<SUPPLEMENT-II>

ELECTRICAL SYSTEM

SECTION EL

MODIFICATION NOTICE:
Wiring diagrams have been changed.

CONTENTS

WIRING DIAGRAM REFERENCE CHART

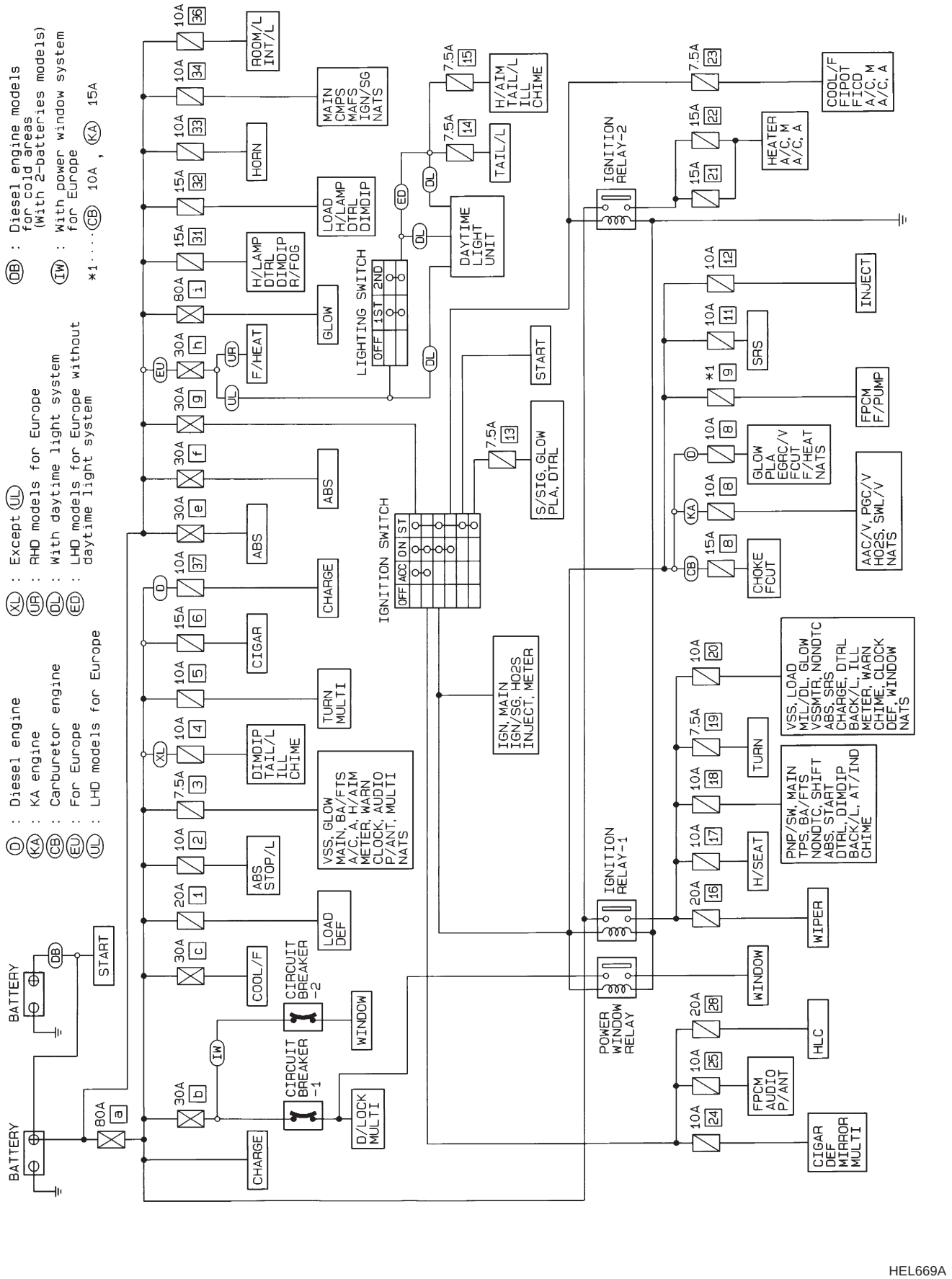
Supplemental Restraint System (SRS) ''AIR BAG'' and ''SEAT BELT PRE-TENSIONER''

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. Spiral Cable and wiring harnesses (except ''SEAT BELT PRE-TENSIONER'') covered with yellow insulation either just before the harness connectors or for the complete harness are related to the SRS.**

Schematic

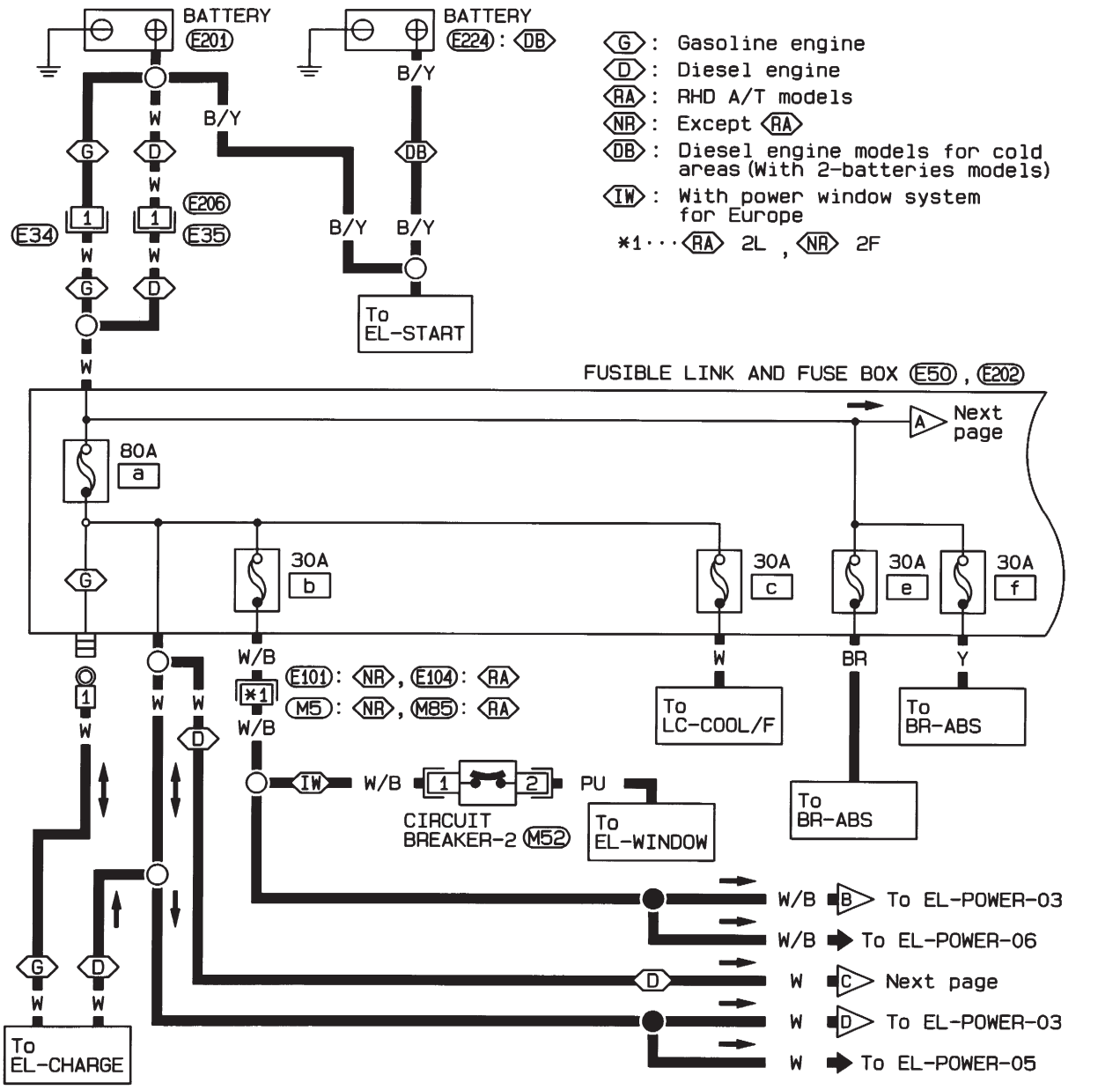


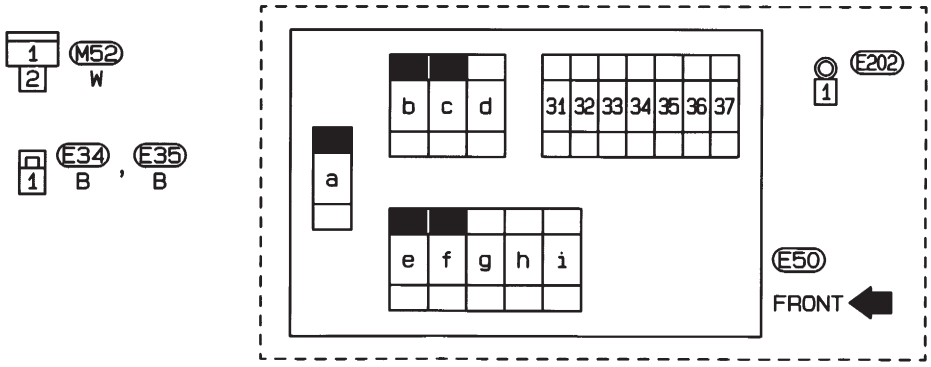
HEL669A

Wiring Diagram — POWER —

BATTERY POWER SUPPLY — IGNITION SWITCH IN ANY POSITION

EL-POWER-01





Refer to last page (Foldout page).

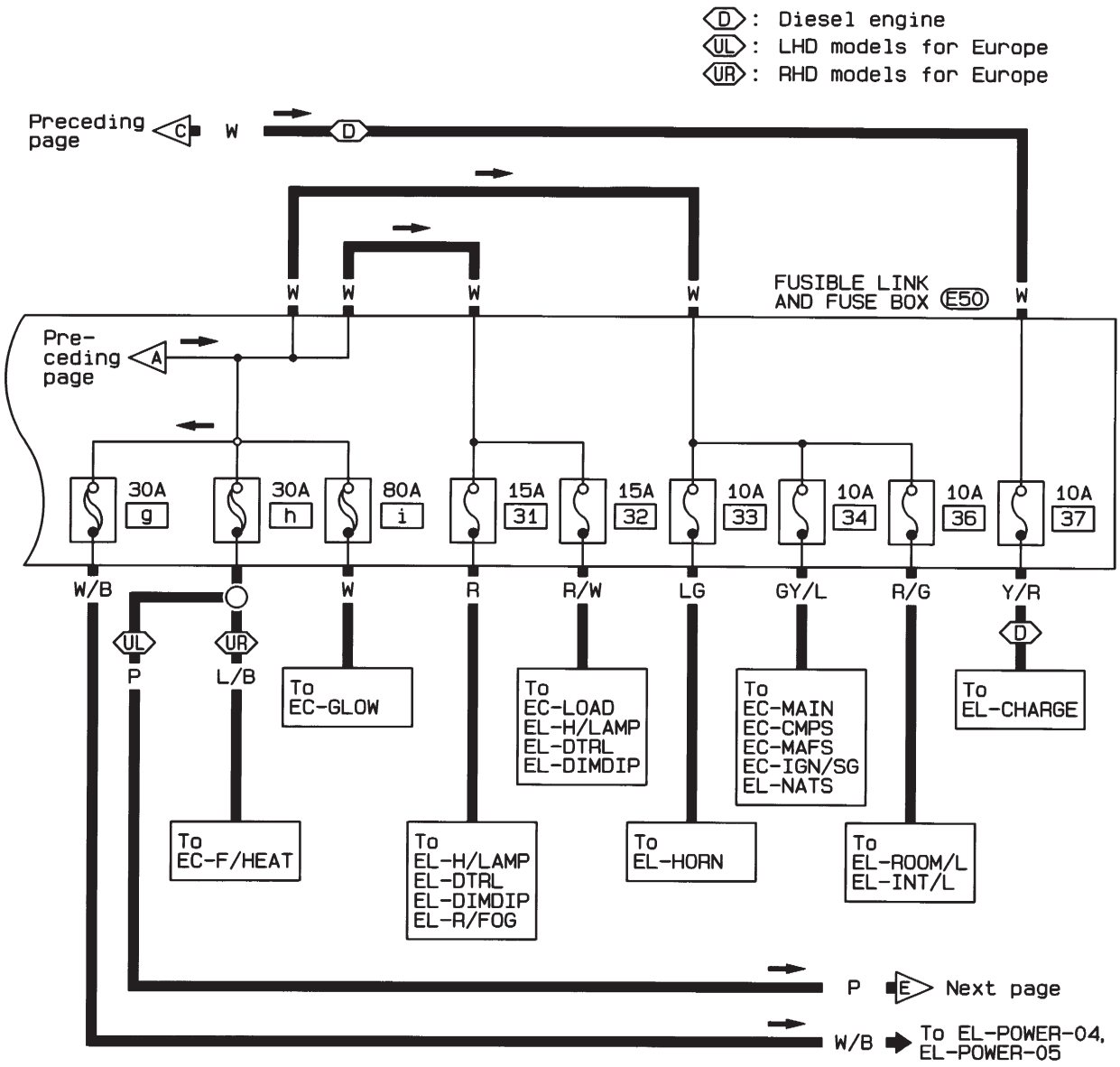
M5 , E101

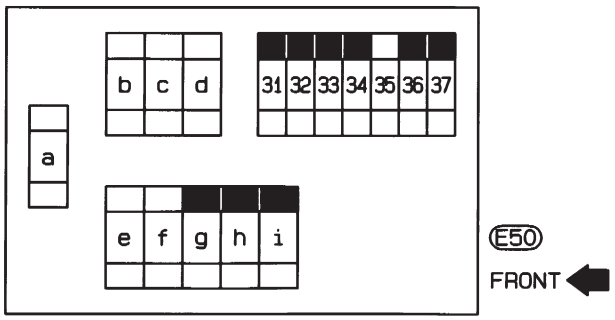
M85 , E104

HEL670A

Wiring Diagram — POWER — (Cont'd)

EL-POWER-02

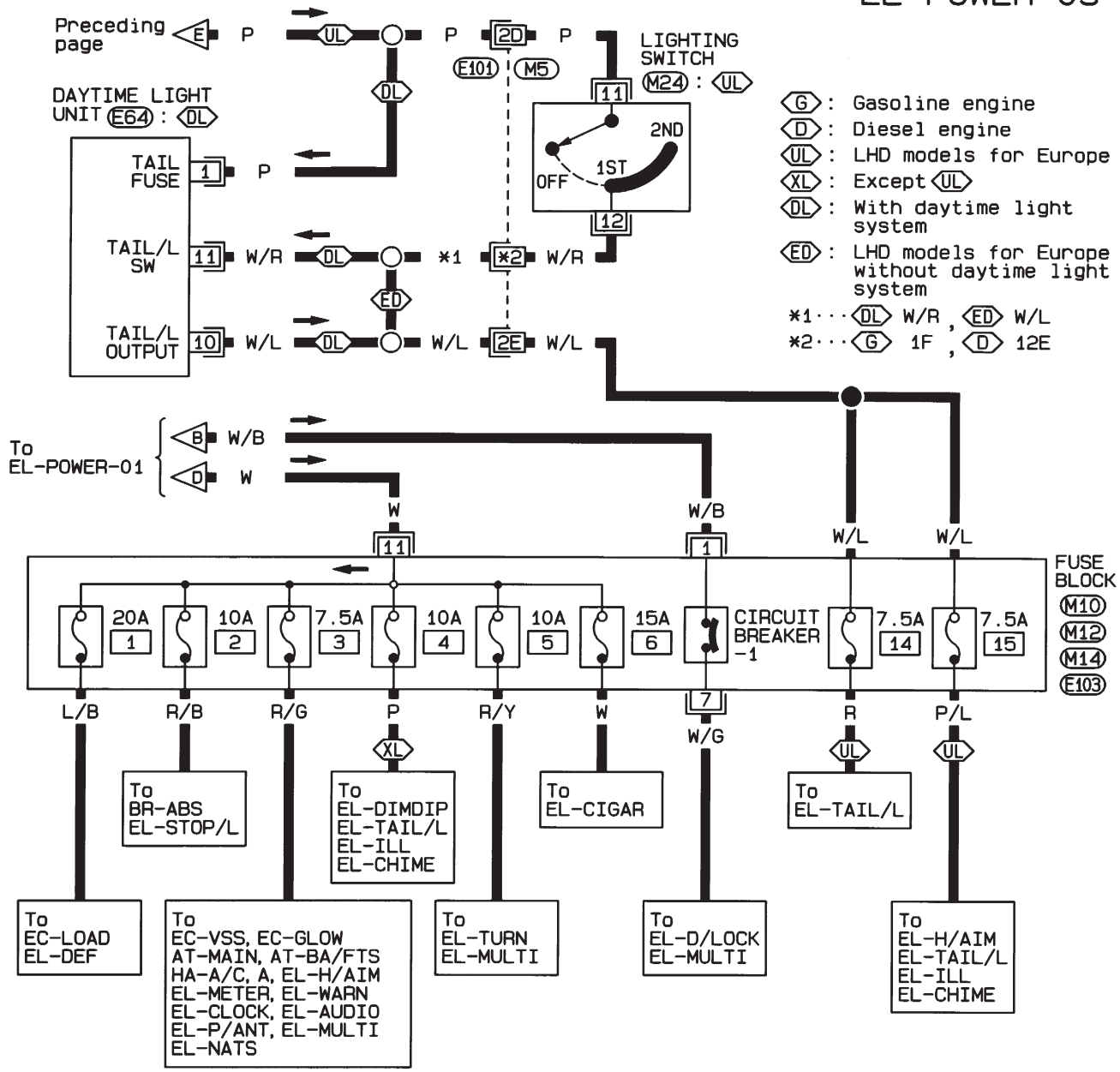


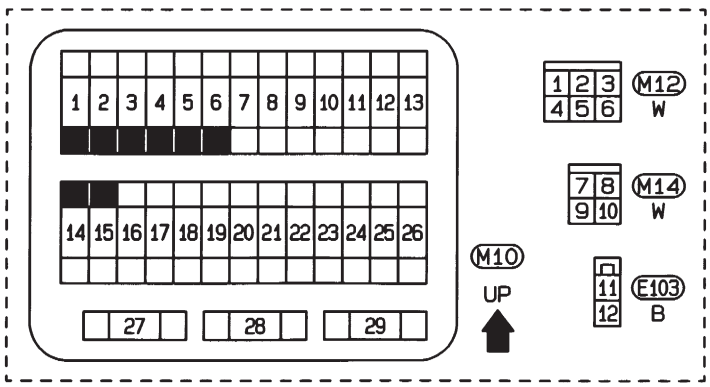


HEL671A

Wiring Diagram — POWER — (Cont'd)

EL-POWER-03





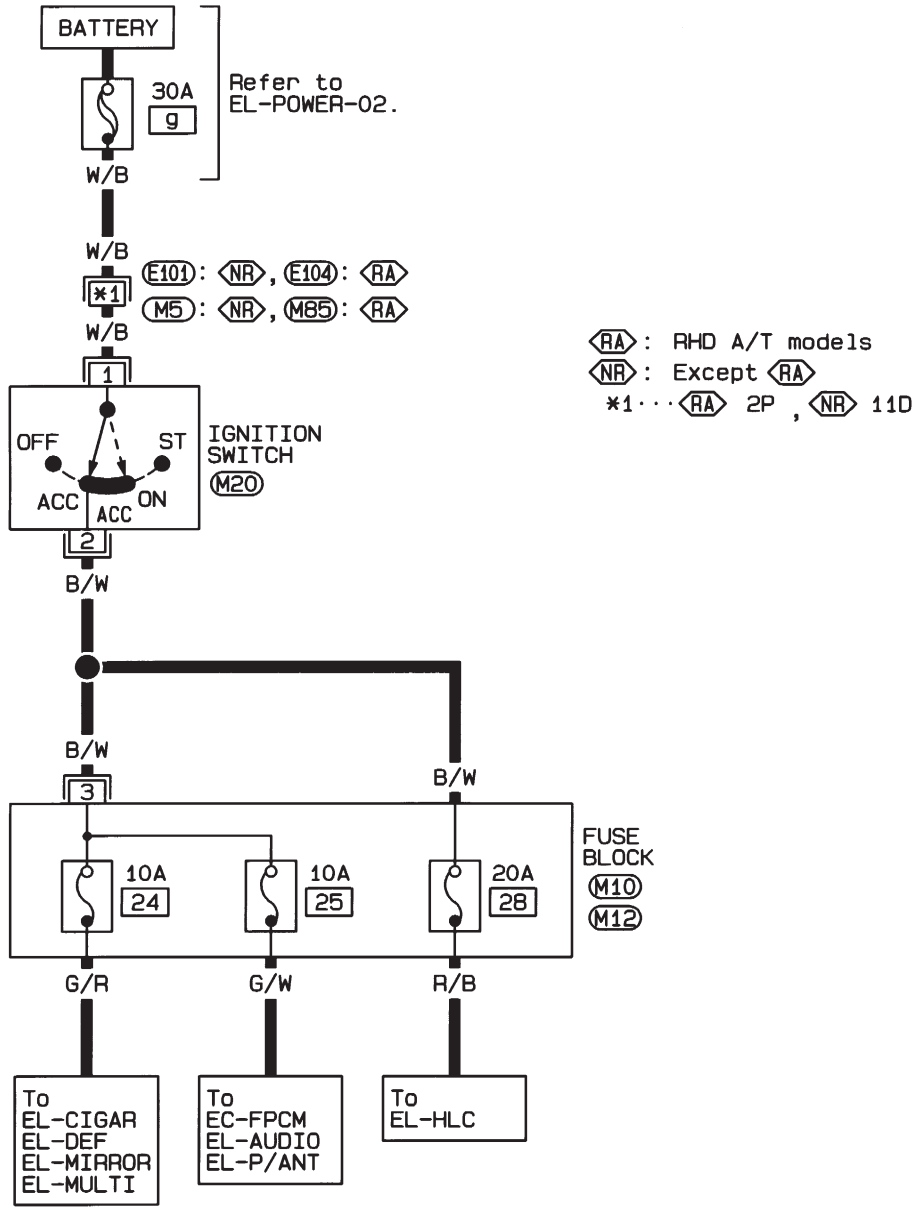
Refer to last page (Foldout page).
M5, E101

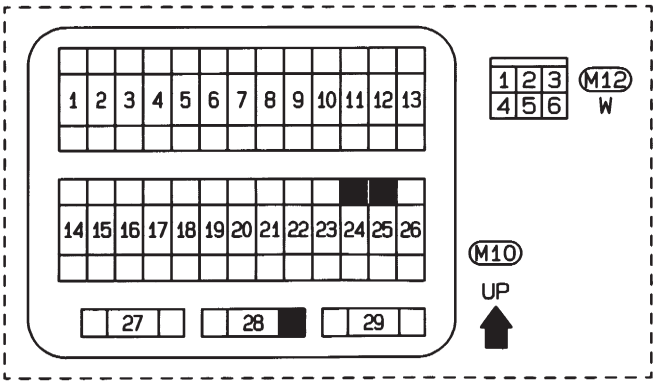
HEL672A

Wiring Diagram — POWER — (Cont'd)

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

EL-POWER-04





Refer to last page (Foldout page).

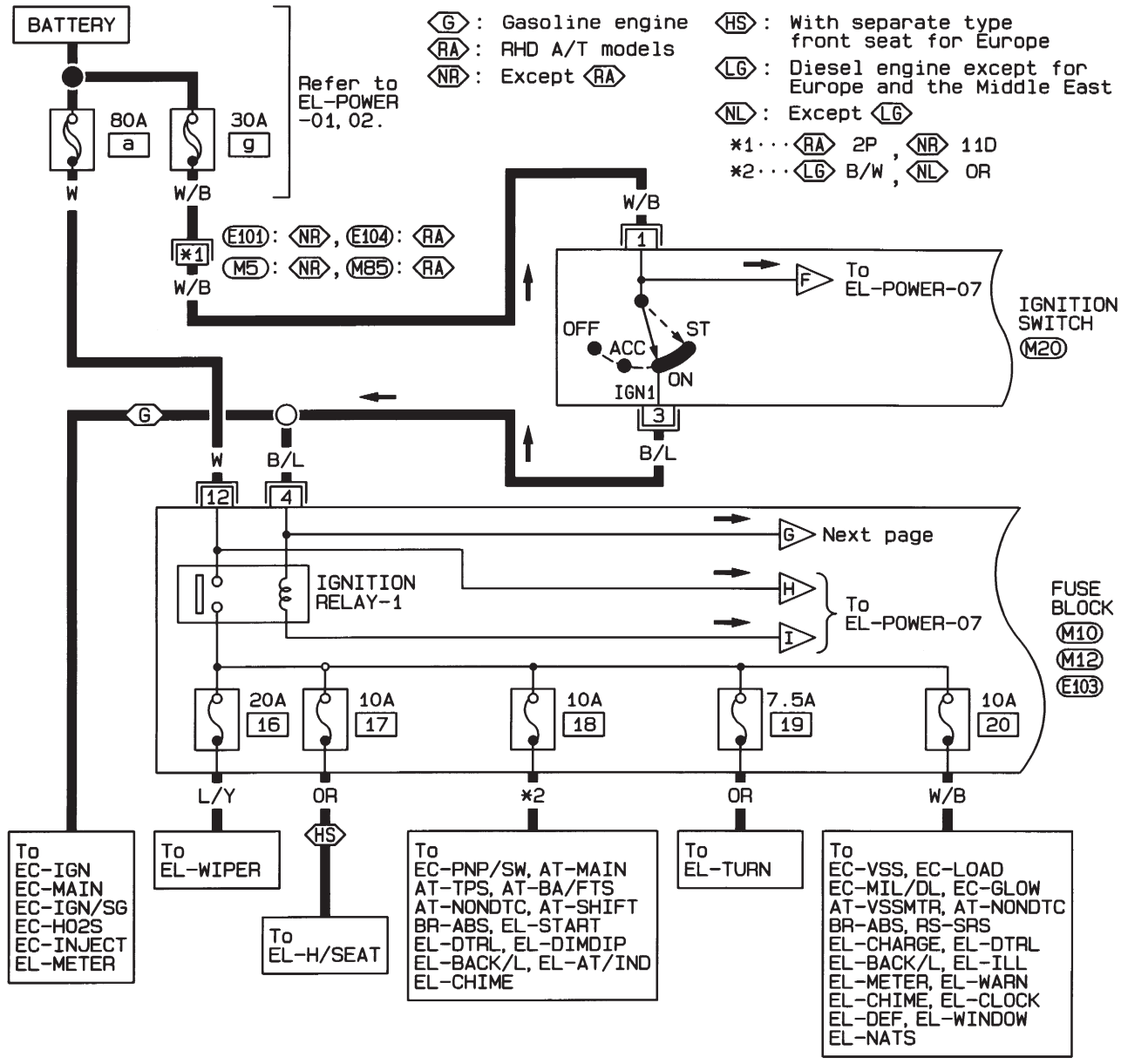
M5, E101
M85, E104

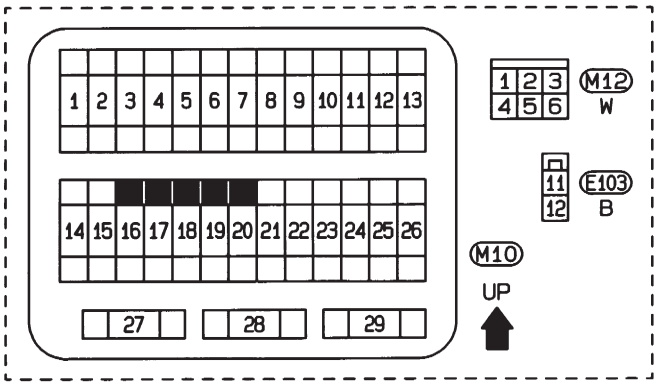
HEL673A

Wiring Diagram — POWER — (Cont'd)

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

EL-POWER-05





Refer to last page (Foldout page).

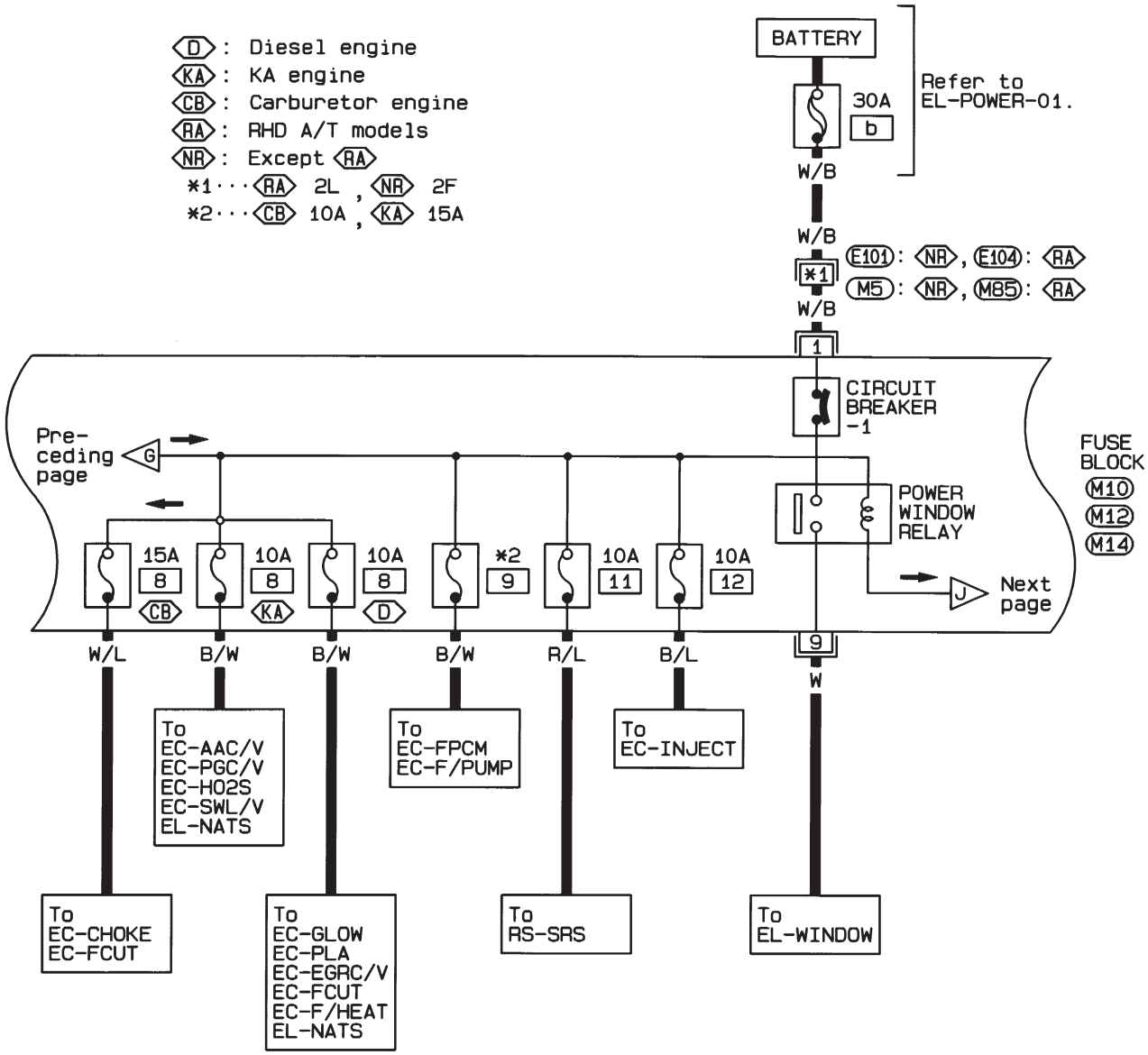
M5 , E101

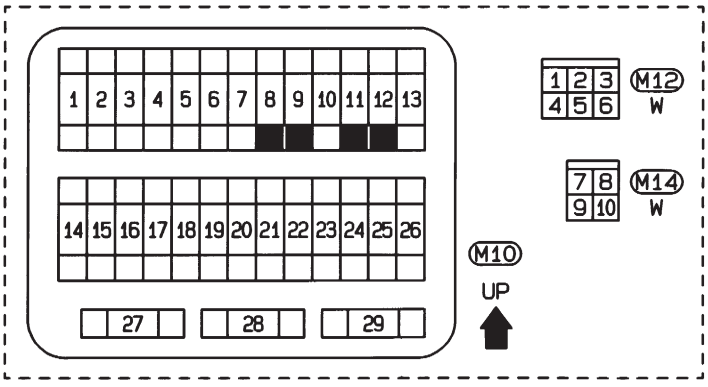
M85 , E104

HEL674A

Wiring Diagram — POWER — (Cont'd)

EL-POWER-06





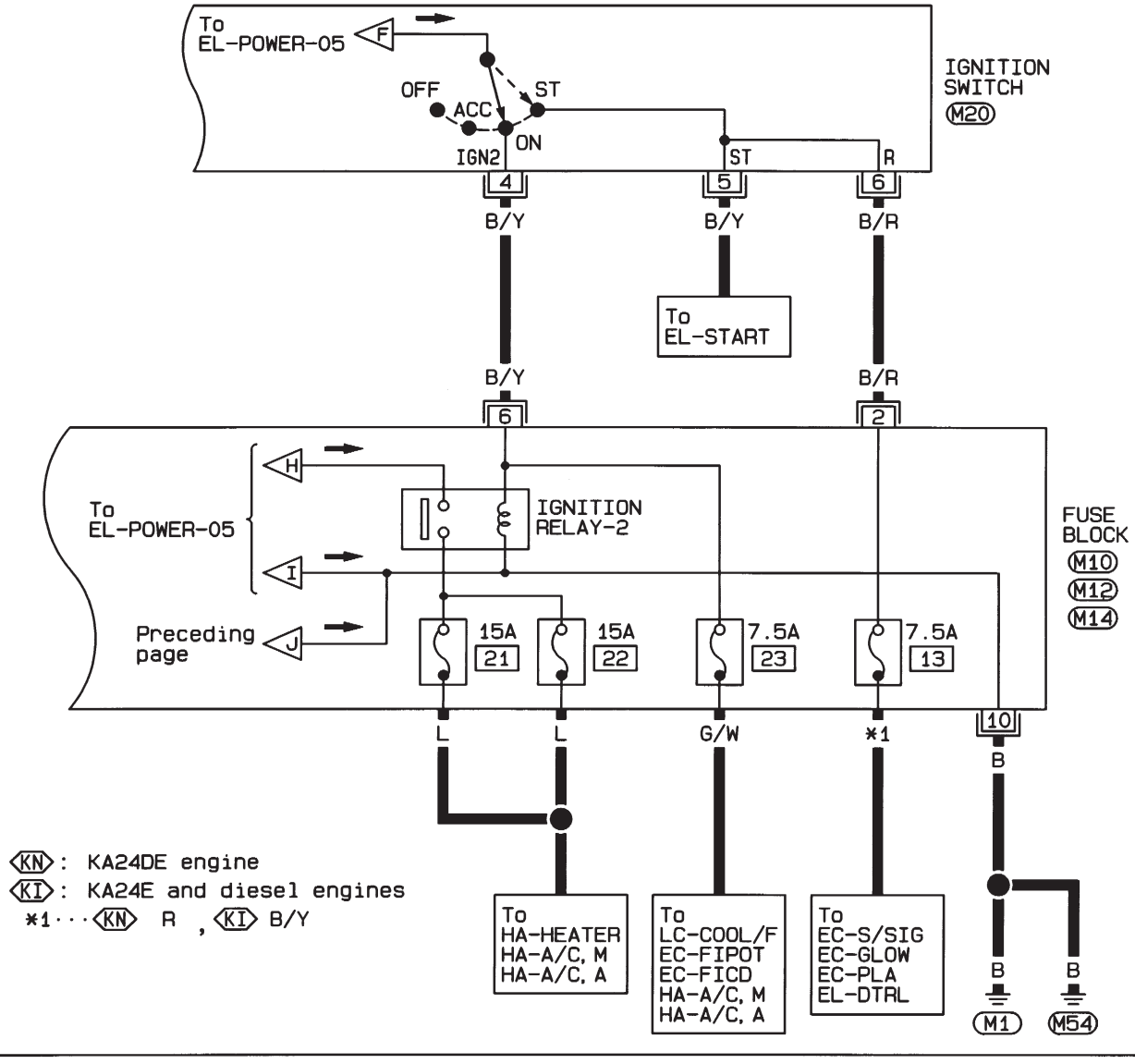
Refer to last page (Foldout page).

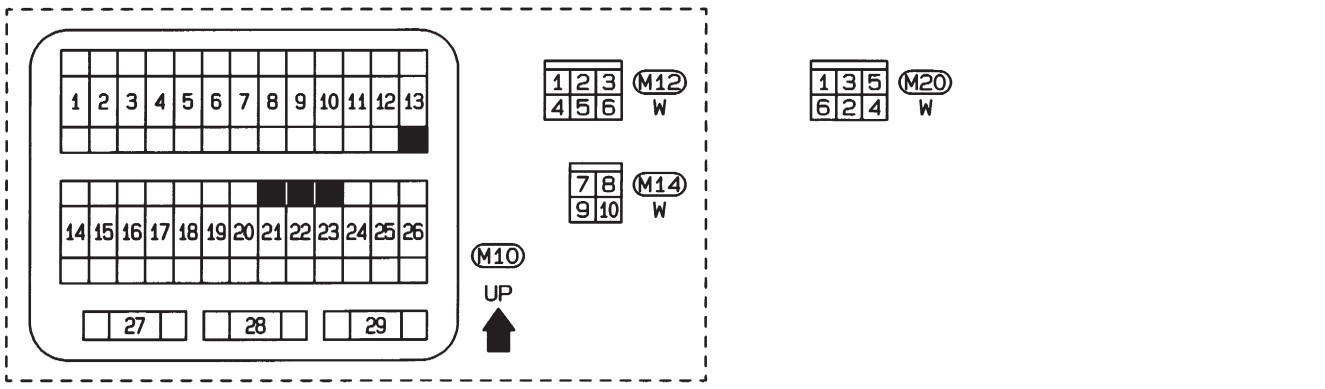
(M5), (E101), (M85), (E104)

HEL675A

Wiring Diagram — POWER — (Cont'd)

EL-POWER-07

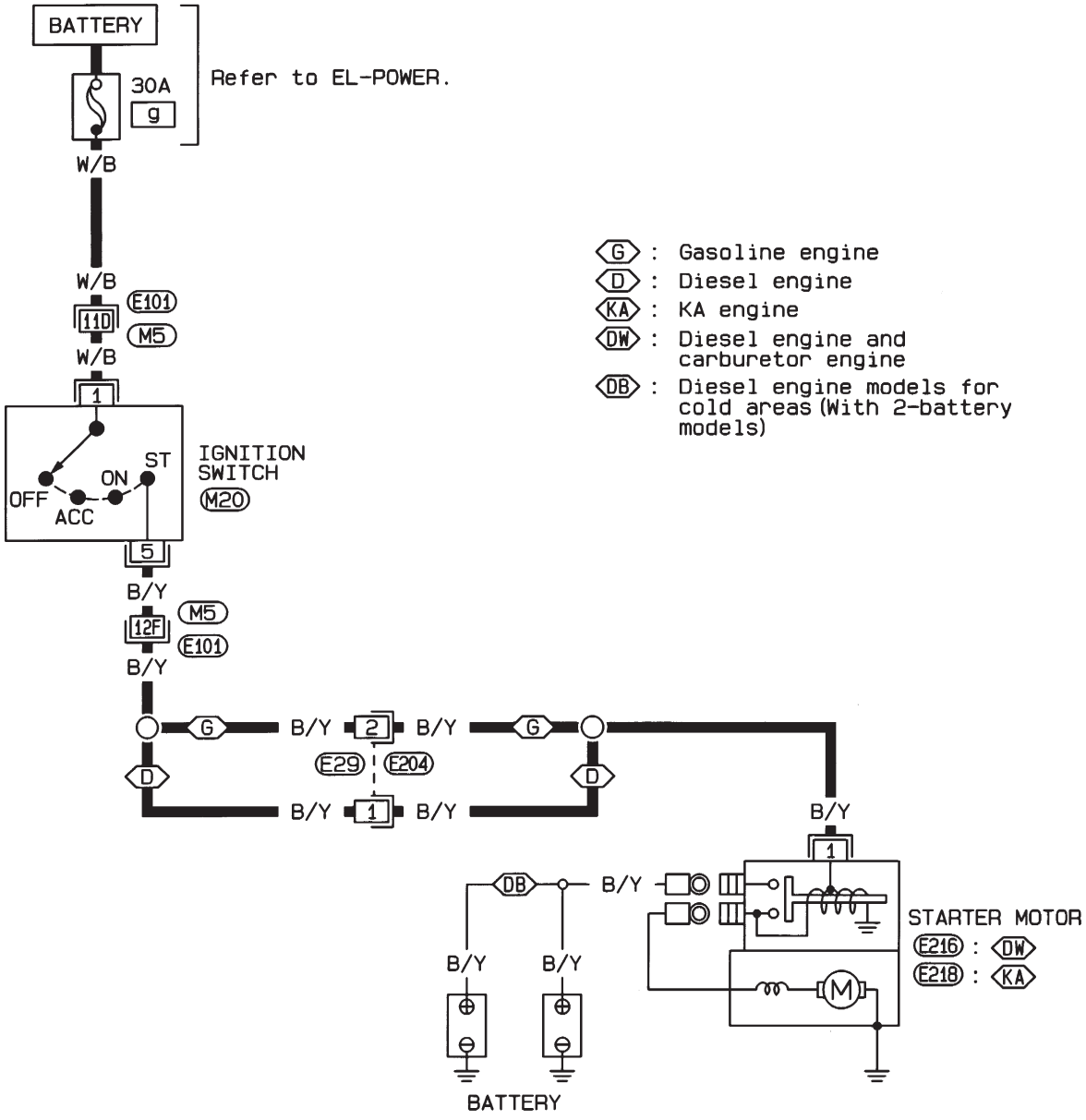




HEL676A

Wiring Diagram — START —/M/T Models

EL-START-01

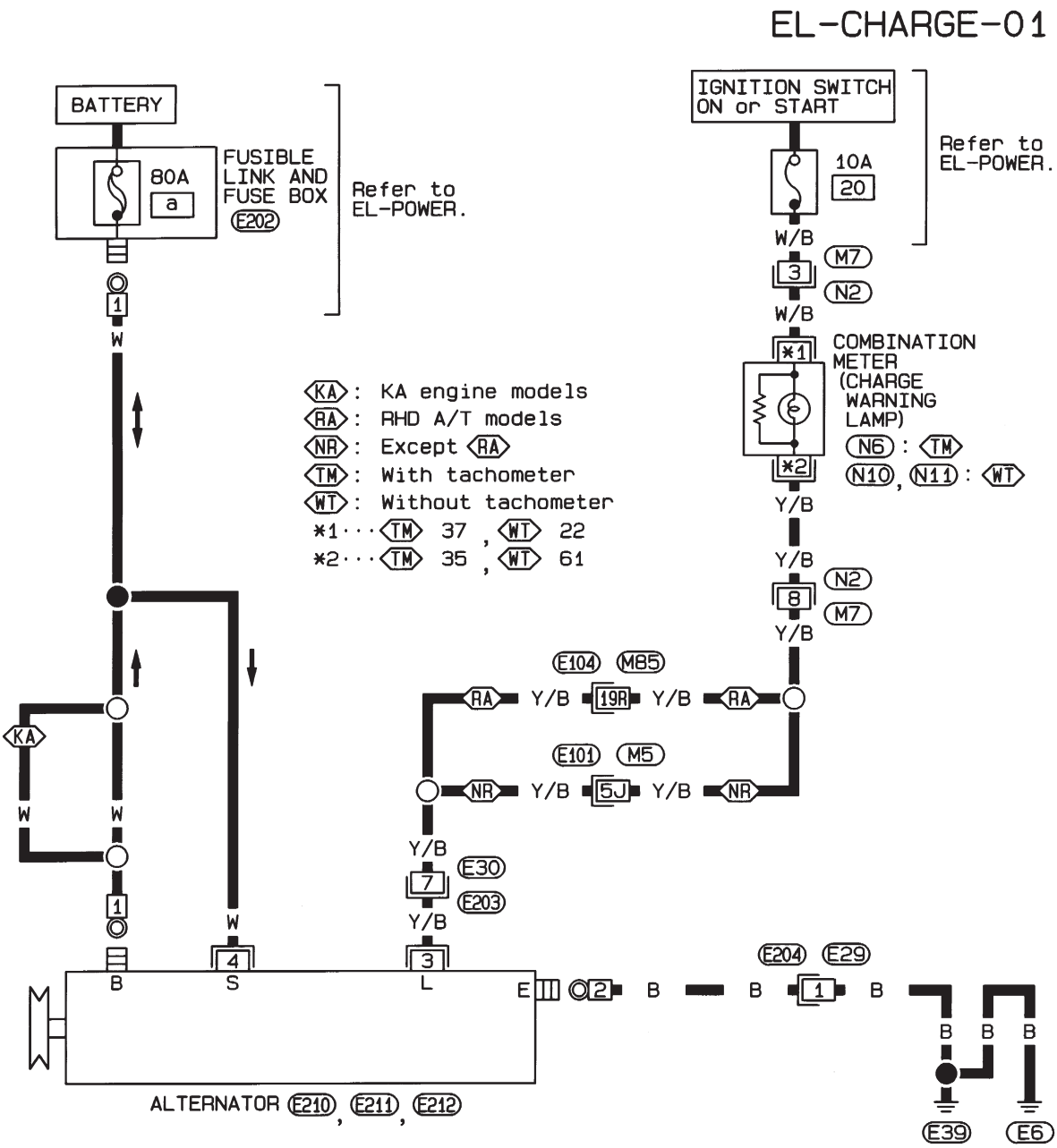


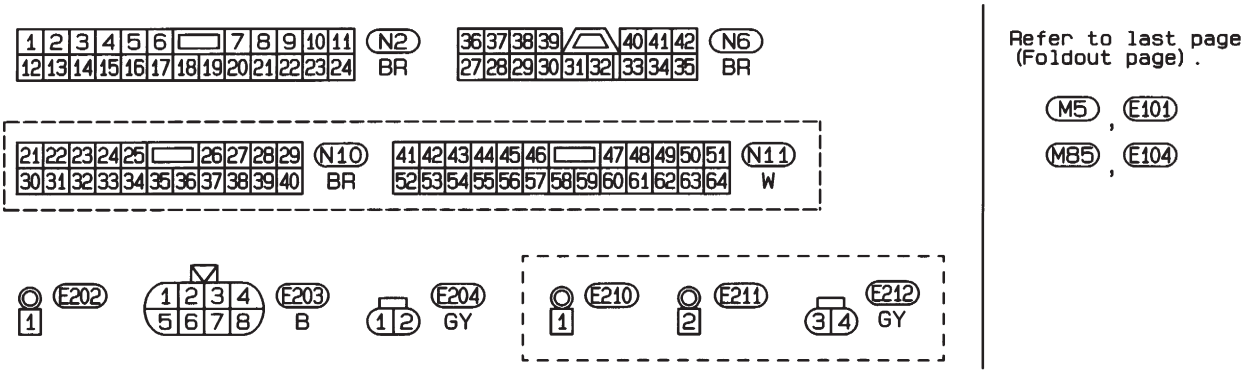
Refer to last page (Foldout page).

M5, E101

HEL677A

Wiring Diagram — CHARGE —/Gasoline Engine

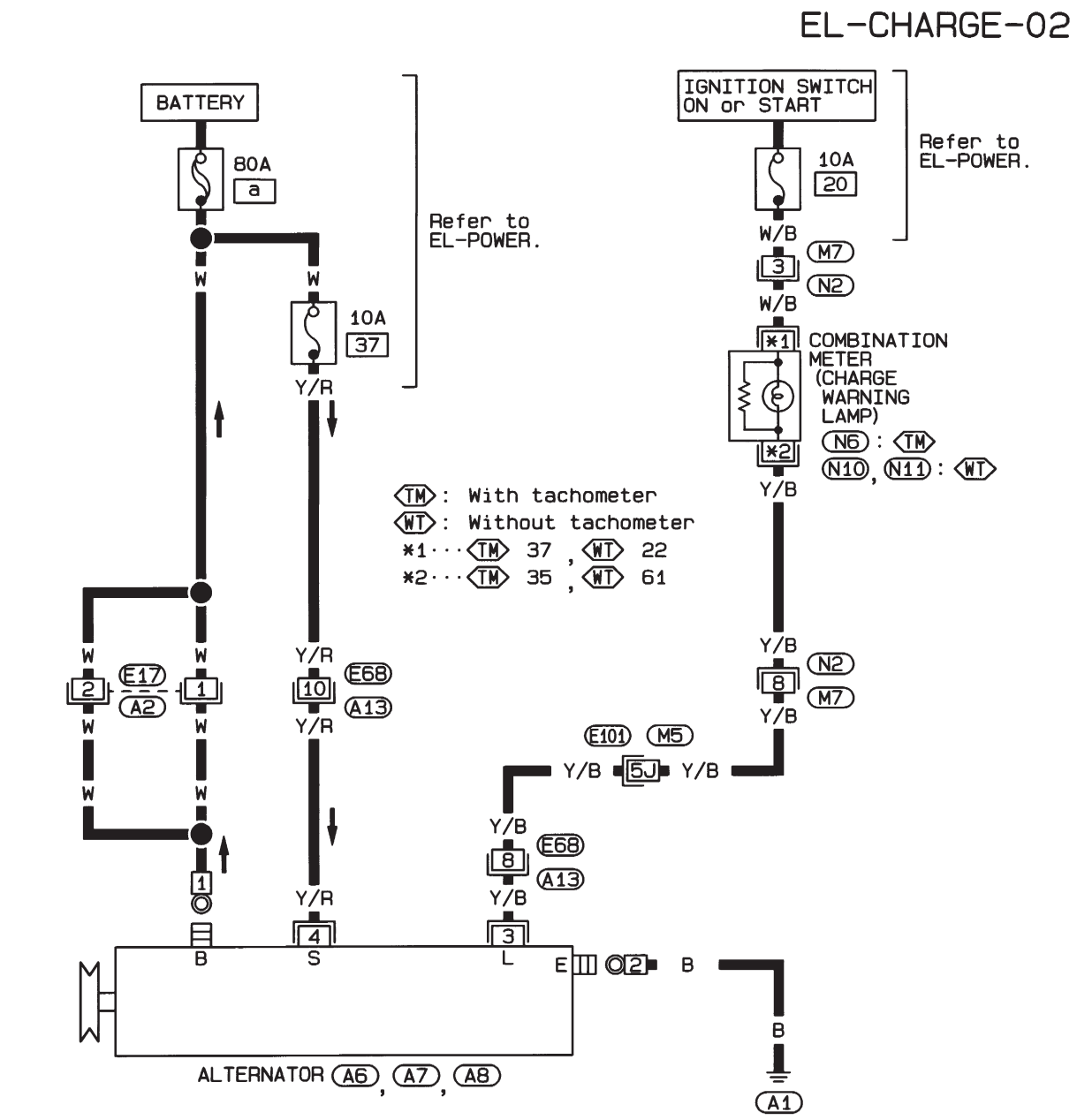


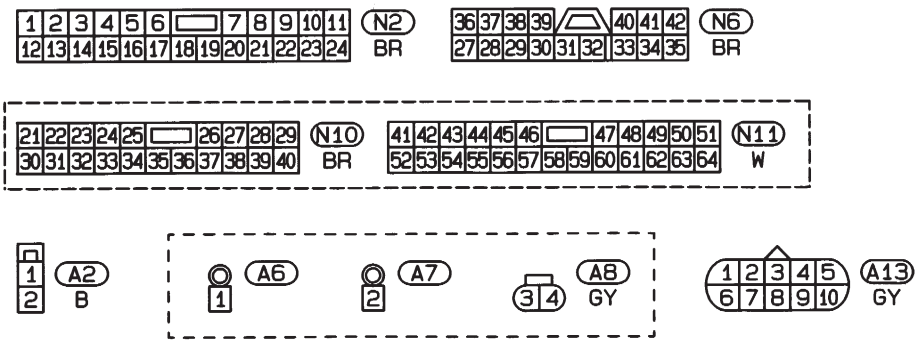


Refer to last page (Foldout page).
M5, E101
M85, E104

HEL680A

Wiring Diagram — CHARGE —/Diesel Engine





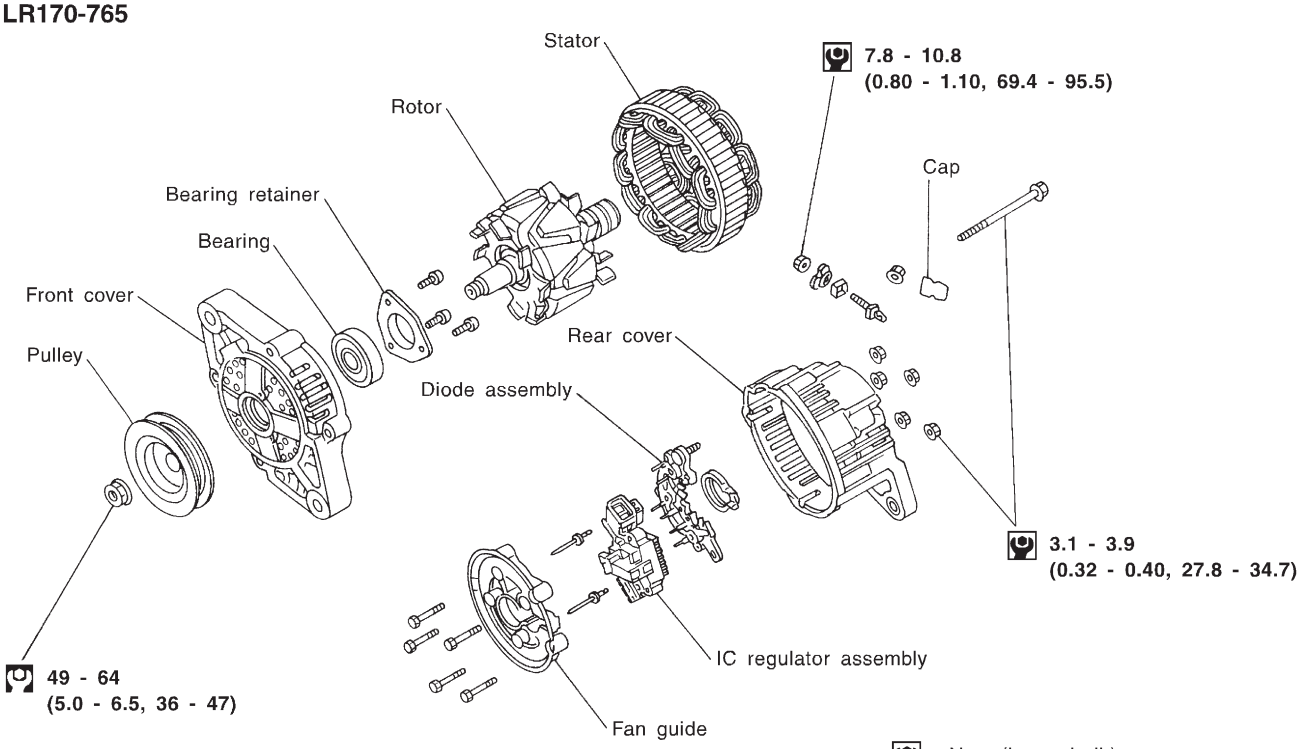
Refer to last page (Foldout page).

M5 , E101

HEL681A

Construction

SEC. 231
LR170-765



Service Data and Specifications (SDS)

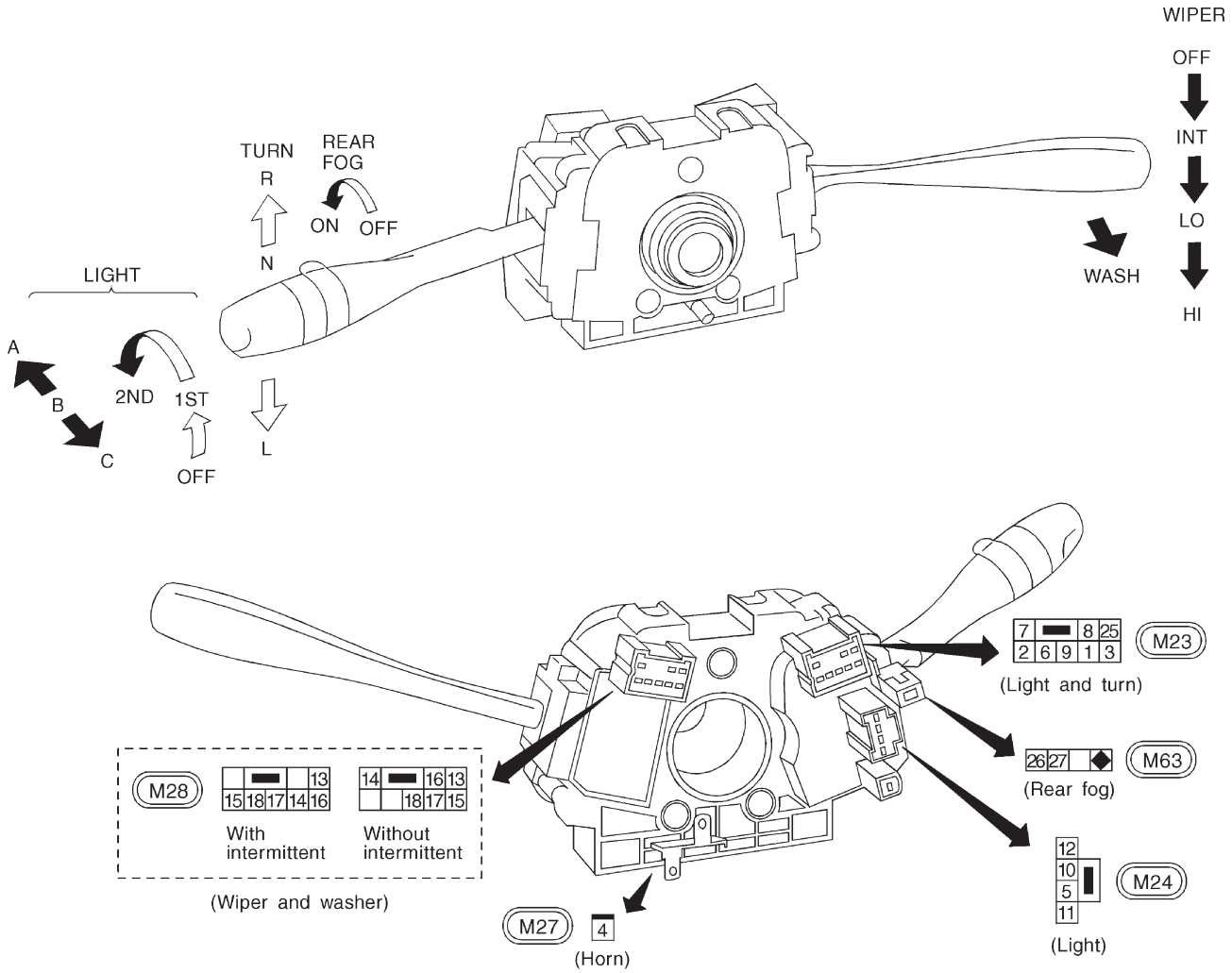
ALTERNATOR

Type		LR170-765	LR160-728F
		HITACHI	
Applied model		KA24	TD25
Nominal rating	V-A	12-70	12-60
Ground polarity		Negative	
Minimum revolution under no-load (When 13.5V is applied)	rpm	Less than 1,000	
Hot output current (When 13.5V is applied)	A/rpm	More than 17/1,300 More than 54/2,500 More than 75/5,000	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)	6.0 (0.236)	
Brush spring pressure	N (g, oz)	1.0 - 3.43 (102 - 350, 3.60 - 12.34)	
Slip ring minimum outer diameter	mm (in)	26.0 (1.024)	
Rotor (Field coil) resistance	Ω	2.58	

*: Models with power steering and air conditioner

Check

LHD MODELS



LIGHTING SWITCH

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

WIPER AND WASHER SWITCH (With intermittent)

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

WIPER AMPLIFIRE (In combination switch)

WIPER AND WASHER SWITCH (Without intermittent)

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

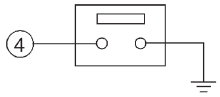
TURN SIGNAL LAMP SWITCH

	L	N	R
1	○		○
2			○
3	○		

REAR FOG LAMP SWITCH

	OFF	ON
26		○
27		○

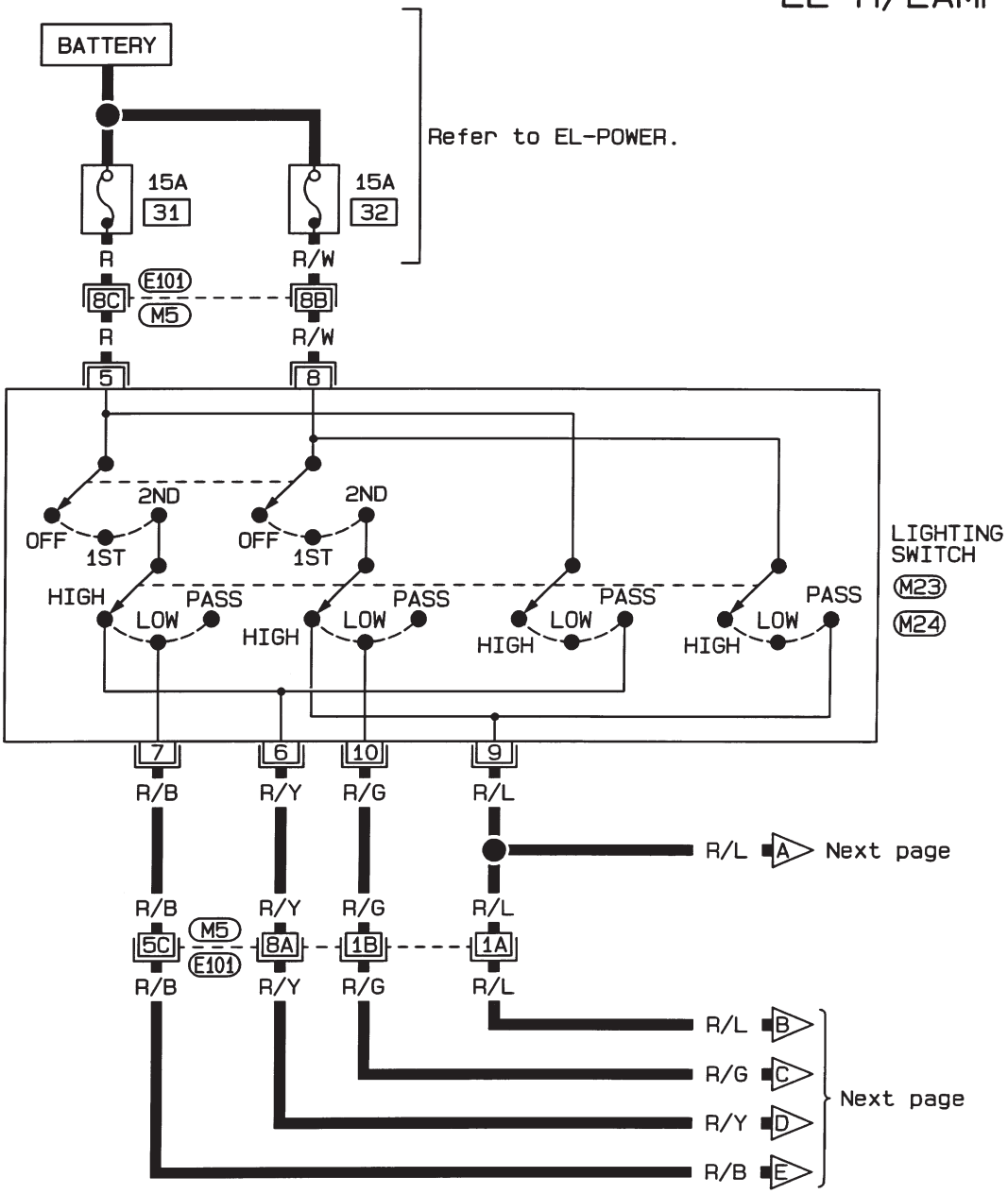
HORN SWITCH (Without air bag)

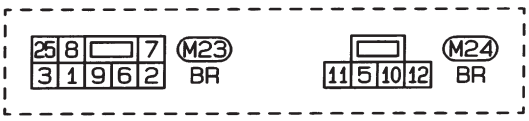


HEL682A

Wiring Diagram — H/LAMP —/LHD Models

EL-H/LAMP-01





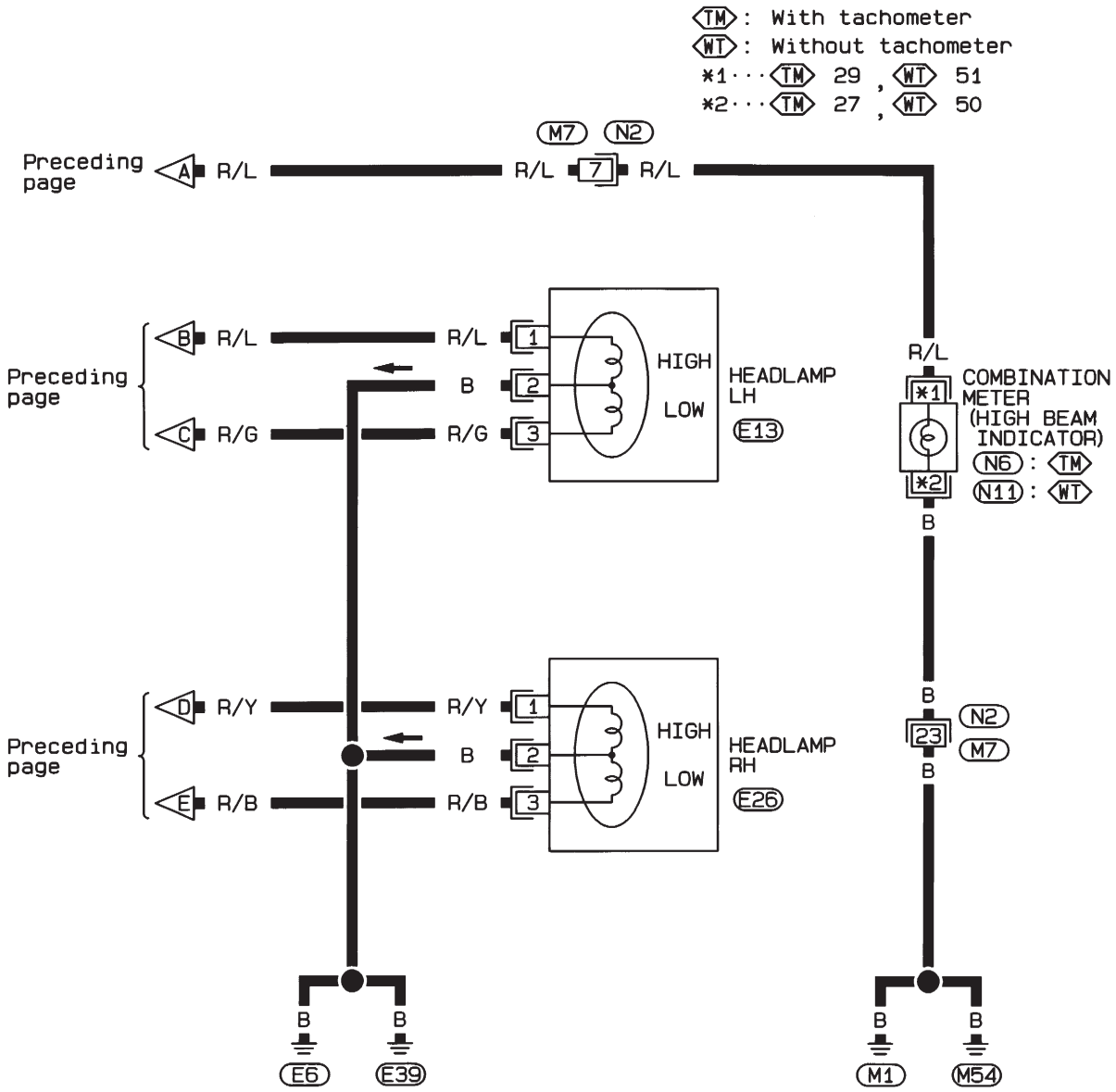
Refer to last page (Foldout page).

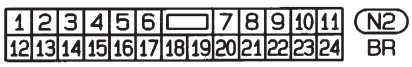
M5, E101

HEL898

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

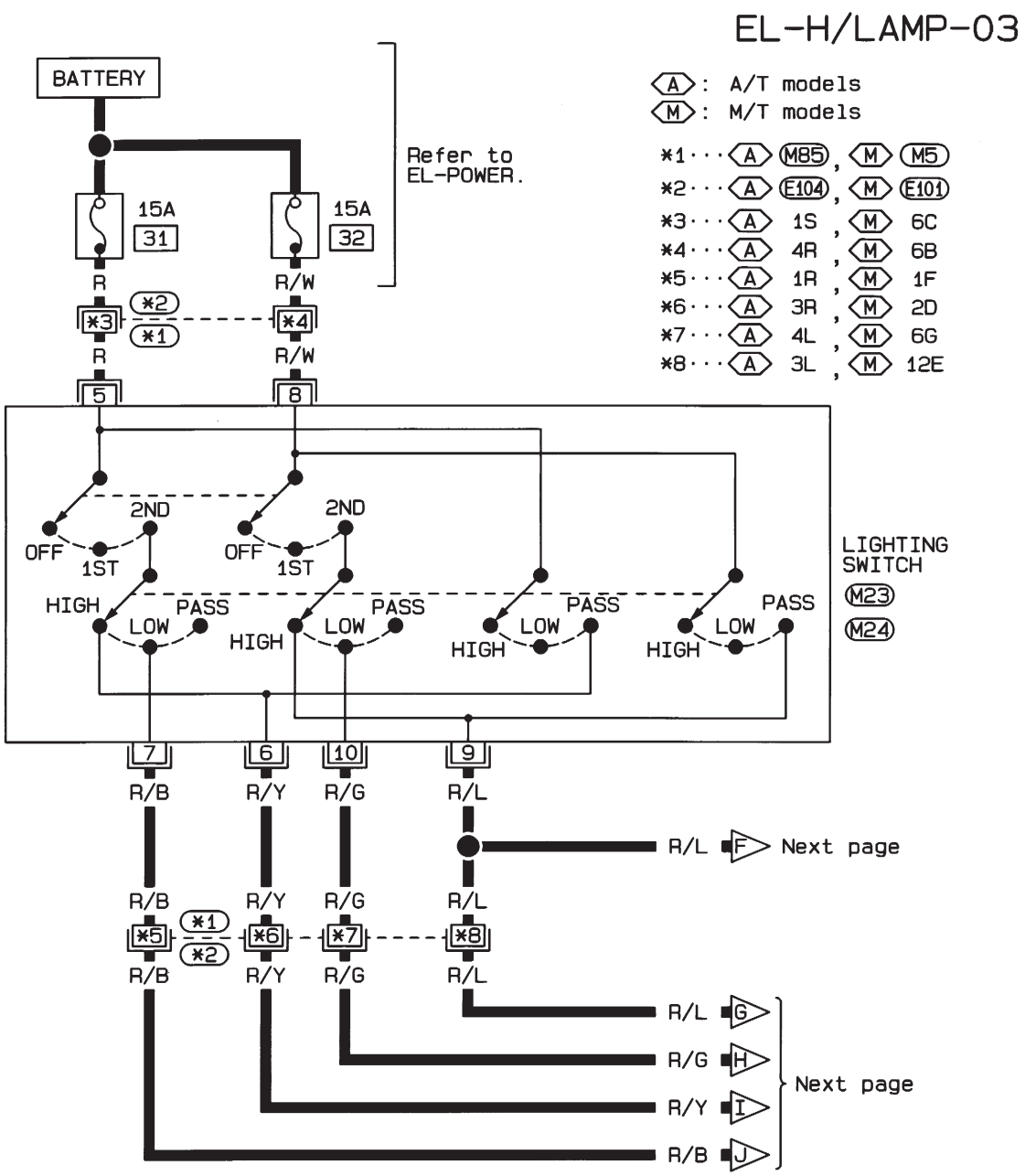
EL-H/LAMP-02





HEL684A

Wiring Diagram — H/LAMP —/RHD Models



Refer to last page (Foldout page).

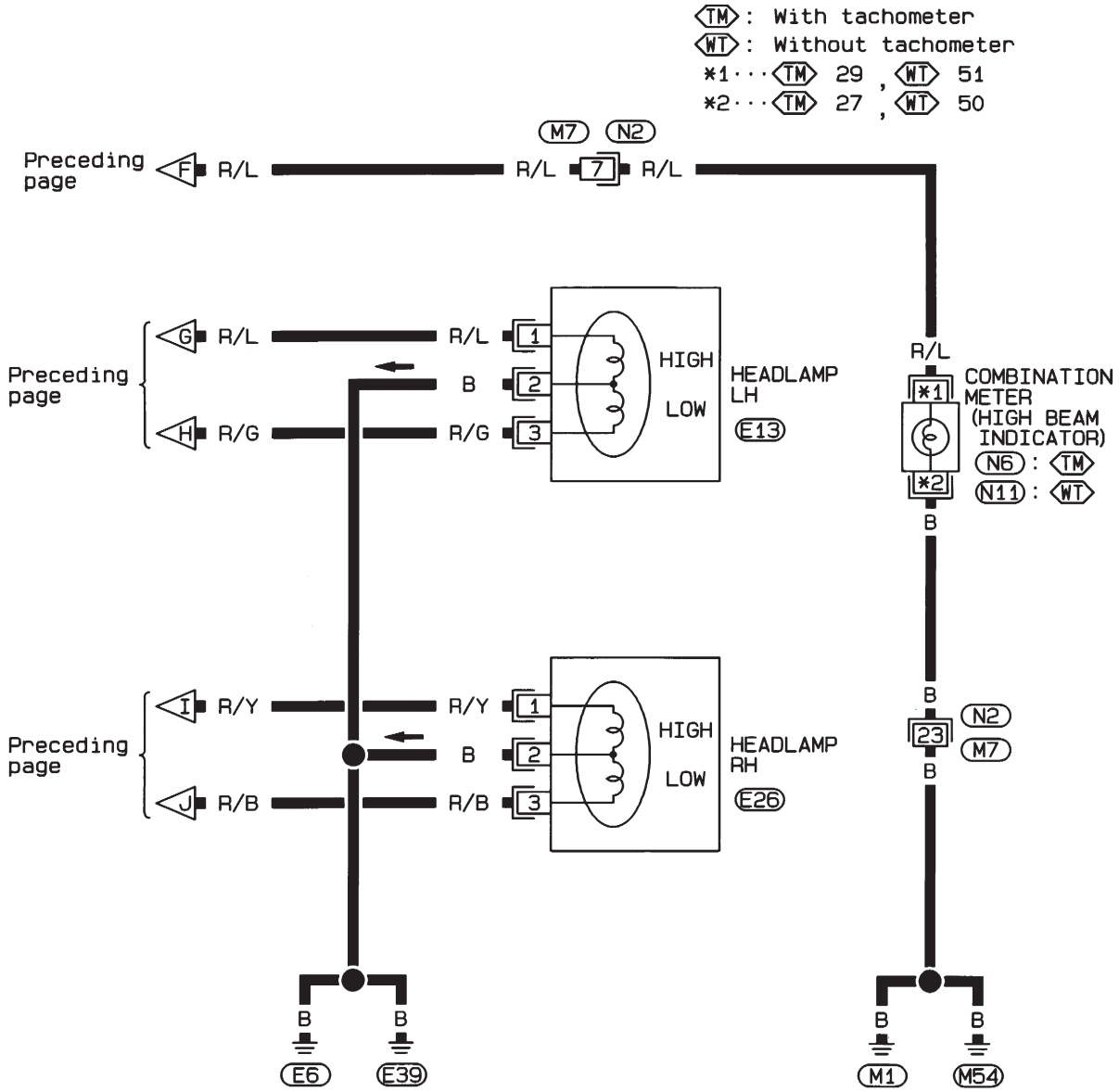
M5 , E101

M85 , E104

HEL685A

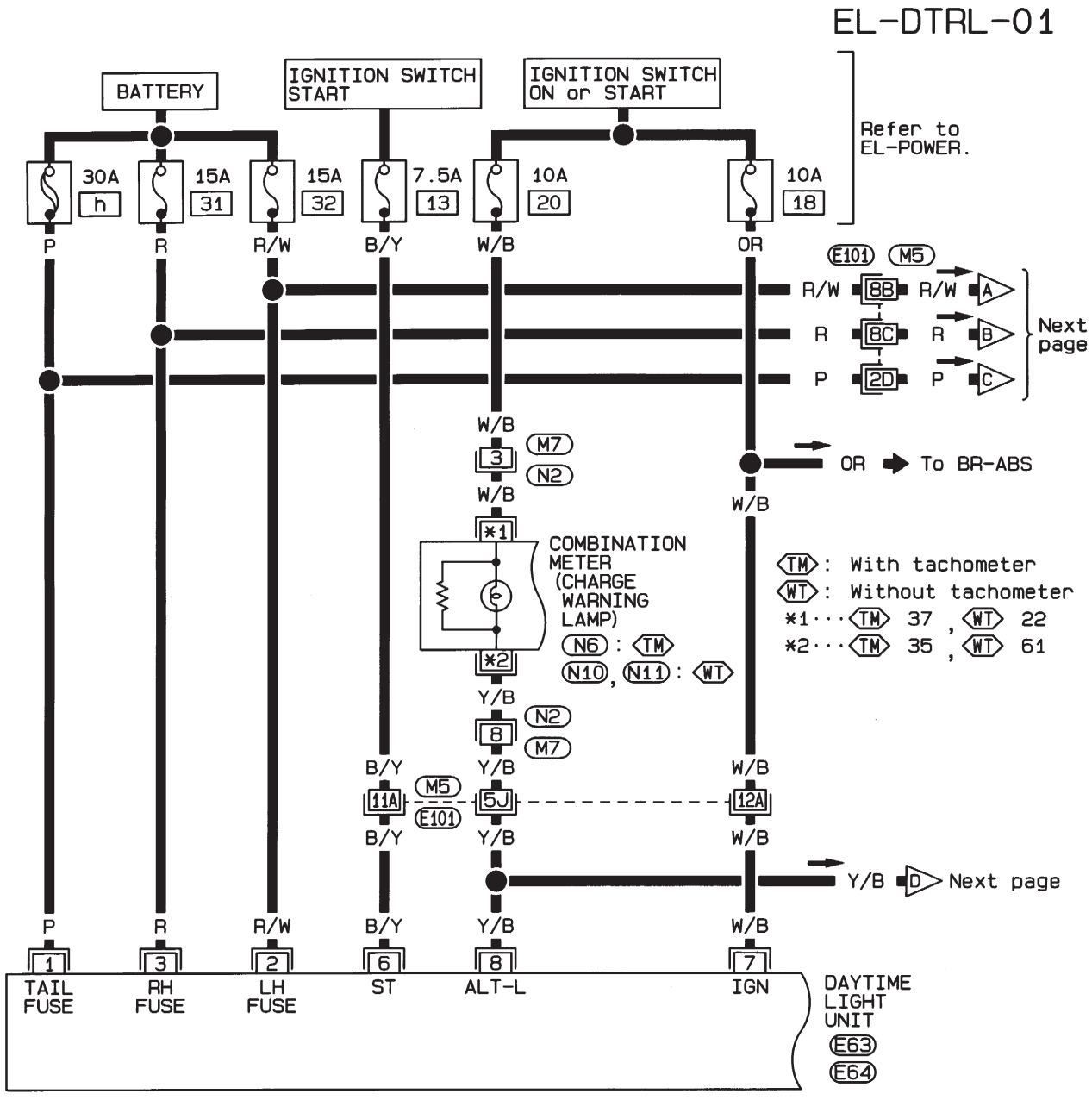
Wiring Diagram — H/LAMP —/RHD Models (Cont'd)

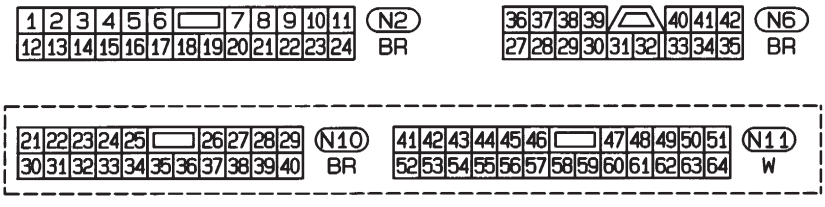
EL-H/LAMP-04

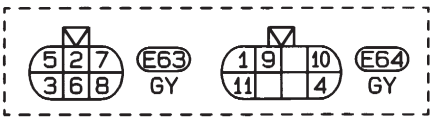


HEL686A

Wiring Diagram — DTRL —







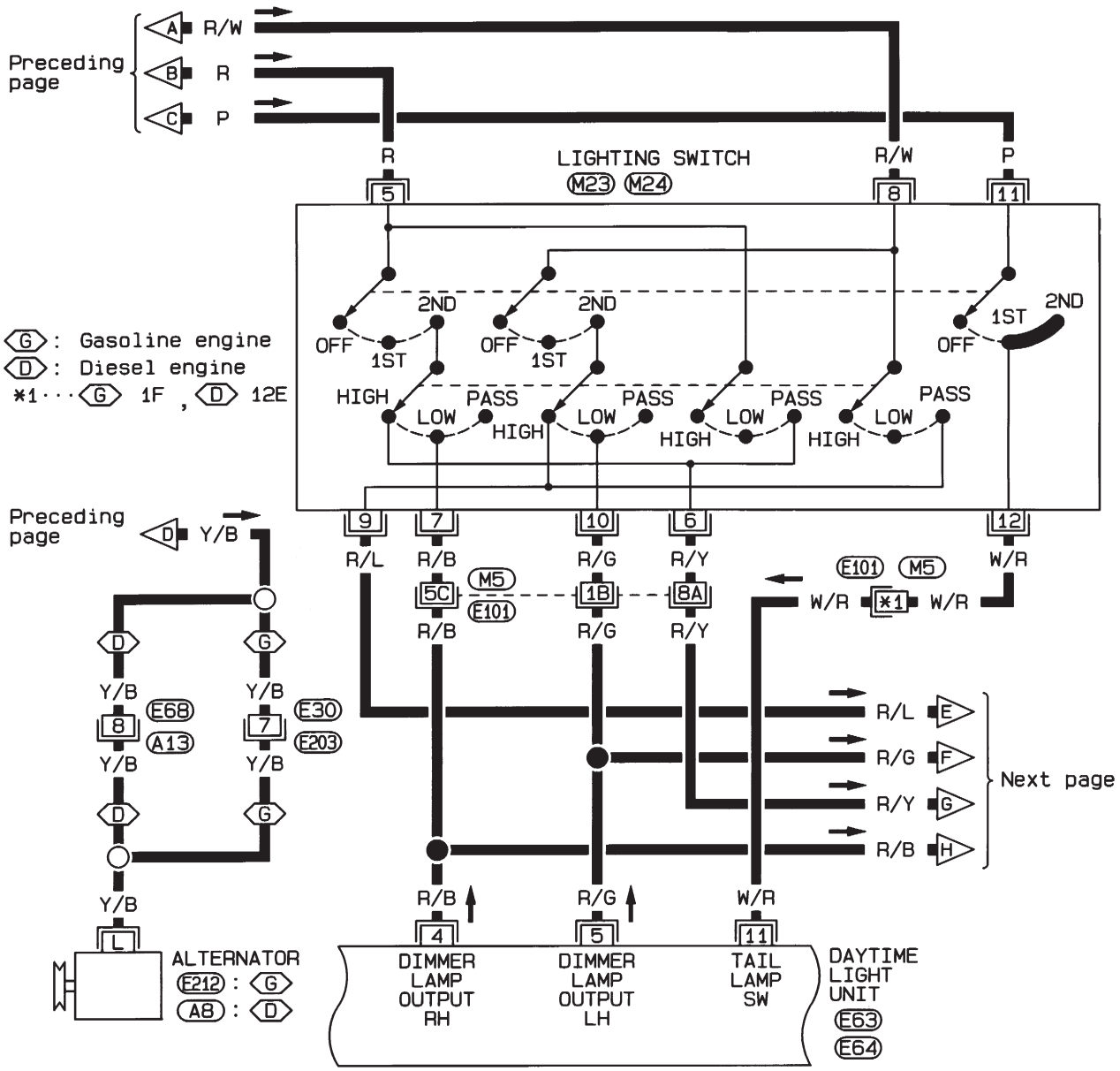
Refer to last page (Foldout page).

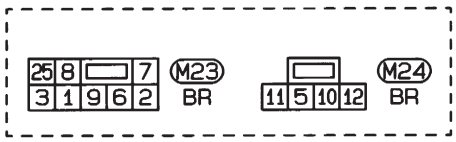
M5, E101

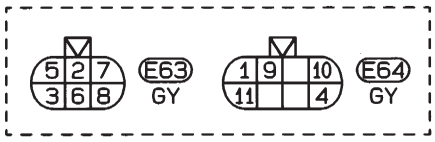
HEL687A

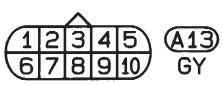
Wiring Diagram — DTRL — (Cont'd)

EL-DTRL-02









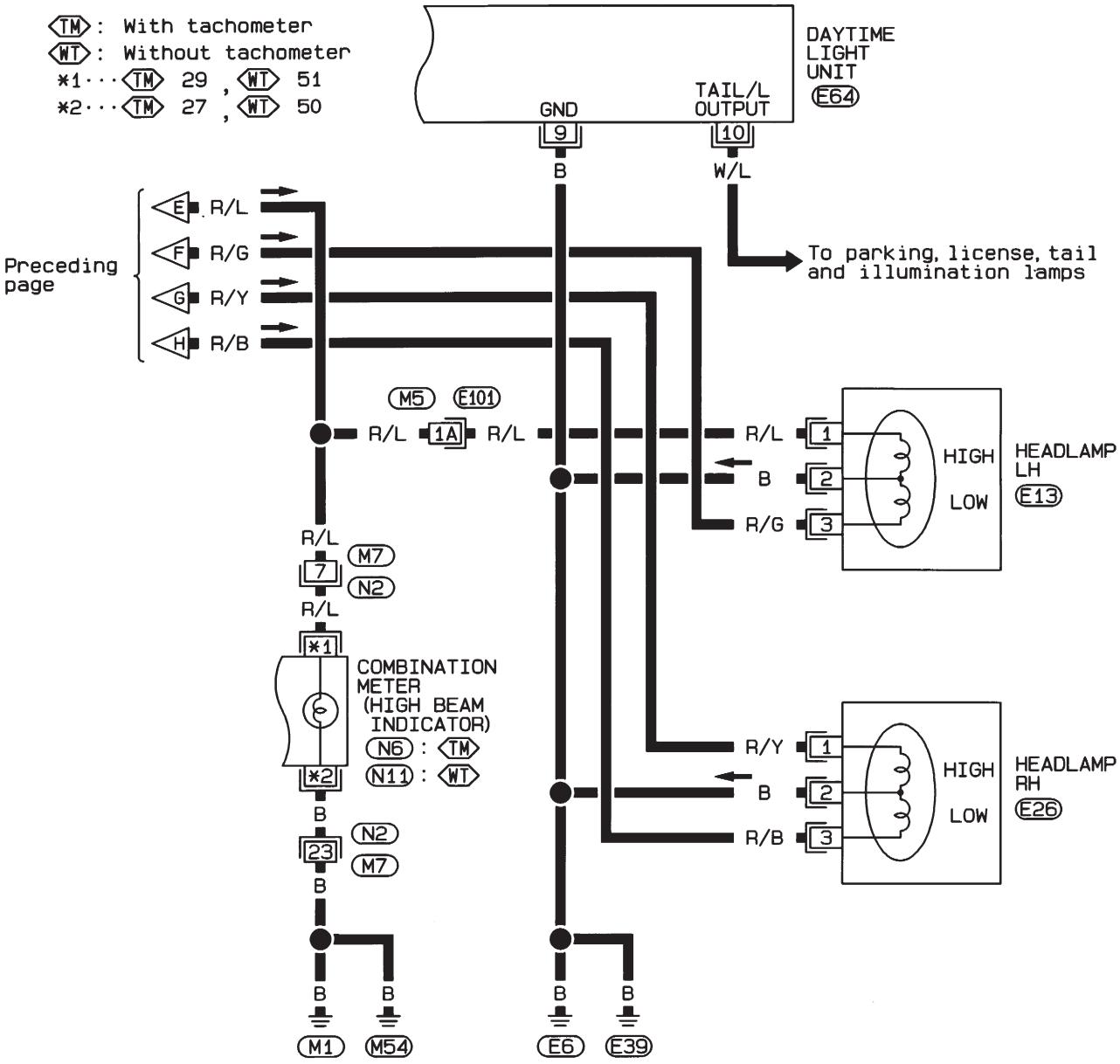
Refer to last page (Foldout page).

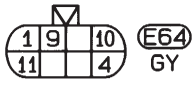
M5 , E101

HEL688A

Wiring Diagram — DTRL — (Cont'd)

EL-DTRL-03





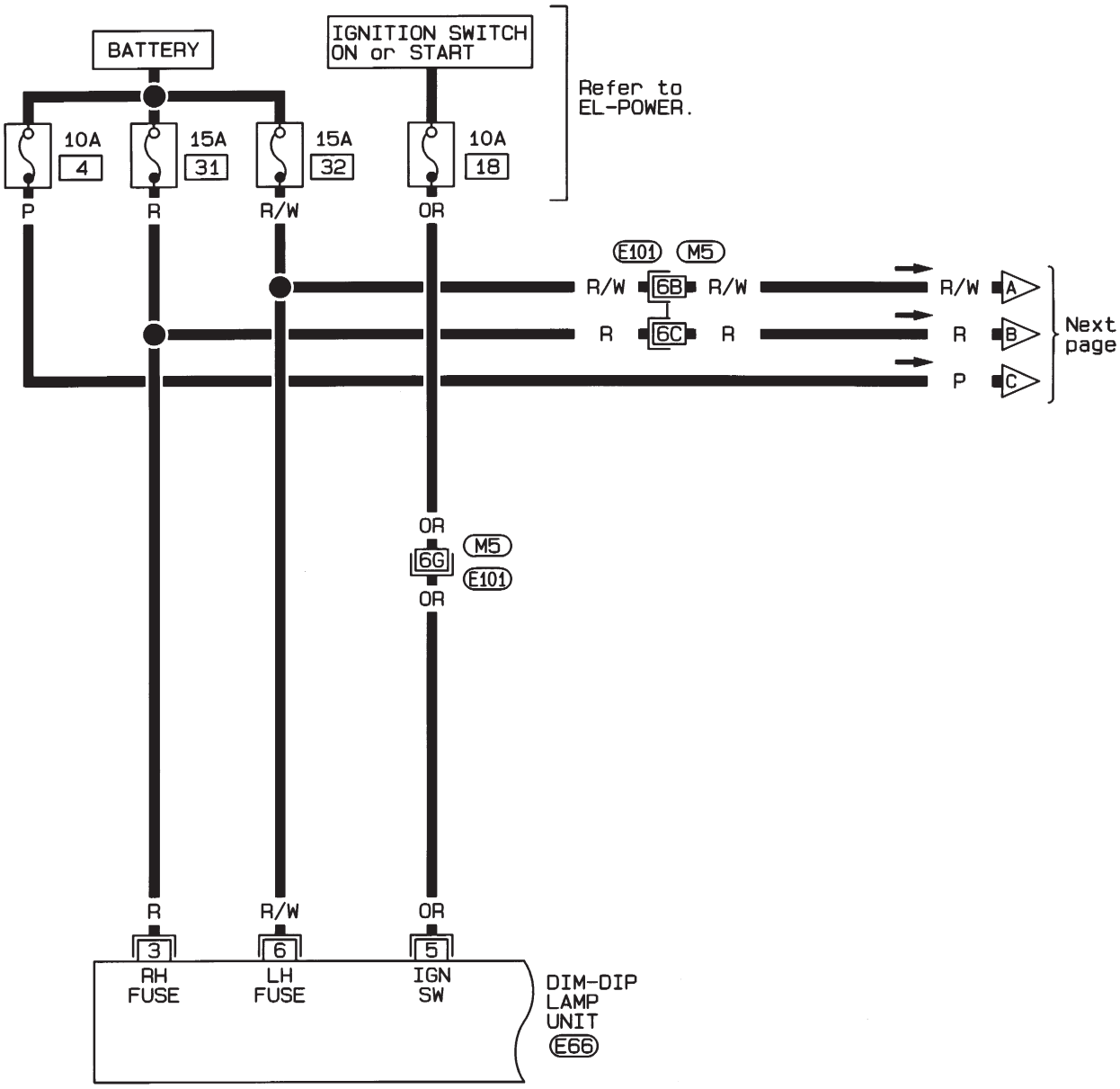
Refer to last page (Foldout page).

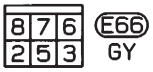
M5 , E101

HEL689A

Wiring Diagram — DIMDIP —

EL-DIMDIP-01





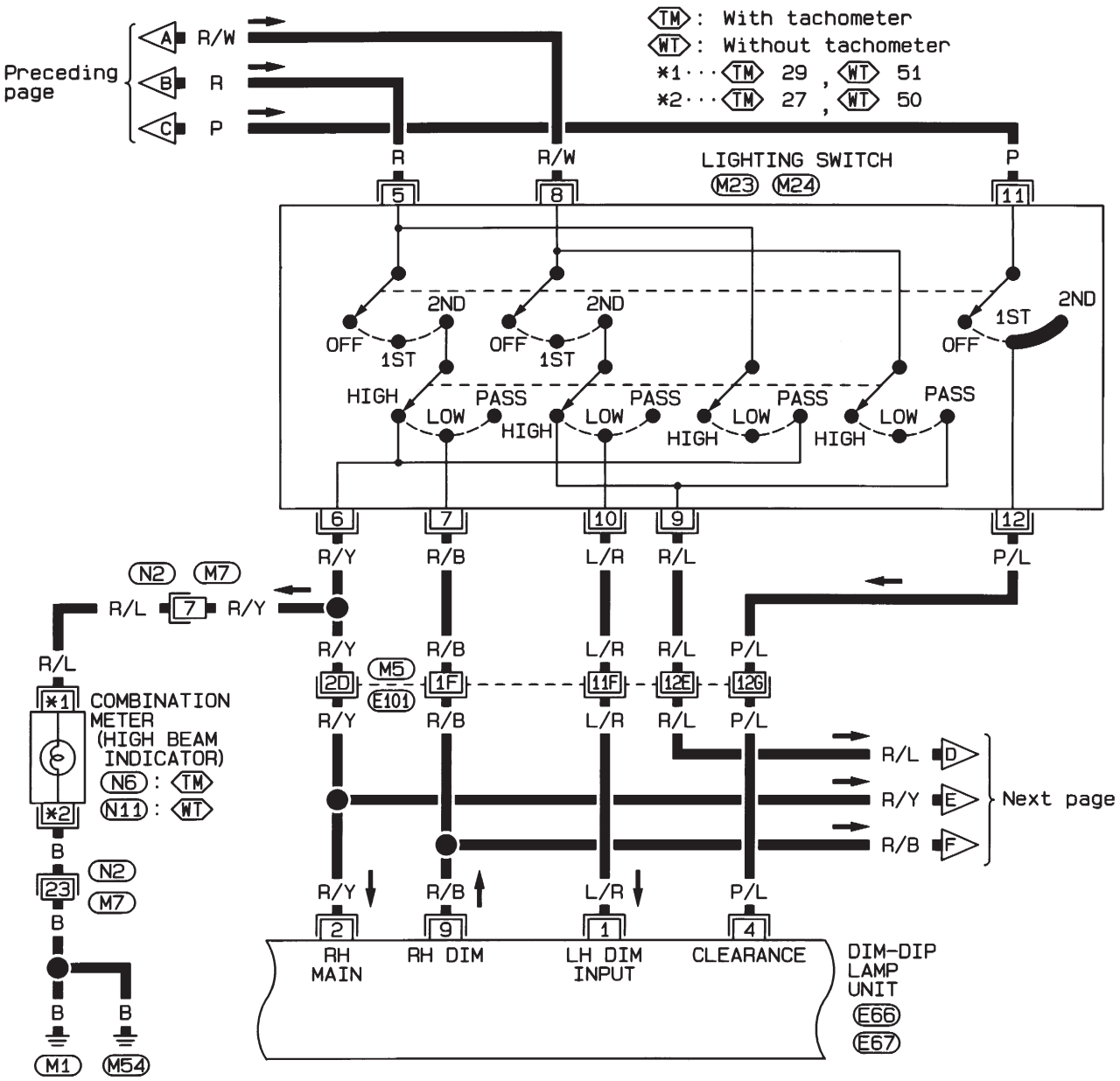
Refer to last page (Foldout page).

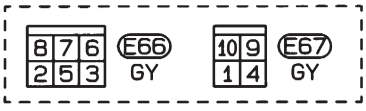
M5, E101

HEL690A

Wiring Diagram — DIMDIP — (Cont'd)

EL-DIMDIP-02



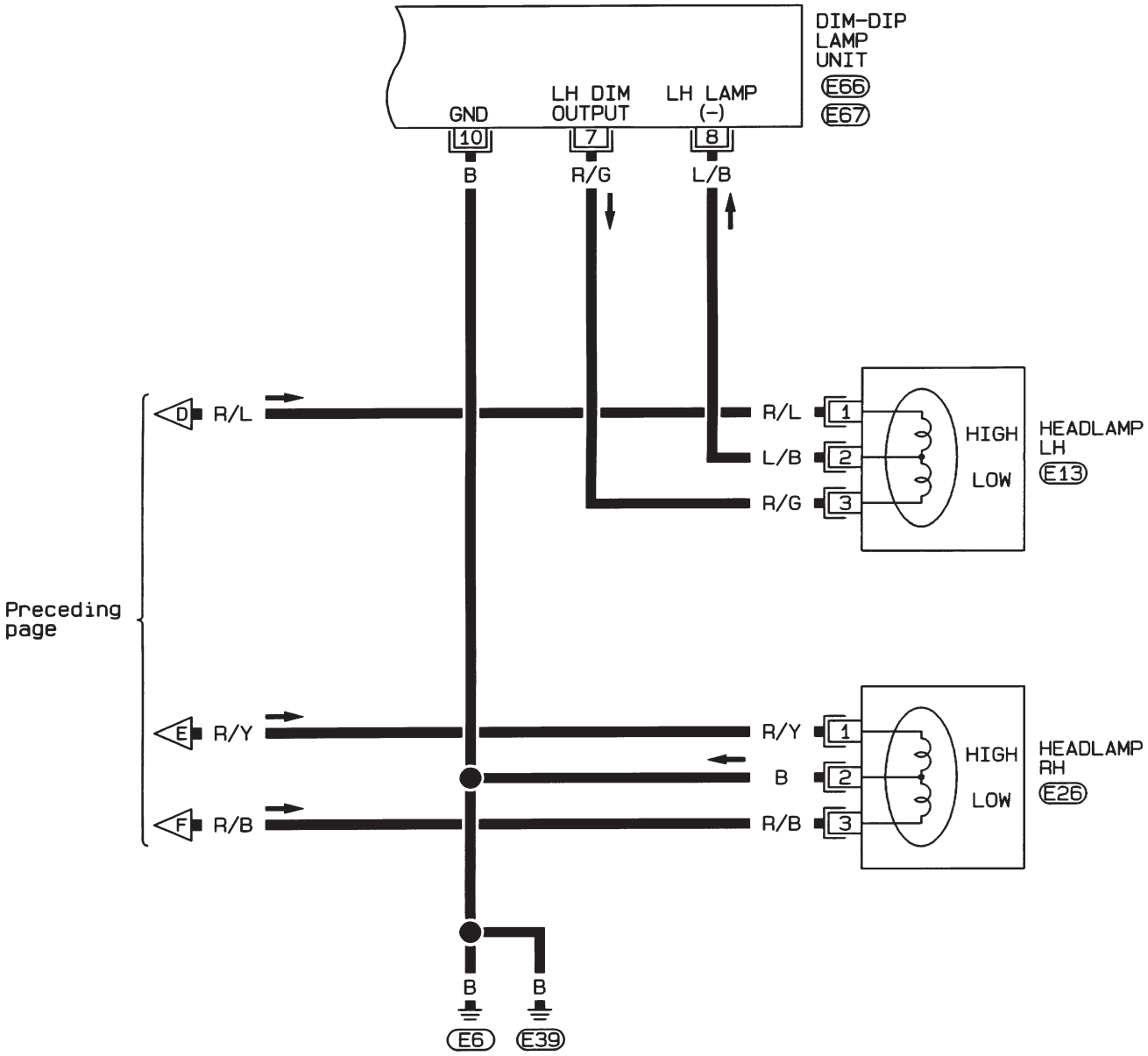


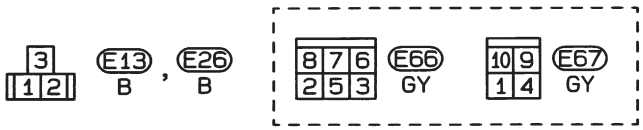
Refer to last page (Foldout page).
M5, E101

HEL691A

Wiring Diagram — DIMDIP — (Cont'd)

EL-DIMDIP-03

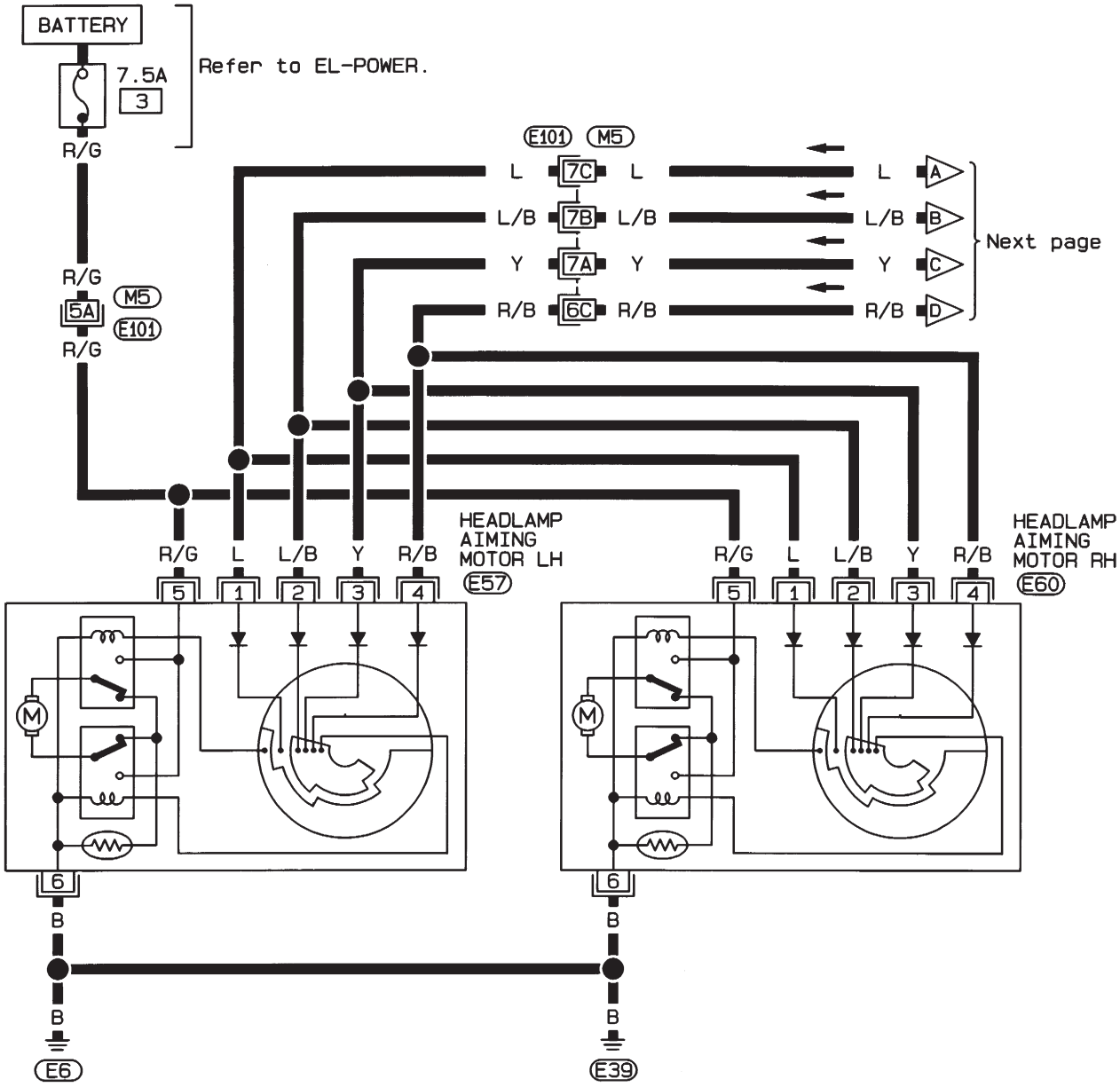




HEL329A

Wiring Diagram — H/AIM —

EL-H/AIM-01



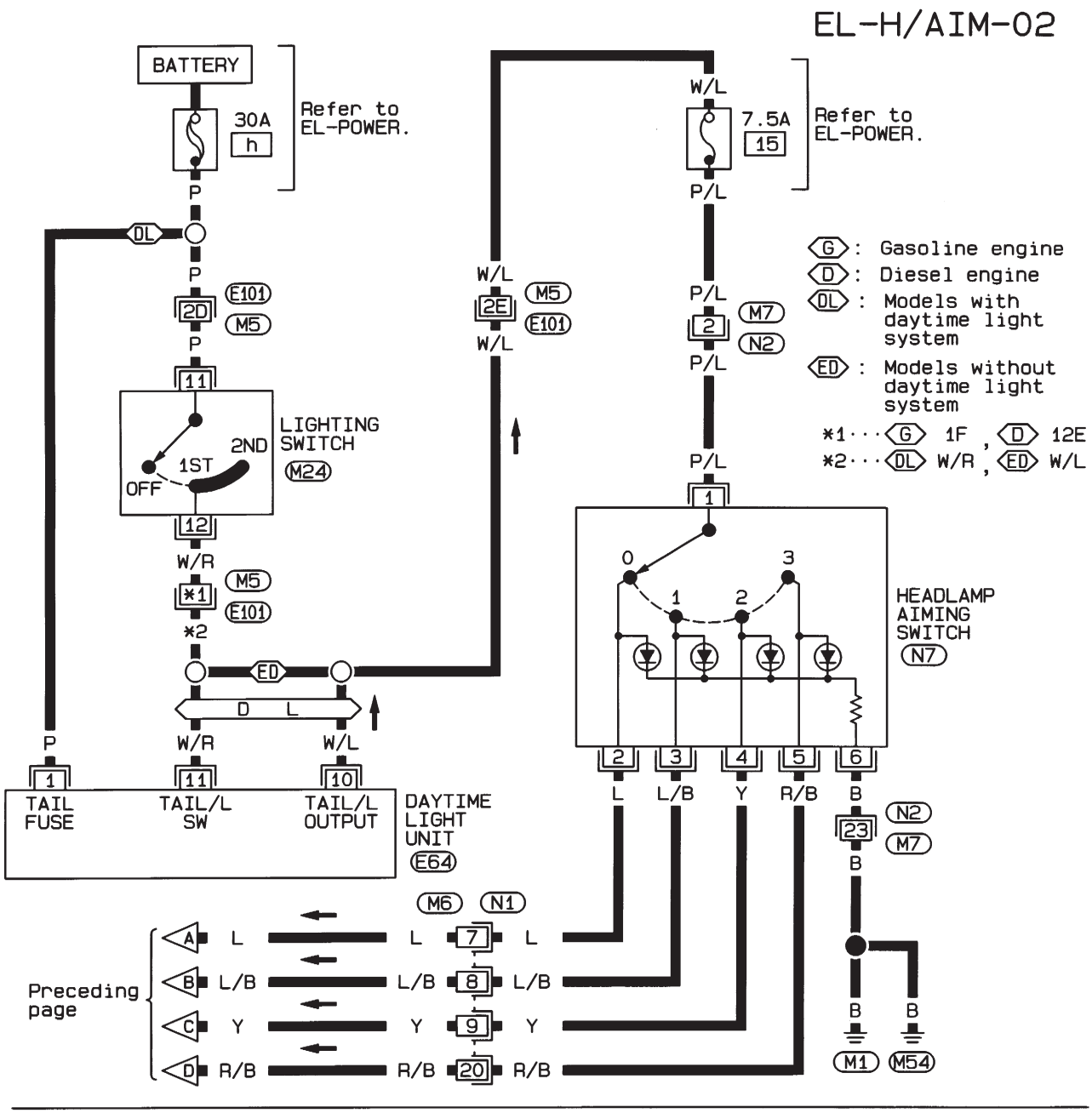
1 2 3
4 5 6
E57 GY , E60 GY

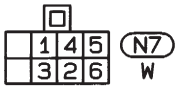
Refer to last page (Foldout page).

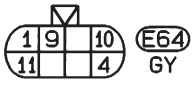
M5 , E101

HEL692A

Wiring Diagram — H/AIM — (Cont'd)







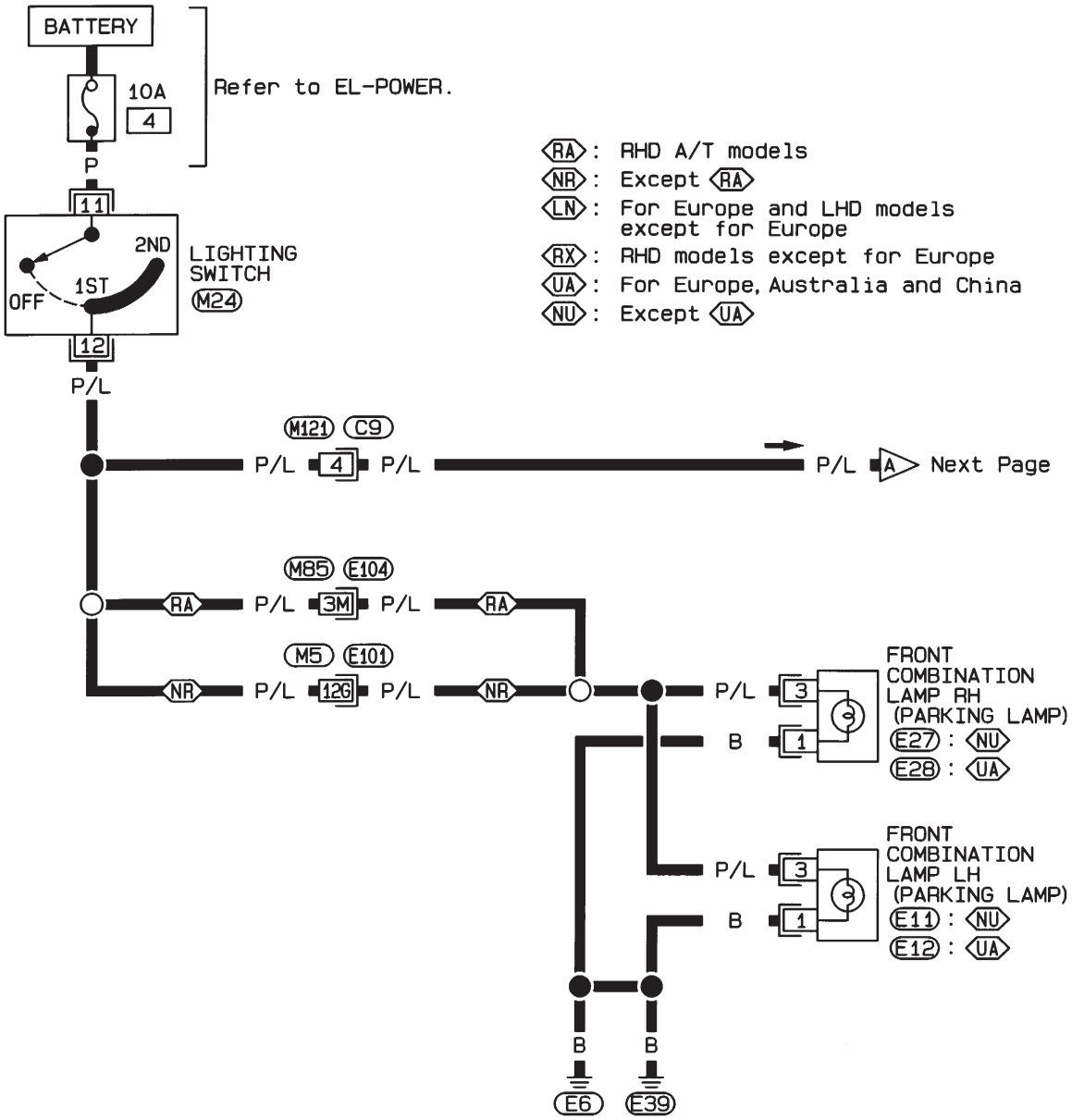
Refer to last page (Foldout page).

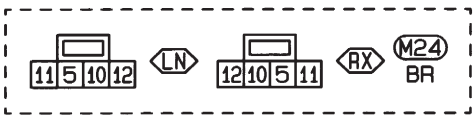
M5, E101

HEL693A

Wiring Diagram — TAIL/L —/Except LHD Models

EL-TAIL/L-01





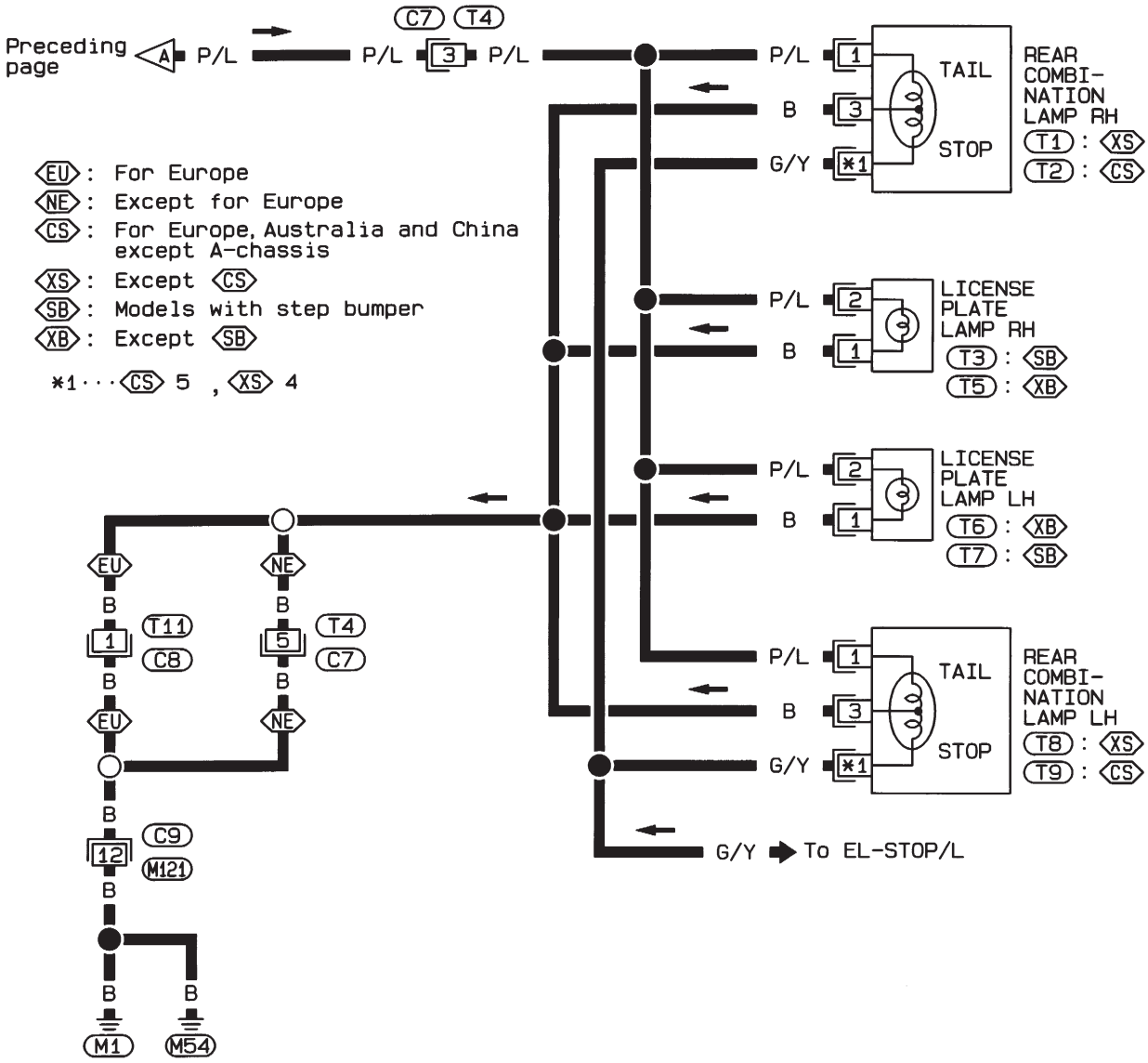
Refer to last page (Foldout page).

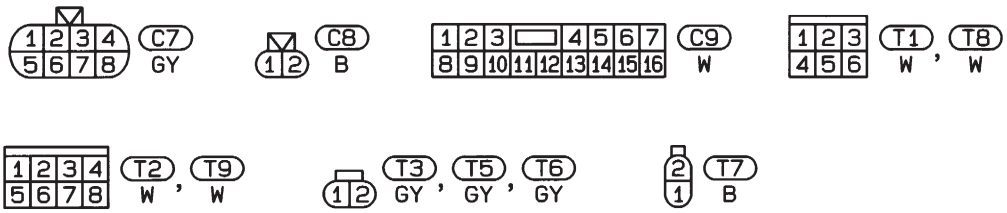
M5, E101
M85, E104

HEL694A

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

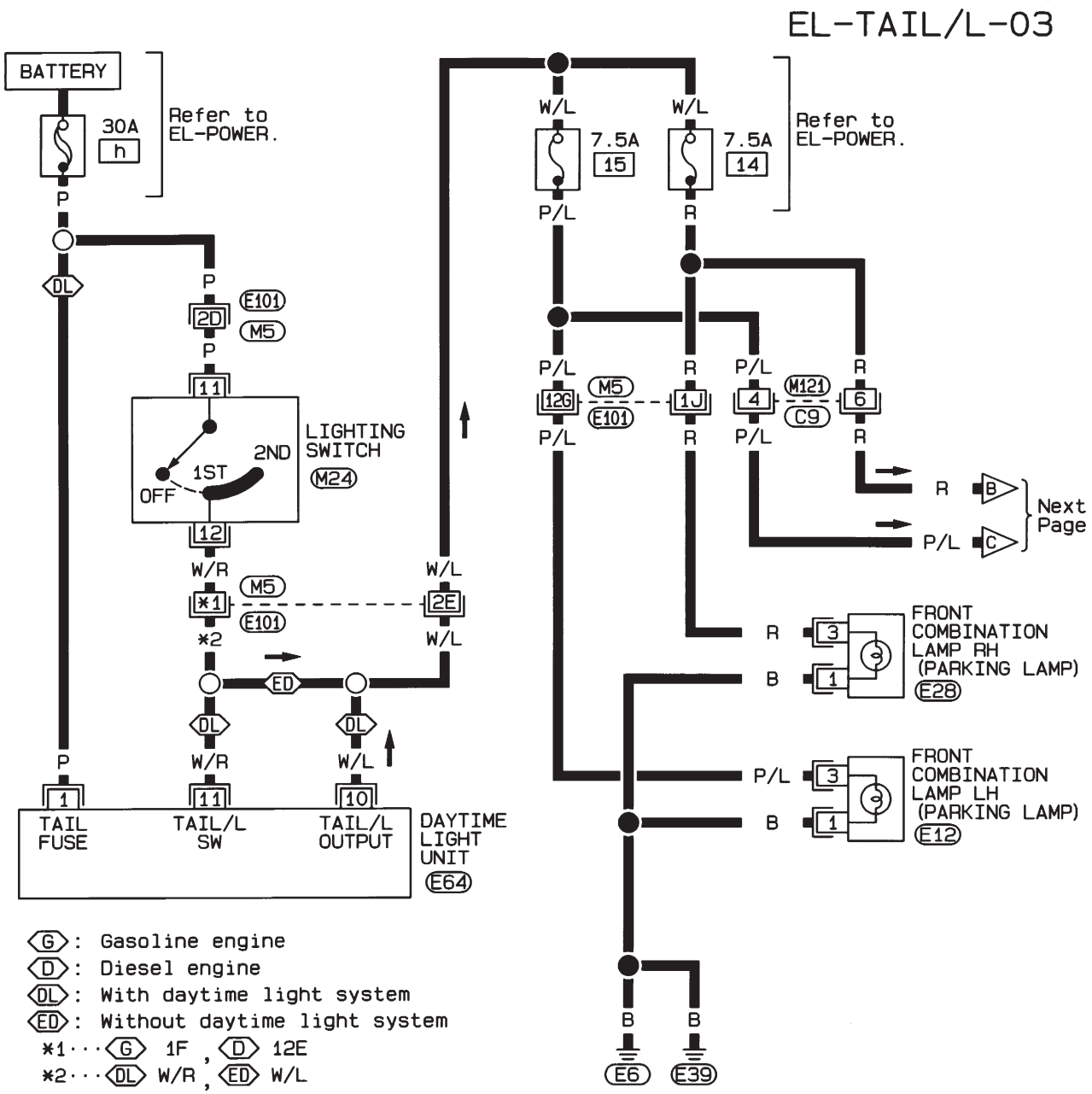
EL-TAIL/L-02

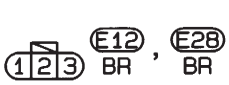


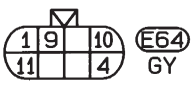


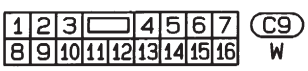
HEL695A

Wiring Diagram — TAIL/L —/LHD Models







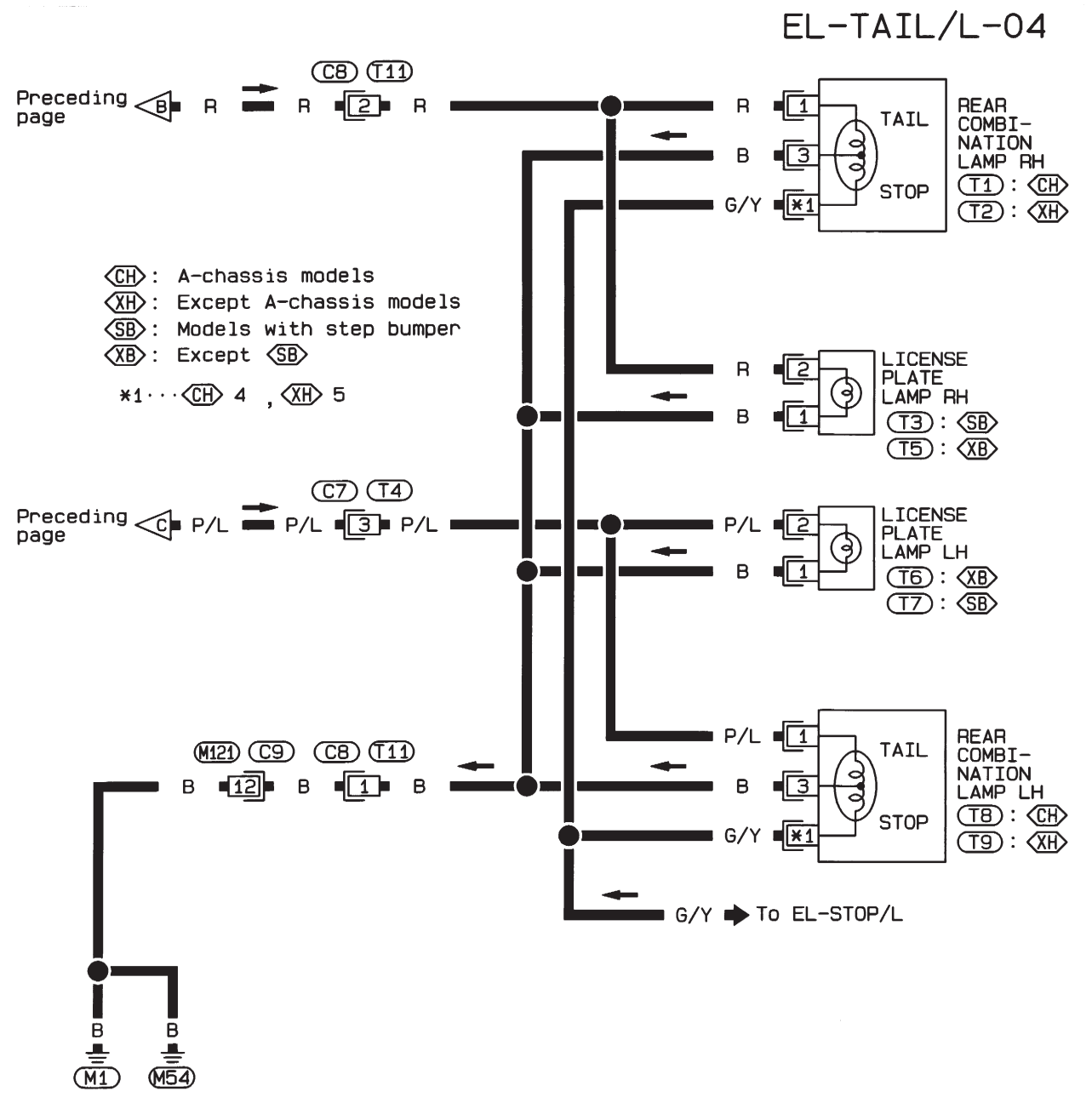


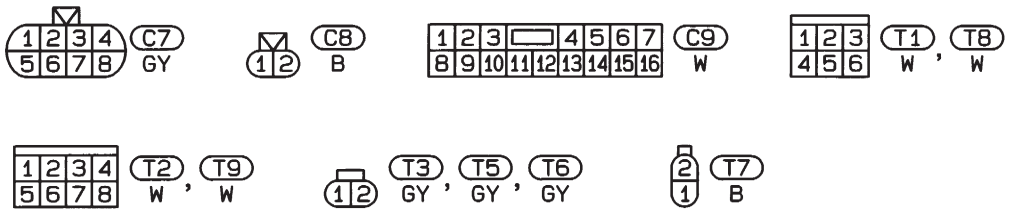
Refer to last page (Foldout page).

M5 , E101

HEL696A

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

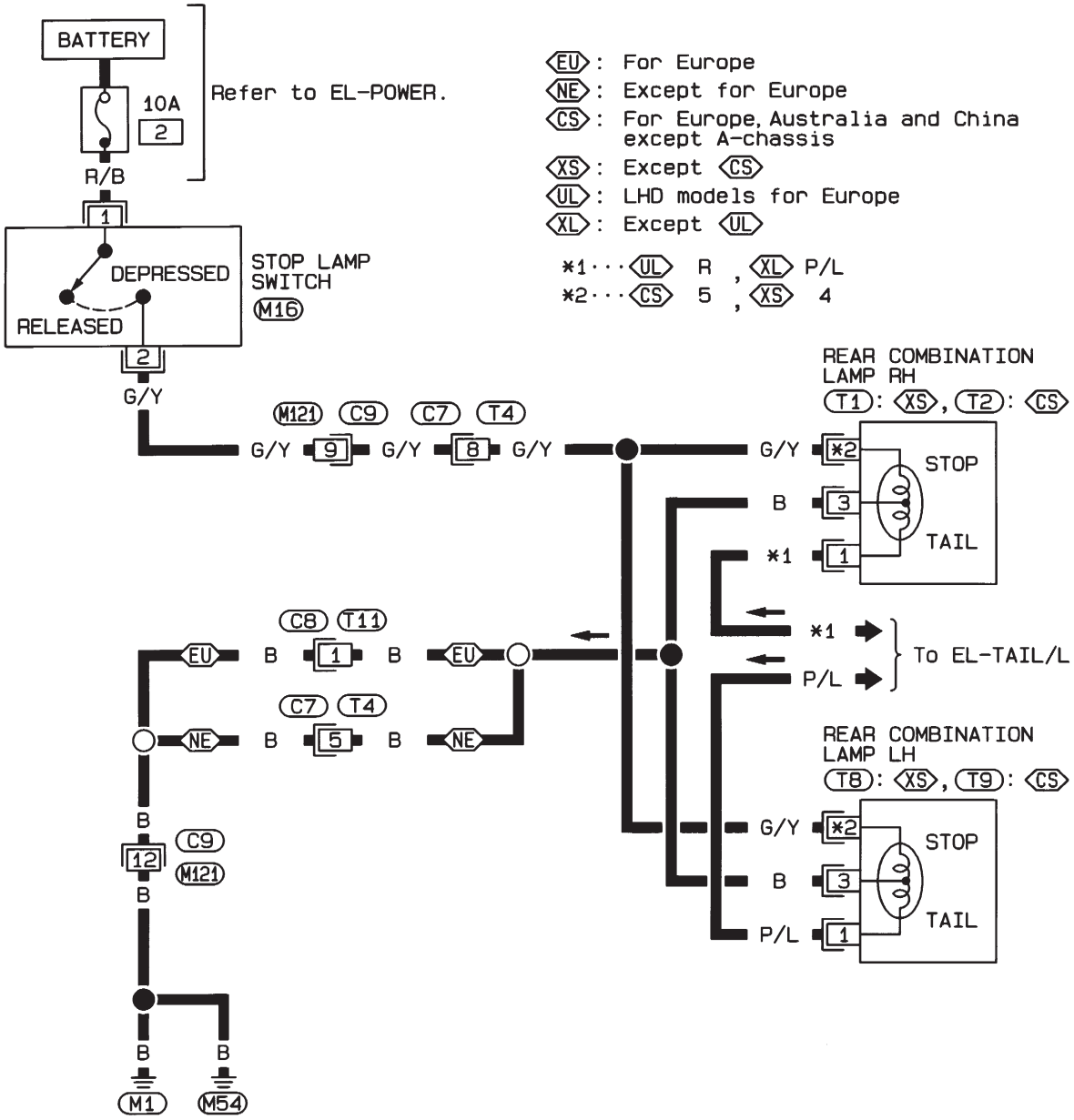


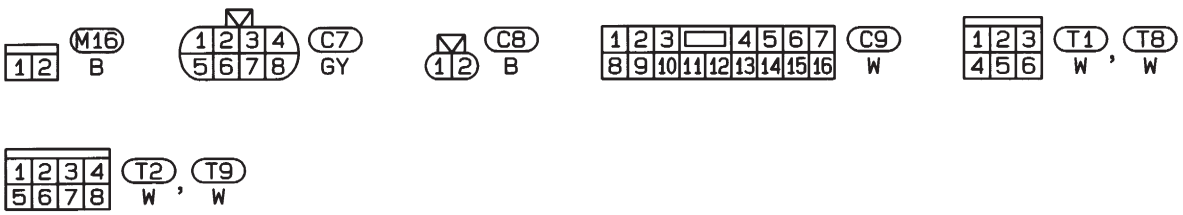


HEL697A

Wiring Diagram — STOP/L —

EL-STOP/L-01

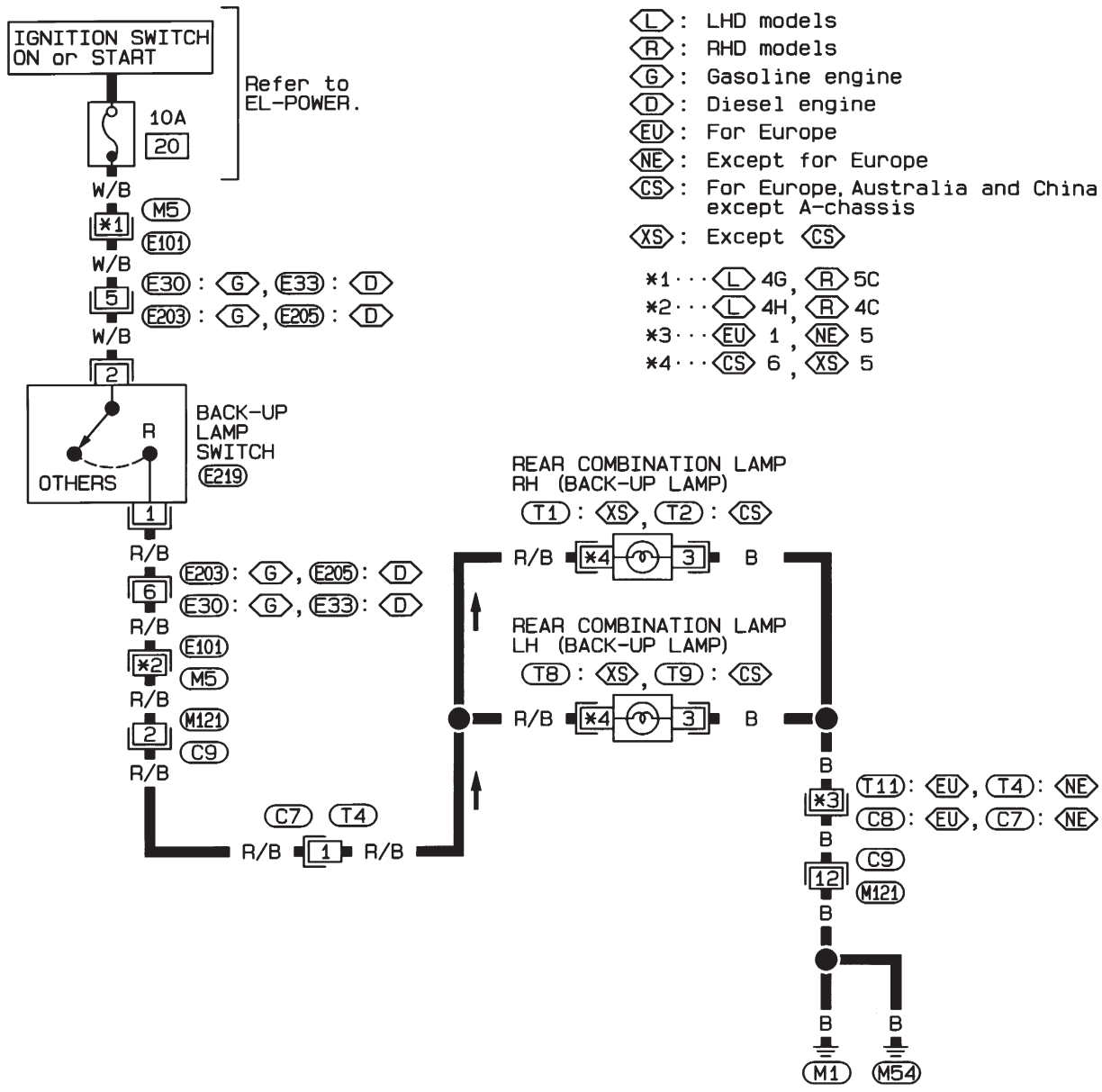


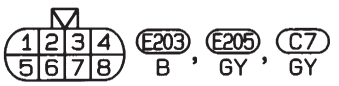


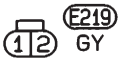
HEL698A

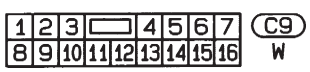
Wiring Diagram — BACK/L —/M/T Models

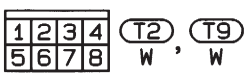
EL-BACK/L-01











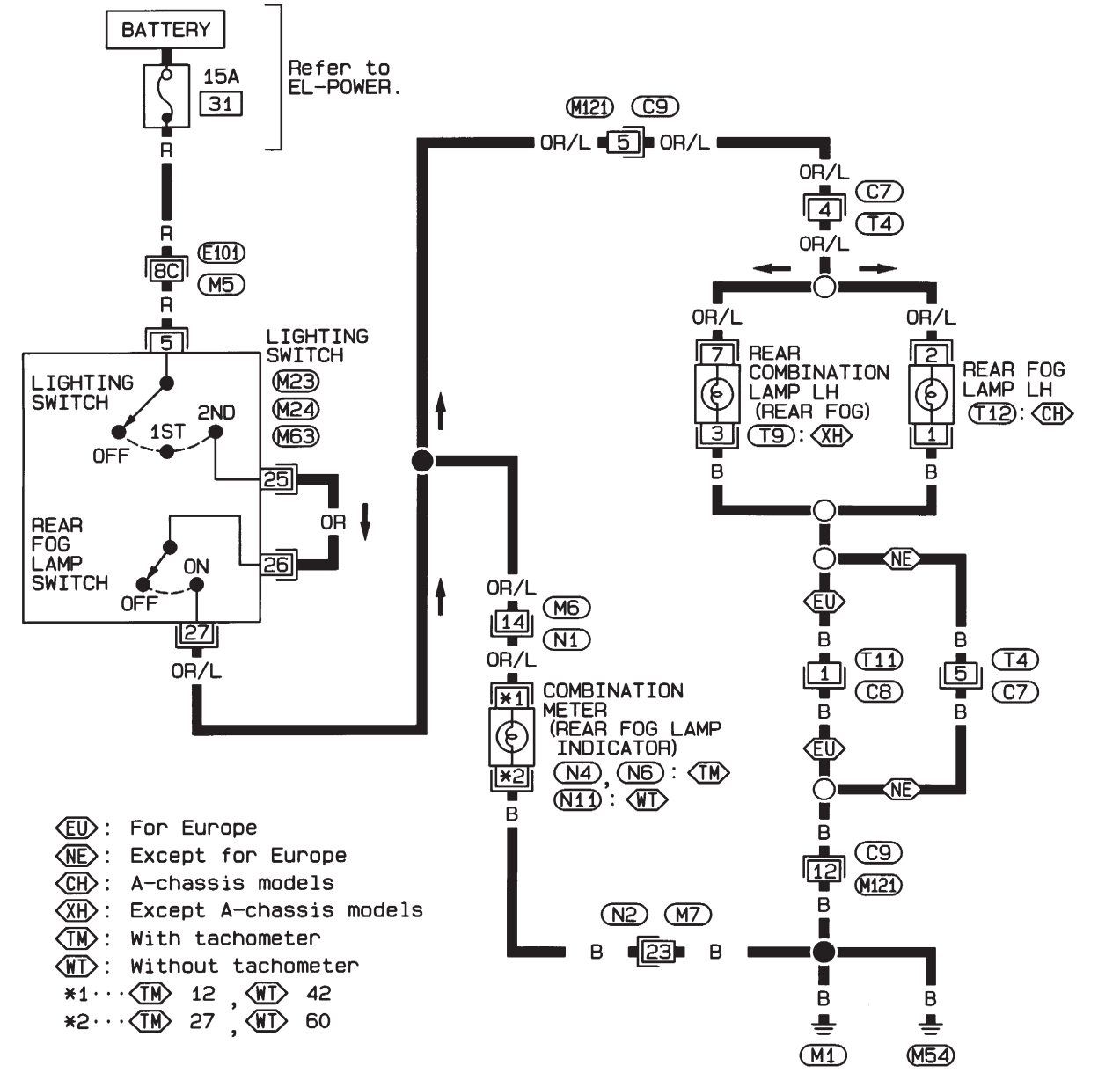
Refer to last page (Foldout page).

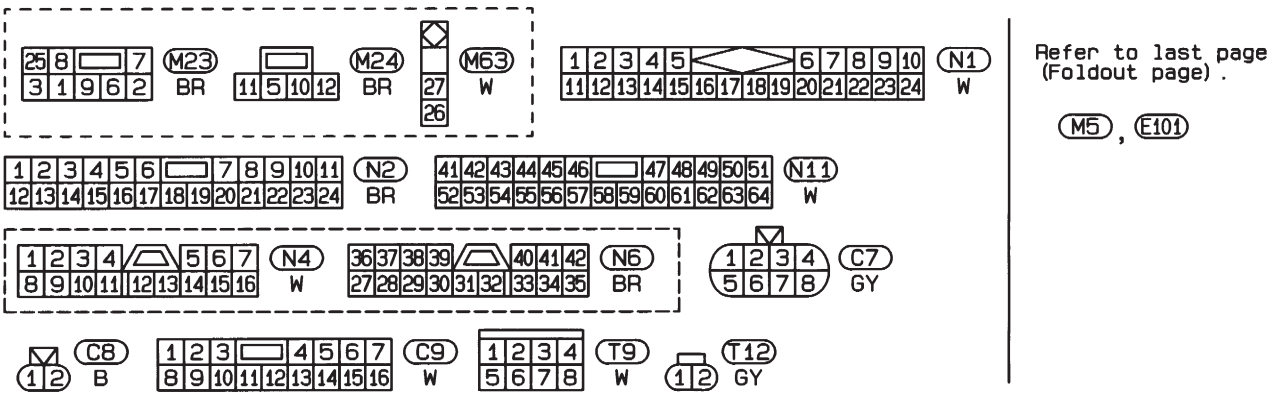
M5, E101

HEL699A

Wiring Diagram — R/FOG —/LHD Models

EL-R/FOG-01

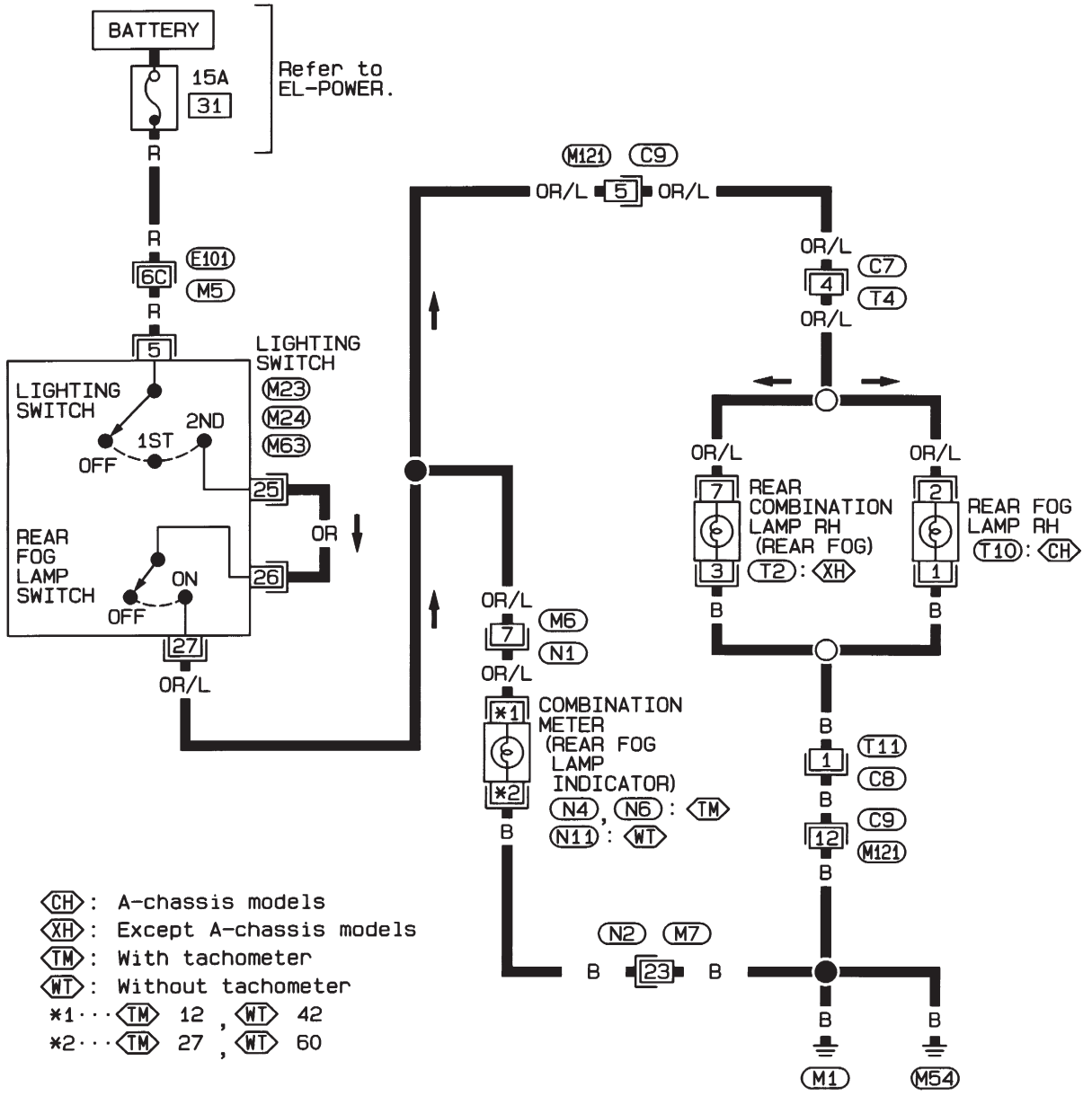


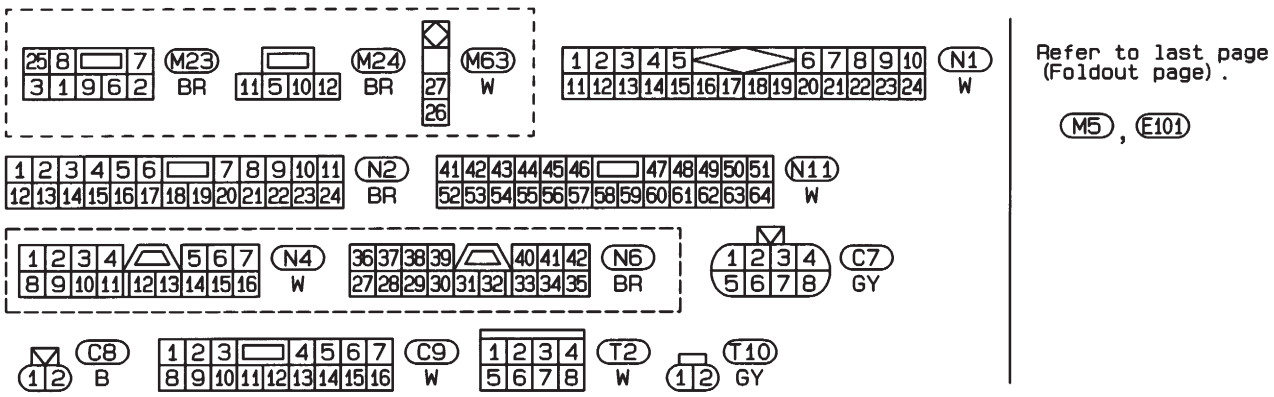


HEL701A

Wiring Diagram — R/FOG —/RHD Models

EL-R/FOG-02

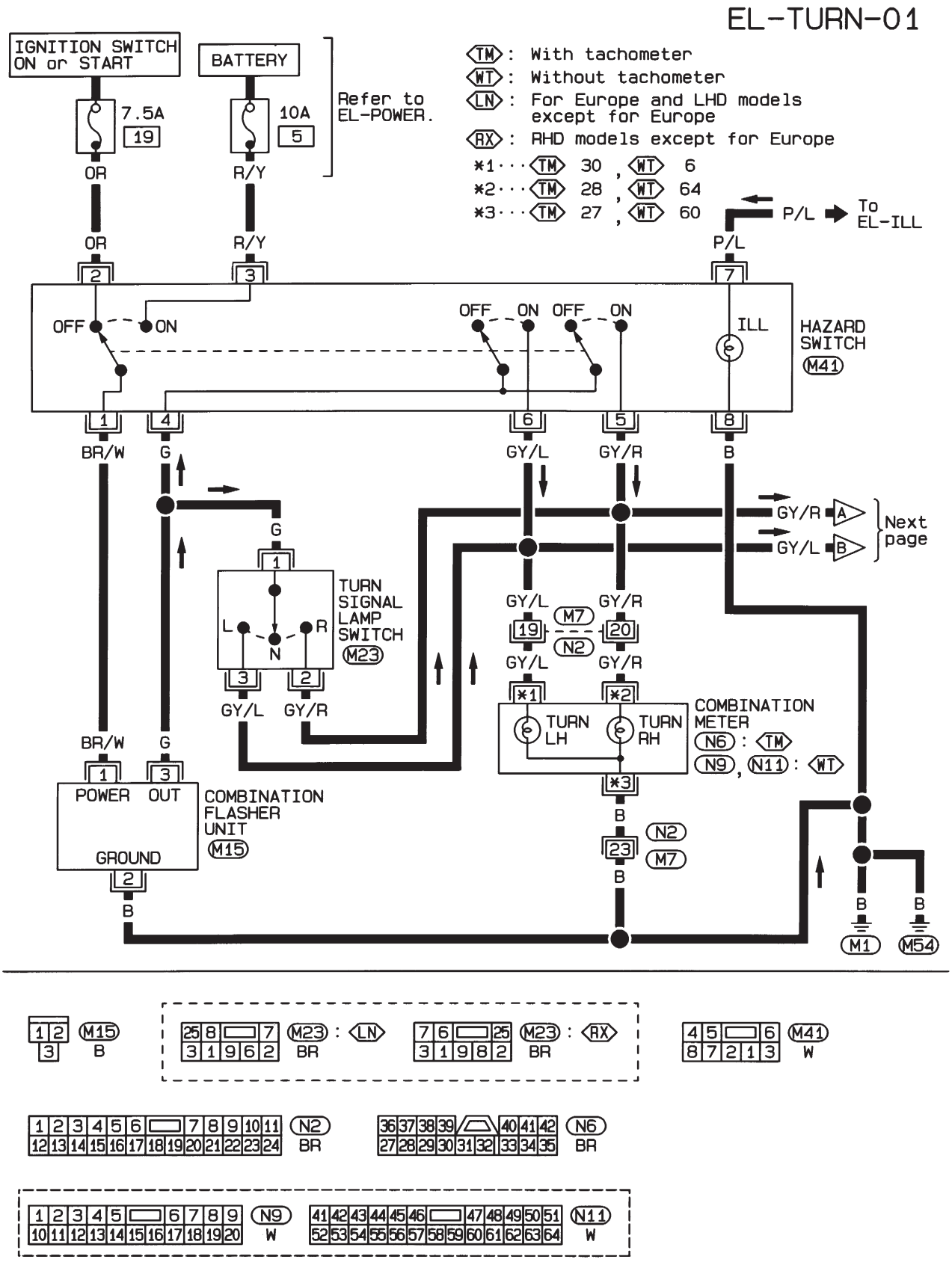




HEL702A

Wiring Diagram — TURN —/Type-1

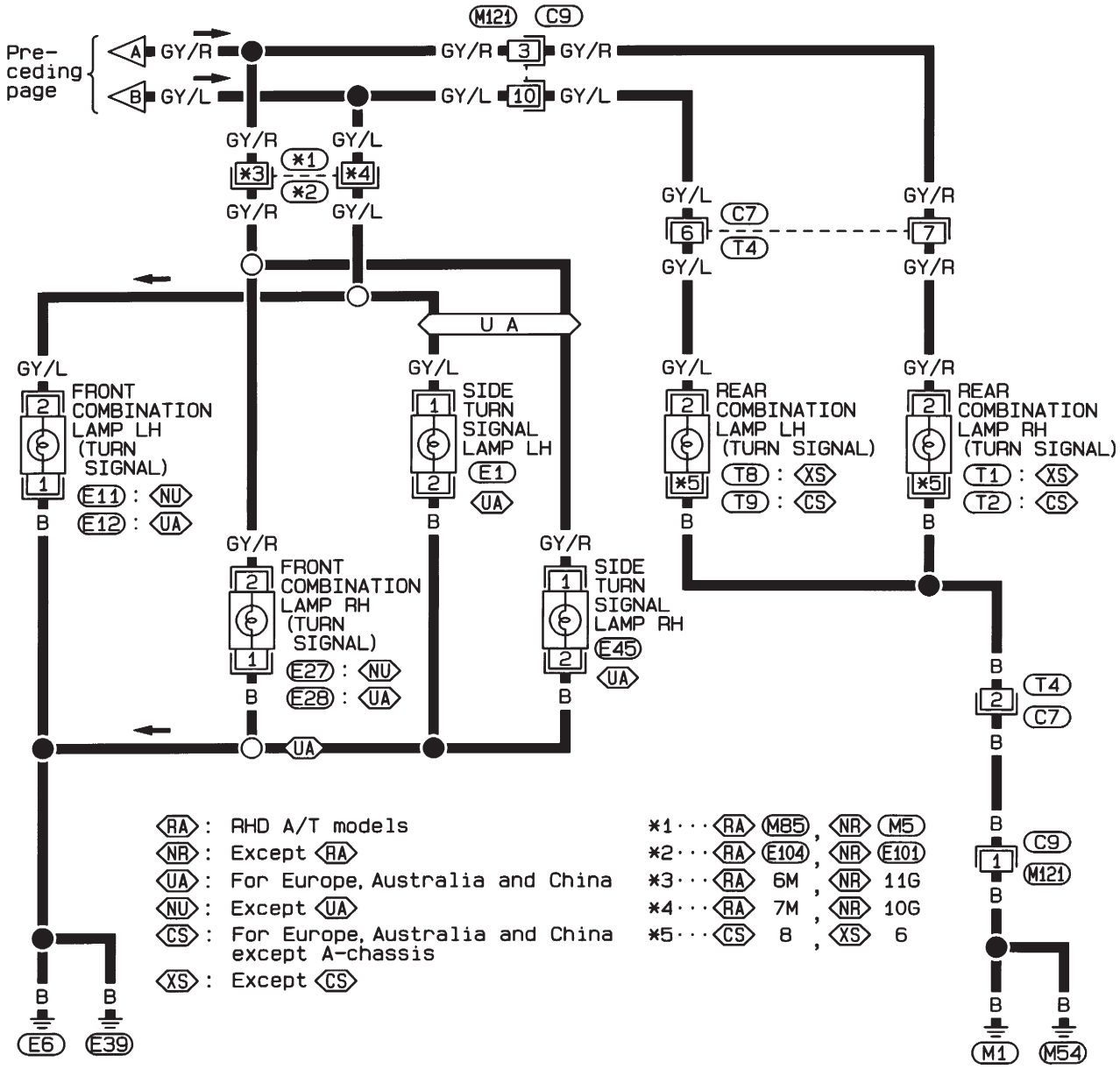
FOR EUROPE (Single cab)

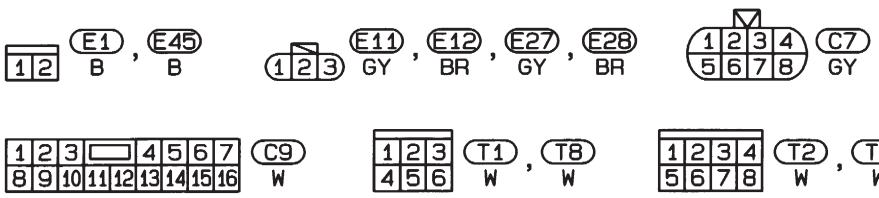


HEL703A

Wiring Diagram — TURN —/Type-1 (Cont'd)

EL-TURN-02





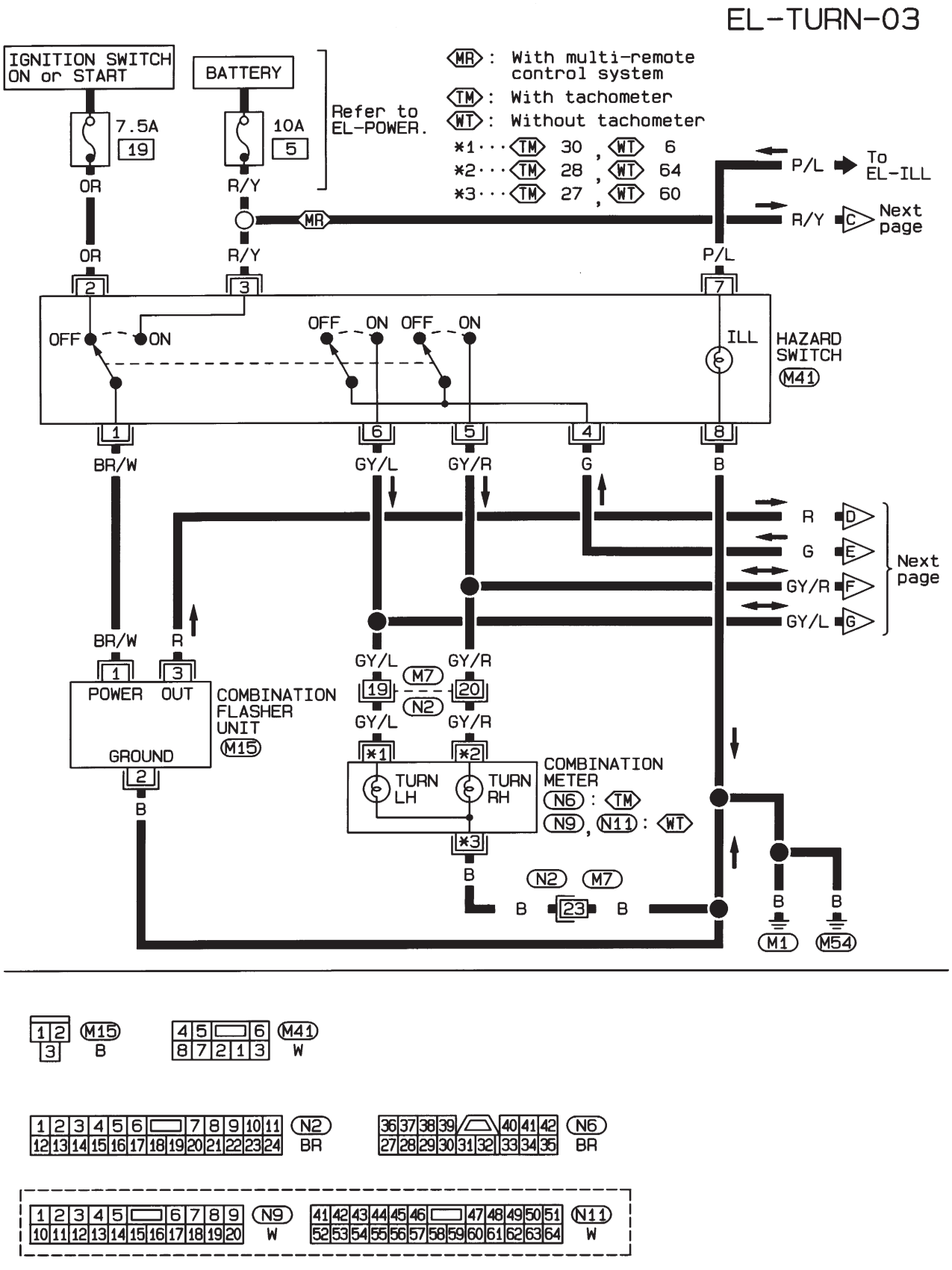
Refer to last page (Foldout page).

M5 , E101
M85 , E104

HEL704A

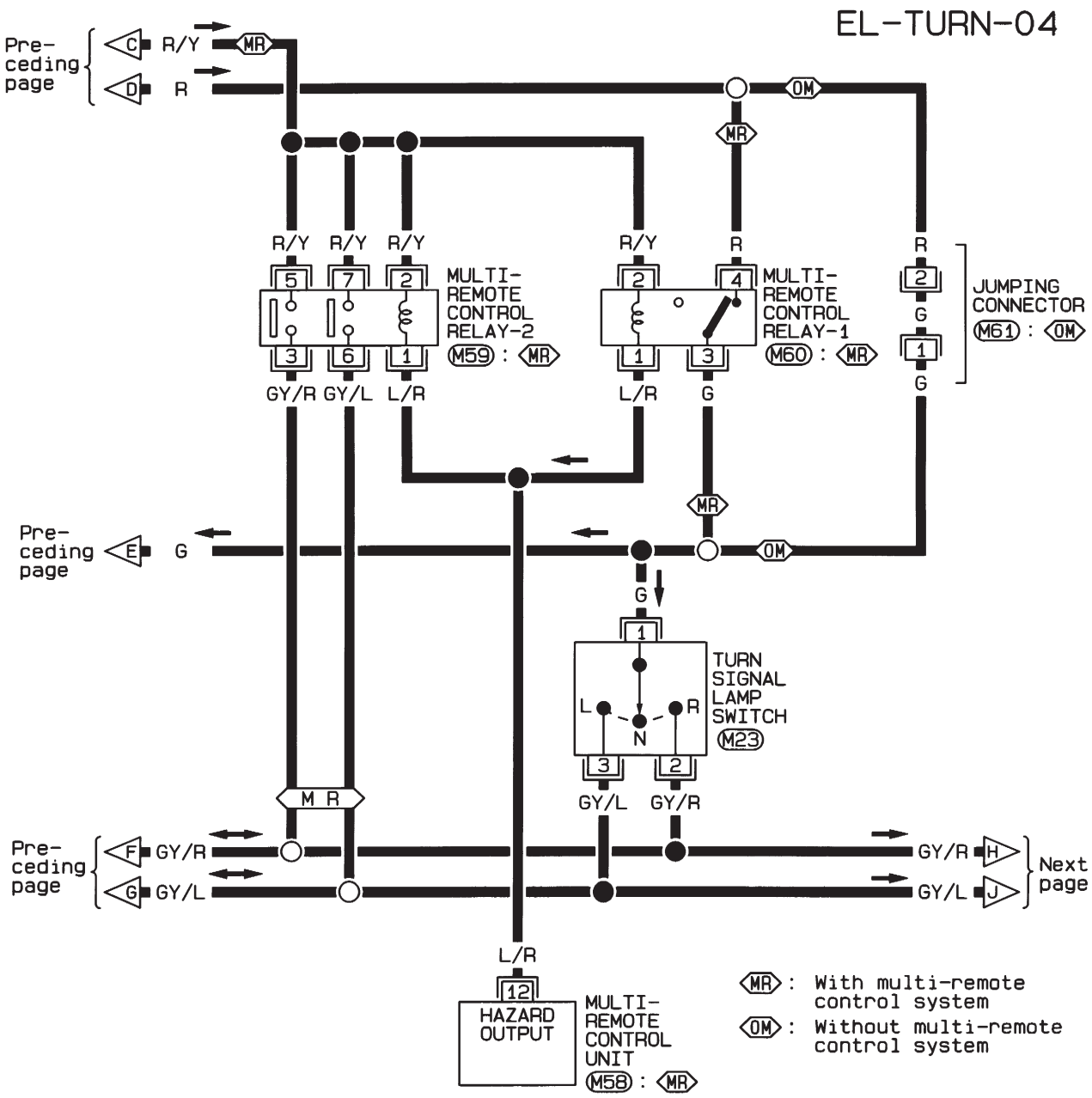
Wiring Diagram — TURN —/Type-2

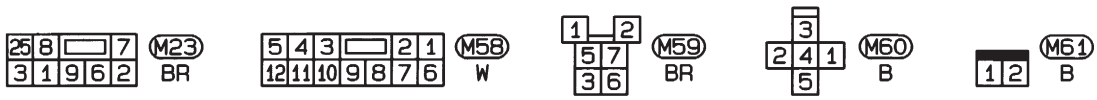
FOR EUROPE (King cab and Double cab)



HEL705A

Wiring Diagram — TURN —/Type-2 (Cont'd)

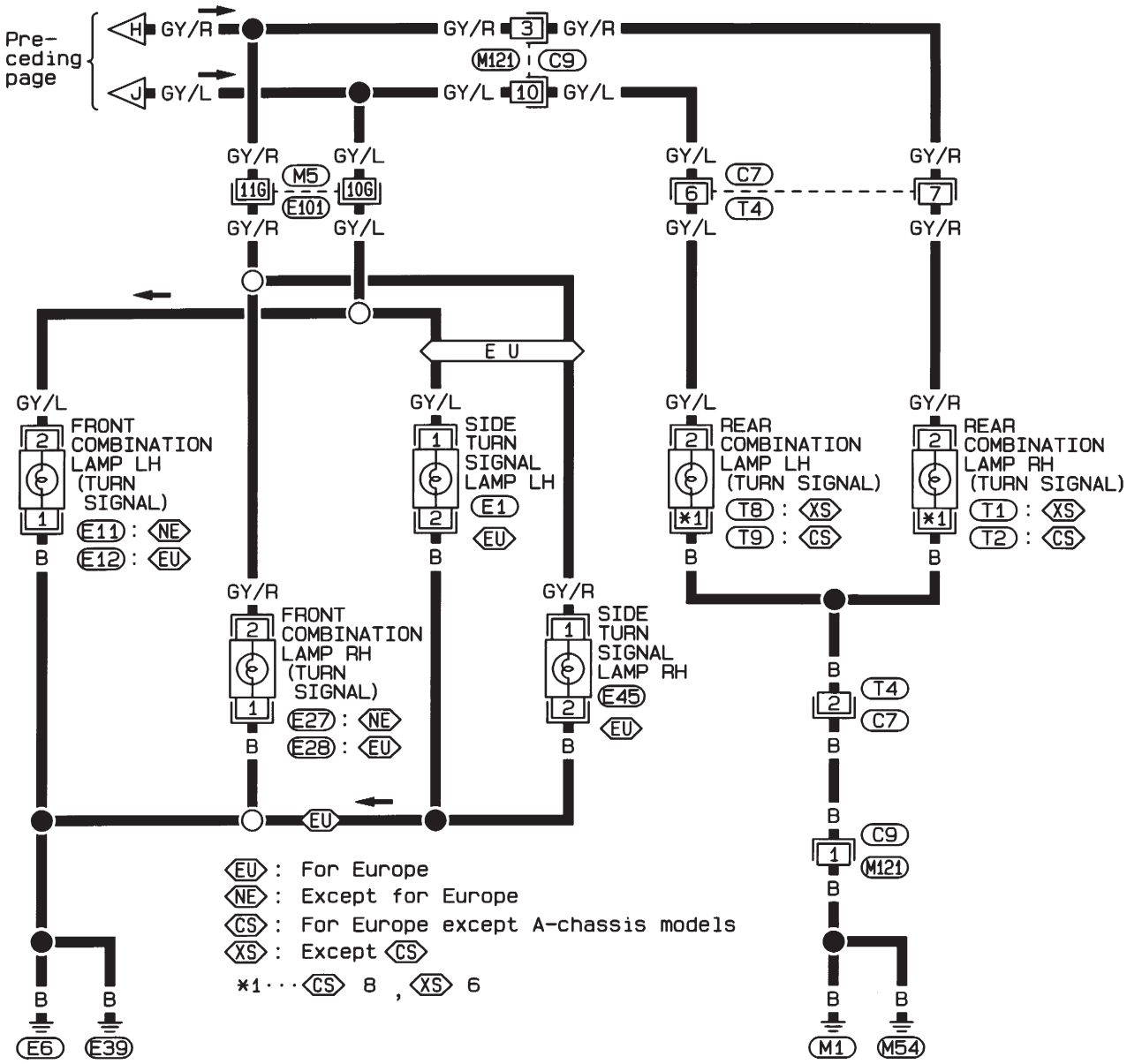


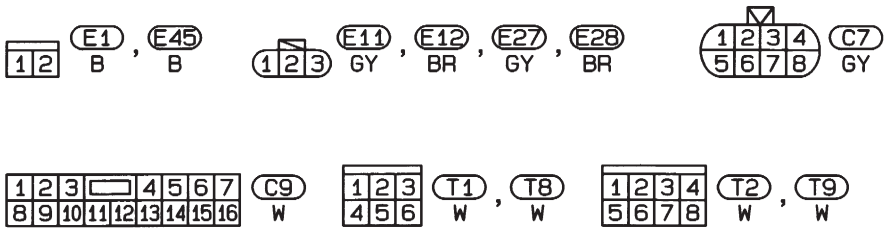


HEL706A

Wiring Diagram — TURN —/Type-2 (Cont'd)

EL-TURN-05





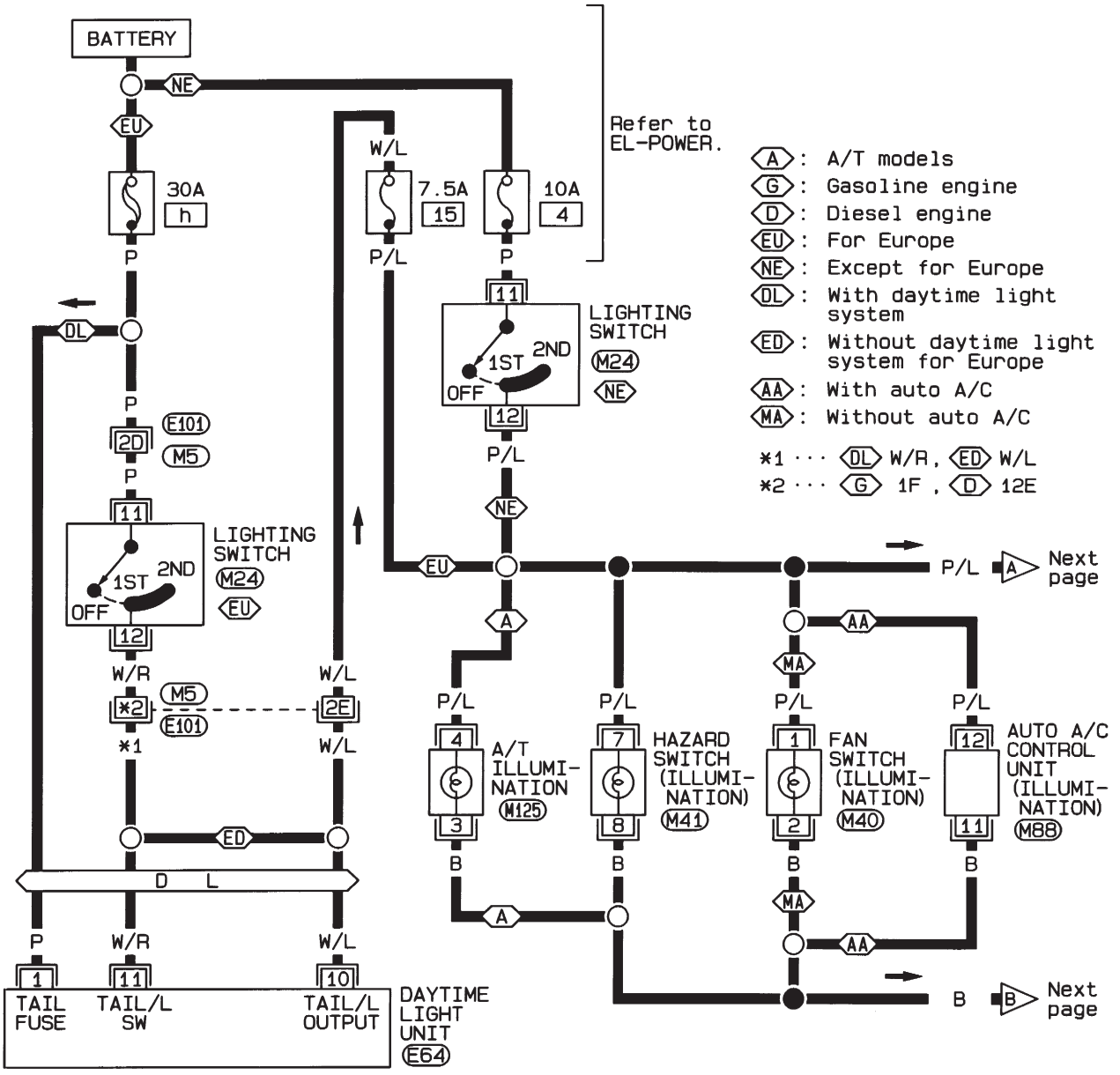
Refer to last page (Foldout page).

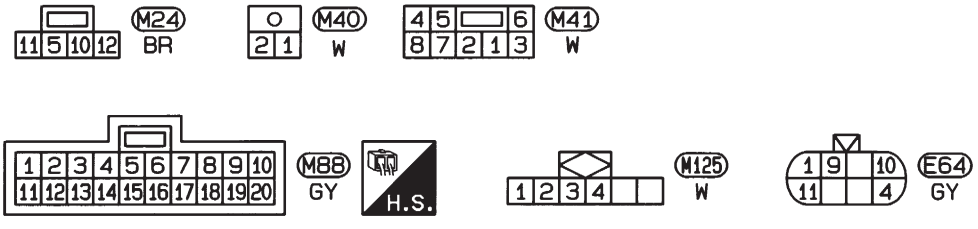
M5 , E101

HEL707A

Wiring Diagram — ILL —/LHD Models

EL-ILL-01





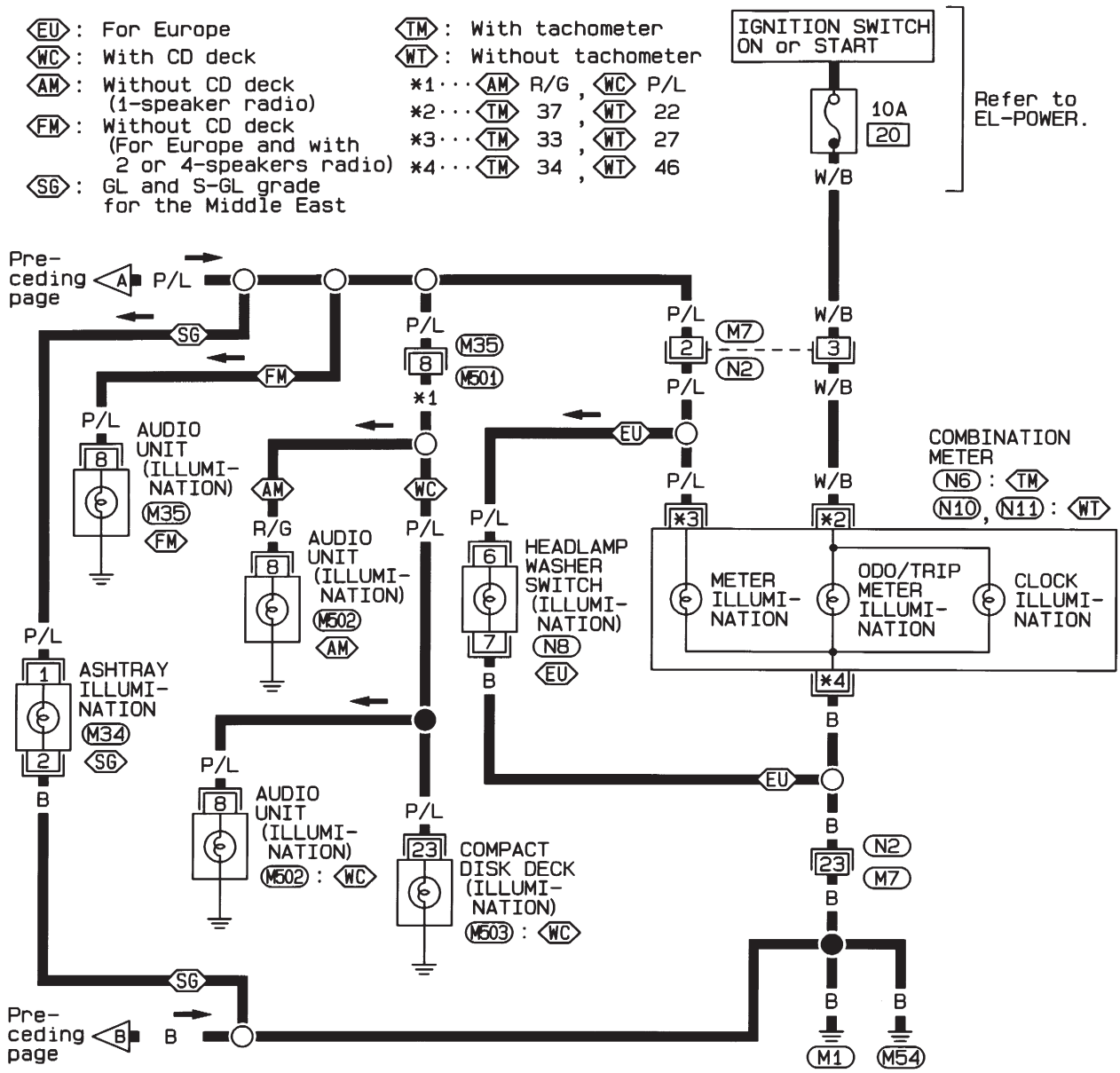
Refer to last page (Foldout page).

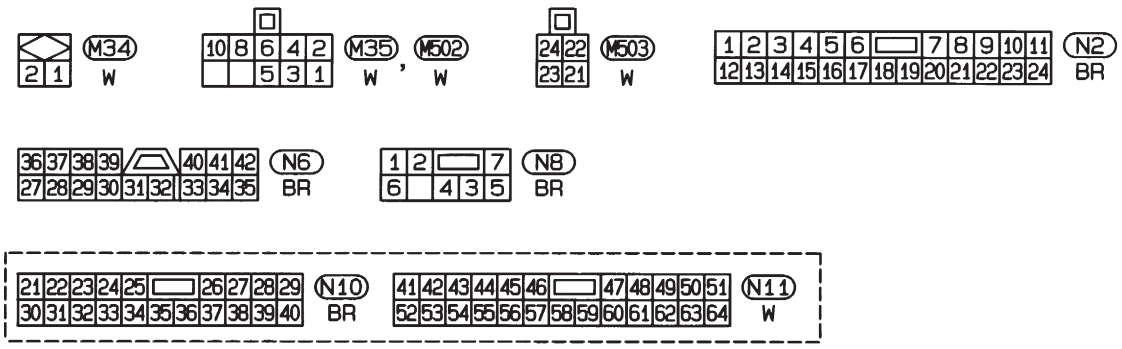
M5, E101

HEL708A

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

EL-ILL-02

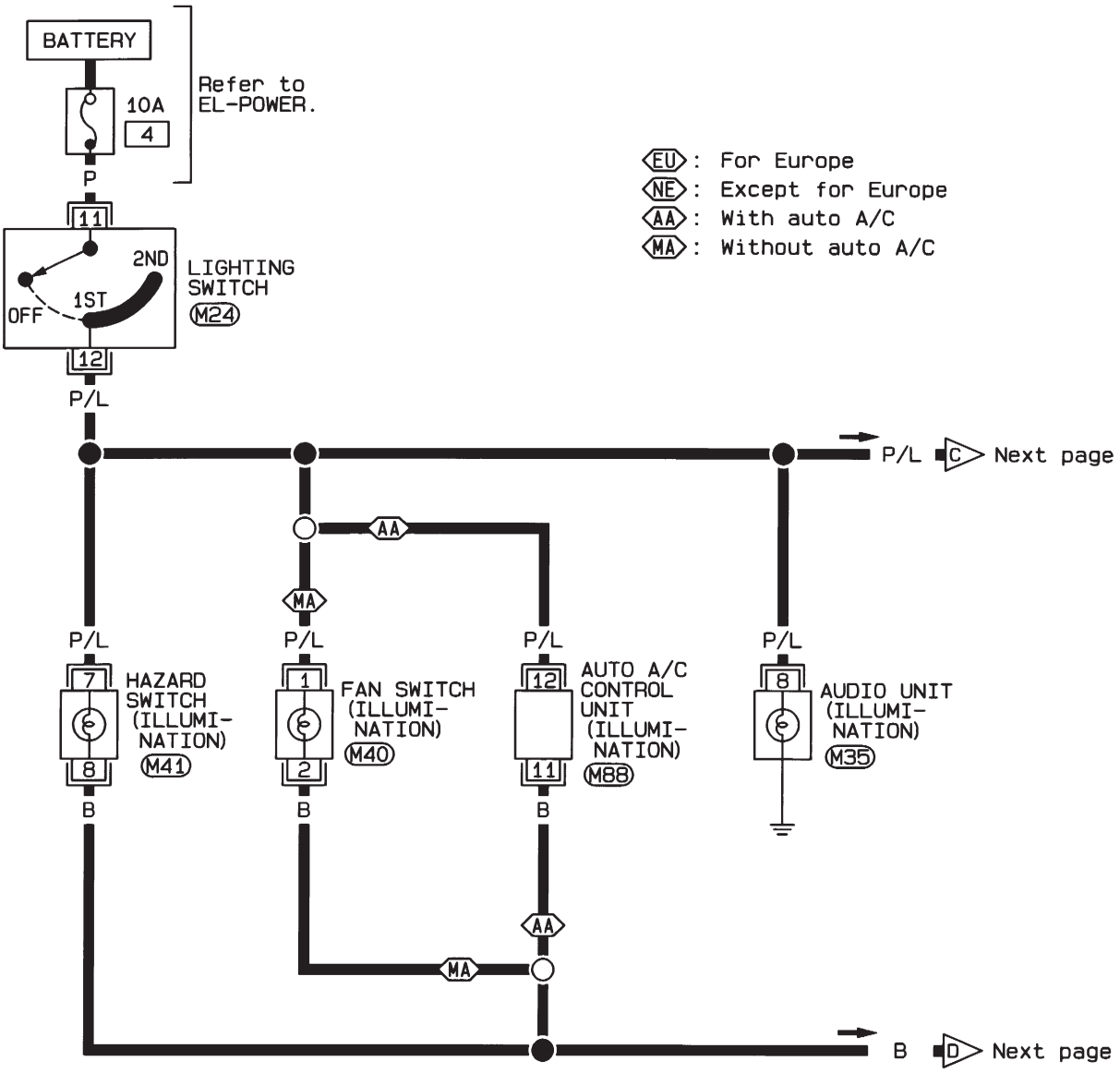


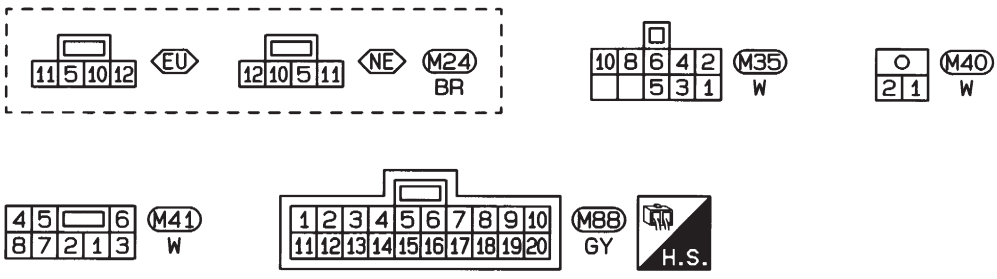


HEL709A

Wiring Diagram — ILL —/RHD Models

EL-ILL-03

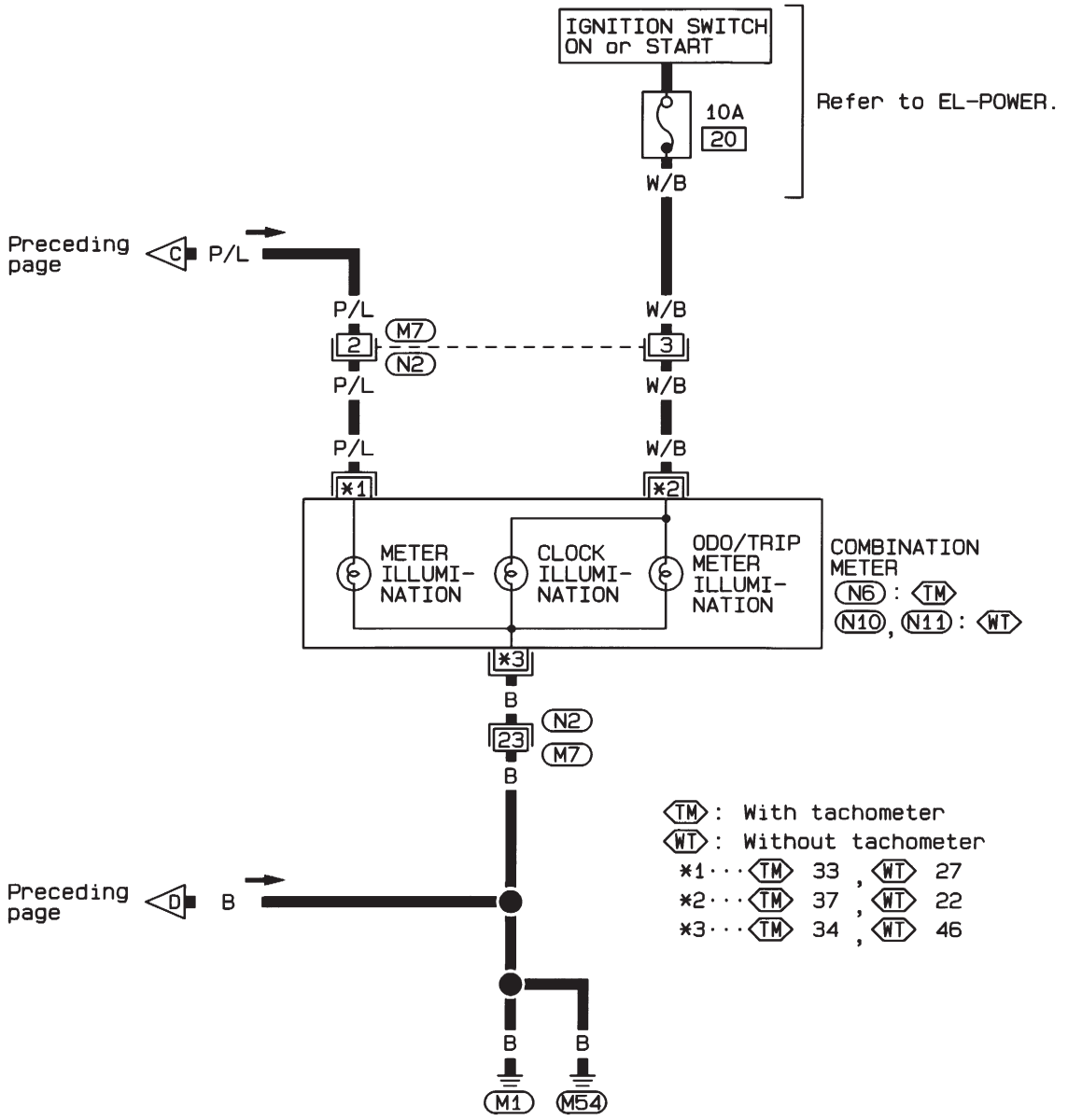




HEL710A

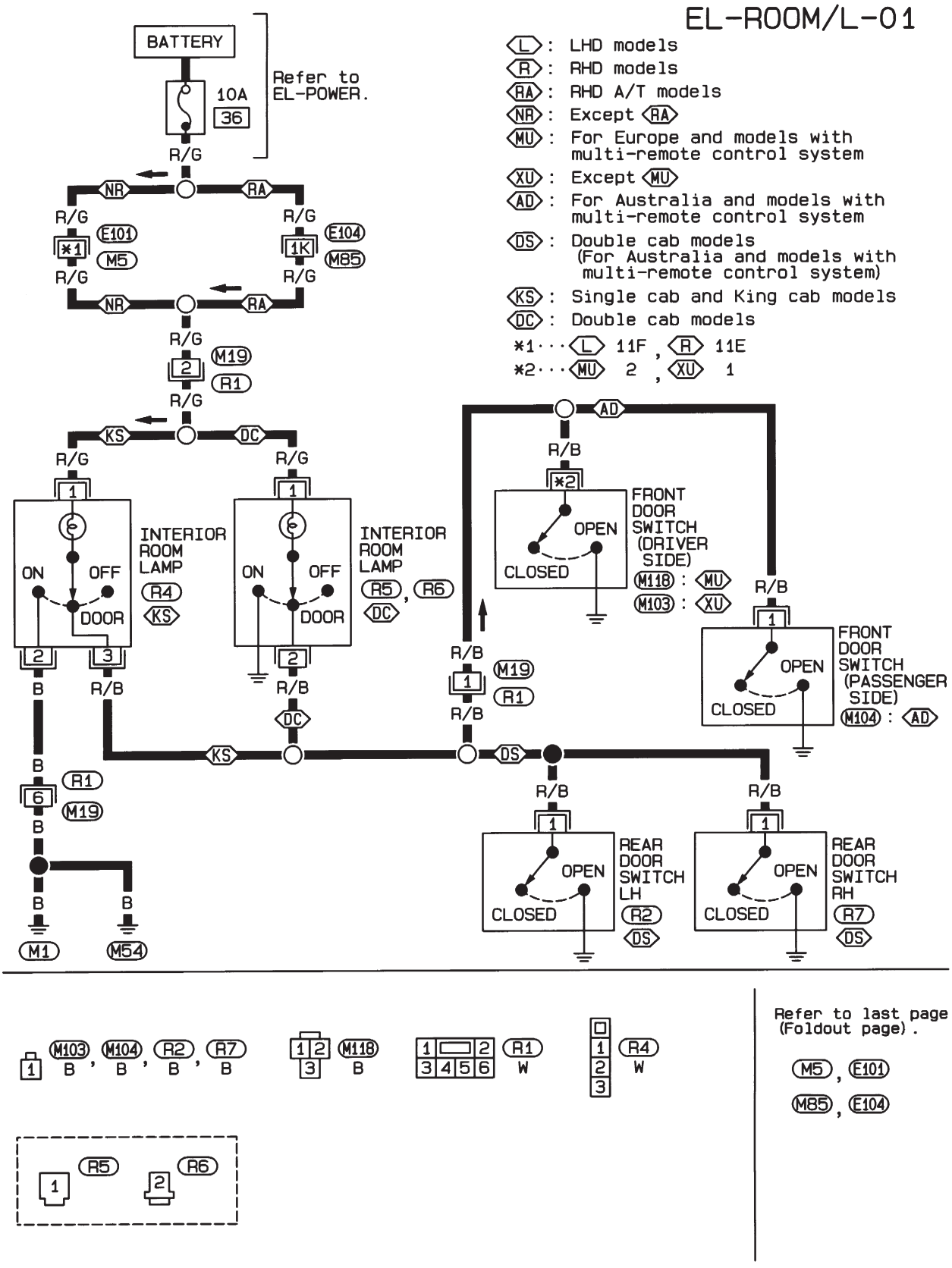
Wiring Diagram — ILL —/RHD Models (Cont'd)

EL-ILL-04



HEL711A

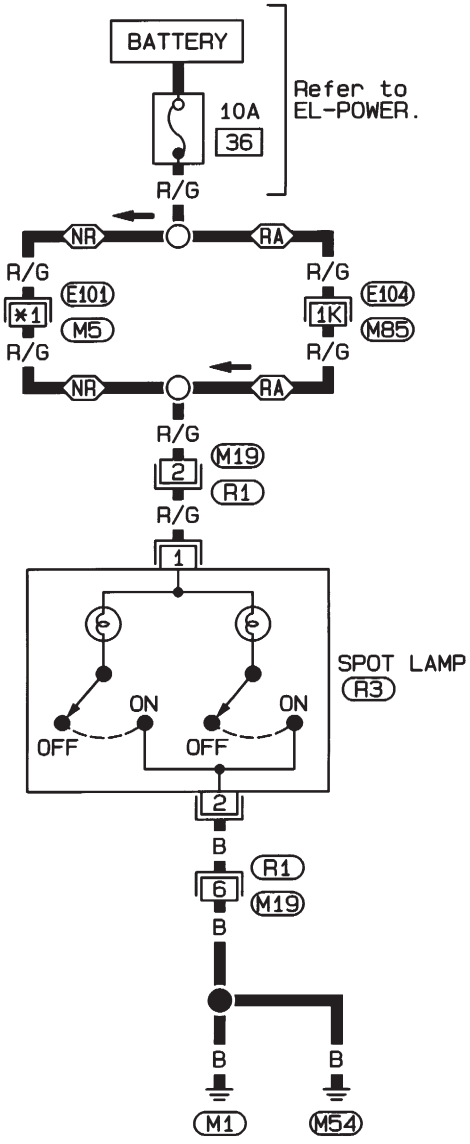
Wiring Diagram — ROOM/L —



HEL712A

Wiring Diagram — INT/L —

EL-INT/L-01



Ⓛ : LHD models
Ⓡ : RHD models
ⓇⒶ : RHD A/T models
ⓃⓇ : Except ⓇⒶ
*1 ··· Ⓛ 11F , Ⓡ 11E

Refer to last page (Foldout page).

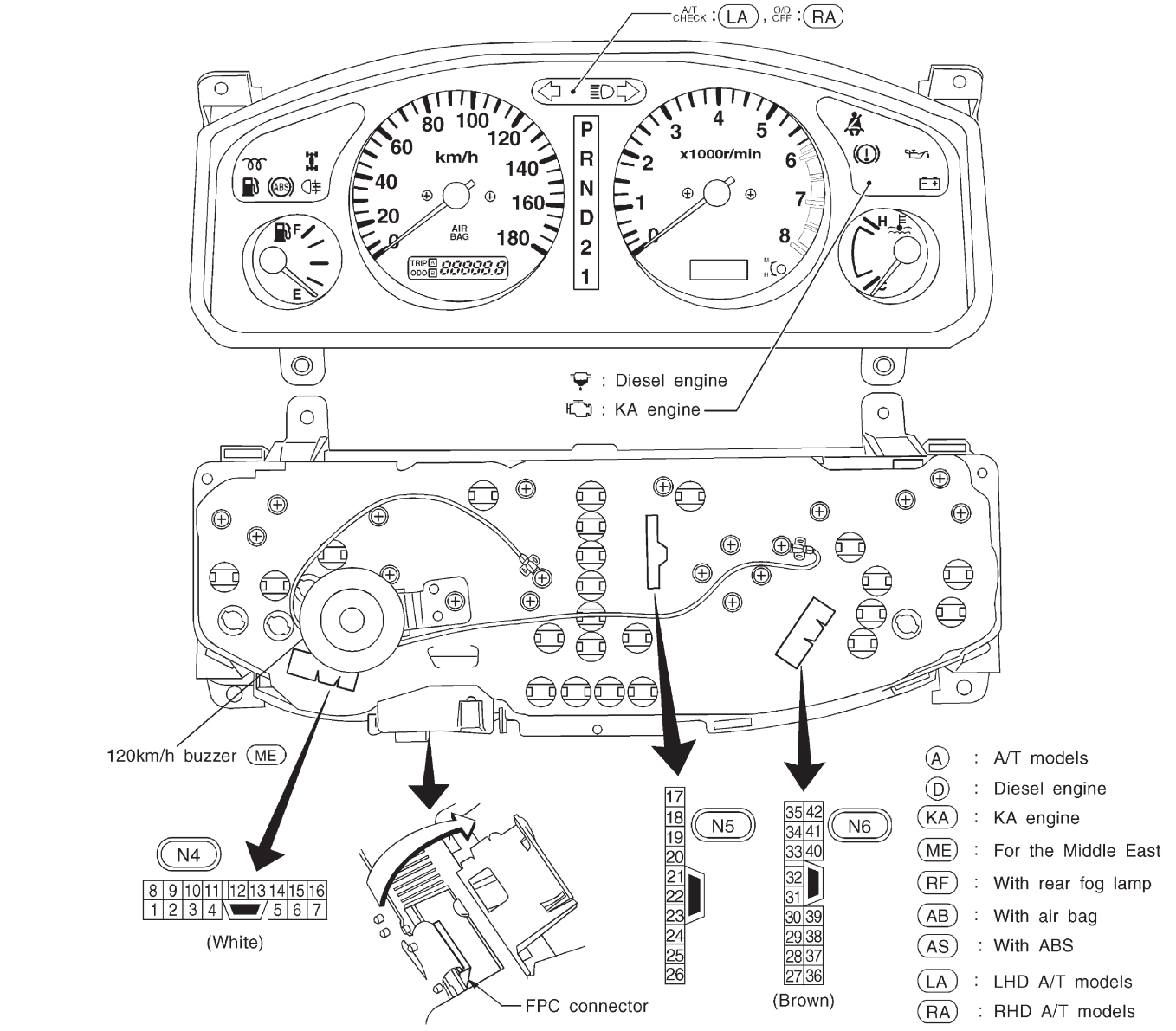
M5 , E101

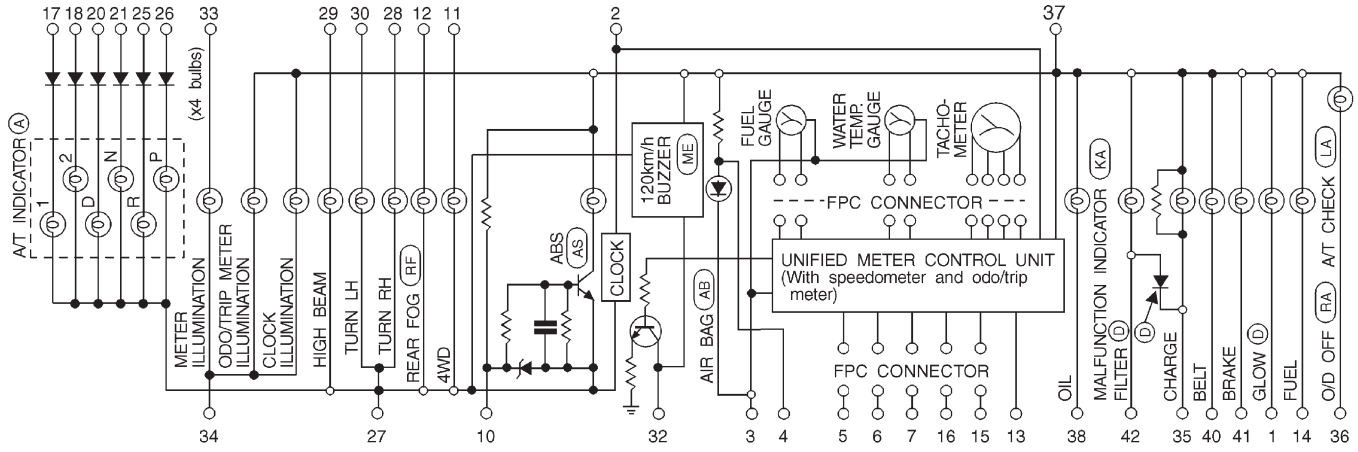
M85 , E104

HEL713A

Combination Meter

WITH TACHOMETER

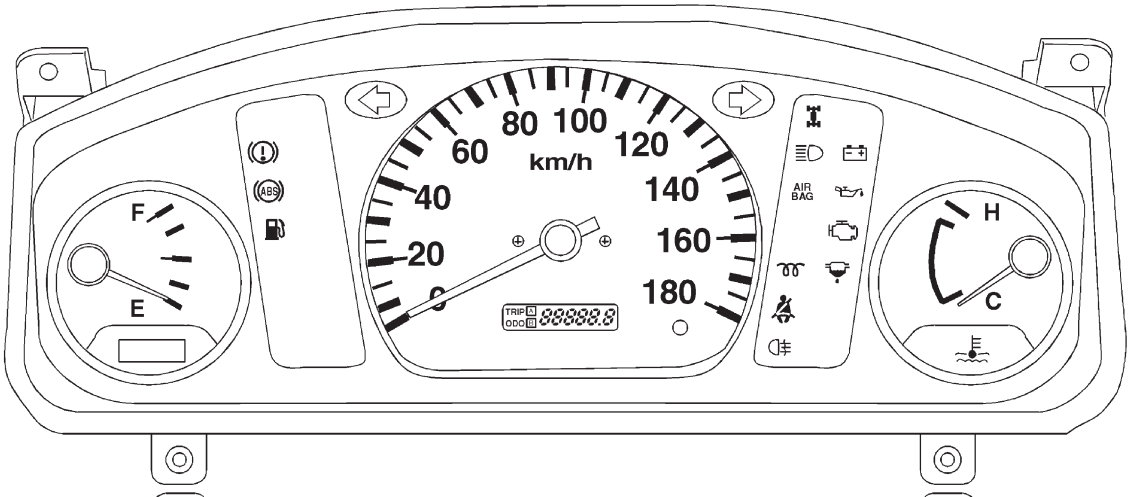


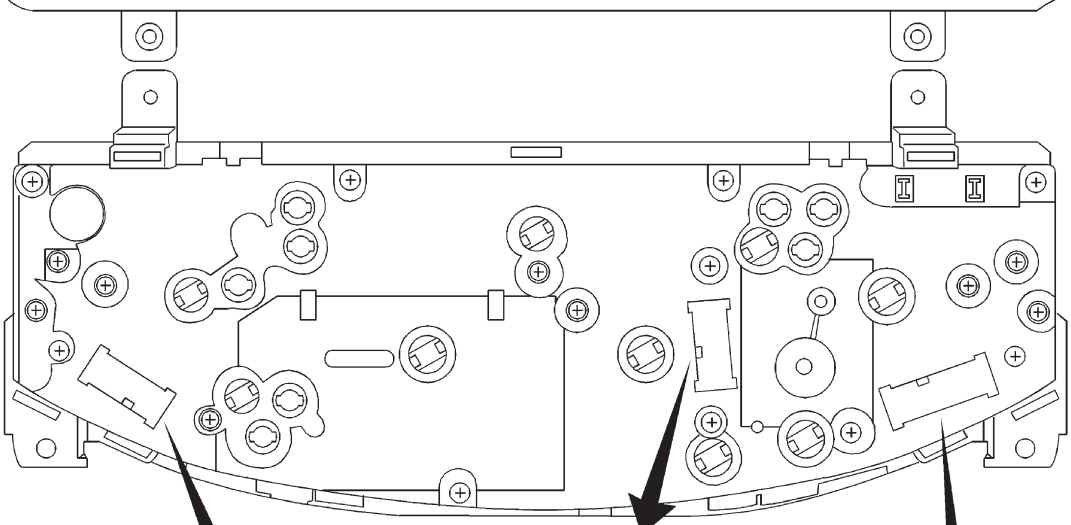


HEL714A

Combination Meter (Cont'd)

WITHOUT TACHOMETER





(D) : Diesel engine
(KA) : KA engine
(ME) : For the Middle East
(RF) : With rear fog lamp
(AB) : With air bag
(AS) : With ABS

N9

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

(White)

N10

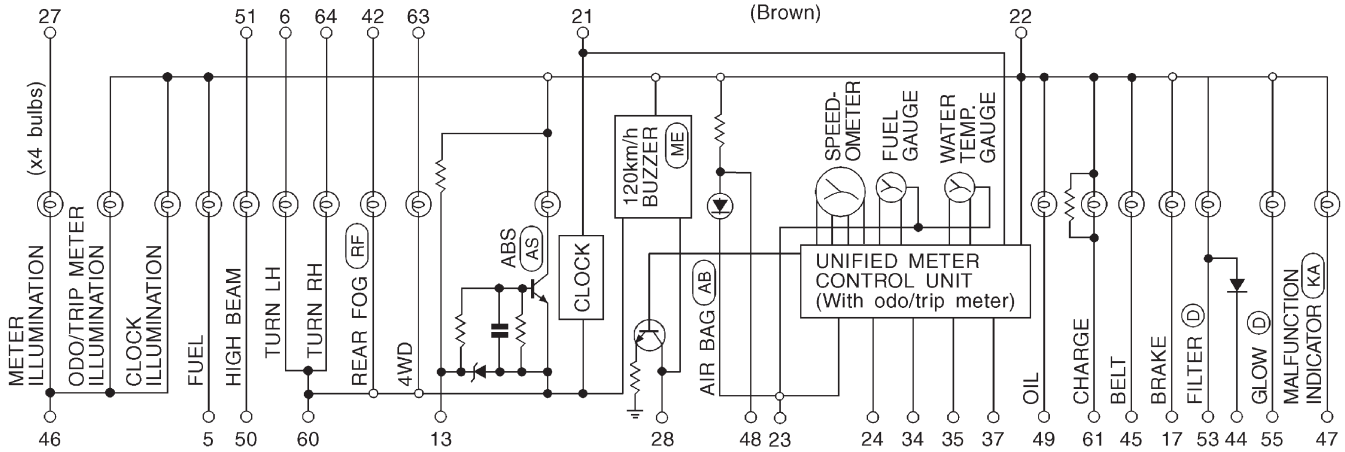
21	30
22	31
23	32
24	33
25	34
	35
	36
26	37
27	38
28	39
29	40

(Brown)

N11

51	50	49	48	47		46	45	44	43	42	41					
64	63	62	61	60	59	58	57	56	55	54	53	52				

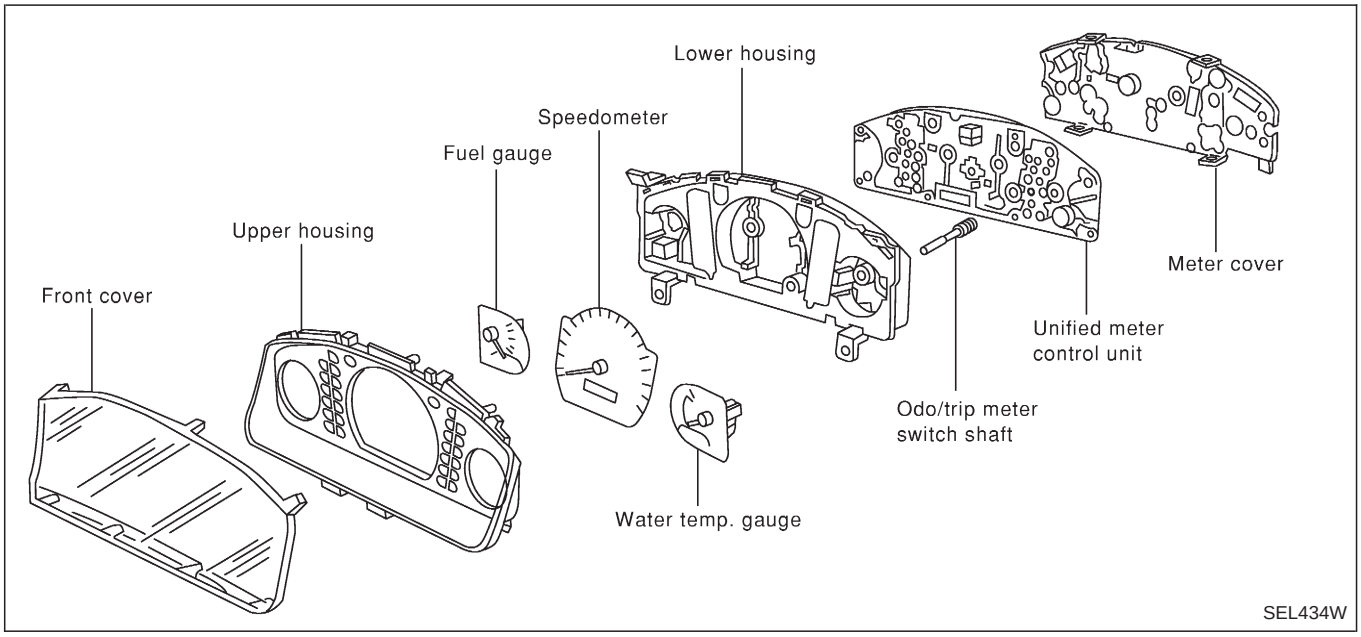
(White)



HEL715A

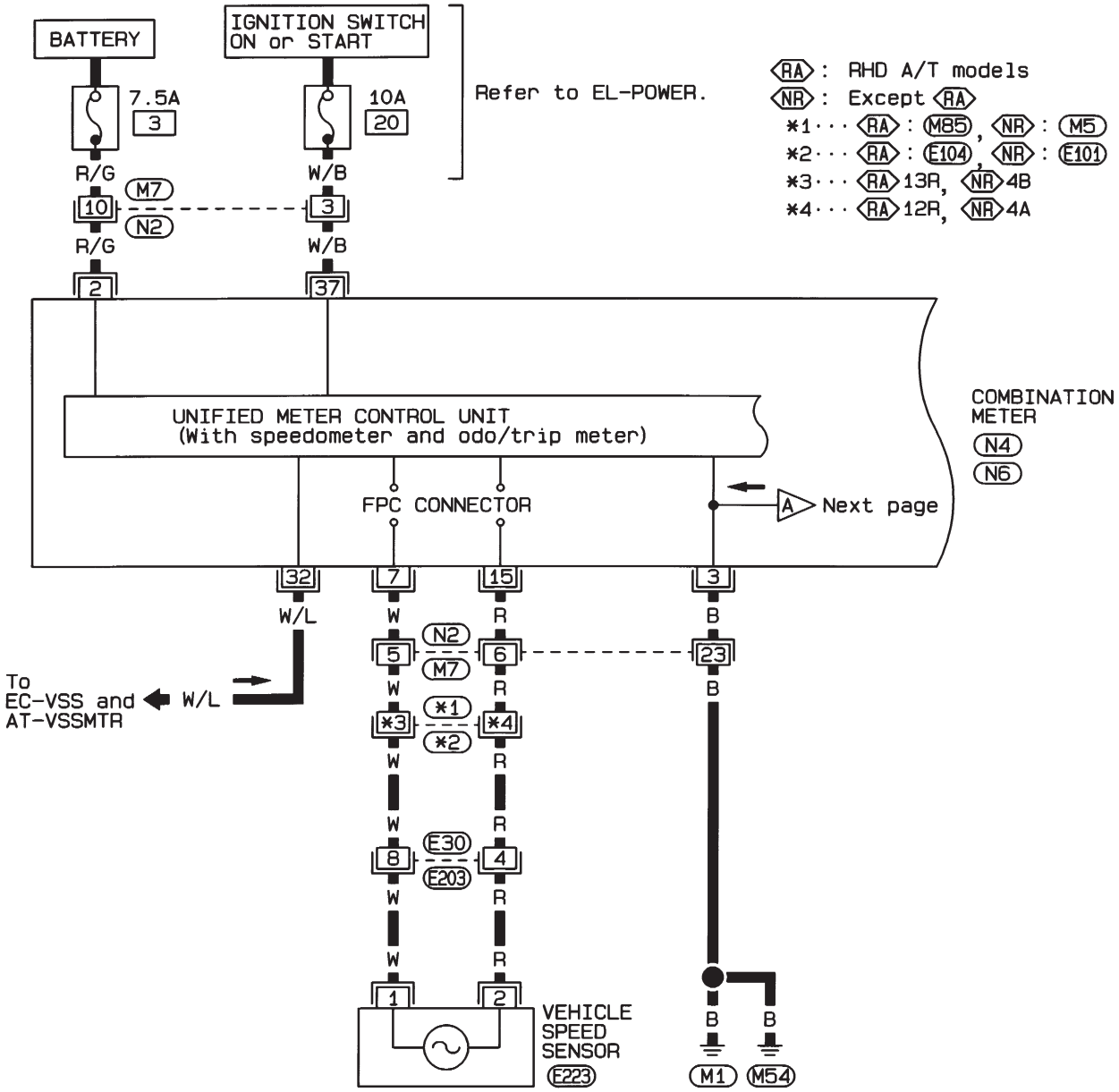
Combination Meter (Cont'd)

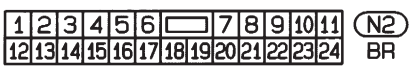
CONSTRUCTION (Without tachometer)

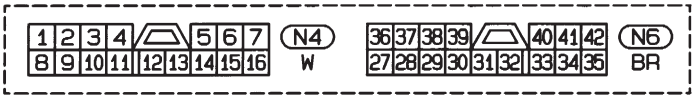


Wiring Diagram — METER —/Gasoline Engine with Tachometer

EL-METER-01







Refer to last page (Foldout page).

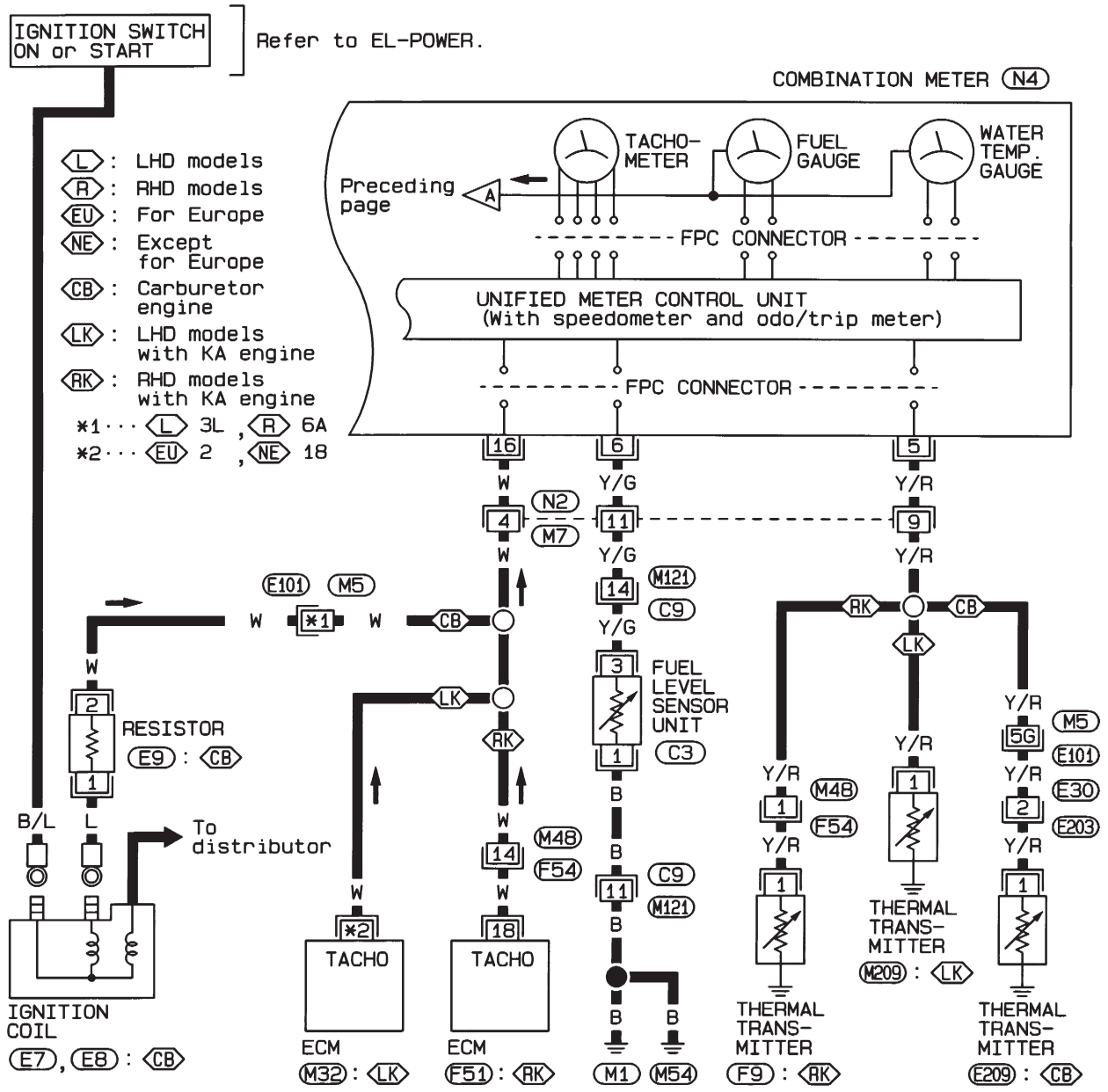
M5, E101

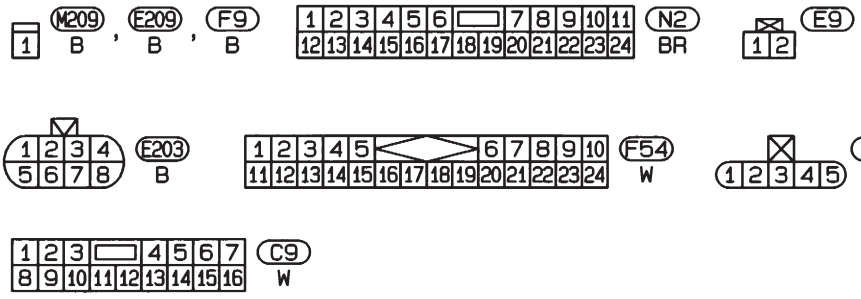
M85, E104

HEL716A

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

EL-METER-02





Refer to last page (Foldout page).

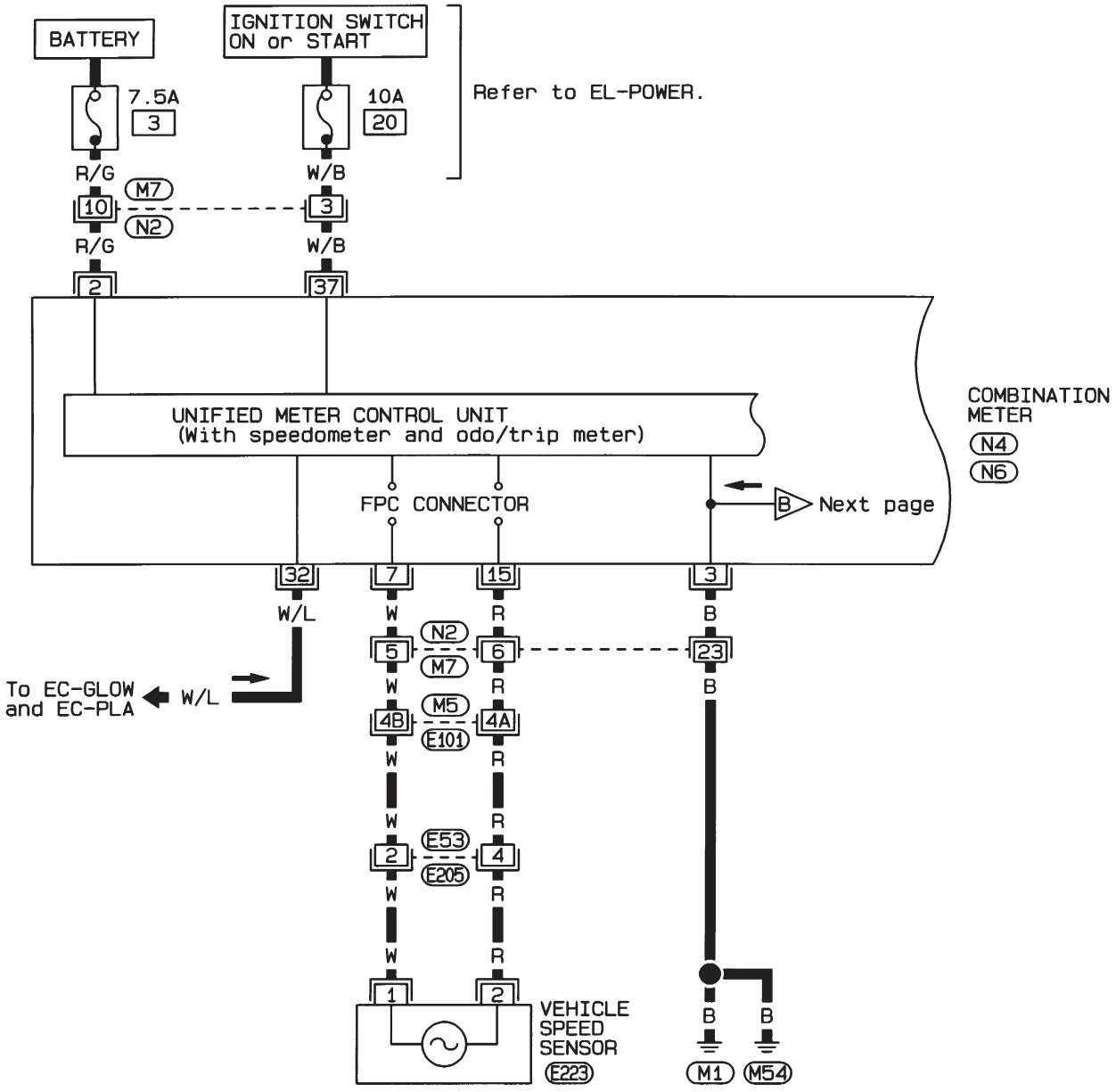
M5 , E101

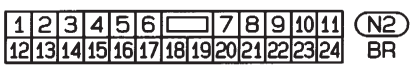
M32 , F51

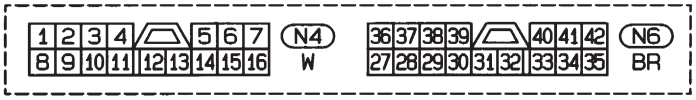
HEL717A

Wiring Diagram — METER —/Diesel Engine with Tachometer

EL-METER-03







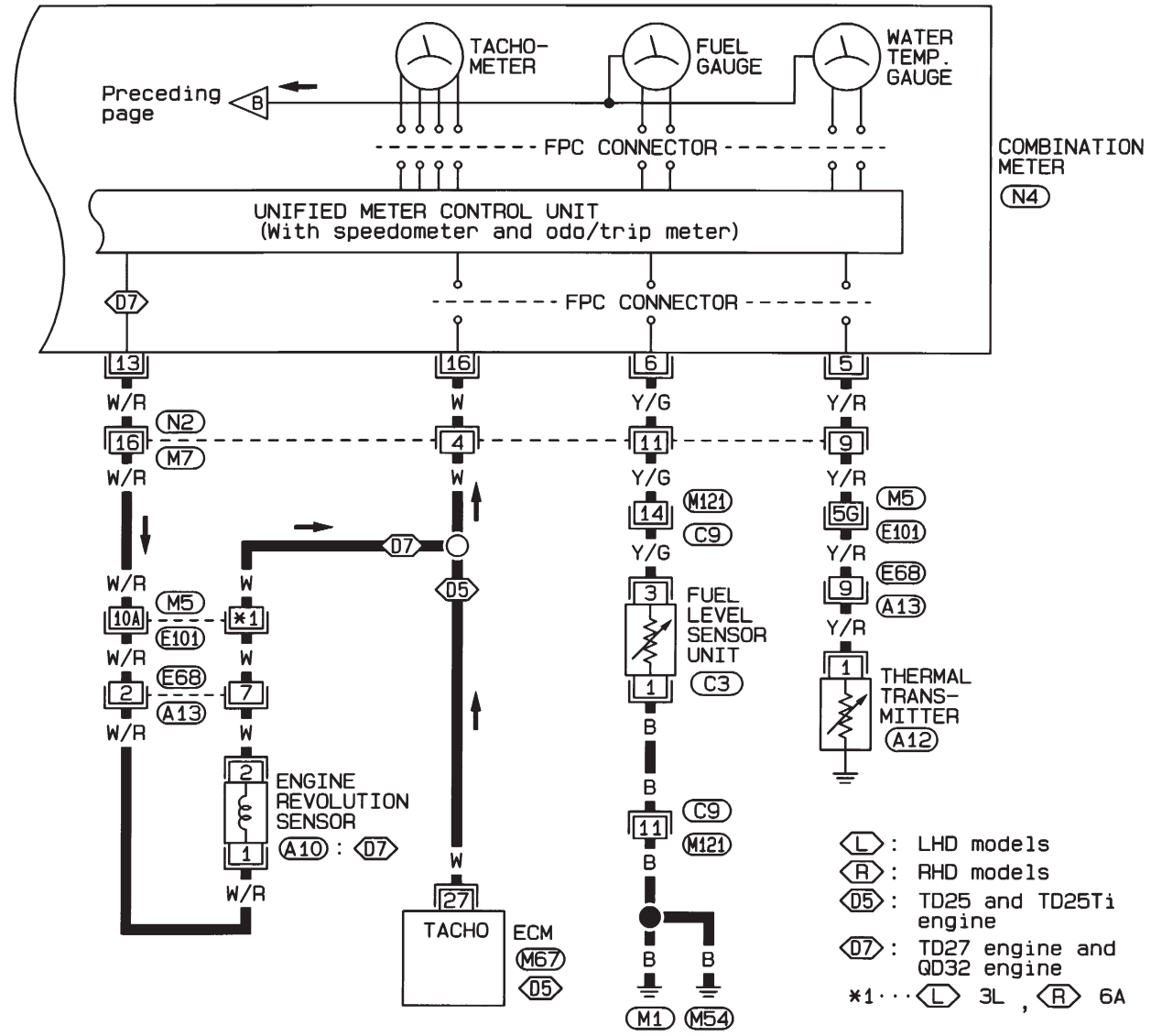
Refer to last page (Foldout page).

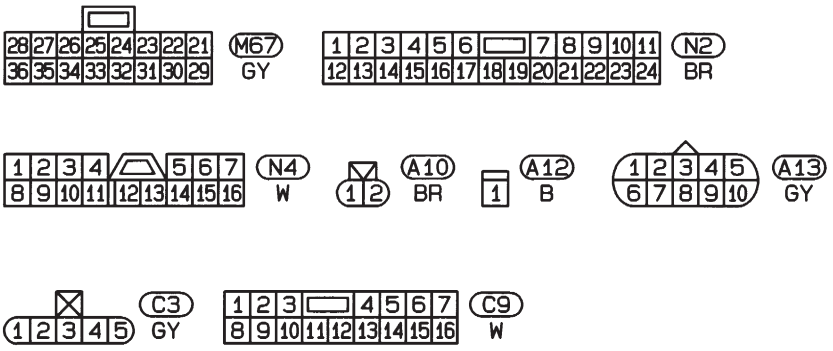
M5 , E101

HEL718A

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

EL-METER-04

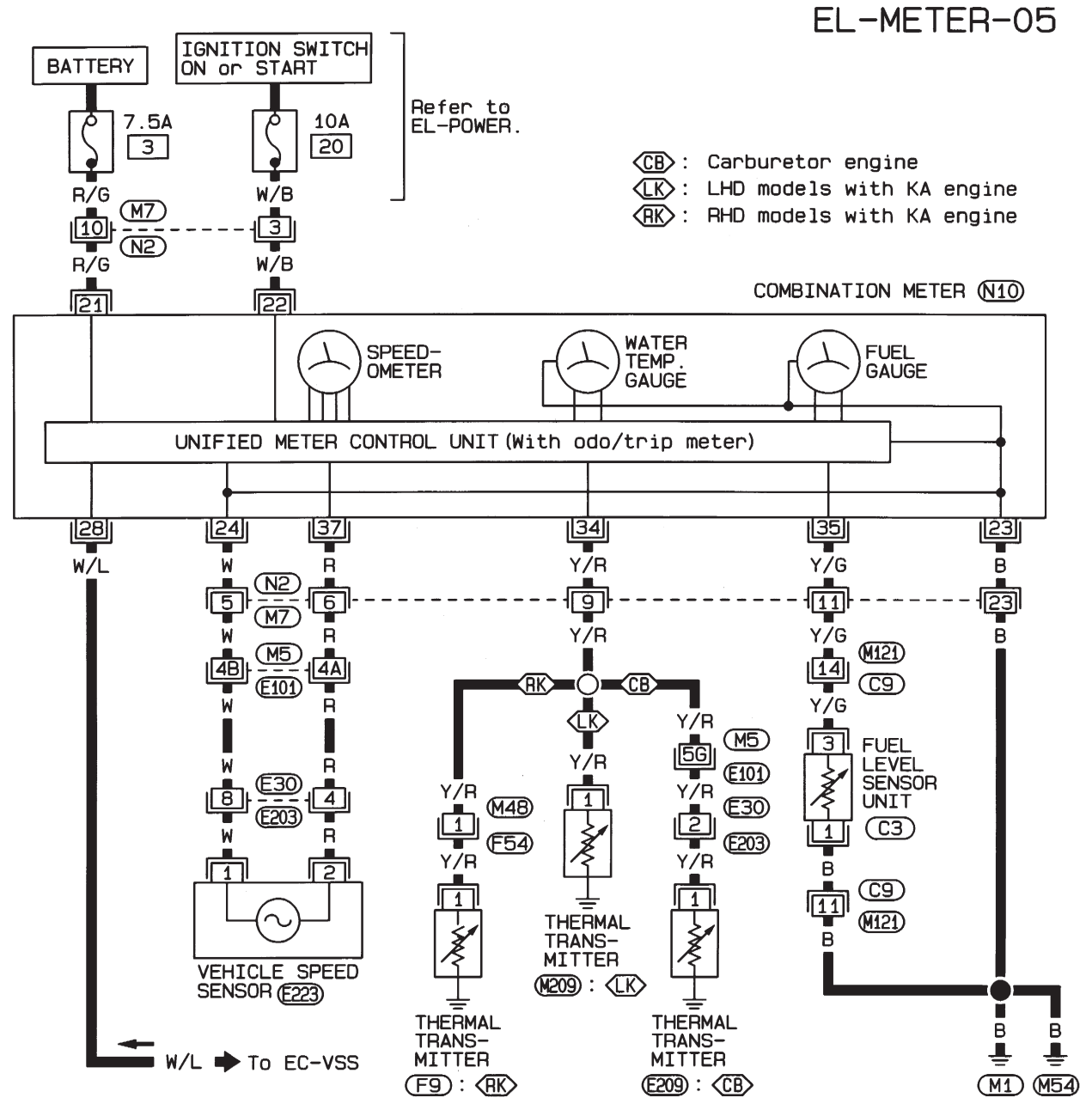


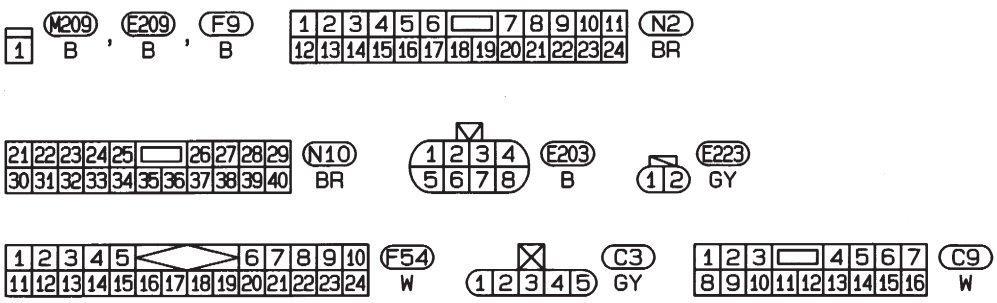


Refer to last page (Foldout page).
M5 , E101

HEL719A

Wiring Diagram — METER —/Gasoline Engine without Tachometer





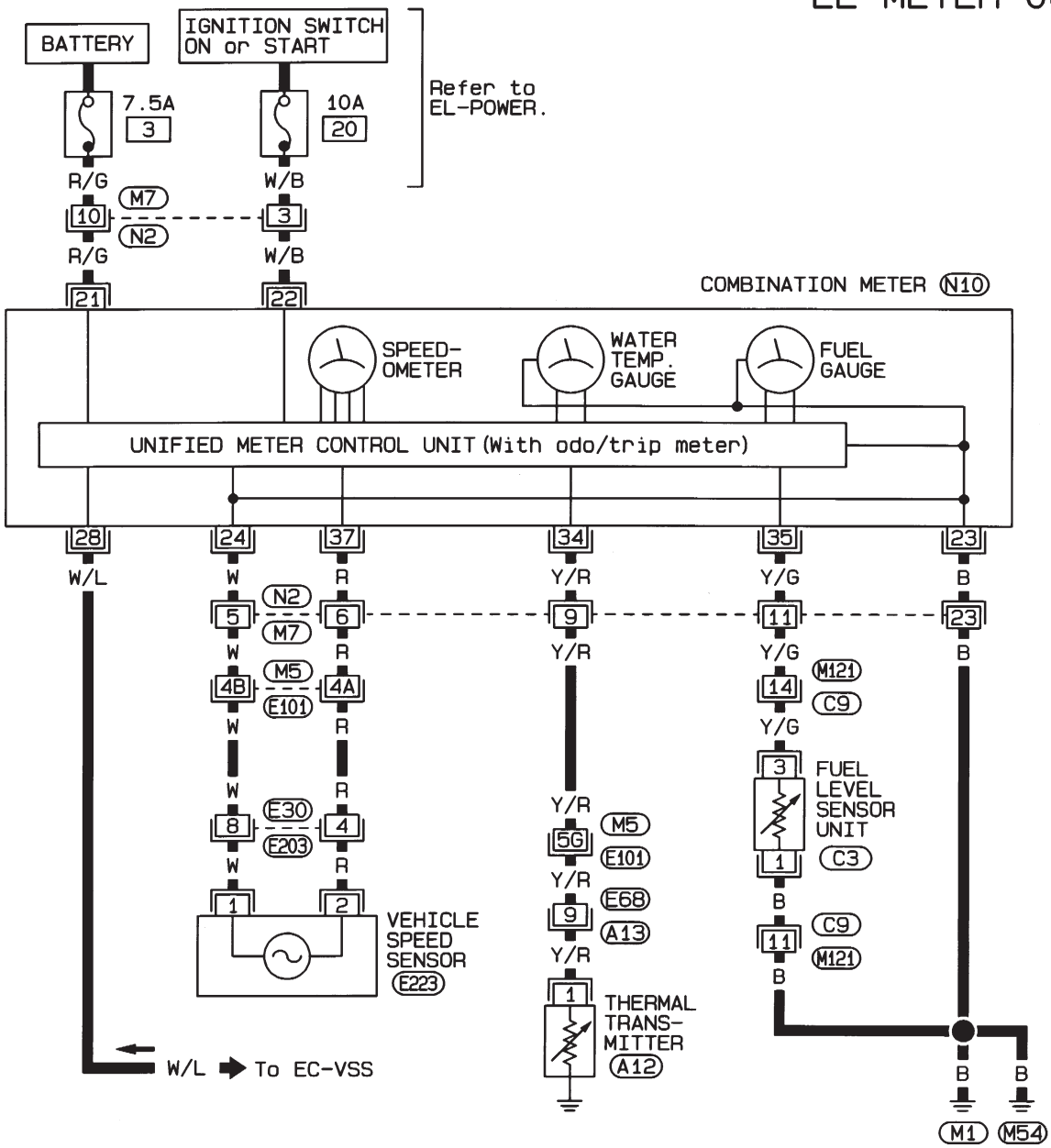
Refer to last page (Foldout page).

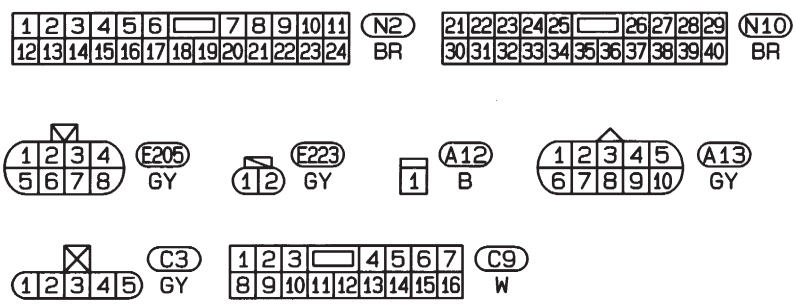
M5, E101

HEL720A

Wiring Diagram — METER —/Diesel Engine without Tachometer

EL-METER-06





Refer to last page (Foldout page).

M5, E101

HEL721A

Unified Control Meter System Description

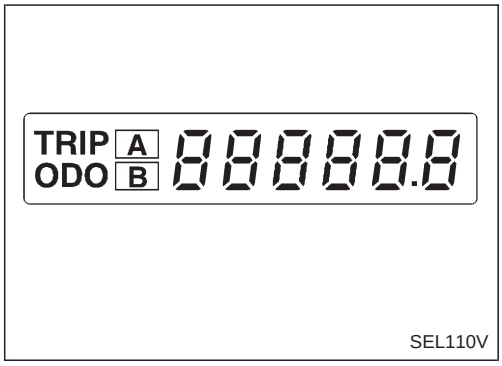
UNIFIED CONTROL METER

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

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.



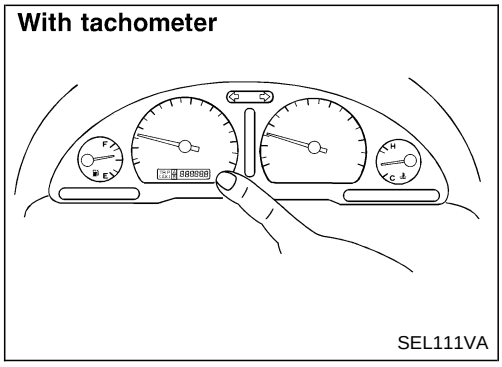
SEL110V

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 should be replaced.

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

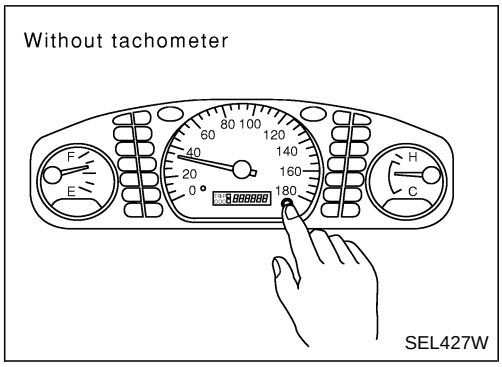


SEL111VA

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

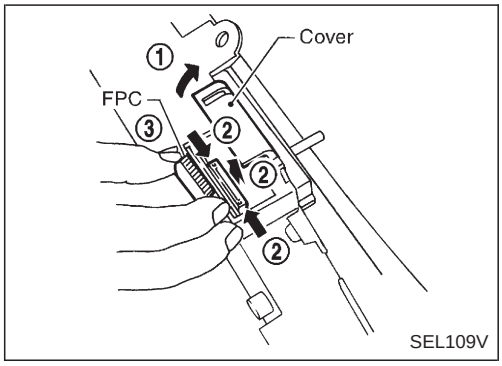
NOTE: It takes about 1 minute for indication of fuel gauge to become stable.

Meter/gauge Operation and Odo/Trip Meter Segment Check in Diagnosis Mode (Cont'd)



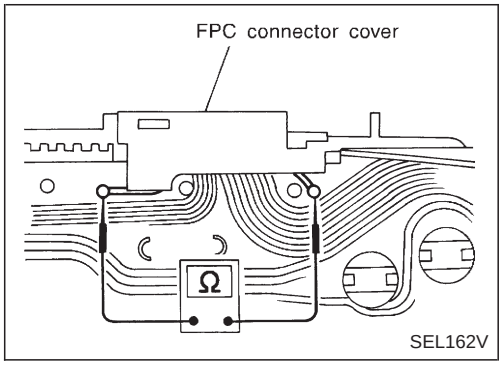
Flexible Print Circuit (FPC) (Models with Tachometer)

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



DISCONNECT

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

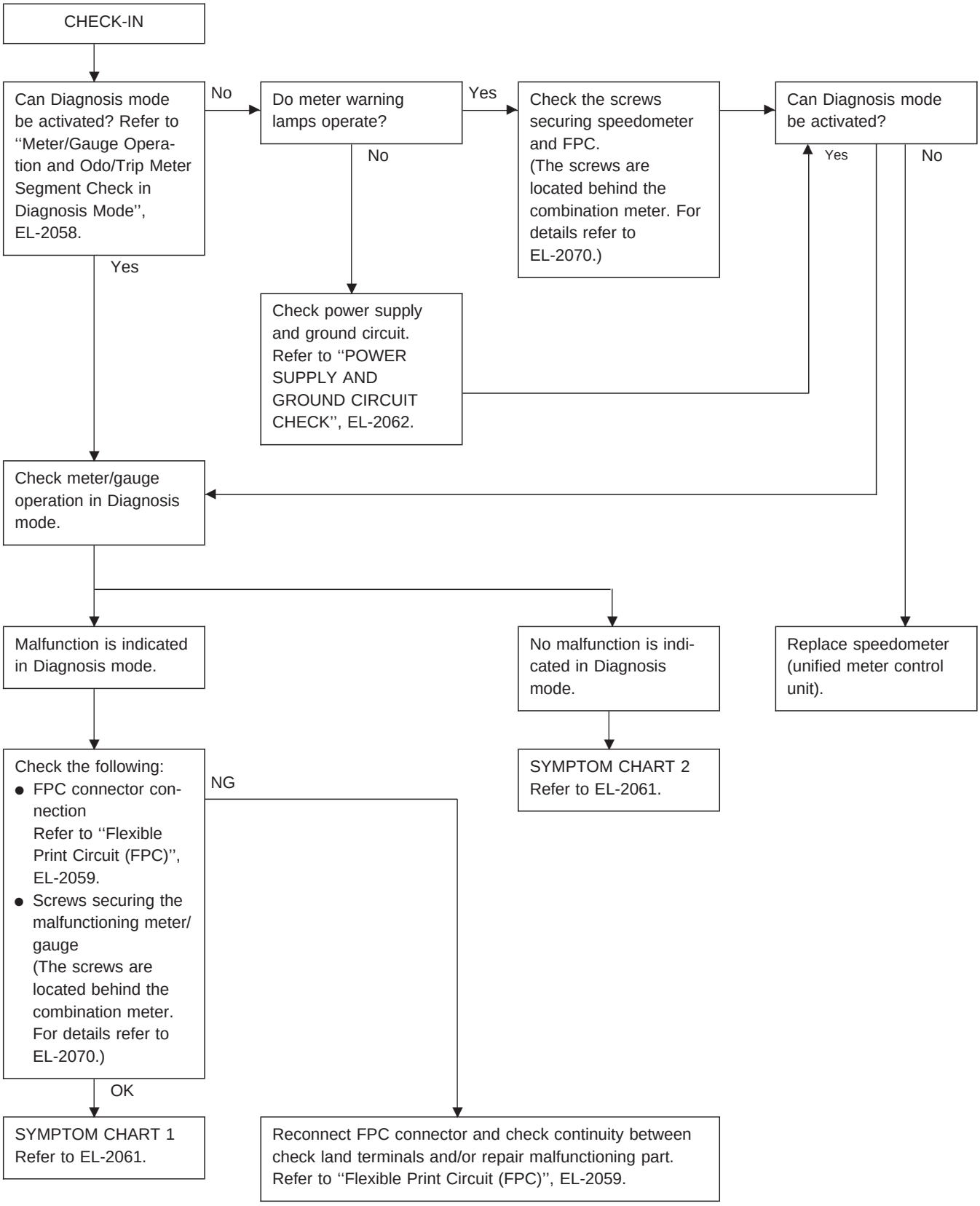


CONNECT

1. Insert FPC into connector and lock connector pushing FPC downward.
2. Check secure connection of FPC.
3. Check continuity of check land terminals for secure connection of FPC.
   Resistance: 0Ω
4. Close connector cover.

Trouble Diagnoses/Models with Tachometer

PRELIMINARY CHECK



Trouble Diagnoses/Models with Tachometer (Cont'd)

Before starting trouble diagnoses below, perform PRELIMINARY CHECK, EL-2060.

SYMPTOM CHART 1 (MALFUNCTION IS INDICATED IN DIAGNOSIS MODE)

Symptom	Possible causes	Repair order
Speedometer and/or odo/trip meter indicate(s) malfunction in Diagnosis mode.	● Speedometer (Unified meter control unit)	● Replace speedometer (unified meter control unit).
Multiple meter/gauge indicate malfunction in Diagnosis mode.		
One of tachometer/fuel gauge/ water temp. gauge indicates malfunction in Diagnosis mode.	● Meter/Gauge ● Speedometer (Unified meter control unit)	1. Check resistance of meter/gauge indicating malfunction. If the resistance is NG, replace the meter/gauge. Refer to ''METER/GAUGE RESISTANCE CHECK'', EL-2070. 2. If the resistance is OK, replace speedometer (unified meter control unit).

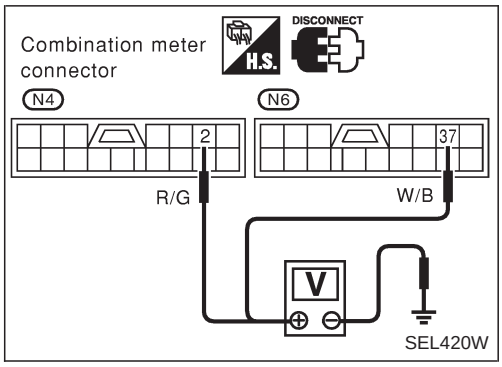
SYMPTOM CHART 2 (NO MALFUNCTION IS INDICATED IN DIAGNOSIS MODE)

Symptom	Possible causes	Repair order
Speedometer and odo/trip meter are malfunctioning.	1. Sensor - Speedometer, Odo/Trip meter 2. FPC connector 3. Speedometer (Unified meter control unit)	1. Check vehicle speed sensor. INSPECTION/VEHICLE SPEED SENSOR (Refer to EL-2063.) 2. Check FPC connector. Refer to ''FLEXIBLE PRINT CIRCUIT (FPC)'', EL-2059. 3. Replace speedometer (unified meter control unit).
Multiple meter/gauge are malfunctioning. (except speedometer, odo/trip meter)	1. FPC connector 2. Speedometer (Unified meter control unit)	1. Check FPC connector. Refer to ''FLEXIBLE PRINT CIRCUIT (FPC)'', EL-2059. 2. Replace speedometer (unified meter control unit).
One of tachometer/fuel gauge/ water temp. gauge is malfunctioning.	1. Sensor/Engine revolution signal - Tachometer - Fuel gauge - Water temp. gauge 2. FPC connector 3. Speedometer (Unified meter control unit)	1. Check the sensor for malfunctioning meter/gauge. INSPECTION/ENGINE REVOLUTION SIGNAL (Refer to EL-2063.) INSPECTION/FUEL TANK GAUGE (Refer to EL-102.) INSPECTION/THERMAL TRANSMITTER (Refer to EL-2064.) 2. Check FPC connector. Refer to ''Flexible Print Circuit (FPC)'', EL-2059. 3. Replace speedometer (unified meter control unit).

Trouble Diagnoses/Models with Tachometer (Cont'd)

POWER SUPPLY AND GROUND CIRCUIT CHECK

Power supply circuit check

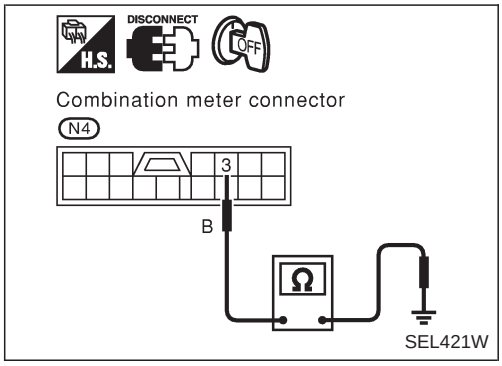


Terminals		Ignition switch position		
⊕	⊖	OFF	ACC	ON
②	Ground	Battery voltage	Battery voltage	Battery voltage
㊲	Ground	0V	0V	Battery voltage

If NG, check the following.

- 7.5A fuse [No. 3, located in fuse block (J/B)]
- 10A fuse [No. 20, located in fuse block (J/B)]
- Harness for open or short between fuse and combination meter

Ground circuit check

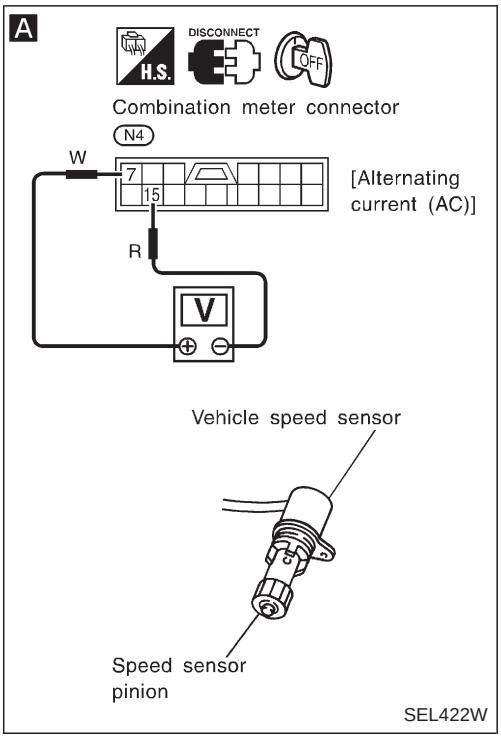


Terminals	Continuity
③ - Ground	Yes

Trouble Diagnoses/Models with Tachometer (Cont'd)

INSPECTION/VEHICLE SPEED SENSOR

A



CHECK VEHICLE SPEED SENSOR OUTPUT.
1. Remove vehicle speed sensor from transmission.
2. Check voltage between combination meter terminals ⑦ and ⑮ while quickly turning speed sensor pinion.
   Voltage: Approx. 0.5V

OK → Vehicle speed sensor is OK.

NG ↓

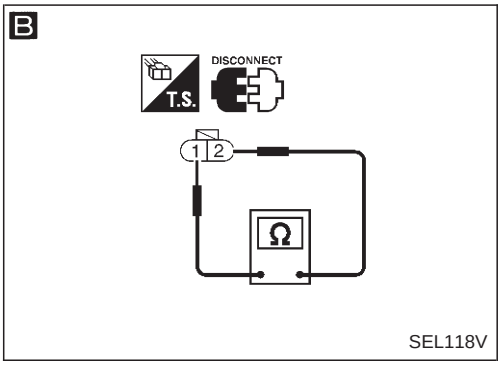
B

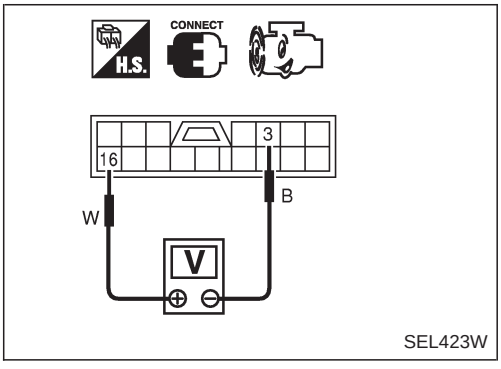
CHECK VEHICLE SPEED SENSOR.
Check resistance between vehicle speed sensor terminals ① and ②.
Resistance: Approx. 250Ω

NG → Replace vehicle speed sensor.

OK ↓

Check harness or connector between speedometer and vehicle speed sensor.





INSPECTION/ENGINE REVOLUTION SIGNAL (Models with tachometer)

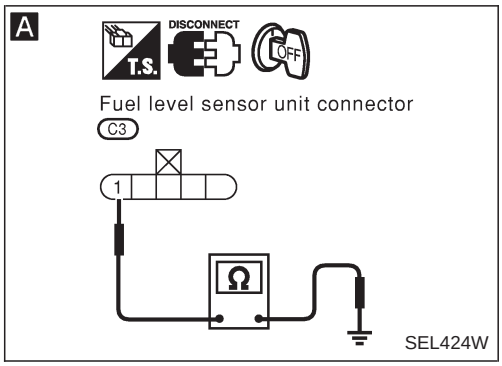
Engine	Check item	Terminals ⊕	Terminals ⊖	Explanation
ECM controlled engine	DC voltage	⑯	③	Higher rpm = Higher voltage Lower rpm = Lower voltage Voltage should change with rpm.
Carburetor	AC voltage			
Diesel TD27 and QD32				

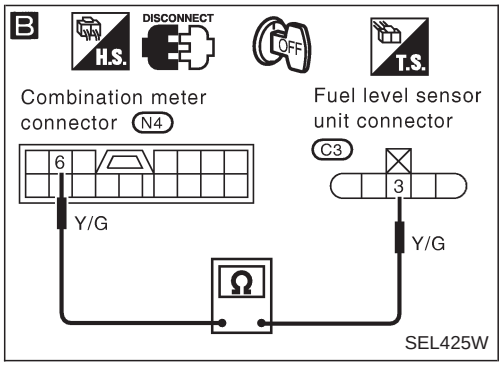
If NG, check the following.

Engine	Check item
ECM controlled engine	● Harness for open or short and connection
Carburetor	● Harness for open or short and connection ● Resistor etc.
Diesel TD27 and QD32	● Harness for open or short and connection ● Engine revolution sensor etc.

Trouble Diagnoses/Models with Tachometer (Cont'd)

INSPECTION/FUEL LEVEL SENSOR





A

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

NG → Repair harness or connector.

OK ↓

CHECK FUEL LEVEL SENSOR UNITS.
Refer to "FUEL LEVEL SENSOR UNIT CHECK" (EL-2070).

NG → Repair or replace. Refer to FE section.

OK ↓

B

CHECK HARNESS.
1. Disconnect combination meter connector N4 and fuel level sensor unit connector.
2. Check harness continuity between combination meter terminal ⑥ and fuel level sensor unit terminal ③.

Continuity should exist.

3. Check continuity between combination meter terminal ⑥ and ground.

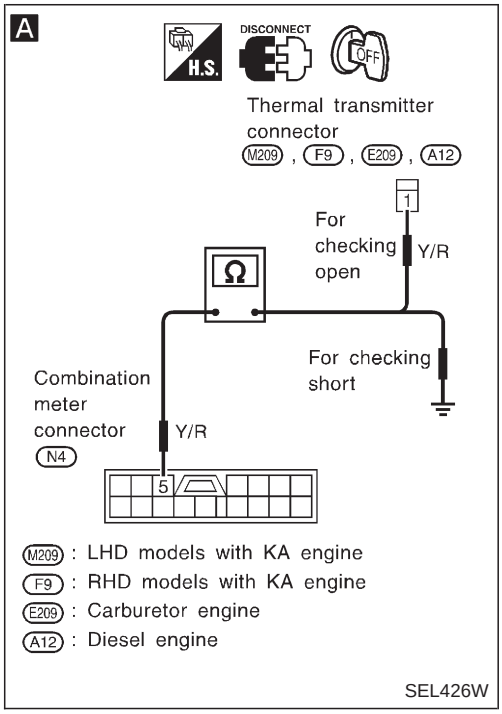
Continuity should not exist.

NG → Repair harness or connector.

OK ↓

Fuel level sensor is OK.

INSPECTION/THERMAL TRANSMITTER



CHECK THERMAL TRANSMITTER.
Refer to "THERMAL TRANSMITTER CHECK" (EL-2071).

NG → Repair or replace.

OK ↓

A

CHECK HARNESS.
1. Disconnect combination meter connector N4 and thermal transmitter connector.
2. Check harness continuity between combination meter terminal ⑤ and thermal transmitter terminal ①.

Continuity should exist.

3. Check continuity between combination meter terminal ⑤ and ground.

Continuity should not exist.

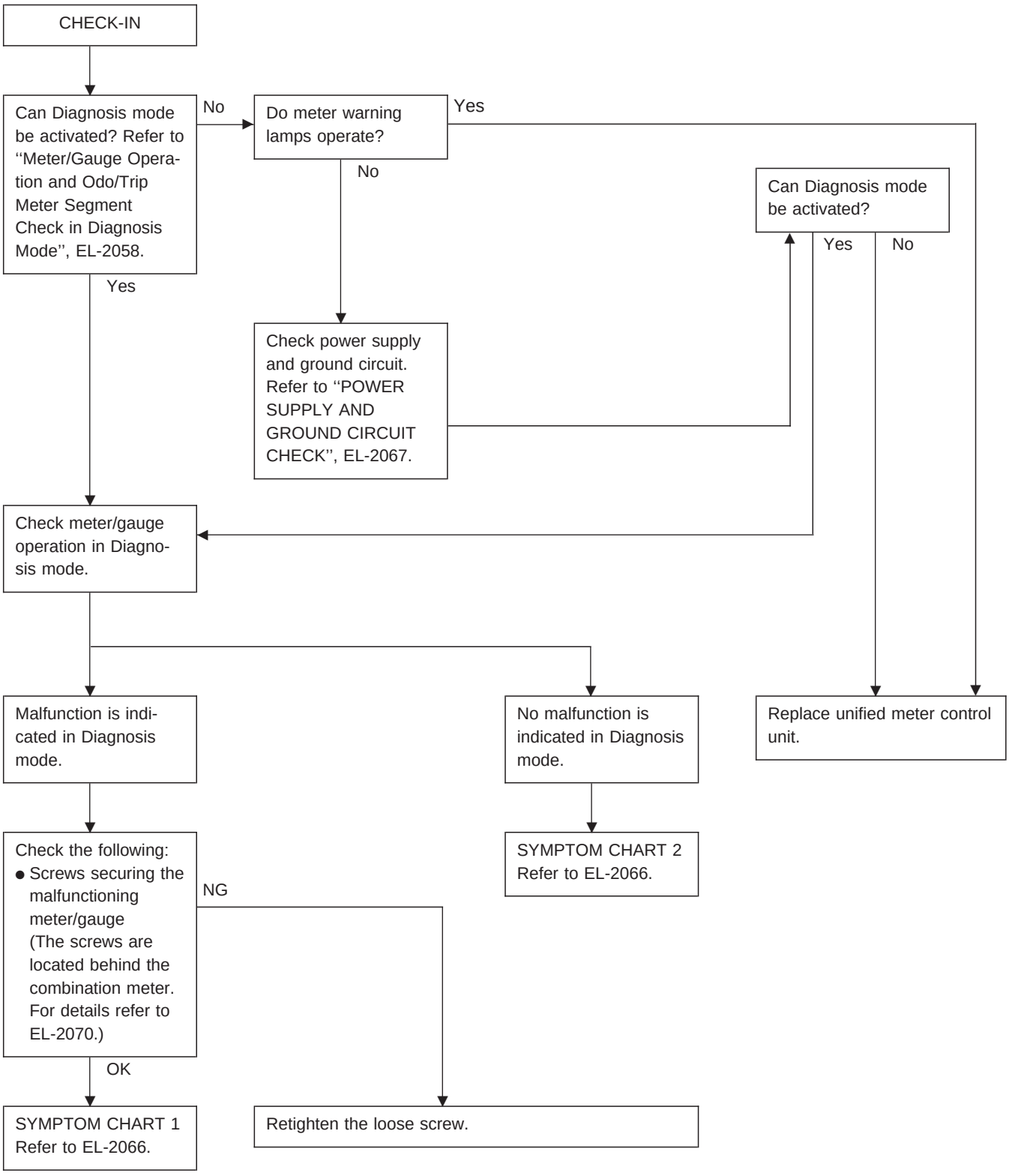
NG → Repair harness or connector.

OK ↓

Thermal transmitter is OK.

Trouble Diagnoses/Models without Tachometer

PRELIMINARY CHECK



Trouble Diagnoses/Models without Tachometer (Cont'd)

Before starting trouble diagnoses below, perform PRELIMINARY CHECK, EL-2065.

SYMPTOM CHART 1 (MALFUNCTION IS INDICATED IN DIAGNOSIS MODE)

Symptom	Possible causes	Repair order
Odo/trip meter indicate(s) malfunction in Diagnosis mode.	● Unified meter control unit	● Replace unified meter control unit.
Multiple meter/gauge indicate malfunction in Diagnosis mode.		
One of speedometer/ tachometer/fuel gauge/water temp. gauge indicates malfunction in Diagnosis mode.	● Meter/Gauge ● Unified meter control unit	1. Check resistance of meter/gauge indicating malfunction. If the resistance is NG, replace the meter/gauge. Refer to ''METER/GAUGE RESISTANCE CHECK'', EL-2070. 2. If the resistance is OK, replace unified meter control unit.

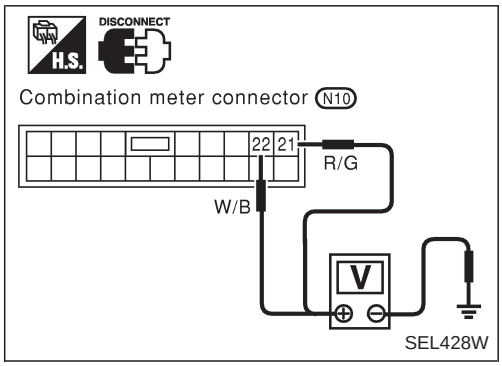
SYMPTOM CHART 2 (NO MALFUNCTION IS INDICATED IN DIAGNOSIS MODE)

Symptom	Possible causes	Repair order
One/or more of speedometer/ tachometer/fuel gauge/water temp. gauge is malfunctioning.	1. Sensor - Vehicle speed signal - Fuel gauge - Water temp. gauge 2. Unified meter control unit	1. Check the sensor for malfunctioning meter/gauge. INSPECTION/VEHICLE SPEED SENSOR (Refer to EL-2068.) INSPECTION/FUEL LEVEL SENSOR (Refer to EL-2064.) INSPECTION/THERMAL TRANSMITTER (Refer to EL-2069.) 2. Replace unified meter control unit.

Trouble Diagnoses/Models without Tachometer (Cont'd)

POWER SUPPLY AND GROUND CIRCUIT CHECK

Power supply circuit check

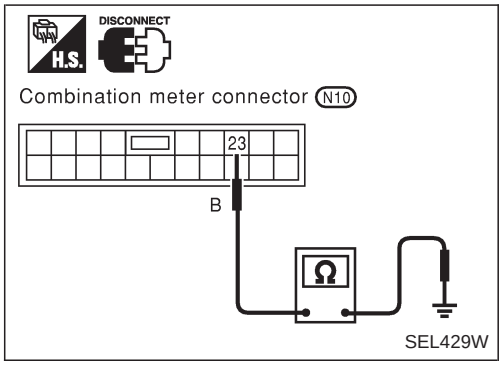


Terminals		Ignition switch position		
⊕	⊖	OFF	ACC	ON
21	Ground	Battery voltage	Battery voltage	Battery voltage
22	Ground	0V	0V	Battery voltage

If NG, check the following.

- 7.5A fuse [No. 3, located in fuse block (J/B)]
- 10A fuse [No. 20, located in fuse block (J/B)]
- Harness for open or short between fuse and combination meter

Ground circuit check

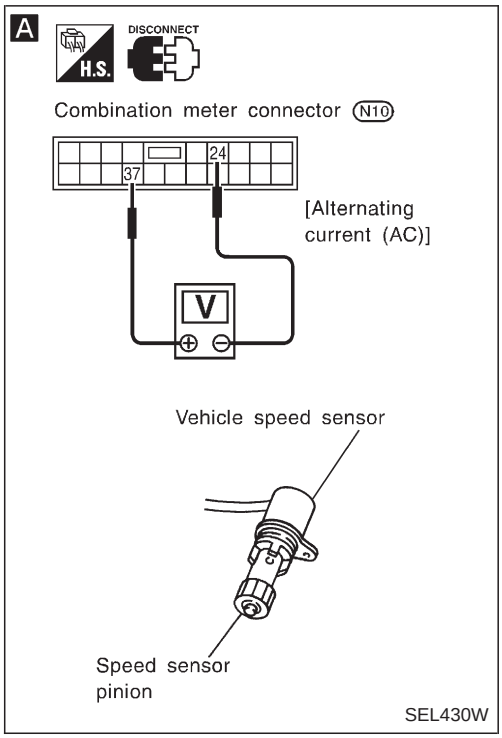


Terminals	Continuity
23 - Ground	Yes

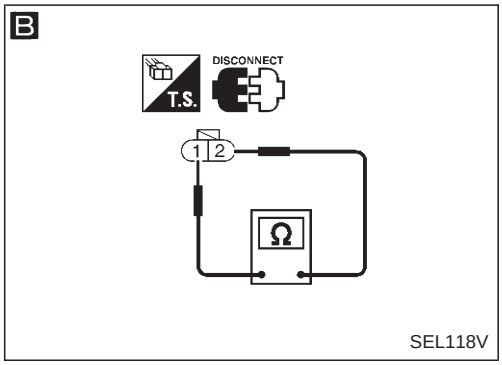
Trouble Diagnoses/Models without Tachometer (Cont'd)

INSPECTION/VEHICLE SPEED SENSOR

A



B



A

CHECK VEHICLE SPEED SENSOR OUTPUT.

1. Remove vehicle speed sensor from transmission.
2. Check voltage between combination meter terminals ㉔ and ㊲ while quickly turning speed sensor pinion.
   Voltage: Approx. 0.5V

OK → Vehicle speed sensor is OK.

NG ↓

B

CHECK VEHICLE SPEED SENSOR.

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

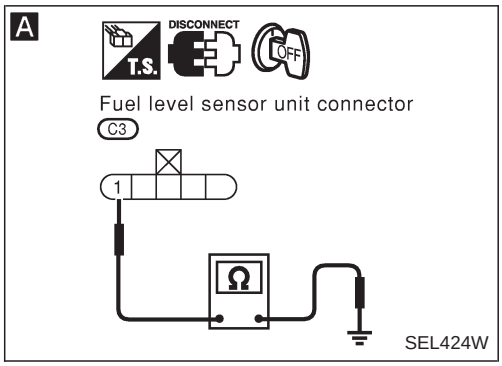
NG → Replace vehicle speed sensor.

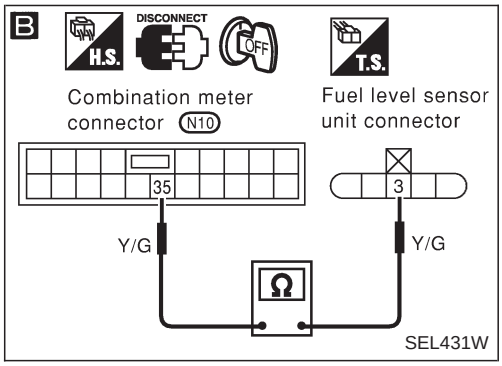
OK ↓

Check harness or connector between speedometer and vehicle speed sensor.

Trouble Diagnoses/Models without Tachometer (Cont'd)

INSPECTION/FUEL LEVEL SENSOR





A

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

NG → Repair harness or connector.

OK ↓

CHECK FUEL LEVEL SENSOR UNIT.
Refer to "FUEL LEVEL SENSOR UNIT CHECK" (EL-2070).

NG → Repair or replace. Refer to FE section.

OK ↓

B

CHECK HARNESS.
1. Disconnect combination meter connector (N10) and fuel level sensor unit connector.
2. Check harness continuity between combination meter terminal (35) and fuel level sensor unit terminal (3).

Continuity should exist.

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

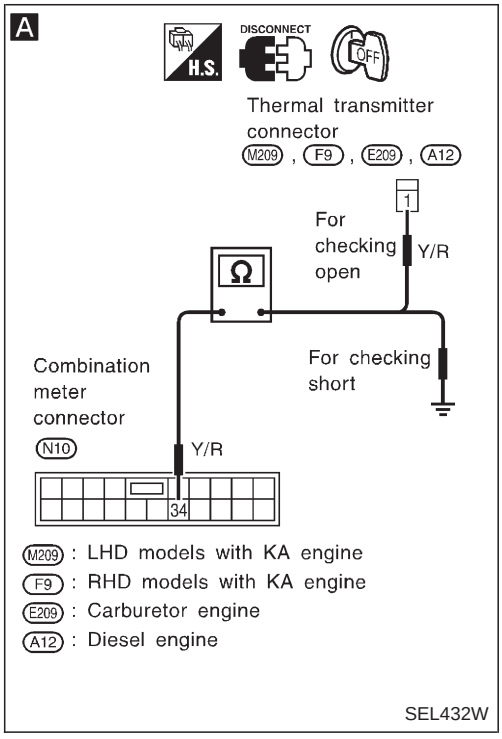
Continuity should not exist.

NG → Repair harness or connector.

OK ↓

Fuel level sensor is OK.

INSPECTION/THERMAL TRANSMITTER



CHECK THERMAL TRANSMITTER.
Refer to "THERMAL TRANSMITTER CHECK" (EL-2071).

NG → Repair or replace.

OK ↓

A

CHECK HARNESS.
1. Disconnect combination meter connector (N10) and thermal transmitter connector.
2. Check harness continuity between combination meter terminal (34) and thermal transmitter terminal (1).

Continuity should exist.

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

Continuity should not exist.

NG → Repair harness or connector.

OK ↓

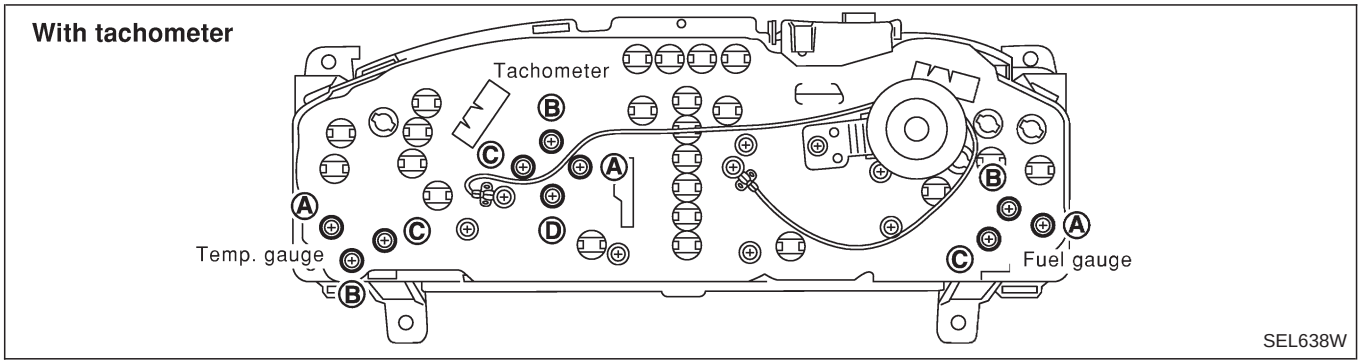
Thermal transmitter is OK.

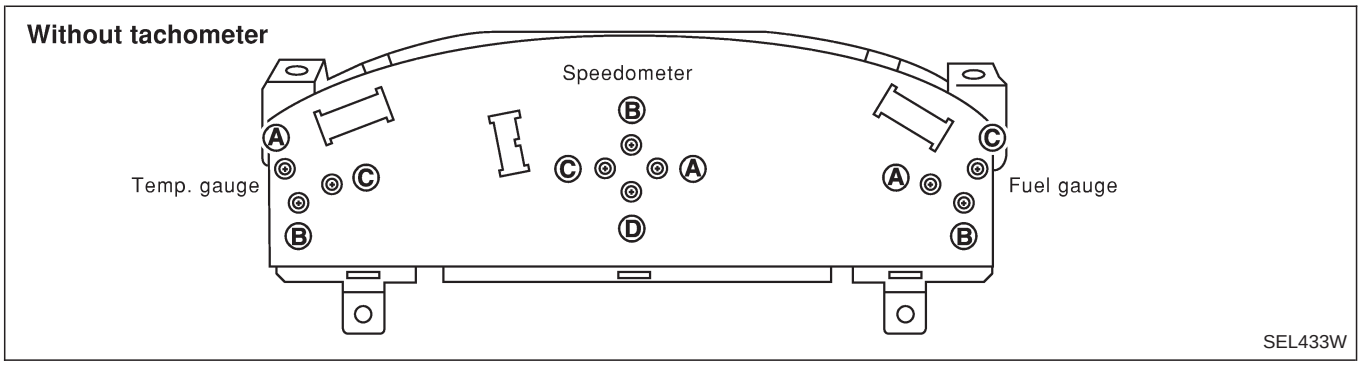
Electrical Components Inspection

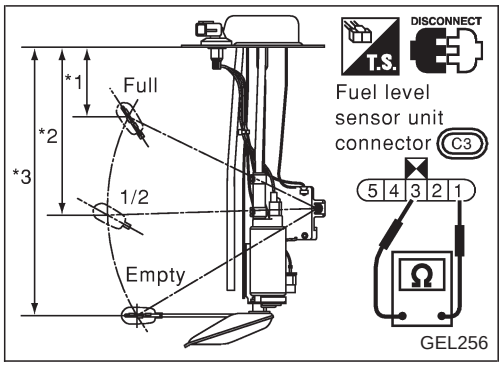
METER/GAUGE RESISTANCE CHECK

1. Disconnect FPC connector (Combination meter with tachometer). Refer to EL-2059.
2. Check resistance between terminals (the points of installation screws) of meter/gauge after removing meter/gauge.

Screws		Resistance Ω
Tachometer	Fuel/Temp. gauge	
A - C	A - C	Approx. 140 - Approx. 260
B - D	B - C	Approx. 230 - Approx. 310







FUEL LEVEL SENSOR UNIT CHECK

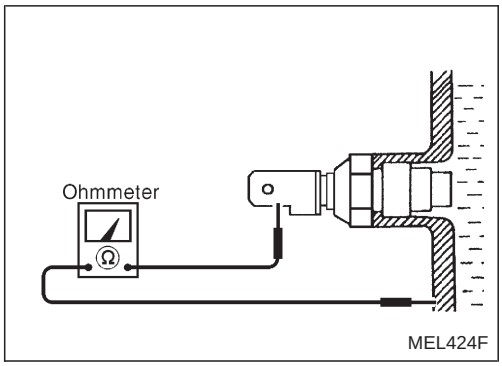
- For removal, refer to FE section.

Check the resistance between terminals ① and ③.

Ohmmeter		Float position mm (in)				Resistance value Ω
(+)	(−)			60ℓ (13-1/4 Imp gal) tank	80ℓ (17-5/8 Imp gal) tank	
③	①	*1	Full	253 (9.96)	77 (3.03)	Approx. 4 - 6
		*2	1/2	130 (5.12)	191 (7.52)	27 - 35
		*3	Empty	27 (1.06)	299 (11.77)	78 - 85

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

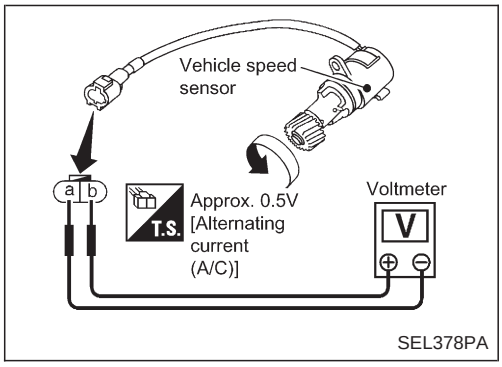
Electrical Components Inspection (Cont'd)



THERMAL TRANSMITTER CHECK

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

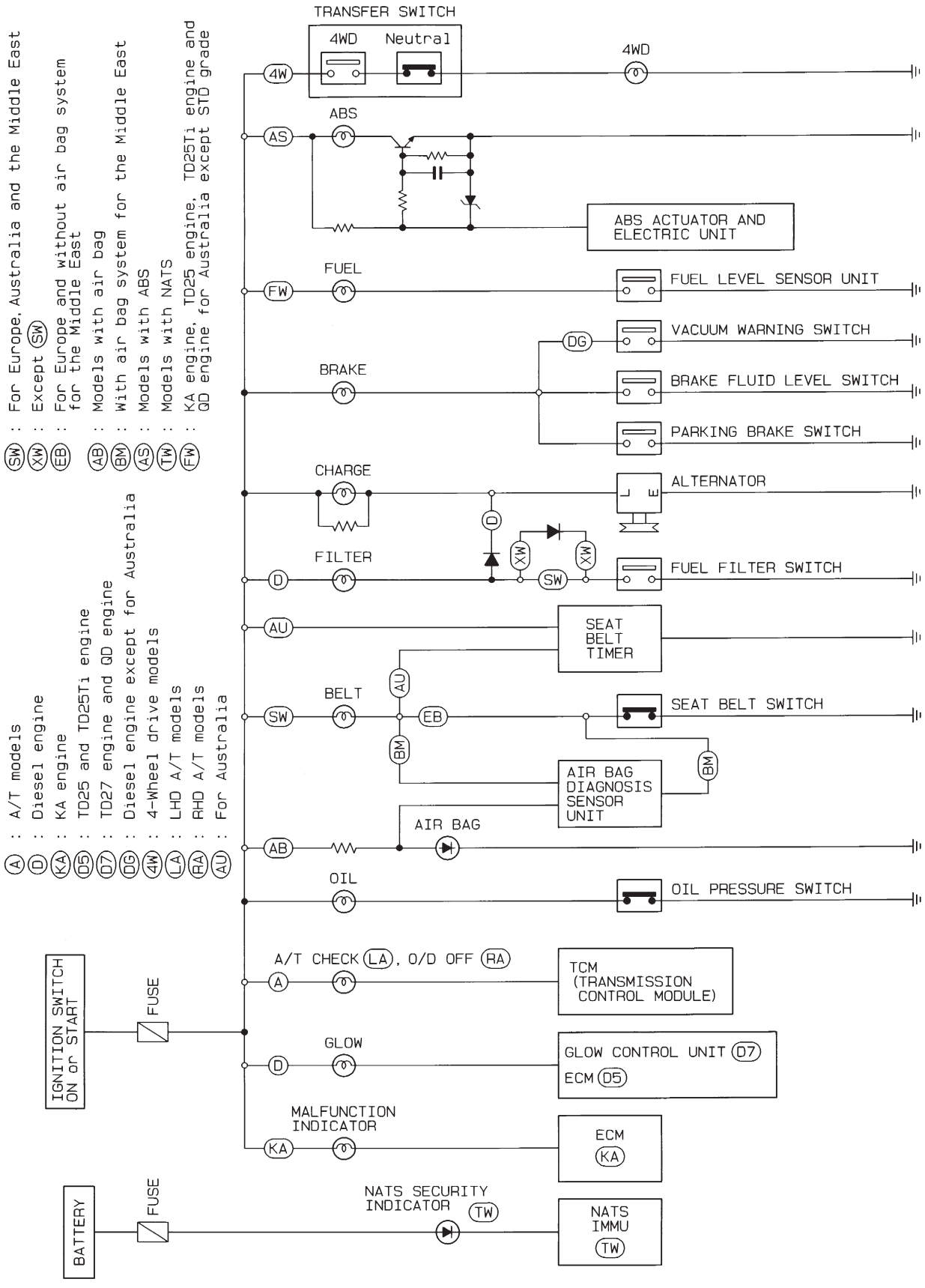
Water temperature	Resistance
60°C (140°F)	Approx. 167 - 211Ω
100°C (212°F)	Approx. 47 - 53Ω



VEHICLE SPEED SENSOR SIGNAL CHECK

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

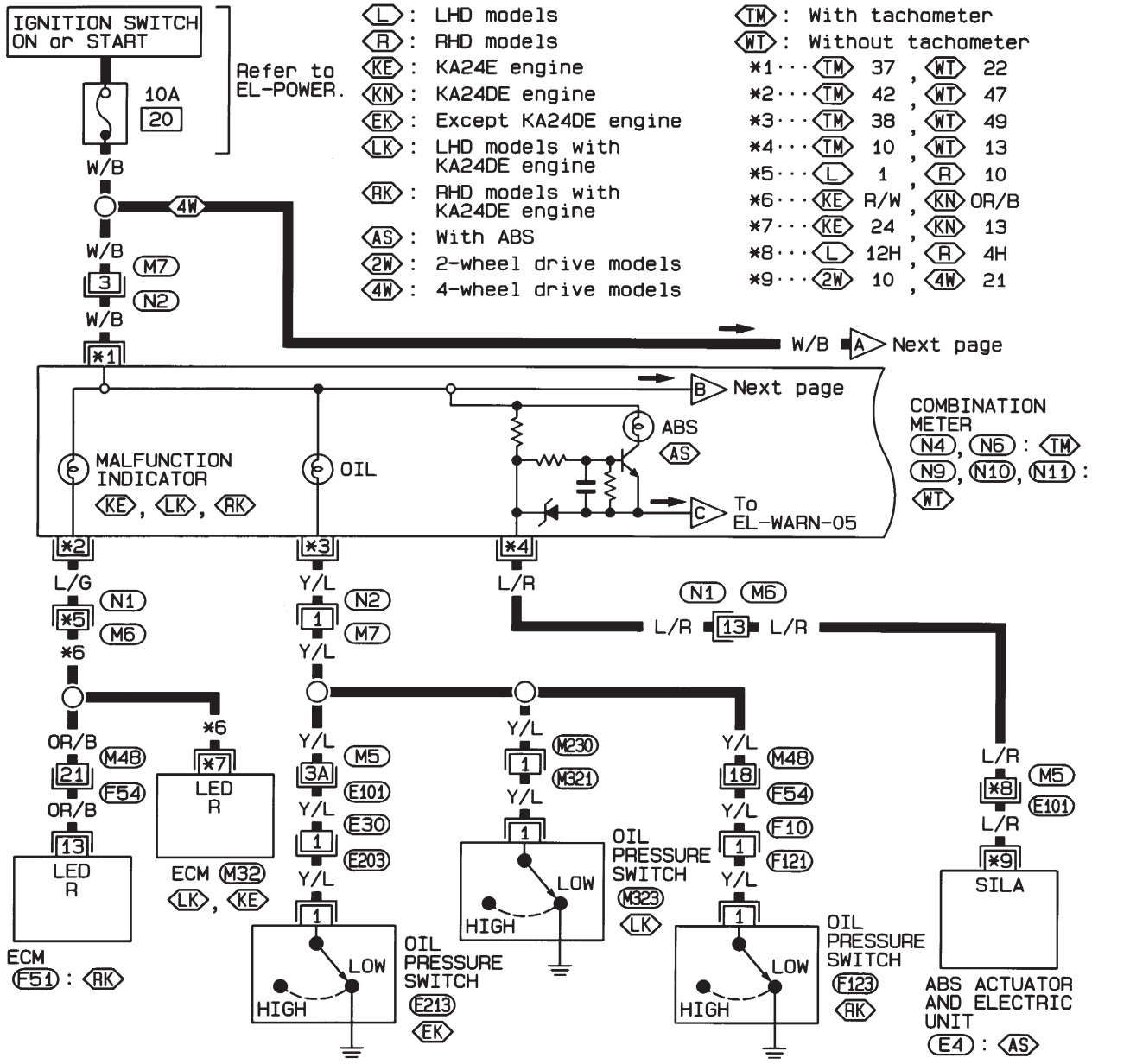
Schematic

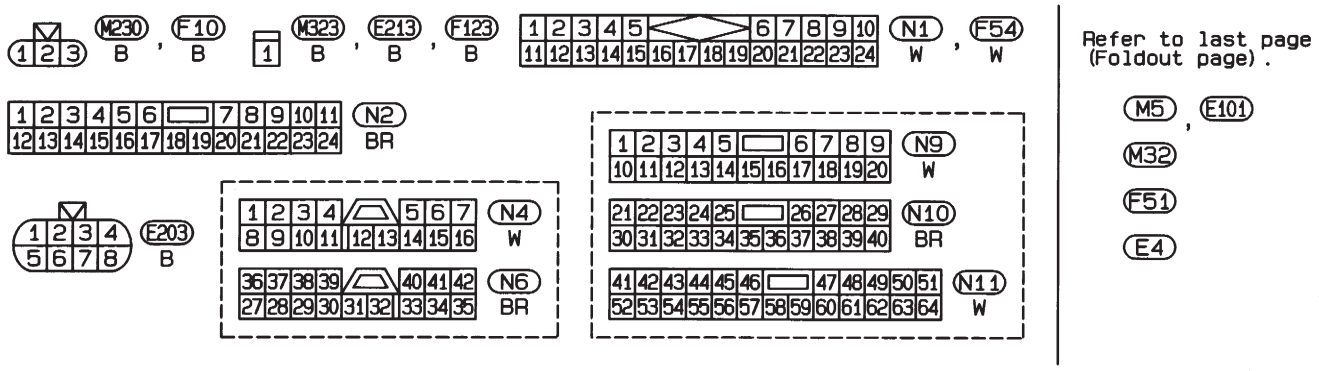


HEL722A

Wiring Diagram — WARN —/Gasoline Engine

EL-WARN-01

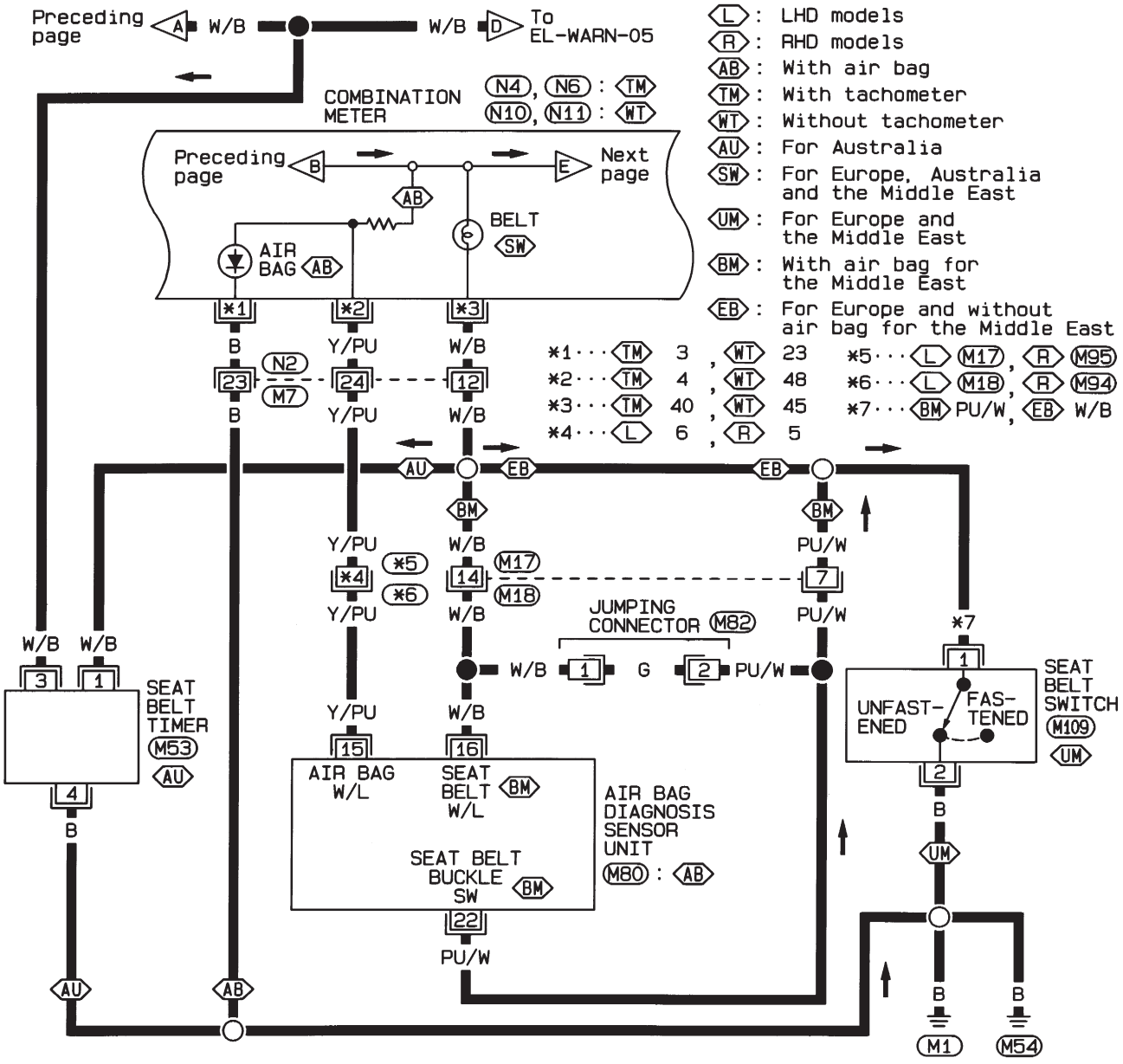


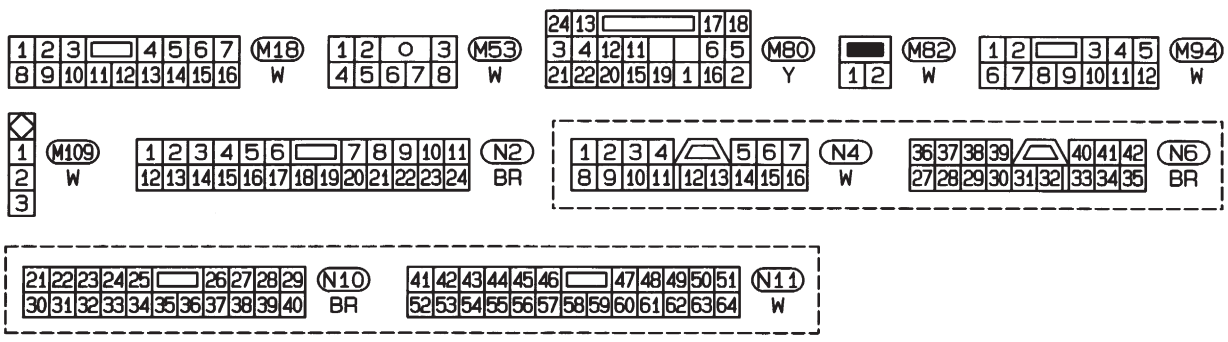


HEL723A

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

EL-WARN-02

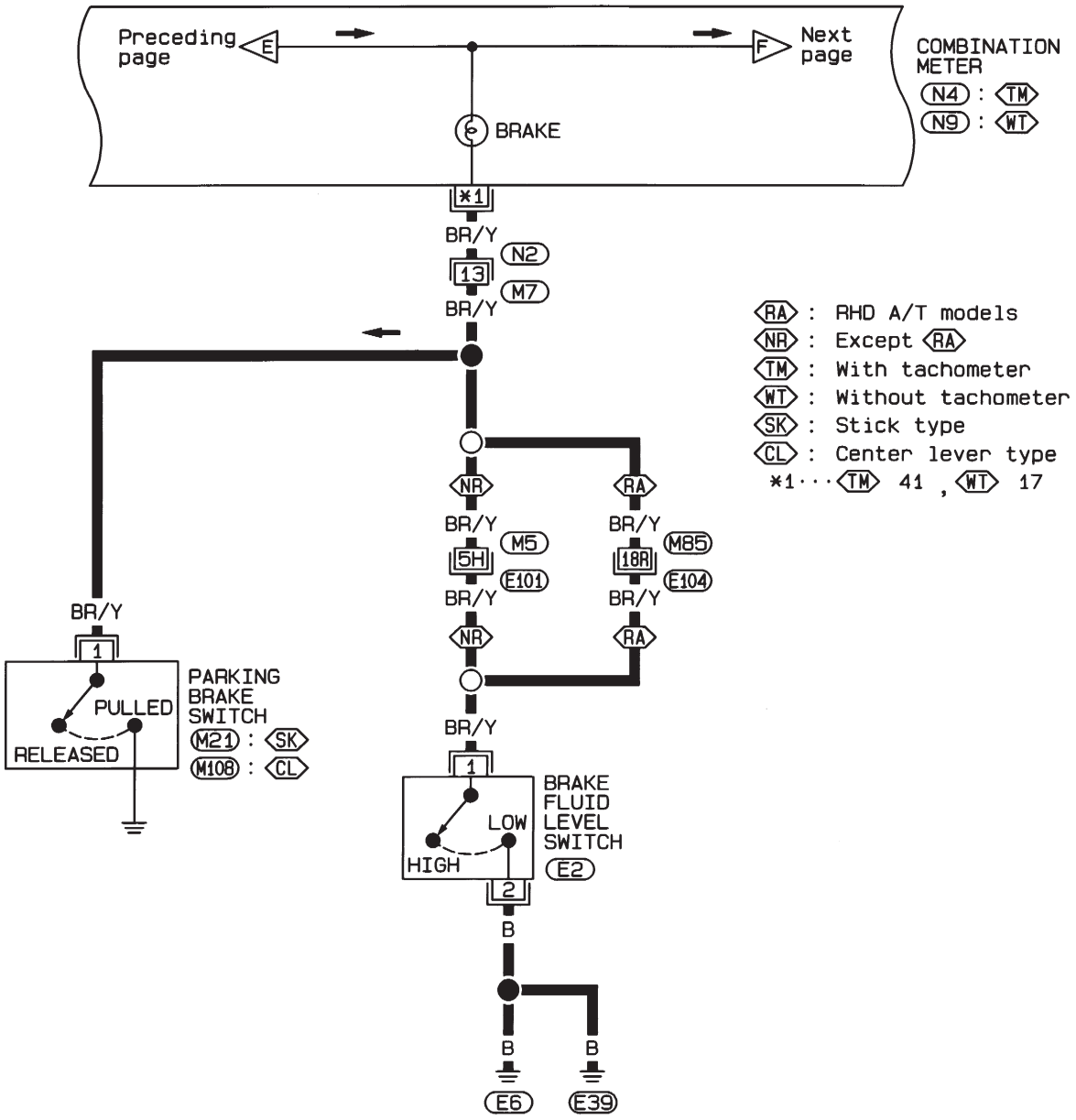


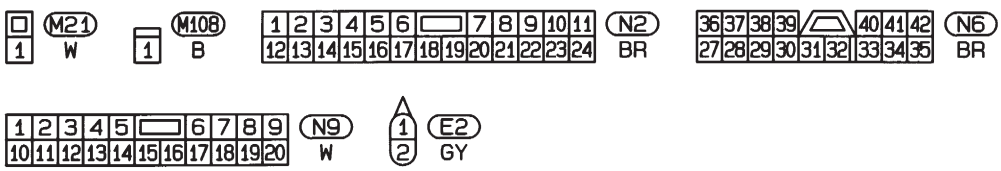


HEL724A

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

EL-WARN-03





Refer to last page (Foldout page).

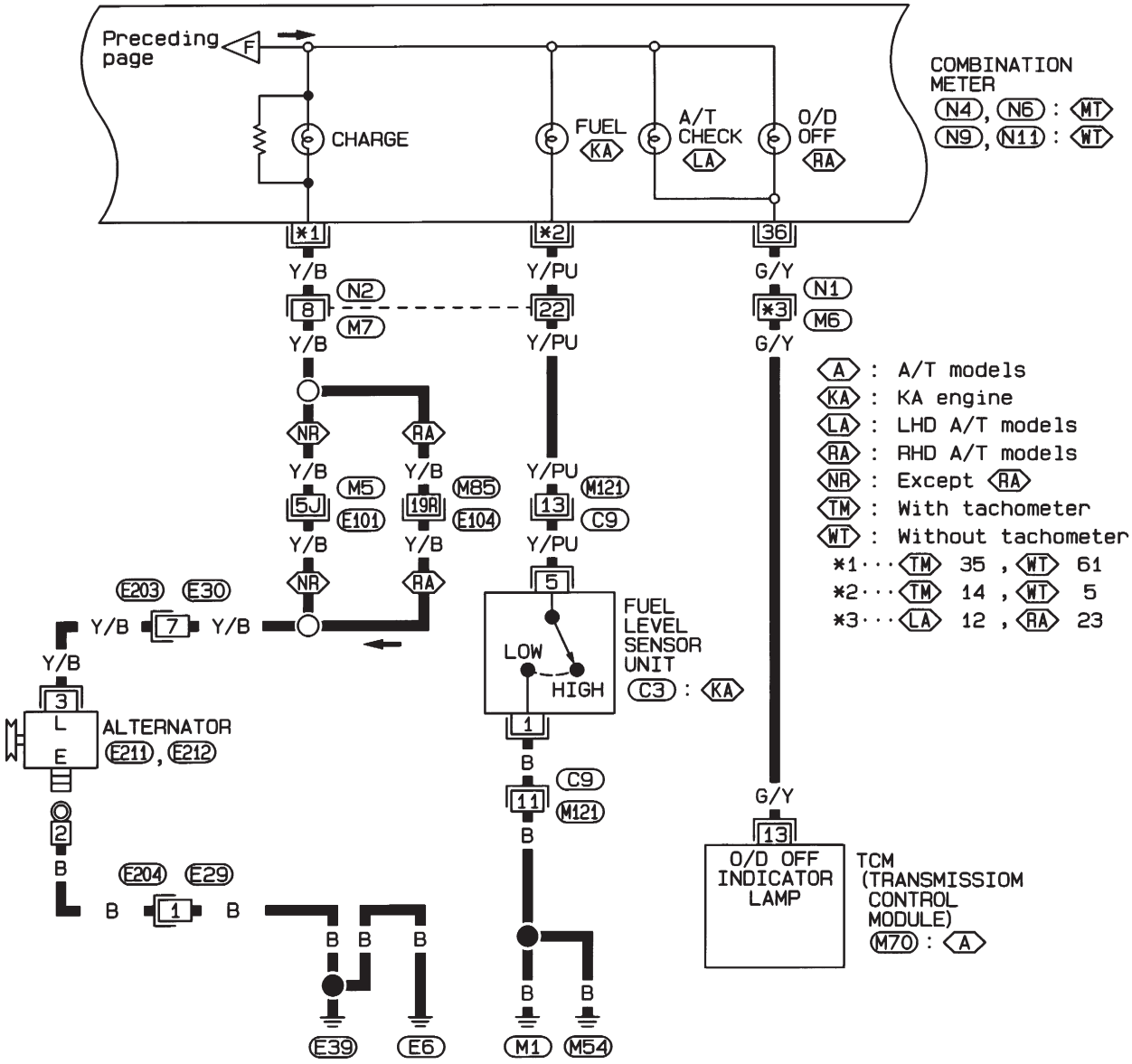
M5 , E101

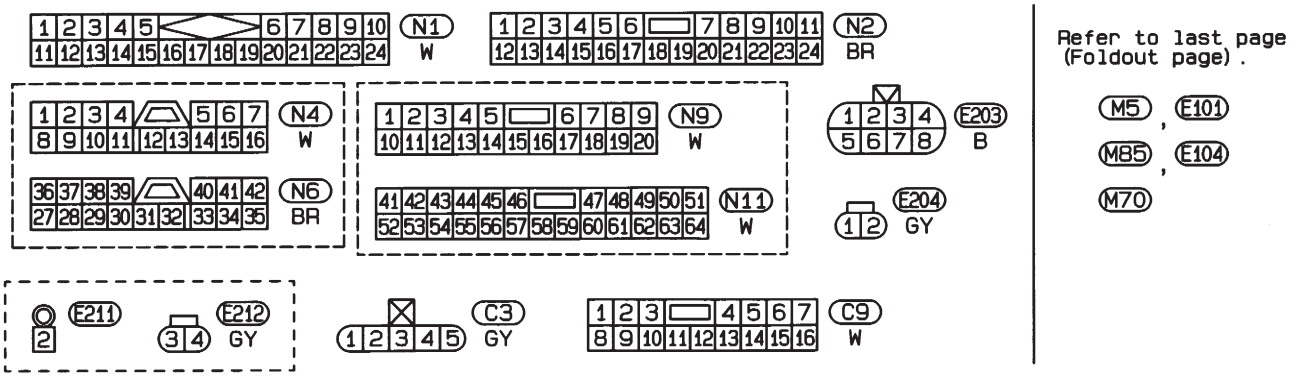
M85 , E104

HEL725A

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

EL-WARN-04





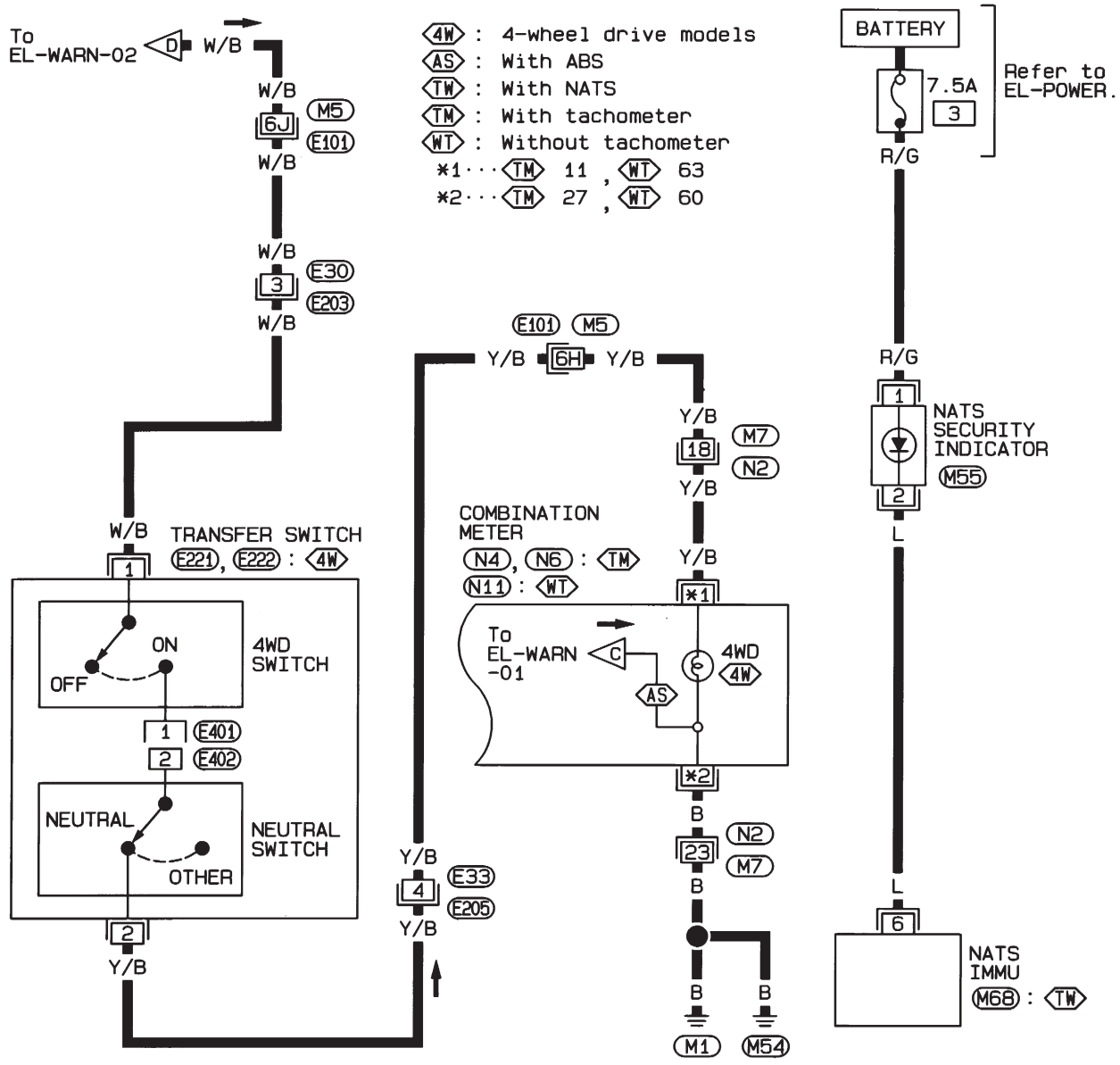
Refer to last page (Foldout page).

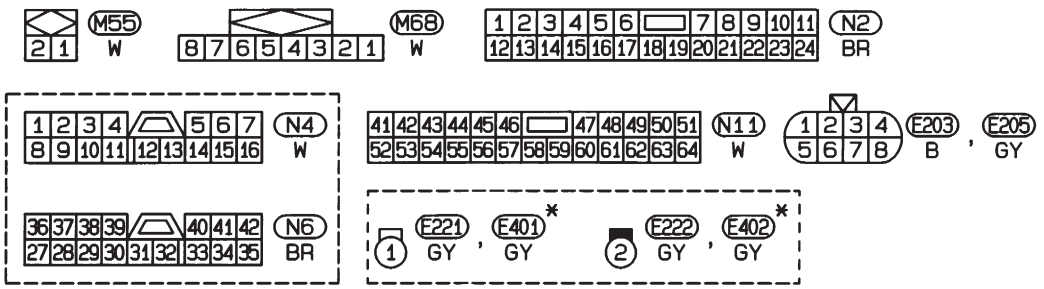
M5, E101
M85, E104
M70

HEL726A

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

EL-WARN-05





Refer to last page (Foldout page).

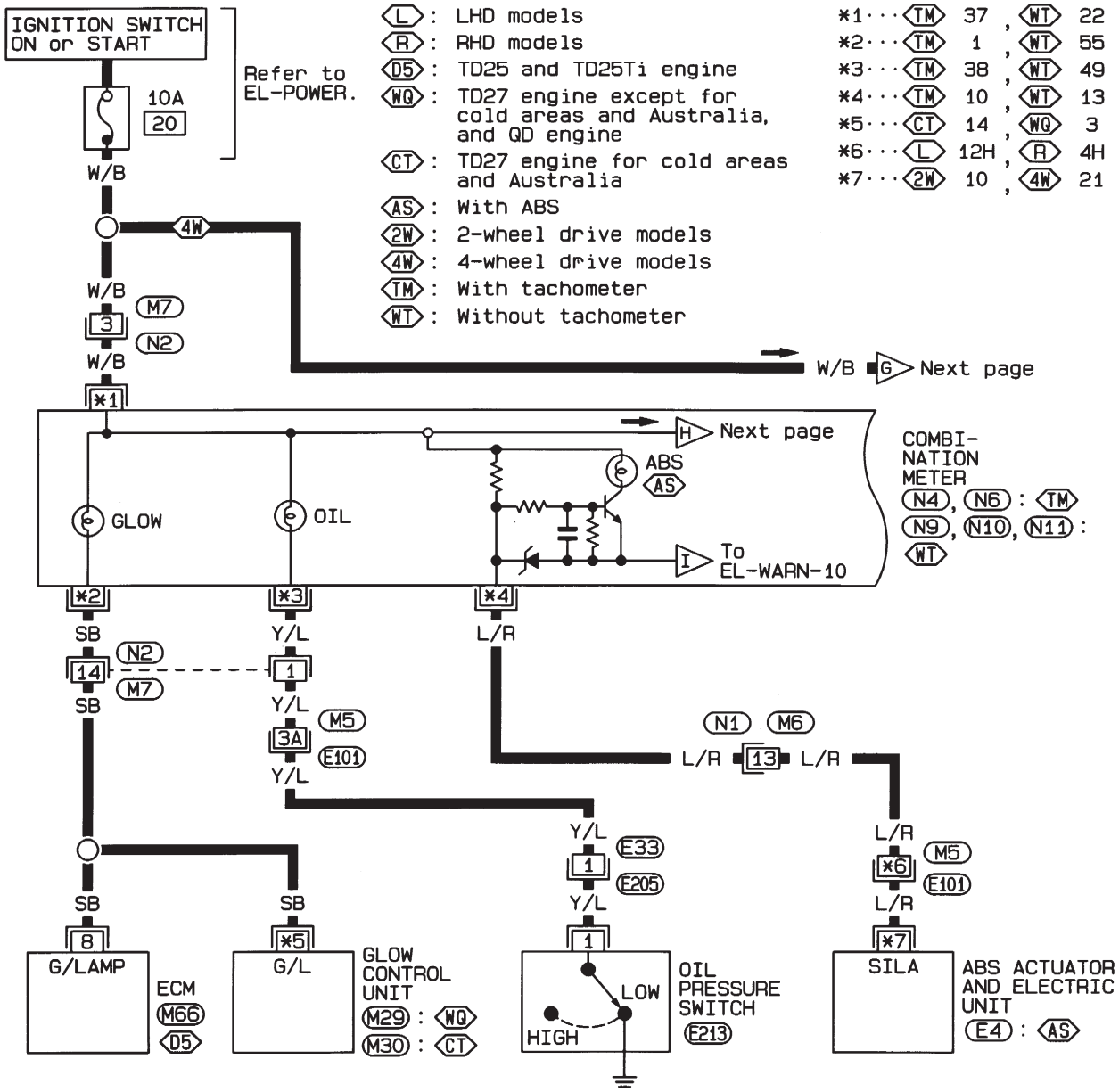
M5 , E101

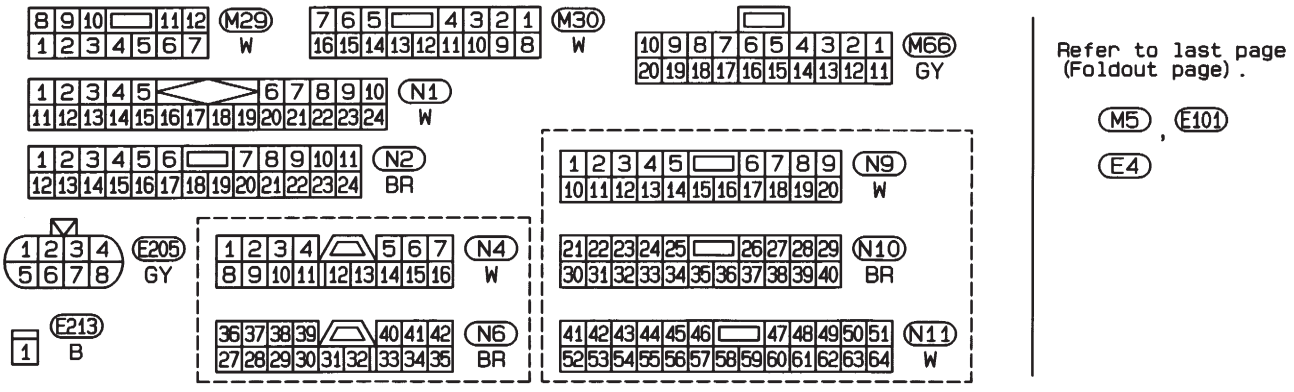
* : This connector is not shown in "HARNESS LAYOUT".

HEL727A

Wiring Diagram — WARN —/Diesel Engine

EL-WARN-06

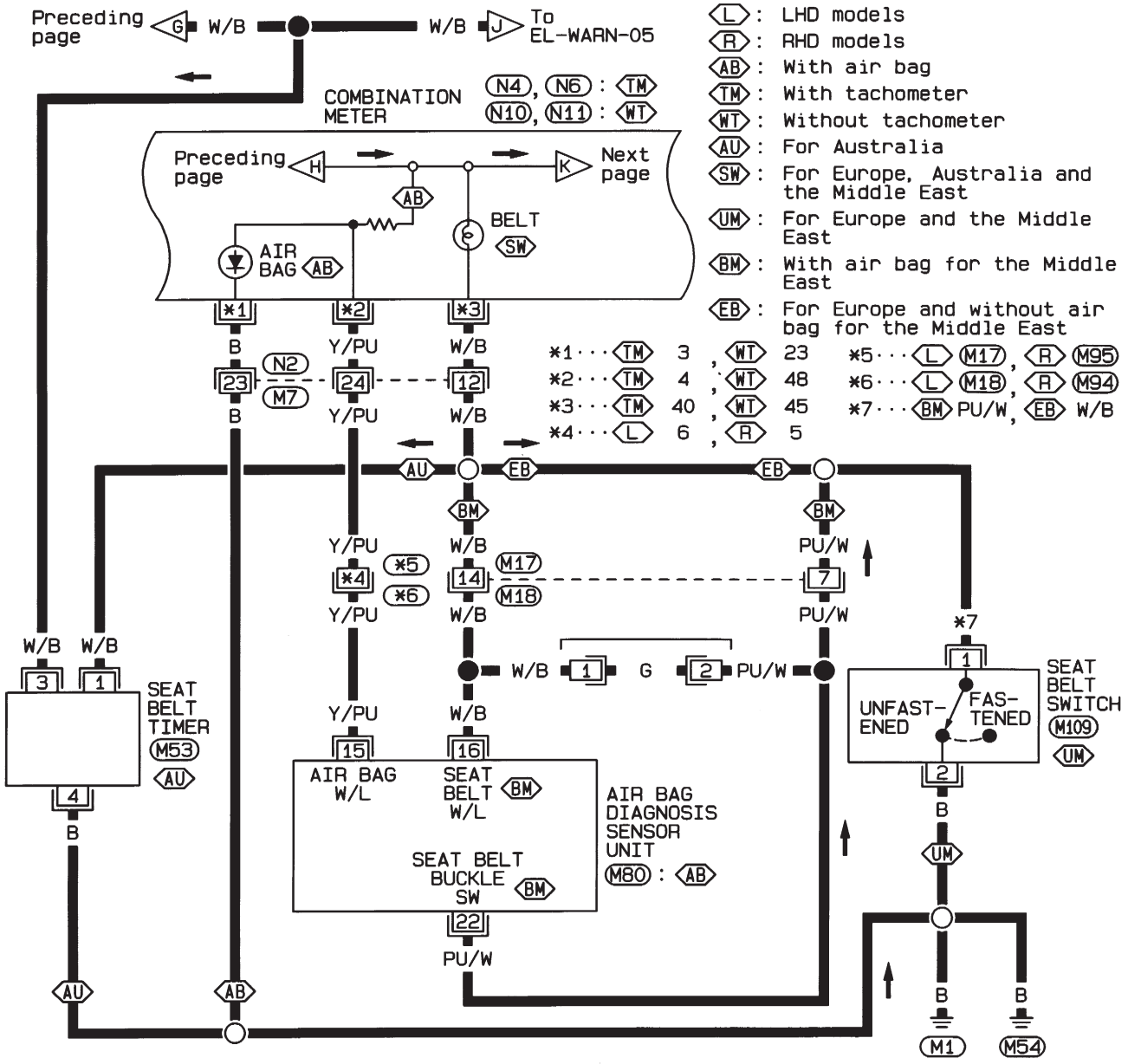


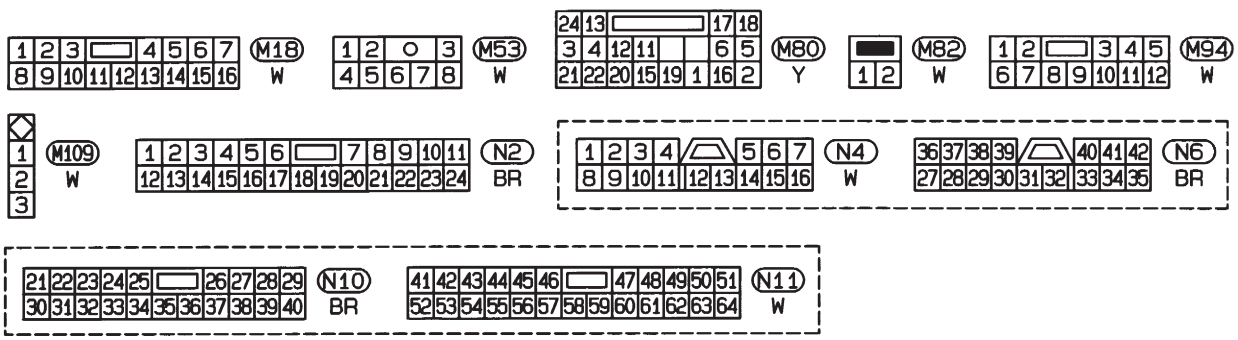


HEL728A

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

EL-WARN-07

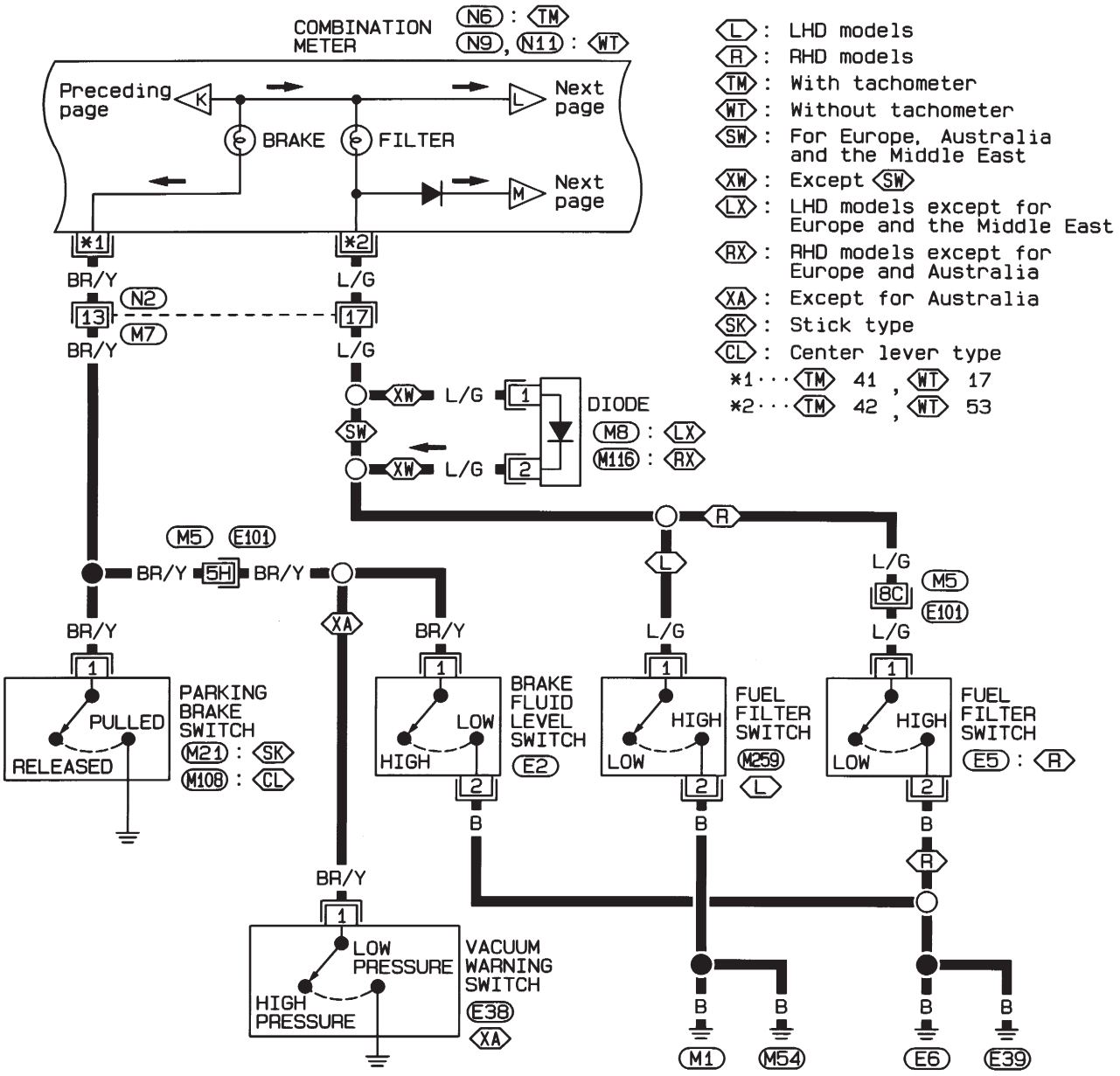


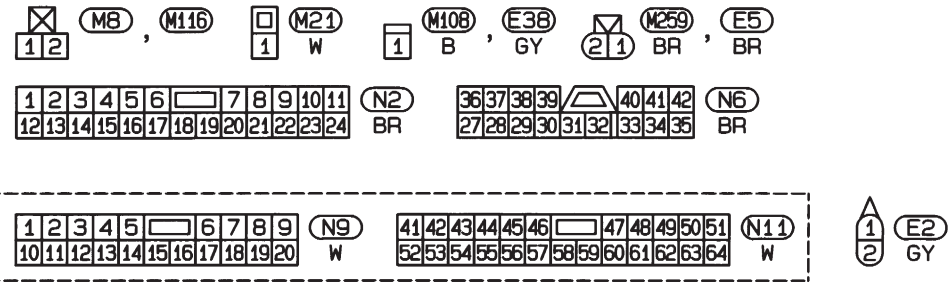


HEL729A

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

EL-WARN-08





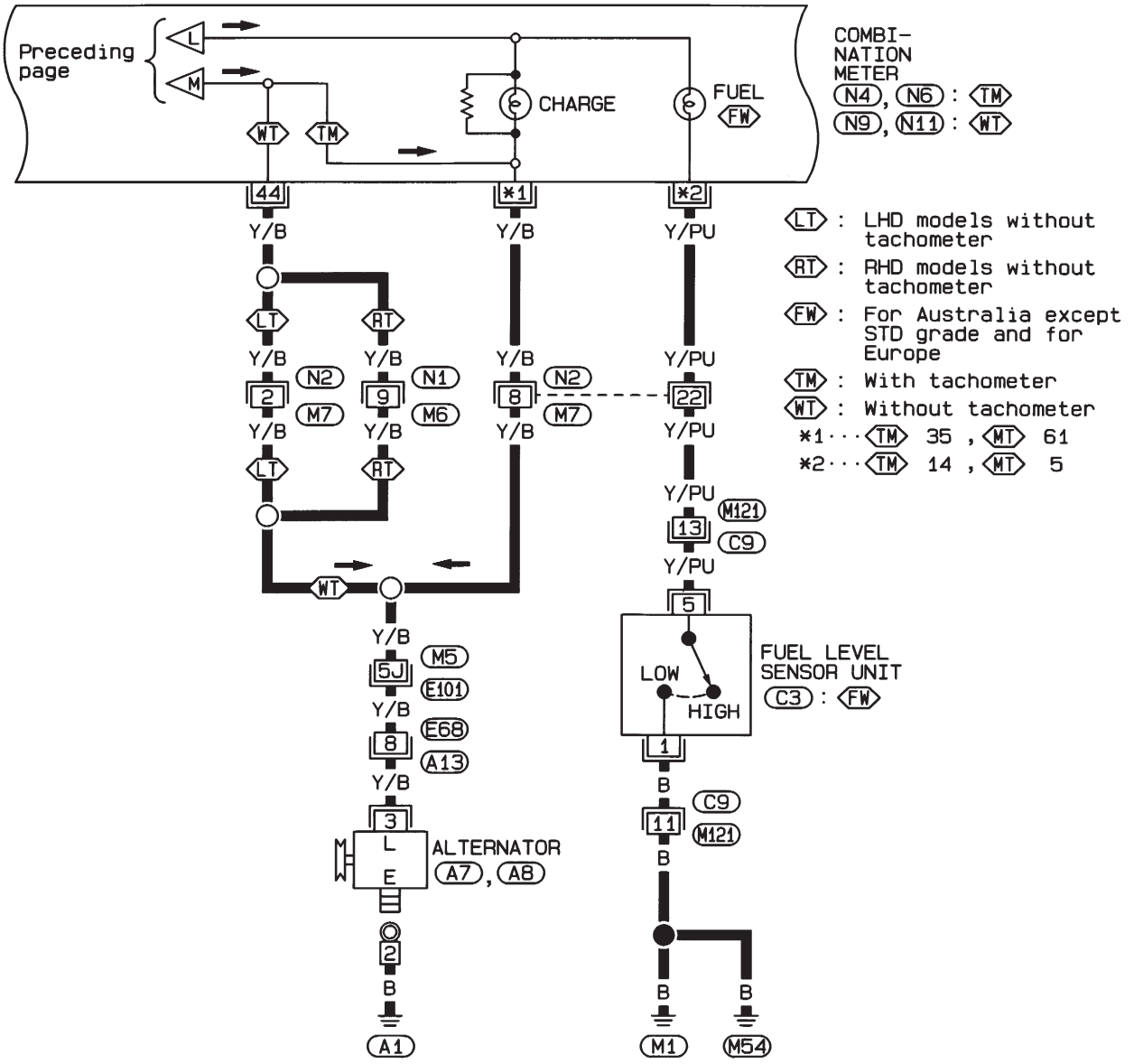
Refer to last page (Foldout page).

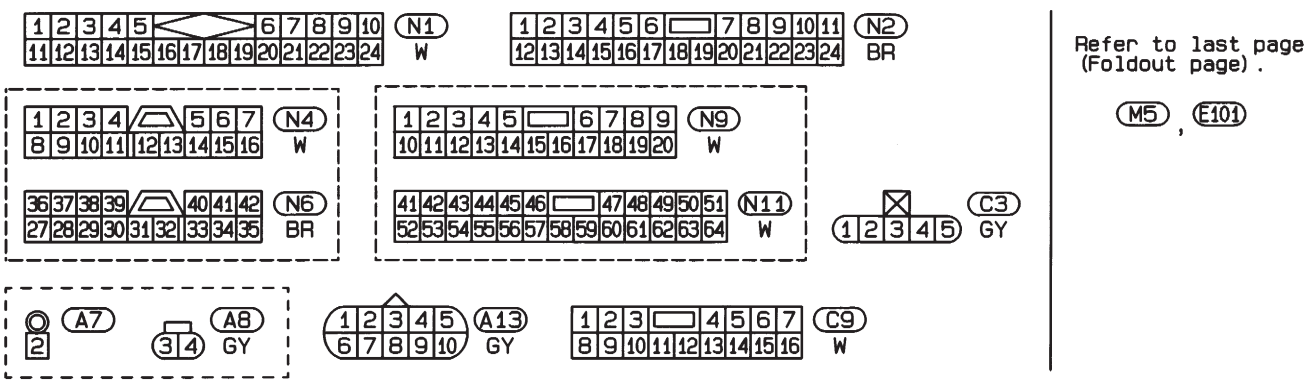
M5 , E101

HEL730A

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

EL-WARN-09





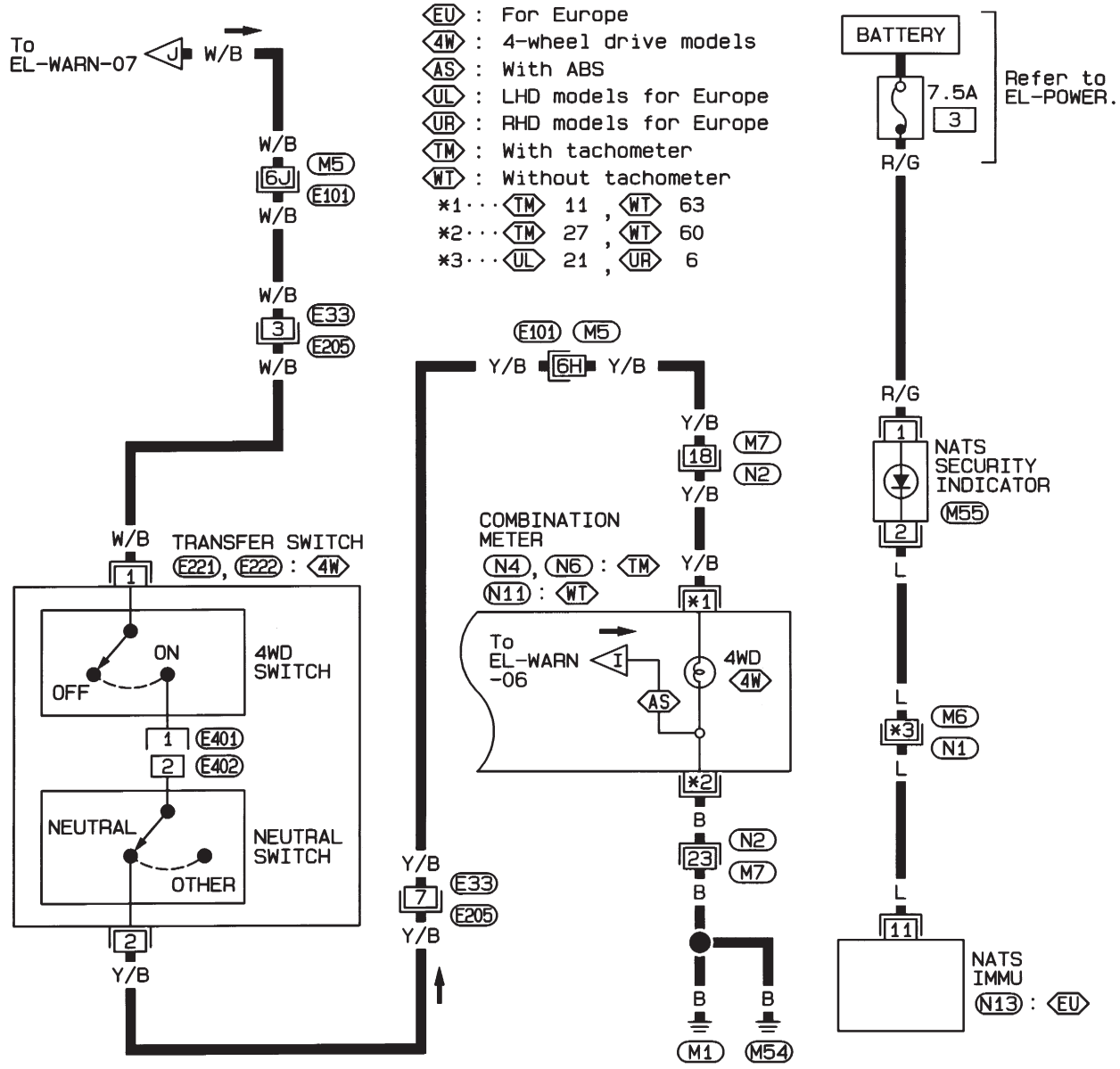
Refer to last page (Foldout page).

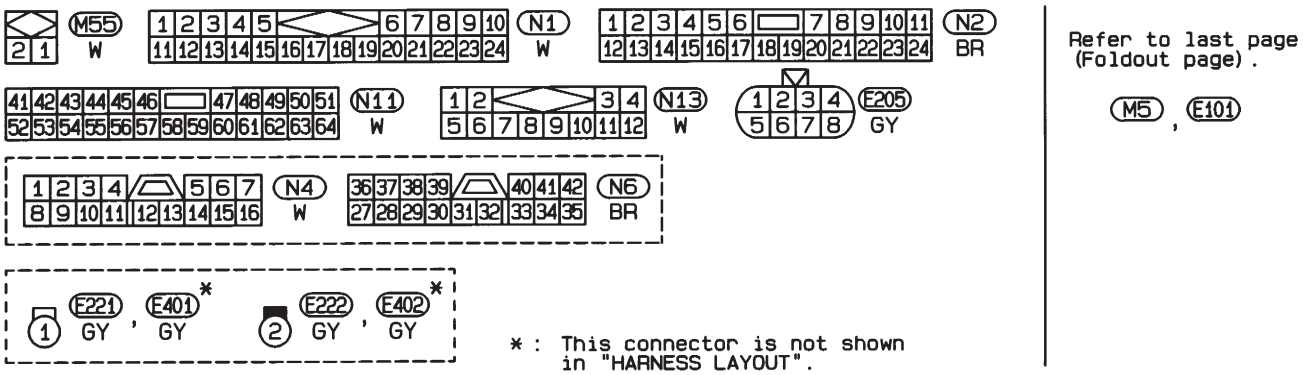
M5, E101

HEL731A

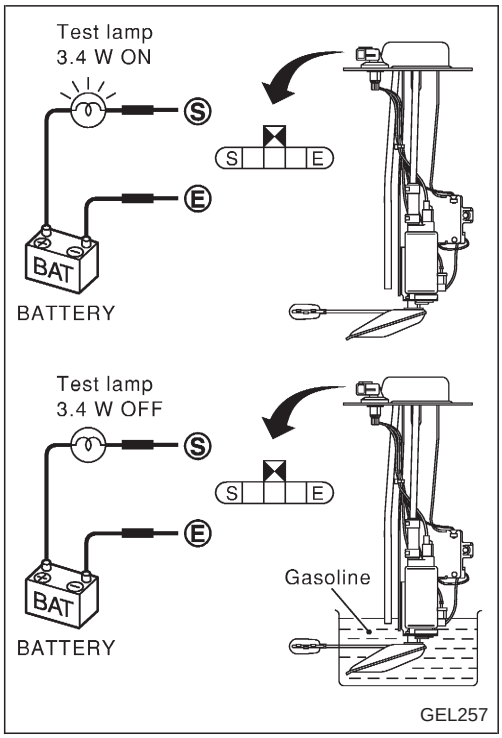
Wiring Diagram — WARN —/Diesel Engine (Cont'd)

EL-WARN-10





HEL732A



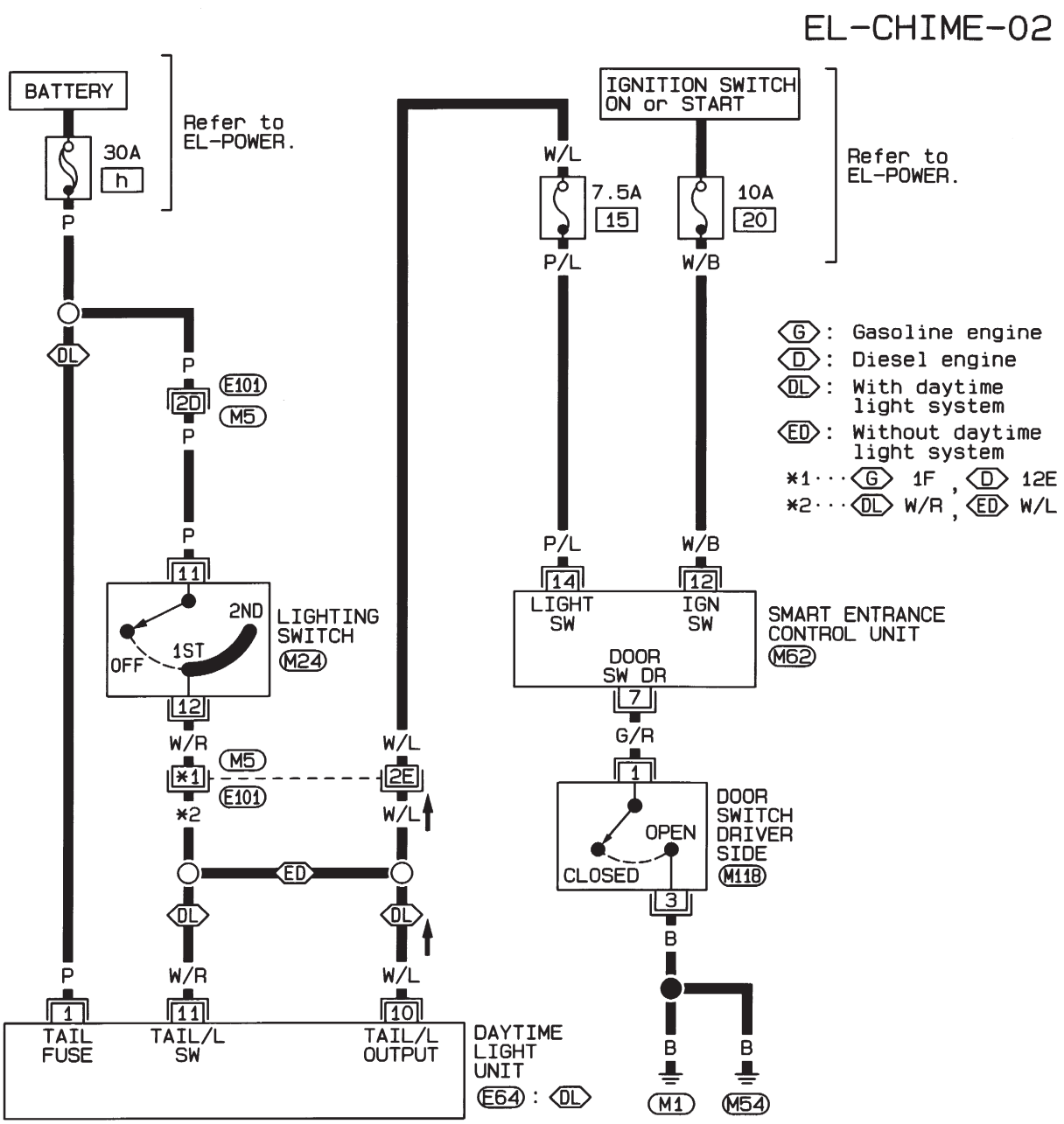
Electrical Components Inspection

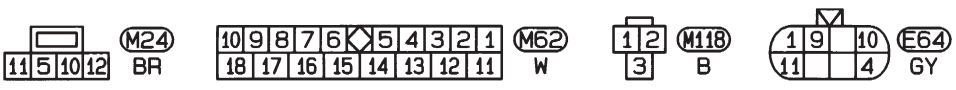
FUEL WARNING LAMP SENSOR CHECK

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

Wiring Diagram — CHIME —/LHD Models

LIGHT WARNING BUZZER



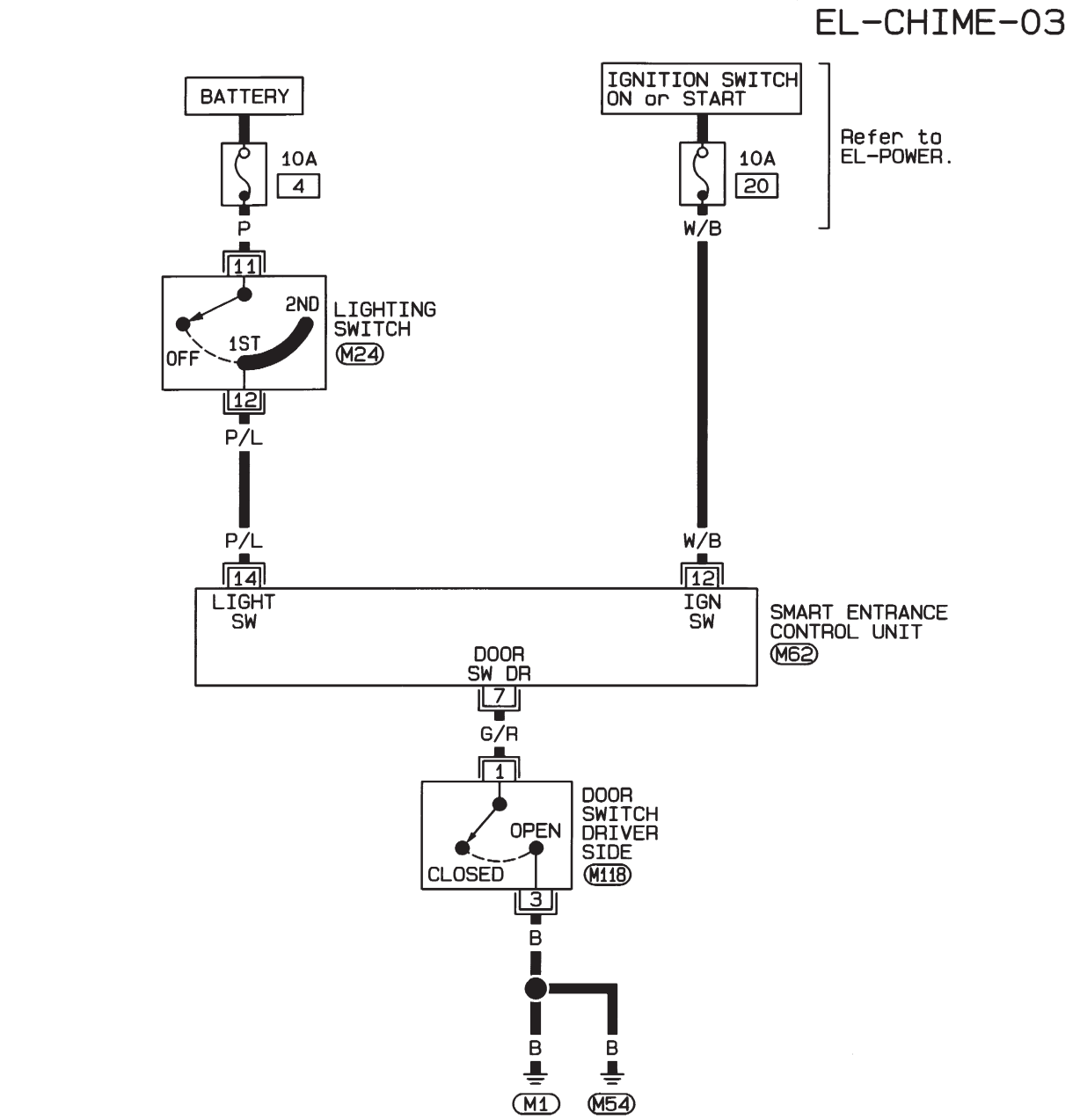


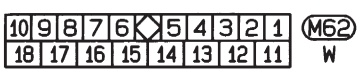
Refer to last page (Foldout page).
M5 , E101

HEL734A

Wiring Diagram — CHIME —/RHD Models

LIGHT WARNING BUZZER

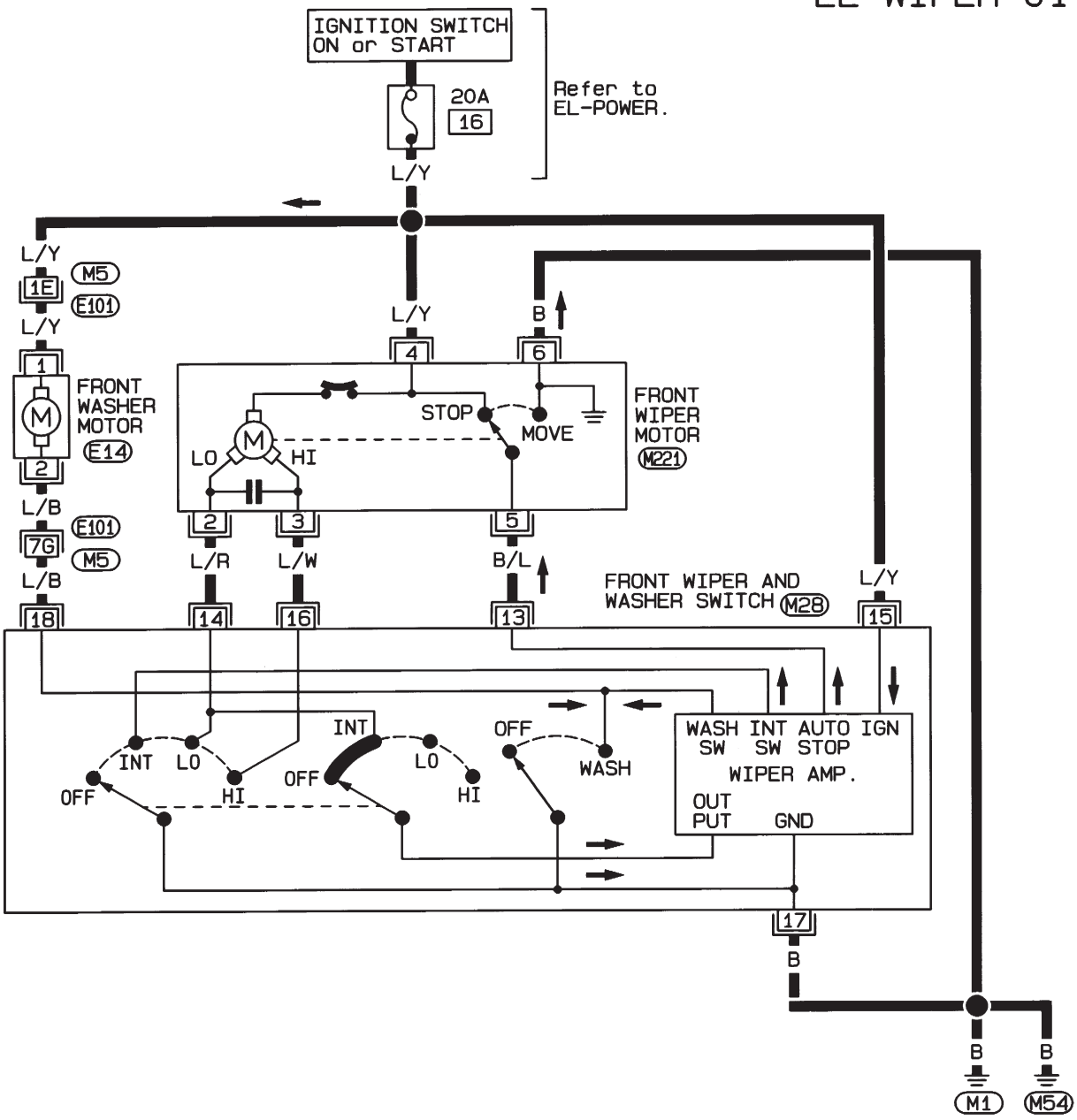


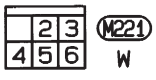


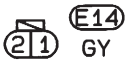
HEL735A

Wiring Diagram — WIPER —/LHD Models with Intermittent

EL-WIPER-01







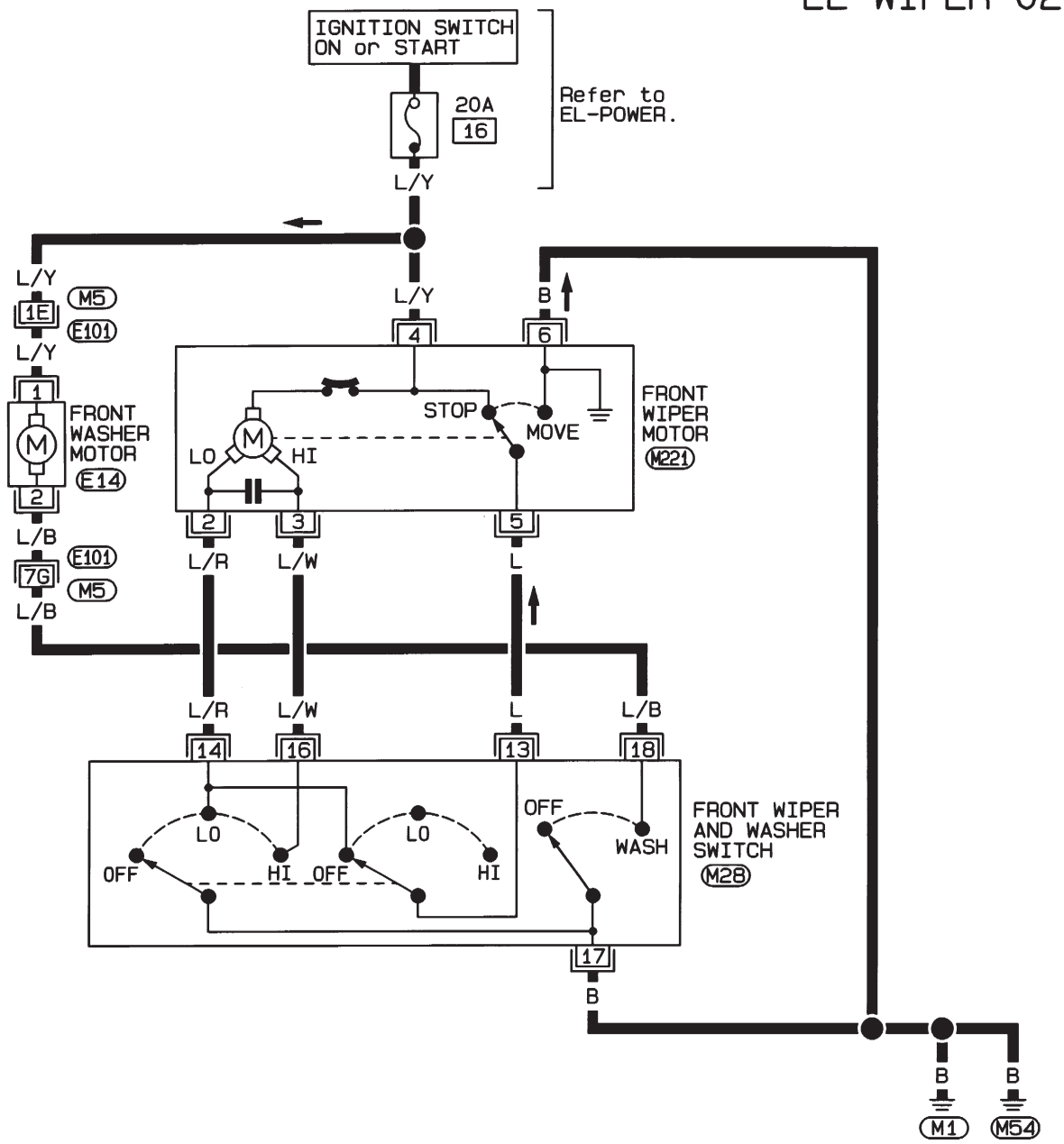
Refer to last page (Foldout page).

M5 , E101

HEL737A

Wiring Diagram — WIPER —/LHD Models without Intermittent

EL-WIPER-02



M28 GY

M221 W

E14 GY

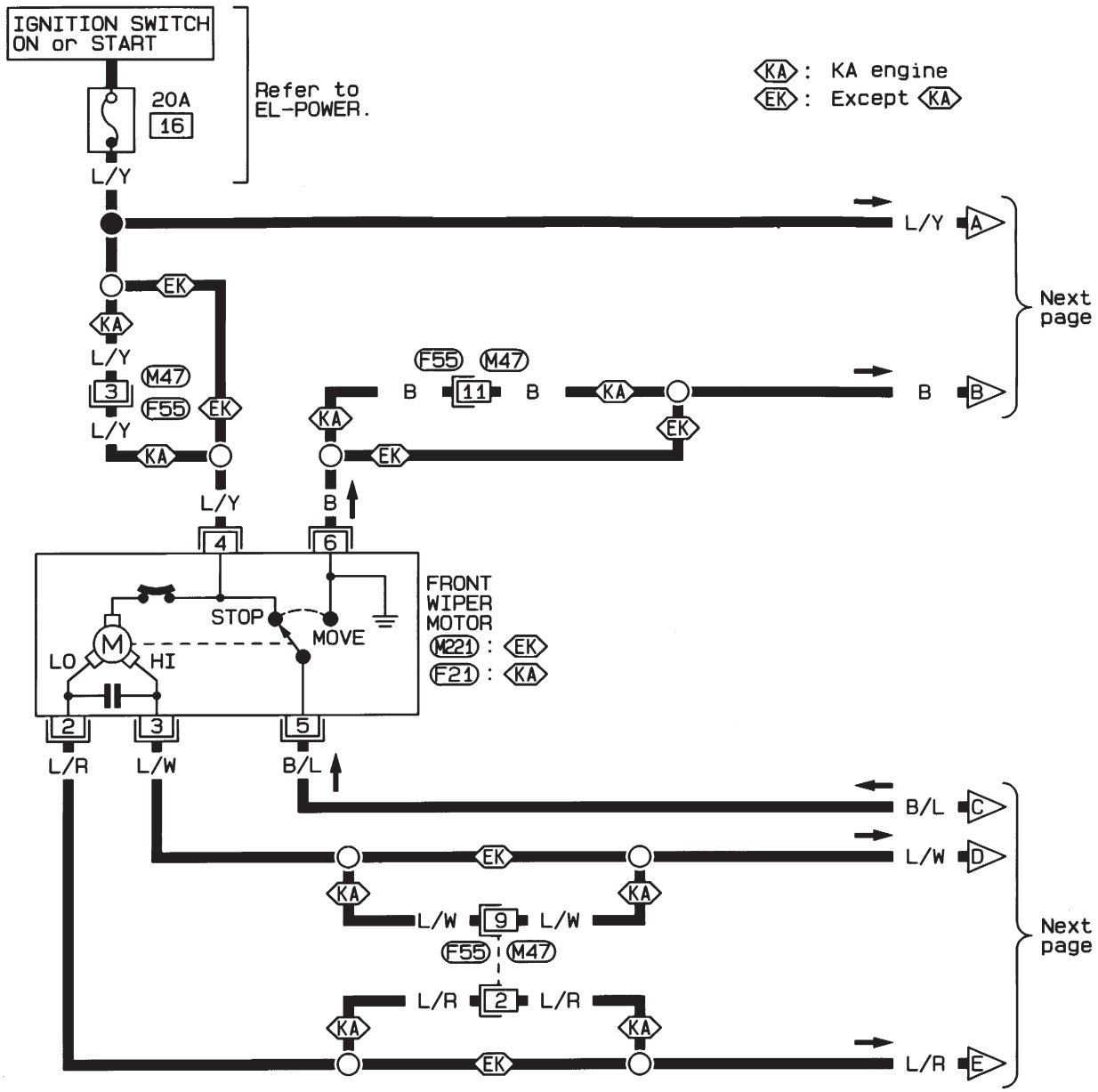
Refer to last page (Foldout page).

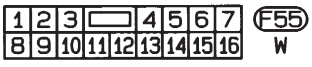
M5 , E101

HEL738A

Wiring Diagram — WIPER —/RHD M/T Models with Intermittent

EL-WIPER-03

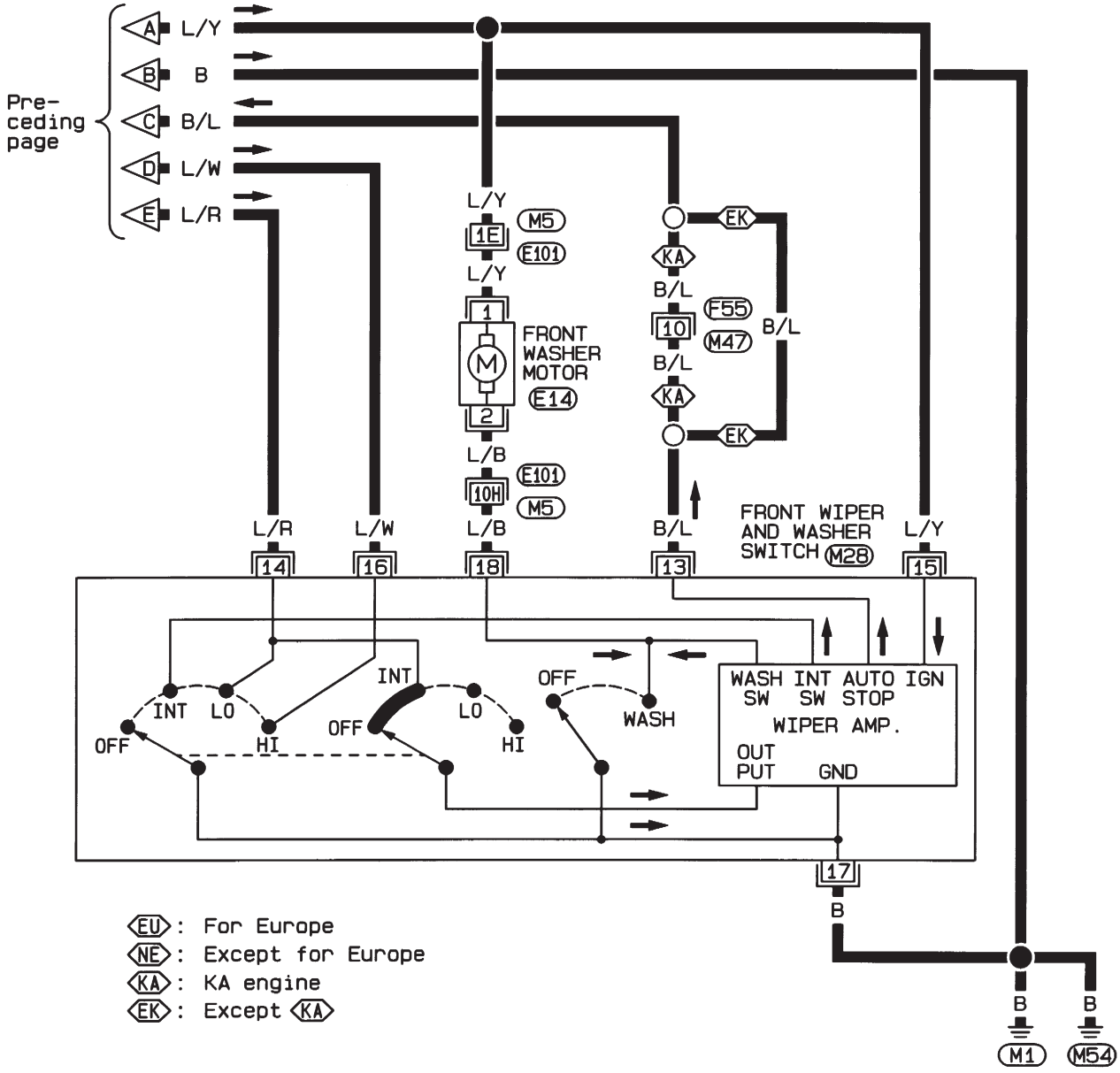


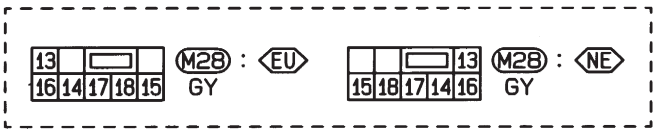


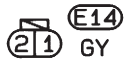
HEL739A

Wiring Diagram — WIPER —/RHD M/T Models with Intermittent (Cont'd)

EL-WIPER-04







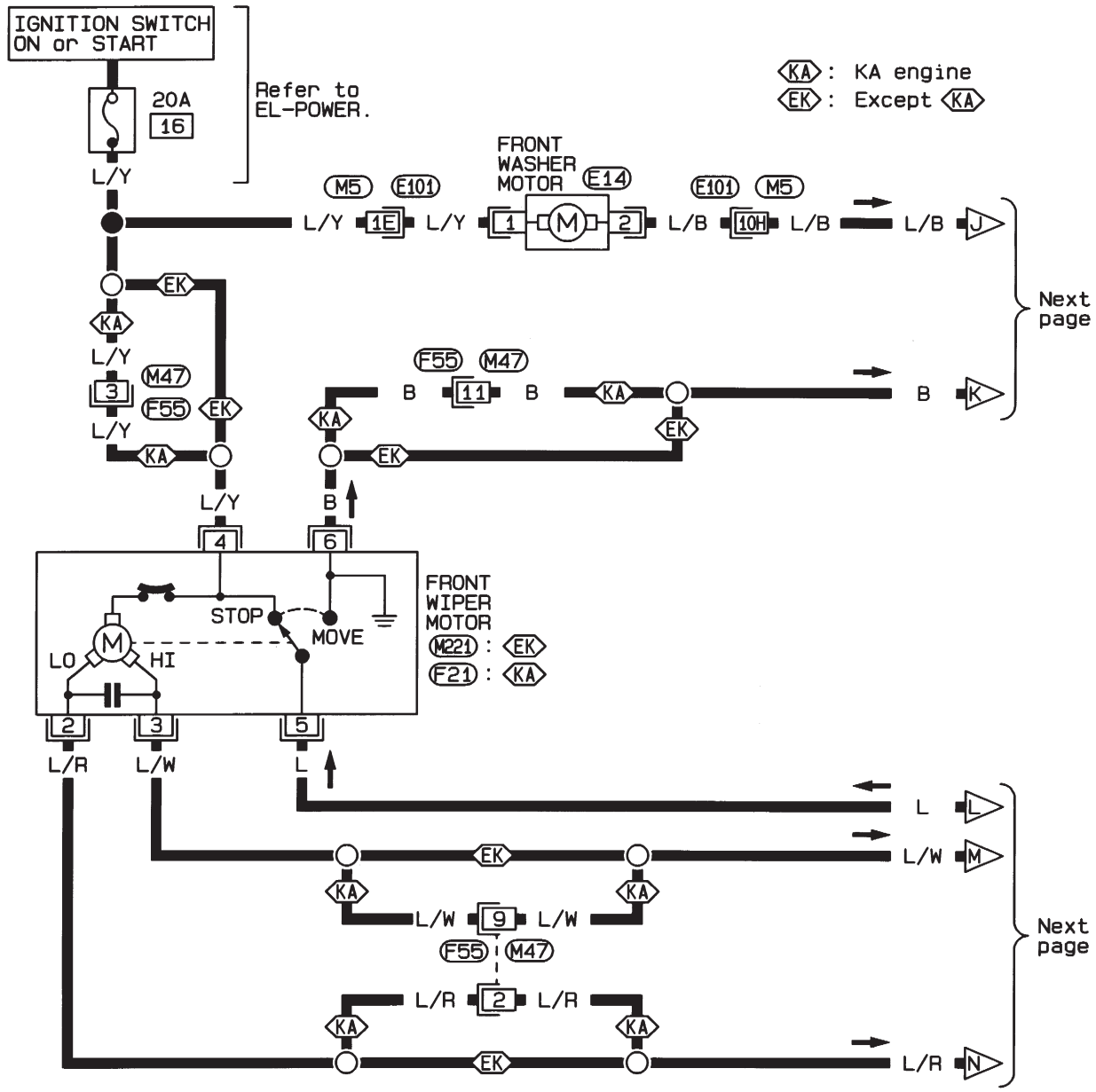
Refer to last page (Foldout page).

M5 , E101

HEL740A

Wiring Diagram — WIPER —/RHD Models without Intermittent

EL-WIPER-07



M221 W , F21 W

E14 GY

F55 W

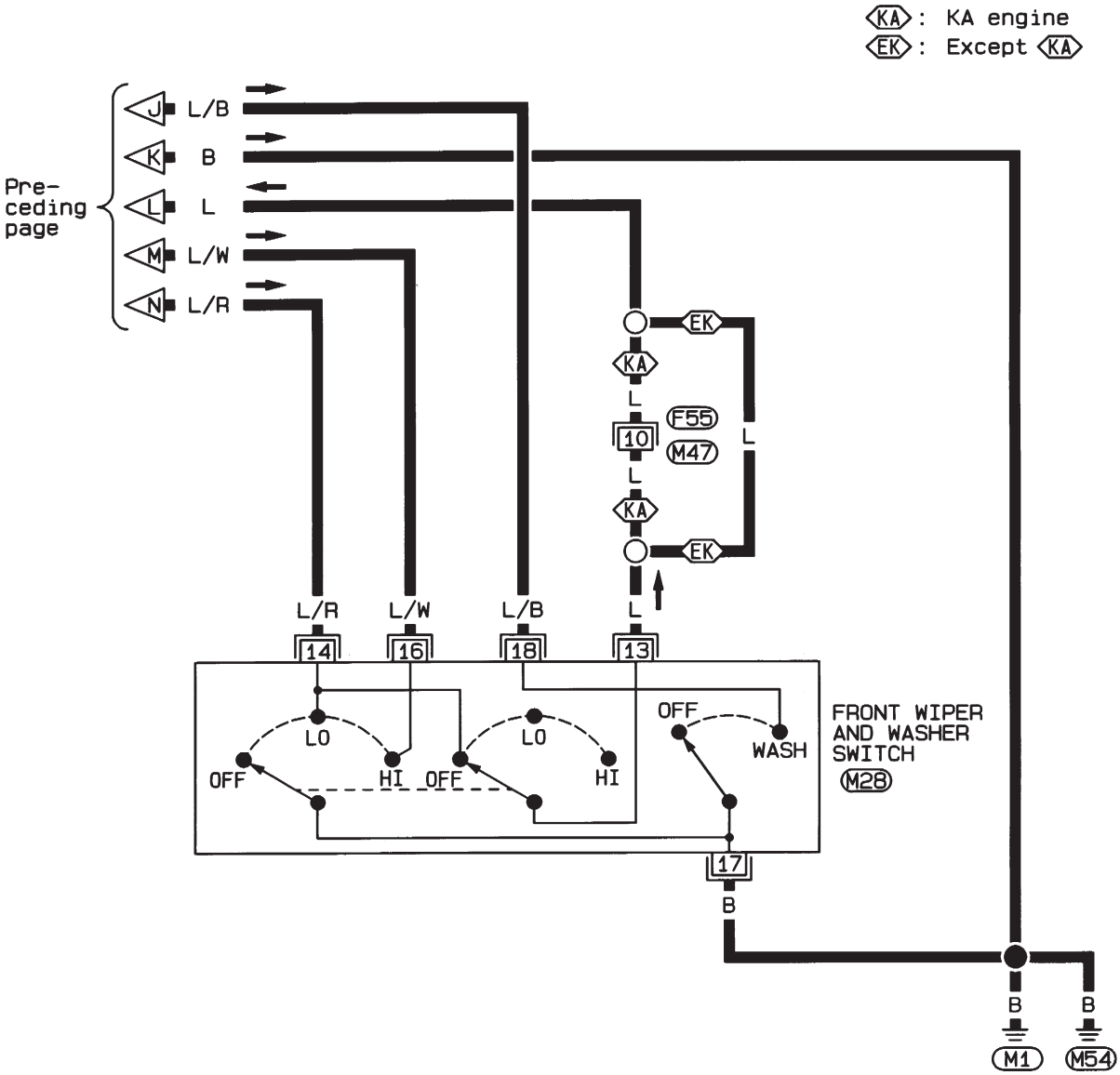
Refer to last page (Foldout page).

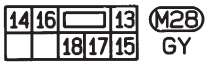
M5 , E101

HEL743A

Wiring Diagram — WIPER —/RHD Models without Intermittent (Cont'd)

EL-WIPER-08

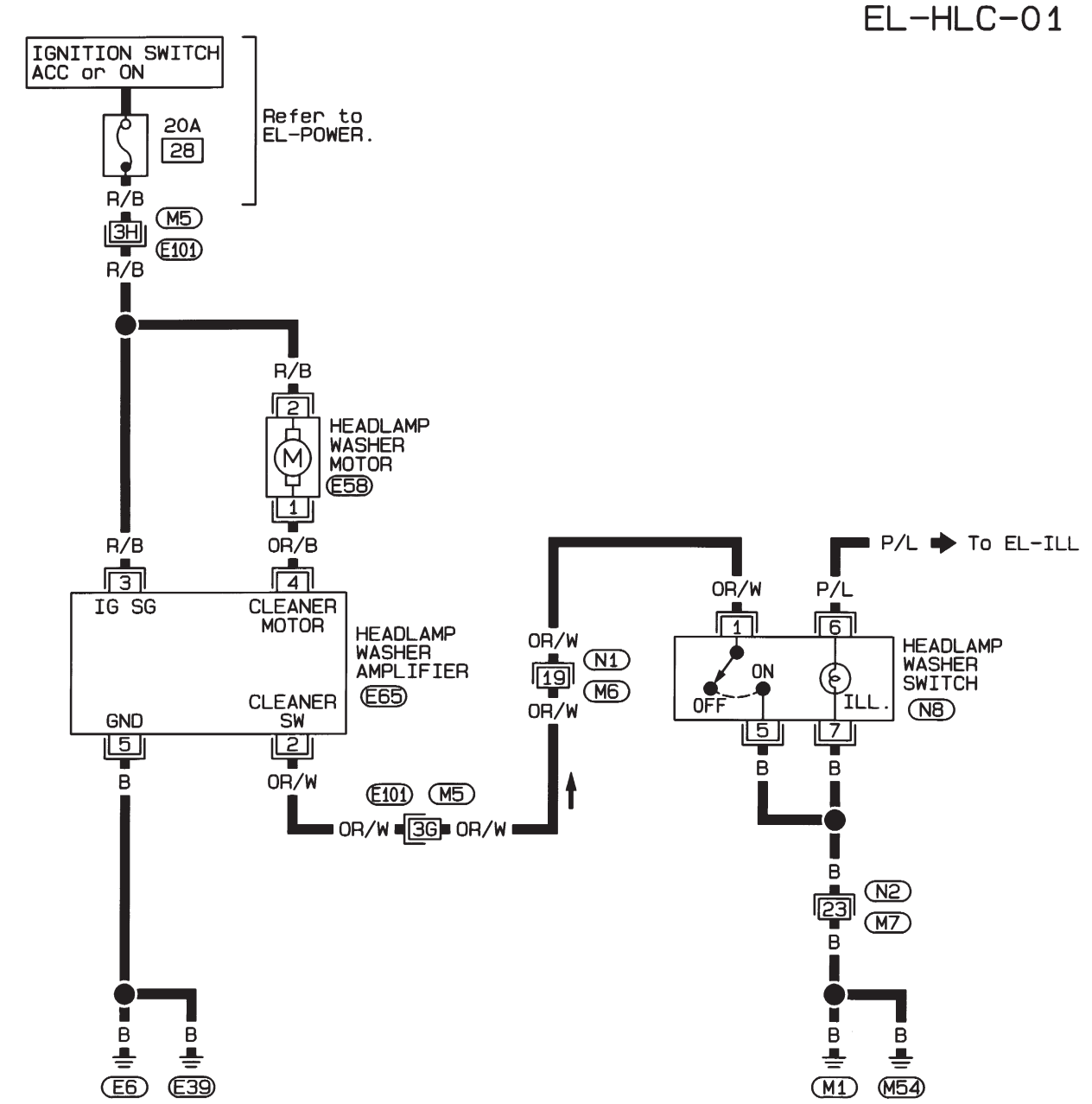


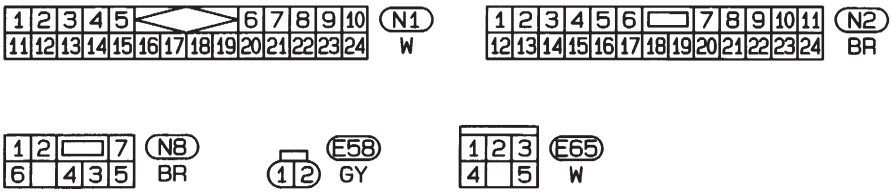


HEL744A

Wiring Diagram — HLC —

EL-HLC-01





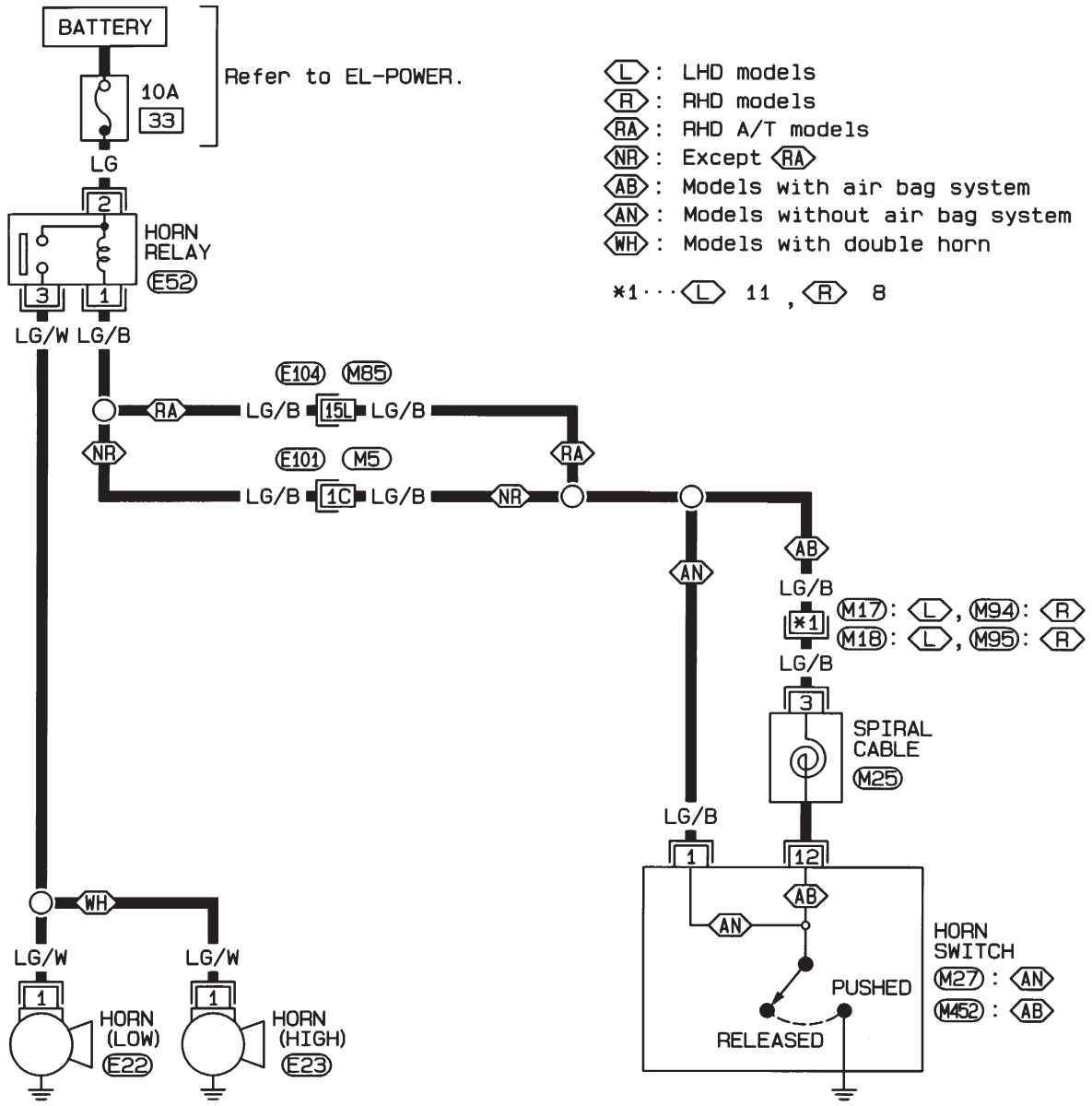
Refer to last page (Foldout page).

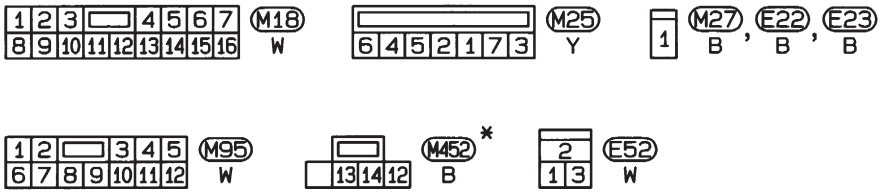
M5, E101

HEL745A

Wiring Diagram — HORN —

EL-HORN-01





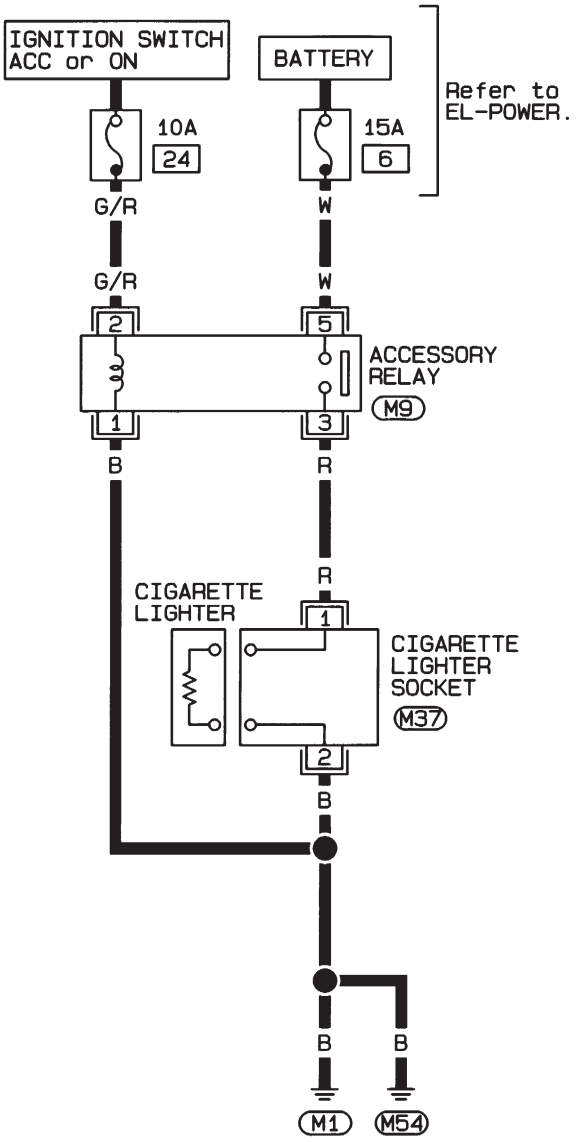
* : This connector is not shown in "HARNESS LAYOUT".

Refer to last page (Foldout page).
M5, E101
M85, E104

HEL746A

Wiring Diagram — CIGAR —

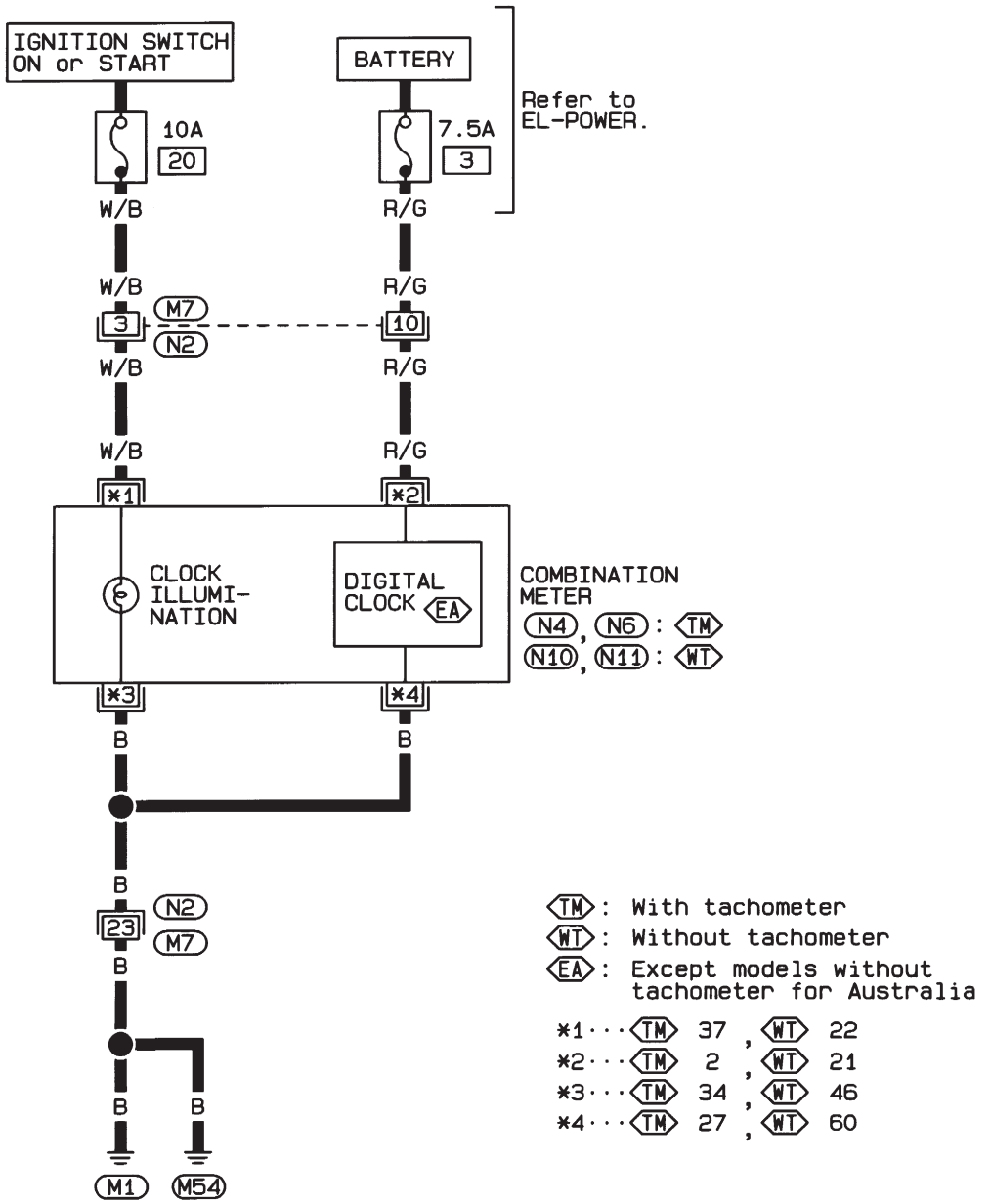
EL-CIGAR-01

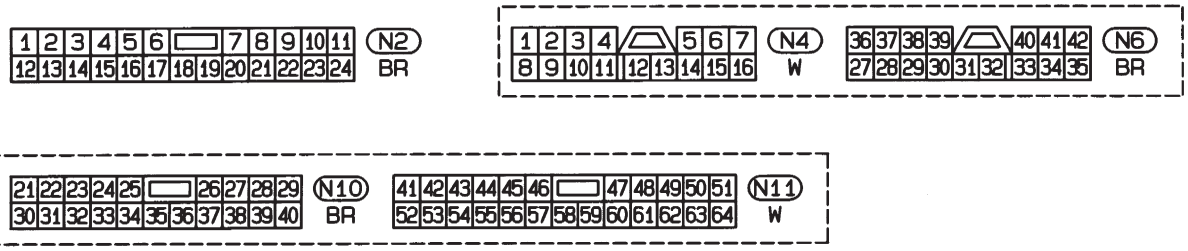


HEL747A

Wiring Diagram — CLOCK —

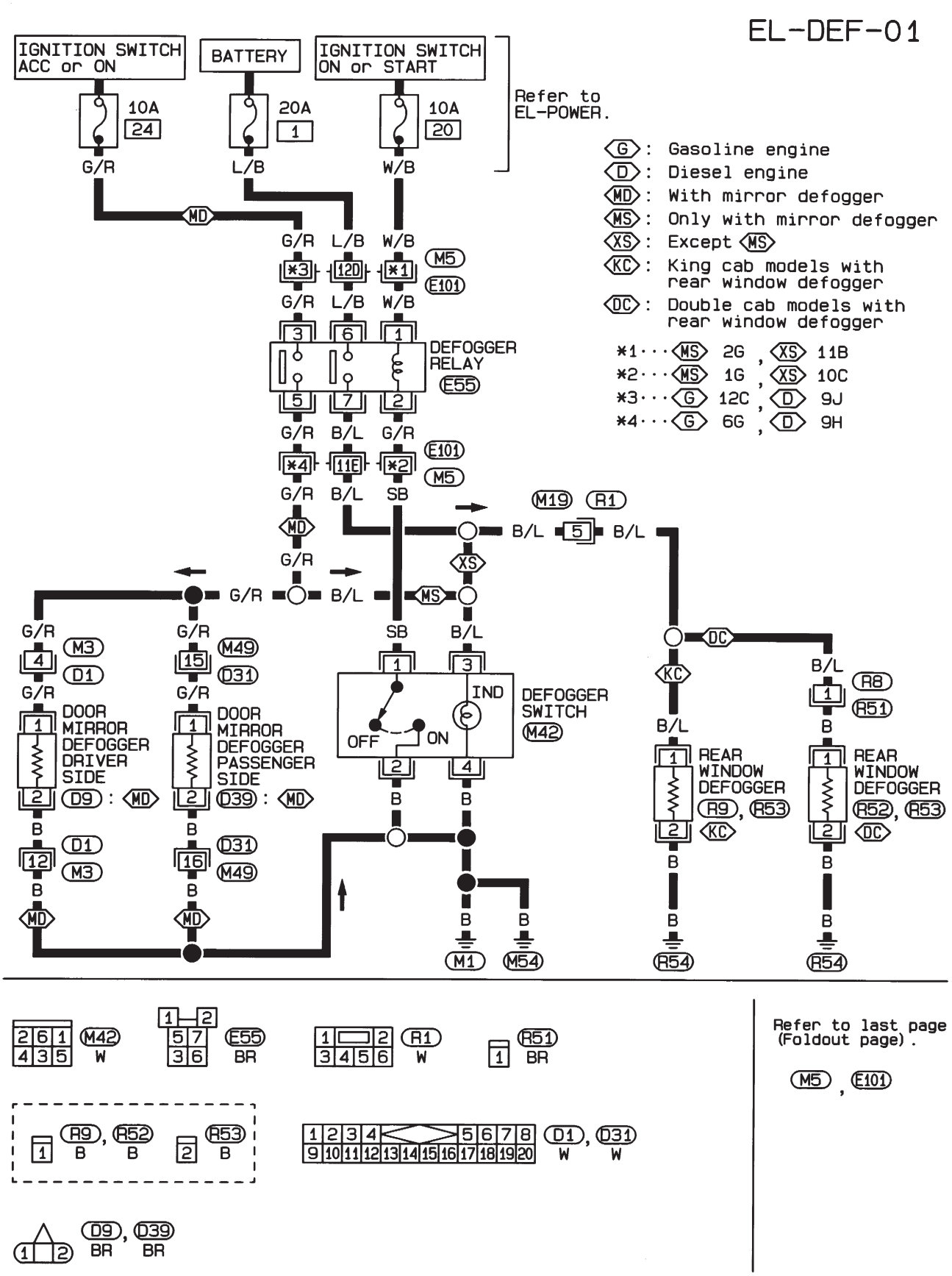
EL-CLOCK-01





HEL748A

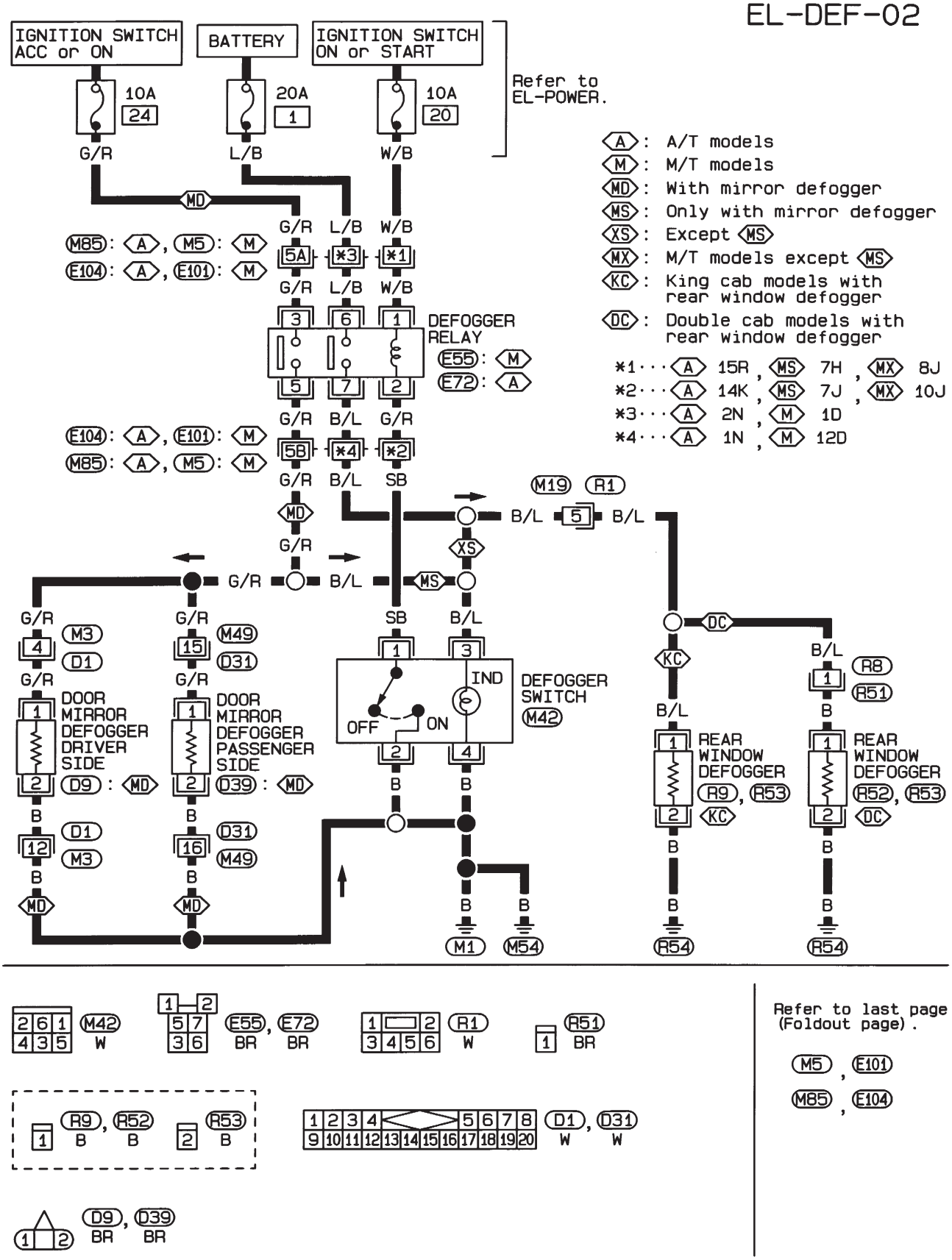
Wiring Diagram — DEF —/LHD Models



HEL749A

Wiring Diagram — DEF —/RHD Models

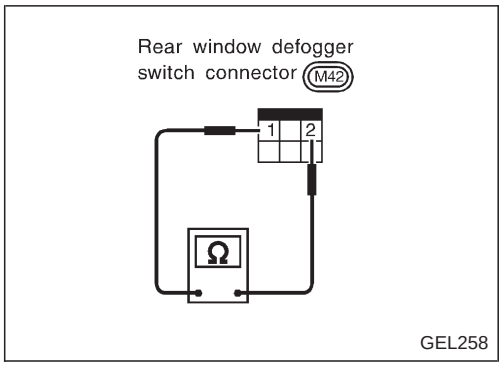
EL-DEF-02



Refer to last page (Foldout page).

M5, E101
M85, E104

HEL750A



Electrical Components Inspection

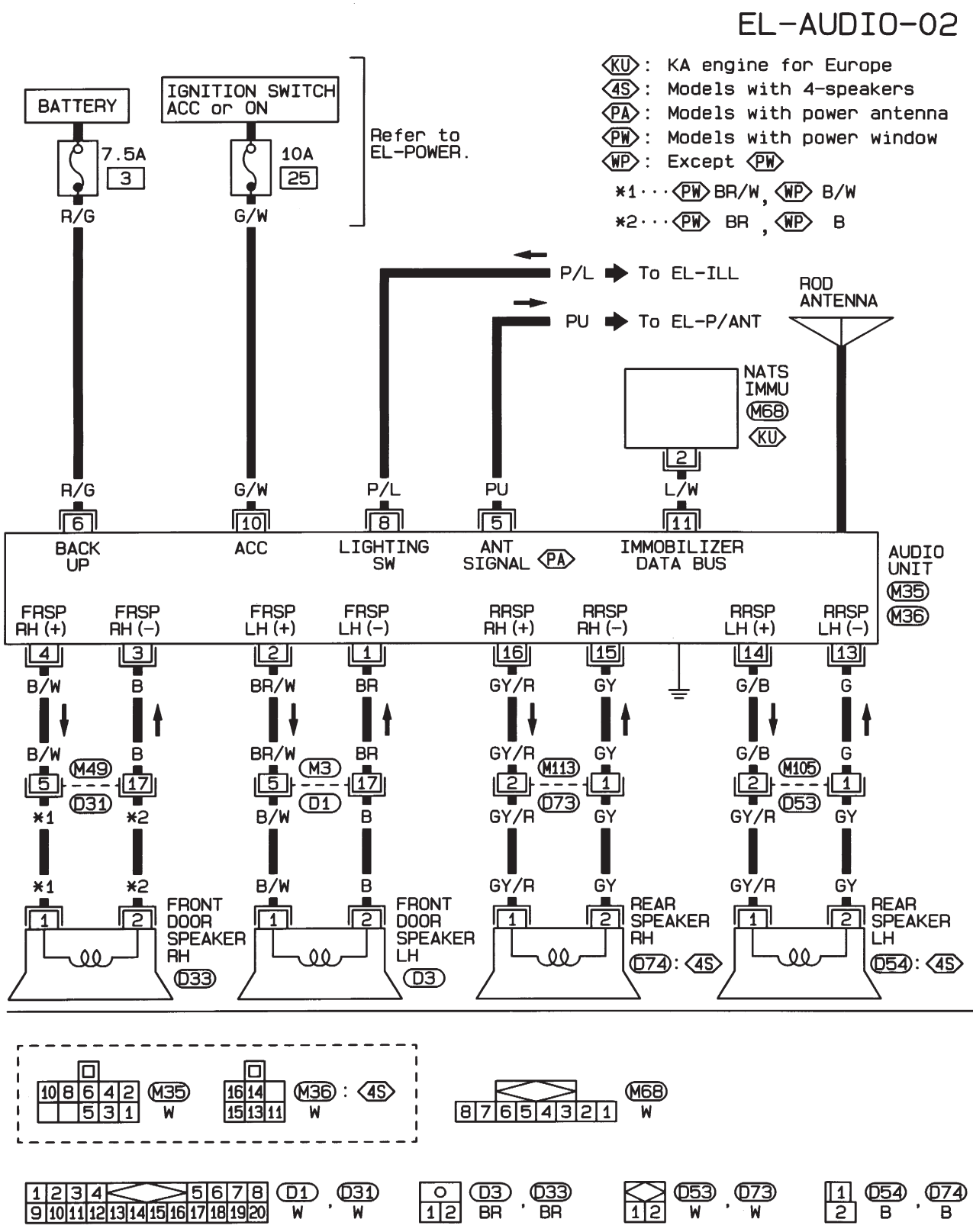
REAR WINDOW DEFOGGER SWITCH

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

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

Wiring Diagram — AUDIO —/LHD Models Type-2

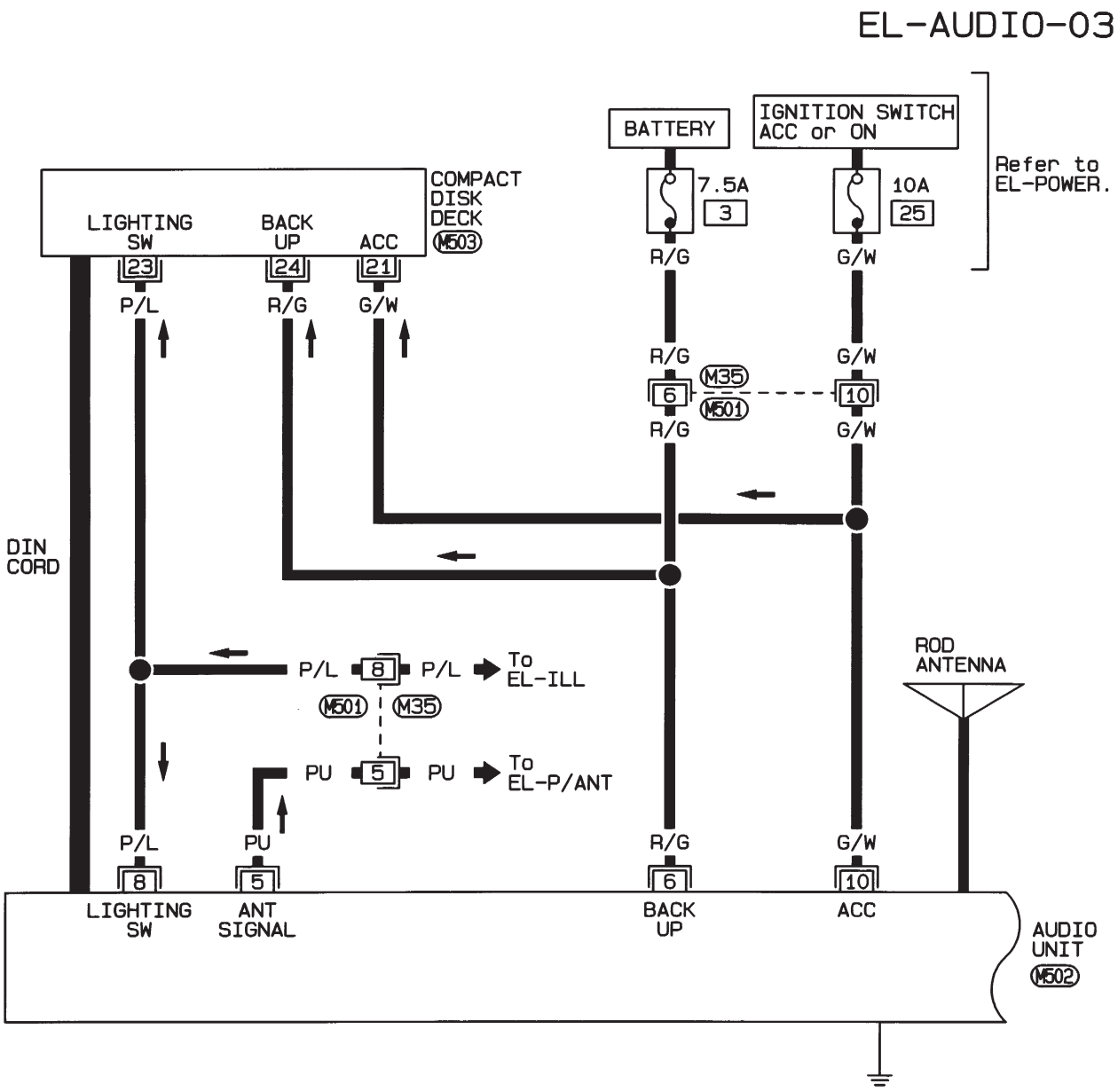
WITH 2 OR 4-SPEAKERS (Without CD deck) AND WITH 1-SPEAKER

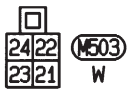


HEL752A

Wiring Diagram — AUDIO —/LHD Models Type-3

WITH 4-SPEAKERS (With CD deck)

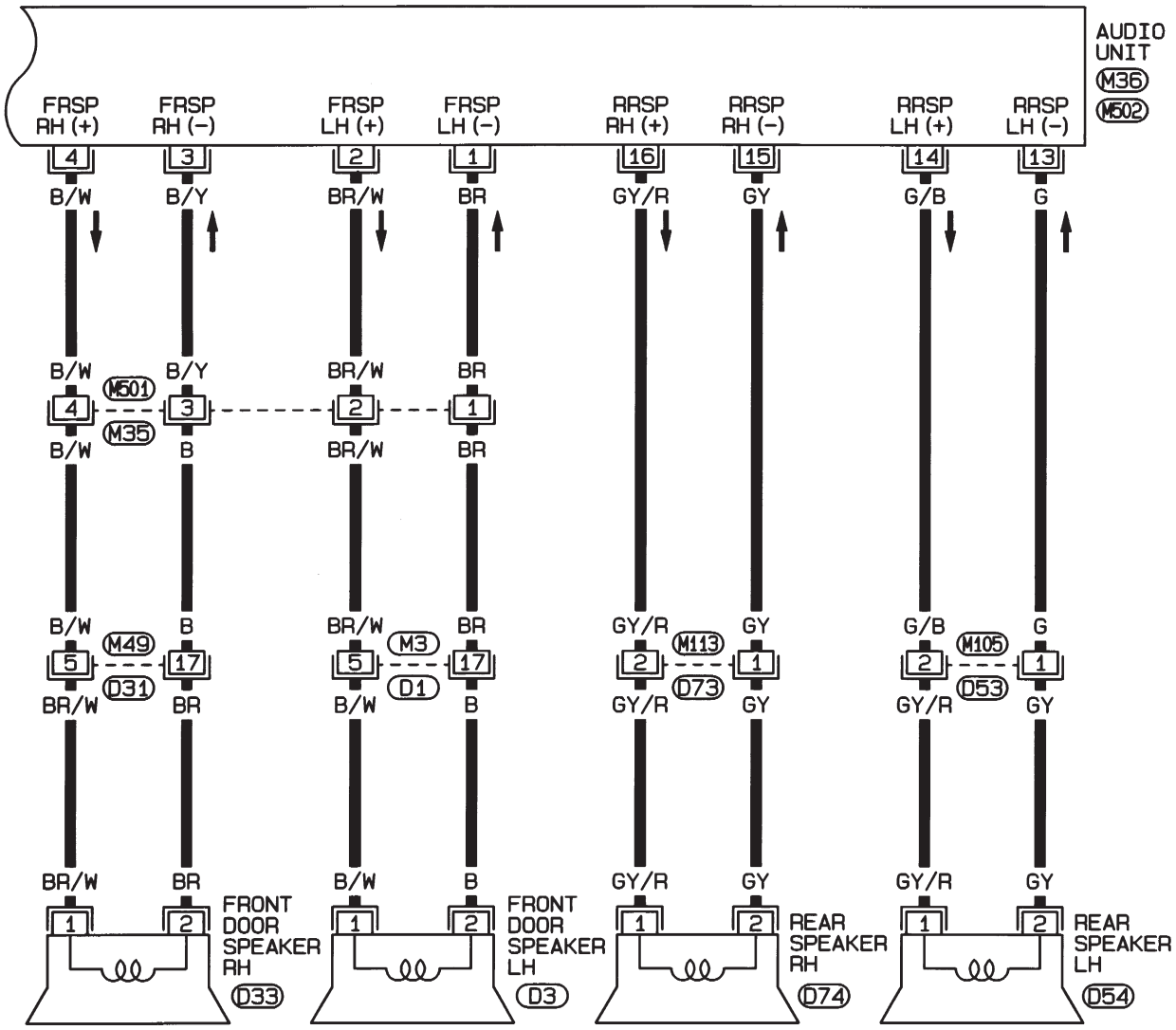


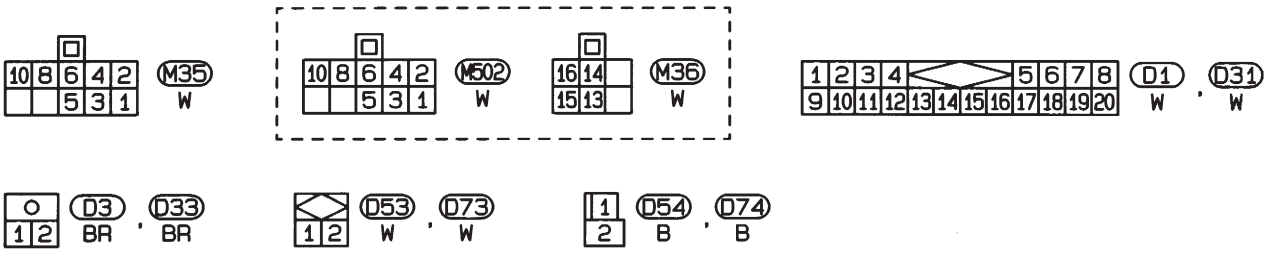


HEL753A

Wiring Diagram — AUDIO —/LHD Models Type-3 (Cont'd)

EL-AUDIO-04

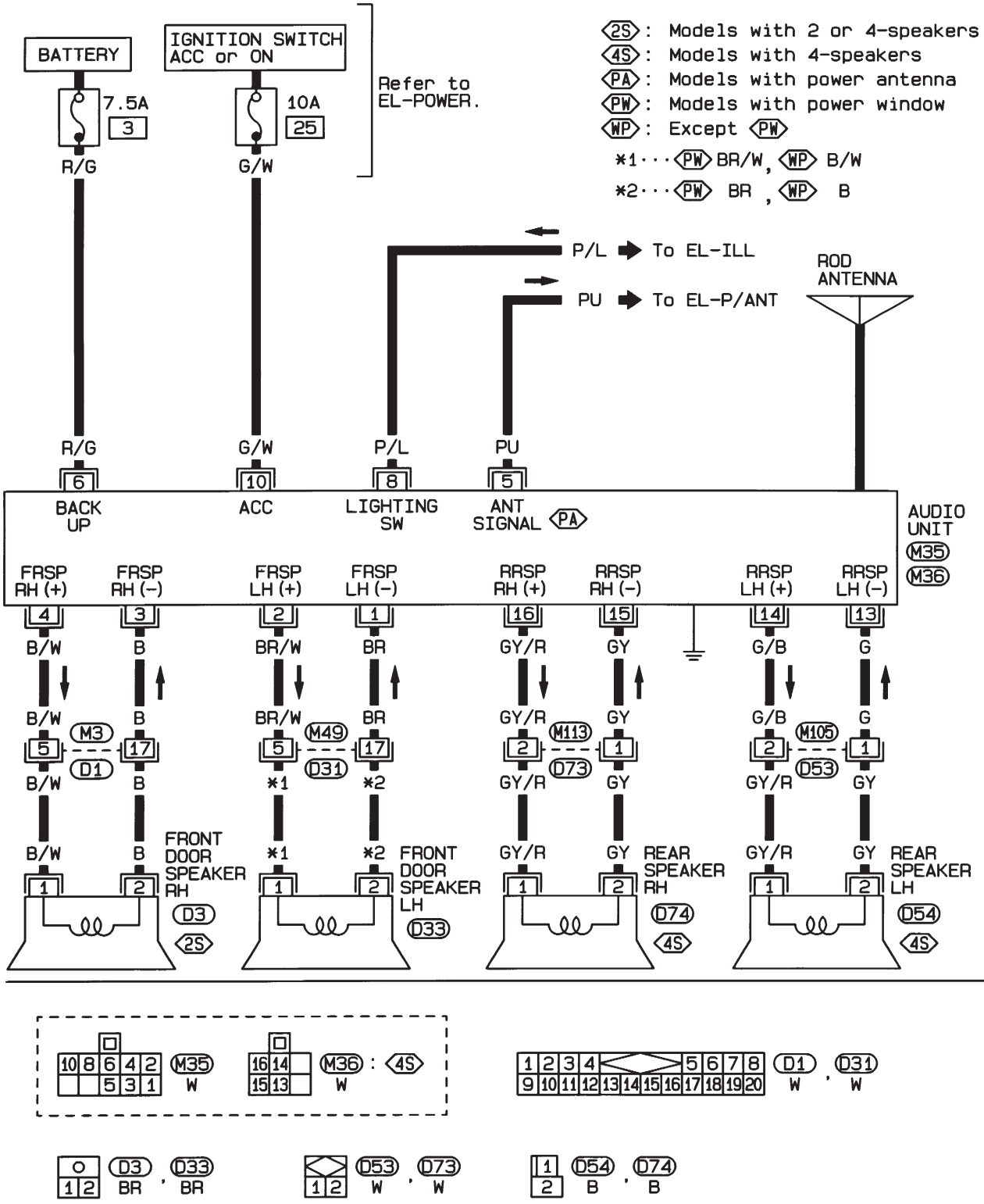




HEL754A

Wiring Diagram — AUDIO —/RHD Models

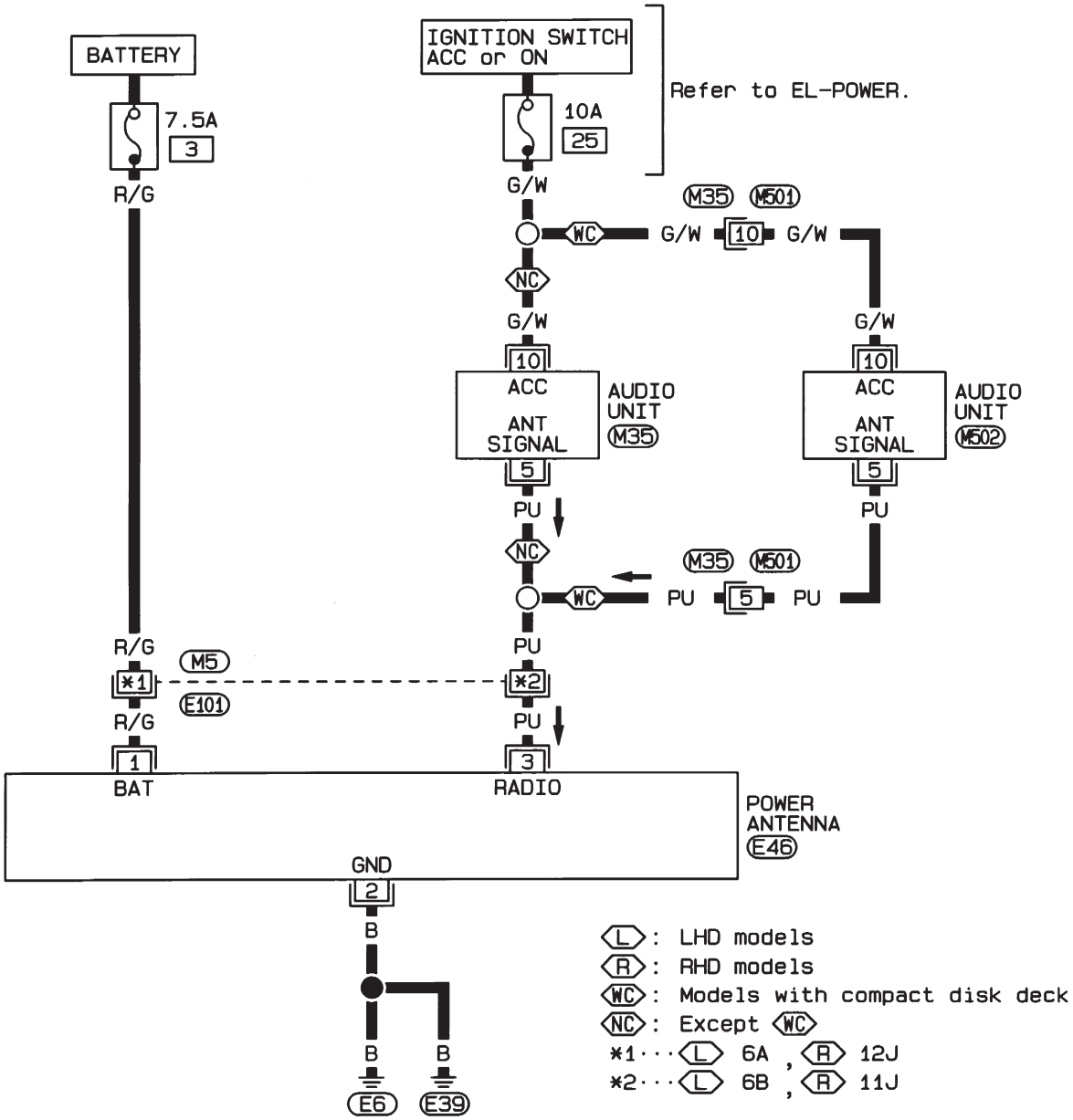
EL-AUDIO-05

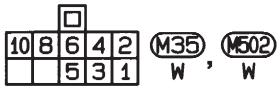


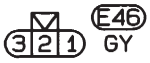
HEL755A

Power Antenna/Wiring Diagram — P/ANT —

EL-P/ANT-01







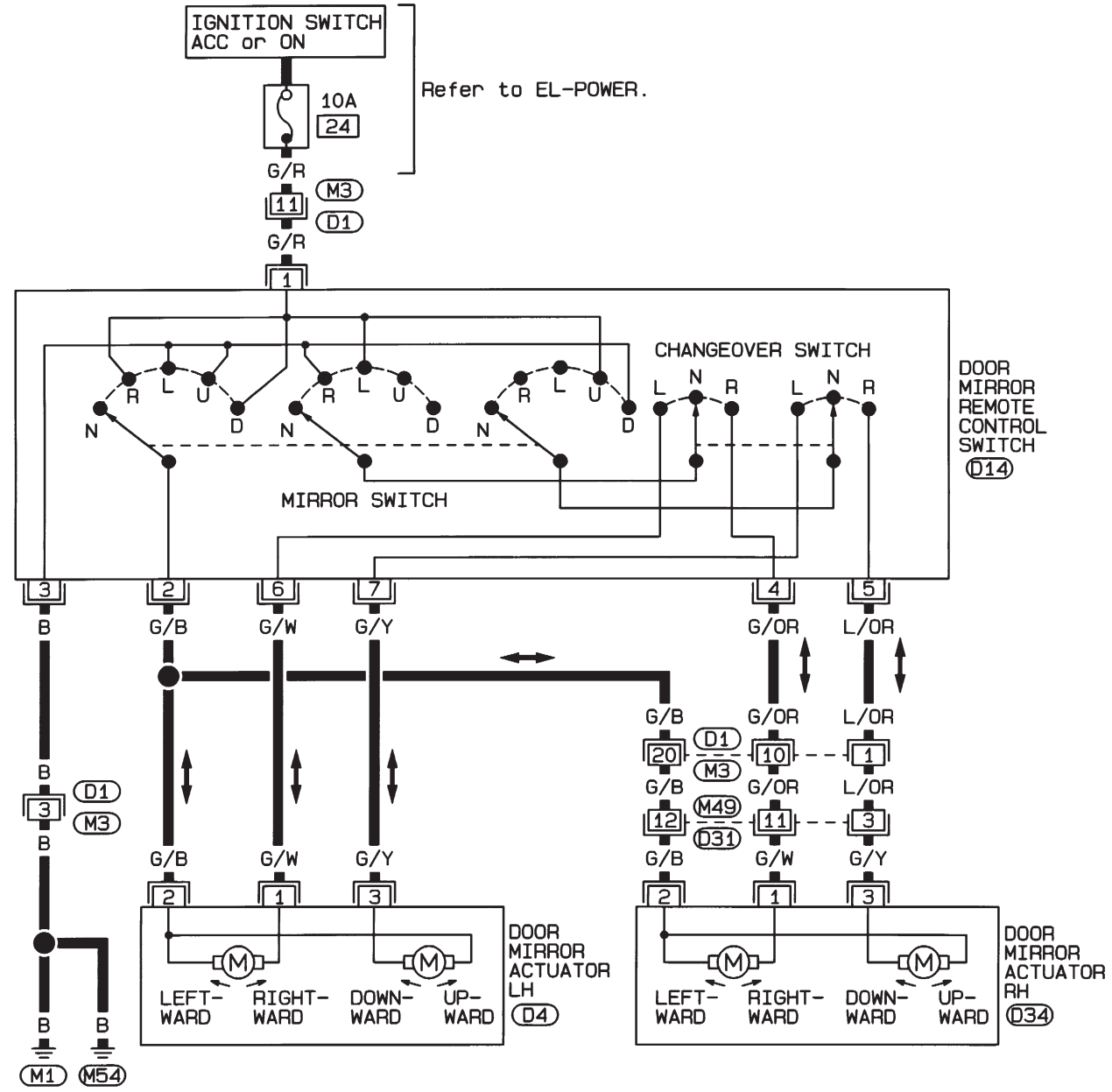
Refer to last page (Foldout page).

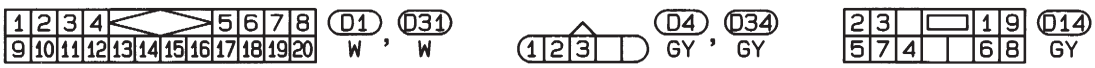
M5 , E101

HEL756A

Wiring Diagram — MIRROR —/LHD Models

EL-MIRROR-01

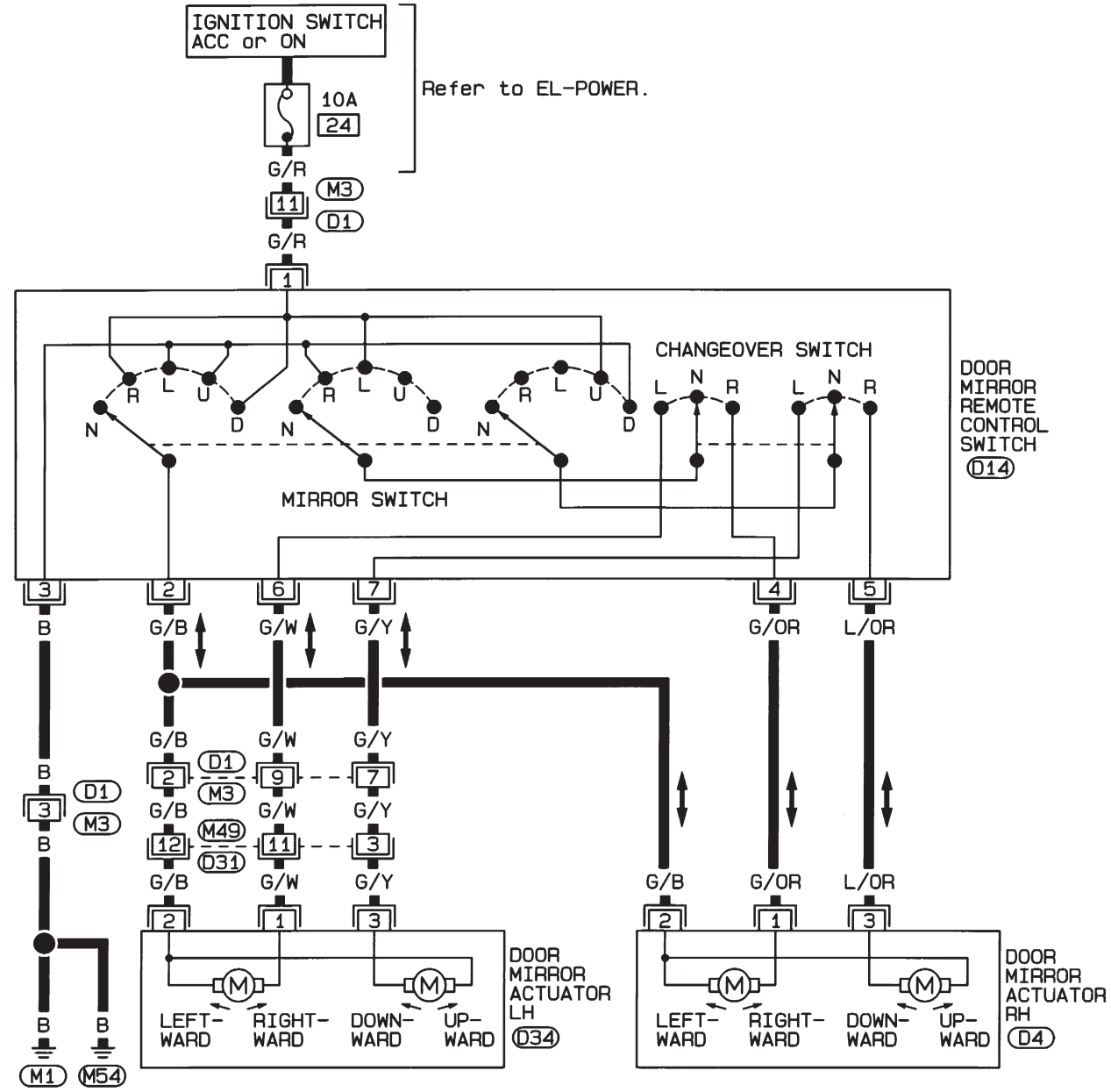


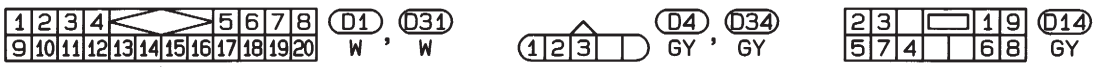


HEL757A

Wiring Diagram — MIRROR —/RHD Models

EL-MIRROR-03

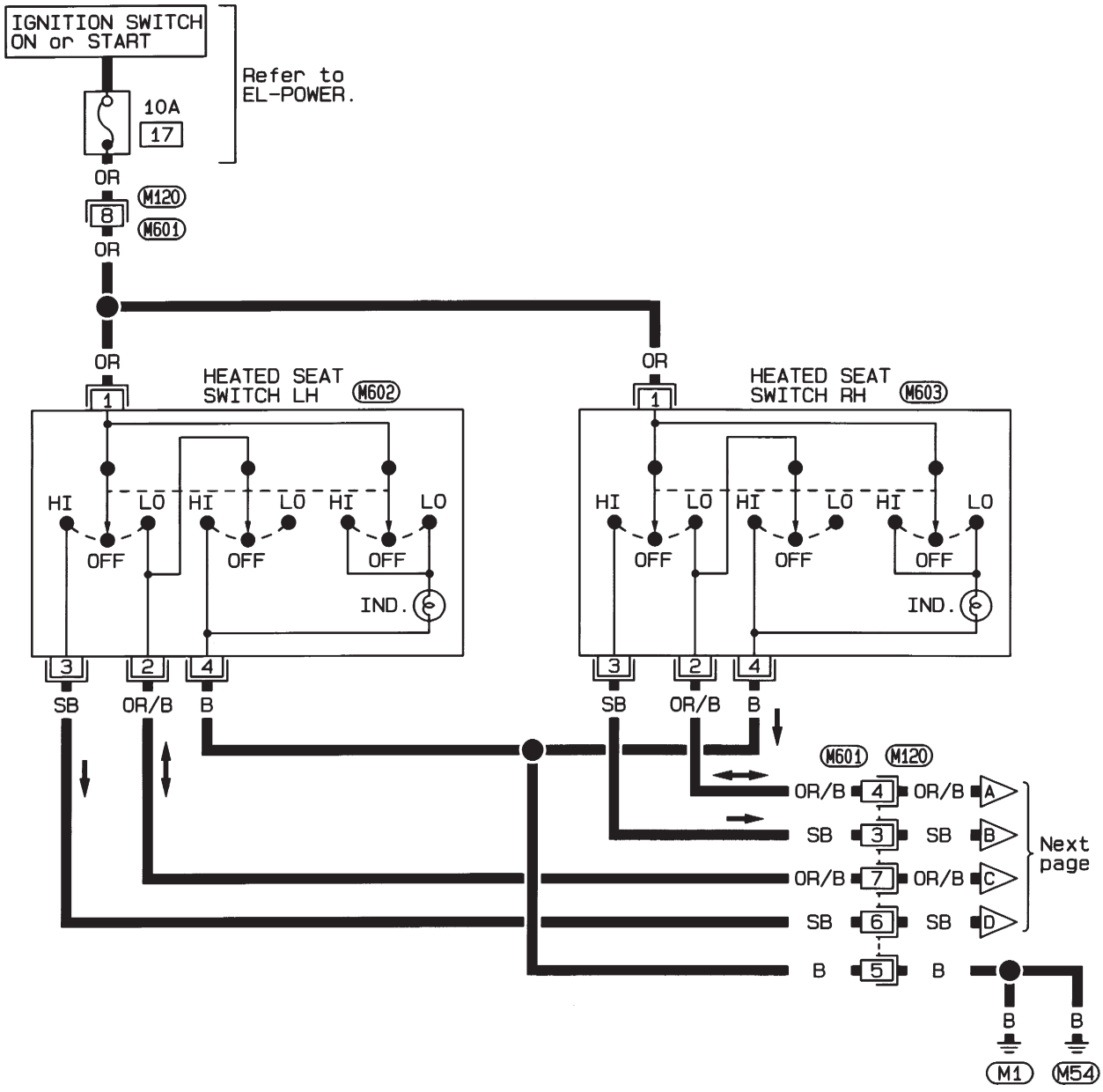




HEL818A

Wiring Diagram — H/SEAT —

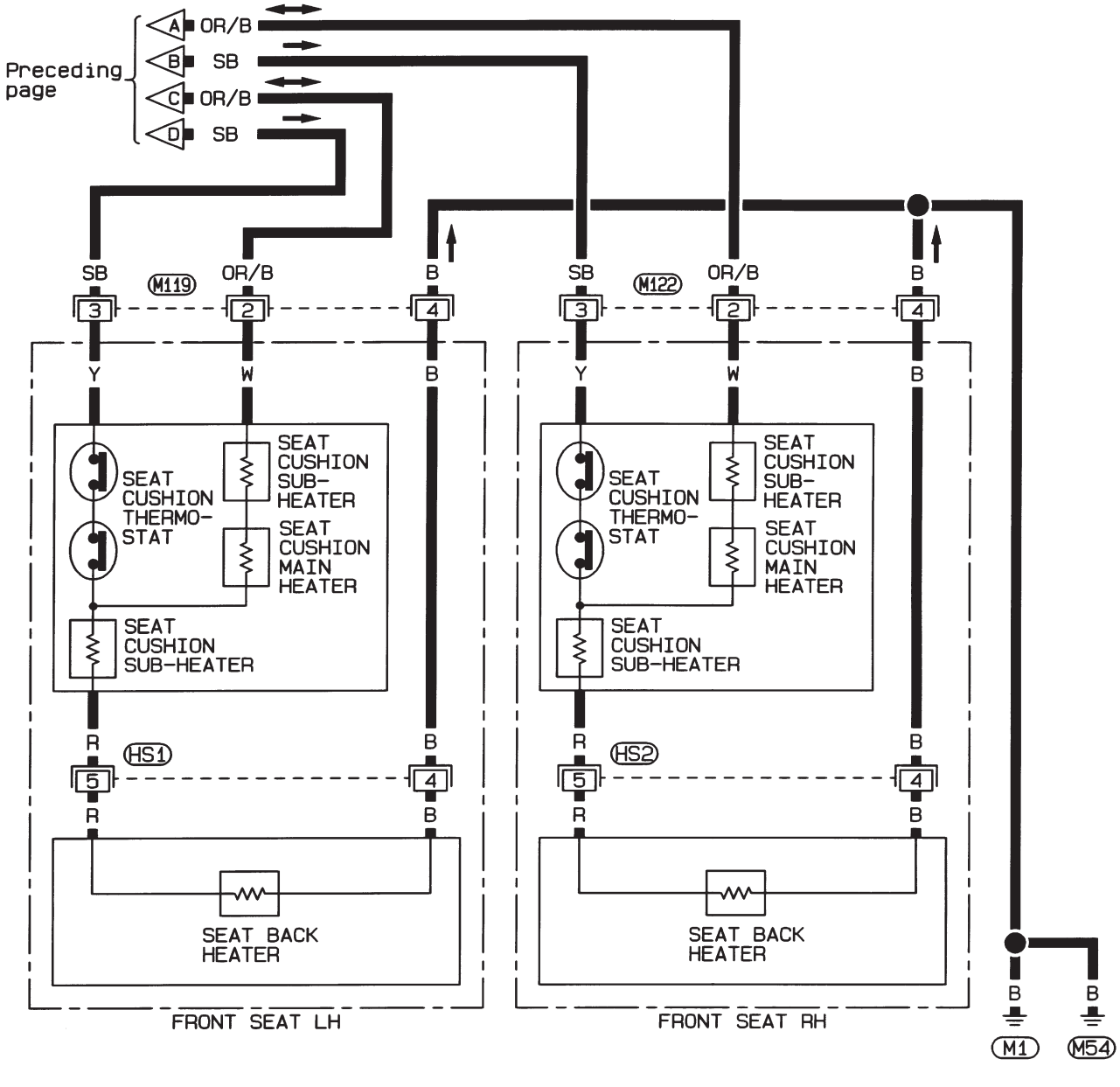
EL-H/SEAT-01

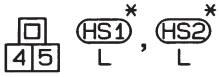


HEL759A

Wiring Diagram — H/SEAT — (Cont'd)

EL-H/SEAT-02

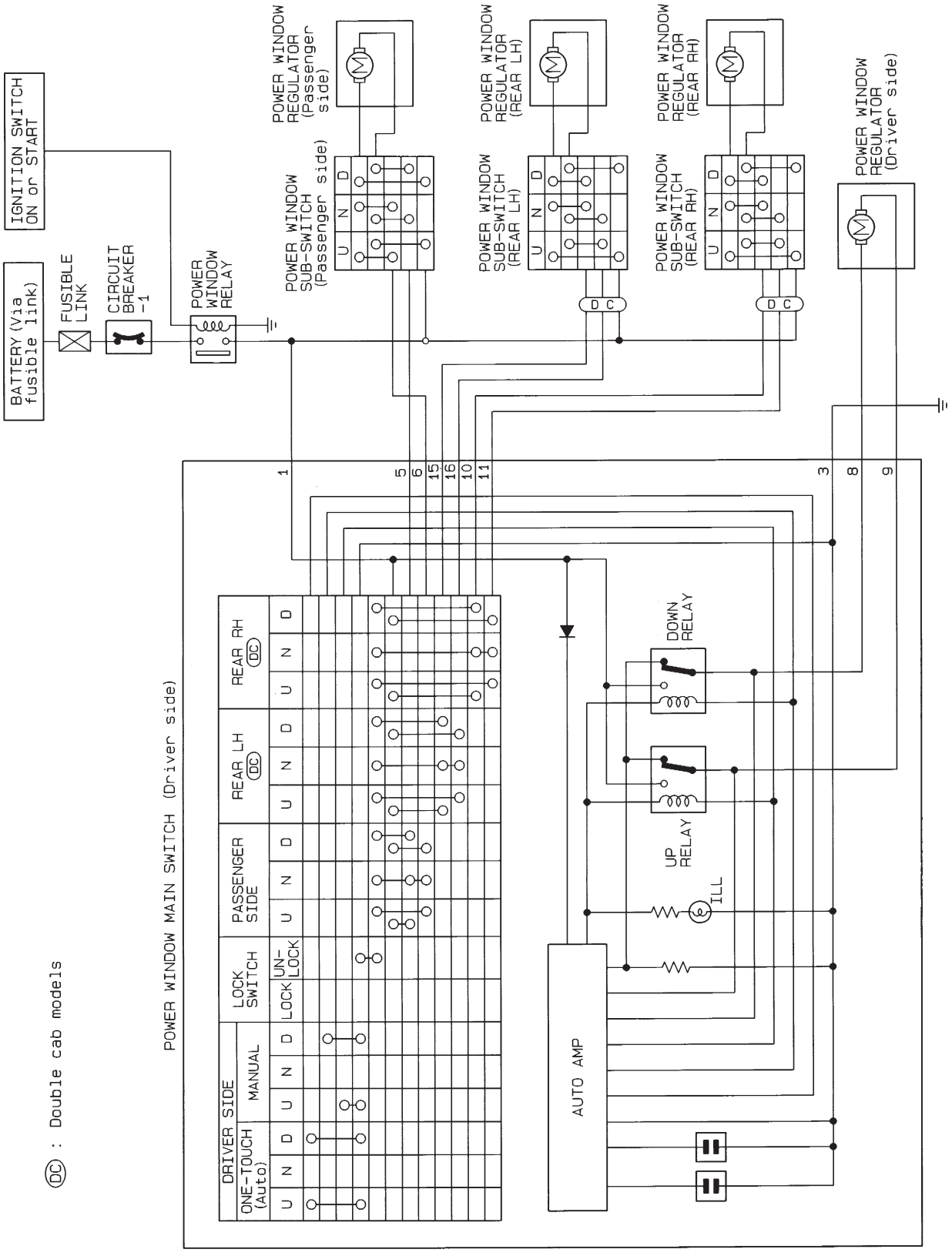




* : This connector is not shown in "HARNESS LAYOUT".

HEL379A

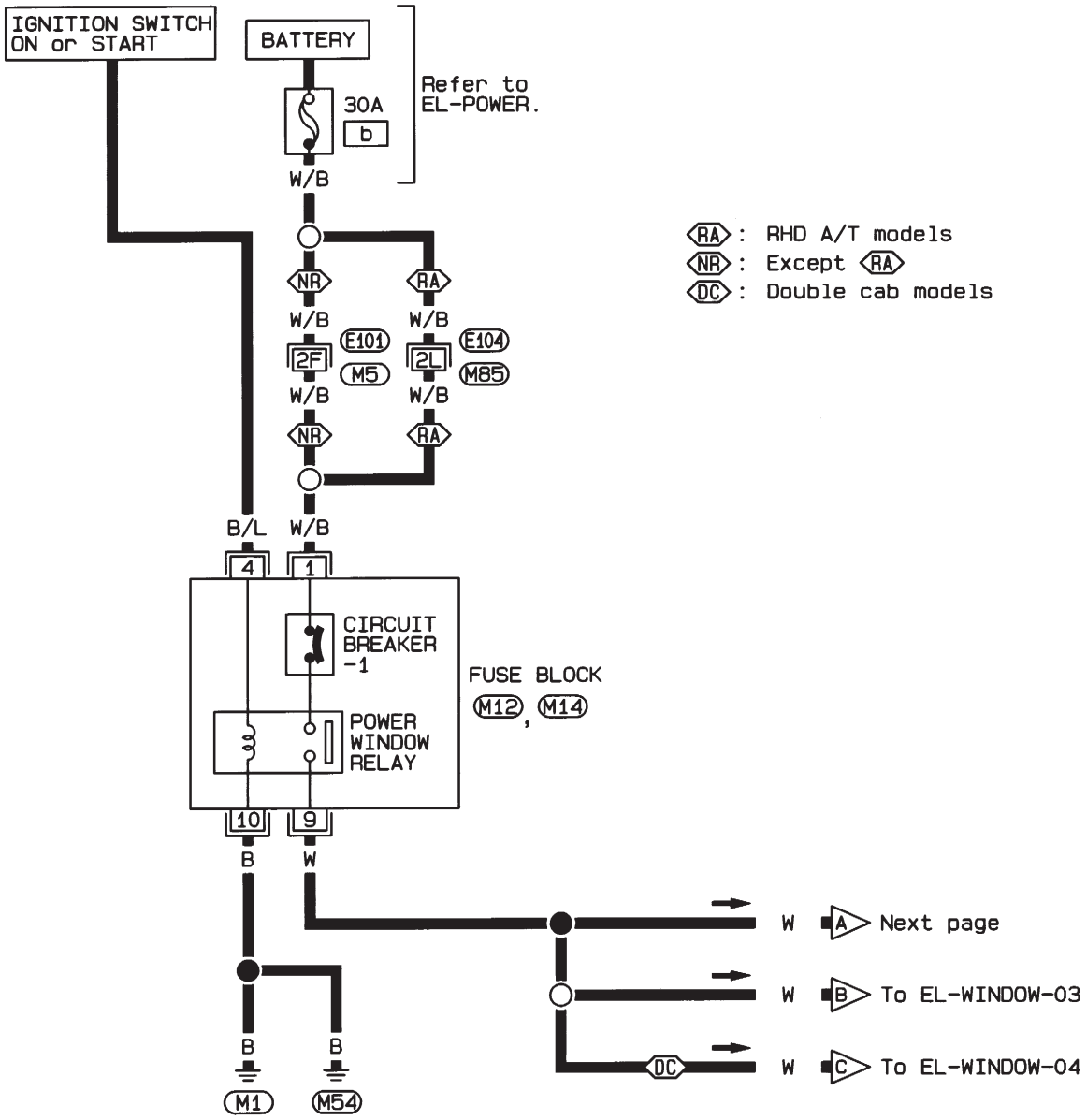
Schematic/Without Interruption Detection Function

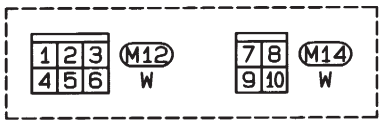


HEL760A

Wiring Diagram — WINDOW —/Without Interruption Detection Function

EL-WINDOW-01





Refer to last page (Foldout page).

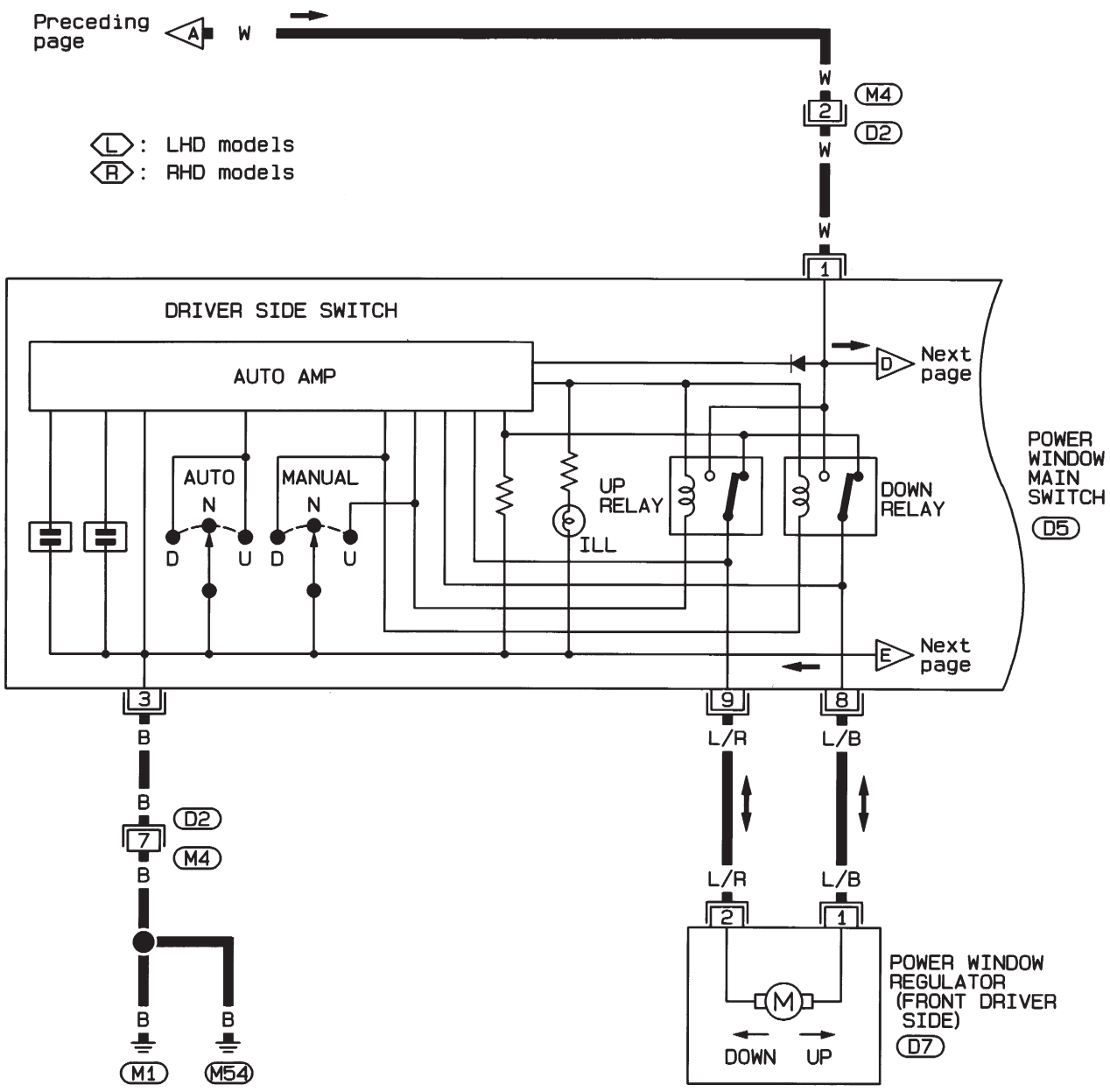
M5, E101

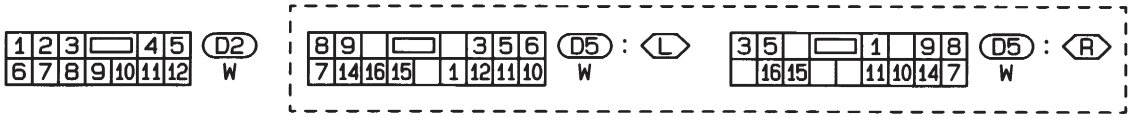
M85, E104

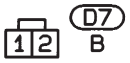
HEL761A

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

EL-WINDOW-02



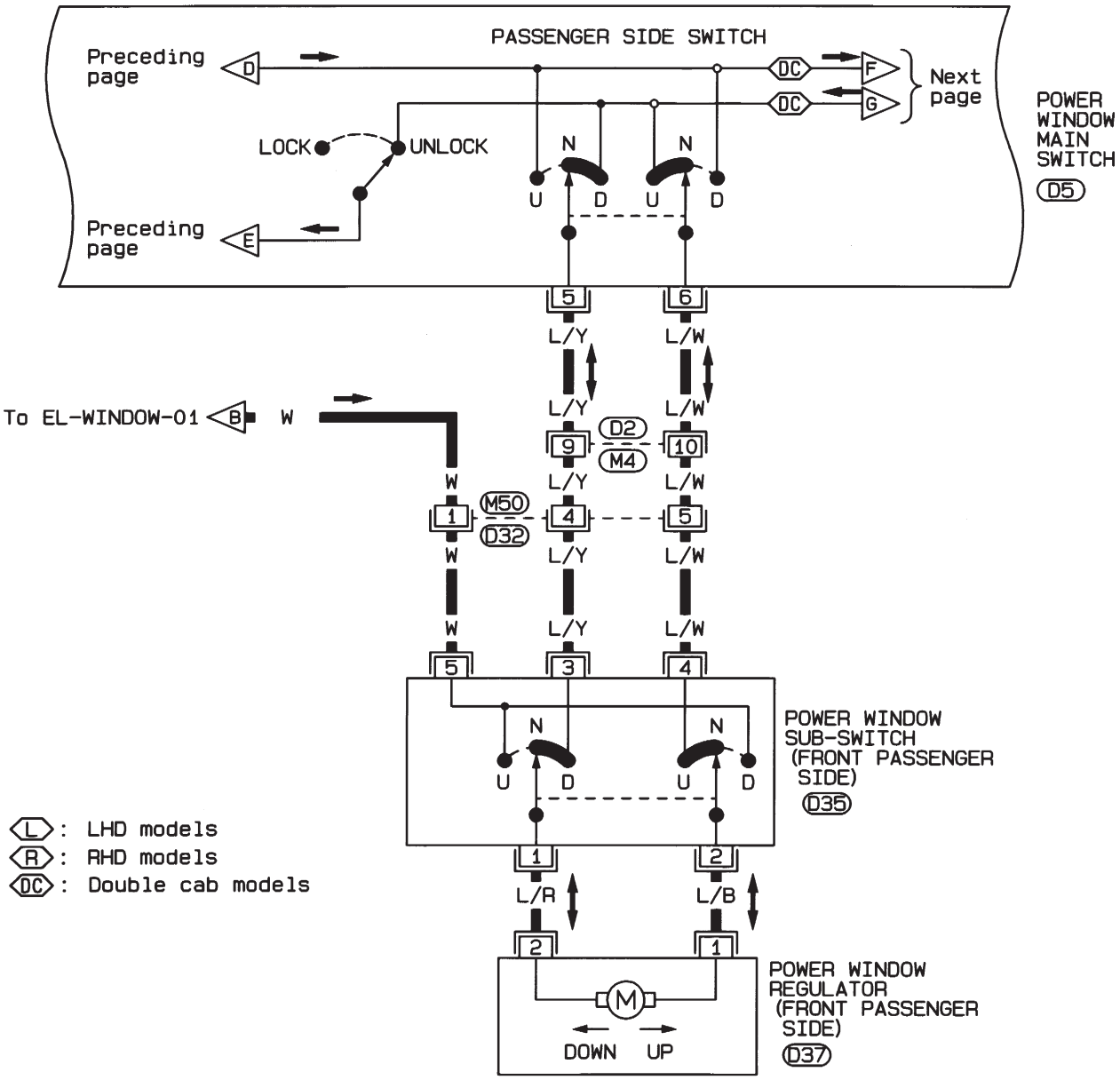


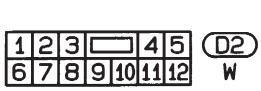


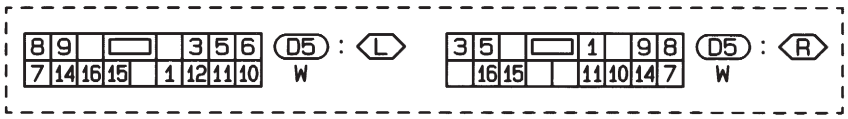
HEL762A

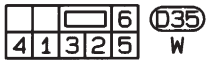
Wiring Diagram — WINDOW —/Without Interruption Detection Function (Cont'd)

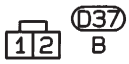
EL-WINDOW-03







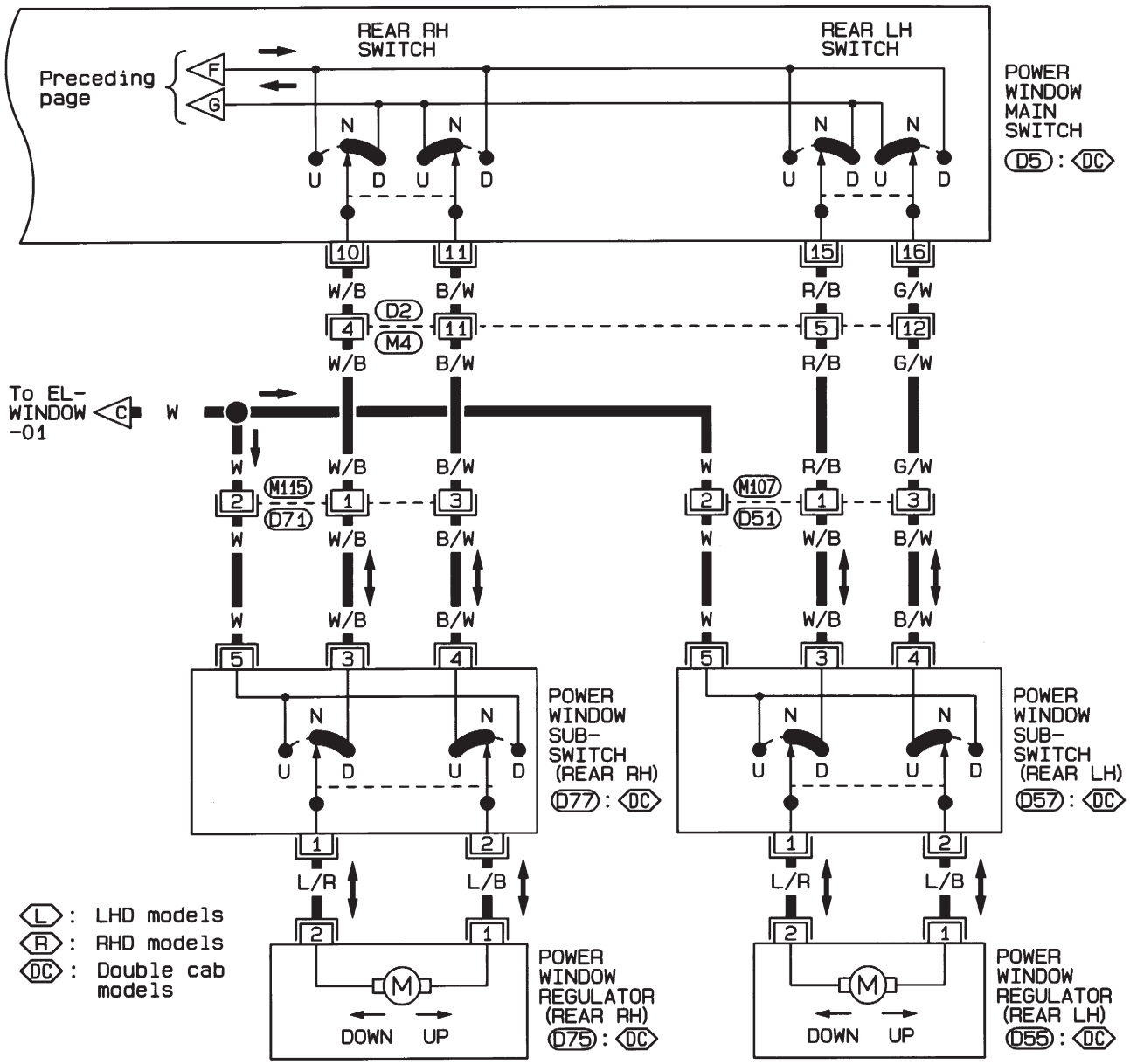


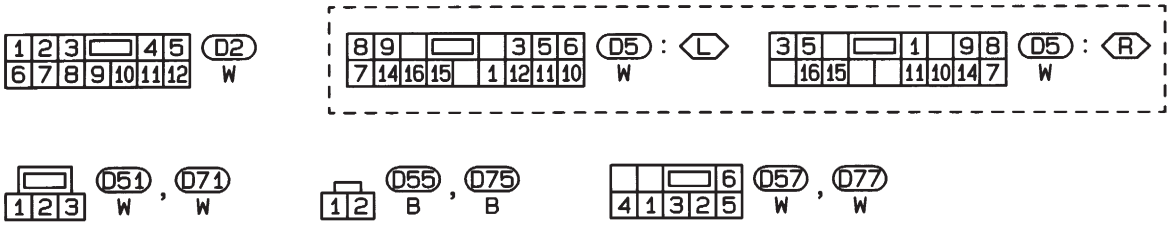


HEL763A

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

EL-WINDOW-04





HEL764A

Trouble Diagnoses/Without Interruption Detection Function

Symptom	Possible cause	Repair order
None of the power windows can be operated using any switch.	1. 30A 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 30A fusible link (letter b, 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.

System Description/With Interruption Detection Function

OUTLINE

Power window system consists of
- CPU (combined with power window main switch)
- four power window regulators

When ignition switch is in the ''ON'' position, power window can be operated depending on power window sub/main switch condition.

OPERATIVE CONDITION

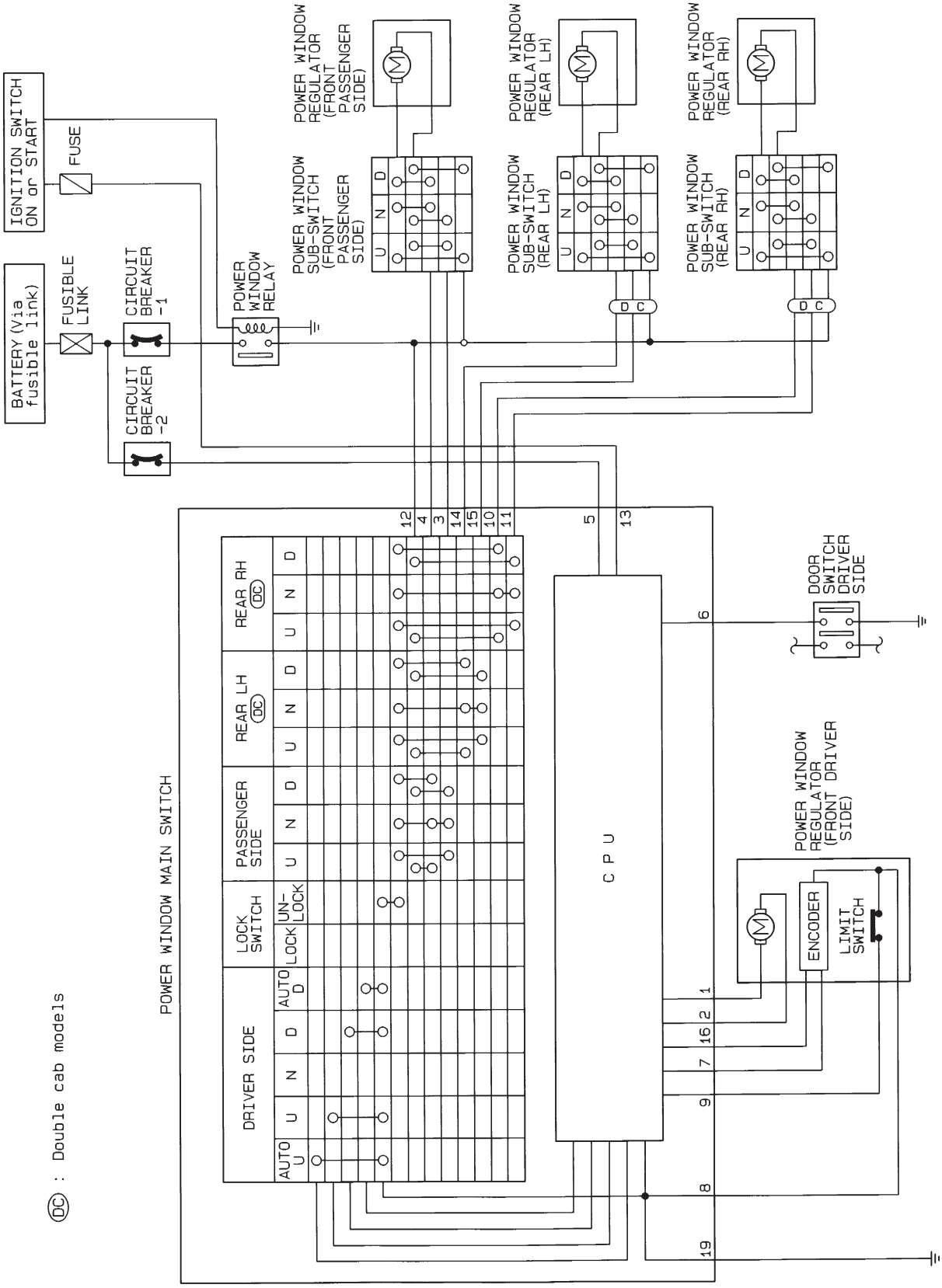
- Power windows can be raised or lowered with each sub-switch or the power window main switch located on the driver's door trim when ignition switch is in the ''ON'' position and power window lock switch on the driver's door trim is unlocked.
- When power window lock switch is locked, no windows can be raised or lowered except for driver's side window.
- When ignition switch is in the ''ON'' position, to fully open/close the driver's side window, press down/pull up completely on the automatic switch (main switch) and release it; it needs not be held. The window will automatically open/close all the way. To stop the window, pull up/press down then release the switch.
- After turning ignition switch to OFF, the driver's side window can be raised or lowered for 15 minutes. The timer control for supplying power after turning ignition switch to ''OFF'' will be canceled when the driver's side door is closed. (Except models for Europe)

INTERRUPTION DETECTION FUNCTION

CPU (combined with power window main switch) monitors the power window regulator motor operation and the power window position (full closed or other) for driver's power window by the signals from encoder and limit switch in front power window regulator (driver's side).
When CPU (combined with power window main switch) detects interruption during the following close operation in the driver's side door,
- automatic close operation when ignition switch is in the ''ON'' position
- automatic close operation during power window timer operation
- manual close operation during power window timer operation

CPU (combined with power window main switch) controls driver's power window regulator motor for open and the power window will be lowered about 150 mm (5.91 in).

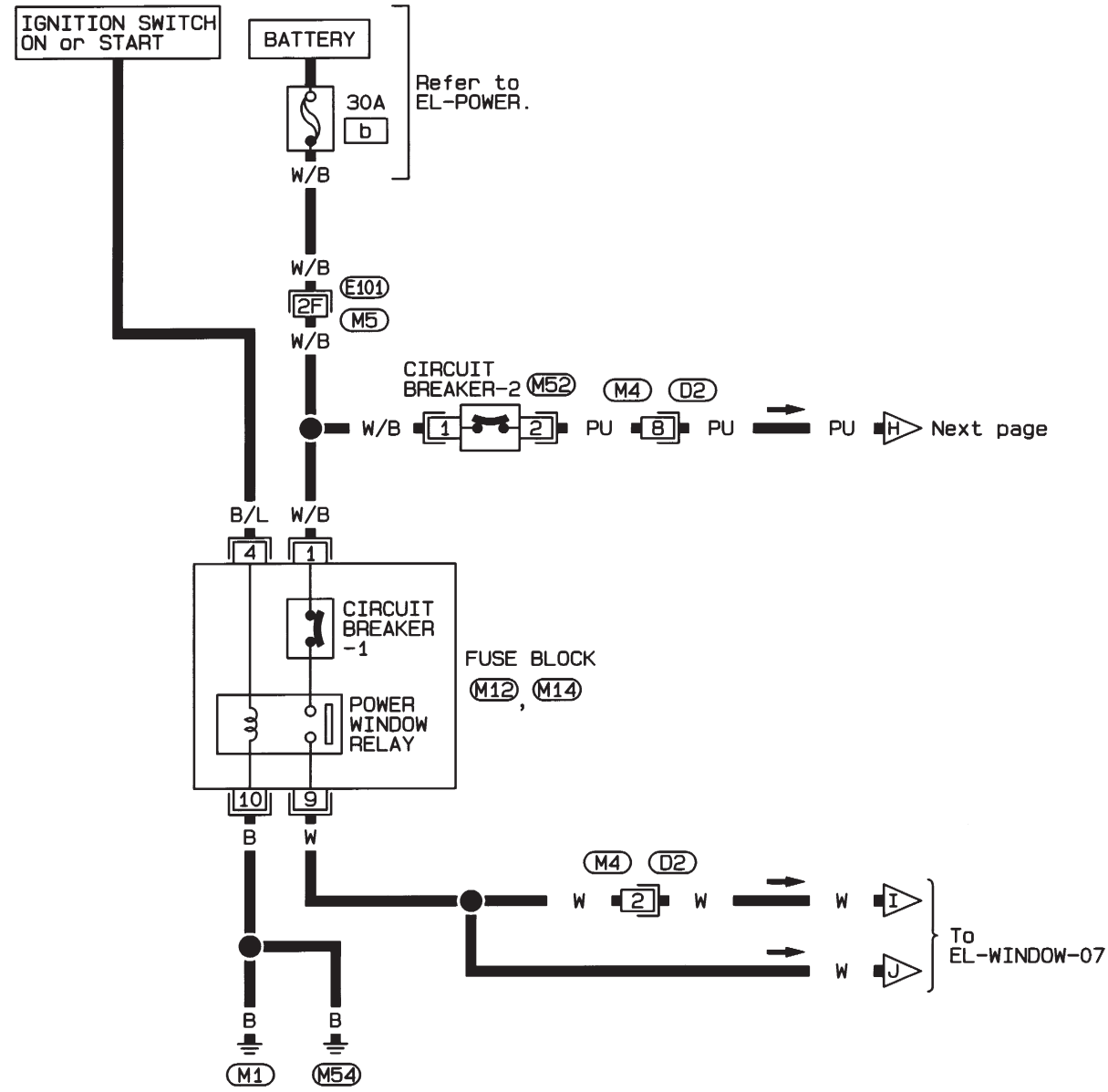
Schematic/With Interruption Detection Function



HEL765A

Wiring Diagram — WINDOW —/With Interruption Detection Function

EL-WINDOW-05



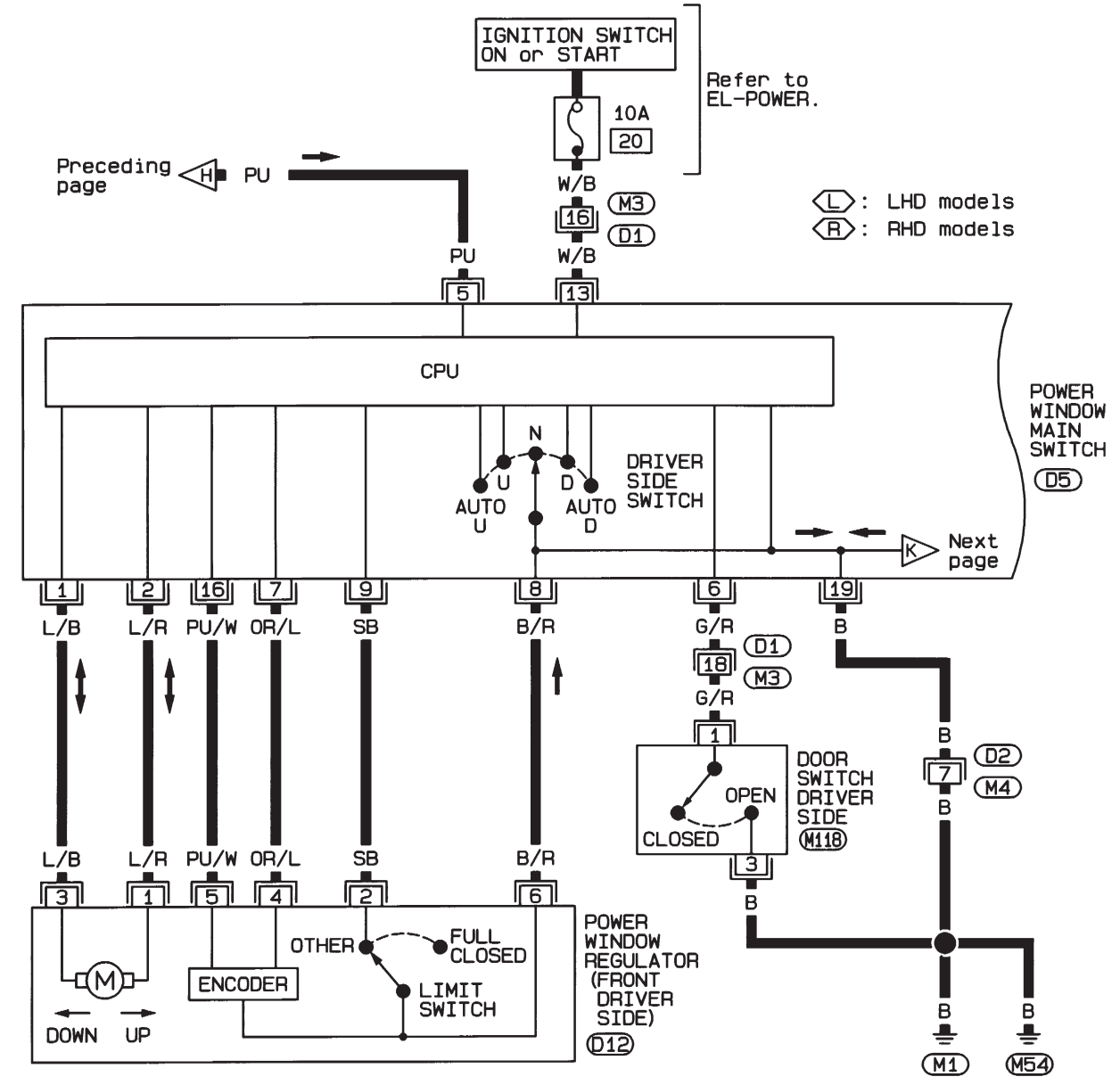
Refer to last page (Foldout page).

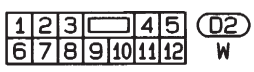
M5, E101

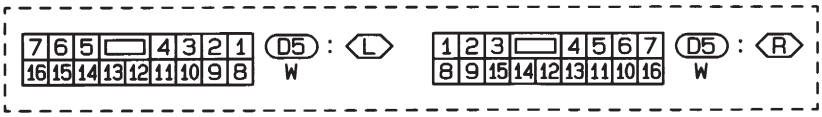
HEL766A

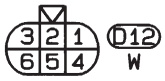
Wiring Diagram — WINDOW —/With Interruption Detection Function (Cont'd)

EL-WINDOW-06





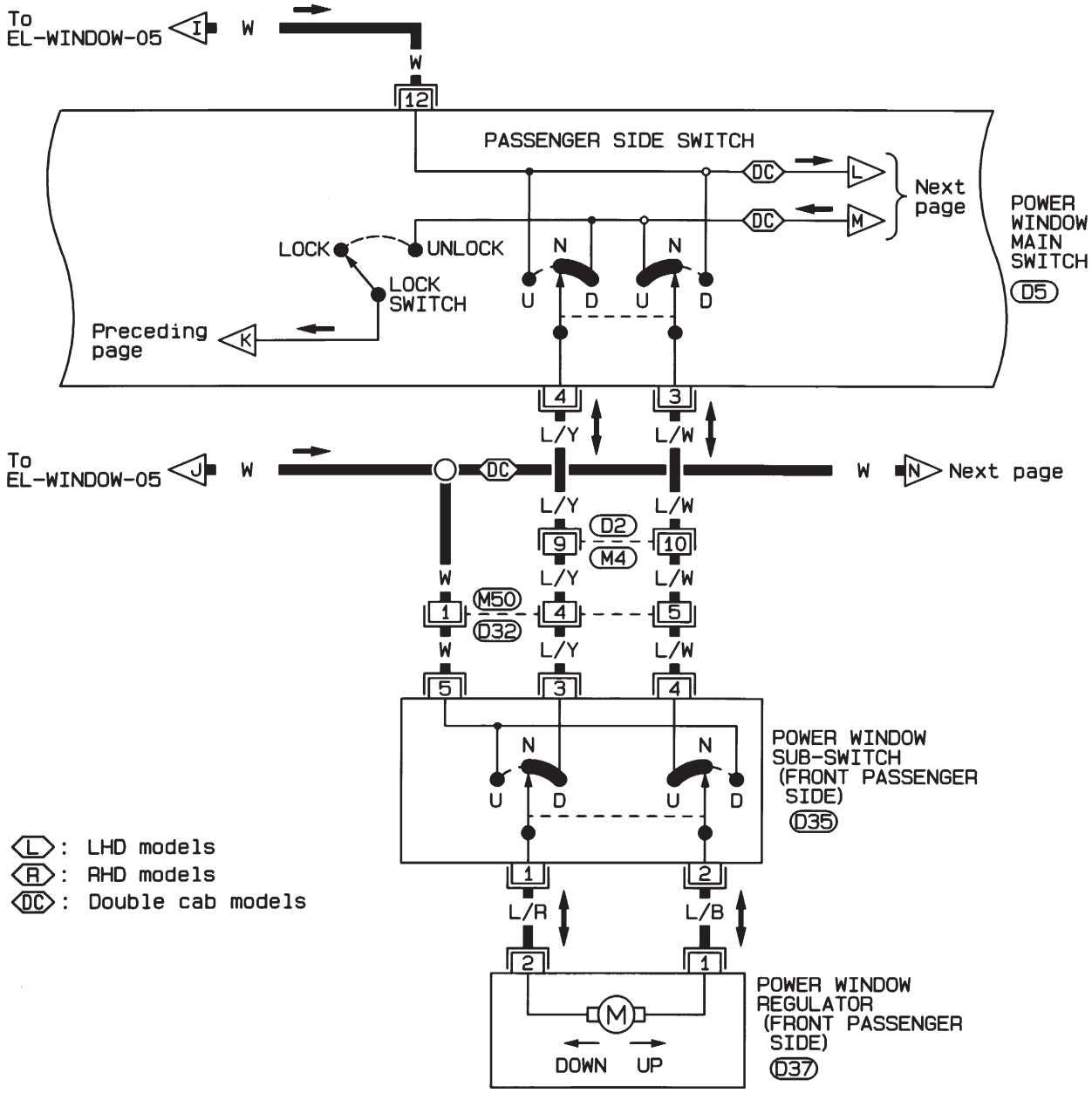


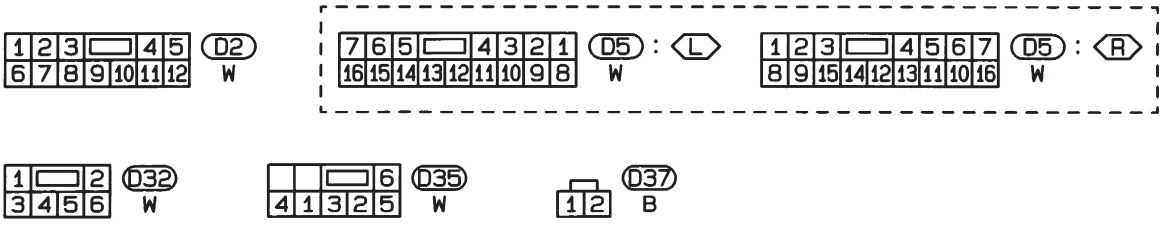


HEL767A

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

EL-WINDOW-07

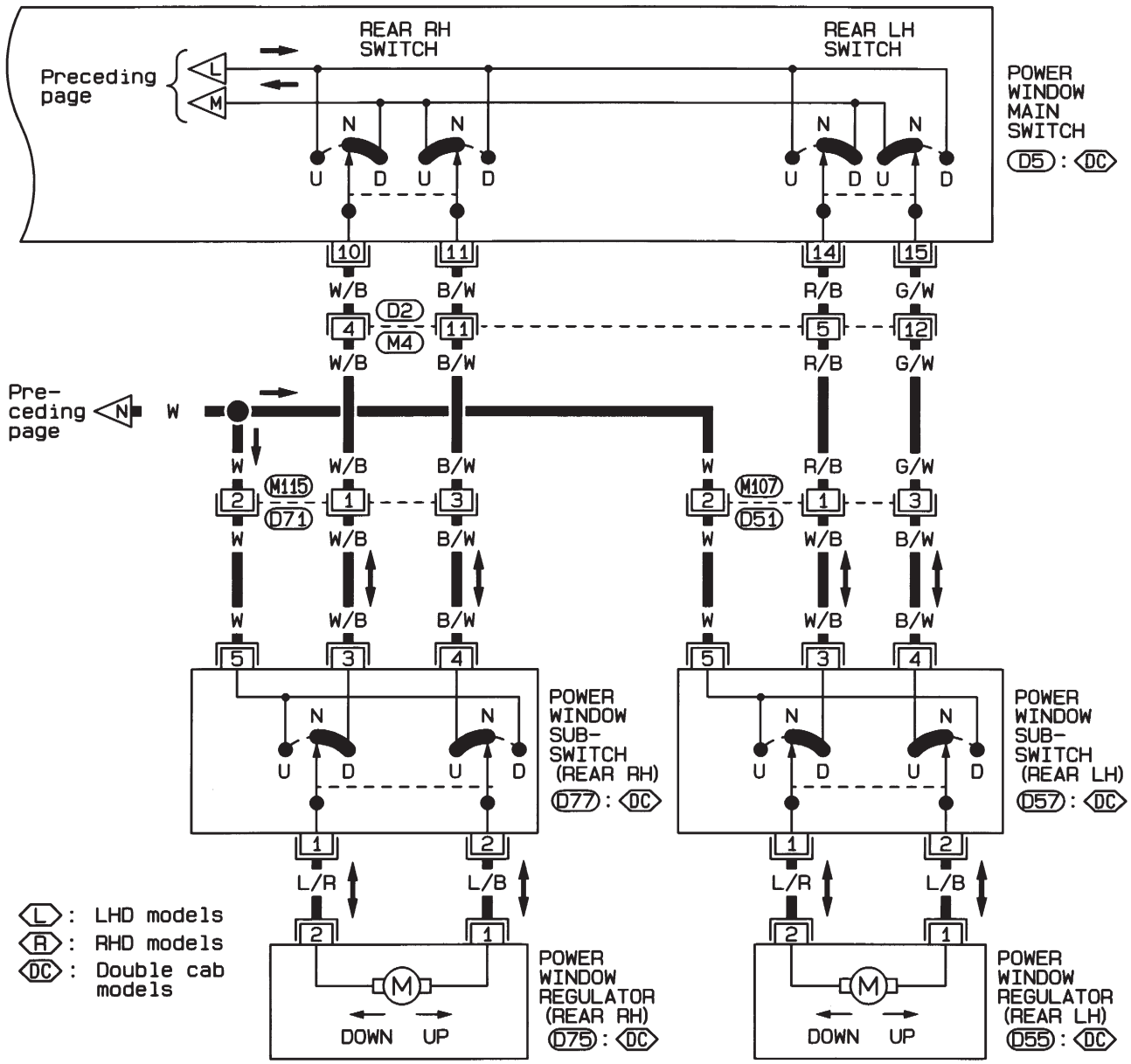


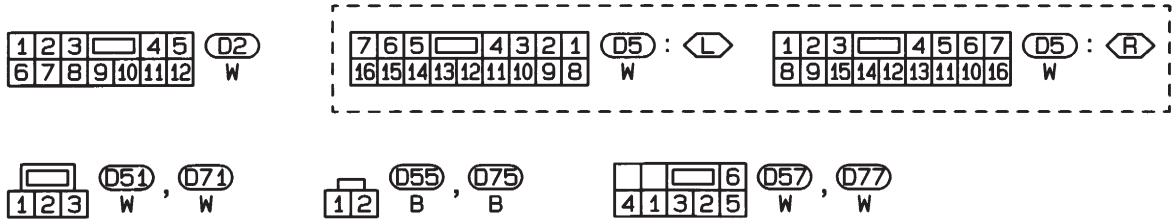


HEL768A

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

EL-WINDOW-08





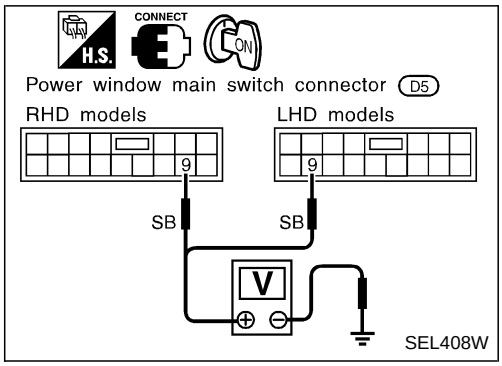
HEL769A

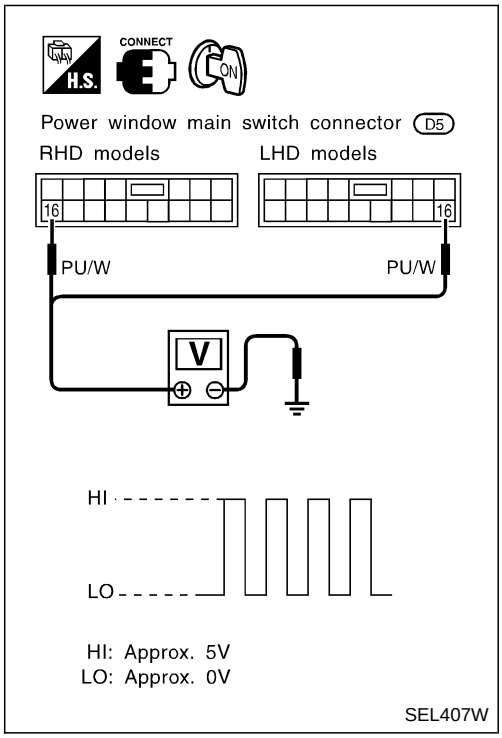
Trouble Diagnoses/With Interruption Detection Function

Symptom	Possible cause	Repair order
None of the power windows can be operated using any switch.	1. 10A fuse, 30A fusible link	1. Check 10A fuse [No. 20, located in fuse block (J/B)], 30A fusible link (letter b, 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 30A fusible link (letter b, 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. 20, 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-2121)
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.

System Description

Power is supplied at all times
- through 30A fusible link (Letter [b], located in the fusible link and fuse box)
- to circuit breaker-1 (terminal ①) of fuse block)
- through circuit breaker-1 (terminal ⑦) of fuse block)
- to smart entrance control unit terminal ⑪.

Ground is supplied to smart entrance control unit terminal ⑱ through body grounds (M1) and (M54).

INPUT

When the door lock & unlock switch (power window main switch) is in LOCKED position, ground signal is supplied
- to smart entrance control unit terminal ④
- through door lock & unlock switch terminal ⑭
- to door lock & unlock switch terminal ③
- through body grounds (M1) and (M54).

When the door lock & unlock switch (power window main switch) is in UNLOCKED position, ground signal is supplied
- to smart entrance control unit terminal ⑤
- through door lock & unlock switch terminal ⑦
- to door lock & unlock switch terminal ③
- through body grounds (M1) and (M54).

Driver side door key cylinder and driver side lock knob are connected to lock knob switch with a rod. When lock knob switch is in UNLOCKED position, ground signal is supplied
- to smart entrance control unit terminal ②
- through lock knob switch terminal ②
- to driver side lock knob switch terminal ①
- through body grounds (M1) and (M54).

When lock knob switch is in LOCKED position, ground signal is interrupted.
Door lock operates according to the conditions of the door lock & unlock switch (power window main switch) and lock knob switch.

OUTPUT

Unlock

Ground is supplied
- to passenger side door lock actuator, rear door lock actuator LH and RH terminal ① (double cab models)
- through smart entrance control unit terminal ⑮

Power is supplied
- to passenger side door lock actuator, rear door lock actuator LH and RH terminal ② (double cab models)
- through smart entrance control unit terminal ⑯

Then, the doors are unlocked.

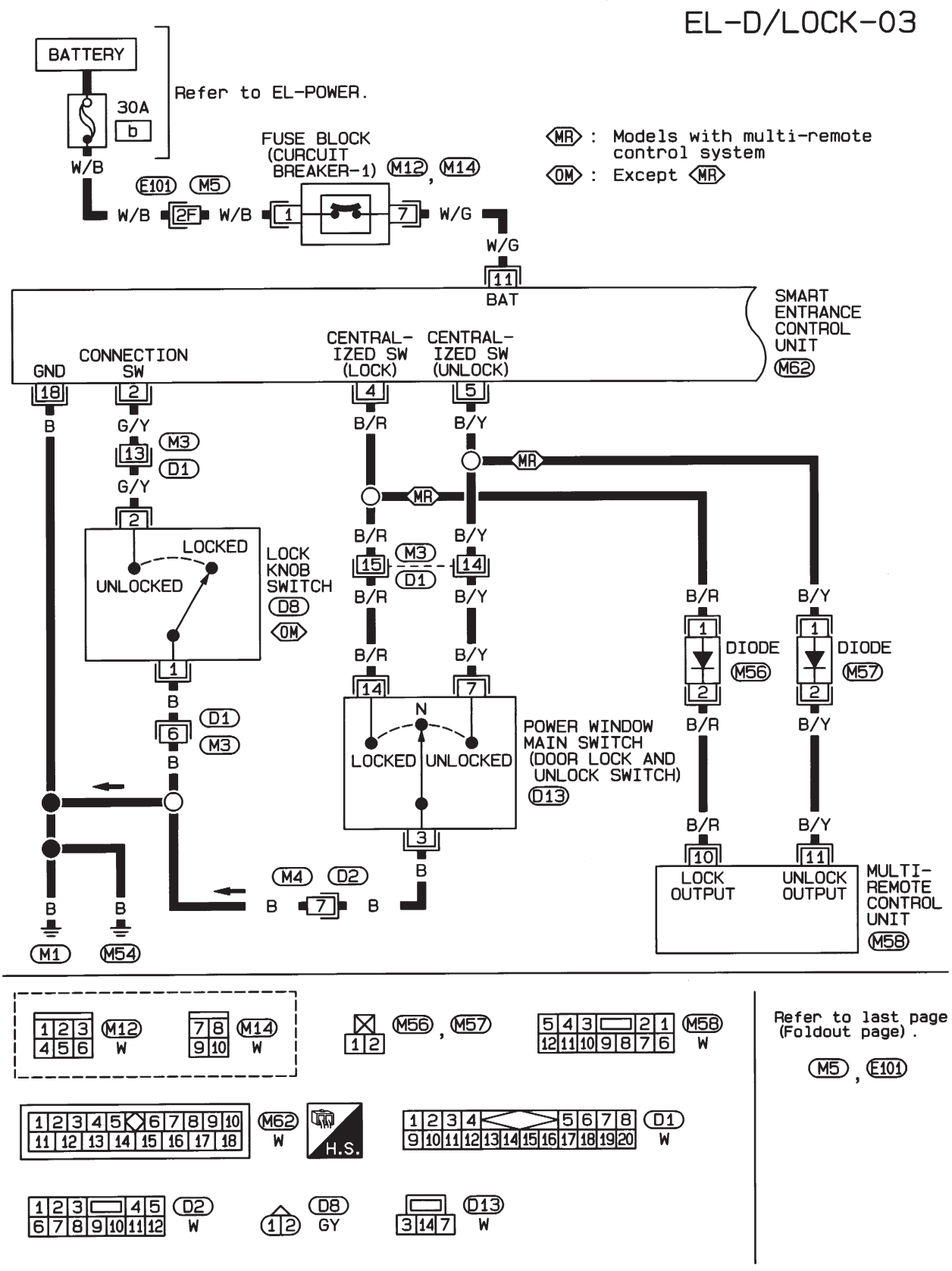
Lock

Ground is supplied
- to passenger side door lock actuator, rear door lock actuator LH and RH terminal ②
- through smart entrance control unit terminal ⑯

Power is supplied
- to passenger side door lock actuator, rear door lock actuator LH and RH terminal ①
- through smart entrance control unit terminal ⑮

Then, the doors are locked.

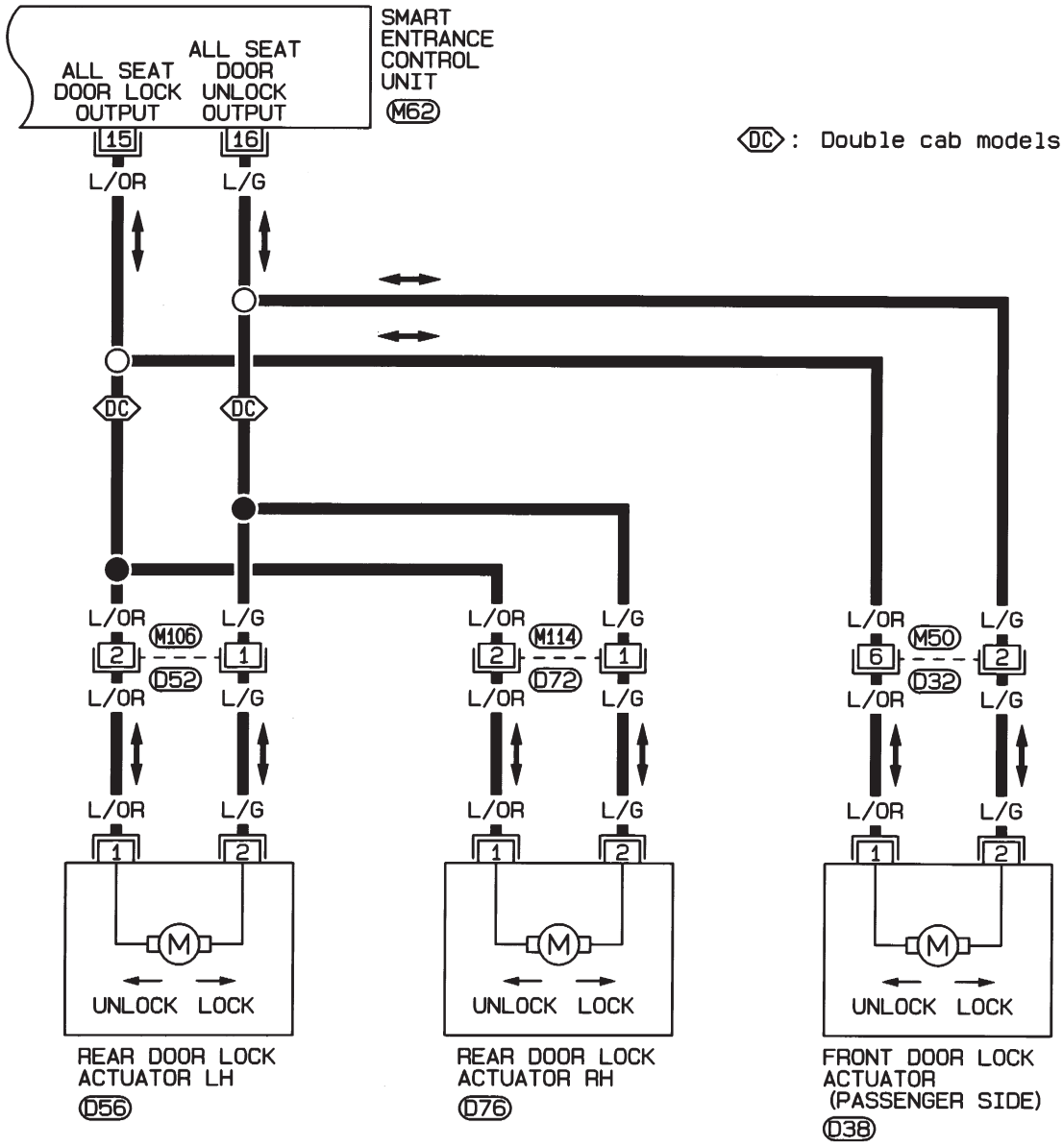
Wiring Diagram — D/LOCK —

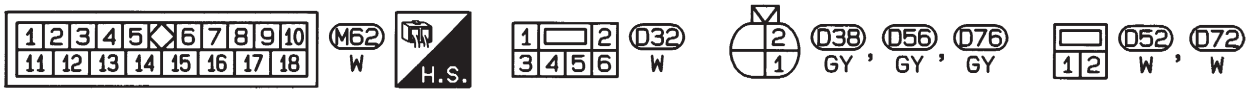


HEL771A

Wiring Diagram — D/LOCK — (Cont'd)

EL-D/LOCK-04



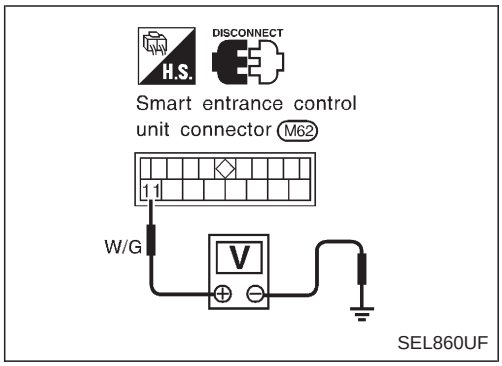


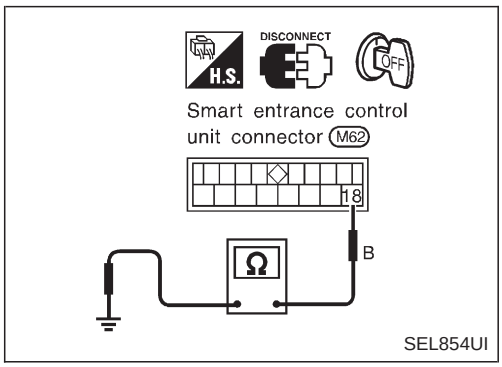
HEL772A

Trouble Diagnosis

SYMPTOM CHART

REFERENCE PAGE	EL-2125	EL-2126	EL-2127	EL-2128
SYMPTOM	Main power supply and ground circuit check	Diagnostic procedure 1 (Door lock and unlock switch check)	Diagnostic procedure 2 (Door lock actuator check)	Diagnostic procedure 3 (Driver side lock knob switch check)
None of the doors lock/unlock when operating any switch.	X		X	
One or more doors are not locked and/or unlocked.			X	
Door lock and unlock switch does not operate.		X		
Lock knob switch on driver's door does not operate.				X





MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK

Main power supply for door lock timer

Terminal		Ignition switch		
⊕	⊖	OFF	ACC	ON
⑪	Ground	Battery voltage	Battery voltage	Battery voltage

Ground circuit for door lock timer

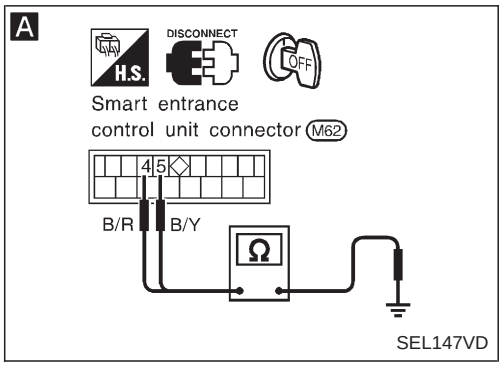
Terminals	Continuity
⑱ - Ground	Yes

Trouble Diagnosis (Cont'd)

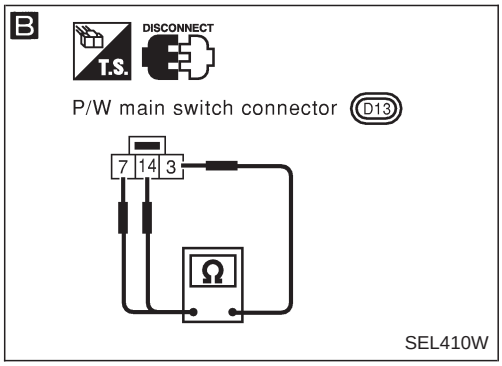
DIAGNOSTIC PROCEDURE 1

(Door lock and unlock switch check)

A



B



A

CHECK DOOR LOCK AND UNLOCK SWITCH INPUT SIGNAL.

1. Disconnect smart entrance control unit connector.
2. Check continuity between control unit terminal ④ or ⑤ and ground.

Terminals	Door lock and unlock switch condition	Continuity
④ - Ground	Lock	Yes
	N and Unlock	No
⑤ - Ground	Unlock	Yes
	N and Lock	No

OK → Door lock and unlock switch is OK.

NG ↓

B

CHECK DOOR LOCK AND UNLOCK SWITCH.

1. Disconnect door lock and unlock switch connector.
2. Check continuity between power window main switch (Door lock and unlock switch) terminals.

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

NG → Replace door lock and unlock switch.

OK ↓

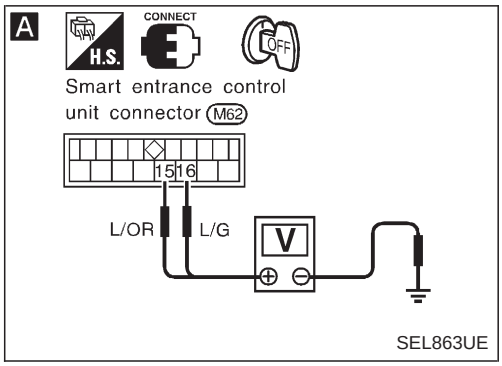
Check the following.

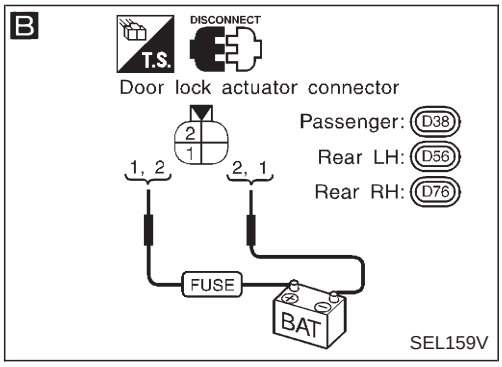
- Ground circuit for door lock and unlock switch
- Harness for open or short between door lock and unlock switch and smart entrance control unit connector

Trouble Diagnosis (Cont'd)

DIAGNOSTIC PROCEDURE 2

(Door lock actuator check)





A

CHECK DOOR LOCK ACTUATOR CIRCUIT.
Check voltage for door lock actuator.

Lock knob switch condition	Terminals ⊕	Terminals ⊖	Voltage V
Lock	15	Ground	Battery voltage
Unlock	16	Ground	

NG → Replace door lock timer. (Before replacing control unit, perform DIAGNOSTIC PROCEDURE 1.)

OK ↓

B

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

Door lock actuator operation	Terminals ⊕	Terminals ⊖
Unlocked → Locked	1	2
Locked → Unlocked	2	1

NG → Replace door lock actuator.

OK ↓

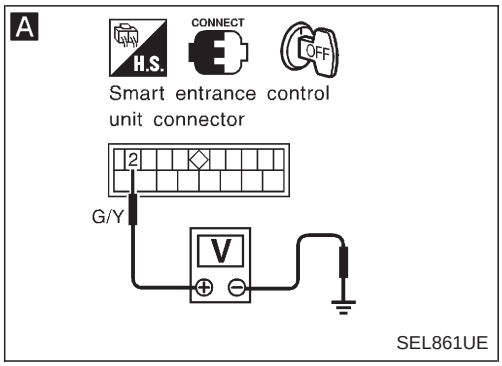
Repair harness between smart entrance control unit connector and door lock actuator.

Trouble Diagnosis (Cont'd)

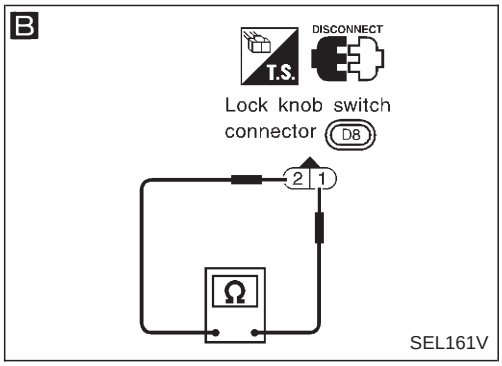
DIAGNOSTIC PROCEDURE 3

(Driver side lock knob switch check)

A



B



A

CHECK LOCK KNOB SWITCH INPUT SIGNAL.
Check voltage between smart entrance control unit terminal ② and ground.

Lock knob switch condition	Voltage V
Lock	Approx. 12
Unlock	0

OK → Driver side lock knob switch is OK.

NG ↓

B

CHECK LOCK KNOB SWITCH.
1. Disconnect driver side lock knob switch connector.
2. Check continuity between lock knob switch terminals.

Terminals	Condition	Continuity
① - ②	Locked	No
	Unlocked	Yes

NG → Replace lock knob switch.

OK ↓

Check the following.
- Ground circuit for lock knob switch
- Harness for open or short between lock knob switch and smart entrance control unit

System Description

FUNCTION

Multi-remote control system has the following function.

- Door lock
- Door unlock
- Hazard reminder

LOCK OPERATION

To lock door by multi-remote controller, the following two signals must be received.

- Key switch OFF (when ignition key is not in ignition key cylinder.)
- All door switches CLOSED

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 ⑩
- to smart entrance control unit terminal ④ and
- to door lock relay terminal ⑥.

Then smart entrance control unit operates to lock doors (except for driver's door) and door lock relay energized to lock driver's door.

UNLOCK OPERATION

To unlock door by multi-remote controller, the following signal must be received.

- Key switch OFF (when ignition key is not in ignition key cylinder)

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 ⑪
- to smart entrance control unit terminal ⑤ and
- to door lock relay terminal ⑤.

Then smart entrance control unit operates to unlock doors (except for driver's door) and door lock relay is energized to unlock driver's door.

HAZARD REMINDER

When the doors and locked or unlocked by multi-remote controller, ground is supplied

- to terminal ① of multi-remote control relay-1 and 2
- through multi-remote control unit terminal ⑫.

Then the relays are energized and hazard warning lamp flashes as follows

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

MULTI-REMOTE CONTROLLER ID CODE ENTRY

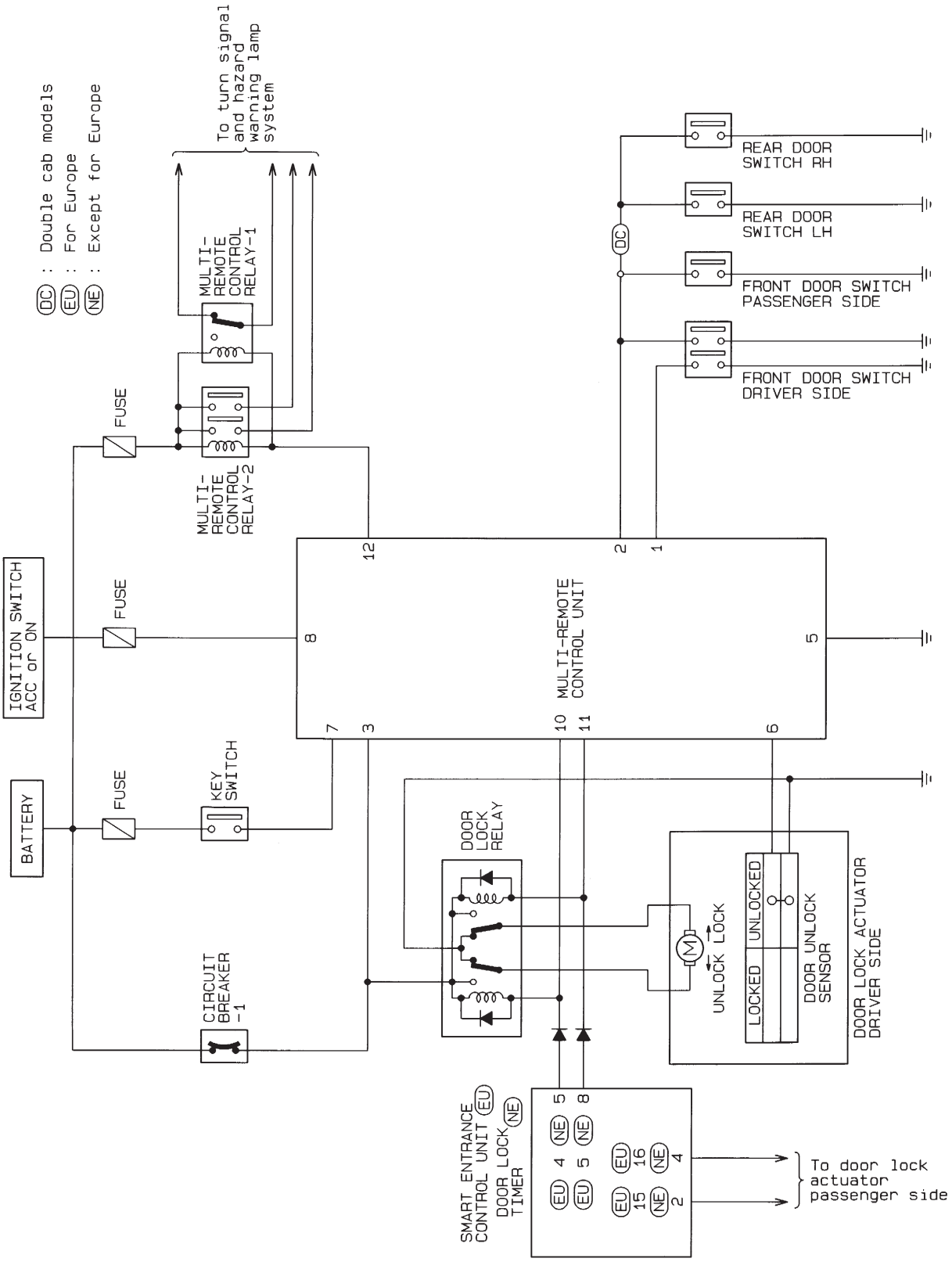
A maximum of four remote controllers can be entered. Any attempt to enter a remote controller will erase all ID codes previously entered. Therefore, be sure to receive all remote controllers from the vehicle owner when any ID code entry is performed.

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

- Driver side LOCKED signal (from driver side door unlock sensor)
- Door switch CLOSED signal
- Key switch signal (INSERTED/WITHDRAWN)
- Accessory power supply
- Signal from remote controller

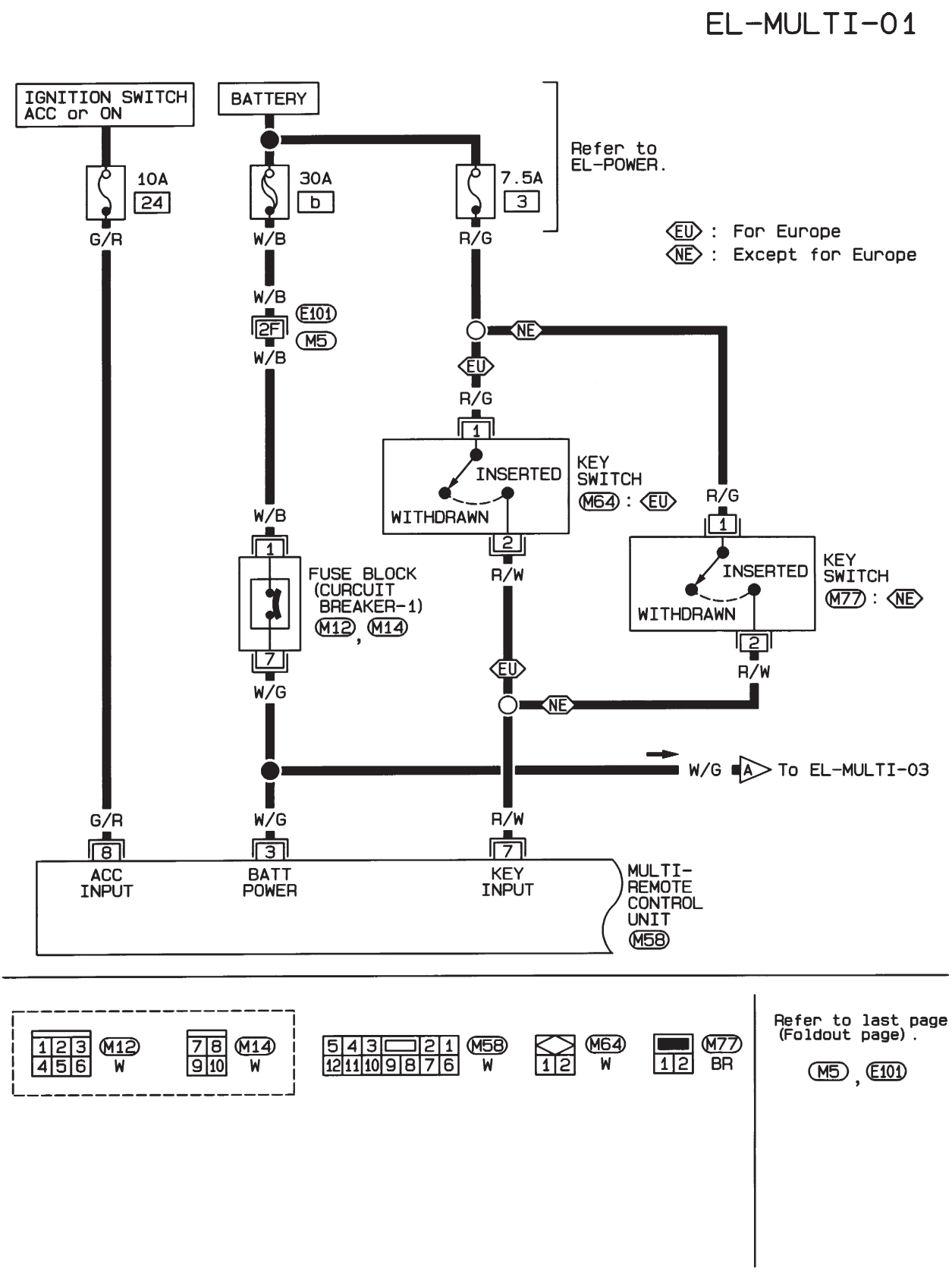
For detailed procedure, refer to ''ID Code Entry Procedure'' in EL-2139.

Schematic



HEL773A

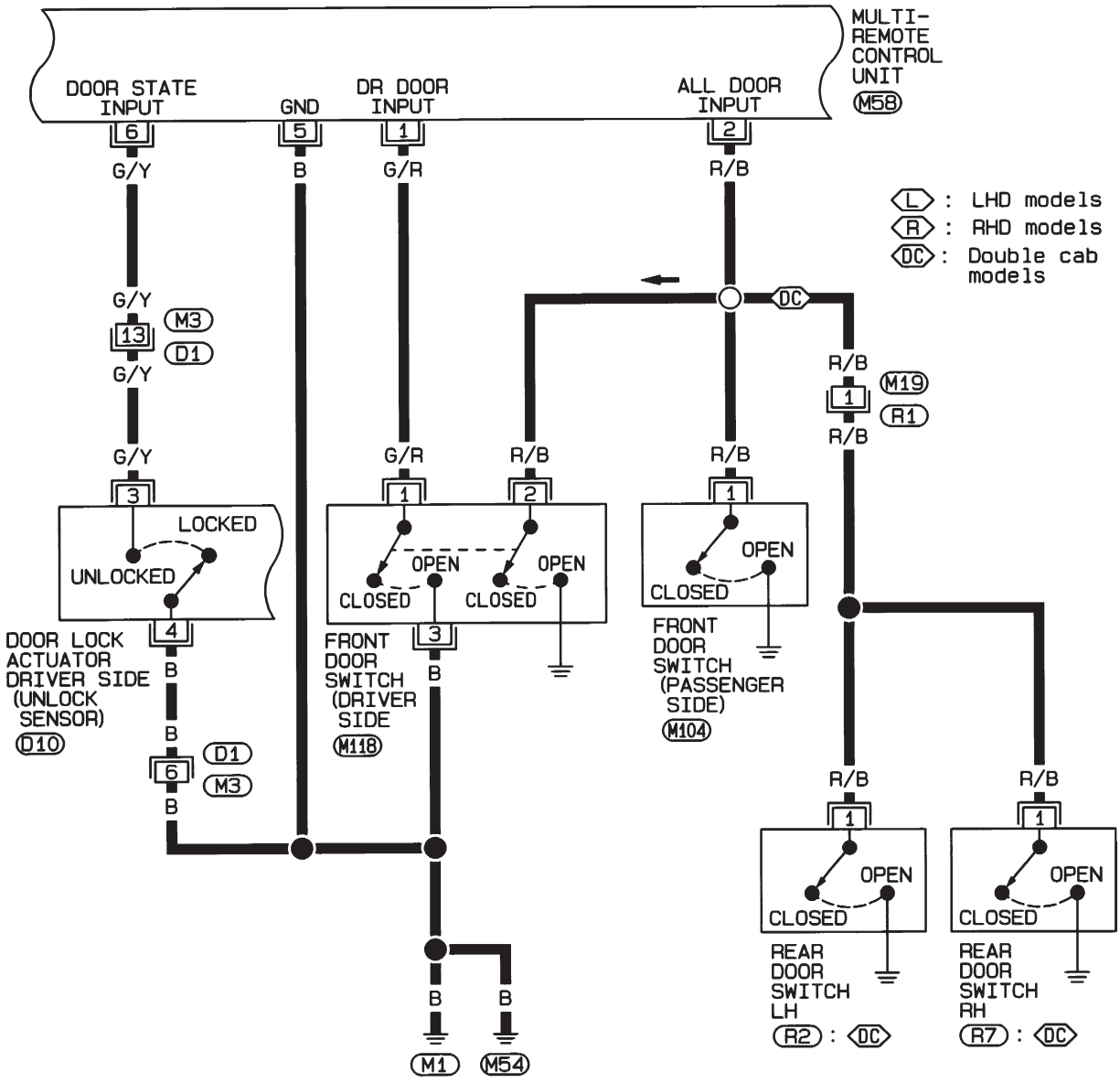
Wiring Diagram — MULTI —



HEL774A

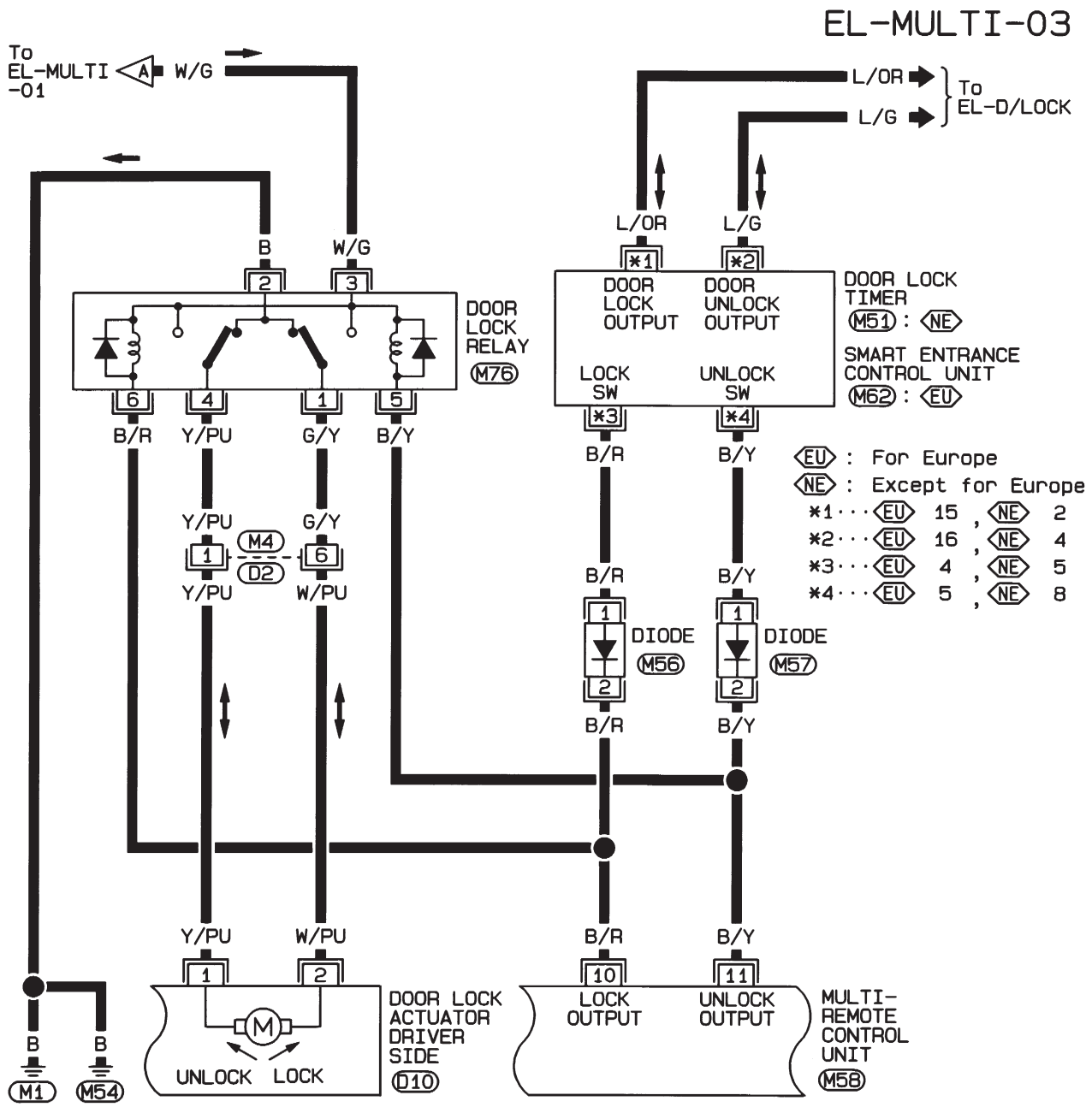
Wiring Diagram — MULTI — (Cont'd)

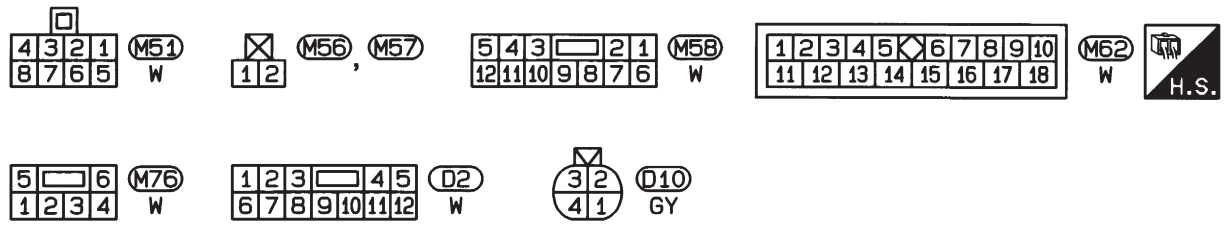
EL-MULTI-02



HEL775A

Wiring Diagram — MULTI — (Cont'd)

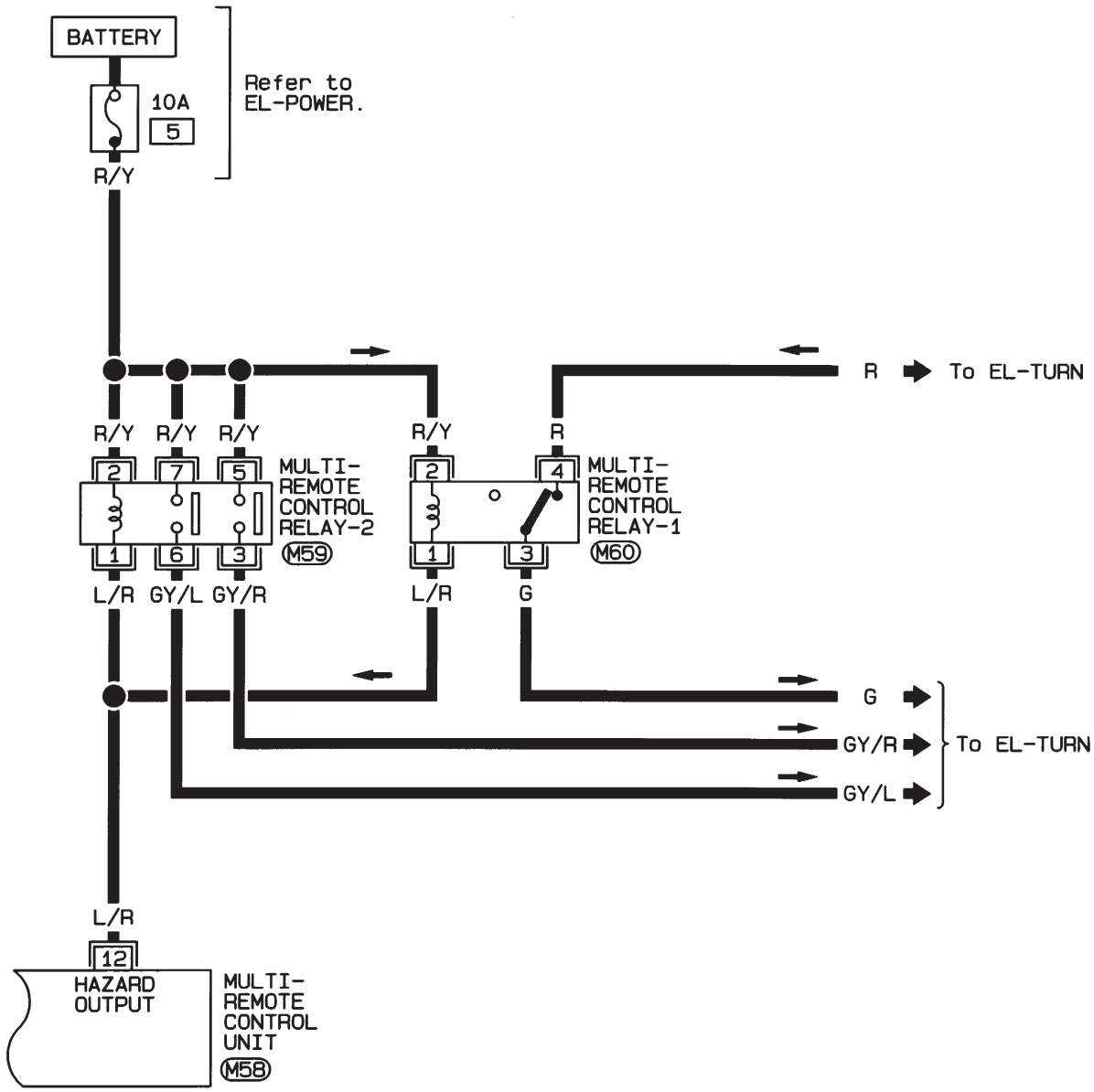


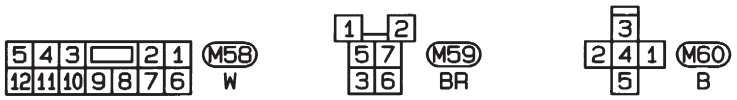


HEL776A

Wiring Diagram — MULTI — (Cont'd)

EL-MULTI-04





HEL777A

Trouble Diagnoses

SYMPTOM CHART

Symptom	Possible cause	Diagnoses/service order
No doors can be locked or unlocked by remote control operation. (See NOTE.)	1. Remote controller battery 2. Key switch (insert) 3. Door switch 4. Power supply circuit for multi-remote control unit 5. Ground circuit for multi-remote control unit 6. Remote controller	1. Check remote controller battery. Refer to EL-2136. 2. Check key switch (insert) signal at terminal ⑦ of multi-remote control unit. 3. Check door switch signal at terminals ① and ② of multi-remote control unit. 4. Make sure battery voltage is present at terminal ③ of multi-remote control unit. 5. Check continuity between terminal ⑤ of multi-remote control unit and ground. 6. Replace remote controller. Refer to EL-2139.
Driver's door cannot be locked or unlocked by remote controller operation.	Driver side door lock actuator circuit	Check driver side door lock actuator circuit. Refer to EL-2137.
Doors other than driver side cannot be locked or unlocked by remote control operation. (If the power door lock system does not operate correctly, check power door lock system. Refer to EL-2122.)	Lock/unlock signal to smart entrance control unit	● When locking is not possible: Check continuity between terminal ⑩ of multi-remote control unit and terminal ④ of smart entrance control unit. ● When unlocking is not possible: Check continuity between terminal ⑪ of multi-remote control unit and terminal ⑤ of smart entrance control unit.
Hazard reminder does not operate properly.	1. 10A fuse 2. Multi-remote control relay-1 and 2 3. Hazard reminder circuit	1. Check 10A fuse (No. 5, located in the fuse block). 2. Check multi-remote control relay-1 and 2. 3. Check harness for open or short between relays and multi-remote control unit terminal ⑫.
The new ID of remote controller cannot be entered.	1. Remote controller battery 2. Key switch (insert) 3. Door switch 4. Driver's door unlock sensor 5. Accessory power supply circuit for multi-remote control unit 6. Remote controller	1. Check remote controller battery. Refer to EL-2136. 2. Check key switch (insert) signal at terminal ⑦ of multi-remote control unit. 3. Check door switch signal at terminals ① and ② of multi-remote control unit. 4. Check driver's door unlock sensor signal at terminal ⑥ of multi-remote control unit. 5. Make sure battery voltage is present at terminal ⑧ of multi-remote control unit while ignition switch is in ACC position. 6. Replace remote controller. Refer to EL-2139.

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

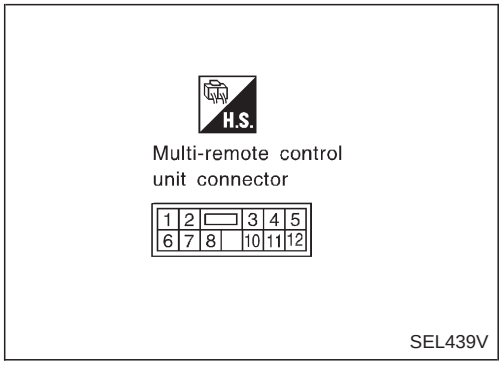
NOTE:

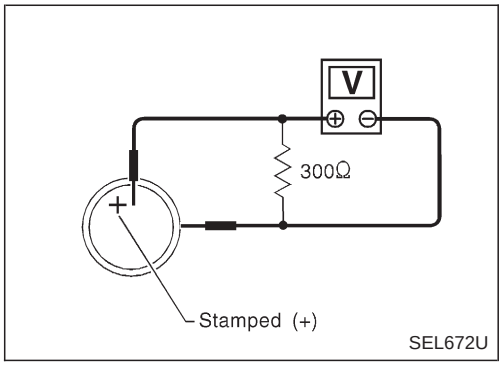
- Always check remote controller battery before replacing remote controller.
- The unlock operation of multi-remote control system does not activate with key inserted in the ignition key cylinder.
- The lock operation of multi-remote controller does not activate with the key inserted ignition key cylinder or if one of the door is opened.

Trouble Diagnoses (Cont'd)

MULTI-REMOTE CONTROL UNIT INSPECTION TABLE

Terminal No.	Connections	Condition		Voltage V (approximate values)
1	Driver side door switch	Driver side door	Opened	0
			Closed	12
2	Door switch (all doors)	One of doors is opened		0
		All doors are closed		12
3	Power source (BAT)	—		12
5	Ground	—		—
6	Driver side door unlock sensor	Driver side door	Locked	5
			Unlocked	0
7	Key switch (insert)	Key is in ignition key cylinder		12
		Key is not in ignition key cylinder		0
8	Accessory power supply	Ignition switch	OFF	0
			ACC or ON	12
10	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		12
11	Unlock signal	Remote controller UNLOCK button is pushed (Key is not in ignition key cylinder.)		0
		Other than above condition		12
12	Multi-remote control relay-1, 2	Remote controller LOCK/UNLOCK button is pushed (All doors are closed and key is not in ignition key cylinder.)		0
		Other than above condition		12





REMOTE CONTROLLER BATTERY CHECK

Remove battery and measure voltage across battery positive and negative terminals, ⊕ and ⊖.

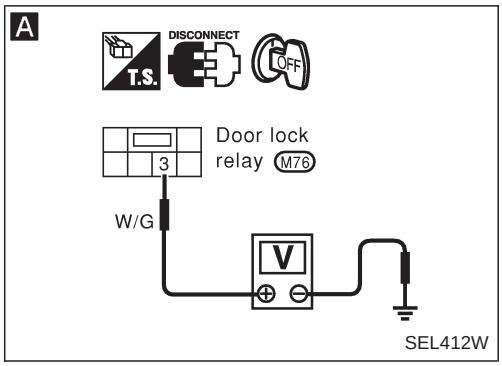
Measuring terminal		Standard value
⊕	⊖	
Battery positive terminal ⊕	Battery negative terminal ⊖	2.5 - 3.0V

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

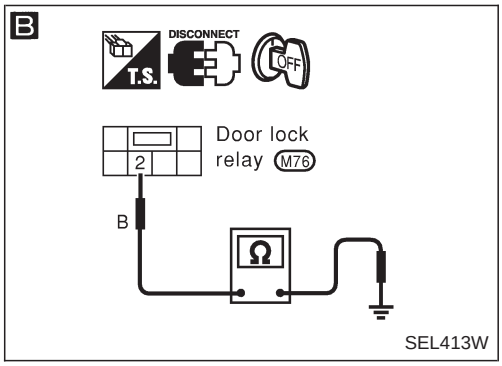
Trouble Diagnoses (Cont'd)

DRIVER SIDE DOOR LOCK ACTUATOR CHECK

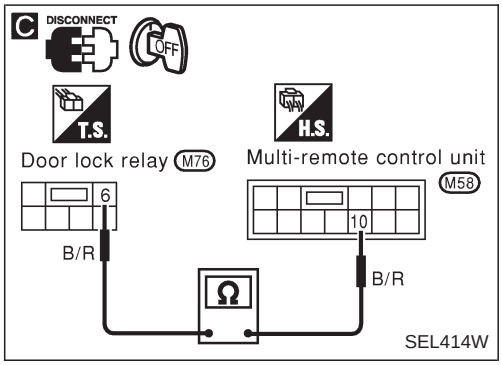
A



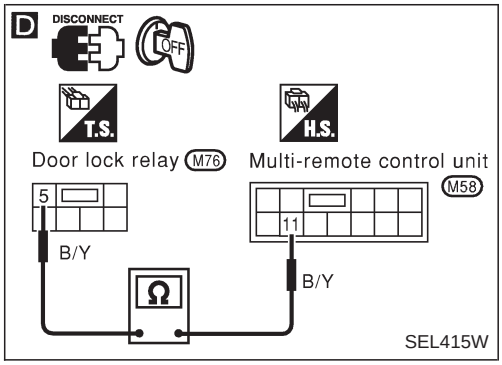
B



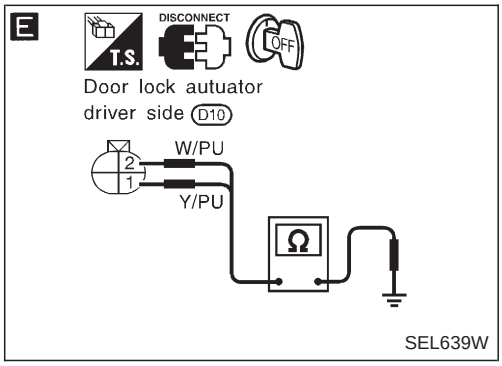
C



D



E



CHECK DOOR LOCK RELAY.
Refer to EL-2138.

NG → Replace the relay.

OK ↓

A

CHECK POWER SUPPLY FOR DOOR LOCK RELAY.
Check voltage between door lock relay terminal ③ and ground.
Battery voltage should exist.

NG → Check the following.
- 30A fusible link (letter b, located in fusible link and fuse box) (No. 3, located in the fusible link and fusible link box).
- Check harness for open or short between fusible link and relay.

OK ↓

B

CHECK GROUND CIRCUIT FOR DOOR LOCK RELAY.
Check continuity between door lock relay terminal ② and ground.
Continuity should exist.

NG → Repair harness.

OK ↓

C

CHECK LOCK SIGNAL FOR DOOR LOCK RELAY.
Check continuity between door lock relay terminal ⑥ and multi-remote control unit terminal ⑩.
Continuity should exist.

NG → Check harness for open or short between door lock relay and multi-remote control unit.

OK ↓

D

CHECK UNLOCK SIGNAL FOR DOOR LOCK RELAY.
Check continuity between door lock relay terminal ⑤ and multi-remote control unit terminal ⑪.
Continuity should exist.

NG → Check harness for open or short between door lock relay and multi-remote control unit.

OK ↓

E

CHECK DOOR LOCK ACTUATOR CIRCUIT.
1. Connect the relays.
2. Disconnect driver side door lock actuator.
3. Check continuity between driver side door lock actuator and door lock relay.
Continuity should exist.

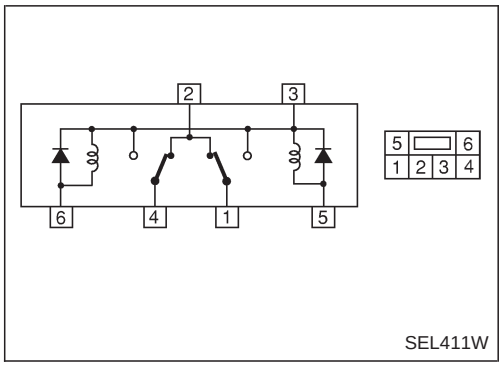
NG → Check harness for open or short between door lock relay and door lock actuator.

OK ↓

Replace door lock actuator.

Trouble Diagnoses (Cont'd)

DOOR LOCK RELAY CHECK



SEL411W

Condition		Continuity between terminals					
		1	2	3	4	5	6
Battery voltage not applied between each terminal	③ and ⑤	○—○					
	③ and ⑥		○		○		
Battery voltage applied between each terminal	③ and ⑤	○		○			
	③ and ⑥			○	○		
Always				○		○	○

CAUTION:
While applying battery voltage to relay terminals, insert fuse into the circuit.

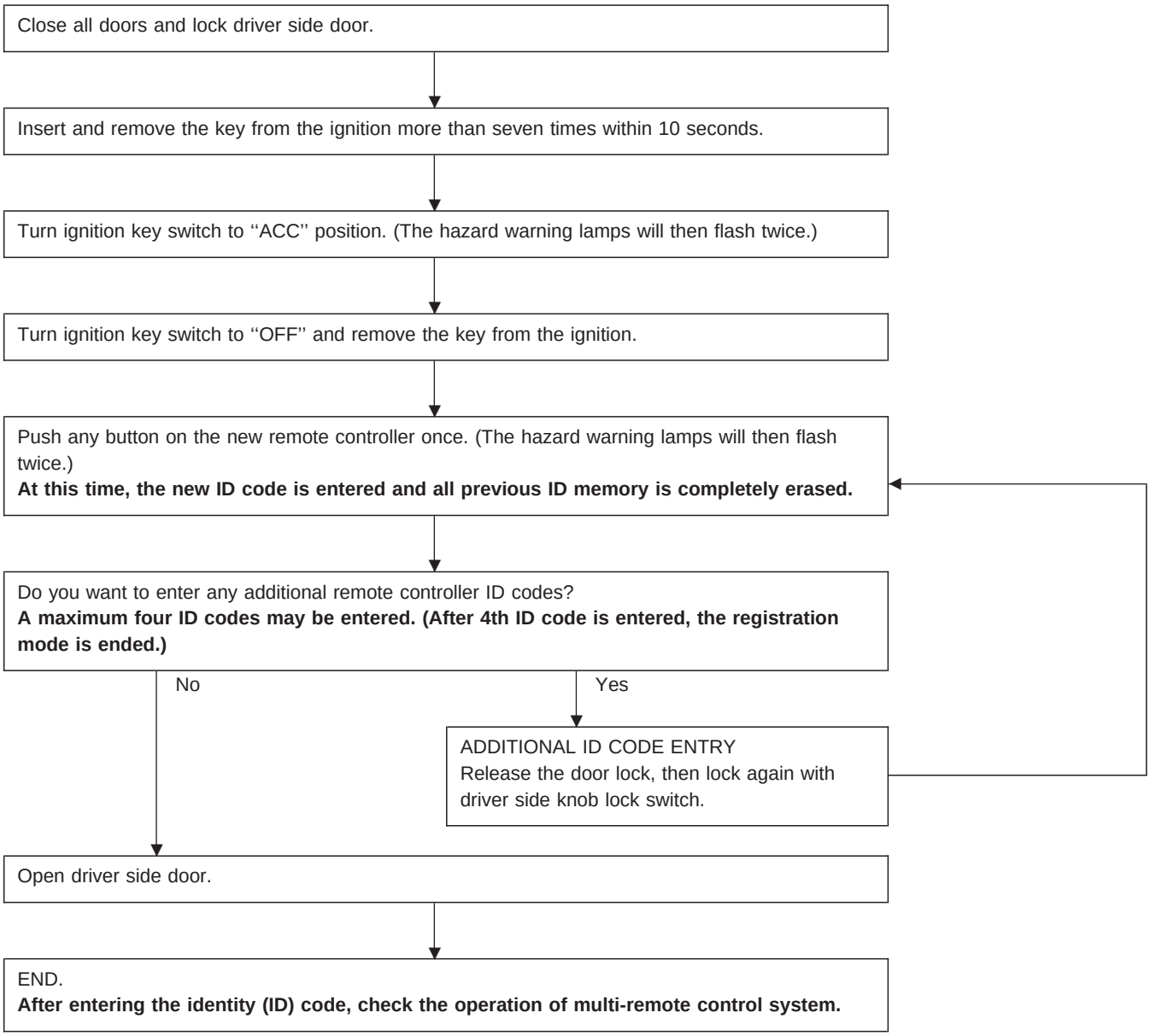
ID Code Entry Procedure

Note:
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.

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

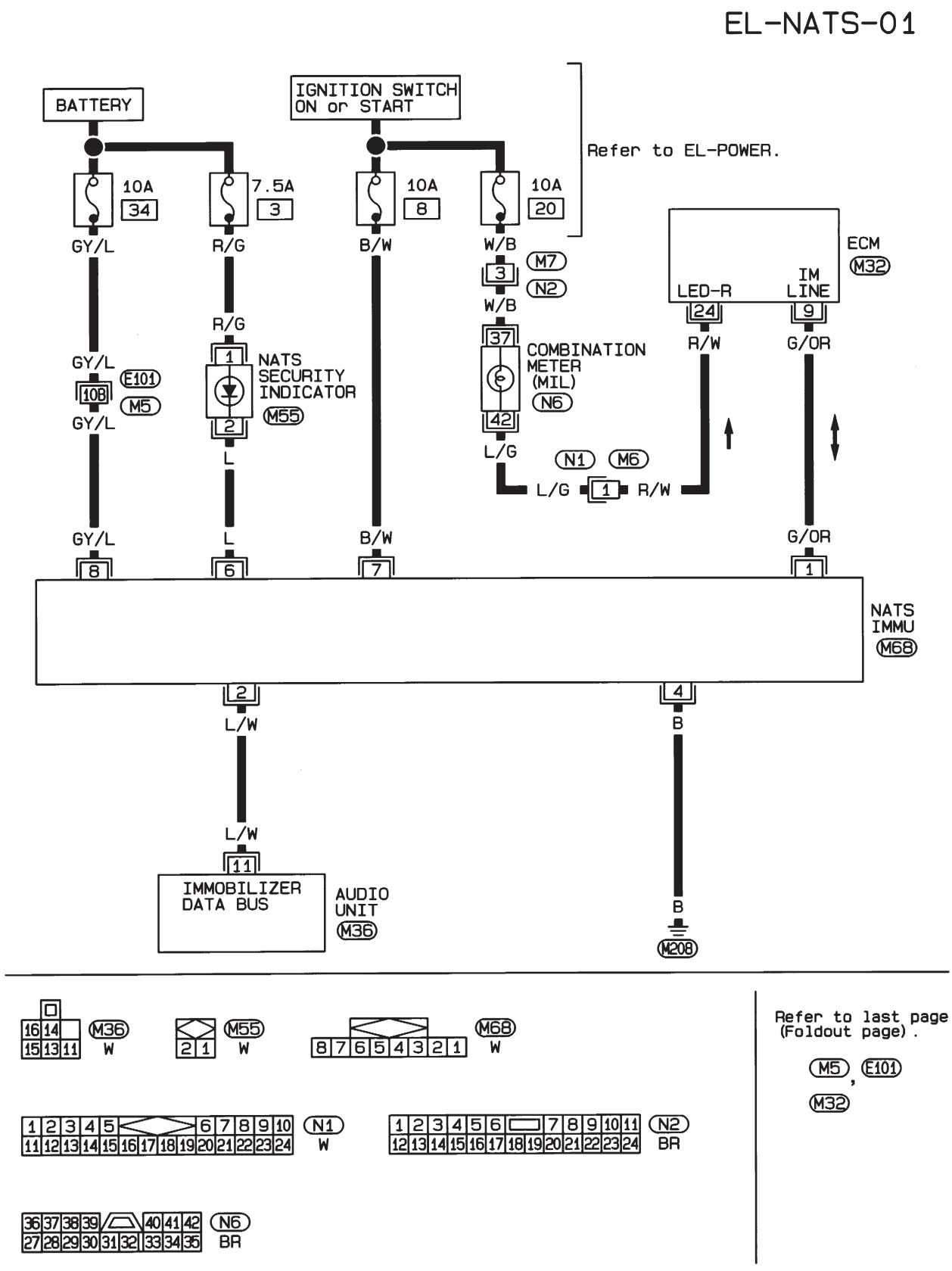
To enter the ID code, follow the procedures below.

PROCEDURE



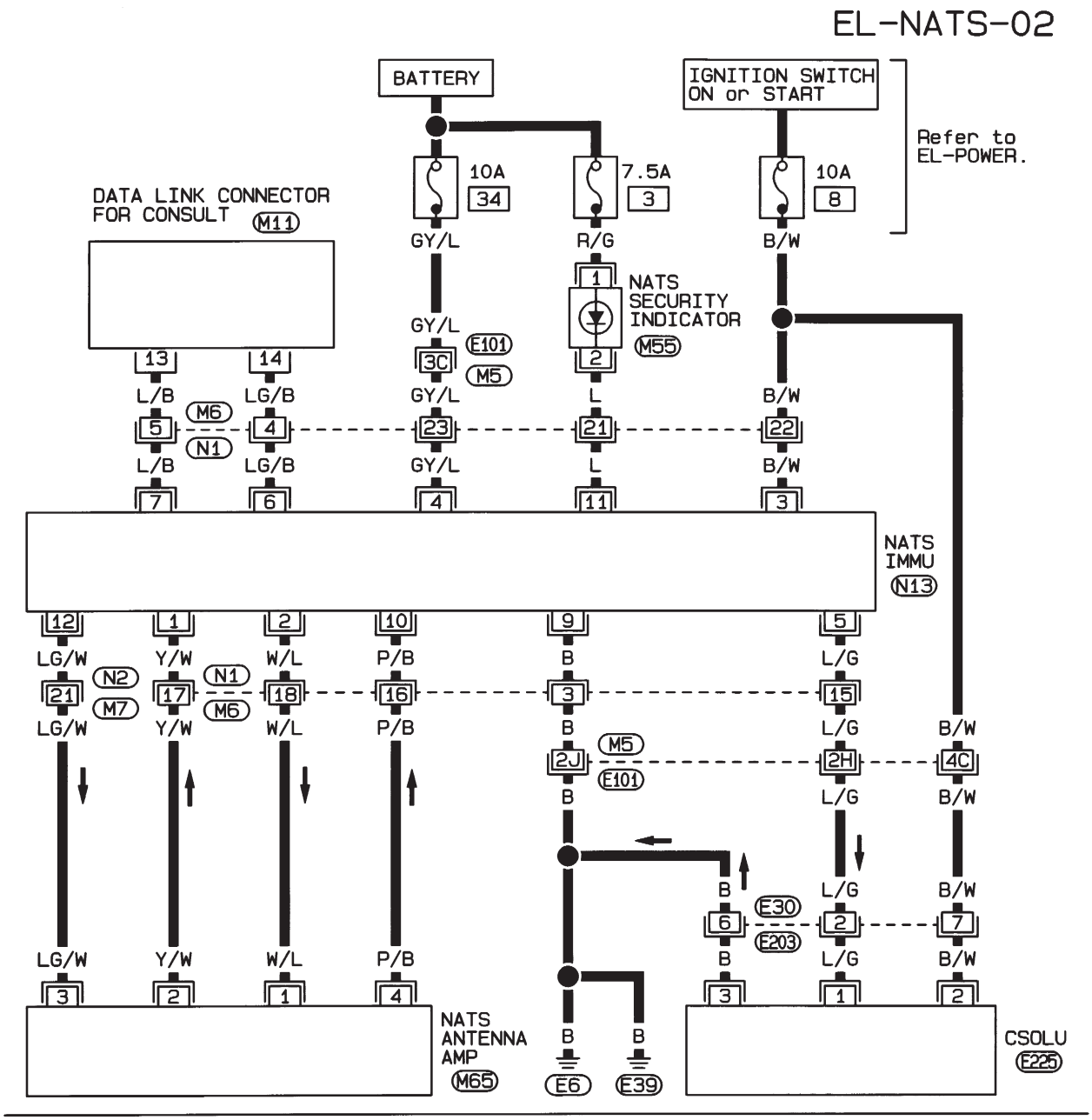
NOTE:
- **If you need to activate more than two additional new remote controllers, repeat the procedure ''Additional ID code entry'' for each new remote controller.**
- **Any ID codes cannot be entered after termination of the ''setting mode''.**

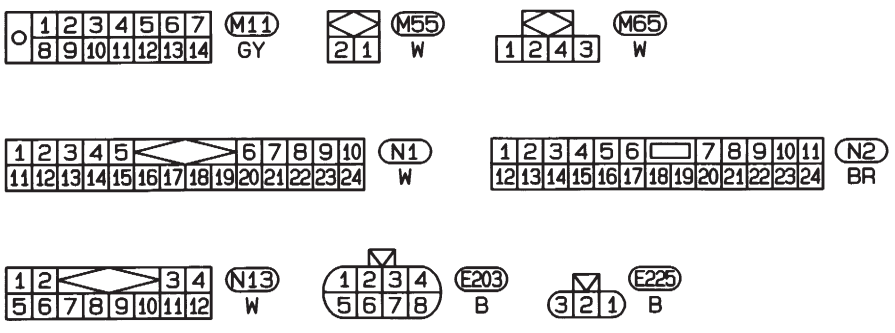
Wiring Diagram — NATS —



HEL778A

Wiring Diagram — NATS —/LHD Models

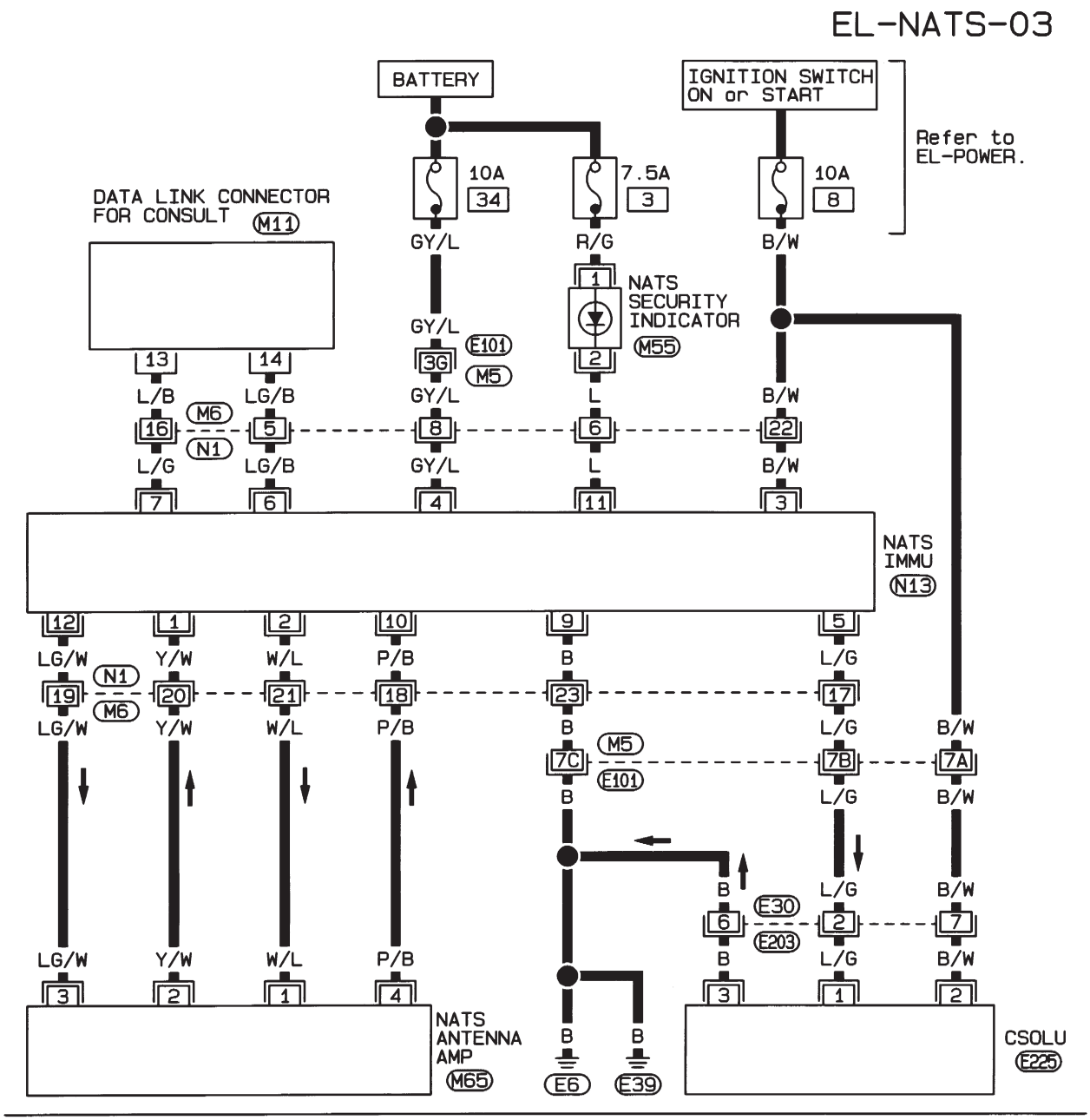


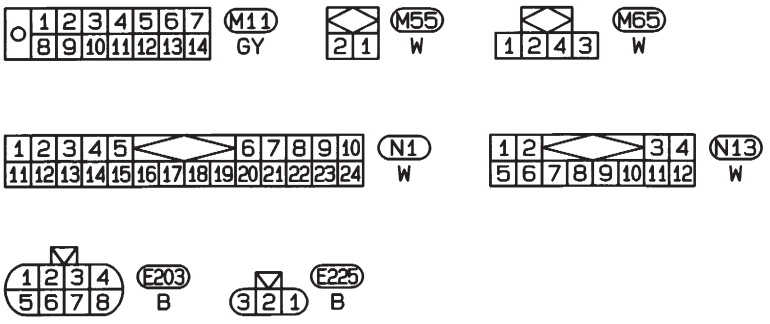


Refer to last page (Foldout page).
M5, E101

HEL779A

Wiring Diagram — NATS —/RHD Models



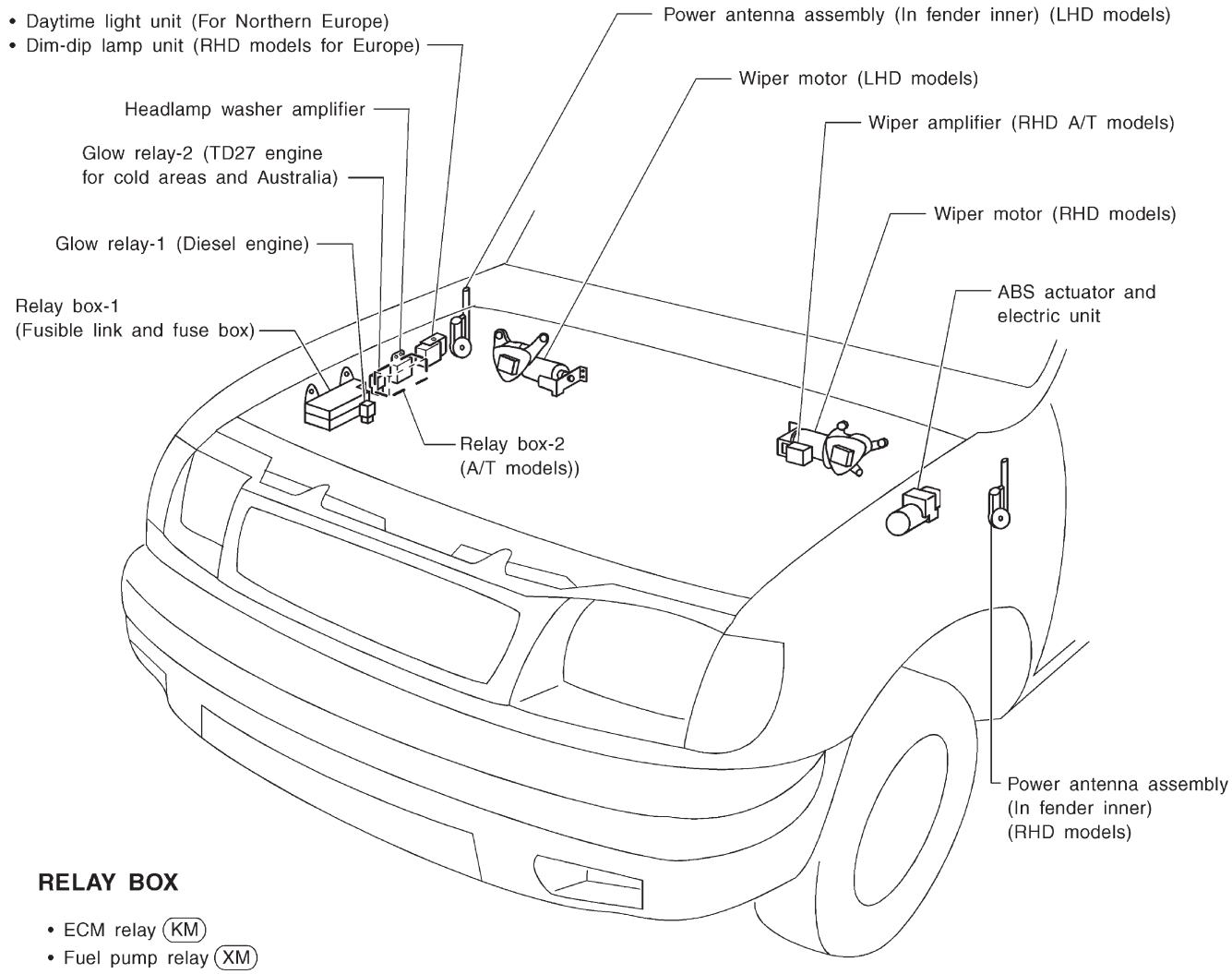


Refer to last page (Foldout page).

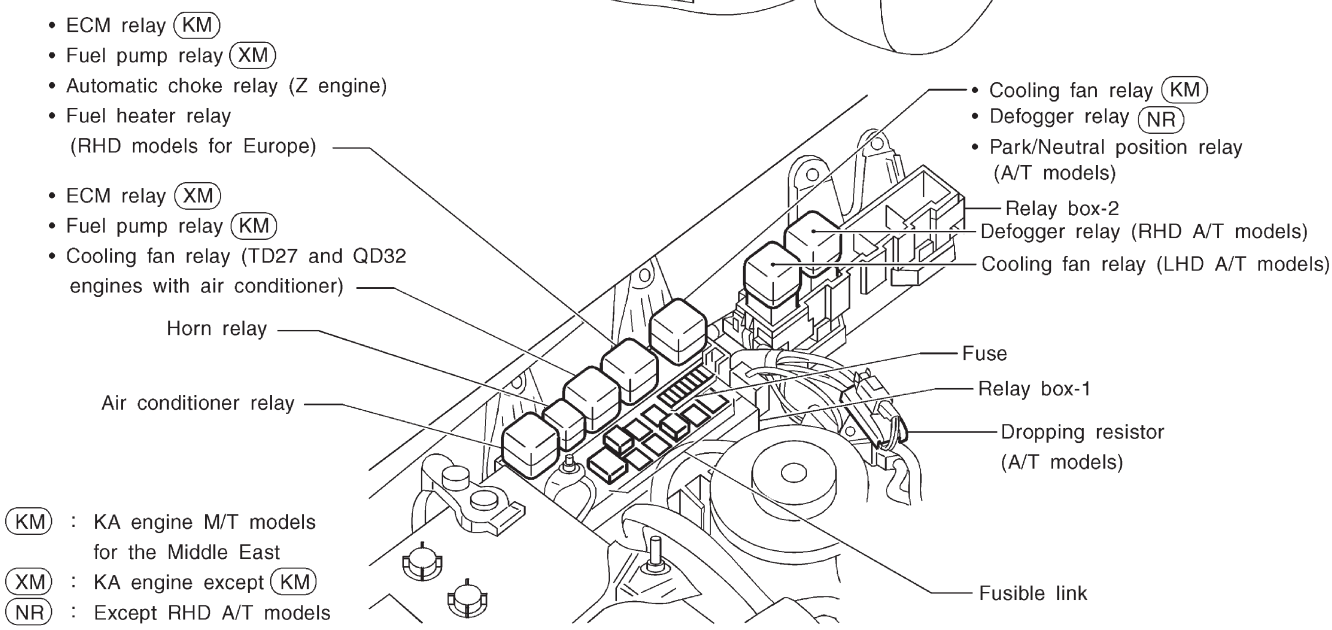
M5, E101

HEL780A

Engine Compartment



RELAY BOX

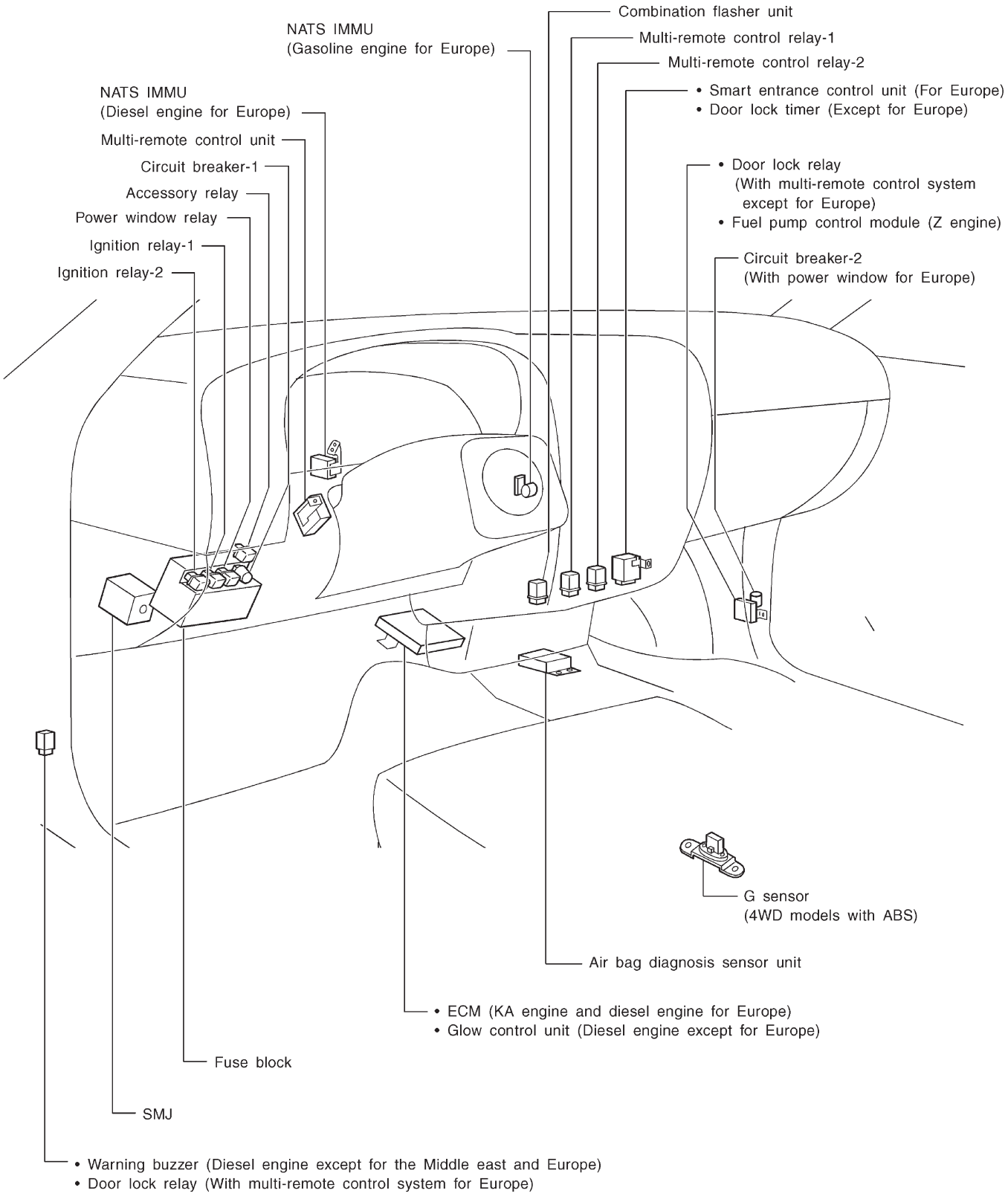


(KM) : KA engine M/T models for the Middle East
(XM) : KA engine except (KM)
(NR) : Except RHD A/T models

HEL783A

Passenger Compartment

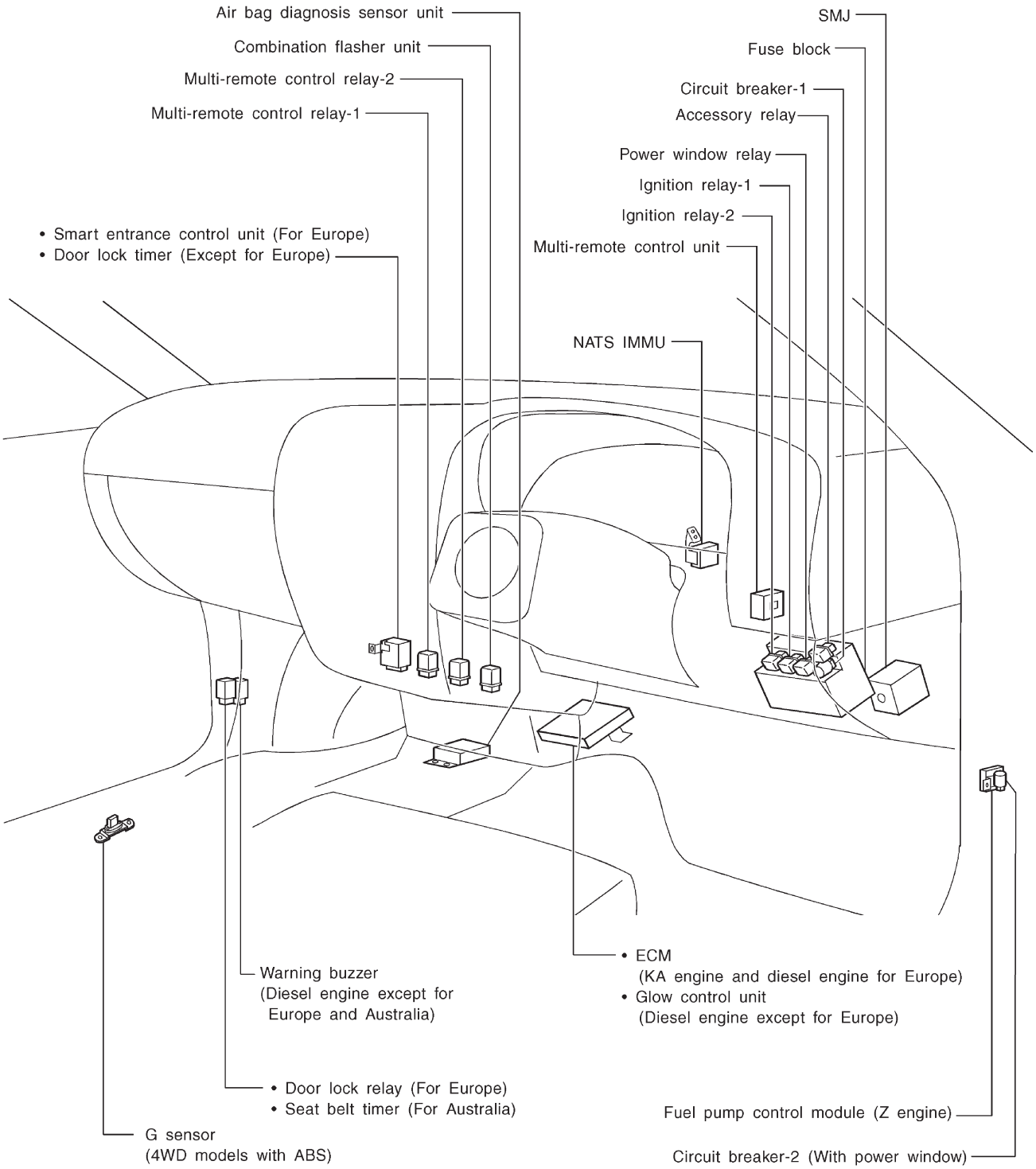
LHD MODELS



HEL784A

Passenger Compartment (Cont'd)

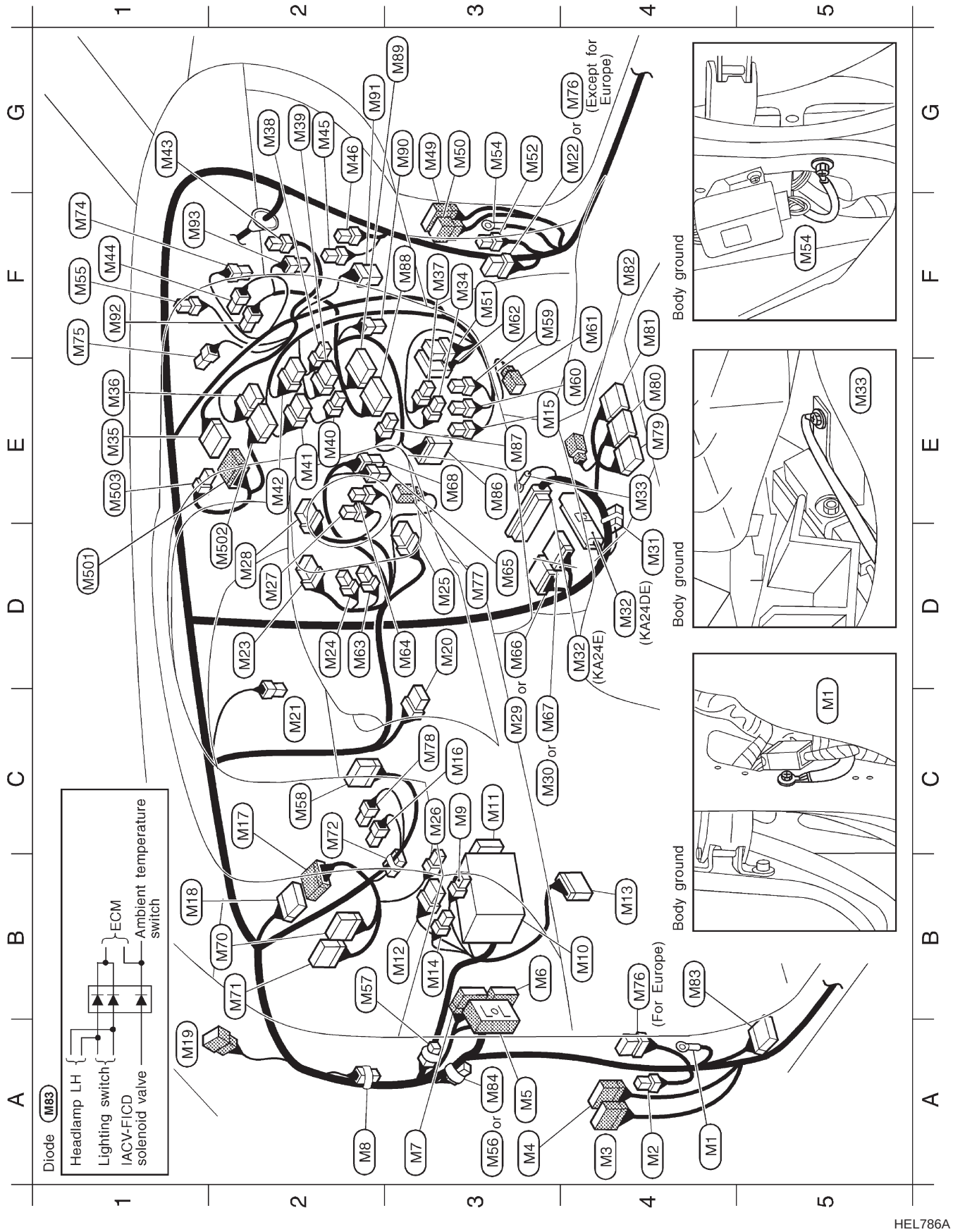
RHD MODELS



HEL785A

Main Harness

INSTRUMENT PANEL — LHD MODELS



HEL786A

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)
B3 (M6) W/24 : To (N1)
A3 (M7) BR/24 : To (N2)
A2 (M8) –/2 : Diode (Diesel engine except for Europe and the Middle East)
C3 (M9) L/4 : Accessory relay
B4 (M10) — : Fuse block
C3 (M11) GY/14 : Data link connector for CONSULT (With air bag, ABS or ECM)
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
C2 (M17) W/16 : To (M18) (With air bag)
B1 (M18) W/16 : To (M17) (With air bag)
A1 (M19) W/6 : To (R1)
D3 (M20) W/6 : Ignition switch
C2 (M21) W/1 : Parking brake switch (Stick type)
G4 (M22) W6 : 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 (A/T models)
D2 (M27) B/1 : Horn switch (Without air bag)
D2 (M28) GY/8 : Wiper and washer switch
C3 (M29) W/12 : Glow control unit (TD27 engine except for cold areas and QD engine)
C3 (M30) W/16 : Glow control unit (TD27 engine for cold areas)
D4 (M31) GY/6 : Joint connector-1 (KA engine)
D4 (M32) W/64 : ECM (KA24E)
W/48 : ECM (KA24DE)
E4 (M33) — : Body ground (KA24E)
F3 (M34) W/2 : Ashtray illumination (GL and S-GL grade for the Middle East)

E1 (M35) W/10 : Audio unit
E1 (M36) W/6 : Audio unit (KA24E and with 4-speakers radio)
F3 (M37) B/2 : Cigarette lighter
G2 (M38) W/3 : A/C switch (Without auto A/C)
G2 (M39) W/6 : Fan switch (Without auto A/C)
E2 (M40) W/2 : Fan switch illumination (Without auto A/C)
E2 (M41) W/8 : Hazard switch
E2 (M42) W/6 : Defogger switch (For Europe and SE grade with diesel engine)
G1 (M43) Y/2 : Air bag module passenger side
F1 (M44) BR/4 : Thermo control amplifier
G2 (M45) BR/4 : Fan resistor (Without auto A/C)
G2 (M46) W/2 : Blower motor
G3 (M49) W/20 : To (D31)
G3 (M50) W/6 : To (D32) (With power window)
F3 (M51) W/8 : Door lock timer (With power window except for Europe)
G3 (M52) W/2 : Circuit breaker-2 (For Europe)
G3 (M54) — : Body ground
F1 (M55) W/2 : NATS security indicator (For Europe)
A3 (M56) –/2 : Diode (✱1)
B2 (M57) –/2 : Diode (✱1)
C2 (M58) W/12 : Multi-remote control unit (✱1)
F3 (M59) BR/6 : Multi-remote control relay-2 (✱1)
F4 (M60) B/5 : Multi-remote control relay-1 (✱1)
F4 (M61) B/2 : Jumping connector (✱1)
F3 (M62) W/18 : Smart entrance control unit (For Europe)
D2 (M63) W/3 : Rear fog lamp switch (For Europe and China)
D3 (M64) W/2 : Key switch (For Europe except Single cab)
D3 (M65) W/4 : NATS antenna amp. (Diesel engine for Europe)
D3 (M66) GY/20 : ECM (Diesel engine for Europe)
C3 (M67) GY/16 : ECM (Diesel engine for Europe)
E3 (M68) W/8 : NATS IMMU (KA24E)
B2 (M70) W/24 : TCM (Transmission control module) (A/T models)
B2 (M71) GY/24 : TCM (Transmission control module) (A/T models)
C2 (M72) –/6 : Joint connector-2 (A/T models)

F1 (M74) W/2 : Intake air temperature sensor (With auto A/C)
F1 (M75) B/2 : Sunload sensor (With auto A/C)
B4•G4 (M76) W/6 : Door lock relay (✱1)
D3 (M77) BR/2 : Key switch (For Turkey)
C3 (M78) L/2 : Shift lock brake switch (A/T models)
E4 (M79) Y/12 : Air bag diagnosis sensor unit (With pre-tensioner seat belt)
E4 (M80) Y/20 : Air bag diagnosis sensor unit
F4 (M81) Y/12 : Air bag diagnosis sensor unit (With pre-tensioner seat belt)
F4 (M82) W/2 : Jumping connector (With pre-tensioner seat belt)
B4 (M83) L/10 : Diode (KA24DE)
A3 (M84) BR/2 : Resistor (A/T models)
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/4 : 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)

Sub-harness

D1 (M501) W/10 : To (M35)
D2 (M502) W/10 : Audio unit
E1 (M503) W/4 : Compact disk deck

Diode (M8)

FILTER warning lamp — Fuel filter switch, Warning buzzer

Diode (M56), (M57)

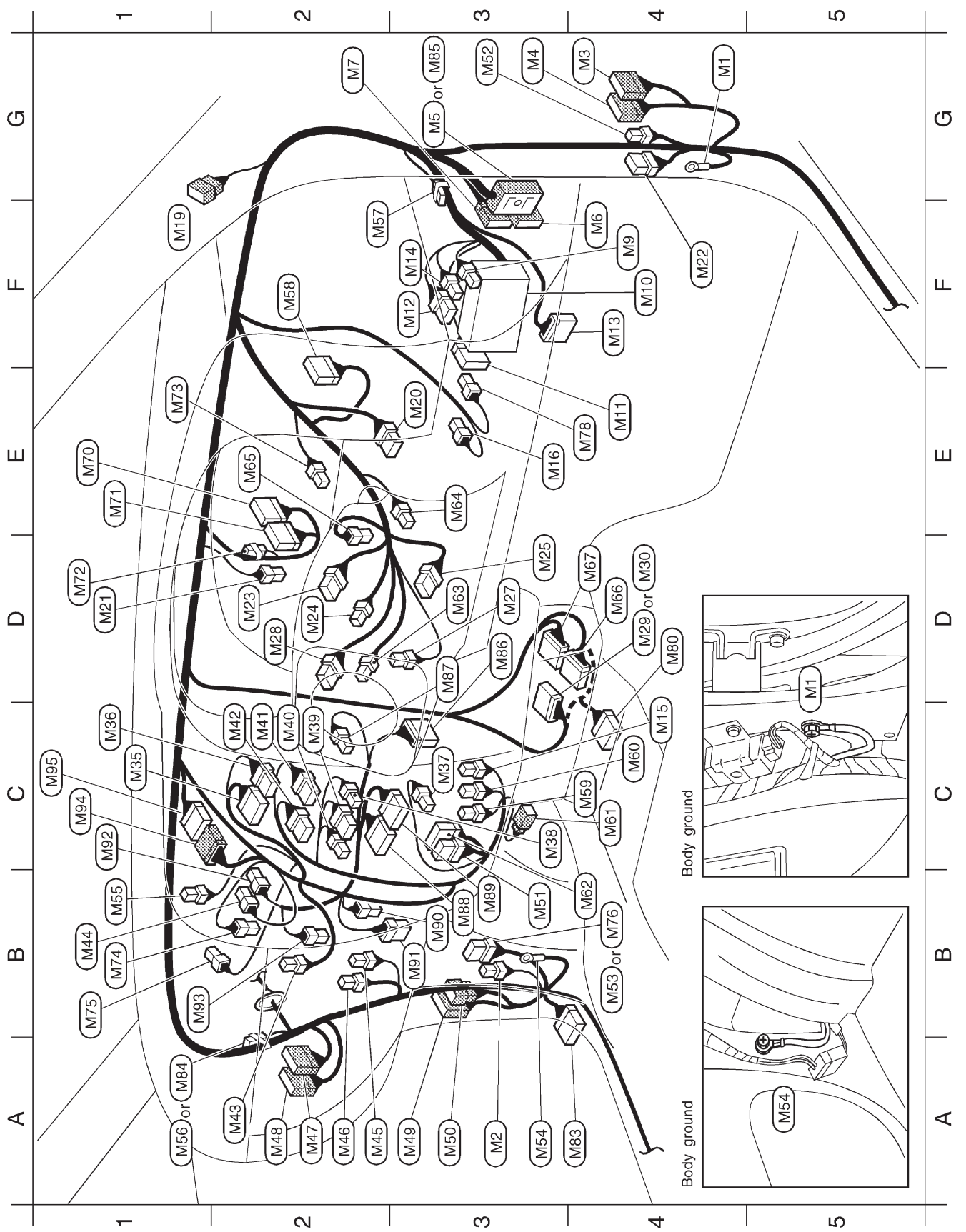
Lock and unlock switch — ✱2 — (M56) — Door lock relay, Multi-remote control unit; ✱2 — (M57) — Door lock relay

✱1 : With multi-remote control system
✱2 : For Europe···Smart entrance control unit
Except for Europe···Door lock timer

HEL787A

Main Harness (Cont'd)

INSTRUMENT PANEL — RHD MODELS



HEL788A

Main Harness (Cont'd)

G4 (M1) — : Body ground
A3 (M2) W/2 : Warning buzzer (Diesel engine except for Europe and Australia)
G4 (M3) W/20 : To (D1)
G3 (M4) W/12 : To (D2) (With power window)
G3 (M5) SMJ : To (E101) (M/T models)
F4 (M6) W/24 : To (N1)
G2 (M7) BR/24 : To (N2)
F4 (M9) L/4 : Accessory relay
F4 (M10) — : Fuse block
E4 (M11) GY/14 : Data link connector for CONSULT (With air bag, ABS or ECM)
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) W6 : 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 except for Australia and QD engine)
D4 (M30) W/16 : Glow control unit (TD27 engine for Australia)
C1 (M35) W/10 : Audio unit
C1 (M36) W/6 : Audio unit (Double cab models)
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 (For Europe and with power window)
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 engine)
A2 (M48) W/24 : To (F54) (KA engine)
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)
B4 (M53) W/8 : Seat belt timer (For Australia)
A3 (M54) — : Body ground
B1 (M55) W/2 : NATS security indicator (For Europe)
A1 (M56) –/2 : Diode (For multi-remote control system)
F2 (M57) –/2 : Diode (For multi-remote control system)
F2 (M58) W/12 : Multi-remote control unit (For Europe except Single cab)
C4 (M59) BR/6 : Multi-remote control relay-2
C4 (M60) B/5 : Multi-remote control relay-1
C4 (M61) B/2 : Jumping connector (For Europe except Single cab)
B4 (M62) W/18 : Smart entrance control unit (For Europe)
D3 (M63) W/3 : Rear fog lamp switch (For Europe)
E3 (M64) W/2 : Key switch (For Europe except Single cab)
E2 (M65) W/4 : NATS antenna amp. (For Europe)
D4 (M66) GY/20 : ECM (Diesel engine for Europe)
D4 (M67) GY/16 : ECM (Diesel engine for Europe)
E1 (M70) W/24 : TCM (Transmission control module) (A/T models)
E1 (M71) GY/24 : TCM (Transmission control module) (A/T models)
D1 (M72) –/6 : Joint connector-2 (A/T models)
E1 (M73) W/4 : A/T device (A/T models)
B1 (M74) W/2 : Intake air temperature sensor (With auto A/C)
B1 (M75) B/2 : Sunload sensor (With auto A/C)
B4 (M76) W/6 : Door lock relay (For Europe except Single cab)
E4 (M78) L/2 : Shift lock brake switch (A/T models)

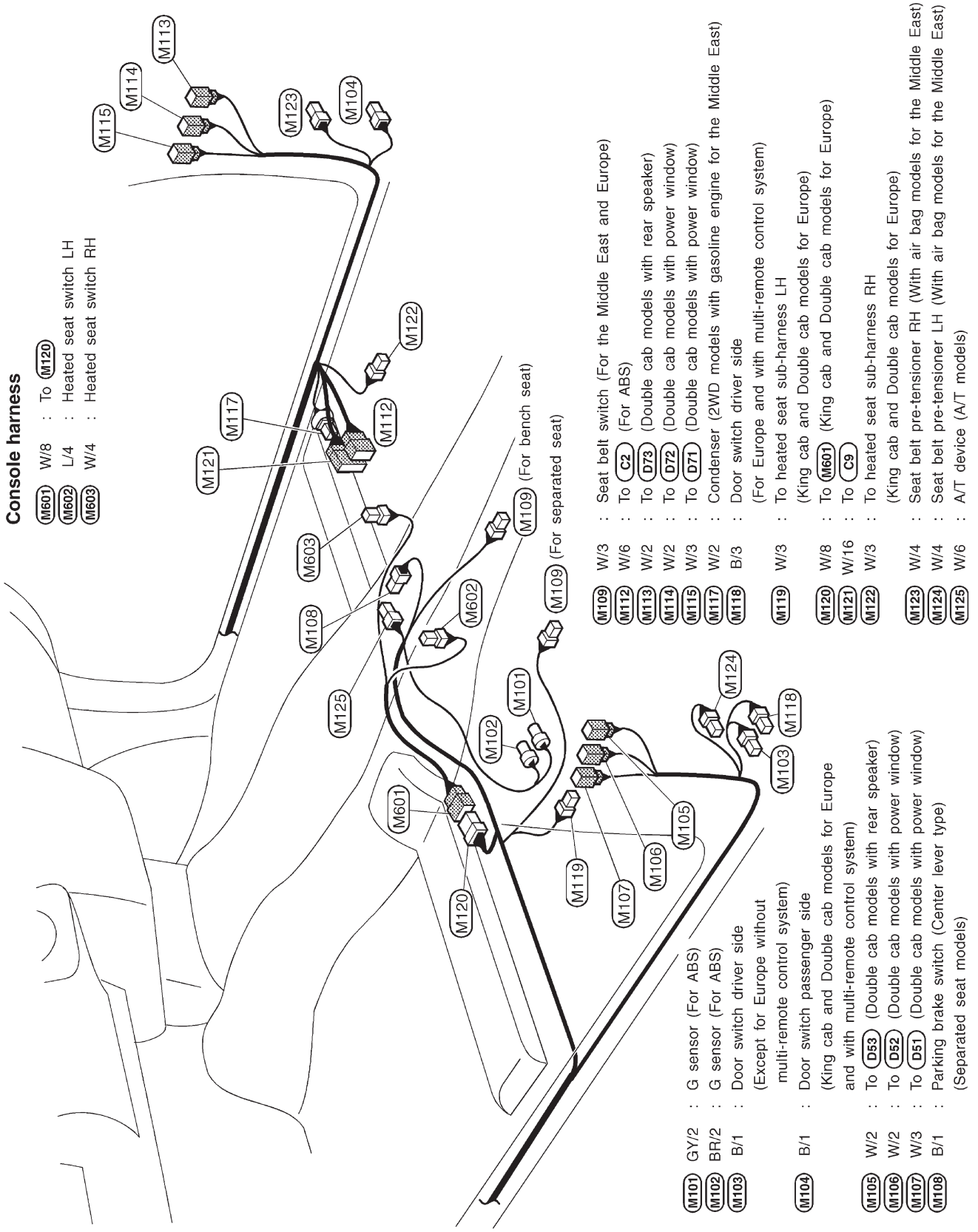
D4 (M80) Y/20 : Air bag diagnosis sensor unit
A4 (M83) L/10 : Diode (KA engine)
A1 (M84) BR/2 : Resistor (A/T models)
G3 (M85) SMJ : To (E104) (A/T models)
D3 (M86) BR/10 : Mode door motor (With auto A/C)
D3 (M87) W/2 : In-vehicle sensor (With auto A/C)
B3 (M88) GY/20 : A/C auto amp. (With auto A/C)
B3 (M89) GY/4 : 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)
C1 (M94) W/12 : To (M95) (With air bag)
C1 (M95) W/12 : To (M94) (With air bag)

Engine compartment

HEL789A

Main Harness (Cont'd)

BODY SIDE — LHD MODELS



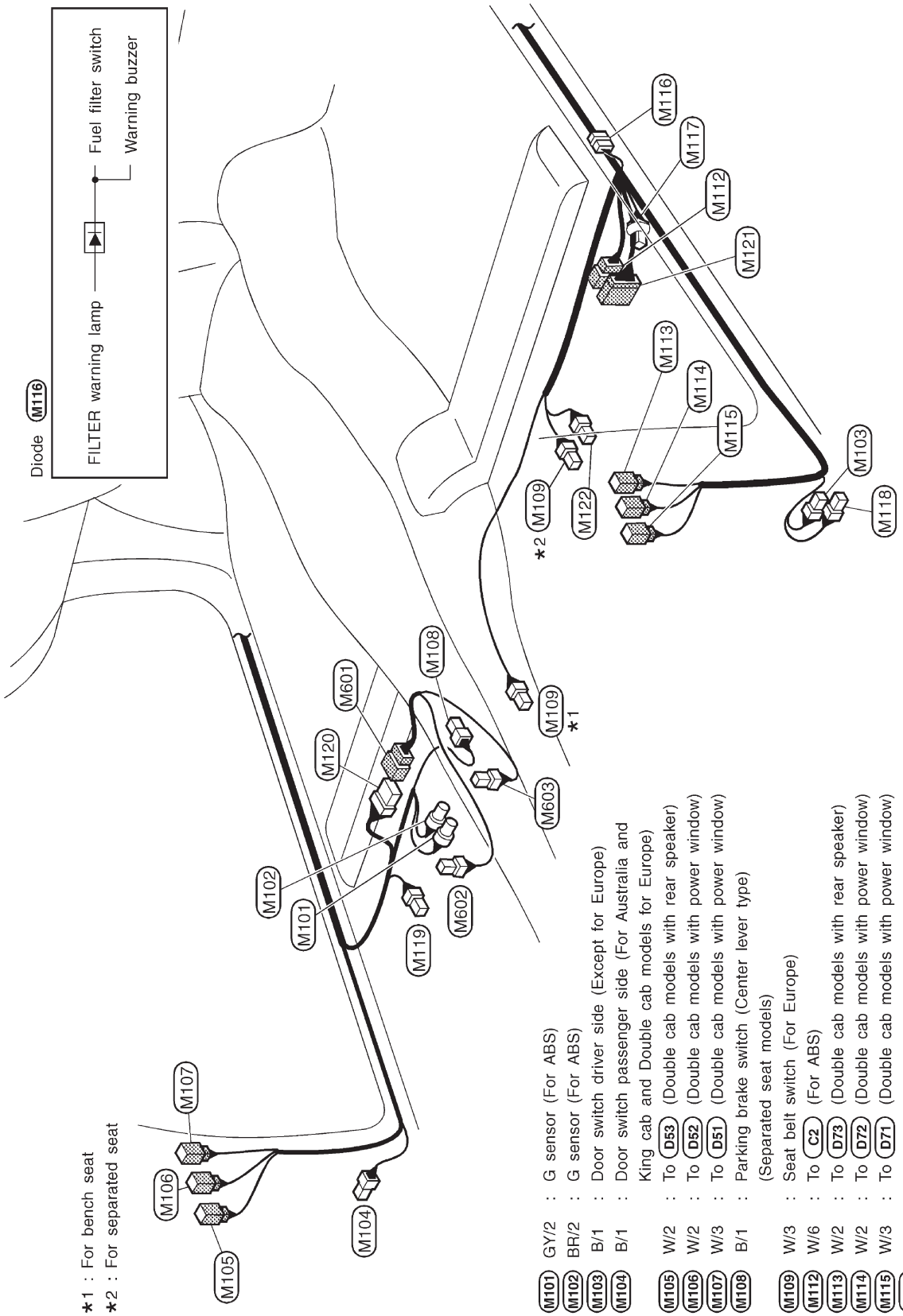
M109 W/3 : Seat belt switch (For the Middle East and Europe)
M112 W/6 : To C2 (For ABS)
M113 W/2 : To D73 (Double cab models with rear speaker)
M114 W/2 : To D72 (Double cab models with power window)
M115 W/3 : To D71 (Double cab models with power window)
M117 W/2 : Condenser (2WD models with gasoline engine for the Middle East)
M118 B/3 : Door switch driver side
(For Europe and with multi-remote control system)
M119 W/3 : To heated seat sub-harness LH
(King cab and Double cab models for Europe)
M120 W/8 : To M601 (King cab and Double cab models for Europe)
M121 W/16 : To C9
M122 W/3 : To heated seat sub-harness RH
(King cab and Double cab models for Europe)
M123 W/4 : Seat belt pre-tensioner RH (With air bag models for the Middle East)
M124 W/4 : Seat belt pre-tensioner LH (With air bag models for the Middle East)
M125 W/6 : A/T device (A/T models)

M101 GY/2 : G sensor (For ABS)
M102 BR/2 : G sensor (For ABS)
M103 B/1 : Door switch driver side
(Except for Europe without multi-remote control system)
M104 B/1 : Door switch passenger side
(King cab and Double cab models for Europe and with multi-remote control system)
M105 W/2 : To D53 (Double cab models with rear speaker)
M106 W/2 : To D52 (Double cab models with power window)
M107 W/3 : To D51 (Double cab models with power window)
M108 B/1 : Parking brake switch (Center lever type)
(Separated seat models)

HEL790A

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 Australia and King cab and Double cab models for Europe)
M105 W/2 : To D53 (Double cab models with rear speaker)
M106 W/2 : To D52 (Double cab models with power window)
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)
M112 W/6 : To C2 (For ABS)
M113 W/2 : To D73 (Double cab models with rear speaker)
M114 W/2 : To D72 (Double cab models with power window)
M115 W/3 : To D71 (Double cab models with power window)
M116 –/2 : Diode (Diesel engine except for Europe and Australia)
M117 W/2 : Condenser (Gasoline engine)
M118 B/3 : Door switch driver side (For Europe)
M119 W/3 : To heated seat sub-harness LH (King cab and Double cab models for Europe)
M120 W/8 : To M601 (King cab and Double cab models for Europe)

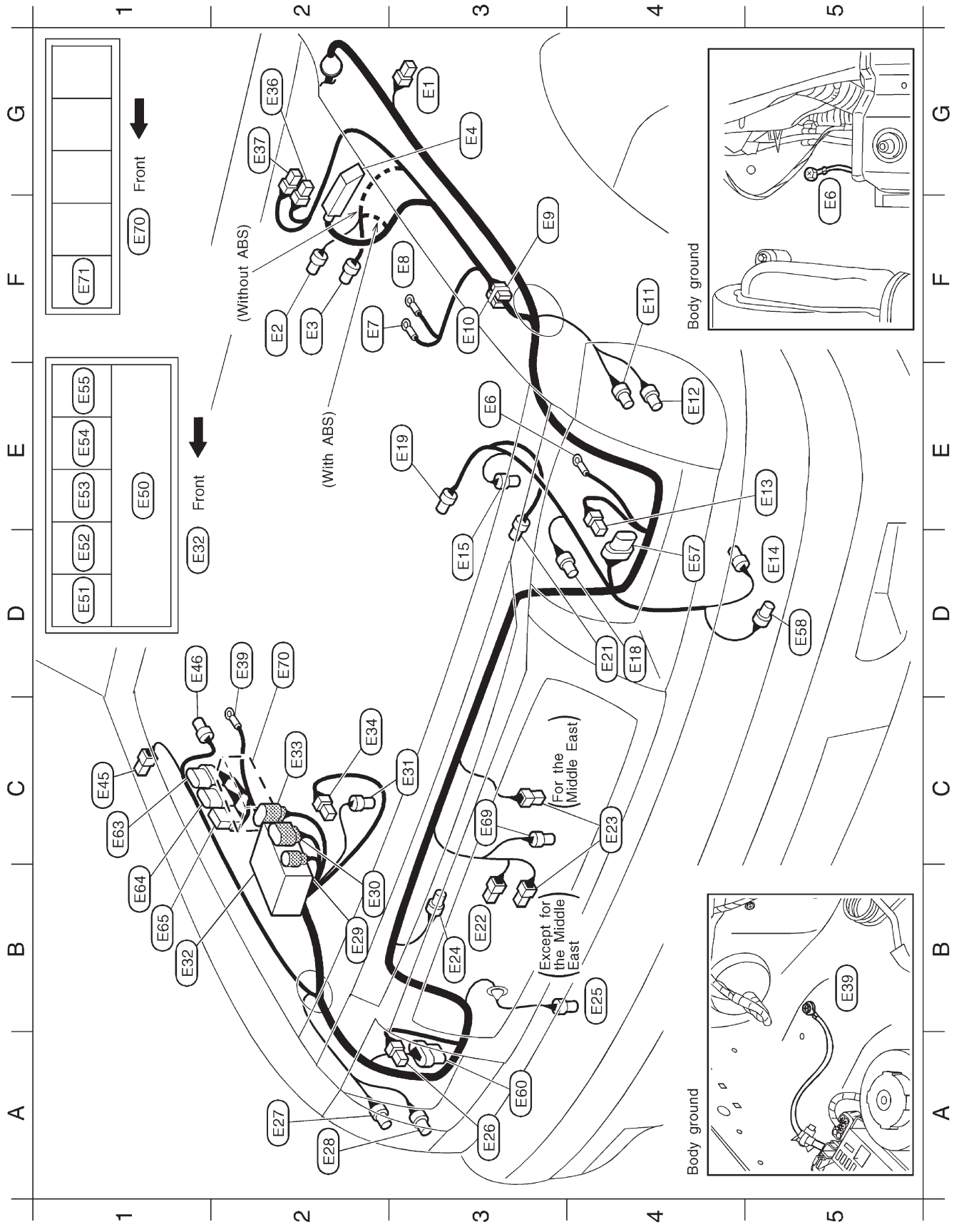
Console harness

M121 W/16 : To C9
M122 W/3 : To heated seat sub-harness RH (King cab and Double cab models for Europe)
M601 W/8 : To M120
M602 L/4 : Heated seat switch LH
M603 W/4 : Heated seat switch RH

HEL791A

Engine Room Harness

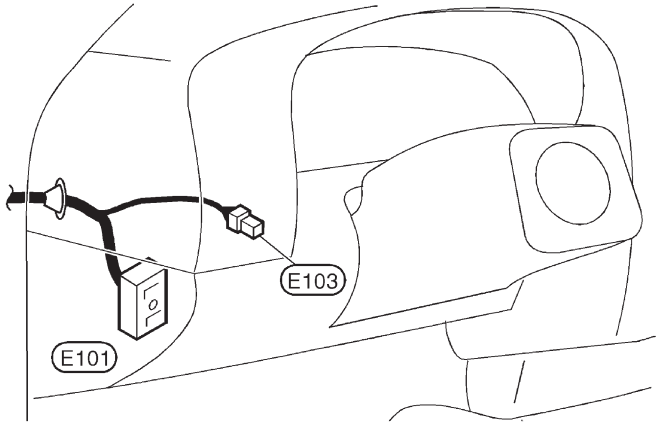
LHD MODELS — GASOLINE ENGINE



HEL794A

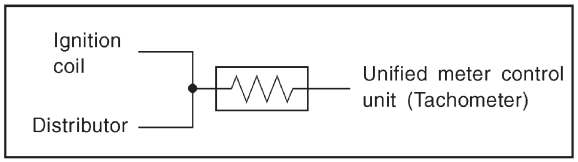
G3 (E1) B/2 : Side turn signal lamp LH (For Europe and China)
F2 (E2) GY/2 : Brake fluid level switch
F2 (E3) GY/3 : Heated oxygen sensor (KA24E engine)
G3 (E4) B/31 : ABS actuator and electric unit (For ABS)
E3 (E6) — : Body ground
F2 (E7) — : Ignition coil (Z engine)
F3 (E8) — : Ignition coil (Z engine)
F3 (E9) –/2 : Resistor (Z engine)
F3 (E10) W/2 : Condenser (Z engine)
F4 (E11) GY/3 : Front combination lamp LH (Except for Europe and China)
E4 (E12) BR/3 : Front combination lamp LH (For Europe and China)
E5 (E13) B/3 : Headlamp LH
D5 (E14) GY/2 : Washer motor
D3 (E15) BR/2 : Front wheel sensor LH (For ABS)
D4 (E18) GY/2 : Not used (KA engine for the Middle East)
E3 (E19) GY/3 : Distributor (Z engine)
D4 (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)
B4 (E25) B/4 : Triple-pressure switch
A3 (E26) B/3 : Headlamp RH
A2 (E27) GY/3 : Front combination lamp RH (Except for Europe and China)
A2 (E28) BR/3 : Front combination lamp RH (For Europe and China)
B2 (E29) GY/2 : To (E204)
B2 (E30) B/8 : To (E203)
C3 (E31) GY/2 : Front wheel sensor RH (For ABS)
B1 (E32) — : Relay box-1 (Fusible link and fuse box)
C2 (E33) GY/8 : To (E205) (KA engine)
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
C1 (E45) B/2 : Side turn signal lamp RH (For Europe and China)
D1 (E46) GY/3 : Power antenna
(For the Middle East except 4WD models with ABS)
E1 (E50) — : Fusible link and fuse box
D1 (E51) L/4 : Air conditioner relay
D1 (E52) W/3 : Horn relay
E1 (E53) L/4 : ECM relay (KA engine for Europe)
BR/6 : ECM relay (KA engine M/T models except for Europe and the Middle East, and A/T models)
L/4 : Fuel pump relay (KA engine M/T models for the Middle East)
E1 (E54) B/5 : Automatic choke relay (Z engine)
L/4 : Fuel pump relay (KA engine except M/T models for the Middle East)
BR/6 : ECM relay (KA engine M/T models for the Middle East)
E1 (E55) L/4 : Cooling fan relay (KA engine M/T models for the Middle East)
BR/6 : Park/Neutral position (PNP) relay (A/T models)
BR/6 : Defogger relay (For Europe)
D4 (E57) GY/6 : Headlamp aiming motor LH (For Europe)
D5 (E58) GY/2 : Headlamp washer motor (For Europe)
A3 (E60) GY/6 : Headlamp aiming motor RH (For Europe)
C1 (E63) GY/6 : Daytime light unit (With daytime light system)
B1 (E64) GY/8 : Daytime light unit (With daytime light system)
B1 (E65) W/6 : Headlamp washer amplifier (For Europe)
C3 (E69) BR/2 : Ambient temperature switch (KA24DE engine)
D2 (E70) — : Relay box-2 (A/T models)
F1 (E71) L/4 : Cooling fan relay (A/T models)

PASSENGER COMPARTMENT



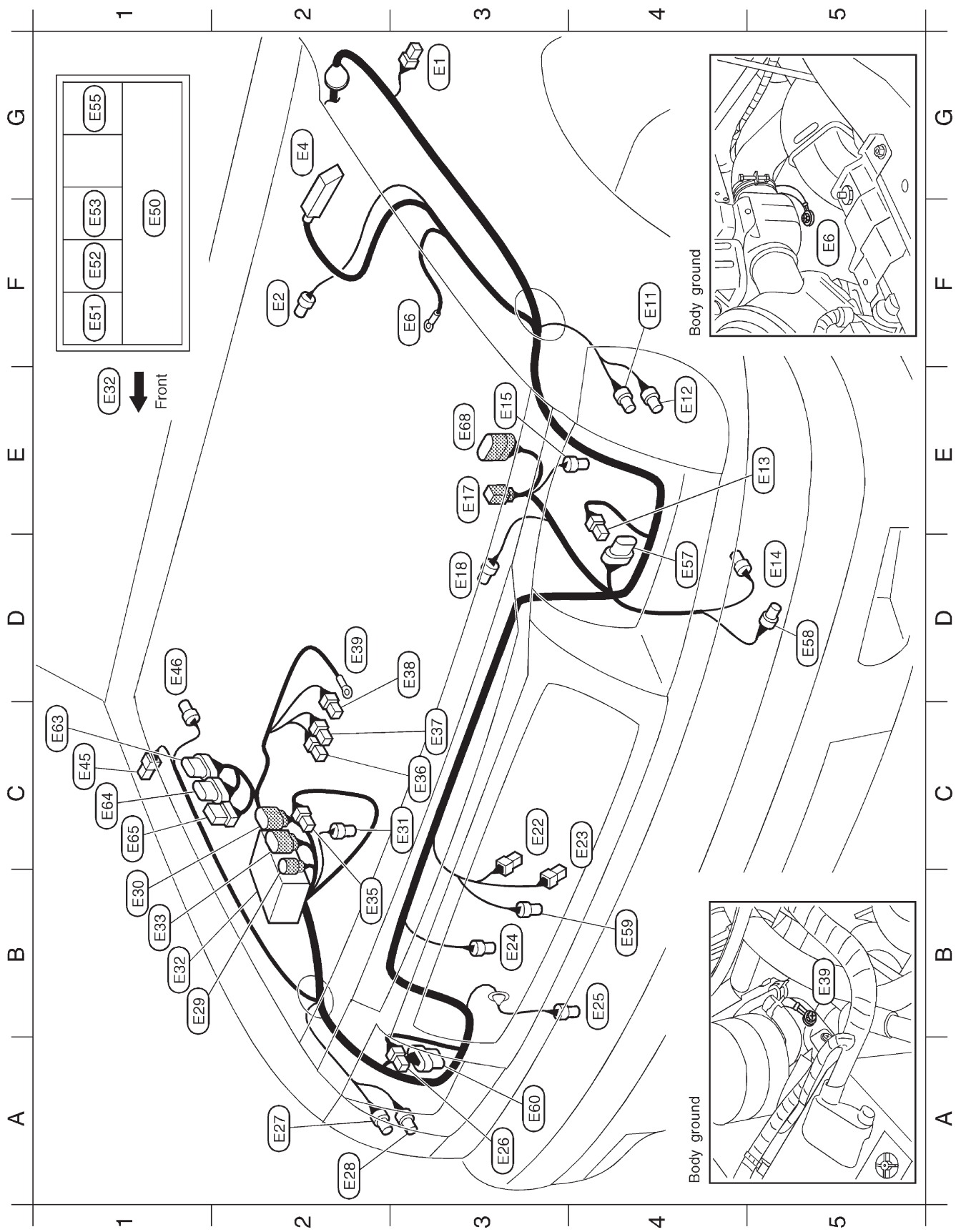
(E101) SMJ : To (M5)
(E103) B/2 : Fuse block

Resistor (E9)



Engine Room Harness (Cont'd)

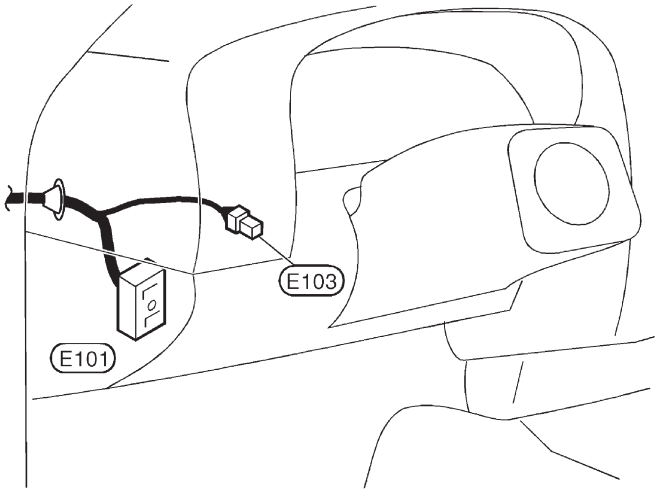
LHD MODELS — DIESEL ENGINE



HEL796A

G3 (E1) B/2 : Side turn signal lamp LH (For Europe)
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 (Except for Europe)
E4 (E12) BR/3 : Front combination lamp LH (For Europe)
E5 (E13) B/3 : Headlamp LH
D5 (E14) GY/2 : Washer motor
E3 (E15) BR/2 : Front wheel sensor LH (For ABS)
E3 (E17) B/2 : To (A2)
D3 (E18) GY/2 : Thermoswitch (Except TD27 engine except for the Middle East and TD engine 2WD models with ABS for Europe)
C3 (E22) B/1 : Horn low
C4 (E23) B/1 : Horn high
B3 (E24) GY/2 : Cooling fan motor (Except TD27 engine except for the Middle East and TD engine 2WD models with ABS for Europe)
B4 (E25) B/4 : Triple-pressure switch
A3 (E26) B/3 : Headlamp RH
A2 (E27) GY/3 : Front combination lamp RH (Except for Europe)
A2 (E28) BR/3 : Front combination lamp RH (For Europe)
B2 (E29) GY/2 : To (E204)
B1 (E30) B/8 : To (E203) (For Europe)
C3 (E31) GY/2 : Front wheel sensor RH (For ABS)
B1 (E32) — : Relay box (Fusible link and fuse box)
B1 (E33) GY/8 : To (E205)
B2 (E35) B/1 : To (E206)
C3 (E36) B/1 : IACV-FICD solenoid valve
C3 (E37) B/1 : IACV-FICD solenoid valve
D3 (E38) GY/1 : Vacuum warning switch
D2 (E39) — : Body ground
C1 (E45) B/2 : Side turn signal lamp RH (For Europe)
D1 (E46) GY/3 : Power antenna (For Europe except 2WD models with ABS)
F1 (E50) — : Fusible link and fuse box
F1 (E51) L/4 : Air conditioner relay
F1 (E52) W/3 : Horn relay
F1 (E53) L/4 : Cooling fan relay (Except TD27 engine except for the Middle East and TD engine 2WD models with ABS for Europe)
G1 (E55) L/4 : Defogger relay (Except for the Middle East)
D4 (E57) GY/6 : Headlamp aiming motor LH (For Europe)
D5 (E58) GY/2 : Headlamp washer motor (For Europe)
B4 (E59) B/2 : Ambient sensor (For auto A/C) (For Europe except 2WD models with ABS)
A3 (E60) GY/6 : Headlamp aiming motor RH (For Europe)
C1 (E63) GY/6 : Daytime light unit (With daytime light system)
C1 (E64) GY/8 : Daytime light unit (With daytime light system)
C1 (E65) W/6 : Headlamp washer amplifier (For Europe)
E3 (E68) GY/10 : To (A13)

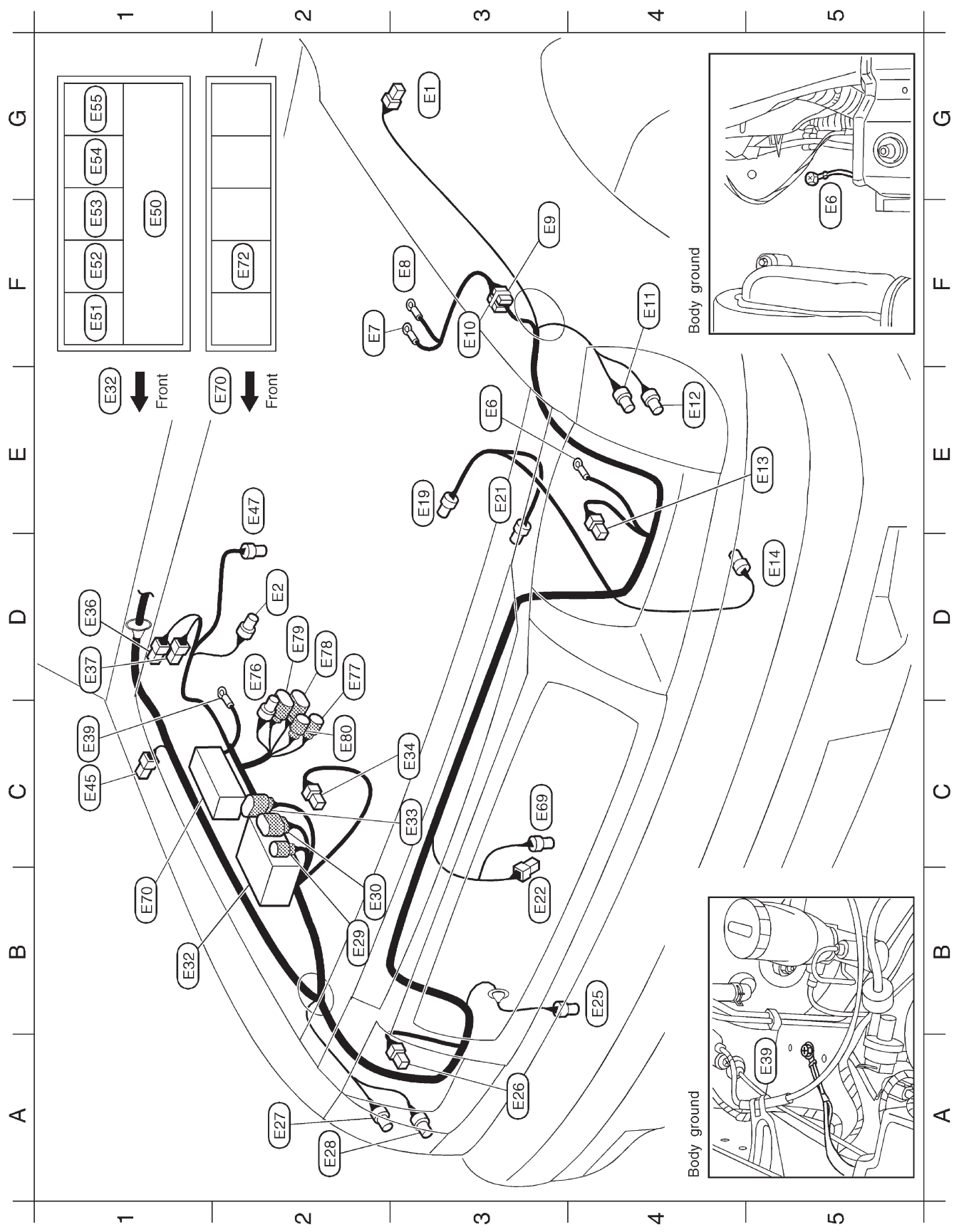
PASSENGER COMPARTMENT



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

Engine Room Harness (Cont'd)

RHD MODELS — GASOLINE ENGINE



HEL798A

Engine Room Harness (Cont'd)

G3 (E1) B/2 : Side turn signal lamp LH (For Australia)
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)
F4 (E11) GY/3 : Front combination lamp LH (Except for Australia)
E4 (E12) BR/3 : Front combinaiton lamp LH (For Australia)
E5 (E13) B/3 : Headlamp LH
D5 (E14) GY/2 : Washer motor
E3 (E19) GY/3 : Distributor (Z engine)
E3 (E21) B/1 : Compressor (Z engine)
B3 (E22) B/1 : Horn low
B4 (E25) B/4 : Triple-pressure switch
A3 (E26) B/3 : Headlamp RH
A2 (E27) GY/3 : Front combination lamp RH (Except for Australia)
A2 (E28) BR/3 : Front combination lamp RH (For Australia)
B2 (E29) GY/2 : To (E204)
B2 (E30) B/8 : To (E203)
B1 (E32) — : Relay box-1 (Fusible link and fuse box)
C3 (E33) GY/8 : To (E205) (KA 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) B/2 : Side turn signal lamp RH (For Australia)
E2 (E47) GY/3 : Carburetor (Z engine)
F1 (E50) — : Fusible link and fuse box
F1 (E51) L/4 : Air conditioner relay
F1 (E52) W/3 : Horn relay
F1 (E53) BR/6 : ECM relay (KA engine)
G1 (E54) B/5 : Automatic choke relay (Z engine)
L/4 : Fuel pump relay (KA engine)
G1 (E55) BR/6 : Defogger relay (M/T models for AAustralia)
BR/6 : Park/Neutral position (PNP) relay (A/T models)
C3 (E69) BR/2 : Ambient temperature switch (KA engine)
B1 (E70) — : Relay box-2 (A/T models)
F2 (E72) BR/6 : Defogger relay (A/T models)
D2 (E76) GY/2 : Dropping resistor (A/T models)

D2 (E77) GY/2 : Park/Neutral position (PNP) switch (A/T models)
D2 (E78) GY/8 : Park/Neutral position (PNP) switch (A/T models)
D2 (E79) BR/8 : To terminal cord assembly (A/T models)
C2 (E80) GY/3 : Revolution sensor (A/T models)

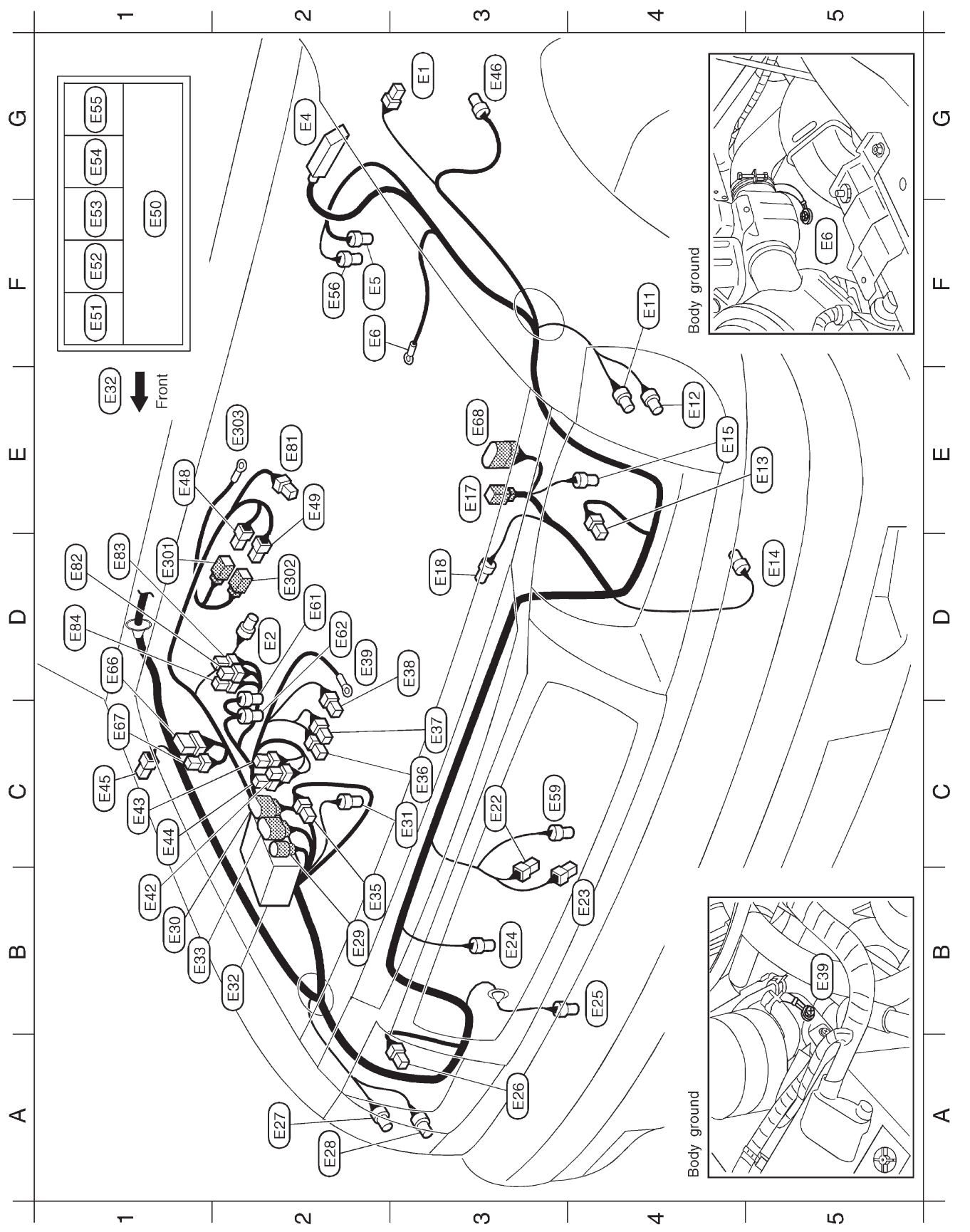
PASSENGER COMPARTMENT

(E101) SMJ : To (M5) (M/T models)
(E103) B/2 : Fuse block
(E104) SMJ : To (M85) (A/T models)

HEL799A

Engine Room Harness (Cont'd)

RHD MODELS — DIESEL ENGINE

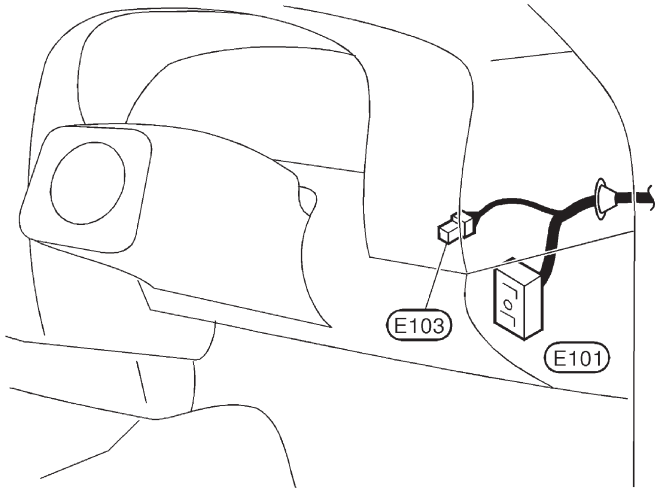


HEL800A

G3 (E1) B/2 : Side turn signal lamp LH (For Europe and Australia)
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
F2 (E6) — : Body ground
F4 (E11) GY/3 : Front combination lamp LH (Except for Europe and Australia)
E4 (E12) BR/3 : Front combination lamp LH (For Europe and Australia)
E5 (E13) B/3 : Headlamp LH
D5 (E14) GY/2 : Washer motor
E4 (E15) BR/2 : Front wheel sensor LH (For ABS)
E3 (E17) B/2 : To (A2)
D3 (E18) GY/2 : Thermoswitch
(For Europe except 2WD models with ABS and QD engine)
C3 (E22) B/1 : Horn low
B4 (E23) B/1 : Horn high (For Europe and QD engine except for Australia)
B3 (E24) GY/2 : Cooling fan motor
(For Europe except 2WD models with ABS and QD engine)
B4 (E25) B/4 : Triple-pressure switch
A3 (E26) B/3 : Headlamp RH
A2 (E27) GY/3 : Front combination lamp RH (Except for Europe and Australia)
A2 (E28) BR/3 : Front combination lamp RH (For Europe and Australia)
B2 (E29) GY/2 : To (E204)
B1 (E30) B/8 : To (E203) (For Europe)
C3 (E31) GY/2 : Front wheel sensor RH (For ABS)
B2 (E32) — : Relay box-1 (Fusible link and fuse box)
B1 (E33) GY/8 : To (E205)
B2 (E35) B/1 : To (E206)
C3 (E36) B/1 : IACV-FICD solenoid valve
C3 (E37) B/1 : IACV-FICD solenoid valve
D3 (E38) GY/1 : Vacuum warning switch (Except for Australia)
D2 (E39) — : Body ground
B1 (E42) W/1 : Glow relay-1
C1 (E43) W/1 : Glow relay-1
C1 (E44) G/2 : Glow relay-1
C1 (E45) B/2 : Side turn signal lamp RH (For Europe and Australia)
G3 (E46) GY/3 : Power antenna (For Europe except 2WD model with ABS)
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 : Air conditioner relay
F1 (E52) W/3 : Horn relay
F1 (E53) L/4 : Cooling fan relay (For Europe except 2WD models with ABS and QD engine)

G1 (E54) L/4 : Fuel heater relay (For Europe)
G1 (E55) BR/6 : Defogger relay (TD27 engine for Australia and TD25, 25Ti and QD engine)
F2 (E56) GY/4 : Fuel filter (For fuel heater)(For Europe)
C3 (E59) B/2 : Ambient sensor (For auto A/C)
D2 (E61) B/2 : EGRC-solenoid valve (Throttle chamber)(For Europe)
D2 (E62) BR/2 : EGRC-solenoid valve (EGR valve)(For Europe)
D1 (E66) GY/6 : Dim-dip lamp unit (For Europe)
C1 (E67) GY/4 : Dim-dip lamp unit (For Europe)
E3 (E68) GY/10 : To (A13)
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

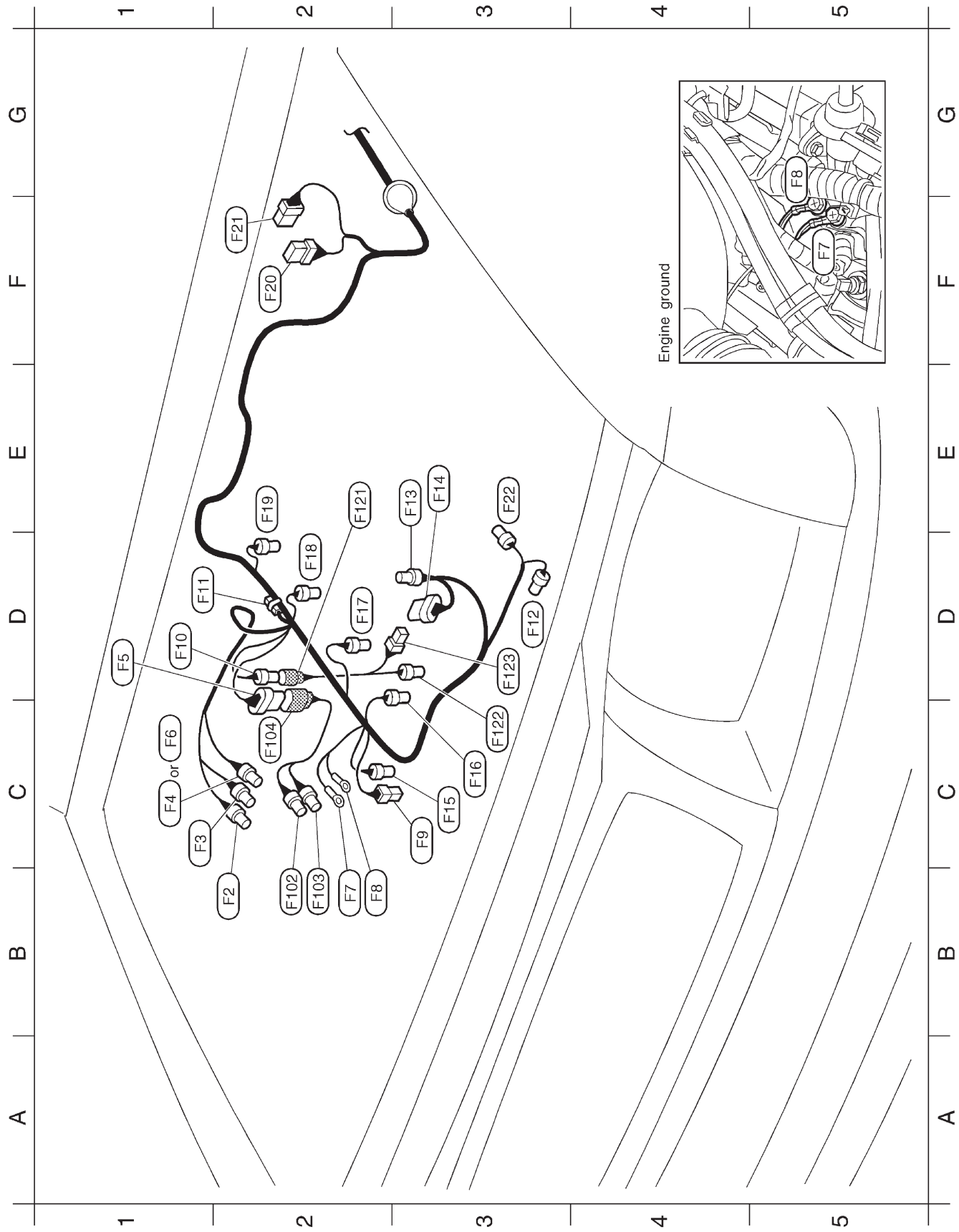


(E101) SMJ : To (M5)
(E103) B/2 : Fuse block

Sub-harness

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

Engine Control Harness



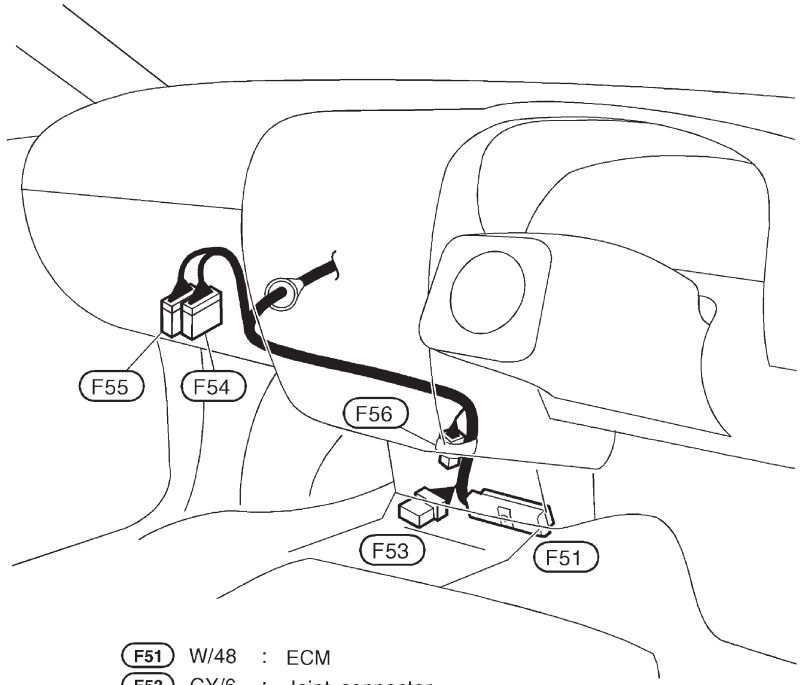
HEL802A

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) B/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 (With three way catalyst)

Sub-harness

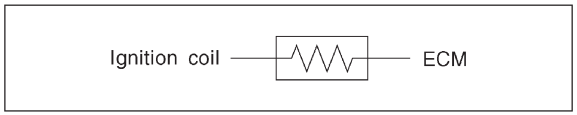
B2 (F102) BR/3 : Throttle position sensor
B2 (F103) GY/3 : Throttle position switch (A/T models)
C2 (F104) B/6 : To (F5)
E2 (F121) B/3 : To (F10)
C3 (F122) –/2 : Knock sensor
D3 (F123) B/1 : Oil pressure switch

PASSENGER COMPARTMENT

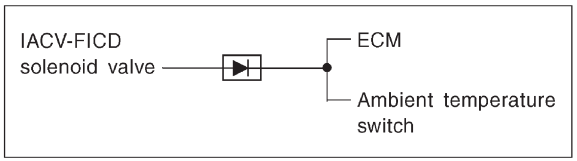


(F51) W/48 : ECM
(F53) GY/6 : Joint connector
(F54) W/24 : To (M48)
(F55) W/16 : To (M47)
(F56) –/2 : Diode

Resistor (F11)



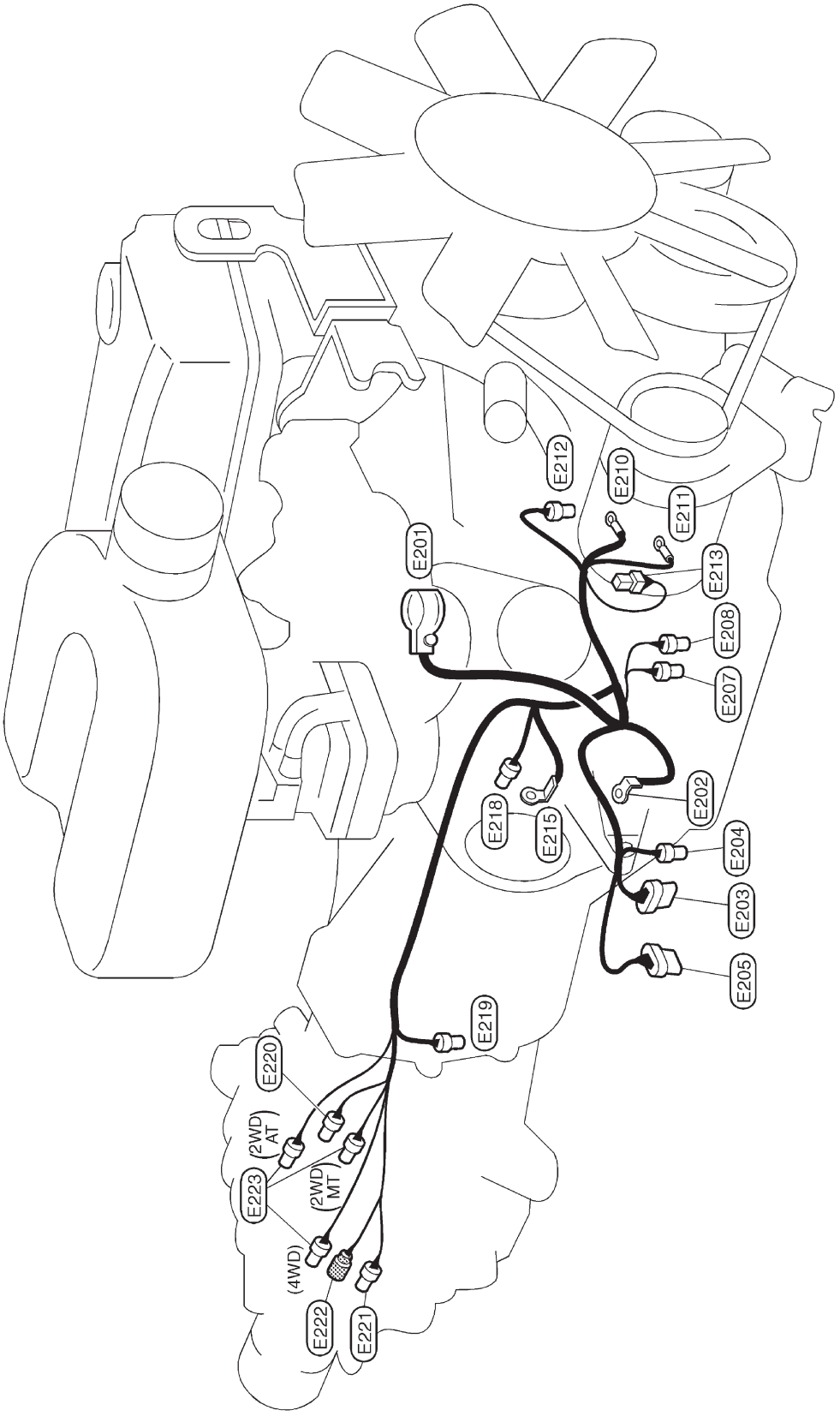
Diode (F56)



HEL803A

Engine Control Harness (Cont'd)

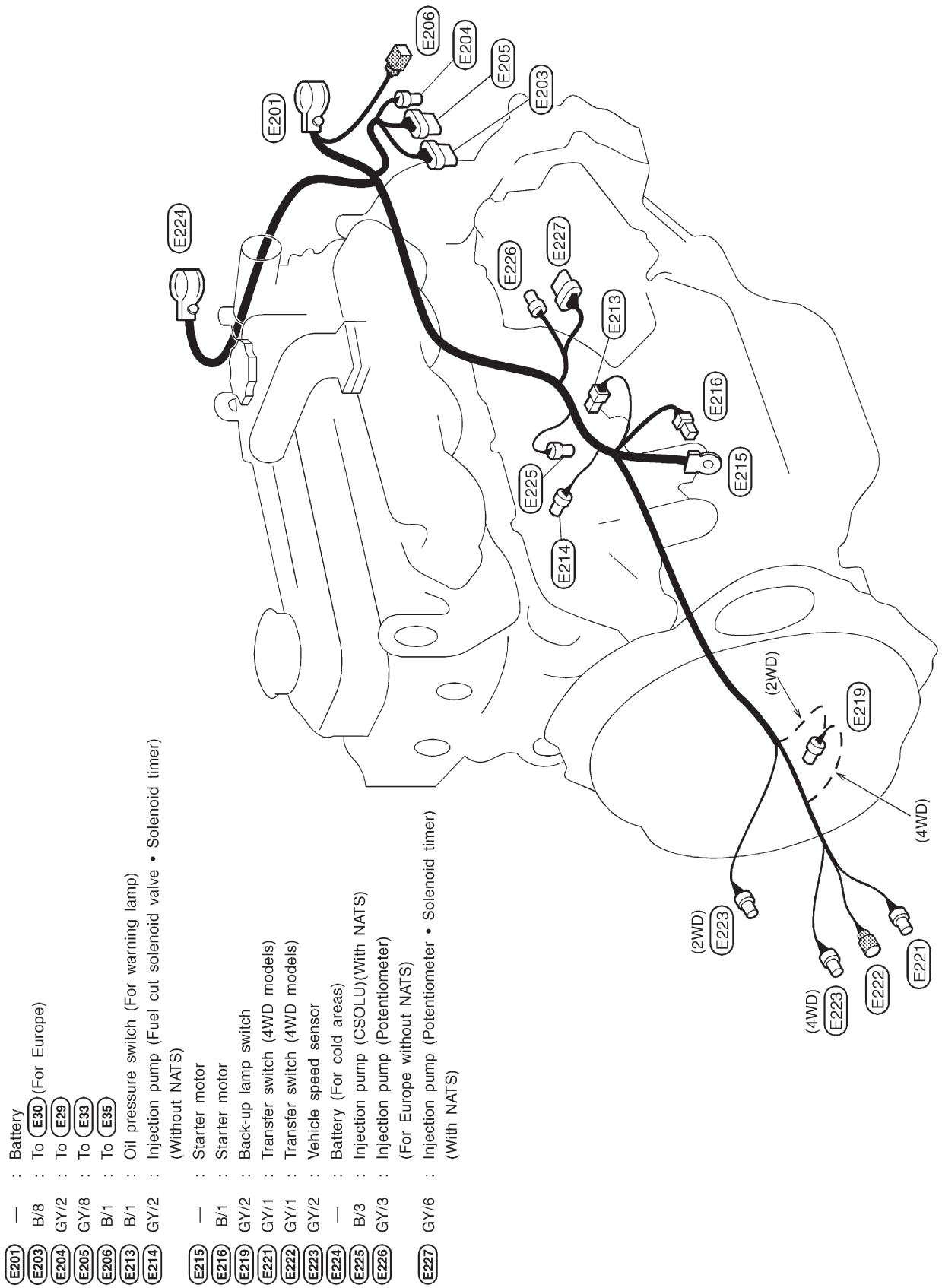
KA ENGINE



E201	—	: Battery
E202	—	: Fusible link and fuse box
E203	B/8	: To E30
E204	GY/2	: To E29
E205	GY/8	: To E33
E207	GY/2	: Power steering oil pressure switch (RHD 4WD models)
E208	B/2	: Power steering oil pressure switch (Except RHD 4WD models)
E210	—	: Alternator (B)
E211	—	: Alternator (E)
E212	GY/2	: Alternator (S,L)
E213	B/1	: Oil pressure switch (KA24E)
E215	—	: Starter motor
E218	GY/1	: Starter motor
E219	GY/2	: Back-up lamp switch (M/T models)
E220	B/2	: Park/Neutral position (PNP) switch (M/T models)
E221	GY/1	: Transfer switch (4WD models)
E222	GY/1	: Transfer switch (4WD models)
E223	GY/2	: Vehicle speed sensor

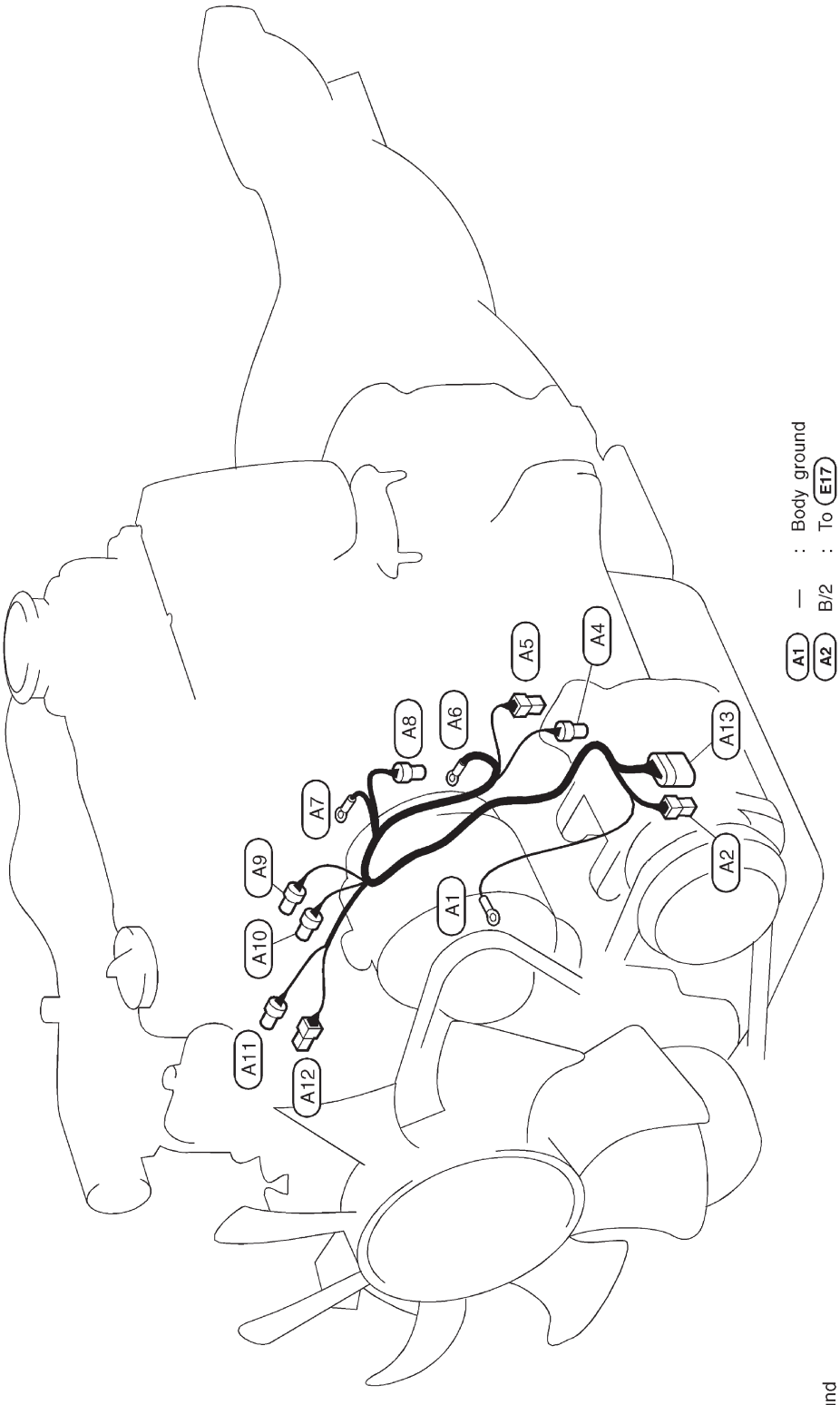
HEL805A

DIESEL ENGINE

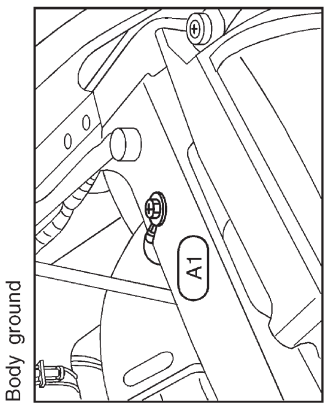


HEL806A

Alternator Harness



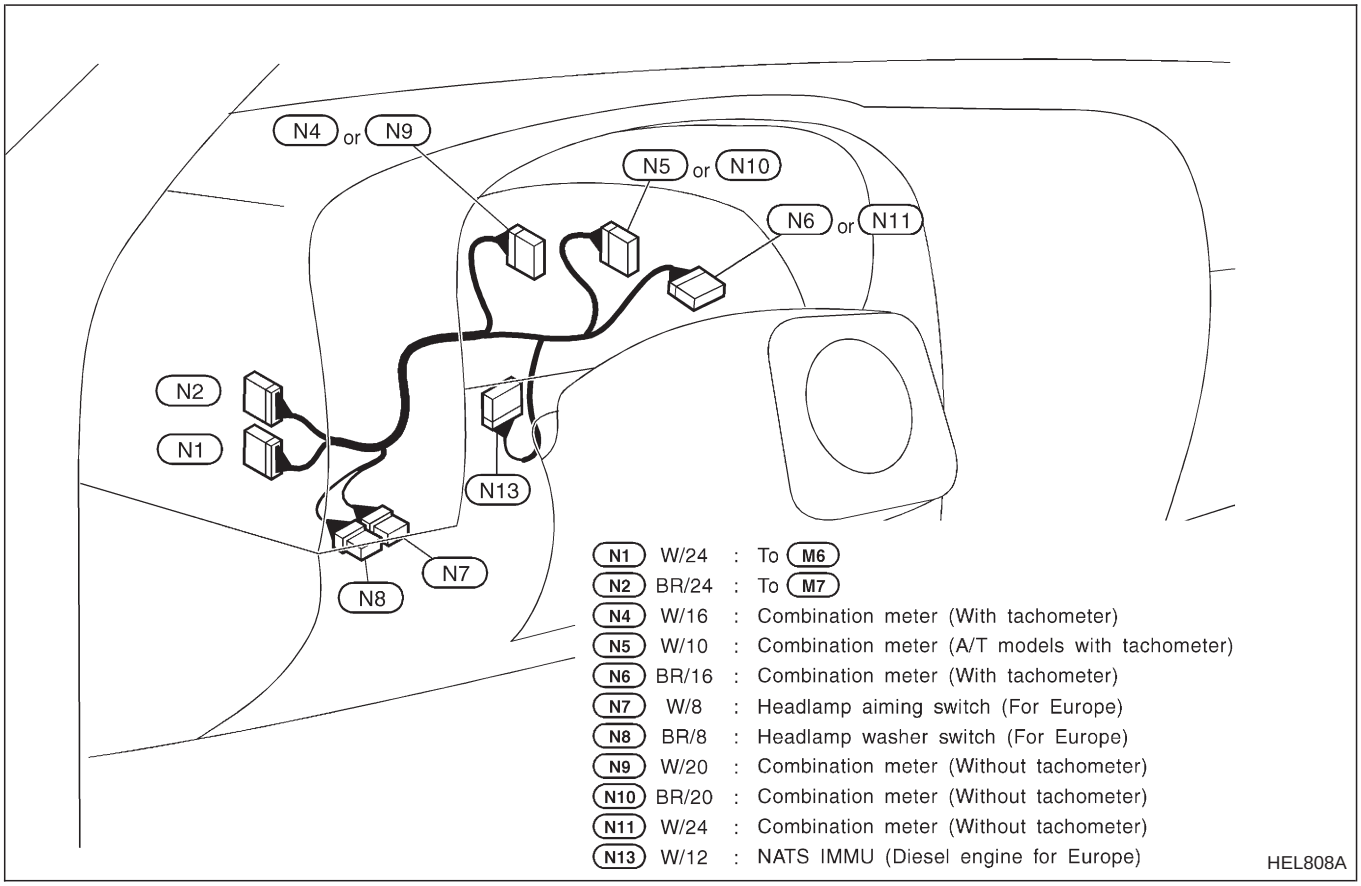
A1	—	: Body ground
A2	B/2	: To E17
A4	B/1	: Compressor
A5	B/1	: Oil pressure switch (For fuel heater) (Except QD engine for Australia)
A6	—	: Alternator (B)
A7	—	: Alternator (E)
A8	GY/2	: Alternator (S,L)
A9	GY/2	: Thermoswitch (Turbocharger models and except for Europe)
A10	BR/2	: Revolution sensor
A11	GY/2	: Engine coolant temperature sensor
A12	B/1	: Thermal transmitter
A13	GY/10	: To E68



HEL807A

Instrument Harness

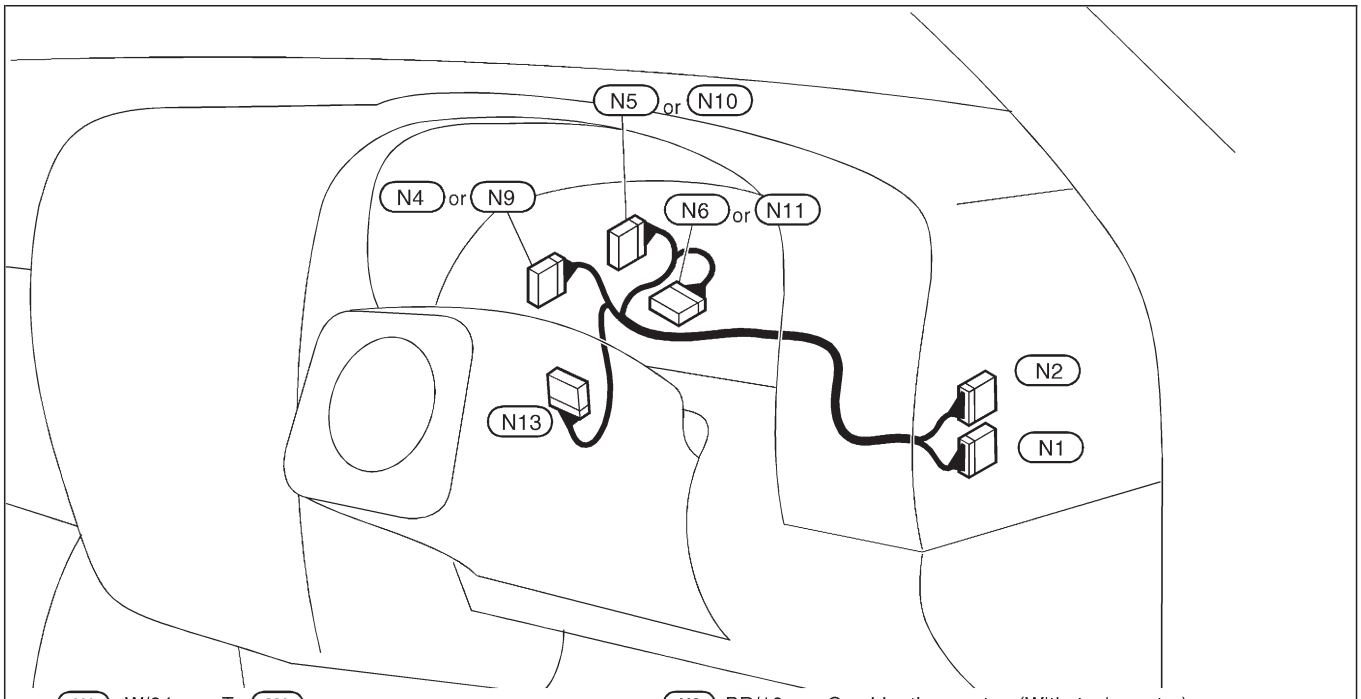
LHD MODELS



N1	W/24	:	To M6
N2	BR/24	:	To M7
N4	W/16	:	Combination meter (With tachometer)
N5	W/10	:	Combination meter (A/T models with tachometer)
N6	BR/16	:	Combination meter (With tachometer)
N7	W/8	:	Headlamp aiming switch (For Europe)
N8	BR/8	:	Headlamp washer switch (For Europe)
N9	W/20	:	Combination meter (Without tachometer)
N10	BR/20	:	Combination meter (Without tachometer)
N11	W/24	:	Combination meter (Without tachometer)
N13	W/12	:	NATS IMMU (Diesel engine for Europe)

HEL808A

RHD MODELS

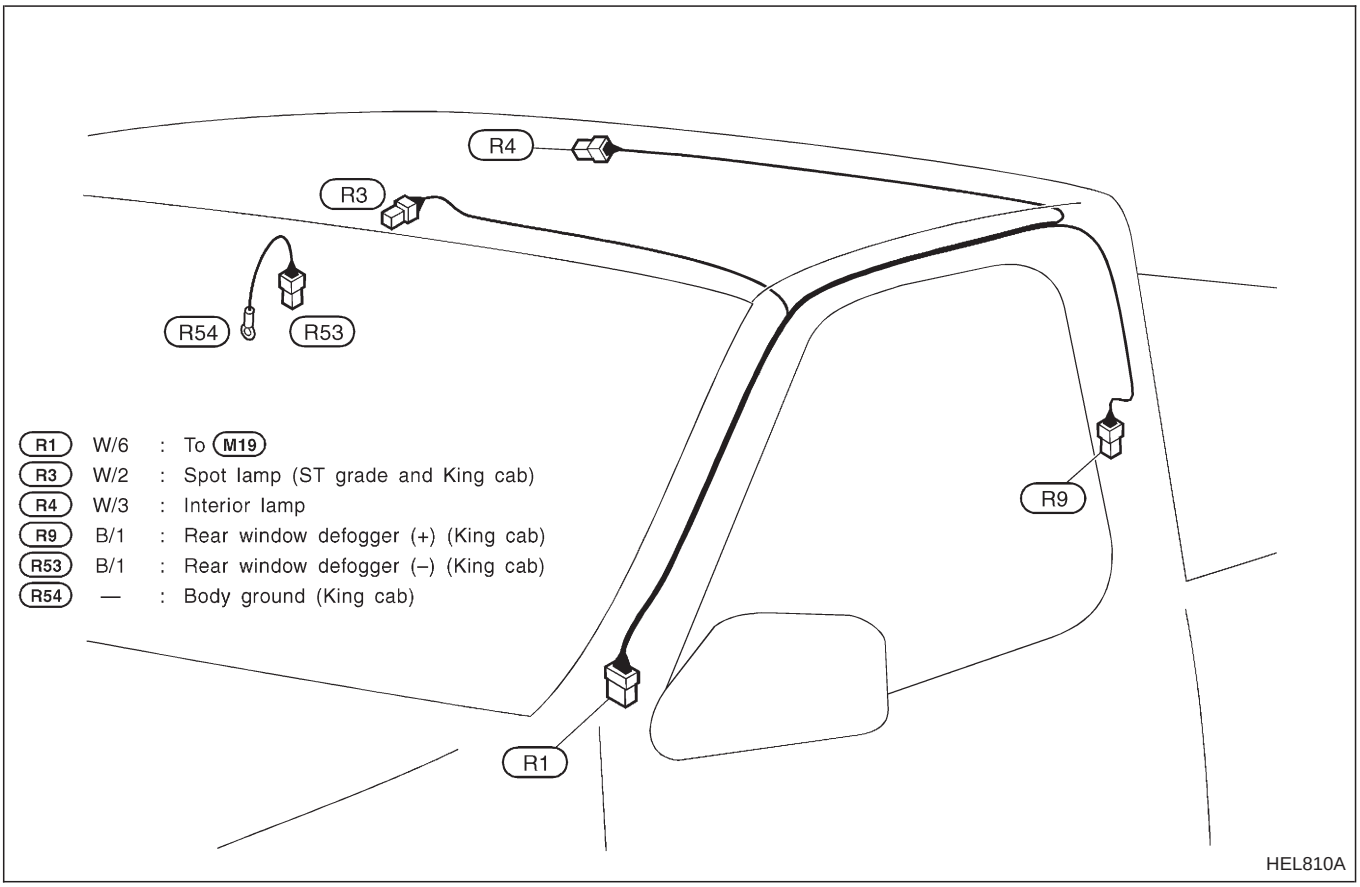


N1	W/24	:	To M6
N2	BR/24	:	To M7 (For Europe)
N4	W/16	:	Combination meter (With tachometer)
N5	W/10	:	Combination meter (A/T models with tachometer)
N6	BR/16	:	Combination meter (With tachometer)
N9	W/20	:	Combination meter (Without tachometer)
N10	BR/20	:	Combination meter (Without tachometer)
N11	W/24	:	Combination meter (Without tachometer)
N13	W/12	:	NATS IMMU (Diesel engine for Europe)

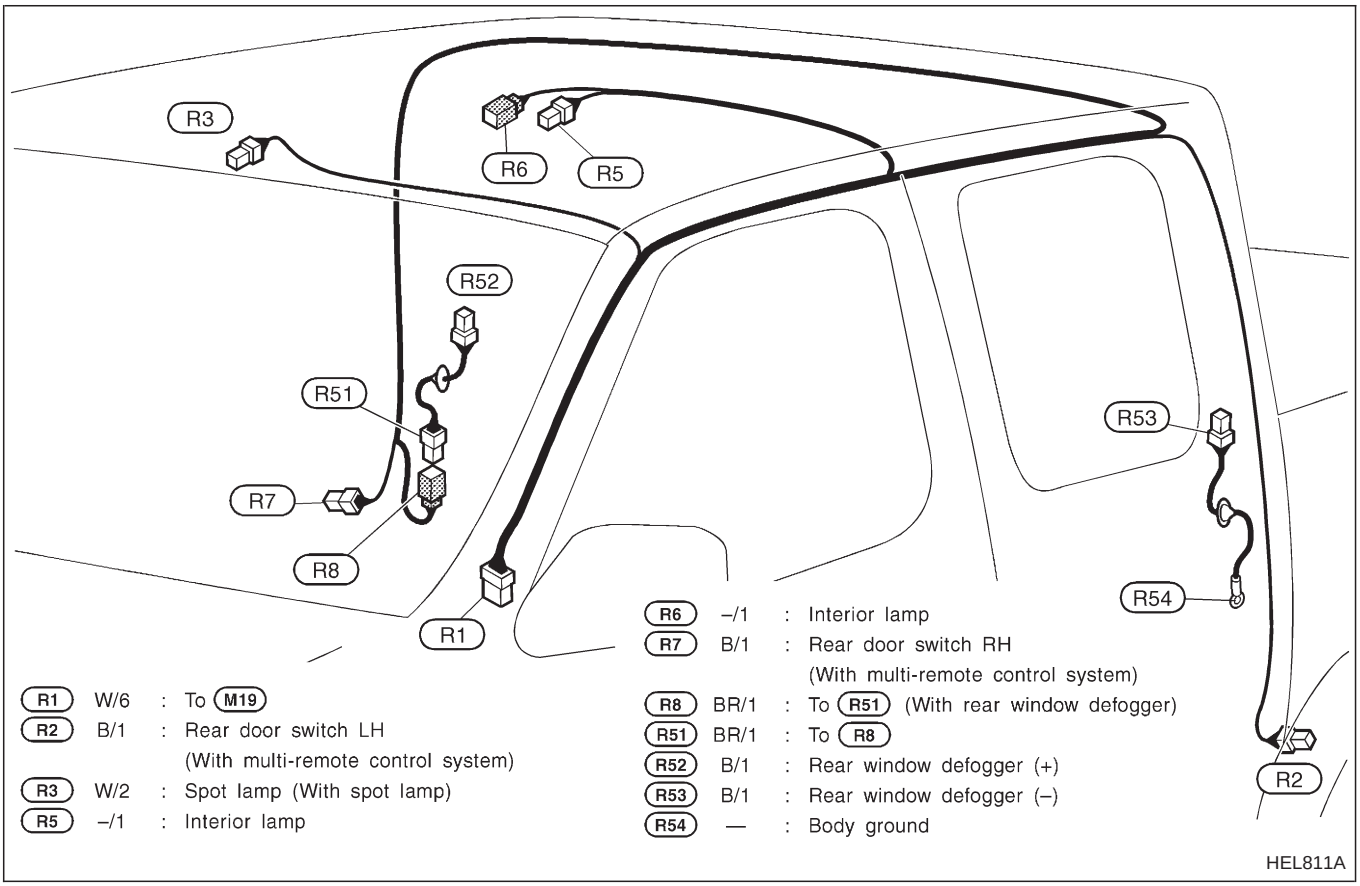
HEL809A

Room Lamp Harness/LHD Models

SINGLE AND KING CAB

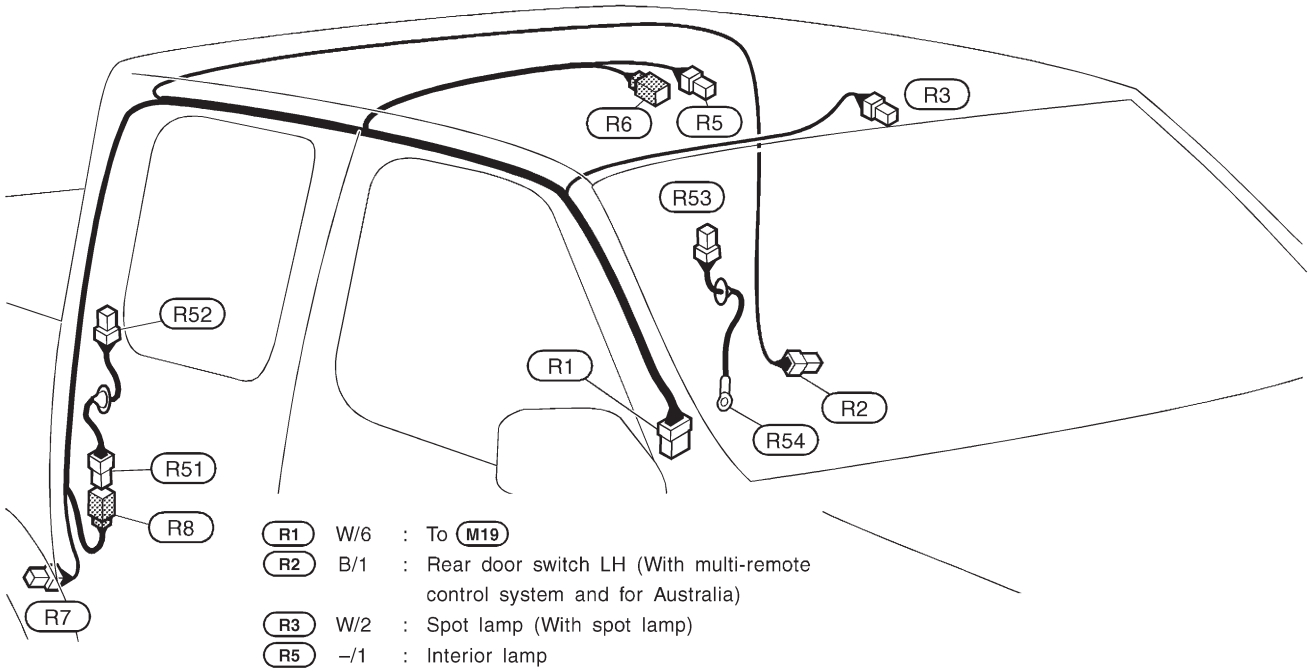


DOUBLE CAB



Room Lamp Harness/RHD Models

DOUBLE CAB



R1	W/6	:	To M19
R2	B/1	:	Rear door switch LH (With multi-remote control system and for Australia)
R3	W/2	:	Spot lamp (With spot lamp)
R5	–/1	:	Interior lamp
R6	–/1	:	Interior lamp
R7	B/1	:	Rear door switch RH (With multi-remote control system and for Australia)
R8	BR/1	:	To R51 (With rear window defogger)
R51	BR/1	:	To R8
R52	B/1	:	Rear window defogger (+)
R53	B/1	:	Rear window defogger (–)
R54	—	:	Body ground

HEL812A

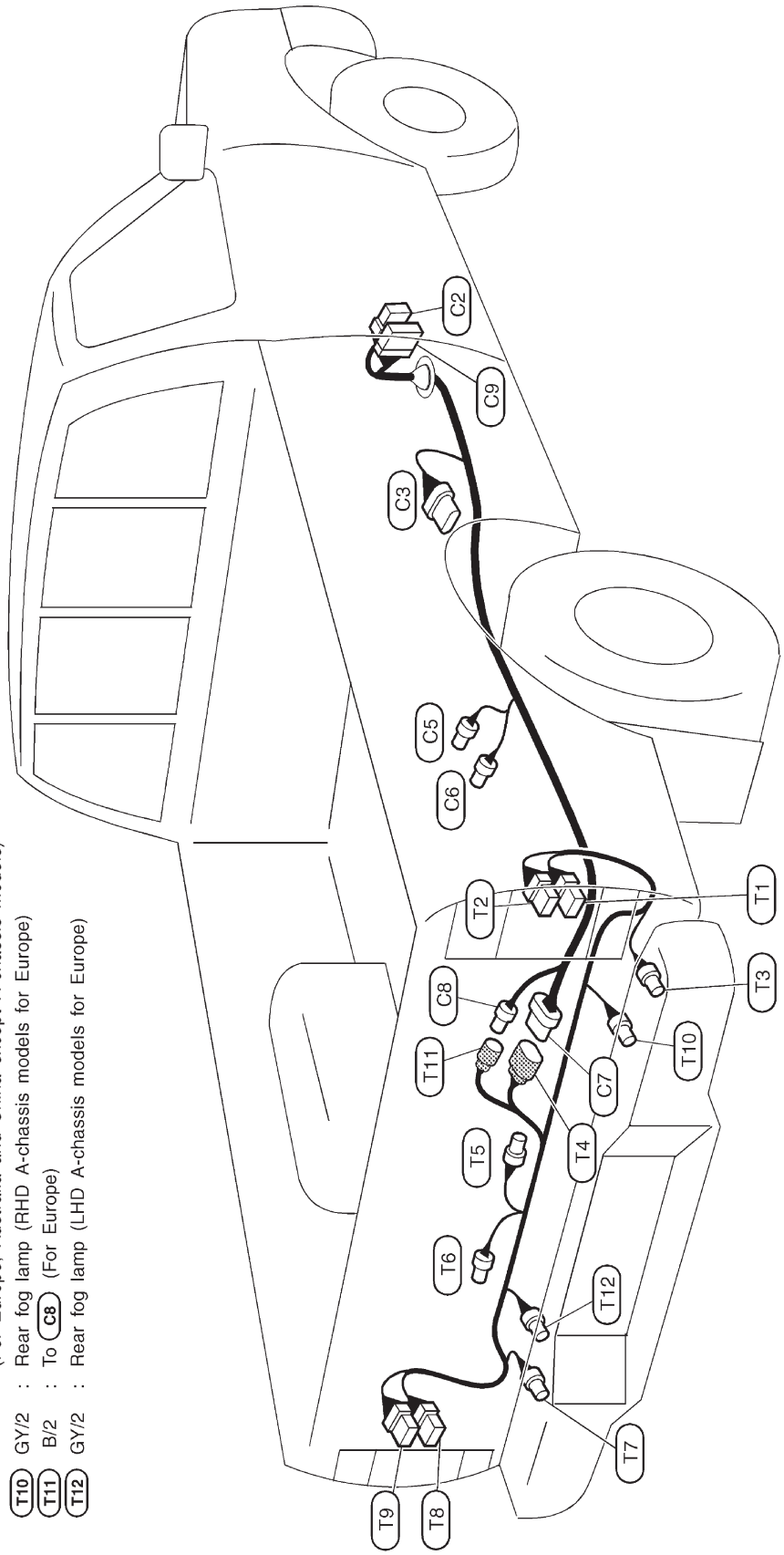
Chassis Harness and Tail Harness

Tail harness

- T1 W/6 : Rear combination lamp RH (A-chassis models and except for Europe, Australia and China)
- T2 W/8 : Rear combination lamp RH (For Europe, Australia and China except A-chassis models)
- T3 GY/2 : License plate lamp RH (With step bumper)
- T4 GY/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 and except for Europe, Australia and China)
- T9 W/8 : Rear combination lamp LH (For Europe, Australia and China except A-chassis models)
- T10 GY/2 : Rear fog lamp (RHD A-chassis models for Europe)
- T11 B/2 : To C8 (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/6 : Fuel level sensor unit and fuel pump
- C5 GY/4 : To rear wheel sensor sub-harness (For ABS)(4WD models)
- C6 GY/2 : Rear wheel sensor (For ABS)(2WD models)
- C7 GY/8 : To T4
- C8 B/2 : To T11 (For Europe)
- C9 W/16 : To M121

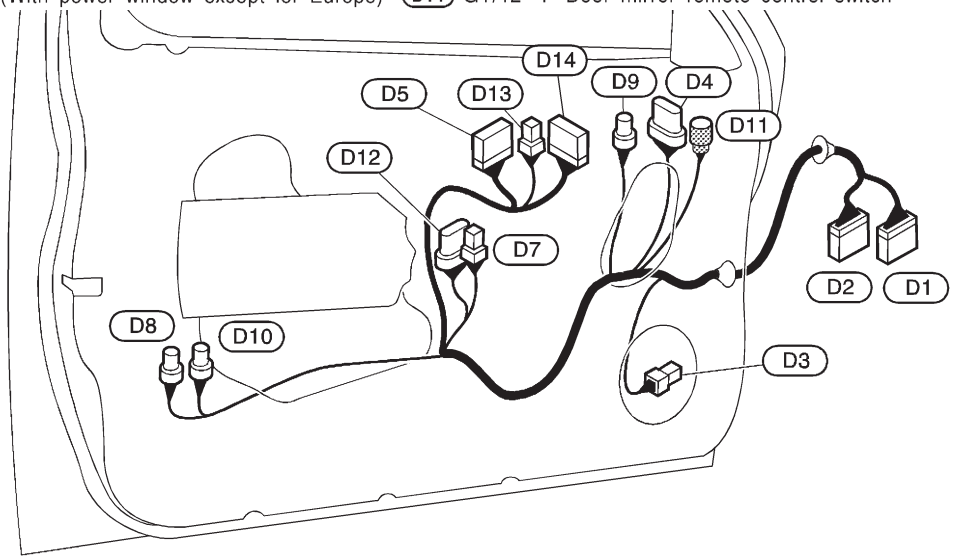


HEL813A

Front Door Harness (LH side)

LHD MODELS

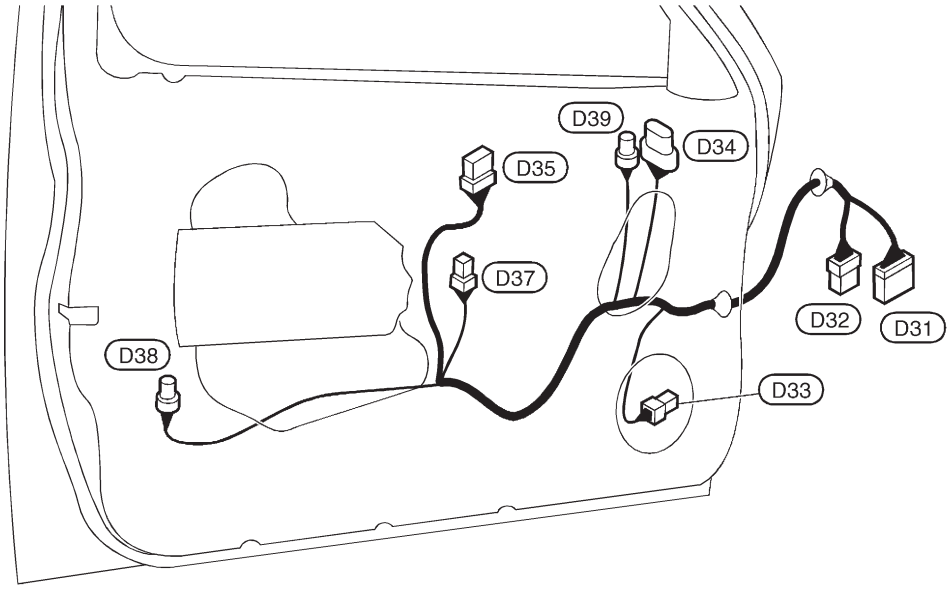
- D1 W/20 : To M3
- D2 W/12 : To M4 (With power window)
- D3 BR/2 : Front speaker
- D4 GY/5 : Door mirror actuator (With power door mirror except for the Middle East)
- D5 W/16 : Power window main switch
- D7 B/2 : Power window regulator (With power window except for Europe)
- D8 GY/2 : Lock knob switch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



HEL814A

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 GY/4 : Door lock actuator (With power door lock)
- D39 BR/3 : Door mirror defogger (With power door mirror)

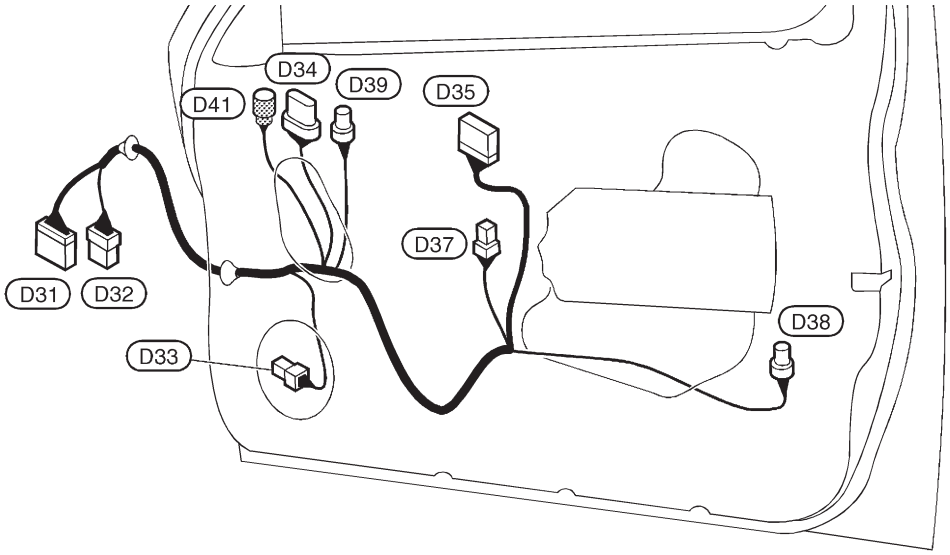


HEL815A

Front Door Harness (RH side)

LHD MODELS

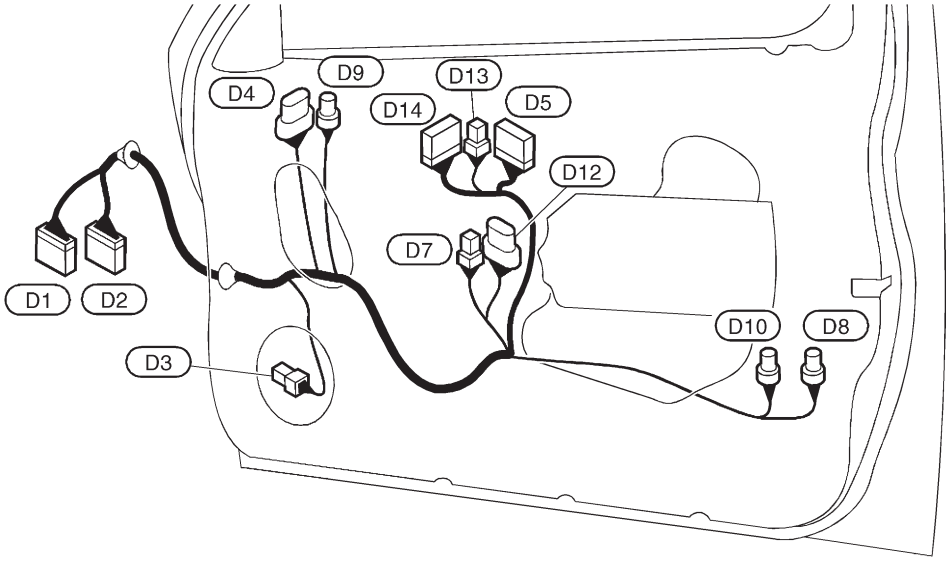
(D31) W/20 : To (M49)
(D32) W/6 : To (M50) (With power window)
(D33) BR/2 : Front speaker
(D34) GY/5 : Door mirror actuator (With power door mirror except for the Middle East)
(D35) W/8 : Power window sub-switch (With power window)
(D37) B/2 : Power window regulator (With power window)
(D38) GY/4 : Door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



HEL816A

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)
(D10) GY/4 : Door lock actuator (With multi-remote control system)
(D12) GY/6 : Power window regulator (With power window for Europe)
(D13) W/3 : Power window main switch (With power window for Europe)
(D14) GY/12 : Door mirror remote control switch (With power window)



HEL817A

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, M	HA	Manual Air Conditioner
A/C, A	HA	Auto Air Conditioner
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
CHARGE	EL	Charging System
CHIME	EL	Warning Chime
CHOKE	EC	Automatic Choke
CIGAR	EL	Cigarette Lighter
CLOCK	EL	Clock
CMPS	EC	Camshaft Position Sensor
COOL/F	LC	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
ECTS	EC	Engine Coolant Temperature Sensor
EGRC/V	EC	EGRC — Solenoid Valve
ENGSS	AT	Engine Speed Signal
FCUT	EC	Fuel Cut Solenoid Valve
F/HEAT	EC	Fuel Heater System
FICD	EC	IACV-FICD Solenoid Valve
FIPOT	EC	ISC-FI Pot
FPCM	EC	Fuel Pump Control Module
F/PUMP	EC	Fuel Pump
GLOW	EC	Quick-glow System
H/AIM	EL	Headlamp Aiming Control
HEATER	HA	Heater
H/LAMP	EL	Headlamp
HLC	EL	Headlamp Washer
HO2S	EC	Heated Oxygen Sensor
HORN	EL	Horn
H/SEAT	EL	Heated Seat

Code	Section	Wiring Diagram Name
IGN	EC	Ignition System
IGN/SG	EC	Ignition Signal
ILL	EL	Illumination
INJECT	EC	Injector
INT/L	EL	Spot Lamp
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 Connector For CONSULT
MIRROR	EL	Power Door Mirror
MULTI	EL	Multi-remote Control System
NATS	EL	Nissan Anti-theft System
NONDTC	AT	Non-detectable Items
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
PNP/SW	EC	Park/Neutral Position Switch
POWER	EL	Power Supply Routing
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
TAIL/L	EL	Parking, License and Tail Lamps
TCV	AT	Torque Converter Clutch Solenoid Valve

Code	Section	Wiring Diagram Name
TPS	EC, AT	Throttle Position Sensor
TURN	EL	Turn Signal and Hazard Warning Lamps
VSS	EC	Vehicle Speed Sensor
VSSAT	AT	Vehicle Speed Sensor A/T (Revolution Sensor)

Code	Section	Wiring Diagram Name
VSSMTR	AT	Vehicle Speed Sensor Meter
WARN	EL	Warning Lamps
WINDOW	EL	Power Window
WIPER	EL	Front Wiper and Washer