2 : Shift lock brake switch (With A/T)
C4 (M79) Y/12 : Air bag diagnosis sensor unit (With air bag for Europe and Australia)
C4 (M80) Y/20 : Air bag diagnosis sensor unit (With air bag)
D4 (M81) Y/12 : Air bag diagnosis sensor unit (With air bag for Europe and Australia)
E4 (M82) B/2 : Brake pedal position switch (YD engine)
A4 (M83) L/10 : Diode (KA engine)
A1 (M84) BR/2 : Resistor (With A/T)

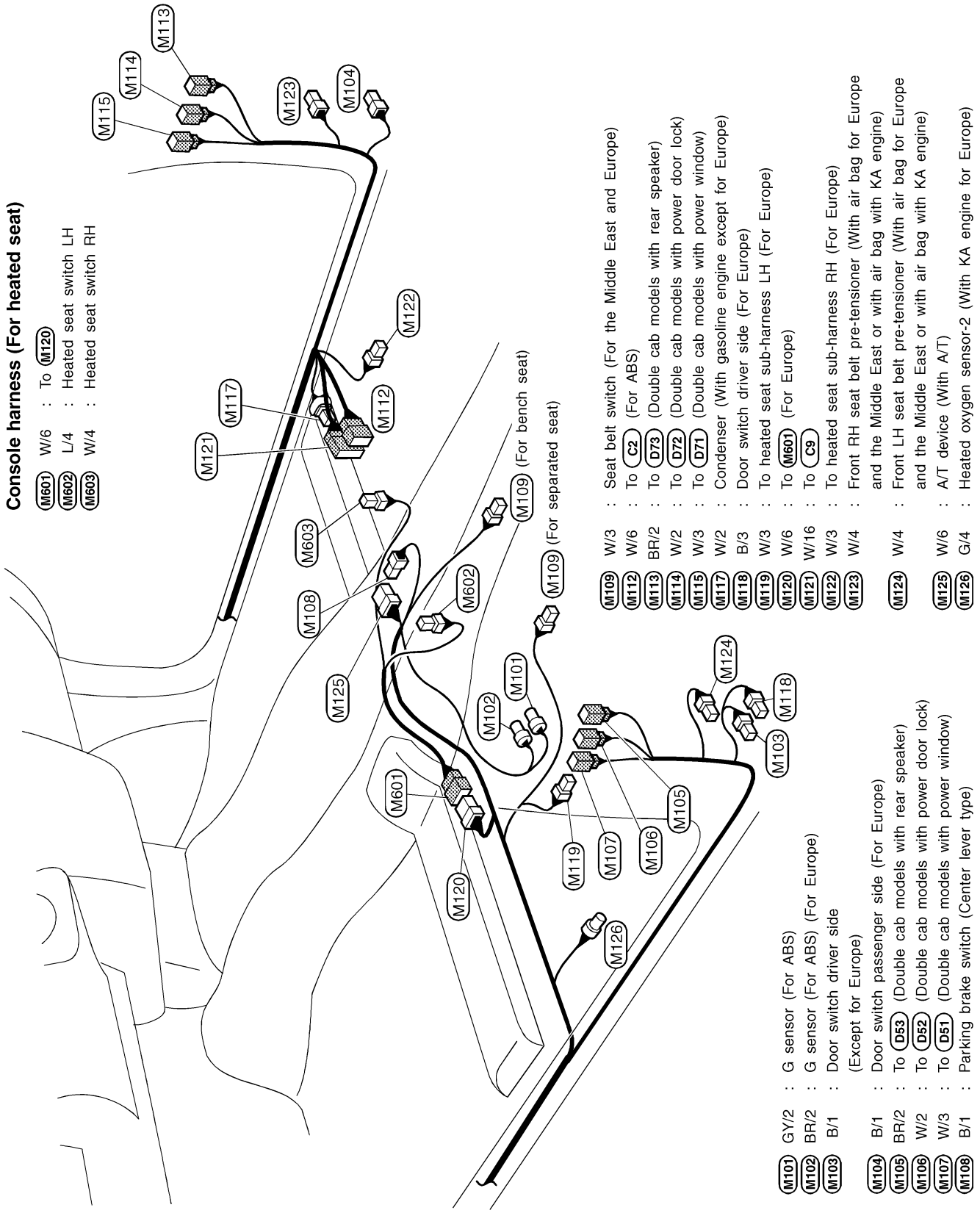
G3 (M85) GY/6 : Accelerator work unit (YD engine)
D3 (M86) BR/10 : Mode door motor (With auto A/C)
D3 (M87) W/2 : In-vehicle sensor (With auto A/C)
B3 (M88) GY/20 : A/C auto amp. (With auto A/C)
B3 (M89) GY/16 : A/C auto amp. (With auto A/C)
B3 (M90) L/2 : Aspirator motor (With auto A/C)
B3 (M91) B/6 : Air mix door motor (With auto A/C)
C1 (M92) W/4 : Fan control amp. (With auto A/C)
B1 (M93) W/4 : Intake door motor (With auto A/C)
G3 (M94) BR/3 : Accelerator position sensor (ZD engine)
G3 (M95) GY/3 : Accelerator position switch (ZD engine)
G3 (M96) W/3 : Accelerator switch (F/C) (ZD engine)
E4 (M97) W/2 : Kickdown switch (With A/T with VG engine)
C1 (M98) W/12 : Audio unit (Via sub-harness) (Except for Europe)

Engine compartment

HEL854B

Main Harness (Cont'd)

BODY SIDE — LHD MODELS



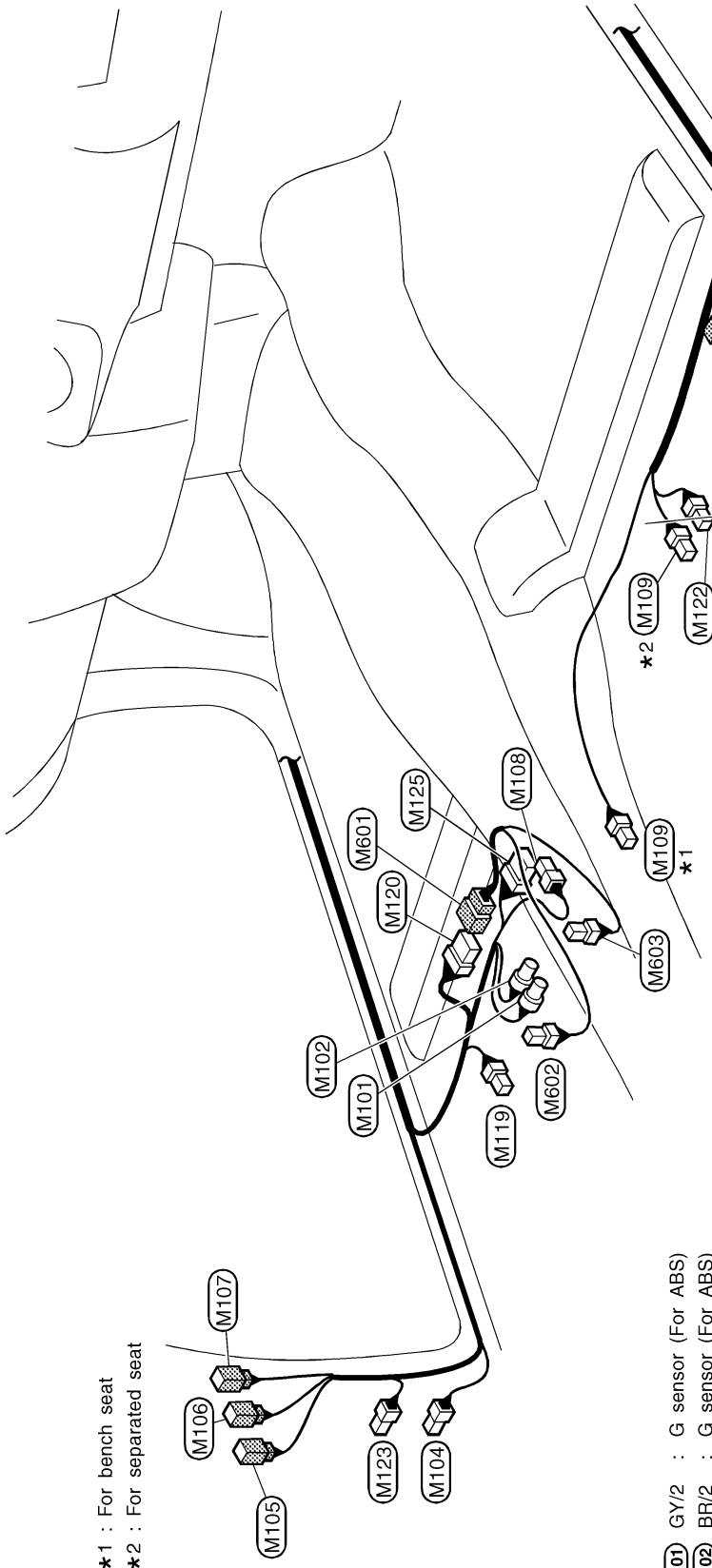
M101 GY/2 : G sensor (For ABS)
M102 BR/2 : G sensor (For ABS) (For Europe)
M103 B/1 : Door switch driver side (Except for Europe)
M104 B/1 : Door switch passenger side (For Europe)
M105 BR/2 : To D53 (Double cab models with rear speaker)
M106 W/2 : To D52 (Double cab models with power door lock)
M107 W/3 : To D51 (Double cab models with power window)
M108 B/1 : Parking brake switch (Center lever type)

M109 W/3 : Seat belt switch (For the Middle East and Europe)
M112 W/6 : To C2 (For ABS)
M113 BR/2 : To D73 (Double cab models with rear speaker)
M114 W/2 : To D72 (Double cab models with power door lock)
M115 W/3 : To D71 (Double cab models with power window)
M117 W/2 : Condenser (With gasoline engine except for Europe)
M118 B/3 : Door switch driver side (For Europe)
M119 W/3 : To heated seat sub-harness LH (For Europe)
M120 W/6 : To M601 (For Europe)
M121 W/16 : To C9
M122 W/3 : To heated seat sub-harness RH (For Europe)
M123 W/4 : Front RH seat belt pre-tensioner (With air bag for Europe and the Middle East or with air bag with KA engine)
M124 W/4 : Front LH seat belt pre-tensioner (With air bag for Europe and the Middle East or with air bag with KA engine)
M125 W/6 : A/T device (With A/T)
M126 G/4 : Heated oxygen sensor-2 (With KA engine for Europe)

HEL855B

Main Harness (Cont'd)

BODY SIDE — RHD MODELS



*1 : For bench seat
*2 : For separated seat

M101	GY/2	: G sensor (For ABS)
M102	BR/2	: G sensor (For ABS)
M103	B/1	: Door switch driver side (Except for Europe)
M104	B/1	: Door switch passenger side (For Europe and Australia)
M105	BR/2	: To D53 (Double cab models with rear speaker)
M106	W/2	: To D52 (Double cab models with power door lock)
M107	W/3	: To D51 (Double cab models with power window)
M108	B/1	: Parking brake switch (Center lever type) (Separated seat models)
M109	W/3	: Seat belt switch (For Europe and Australia)
M112	W/6	: To C2 (For ABS)
M113	BR/2	: To D73 (Double cab models with rear speaker)
M114	W/2	: To D72 (Double cab models with power door lock)
M115	W/3	: To D71 (Double cab models with power window)
M117	W/2	: Condenser (Z and KA engines)
M118	B/3	: Door switch driver side (For Europe)
M119	W/3	: To heated seat sub-harness LH (For Europe)
M120	W/6	: To M601 (For Europe)
M121	W/16	: To C9
M122	W/3	: To heated seat sub-harness RH (For Europe)
M123	W/4	: Front LH seat belt pre-tensioner (With air bag for Europe and Australia)
M124	W/4	: Front RH seat belt pre-tensioner (With air bag for Europe and Australia)
M125	W/6	: A/T device (A/T models with floor shift)

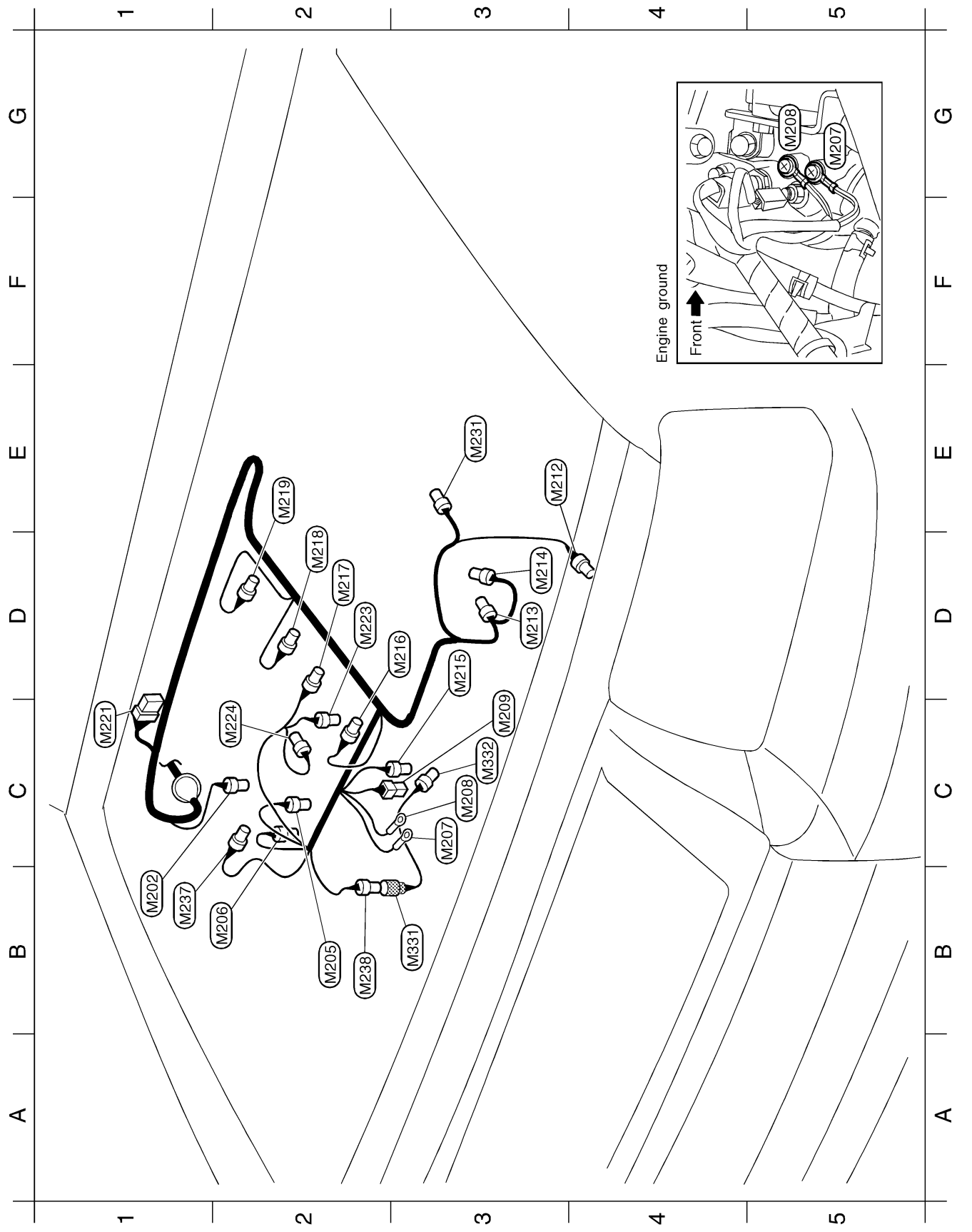
Console harness

M601	W/6	: To M120
M602	L/4	: Heated seat switch LH
M603	W/4	: Heated seat switch RH

HEL856B

Main Harness (Cont'd)

ENGINE COMPARTMENT — LHD models



HEL857B

Main Harness (Cont'd)

B1 (M202) L/2 : EVAP canister purge control solenoid valve
B2 (M205) BR/3 : Throttle position sensor
B2 (M206) GY/3 : Throttle position switch
C3 (M207) — : Engine ground
C3 (M208) — : Engine ground
C3 (M209) B/1 : Thermal transmitter
E3 (M212) B/1 : Compressor
D3 (M213) GY/2 : Distributor
D3 (M214) GY/6 : Distributor
D3 (M215) GY/2 : Engine coolant temperature sensor
D3 (M216) B/2 : Injector No.1
D2 (M217) B/2 : Injector No.2
D2 (M218) B/2 : Injector No.3
E2 (M219) B/2 : Injector No.4
C1 (M221) W/6 : Wiper motor
D2 (M223) BR/2 : IACV-AAC valve
C2 (M224) PU/2 : IACV-FICD solenoid valve
E3 (M231) SB/3 : Heated oxygen sensor 1
B1 (M237) BR/4 : Mass air flow sensor
B2 (M238) GY/2 : To (M331)

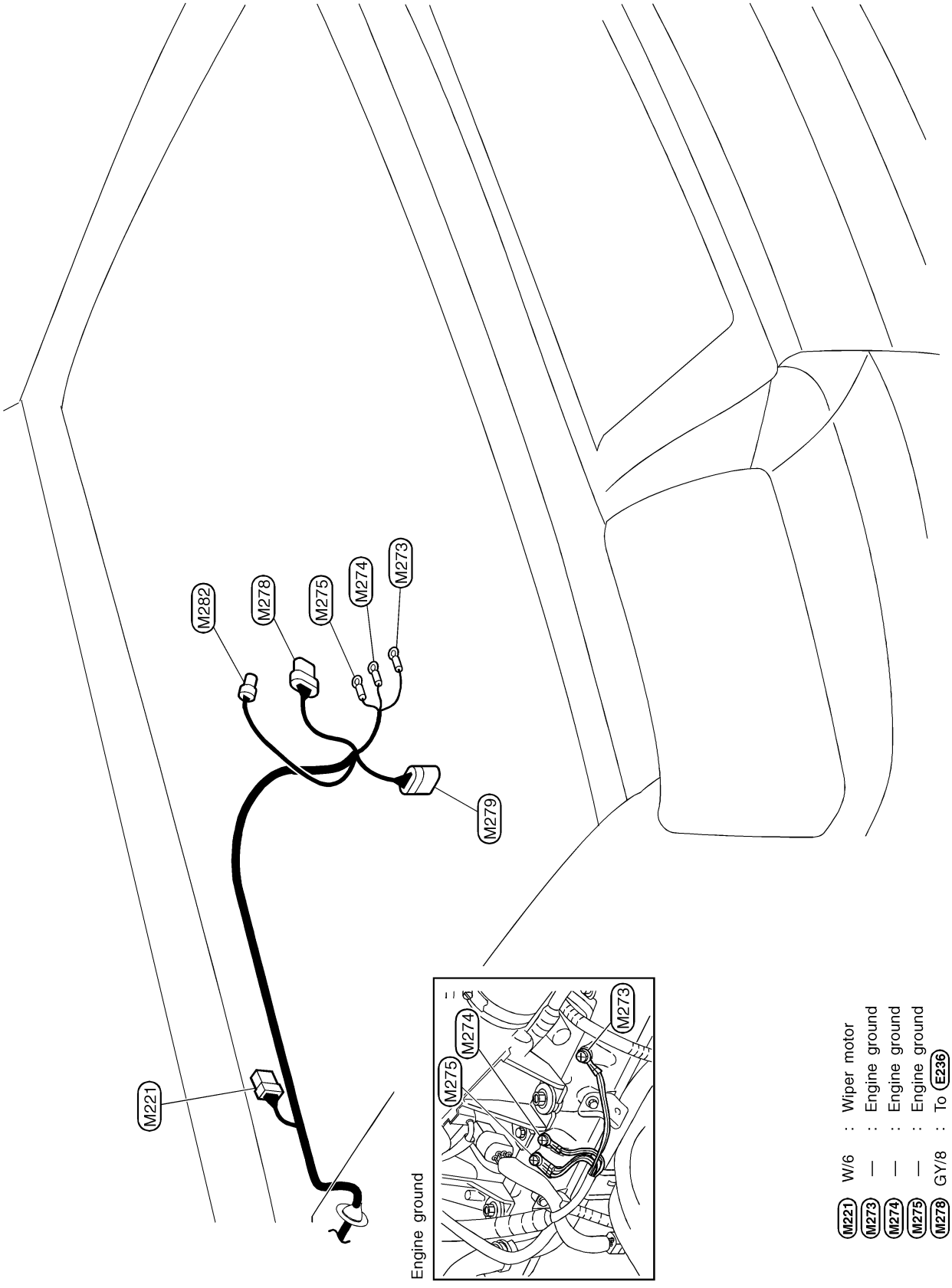
Sub-harness

B3 (M331) GY/2 : To (M238)
C3 (M332) GY/2 : Knock sensor

HEL858B

Main Harness (Cont'd)

ENGINE COMPARTMENT — YD ENGINE (LHD models)

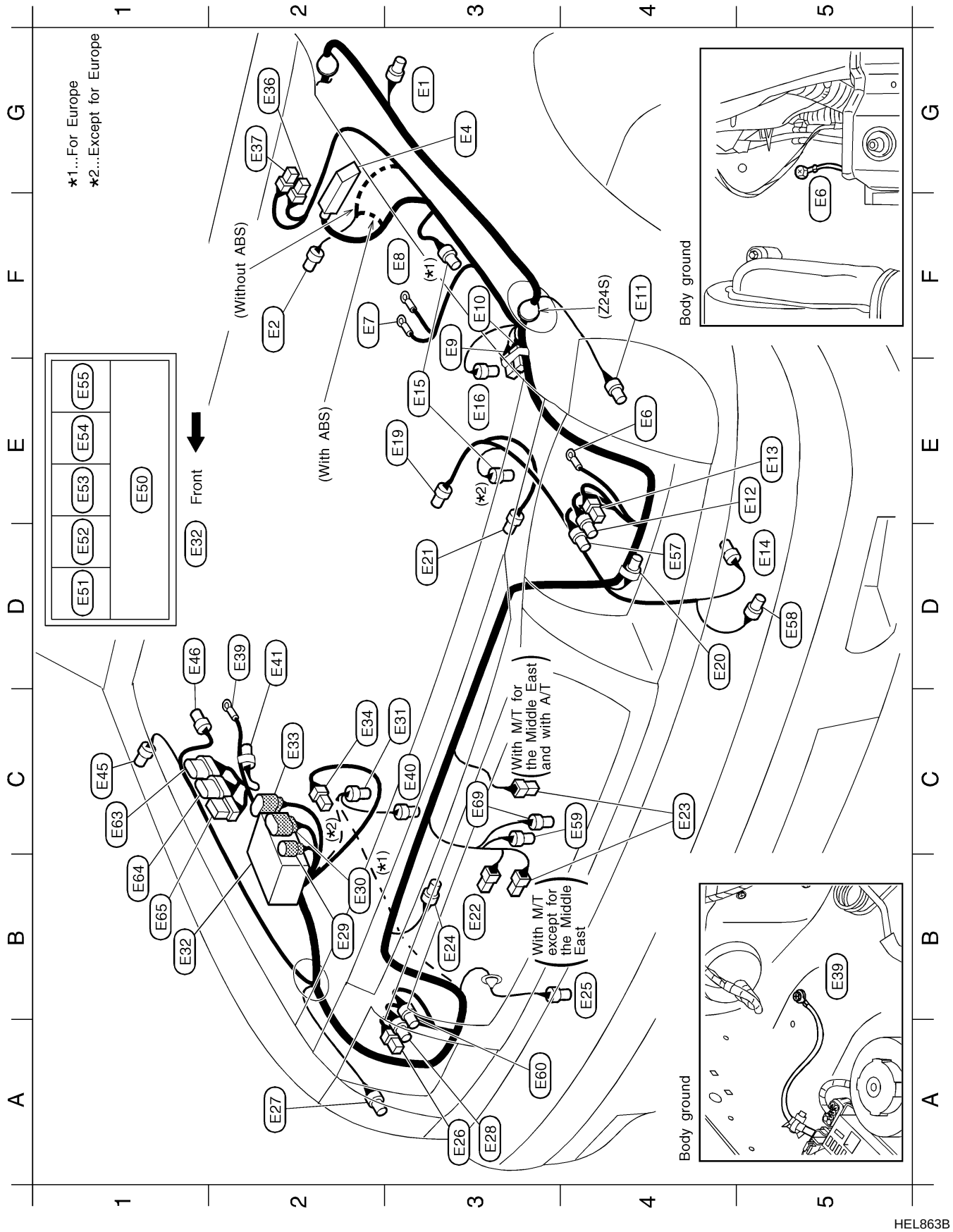


HEL861B

NOTE

Engine Room Harness

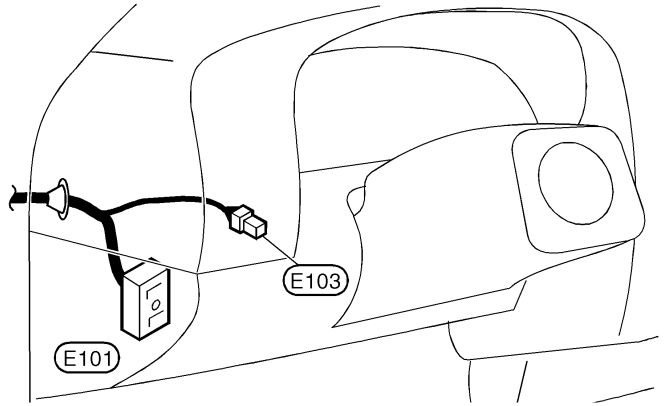
LHD MODELS — GASOLINE ENGINE



HEL863B

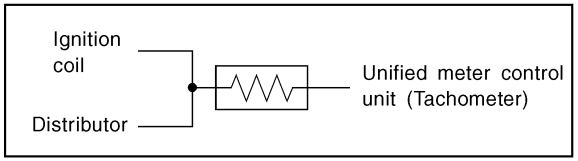
G3 (E1) GY/2 : Side turn signal lamp LH (With multi-beam type headlamp)
F2 (E2) GY/2 : Brake fluid level switch
G3 (E4) B/31 : ABS actuator and electric unit (For ABS)
E4 (E6) — : Body ground
F2 (E7) — : Ignition coil (Z engine)
F3 (E8) — : Ignition coil (Z engine)
F3 (E9) –/2 : Resistor (Z engine)
F3 (E10) W/2 : Condenser (Z engine)
F4 (E11) GY/3 : Front combination lamp LH (Without multi-beam type headlamp)
E5 (E12) GY/3 : Front combination lamp LH (With multi-beam type headlamp)
E5 (E13) B/3 : Headlamp LH
D5 (E14) GY/2 : Washer motor
E3 (E15) BR/2 : Front wheel sensor LH (For ABS)
E3 (E16) BR/2 : Intake air temperature sensor (KA engine for Europe)
E3 (E19) GY/3 : Distributor (Z engine)
D4 (E20) GY/2 : Option connector (For hood switch) (For Europe)
D3 (E21) B/1 : Compressor (Z engine)
B3 (E22) B/1 : Horn low
C4 (E23) B/1 : Horn high
B3 (E24) GY/2 : Cooling fan motor (KA engine for the Middle East and Europe)
B4 (E25) GY/4 : Triple-pressure switch
A3 (E26) B/3 : Headlamp RH
A2 (E27) GY/3 : Front combination lamp RH (Without multi-beam type headlamp)
A3 (E28) GY/3 : Front combination lamp RH (With multi-beam type headlamp)
B2 (E29) GY/2 : To (E204)
B2 (E30) GY/8 : To (E203)
C3 (E31) GY/2 : Front wheel sensor RH (For ABS)
B1 (E32) — : Relay box (Fusible link and fuse box)
C2 (E33) SB/8 : To (E205)
C2 (E34) B/1 : Battery
G2 (E36) B/1 : ISC-FI pot control solenoid valve (Z engine)
G2 (E37) B/1 : ISC-FI pot control solenoid valve (Z engine)
D2 (E39) — : Body ground
C3 (E40) B/2 : Power steering oil pressure switch (For Europe)
D2 (E41) B/1 : Option connector (For front fog lamp) (For Europe)
C1 (E45) GY/2 : Side turn signal lamp RH (With multi-beam type headlamp)
D1 (E46) GY/3 : Power antenna (For the Middle East and Europe)
E1 (E50) — : Fusible link and fuse box
D1 (E51) L/4 : Cooling fan relay (KA engine for the Middle East and Europe)
D1 (E52) L/4 : Air conditioner relay
E1 (E53) W/3 : Horn relay
E1 (E54) BR/6 : Park/neutral position relay (With A/T)
E1 (E55) B/5 : Automatic choke relay (Z engine)
BR/6 : ECM relay (KA engine)
D4 (E57) –/3 : Headlamp aiming motor LH (For the Middle East and Europe)
D5 (E58) GY/2 : Headlamp washer motor (For Europe)
C4 (E59) B/2 : Ambient sensor (For Europe)
A3 (E60) –/3 : Headlamp aiming motor RH (For the Middle East and Europe)
C1 (E63) SB/6 : Daytime light unit (With daytime light system)
B1 (E64) SB/8 : Daytime light unit (With daytime light system)
B1 (E65) W/6 : Headlamp washer amplifier (For Europe)
C3 (E69) BR/2 : Ambient temperature switch (KA engine)

PASSENGER COMPARTMENT



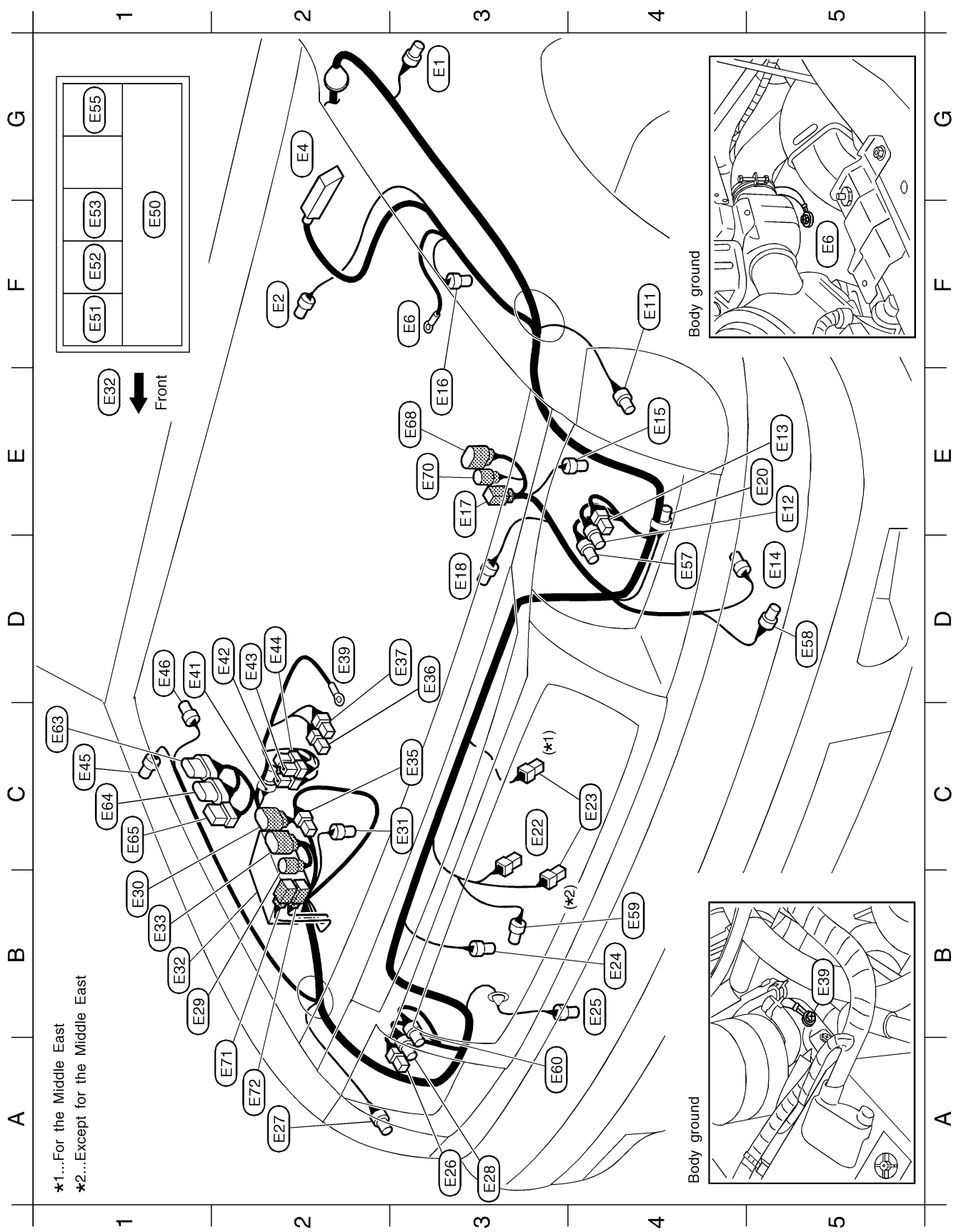
(E101) SMJ : To (M5)
(E103) B/2 : Fuse block

Resistor (E9)



Engine Room Harness (Cont'd)

LHD MODELS — DIESEL ENGINE



HEL865B

Engine Room Harness (Cont'd)

G3 (E1) GY/2 : Side turn signal lamp LH (Except for the Middle East)
F2 (E2) GY/2 : Brake fluid level switch
G2 (E4) B/31 : ABS actuator and electric unit (For ABS)
F3 (E6) — : Body ground
F4 (E11) GY/3 : Front combination lamp LH (For the Middle East)
E5 (E12) GY/3 : Front combination lamp LH (Except for the Middle East)
E5 (E13) B/3 : Headlamp LH
D5 (E14) GY/2 : Washer motor
E4 (E15) BR/2 : Front wheel sensor LH (For ABS)
E3 (E16) GY/2 : Intake air temperature sensor (YD and ZD engines)
E3 (E17) B/2 : To (A2)
D3 (E18) GY/2 : Thermoswitch (TD engine for the Middle East and QD engines)
E5 (E20) GY/2 : Option connector (For hood switch) (For Europe)
C3 (E22) B/1 : Horn low
C4 (E23) B/1 : Horn high
B4 (E24) GY/2 : Cooling fan motor
(TD engine for the Middle East, QD, YD and ZD engines)
B4 (E25) GY/4 : Triple-pressure switch
A3 (E26) B/3 : Headlamp RH
A2 (E27) GY/3 : Front combination lamp RH (For the Middle East)
A3 (E28) GY/3 : Front combination lamp RH (Except for the Middle East)
B1 (E29) GY/2 : To (E204)
B1 (E30) GY/8 : To (E203) (YD and ZD engines)
C3 (E31) GY/2 : Front wheel sensor RH (For ABS)
B1 (E32) — : Relay box (Fusible link and fuse box)
B1 (E33) SB/8 : To (E205)
C3 (E35) B/1 : To (E206) (TD and QD engines)
D3 (E36) B/1 : IACV-FICD solenoid valve (TD and QD engines)
D3 (E37) B/1 : IACV-FICD solenoid valve (TD and QD engines)
D2 (E39) — : Body ground
D1 (E41) B/1 : Option connector (For front fog lamp) (For Europe)
D2 (E42) W/1 : Glow relay-1 (YD and ZD engines)
D2 (E43) W/1 : Glow relay-1 (YD and ZD engines)
D2 (E44) G/2 : Glow relay-1 (YD and ZD engines)
C1 (E45) GY/2 : Side turn signal lamp RH (Except for the Middle East)
D1 (E46) GY/3 : Power antenna (For Europe)
F1 (E50) — : Fusible link and fuse box
F1 (E51) L/4 : Cooling fan relay (TD engine for the Middle East, QD, YD and ZD engines)
F1 (E52) L/4 : Air conditioner relay
F1 (E53) W/3 : Horn relay
G1 (E55) BR/6 : ECM relay (YD and ZD engines)

D4 (E57) –/3 : Headlamp aiming motor LH
(For the Middle East and Europe)
D5 (E58) GY/2 : Headlamp washer motor (For Europe)
B4 (E59) B/2 : Ambient sensor (For auto A/C) (YD and ZD engines)
A3 (E60) –/3 : Headlamp aiming motor RH
(For the Middle East and Europe)
C1 (E63) SB/6 : Daytime light unit (With daytime light system)
C1 (E64) SB/8 : Daytime light unit (With daytime light system)
C1 (E65) W/6 : Headlamp washer amplifier (For Europe)
E3 (E68) GY/8 : To (A13) (TD and QD engines)
E3 (E70) BR/3 : To (A14) (YD and ZD engines)
A2 (E71) B/2 : To (E231) (YD and ZD engines)
A2 (E72) B/1 : To (E232) (YD and ZD engines)

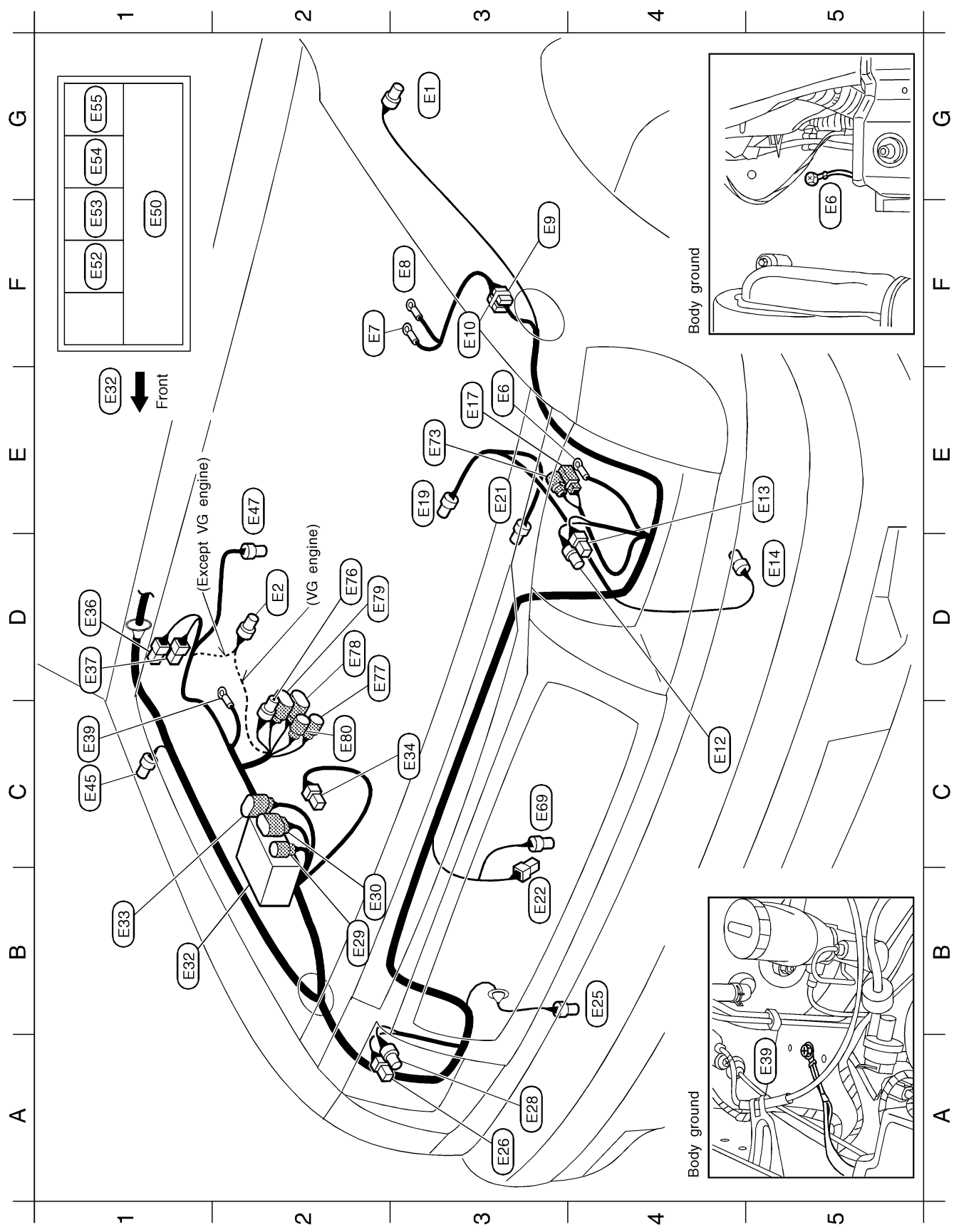
PASSENGER COMPARTMENT

(E101) SMJ : To (M5)
(E103) B/2 : Fuse block

HEL866B

Engine Room Harness (Cont'd)

RHD MODELS — GASOLINE ENGINE



HEL867B

Engine Room Harness (Cont'd)

G3 E1 GY/2 : Side turn signal lamp LH
D2 E2 GY/2 : Brake fluid level switch
E3 E6 — : Body ground
F2 E7 — : Ignition coil (Z engine)
F3 E8 — : Ignition coil (Z engine)
F3 E9 –/2 : Resistor (Z engine)
F3 E10 W/2 : Condenser (Z engine)
C4 E12 GY/3 : Front combinaiton lamp LH
E5 E13 B/3 : Headlamp LH
D5 E14 GY/2 : Washer motor
E3 E17 B/2 : To A2 (VG engine)
E3 E19 GY/3 : Distributor (Z engine)
E3 E21 B/1 : Compressor (Z engine)
B3 E22 B/1 : Horn low
B4 E25 GY/4 : Triple-pressure switch
A3 E26 B/3 : Headlamp RH
A3 E28 GY/3 : Front combination lamp RH (For Australia)
B2 E29 GY/2 : To E204 (Except VG engine)
To E502 (VG engine)
B2 E30 GY/8 : To E203 (Except VG engine)
B1 E32 — : Relay box (Fusible link and fuse box)
B1 E33 SB/8 : To E205 (Except VG engine)
C3 E34 B/1 : Battery
D1 E36 B/1 : ISC-FI pot control solenoid valve (Z engine)
D1 E37 B/1 : ISC-FI pot control solenoid valve (Z engine)
C1 E39 — : Body ground
C1 E45 GY/2 : Side turn signal lamp RH
E2 E47 GY/3 : Carburetor (Z engine)
F1 E50 — : Fusible link and fuse box
F1 E52 L/4 : Air conditioner relay
F1 E53 W/3 : Horn relay
G1 E54 BR/6 : Park/Neutral position relay (With A/T)
G1 E55 BR/6 : ECM relay (KA engine)
L/4 : ECM relay (VG engine)
B/5 : Automatic choke relay (Z engine)
C3 E69 BR/2 : Ambient temperature switch (KA engine)

E3 E73 GY/2 : To A3 (VG engine)
D2 E76 GY/2 : Dropping resistor (With A/T)
D2 E77 GY/2 : Park/Neutral position switch (With A/T)
D2 E78 GY/8 : Park/Neutral position switch (With A/T)
D2 E79 BR/8 : To terminal cord assembly (With A/T)
C2 E80 GY/3 : Revolution sensor (With A/T)

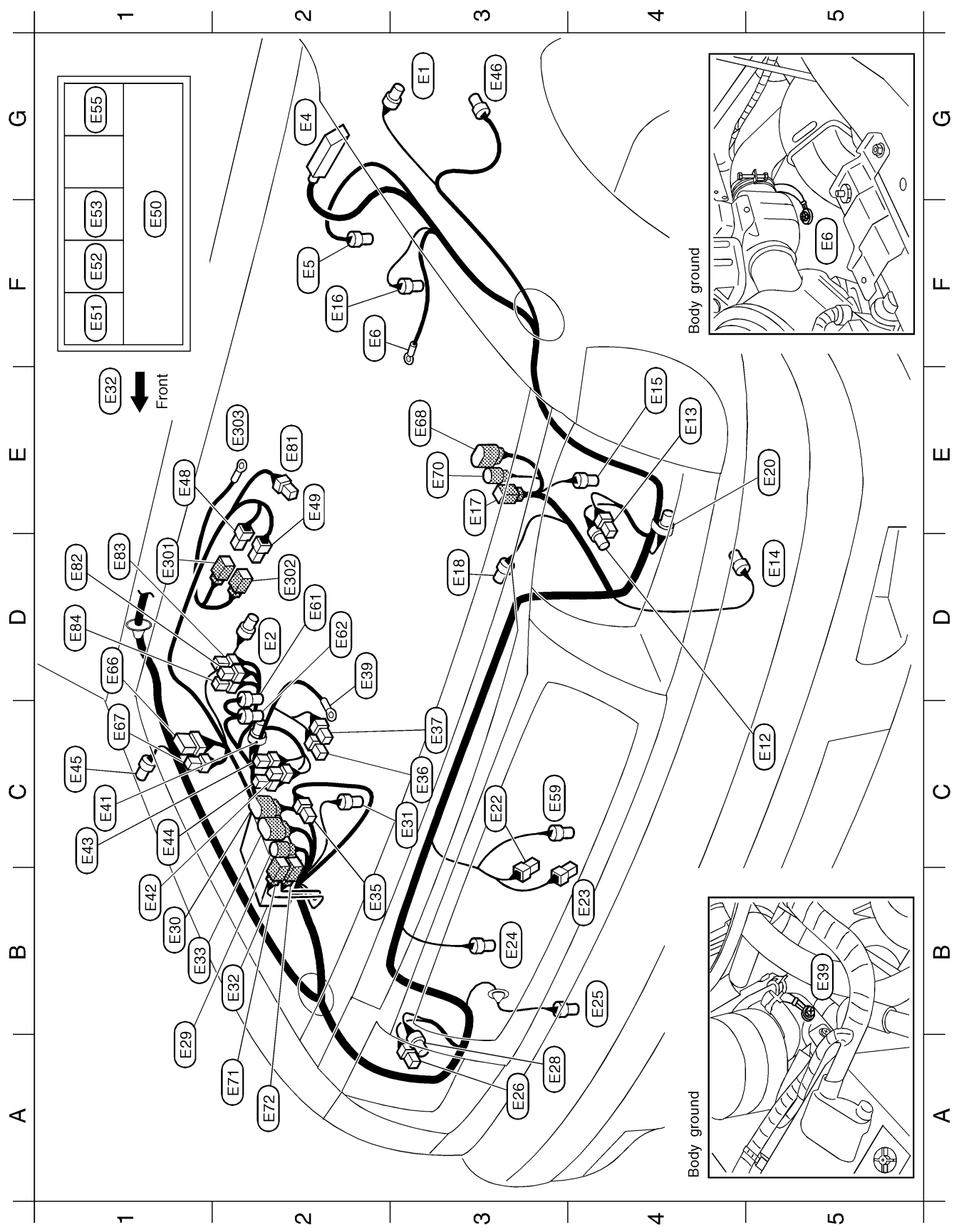
PASSENGER COMPARTMENT

E101 SMJ : To M5
E103 B/2 : Fuse block

HEL868B

Engine Room Harness (Cont'd)

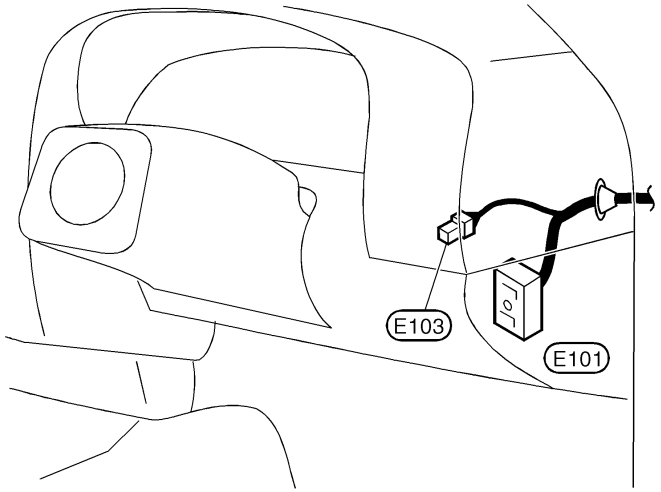
RHD MODELS — DIESEL ENGINE



HEL869B

G3 E1 GY/2 : Side turn signal lamp LH
D2 E2 GY/2 : Brake fluid level switch
G2 E4 B/31 : ABS actuator and electric unit (For ABS)
F2 E5 BR/2 : Fuel filter switch (Except for Europe)
F2 E6 — : Body ground
C5 E12 GY/3 : Front combination lamp LH
E4 E13 B/3 : Headlamp LH
D5 E14 GY/2 : Washer motor
E4 E15 BR/2 : Front wheel sensor LH (For ABS)
F2 E16 GY/2 : Intake air temperature sensor (YD and ZD engines)
E3 E17 B/2 : To A2
D3 E18 GY/2 : Thermoswitch (QD engine)
E5 E20 GY/2 : Option connector (For hood switch) (For Europe)
C3 E22 B/1 : Horn low
B4 E23 B/1 : Horn high (ZD engine except for Australia, YD and QD engines)
B3 E24 GY/2 : Cooling fan motor (Except TD engine)
B4 E25 GY/4 : Triple-pressure switch
A3 E26 B/3 : Headlamp RH
A3 E28 BR/3 : Front combination lamp RH
A1 E29 GY/2 : To E204
B1 E30 GY/8 : To E203 (With ECM control engine)
C3 E31 GY/2 : Front wheel sensor RH (For ABS)
B2 E32 — : Relay box (Fusible link and fuse box)
B1 E33 SB/8 : To E205
B2 E35 B/1 : To E206 (TD and QD engines)
C3 E36 B/1 : IACV-FICD solenoid valve (TD and QD engines)
C3 E37 B/1 : IACV-FICD solenoid valve (TD and QD engines)
D2 E39 — : Body ground
C1 E41 B/1 : Option connector (For front fog lamp) (For Europe)
B1 E42 W/1 : Glow relay-1
C1 E43 W/1 : Glow relay-1
C1 E44 G/2 : Glow relay-1
C1 E45 GY/2 : Side turn signal lamp RH
G3 E46 GY/3 : Power antenna (For Europe)
E1 E48 B/1 : To E301 (QD engine)
E2 E49 L/2 : To E302 (TD engine)
F1 E50 — : Fusible link and fuse box
F1 E51 L/4 : Cooling fan relay (Except TD engine)
F1 E52 L/4 : Air conditioner relay
F1 E53 W/3 : Horn relay
G1 E55 BR/6 : ECM relay (YD and ZD engines)
C3 E59 B/2 : Ambient sensor (YD and ZD engines)
D2 E61 B/2 : EGRC-solenoid valve (Throttle chamber) (TD engine with EGR)
D2 E62 BR/2 : EGRC-solenoid valve (EGR valve) (TD engine with EGR)
D1 E66 GY/6 : Dim-dip lamp unit (For Europe)
C1 E67 GY/4 : Dim-dip lamp unit (For Europe)
E3 E68 GY/8 : To A13 (TD and QD engines)
E3 E70 BR/3 : To A14 (YD and ZD engines)
A2 E71 B/2 : To E231 (YD and ZD engines)
A2 E72 B/1 : To E232 (YD and ZD engines)
E2 E81 B/2 : Dropping resistor (TD engine for Australia)
D1 E82 W/1 : Glow relay-2 (TD engine for Australia)
D1 E83 W/1 : Glow relay-2 (TD engine for Australia)
D1 E84 G/2 : Glow relay-2 (TD engine for Australia)

PASSENGER COMPARTMENT

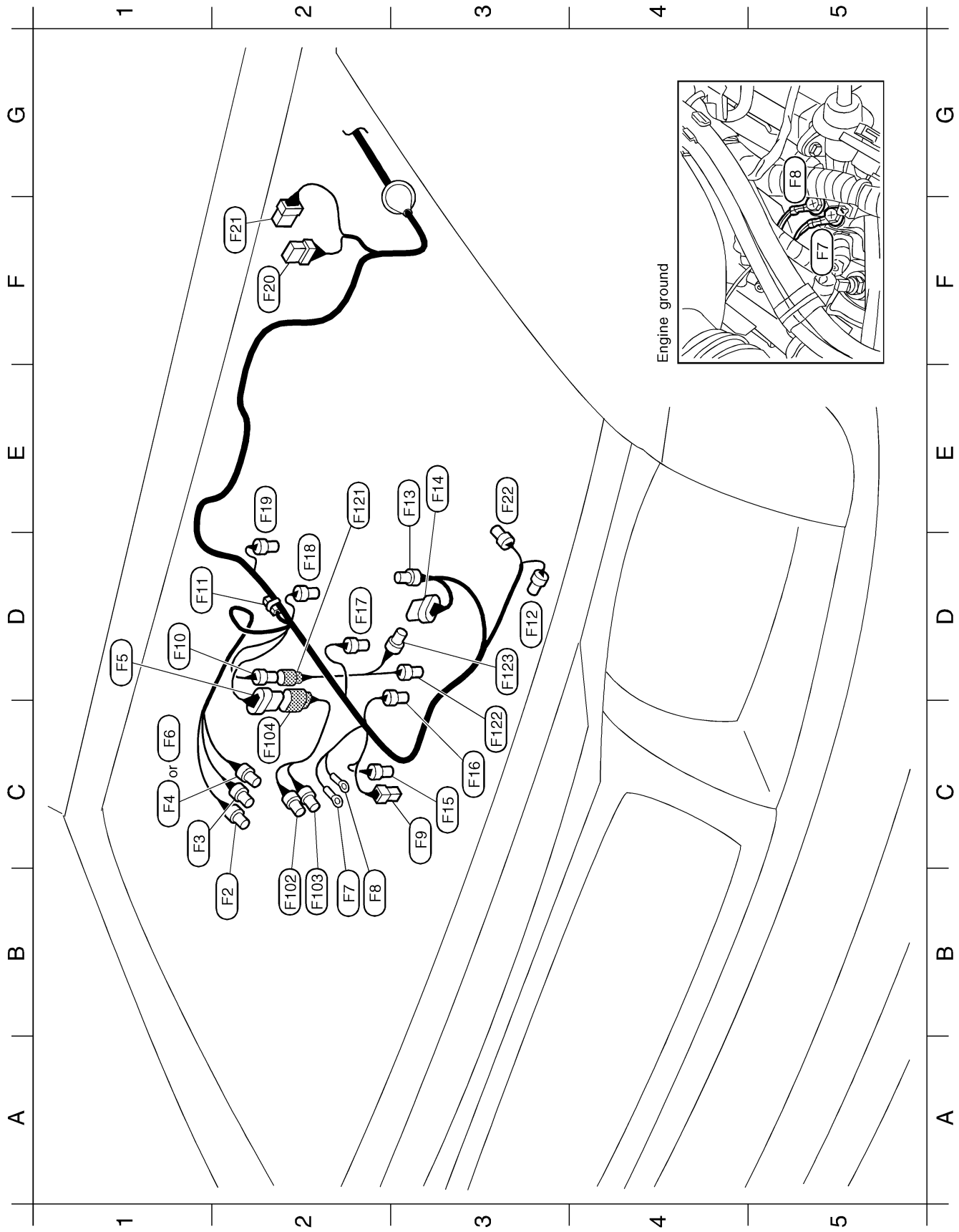


E101 SMJ : To M5
E103 B/2 : Fuse block

Sub-harness

D1 E301 B/1 : To E48 (QD engine)
D2 E302 L/2 : To E49 (TD engine)
E2 E303 — : Glow plug (TD and QD engines)

Engine Control Harness/KA engine



HEL871B

PASSENGER COMPARTMENT

F51 W/48 : ECM
F53 GY/6 : Joint connector-1
F54 W/24 : To M48
F55 W/16 : To M47
F56 –/2 : Diode

Resistor F11

Diode F56

B2 F2 B/2 : IACV-FICD solenoid valve
C1 F3 BR/2 : IACV-AAC valve
C1 F4 GY/3 : Mass air flow sensor (With three way catalyst)
D1 F5 GY/6 : To F104
C1 F6 BR/4 : Mass air flow sensor (Without three way catalyst)
B2 F7 — : Engine ground
B2 F8 — : Engine ground
C3 F9 B/1 : Thermal transmitter
D1 F10 B/3 : To F121
D1 F11 –/2 : Resistor
D3 F12 B/1 : Compressor
E3 F13 GY/2 : Distributor
E3 F14 GY/6 : Distributor
C3 F15 GY/2 : Engine coolant temperature sensor
C3 F16 GY/2 : Injector No.1
D2 F17 GY/2 : Injector No.2
D2 F18 GY/2 : Injector No.3
E2 F19 GY/2 : Injector No.4
F2 F20 GY/8 : Wiper amplifier (A/T models)
F2 F21 W/6 : Wiper motor
E2 F22 B/3 : Heated oxygen sensor 1 (With three way catalyst)

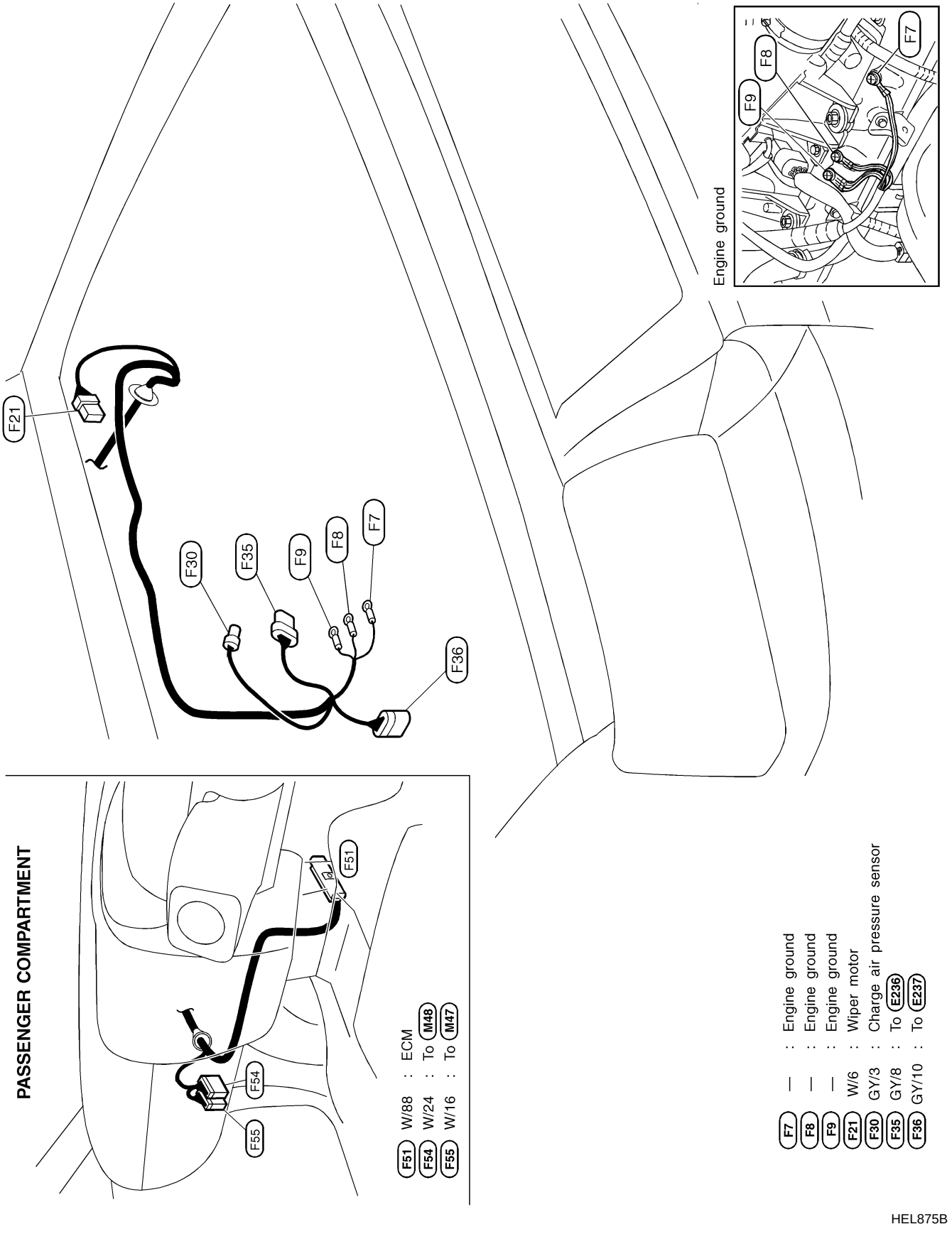
Sub-harness

B2 F102 BR/3 : Throttle position sensor
B2 F103 GY/3 : Throttle position switch (A/T models)
C2 F104 B/6 : To F5
E2 F121 B/3 : To F10
C3 F122 –/2 : Knock sensor
D3 F123 GY/1 : Oil pressure switch

HEL872B

Engine Control Harness

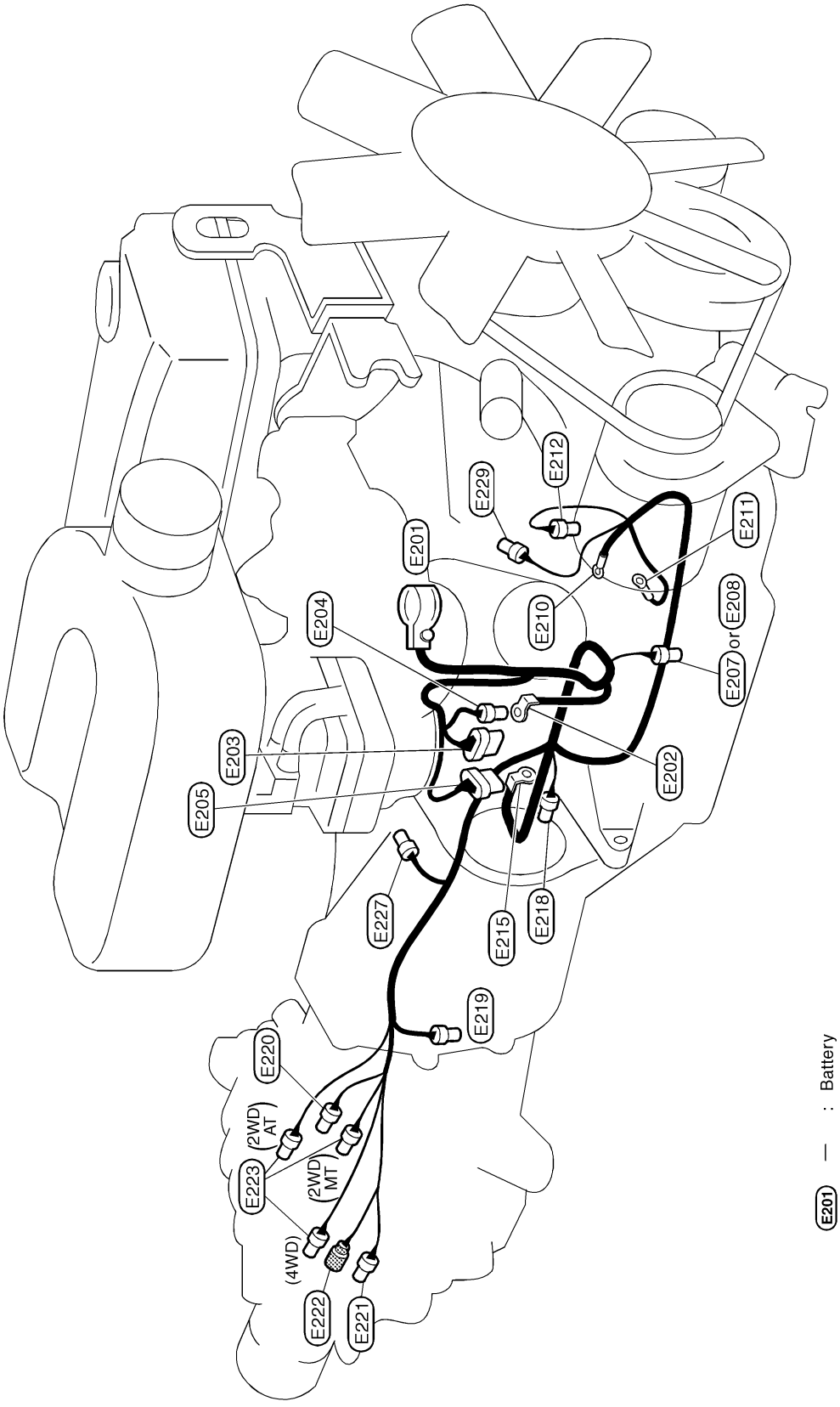
ENGINE COMPARTMENT — YD ENGINE (RHD models)



HEL875B

Engine Harness

KA ENGINE

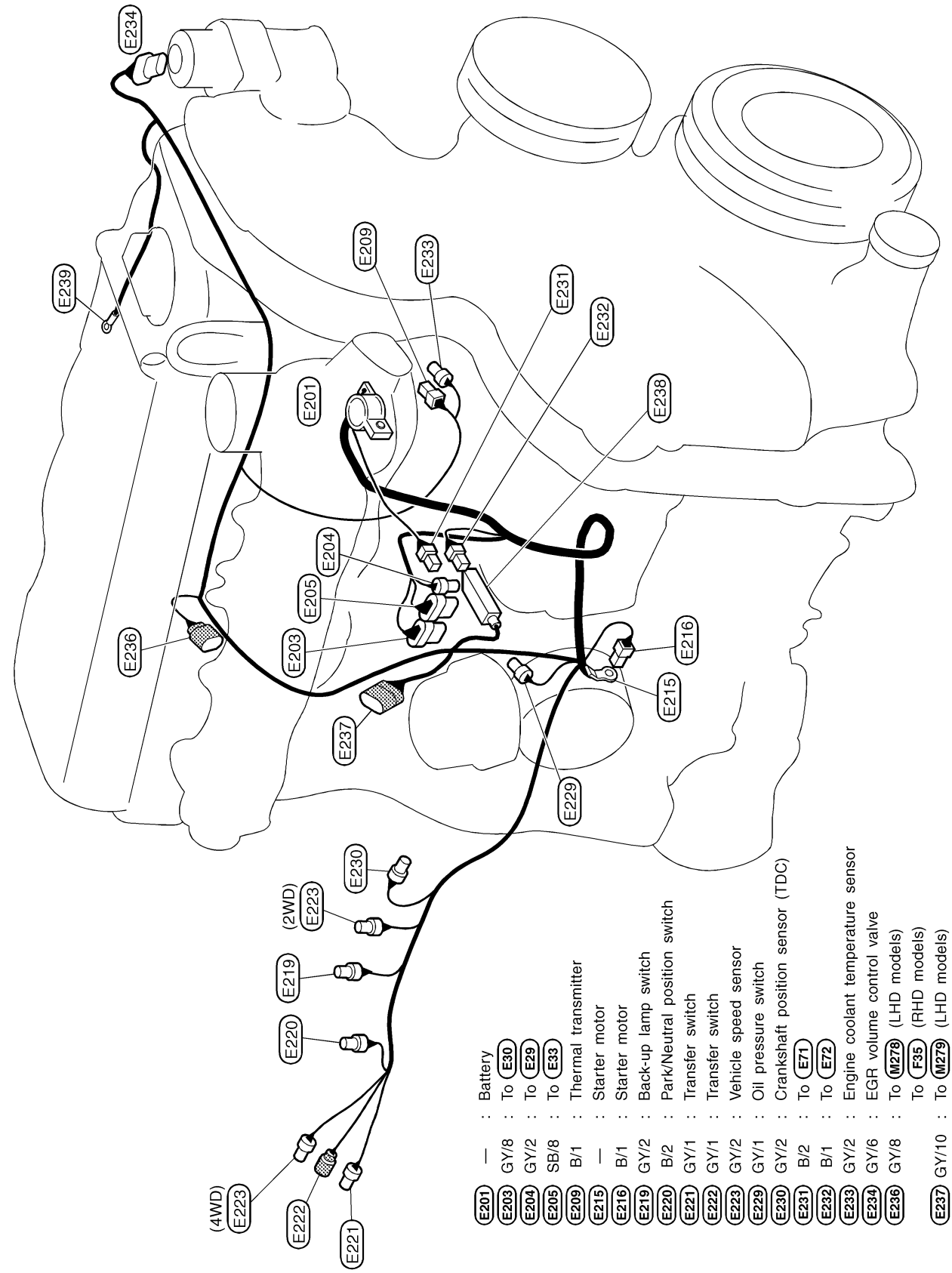


E201 — : Battery
E202 — : Fusible link and fuse box
E203 GY/8 : To E30
E204 GY/2 : To E29
E205 SB/8 : To E33
E207 GY/2 : Power steering oil pressure switch (RHD 4WD models except for Europe)
E208 B/2 : Power steering oil pressure switch (Except RHD 4WD models except for Europe)
E210 — : Alternator (B)
E211 — : Alternator (E)
E212 GY/2 : Alternator (S,L)
E215 — : Starter motor
E218 GY/1 : Starter motor
E219 GY/2 : Back-up lamp switch (With M/T)
E220 B/2 : Park/Neutral position switch (With M/T)
E221 GY/1 : Transfer switch (4WD models)
E222 GY/1 : Transfer switch (4WD models)
E223 GY/2 : Vehicle speed sensor
E227 GY/2 : Crankshaft position sensor (OBD) (For Europe)
E229 GY/1 : Oil pressure switch (For Europe)

HEL877B

Engine Harness (Cont'd)

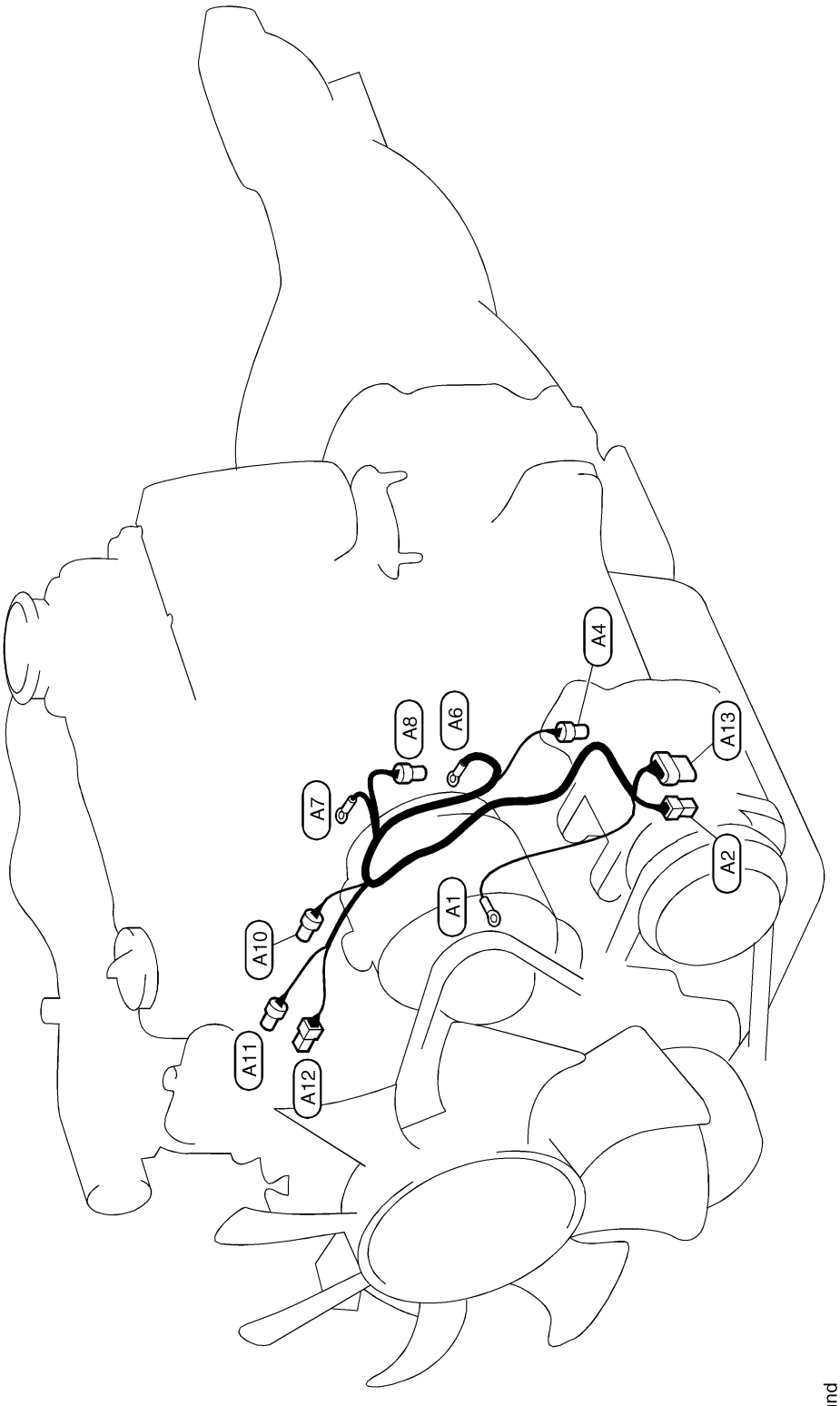
YD ENGINE



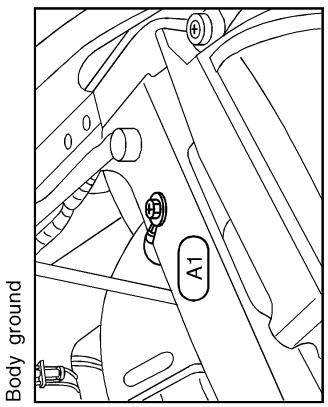
E201	—	Battery
E203	GY/8	To E30
E204	GY/2	To E29
E205	SB/8	To E33
E209	B/1	Thermal transmitter
E215	—	Starter motor
E216	B/1	Starter motor
E219	GY/2	Back-up lamp switch
E220	B/2	Park/Neutral position switch
E221	GY/1	Transfer switch
E222	GY/1	Transfer switch
E223	GY/2	Vehicle speed sensor
E229	GY/1	Oil pressure switch
E230	GY/2	Crankshaft position sensor (TDC)
E231	B/2	To E71
E232	B/1	To E72
E233	GY/2	Engine coolant temperature sensor
E234	GY/6	EGR volume control valve
E236	GY/8	To M278 (LHD models)
		To F35 (RHD models)
E237	GY/10	To M279 (LHD models)
		To F36 (RHD models)
E238	B/9	Electronic control fuel injection pump
E239	—	Glow plug

HEL880B

Alternator Harness



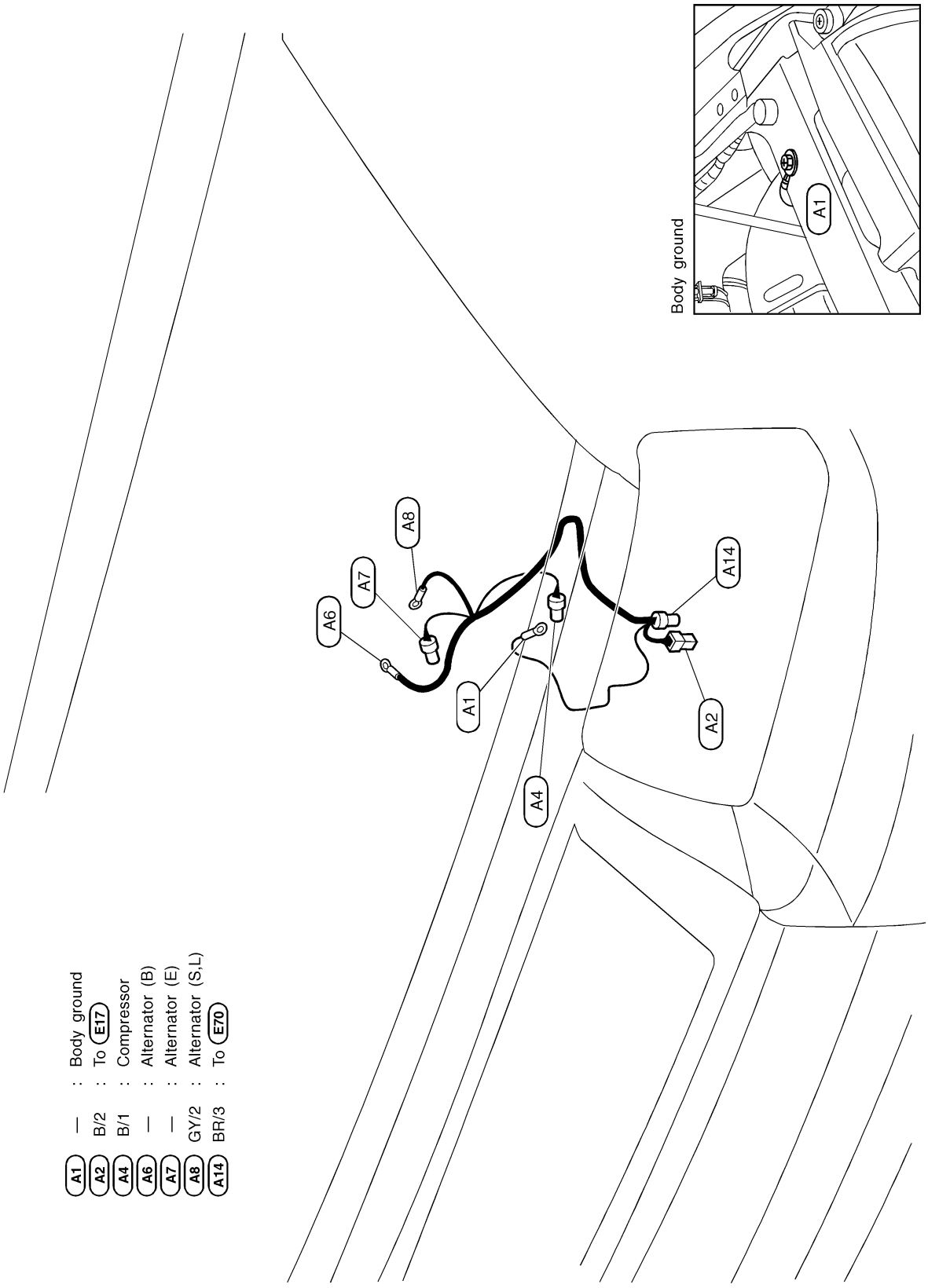
A1 — : Body ground
A2 B/2 : To E17
A4 B/1 : Compressor
A6 — : Alternator (B)
A7 — : Alternator (E)
A8 GY/2 : Alternator (S,L)
A10 BR/2 : Revolution sensor
A11 GY/2 : Engine coolant temperature sensor
A12 B/1 : Thermal transmitter
A13 GY/8 : To E68



HEL808B

Alternator Harness (Cont'd)

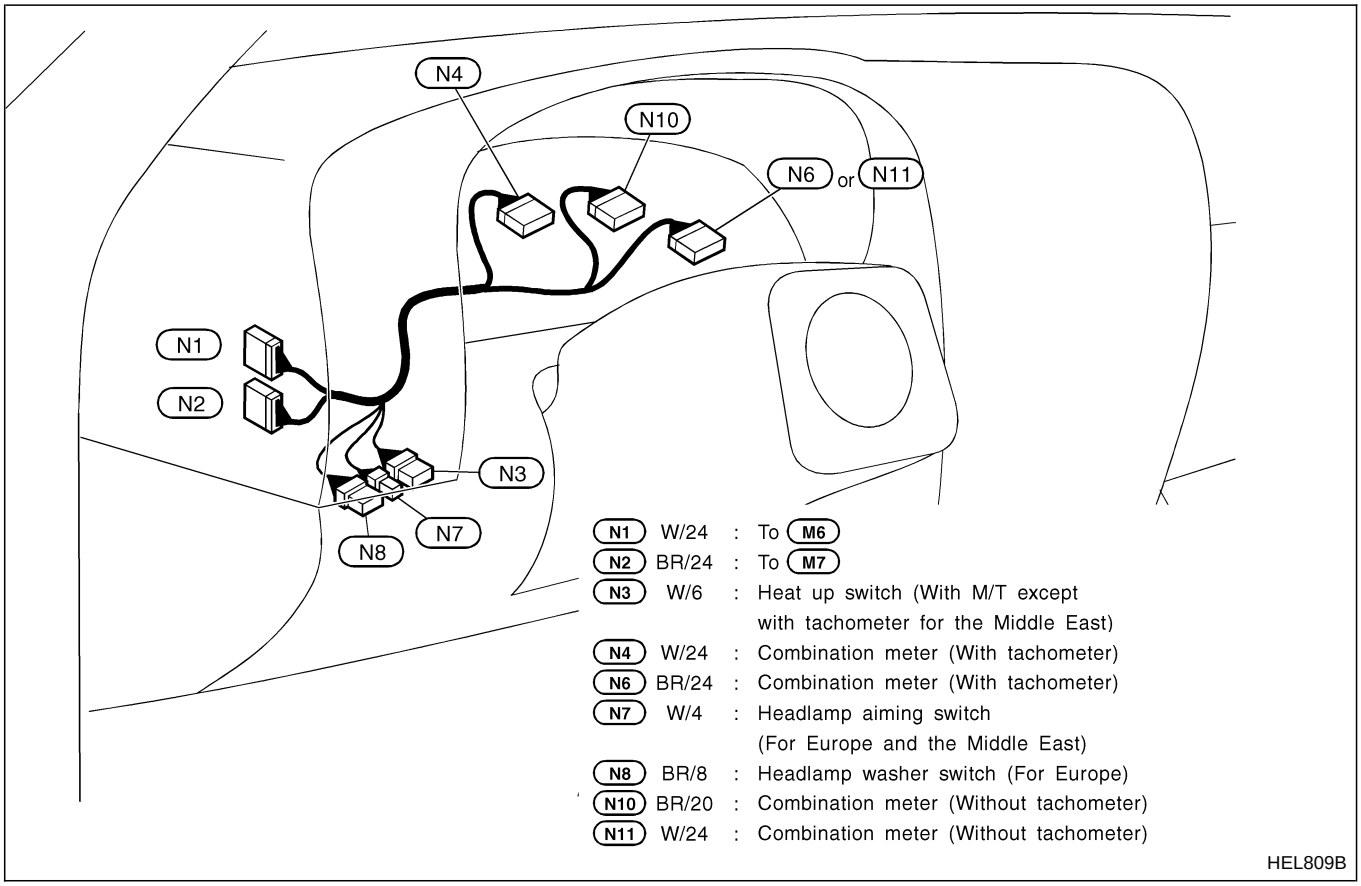
YD ENGINE



HEL882B

LHD MODELS

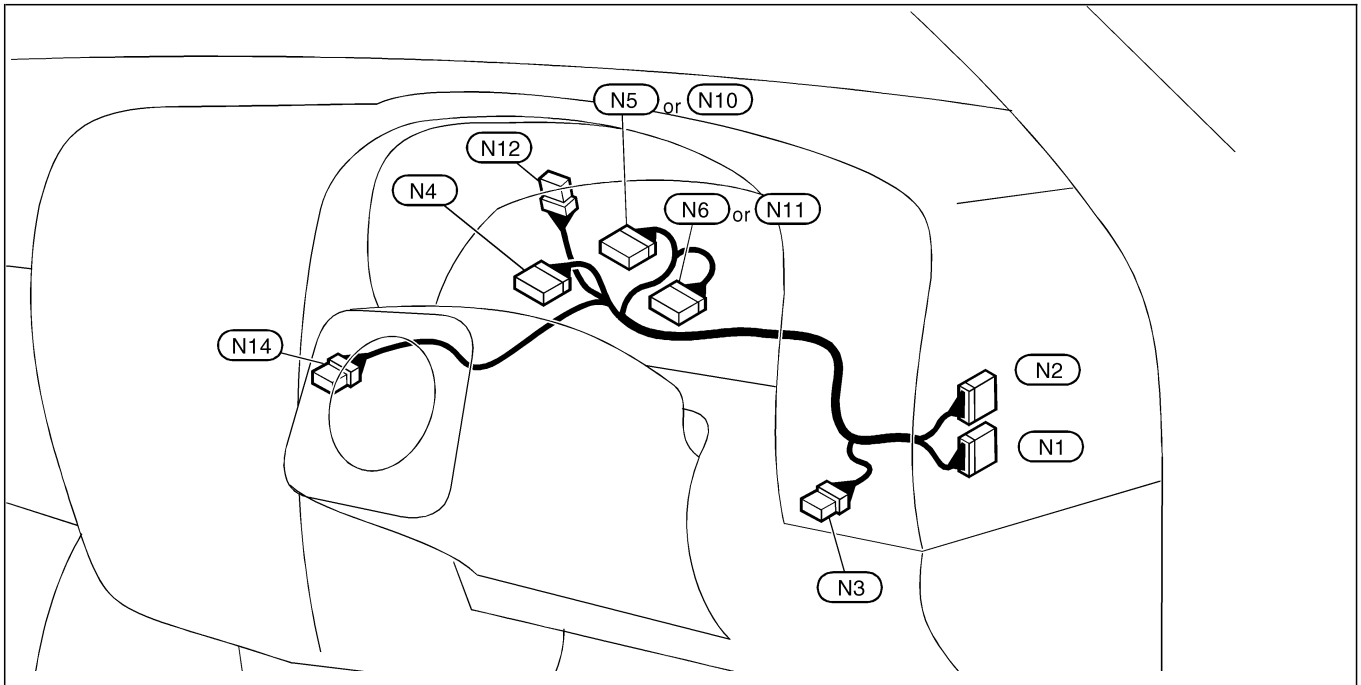
Instrument Harness



N1	W/24	:	To M6
N2	BR/24	:	To M7
N3	W/6	:	Heat up switch (With M/T except with tachometer for the Middle East)
N4	W/24	:	Combination meter (With tachometer)
N6	BR/24	:	Combination meter (With tachometer)
N7	W/4	:	Headlamp aiming switch (For Europe and the Middle East)
N8	BR/8	:	Headlamp washer switch (For Europe)
N10	BR/20	:	Combination meter (Without tachometer)
N11	W/24	:	Combination meter (Without tachometer)

HEL809B

RHD MODELS



N1	W/24	:	To M6	N6	BR/24	:	Combination meter (With tachometer)
N2	BR/24	:	To M7	N10	BR/20	:	Combination meter (Without tachometer)
N3	W/6	:	Heat up switch (With M/T)	N11	W/24	:	Combination meter (Without tachometer)
N4	W/24	:	Combination meter (With tachometer)	N12	BR/8	:	Dongle unit (For Europe)
N5	BR/20	:	Combination meter (With A/T with tachometer)	N14	GY/6	:	A/T mode switch (With A/T)

HEL883B

Chassis Harness and Tail Harness

Tail harness

- (T1) W/6 : Rear combination lamp RH (A-chassis models or with smooth rear body except for Europe, Australia and China)
- (T2) W/8 : Rear combination lamp RH (For Europe, Australia and China except A-chassis models or with regular rear body)
- (T3) GY/2 : License plate lamp RH (With step bumper)
- (T4) SB/8 : To (C7)
- (T5) GY/2 : License plate lamp RH (Without step bumper)
- (T6) GY/2 : License plate lamp LH (Without step bumper)
- (T7) B/2 : License plate lamp LH (With step bumper)
- (T8) W/6 : Rear combination lamp LH (A-chassis models or with smooth rear body except for Europe, Australia and China)
- (T9) W/8 : Rear combination lamp LH (For Europe, Australia and China except A-chassis models or with regular rear body)
- (T10) GY/2 : Rear fog lamp (RHD A-chassis models for Europe)
- (T12) GY/2 : Rear fog lamp (LHD A-chassis models for Europe)

Chassis harness

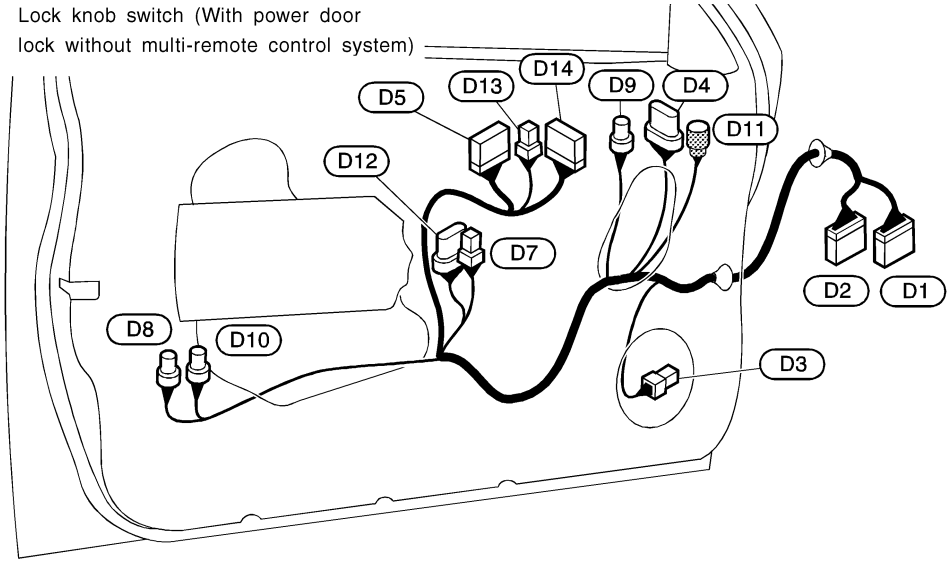
- (C2) W/6 : To (M112) (With ABS)
- (C3) GY/5 : Fuel level sensor unit and fuel pump
- (C5) SB/4 : To rear wheel sensor sub-harness (For ABS) (4WD models and 2WD models with LT30 rear brake)
- (C6) GY/2 : Rear wheel sensor (For ABS) (2WD models with LT26B rear brake)
- (C7) SB/8 : To (T4)
- (C9) W/16 : To (M121)
- (C10) BR/2 : High-mounted stop lamp (With guard bar for the Middle East)

HEL889B

LHD MODELS

Front Door Harness (LH side)

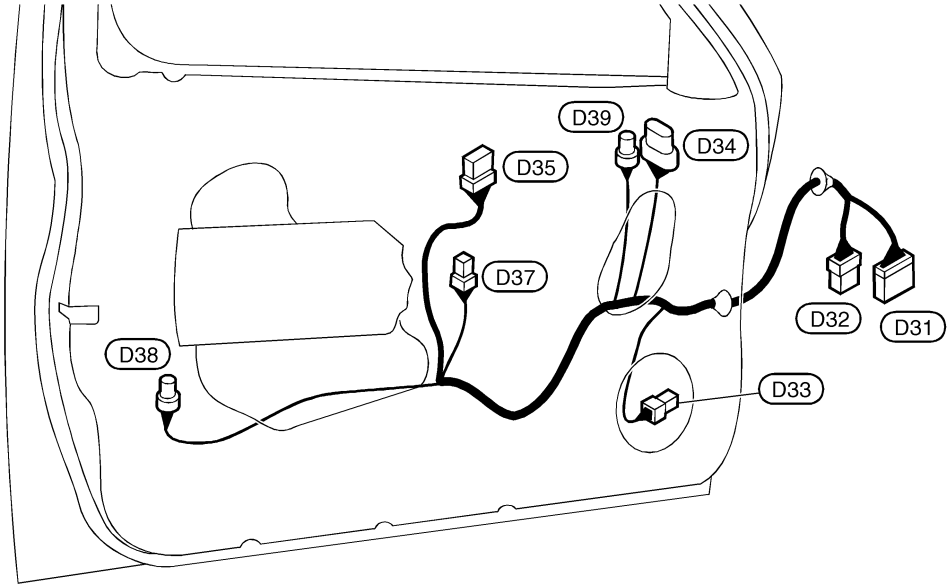
- D1 W/20 : To M3
- D2 W/12 : To M4 (With power window)
- D3 BR/2 : Front speaker
- D4 GY/5 : Door mirror actuator (With power door mirror except for the Middle East)
- D5 W/16 : Power window main switch
- D7 B/2 : Power window regulator (With power window without interruption detection function)
- D8 GY/2 : Lock knob switch (With power door lock without multi-remote control system)
- D9 BR/3 : Door mirror defogger (With power window for Europe)
- D10 SB/4 : Door lock actuator (With multi-remote control system)
- D11 GY/3 : Door mirror actuator (With power door mirror for the Middle East)
- D12 SB/6 : Power window regulator (With power window with interruption detection function)
- D13 W/3 : Power window main switch (With power window with interruption detection function)
- D14 W/10 : Door mirror remote control switch



HEL811B

RHD MODELS

- D31 W/20 : To M49
- D32 W/6 : To M50 (With power window)
- D33 BR/2 : Front speaker
- D34 GY/5 : Door mirror actuator (With power door mirror)
- D35 W/8 : Power window sub-switch (With power window)
- D37 B/2 : Power window regulator (With power window)
- D38 SB/4 : Door lock actuator (With power door lock)
- D39 BR/3 : Door mirror defogger (With power door mirror)

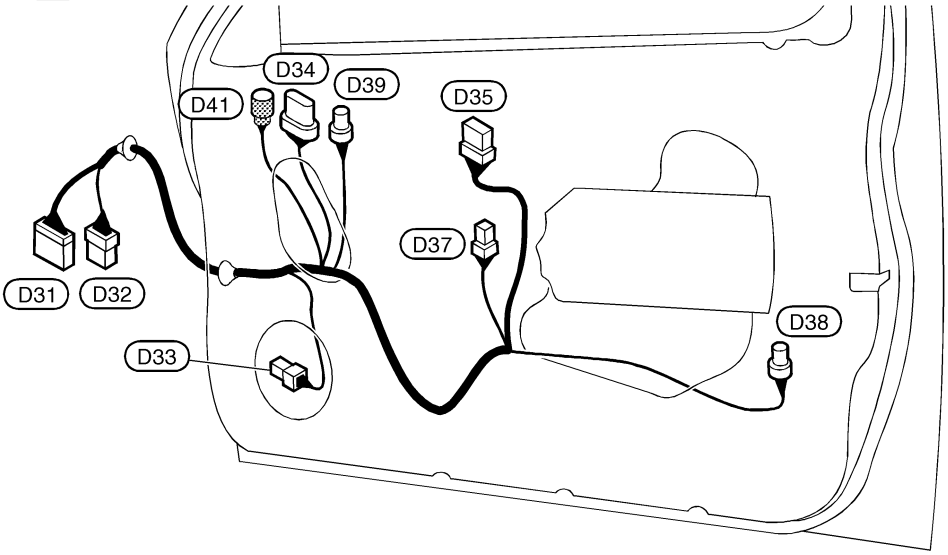


HEL885B

Front Door Harness (RH side)

LHD MODELS

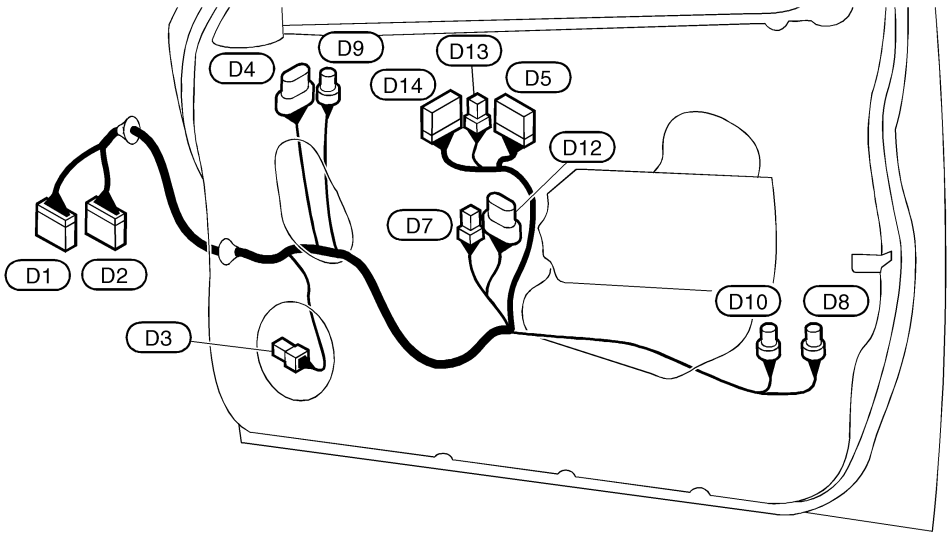
(D31) W/20 : To (M49)
(D32) W/6 : To (M50) (With power window)
(D33) BR/2 : Front speaker
(D34) GY/5 : Door mirror actuator (With power door mirror except for the Middle East)
(D35) W/8 : Power window sub-switch (With power window)
(D37) B/2 : Power window regulator (With power window)
(D38) SB/4 : Door lock actuator (With power door lock)
(D39) BR/3 : Door mirror defogger (With power door mirror except for the Middle East)
(D41) BR/3 : Door mirror actuator (With power door mirror for the Middle East)



HEL812B

RHD MODELS

(D1) W/20 : To (M3)
(D2) W/12 : To (M4) (With power window)
(D3) BR/2 : Front speaker
(D4) GY/5 : Door mirror actuator (With power window)
(D5) W/16 : Power window main switch
(D7) B/2 : Power window regulator (With power window except for Europe)
(D8) GY/2 : Lock knob switch (With power door lock without multi-remote control system)
(D9) BR/3 : Door mirror defogger (With power window for Europe)
(D10) SB/4 : Door lock actuator (With multi-remote control system)
(D12) SB/6 : Power window regulator (With power window for Europe)
(D13) W/3 : Power window main switch (With power window for Europe)
(D14) W/10 : Door mirror remote control switch (With power window)

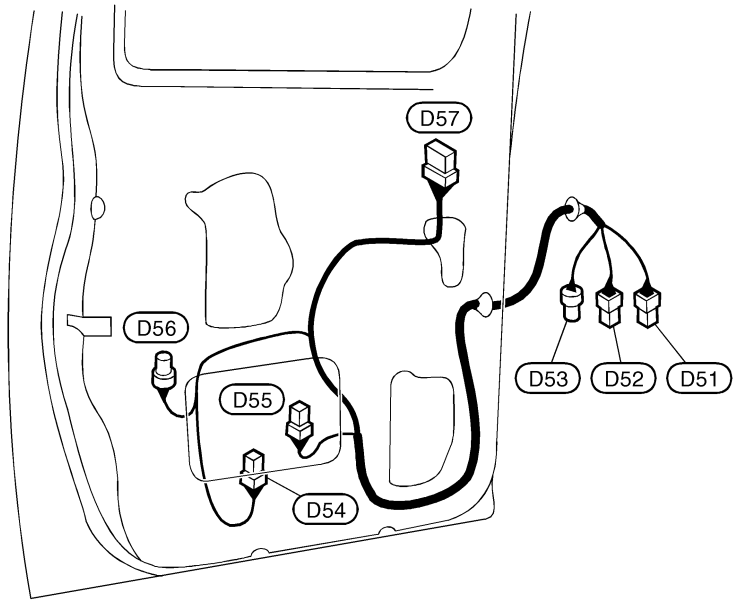


HEL884B

LH SIDE

Rear Door Harness

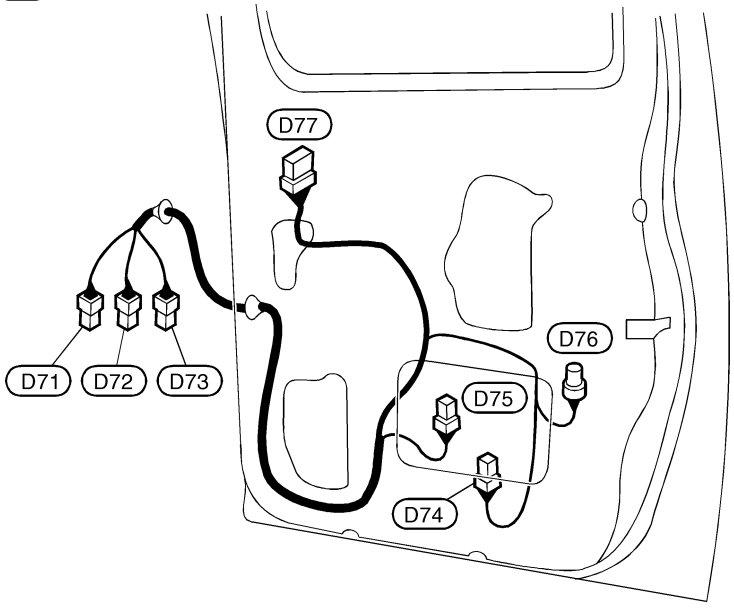
D51 W/3 : To M107
D52 W/2 : To M106
D53 BR/2 : To M105
D54 B/2 : Rear speaker
D55 B/2 : Power window regulator
D56 SB/4 : Door lock actuator
D57 W/8 : Power window sub-switch



HEL886B

RH SIDE

D71 W/3 : To M115
D72 W/2 : To M114
D73 BR/2 : To M113
D74 B/2 : Rear speaker
D75 B/2 : Power window regulator
D76 SB/4 : Door lock actuator
D77 W/8 : Power window sub-switch



HEL887B

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

Code	Section	Wiring Diagram Name
AAC/V	EC	IACV-AAC Valve
ABS	BR	Anti-lock Brake System
A/C, A	HA	Auto Air Conditioner
A/C, M	HA	Manual Air Conditioner
ACC/SW	EC	Accelerator Switch
A/CCOT	EC	Air Conditioner Control
AIRREG	EC	IACV-Air Regulator
APS	EC	Accelerator Position Sensor
AT/IND	EL	A/T Indicator
AUDIO	EL	Audio
BACK/L	EL	Back-up Lamp
BA/FTS	AT	BATT/A/T Fluid Temperature Sensor and TCM Power Supply
BOOST	EC	Turbocharger Boost Sensor
BRK/SW	EC	Brake Switch Signal
CHARGE	EL	Charging System
CHIME	EL	Warning Chime
CHOKE	EC	Automatic Choke
CIGAR	EL	Cigarette Lighter
CKPS	EC	Crankshaft Position Sensor
CLOCK	EL	Clock
CMPS	EC	Camshaft Position Sensor
COOL/F	LC, EC	Cooling Fan Control
DEF	EL	Rear Window Defogger and Mirror Defogger
DIMDIP	EL	Headlamp — With Dim-dip Lamp System
D/LOCK	EL	Power Door Lock
DTRL	EL	Headlamp — With Daytime Light System
ECMRLY	EC	ECM Relay
ECTS	EC	Engine Coolant Temperature Sensor
EGRC/V	EC	EGRC — Solenoid Valve
EGVC/V	EC	EGR Volume Control Valve
ENGSS	AT	Engine Speed Signal
FCUT	EC	Fuel Cut Solenoid Valve
FICD	EC	IACV-FICD Solenoid Valve
FIPOT	EC	ISC-FI Pot
FPCM	EC	Fuel Pump Control Module
F/PUMP	EC	Fuel Pump

Code	Section	Wiring Diagram Name
GLOW	EC	Quick-glow System
H/AIM	EL	Headlamp Aiming Control
HEATER	HA	Heater
HEATUP	EC	Heat up Switch
H/LAMP	EL	Headlamp
HLC	EL	Headlamp Washer
HO2S	EC	Heated Oxygen Sensor
HORN	EL	Horn
H/SEAT	EL	Heated Seat
IATS	EC	Intake Air Temperature Sensor
IGN	EC	Ignition System
IGN/SG	EC	Ignition Signal
ILL	EL	Illumination
INJECT	EC	Injector
INJPMP	EC	Electronic Control Fuel Injection Pump
INT/L	EL	Spot Lamp
INT/V	EC	Intake Air Control Valve Control Solenoid Valve
KS	EC	Knock Sensor
LOAD	EC	Electric Load Signal
LPSV	AT	Line Pressure Solenoid Valve
MAFS	EC	Mass Air Flow Sensor
MAIN	EC, AT	Main Power Supply and Ground Circuit
METER	EL	Speedometer, Tachometer, Temp. and Fuel Gauges
MIL/DL	EC	MIL and Data Link Connectors
MIRROR	EL	Power Door Mirror
MULTI	EL	Multi-remote Control System
NATS	EL	Nissan Anti-theft System
NONDTC	AT	Non-detectable Items
O2H1B1	EC	Heated Oxygen Sensor 1 Heater
O2H2B1	EC	Heated Oxygen Sensor 2 Heater
O2S1B1	EC	Heated Oxygen Sensor 1
O2S2B1	EC	Heated Oxygen Sensor 2
OVRCSV	AT	Overrun Clutch Solenoid Valve
P/ANT	EL	Power Antenna
PGC/V	EC	EVAP Canister Purge Control Solenoid Valve
PLA	EC	Partial Load Advance Control

Code	Section	Wiring Diagram Name
PNP/SW	EC	Park/Neutral Position Switch
POWER	EL	Power Supply Routing
PRWIRE	EL	Theft Warning System Pre-wire
PST/SW	EC	Power Steering Oil Pressure Switch
R/FOG	EL	Rear Fog Lamp
ROOM/L	EL	Interior Room Lamp
SHIFT	AT	Shift Lock System
SSV/A	AT	Shift Solenoid Valve A
SSV/B	AT	Shift Solenoid Valve B
SRS	RS	Supplemental Restraint System
S/SIG	EC	Start Signal
START	EL	Starting System
STOP/L	EL	Stop Lamp
SWL/V	EC	Swirl Control Valve Control Solenoid Valve

Code	Section	Wiring Diagram Name
TAIL/L	EL	Parking, License and Tail Lamps
TCV	AT	Torque Converter Clutch Solenoid Valve
TPS	EC, AT	Throttle Position Sensor
TP/SW	EC	Throttle Position Sensor
TURN	EL	Turn Signal and Hazard Warning Lamps
VSS	EC	Vehicle Speed Sensor
VSSA/T	AT	Vehicle Speed Sensor A/T (Revolution Sensor)
VSSMTR	AT	Vehicle Speed Sensor Meter
WARN	EL	Warning Lamps
WINDOW	EL	Power Window
WIPER	EL	Front Wiper and Washer