ELECTRICAL SYSTEM

SECTION EL

CONTENTS

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CONTENTS (Cont'd)

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

NGEL0001

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER” used along with a seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. The Supplemental Restraint System consists of driver air bag module (located in the center of the steering wheel), front passenger air bag module (located on the instrument panel on passenger side), seat belt pre-tensioners, a diagnosis sensor unit, warning lamp, wiring harness and spiral cable.
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 should be performed by an authorized NISSAN dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the RS section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harness connectors.**

Wiring Diagrams and Trouble Diagnosis

NGEL0002

When you read wiring diagrams, refer to the following:

- ***GI-10***, “HOW TO READ WIRING DIAGRAMS”
- EL-10, “POWER SUPPLY ROUTING” for power distribution circuit.

When you perform trouble diagnosis, refer to the following:

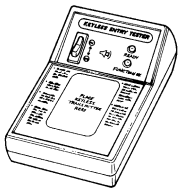
- ***GI-33***, “How to Follow Test Groups in Trouble Diagnoses”.
- ***GI-22***, “HOW TO PERFORM EFFICIENT DIAGNOSIS FOR AN ELECTRICAL INCIDENT”.

Check for any Service bulletins before servicing the vehicle.

Special Service Tools

NGEL0217

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
(J-43241) Remote keyless entry tester	 LEL946A Used to test keyfobs

*: Special tool or commercial equivalent

Description

NGEL0003

HARNESS CONNECTOR (TAB-LOCKING TYPE)

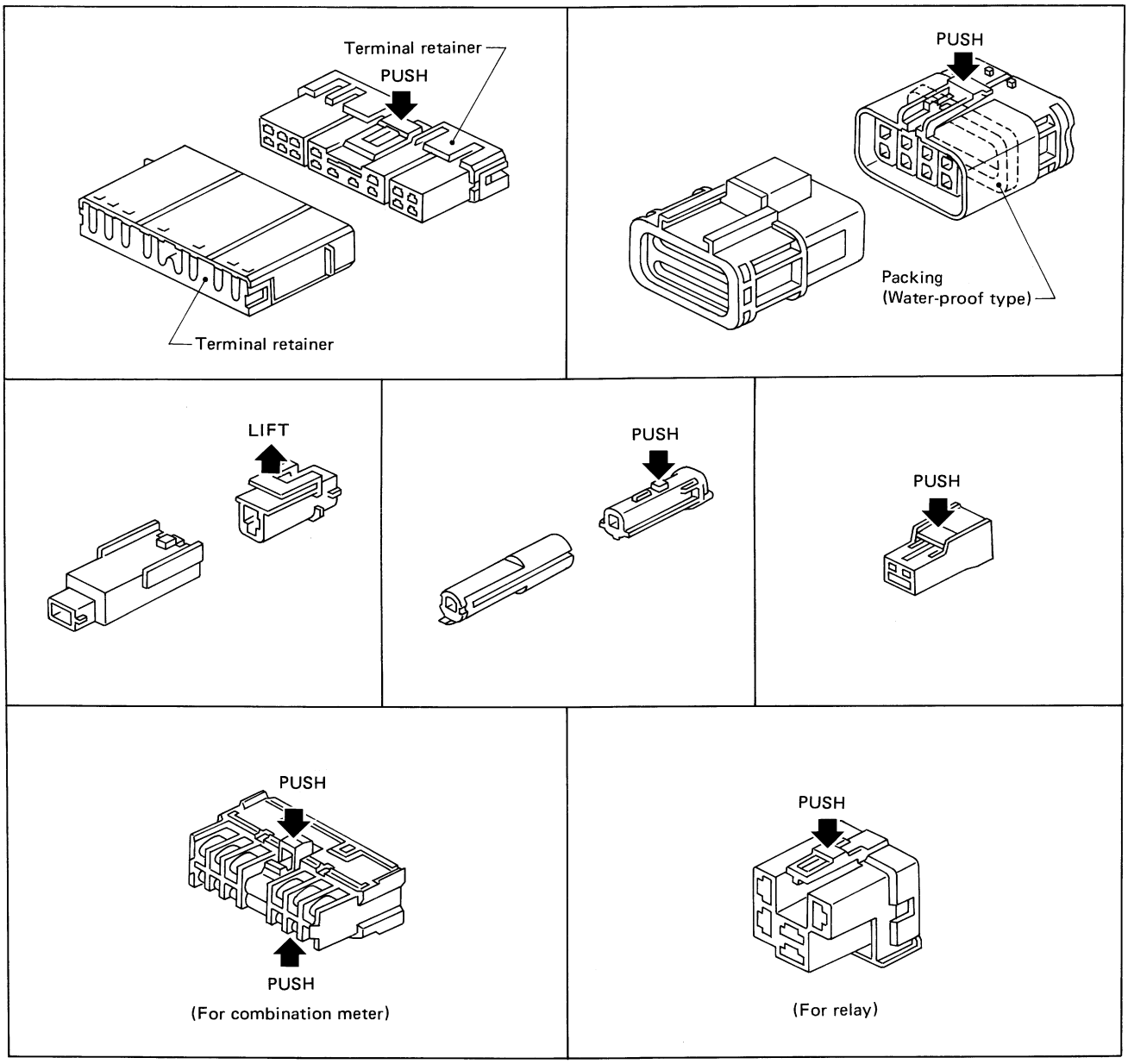
NGEL0003S01

- The tab-locking type connectors help prevent accidental looseness or disconnection.
- The tab-locking type connectors are disconnected by pushing or lifting the locking tab(s). Refer to the illustration below.
  Refer to EL-7 for description of the slide-locking type connector.

CAUTION:

Do not pull the harness when disconnecting the connector.

[Example]



SEL769D

HARNESS CONNECTOR (SLIDE-LOCKING TYPE)

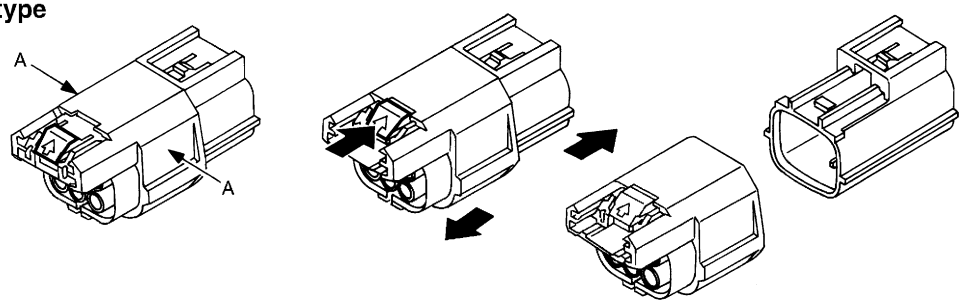
=NGEL0003S02

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

CAUTION:

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

Waterproof type

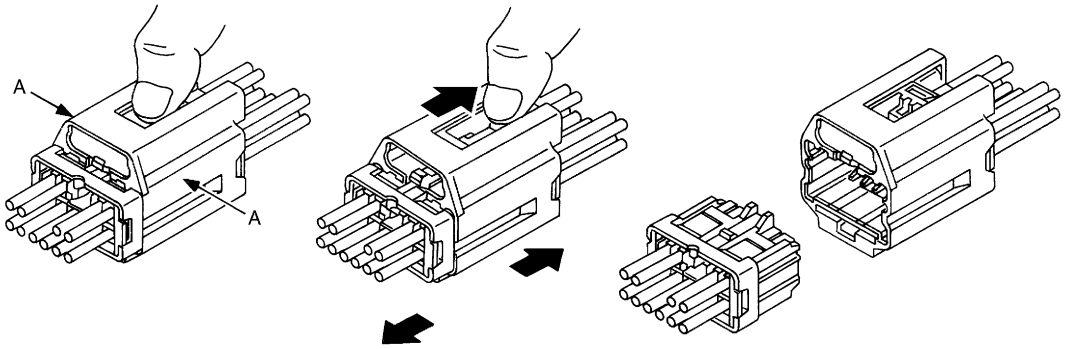


① Firmly grasp shell of connector housing at A.

② Push slider until connector pops or snaps apart.

③ Disconnect harness connector.

Non-waterproof type



① Firmly grasp shell of connector housing at A.

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

③ Disconnect harness connector.

AEL299C

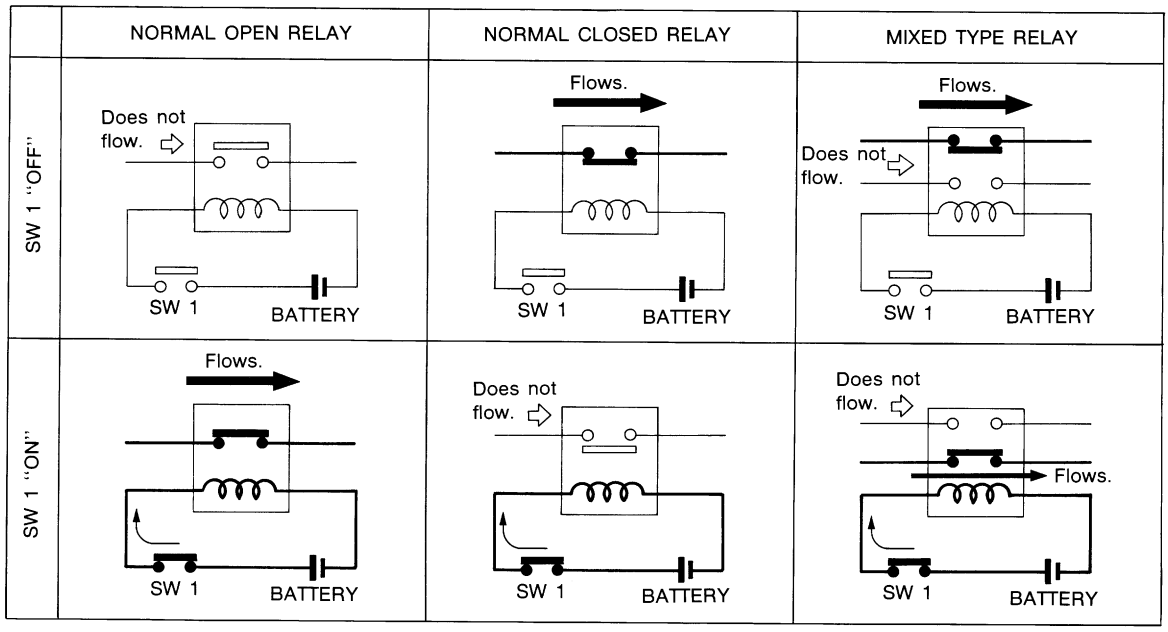
Description

NGEL0004

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

NGEL0004S01

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

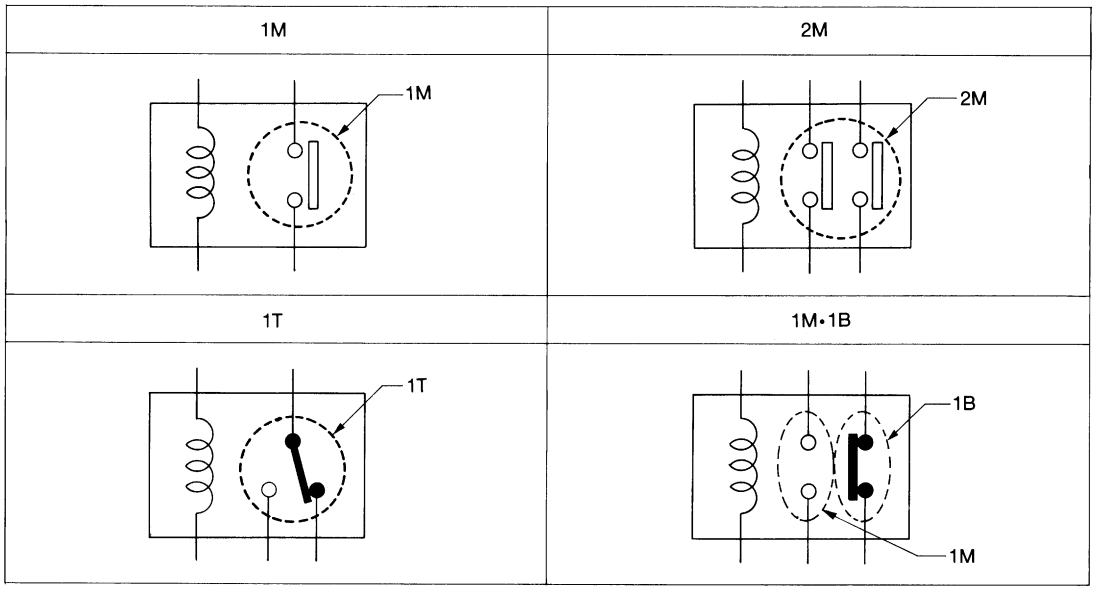


SEL881H

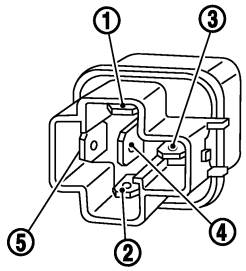
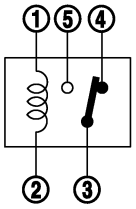
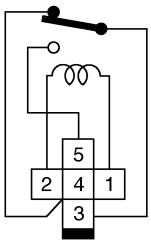
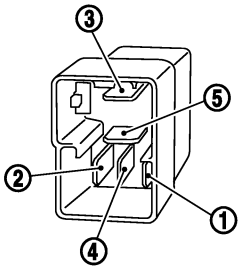
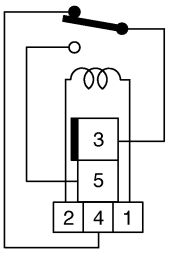
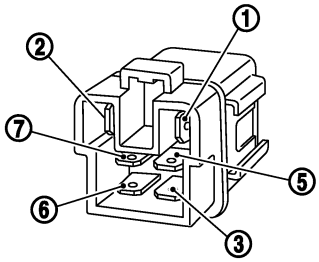
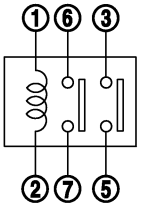
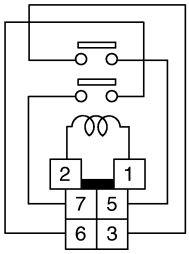
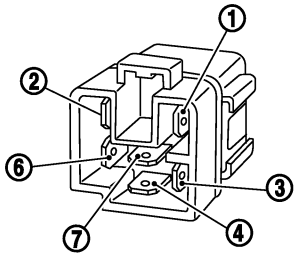
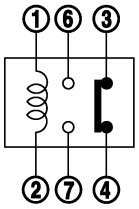
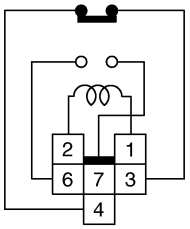
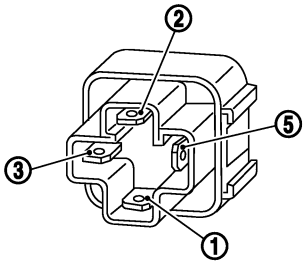
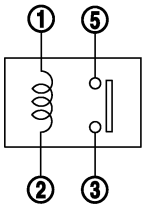
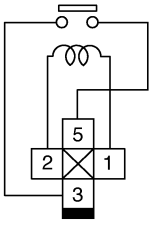
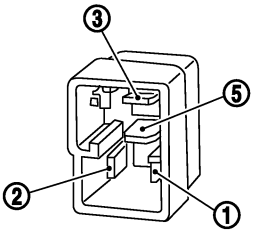
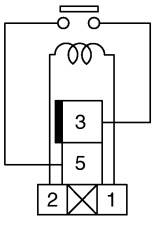
TYPE OF STANDARDIZED RELAYS

NGEL0004S02

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



SEL882H

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

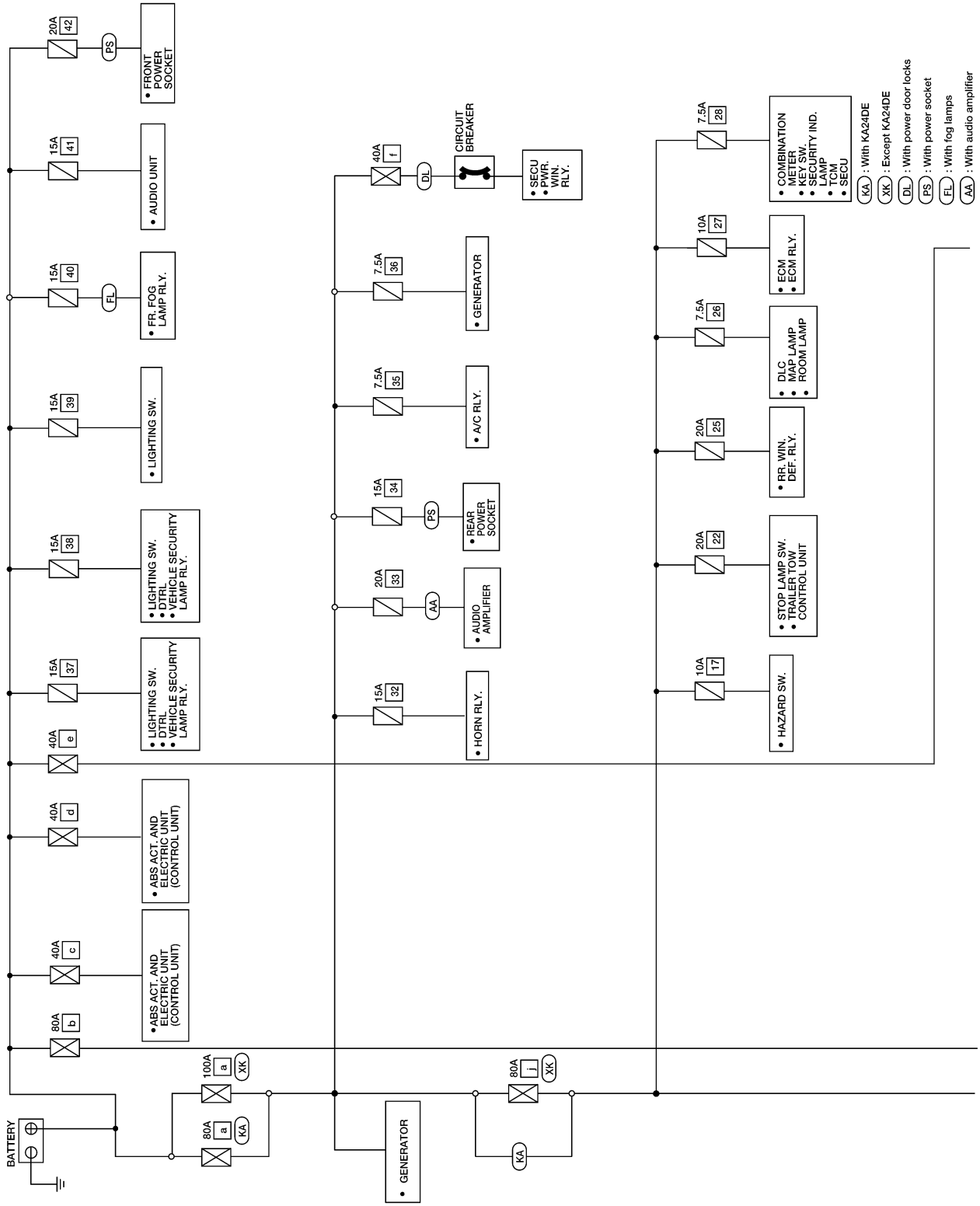
The arrangement of terminal numbers on the actual relays may differ from those shown above.

GEL264

Circuit Diagram

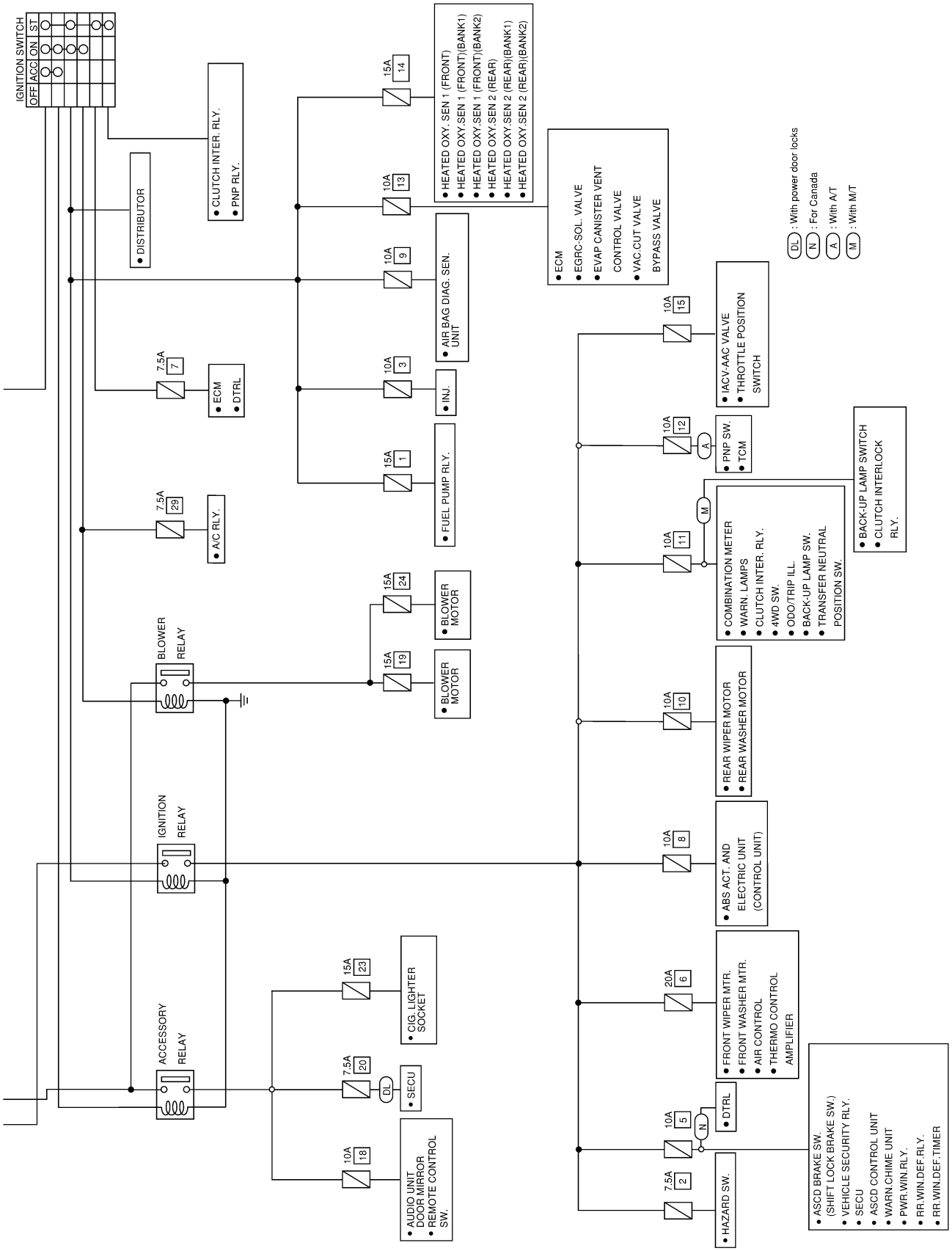
NGEL0005

NOTE:
For detailed ground distribution information, refer to “Ground Distribution”, EL-18.



WEL812A

Circuit Diagram (Cont'd)



WEL108B

Wiring Diagram — POWER —

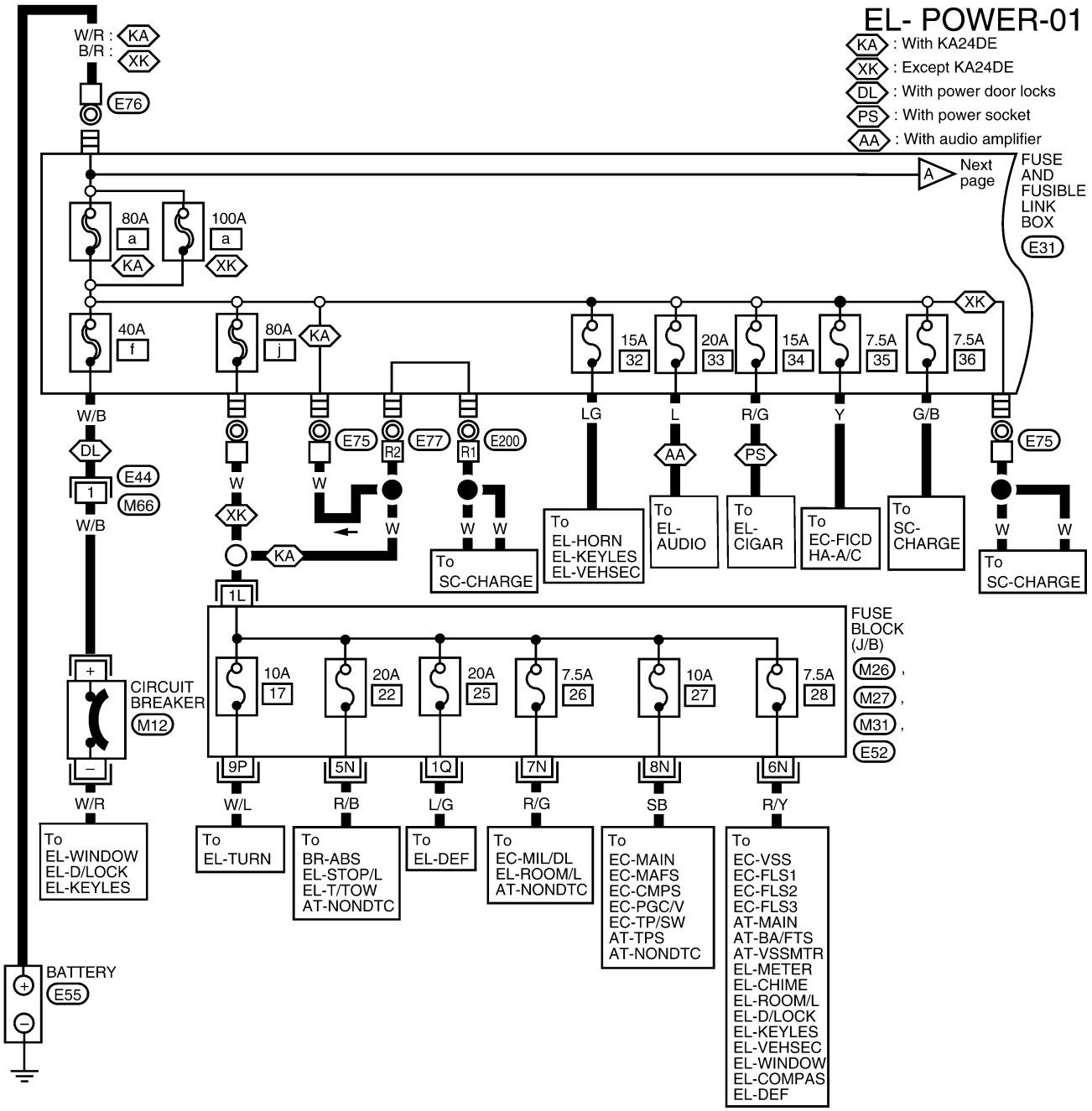
=NGEL0006

BATTERY POWER SUPPLY — IGNITION SW. IN ANY POSITION

NGEL0006S01

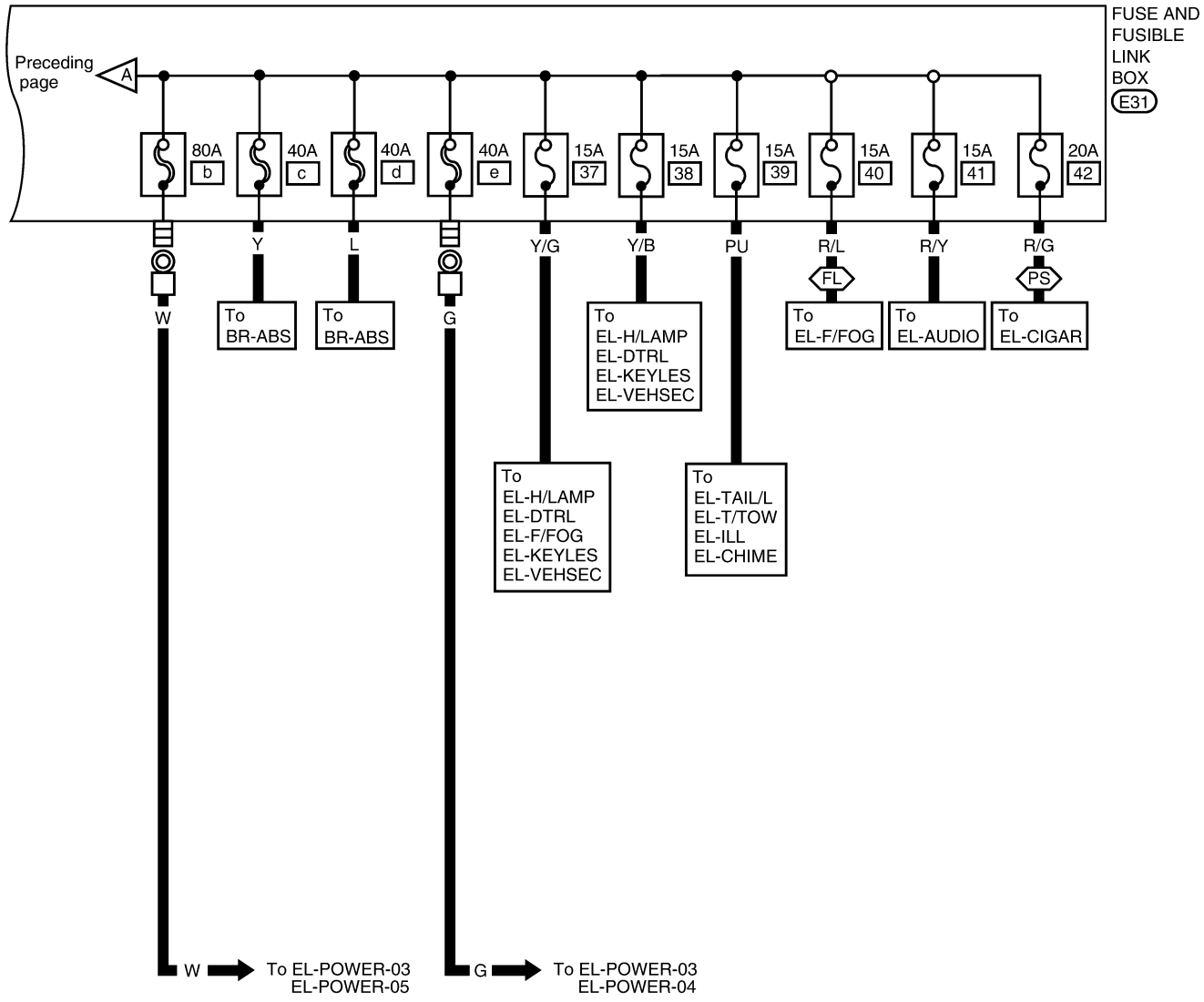
NOTE:

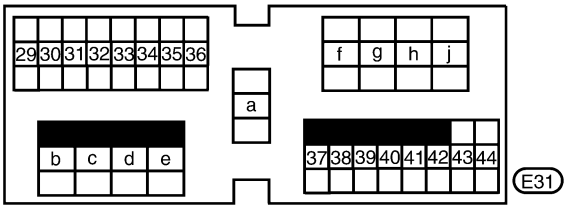
For detailed ground distribution information, refer to “Ground Distribution”, EL-18.



EL-POWER-02

PS : With power socket
FL : With fog lamps





WEL808A

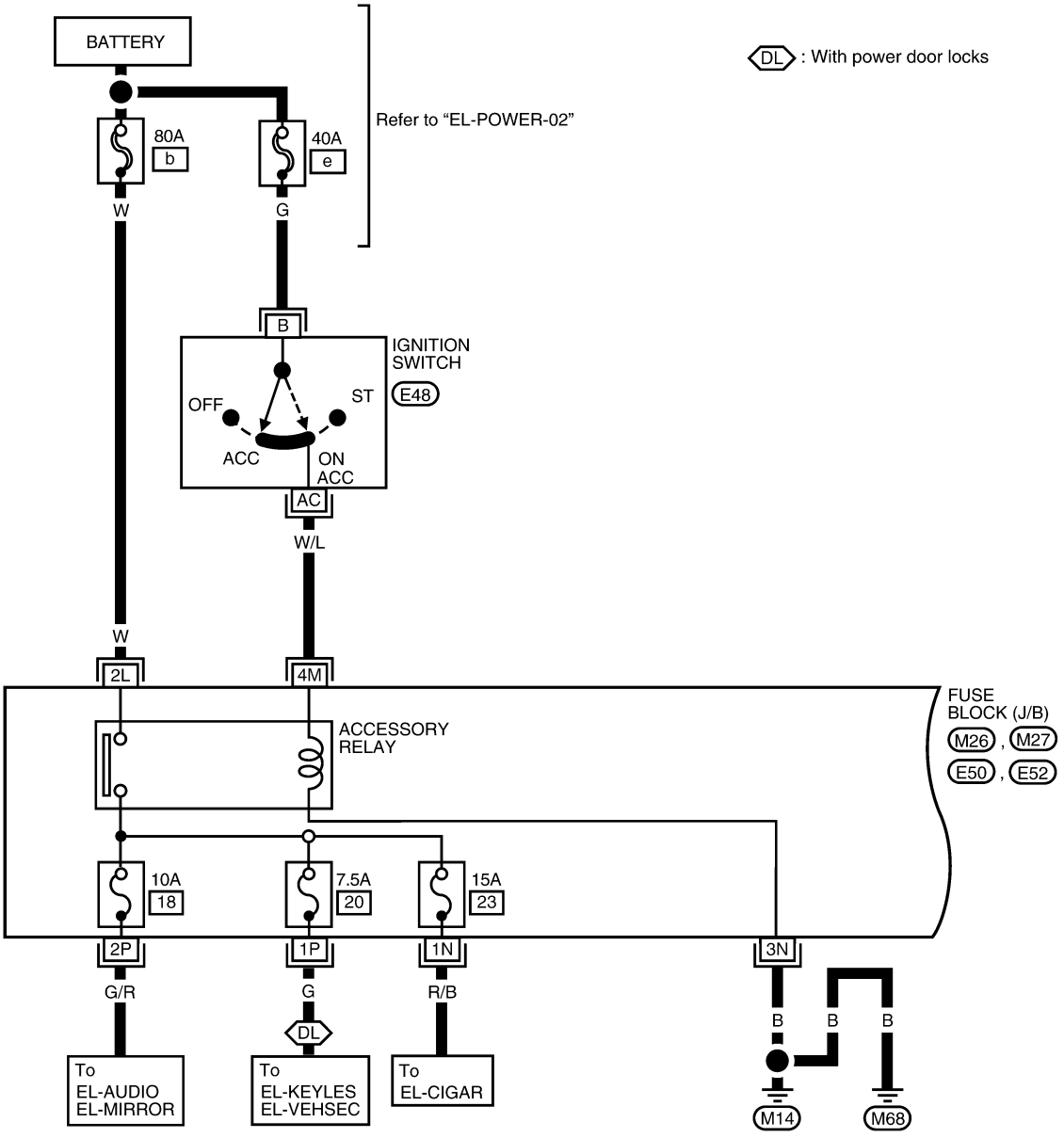
ACCESSORY POWER SUPPLY — IGNITION SW. IN ACC OR ON

=NGEL0006S02

NOTE:

For detailed ground distribution information, refer to "Ground Distribution", EL-18.

EL-POWER-03



Refer to the following.

M26 , M27 , E50 , E52

1	6	11	16	21	25
2	7	12	17	22	26
3	8	13	18	23	27
4	9	14	19	24	
5	10	15	20		28

-FUSE BLOCK - JUNCTION BOX (J/B)

WEL809A

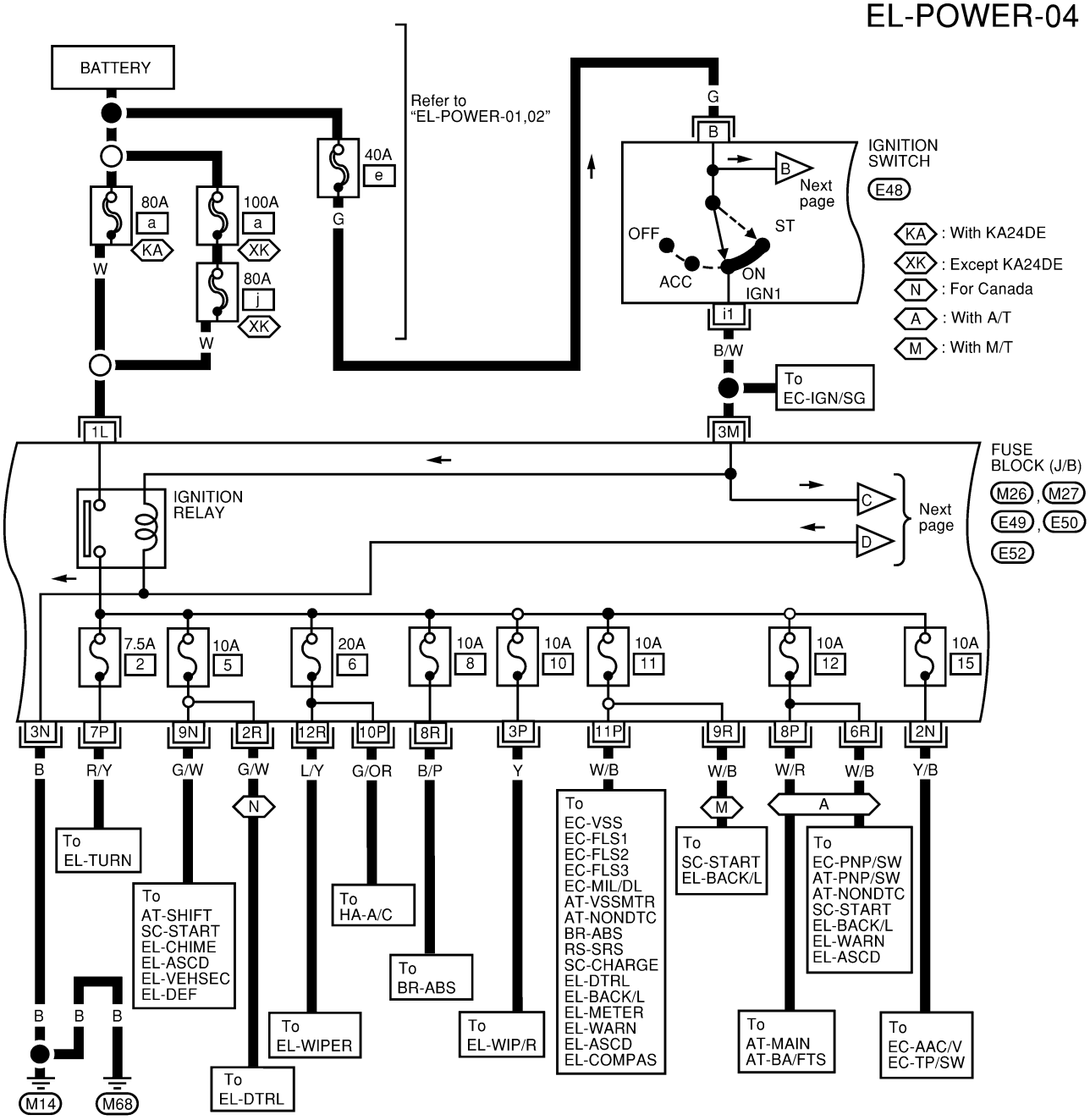
IGNITION POWER SUPPLY — IGNITION SW. IN ON AND/OR START

=NGEL0006S03

NOTE:

For detailed ground distribution information, refer to "Ground Distribution", EL-18.

EL-POWER-04



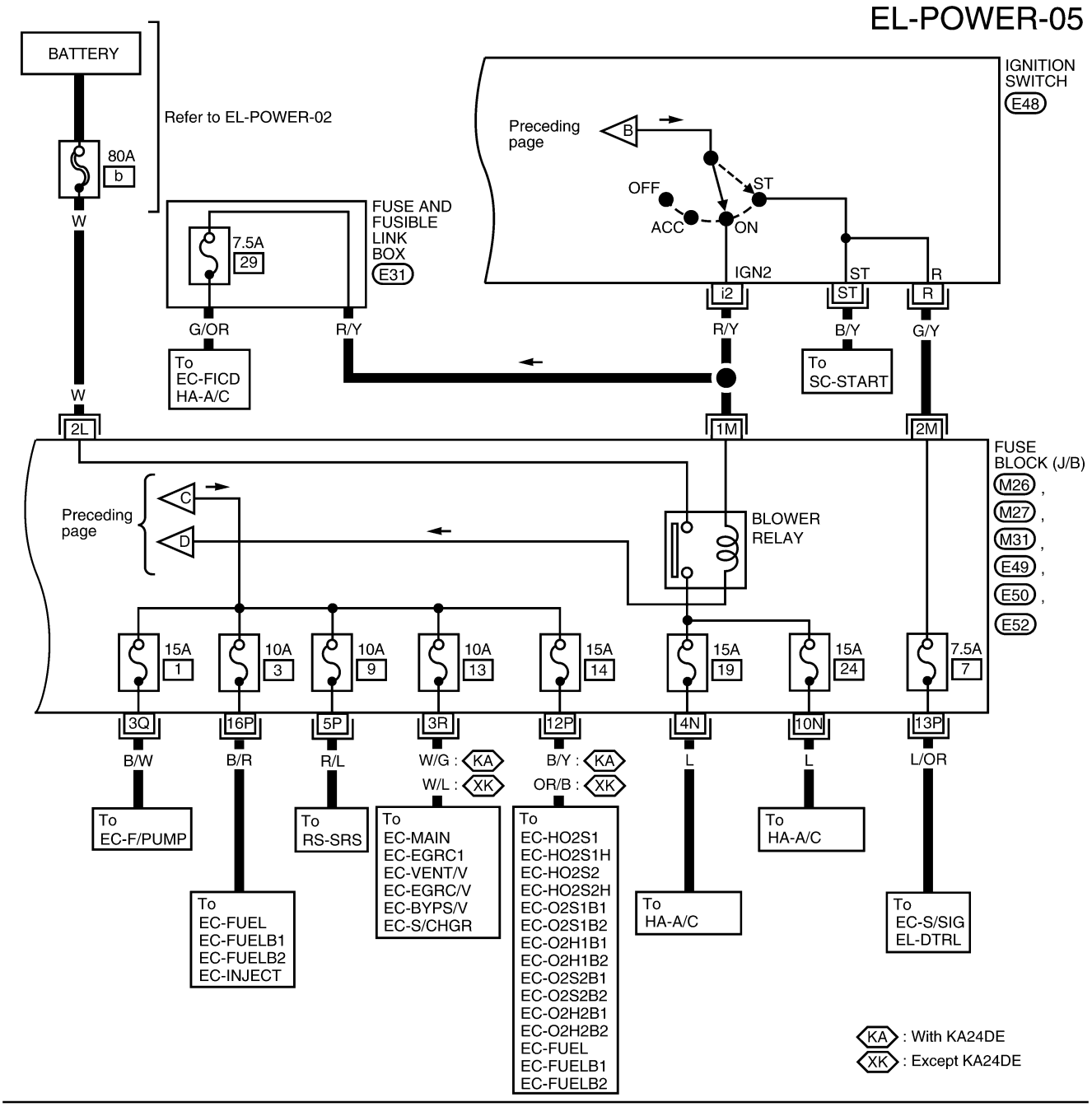
Refer to the following.

M26, M27, E49, E50, E52

1	6	11	16	21	25
2	7	12	17	22	26
3	8	13	18	23	27
4	9	14	19	24	
5	10	15	20		28

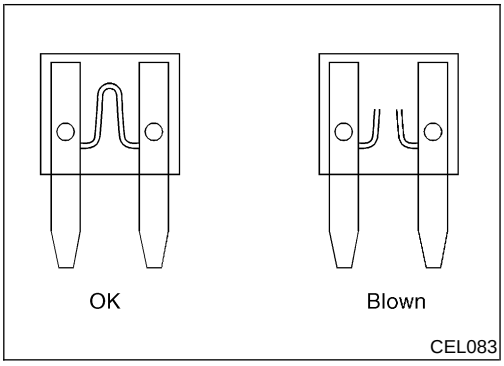
-FUSE BLOCK - JUNCTION BOX (J/B)

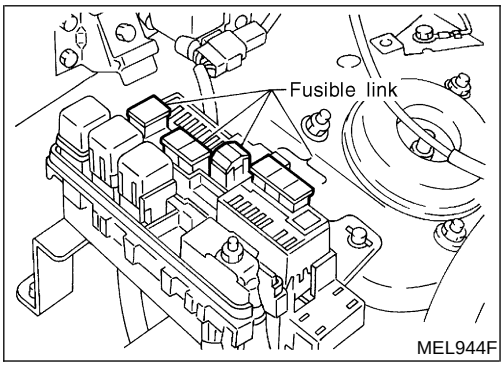
WEL109B



1	6	11	16	21	25
2	7	12	17	22	26
3	8	13	18	23	27
4	9	14	19	24	
5	10	15	20		28

WEL811A





Inspection

NGEL0007

FUSE

NGEL0007S01

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

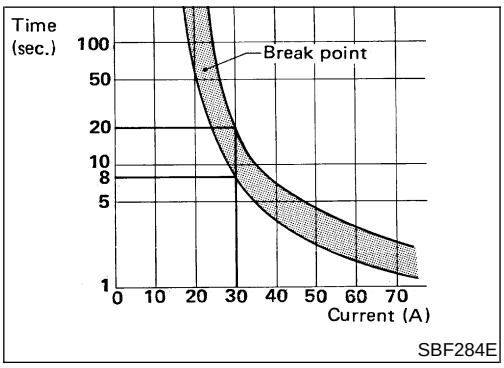
FUSIBLE LINK

NGEL0007S02

A melted fusible link can be detected either by visual inspection or by feeling with fingertip. If its condition is questionable, use circuit tester or test lamp.

CAUTION:

- **If fusible link should melt, it is possible that critical circuit (power supply or large current carrying circuit) is shorted. In such a case, carefully check and eliminate cause of problem.**
- **Never wrap outside of fusible link with vinyl tape. Important: Never let fusible link touch any other wiring harness, vinyl or rubber parts.**



CIRCUIT BREAKER

NGEL0007S03

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

Circuit breakers are used in the following systems.

- power window
- power door lock
- remote keyless entry

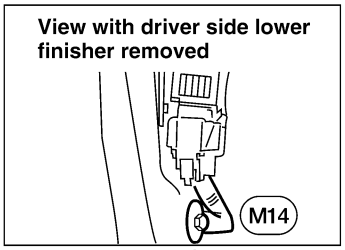
Ground Distribution

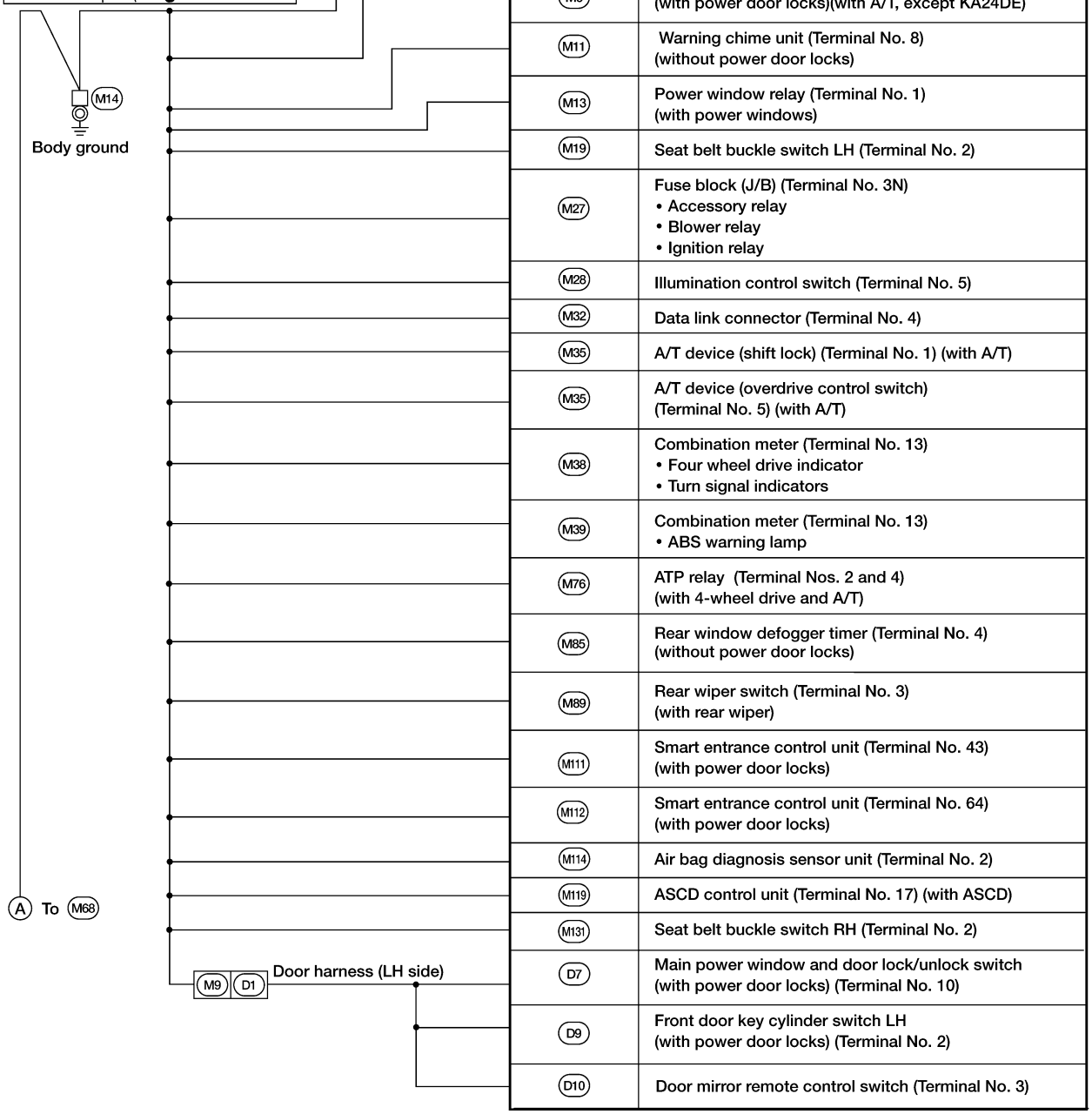
MAIN HARNESS

NGEL0171

NGEL0171S01

Body ground

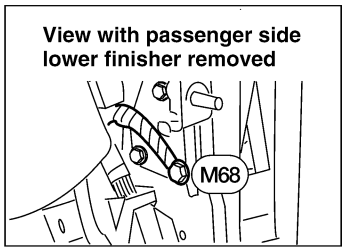


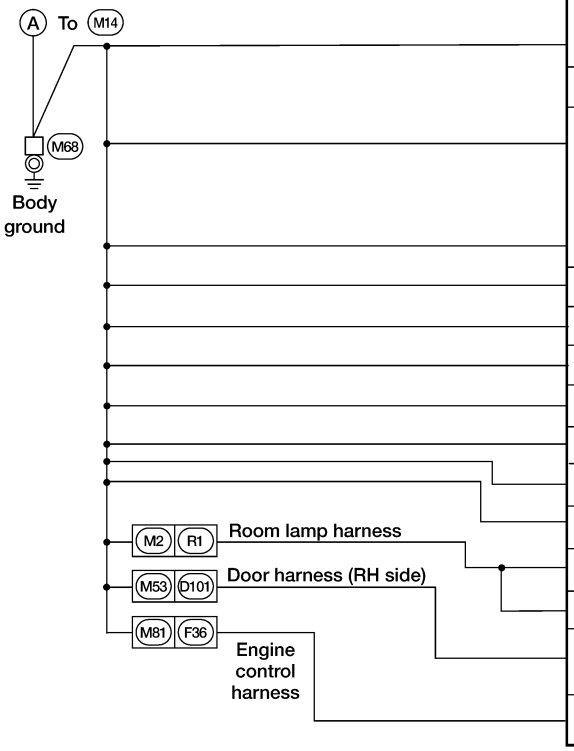


CONNECTOR NUMBER	CONNECT TO
M5	Clutch interlock switch (Terminal No. 2) (with M/T)
M6	Vehicle security relay (Terminal No. 3) (with power door locks)(with A/T, except KA24DE)
M11	Warning chime unit (Terminal No. 8) (without power door locks)
M13	Power window relay (Terminal No. 1) (with power windows)
M19	Seat belt buckle switch LH (Terminal No. 2)
M27	Fuse block (J/B) (Terminal No. 3N) • Accessory relay • Blower relay • Ignition relay
M28	Illumination control switch (Terminal No. 5)
M32	Data link connector (Terminal No. 4)
M35	A/T device (shift lock) (Terminal No. 1) (with A/T)
M35	A/T device (overdrive control switch) (Terminal No. 5) (with A/T)
M38	Combination meter (Terminal No. 13) • Four wheel drive indicator • Turn signal indicators
M39	Combination meter (Terminal No. 13) • ABS warning lamp
M76	ATP relay (Terminal Nos. 2 and 4) (with 4-wheel drive and A/T)
M85	Rear window defogger timer (Terminal No. 4) (without power door locks)
M89	Rear wiper switch (Terminal No. 3) (with rear wiper)
M111	Smart entrance control unit (Terminal No. 43) (with power door locks)
M112	Smart entrance control unit (Terminal No. 64) (with power door locks)
M114	Air bag diagnosis sensor unit (Terminal No. 2)
M119	ASCD control unit (Terminal No. 17) (with ASCD)
M131	Seat belt buckle switch RH (Terminal No. 2)
D7	Main power window and door lock/unlock switch (with power door locks) (Terminal No. 10)
D9	Front door key cylinder switch LH (with power door locks) (Terminal No. 2)
D10	Door mirror remote control switch (Terminal No. 3)

WEL818A

Body ground





CONNECTOR NUMBER	CONNECT TO
M38	Combination meter (high beam indicator) (Terminal No. 10)
M39	Combination meter (Terminal No. 33) • Air bag warning lamp • Fuel gauge • Speedometer • Tachometer • Water temperature gauge
M45	Combination flasher unit
M52	Cigarette lighter socket
M54	Power socket (with power socket)
M57	Fan switch (Terminal No. 6)
M95	Air control (Terminal No. 8)
M128	ASCD relay (Terminal No. 2)
M132	Audio amplifier (Terminal Nos. 4 and 11)
R4	Map lamp
R5	Compass and thermometer (Terminal No. 2)
D107	Front door lock and unlock switch RH (Terminal No. 4) (with power door locks)
F29	ECM (Terminal No. 66)

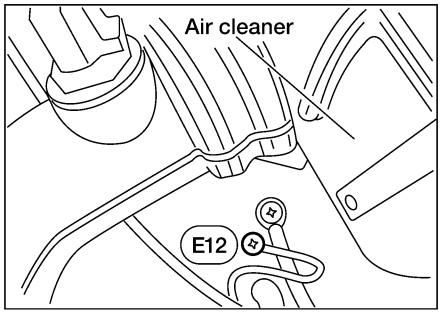
WEL819A

ENGINE ROOM HARNESS
KA24DE

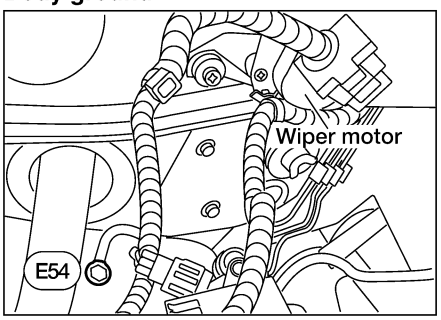
NGEL0171S02

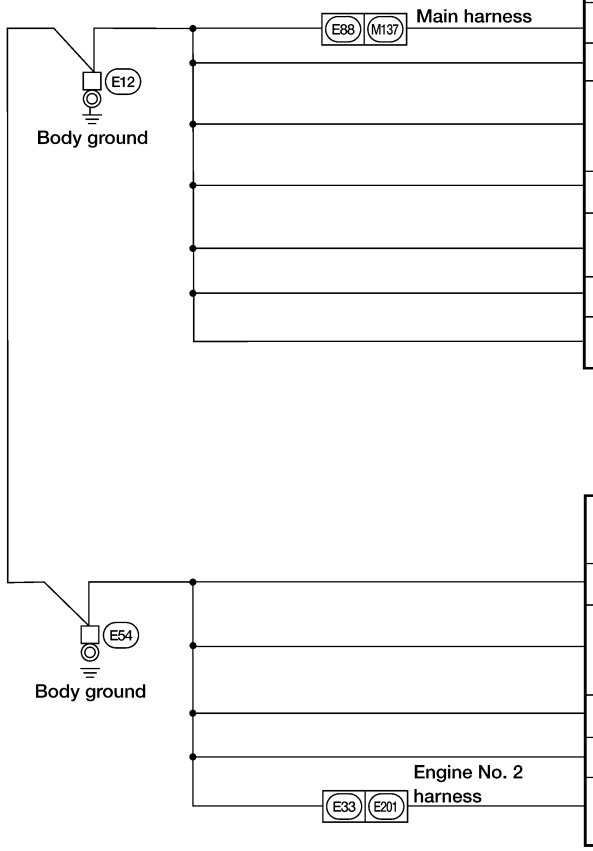
NGEL0171S0201

Body ground



Body ground



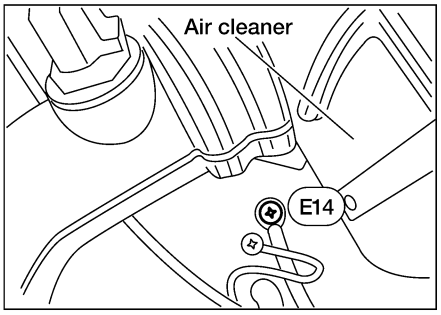


CONNECTOR NUMBER	CONNECT TO
M114	Air bag diagnosis sensor unit (shield wire)
E7	Headlamp LH
E13	Front combination lamp LH (Terminal No. 2) • Parking lamp • Turn signal lamp
E37	Brake fluid level switch (Terminal No. 2)
E39	ABS actuator and electric unit (control unit) (Terminal No. 8)
E46	Front wiper switch (Terminal No. 17)
E87	Side marker lamp LH (Terminal No. 2)

CONNECTOR NUMBER	CONNECT TO
E1	Headlamp RH
E19	Front combination lamp RH (Terminal No. 2) • Parking lamp • Turn signal lamp
E42	Front wiper motor (Terminal No. E)
E86	Side marker lamp RH (Terminal No. 2)
E218	Park neutral position (PNP) switch (Terminal No. 2)

WEL820A

Body ground



CONNECTOR NUMBER	CONNECT TO
E39	ABS actuator and electric unit (control unit) (Terminal No. 24)

E14

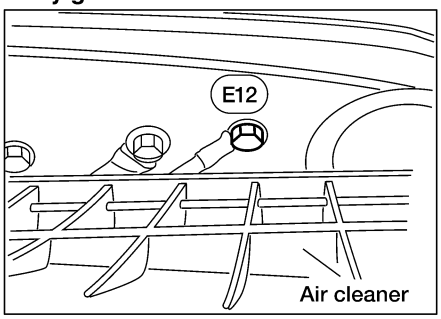
Body ground

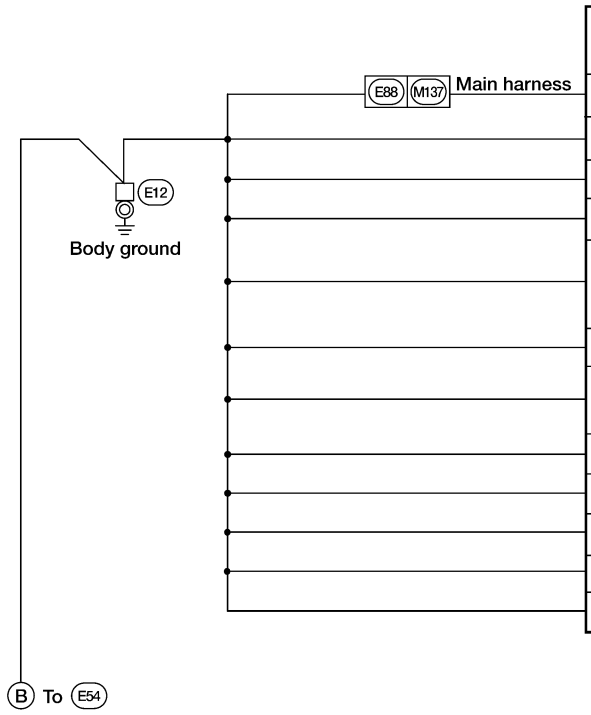
WEL898A

VG33E and VG33ER

NGEL0171S0202

Body ground

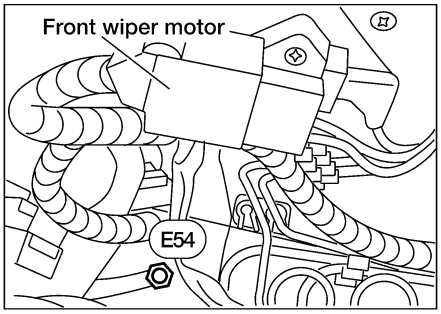




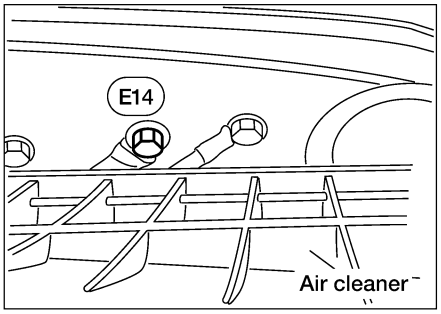
CONNECTOR NUMBER	CONNECT TO
M114	Air bag diagnosis sensor unit (shield wire)
E5	Washer fluid level switch (VG33E and VG33ER)
E7	Headlamp LH
E9	Hood switch (with power door locks)
E13	Front combination lamp LH (Terminal No. 2) • Parking lamp • Turn signal lamp
E37	Brake fluid level switch (Terminal No. 2)
E39	ABS actuator and electric unit (control unit) (Terminal No. 8)
E46	Front wiper switch (Terminal No. 17)
E56	Front fog lamp relay (Terminal No. 1)
E58	Front fog lamp LH (Terminal No. 2) (with fog lamps)
E68	Ambient air temperature switch
E87	Side marker lamp LH (Terminal No. 2)

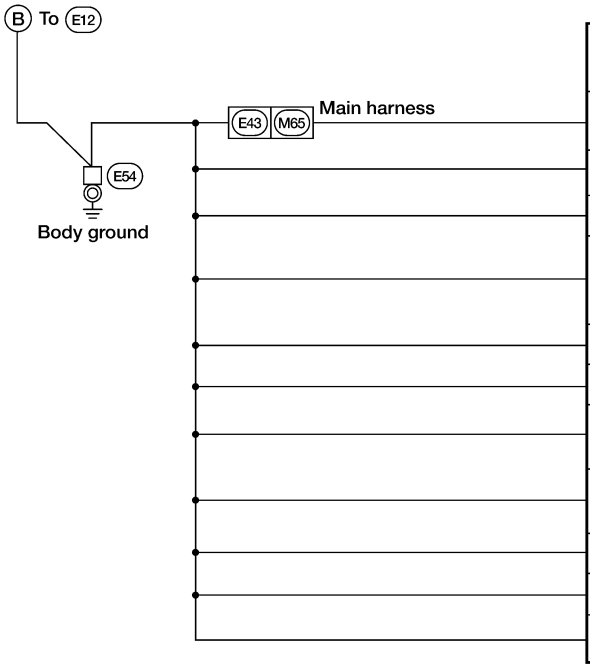
WEL821A

Body ground



Body ground





CONNECTOR NUMBER	CONNECT TO
M6	Vehicle security relay (Terminal No. 4) (with power door locks)
E1	Headlamp RH
E17	Daytime light control unit (Terminal No. 9) (for Canada)
E19	Front combination lamp RH (Terminal No. 2) • Parking lamp • Turn signal lamp
E21	ASCD relay (Terminal No. 2) (with A/T and ASCD)
E22	Vehicle security lamp relay (Terminal No. 2)
E27	Park/neutral position (PNP) relay (Terminal No. 1) (with A/T)
E27	Park/neutral position (PNP) relay (Terminal No. 6) (with A/T)
E42	Front wiper motor (Terminal No. E)
E57	Front fog lamp RH (Terminal No. 2) (with fog lamps)
E86	Side marker lamp RH (Terminal No. 2)

CONNECTOR NUMBER	CONNECT TO
E39	ABS actuator and electric unit (control unit) (Terminal No. 24)

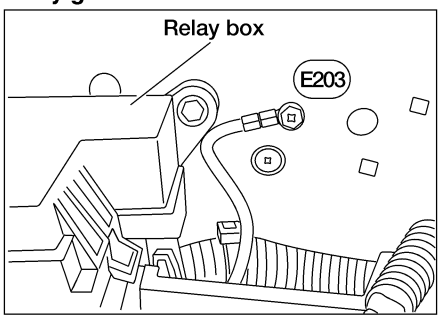
WEL822A

ENGINE NO. 2 HARNESS
KA24DE

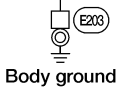
NGEL0171S08

NGEL0171S0801

Body ground



CONNECTOR NUMBER	CONNECT TO
E206	Generator



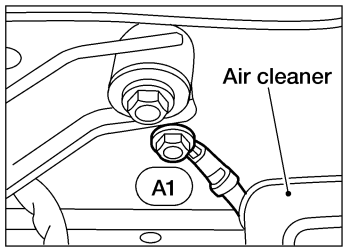
AEL710C

GENERATOR HARNESS
VG33E and VG33ER

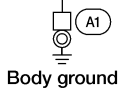
NGEL0171S03

NGEL0171S0301

Body ground



CONNECTOR NUMBER	CONNECT TO
A7	Generator



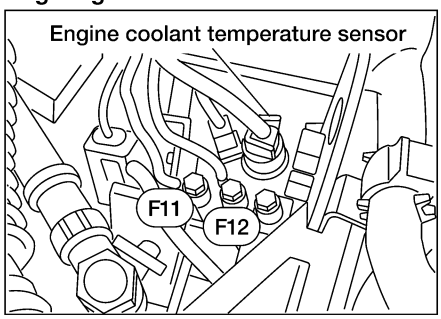
AEL697C

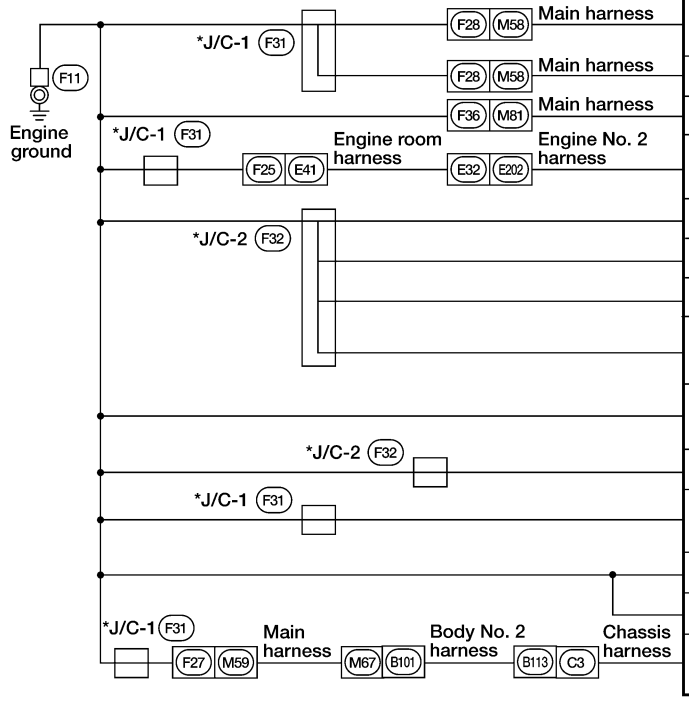
ENGINE CONTROL HARNESS
KA24DE

NGEL0171S04

NGEL0171S0401

Engine ground





CONNECTOR NUMBER	CONNECT TO
M21	Heated oxygen sensor 2 (rear) (Terminal No. 4)
M21	*Heated oxygen sensor 2 (rear)(shield wire)
M32	Data link connector (Terminal No. 5)
E211	Crankshaft position sensor (OBD) (shield wire)
F1	Mass air flow sensor (shield wire)
F2	Knock sensor (shield wire)
F3	Throttle position sensor (shield wire)
F13	Distributor (camshaft position sensor) (shield wire)
F13	Distributor (camshaft position sensor) (Terminal No. 6)
F14	Resistor (ignition coil) (shield wire)
F16	*Heated oxygen sensor 1 (front) (shield wire)
F29	ECM (Terminal No. 25)
F29	ECM (Terminal No. 32)
C4	Evap control system pressure sensor (shield wire)

*Early production

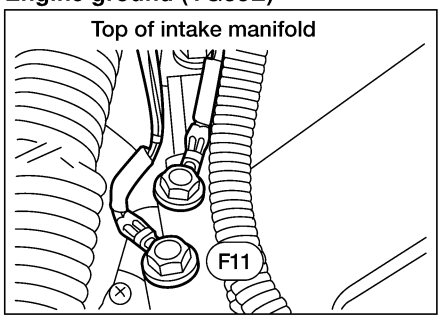
CONNECTOR NUMBER	CONNECT TO
F7	IACV-FICD solenoid valve
F13	Distributor (power transistor) (Terminal No. 2)
F29	ECM (Terminal No. 10)
F29	ECM (Terminal No. 19)
F29	ECM (Terminal No. 116)
F29	ECM (Terminal No. 124)

WEL110B

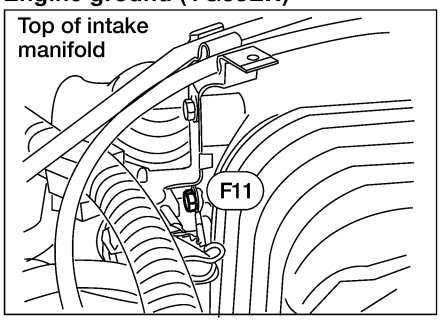
VG33E and VG33ER

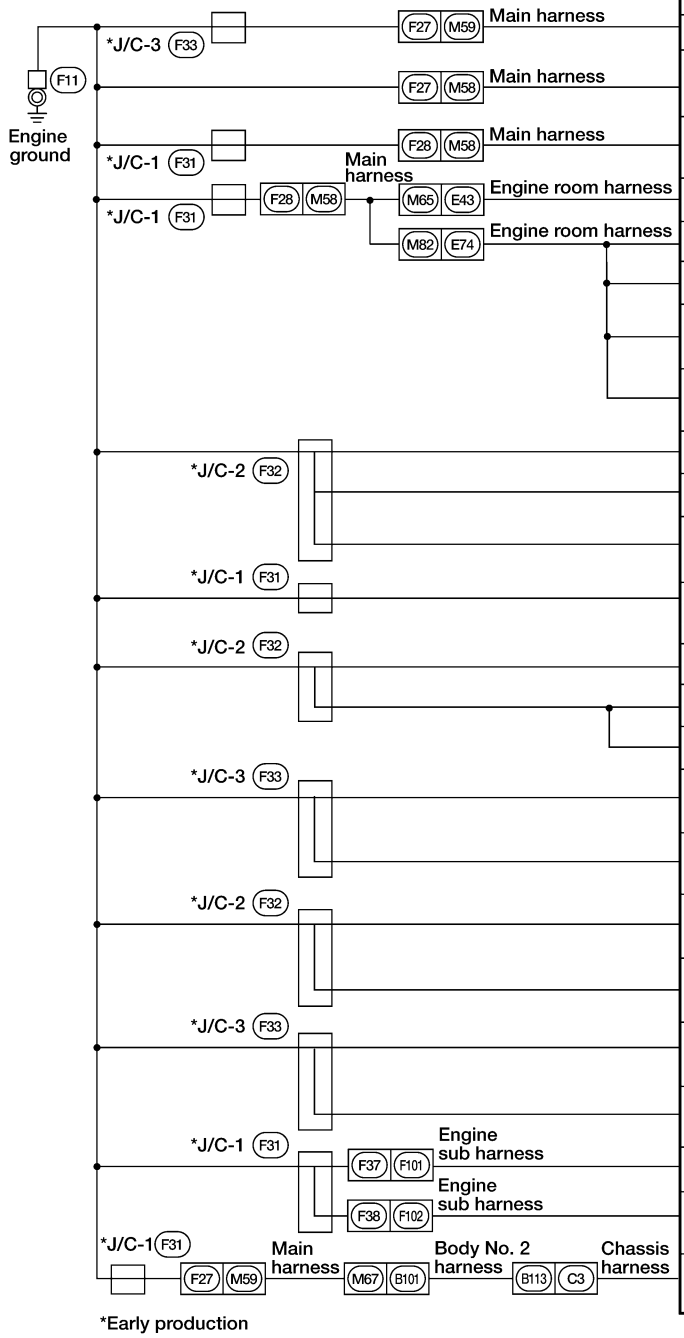
NGEL0171S0402

Engine ground (VG33E)



Engine ground (VG33ER)

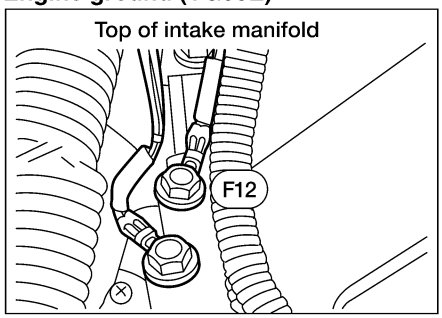




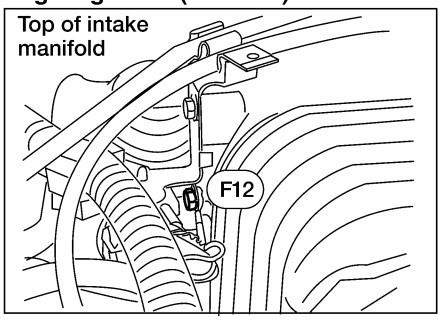
CONNECTOR NUMBER	CONNECT TO
M32	Data link connector (Terminal No. 5)
M77	TCM (transmission control module) (shield wire) (VG33ER with A/T)
M78	TCM (transmission control module) (Terminal Nos. 25, 42 and 48) (with A/T)
E72	A/T fluid temperature sensor (with A/T)
E73	Revolution sensor (with A/T)
E73	Revolution sensor (shield wire) (with A/T)
E83	Turbine revolution sensor (VG33ER with A/T)
E83	Turbine revolution sensor (shield wire) (VG33ER with A/T)
F1	Mass air flow sensor (shield wire)
F3	Throttle position sensor (shield wire)
F13	Distributor (camshaft position sensor) (Terminal No. 6)
F13	Distributor (camshaft position sensor) (shield wire)
F14	Resistor (ignition coil) (shield wire)
F29	ECM (Terminal No. 25)
F29	ECM (Terminal No. 32)
F39	*Heated oxygen sensor 2 (rear) (bank2) (shield wire)
F39	Heated oxygen sensor 2 (rear) (bank2) (Terminal No. 4)
F40	*Heated oxygen sensor 1 (front) (bank2) (shield wire)
F41	*Heated oxygen sensor 1 (front) (bank1) (shield wire)
F42	*Heated oxygen sensor 2 (rear) (bank1) (shield wire)
F42	Heated oxygen sensor 2 (rear) (bank1) (Terminal No. 4)
F109	Knock sensor (shield wire)
F110	Crankshaft position sensor (OBD) (shield wire)
C4	Evap control system pressure sensor (shield wire)

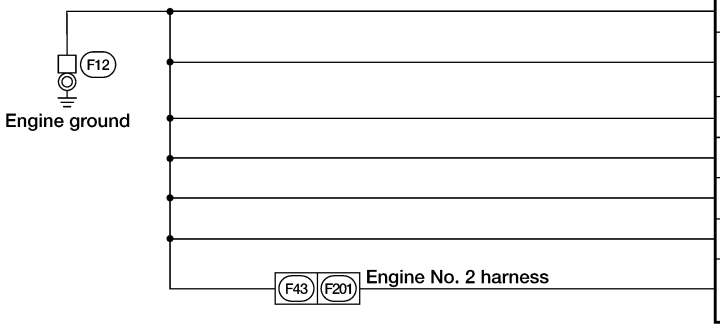
WEL111B

Engine ground (VG33E)



Engine ground (VG33ER)





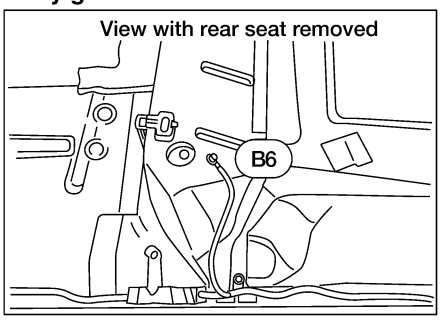
CONNECTOR NUMBER	CONNECT TO
F8	Power steering oil pressure switch
F13	Distributor (power transistor) (Terminal No. 2)
F29	ECM (Terminal No. 10)
F29	ECM (Terminal No. 19)
F29	ECM (Terminal No. 116)
F29	ECM (Terminal No. 124)
F218	Park/neutral position (PNP) switch (with M/T)

WEL825A

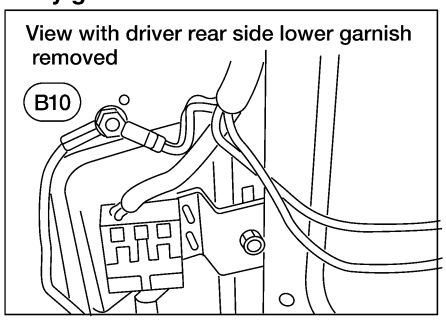
BODY HARNESS

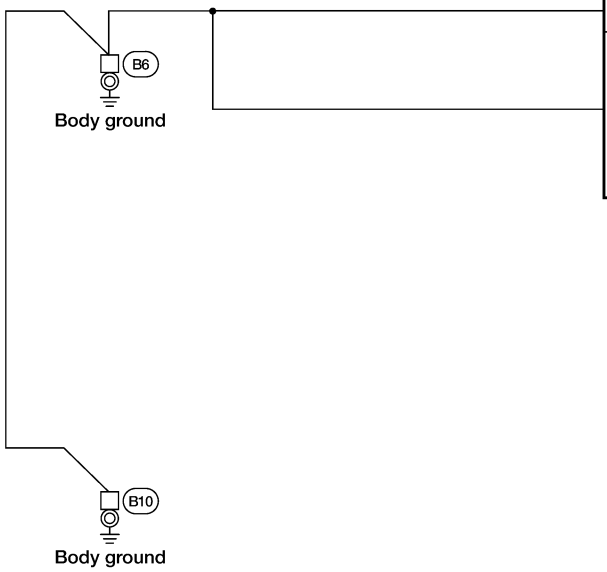
NGEL0171S05

Body ground



Body ground





CONNECTOR NUMBER	CONNECT TO
B4	Front door switch LH (Terminal No. 3)
B9	Rear combination lamp LH (Terminal No. 2) • Backup lamp • Stop lamp • Tail lamp • Turn signal lamp

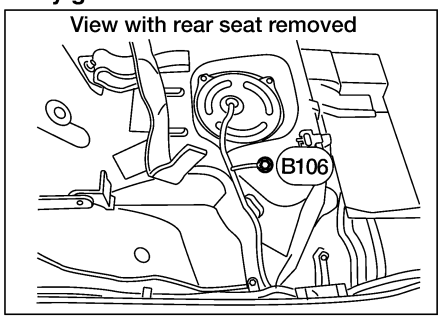
LEL734

BODY NO. 2 HARNESS

NGEL0171S06

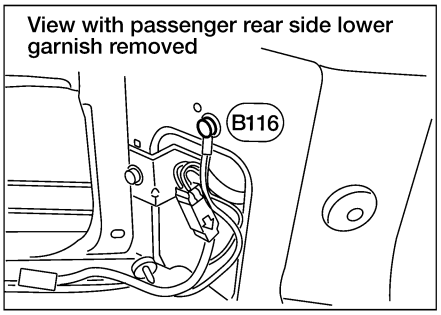
Body ground

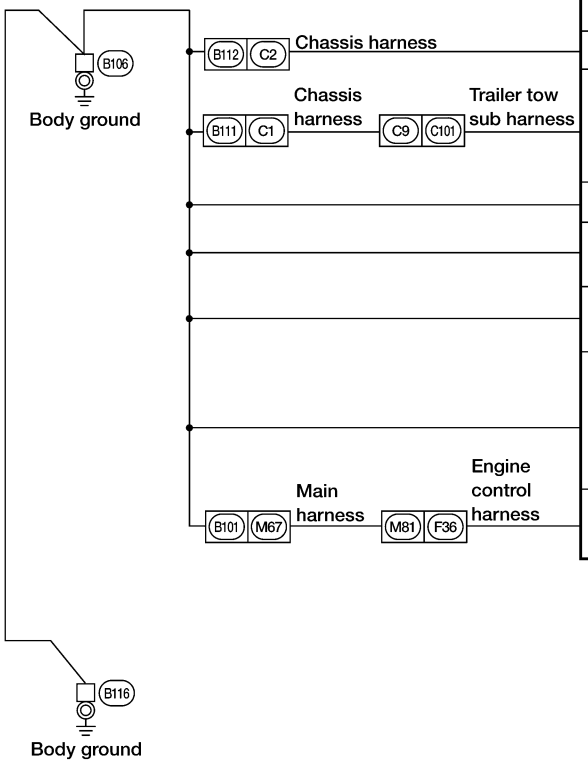
View with rear seat removed



Body ground

View with passenger rear side lower garnish removed





CONNECTOR NUMBER	CONNECT TO
C8	License plate lamp
C102	Trailer (Terminal No. 1) (with trailer tow) • Stop/turn LH lamp • Stop/turn RH lamp • Tail lamp
B107	Fuel pump
B108	Fuel level sensor unit (Terminal No. 4)
B114	Trailer tow control unit (Terminal No. 7) (with trailer tow)
B115	Rear combination lamp RH (Terminal No. 2) • Back up lamp • Stop lamp • Tail lamp • Turn signal lamp
F29	ECM (Terminal No. 66) (KA24DE)

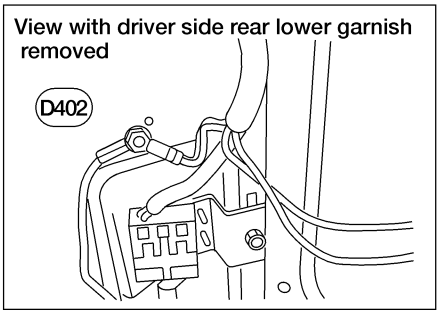
WEL826A

BACK DOOR NO. 2 HARNESS

NGEL0171S07

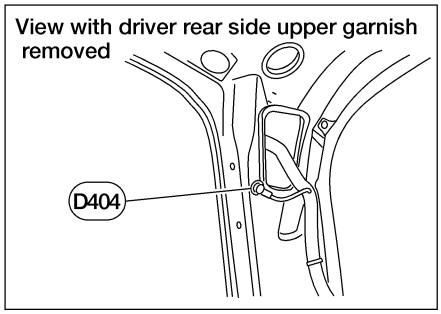
Body ground

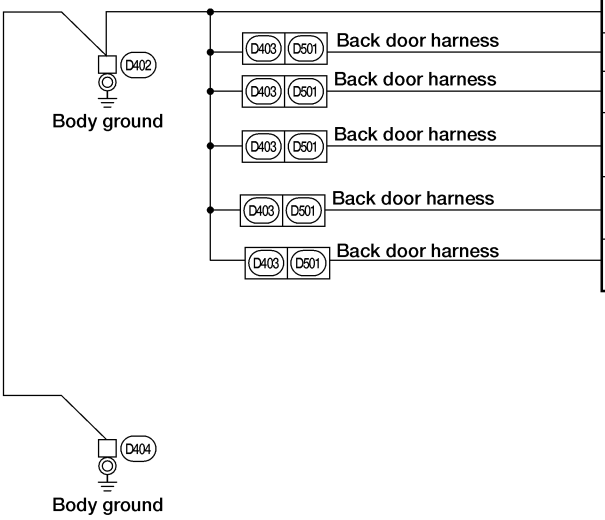
View with driver side rear lower garnish removed



Body ground

View with driver rear side upper garnish removed



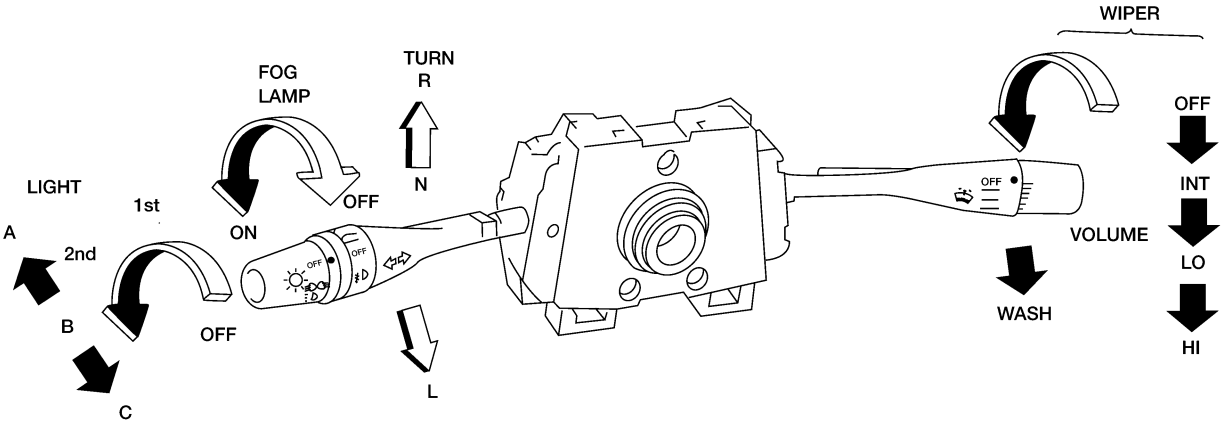


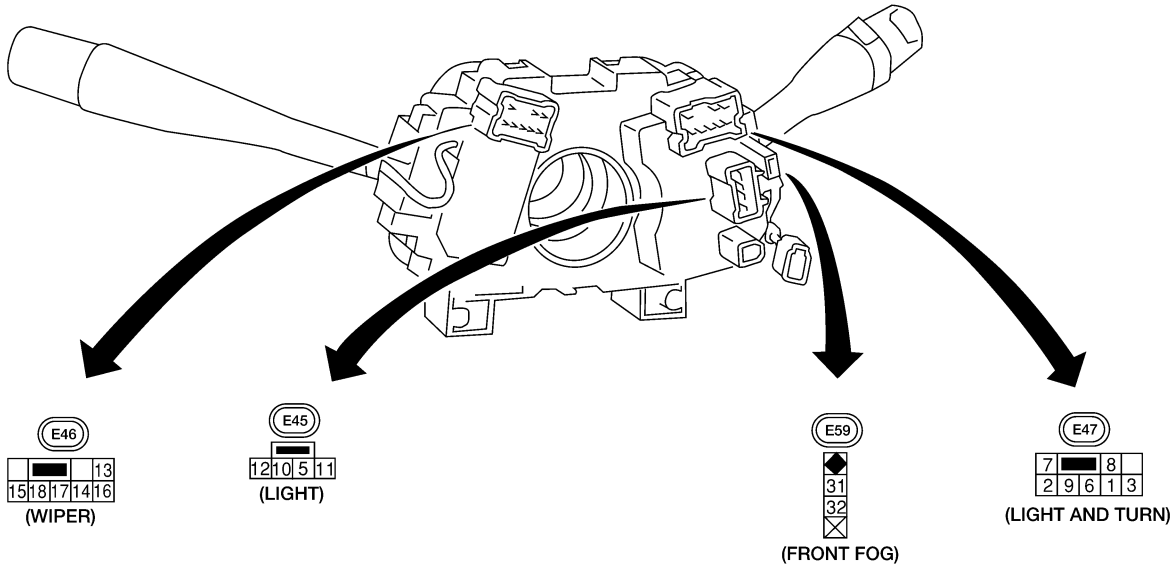
CONNECTOR NUMBER	CONNECT TO
D405	Rear power socket (with power socket)
D503	High mounted stop lamp
D504	Back door switch
D505	Rear wiper motor (Terminal No. E) (with intermittent wipers)
D506	Back door key cylinder switch (Terminal No. 2) (with power door locks)
D507	Rear window defogger

LEL736

Check

NGEL0009





FRONT WIPER AND WASHER SWITCH
(WITH INTERMITTENT OPERATION)

	LO	AUTO STOP	AMP	WASH	HI	EARTH
OFF	○	○				
INT	○	○	○			○
LO	○					○
HI					○	○
WASH				○		○

VARIABLE INTERMITTENT WIPER VOLUME

WIPER AMP.

14 15 13 16 17 18

LIGHTING SWITCH

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

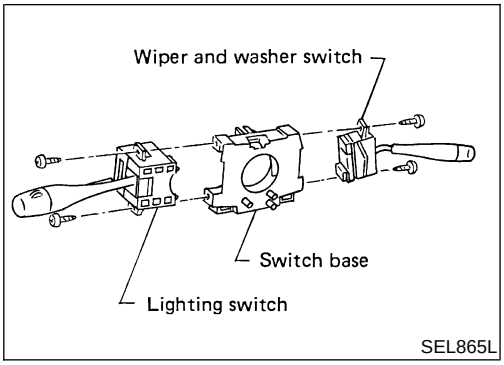
TURN SIGNAL LAMP SWITCH

	R	N	L
1	○		○
2	○		
3			○

FRONT FOG LAMP SWITCH

	OFF	ON
31		○
32		○

WEL112B

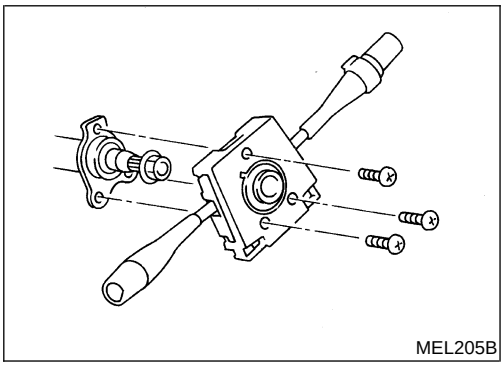


Replacement

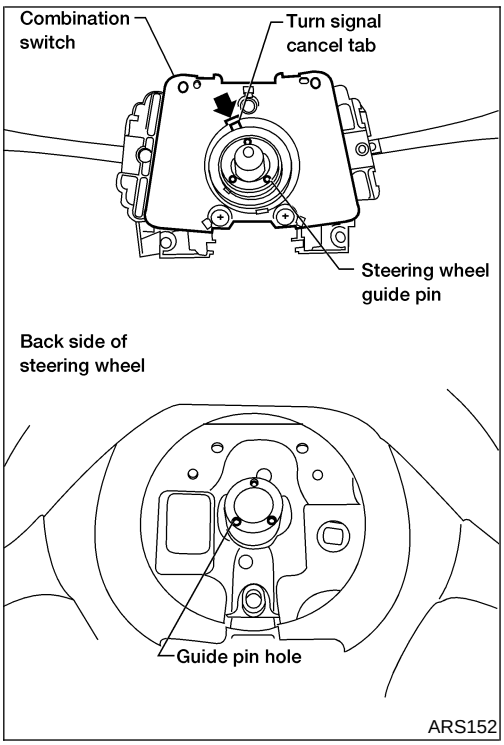
NGEL0010

For removal and installation of spiral cable, refer to *RS-16*, "Driver Air Bag Module and Spiral Cable".

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



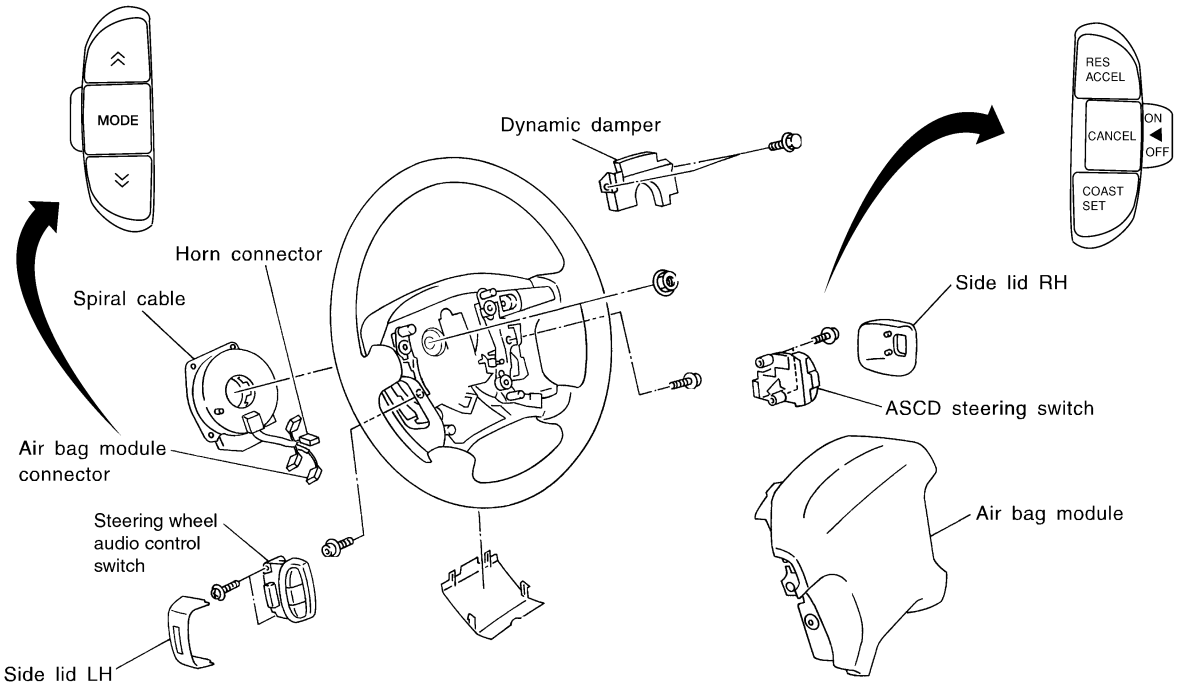
- To remove combination switch base, remove base attaching screws.

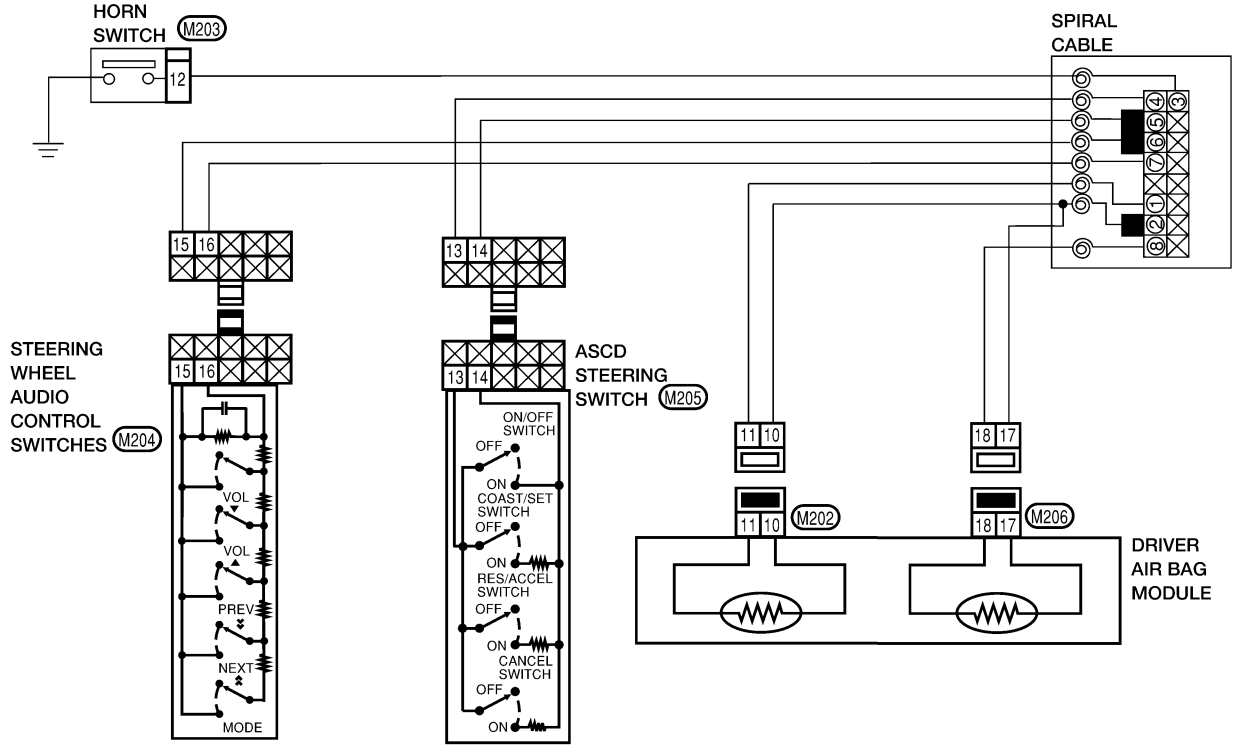


- Before installing the steering wheel, align the turn signal cancel tab with the notch of the combination switch. Refer to ***RS-16***, "Driver Air Bag Module and Spiral Cable".

Check

NGEL0011





WEL113B

System Description

NGEL0012

The headlamps are controlled by the lighting switch which is built into the combination switch.
Power is supplied at all times

- through 15A fuse (No. 37, located in the fuse and fusible link box)
- to lighting switch terminal 5 and
- through 15A fuse (No. 38, located in the fuse and fusible link box)
- to lighting switch terminal 8.

LOW BEAM OPERATION

NGEL0012S01

With the lighting switch in the headlamp ON (2ND) position and LOW BEAM (B) position, power is supplied

- from lighting switch terminal 10
- to headlamp LH terminal D and
- from lighting switch terminal 7
- to headlamp RH terminal D.

Ground is supplied to headlamp LH/RH terminal E through body grounds E12 and E54.
With power and ground supplied, the low beams illuminate.

HIGH BEAM OPERATION/FLASH-TO-PASS OPERATION

NGEL0012S02

With the lighting switch in the FLASH-TO-PASS (C) position or the headlamp ON (2ND) position and HIGH BEAM (A) position, power is supplied

- from lighting switch terminal 6
- to headlamp RH terminal M and
- from lighting switch terminal 9
- to headlamp LH terminal M and
- to combination meter terminal 11 for the high beam indicator.

Ground is supplied to terminal 10 of the combination meter through body grounds M14 and M68.
Ground is supplied to headlamp LH/RH terminal E through body grounds E12 and E54.
With power and ground supplied, the high beams and the high beam indicator illuminate.

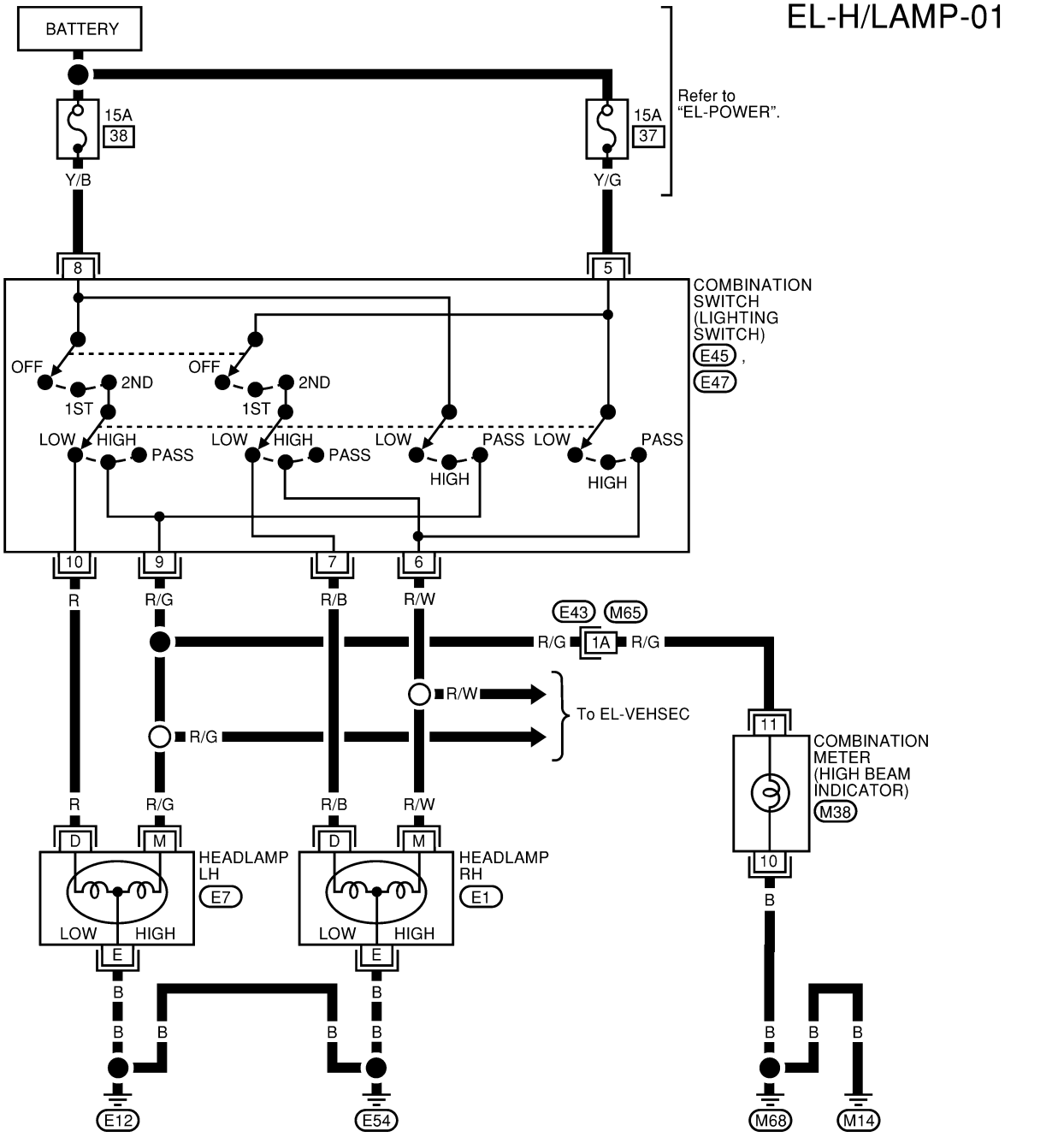
VEHICLE SECURITY SYSTEM

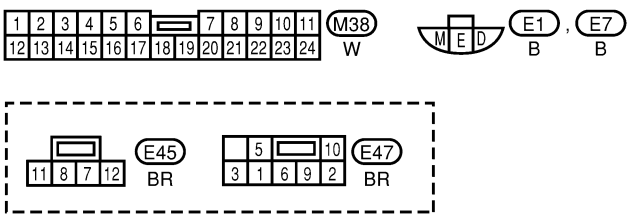
NGEL0012S03

The vehicle security system will flash the high beams if the system is triggered. Refer to “System Description”, EL-222.

Wiring Diagram — H/LAMP —

NGEL0013





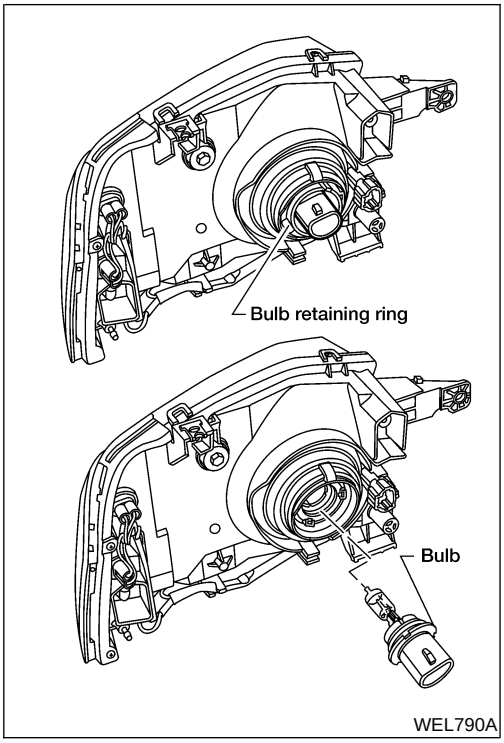
Refer to the following.
E43 - SUPER
MULTIPLE JUNCTION (SMJ)

WEL114B

Trouble Diagnoses

NGEL0014

Symptom	Possible cause	Repair order
Neither headlamp LH nor headlamp RH operate.	1. Lighting switch	1. Check lighting switch.
Headlamp LH does not operate, but headlamp RH operates properly.	1. Bulb 2. Headlamp LH ground circuit 3. 15A fuse 4. Lighting switch	1. Check bulb. 2. Check continuity between headlamp LH terminal E and grounds E12 and E54. 3. Check 15A fuse (No. 38, located in fuse and fusible link box). Verify battery positive voltage is present at terminal 8 of lighting switch. 4. Check lighting switch.
Headlamp RH does not operate, but headlamp LH operates properly.	1. Bulb 2. Headlamp RH ground circuit 3. 15A fuse 4. Lighting switch	1. Check bulb. 2. Check continuity between headlamp RH terminal E and grounds E12 and E54. 3. Check 15A fuse (No. 37, located in fuse and fusible link box). Verify battery positive voltage is present at terminal 5 of lighting switch. 4. Check lighting switch.
High beam LH does not operate, but low beam LH operates.	1. Bulb 2. Open in high beam LH circuit 3. Lighting switch	1. Check bulb. 2. Check R/G wire between lighting switch terminal 9 and headlamp LH terminal M for an open circuit. 3. Check lighting switch.
Low beam LH does not operate, but high beam LH operates.	1. Bulb 2. Open in low beam LH circuit 3. Lighting switch	1. Check bulb. 2. Check R wire between lighting switch terminal 10 and headlamp LH terminal D for an open circuit. 3. Check lighting switch.
High beam RH does not operate, but low beam RH operates.	1. Bulb 2. Open in high beam RH circuit 3. Lighting switch	1. Check bulb. 2. Check R/W wire between lighting switch terminal 6 and headlamp RH terminal M for an open circuit. 3. Check lighting switch.
Low beam RH does not operate, but high beam RH operates.	1. Bulb 2. Open in low beam RH circuit 3. Lighting switch	1. Check bulb. 2. Check R/B wire between lighting switch terminal 7 and headlamp RH terminal D for an open circuit. 3. Check lighting switch.
High beam indicator does not work.	1. Bulb 2. High beam indicator ground circuit 3. Open in high beam circuit	1. Check bulb in combination meter. 2. Check continuity between combination meter terminal 10 and grounds M14 and M68. 3. Check R/G wire between lighting switch terminal 9 and combination meter terminal 11 for an open circuit.



Bulb Replacement

=NGEL0015

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

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

1. Disconnect the battery cable.
2. Disconnect the harness connector from the back side of the bulb.
3. Remove bulb retaining ring.
4. Remove the headlamp bulb carefully. Do not shake or rotate the bulb when removing it.
5. Install in the reverse order of removal.

CAUTION:

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

Aiming Adjustment

NGEL0208

When performing headlamp aiming adjustment, use an aiming wall screen.

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

Before performing aiming adjustment, check the following.

1) **Keep all tires inflated to correct pressures.**
2) **Place vehicle on flat surface.**
3) **See that the vehicle is unloaded (except for full levels of coolant, engine oil and fuel, and spare tire, jack, and tools). Have the driver or equivalent weight placed in the driver's seat.**

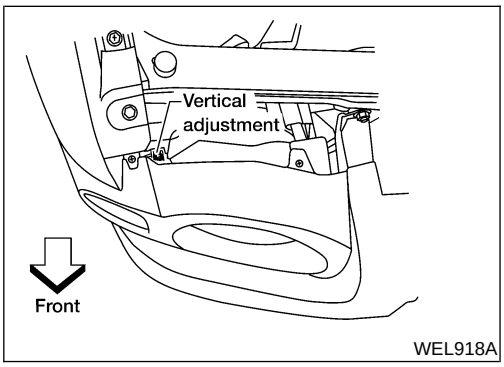
LOW BEAM

NGEL0208S01

NOTE:

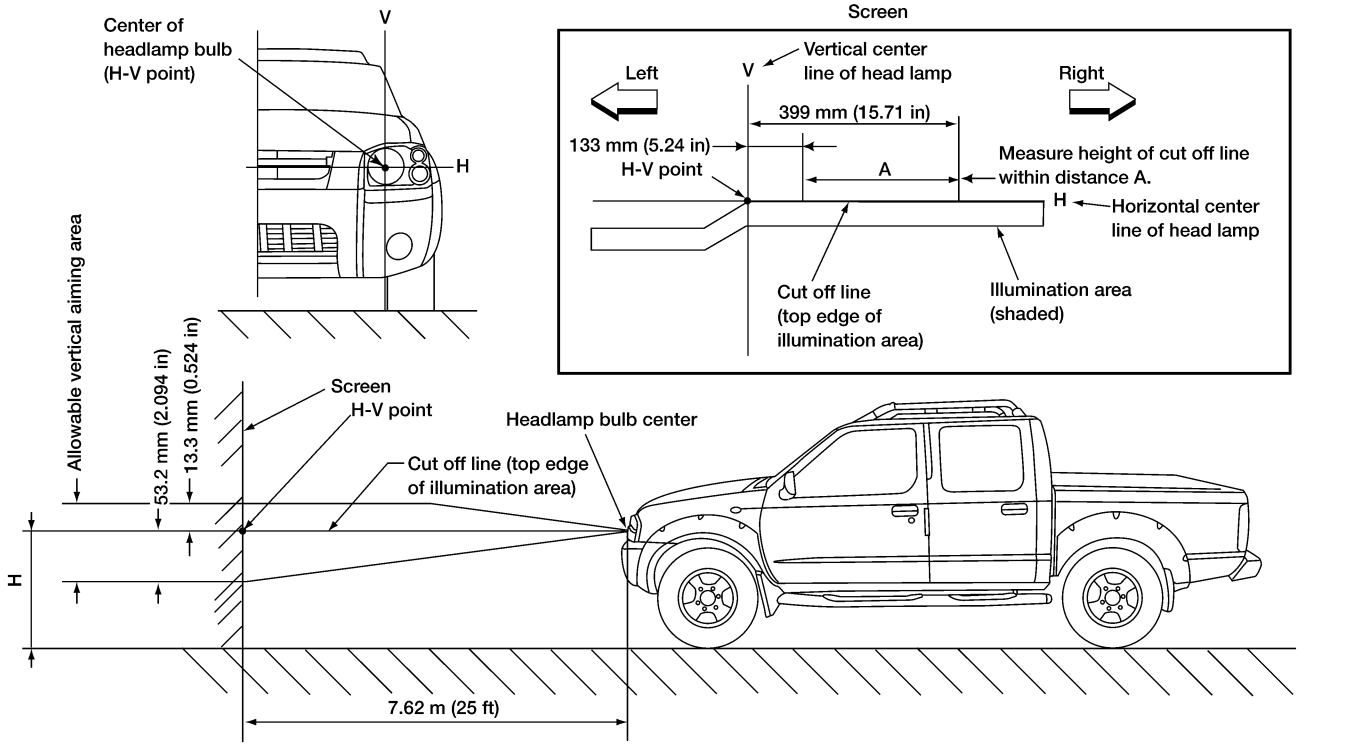
The horizontal headlamp aim cannot be adjusted. Only vertical aim is adjustable.

1. Turn headlamp low beam on.



2. Use adjusting screw to adjust the vertical aim of the lamp.

- **Cover the opposite lamp and ensure fog lamps, if equipped, are turned off.**
- **Adjust beam pattern until cut-off line (top edge of illumination area) is positioned at same height off ground as bulb center (on H-line). Measure cut-off line within distance A on H-line. See aiming chart following.**



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

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

System Description (For Canada)

NGEL0017

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

Power is supplied at all times

- through 15A fuse (No. 38, located in the fuse and fusible link box)
- to daytime light control unit terminal 3 and
- to lighting switch terminal 8.

Power is also supplied at all times

- through 15A fuse (No. 37, located in the fuse and fusible link box)
- to daytime light control unit terminal 2 and
- to lighting switch terminal 5.

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

- through 7.5A fuse [No. 5, located in the fuse block (J/B)]
- to daytime light control unit terminal 12.

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

- through 7.5A fuse [No. 7, located in the fuse block (J/B)]
- to daytime light control unit terminal 1.

Ground is supplied to daytime light control unit terminal 9 through body grounds E12 and E54.

HEADLAMP OPERATION

NGEL0017S01

Low Beam Operation

NGEL0017S0101

When the lighting switch is turned to the headlamp ON (2ND) position, LOW BEAM (B), power is supplied

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

Ground is supplied to headlamp RH terminal E through body grounds E12 and E54.

Also, when the lighting switch is turned to the headlamp ON (2ND) position, LOW BEAM (B), power is supplied

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

Ground is supplied

- to headlamp LH terminal E
- from daytime light control unit terminal 7
- through daytime light control unit terminal 9
- through body grounds E12 and E54.

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

High Beam Operation/Flash-to-pass Operation

NGEL0017S0102

When the lighting switch is turned to the headlamp ON (2ND) position, HIGH BEAM (A) or FLASH-TO-PASS (C) position, power is supplied

- from lighting switch terminal 6
- to headlamp RH terminal M and
- to daytime light control unit terminal 8.

Also, when the lighting switch is turned to the headlamp ON (2ND) position, HIGH BEAM (A) or FLASH-TO-PASS (C) position, power is supplied

- from lighting switch terminal 9
- to combination meter terminal 11 for the high beam indicator and
- to daytime light control unit terminal 5
- through daytime light control unit terminal 6

- to headlamp LH terminal M.

Ground is supplied in the same manner as low beam operation.
Ground is supplied to combination meter terminal 10 through body grounds M14 and M68.
With power and ground supplied, the high beam headlamps and HI BEAM indicator illuminate.

DAYTIME LIGHT OPERATION

NGEL0017S02

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

- through daytime light control unit terminal 6
- to headlamp LH terminal M
- through headlamp LH terminal E
- to daytime light control unit terminal 7
- through daytime light control unit terminal 8
- to headlamp RH terminal M.

Ground is supplied to headlamp RH terminal E through body grounds E12 and E54.
Because the high beam headlamps are now wired in series, they operate at half illumination.

OPERATION (FOR CANADA)

NGEL0017S03

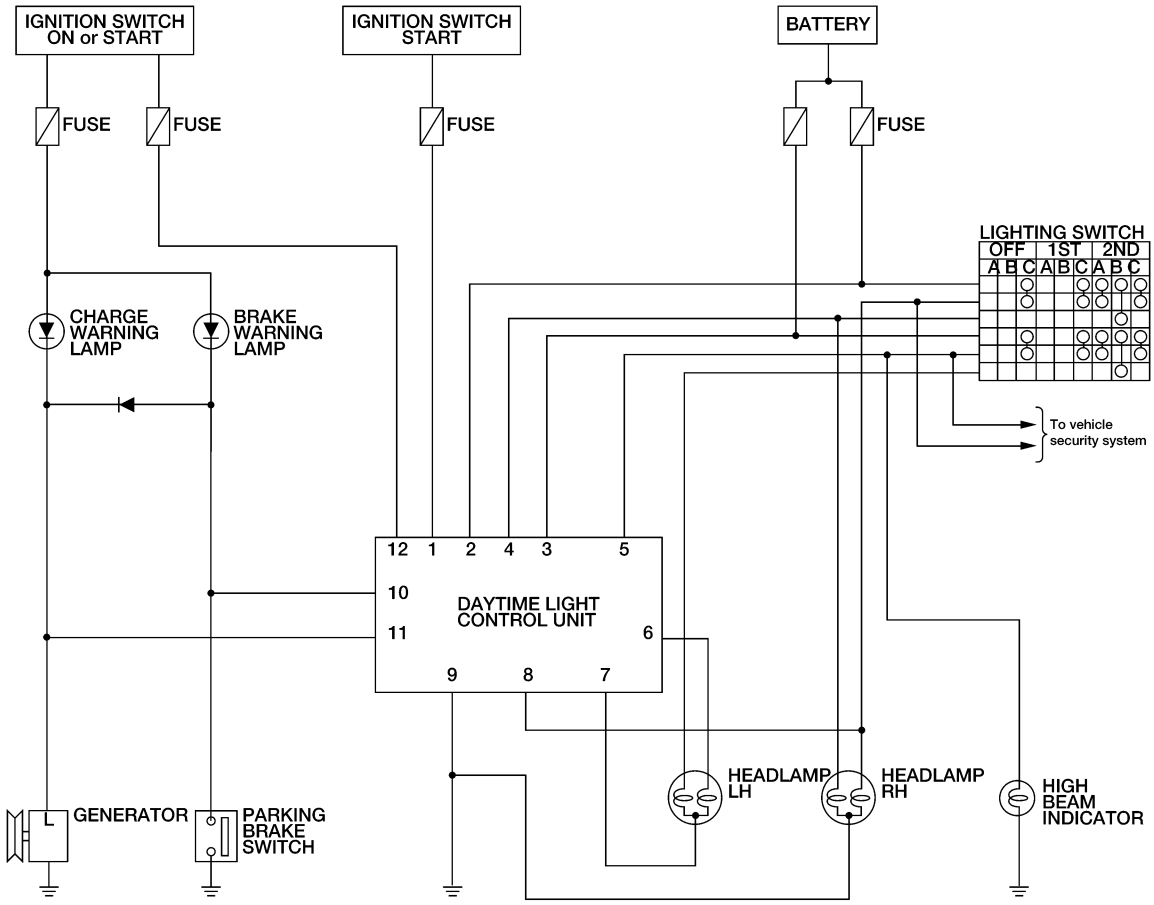
After starting the engine with the lighting switch in the OFF or parking lamp (1ST) position, the headlamp high beams automatically turn on. Lighting switch operations other than the above are the same as conventional light systems.

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

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

Circuit Diagram

NGEL0019

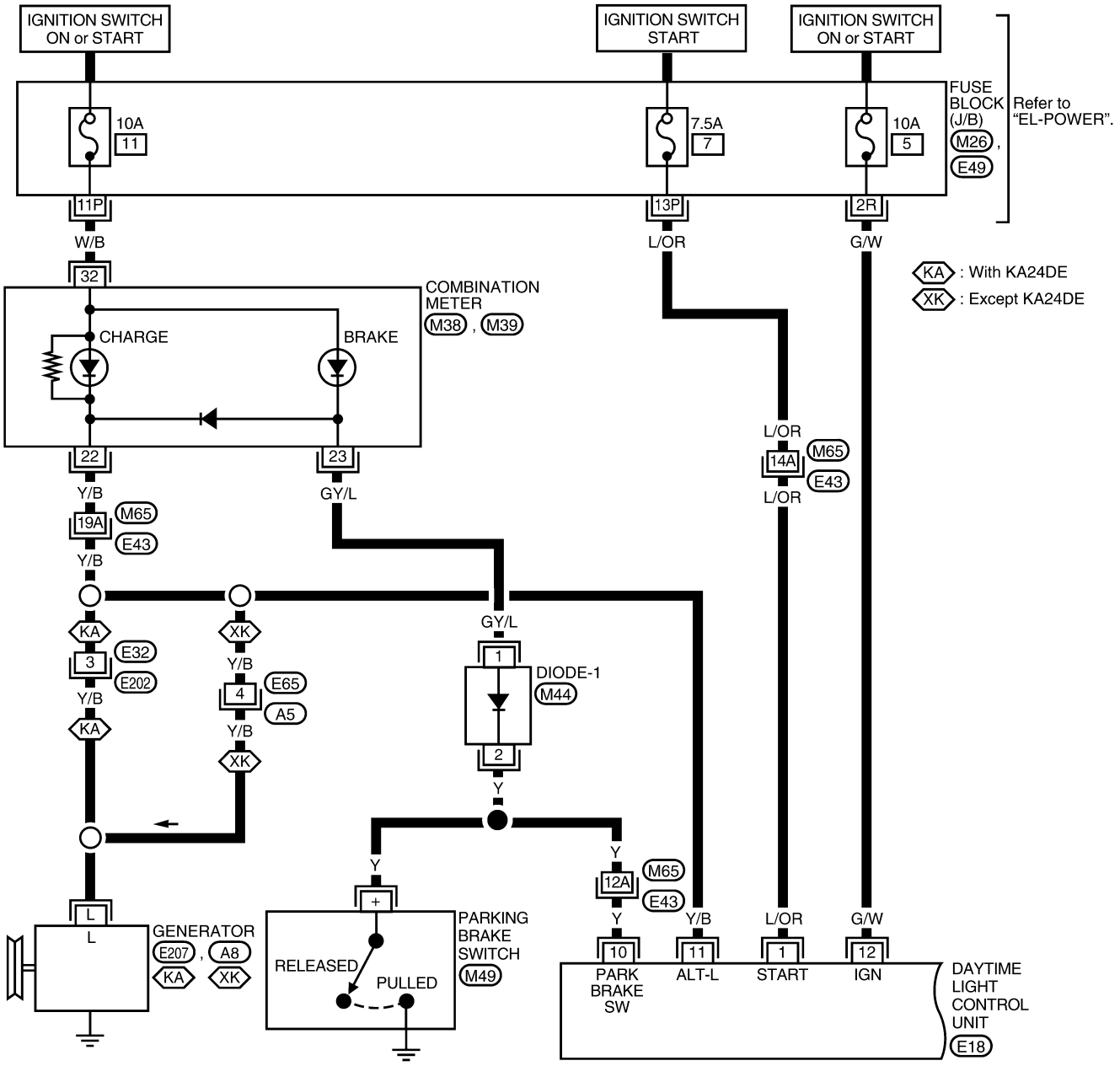


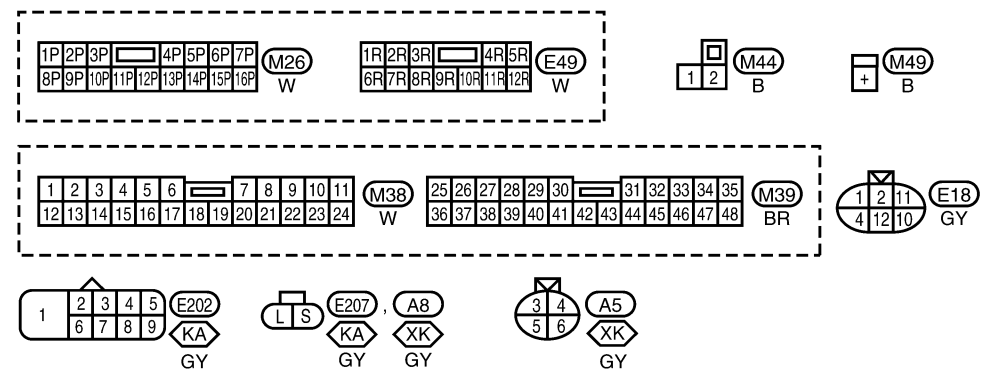
LEL714A

Wiring Diagram — DTRL —

NGEL0020

EL-DTRL-01

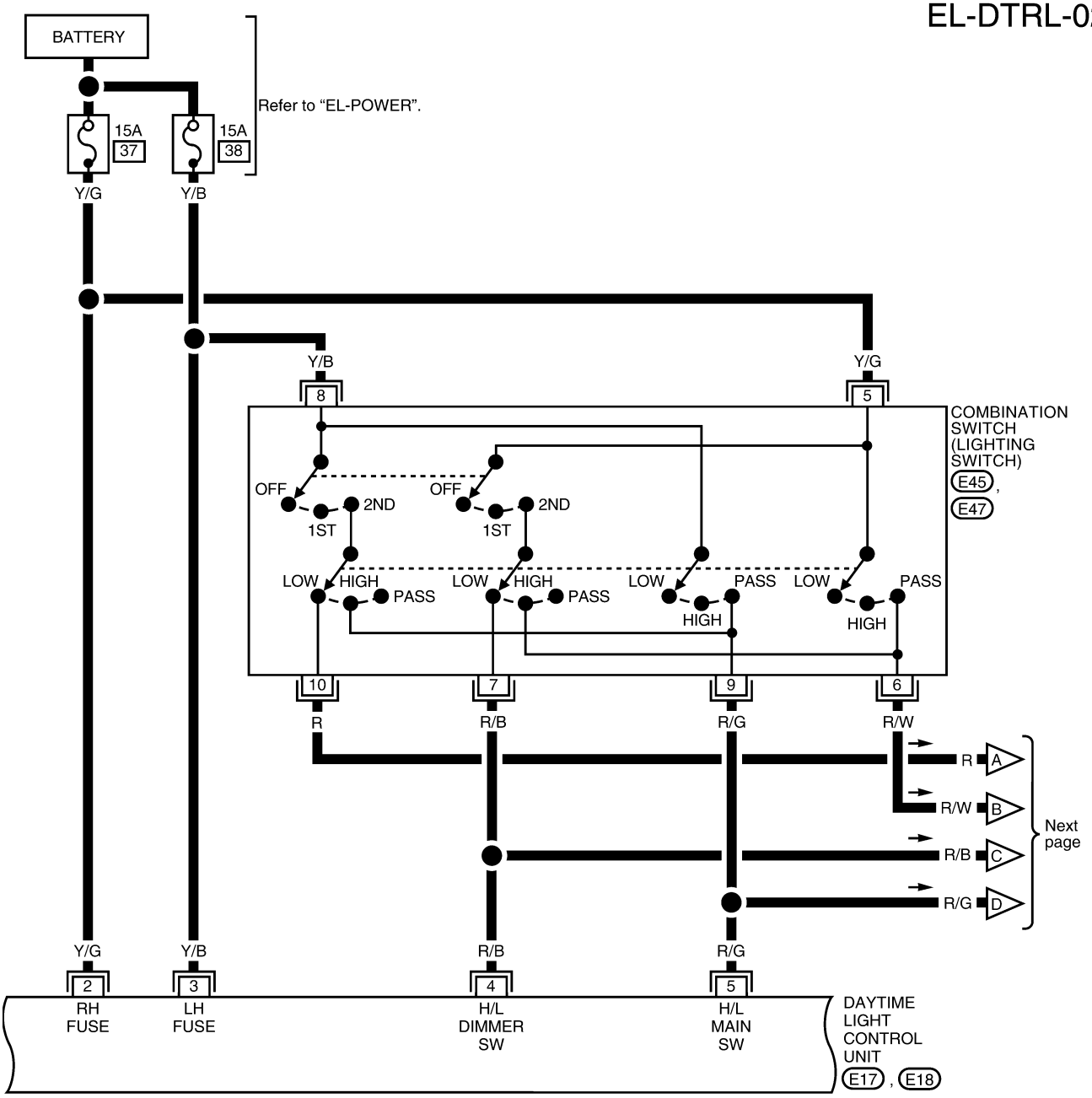


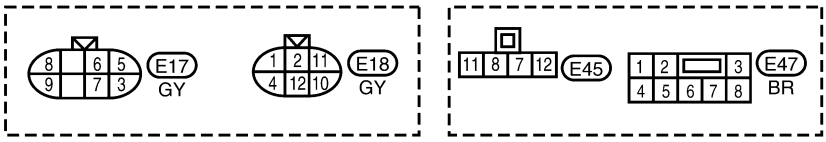


Refer to the following.
E43 - SUPER MULTIPLE JUNCTION (SMJ)

WEL657A

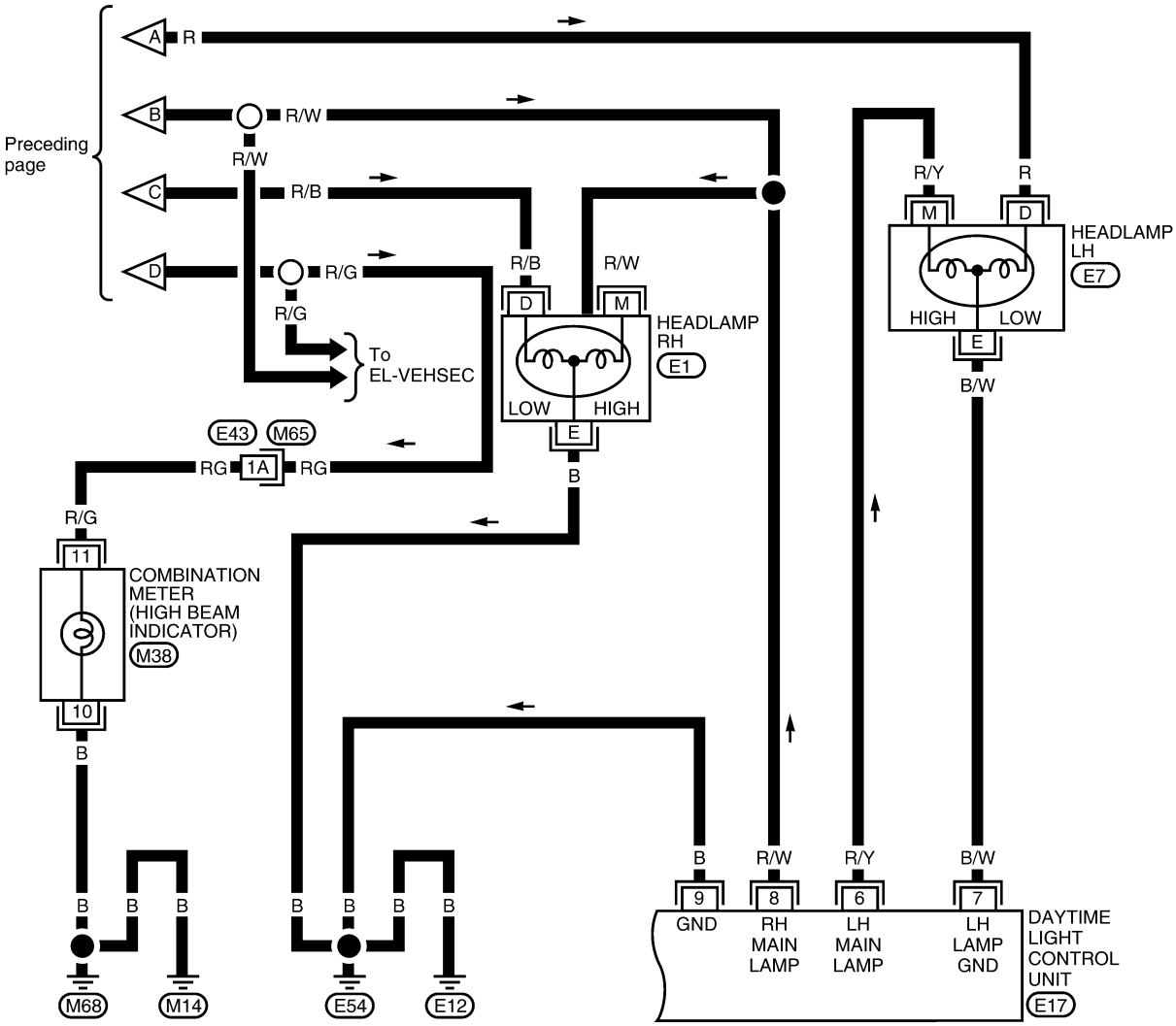
EL-DTRL-02

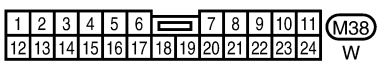


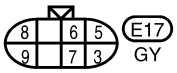


LEL658A

EL-DTRL-03







Refer to the following.
E43 - SUPER MULTIPLE JUNCTION (SMJ)

WEL659A

Trouble Diagnoses

NGEL0021

DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

NGEL0021S01

Terminal No.	Wire color	Item	Condition	Voltage (Approx.)
1	L/OR	Ignition switch start signal	Ignition switch in START position	12
			All other conditions	0
2	Y/G	Power source for headlamp RH	—	12
3	Y/B	Power source for headlamp LH	—	12
4	R/B	Lighting switch headlamp RH low beam output	Lighting switch in the headlamp ON (2ND) position and LOW BEAM (B) position	12
			All other conditions	0
5	R/G	Lighting switch headlamp LH high beam output	Lighting switch in the FLASH-TO-PASS (C) position or headlamp ON (2ND) position and HIGH BEAM (A) position	12
			All other conditions	0
6	R/Y	Headlamp LH high beam	Lighting switch in the FLASH-TO-PASS (C) position or headlamp ON (2ND) position and HIGH BEAM (A) position	12
			With parking brake released, engine running and lighting switch in OFF or parking and tail lamp ON (1ST) positions **CAUTION:** **Block wheels and ensure selector lever is in P or N position.**	12
			All other conditions	0
7	B/W	Headlamp LH control (ground)	Lighting switch in the FLASH-TO-PASS (C) position or headlamp ON (2ND) position	0
			All other conditions	6
8	R/W	Lighting switch headlamp RH high beam output	Lighting switch in the FLASH-TO-PASS (C) position or headlamp ON (2ND) position and HIGH BEAM (A) position	12
			With parking brake released, engine running and lighting switch in OFF or parking and tail lamp ON (1ST) positions **CAUTION:** **Block wheels and ensure selector lever is in P or N position.**	6
			All other conditions	0
9	B	Ground	—	—
10	Y	Parking brake switch	Parking brake released	12
			Parking brake set	0
11	Y/B	Generator (L terminal)	When engine is running	12
			All other conditions	0

12	G/W	Ignition switch on signal	Ignition switch OFF, ACC positions	0
			Ignition switch ON, START positions	12

Bulb Replacement

NGEL0022

Refer to "Bulb Replacement", EL-38.

Aiming Adjustment

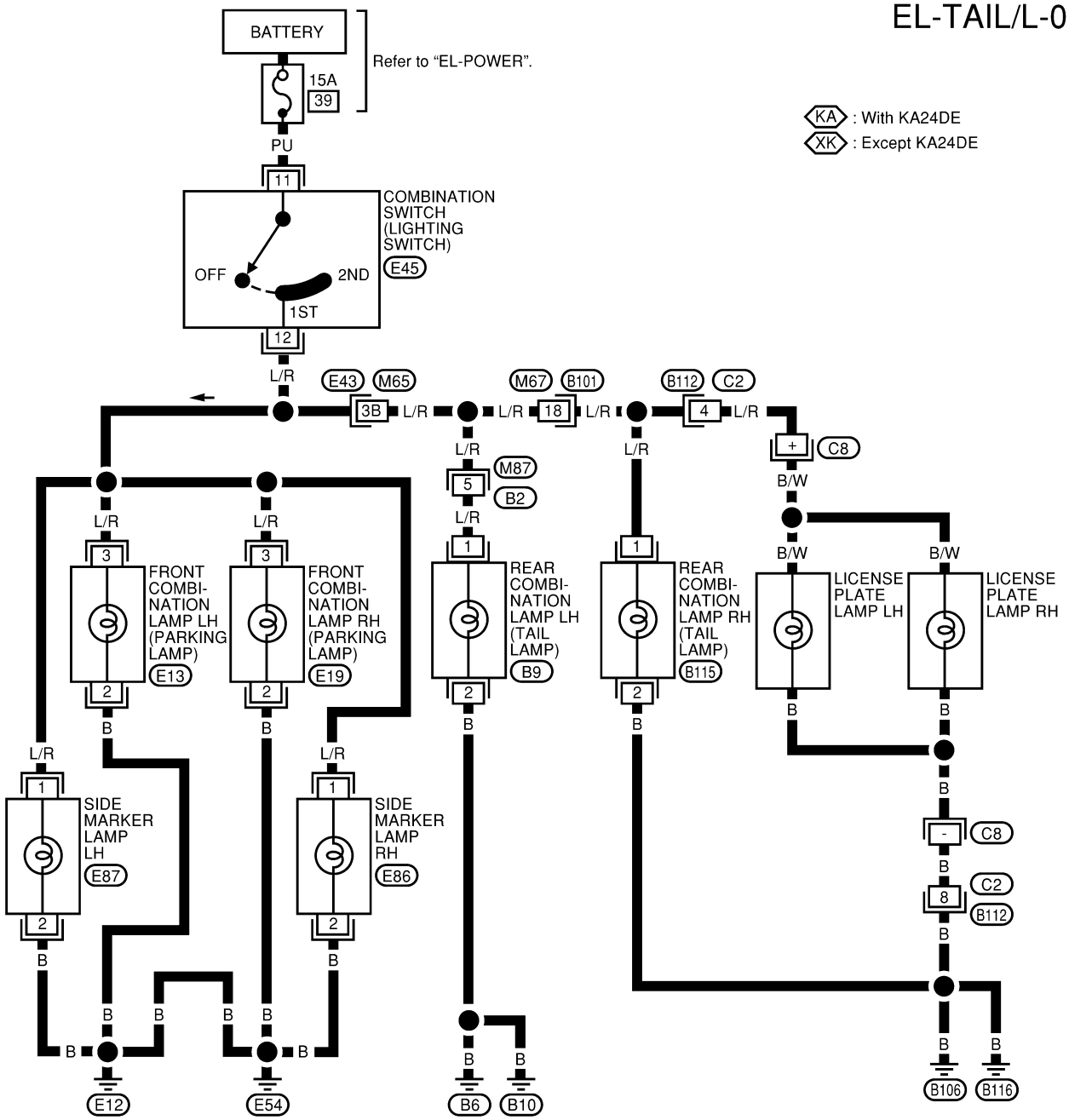
NGEL0023

Refer to "Aiming Adjustment", EL-38.

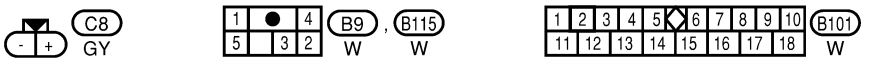
Wiring Diagram — TAIL/L —

NGEL0024

EL-TAIL/L-01



KA : With KA24DE
XK : Except KA24DE



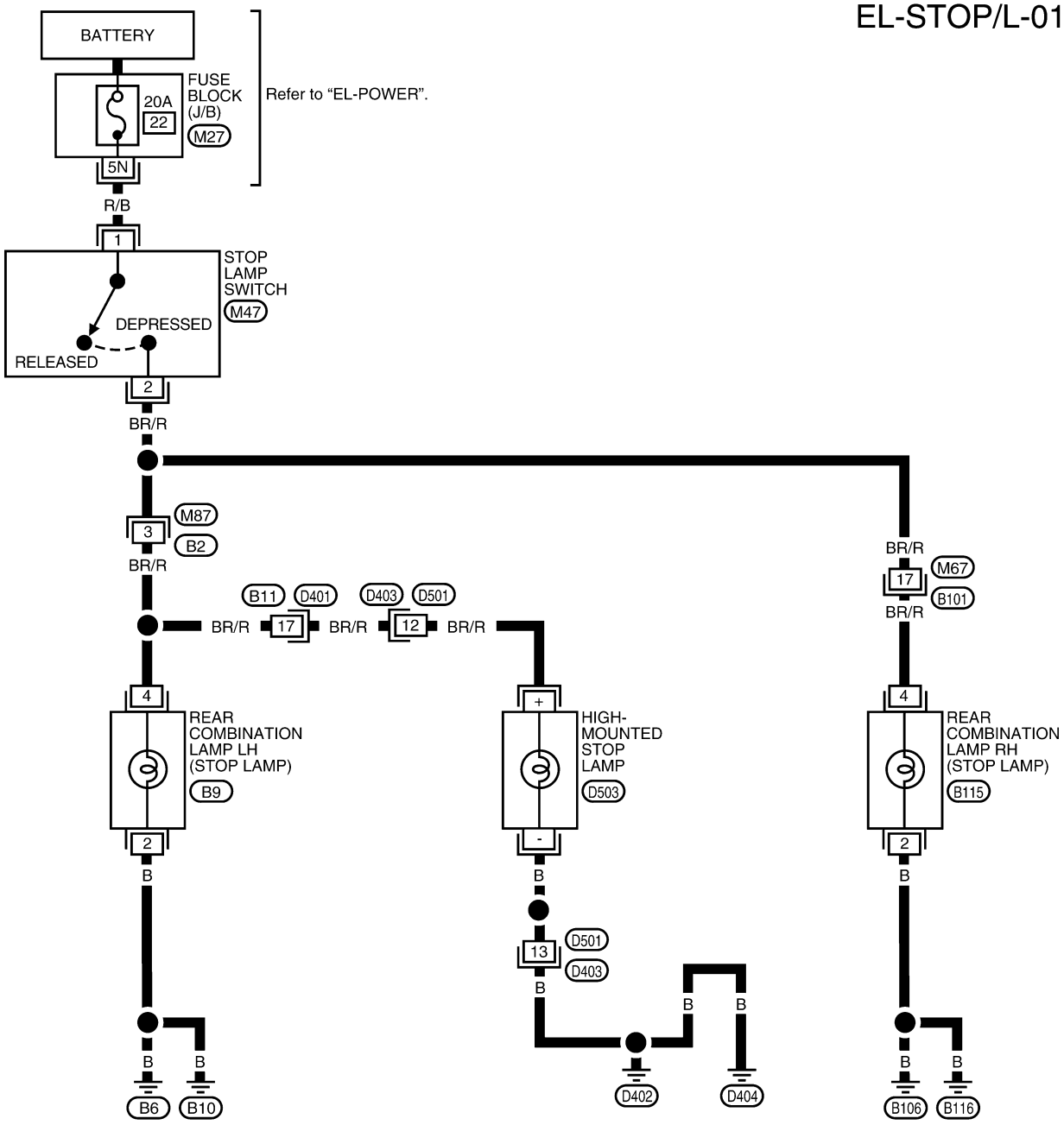
Refer to the following.
E43 - SUPER MULTIPLE JUNCTION (SMJ)

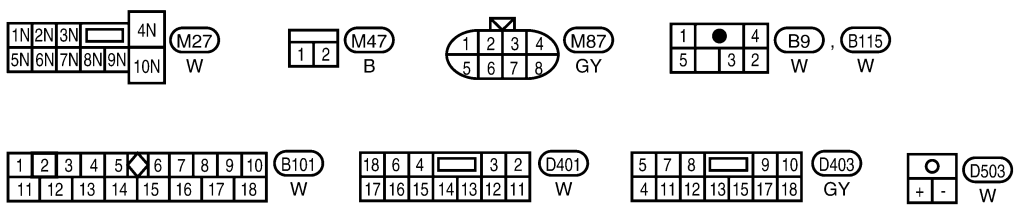
WEL144B

Wiring Diagram — STOP/L —

NGEL0025

EL-STOP/L-01

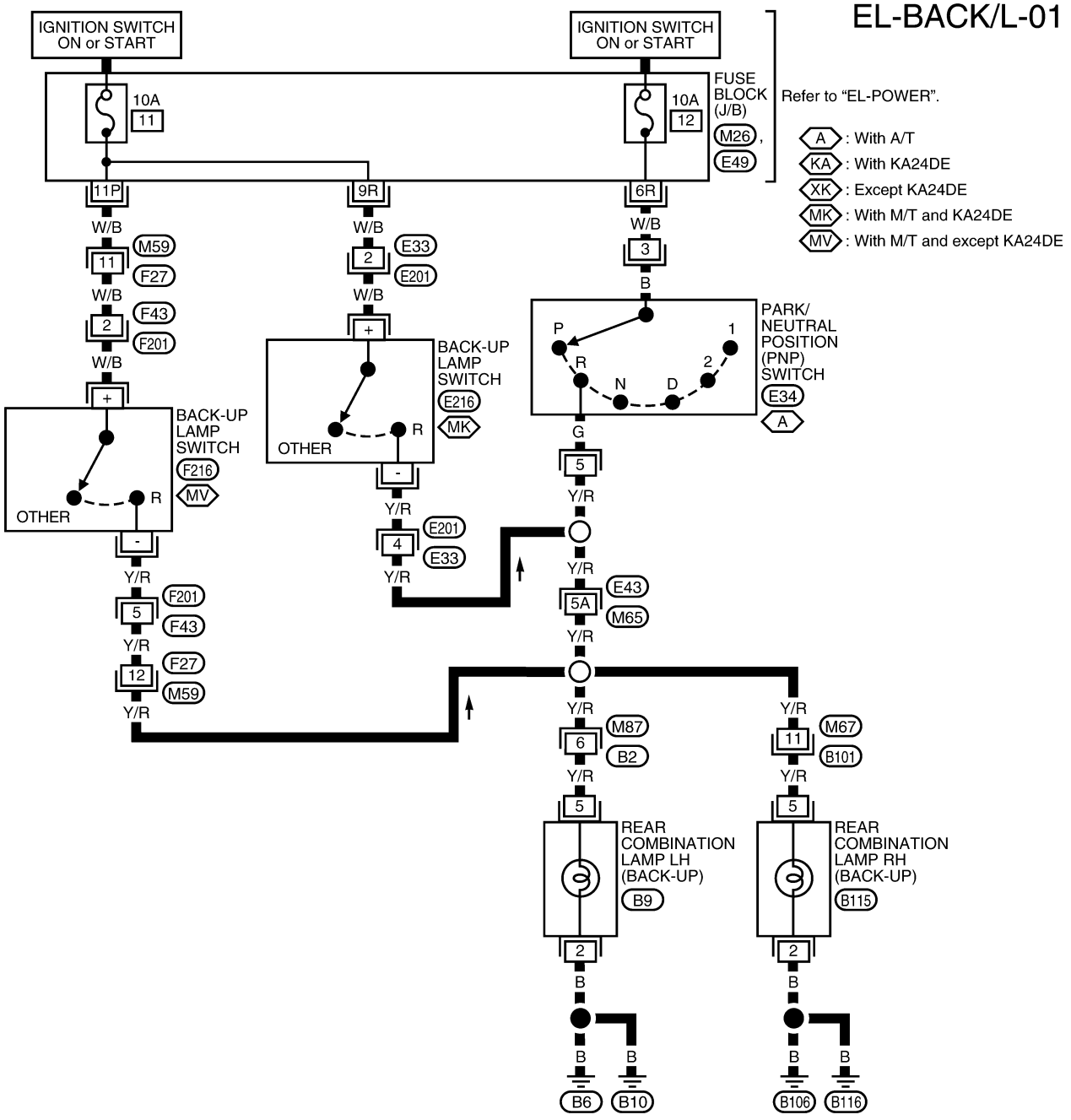


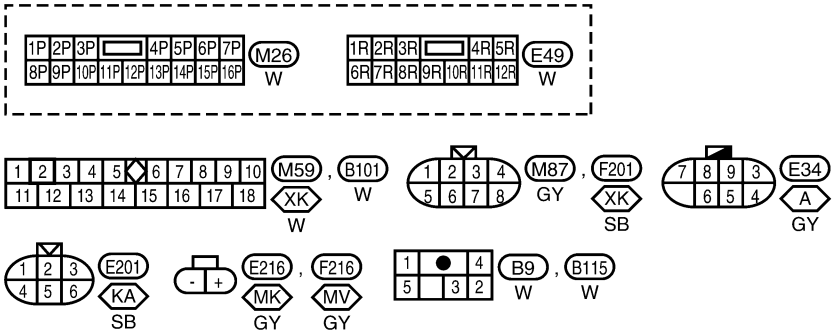


WEL661A

Wiring Diagram — BACK/L —

NGEL0026





Refer to the following.
E43 - SUPER MULTIPLE JUNCTION (SMJ)

WEL662A

System Description

NGEL0027

Power is supplied at all times

- through 15A fuse (No. 40, located in the fuse and fusible link box)
- to front fog lamp relay terminal 5 and
- through 15A fuse (No. 37, located in the fuse and fusible link box)
- to lighting switch terminal 5.

With the lighting switch in the headlamp ON (2ND) position and LOW BEAM (B) position, power is supplied

- through lighting switch terminal 7
- to front fog lamp switch terminal 1.

FRONT FOG LAMP OPERATION

NGEL0027S01

The front fog lamp switch is built into the combination switch. The lighting switch must be in the headlamp ON (2ND) position and LOW BEAM (B) position for front fog lamp operation.
With the front fog lamp switch in the ON position:

- power is supplied to front fog lamp relay terminal 2
- through front fog lamp switch terminal 2
- through front fog lamp switch terminal 1.

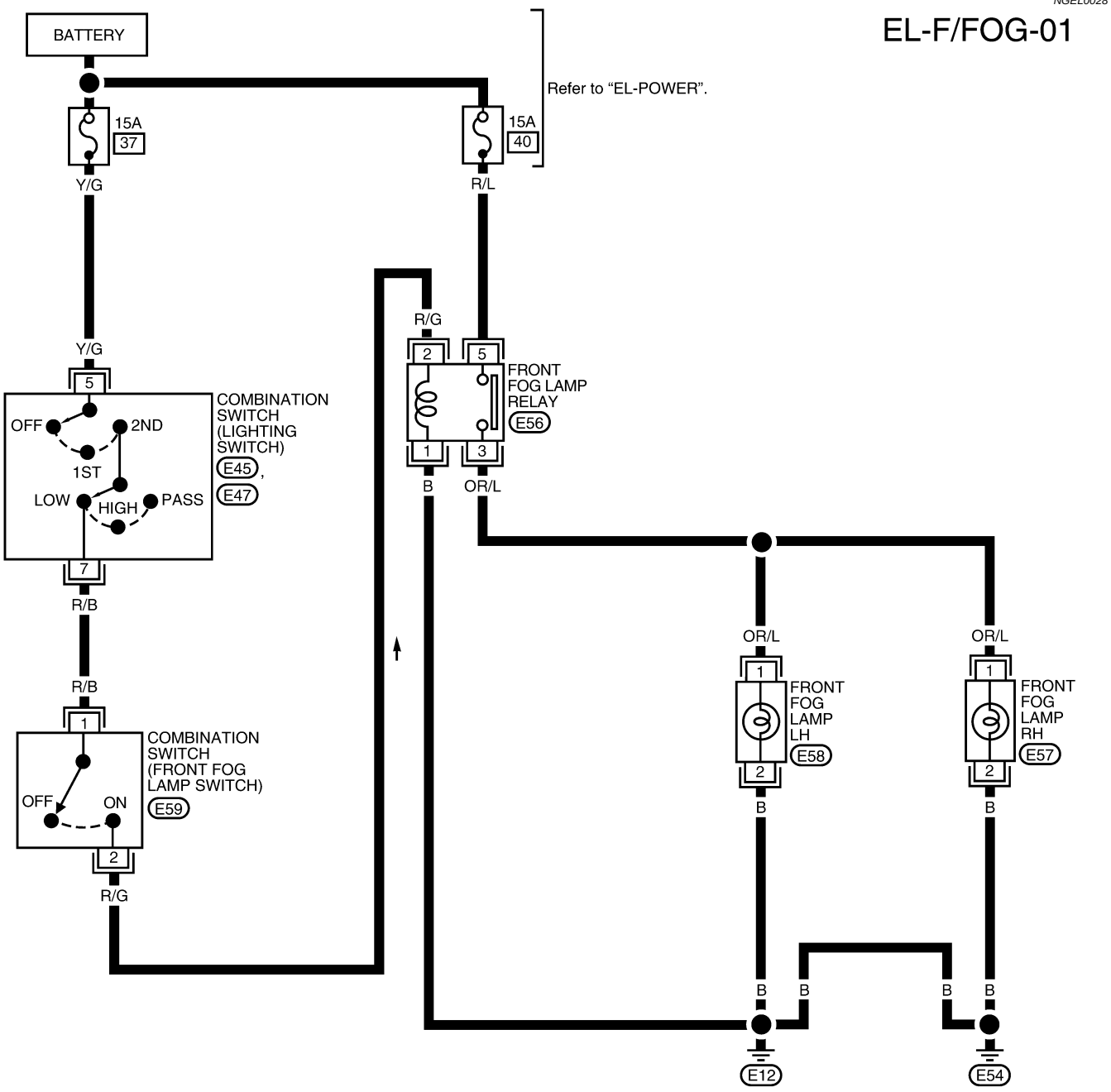
The front fog lamp relay is energized and power is supplied

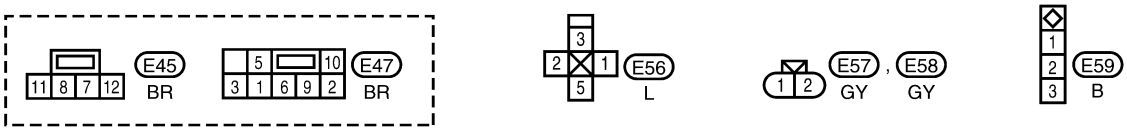
- through front fog lamp relay terminal 3
- to front fog lamp LH/RH terminal 1.

Ground is supplied to front fog lamp LH/RH terminal 2 and front fog lamp relay terminal 1 through body grounds E12 and E54.
With power and ground supplied, the front fog lamps illuminate.

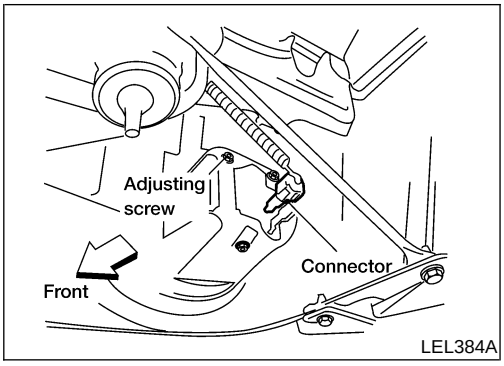
Wiring Diagram — F/FOG —

NGEL0028





WEL663A



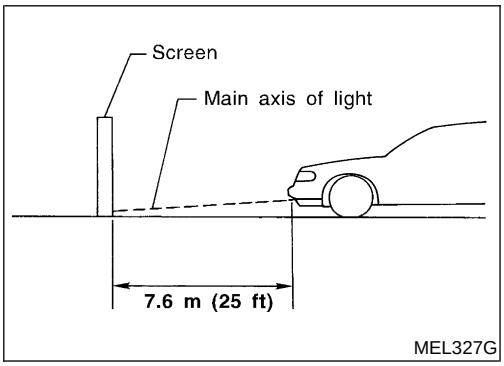
Aiming Adjustment

NGEL0029

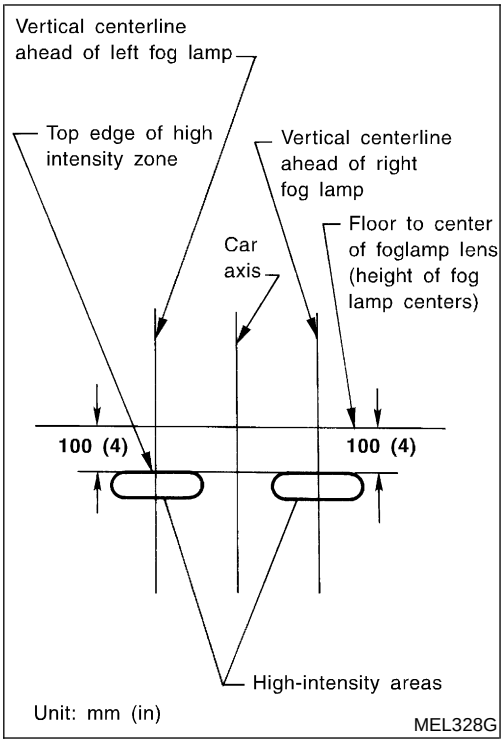
Before performing aiming adjustment, make sure of the following.

1) Keep all tires inflated to correct pressure.
2) Place vehicle on level ground.
3) See that vehicle is unloaded (except for full levels of coolant, engine oil and fuel, and spare tire, jack, and tools). Have the driver or equivalent weight placed in driver's seat.

Loosen front fog lamp adjusting nuts and adjust aiming by moving front fog lamps.



1. Set the distance between the screen and the center of the front fog lamp lens as shown at left.
2. Turn front fog lamps ON.



3. Adjust front fog lamps so that the top edge of the high intensity zone is 100 mm (4 in) below the height of the fog lamp centers as shown at left.

- **When performing adjustment, if necessary, cover the headlamps and opposite fog lamp.**

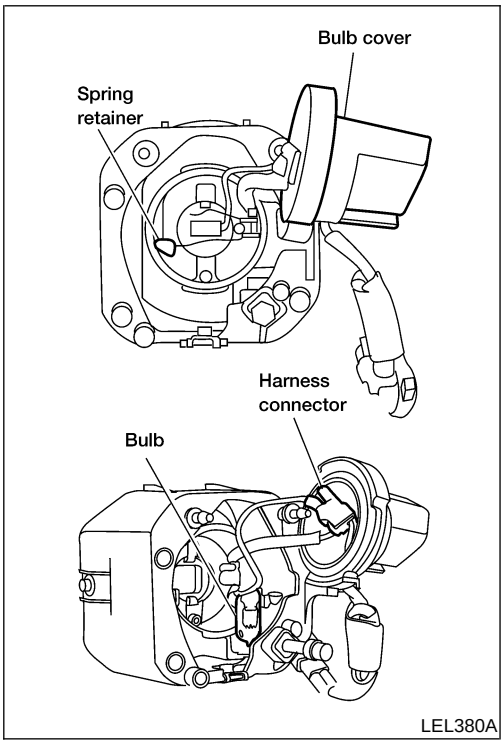
4. Tighten the front fog lamp adjusting nuts.

Removal and Installation

=NGEL0184

1. Disconnect front fog lamp harness connector.
2. Remove mounting bolt and remove lens and housing assembly from front bumper cover.
3. Install in reverse order of removal. Ensure top of lens faces up.
4. Tighten mounting bolt.

: 5 – 6 N·m (0.51 – 0.61 kg-m, 44.3 – 53.1 in-lb)



Bulb and Lens Replacement

NGEL0185

1. Remove front fog lamp. Refer to “Removal and Installation”, EL-54.
2. Remove bulb cover.
3. Release the spring retainer.
4. Disconnect fog lamp bulb connector.
5. Remove fog lamp bulb.
6. Install in reverse order of removal. Ensure top of lens faces up. **DO NOT TOUCH BULB.**

System Description

NGEL0030

TURN SIGNAL OPERATION

NGEL0030S01

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

- through 7.5A fuse [No. 2, located in the fuse block (J/B)]
- to hazard switch terminal 2
- through the hazard switch terminal 1
- to combination flasher unit terminal B
- through combination flasher unit terminal L
- to turn signal switch terminal 1.

Ground is supplied to combination flasher unit terminal E through body grounds M14 and M68.

LH Turn

NGEL0030S0101

With the turn signal switch in the LH position, power is supplied from turn signal switch terminal 3 to

- front combination lamp LH terminal 1
- combination meter terminal 11 and
- rear combination lamp LH terminal 3.

Ground is supplied to front combination lamp LH terminal 2 through body grounds E12 and E54.
Ground is supplied to rear combination lamp LH terminal 2 through body grounds B6 and B10.
Ground is supplied to combination meter terminal 36 through body grounds M14 and M68.
With power and ground supplied, the combination flasher unit controls the flashing of the LH turn signal lamps.

RH Turn

NGEL0030S0102

With the turn signal switch in the RH position, power is supplied from turn signal switch terminal 2 to

- front combination lamp RH terminal 1
- combination meter terminal 28 and
- rear combination lamp RH terminal 3.

Ground is supplied to the front combination lamp RH terminal 2 through body grounds E12 and E54.
Ground is supplied to the rear combination lamp RH terminal 2 through body grounds B106 and B116.
Ground is supplied to combination meter terminal 36 through body grounds M14 and M68.
With power and ground supplied, the combination flasher unit controls the flashing of the RH turn signal lamps.

HAZARD LAMP OPERATION

NGEL0030S02

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

- 10A fuse [No. 17, located in the fuse block (J/B)].

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

- through hazard switch terminal 1
- to combination flasher unit terminal B
- through combination flasher unit terminal L
- to hazard switch terminal 4.

Ground is supplied to combination flasher unit terminal E through body grounds M14 and M68.
Power is supplied through hazard switch terminal 5 to

- front combination lamp LH terminal 1
- combination meter terminal 11 and
- rear combination lamp LH terminal 3.

Power is supplied through hazard switch terminal 6 to

- front combination lamp RH terminal 1
- combination meter terminal 28 and
- rear combination lamp RH terminal 3.

Ground is supplied to front combination lamp LH/RH terminal 2 through body grounds E12 and E54.
Ground is supplied to rear combination lamp LH terminal 2 through body grounds B6 and B10.
Ground is supplied to rear combination lamp RH terminal 2 through body grounds B106 and B116.
Ground is supplied to combination meter terminal 36 through body grounds M14 and M68.
With power and ground supplied, the combination flasher unit controls the flashing of the hazard warning lamps.

REMOTE KEYLESS ENTRY SYSTEM OPERATION

NGEL0030S04

Power is supplied at all times to smart entrance control unit terminal 49

- through 9.5A fuse [No. 28, located in the fuse block (J/B)].

Ground is supplied to smart entrance control unit terminals 43 and 64.
Refer to "REMOTE KEYLESS ENTRY SYSTEM", EL-203.
When smart entrance control unit receives LOCK or UNLOCK signal from key fob with all doors closed, power is supplied through smart entrance control unit terminal 47

- to front combination lamp LH terminal 1
- to combination meter terminal 11
- to rear combination lamp LH terminal 3.

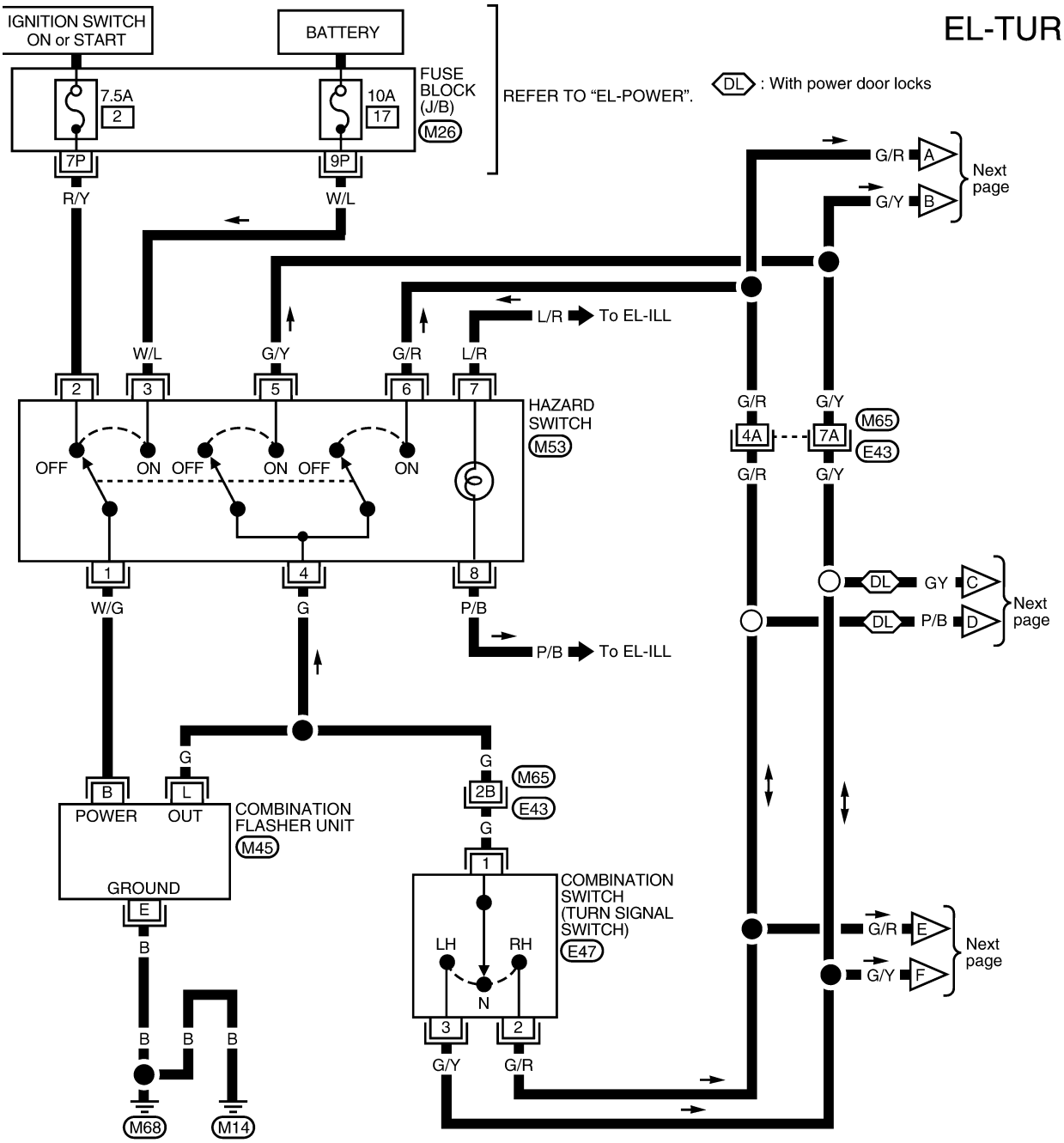
Power is supplied through smart entrance control unit terminal 48

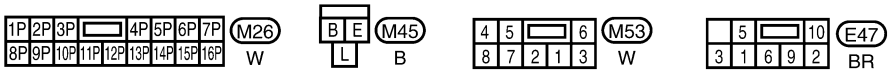
- to front combination lamp RH terminal 1
- to combination meter terminal 28
- to rear combination lamp RH terminal 3.

Ground is supplied to terminal 2 of each front combination lamp through body grounds E12 and E54.
Ground is supplied to terminal 2 of rear combination lamp LH through body grounds B6 and B10.
Ground is supplied to terminal 2 of rear combination lamp RH through body grounds B106 and B116.
Ground is supplied to combination meter terminal 36 through body grounds M14 and M68.
With power and ground supplied, the smart entrance control unit controls the flashing of the hazard warning lamps.

Wiring Diagram — TURN —

NGEL0032

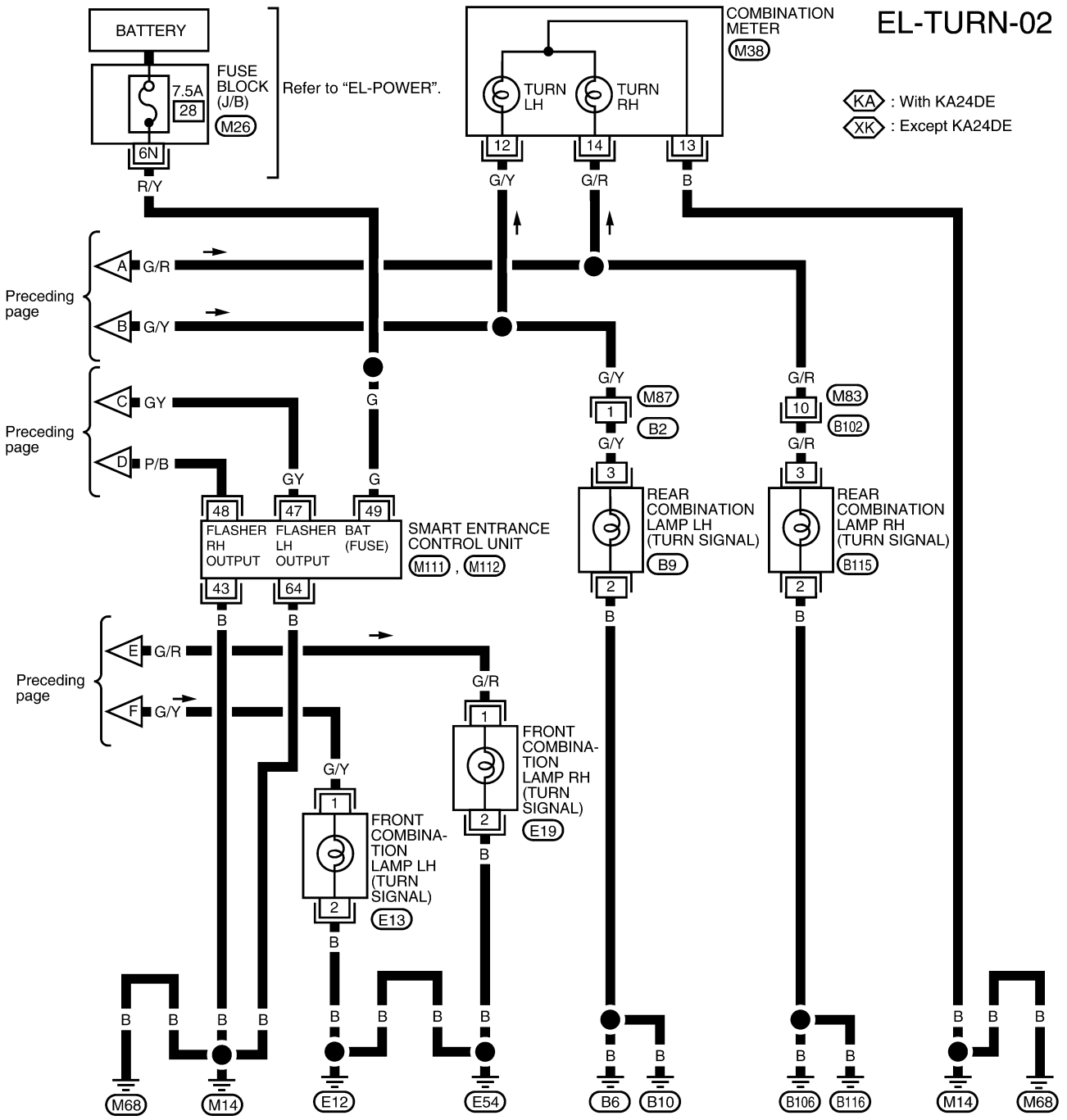


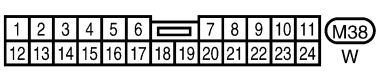


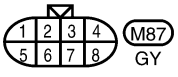
Refer to the following.
E43 - SUPER MULTIPLE JUNCTION (SMJ)

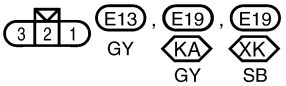
WEL664A

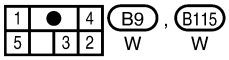
Wiring Diagram — TURN — (Cont'd)

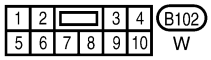










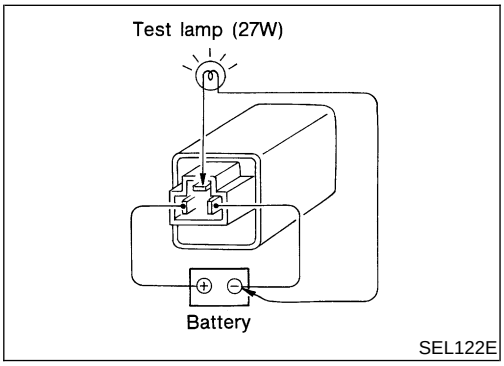


WEL665A

Trouble Diagnoses

NGEL0033

Symptom	Possible cause	Repair order
Turn signal and hazard warning lamps do not operate.	1. 7.5A fuse 2. 10A fuse 3. Hazard switch 4. Combination flasher unit 5. Open in combination flasher unit circuit	1. Check 7.5A fuse [No. 2, located in fuse block (J/B)]. Turn ignition switch ON and verify battery positive voltage is present at terminal 2 of hazard switch. 2. Check 10A fuse [No. 17, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 3 of hazard switch. 3. Check hazard switch. 4. Refer to combination flasher unit check. 5. Check wiring to combination flasher unit for open circuit.
Turn signal lamps do not operate but hazard warning lamps operate.	1. 7.5A fuse 2. Hazard switch 3. Turn signal switch 4. Open in turn signal switch circuit	1. Check 7.5A fuse [No. 2, located in fuse block (J/B)]. Turn ignition switch ON and verify battery positive voltage is present at terminal 2 of hazard switch. 2. Check hazard switch. 3. Check turn signal switch. 4. Check G wire between combination flasher unit and turn signal switch for open circuit. Check the harness between turn signal switch and front combination lamp for an open circuit.
Hazard warning lamps do not operate but turn signal lamps operate.	1. 10A fuse 2. Hazard switch 3. Open in hazard switch circuit	1. Check 10A fuse [No. 17, located in fuse block (J/B)]. Verify battery positive voltage is present at terminal 3 of hazard switch. 2. Check hazard switch. 3. Check G wire between combination flasher unit and hazard switch for open circuit.
Front turn signal lamp LH or RH does not operate.	1. Bulb 2. Front turn signal lamp ground circuit	1. Check bulb. 2. Check front turn signal lamp ground circuit.
Rear turn signal lamp LH does not operate.	1. Bulb 2. Rear turn signal lamp LH ground circuit	1. Check bulb. 2. Check rear turn signal lamp LH ground circuit.
Rear turn signal lamp RH does not operate.	1. Bulb 2. Rear turn signal lamp RH ground circuit	1. Check bulb. 2. Check rear turn signal lamp RH ground circuit.
LH and RH turn indicators do not operate.	1. Ground circuit	1. Check ground circuit.
LH or RH turn indicator does not operate.	1. Bulb 2. Turn indicator circuit	1. Check bulb in cluster lid A. 2. Check continuity between combination meter terminals 12, 14 and 13.



SEL122E

Electrical Components Inspection

NGEL0034

COMBINATION FLASHER UNIT CHECK

NGEL0034S01

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

System Description

NGEL0161

Power is supplied at all times
- through 15A fuse [No. 22, located in the fuse block (J/B)]
- to trailer tow control unit terminal 6.

Ground is supplied
- to trailer tow control unit terminal 7 and
- to trailer harness connector terminal 1
- through body grounds B106 and B116.

TRAILER TAIL LAMP OPERATION

NGEL0161S01

With the lighting switch in the parking and tail lamp ON (1ST) or headlamp ON (2ND) position, power is supplied
- from lighting switch terminal 12
- to trailer harness connector terminal 2.

TRAILER STOP, TURN SIGNAL AND HAZARD LAMP OPERATION

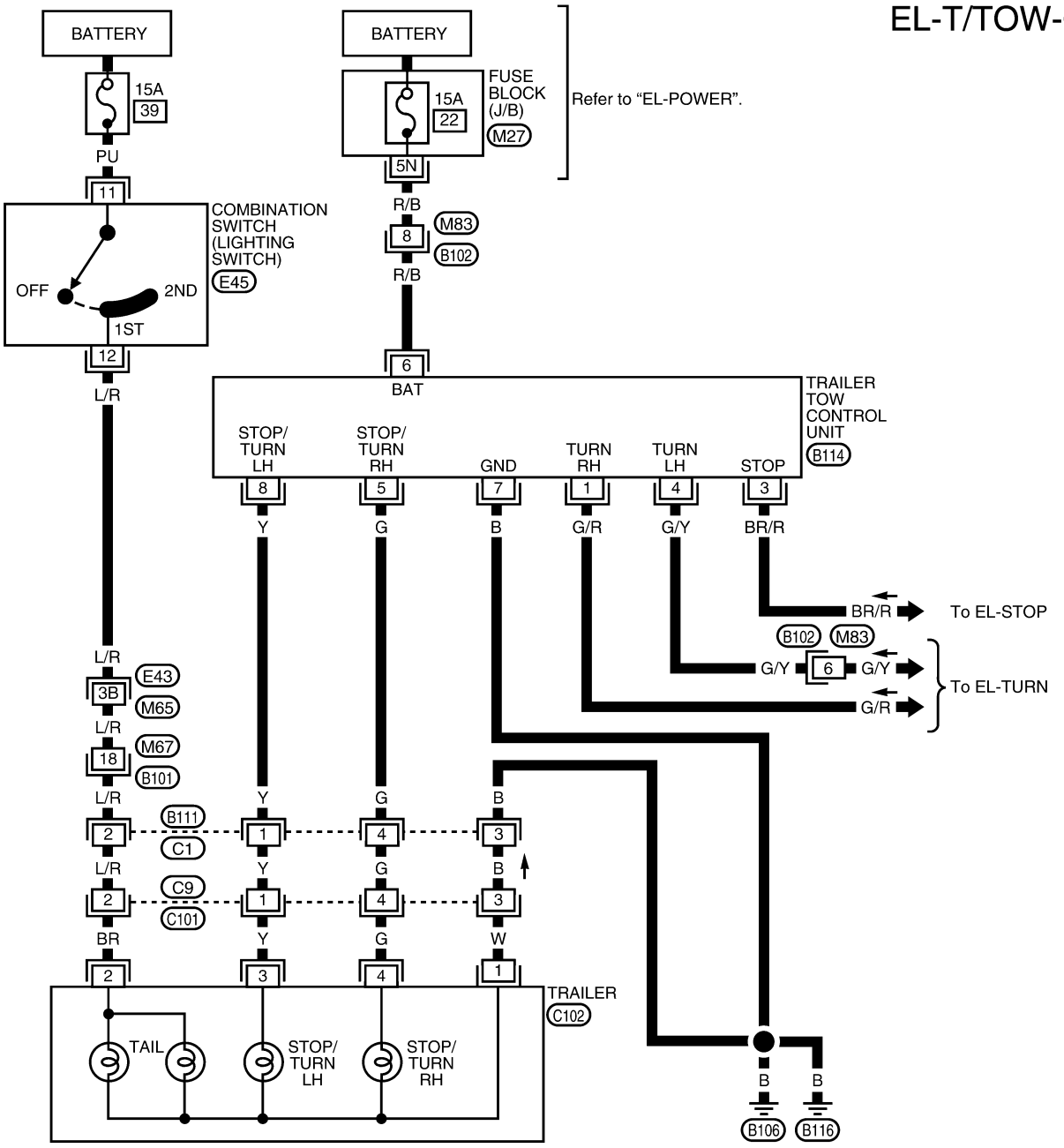
NGEL0161S02

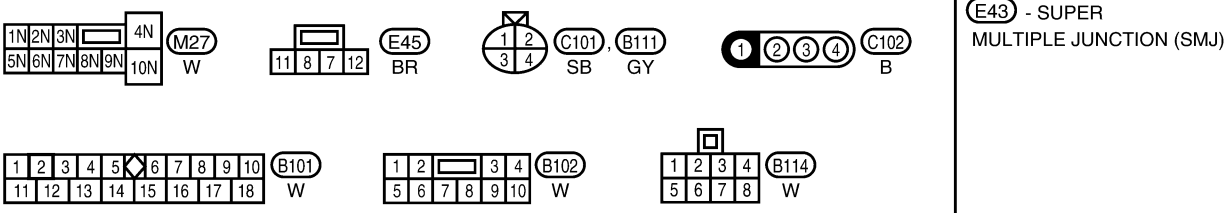
The trailer stop, turn signal and hazard lamps are all controlled by the trailer tow control unit. The trailer tow control unit regulates the amount of voltage supplied to the trailer lamps. If either turn signal or the hazard lamps are turned on and the trailer tow control unit gets a brake lamp input, the trailer tow control unit supplies more voltage to the trailer lamps to make them illuminate brighter.
Power is supplied to trailer tow control unit terminal 6 through 15A fuse (No. 22, located in the fuse block) at all times.
Stop lamp input is supplied to trailer tow control unit terminal 3.
Left turn signal and hazard lamp input is supplied to trailer tow control unit terminal 4.
Right turn signal and hazard lamp input is supplied to trailer tow control unit terminal 1.
Based on the stop lamp, turn signal lamp and hazard lamp inputs to the trailer tow control unit, power is supplied to trailer stop/turn lamp LH
- from trailer tow control unit terminal 8
- to trailer harness connector terminal 3.

Power is also supplied to trailer stop/turn lamp RH
- from trailer tow control unit terminal 5
- to trailer harness connector terminal 4.

Wiring Diagram — T/TOW —

NGEL0162





Refer to the following.
E43 - SUPER MULTIPLE JUNCTION (SMJ)

WEL666A

Trouble Diagnoses

NGEL0163

TRAILER TOW CONTROL UNIT INSPECTION TABLE

NGEL0163S01

Terminal No.	Wire color	Item	Condition	Voltage (Approx.)
1	G/R	RH turn lamps input	When RH turn lamps or hazard lamps operate	12 (intermittently)
			All other conditions	0
3	BR/R	Stop lamps signal input	When brake pedal is depressed	12
			When brake pedal is released	0
4	G/Y	LH turn lamps input	When LH turn lamps or hazard lamps operate	12 (intermittently)
			All other conditions	0
5	G	Stop/RH turn lamp (output)	When brake pedal is depressed	12
			When RH turn lamps or hazard lamps operate	12 (intermittently)
			All other conditions	0
6	R/B	Power supply	—	12
7	B	Ground	—	—
8	Y	Stop/LH turn lamp (output)	When brake pedal is depressed	12
			When LH turn lamps or hazard lamps operate	12 (intermittently)
			All other conditions	0

System Description

NGEL0035

Power is supplied at all times

- through 15A fuse (No. 39, located in the fuse and fusible link box)
- to lighting switch terminal 11.

The lighting switch must be in the parking and tail lamps ON (1ST) or headlamps ON (2ND) position for illumination.
The illumination control switch controls the amount of current to the illumination system. As the amount of current increases, the illumination becomes brighter.
The following chart shows the power and ground connector terminals for the components included in the illumination system.

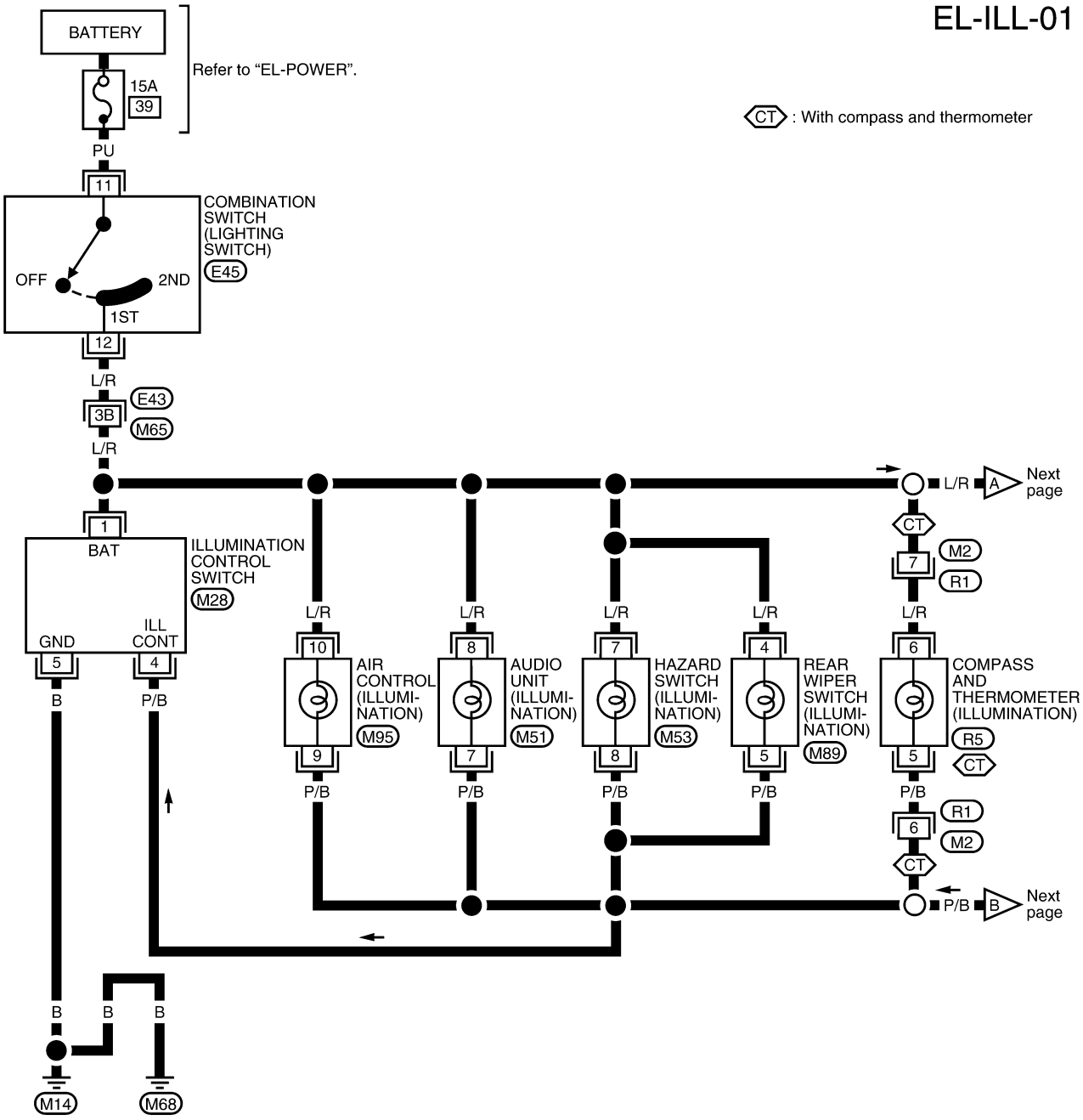
Component	Connector No.	Power terminal	Ground terminal
Illumination control switch	M28	1	5
Air control	M95	10	9
Audio unit	M51	8	7
Hazard switch	M53	7	8
Rear wiper switch	M89	4	5
Compass and thermometer	R5	3	4
Combination meter	M39	30, 32	42
Main power window and door lock/unlock switch	D7	3	8
A/T device	M35	4	3

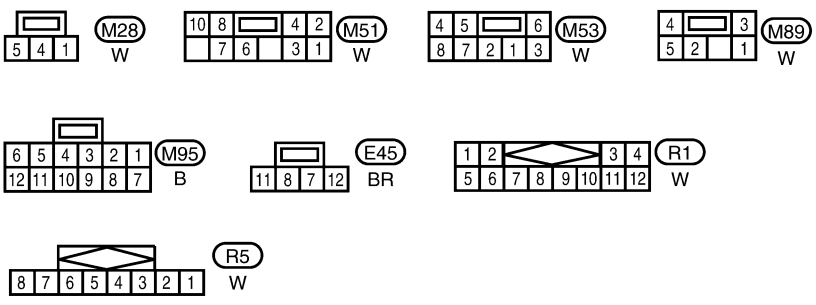
The ground for all of the components are controlled through terminals 4 and 5 of the illumination control switch and body grounds M14 and M68.

Wiring Diagram — ILL —

NGEL0037

EL-ILL-01

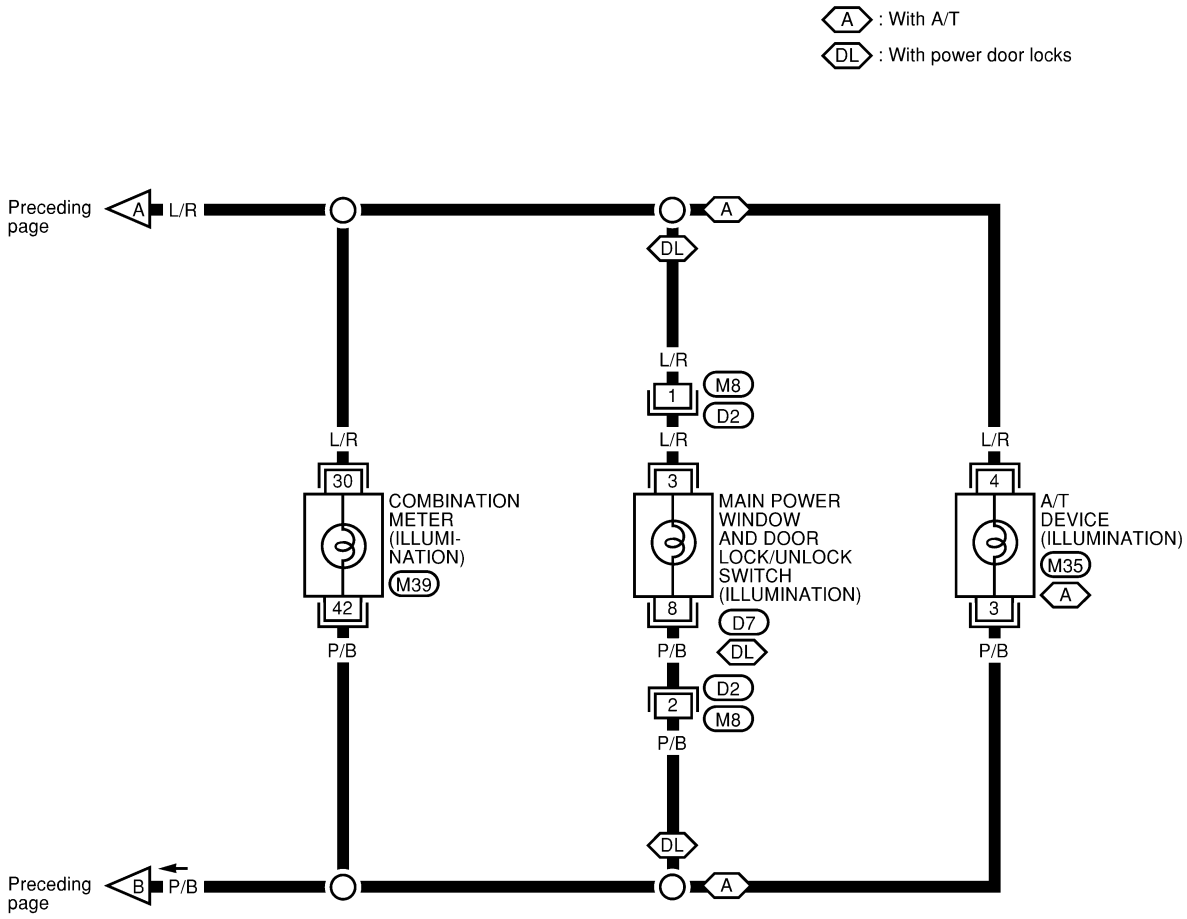




Refer to the following.
E43 - SUPER MULTIPLE JUNCTION (SMJ)

WEL667A

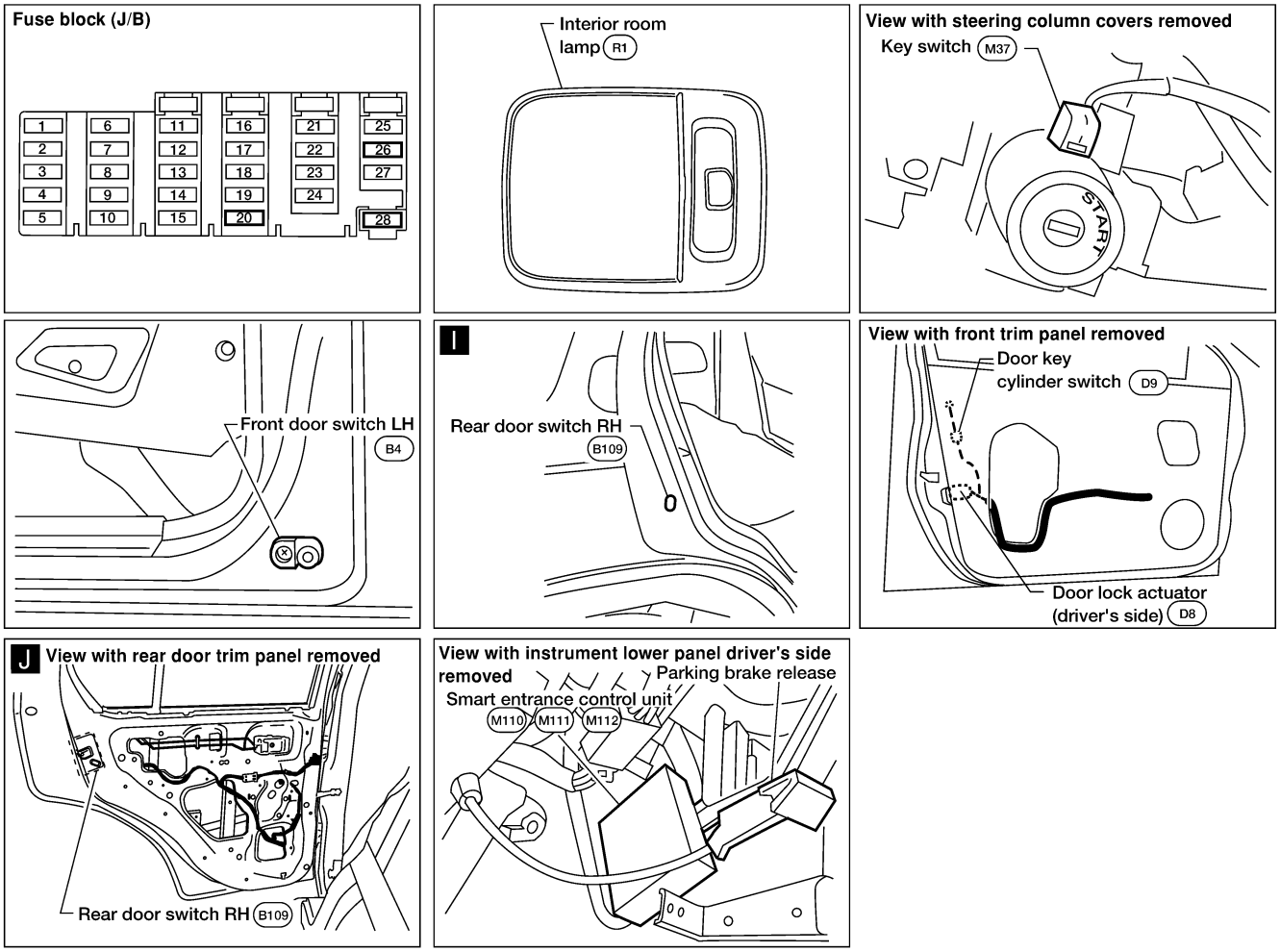
EL-ILL-02



WEL115B

Component Parts and Harness Connector Location

NGEL0194



WEL116B

System Description

NGEL0038

MODELS WITHOUT POWER DOOR LOCKS

NGEL0038S01

Room Lamp

NGEL0038S0106

Power is supplied at all times

- through 7.5A fuse [No. 26, located in the fuse block (J/B)]
- to front room lamp terminal + and
- to rear room lamp terminal +.

With the front/rear room lamp switch in the ON position, ground is supplied through the case of the front/rear room lamp.

With one or more doors open, with the front/rear room lamp switch in the DOOR position, ground is supplied

- to front/rear room lamp terminal DR
- through front door switch LH terminal 1 and/or
- through front door switch RH, rear door switch LH/RH and/or back door switch terminal +.

Ground is supplied to back door switch terminal – through body grounds D402 and D404.

MODELS WITH POWER DOOR LOCKS

NGEL0038S06

Room Lamp

NGEL0038S0601

Power is supplied at all times

- through 7.5A fuse [No. 28, located in the fuse block (J/B)]
- to smart entrance control unit terminal 49.

With the front/rear room lamp or map lamp switches in the ON position, ground is supplied

- through the case of the front/rear room lamp or
- through body grounds M14 and M68
- to map lamp terminal –.

Power is also supplied

- to front/rear room lamp or map lamp terminal +
- from smart entrance control unit terminal 50.

With the front door LH open and the front/rear room lamp switch in the DOOR position, ground is supplied

- to front/rear room lamp terminal DR
- through front door switch LH terminal 1 and
- to smart entrance control unit terminal 1
- through front door switch LH terminal 2
- through body grounds B6 and B10.

With the front door RH open and the front/rear room lamp switch in the DOOR position, ground is supplied

- to smart entrance control unit terminal 2
- through front door switch RH terminal + and
- to front/rear room lamp terminal DR
- through smart entrance control unit terminal 31
- through smart entrance control unit terminal 43 and 64
- through body grounds M14 and M68.

With rear door LH/RH and/or back door open and the front/rear room lamp switch in the DOOR position, ground is supplied

- to smart entrance control unit terminal 3 (with vehicle security system) or terminal 2 (without vehicle security system)
- through rear door switch LH/RH and/or back door switch terminal + and
- to front/rear room lamp terminal DR
- through smart entrance control unit terminal 31
- through smart entrance control unit terminal 43 and 64
- through body grounds M14 and M68.

Room Lamp Timer Operation

=NGEL0038S0603

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

- unlock signal is supplied from driver door lock and unlock switch while all doors are closed and key is removed from ignition key cylinder
- unlock signal is supplied from key fob while all doors are closed and driver door is locked
- key is removed from ignition key cylinder while driver door is closed
- driver door is opened and then closed while key is removed from ignition key cylinder. (However, if the driver door is closed with the key inserted in the ignition key cylinder after the driver door is opened with key removed, the timer is operated.)

The timer is canceled when:

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

ON-OFF CONTROL

NGEL0038S0602

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

BATTERY SAVER

NGEL0038S0604

The lamp turns off automatically when front/rear room lamp, map lamp is illuminated with the ignition key in the OFF position, if the lamp remains lit by the door switch open signal or if the lamp switch is in ON position for more than 30 minutes.

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

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

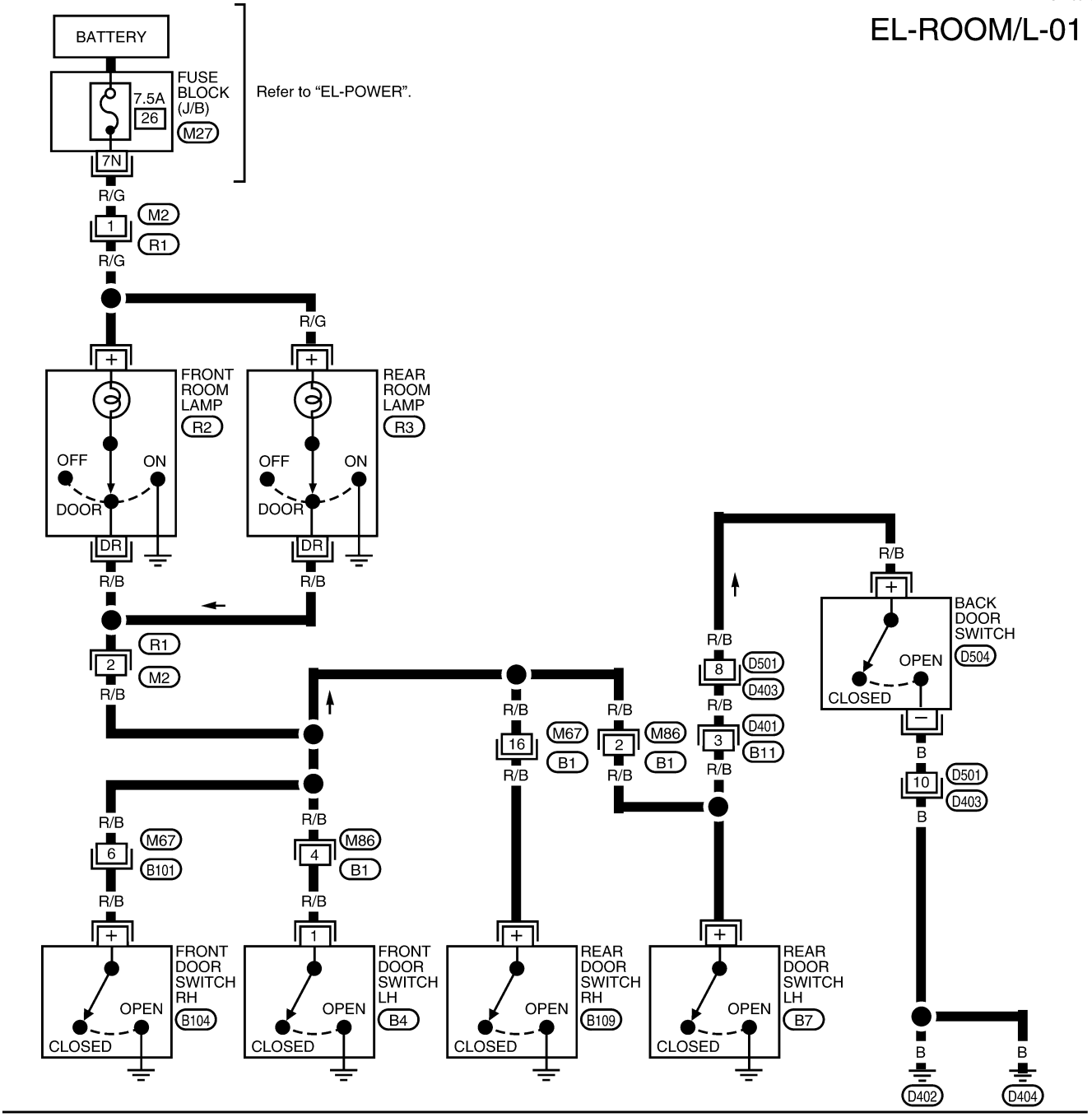
Wiring Diagram — ROOM/L —

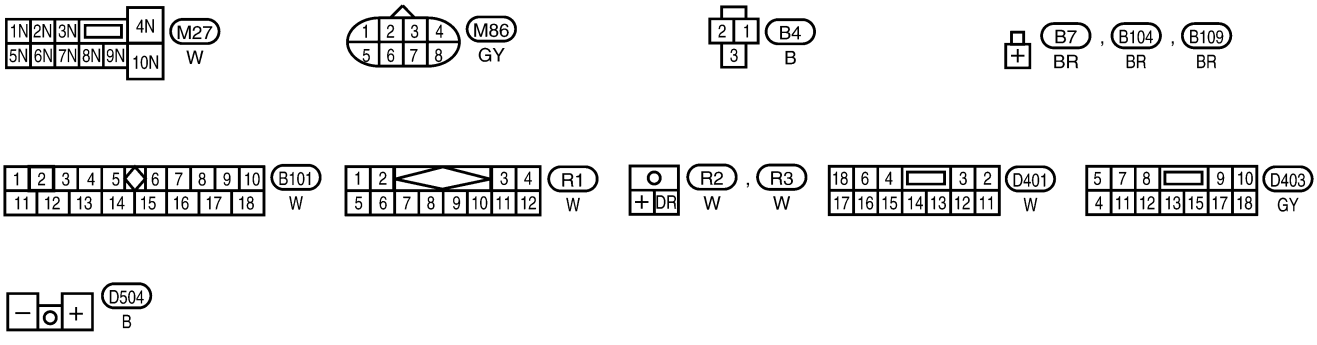
NGEL0040

MODELS WITHOUT POWER DOOR LOCKS

NGEL0040S01

EL-ROOM/L-01



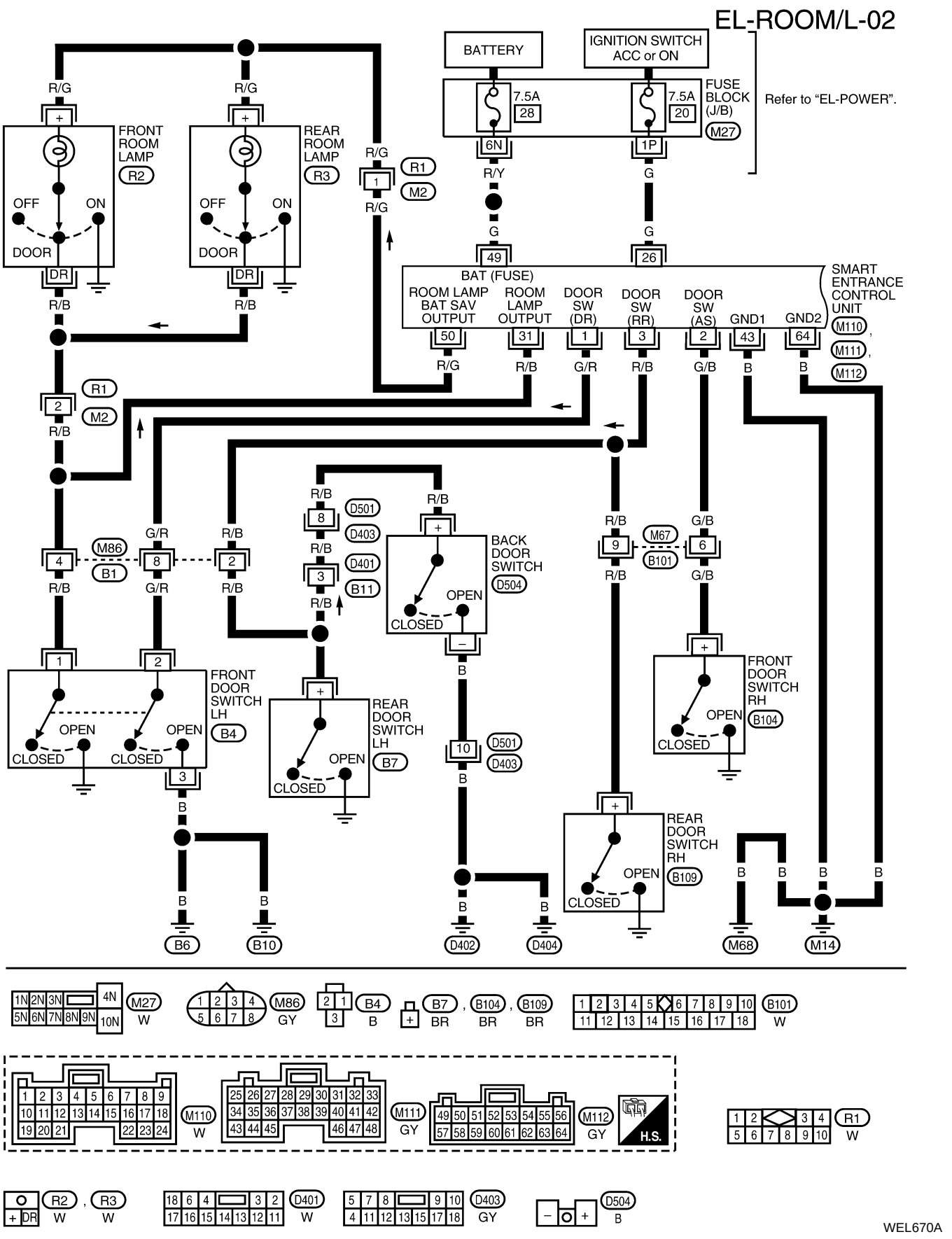


WEL669A

Wiring Diagram — ROOM/L — (Cont'd)

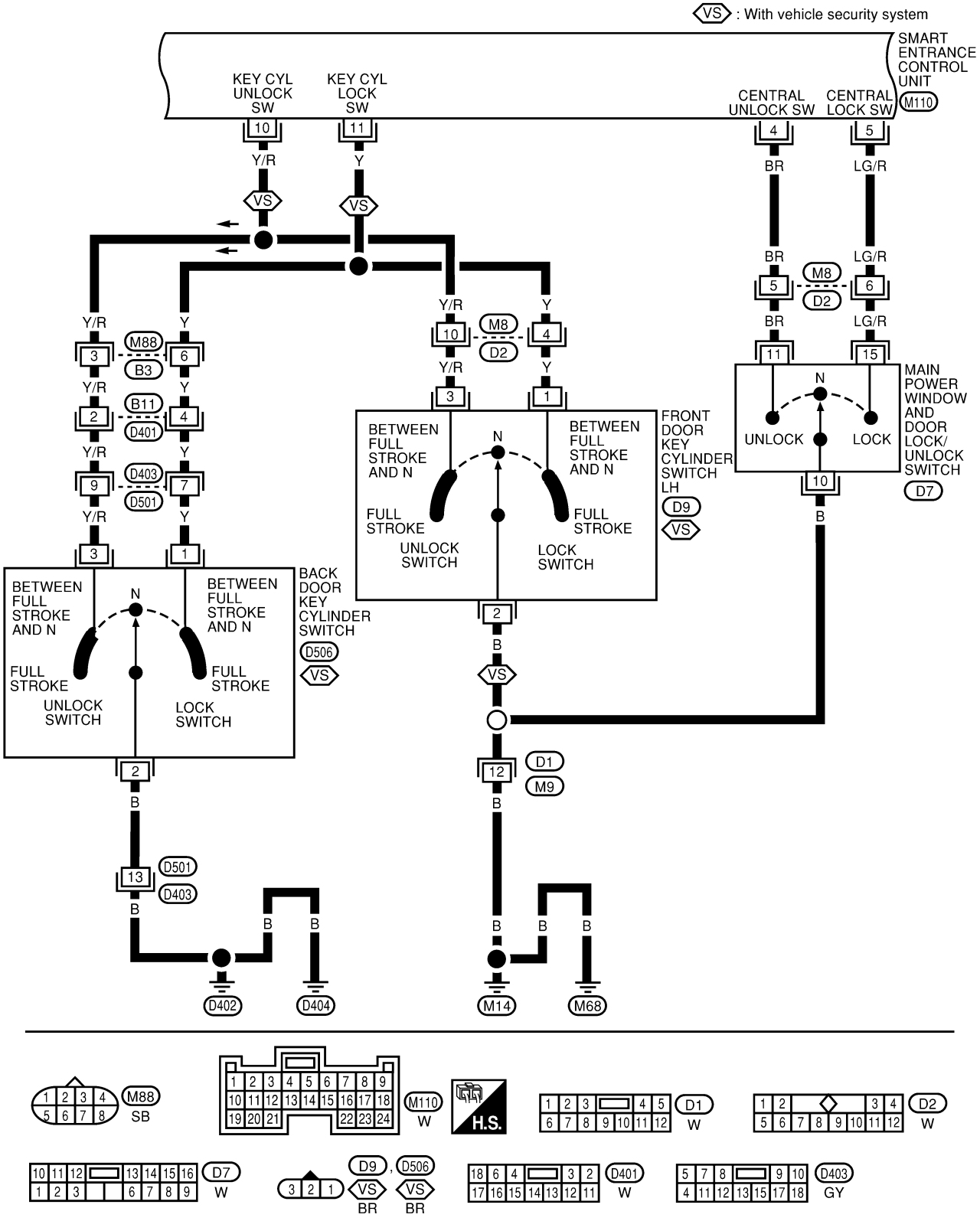
MODELS WITH POWER DOOR LOCKS

NGEL0040S02



WEL670A

EL-ROOM/L-03



WEL117B

Trouble Diagnosis

NGEL0207

SYMPTOM: Front and rear room lamp does not turn on or off properly.

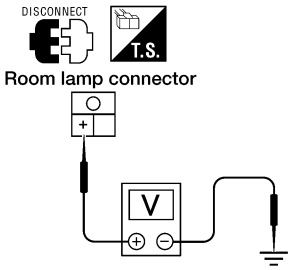
MODELS WITHOUT POWER DOOR LOCKS

NGEL0207S01

1	CHECK FRONT AND REAR ROOM LAMP FUSE	
Check 7.5 A fuses [No. 26 located in fuse block (J/B)].		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Replace fuse and check harness for short between fuse and front and rear room lamps.

2	CHECK FRONT AND REAR ROOM LAMP SWITCH SIGNALS	
1. Close all doors, turn ON front and rear room lamp switches. **Do front and rear room lamps turn on?** 2. Turn off front and rear room lamp switches. **Do front and rear room lamps turn off?**		
OK or NG		
OK	▶	GO TO 3.
NG	▶	**Check the following.** ● Front or rear room lamp switch ● Front or rear room lamp switch ground circuit ● Harness for open or short between front or rear room lamp switch and front door switch LH, front door switch RH, rear door switch LH, rear door switch RH or back door switch

3	CHECK FRONT AND REAR ROOM LAMP POWER SUPPLY	
Check voltage between front room lamp connector R2, or rear room lamp connector R3 terminal + (R/G) and ground.		
OK or NG		
OK	▶	GO TO 4.
NG	▶	Check harness for open between fuse and front or rear room lamps.



	Terminals		Voltage [V]
	(+)	(−)	
Front room lamp	+	Ground	Approx. 12
Rear room lamp	+	Ground	Approx. 12

LEL341A

4	CHECK INTERIOR ROOM LAMP BULB	
Check interior room lamp bulb.		
OK or NG		
OK	▶	GO TO 5.
NG	▶	Replace bulb.

5	CHECK KEY SWITCH (INSERTED) AND IGNITION ON SIGNAL
1. Insert key into ignition key cylinder. 2. Open front door LH. **Does warning chime sound?** 3. Turn ignition key to ON position. **Does warning chime stop sounding?** **YES or NO**	
YES ▶	Check harness for open or short between front or rear room lamp switch and front door switch LH, front door switch RH, rear door switch LH, rear door switch RH or back door switch.
NO ▶	Check "WARNING CHIME" system, refer to EL-103.

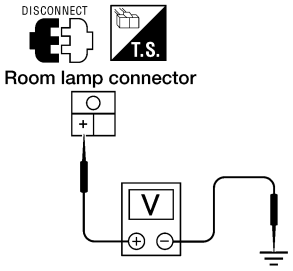
MODELS WITH POWER DOOR LOCKS

NGEL0207S02

1	CHECK FRONT AND REAR ROOM LAMP FUSE
Check 7.5 A fuses [No. 28 located in fuse block (J/B)]. **OK or NG**	
OK ▶	GO TO 2.
NG ▶	Replace fuse and check harness for short between fuse and front and rear room lamps.

2	CHECK FRONT AND REAR ROOM LAMP SWITCH SIGNALS
1. Close all doors, turn ON front and rear room lamp switches. **Do front and rear room lamps turn on?** 2. Turn off front and rear room lamp switches. **Do front and rear room lamps turn off?** **OK or NG**	
OK ▶	GO TO 3.
NG ▶	**Check the following.** ● Front or rear room lamp switch ● Front or rear room lamp switch ground circuit ● Harness for open or short between front or rear room lamp switch and smart entrance control unit

3	CHECK FRONT AND REAR ROOM LAMP POWER SUPPLY
Check voltage between front room lamp connector R2, or rear room lamp connector R3 terminal + (R/G) and ground.	



	Terminals (+)	Terminals (–)	Voltage [V]
Front room lamp	+	Ground	Approx. 12
Rear room lamp	+	Ground	Approx. 12

LEL341A

OK or NG

OK ▶	GO TO 4.
NG ▶	Check harness for open between fuse and front or rear room lamps.

4	CHECK INTERIOR ROOM LAMP BULB	
Check interior room lamp bulb. **OK or NG**		
OK	▶	GO TO 5.
NG	▶	Replace bulb.

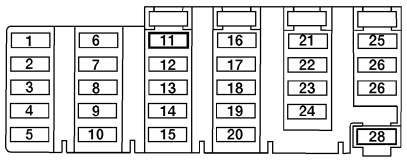
5	CHECK KEY SWITCH (INSERTED) AND IGNITION ON SIGNAL	
1. Insert key into ignition key cylinder. 2. Open front door LH. **Does warning chime sound?** 3. Turn ignition key to ON position. **Does warning chime stop sounding?** **YES or NO**		
YES	▶	GO TO 6.
NO	▶	Check "WARNING CHIME" system, refer to EL-103.

6	CHECK DOOR SWITCH INPUT SIGNAL	
Unlock doors using LH door key cylinder **Do the doors unlock?** **YES or NO**		
YES	▶	Replace smart entrance control unit.
NO	▶	Refer to "DOOR KEY CYLINDER SWITCH CHECK", EL-200.

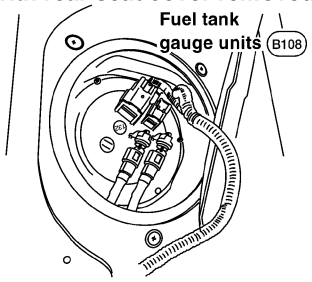
Component Parts and Harness Connector Location

NGEL0041

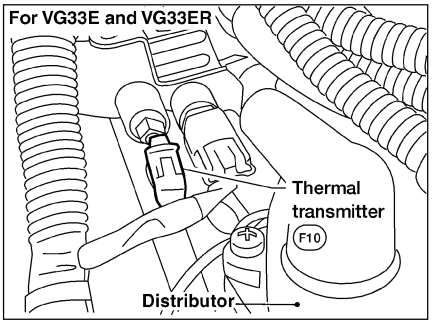
Fuse block (J/B)



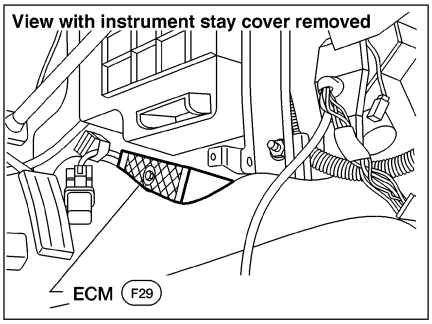
View with rear seat cover removed



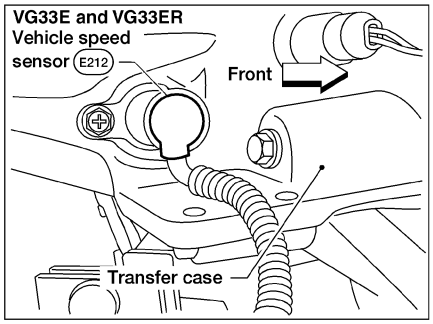
For VG33E and VG33ER



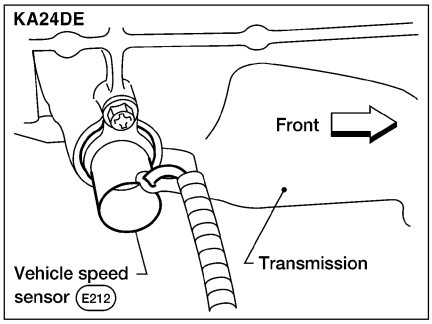
View with instrument stay cover removed



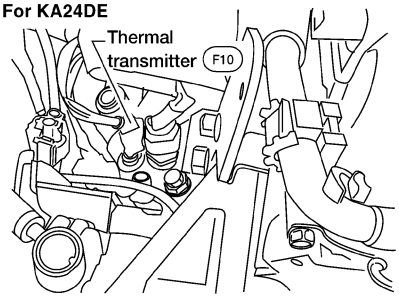
VG33E and VG33ER



KA24DE



For KA24DE



WEL916A

System Description

NGEL0042

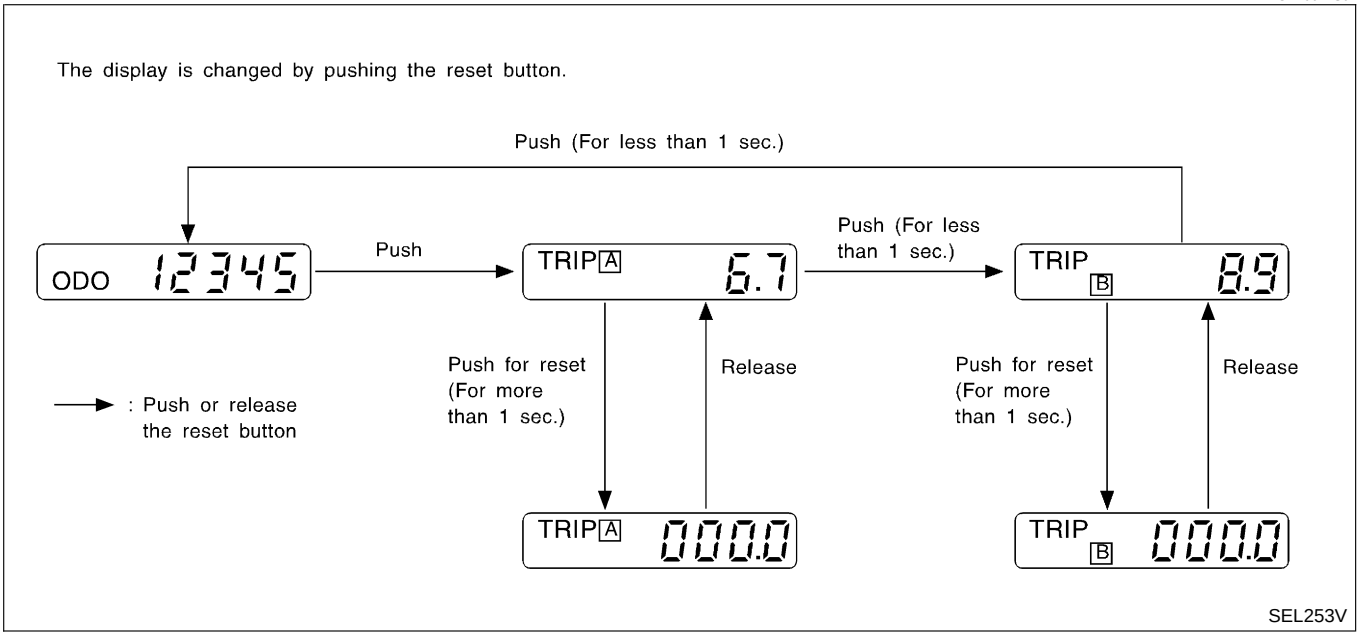
UNIFIED CONTROL METER

NGEL0042S06

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

HOW TO CHANGE THE DISPLAY FOR ODO/TRIP METER

NGEL0042S07



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

POWER SUPPLY AND GROUND CIRCUIT

NGEL0042S08

Power is supplied at all times

- through 7.5A fuse [No. 28, located in the fuse block (J/B)]
- to combination meter terminal 31.

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

- through 10A fuse [No. 11, located in the fuse block (J/B)]
- to combination meter terminal 32.

Ground is supplied

- to combination meter terminal 33
- through body grounds M14 and M68.

FUEL GAUGE

NGEL0042S03

The fuel gauge indicates the approximate fuel level in the fuel tank. The reading on the gauge is based on the resistance of the fuel level sensor unit.
The fuel gauge is regulated by a variable ground signal supplied

- to combination meter terminal 47 for the fuel gauge
- through fuel level sensor unit terminal 2
- through fuel level sensor unit terminal 4
- through body grounds B106 and B116.

WATER TEMPERATURE GAUGE

NGEL0042S01

The water temperature gauge indicates the engine coolant temperature. The reading on the gauge is based on the resistance of the thermal transmitter.
The water temperature gauge is regulated by a variable ground signal supplied

- to combination meter terminal 46
- through thermal transmitter terminal 1.

As the temperature of the coolant increases, the resistance of the thermal transmitter decreases and the needle on the gauge moves from C to H.

TACHOMETER

NGEL0042S02

The tachometer indicates engine speed in revolutions per minute (rpm).
The tachometer is regulated by a signal

- to combination meter terminal 48 for the tachometer
- from ECM terminal 3.

SPEEDOMETER

NGEL0042S04

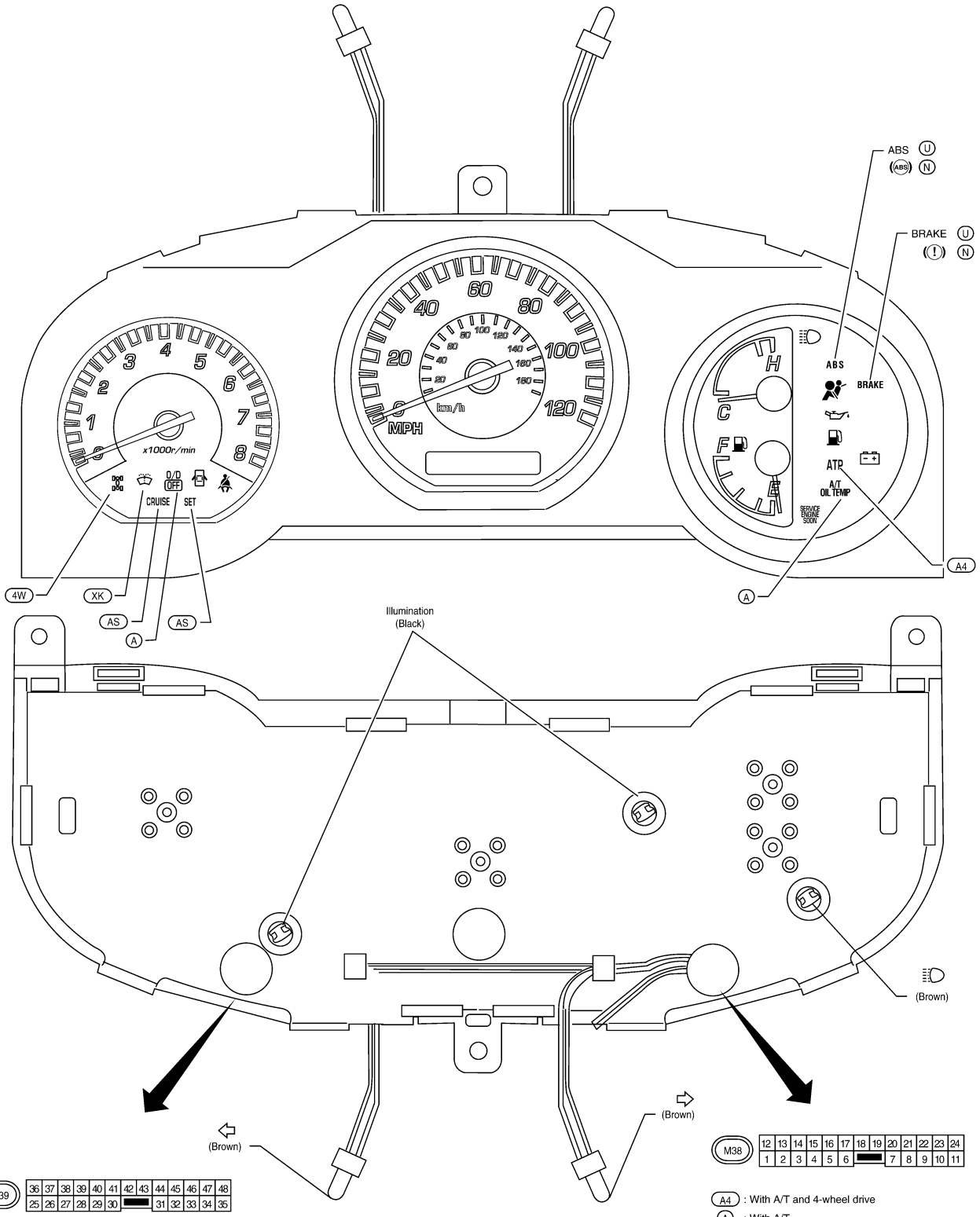
The vehicle speed sensor provides a voltage signal to the combination meter for the speedometer.
The voltage is supplied

- to combination meter terminals 34 and 35 for the speedometer
- from vehicle speed sensor terminals 1 and 2.

The unified meter control unit converts the voltage to the vehicle speed and displays it on the speedometer.

Combination Meter

NGEL0043

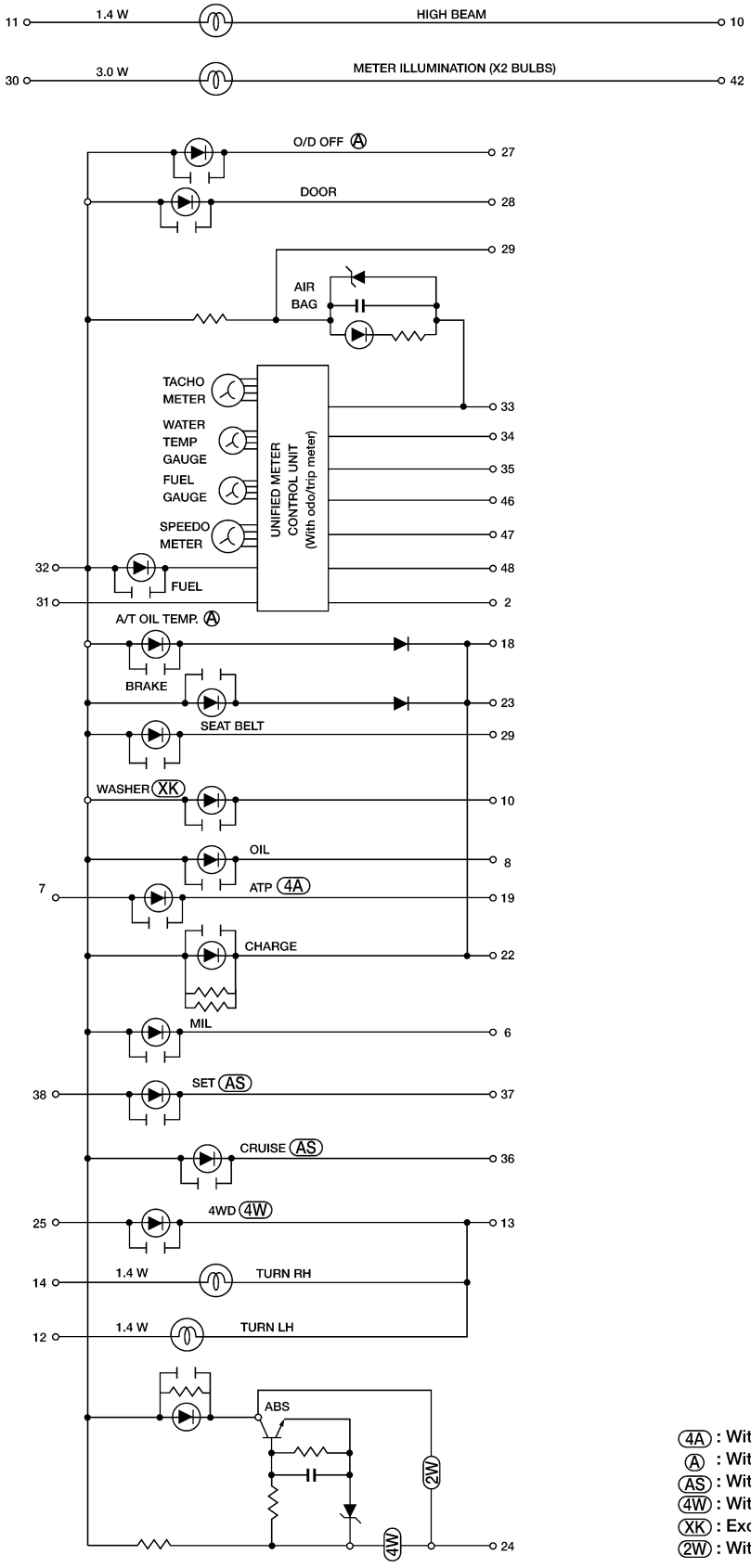


Bulb socket color	Bulb wattage
Brown	1.4 W
Black	3.0 W

( ) : Bulb socket color

A4 : With A/T and 4-wheel drive
A : With A/T
N : For Canada
U : For USA
AS : With ASCD
4W : With 4-wheel drive
XK : Except with KA24DE engine

LEL894A

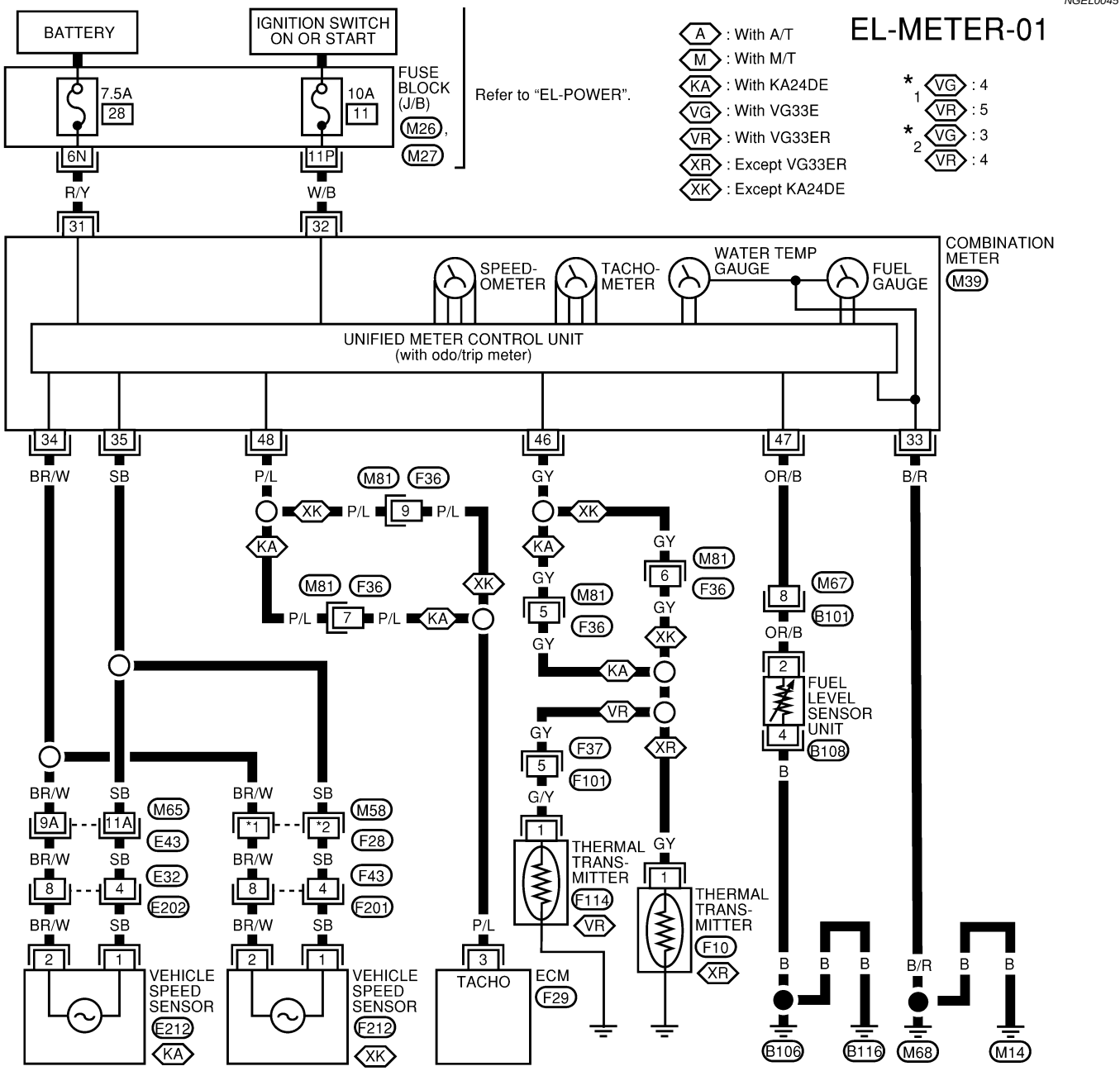


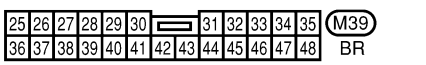
4A : With A/T and 4-wheel drive
Ⓐ : With A/T
AS : With ASCD
4W : With 4-wheel drive
XK : Except KA24DE
2W : With 2-wheel drive

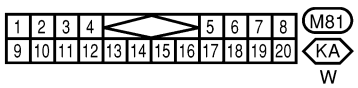
WEL118B

Wiring Diagram — METER —

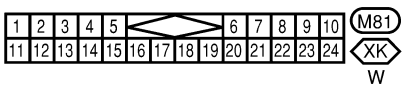
NGEL0045

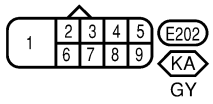






Refer to the following.
E43 - SUPER MULTIPLE JUNCTION (SMJ)
F29 - ELECTRICAL UNITS
M26, M27 - FUSE BLOCK (J/B)





WEL119B

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

NGEL0151

DIAGNOSIS FUNCTION

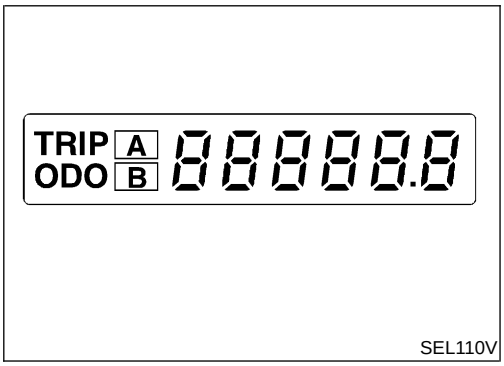
NGEL0151S01

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

HOW TO ALTERNATE DIAGNOSIS MODE

NGEL0151S02

1. Turn ignition switch ON while pressing and holding trip reset switch for 0.8 second.
2. Push trip reset switch 3 times within 7 seconds.
3. All odo/trip meter segments should be turned on.

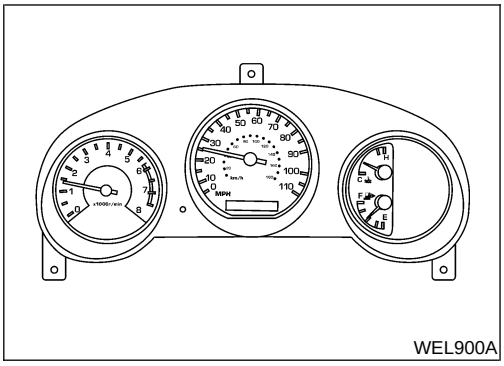


SEL110V

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

At this point, the unified meter control unit is in diagnosis mode.

4. Push odo/trip meter switch. Indication of each meter/gauge should be as shown in figure at left while pushing odo/trip meter switch if it is not malfunctioning.


WEL900A

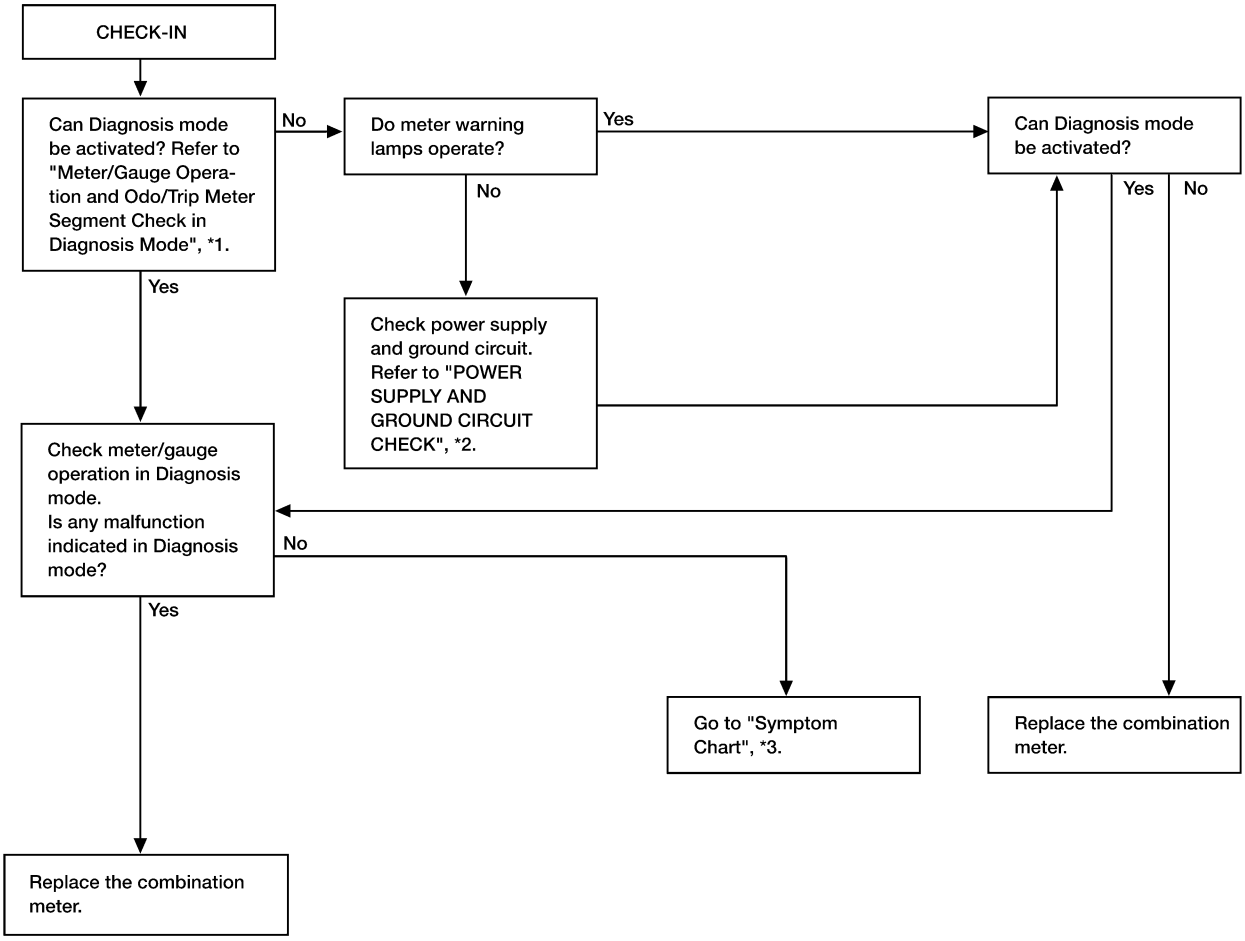
NOTE:
It takes about 1 minute for indication of fuel gauge to become stable.

Trouble Diagnoses

NGEL0046

PRELIMINARY CHECK

NGEL0046S04



WEL835A

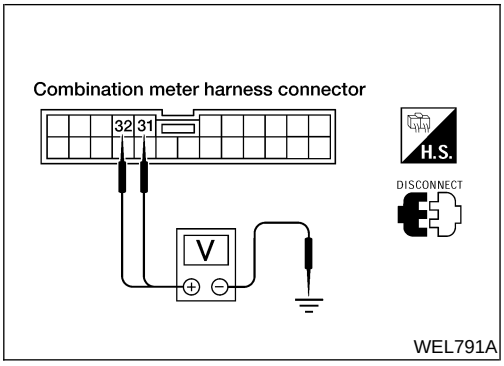
*1: EL-81 *2: EL-84 *3: EL-83

SYMPTOM CHART

=NGEL0046S05

Symptom	Possible causes	Repair order
Speedometer and odo/trip meter are malfunctioning.	• Signal - Speedometer, Odo/Trip meter • Unified meter control unit	1. Check vehicle speed sensor. Refer to INSPECTION/VEHICLE SPEED SENSOR, EL-85. 2. Replace combination meter.
Multiple meters/gauges are malfunctioning (except speedometer, odo/trip meter).	• Unified meter control unit	• Replace combination meter.
One gauge (tachometer, fuel gauge or water temp. gauge) is malfunctioning.	• Unified meter control unit	1. Replace combination meter.

Before starting trouble diagnoses above, refer to "PRELIMINARY CHECK", EL-82.



POWER SUPPLY AND GROUND CIRCUIT CHECK

=NGEL0046S07

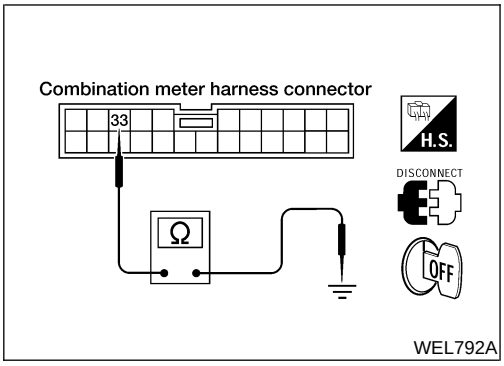
Power Supply Circuit Check

NGEL0046S0701

Terminals			Ignition switch position		
(+)		(−)			
Connector	Terminal (wire color)				
M39	31 (R/Y)	Ground	Battery voltage	Battery voltage	Battery voltage
M39	32 (W/B)	Ground	0V	0V	Battery voltage

If NG, check the following.

- 7.5A fuse [No. 28, located in fuse block (J/B)]
- 10A fuse [No. 11, located in fuse block (J/B)]
- Harness for open or short between fuse and combination meter



Ground Circuit Check

NGEL0046S0702

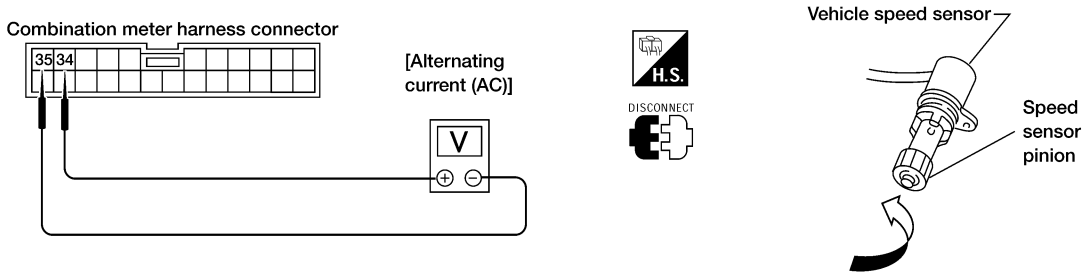
Terminals			Continuity
(+)		(–)	
Connector	Terminal (wire color)		
M39	33 (B/R)	Ground	Yes

INSPECTION/VEHICLE SPEED SENSOR

=NGEL0046S03

1	CHECK VEHICLE SPEED SENSOR OUTPUT

1. Remove vehicle speed sensor from transmission.
2. Check voltage between combination meter connector M39 terminal 34 (BR/W) and terminal 35 (SB) while quickly turning speed sensor pinion.



WEL793A

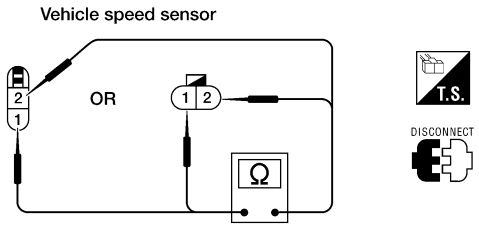
Voltage: Approx. 0.5V

OK or NG

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

2	CHECK VEHICLE SPEED SENSOR

Check resistance between vehicle speed sensor terminals 1 and 2.



WEL120B

Resistance: Approx. 285Ω

OK or NG

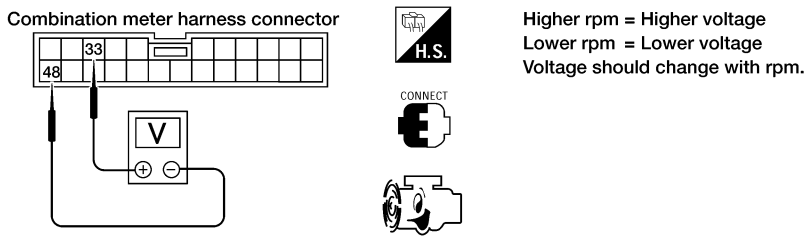
OK	▶	Check harness and connector between speedometer and vehicle speed sensor.
NG	▶	Replace vehicle speed sensor.

INSPECTION/ENGINE REVOLUTION SIGNAL

NGEL0046S02

1	CHECK ECM OUTPUT

1. Start engine.
2. Check voltage between combination meter connector M39 terminal 48 (P/L) and terminal 33 (B/R) at idle and 2,000 rpm.



WEL795A

OK or NG

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

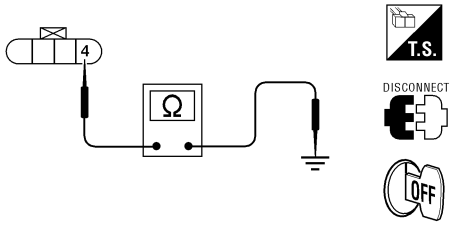
INSPECTION/FUEL LEVEL SENSOR UNIT

=NGEL0046S08

1	CHECK GROUND CIRCUIT FOR FUEL LEVEL SENSOR UNIT

Check harness continuity between fuel level sensor unit harness connector B108 terminal 4 (B) and ground.

Fuel level sensor unit harness connector



Does continuity exist?

LEL004A

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

2	CHECK FUEL LEVEL SENSOR UNIT

Refer to "FUEL LEVEL SENSOR UNIT CHECK", EL-89.

OK or NG

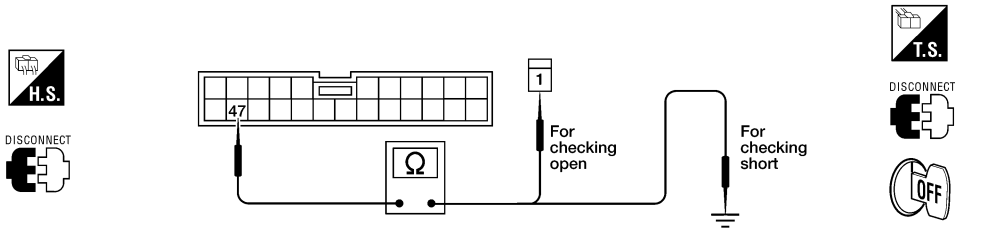
OK	▶	GO TO 3.
NG	▶	Replace fuel level sensor unit.

3	CHECK HARNESS FOR OPEN OR SHORT

1. Disconnect combination meter harness connector M39, fuel level sensor unit harness connector B108 and ECM connector F29.
2. Check continuity between combination meter harness connector M39 terminal 47 (OR/B) and fuel level sensor unit harness connector B108 terminal 2 (OR/B).
   Continuity should exist.
3. Check continuity between combination meter harness connector M39 terminal 47 (OR/B) and ground.
   Continuity should not exist.

Combination meter harness connector

Fuel level sensor unit harness connector



WEL796A

OK or NG

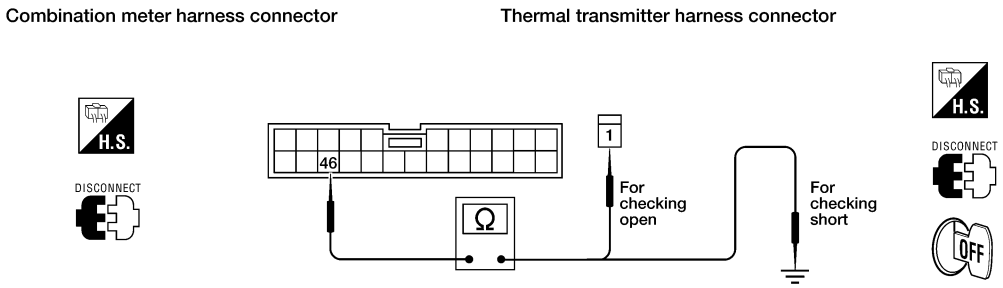
OK	▶	Fuel level sensor unit is OK.
NG	▶	Repair harness or connector.

INSPECTION/THERMAL TRANSMITTER

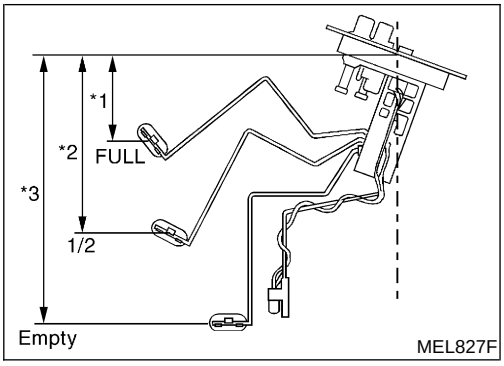
NGEL0046S09

1	CHECK THERMAL TRANSMITTER	
Refer to "THERMAL TRANSMITTER CHECK", EL-89.		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Replace thermal transmitter.

2	CHECK HARNESS FOR OPEN OR SHORT	
1. Disconnect combination meter harness connector M39 and thermal transmitter harness connector. 2. Check continuity between combination meter harness connector M39 terminal 46 (GY) and thermal transmitter harness connector terminal 1. **Continuity should exist.** 3. Check continuity between combination meter harness connector M39 terminal 46 (GY) and ground. **Continuity should not exist.**		
OK or NG		
OK	▶	Thermal transmitter is OK.
NG	▶	Repair harness or connector.



WEL797A



MEL827F

Electrical Components Inspection

NGEL0047

FUEL LEVEL SENSOR UNIT CHECK

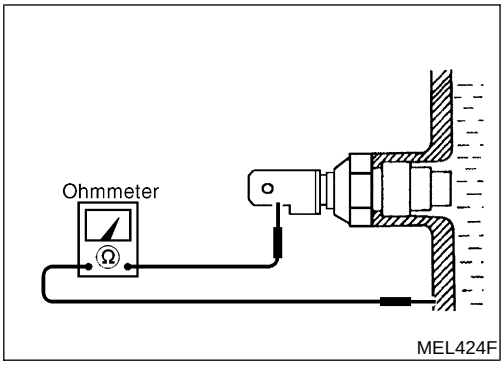
=NGEL0047S01

- For removal, refer to ***FE-4***, “Removal and Installation”.

Check the resistance between fuel level sensor unit terminals 2 and 4.

Ohmmeter		Float position mm (in)			Resistance value (Ω)
(+)	(−)				
2	4	*1	Full	96 (3.78)	Approx. 4 - 6
		*2	1/2	188 (7.40)	30 - 34
		*3	Empty	257 (10.12)	80 - 83

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



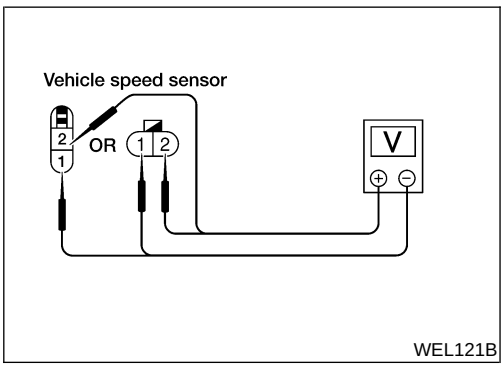
MEL424F

THERMAL TRANSMITTER CHECK

NGEL0047S02

Check the resistance between thermal transmitter terminal 1 and body ground.

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



WEL121B

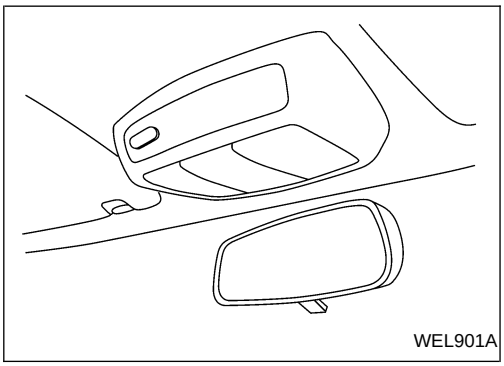
VEHICLE SPEED SENSOR SIGNAL CHECK

NGEL0047S03

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

System Description

NGEL0209



This unit displays following items:

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

OUTSIDE TEMPERATURE DISPLAY

NGEL0209S01

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

- Selecting the indication range
  Push the switch to change from “°F” to “°C”.
- The indicated temperature on the thermometer is not readily affected by engine heat. It changes only when one of the following conditions is present.

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

b) The vehicle speed is greater than 20 km/h (13 MPH).
(This is to prevent the indicated temperature from being affected by engine heat during low-speed driving.)

c) The ignition key has been turned to the “OFF” position for more than 2 hours. (The engine is cold.)

DIRECTION DISPLAY

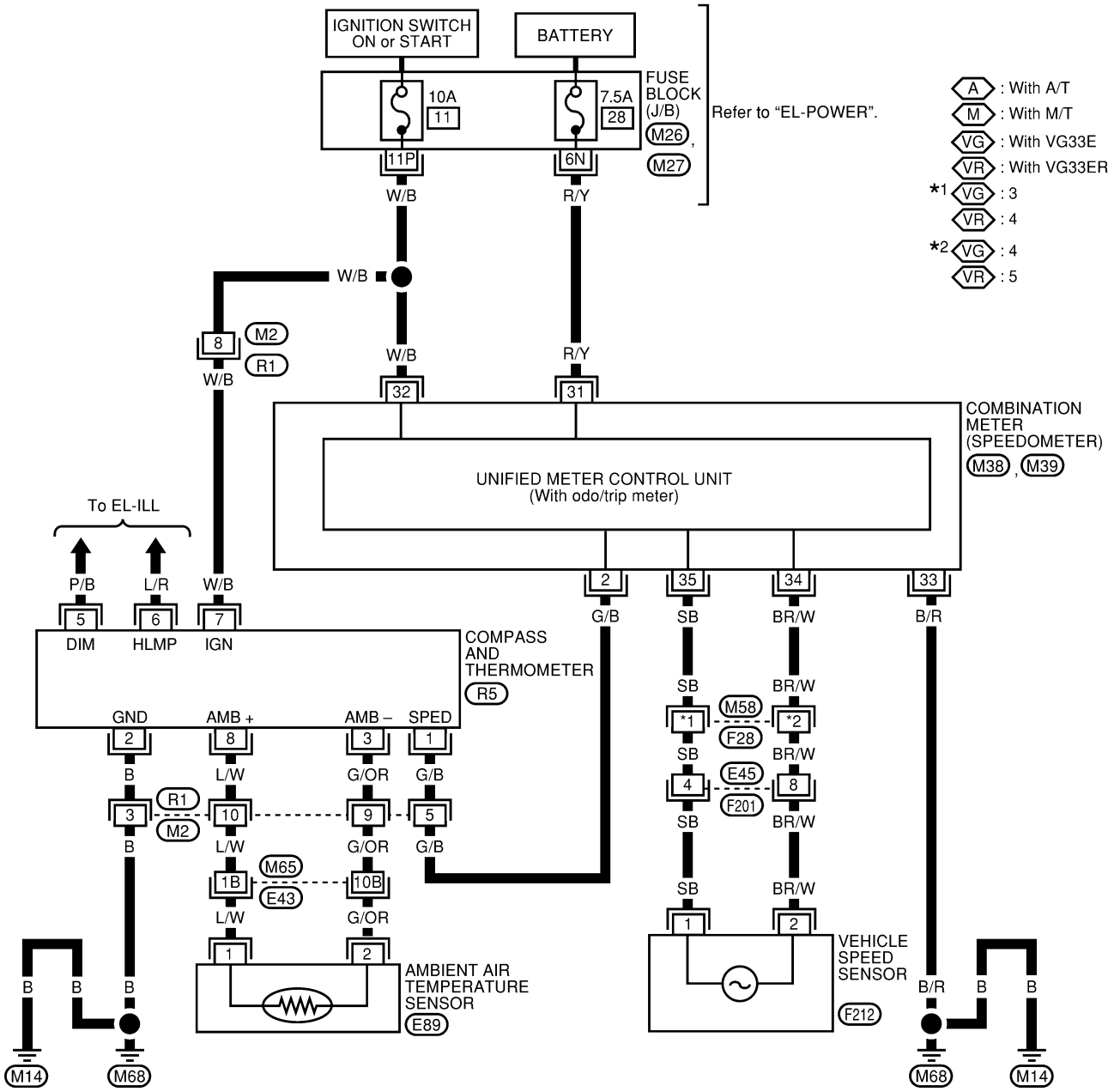
NGEL0209S02

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

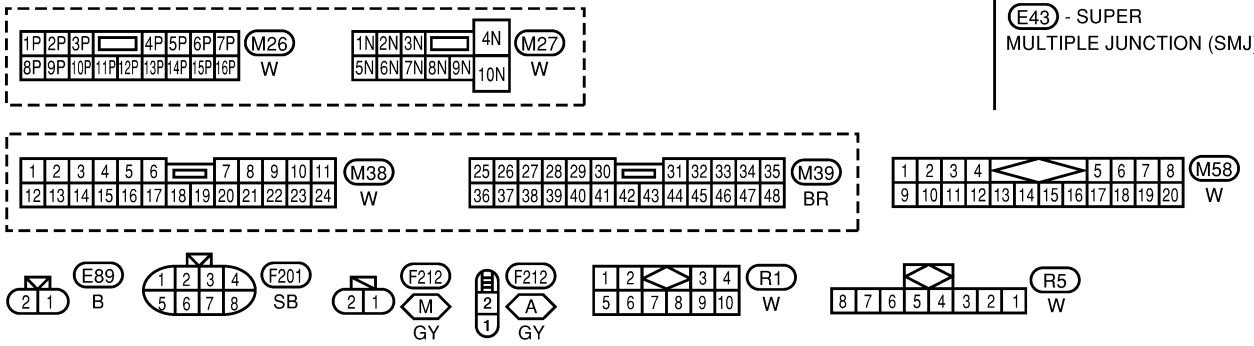
Wiring Diagram — COMPAS —

NGEL0210

EL-COMPAS-01



Refer to the following.
E43 - SUPER MULTIPLE JUNCTION (SMJ)



WEL122B

Trouble Diagnoses

NGEL0211

PRELIMINARY CHECK FOR THERMOMETER

NGEL0211S01

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

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

NOTE:

- The indicated temperature on the thermometer is not readily affected by engine heat. It changes only when one of the following conditions is present.

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

b) The vehicle speed is greter than 20 km/h (13 MPH).
(This is to prevent the indicated temperature from being affected by engine heat during low-speed driving.)

c) The ignition key has been turned to the “OFF” position for more than 2 hours. (The engine is cold.)

INSPECTION/COMPASS AND THERMOMETER

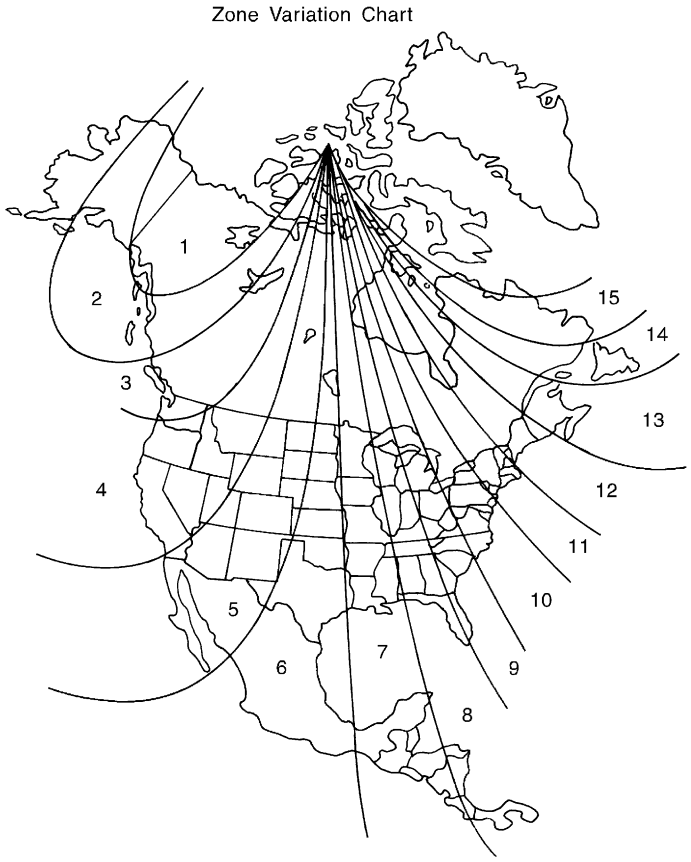
NGEL0211S02

Symptom	Possible causes	Repair order
No display at all	1. 10A fuse 2. Ground circuit 3. Compass and thermometer	1. Check 10A fuse [No. 11, located in fuse block (J/B)]. Turn the ignition switch ON and verify that battery positive voltage is at terminal 7 of compass and thermometer. 2. Check ground circuit for compass and thermometer. 3. Replace compass and thermometer.
Forward direction indication slips off the mark or incorrect.	1. In manual correction mode (Bar and display vanish.) 2. Zone variation change is not done.	1. Drive the vehicle and turn at an angle of 90°. 2. Perform the zone variation change.
Compass reading remains unchanged.	1. Vehicle speed signal is not entered. 2. Compass and thermometer	1. Check harness for open or short between combination meter terminal 2 and compass and thermometer terminal 1. 2. Replace compass and thermometer.
Displays wrong temperature when ambient temperature is between −40°C (−40°F) and 55°C (130°F). (See NOTE above.)	1. Check operation 2. Ambient air temperature sensor circuit 3. Vehicle speed signal is not entered. 4. Ambient air temperature sensor 5. Compass and thermometer	1. Perform preliminary check shown above. 2. Check harness for open or short between ambient air temperature sensor and compass and thermometer. 3. Check harness for open or short between combination meter terminal 2 and compass and thermometer terminal 1. 4. Replace ambient air temperature sensor. 5. Replace compass and thermometer.
Displays SC or OC.	1. Ambient air temperature sensor circuit. 2. Ambient air temperature sensor. 3. Compass and thermometer.	1. Check harness for open or short between ambient air temperature sensor and compass and thermometer. 2. Replace ambient air temperature sensor. 3. Replace compass and thermometer.

Calibration Procedure for Compass

=NGEL0212

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

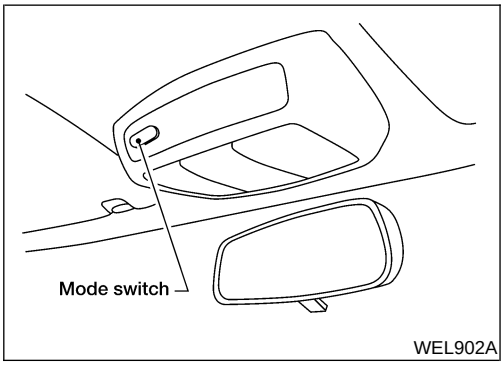


1. Determine your location on the zone map. Record your zone number.
2. Turn the ignition switch to the ON position.
3. Push the "Mode" switch continuously for five seconds until the current zone entry number and the "VAR" icon is displayed.
4. Press the "Mode" switch repeatedly until the desired zone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

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

NOTE: Use zone number 5 for Hawaii.

WEL859A



WEL902A

CORRECTION FUNCTIONS OF COMPASS

NGEL0212S01

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

INITIAL CORRECTION PROCEDURE FOR COMPASS

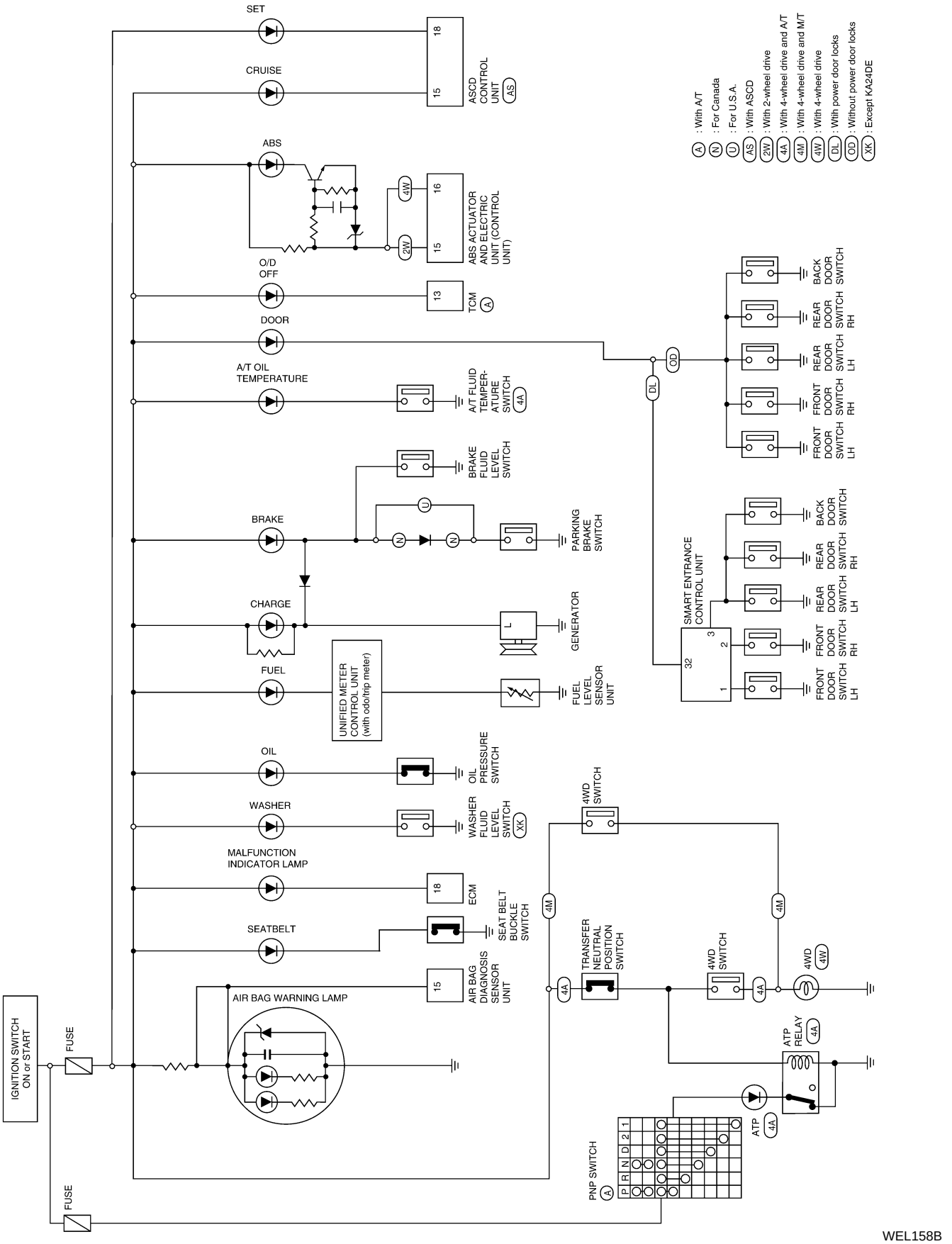
NGEL0212S02

1. Pushing the “Mode” switch for about 10 seconds will enter the initial correction mode. The “CAL” icon will illuminate.
2. Turn the vehicle slowly in an open, safe place. The initial correction is completed in one or two turns.

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

Circuit Diagram

NGEL0049

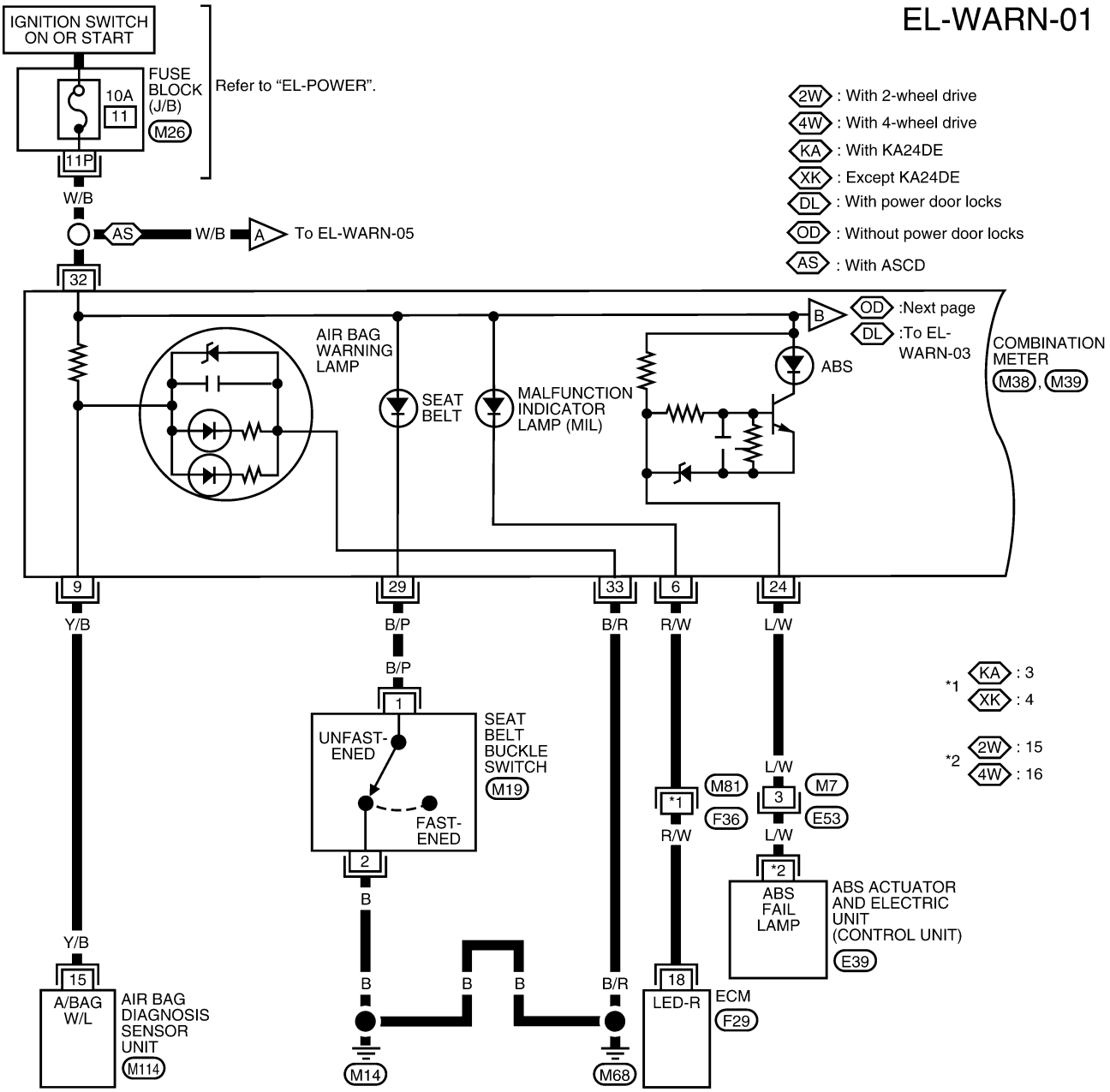


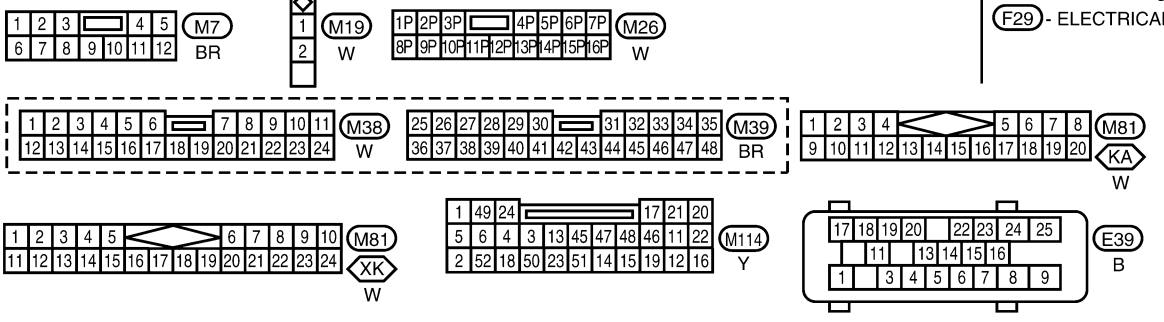
WEL158B

Wiring Diagram — WARN —

NGEL0050

EL-WARN-01





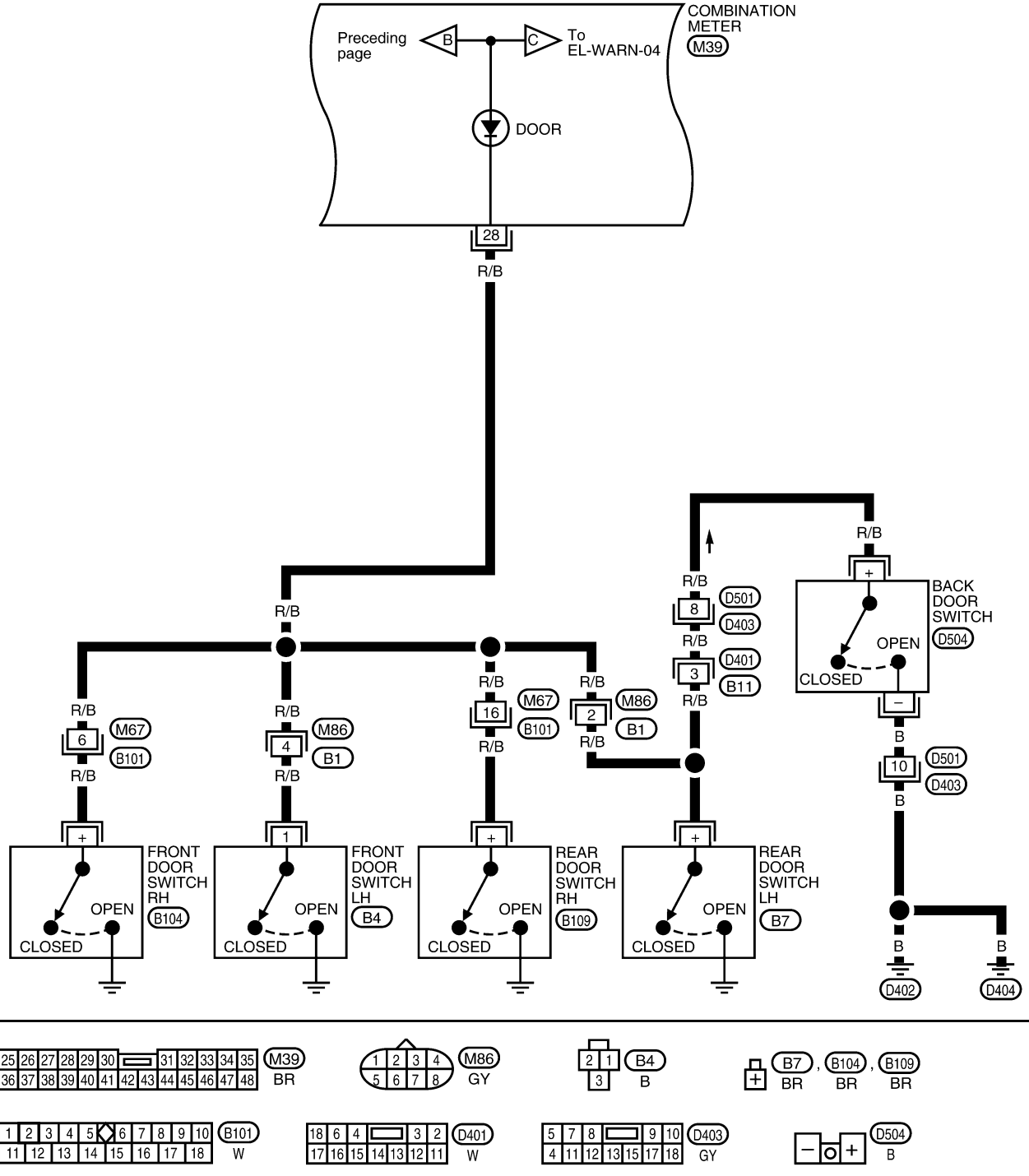
Refer to the following.
F29 - ELECTRICAL UNITS

WEL123B

MODELS WITHOUT POWER DOOR LOCKS

NGEL0050S01

EL-WARN-02

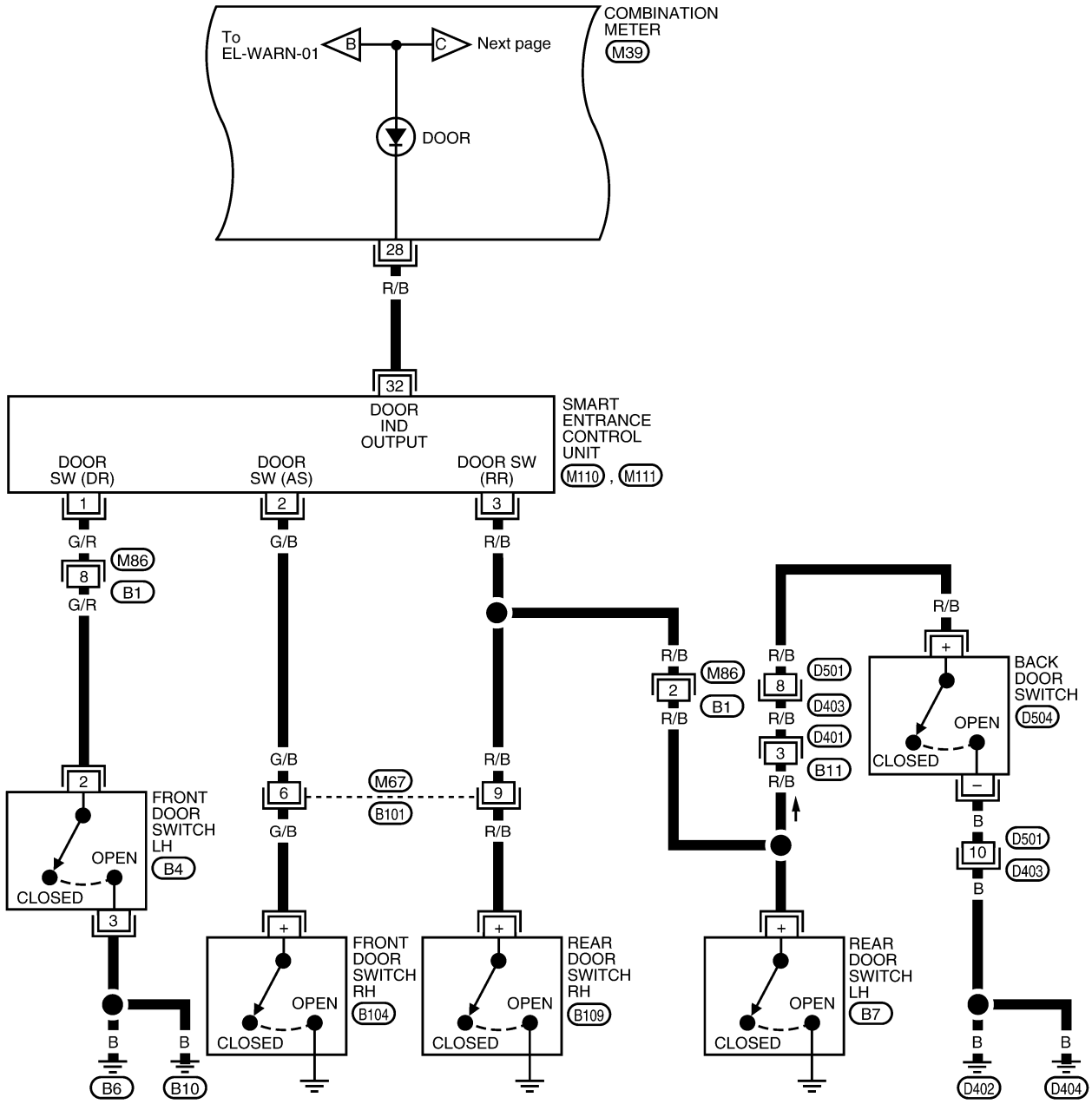


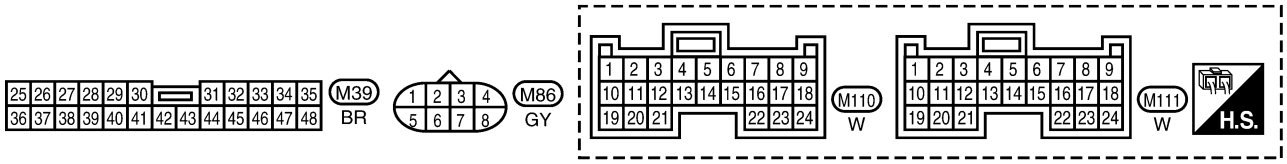
WEL677A

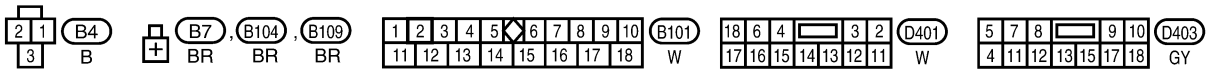
MODELS WITH POWER DOOR LOCKS

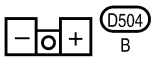
NGEL0050S02

EL-WARN-03





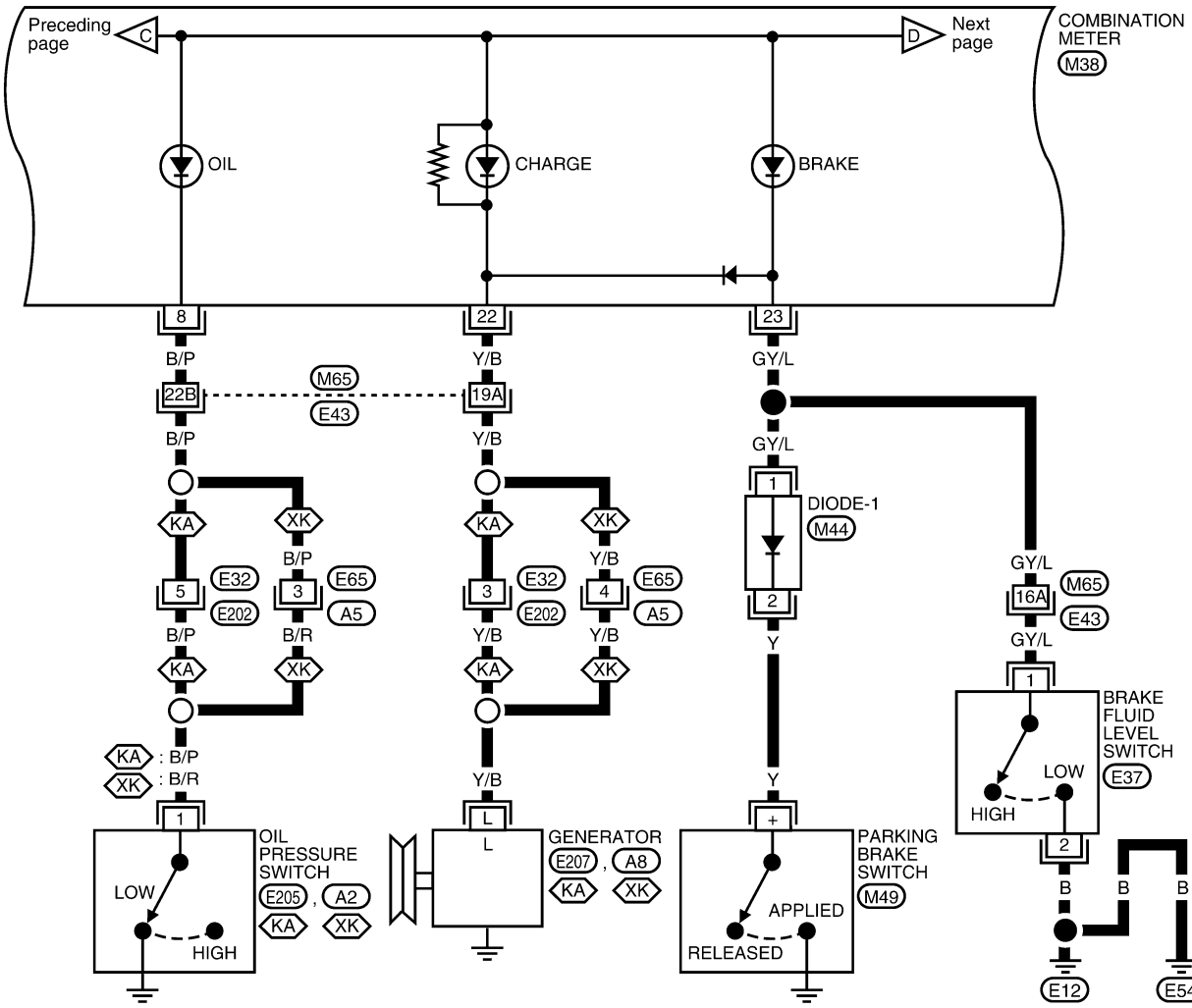


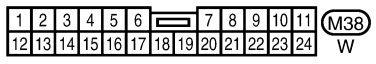


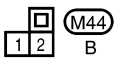
WEL678A

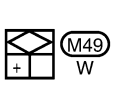
EL-WARN-04

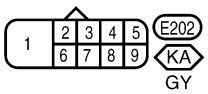
A : With A/T
KA : With KA24DE
XK : Except KA24DE

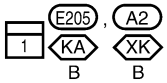


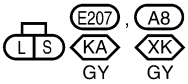


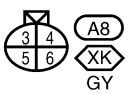








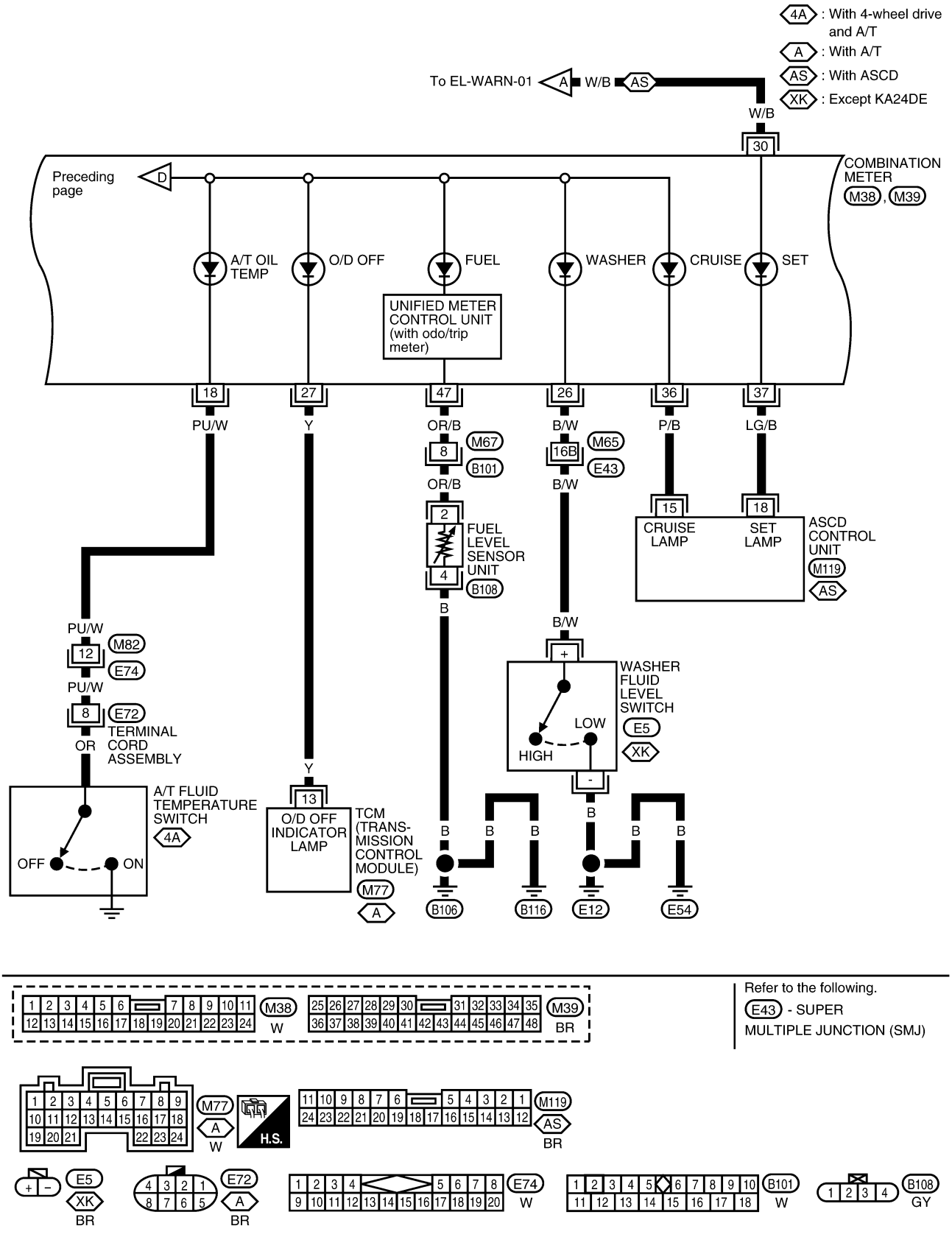




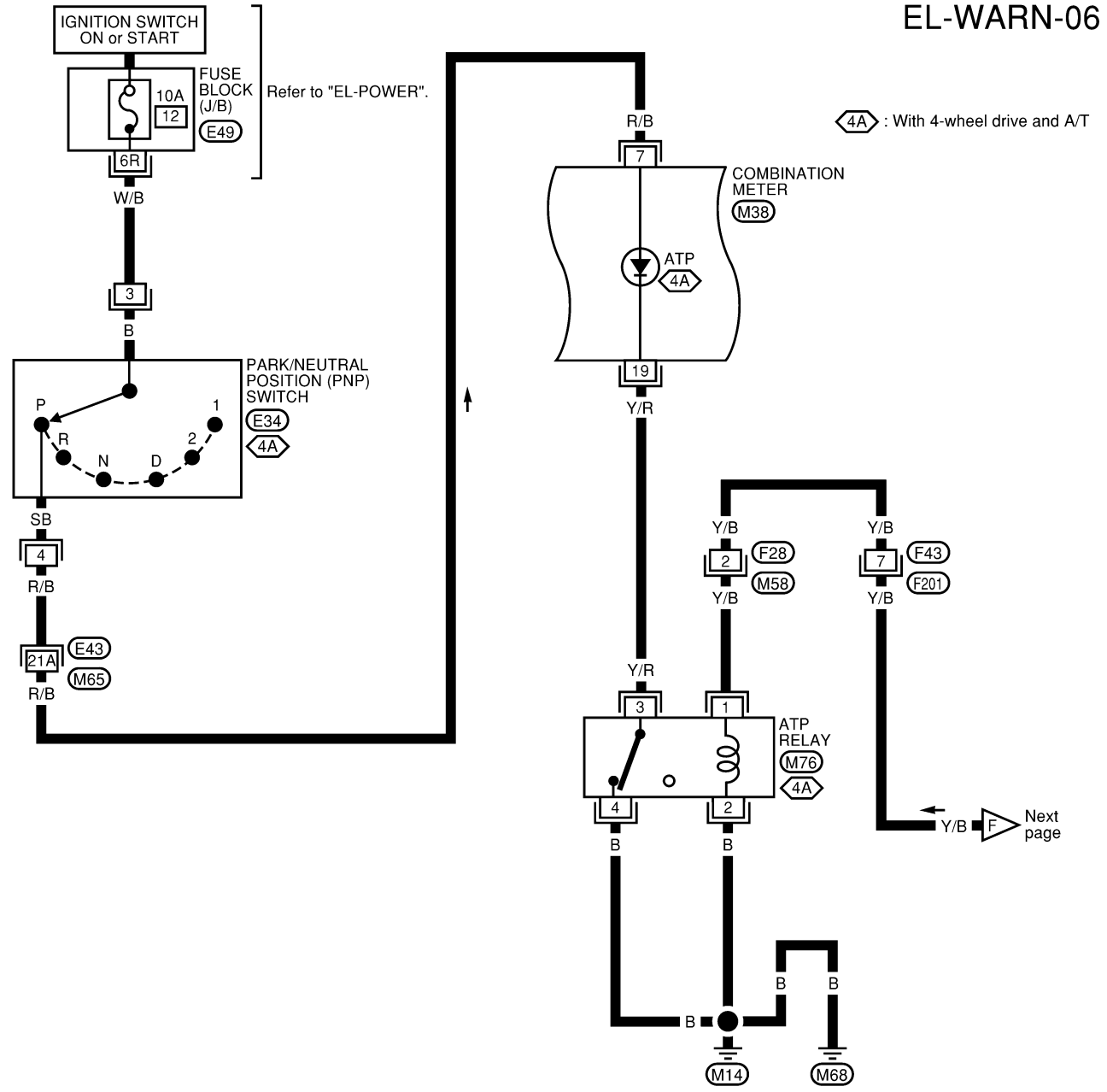
Refer to the following.
E43 - SUPER MULTIPLE JUNCTION (SMJ)

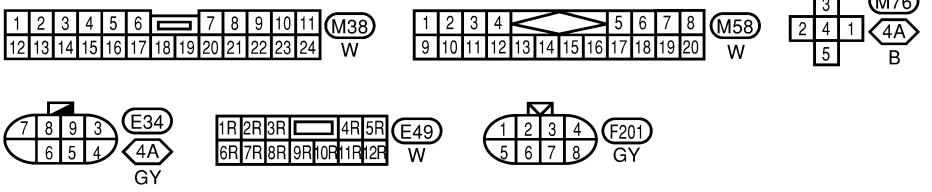
WEL159B

EL-WARN-05



WEL160B

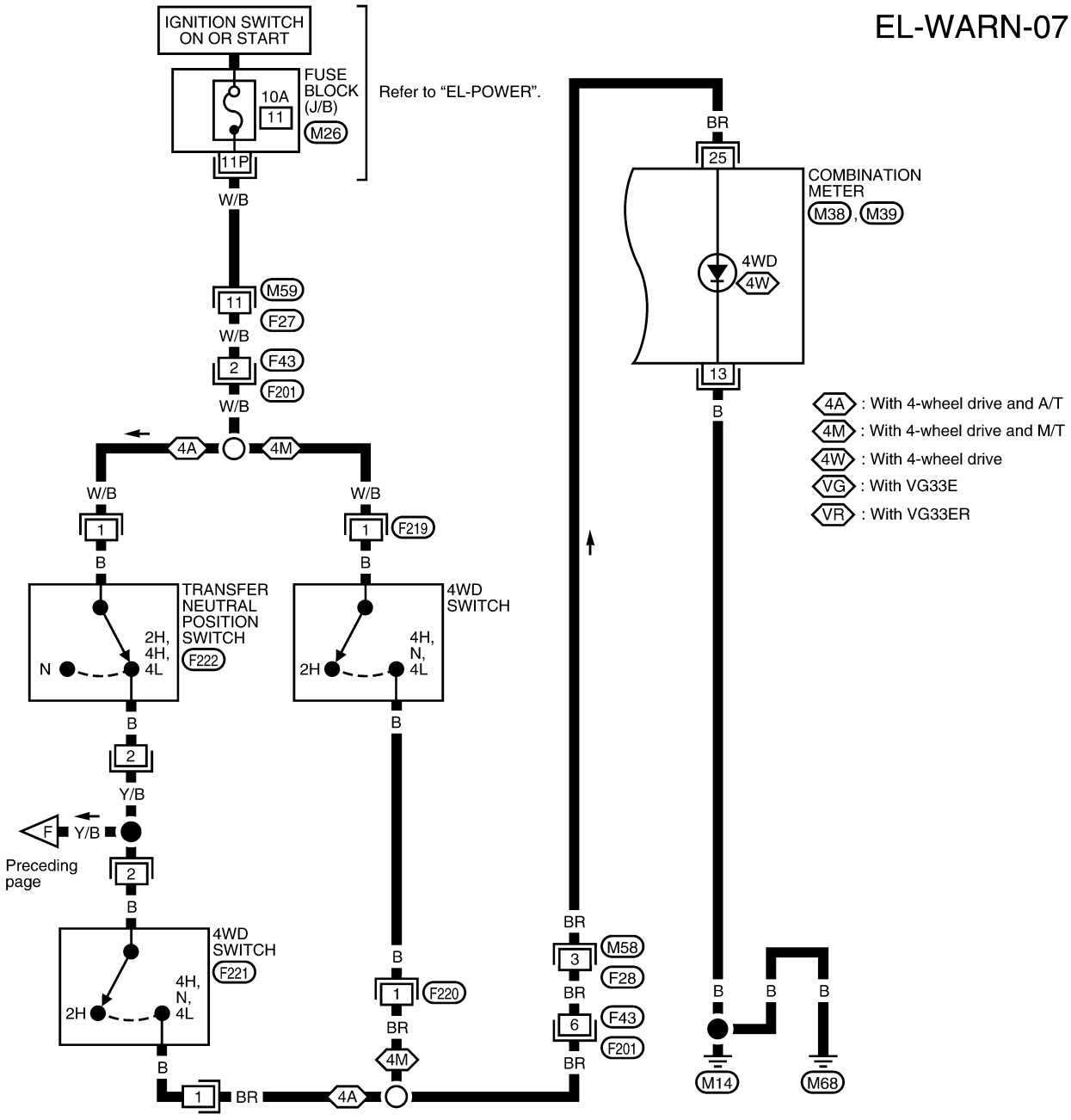


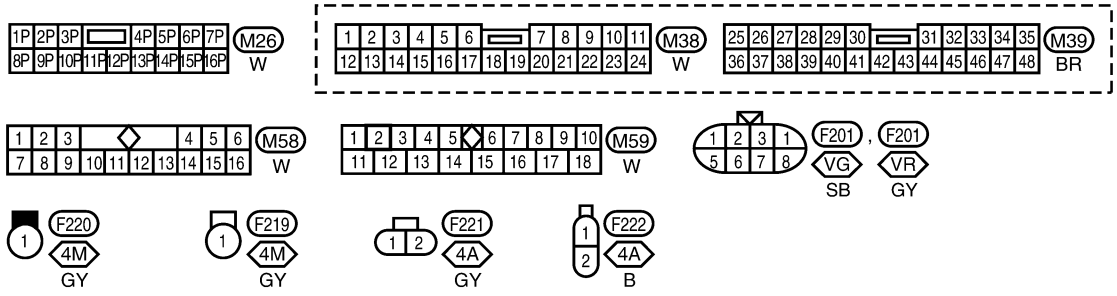


Refer to the following.
M43 - SUPER MULTIPLE JUNCTION (SMJ)

WEL124B

EL-WARN-07





WEL682A

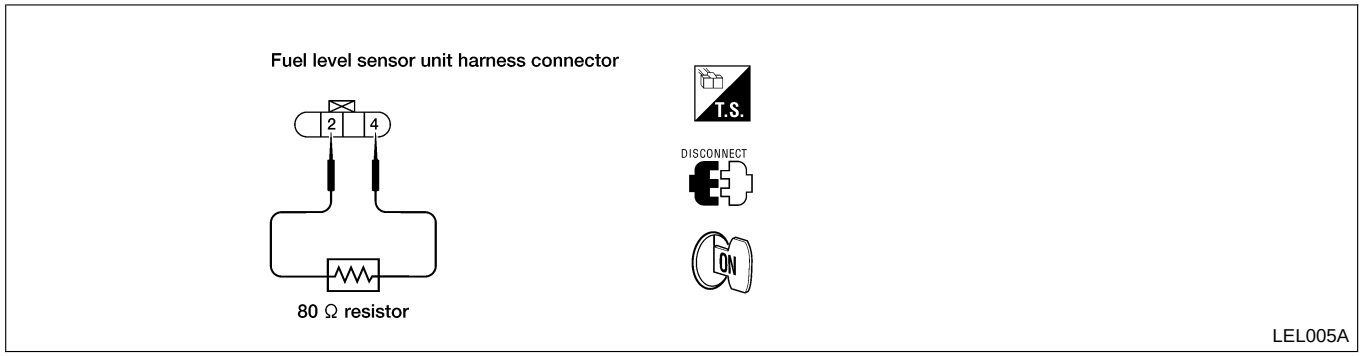
Electrical Components Inspection

NGEL0051

FUEL WARNING LAMP SENSOR CHECK

NGEL0051S01

1) Turn ignition switch OFF.

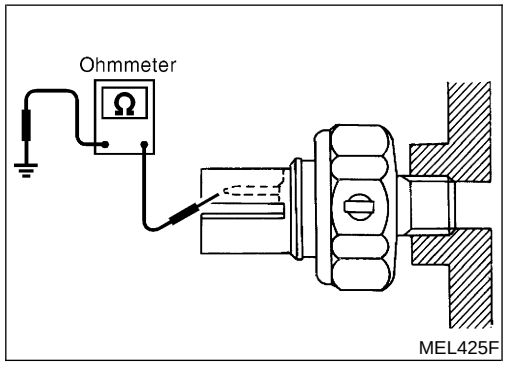


LEL005A

2) Disconnect fuel level sensor unit harness connector B108.
3) Connect a resistor (80 Ω) between fuel level sensor unit harness connector B108 terminals 2 (OR/B) and 4 (B).
4) Turn ignition switch ON.

The fuel warning lamp should come on.

NOTE:
ECM might store the 1st tip DTC P0180 during this inspection. If the DTC is stored in ECM memory, erase the DTC after reconnecting the fuel level sensor unit harness connector.
Refer to ***EC-86*** (KA24DE), ***EC-673*** (VG33E), or ***EC-1197*** (VG33ER), "HOW TO ERASE EMISSION-RELATED DIAGNOSTIC INFORMATION".



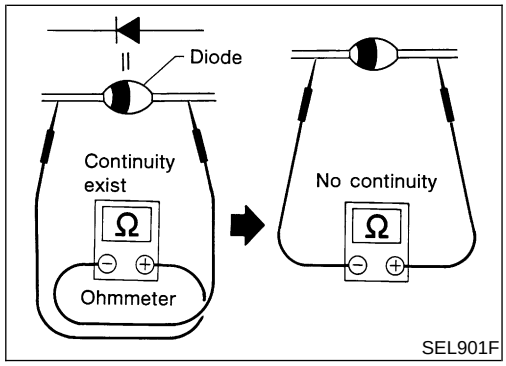
MEL425F

OIL PRESSURE SWITCH CHECK

NGEL0051S02

	Oil pressure kPa (kg/cm^2, psi)	Continuity
Engine start	More than 10 - 20 (0.1 - 0.2, 1 - 3)	No
Engine stop	Less than 10 - 20 (0.1 - 0.2, 1 - 3)	Yes

Check the continuity between oil pressure switch terminal 1 and body ground.



SEL901F

DIODE CHECK

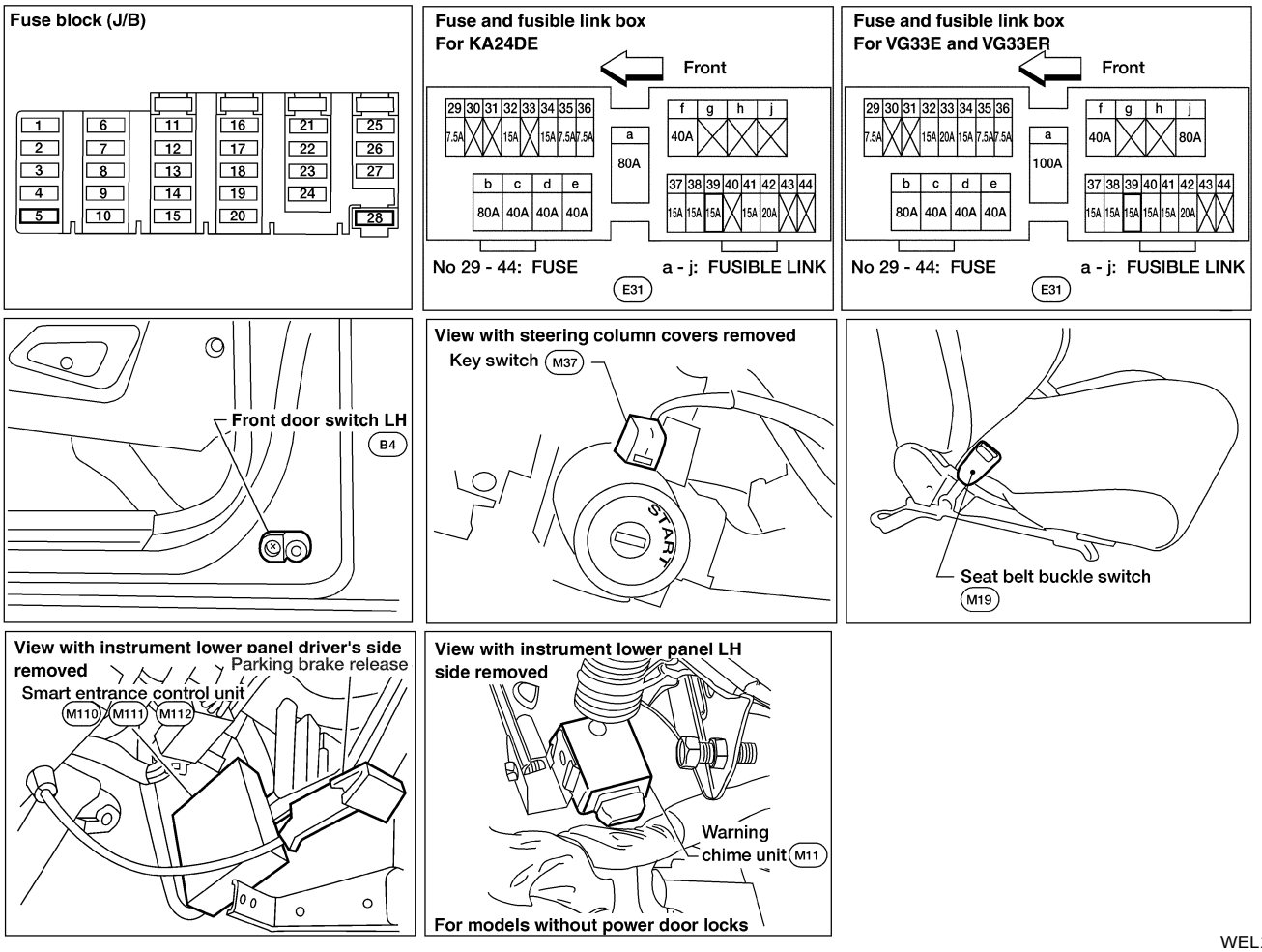
NGEL0051S03

- Check continuity using an ohmmeter.
- Diode is functioning properly if test results are as shown in the figure at left.
- Check diodes at the combination meter harness connector instead of the combination meter assembly. Refer to "Wiring Diagrams —WARN—", EL-95.

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

Component Parts and Harness Connector Location

NGEL0052



WEL125B

System Description

NGEL0053

MODELS WITHOUT POWER DOOR LOCKS

NGEL0053S04

The warning chime is integral with the warning chime unit, which controls its operation.
Power is supplied at all times

- through 7.5A fuse [No. 28, located in the fuse block (J/B)]
- to key switch terminal 1.

Power is supplied at all times

- through 15A fuse (No. 39, located in the fuse and fusible link box)
- to lighting switch terminal 11.

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

- through 10A fuse [No. 5, located in the fuse block (J/B)]
- to warning chime unit terminal 1.

Ground is supplied to warning chime unit terminal 8 through body grounds M14 and M68.
When a signal, or combination of signals, is received by the warning chime unit, the warning chime will sound.

Ignition Key Warning Chime

NGEL0053S0401

With the key switch in the INSERTED (key is in the ignition key cylinder) position, the ignition switch in the OFF or ACC position and the front door LH open, the warning chime will sound. A battery positive voltage is supplied

- from key switch terminal 2
- to warning chime unit terminal 5.

Ground is supplied

- to warning chime unit terminal 7
- through front door switch LH terminal 2.

Front door switch LH terminal 3 is grounded through body grounds B6 and B10.

Light Warning Chime

NGEL0053S0402

With the ignition switch in the OFF or ACC position, front door LH open and lighting switch in the parking and tail lamps ON (1ST) or headlamps ON (2ND) position, the warning chime will sound. A battery positive voltage is supplied

- from lighting switch terminal 12
- to warning chime unit terminal 4.

Ground is supplied

- to warning chime unit terminal 7
- through front door switch LH terminal 2.

Front door switch LH terminal 3 is grounded through body grounds B6 and B10.

Seat Belt Warning Chime

NGEL0053S0403

The warning chime will sound for approximately 6 seconds when the ignition switch is turned from OFF to ON with the driver's seat belt unfastened (seat belt buckle switch ON).
Ground is supplied

- to warning chime unit terminal 2
- through seat belt buckle switch terminal 1.

Seat belt buckle switch terminal 2 is grounded through body grounds M14 and M68.

MODELS WITH POWER DOOR LOCKS

NGEL0053S05

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

- through 7.5A fuse [No. 28, located in the fuse block (J/B)]
- to key switch terminal 1, and
- to smart entrance control unit terminal 49.

Power is supplied at all times

- through 15A fuse (No. 39, located in the fuse and fusible link box)
- to lighting switch terminal 11.

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

- through 10A fuse [No. 5, located in the fuse block (J/B)]
- to smart entrance control unit terminal 27.

Ground is supplied to smart entrance control unit terminals 43 and 64 through body grounds M14 and M68.
When a signal, or combination of signals, is received by the smart entrance control unit, the warning chime will sound.

Ignition Key Warning Chime

NGEL0053S0501

With the key switch in the INSERTED (key is in the ignition key cylinder) position, the ignition switch in the OFF or ACC position and the front door LH open, the warning chime will sound. Power is supplied

- from key switch terminal 2
- to smart entrance control unit terminal 25.

Ground is supplied

- to smart entrance control unit terminal 1
- through front door switch LH terminal 2.

Front door switch LH terminal 3 is grounded through body grounds B6 and B10.

Light Warning Chime

NGEL0053S0502

With the ignition switch the OFF or ACC position, front door LH open and lighting switch in parking and tail lamps ON (1ST) or headlamps ON (2ND) position, the warning chime will sound. Power is supplied

- from lighting switch terminal 12
- to smart entrance control unit terminal 58.

Ground is supplied

- to smart entrance control unit terminal 1
- through front door switch LH terminal 2.

Front door switch LH terminal 3 is grounded through body grounds B6 and B10.

Seat Belt Warning Chime

NGEL0053S0503

The warning chime will sound for approximately 6 seconds when the ignition switch is turned from OFF to ON with the driver's seat belt unfastened (seat belt buckle switch ON).
Ground is supplied

- to smart entrance control unit terminal 28
- through seat belt buckle switch terminal 1.

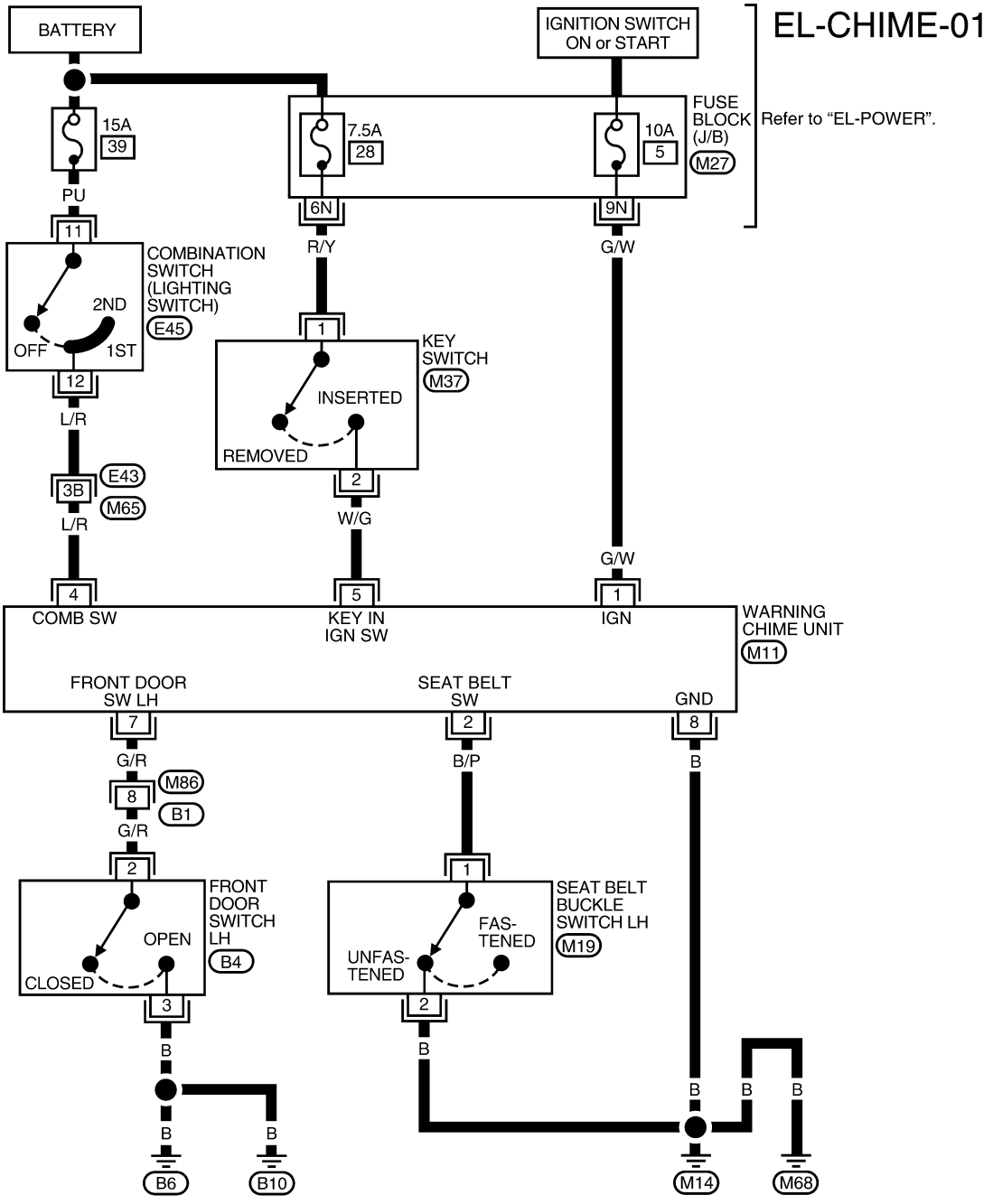
Seat belt buckle switch terminal 2 is grounded through body grounds M14 and M68.

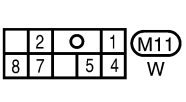
Wiring Diagram — CHIME —

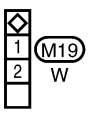
NGEL0054

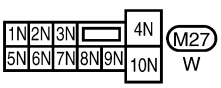
MODELS WITHOUT POWER DOOR LOCKS

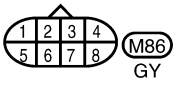
NGEL0054S01

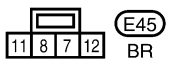


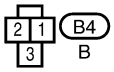










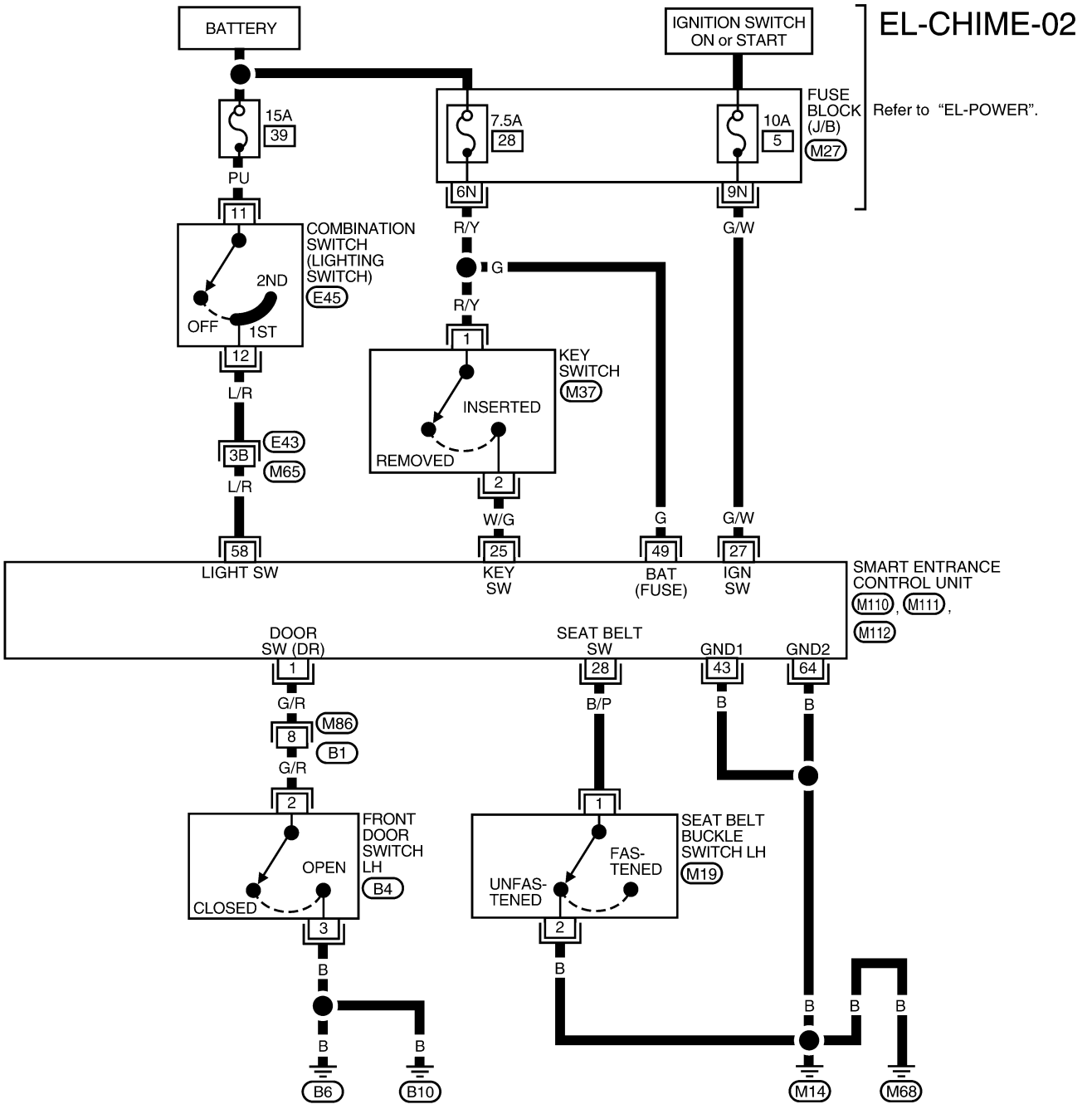


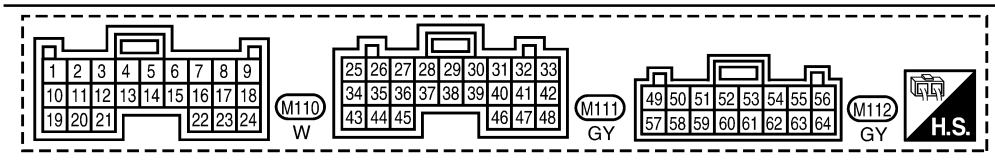
Refer to the following.
E43 - SUPER MULTIPLE JUNCTION (SMJ)

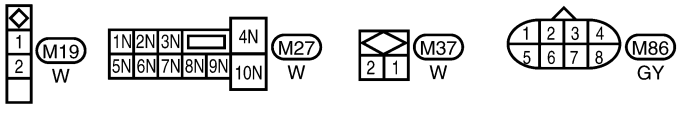
LEL683A

MODELS WITH POWER DOOR LOCKS

NGEL0054S02







Refer to the following.
E43 - SUPER MULTIPLE JUNCTION (SMJ)

WEL684A

Trouble Diagnoses

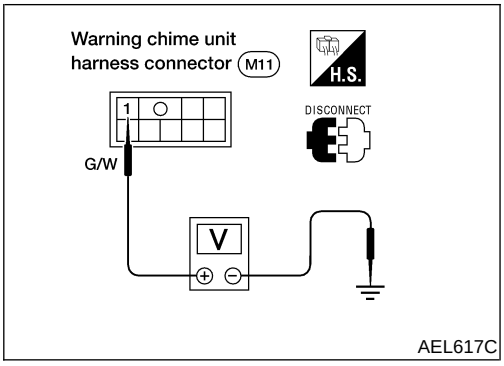
NGEL0055

SYMPTOM CHART

NGEL0055S01

REFERENCE PAGE (EL-)						
	Without power door locks	109	111	112	114	116
	With power door locks	109	111	113	115	117
SYMPTOM		POWER SUPPLY AND GROUND CIRCUIT CHECK	LIGHTING SWITCH INPUT SIGNAL CHECK	KEY SWITCH (INSERTED) CHECK	SEAT BELT BUCKLE SWITCH CHECK	FRONT DOOR SWITCH LH CHECK
Light warning chime does not activate.		X	X			X
Ignition key warning chime does not activate.		X		X		X
Seat belt warning chime does not activate.		X			X	
All warning chimes do not activate.		X				

X: Applicable



POWER SUPPLY AND GROUND CIRCUIT CHECK

=NGEL0055S02

Main Power Supply Circuit Check

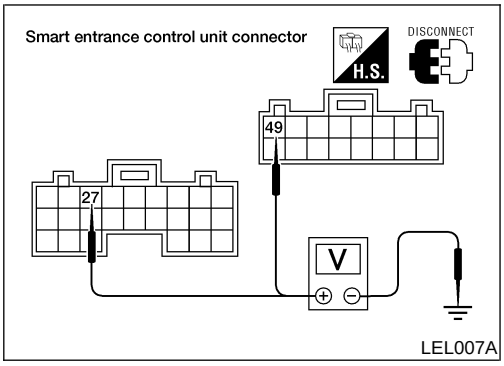
NGEL0055S0201

- **Models without power door locks**

Terminals		Ignition switch position		
(+)	(–)	OFF	ACC	ON
1	Ground	0V	0V	Battery voltage

If NG, check the following

- 15A fuse (No. 39, located in fuse and fusible link box)
- Harness for open or short between warning chime unit and fuse.

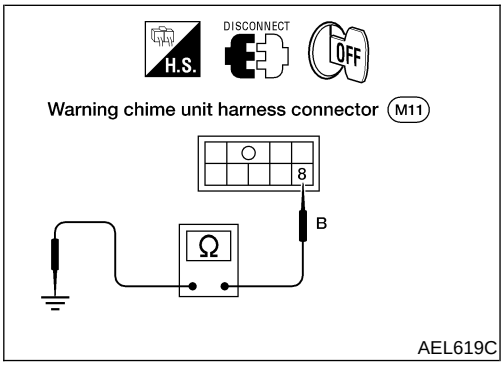


- **Models with power door locks**

Terminals			Ignition switch position		
(+)		(−)	OFF	ACC	ON
Connector	Terminal (wire color)				
M111	27 (G/W)	Ground	0V	0V	Battery voltage
M112	49 (G)	Ground	Battery voltage	Battery voltage	Battery voltage

If NG, check the following

- 7.5A fuse [No. 28, located in fuse block (J/B)]
- 10A fuse [No. 5, located in fuse block (J/B)]
- Harness for open or short between smart entrance control unit and fuse.

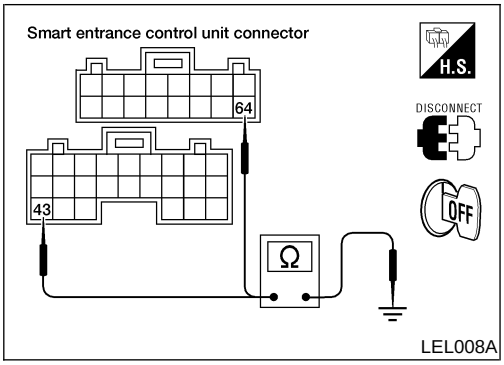


Ground Circuit Check

NGEL0055S0202

- **Models without power door locks**

Terminals	Continuity
8 - Ground	Yes



- **Models with power door locks**

Terminals			Continuity
(+)		(−)	
Connector	Terminal (wire color)		
M111	43 (B)	Ground	Yes
M112	64 (B)	Ground	

LIGHTING SWITCH INPUT SIGNAL CHECK

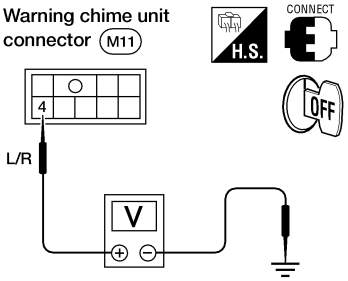
=NGEL0055S03

Models without Power Door Locks

NGEL0055S0301

1	CHECK LIGHTING SWITCH INPUT SIGNAL

Check voltage between warning chime unit terminal 4 and ground.



AEL372B

Voltage [V]:
Condition of lighting switch: 1ST or 2ND
Approx. 12
Condition of lighting switch: OFF
0

OK or NG

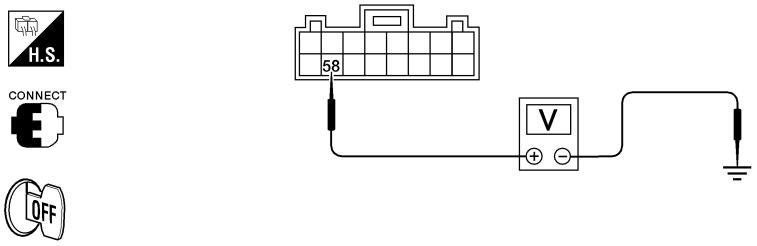
OK	▶	Lighting switch is OK.
NG	▶	**Check the following.** ● 15A fuse (No. 39, located in the fuse and fusible link box) ● Harness for open or short between warning chime unit and lighting switch

Models with Power Door Locks

NGEL0055S0302

1	CHECK LIGHTING SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit connector M112 terminal 58 (L/R) and ground.



Voltage [V]:
Condition of lighting switch: 1ST or 2ND
Approx. 12
Condition of lighting switch: OFF
Approx. 0

LEL009A

OK or NG

OK	▶	Lighting switch is OK.
NG	▶	**Check the following.** ● 15A fuse (No. 39, located in the fuse and fusible link box) ● Harness for open or short between smart entrance control unit and lighting switch

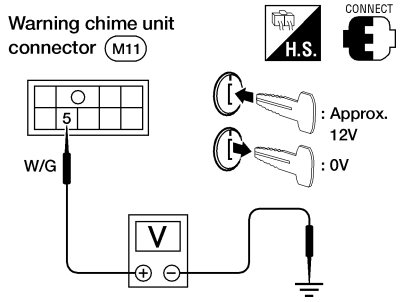
KEY SWITCH (INSERTED) CHECK
Models without Power Door Locks

NGEL0055S04

NGEL0055S0401

1	CHECK KEY SWITCH INPUT SIGNAL

Check voltage between warning chime unit terminal 5 and ground.



AEL374B

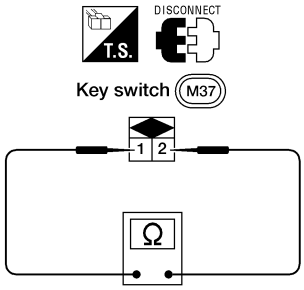
Voltage [V]:
Condition of key switch: Key is INSERTED.
Approx. 12
Condition of key switch: Key is REMOVED.
0

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH (INSERTED)

Check continuity between terminals 1 and 2.



AEL416B

Continuity:
Condition of key switch: Key is INSERTED.
Yes
Condition of key switch: Key is REMOVED.
No

OK or NG

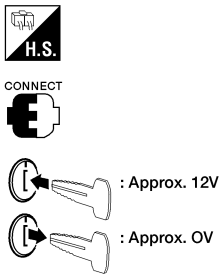
OK	▶	**Check the following.** ● 7.5A fuse [No. 28, located in fuse block (J/B)] ● Harness for open or short between key switch and fuse ● Harness for open or short between warning chime unit and key switch
NG	▶	Replace key switch.

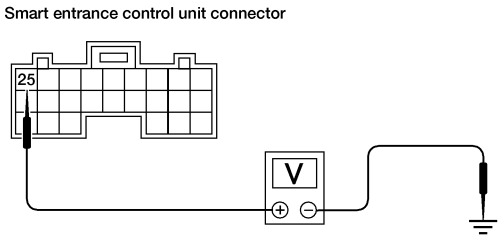
Models with Power Door Locks

NGEL0055S0402

1	CHECK KEY SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit connector M111 terminal 25 (W/G) and ground.





Voltage [V]:
Condition of key switch: Key is INSERTED.
Approx. 12
Condition of key switch: Key is REMOVED.
Approx. 0

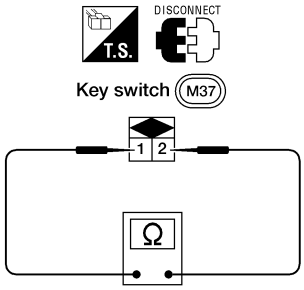
LEL010A

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH (INSERTED)

Check continuity between terminals 1 and 2.



AEL416B

Continuity:
Condition of key switch: Key is INSERTED.
Yes
Condition of key switch: Key is REMOVED.
No

OK or NG

OK	▶	**Check the following.** • 7.5A fuse [No. 28, located in fuse block (J/B)] • Harness for open or short between key switch and fuse • Harness for open or short between smart entrance control unit and key switch
NG	▶	Replace key switch.

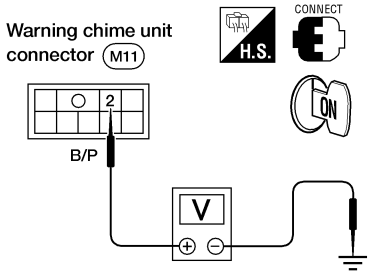
SEAT BELT BUCKLE SWITCH CHECK
Models without Power Door Locks

=NGEL0055S05

NGEL0055S0501

1	CHECK SEAT BELT BUCKLE SWITCH INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between warning chime unit terminal 2 and ground.



AEL376B

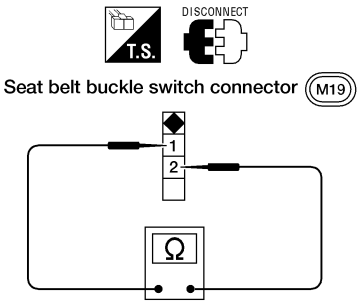
Voltage [V]:
Condition of seat belt buckle switch: FASTENED
Approx. 12
Condition of seat belt buckle switch: UNFASTENED
0

OK or NG

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

2	CHECK SEAT BELT BUCKLE SWITCH

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



AEL381B

Continuity:
Seat belt is fastened.
No
Seat belt is unfastened.
Yes

OK or NG

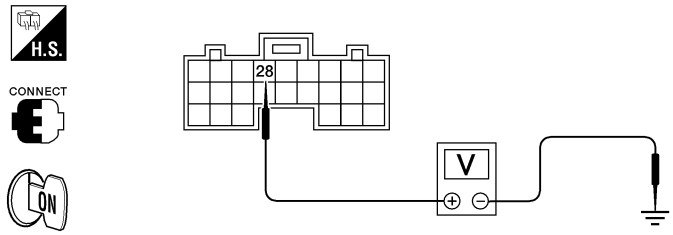
OK	▶	**Check the following.** • Seat belt buckle switch ground circuit • Harness for open or short between warning chime unit and seat belt buckle switch
NG	▶	Replace seat belt buckle switch.

Models with Power Door Locks

NGEL0055S0502

1	CHECK SEAT BELT BUCKLE SWITCH INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between smart entrance control unit connector M111 terminal 28 (B/P) and ground.



Voltage [V]:
Condition of seat belt buckle switch: FASTENED
Approx.12
Condition of seat belt buckle switch: UNFASTENED
Approx. 0

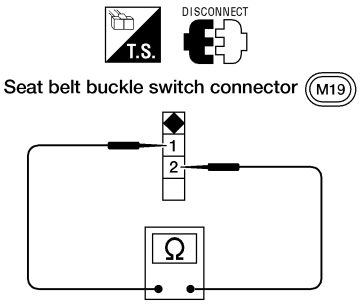
LEL011A

OK or NG

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

2	CHECK SEAT BELT BUCKLE SWITCH

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



AEL381B

Continuity:
Seat belt is fastened.
No
Seat belt is unfastened.
Yes

OK or NG

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

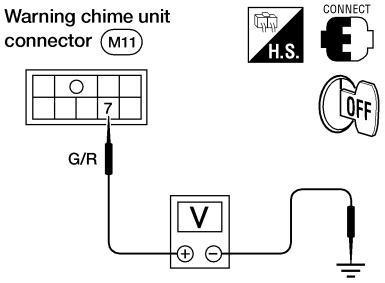
FRONT DOOR SWITCH LH CHECK
Models without Power Door Locks

NGEL0055S06

NGEL0055S0601

1	CHECK FRONT DOOR SWITCH LH INPUT SIGNAL

Check voltage between warning chime unit terminal 7 and ground.



AEL378B

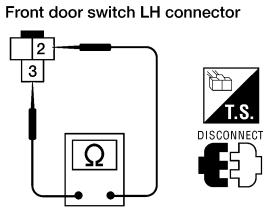
Voltage [V]:
Condition of front door LH: CLOSED
Approx. 12
Condition of front door LH: OPEN
0

OK or NG

OK	▶	Front door switch LH is OK.
NG	▶	GO TO 2.

2	CHECK FRONT DOOR SWITCH LH

Check continuity between front door switch LH connector B4 terminals 2 and 3.



Continuity:
Front door switch LH is pressed
NO
Front door switch LH is released
Yes

LEL319A

OK or NG

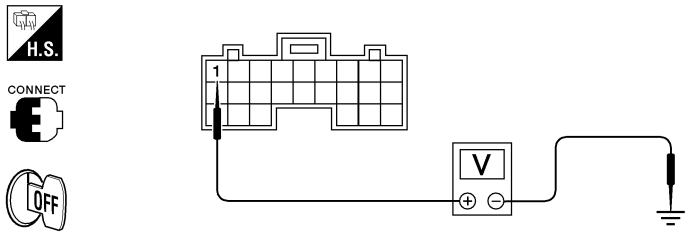
OK	▶	**Check the following.** ● Front door switch LH ground circuit ● Harness for open or short between warning chime unit and front door switch LH
NG	▶	Replace front door switch LH.

Models with Power Door Locks

NGEL0055S0602

1	CHECK FRONT DOOR SWITCH LH INPUT SIGNAL

Check voltage between smart entrance control unit connector M110 terminal 1 (G/R) and ground.



Voltage [V]:
Condition of front door LH: CLOSED
Approx.12
Condition of front door LH: OPEN
Approx. 0

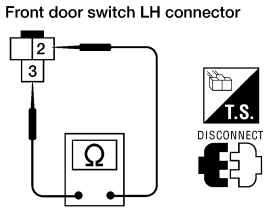
LEL012A

OK or NG

OK	▶	Front door switch LH is OK.
NG	▶	GO TO 2.

2	CHECK FRONT DOOR SWITCH LH

Check continuity between front door switch LH connector B4 terminals 2 and 3.



Continuity:
Front door switch LH is pressed
NO
Front door switch LH is released
Yes

LEL319A

OK or NG

OK	▶	**Check the following.** ● Front door switch LH ground circuit ● Harness for open or short between smart entrance control unit and front door switch LH
NG	▶	Replace front door switch LH.

System Description

NGEL0057

WIPER OPERATION

NGEL0057S01

Models without Intermittent Wipers

NGEL0057S0104

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

- LO speed
- HI speed

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

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

Low and High Speed Wiper Operation

Ground is supplied to front wiper switch terminal 17 through body grounds E12 and E54.
With the front wiper switch in the LO position, ground is supplied

- to front wiper motor terminal L
- through front wiper switch terminal 14.

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

- to front wiper motor terminal H
- through front wiper switch terminal 16.

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

Auto Stop Operation

When the front wiper switch is turned OFF, the front wiper motor will continue to operate at low speed until wiper blades reach windshield base.
When wiper blades are not located at base of windshield with front wiper switch OFF, ground is supplied

- to front wiper motor terminal L
- through front wiper switch terminal 14
- through front wiper switch terminal 13
- through front wiper motor terminal P.

Ground is supplied to front wiper motor terminal E through body grounds E12 and E54.

Models with Intermittent Wipers

NGEL0057S0105

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

- LO speed
- HI speed
- INT (Intermittent)

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

- through 20A fuse [No. 6, located in the fuse block (J/B)]
- to front wiper motor terminal B and
- to front wiper switch terminal 15.

Low and High Speed Wiper Operation

Ground is supplied to front wiper switch terminal 17 through body grounds E12 and E54
With the front wiper switch in the LO position, ground is supplied

- to front wiper motor terminal L
- through front wiper switch terminal 14.

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

- to front wiper motor terminal H
- through front wiper switch terminal 16.

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

Auto Stop Operation

When the front wiper switch is turned OFF, the front wiper motor will continue to operate at low speed until wiper blades reach windshield base.
When wiper blades are not located at base of windshield with front wiper switch OFF, ground is supplied

- to front wiper motor terminal L
- through front wiper switch terminal 14
- through front wiper switch terminal 13
- through front wiper motor terminal P
- through front wiper motor terminal E
- through body grounds E12 and E54.

When wiper blades reach base of windshield, front wiper motor terminals B and P are connected instead of terminals P and E.
Battery power is then supplied

- through front wiper motor terminal P
- to front wiper switch terminal 13.

With battery voltage supplied to front wiper switch terminal 13, the front wiper switch will stop the front wiper motor with the wiper blades at the PARK position.

Intermittent Operation

The wiper blades perform a single wiping operation, followed by a delay interval which is adjustable from approximately 3 to 13 seconds, after which the cycle repeats. This feature is controlled by the front wiper switch.
When the front wiper switch is placed in the INT position, ground is supplied intermittently

- to front wiper motor terminal L
- through front wiper switch terminal 14
- through front wiper switch terminal 17
- through body grounds E12 and E54.

The delay interval time is controlled by the wiper switch.
Ground is supplied to front wiper switch terminal 17 through body grounds E12 and E54.
The wiper motor operates at low speed at the desired delay interval.

WASHER OPERATION

NGEL0057S02

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

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

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

- to front washer motor terminal –
- from front wiper switch terminal 18
- through front wiper switch terminal 17, and
- through body grounds E12 and E54.

With power and ground supplied, the front washer motor operates.

Models with Intermittent Wipers

NGEL0057S0201

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

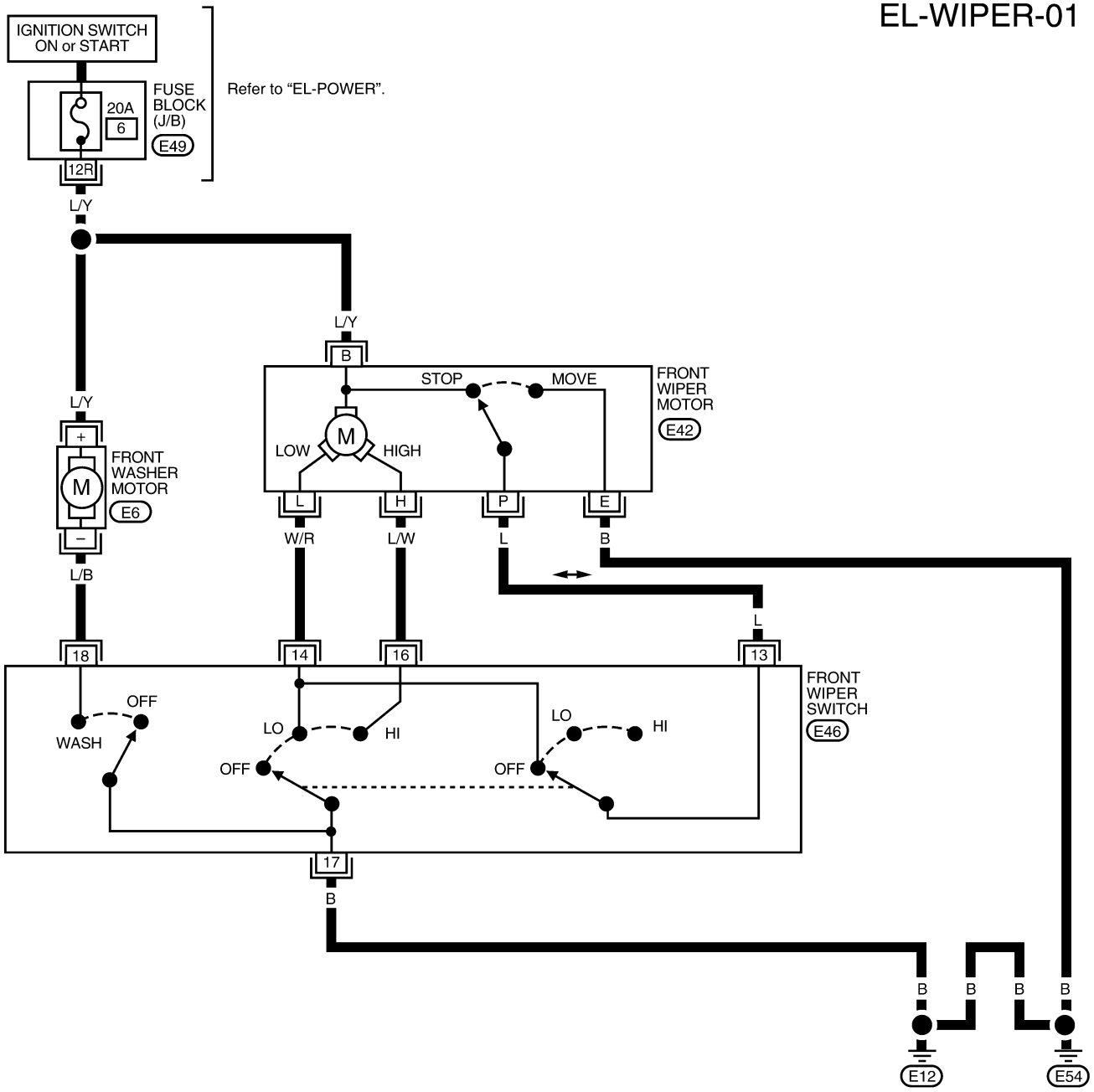
Wiring Diagram — WIPER —

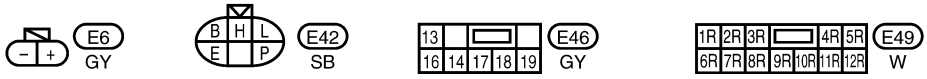
NGEL0058

MODELS WITHOUT INTERMITTENT WIPERS

NGEL0058S01

EL-WIPER-01



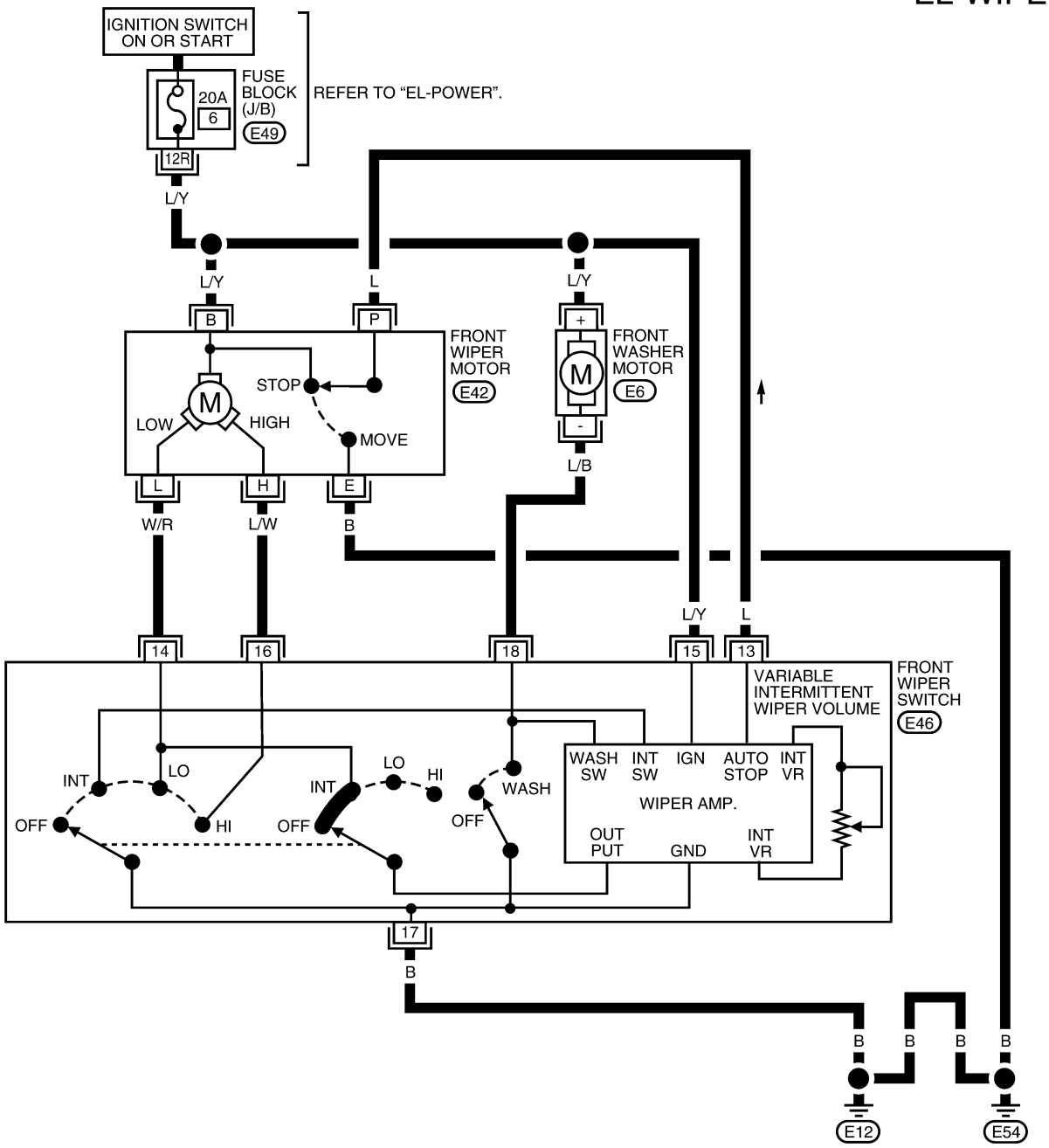


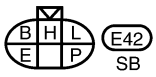
WEL685A

MODELS WITH INTERMITTENT WIPERS

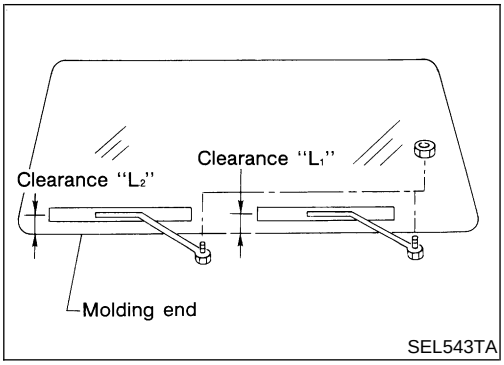
NGEL0058S02

EL-WIPER-02





WEL686A



Removal and Installation

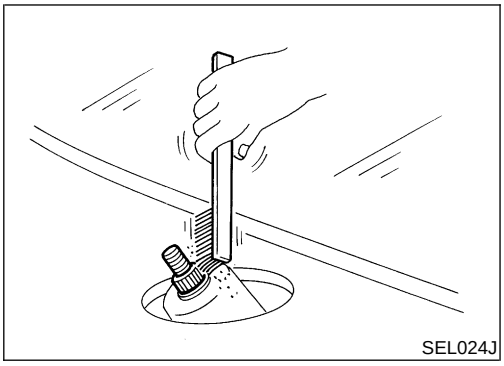
NGEL0060

WIPER ARMS

NGEL0060S01

1. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it "OFF" (Auto Stop).
2. Lift the blade up and then set it down onto glass surface to set the blade center to clearance "L_1" and "L_2" immediately before tightening nut.
3. Eject washer fluid. Turn on wiper switch to operate wiper motor and then turn it "OFF".
4. Ensure that wiper blades stop within clearance "L_1" and "L_2".
   Clearance "L_1": 25 mm (.98 in)
   Clearance "L_2": 25 mm (.98 in)

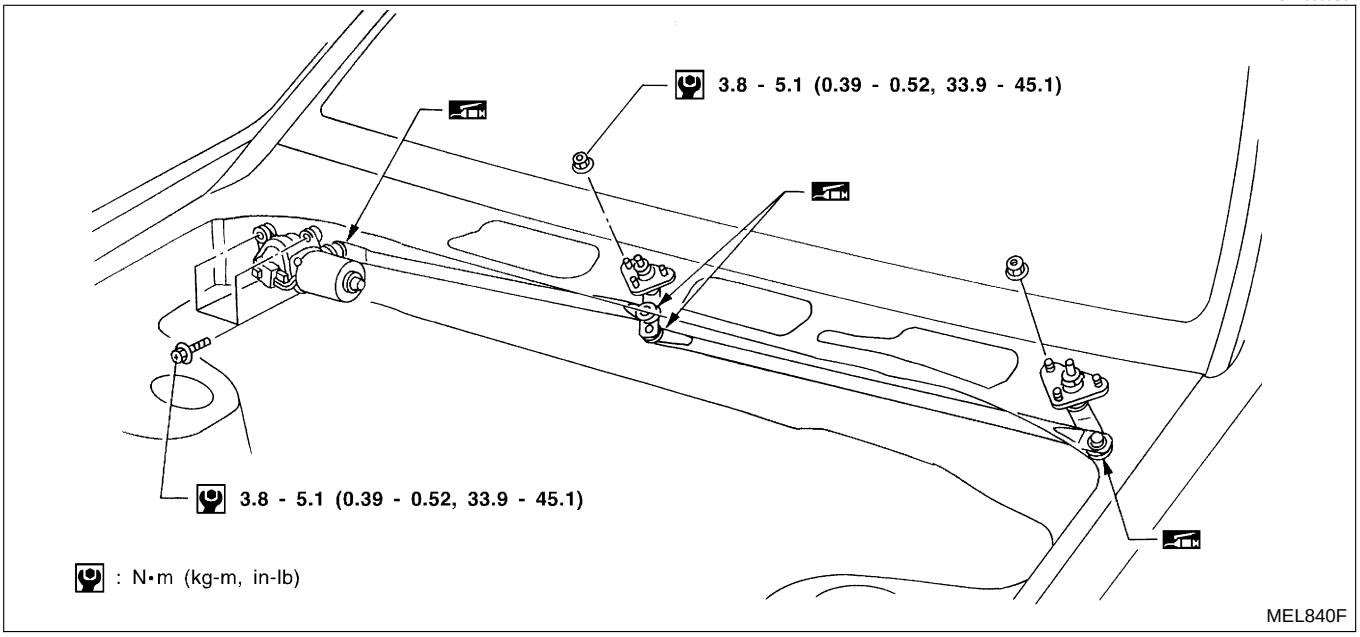
- Tighten wiper arm nuts to specified torque.
  Front wiper: 13 - 18 N·m (1.3 - 1.8 kg-m, 9 - 13 ft-lb)



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

WIPER LINKAGE

NGEL0060S02



Removal

NGEL0060S0201

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

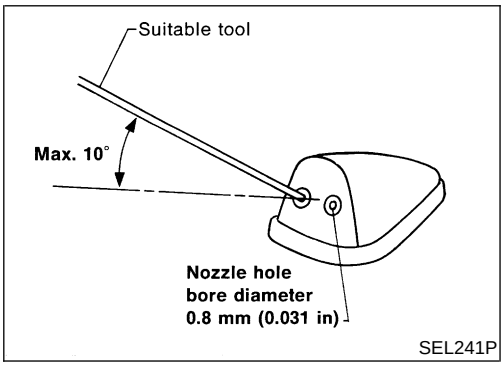
Be careful not to break ball joint rubber boot.

Installation

NGEL0060S0202

- Grease ball joint portion before installation.

1. Installation is the reverse order of removal.



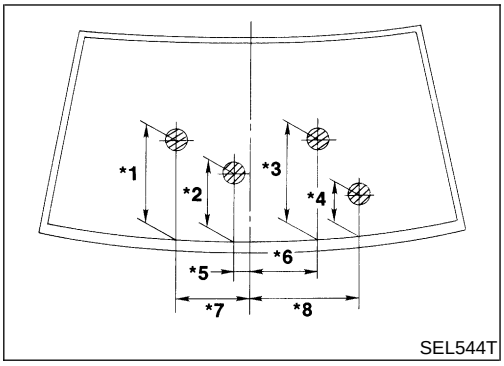
SEL241P

Washer Nozzle Adjustment

NGEL0061

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

Adjustable range: ±10°



SEL544T

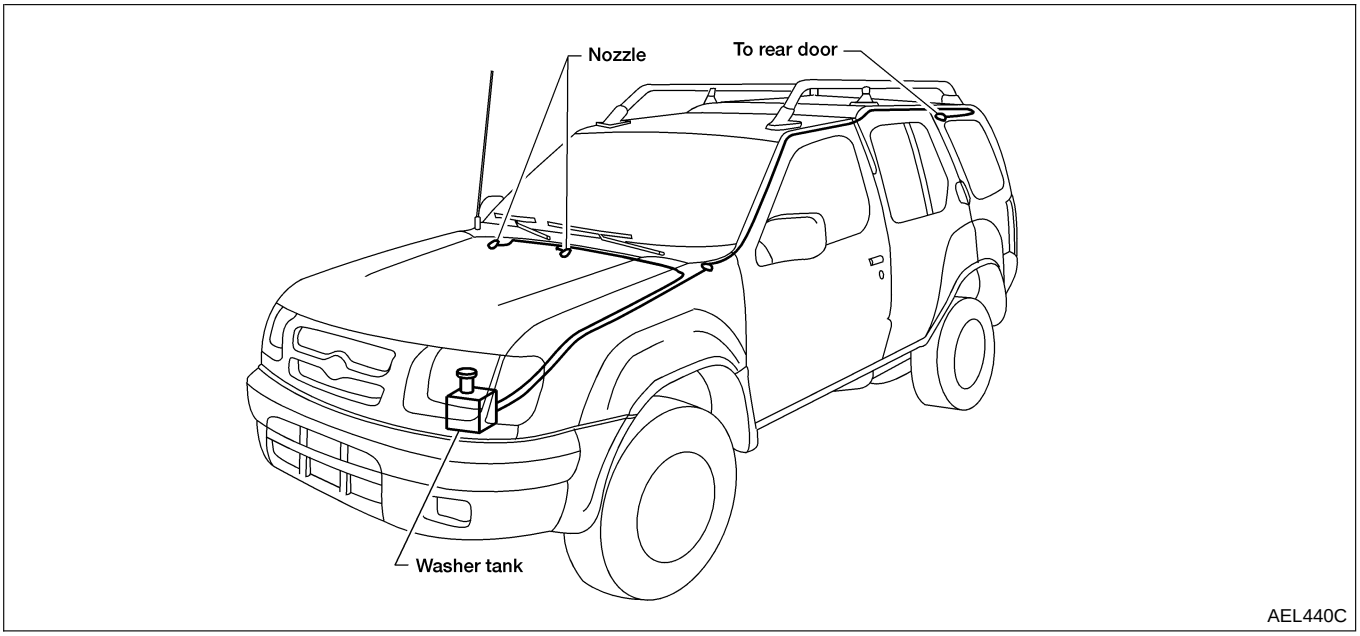
Unit: mm (in)

*1	390 (15.35)	*5	145 (5.71)
*2	160 (6.30)	*6	143 (5.63)
*3	379 (14.92)	*7	225 (8.86)
*4	140 (5.51)	*8	535 (21.06)

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

Washer Tube Layout

NGEL0062



AEL440C

System Description

NGEL0063

POWER SUPPLY AND GROUND

NGEL0063S03

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

- through 10A fuse [No. 10, located in the fuse block (J/B)]
- to rear wiper motor terminal +A and
- to rear washer motor terminal +.

Ground is supplied

- to rear wiper switch terminal 3
- through body grounds M14 and M68.

Ground is also supplied

- to rear wiper motor terminal E
- through body grounds D402 and D404.

WIPER OPERATION

NGEL0063S01

With the rear wiper switch WIPER in the ON position, ground is supplied

- to rear wiper motor terminal I
- through rear wiper switch terminal 1.

WASHER OPERATION

NGEL0063S02

With the rear wiper switch WASHER in the ON position, ground is supplied

- to rear washer motor terminal – and
- to rear wiper motor terminal W
- through rear wiper switch terminal 2.

With power and ground supplied, the rear wiper motor and rear washer motor operate until the rear wiper switch WASHER is released from the ON position. If the switch is pressed momentarily, the rear wiper motor will cycle 2 times.

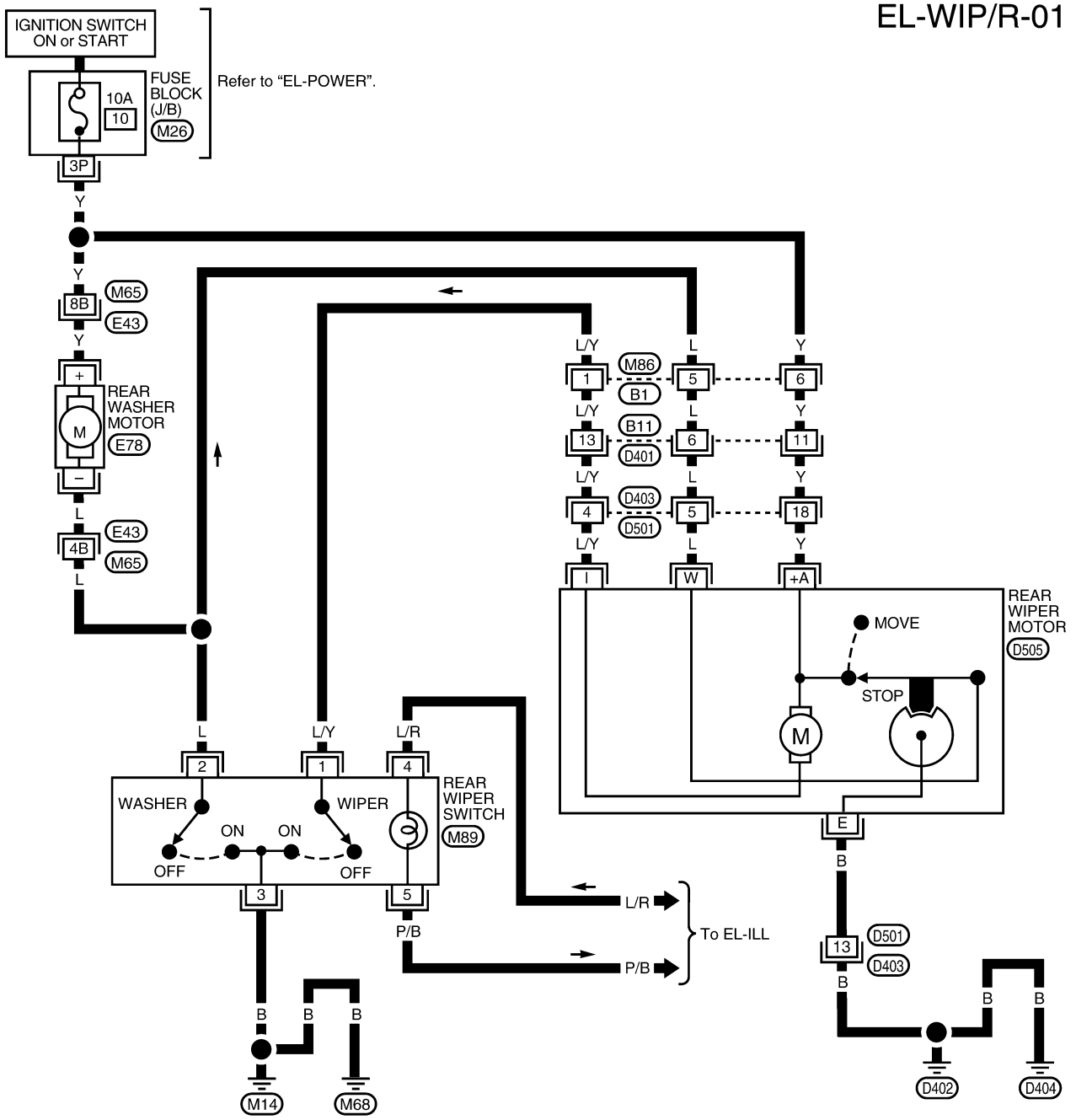
AUTO STOP OPERATION

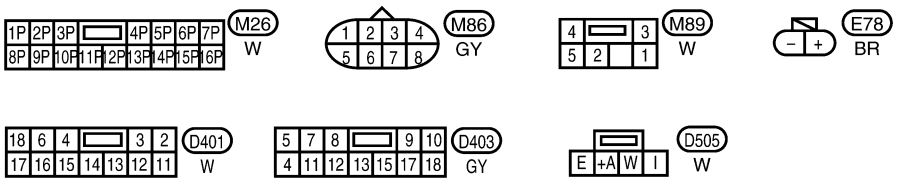
NGEL0063S04

When the rear wiper switch is placed in the OFF position, the rear wiper motor will continue to operate until the rear wiper blade reaches the park position.
The ground is supplied through rear wiper motor terminal E. This allows the rear wiper motor to operate until the rear wiper blade reached the park position. When the rear wiper blade reaches the park position, the rear wiper motor ground is interrupted and the rear wiper motor stops.

Wiring Diagram — WIP/R —

NGEL0065



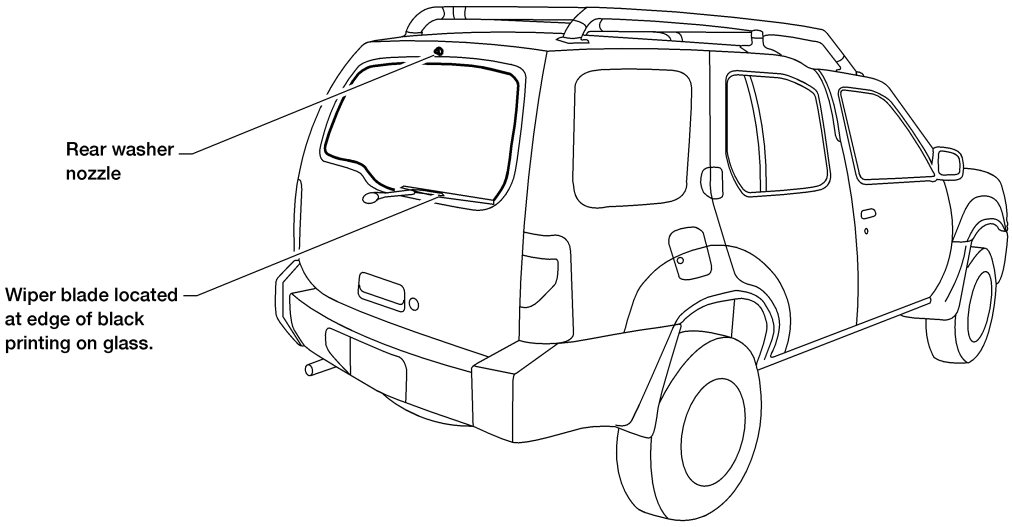


Refer to the following.
E43 - SUPER MULTIPLE JUNCTION (SMJ)

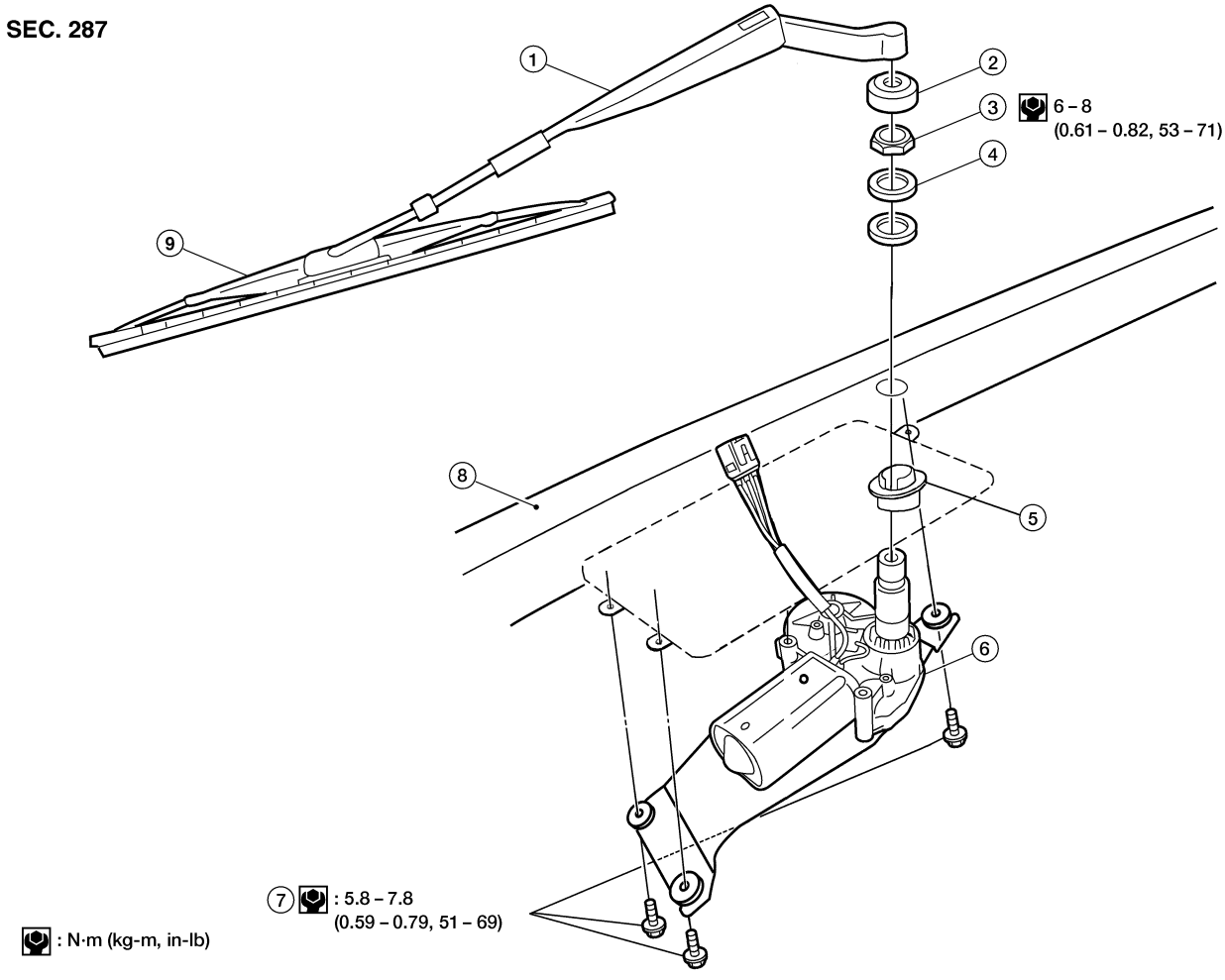
WEL687A

Removal and Installation

NGEL0067



AEL439C



LEL049A

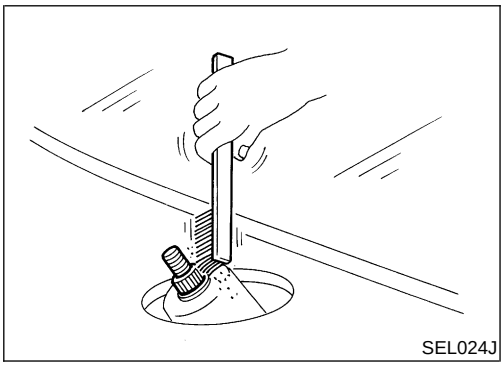
1. Rear wiper arm
2. Pivot shaft cover
3. Pivot shaft nut
4. Outer collar
5. Seal
6. Rear wiper motor
7. Mounting bolts
8. Back door
9. Rear wiper blade

WIPER ARMS

NGEL0067S01

1. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it "OFF" (Auto Stop).
2. Install wiper arm so that wiper blade is parallel to the ground and tighten wiper arm nut to specification.

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


SEL024J

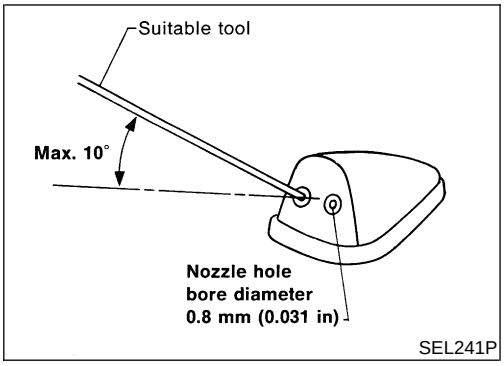
- **Before reinstalling wiper arm, clean up the pivot area as illustrated. This will reduce possibility of wiper arm looseness.**

Washer Nozzle Adjustment

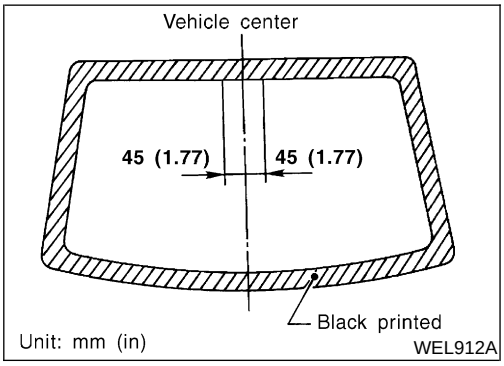
NGEL0068

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

Adjustable range: ±10° (In any direction)



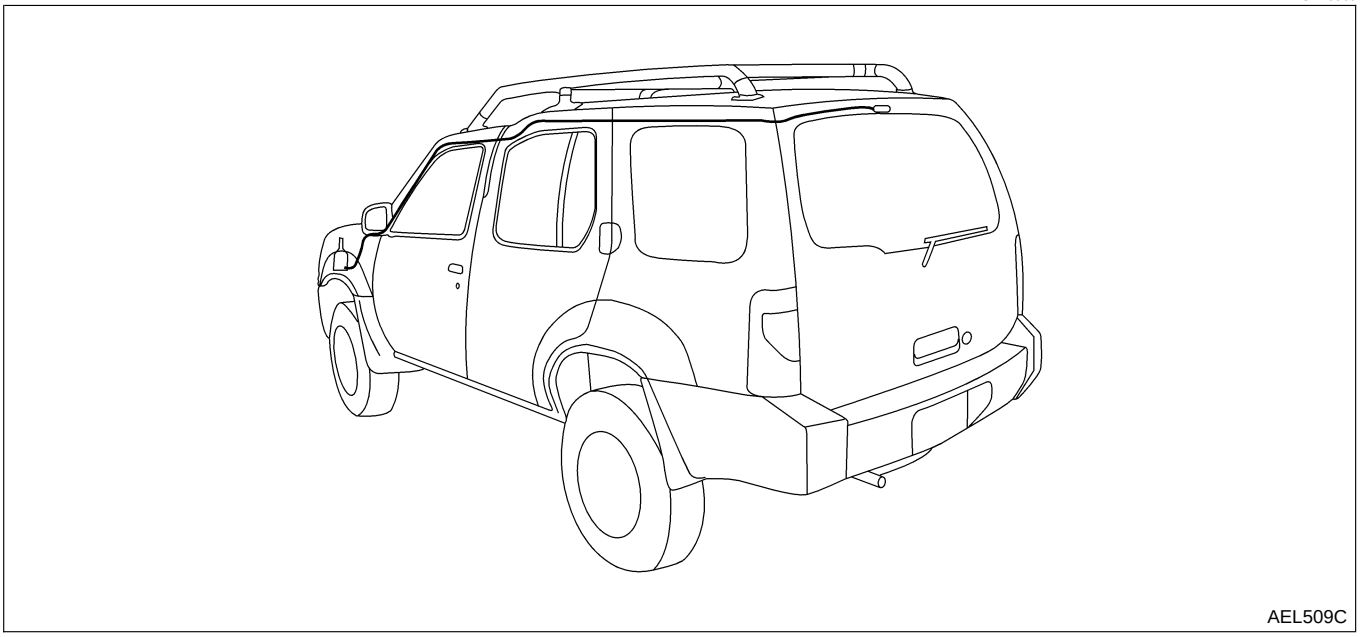
SEL241P



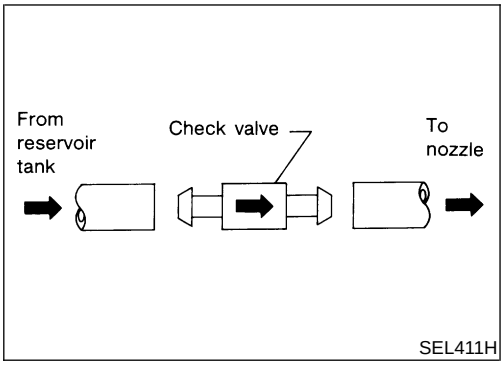
WEL912A

Washer Tube Layout

NGEL0069



AEL509C



SEL411H

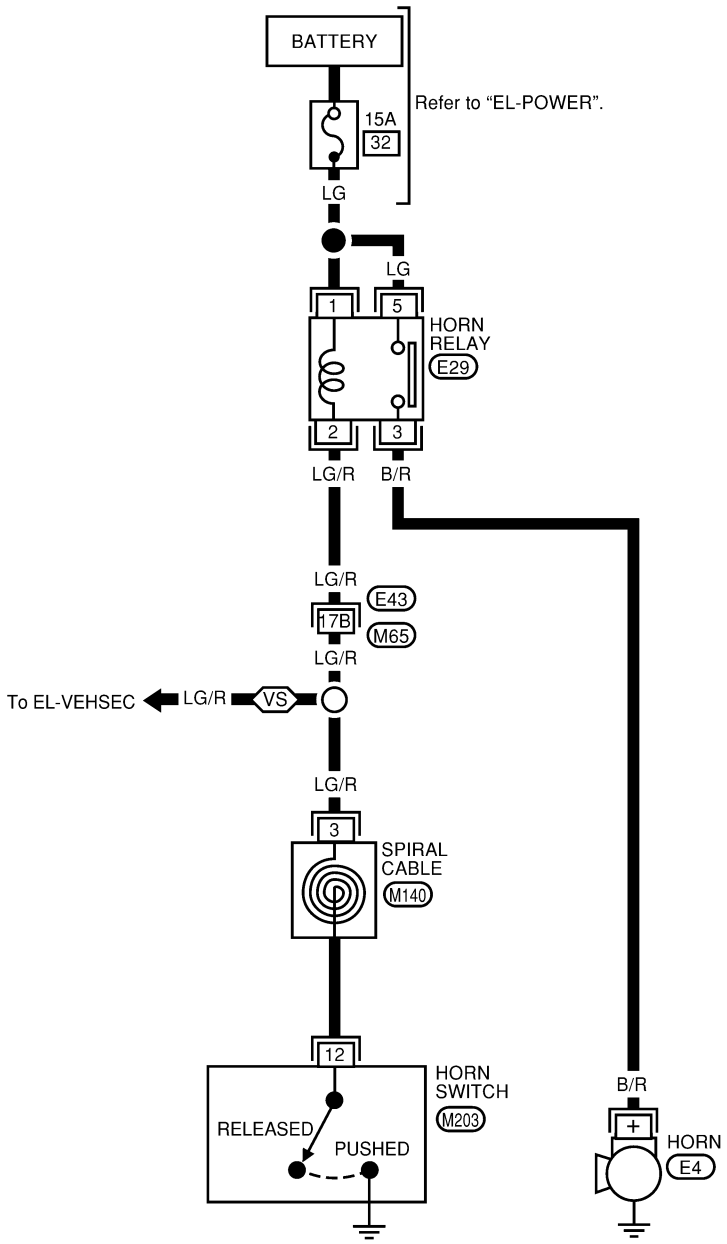
Check Valve

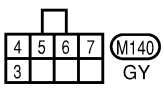
NGEL0070

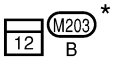
- A check valve is provided in the washer fluid line. Be careful not to connect check valve to washer tube in the wrong direction.

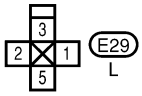
Wiring Diagram — HORN —

NGEL0071









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

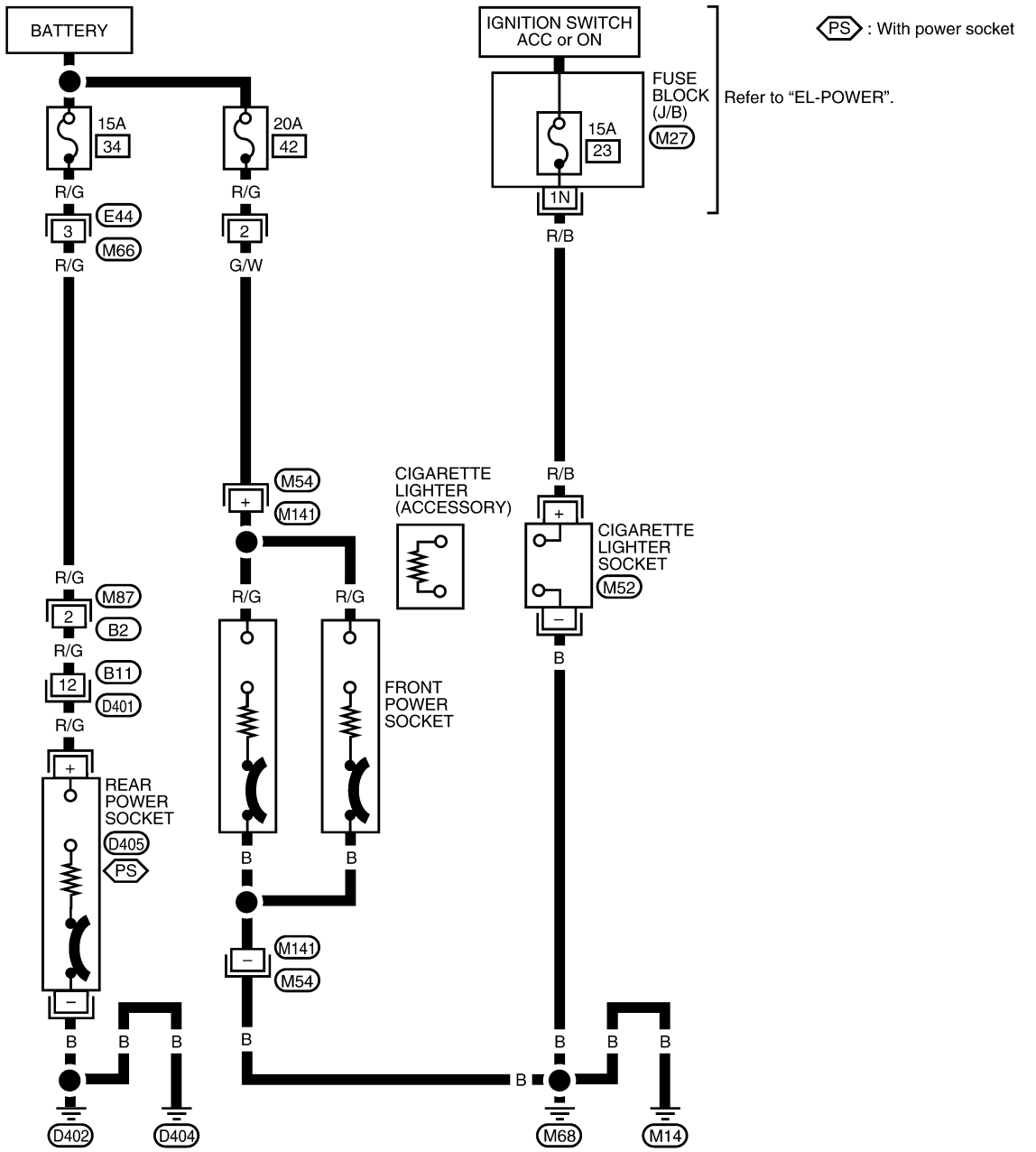
Refer to the following.
E43 - SUPER MULTIPLE JUNCTION (SMJ)

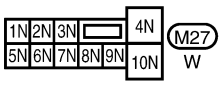
WEL126B

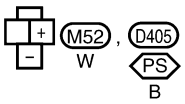
Wiring Diagram — CIGAR —

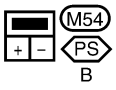
NGEL0156

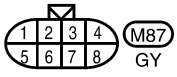
EL-CIGAR-01

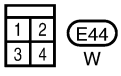


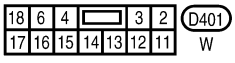








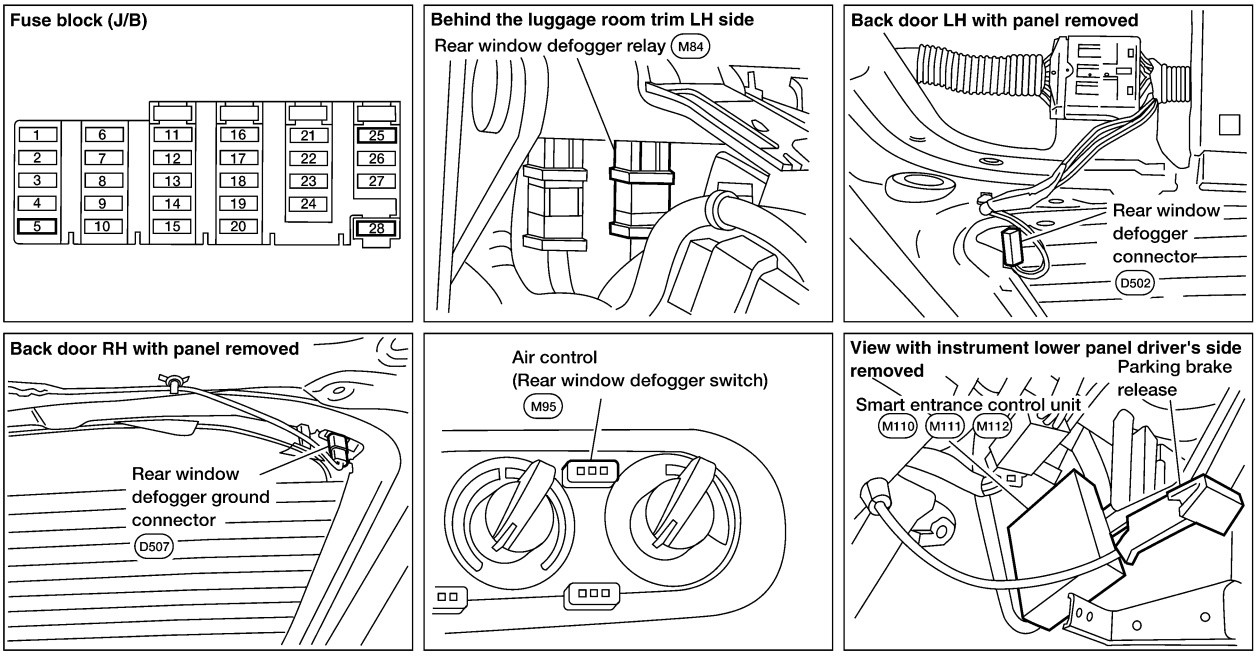




WEL127B

Component Parts and Harness Connector Location

NGEL0072



WEL128B

System Description

NGEL0073

MODELS WITHOUT POWER DOOR LOCKS

NGEL0073S01

The rear window defogger system is controlled by the rear window defogger timer. The rear window defogger operates only for approximately 15 minutes.
Power is supplied at all times

- to rear window defogger relay terminal 5 and
- through 20A fuse [No. 25, located in the fuse block (J/B)] and

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

- through 10A fuse [No. 5, located in the fuse block (J/B)]
- to rear window defogger relay terminal 1 and
- to rear window defogger timer terminal 1.

Ground is supplied to air control (rear window defogger switch) terminal 8 and rear window defogger timer terminal 4 through body grounds M14 and M68.
With the air control (rear window defogger switch) ON, ground is supplied

- to rear window defogger timer terminal 3
- through air control (rear window defogger switch) terminal 5.

Rear window defogger timer terminal 2 then supplies ground to the rear window defogger relay terminal 2.
With power and ground supplied, the rear window defogger relay is energized.
Power is supplied

- through terminal 3 of the rear window defogger relay
- to rear window defogger terminal +.

Rear window defogger terminal – is grounded through body grounds D402 and D404.
With power and ground supplied, the rear window defogger filaments heat and defog the rear window.
When the system is activated, the rear window defogger indicator illuminates in the air control (rear window defogger switch).
Power is supplied

- from rear window defogger relay terminal 3
- to air control (rear window defogger switch) terminal 4.

Air control (rear window defogger switch) terminal 8 is grounded through body grounds M14 and M68.

MODELS WITH POWER DOOR LOCKS

NGEL0073S02

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

- to rear window defogger relay terminal 5 and
- through 20A fuse [No. 25, located in the fuse block (J/B)] and
- to smart entrance control unit terminal 49
- through 7.5A fuse [No. 28, located in the fuse block (J/B)].

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

- through 10A fuse [No. 5, located in the fuse block (J/B)]
- to rear window defogger relay terminal 1 and
- to smart entrance control unit terminal 27.

Ground is supplied to air control (rear window defogger switch) terminal 8 and smart entrance control unit terminals 43 and 64 through body grounds M68 and M14.
With the air control (rear window defogger switch) ON, ground is supplied

- to smart entrance control unit terminal 14
- through air control (rear window defogger switch) terminal 5.

Smart entrance control unit terminal 37 then supplies ground to the rear window defogger relay terminal 2.
With power and ground supplied, the rear window defogger relay is energized.
Power is supplied

- through terminal 3 of the rear window defogger relay
- to rear window defogger terminal +.

Rear window defogger terminal – is grounded through body grounds D402 and D404.
With power and ground supplied, the rear window defogger filaments heat and defog the rear window.
When the system is activated, the rear window defogger indicator illuminates in the air control (rear window defogger switch).
Power is supplied

- from rear window defogger relay terminal 3
- to air control (rear window defogger switch) terminal 4.

Air control (rear window defogger switch) terminal 8 is grounded through body grounds M14 and M68.

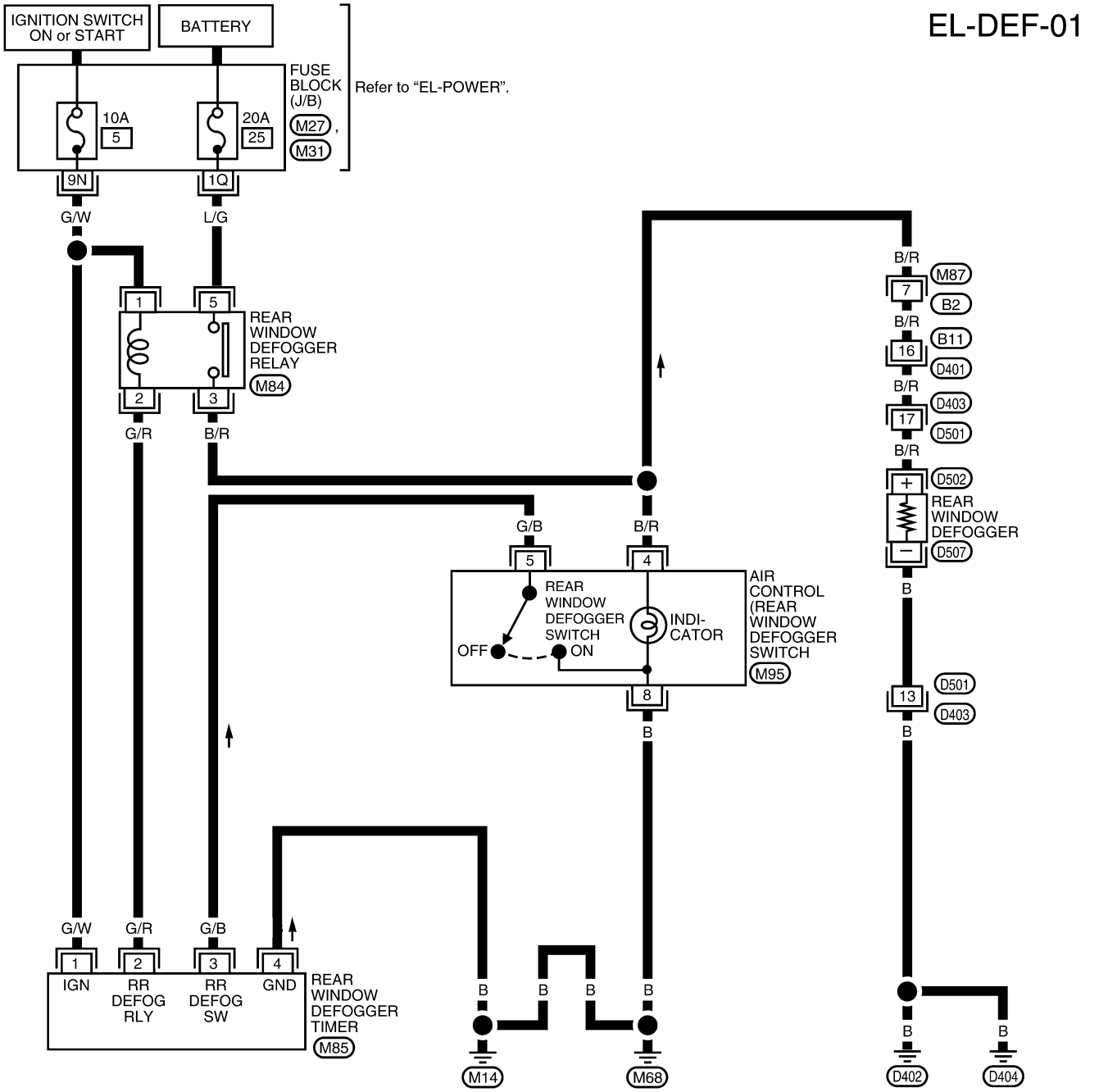
Wiring Diagram — DEF —

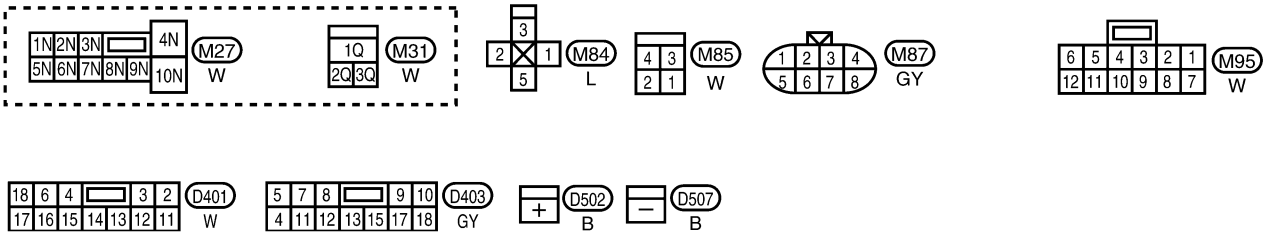
NGEL0074

MODELS WITHOUT POWER DOOR LOCKS

NGEL0074S01

EL-DEF-01

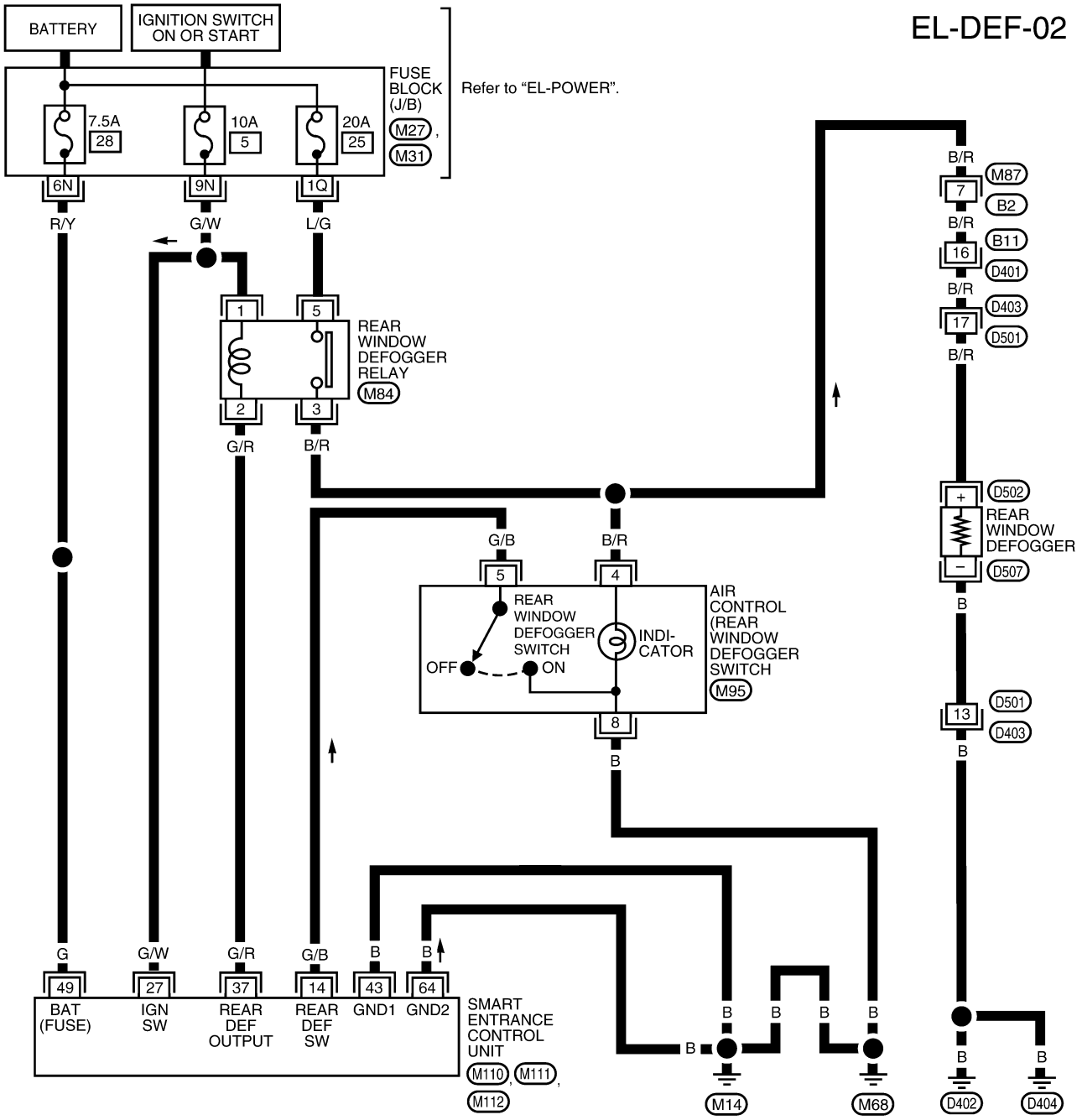


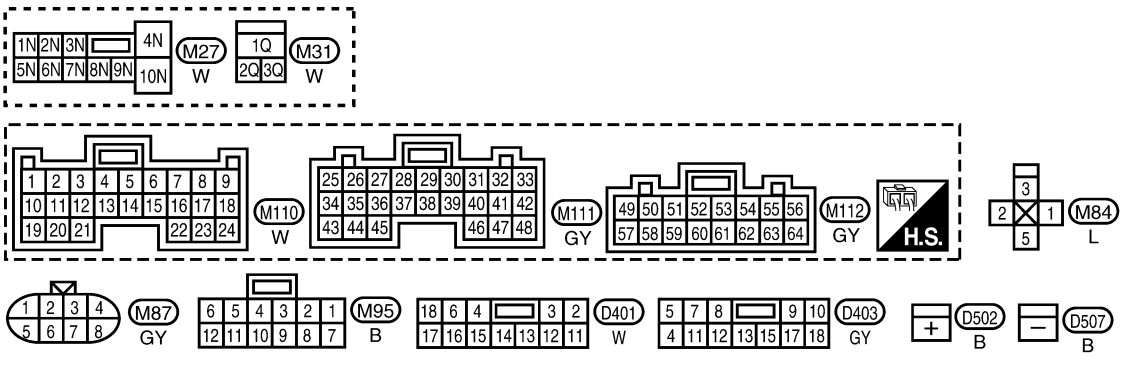


WEL691A

MODELS WITH POWER DOOR LOCKS

NGEL0074S02





WEL690A

Trouble Diagnoses

NGEL0075

DIAGNOSTIC PROCEDURE

NGEL0075S01

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

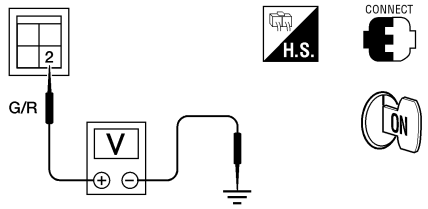
Models without Power Door Locks

NGEL0075S0101

1	CHECK REAR WINDOW DEFOGGER OUTPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between rear window defogger timer harness connector terminal 2 and ground.

Rear window defogger timer harness connector (M85)



AEL629C

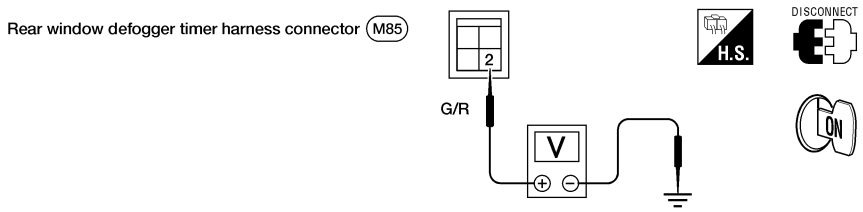
Voltage [V]:
Rear window defogger switch is OFF.
Approx. 12
Rear window defogger switch is ON.
0

OK or NG

OK	▶	**Check the following.** ● Rear window defogger relay Refer to “REAR WINDOW DEFOGGER RELAY”, EL-141. ● Rear window defogger circuit ● Rear window defogger filament Refer to “Filament Check”, EL-142.
NG	▶	GO TO 2.

2	CHECK DEFOGGER RELAY COIL SIDE CIRCUIT

1. Disconnect rear window defogger timer harness connector.
2. Turn ignition switch ON.
3. Check voltage between rear window defogger timer harness connector terminal 2 and ground.



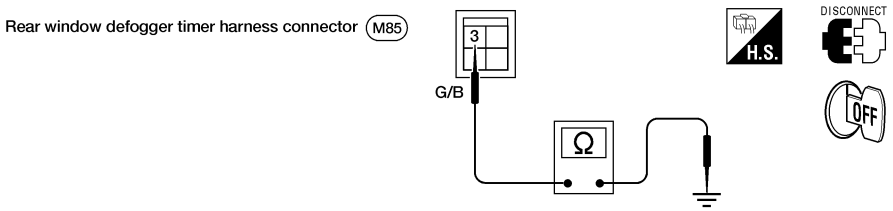
AEL630C

Does battery voltage exist?

Yes	▶	GO TO 3.
No	▶	**Check the following.** ● 10A fuse [No. 5, located in the fuse block (J/B)] ● Rear window defogger relay. Refer to "REAR WINDOW DEFOGGER RELAY", EL-141. ● Harness for open or short between rear window defogger relay and rear window defogger timer ● Harness for open or short between rear window defogger relay and fuse

3	CHECK REAR WINDOW DEFOGGER SWITCH INPUT SIGNAL

Check continuity between rear window defogger timer harness connector terminal 3 and ground.



AEL631C

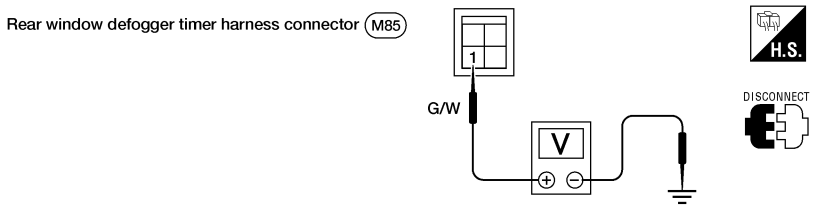
Continuity:
Rear window defogger switch is pressed.
Yes
Rear window defogger switch is released.
No

OK or NG

OK	▶	GO TO 4.
NG	▶	**Check the following.** ● Air control (rear window defogger switch) Refer to "REAR WINDOW DEFOGGER SWITCH", EL-141 ● Harness for open or short between rear window defogger timer and air control (rear window defogger switch) ● Air control (rear window defogger switch) ground circuit

4	CHECK IGNITION INPUT SIGNAL

Check voltage between rear window defogger timer harness connector terminal 1 and ground.



AEL632C

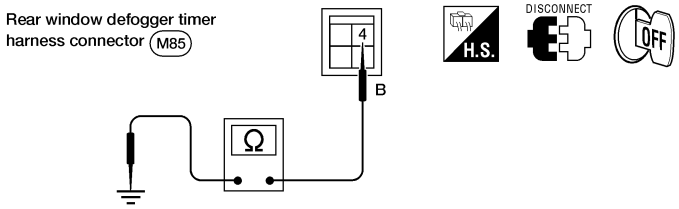
Voltage [V]:
Ignition switch is ON.
Approx. 12
Ignition switch is OFF.
0

OK or NG

OK	▶	GO TO 5.
NG	▶	**Check the following.** ● 10A fuse [No. 5, located in the fuse block (J/B)] ● Harness for open or short between rear window defogger timer and fuse

5	CHECK CONTROL UNIT GROUND CIRCUIT

Check continuity between rear window defogger timer harness connector terminal 4 and ground.



AEL633C

Does continuity exist?

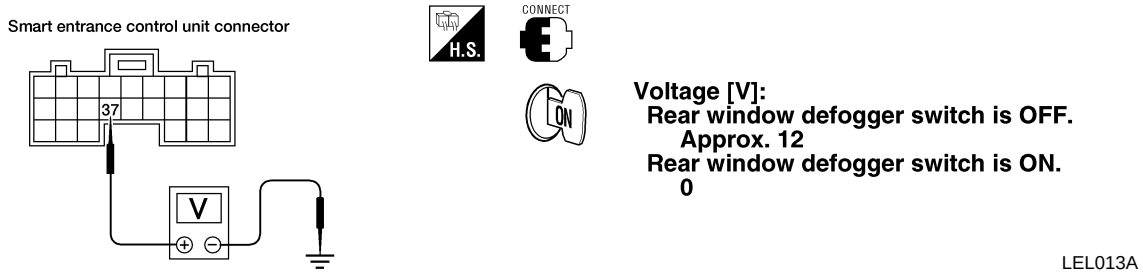
Yes	▶	Replace rear window defogger timer.
No	▶	Repair harness or connectors.

Models with Power Door Locks

NGEL0075S0102

1	CHECK REAR WINDOW DEFOGGER OUTPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between smart entrance control unit harness connector M111 terminal 37 (G/R) and ground.



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

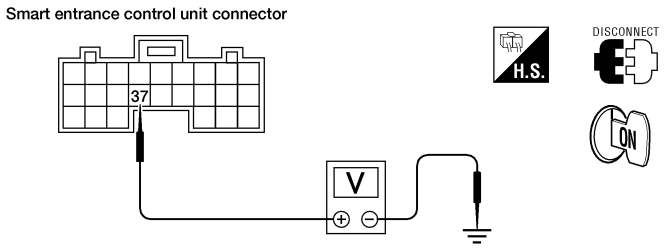
LEL013A

OK or NG

OK	▶	**Check the following.** ● Rear window defogger relay Refer to "REAR WINDOW DEFOGGER RELAY", EL-141. ● Rear window defogger circuit ● Rear window defogger filament Refer to "Filament Check", EL-142.
NG	▶	GO TO 2.

2	CHECK DEFOGGER RELAY COIL SIDE CIRCUIT

1. Disconnect smart entrance control unit harness connector.
2. Turn ignition switch ON.
3. Check voltage between smart entrance control unit harness connector M111 terminal 37 (G/R) and ground.



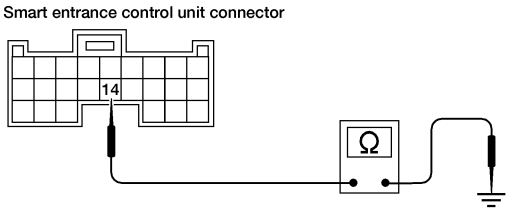
LEL014A

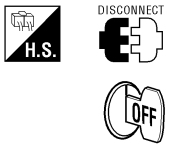
Does battery voltage exist?

Yes	▶	GO TO 3.
No	▶	**Check the following.** ● 10A fuse [No. 5, located in the fuse block (J/B)] ● Rear window defogger relay Refer to "REAR WINDOW DEFOGGER RELAY", EL-141. ● Harness for open or short between rear window defogger relay and smart entrance control unit ● Harness for open or short between rear window defogger relay and fuse

3	CHECK REAR WINDOW DEFOGGER SWITCH INPUT SIGNAL

Check continuity between smart entrance control unit harness connector M110 terminal 14 (G/B) and ground.





Continuity:
Rear window defogger switch is pressed
Yes
Rear window defogger switch is released
No

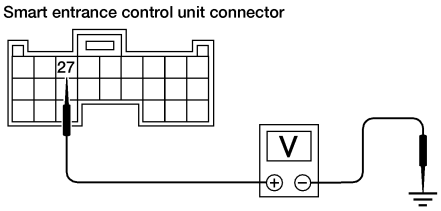
LEL015A

OK or NG

OK	▶	GO TO 4.
NG	▶	**Check the following.** ● Air control (rear window defogger switch) Refer to "REAR WINDOW DEFOGGER SWITCH", EL-141. ● Harness for open or short between smart entrance control unit and air control (rear window defogger switch) ● Air control (rear window defogger switch) ground circuit

4	CHECK IGNITION INPUT SIGNAL

Check voltage between smart entrance control unit harness connector M111 terminal 27 (G/W) and ground.



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

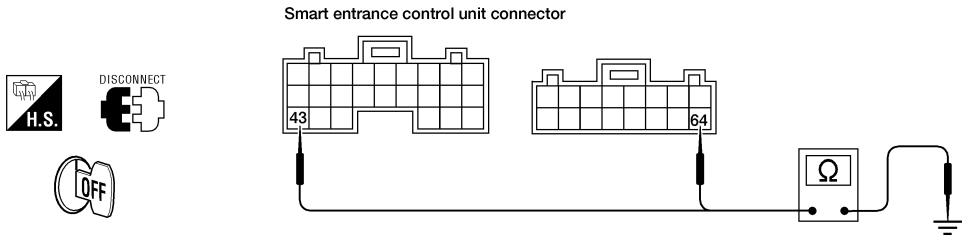
LEL016A

OK or NG

OK	▶	GO TO 5.
NG	▶	**Check the following.** ● 10A fuse [No. 5, located in the fuse block (J/B)] ● Harness for open or short between smart entrance control unit and fuse

5	CHECK CONTROL UNIT GROUND CIRCUIT

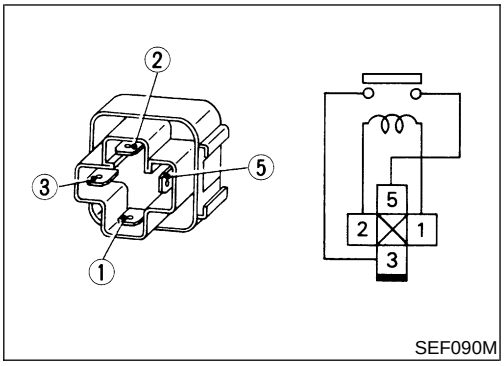
Check continuity between smart entrance control unit harness connector M111 terminal 43 (B), connector M112 terminal 64 (B) and ground.



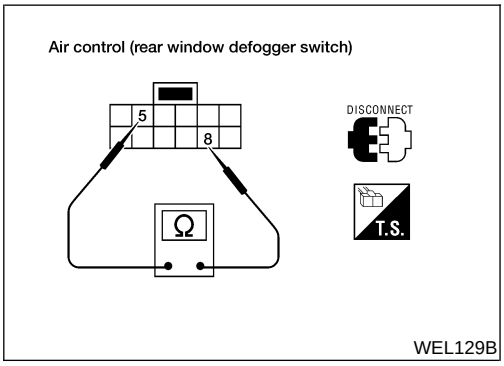
LEL017A

Does continuity exist?

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



SEF090M



WEL129B

Electrical Components Inspection

REAR WINDOW DEFOGGER RELAY

NGEL0076

NGEL0076S01

Check continuity between terminals 3 and 5.

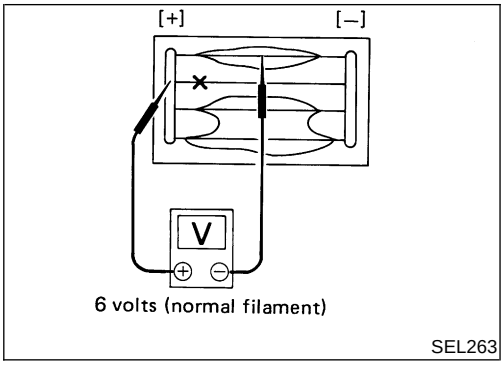
Condition	Continuity
12V direct current supply between terminals 1 and 2	Yes
No current supply	No

REAR WINDOW DEFOGGER SWITCH

NGEL0076S02

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

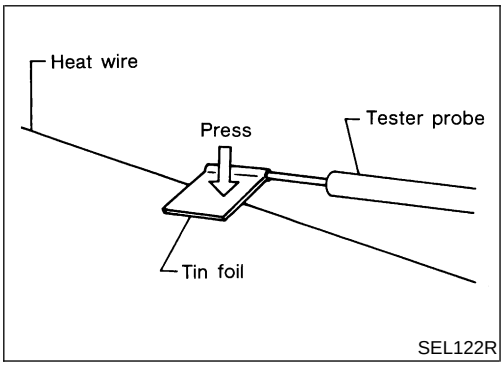
Terminals				Condition	Continuity
(+)		(–)			
Connector	Terminal	Connector	Terminal		
M95	5	M95	8	Rear window defogger switch is pushed	Yes
				Rear window defogger switch is released	No



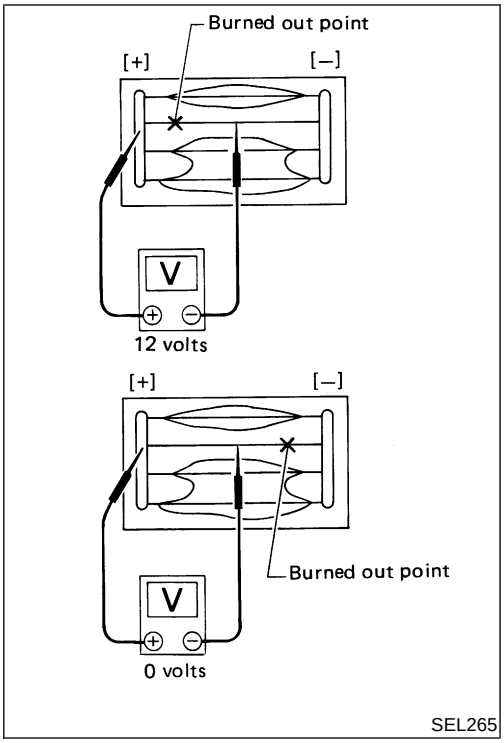
Filament Check

NGEL0077

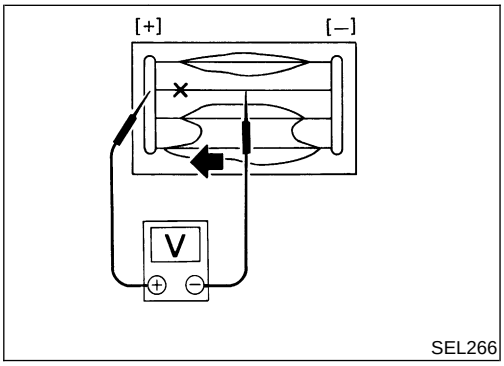
1. Attach probe circuit tester (in volt range) to middle portion of each filament.



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



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



3. To locate burned out point, move probe to left and right along filament. Test needle will swing abruptly when probe passes the point.

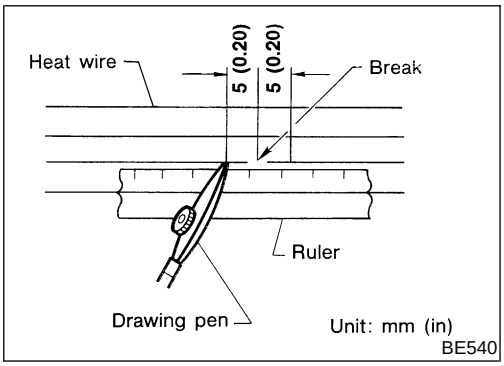
Filament Repair

NGEL0078

REPAIR EQUIPMENT

NGEL0078S01

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



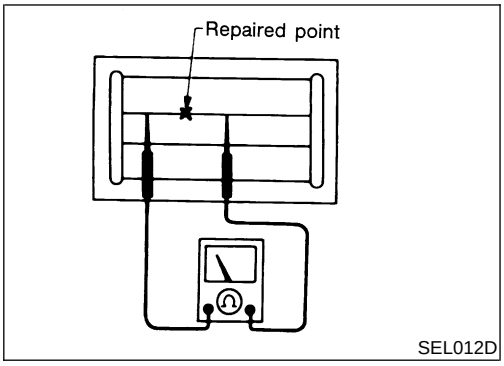
REPAIRING PROCEDURE

NGEL0078S02

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

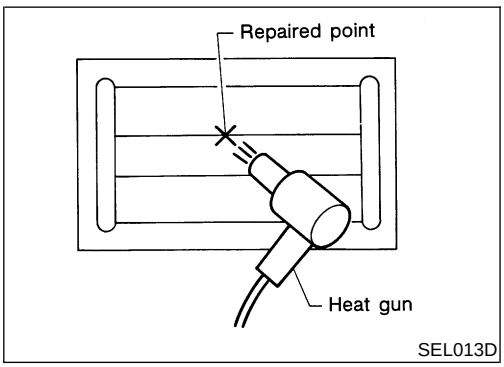
Shake silver composition container before use.

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



4. After repair has been completed, check repaired wire for continuity. This check should be conducted 10 minutes after silver composition is deposited.

Do not touch repaired area while test is being conducted.



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

System Description

NGEL0079

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

MODELS WITHOUT AUDIO AMPLIFIER

NGEL0079S03

Power is supplied at all times

- through 15A fuse (No. 41, located in the fuse and fusible link box)
- to audio unit terminal 6.

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

- through 10A fuse [No. 18, located in the fuse block (J/B)]
- to audio unit terminal 10.

Ground is supplied through the case of the audio unit.
When the audio unit power knob is pushed to the ON position, audio signals are supplied

- through audio unit terminals 2, 4, 14 and 16
- to door speakers, pillar tweeters and rear speakers.

MODELS WITH AUDIO AMPLIFIER

NGEL0079S04

Power is supplied at all times

- through 20A fuse (No. 33, located in the fuse and fusible link box)
- to audio amplifier terminals 5 and 12
- through 15A fuse (No. 41, located in the fuse and fusible link box)
- to audio unit terminal 6.

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

- through 10A fuse [No. 18, located in the fuse block (J/B)]
- to audio unit terminal 10.

Ground for the audio unit is supplied through the case of the audio unit. Ground for the audio amplifier is supplied to terminals 4 and 11 through body grounds M68 and M14.
When the audio unit power knob is pushed to the ON position, audio signals are supplied

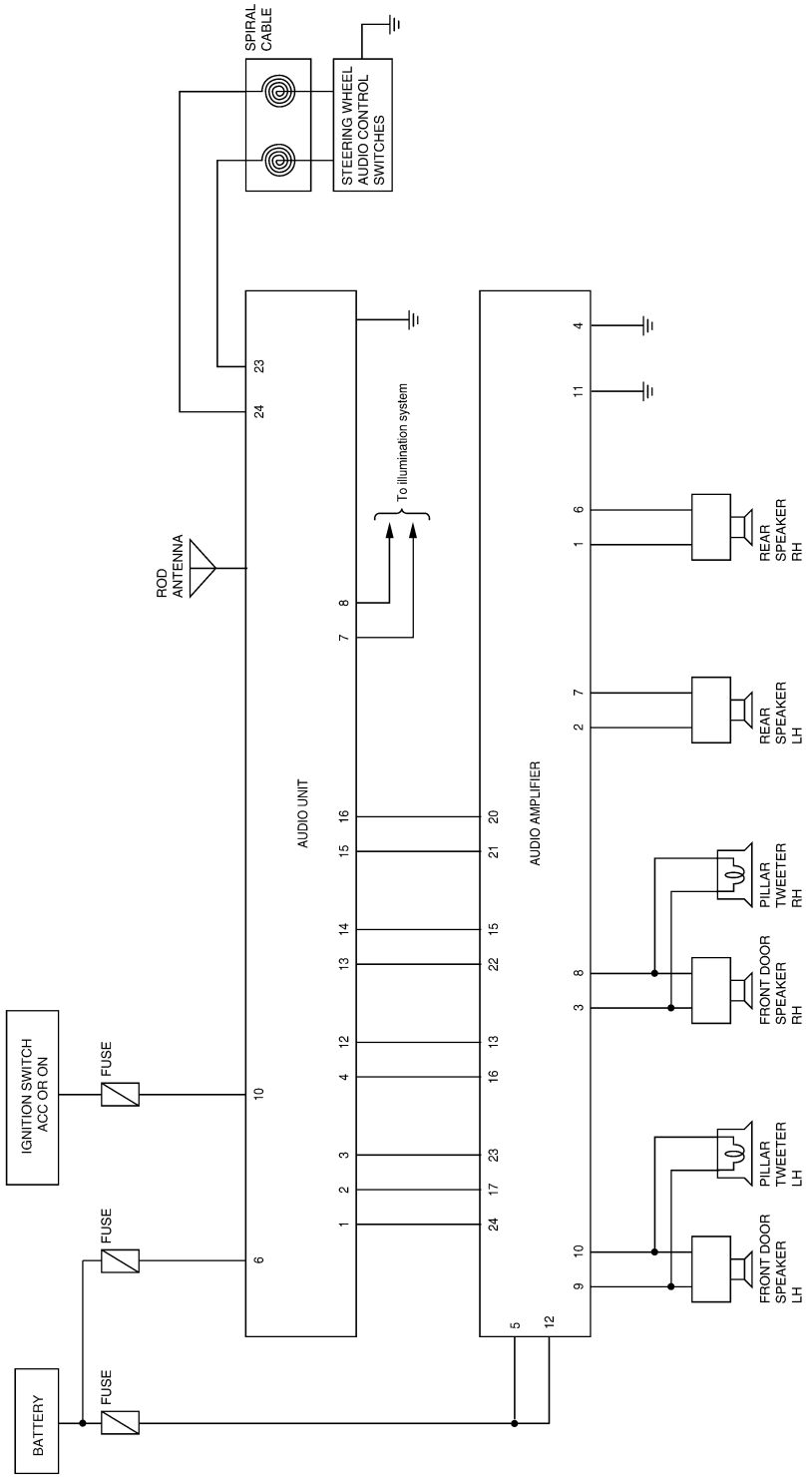
- through audio unit terminals 1, 2, 3, 4, 13, 14, 15 and 16
- to audio amplifier terminals 15, 16, 17, 20, 21, 22, 23, and 24
- through audio amplifier terminals 1, 2, 3, and 9
- to front door speakers, pillar tweeters and rear speakers

When the steering switch is pushed, audio signals are supplied

- through audio unit terminal 23
- to steering wheel audio control switch terminal 15, and
- through steering wheel audio control switch terminal 16
- to audio unit terminal 24.

Schematic — With Audio Amplifier

NGEL0213



WEL130B

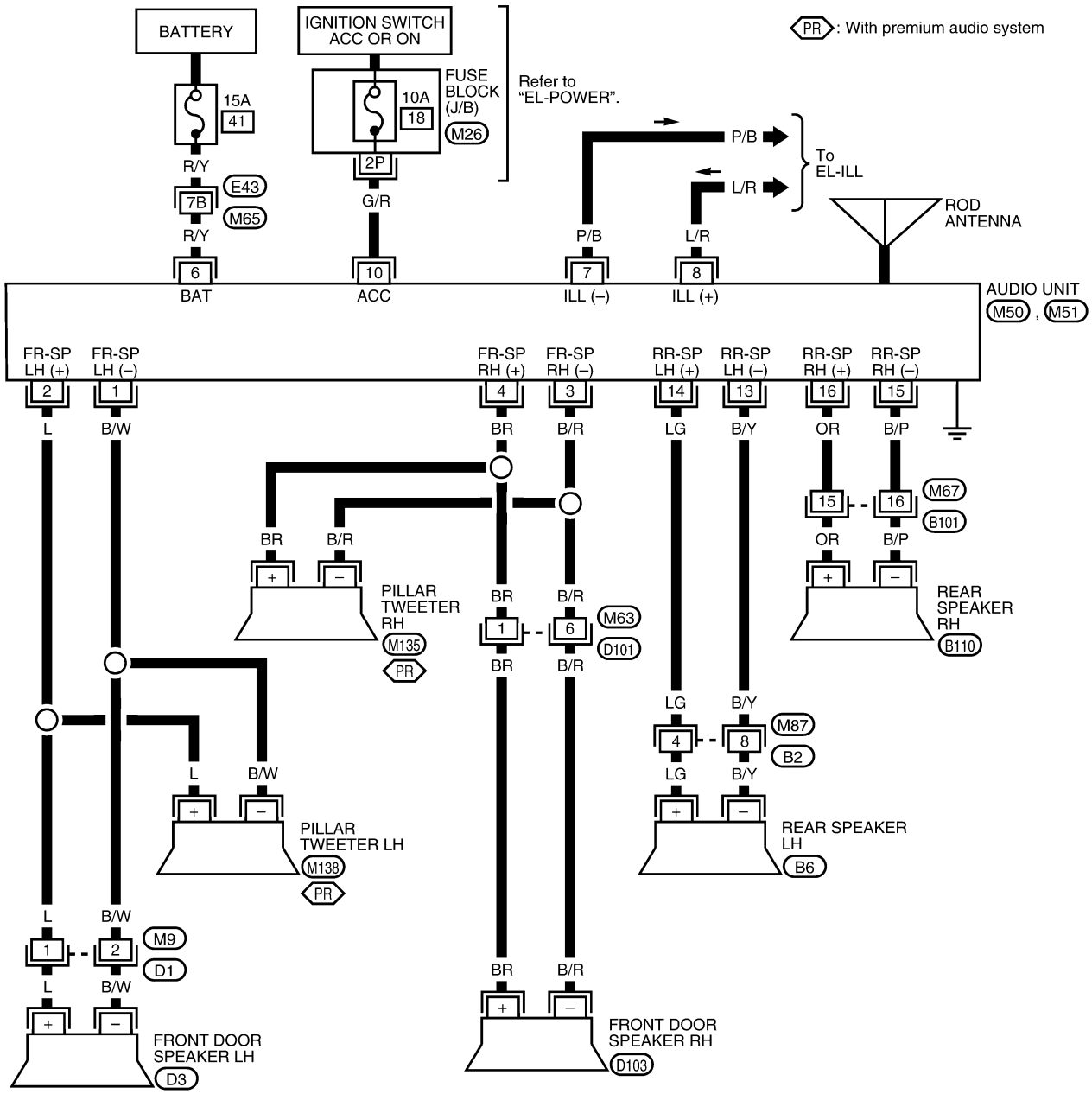
Wiring Diagram — AUDIO —

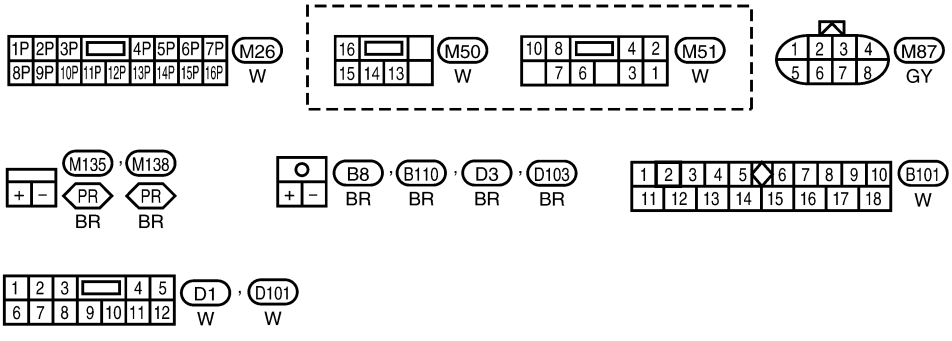
WITHOUT AUDIO AMPLIFIER

NGEL0157

NGEL0157S01

EL-AUDIO-01



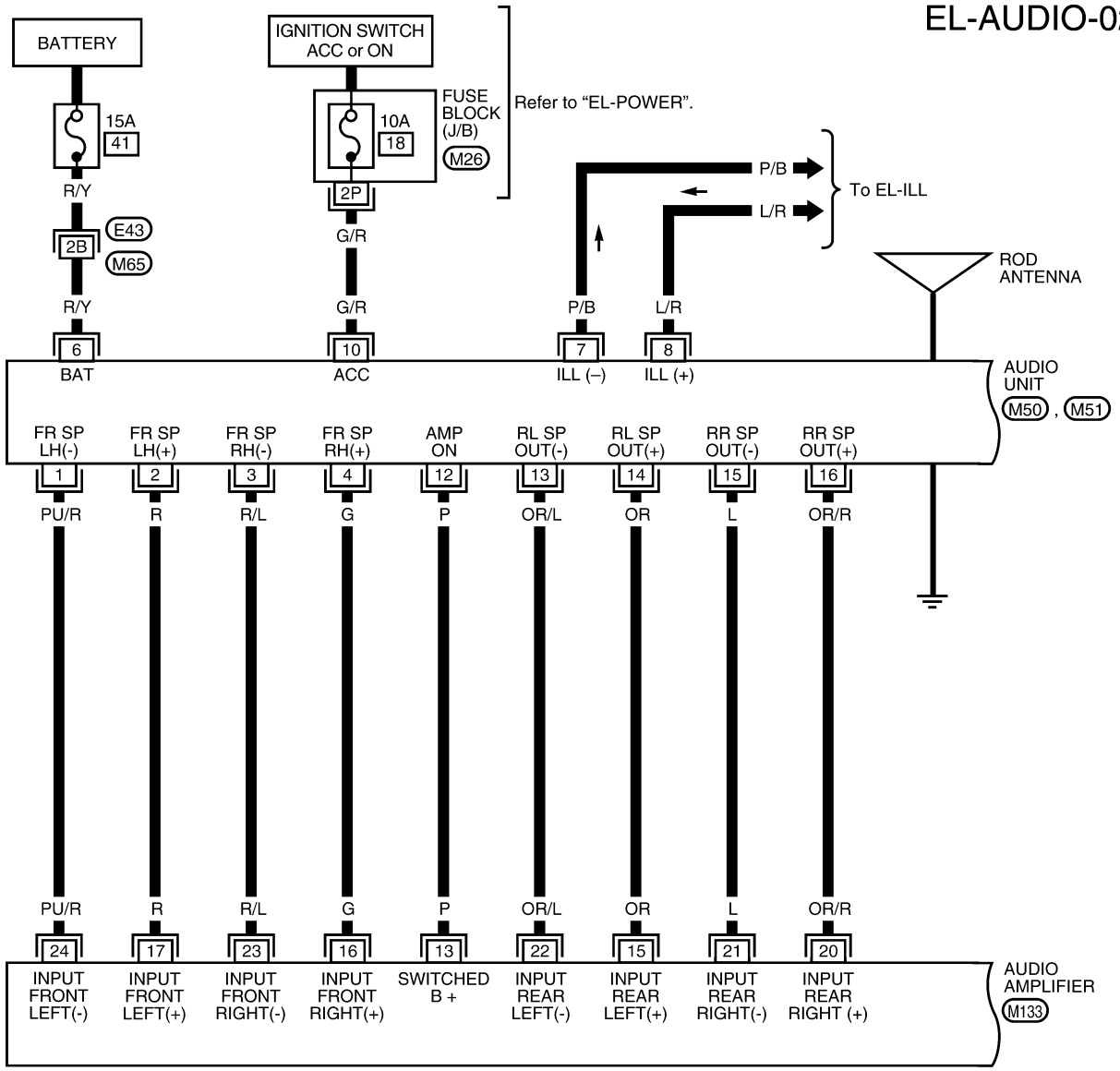


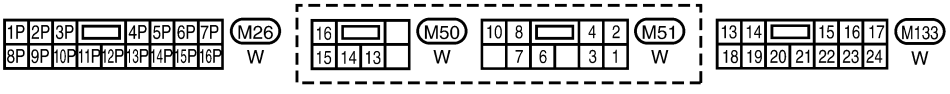
Refer to the following.
E43 - SUPER MULTIPLE JUNCTION (SMJ)

WEL161B

WITH AUDIO AMPLIFIER

NGEL0157S02

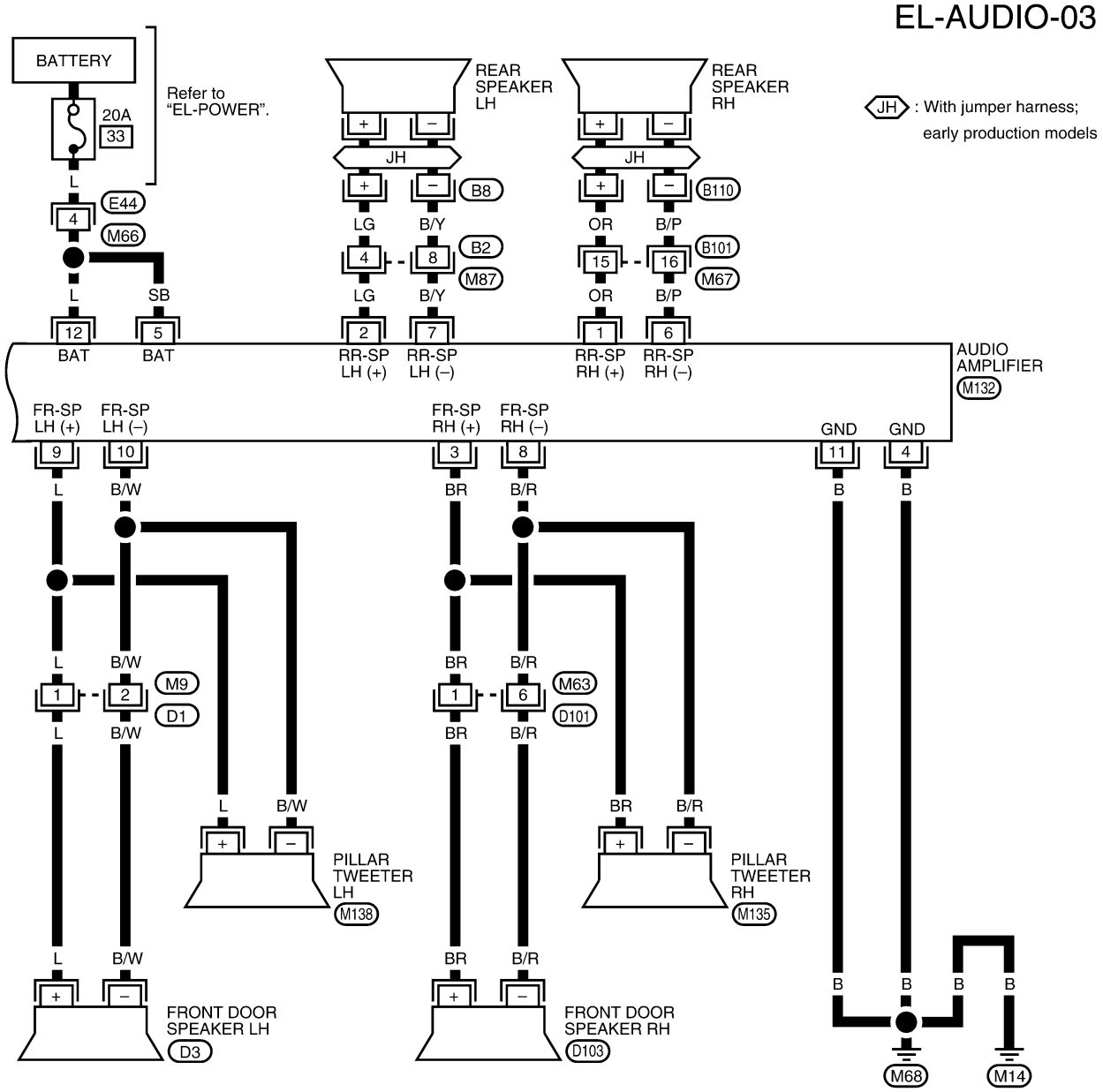


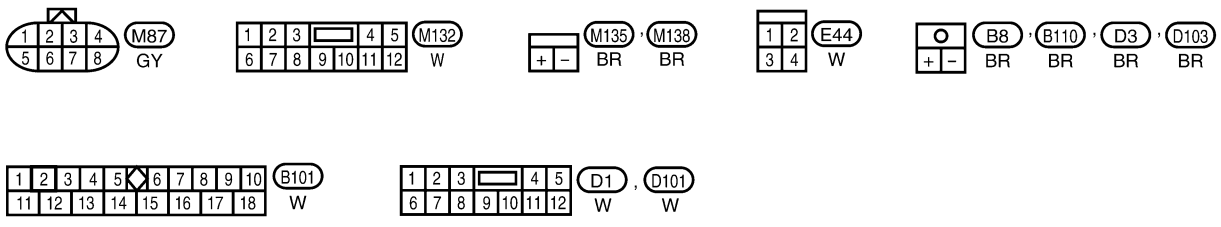


Refer to the following.
E43 - SUPER MULTIPLE JUNCTION (SMJ)

LEL693A

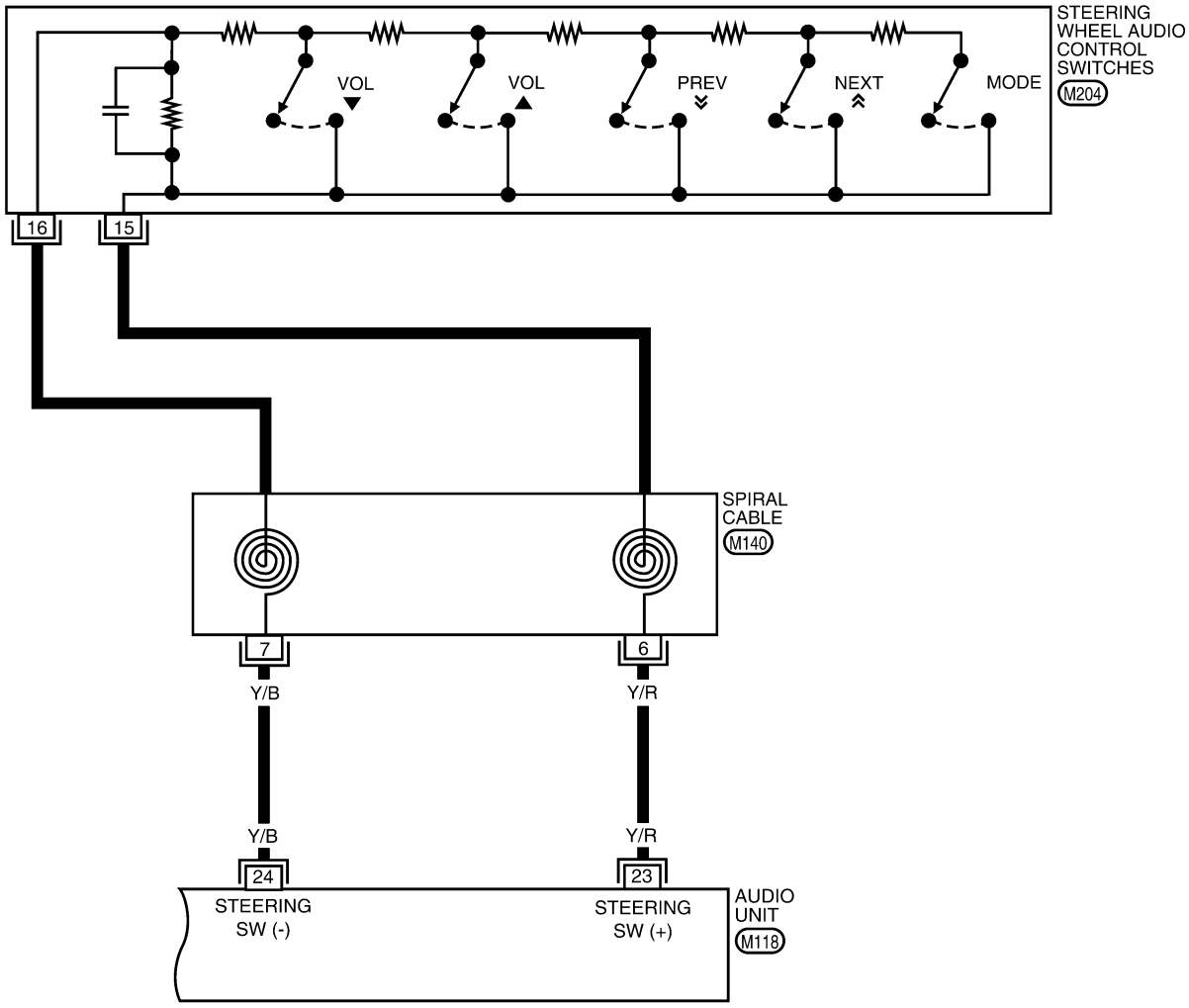
EL-AUDIO-03

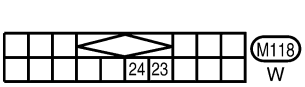


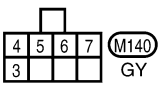


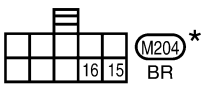
LEL694A

EL-AUDIO-04









*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF EL SECTION.

WEL131B

Trouble Diagnoses

NGEL0082

AUDIO UNIT (WITHOUT AUDIO AMPLIFIER)

NGEL0082S01

Symptom	Possible causes	Repair order
Audio unit inoperative (no digital display and no sound from speakers).	1. 10A fuse 2. Poor audio unit case ground 3. Audio unit	1. Check 10A fuse [No. 18, located in fuse block (J/B)]. Turn ignition switch ON and verify that battery positive voltage is present at terminal 10 of audio unit. 2. Check audio unit case ground. 3. Remove audio unit for repair.
Audio unit controls are operational, but no sound is heard from any speaker.	1. Audio unit output 2. Audio unit	1. Check audio unit output voltages. 2. Remove audio unit for repair.
Audio unit presets are lost when ignition switch is turned OFF.	1. 15A fuse 2. Audio unit	1. Check 15A fuse (No. 41, located in fuse and fusible link box) and verify that battery positive voltage is present at terminal 6 of audio unit. 2. Remove audio unit for repair.
Individual speaker is noisy or inoperative.	1. Speaker 2. Audio unit output 3. Speaker circuit 4. Audio unit	1. Check speaker. 2. Check audio unit output voltages. 3. Check wires for open or short between audio unit and speaker. 4. Remove audio unit for repair.
Audio unit stations are weak or noisy.	1. Antenna 2. Poor audio unit ground 3. Audio unit	1. Check antenna. 2. Check audio unit ground. 3. Remove audio unit for repair.
Audio unit generates noise in AM and FM modes with engine running.	1. Poor audio unit ground 2. Loose or missing ground bonding straps 3. Ignition condenser or rear window defogger noise suppressor condenser 4. Alternator 5. Ignition coil or secondary wiring 6. Audio unit	1. Check audio unit ground. 2. Check ground bonding straps. 3. Replace ignition condenser or rear window defogger noise suppressor condenser. 4. Check alternator. 5. Check ignition coil and secondary wiring. 6. Remove audio unit for repair.
Audio unit generates noise in AM and FM modes with accessories on (switch pops and motor noise).	1. Poor audio unit ground 2. Antenna 3. Accessory ground 4. Faulty accessory	1. Check audio unit ground. 2. Check antenna. 3. Check accessory ground. 4. Replace accessory.

AUDIO UNIT (WITH AUDIO AMPLIFIER)

NGEL0082S04

Symptom	Possible causes	Repair order
Audio unit inoperative (no digital display and no sound from speakers).	1. 10A fuse 2. Poor audio unit case ground 3. Audio unit	1. Check 10A fuse [No. 18, located in fuse block (J/B)]. Turn ignition switch ON and verify that battery positive voltage is present at terminal 10 of audio unit. 2. Check audio unit case ground. 3. Remove audio unit for repair.
Audio unit controls are operational, but no sound is heard from any speaker.	1. 20A fuse 2. Audio amplifier ground 3. Audio amplifier	1. Check 20A fuse (No. 33, located in fuse and fusible link box). Verify battery positive voltage is present at terminals 5 and 12. 2. Check harness continuity between audio amplifier terminals 4 and 11, and ground. 3. Remove audio amplifier for repair.
Audio unit presets are lost when ignition switch is turned OFF.	1. 15A fuse 2. Audio unit	1. Check 15A fuse (No. 41, located in fuse and fusible link box) and verify that battery positive voltage is present at terminal 6 of audio unit. 2. Remove audio unit for repair.

Symptom	Possible causes	Repair order
Individual speaker is noisy or inoperative.	1. Each speaker 2. Output circuit to each speaker	1. Check speaker. 2. Check the output circuit to each speaker ● between audio unit and audio amplifier ● between audio amplifier and each speaker
Audio unit stations are weak or noisy.	1. Antenna 2. Poor audio unit ground 3. Audio unit	1. Check antenna. 2. Check audio unit ground. 3. Remove audio unit for repair.
Audio unit generates noise in AM and FM modes with engine running.	1. Poor audio unit ground 2. Loose or missing ground bonding straps 3. Ignition condenser or rear window defogger noise suppressor condenser 4. Generator 5. Ignition coil or secondary wiring 6. Audio unit	1. Check audio unit ground. 2. Check ground bonding straps. 3. Replace ignition condenser or rear window defogger noise suppressor condenser. 4. Check generator. 5. Check ignition coil and secondary wiring. 6. Remove audio unit for repair.
Audio unit generates noise in AM and FM modes with accessories on (switch pops and motor noise).	1. Poor audio unit ground 2. Antenna 3. Accessory ground 4. Faulty accessory	1. Check audio unit ground. 2. Check antenna. 3. Check accessory ground. 4. Replace accessory.
Steering wheel audio control switch does not operate.	1. Steering wheel audio control switch 2. Audio unit output 3. Steering wheel audio control switch circuit 4. Audio unit	1. Check steering wheel audio control switch, refer to "STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE CHECK", EL-152. 2. Check audio unit output voltage. 3. Check harness between audio unit and steering switch. 4. Remove audio unit for repair.

Inspection

NGEL0083

SPEAKER

NGEL0083S03

1. Disconnect speaker harness connector.
2. Measure the resistance between speaker terminals + and –.
- The resistance should be 2 - 4Ω.
3. Using jumper wires, momentarily connect a 9V battery between speaker terminals + and –.
- A momentary hum or pop should be heard.

ANTENNA

NGEL0083S02

1. Using a jumper wire, clip an auxiliary ground between antenna and body.
- If reception improves, check antenna ground (at body surface).
- If reception does not improve, check main feeder cable for short circuit or open circuit.

AUDIO UNIT

NGEL0083S01

All voltage inspections are made with:
- Ignition switch ON or ACC
- Audio unit ON
- Audio unit connected (If removed for inspection, supply a ground to the case using a jumper wire.)

AUDIO UNIT VOLTAGES

NGEL0083S04

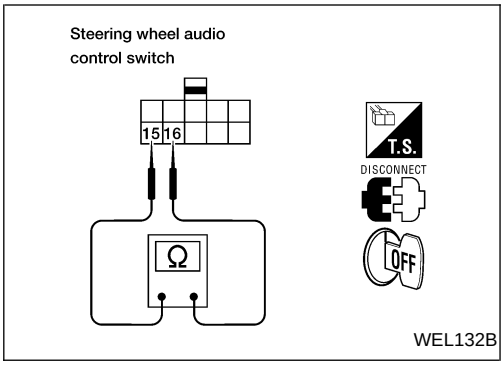
Terminal	Wire color	Voltage (V)		Terminal	Wire color	Voltage (V)	
		Base Audio System	Premium Audio System			Base Audio System	Premium Audio System
1	B/W	5 - 7.5	5 - 7.5	9	—	—	—
2	L	5 - 7.5	5 - 7.5	10	G/R	10.8 - 15.6	10.8 - 15.6
3	B/R	5 - 7.5	5 - 7.5	11	—	—	—
4	BR	5 - 7.5	5 - 7.5	12	—	—	—

Inspection (Cont'd)

Terminal	Wire color	Voltage (V)		Terminal	Wire color	Voltage (V)	
		Base Audio System	Premium Audio System			Base Audio System	Premium Audio System
5	—	—	—	13	B/Y	5 - 7.5	5 - 7.5
6	R/Y	10.8 - 15.6	10.8 - 15.6	14	LG	5 - 7.5	5 - 7.5
7	P/B	0 - 12 (Illumination)	0 - 12 (Illumination)	15	B/P	5 - 7.5	5 - 7.5
8	L/R	0 (Illumination)	0 (Illumination)	16	OR	5 - 7.5	5 - 7.5

STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

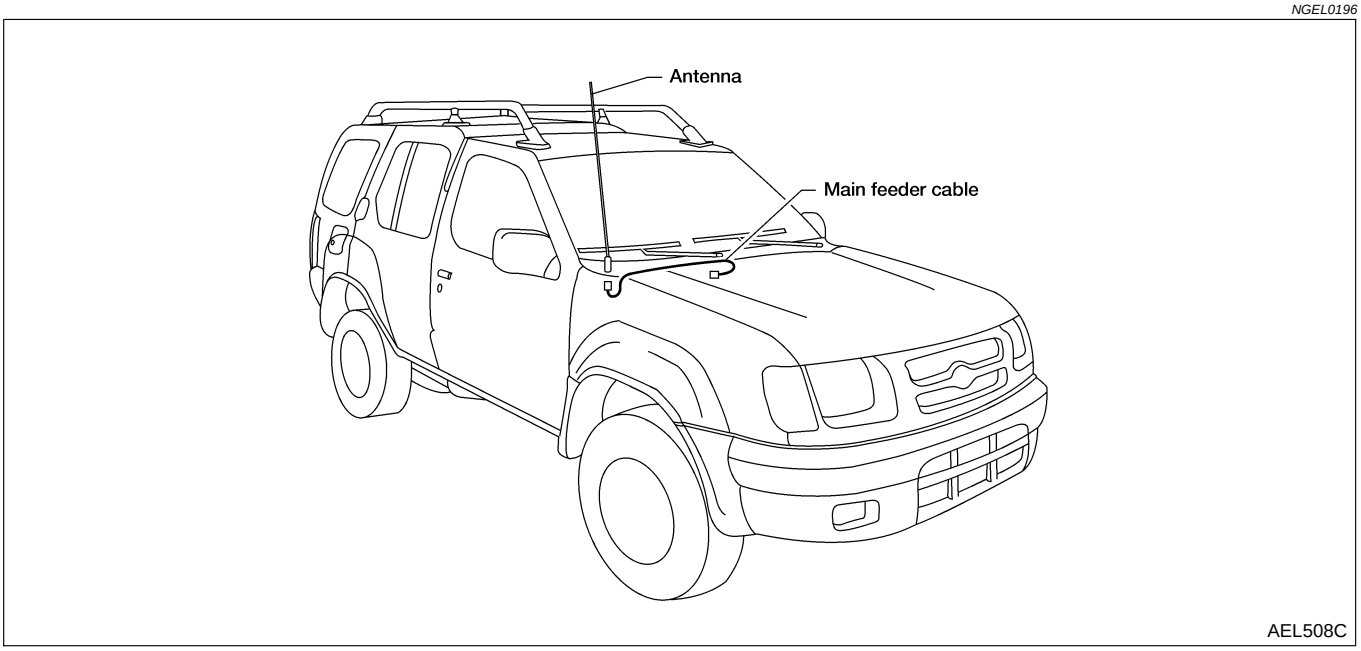
NGEL0083S05

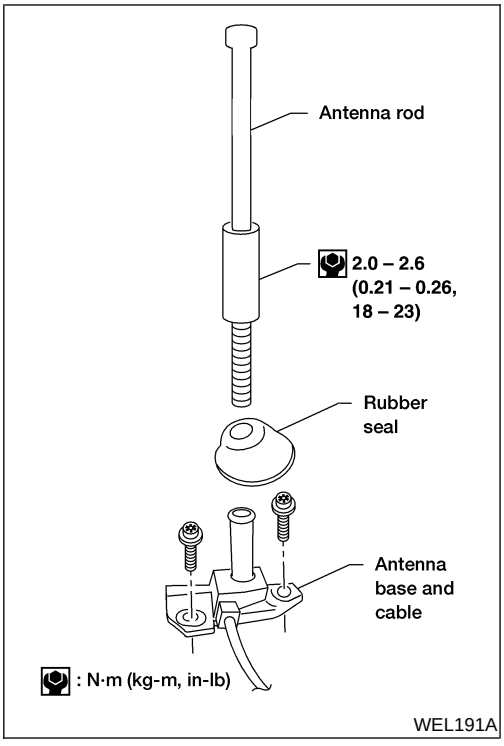


Connector	Terminal	Switch	Resistance Ω (Approx.)
M204	15 - 16	VOLUME (down) sw	21.7 - 22.2
		VOLUME (up) sw	69.3 - 70.7
		PREVIOUS sw	108.9 - 111.1
		NEXT sw	158.4 - 161.6
		MODE sw	326.7 - 333.3

Location of Antenna

NGEL0196





Fixed Antenna Rod Replacement

NGEL0192

REMOVAL

NGEL0192S01

1. Remove antenna rod.
2. Remove rubber seal.
3. Remove cowl screen top seal.
4. Remove right wiper arm.
5. Remove right cowl to grille.
6. Remove antenna base bolts.
7. Remove right fender splash shield.
8. Remove audio unit.
9. Disconnect antenna cable from audio unit.
10. Remove attachment clip from fender apron.
11. Remove antenna base and cable.

INSTALLATION

NGEL0192S02

Install in reverse order of removal.

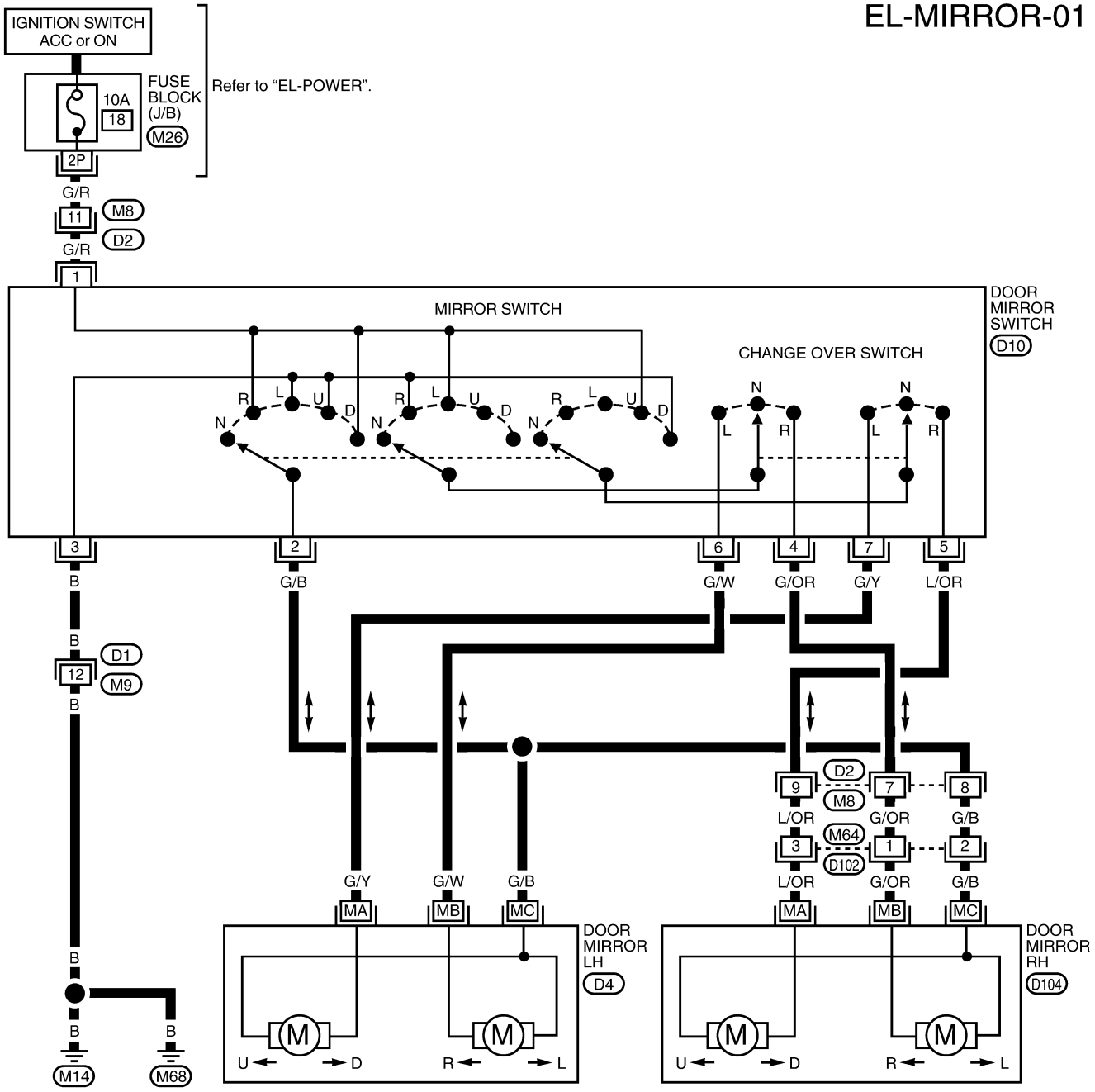
CAUTION:

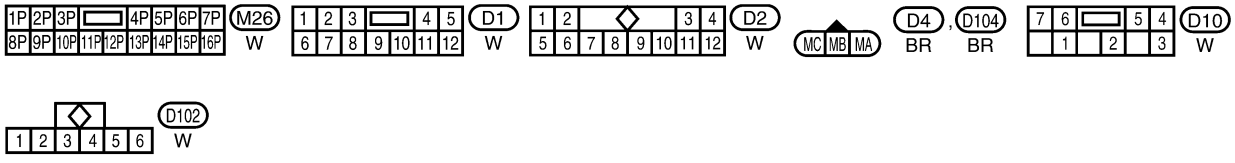
Always properly tighten the antenna rod during installation or the antenna rod may bend or break during vehicle operation.

Wiring Diagram — MIRROR —

NGEL0090

EL-MIRROR-01

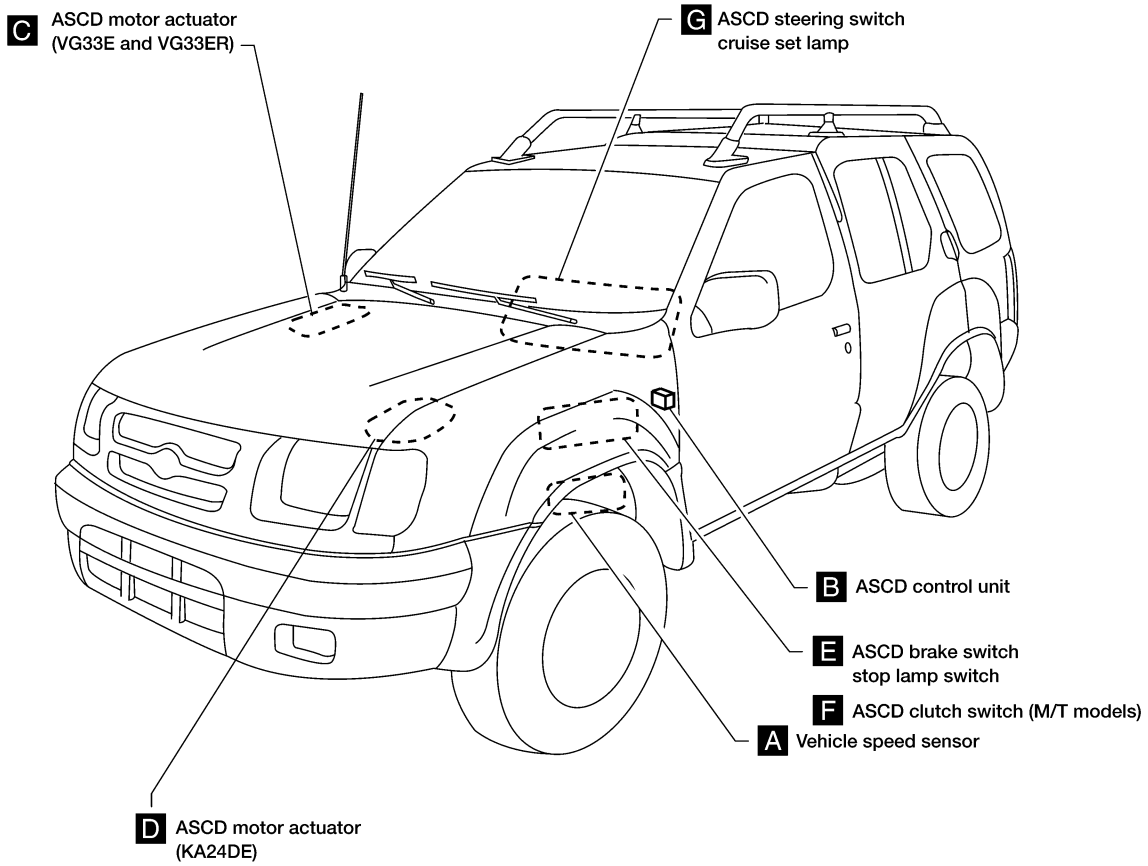




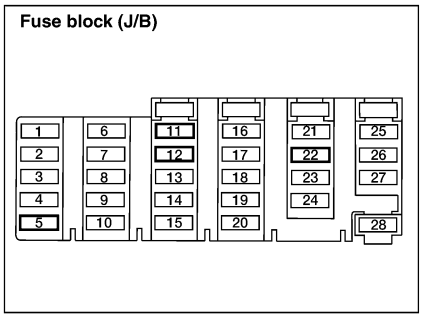
LEL696A

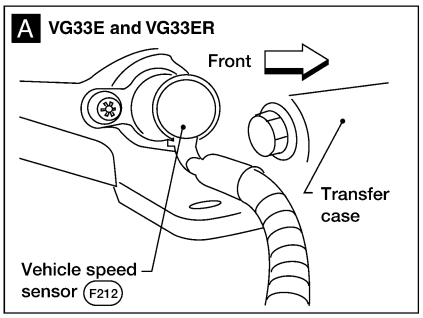
Component Parts and Harness Connector Location

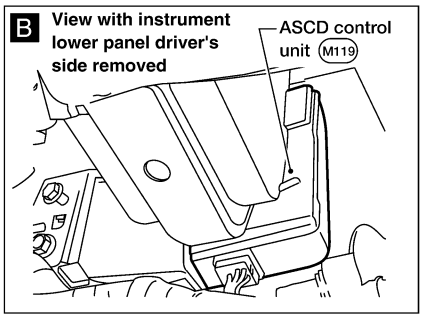
NGEL0094

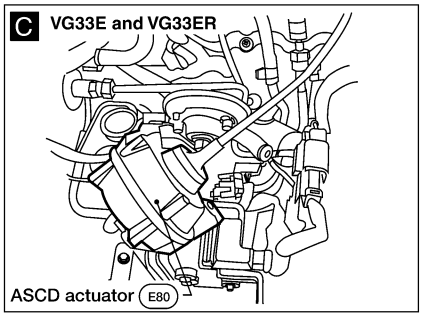


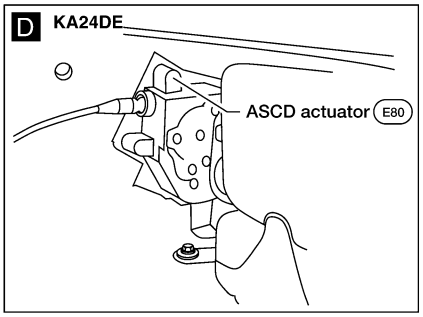
WEL917A

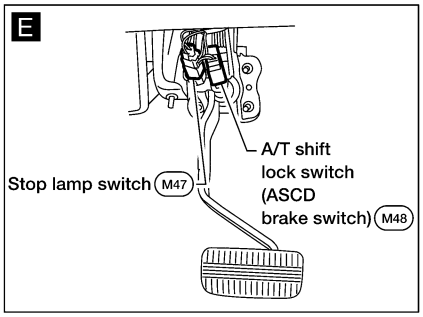

Fuse block (J/B)
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

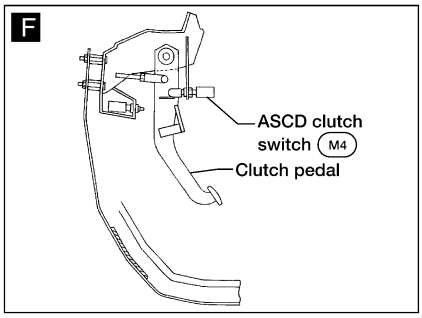

A
VG33E and VG33ER
Front
Transfer case
Vehicle speed sensor
F212

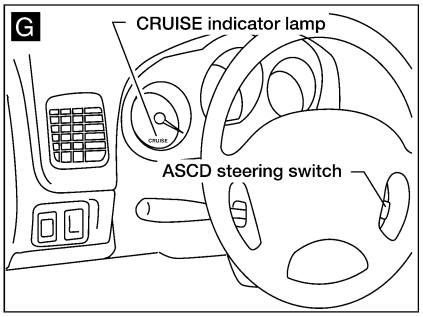

B
View with instrument lower panel driver's side removed
ASCD control unit
M119


C
VG33E and VG33ER
ASCD actuator
E80


D
KA24DE
ASCD actuator
E80


E
A/T shift lock switch (ASCD brake switch)
M48
Stop lamp switch
M47


F
ASCD clutch switch
M4
Clutch pedal


G
CRUISE indicator lamp
ASCD steering switch

WEL905A

System Description

NGEL0095

Refer to Owner's Manual for ASCD operating instructions.

POWER SUPPLY AND GROUND CIRCUIT

NGEL0095S07

Power is supplied at all times
- through 15A fuse [No. 22, located in the fuse block (J/B)]
- to the stop lamp switch terminal 1

When ignition switch is in the ON or START position, power is supplied
- through 10A fuse [No. 5, located in the fuse block (J/B)]
- to ASCD control unit terminal 5.
- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to park/neutral position switch terminal 1,
- through 10A fuse [No. 11, located in the fuse block (J/B)]
- to combination meter terminals 32 and 38.

When park/neutral position switch (A/T) is in the P or N position, ground is supplied
- to park/neutral position switch terminal 2
- through ASCD relay terminal 1 to ASCD relay terminal 2
- through body grounds M68 and M14.

When ASCD ON●OFF switch is depressed (ON), ground is supplied
- to ASCD control unit terminal 11
- from ASCD steering switch terminal 14
- from ASCD steering switch terminal 13
- from ASCD control unit terminal 24.

Then ASCD control unit illuminates CRUISE indicator.
Ground is supplied
- to combination meter terminal 36
- from ASCD control unit terminal 15.

Ground is supplied
- to ASCD control unit terminal 17
- through body grounds M14 and M68.

OPERATION

NGEL0095S04

Set Operation

NGEL0095S0401

To activate the ASCD, all of following conditions must exist
- ASCD control unit receives ASCD ON●OFF switch ON signal
- Power supply to ASCD control unit terminal 8 [Brake and clutch pedal is released (M/T), and brake pedal is released and A/T selector lever is in other than P and N position. (A/T)]
- Vehicle speed is between 40 km/h (25 MPH) and 144 km/h (89 MPH). (Signal from combination meter)

When the COAST/SET switch is depressed, ground is supplied
- to ASCD control unit terminal 11
- from ASCD steering switch terminal 14
- from ASCD steering switch terminal 13
- from ASCD control unit terminal 24.

Then ASCD motor actuator is activated to control throttle wire and ASCD control unit supplies ground
- to combination meter terminal 37 to illuminate SET indicator.

A/T Overdrive Control During Cruise Control Driving (A/T Models)

NGEL0095S0402

When the vehicle speed is approximately 5 km/h (3 MPH) below set speed, a signal is sent
- from ASCD control unit terminal 10
- to TCM terminal 24.

When this occurs, the TCM cancels overdrive.
When vehicle speed returns to approximately 0.6 km/h (0.4 MPH) below set speed, overdrive is reactivated.

Coast Operation

NGEL0095S0403

When the COAST/SET switch is depressed during cruise control driving, ASCD motor actuator returns the throttle cable to decrease vehicle set speed until the switch is released. Then ASCD will keep the new set speed.
If COAST/SET switch is pressed and released quickly during cruise control driving, vehicle set speed will be reduced by 1.6 km/h (1.0 MPH).

Accel Operation

NGEL0095S0404

When the RES/ACCEL switch is depressed, ground is supplied

- to ASCD control unit terminal 11
- from ASCD steering switch terminal 14
- from ASCD steering switch terminal 13
- from ASCD control unit terminal 24

If the RES/ACCEL switch is depressed during cruise control driving, ASCD motor actuator pulls the throttle cable to increase the vehicle speed until the switch is released or vehicle speed is reached to maximum controlled speed by the system. Then ASCD will keep the new set speed.
If RES/ACCEL switch is pressed and released quickly during cruise control driving, vehicle set speed will be increased by 1.6 km/h (1.0 MPH).

Cancel Operation

NGEL0095S0405

When any of following conditions exist, cruise operation will be canceled

- CANCEL switch is depressed. (Ground is supplied to ASCD control unit terminal 11.)
- Brake pedal is depressed. (Power is supplied to ASCD control unit terminal 23 from stop lamp switch.)
- Brake or clutch pedal is depressed (M/T), brake pedal is depressed or A/T selector lever is shifted to P or N position (A/T). (Power supply to ASCD control unit terminal 8 is interrupted.)

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

Resume Operation

NGEL0095S0406

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

- Brake pedal is released.
- Clutch pedal is released (M/T).
- A/T selector lever is in other than P and N position (A/T).
- Vehicle speed is between 40 km/h (25 MPH) and 144 km/h (89 MPH).

ASCD MOTOR ACTUATOR OPERATION

NGEL0095S05

When the ASCD activates, power is supplied

- from terminal 7 of ASCD control unit
- to ASCD motor actuator terminal 1, and
- from terminal 12 of ASCD control unit
- to ASCD motor actuator terminal 6.

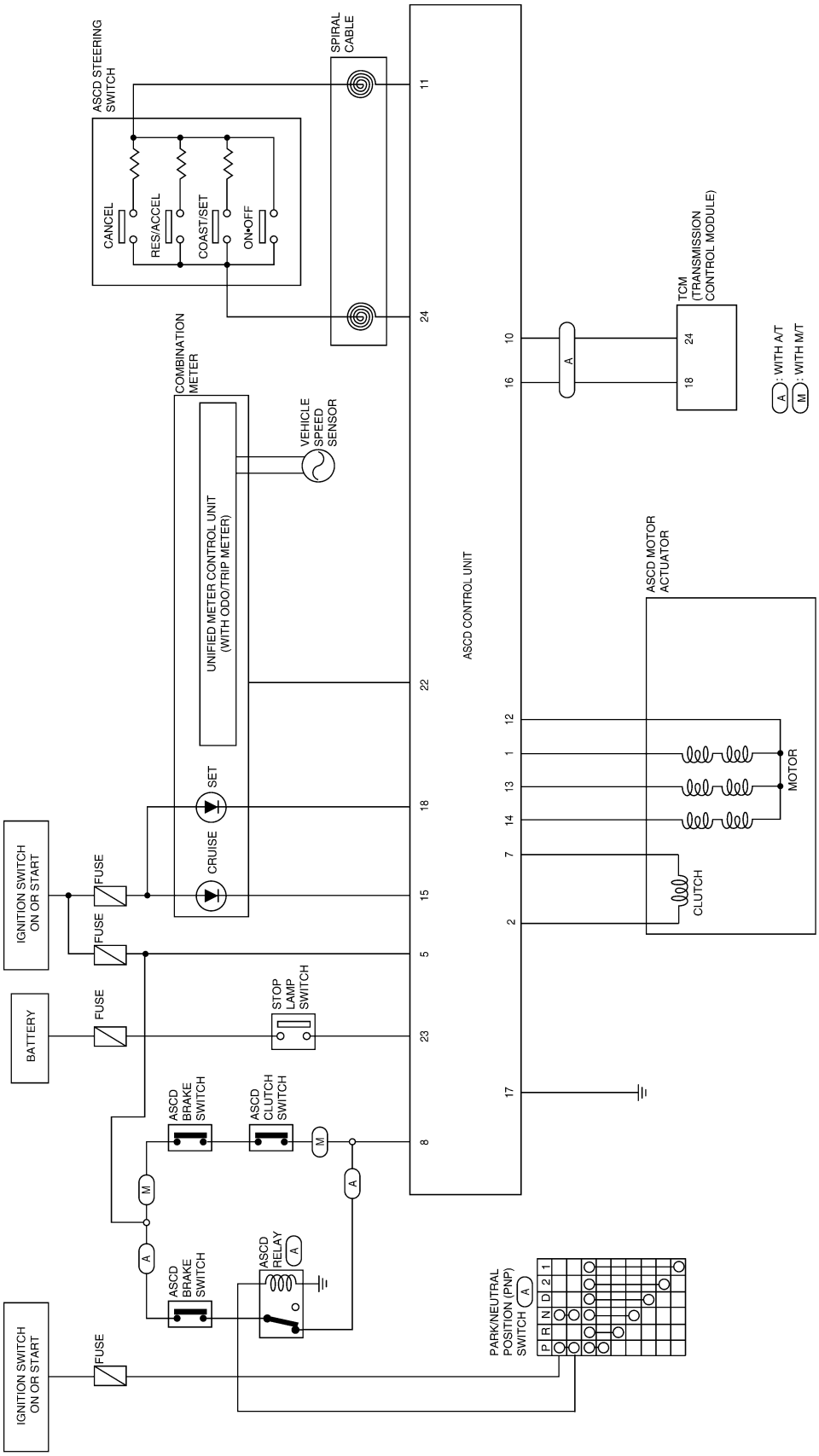
Ground is supplied

- from ASCD control unit terminals 1, 13, and 14
- to terminals 3, 5, and 2 of ASCD motor actuator.

Power to the actuator motor is supplied constantly from the ASCD control unit. The ASCD control unit then switches the actuator motor ground signals ON and OFF to control actuator motor operation and vehicle speed.

Circuit Diagram

NGEL0096



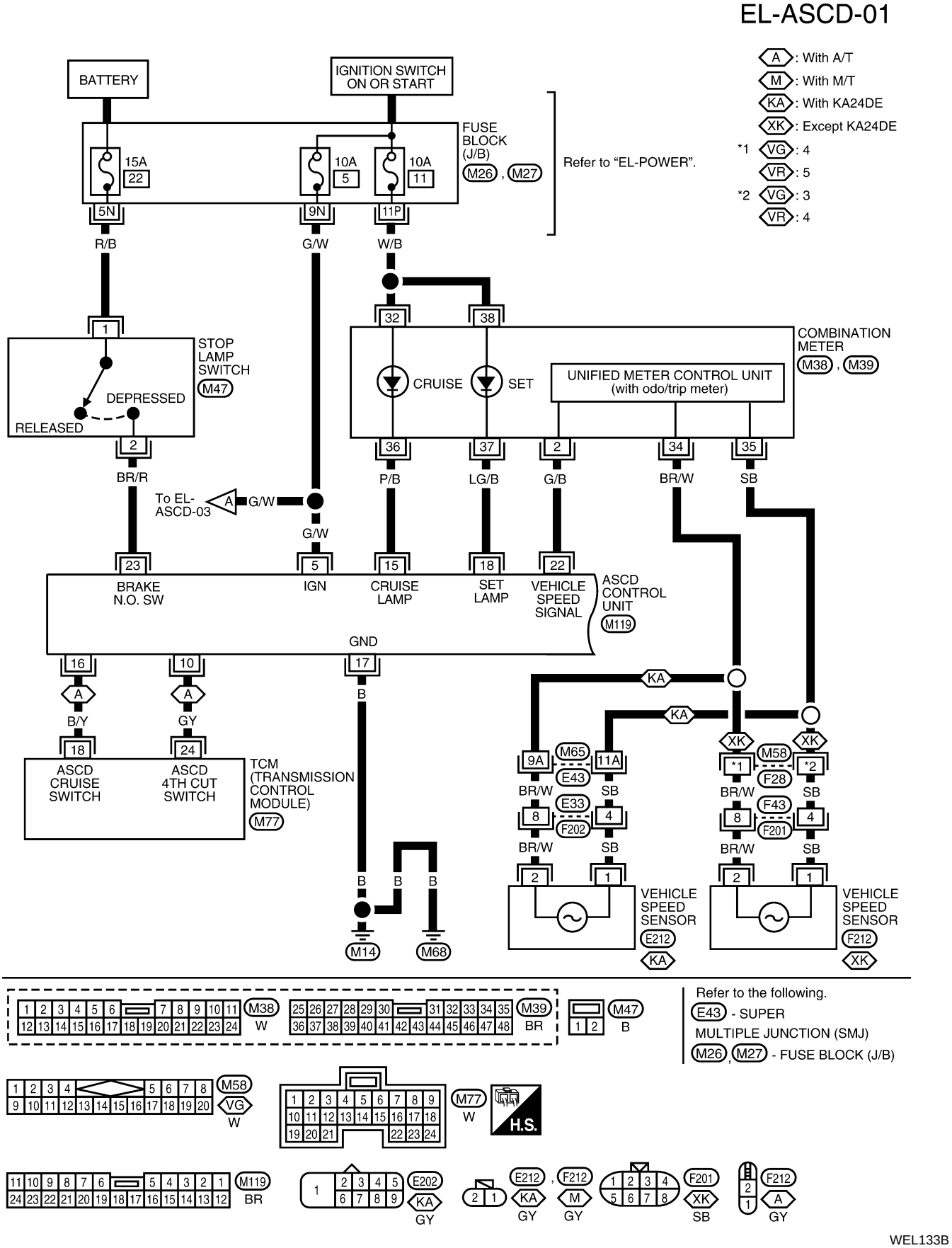
WEL715A

Wiring Diagram — ASCD —

NGEL0097

FIG. 1

NGEL0097S01

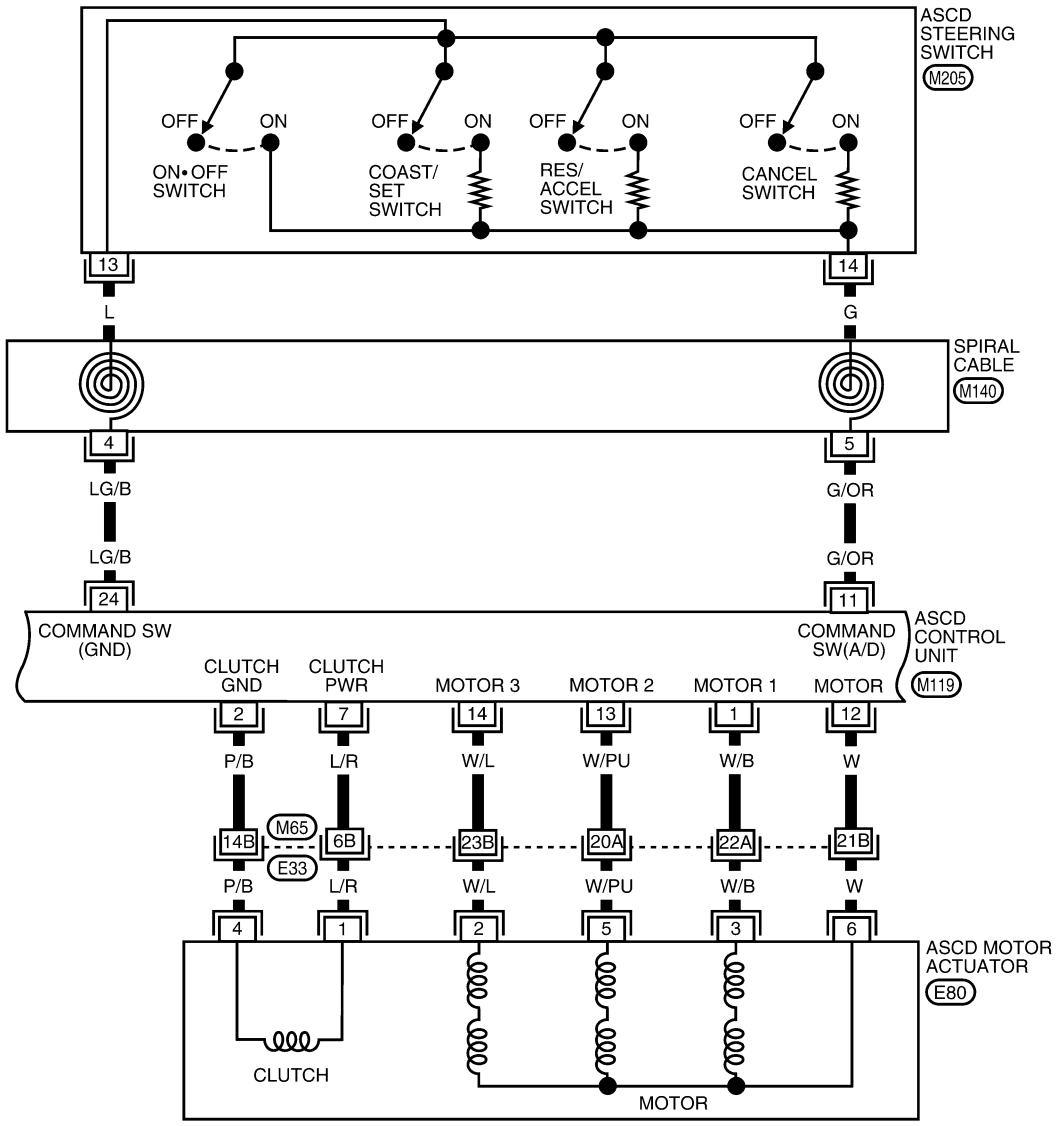


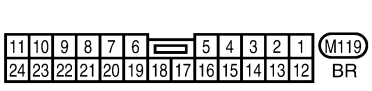
WEL133B

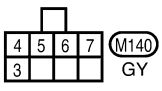
FIG. 2

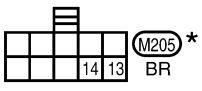
NGEL0097S02

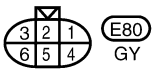
EL-ASCD-02









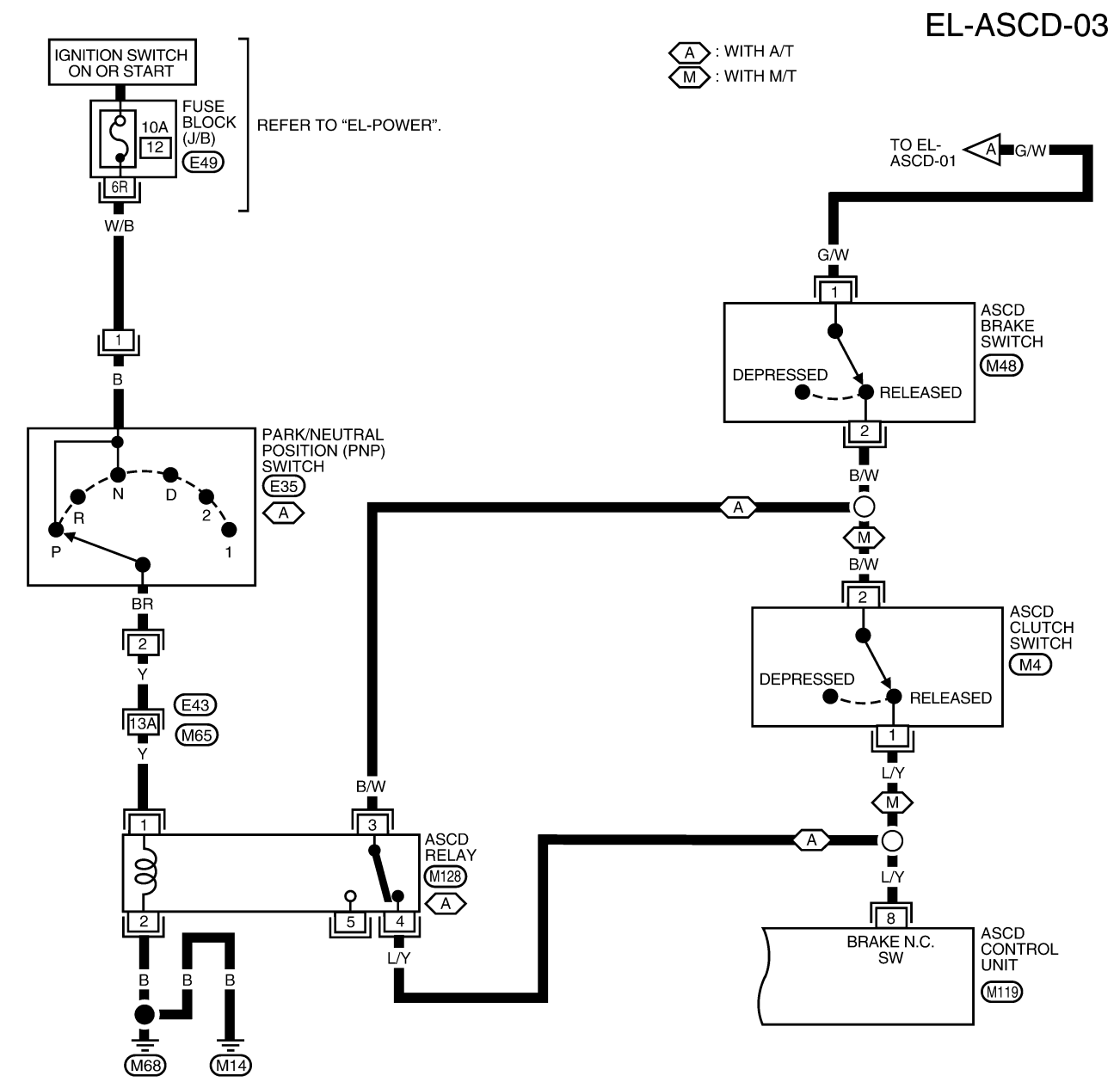


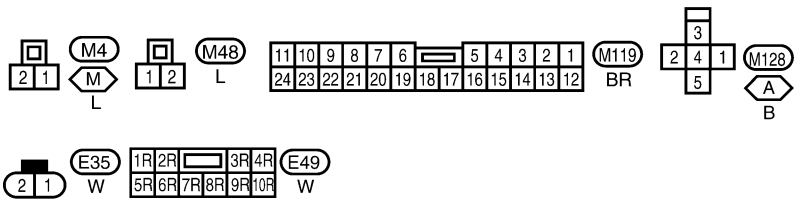
* : This connector is not shown in "HARNESS LAYOUT" of EL section.

WEL134B

FIG. 3

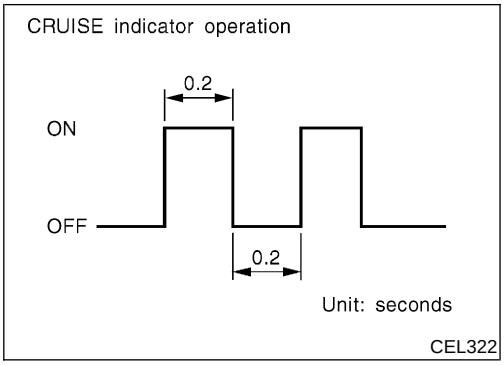
NGEL0097S03





Refer to the following.
E43 - SUPER MULTIPLE JUNCTION (SMJ)

WEL699A



Fail-safe System

NGEL0098

DESCRIPTION

NGEL0098S01

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

MALFUNCTION DETECTION CONDITIONS

NGEL0098S02

Detection conditions	ASCD operation during malfunction detection
• ASCD steering (RES/ACCEL, CANCEL, COAST/SET) switch is stuck. • ASCD motor actuator has internal malfunction. • ASCD motor actuator ground circuit or power circuit is open or shorted. • Vehicle speed sensor is faulty. • ASCD control unit internal circuit is malfunctioning.	• ASCD is deactivated. • Vehicle speed memory is canceled.
• ASCD brake switch or stop lamp switch is faulty.	• ASCD is deactivated. • Vehicle speed memory is not canceled.

Trouble Diagnoses

=NGEL0203

SYMPTOM CHART

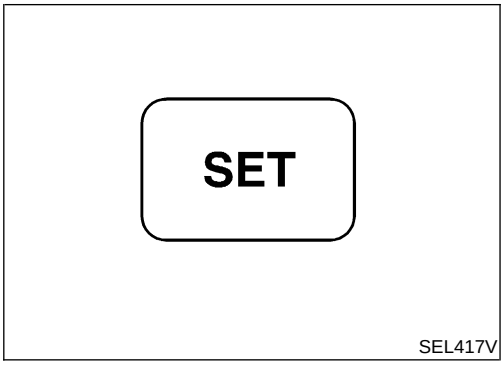
NGEL0203S01

PROCEDURE	Diagnostic procedure						
REFERENCE PAGE (EL-)	165	166	167	168	169	169	171
SYMPTOM	FAIL-SAFE SYSTEM CHECK	POWER SUPPLY AND GROUND CIRCUIT CHECK	ASCD BRAKE/STOP LAMP SWITCH CHECK	ASCD STEERING SWITCH CHECK	VEHICLE SPEED SENSOR CHECK	ASCD MOTOR ACTUATOR CIRCUIT CHECK	ASCD MOTOR ACTUATOR CHECK
ASCD cannot be set. (“CRUISE” indicator lamp does not turn ON.)		X		X★3			
ASCD cannot be set. (“SET” indicator lamp does not turn ON.)			X	X	X		
ASCD cannot be set. (“SET” indicator lamp blinks.★1)	X		X	X	X	X	
Vehicle speed does not decrease after COAST/SET switch has been pressed.				X			X
Vehicle speed does not return to the set speed after RES/ACCEL switch has been pressed.★2				X			X
Vehicle speed does not increase after RES/ACCEL switch has been pressed.				X			X
System is not released after CANCEL switch (steering) has been pressed.				X			X
Large difference between set speed and actual vehicle speed.					X	X	X
Deceleration is greatest immediately after ASCD has been set.					X	X	X

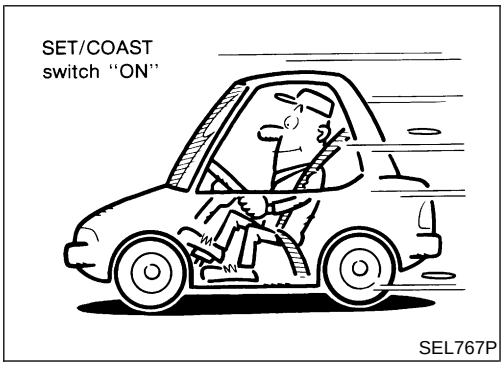
★1: It indicates that system is in fail-safe. After completing diagnostic procedures, perform “FAIL-SAFE SYSTEM CHECK”, (EL-165) to verify repairs.

★2: If vehicle speed is greater than 40 km/h (25 MPH) after system has been released, pressing RES/ACCL switch returns vehicle speed to the set speed previously achieved. However, doing so when the ON●OFF switch is turned to “OFF”, vehicle speed will not return to the set speed since the memory is canceled.

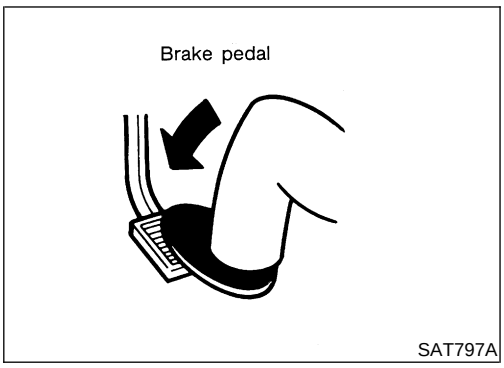
★3: Check only ON●OFF switch built into steering switch.



SEL417V



SEL767P



SAT797A

FAIL-SAFE SYSTEM CHECK

=NGEL0203S02

1. Turn ignition switch to ON position.
2. Turn ON●OFF switch to ON and check if the "SET" indicator blinks.
   If the indicator lamp blinks, check the following.
   - ASCD steering switch. Refer to "ASCD STEERING SWITCH CHECK", EL-168.
3. Drive the vehicle at more than 40 km/h (25 MPH) and push COAST/SET switch.
   If the indicator lamp blinks, check the following.
   - Vehicle speed sensor. Refer to "VEHICLE SPEED SENSOR CHECK", EL-169.
   - ASCD motor actuator circuit. Refer to "ASCD MOTOR ACTUATOR CIRCUIT CHECK", EL-169.
   - Replace control unit.
4. Drive the vehicle at more than 20 km/h (12 MPH).

If the indicator lamp blinks, check the following.

- Replace ASCD motor actuator.

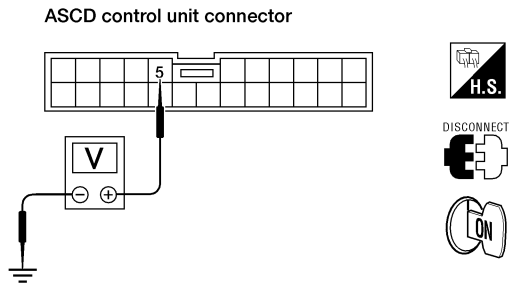
5. Depress brake pedal slowly (brake pedal should be depressed more than 5 seconds).
   If the indicator lamp blinks, check the following.
   - ASCD brake/stop lamp switch. Refer to "ASCD BRAKE/STOP LAMP SWITCH CHECK", EL-167.
6. END. (System is OK.)

POWER SUPPLY AND GROUND CIRCUIT CHECK

=NGEL0203S03

1	CHECK POWER SUPPLY CIRCUIT FOR ASCD CONTROL UNIT

1. Disconnect ASCD control unit harness connector.
2. Turn ignition switch ON.
3. Check voltage between ASCD control unit harness connector M119 terminal 5 (G/W) and ground.



Does battery voltage exist?

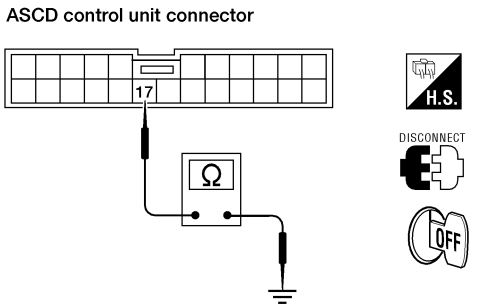
WEL018A

Refer to "Wiring Diagram —ASCD—", EL-160.

Yes	▶	GO TO 2.
No	▶	**Check the following.** ● 10A fuse (No. 5 located in the fuse block) ● Harness for open or short

2	CHECK GROUND CIRCUIT FOR ASCD CONTROL UNIT

Check continuity between ASCD control unit harness connector M119 terminal 17 (B) and body ground.



Does continuity exist?

WEL019A

Refer to "Wiring Diagram —ASCD—", EL-160.

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

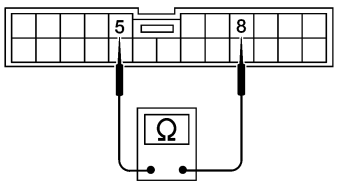
ASCD BRAKE/STOP LAMP SWITCH CHECK

=NGEL0203S04

1 CHECK ASCD BRAKE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect ASCD control unit harness connector.
3. Check continuity between ASCD control unit harness connector M119 terminal 8 (L/Y) and terminal 5 (G/W).

ASCD control unit connector



When brake or clutch pedal is depressed (M/T), or when brake pedal is depressed or A/T selector lever is in "N" or "P" range (A/T):
Continuity should not exist.

When brake and clutch pedal are released (M/T), or when both brake pedal is released and A/T selector lever is not in "N" or "P" range (A/T):
Continuity should exist.

WEL020A

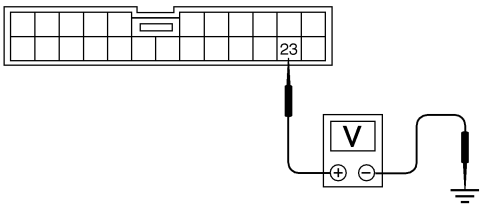
OK or NG

OK	▶	GO TO 2.
NG	▶	**Check the following.** ● ASCD brake switch Refer to "ASCD BRAKE SWITCH AND STOP LAMP SWITCH", EL-172. ● Park/neutral position switch (A/T) Refer to "PARK/NEUTRAL POSITION SWITCH (A/T)", EL-172. ● Park/neutral position relay (A/T) Refer to "ASCD RELAY (A/T MODELS)", EL-173. ● ASCD clutch switch (M/T) Refer to "ASCD CLUTCH SWITCH (M/T)", EL-172. ● Harness for open or short ● ASCD control unit

2 CHECK STOP LAMP SWITCH CIRCUIT

1. Disconnect ASCD control unit harness connector.
2. Check voltage between ASCD control unit harness connector M119 terminal 23 (BR/R) and ground.

ASCD control unit connector



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

WEL035A

Refer to "Wiring Diagram —ASCD—", EL-160.

OK or NG

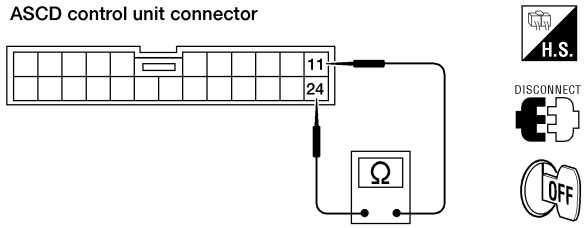
OK	▶	ASCD brake/stop lamp switch is OK.
NG	▶	**Check the following.** ● 15A fuse [No. 22, located in the fuse block (J/B)] ● Harness for open or short between ASCD control unit and stop lamp switch ● Harness for open or short between fuse and stop lamp switch ● Stop lamp switch Refer to "ASCD BRAKE SWITCH AND STOP LAMP SWITCH", EL-172.

ASCD STEERING SWITCH CHECK

=NGEL0203S05

1	CHECK ASCD STEERING SWITCH CIRCUIT FOR ASCD CONTROL UNIT

Check resistance between ASCD control unit harness connector M119 terminals 11 (G/OR) and 24 (LG/B).



	Terminal No.	Resistance (kΩ)
CRUISE/ON-OFF SW	11 - 24	Approx. 0
SET/COAST SW		1.47 - 1.53
ACCEL/RES SW		3.24 - 3.36
CANCEL SW		5.00 - 5.20

WEL022A

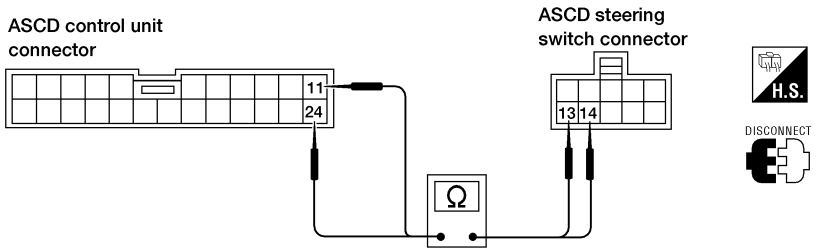
Refer to "Wiring Diagram —ASCD—", EL-160.

OK or NG

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

2	CHECK CIRCUIT CONTINUITY

1. Disconnect ASCD steering switch and ASCD control unit connector.
2. Check continuity between ASCD steering switch connector M205 terminal 14 (G) and ASCD control unit connector M119 terminal 11 (G/OR).
3. Check continuity between ASCD steering switch connector M205 terminal 13 (L) and ASCD control unit connector M119 terminal 24 (LG/B).



Continuity should exist.

LEL326A

Refer to "Wiring Diagram —ASCD—", EL-160.

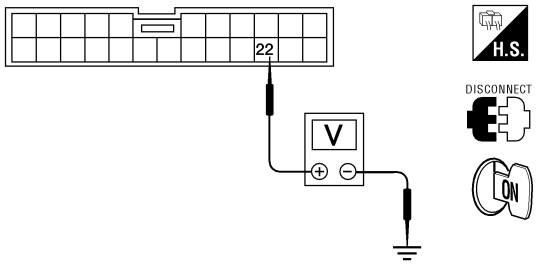
OK or NG

OK	▶	Replace ASCD steering switch.
NG	▶	Repair or replace harness or connectors.

VEHICLE SPEED SENSOR CHECK

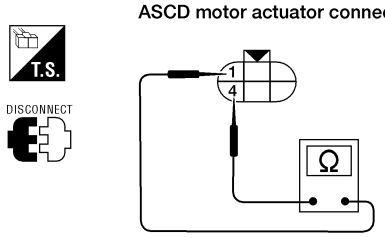
=NGEL0203S06

1	CHECK SPEEDOMETER OPERATION	
Refer to "Wiring Diagram —ASCD—", EL-160. **Does speedometer operate normally?**		
Yes	▶	GO TO 2.
No	▶	Check speedometer and vehicle speed sensor circuit. Refer to "Trouble Diagnoses", EL-82.

2	CHECK VEHICLE SPEED INPUT	
1. Apply wheel chocks and jack up drive wheel. 2. Disconnect ASCD control unit harness connector. 3. Check voltage between control unit connector M119 terminal 22 (G/B) and ground while turning drive wheel slowly by hand. ASCD control unit connector  WEL023A **Does voltage pointer deflect?**		
Yes	▶	Vehicle speed sensor is OK.
No	▶	Check harness for open or short between ASCD control unit connector M119 terminal 22 (G/B) and combination meter connector M39 terminal 37 (G/B).

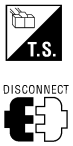
ASCD MOTOR ACTUATOR CIRCUIT CHECK

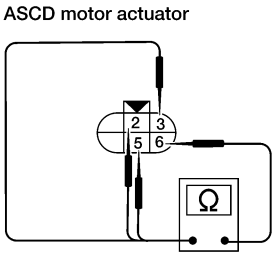
NGEL0203S07

1	CHECK ASCD MOTOR ACTUATOR (CLUTCH)	
1. Disconnect ASCD motor actuator connector. 2. Measure resistance between ASCD motor actuator connector E80 terminals 1 and 4.  WEL024A Terminals: 1 and 4 — Resistance (Ω): Approx. 38.5 Refer to "Wiring Diagram —ASCD—", EL-160. **OK or NG**		
OK	▶	GO TO 2.
NG	▶	Replace ASCD motor actuator.

2 CHECK ASCD MOTOR ACTUATOR (MOTOR)

1. Disconnect ASCD motor actuator connector.
2. Measure resistance between ASCD motor actuator connector E80 terminal 6 and terminals 2, 3, and 5.





Terminals		Resistance (Ω)
6	2	Approx. 5.2
	3	
	5	

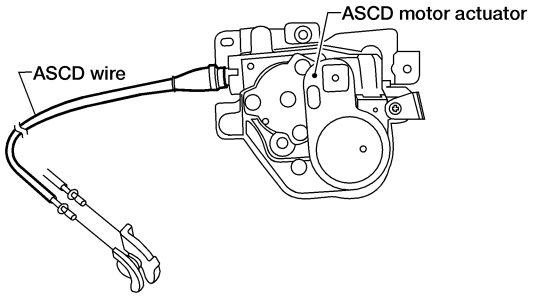
WEL135B

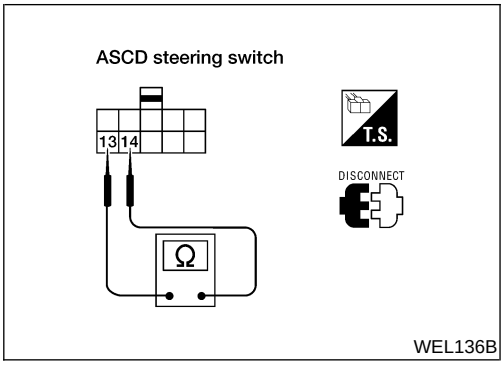
OK or NG

OK	▶	**Check the following.** ● Harness for open or short between ASCD motor actuator and ASCD control unit ● ASCD motor actuator (clutch) ground circuit
NG	▶	Replace ASCD motor actuator.

ASCD MOTOR ACTUATOR CHECK

=NGEL0203S08

1	CHECK ASCD WIRE	
Check wire for improper installation, rust formation or breaks.  LEL620		
OK or NG		
OK	▶	Replace ASCD motor actuator.
NG	▶	Repair or replace wire. Refer to "ASCD Wire Adjustment", EL-174.



Electrical Component Inspection

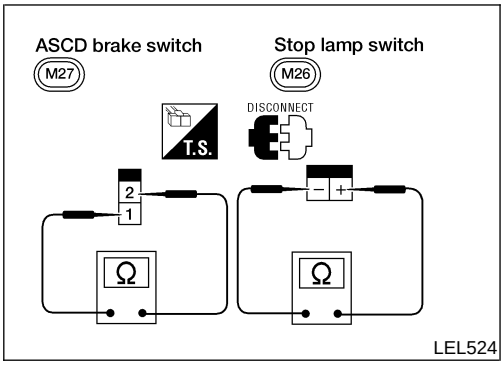
=NGEL0204

ASCD STEERING SWITCH

NGEL0204S01

Check continuity between ASCD steering switch connector M205 terminals 14 and 13 by pushing each button.

Button	Terminals	Resistance (kΩ)
CRUISE/ON●OFF	13 - 14	Approx. 0
COAST/SET		1.47 - 1.53
RES/ACCEL		3.24 - 3.36
CANCEL		5.00 - 5.20

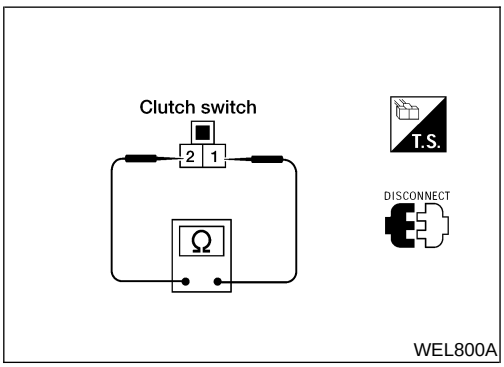


ASCD BRAKE SWITCH AND STOP LAMP SWITCH

NGEL0204S02

Condition	Continuity	
	ASCD brake switch connector M48	Stop lamp switch connector M26
When brake pedal is depressed	No	Yes
When brake pedal is released	Yes	No

Check brake pedal adjustment after checking each switch. Refer to *BR-12*, “Adjustment”.

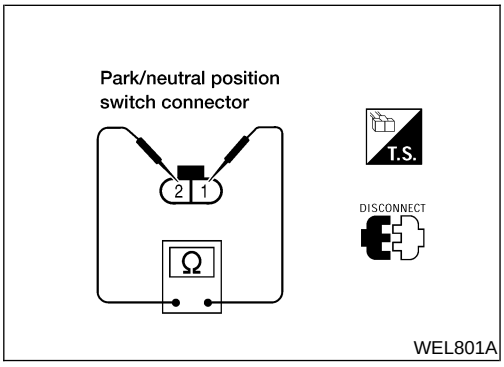


ASCD CLUTCH SWITCH (M/T)

NGEL0204S03

Check continuity between clutch switch connector M4 terminals 1 and 2.

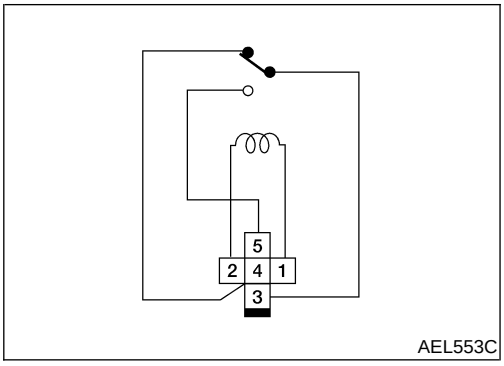
Condition	Continuity
When clutch pedal is depressed	No
When clutch pedal is released	Yes



PARK/NEUTRAL POSITION SWITCH (A/T)

NGEL0204S04

A/T selector lever position	Continuity
	Between terminals 1 and 2
“P”	Yes
“N”	Yes
Except “P” and “N”	No



ASCD RELAY (A/T MODELS)

NGEL0204S05

Check continuity between ASCD relay terminals 3 and 4, 3 and 5.

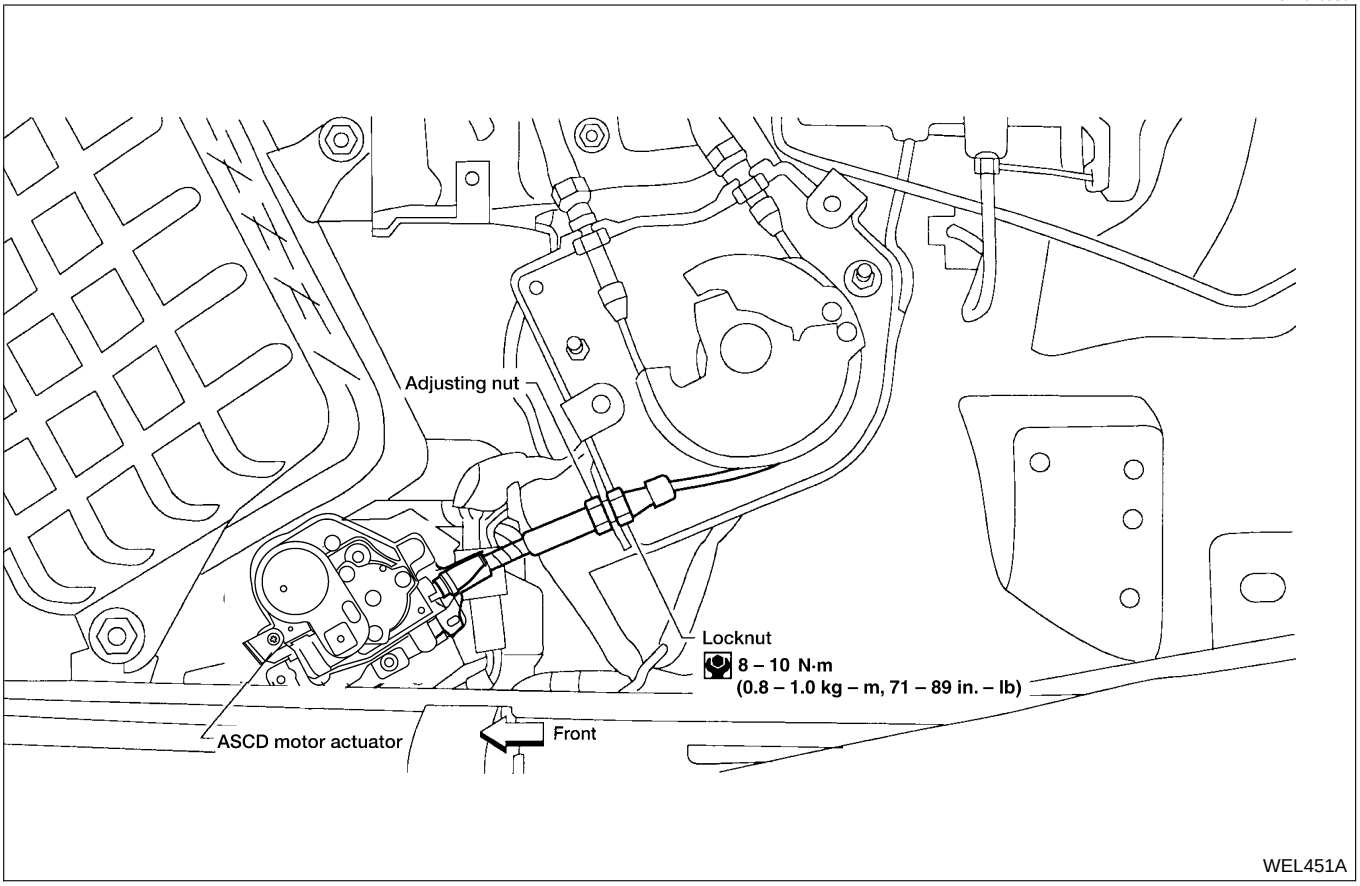
Condition	Continuity
12V direct current supply between terminals 1 and 2	Between terminals 3 and 5
No current supply	Between terminals 3 and 4

ASCD Wire Adjustment

=NGEL0205

WITH KA24DE

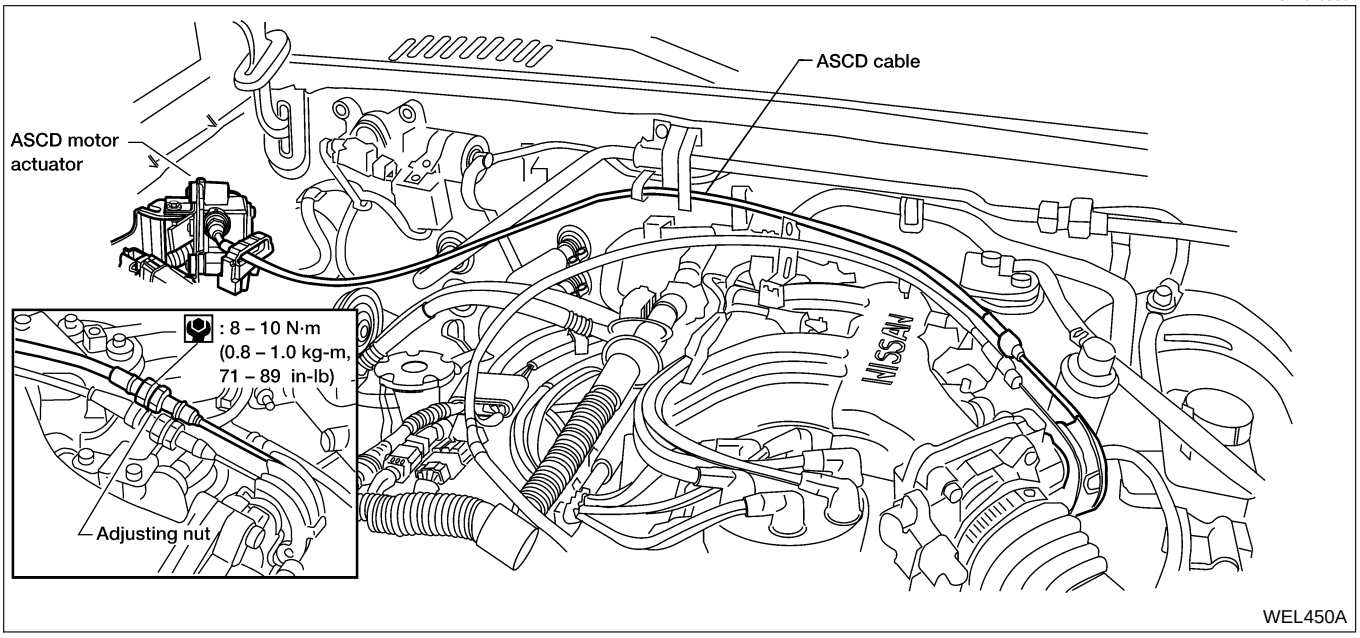
NGEL0205S01



WEL451A

WITH VG33E

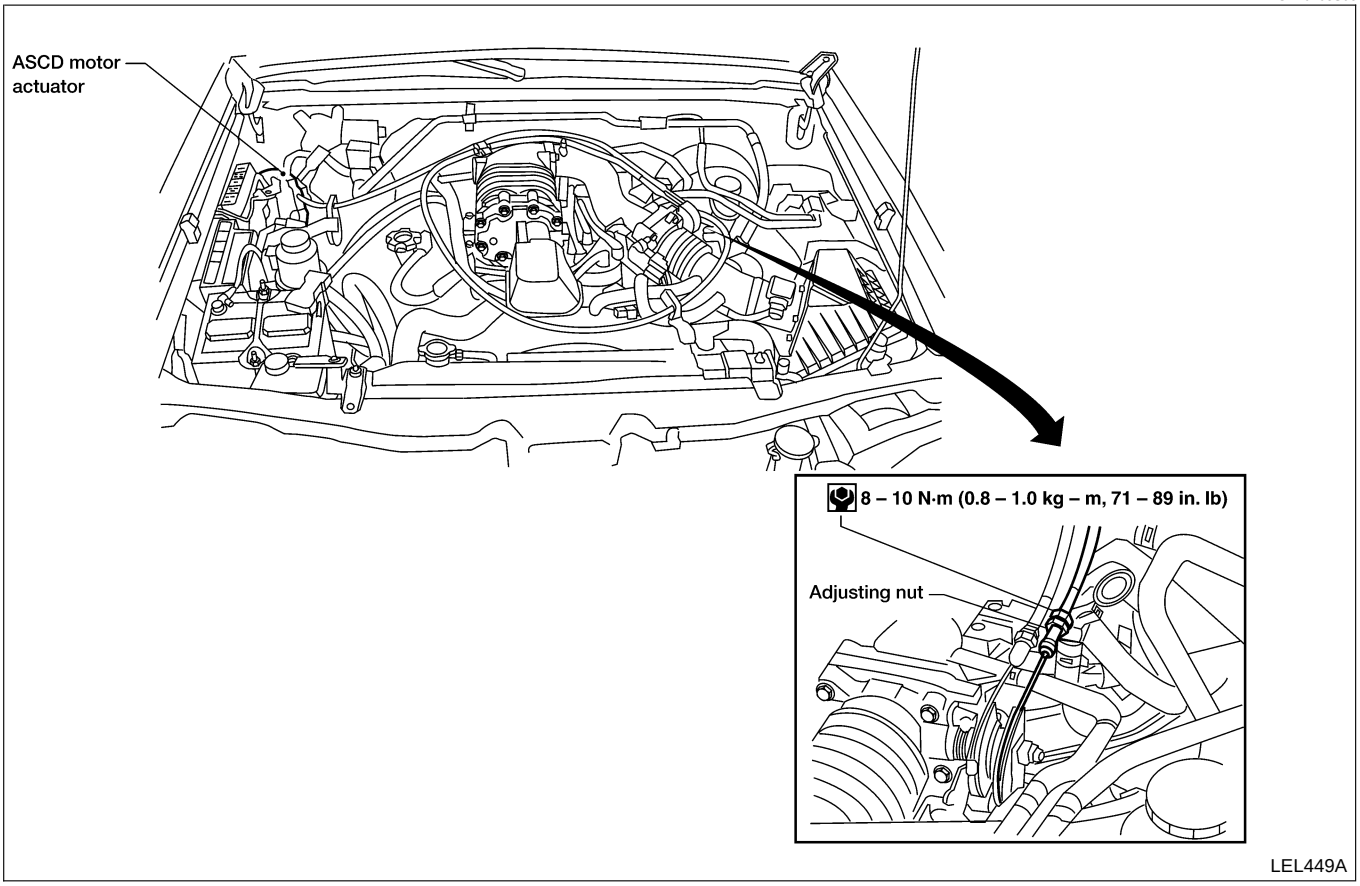
NGEL0205S02



WEL450A

WITH VG33ER

NGEL0205S03



CAUTION:

- **Be careful not to twist ASCD wire when removing it.**
- **Do not tense ASCD wire excessively during adjustment.**

Adjust the tension of ASCD wire in the following manner.

1. Loosen lock nut and adjusting nut.
2. Make sure that accelerator wire is properly adjusted. Refer to ***FE-3***, "Adjusting Accelerator Wire".
3. Tighten adjusting nut just until throttle drum starts to move.
4. Loosen adjusting nut again 1/2 to 1 turn.
5. Tighten lock nut.

System Description

NGEL0102

Power is supplied at all times
- from 40A fusible link (letter **f**, located in the fuse and fusible link box)
- to circuit breaker terminal +
- through circuit breaker terminal –
- to power window relay terminal 3
- through 7.5A fuse [No. 28, located in the fuse block (J/B)]
- to smart entrance control unit terminal 49

With the ignition switch in the ON or START position, power is supplied
- through 10A fuse [No. 5, located in the fuse block (J/B)]
- to smart entrance control unit terminal 27
- through smart entrance control unit terminal 46
- to power window relay terminal 2.

Ground is supplied
- to power window relay terminal 1
- through body grounds M14 and M68.

The power window relay is energized and power is supplied
- through power window relay terminal 5
- to main power window and door lock/unlock switch terminal 2
- to front power window switch RH terminal 4
- to rear power window switch LH terminal 2
- to rear power window switch RH terminal 2

Ground is supplied
- to main power window and door lock/unlock switch terminal 10
- through body grounds M14 and M68.

When the ignition switch is turned to the OFF position from the ON or START position, the power windows will still operate for approximately 45 seconds, unless either front door is opened.

MANUAL OPERATION

NGEL0102S01

NOTE:
Numbers in parentheses are terminal numbers which apply with switch pressed in the UP and DOWN positions respectively.

Front Door LH

NGEL0102S0101

Power is supplied
- through main power window and door lock/unlock switch terminal (12, 16)
- to front power window motor LH terminal (UP, DN).

Ground is supplied
- to front power window motor LH terminal (DN, UP)
- through main power window and door lock/unlock switch terminal (16, 12).

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

Front Door RH

NGEL0102S0102

MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH OPERATION
With front RH switch pressed, power is supplied
- through main power window and door lock/unlock switch (14, 13)
- to front power window switch RH (5, 2).

The following description is the same as the front power window switch RH description.
FRONT POWER WINDOW SWITCH RH OPERATION
Power is supplied
- through front power window switch RH (6, 3)
- to front power window motor RH (UP, DN).

Ground is supplied
- to front power window motor RH (DN, UP)

- through front power window switch RH (3, 6)
- to front power window switch RH (2, 5)
- through main power window and door lock/unlock switch (13, 14).

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

Rear Door LH

NGEL0102S0103

MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH OPERATION
With rear LH switch pressed, power is supplied

- through main power window and door lock/unlock switch (1, 6)
- to rear power window switch LH (1, 3).

The following description is the same as the rear power window switch LH description.
REAR POWER WINDOW SWITCH LH OPERATION
Power is supplied

- through rear power window switch LH (4, 6)
- to rear power window motor LH (UP, DN).

Ground is supplied

- to rear power window motor LH (DN, UP)
- through rear power window switch LH (6, 4)
- to rear power window switch LH (3, 1)
- through main power window and door lock/unlock switch (6, 1).

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

Rear Door RH

NGEL0102S0104

MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH OPERATION
With rear RH switch pressed, power is supplied

- through main power window and door lock/unlock switch (7, 9)
- to rear power window switch RH (1, 3).

The following description is the same as the rear power window switch RH description.
REAR POWER WINDOW SWITCH RH OPERATION
Power is supplied

- through rear power window switch RH (4, 6)
- to rear power window motor RH (UP, DN).

Ground is supplied

- to rear power window motor RH (DN, UP)
- through rear power window switch RH (6, 4)
- to rear power window switch RH (3, 1)
- through main power window and door lock/unlock switch (9, 7).

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

AUTO OPERATION

NGEL0102S02

The power window AUTO feature enables the driver to lower the driver's window without holding the switch in the DOWN position.
The AUTO feature is activated by pressing the switch beyond the DOWN position to the AUTO position.
The AUTO feature only operates on the downward movement of the driver's window.
The window can be stopped before it is fully open by pressing the window switch to the UP position.

POWER WINDOW LOCK

NGEL0102S03

The power window lock prevents operation of all windows except the driver's window.
When the lock switch is pressed to lock position, ground of the front power window switch RH and the rear power window switch LH and RH is disconnected in the main power window and door lock/unlock switch. This prevents the front power window motor RH and the rear power window motor LH and RH from operating.

RETAINED POWER OPERATION (WITH POWER DOOR LOCKS)

NGEL0102S04

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

- to power window relay terminal 2
- from smart entrance control unit terminal 46.

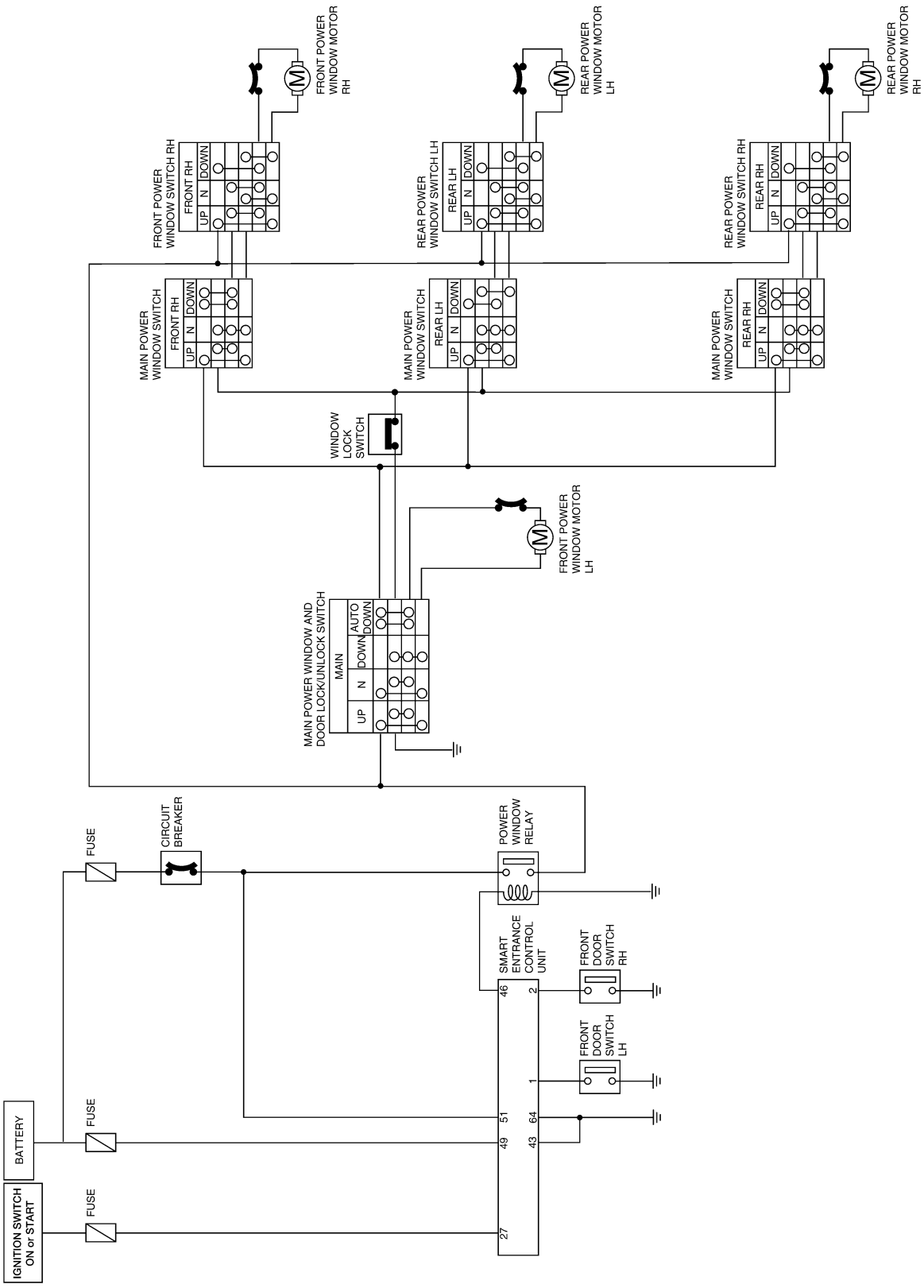
Ground is supplied

- to power window relay terminal 1
- through body grounds M14 and M68.

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

Circuit Diagram

NGEL0206

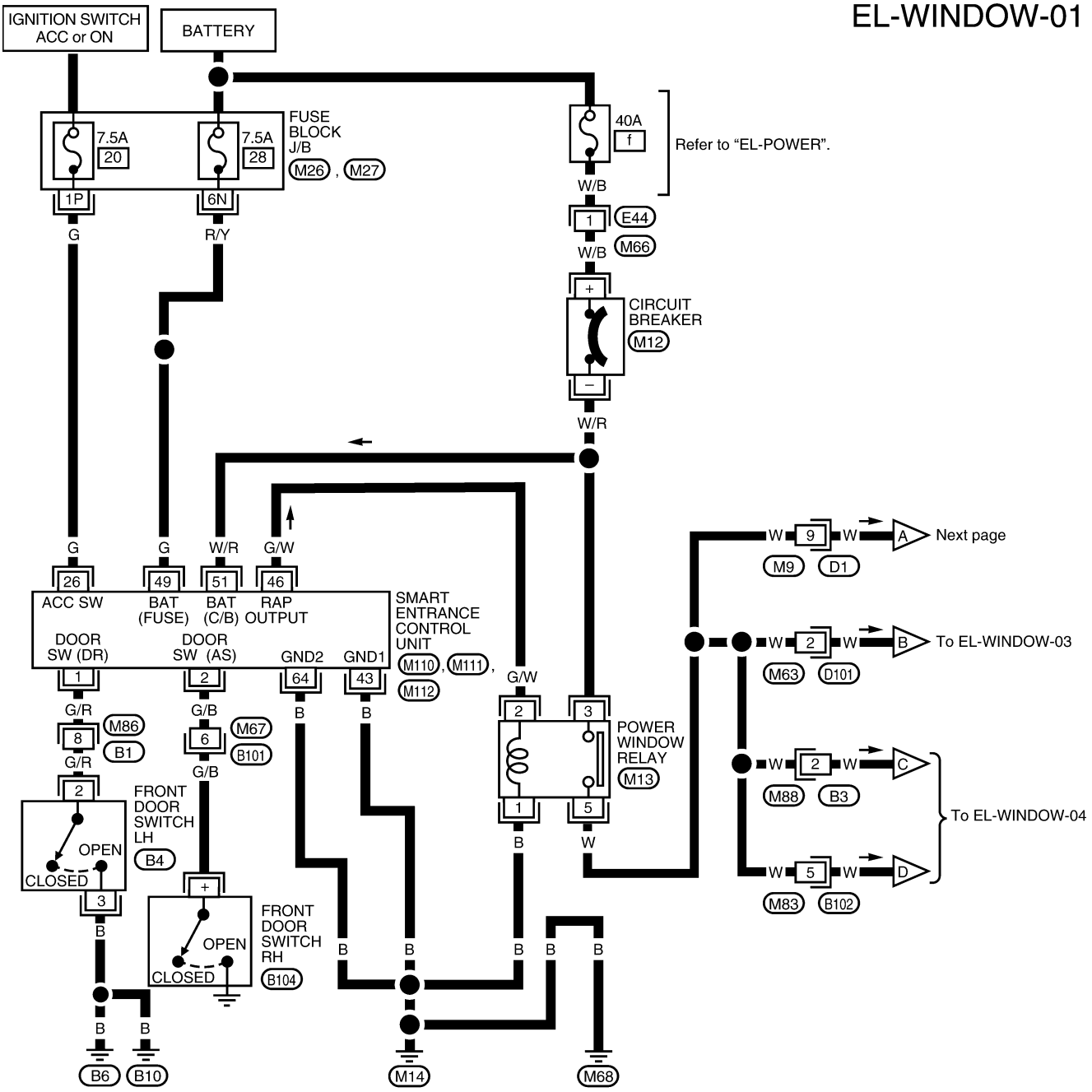


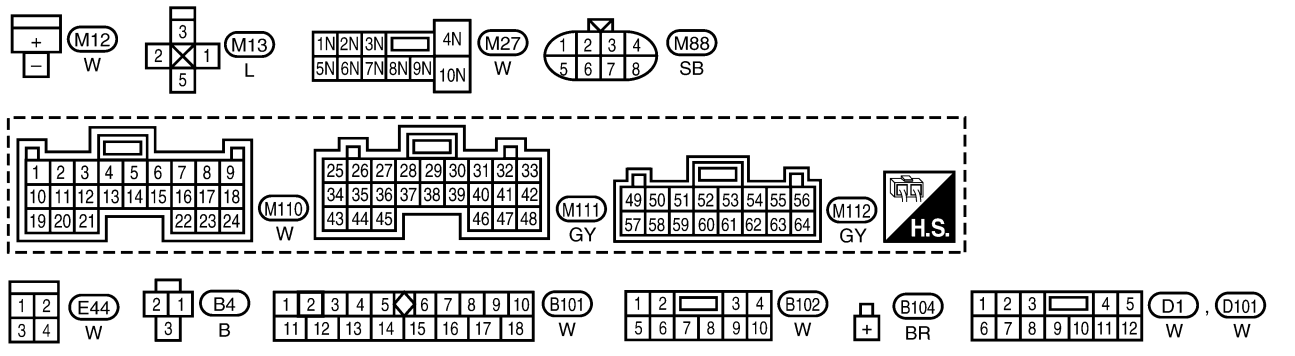
WEL802A

Wiring Diagram — WINDOW —

NGEL0104

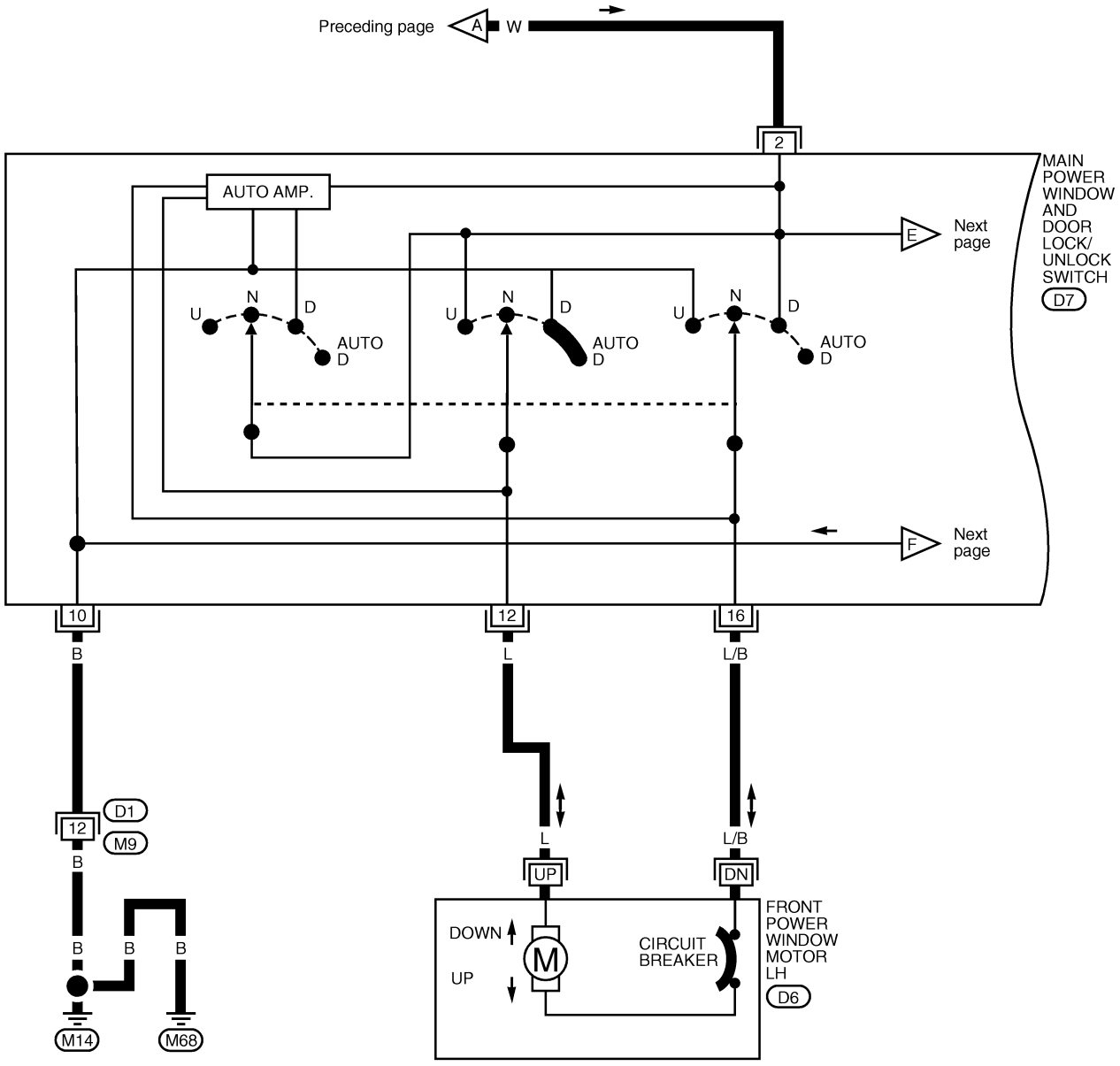
EL-WINDOW-01

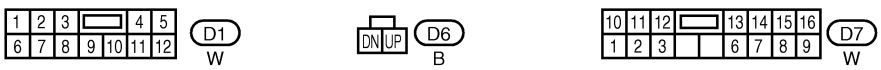




WEL700A

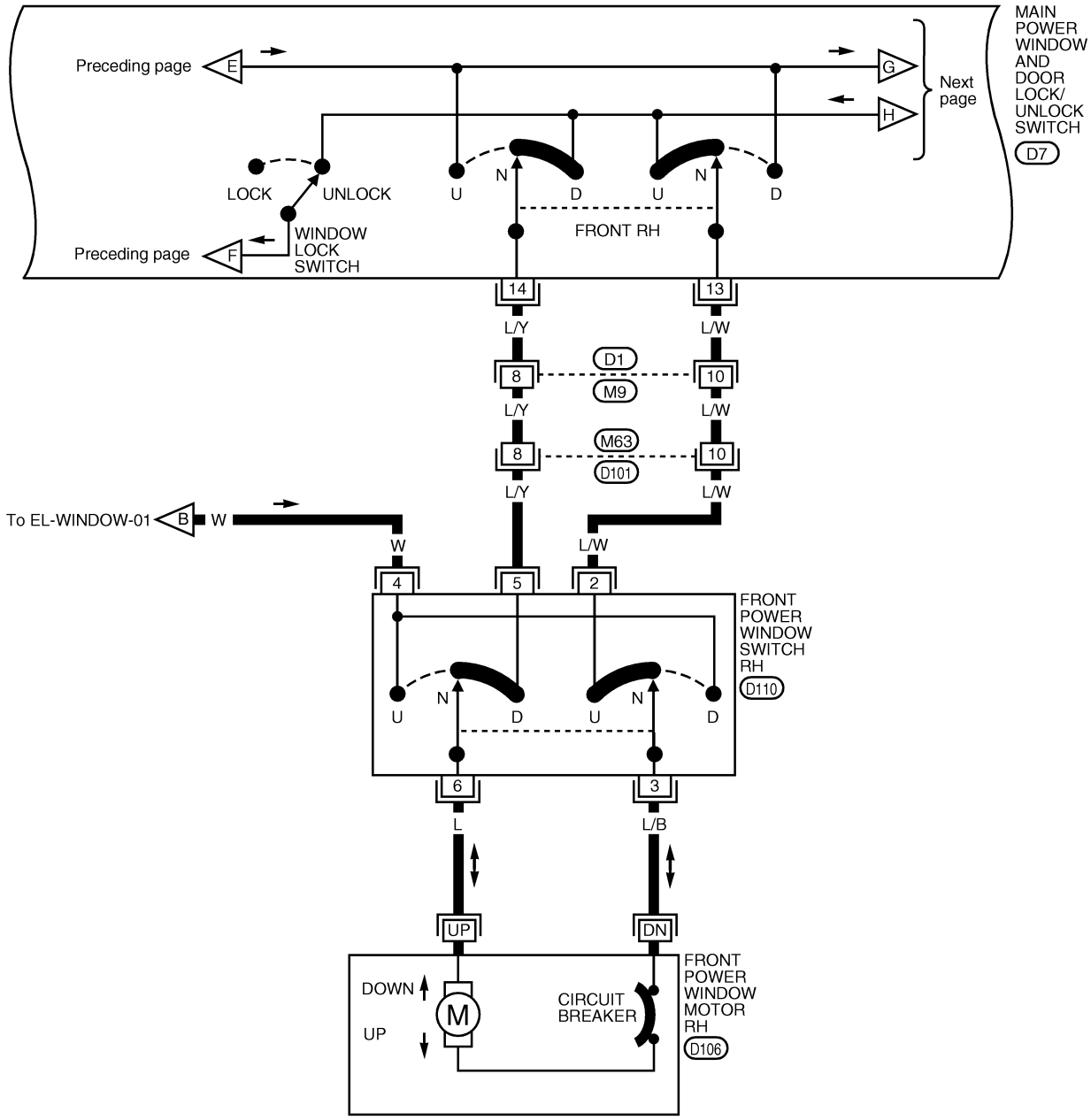
EL-WINDOW-02

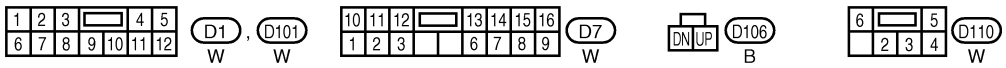




LEL703

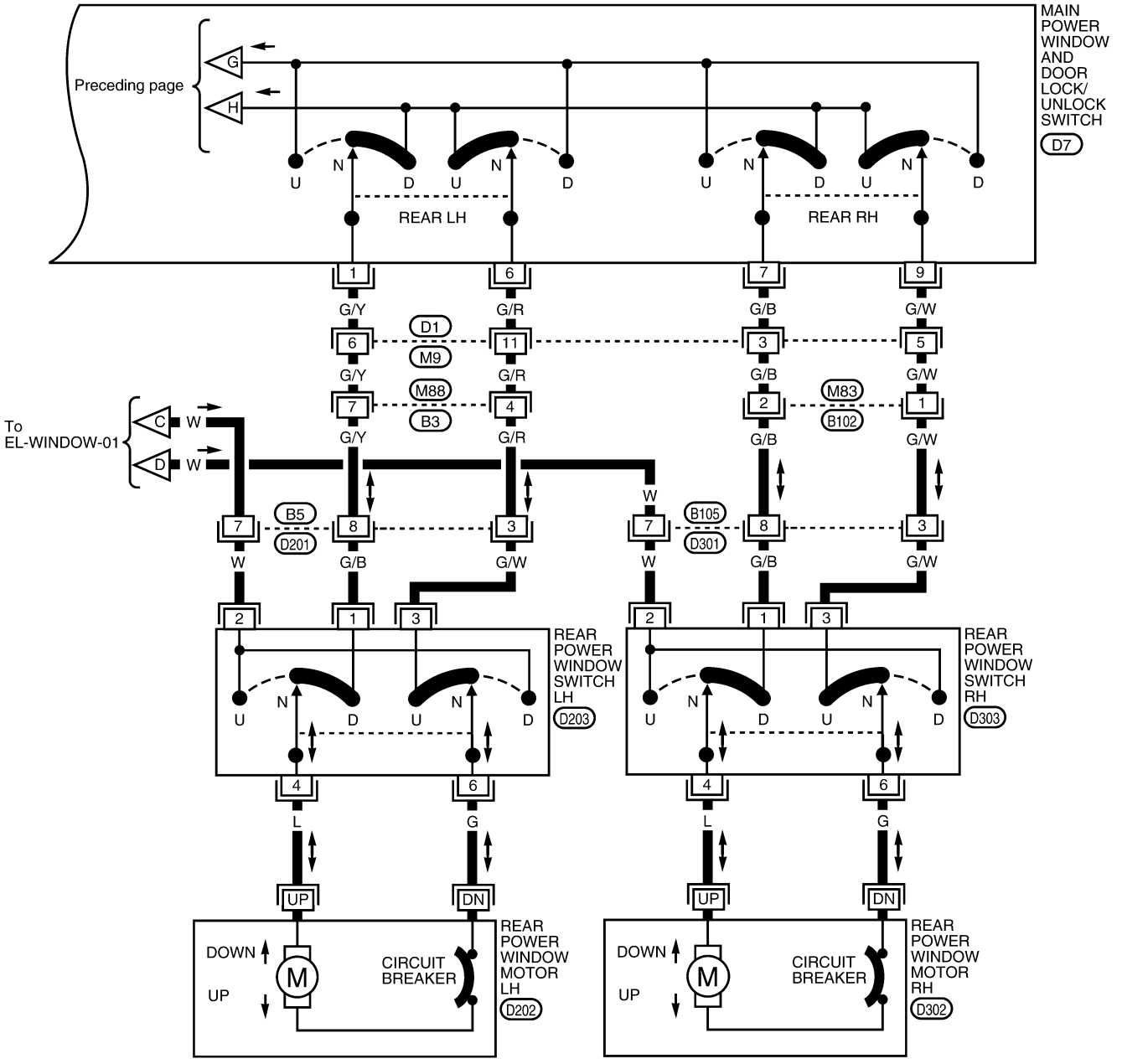
EL-WINDOW-03

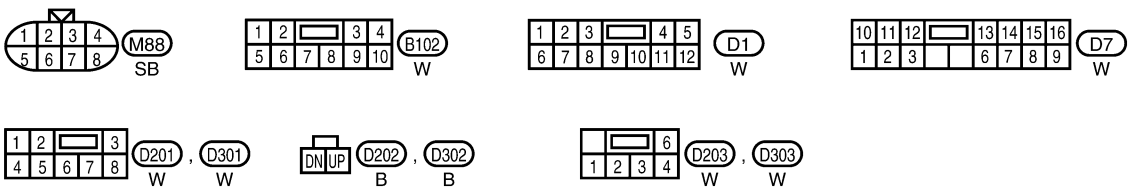




LEL704

EL-WINDOW-04





WEL701A

Trouble Diagnoses

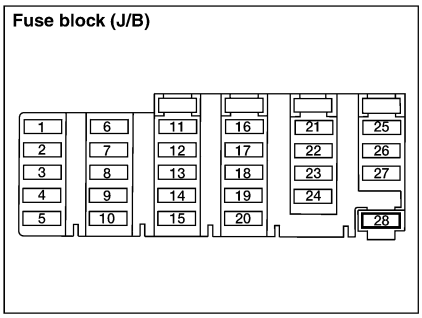
NGEL0105

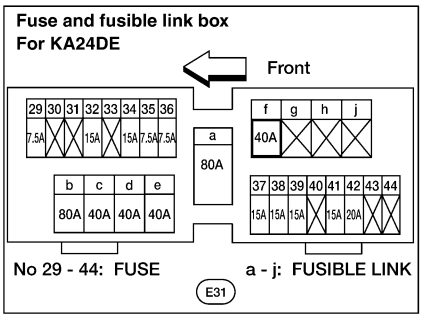
Symptom	Possible cause	Repair order
None of the power windows can be operated using any switch.	1. 7.5A fuse, 40A fusible link and M12 circuit breaker 2. Power window relay ground circuit 3. Power window relay 4. Open/short in main power window and door lock/unlock switch circuit	1. Check 7.5A fuse (No. 20, located in fuse block [J/B]), 40A fusible link (letter **f**, located in fuse and fusible link box) and M12 circuit breaker. Turn ignition switch ON and verify battery positive voltage is present at main power window and door lock/unlock switch terminal 2, front power window switch RH terminal 4 and rear power window switch LH and RH terminal 2. 2. Check power window relay ground circuit. 3. Check power window relay. 4. Check W wire between power window relay and main power window and door lock/unlock switch for open/short circuit.
Driver side power window cannot be operated but other windows can be operated.	1. Front power window motor LH circuit 2. Front power window motor LH circuit 3. Main power window and door lock/unlock switch	1. Check harness between main power window and door lock/unlock switch and front power window motor LH for open or short circuit. 2. Check front power window motor LH. 3. Check main power window and door lock/unlock switch.
Passenger side power window cannot be operated.	1. Front power window switch RH 2. Front power window motor RH 3. Main power window and door lock/unlock switch 4. Power window circuit	1. Check front power window switch RH. 2. Check front power window motor RH. 3. Check main power window and door lock/unlock switch. 4. Check the following. a. Check harnesses between main power window and door lock/unlock switch RH and front power window switch RH for open/short circuit. b. Check harnesses between front power window switch RH and front power window motor RH for open/short circuit.
Passenger side power window cannot be operated using main power window and door lock/unlock switch but can be operated by front power window switch RH.	1. Main power window and door lock/unlock switch	1. Check main power window and door lock/unlock switch.
One or more rear power windows cannot be operated.	1. Rear power window switch 2. Rear power window motor 3. Main power window switch 4. Rear power window switch circuit	1. Check rear power window switch. 2. Check rear power window motor. 3. Check main power window switch. 4. Check the following. a. Harnesses between the main power window switch and rear power window switches b. Harnesses between the rear power window switches and rear power window motors for open or short
Power windows except driver side power window cannot be operated using main power window switch but can be operated by power window switches.	1. Main power window and door lock/unlock switch	1. Check main power window and door lock/unlock switch.
Driver's window AUTO function cannot be operated using main power window and door lock/unlock switch.	1. Main power window and door lock/unlock switch	1. Check main power window and door lock/unlock switch.

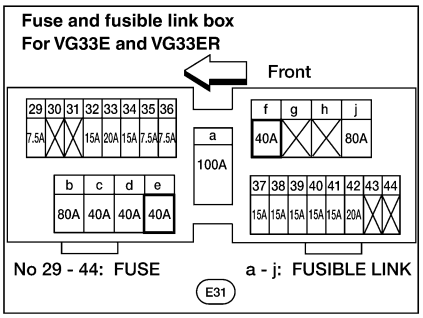
Symptom	Possible cause	Repair order
Retained accessory power feature does not operate properly	1. RAP signal circuit 2. Driver or passenger side door switch circuit 3. Smart entrance control unit	1. Check harness between power window relay terminal 3 and smart entrance control unit terminal 46 for open/short circuit. 2. Check the following a. Check harness between smart entrance control unit and driver or passenger side door switch for short circuit. b. Check driver or passenger side door switch ground circuit. c. Check driver or passenger side door switch. 3. Replace smart entrance control unit.

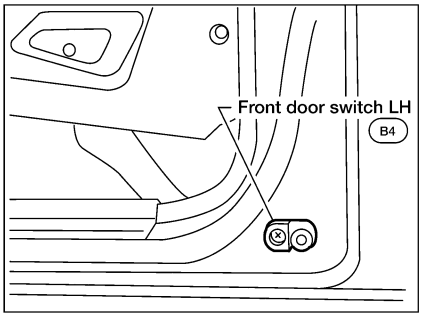
Component Parts and Harness Connector Location

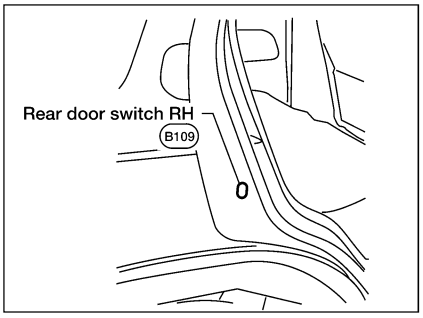
NGEL0106

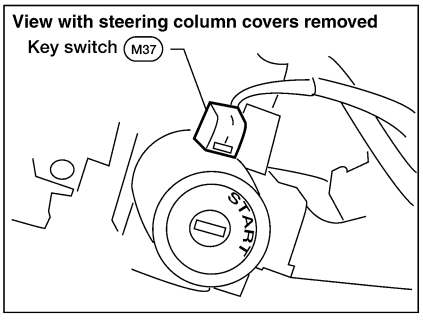


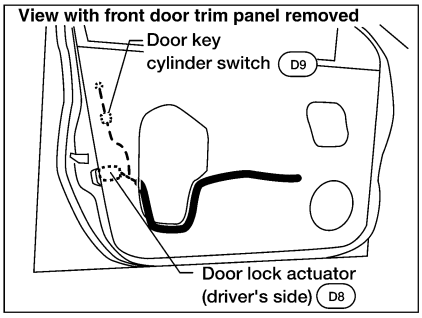


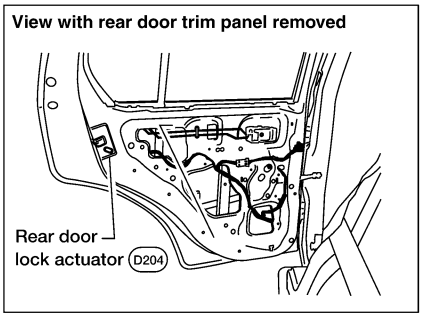


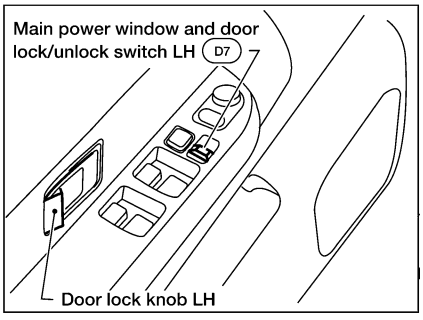


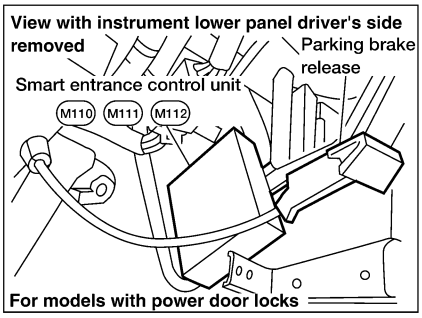












WEL137B

System Description

NGEL0107

Power is supplied at all times
- through 40A fusible link (letter **f**, located in the fuse and fusible link box)
- to circuit breaker terminal +
- through circuit breaker terminal –
- to smart entrance control unit terminal 51.

Power is supplied at all times
- through 7.5A fuse [No. 28, located in the fuse block (J/B)]
- to smart entrance control unit terminal 49, and
- to key switch terminal 1.

Ground is supplied
- to smart entrance control unit terminals 43 and 64
- through body grounds M14 and M68.

INPUT

NGEL0107S01

With the key in the ignition key cylinder, power is supplied
- through key switch terminal 2
- to smart entrance control unit terminal 25.

With front door LH open, ground is supplied
- to smart entrance control unit terminal 1
- through front door switch LH terminal 2
- through front door switch LH terminal 3
- through body grounds B6 and B10.

With front door RH open, ground is supplied
- to smart entrance control unit terminal 2
- through front door switch RH terminal +.

With the key inserted in the front door key cylinder switch LH and turned to LOCK, ground is supplied
- to smart entrance control unit terminal 11
- through front door key cylinder switch LH terminal 1
- through front door key cylinder switch LH terminal 2
- through body grounds M14 and M68.

With the key inserted in the back door key cylinder switch and turned to LOCK, ground is supplied
- to smart entrance control unit terminal 11
- through back door key cylinder switch terminal 1
- through back door key cylinder switch terminal 2
- through body grounds D402 and D404.

With the key inserted in the front door key cylinder switch LH and turned to UNLOCK, ground is supplied
- to smart entrance control unit terminal 10
- through front door key cylinder switch LH terminal 3
- through front door key cylinder switch LH terminal 2
- through body grounds M14 and M68.

With the key inserted in the back door key cylinder switch and turned to UNLOCK, ground is supplied
- to smart entrance control unit terminal 10
- through back door key cylinder switch terminal 3
- through back door key cylinder switch terminal 2
- through body grounds D402 and D404.

With the main power window and door lock/unlock switch pressed to LOCK, ground is supplied
- to smart entrance control unit terminal 5
- through main power window and door lock/unlock switch terminal 15
- through main power window and door lock/unlock switch terminal 10
- through body grounds M14 and M68.

With the door lock/unlock switch RH pressed to LOCK, ground is supplied

- to smart entrance control unit terminal 5
- through door lock/unlock switch RH terminal 6
- through door lock/unlock switch RH terminal 4
- through body grounds M14 and M68.

With the main power window and door lock/unlock switch pressed to UNLOCK, ground is supplied
- to smart entrance control unit terminal 4
- through main power window and door lock/unlock switch terminal 11
- through main power window and door lock/unlock switch terminal 10
- through body grounds M14 and M68.

With the door lock/unlock switch RH pressed to UNLOCK, ground is supplied
- to smart entrance control unit terminal 4
- through door lock/unlock switch RH terminal 3
- through door lock/unlock switch RH terminal 4
- through body grounds M14 and M68.

OUTPUT

NGEL0107S02

Unlock

NGEL0107S0201

Ground is supplied
- to front door lock actuator LH terminal 4
- to front door lock actuator RH terminal 4
- to rear door lock actuator LH terminal 4
- to rear door lock actuator RH terminal 4 and
- to back door lock actuator terminal 1
- through smart entrance control unit terminal 54.

FRONT DOOR LH
Power is supplied
- to front door lock actuator LH terminal 2
- through smart entrance control unit terminal 55.

FRONT DOOR RH
Power is supplied
- to front door lock actuator RH terminal 2
- through smart entrance control unit terminal 56.

REAR DOOR LH
Power is supplied
- to rear door lock actuator LH terminal 2
- through smart entrance control unit terminal 56.

REAR DOOR RH
Power is supplied
- to rear door lock actuator RH terminal 2
- through smart entrance control unit terminal 56.

BACK DOOR
Power is supplied
- to back door lock actuator terminal 3
- through smart entrance control unit terminal 56.

Then, the doors are unlocked.

Lock

NGEL0107S0202

Ground is supplied
- to front door lock actuator LH terminal 2
- through smart entrance control unit terminal 55 and
- to front door lock actuator RH terminal 2
- to rear door lock actuator LH terminal 2
- to rear door lock actuator RH terminal 2 and

- to back door lock actuator 3
- through smart entrance control unit terminal 56.

Power is supplied

- to front door lock actuator LH terminal 4
- to front door lock actuator RH terminal 4
- to rear door lock actuator LH terminal 4
- to rear door lock actuator RH terminal 4 and
- to back door lock terminal 1
- through smart entrance control unit terminal 54.

Then, the doors are locked.

OPERATION

NGEL0107S03

- The main power window and door lock/unlock switch and the door lock/unlock switch RH can lock and unlock all doors.
- With the key inserted in the front door key cylinder LH or the back door key cylinder, turning it to LOCK locks all doors; turning it to UNLOCK once unlocks the corresponding door; turning it to UNLOCK again within 5 seconds of the first unlock operation unlocks all other doors (signal from door key cylinder switch).

Key Reminder

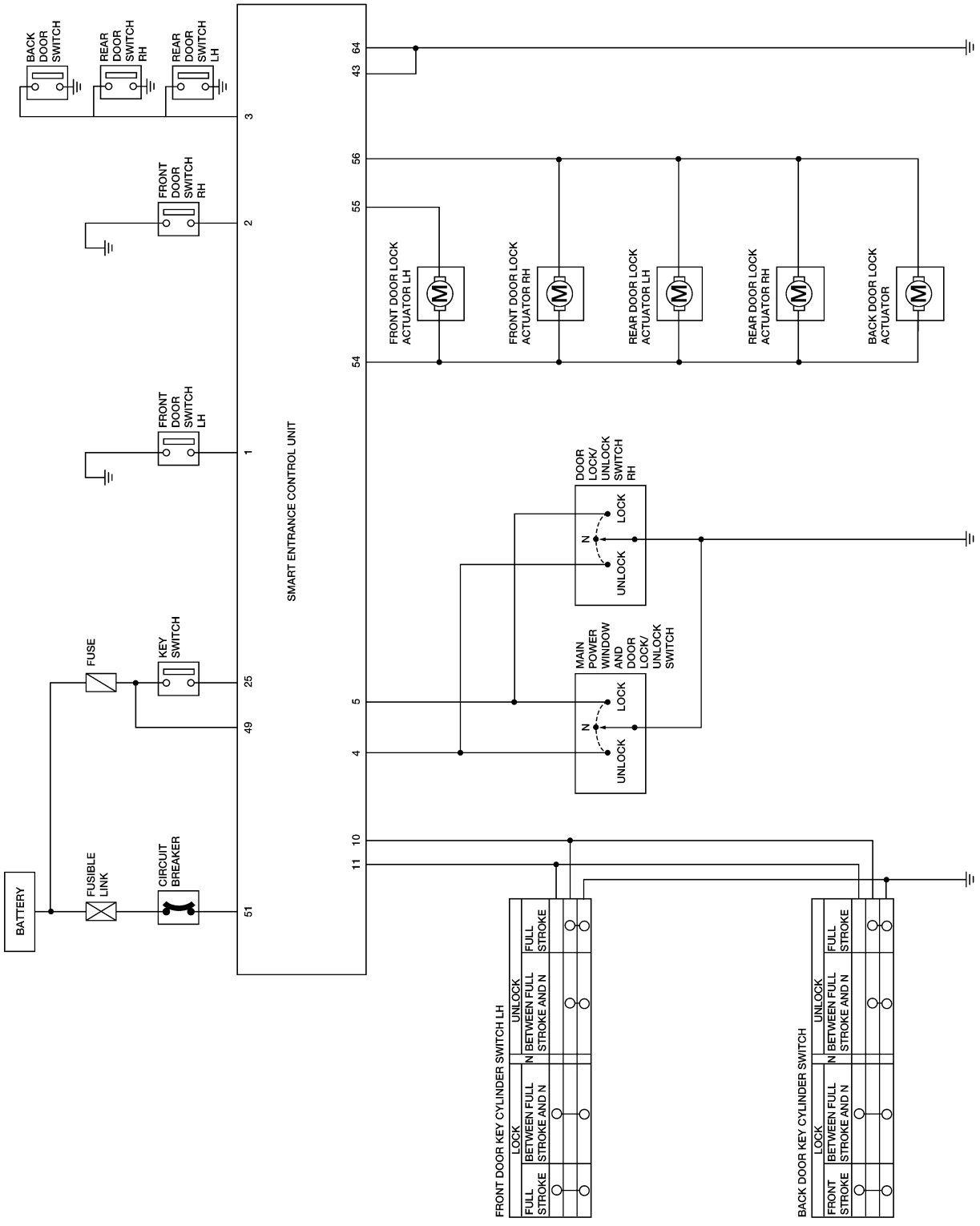
NGEL0107S0301

When performing a door locking operation using the main power window and door lock/unlock switch, the door lock/unlock switch RH, the front door LH lock knob or a keyfob, all the doors will lock and then the front door LH will immediately unlock if the

- key switch is in INSERTED position (key is inserted into ignition key cylinder) and
- either front door switch LH or RH is in OPEN position (door is open).

Circuit Diagram

NGEL0108



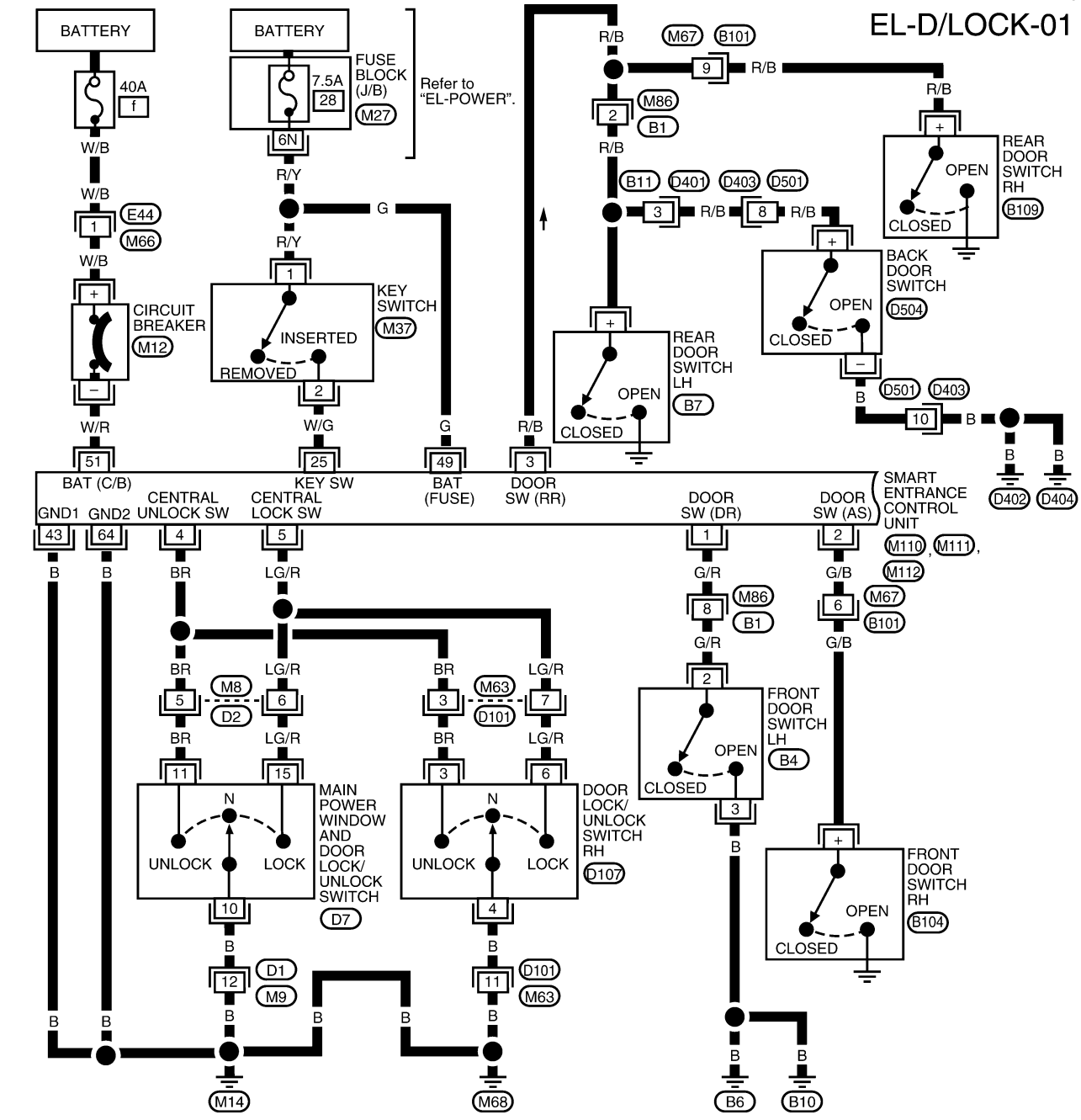
WEL354A

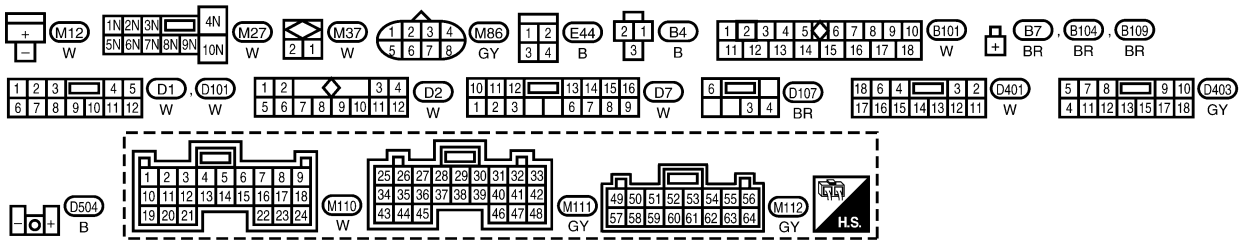
Wiring Diagram — D/LOCK —

NGEL0109

FIG. 1

NGEL0109S01



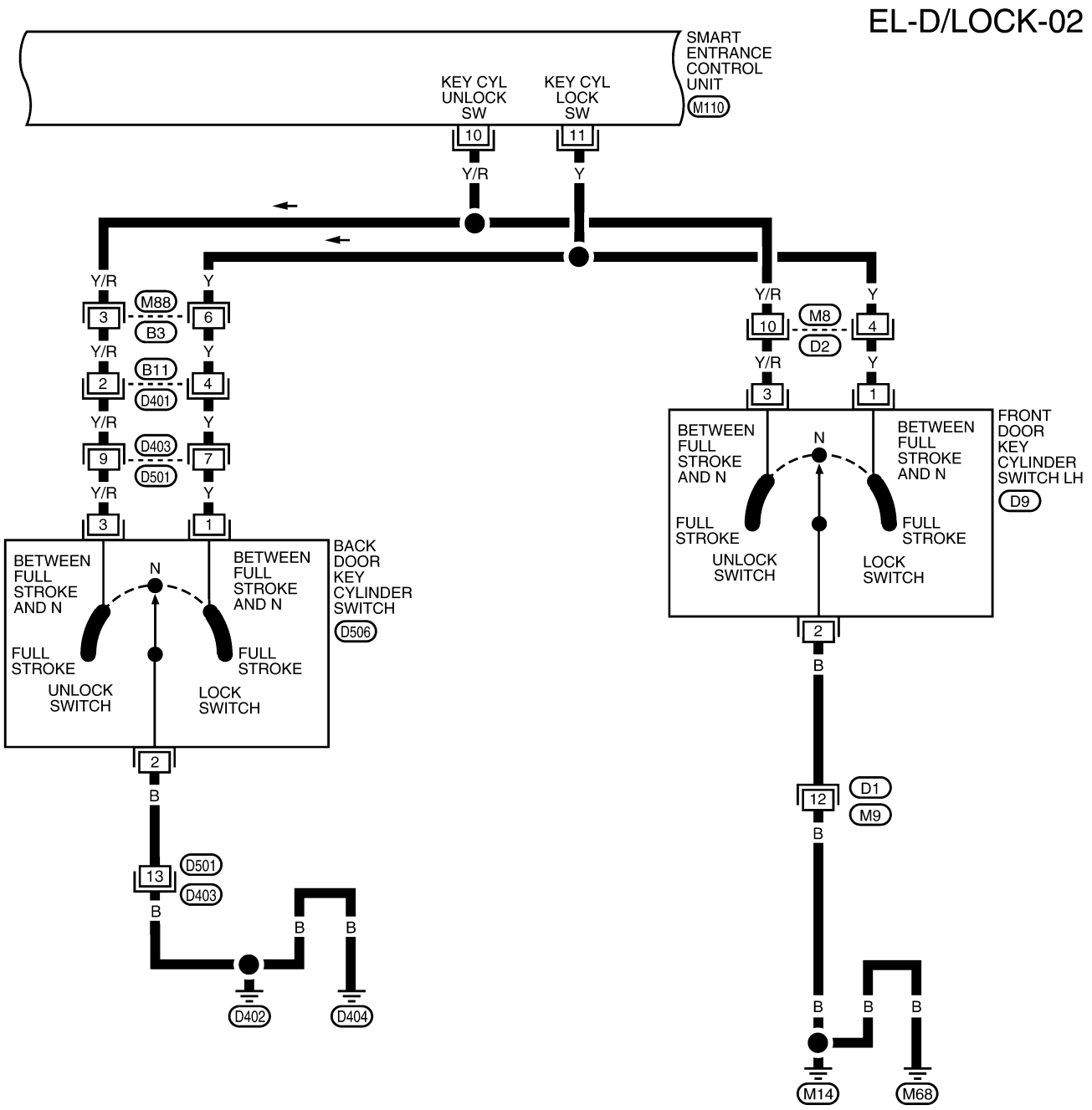


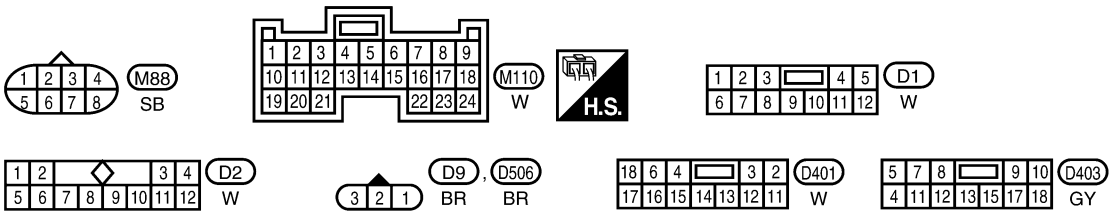
WEL702A

Wiring Diagram — D/LOCK — (Cont'd)

FIG. 2

NGEL0109S02



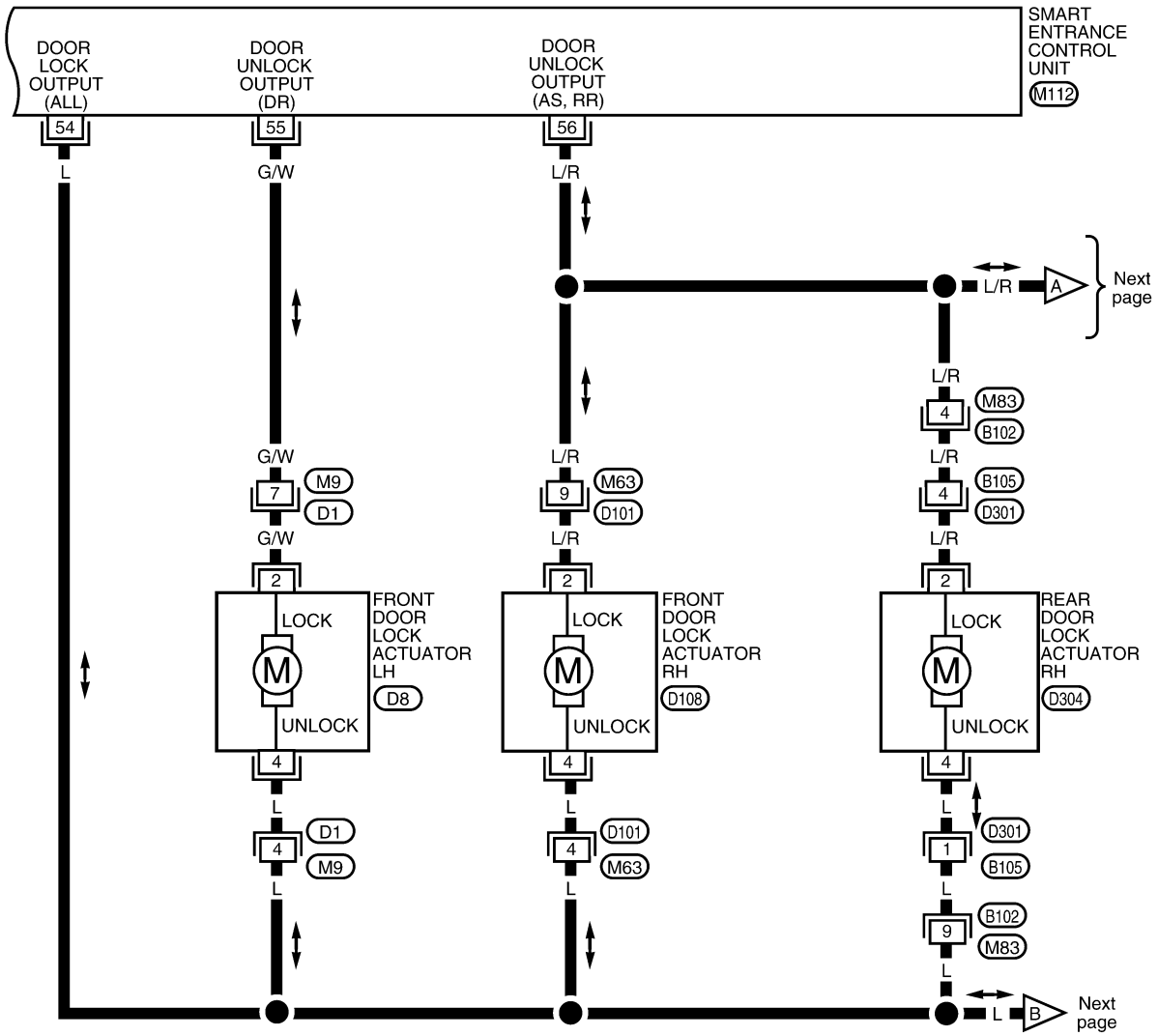


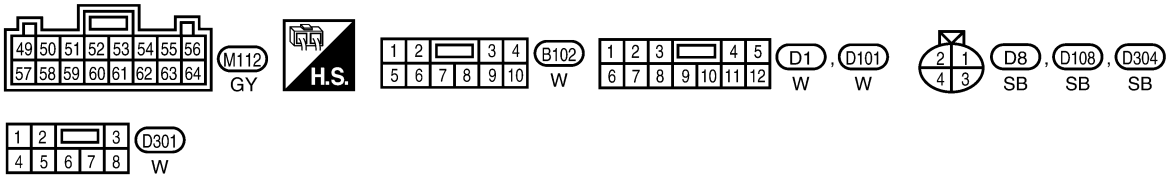
WEL703A

FIG. 3

NGEL0109S03

EL-D/LOCK-03

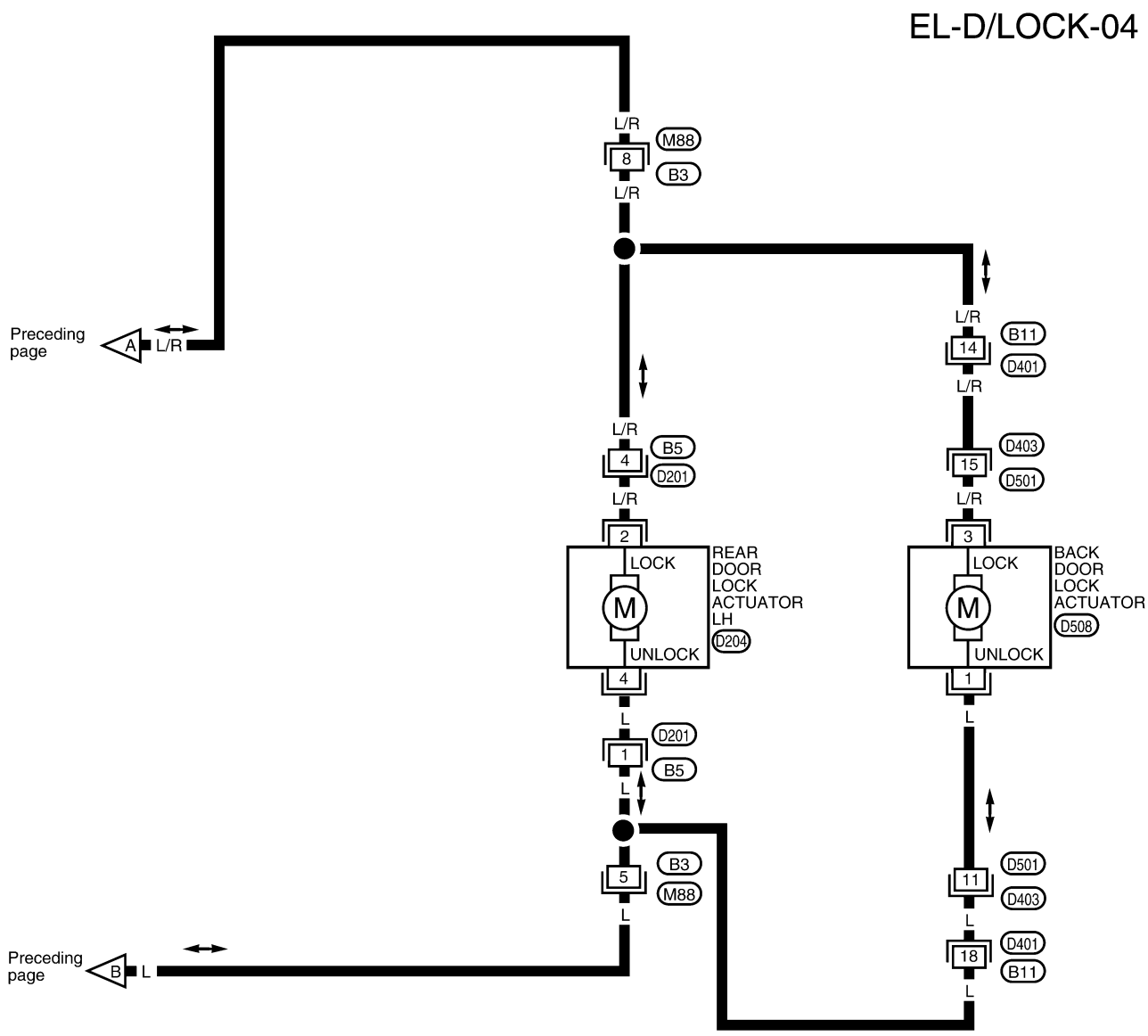


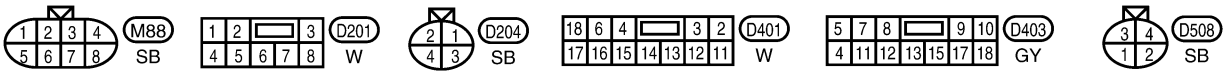


Wiring Diagram — D/LOCK — (Cont'd)

FIG. 4

NGEL0109S04





WEL705A

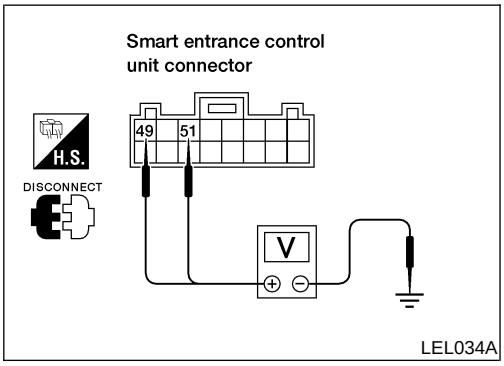
Trouble Diagnoses

SYMPTOM CHART

NGEL0110

NGEL0110S01

REFERENCE PAGE (EL-)	195	196	197	199	200	201
SYMPTOM	MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK	DOOR SWITCH CHECK	KEY SWITCH (INSERTED) CHECK	DOOR LOCK/UNLOCK SWITCH CHECK	DOOR KEY CYLINDER SWITCH CHECK	DOOR LOCK ACTUATOR CHECK
Key reminder door system does not operate properly.	X	X	X			X
Specific door lock actuator does not operate.	X					X
Power door lock does not operate with door lock and unlock switch (LH and RH) on door trim.	X			X		
Power door lock does not operate with front door key cylinder operation.	X				X	



MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK

NGEL0110S02

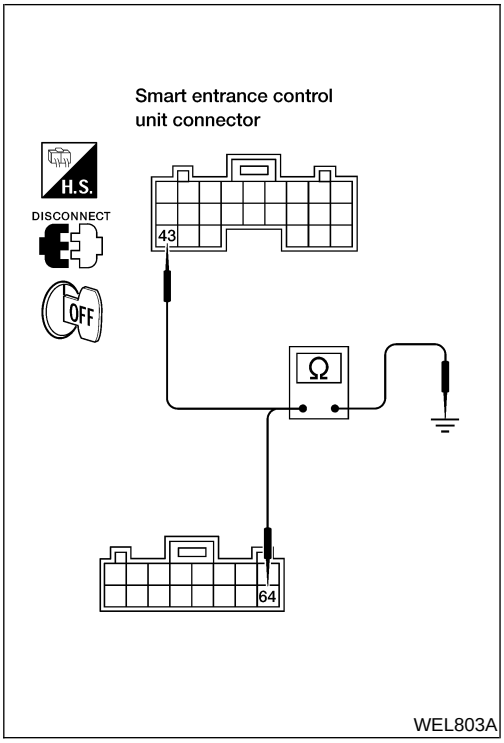
Main Power Supply Circuit Check

NGEL0110S0201

Terminal		Ignition switch		
(+)	(−)	OFF	ACC	ON
M112 - 49 (G)	Ground	Battery voltage	Battery voltage	Battery voltage
M112 - 51 (W/R)				

If NG, check the following.

- 40A fusible link (letter f, located in fuse and fusible link box)
- 7.5A fuse [No. 28, located in fuse block (J/B)]
- Circuit breaker
- Harness for open or short between smart entrance control unit and fuse
- Harness for open or short between circuit breaker and fuse



Ground Circuit Check

NGEL0110S0202

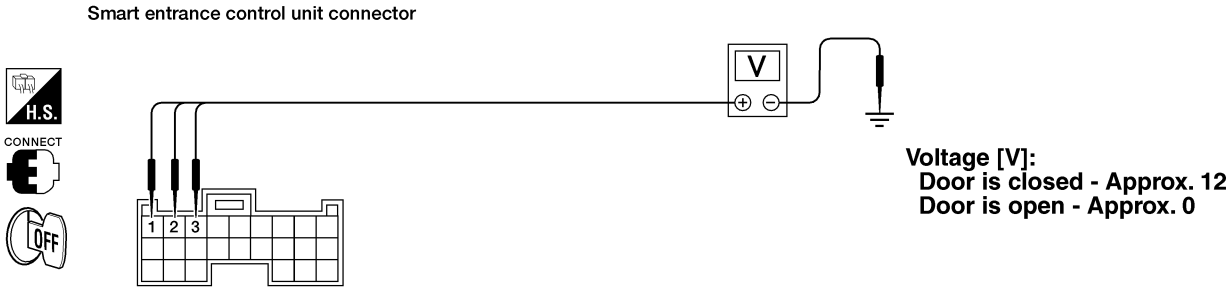
Terminals			Continuity
(+)		(-)	
Connector	Terminal (wire color)		
M111	43 (B)	Ground	Yes
M112	64 (B)	Ground	Yes

DOOR SWITCH CHECK

NGEL0110S05

1 **CHECK DOOR SWITCHES INPUT SIGNAL**

Check voltage between smart entrance control unit harness connector M110 terminals 1 (G/R), 2 (G/B) or 3 (R/B) and ground.



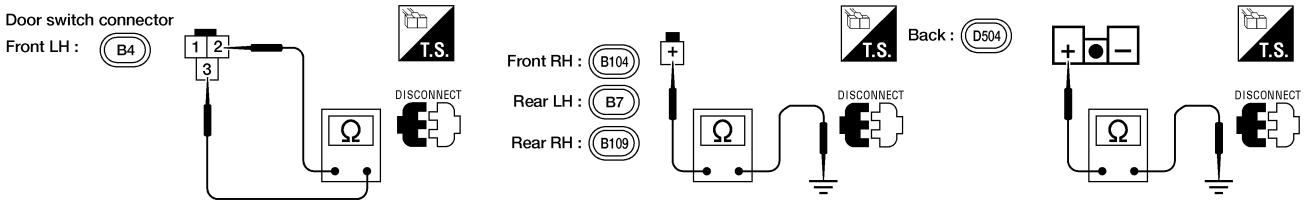
Refer to "Wiring Diagram —D/LOCK—", EL-191.

OK or NG

OK	▶	Door switch is OK.
NG	▶	GO TO 2.

2	CHECK DOOR SWITCHES

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



AEL651C

Continuity:

Front door switch LH terminals 2 - 3

Door switch is pressed - No

Door switch is released - Yes

Front door switch RH, rear door switch LH, or RH, or back door switch terminal + - ground

Door switch is pressed - No

Door switch is released - Yes

OK or NG

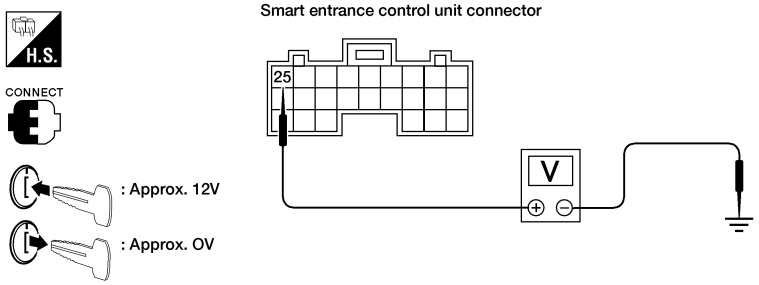
OK	▶	**Check the following.** ● Front door switch LH ground circuit, front door switch RH or back door switch ground condition ● Harness for open or short between smart entrance control unit and door switch
NG	▶	Replace door switch.

KEY SWITCH (INSERTED) CHECK

NGEL0110S06

1	CHECK KEY SWITCH INPUT SIGNAL

1. Disconnect smart entrance control unit harness connector.
2. Check voltage between smart entrance control unit harness connector M111 terminal 25 (W/G) and ground.



Voltage [V]:

Condition of key switch: Key is INSERTED.

Approx. 12

Condition of key switch: Key is REMOVED.

Approx. 0

LEL010A

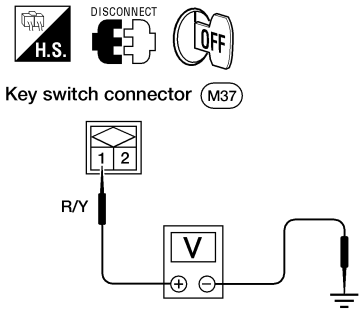
Refer to "Wiring Diagram —D/LOCK—", EL-191.

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH POWER SUPPLY

1. Disconnect key switch harness connector.
2. Check voltage between key switch harness connector terminal 1 and ground.



AEL415B

Battery voltage should exist.

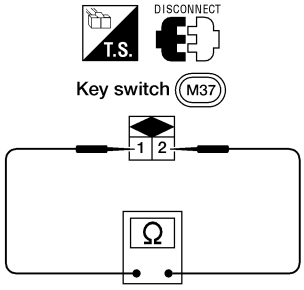
Refer to "Wiring Diagram —D/LOCK—", EL-191.

OK or NG

OK	▶	GO TO 3.
NG	▶	**Check the following.** ● 7.5A fuse [No. 28, located in the fuse block (J/B)] ● Harness for open or short between key switch and fuse

3	CHECK KEY SWITCH

Check continuity between key switch terminals 1 and 2.



AEL416B

Continuity

Condition of key switch: Key is inserted.

Yes

Condition of key switch: Key is removed.

No

OK or NG

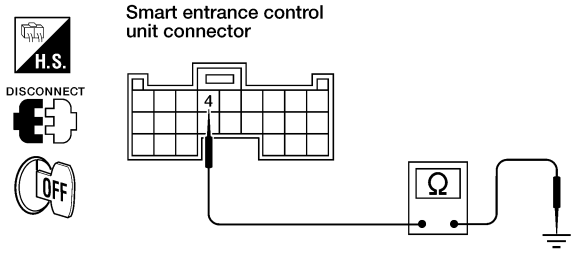
OK	▶	Check harness for open or short between smart entrance control unit and key switch.
NG	▶	Replace key switch.

DOOR LOCK/UNLOCK SWITCH CHECK

=NGEL0110S03

1 CHECK DOOR LOCK/UNLOCK SWITCH INPUT SIGNAL

1. Disconnect smart entrance control unit harness connector.
2. Check continuity between smart entrance control unit harness connector M110 terminal 4 (BR) or 5 (LG/R) and ground.



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

WEL348A

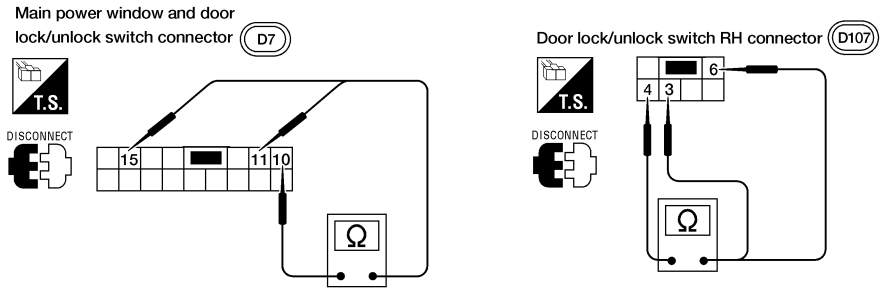
Refer to "Wiring Diagram —D/LOCK—", EL-191.

OK or NG

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

2 CHECK DOOR LOCK/UNLOCK SWITCH

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



AEL642C

Main power window and door lock/unlock switch

Condition	Terminals		
	10	11	15
Lock	○		○
N	No continuity		
Unlock	○	○	

Door lock/unlock switch RH

Condition	Terminals		
	3	4	6
Lock		○	○
N	No continuity		
Unlock	○	○	

AEL556C

OK or NG

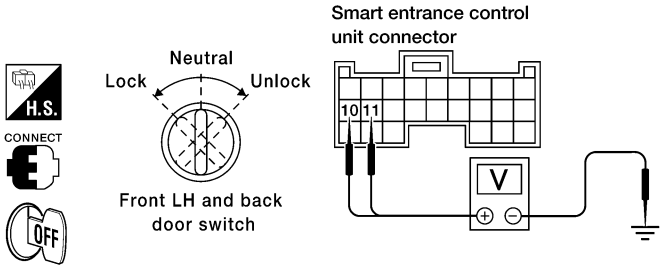
OK	▶	**Check the following.** ● Ground circuit for door lock/unlock switch ● Harness for open or short between door lock/unlock switch and smart entrance control unit
NG	▶	Replace door lock/unlock switch.

DOOR KEY CYLINDER SWITCH CHECK

NGEL0110S07

1 **CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL**

Check voltage between smart entrance control unit harness connector M110, terminal 10 (Y/R) or 11 (Y) and ground.



Terminals (+)	Terminals (–)	Key position	Voltage [V]
11	Ground	Neutral	Approx. 12
		Lock	0
10	Ground	Neutral	Approx. 12
		Unlock	0

WEL328A

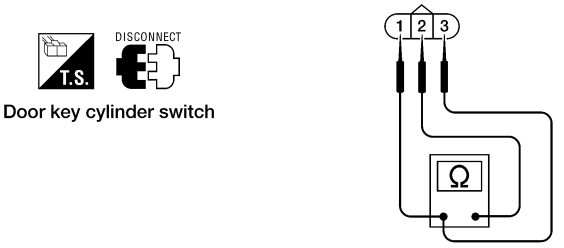
Refer to "Wiring Diagram —D/LOCK—", EL-192.

OK or NG

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

2 **CHECK DOOR KEY CYLINDER SWITCH**

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



Terminals	Key position	Continuity
1 – 2	Neutral	No
	Lock	Yes
3 – 2	Neutral	No
	Unlock	Yes

WEL347A

OK or NG

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

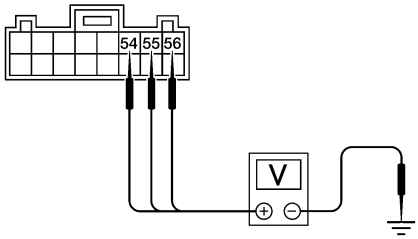
DOOR LOCK ACTUATOR CHECK

NGEL0110S04

1 CHECK DOOR LOCK ACTUATOR CIRCUIT

Check voltage for door lock actuator.

Smart entrance control unit connector



Door lock/unlock switch condition	Terminals		Voltage [V]
	+	−	
Lock	54	Ground	Approx. 12
Unlock (front door LH)	55	Ground	
Unlock (front door RH, rear door LH and RH, back door)	56	Ground	

LEL048A

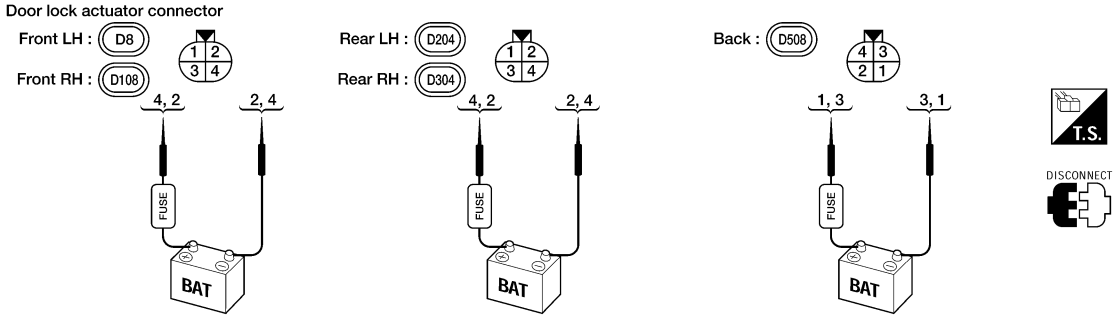
Refer to "Wiring Diagram —D/LOCK—", EL-193.

OK or NG

OK	▶	GO TO 2.
NG	▶	Replace smart entrance control unit. (Before replacing smart entrance control unit, perform other procedures indicated in "SYMPTOM CHART". Refer to "SYMPTOM CHART", EL-195).

2 CHECK DOOR LOCK ACTUATOR

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



WEL833A

Door lock actuator	Operation	Terminals	
		+	−
Front LH	Unlock → Lock	4	2
Front RH	Lock → Unlock	2	4
Rear LH	Unlock → Lock	4	2
Rear RH	Lock → Unlock	2	4
Back	Unlock → Lock	1	3
	Lock → Unlock	3	1

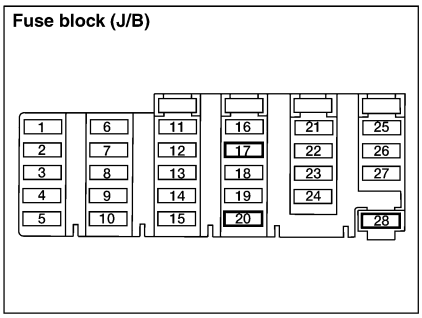
WEL834A

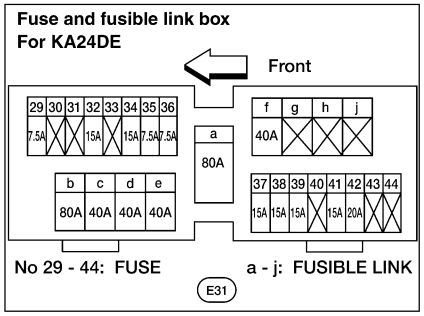
OK or NG

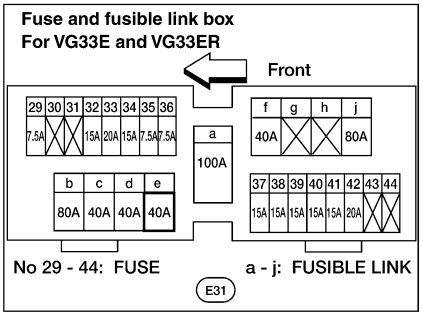
OK	▶	Check harness for open or short between smart entrance control unit and door lock actuator.
NG	▶	Replace door lock actuator.

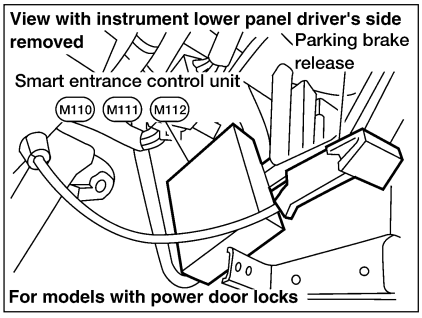
Component Parts and Harness Connector Location

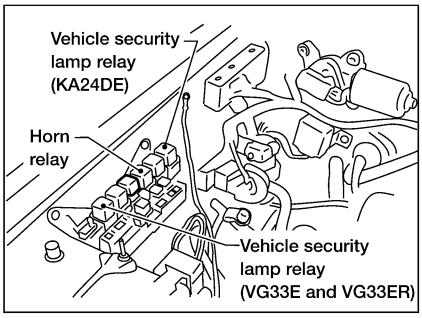
NGEL0111

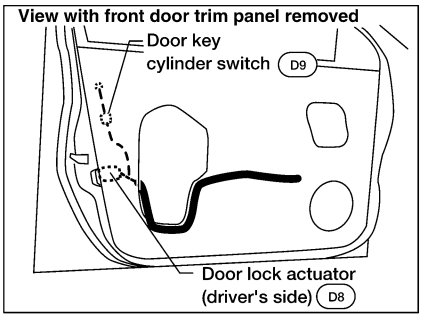


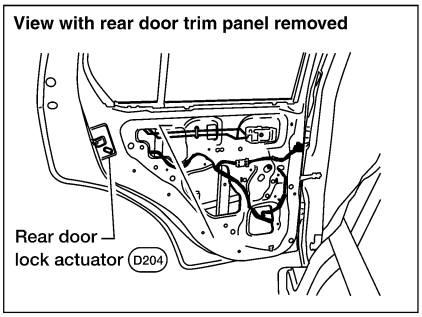


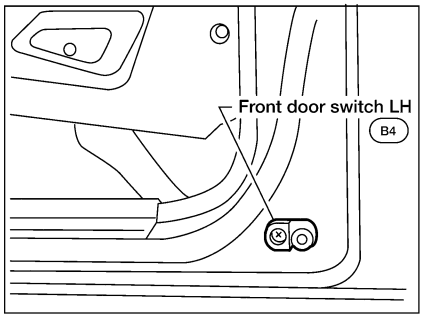


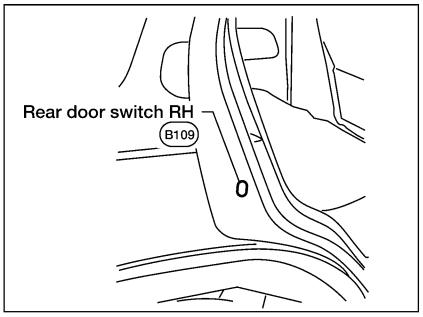


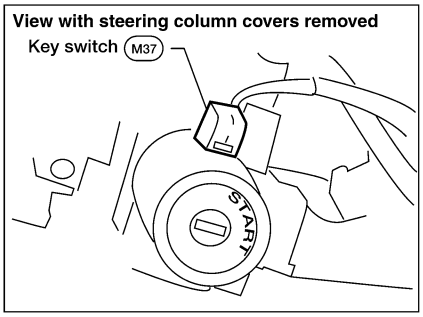


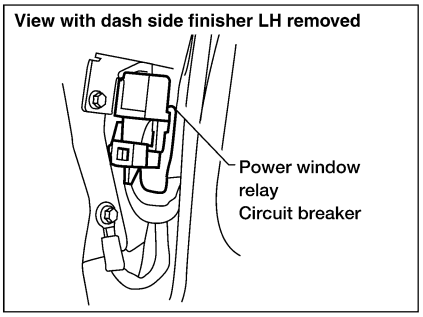












WEL138B

System Description

NGEL0112

POWER SUPPLY AND GROUND

NGEL0112S03

Power is supplied at all times
- through 40A fusible link (letter **f**, located in the fuse and fusible link box)
- to circuit breaker terminal +
- through circuit breaker terminal –
- to smart entrance control unit terminal 51.

With the ignition switch in the ACC or ON position, power is supplied
- through 7.5A fuse [No. 20, located in the fuse block (J/B)]
- to smart entrance control unit terminal 26.

Power is supplied at all times
- through 7.5A fuse [No. 28, located in the fuse block (J/B)]
- to key switch terminal 1, and
- to smart entrance control unit terminal 49.

Power is supplied at all times
- through 15A fuse (No. 37, located in the fuse and fusible link box)
- to vehicle security lamp relay terminal 7.

Power is supplied at all times
- through 15A fuse (No. 38, located in the fuse and fusible link box)
- to vehicle security lamp relay terminal 5.

Power is supplied at all times
- through 15A fuse (No. 32, located in the fuse and fusible link box)
- to horn relay terminals 1 and 5.

Ground is supplied
- to smart entrance control unit terminals 43 and 64
- through body grounds M14 and M68.

INPUTS

NGEL0112S01

With the key switch in the INSERTED (key is in ignition key cylinder) position, power is supplied
- through key switch terminal 2
- to smart entrance control unit terminal 25.

With front door LH open, ground is supplied
- to smart entrance control unit terminal 1
- through front door switch LH terminal 2
- through front door switch LH terminal 3
- through body grounds B6 and B10.

With front door RH open, ground is supplied
- to smart entrance control unit terminal 2
- through front door switch RH terminal +.

With rear door LH or RH open, ground is supplied
- to smart entrance control unit terminal 3 (with vehicle security system) or terminal 2 (without vehicle security system)
- through rear door switch LH or RH terminal +.

With the back door open, ground is supplied
- to smart entrance control unit terminal 3 (with vehicle security system) or terminal 2 (without vehicle security system)
- through back door switch terminal +
- through back door switch terminal –
- through body grounds D402 and D404.

The remote keyless entry system controls operation of the:
- power door locks
- panic alarm

- hazard reminder.

OPERATION PROCEDURE

NGEL0112S02

Power Door Lock Operation

NGEL0112S0201

When the keyfob sends a LOCK signal with the key switch in the REMOVED position (key is not in ignition key cylinder), the smart entrance control unit locks all doors.
When the keyfob sends an UNLOCK signal once, the smart entrance control unit unlocks the front door LH. Then, if the keyfob sends another UNLOCK signal within 5 seconds, the smart entrance control unit unlocks all other doors.

Key Reminder

NGEL0112S0206

When performing a door locking operation using the main power window and door lock/unlock switch, the door lock/unlock switch RH, the front door LH lock knob or a keyfob, all the doors will lock and then the front door LH will immediately unlock if the

- key switch is in INSERTED position (key is in ignition key cylinder) and
- either front door switch LH or RH is in OPEN position (door is open).

Hazard and Horn Reminder

NGEL0112S0204

When smart entrance control unit receives LOCK or UNLOCK signal from the keyfob with all doors closed, power is supplied

- through smart entrance control unit terminals 47 and 48
- to the hazard warning lamps.

Ground is supplied

- to horn relay terminal 2
- through smart entrance control unit terminal 42.

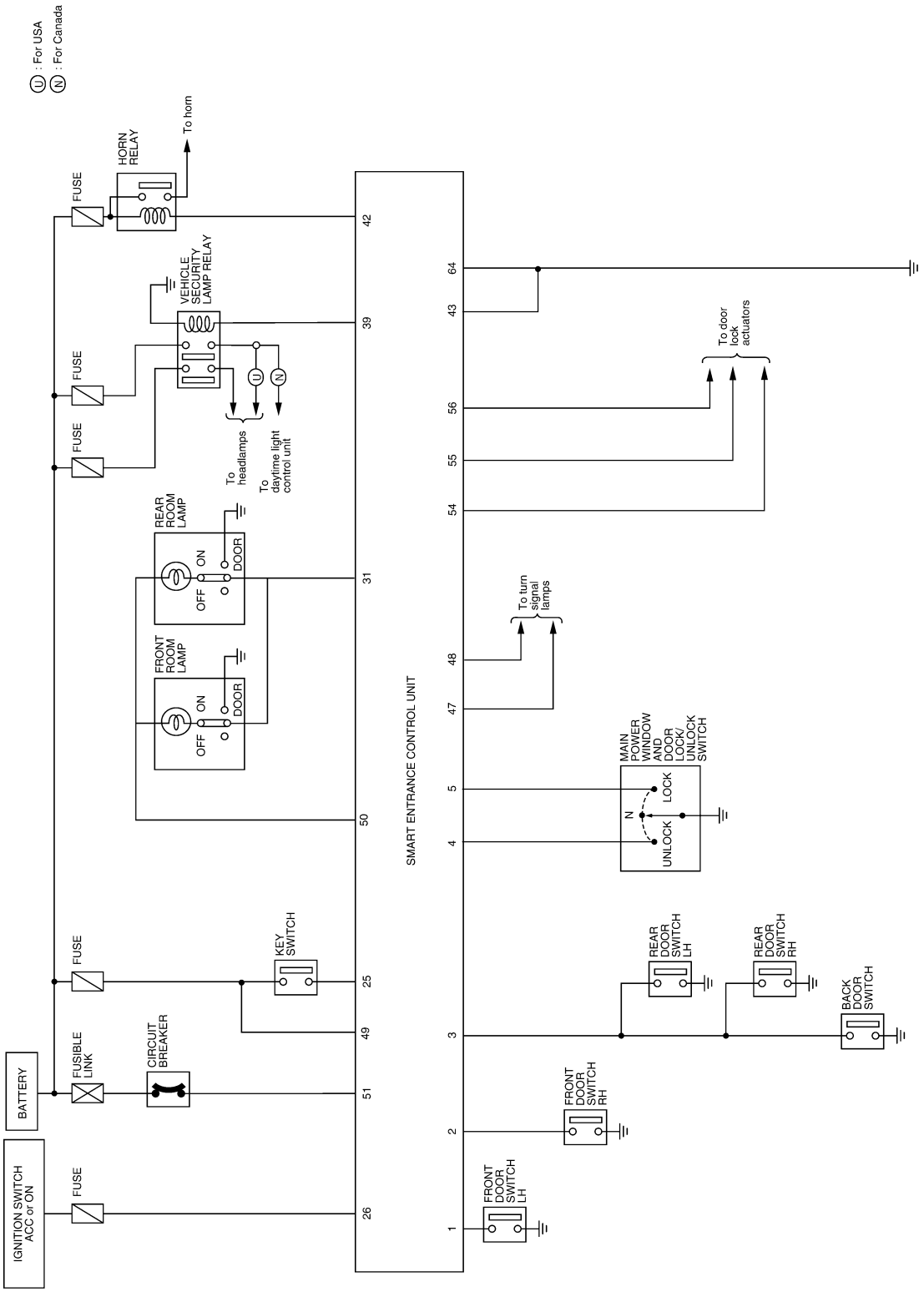
Horn relay is now energized, and hazard warning lamps flash and horn sounds as a reminder.
The hazard and horn reminder has a horn chirp mode (C mode) and a non-horn chirp mode (S mode).

Operating function of hazard and horn reminder

	Horn chirp mode (C mode)		Non-horn chirp mode (S mode)	
	Hazard warning lamps flash	Horn sound	Hazard warning lamp flash	Horn sound
Lock	Twice	Once	Twice	—
Unlock				

Circuit Diagram

NGEL0113



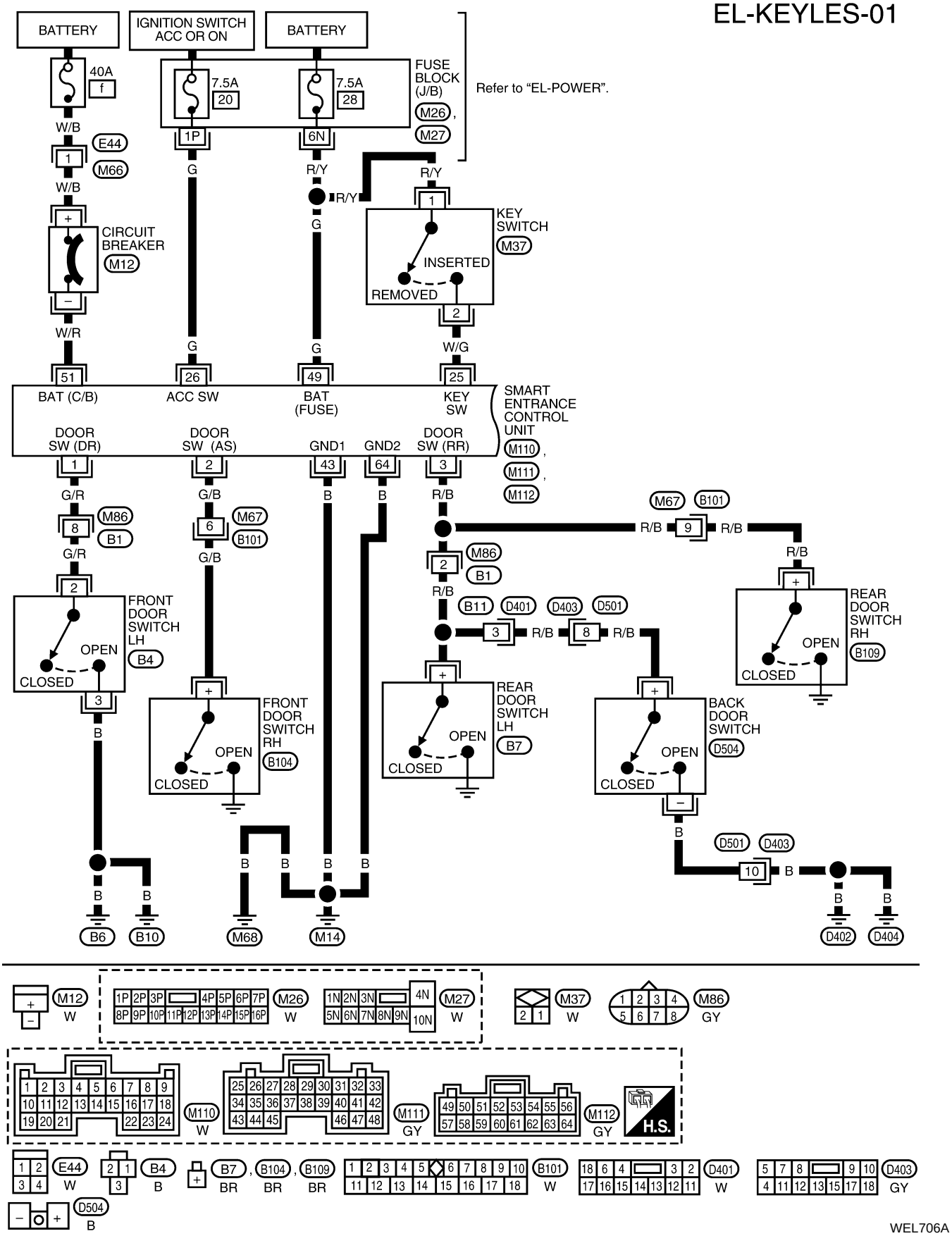
WEL324A

Wiring Diagram — MULTI —

NGEL0114

FIG. 1

NGEL0114S01

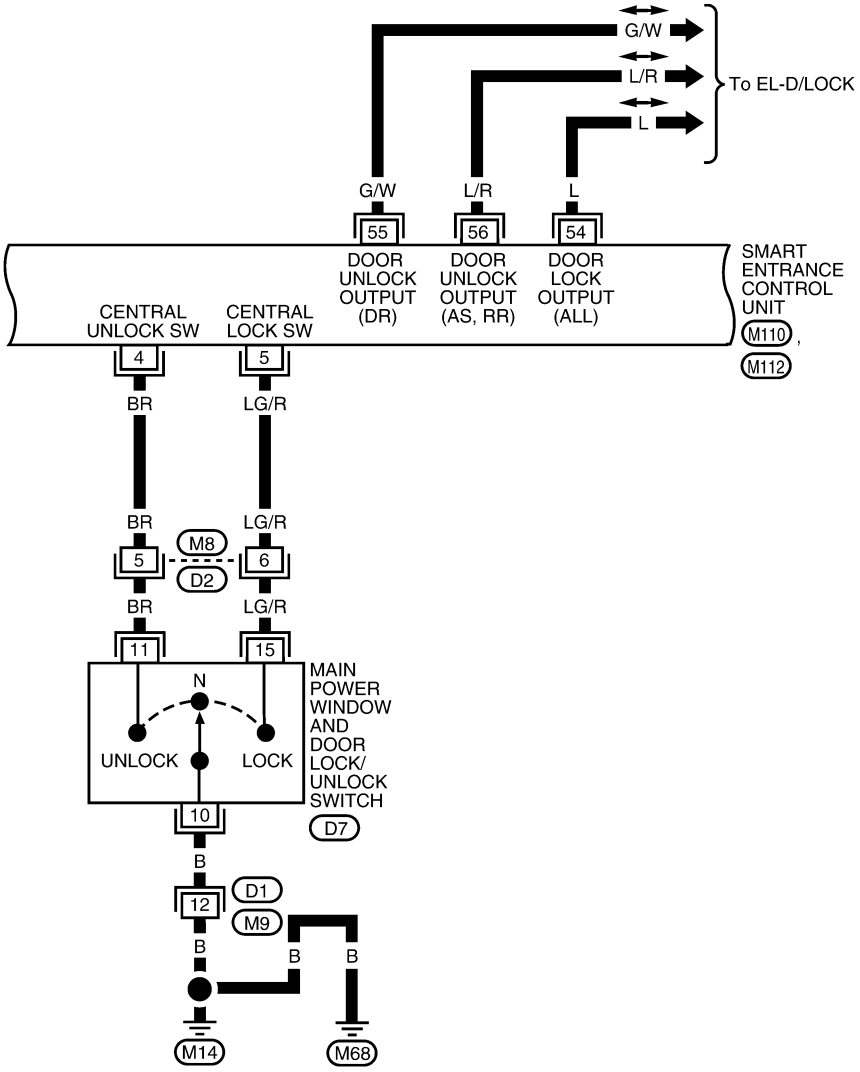


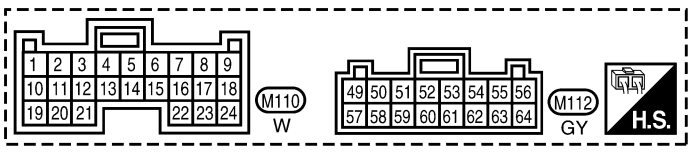
WEL706A

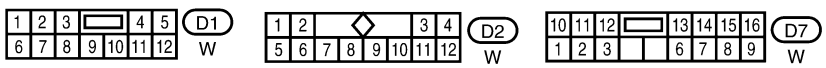
FIG. 2

=NGEL0114S05

EL-KEYLES-02



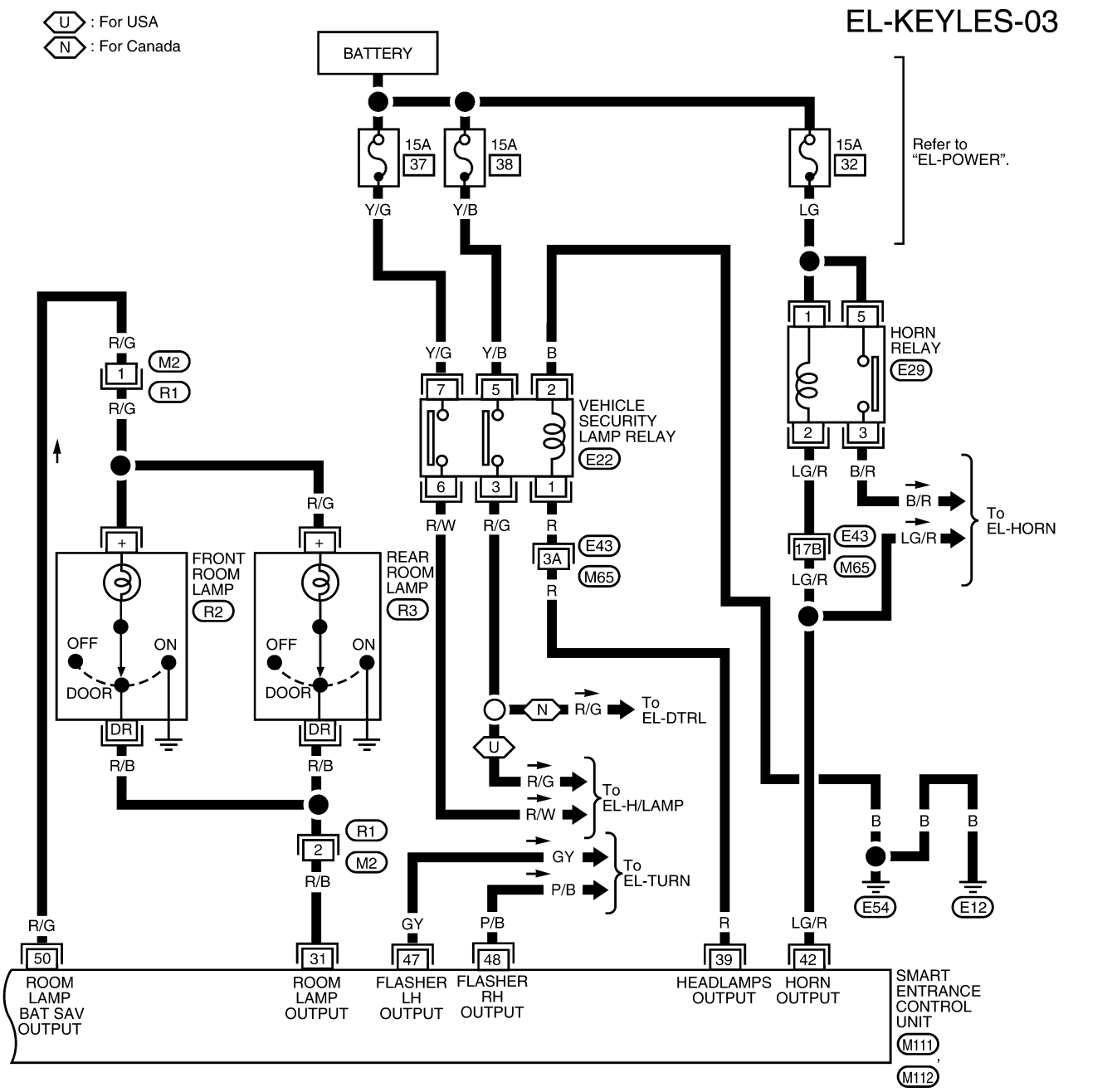


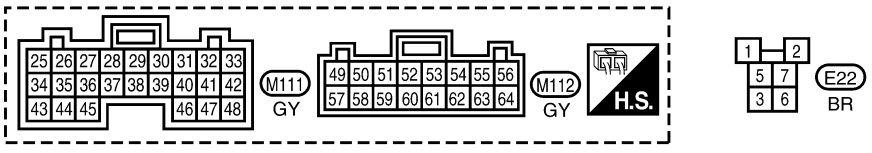


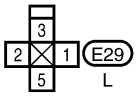
WEL707A

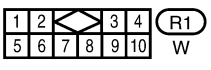
FIG. 3

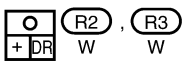
NGEL0114S02











Refer to the following.
E43 - SUPER MULTIPLE JUNCTION (SMJ)

WEL708A

Trouble Diagnoses

=NGEL0115

SYMPTOM CHART

NGEL0115S01

NOTE:

- Always check keyfob battery before replacing keyfob
- Use Remote Keyless Entry Tester J-43241 (follow instructions on tester) to check operation of keyfob before replacing keyfob.

Symptom	Diagnoses/service procedure	Reference page (EL-)
All functions of remote keyless entry system do not operate.	1. Keyfob battery check	210
	2. Keyfob check (use Remote Keyless Entry Tester J-43241).	—
	3. Power supply and ground circuit check	211
	4. Replace keyfob. Refer to ID Code Entry Procedure.	218
The new ID of keyfob cannot be entered.	1. Keyfob battery check	210
	2. Keyfob check (use Remote Keyless Entry Tester J-43241).	—
	3. Power supply and ground circuit check	211
	4. Key switch (inserted) check	214
	5. Door switch check	213
	6. Replace keyfob. Refer to ID Code Entry Procedure.	218
Door lock or unlock does not function (If the power door lock system does not operate manually, check power door lock system. Refer to “Trouble Diagnoses”, EL-195.).	1. Key switch (inserted) check	214
	2. Keyfob check (use Remote Keyless Entry Tester J-43241).	—
	3. Door switch check	213
	4. Replace keyfob. Refer to ID Code Entry Procedure.	218
Hazard indicator does not flash twice when pressing lock button of keyfob.	1. Hazard reminder check	216
	2. Keyfob check (use Remote Keyless Entry Tester J-43241).	—
	3. Replace keyfob. Refer to ID Code Entry Procedure.	218
Room lamp does not activate properly.	1. Room lamp operation check	216
	2. Door switch check	213
Panic alarm (horn and headlamps) does not activate when panic alarm button is pressed continuously for more than 1.5 seconds.	1. Vehicle security operation check. Refer to “PRELIMINARY CHECK”.	229
	2. Keyfob check (use Remote Keyless Entry Tester J-43241).	—
	3. Replace keyfob. Refer to ID Code Entry Procedure.	218

NOTE:

The panic alarm functions of the remote keyless entry system do not activate when the key switch is in INSERTED position (key is in ignition key cylinder).

When performing a door locking operation using the main power window and door lock/unlock switch, the door lock/unlock switch RH, the front door LH lock knob, or a keyfob, all the doors will lock and then the front door LH will immediately unlock if:

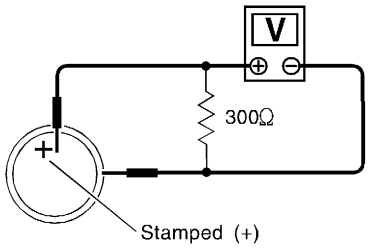
- **the key switch is in INSERTED position (key is in ignition key cylinder), and**
- **either front door switch LH or RH is in OPEN position (door is open).**

KEYFOB BATTERY CHECK

=NGEL0115S02

1	CHECK KEYFOB BATTERY

Remove battery. Refer to "Keyfob Battery Replacement", EL-219. Measure voltage across battery positive and negative terminals, (+) and (−).



SEL277V

Voltage [V]:
2.5 - 3.0

NOTE:
Keyfob does not function if battery is not installed correctly.

OK or NG

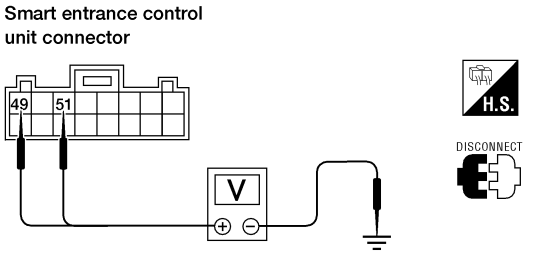
OK	▶	Check keyfob battery terminals for corrosion and damage.
NG	▶	Replace battery.

POWER SUPPLY AND GROUND CIRCUIT CHECK

=NGEL0115S04

1	CHECK MAIN POWER SUPPLY CIRCUIT FOR CONTROL UNIT

1. Disconnect smart entrance control unit harness connector.
2. Check voltage between smart entrance control unit harness connector M112 terminals 49 (G) and 51 (W/R), and ground.



Battery voltage should exist.

LEL051A

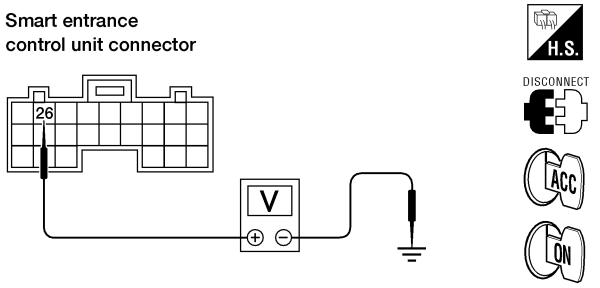
Refer to "Wiring Diagram —KEYLES—", EL-206.

OK or NG

OK	▶	GO TO 2.
NG	▶	**Check the following.** ● 40A fusible link (letter **f**, located in fuse and fusible link box) ● 7.5A fuse [No. 28, located in fuse block (J/B)] ● M12 circuit breaker ● Harness for open or short between smart entrance control unit and fuse ● Harness for open or short between smart entrance control unit and circuit breaker

2	CHECK IGNITION SWITCH ACC CIRCUIT

1. Disconnect smart entrance control unit harness connector.
2. Check voltage between smart entrance control unit harness connector M111 terminal 26 (G) and ground while ignition switch is in ACC or ON position.



Battery voltage should exist.

LEL052A

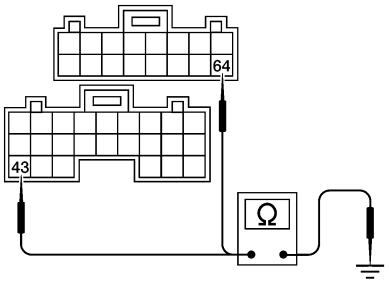
Refer to "Wiring Diagram —KEYLES—", EL-206.

OK or NG

OK	▶	GO TO 3.
NG	▶	**Check the following.** ● 7.5A fuse [No. 20, located in fuse block (J/B)] ● Harness for open or short between smart entrance control unit and fuse

3	CHECK GROUND CIRCUIT FOR CONTROL UNIT

Check continuity between smart entrance control unit connector M111 terminal 43 (B) and M112 terminal 64 (B) and ground.



Continuity should exist

WEL332A

Refer to "Wiring Diagram —KEYLES—", EL-206.

OK or NG

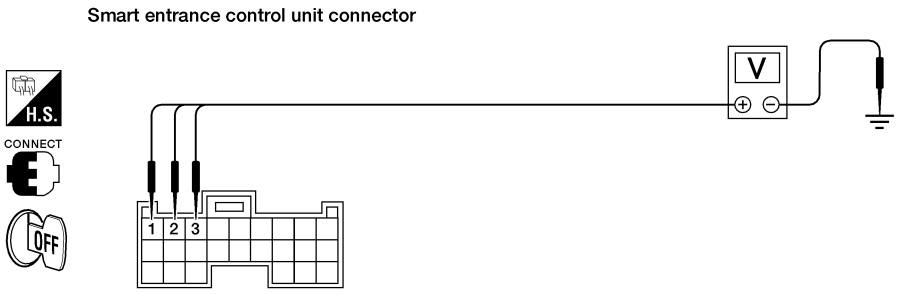
OK	▶	Power supply and ground circuits are OK.
NG	▶	Check ground harness.

DOOR SWITCH CHECK

=NGEL0115S05

1	CHECK DOOR SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit connector M110 terminals 1 (G/R), 2 (G/B) or 3 (R/B) and ground.



Voltage [V]:
Door is closed - Approx. 12
Door is open - Approx. 0

LEL028A

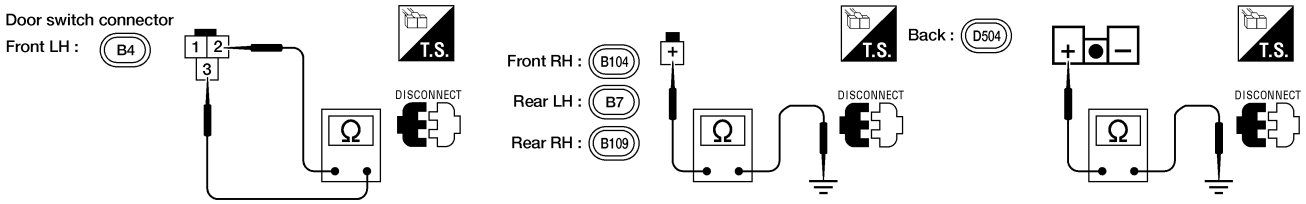
Refer to "Wiring Diagram —KEYLES—", EL-206.

OK or NG

OK	▶	Door switch is OK.
NG	▶	GO TO 2.

2	CHECK DOOR SWITCH

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



AEL651C

Continuity:
Front door switch LH - terminals 2 and 3
Door switch is pressed - No
Door switch is released - Yes
Front door switch RH, back door switch or rear door switch LH or RH - terminal + and ground
Door switch is pressed - No
Door switch is released - Yes

OK or NG

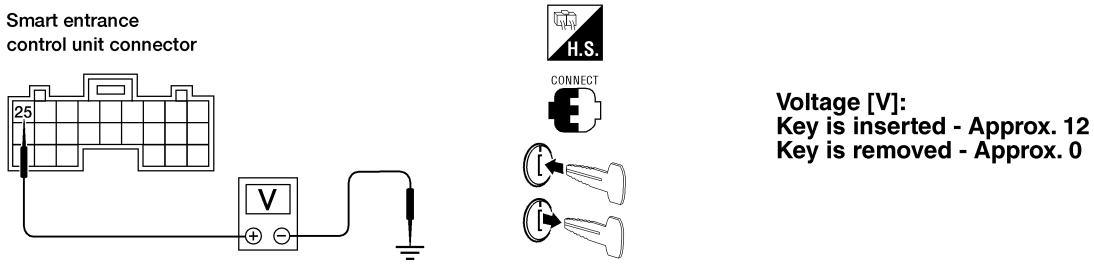
OK	▶	**Check the following.** ● Door switch ground circuit (front door LH, back door) or door switch ground condition ● Harness for open or short between smart entrance control unit and door switch
NG	▶	Replace door switch.

KEY SWITCH (INSERTED) CHECK

=NGEL0115S07

1	CHECK KEY SWITCH INPUT SIGNAL

1. Disconnect smart entrance control unit harness connector.
2. Check voltage between smart entrance control unit harness connector M111 terminal 25 (W/G) and ground.



Voltage [V]:
Key is inserted - Approx. 12
Key is removed - Approx. 0

LEL053A

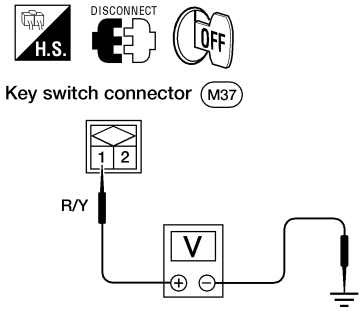
Refer to "Wiring Diagram —KEYLES—", EL-206.

OK or NG

OK	▶	Key switch is OK.
NG	▶	GO TO 2.

2	CHECK KEY SWITCH POWER SUPPLY

1. Disconnect key switch harness connector.
2. Check voltage between key switch harness connector terminal 1 and ground.

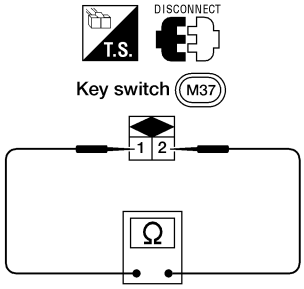


AEL415B

Battery voltage should exist.
Refer to "Wiring Diagram —KEYLES—", EL-206.

OK or NG

OK	▶	GO TO 3.
NG	▶	**Check the following** ● 7.5A fuse [No. 28, located in the fuse block (J/B)] ● Harness for open or short between key switch and fuse

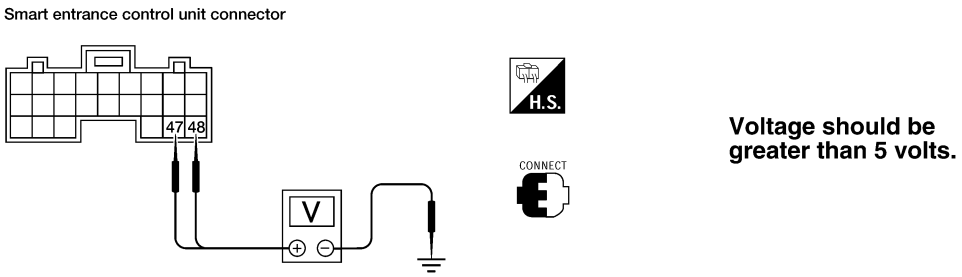
3	CHECK KEY SWITCH (INSERTED)	
Check continuity between terminals 1 and 2.  AEL416B **Continuity:** **Condition of key switch: Key is inserted.** **Yes** **Condition of key switch: Key is removed.** **No** **OK or NG**		
OK	▶	Check harness for open or short between smart entrance control unit and key switch.
NG	▶	Replace key switch.

HAZARD REMINDER CHECK

=NGEL0115S09

1	CHECK HAZARD INDICATOR	
Check if hazard indicator flashes with hazard switch. **Does hazard indicator operate?**		
Yes	▶	GO TO 2.
No	▶	Check "hazard indicator" circuit. Refer to "Trouble Diagnoses", EL-59.

2	CHECK KEYFOB OPERATION	
Check door lock/unlock operation with keyfob. **Does door lock/unlock operate?**		
Yes	▶	GO TO 3.
No	▶	Check keyfob battery. Refer to "KEYFOB BATTERY CHECK", EL-210.

3	CHECK HAZARD REMINDER OUTPUT SIGNAL	
Measure voltage between smart entrance control unit connector M111 terminals 47 (GY) and 48 (P/B) and ground with CONSULT-II or voltmeter when hazard reminder is operated.  **Voltage should be greater than 5 volts.** WEL816A **OK or NG**		
OK	▶	Check harness for open or short between smart entrance control unit and turn signal lamps.
NG	▶	Replace smart entrance control unit.

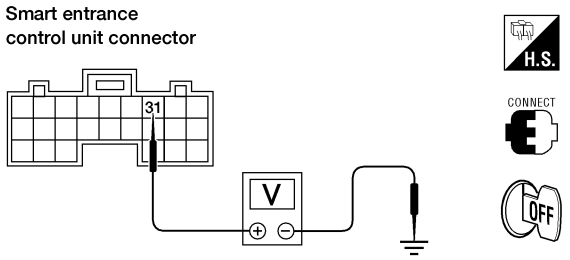
INTERIOR ROOM LAMP OPERATION CHECK

NGEL0115S10

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

2	CHECK INTERIOR ROOM LAMP CIRCUIT

When interior room lamp switch is in "DOOR" position, check voltage across smart entrance control unit connector M111 terminal 31 (R/B) and ground.



Battery voltage should exist.

LEL055A

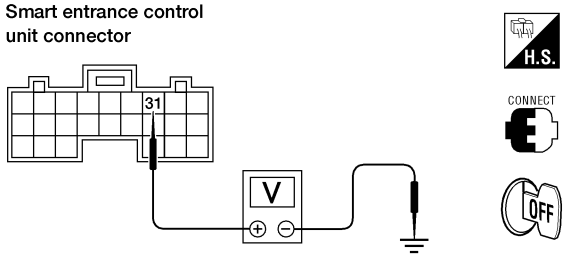
Refer to "Wiring Diagram —KEYLES—", EL-208.

OK or NG

OK	▶	GO TO 3.
NG	▶	Repair harness between smart entrance control unit and interior room lamp.

3	CHECK CONTROL UNIT OUTPUT

Push unlock button of keyfob with key removed and all doors closed, and check voltage across smart entrance control unit connector M111 terminal 31 (R/B) and ground.



Voltage [v]:
Unlock button is pushed.
Approx. 0 (for approx. 30 seconds.)
Unlock button is not pushed.
Battery voltage

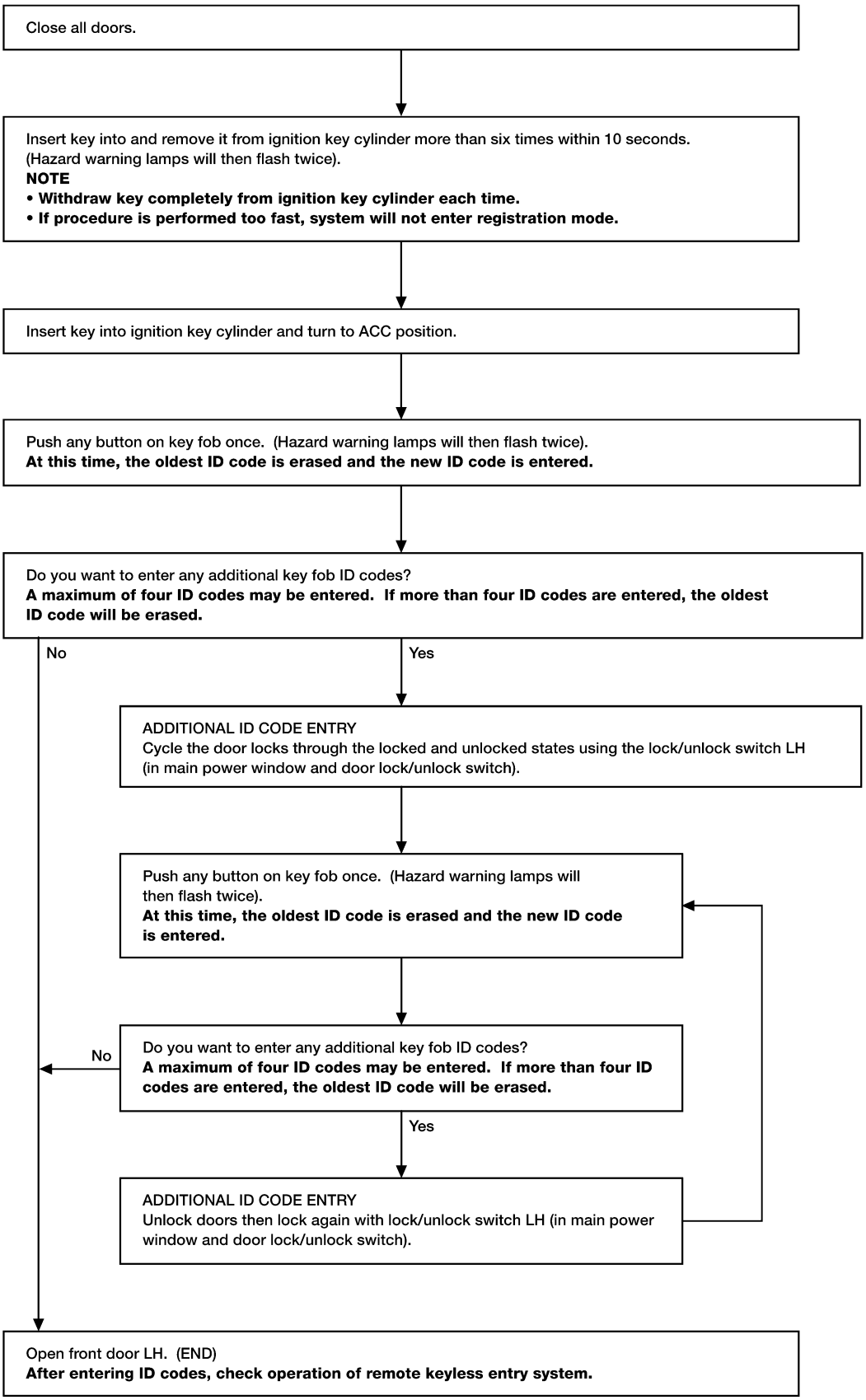
LEL056A

OK or NG

OK	▶	Check system again.
NG	▶	Replace smart entrance control unit.

ID Code Entry Procedure

NGEL0117



WEL806A

NOTE:

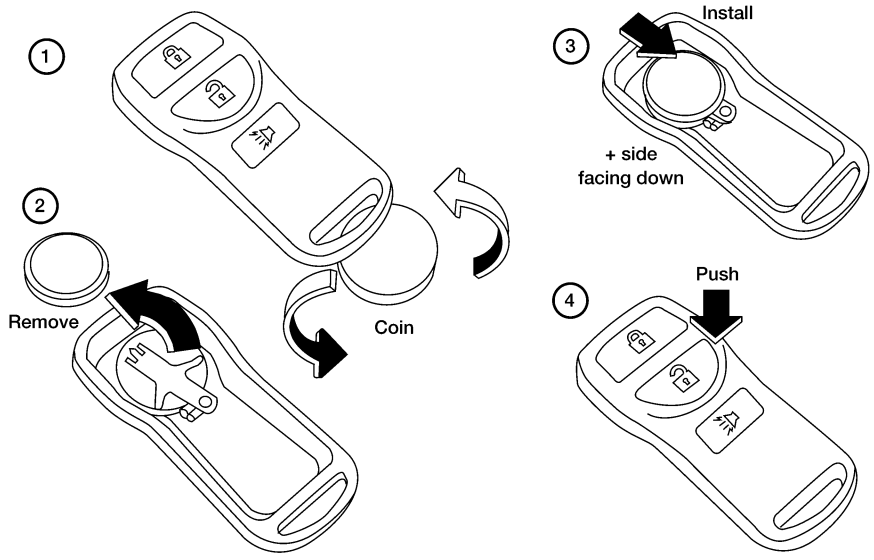
- If a keyfob is lost, the ID code of the lost keyfob must be erased to prevent unauthorized use.
  To erase all ID codes in memory, register one ID code (keyfob) four times. After all ID codes are erased, the ID codes of all remaining and/or new keyfobs must be re-registered.
- When registering an additional remote controller, the existing ID codes in memory may or may not be erased. If four ID codes are stored in memory when an additional code is registered, only the oldest code is erased. If less than four ID codes are stored in memory when an additional ID code is registered, the new ID code is added and no ID codes are erased.
- If you need to activate more than two additional new keyfobs, repeat the procedure "ADDITIONAL ID CODE ENTRY" for each new keyfob.
- Entry of a maximum of four ID codes is allowed. When more than four ID codes are entered, the oldest ID code will be erased.
- If an ID code has already been registered in the memory, the same ID code can be entered in the memory again. Each registration of an ID code counts as an additional code.

Keyfob Battery Replacement

NGEL0118

NOTE:

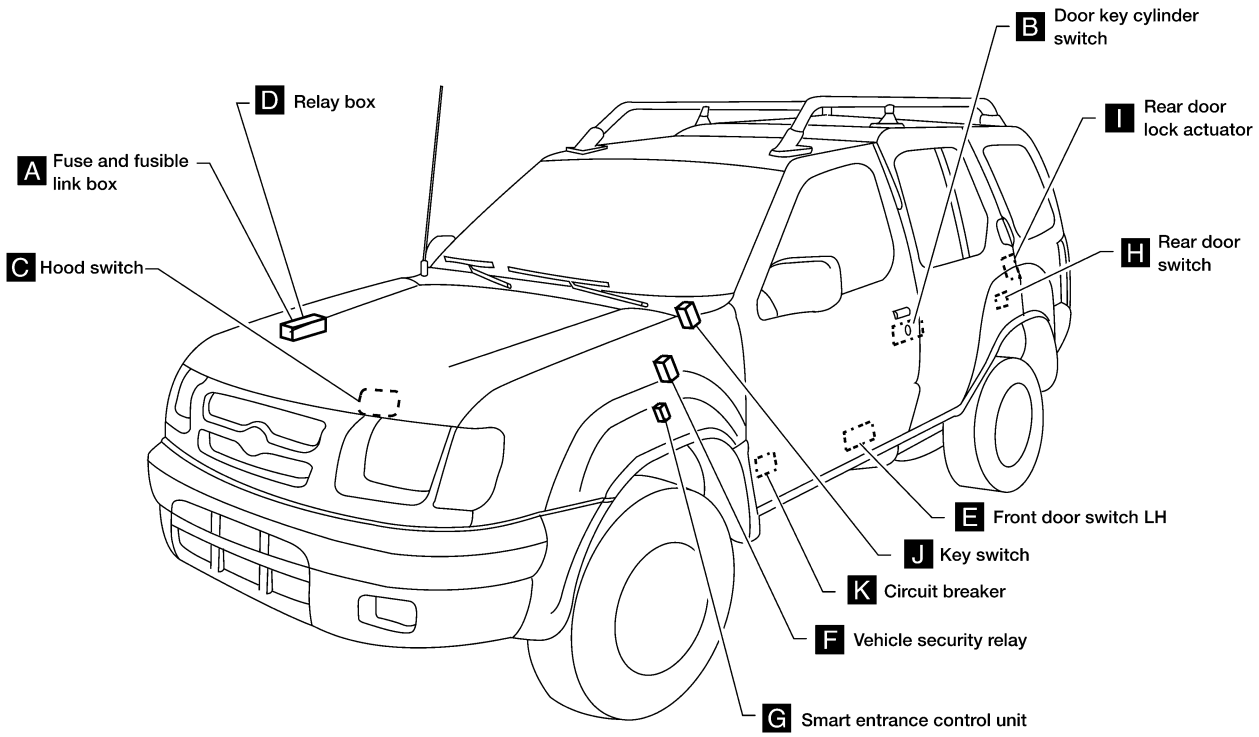
- Be careful not to touch the circuit board or battery terminal.
- The keyfob is water-resistant. However, if it does get wet, wipe it dry immediately.
- After battery replacement, press the keyfob buttons two or three times to check their operation.



WEL911A

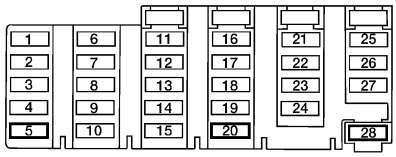
Component Parts and Harness Connector Location

NGEL0119

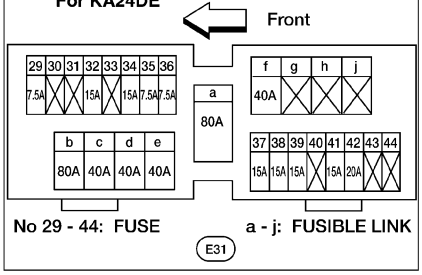


WEL949A

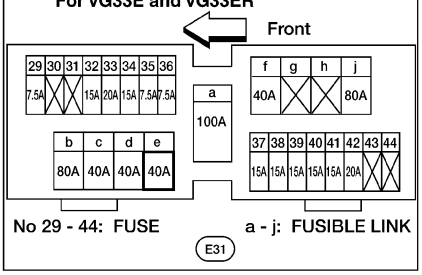
Fuse block (J/B)



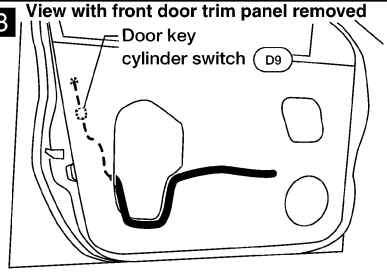
A Fuse and fusible link box
For KA24DE



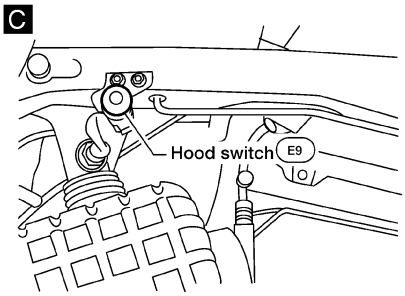
A Fuse and fusible link box
For VG33E and VG33ER



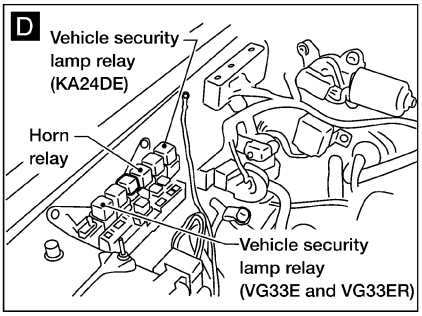
B View with front door trim panel removed



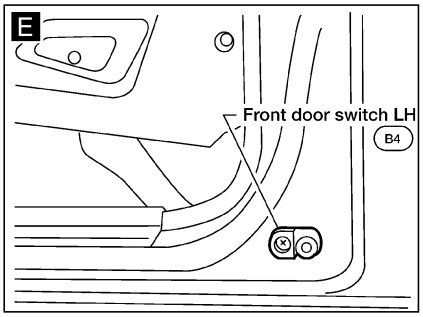
C



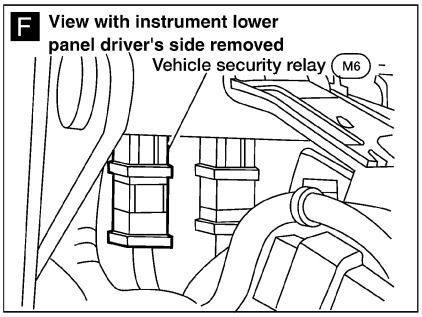
D



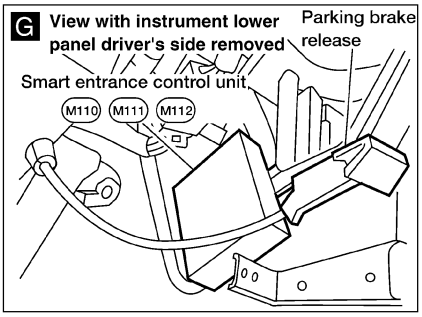
E



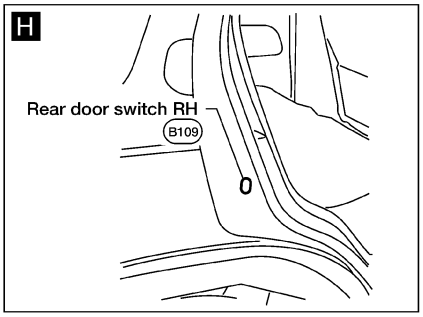
F View with instrument lower
panel driver's side removed



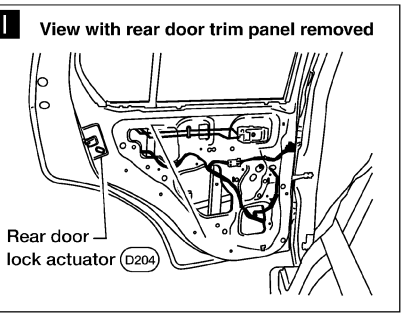
G View with instrument lower
panel driver's side removed



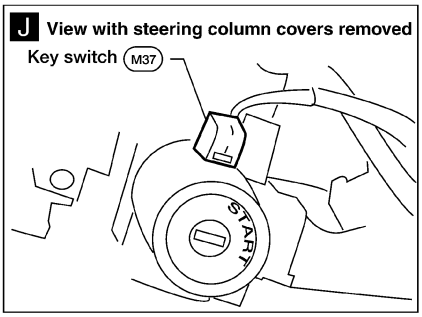
H



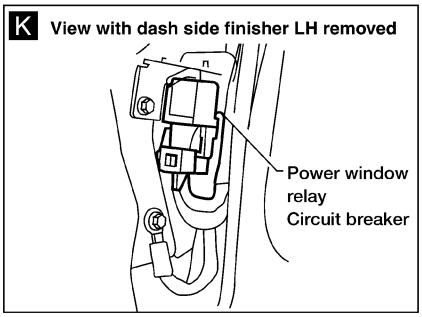
I View with rear door trim panel removed

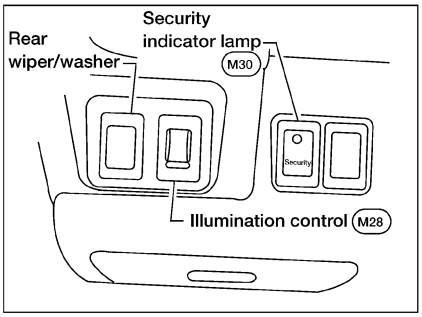


J View with steering column covers removed



K View with dash side finisher LH removed





WEL139B

System Description

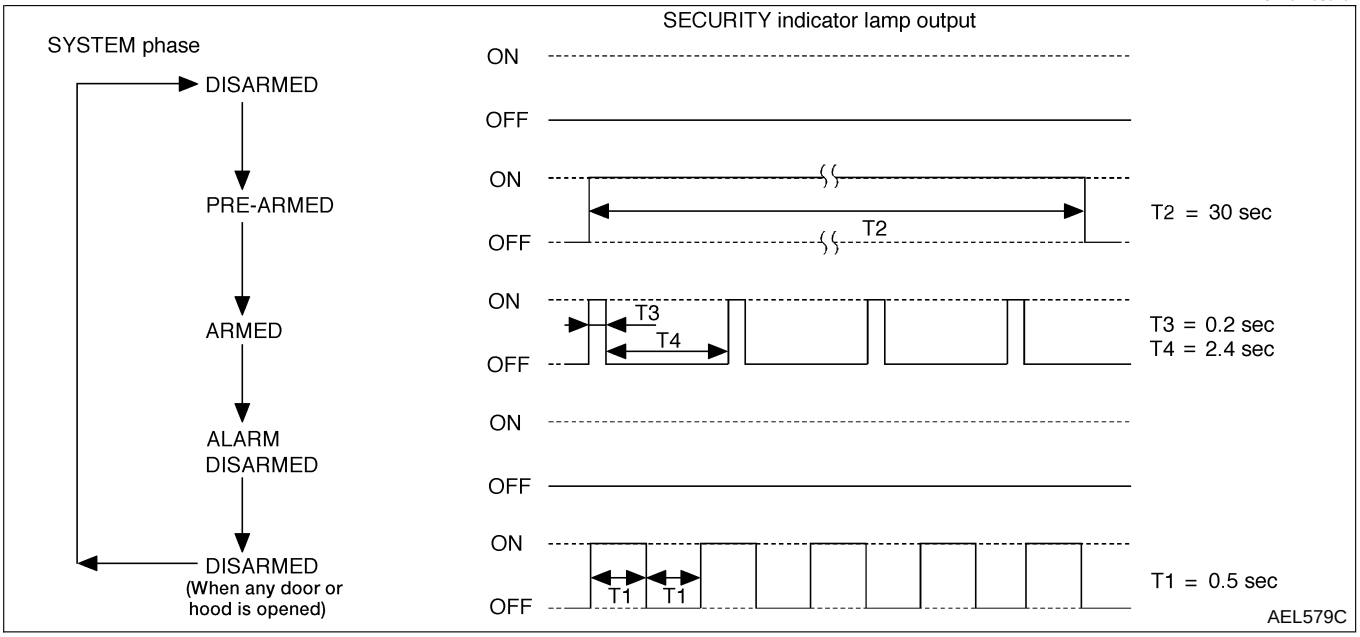
NGEL0120

DESCRIPTION

NGEL0120S01

1. Operation Flow

NGEL0120S0101



2. Setting the Vehicle Security System

NGEL0120S0102

Initial condition

1) Close all doors.
2) Close hood.

Disarmed phase

The vehicle security system is in the disarmed phase when any door(s) or hood is opened. The security indicator lamp blinks every second.

Pre-armed phase and armed phase

The vehicle security system turns into the “pre-armed” phase when hood and all doors are closed and the doors are locked by key or keyfob. (The security indicator lamp illuminates.)
After about 30 seconds, the system automatically shifts into the “armed” phase (the system is set). (The security indicator lamp blinks every 2.6 seconds.)

3. Canceling the Set Vehicle Security System

NGEL0120S0103

When the doors are unlocked with the key or keyfob, the armed phase is canceled.

4. Activating the Alarm Operation of the Vehicle Security System

NGEL0120S0104

Make sure the system is in the armed phase. (The security indicator lamp blinks every 2.6 seconds.)
When the following operation 1) or 2) is performed, the horn, and headlamps operate intermittently for about 50 seconds. (At the same time, the system disconnects the starting system circuit.)

1) Engine hood or any door is opened before unlocking door with key or keyfob.
2) Door is unlocked without using key or keyfob (applies to early production models).

POWER SUPPLY AND GROUND

NGEL0120S07

Power is supplied at all times

- through 15A fuse [No. 37, located in the fuse block (J/B)]
- to vehicle security lamp relay terminal 7.
- through 15A fuse [No. 38, located in the fuse block (J/B)]
- to security lamp relay terminal 5.
- through 7.5A fuse [No. 28, located in the fuse block (J/B)]
- to smart entrance control unit terminal 49
- to key switch terminal 1 and
- to security indicator lamp terminal 1.

With the ignition switch in the ACC or ON position, power is supplied
- through 7.5A fuse [No. 20, located in the fuse block (J/B)]
- to smart entrance control unit terminal 26.

With the ignition switch in the ON or START position, power is supplied
- through 10A fuse [No. 5, located in the fuse block (J/B)]
- to smart entrance control unit terminal 27.

Ground is supplied
- to smart entrance control unit terminals 43 and 64
- through body grounds M14 and M68.

INITIAL CONDITION TO ACTIVATE THE SYSTEM

NGEL0120S02

The operation of the vehicle security system is controlled by the doors and hood.
To activate the vehicle security system, the smart entrance control unit must receive signals indicating the doors and hood are closed and the doors are locked.
When a door is open, smart entrance control unit terminal 1, 2, or 3 receives a ground signal from the corresponding door switch.
When the hood is open, ground is supplied
- to smart entrance control unit terminal 6
- through hood switch terminal +
- through hood switch terminal –
- through body grounds E12 and E54.

When smart entrance control unit receives lock signal from key cylinder or keyfob and none of the described conditions exist, the vehicle security system will automatically shift to armed phase.

VEHICLE SECURITY SYSTEM ACTIVATION (WITH KEY OR KEYFOB USED TO LOCK DOORS)

NGEL0120S03

If the key is used to lock doors, ground is supplied to smart entrance control unit terminal 11
- through front door key cylinder switch LH terminal 1
- through front door key cylinder switch LH terminal 2
- through body grounds M14 and M68 or
- through back door key cylinder switch terminal 1
- through back door key cylinder switch terminal 2
- through body grounds D402 and D404.

If this signal or lock signal from keyfob is received by the smart entrance control unit, the vehicle security system will activate automatically.
Once the vehicle security system has been activated, smart entrance control unit terminal 38 supplies ground to security indicator lamp terminal 2.
The security indicator lamp will illuminate for approximately 30 seconds and then blink.
The vehicle security system is now in armed phase.

VEHICLE SECURITY SYSTEM ALARM OPERATION

NGEL0120S04

The vehicle security system is triggered by
- opening a door
- opening the hood
- unlocking door without using a key or keyfob.

Once the vehicle security system is in armed phase, if the smart entrance control unit receives a ground signal at terminal 1, 2, 3 (door switch) or 6 (hood switch), the horn and headlamps operate intermittently and the starting system is interrupted.
With the ignition switch in the ON or START position, power is supplied
- through 10A fuse [No. 5, located in the fuse block (J/B)].
- to vehicle security relay terminal 2.

If the vehicle security system is triggered, ground is supplied
- to vehicle security relay terminal 1
- through smart entrance control unit terminal 40.

With power and ground supplied, starter motor circuit is interrupted. The starter motor will not crank and the engine will not start.
Power is supplied at all times

- through 15A fuse (No. 37, located in fuse and fusible link box)
- to vehicle security lamp relay terminal 7.
- through 15A fuse (No. 38, located in fuse and fusible link box)
- to vehicle security lamp relay terminal 5.
- through 15A fuse (No. 32, located in fuse and fusible link box)
- to horn relay terminals 1 and 5.

When the vehicle security system is triggered, ground is supplied intermittently

- to vehicle security lamp relay terminal 1
- to horn relay terminal 2
- through smart entrance control unit terminals 39 and 42.

The horn and headlamps operate intermittently.
The alarm automatically turns off after 50 seconds but will reactivate if the vehicle is tampered with again.

VEHICLE SECURITY SYSTEM DEACTIVATION

NGEL0120S05

To deactivate the vehicle security system, a door must be unlocked with the key or keyfob.
When the key is used to unlock the door, smart entrance control unit terminal 10 receives a ground signal

- through front door key cylinder switch LH terminal 3
- through front door key cylinder switch LH terminal 2
- through body grounds M14 and M68 or
- through back door key cylinder switch terminal 3
- through back door key cylinder switch terminal 2
- through body grounds D402 and D404.

When the smart entrance control unit receives this signal or an unlock signal from keyfob, the vehicle security system is deactivated. (Disarmed phase)

PANIC ALARM OPERATION

NGEL0120S06

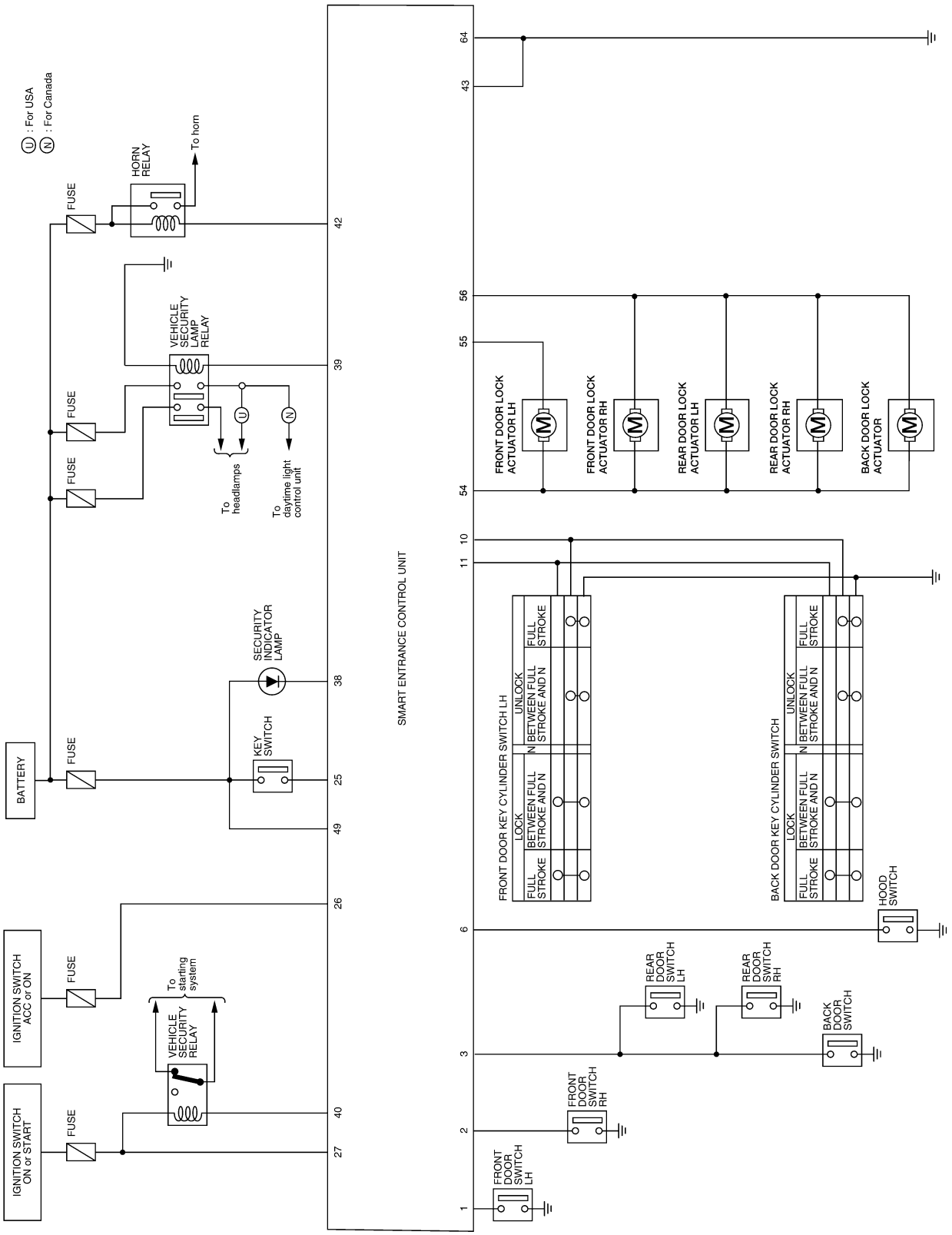
When the remote keyless entry system is triggered, ground is supplied intermittently

- to vehicle security lamp relay terminal 1 and
- to horn relay terminal 2
- through smart entrance control unit terminals 39 and 42.

The horn and headlamps operate intermittently.
The alarm automatically turns off after 30 seconds or when smart entrance control unit receives any signal from keyfob.

Circuit Diagram

NGEL0121



WEL709A

Wiring Diagram — VEHSEC —

NGEL0122

FIG. 1

NGEL0122S01

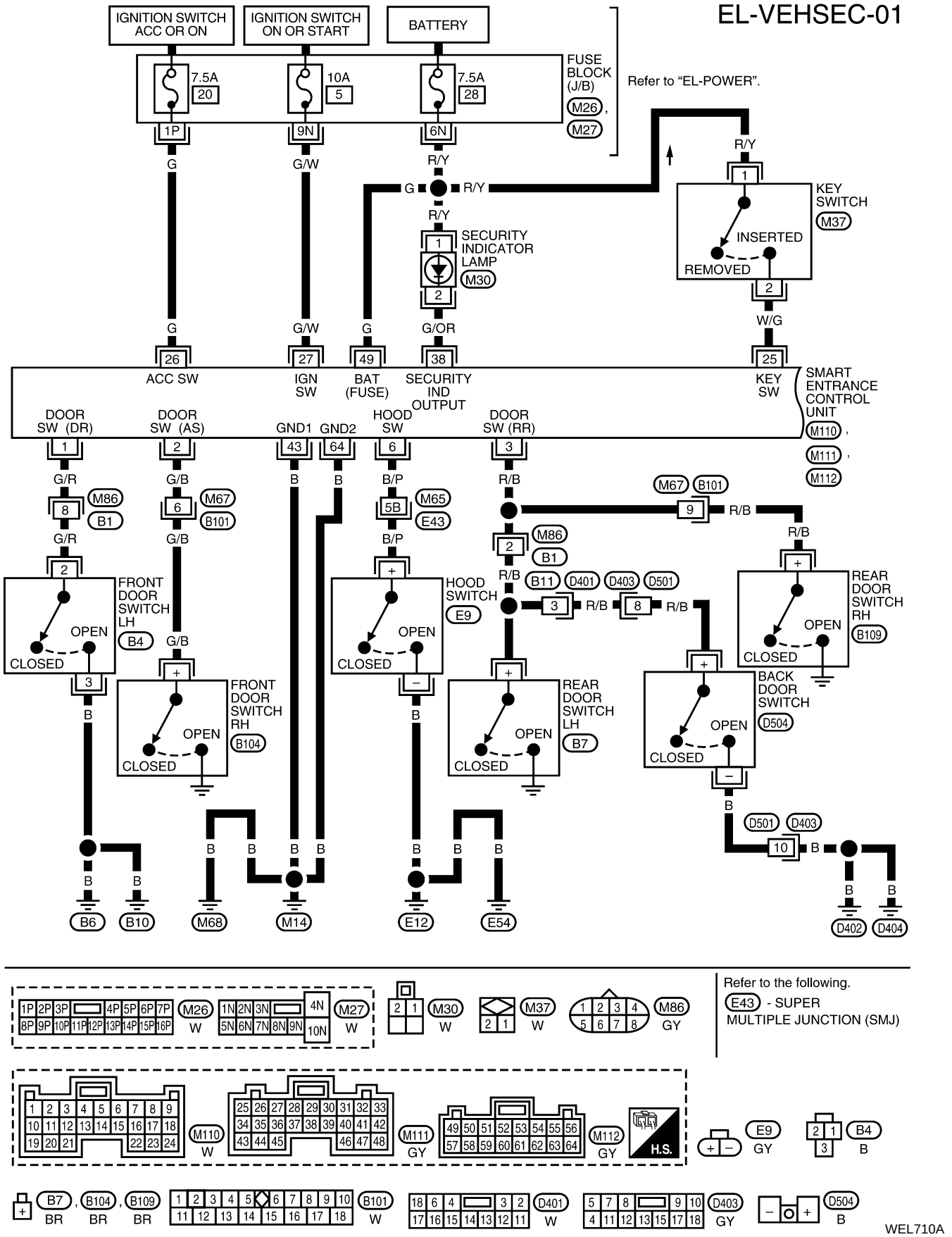
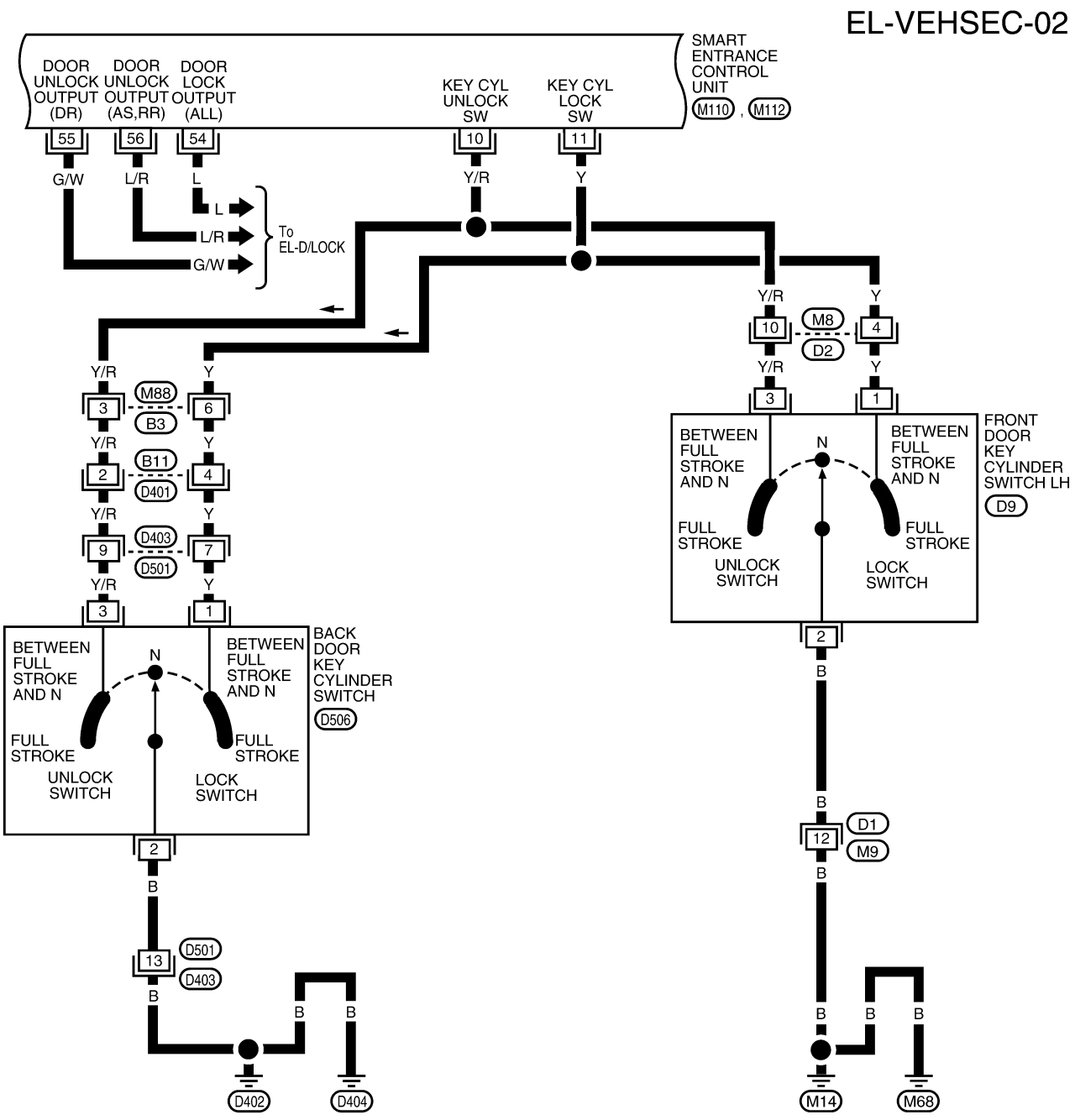
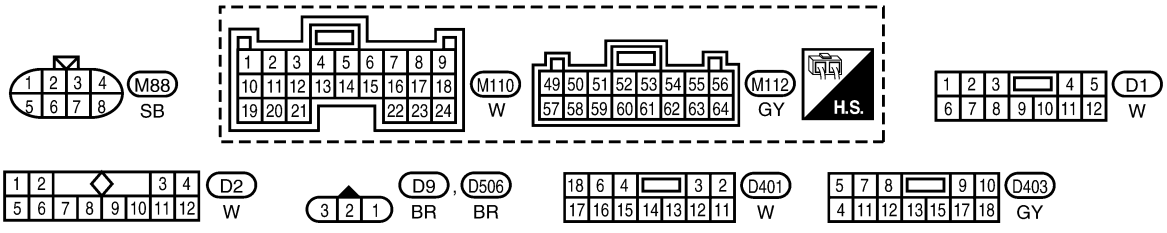


FIG. 2

NGEL0122S02

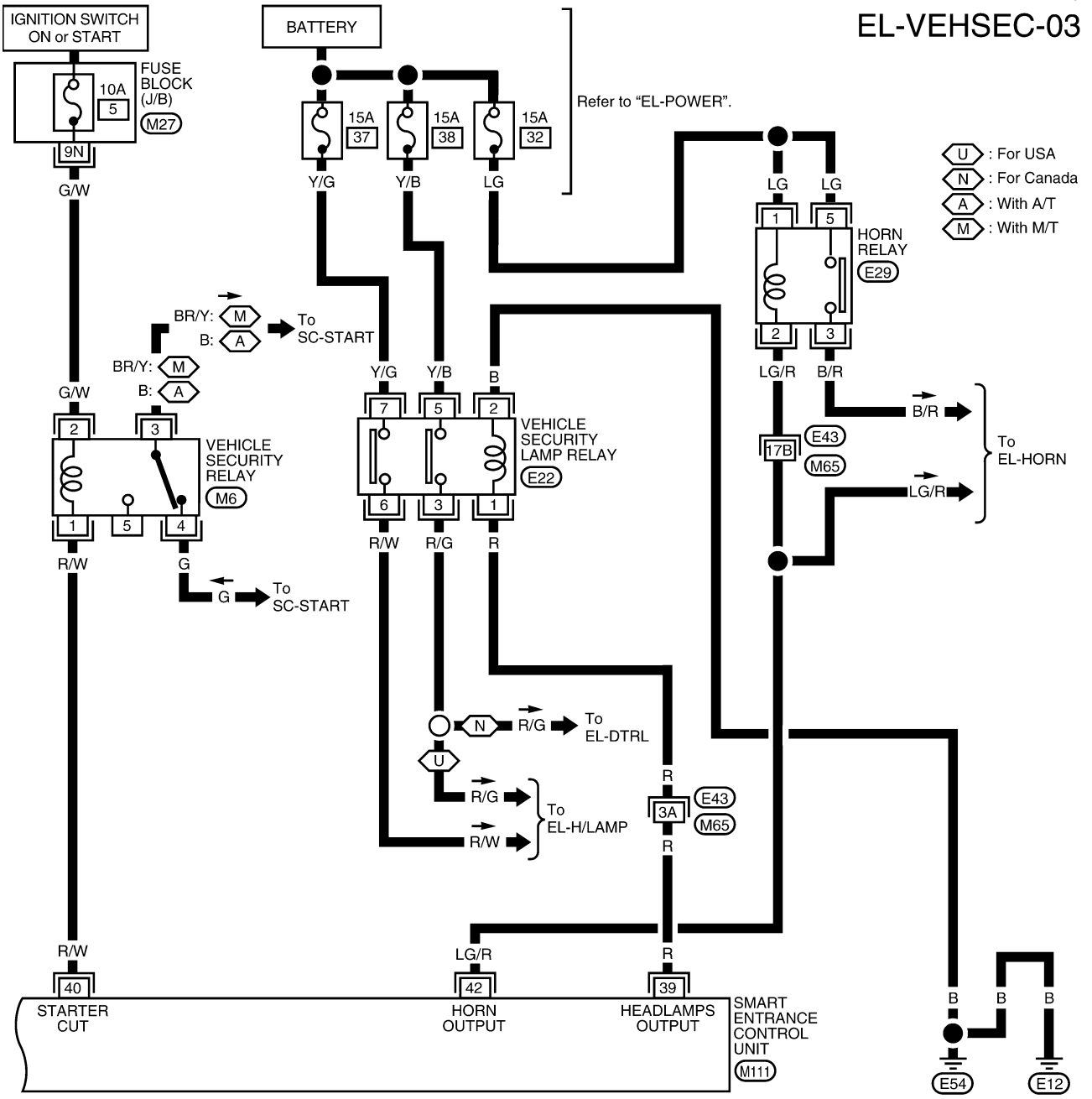


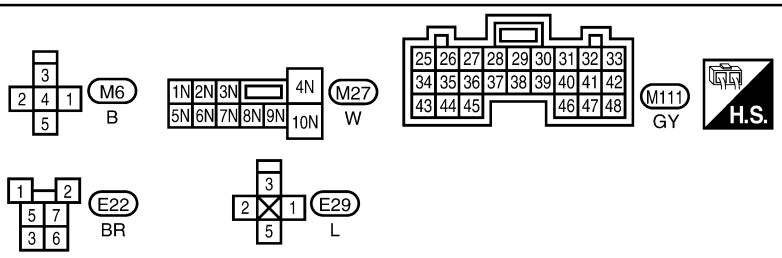


WEL711A

FIG. 3

NGEL0122S03





Refer to the following.
E43 - SUPER MULTIPLE JUNCTION (SMJ)

WEL712A

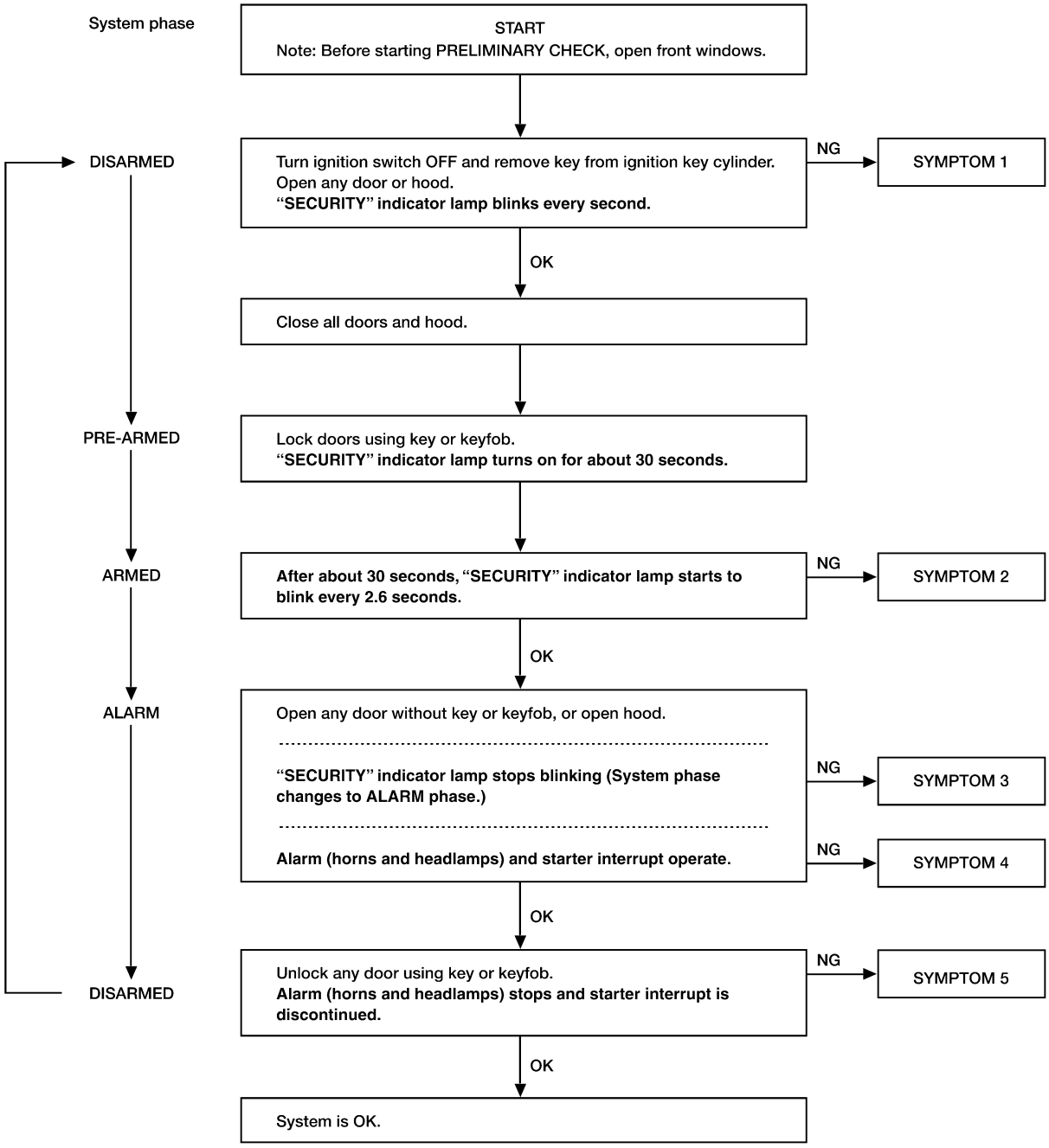
Trouble Diagnoses

NGEL0123

PRELIMINARY CHECK

NGEL0123S01

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



WEL907A

After performing preliminary check, refer to "SYMPTOM CHART", EL-230.

SYMPTOM CHART

NGEL0123S02

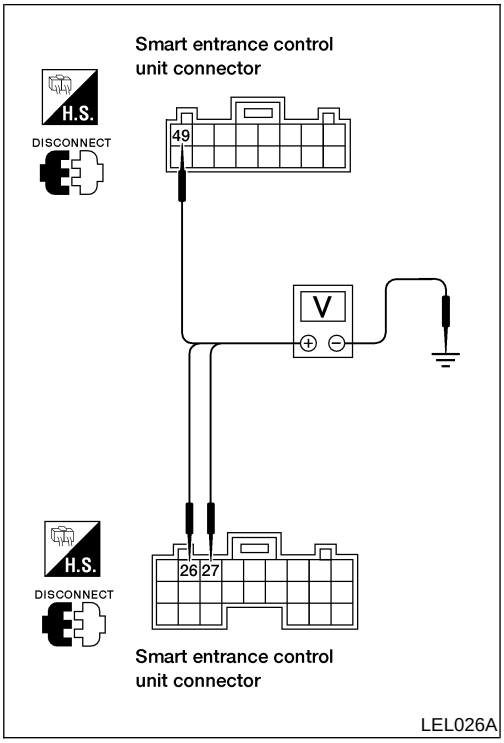
REFERENCE PAGE (EL-)			229	231	232	236	237	238	239	241	209
SYMPTOM			PRELIMINARY CHECK	POWER SUPPLY AND GROUND CIRCUIT CHECK	DOOR AND HOOD SWITCH CHECK	SECURITY INDICATOR LAMP CHECK	DOOR KEY CYLINDER SWITCH CHECK	VEHICLE SECURITY HORN ALARM CHECK	VEHICLE SECURITY HEADLAMP ALARM CHECK	STARTER INTERRUPT SYSTEM CHECK	Check "REMOTE KEYLESS ENTRY" system.
1	Vehicle security indicator does not turn ON or is not blinking.		X	X	X	X					
2	Vehicle security system cannot be set by	All items	X	X	X						
		Door outside key	X				X				
		Keyfob	X								X
3	*1 Vehicle security system does not alarm when ...	Any door is opened.	X		X						
		Any door is unlocked without using key or keyfob.	X								
4	Vehicle security alarm does not activate.	All function	X	X	X						
		Horn alarm	X					X			
		Headlamp alarm	X						X		
		Starter interrupt	X							X	
5	Vehicle security system cannot be canceled by	Door outside key	X				X				
		Keyfob	X								X

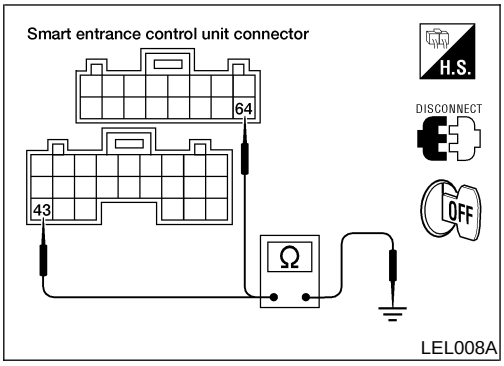
X : Applicable

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

Before starting trouble diagnoses above, refer to "PRELIMINARY CHECK", EL-229.

Symptom numbers in the symptom chart correspond with those of "PRELIMINARY CHECK".





POWER SUPPLY AND GROUND CIRCUIT CHECK

NGEL0123S03

Power Supply Circuit Check

NGEL0123S0301

Terminals			Ignition switch position		
(+)		(−)	OFF	ACC	ON
Connector	Terminal (wire color)				
M112	49 (G)	Ground	Battery voltage	Battery voltage	Battery voltage
M111	27 (G/W)	Ground	0V	0V	Battery voltage
M111	26 (G)	Ground	0V	Battery voltage	Battery voltage

If NG, check the following.

- 7.5A fuse [No. 28, located in fuse block (J/B)]
- 10A fuse [No. 5, located in fuse block (J/B)]
- 7.5A fuse [No. 20, located in fuse block (J/B)]
- Harness for open or short between smart entrance control unit and fuse.

Ground Circuit Check

NGEL0123S0302

Terminals			Continuity
(+)		(−)	
Connector	Terminal (wire color)		
M111	43 (B)	Ground	Yes
M112	64 (B)	Ground	

DOOR AND HOOD SWITCH CHECK

=NGEL0123S04

Door Switch Check

NGEL0123S0401

1	PRELIMINARY CHECK

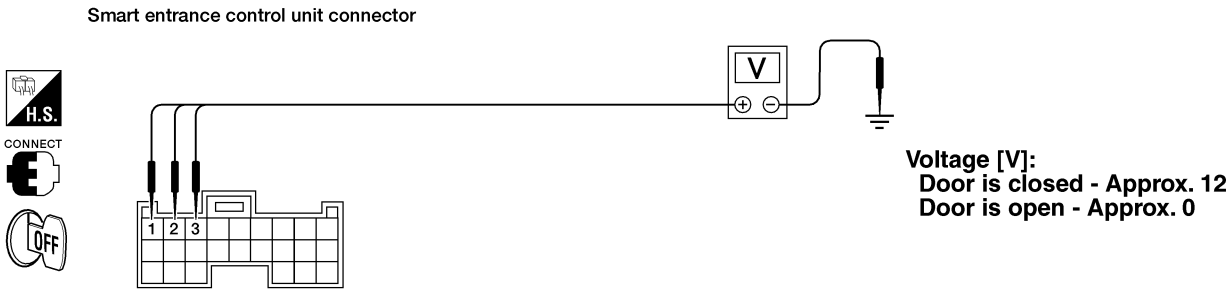
1. Turn ignition switch OFF and remove key from ignition key cylinder.
2. Close all doors and hood.
   "SECURITY" indicator lamp should turn off.
3. Open any door.
   "SECURITY" indicator lamp should blink every second.

OK or NG

OK	▶	Door switch is OK.
NG	▶	GO TO 2.

2	CHECK DOOR SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit connector M110 terminals 1 (G/R), 2 (G/B), or 3 (R/B) and ground.



LEL028A

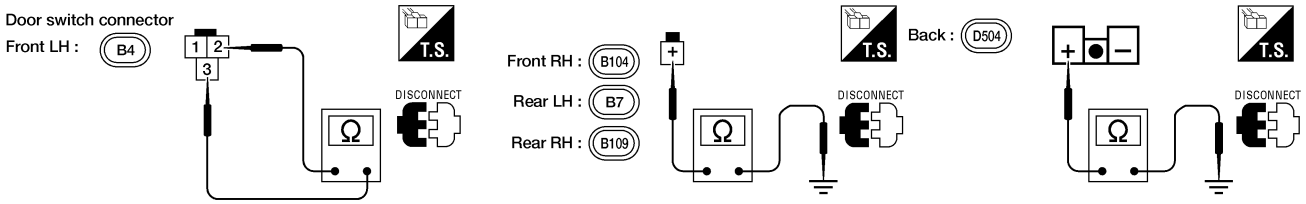
Refer to wiring diagram on EL-226.

OK or NG

OK	▶	Door switch is OK. Refer to "Hood Switch Check", EL-234.
NG	▶	GO TO 3.

3	CHECK DOOR SWITCH

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



AEL651C

Continuity:

Front door switch LH - terminals 2 and 3

Door switch is pressed - No

Door switch is released - Yes

Front door switch RH, back door switch or rear door switch LH or RH - terminal + and ground

Door switch is pressed - No

Door switch is released - Yes

OK or NG

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

Hood Switch Check

=NGEL0123S0402

1	PRELIMINARY CHECK

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

OK or NG

OK	▶	Hood switch is OK.
NG	▶	GO TO 2.

2	CHECK HOOD SWITCH FITTING CONDITION

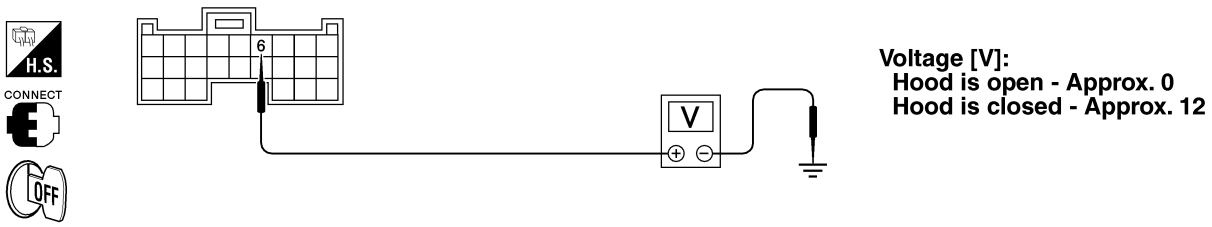
OK or NG

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

3	CHECK HOOD SWITCH INPUT SIGNAL

Check voltage between smart entrance control unit connector M110 terminal 6 (B/P) and ground.

Smart entrance control unit connector



LEL029A

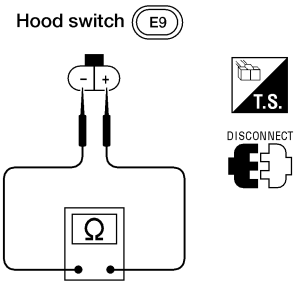
Refer to wiring diagram on EL-226.

OK or NG

OK	▶	Hood switch is OK.
NG	▶	GO TO 4.

4	CHECK HOOD SWITCH

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



AEL430B

Continuity:
Condition: Pressed
No
Condition: Released
Yes

OK or NG

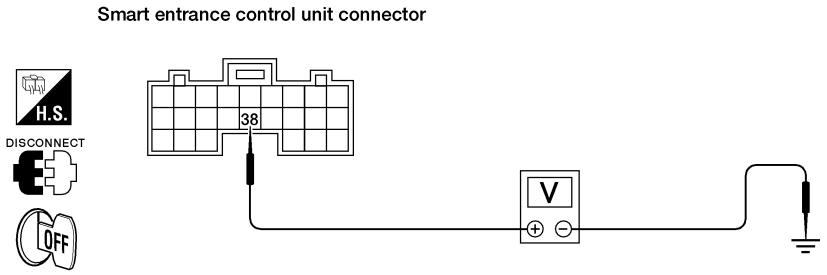
OK	▶	**Check the following.** ● Hood switch ground circuit ● Harness for open or short between smart entrance control unit and hood switch
NG	▶	Replace hood switch.

SECURITY INDICATOR LAMP CHECK

=NGEL0123S05

1	CHECK INDICATOR LAMP OUTPUT SIGNAL

1. Disconnect smart entrance control unit harness connector.
2. Check voltage between smart entrance control unit harness connector M111 terminal 38 (G/OR) and ground.



Battery voltage should exist.

LEL030A

Refer to "Wiring Diagram —VEHSEC—", EL-226.

OK or NG

OK	▶	Security indicator lamp is OK.
NG	▶	GO TO 2.

2	CHECK INDICATOR LAMP

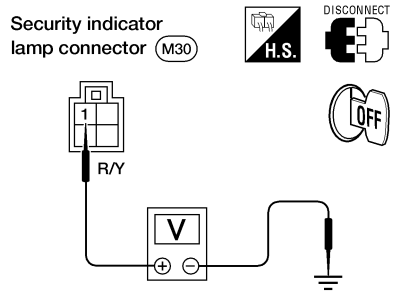
Refer to "Wiring Diagram —VEHSEC—", EL-226.

OK or NG

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

3	CHECK POWER SUPPLY CIRCUIT FOR INDICATOR LAMP

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



AEL145C

Does battery voltage exist?

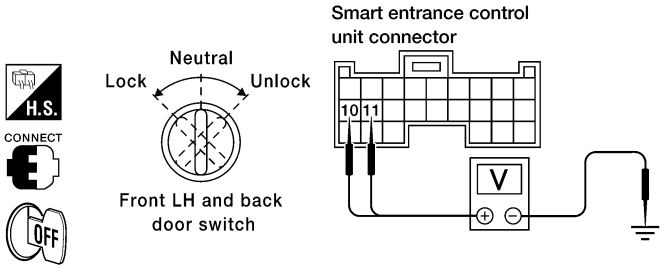
Yes	▶	Check harness for open or short between security indicator lamp and smart entrance control unit.
No	▶	**Check the following.** ● 7.5A fuse [No. 28, located in fuse block (J/B)] ● Harness for open or short between security indicator lamp and fuse

DOOR KEY CYLINDER SWITCH CHECK

=NGEL0123S07

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

Check voltage between smart entrance control unit connector M110 terminal 10 (Y/R) or 11 (Y) and ground.



Terminals (+)	Terminals (–)	Key position	Voltage [V]
11	Ground	Neutral	Approx. 12
		Lock	0
10	Ground	Neutral	Approx. 12
		Unlock	0

WEL328A

Refer to "Wiring Diagram —VEHSEC—" EL-227.

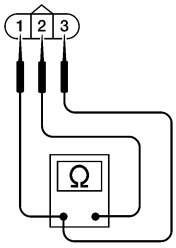
OK or NG

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

2 **CHECK DOOR KEY CYLINDER SWITCH**

1. Disconnect door key cylinder switch harness connector.
2. Check continuity between door key cylinder switch connector D9 terminals 1 and 2, and 3 and 2.

Door key cylinder switch



Terminals	Key position	Continuity
1 – 2	Neutral	No
	Lock	Yes
3 – 2	Neutral	No
	Unlock	Yes

WEL347A

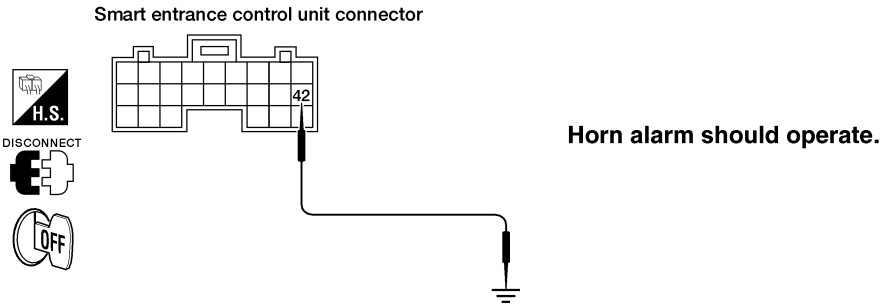
OK or NG

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

VEHICLE SECURITY HORN ALARM CHECK

=NGEL0123S09

1	CHECK HORN OPERATION	
Depress the horn switch to operate horn. **OK or NG**		
OK	▶	GO TO 2.
NG	▶	Refer to "Wiring Diagram — HORN— ", EL-129

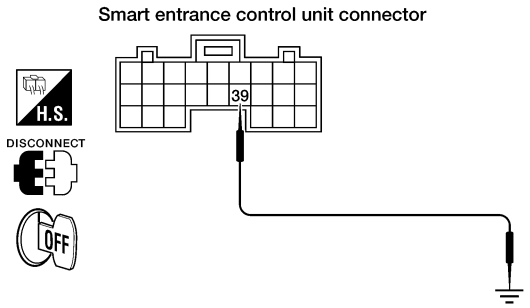
2	CHECK HORN ALARM OPERATION	
1. Disconnect smart entrance control unit harness connector. 2. Apply ground to smart entrance control unit harness connector M111 terminal 42 (LG/R).  LEL033A Refer to "Wiring Diagram —VEHSEC—", EL-228. **OK or NG**		
OK	▶	Replace smart entrance control unit.
NG	▶	Check harness for open or short between horn relay and smart entrance control unit.

VEHICLE SECURITY HEADLAMP ALARM CHECK

=NGEL0123S10

1	CHECK VEHICLE SECURITY HEADLAMP ALARM OPERATION

1. Disconnect smart entrance control unit harness connector.
2. Apply ground to smart entrance control unit harness connector M111 terminal 39 (R).



Headlamp alarm should operate.

LEL422A

Refer to "Wiring Diagram —VEHSEC—", EL-228.

OK or NG

OK	▶	Headlamp alarm is OK.
NG	▶	GO TO 2.

2	CHECK HEADLAMP OPERATION

Do headlamps come on when turning lighting switch ON?

Yes	▶	GO TO 3.
No	▶	Check headlamp system. Refer to "HEADLAMP", EL-35.

3	CHECK VEHICLE SECURITY LAMP RELAY

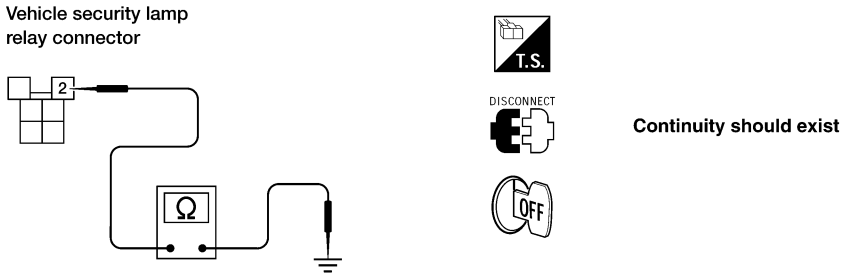
Check vehicle security lamp relay.

OK or NG

OK	▶	GO TO 4.
NG	▶	Replace vehicle security lamp relay.

4	CHECK POWER SUPPLY FOR VEHICLE SECURITY LAMP RELAY

1. Disconnect vehicle security lamp relay harness connector.
2. Check continuity between vehicle security lamp relay harness connector E22 terminal 2 (B) and ground.



Continuity should exist

WEL858A

Refer to "Wiring Diagram —VEHSEC—", EL-228.

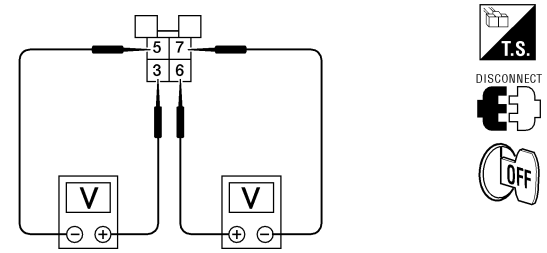
OK or NG

OK	▶	GO TO 5.
NG	▶	**Check the following.** ● Harness for open between vehicle security lamp relay and ground

5	CHECK VEHICLE SECURITY LAMP RELAY CIRCUIT

1. Disconnect vehicle security lamp relay harness connector.
2. Check voltage between vehicle security lamp relay harness connector E22 terminals 3 (R/G) and 5 (Y/B).
   Battery voltage should exist.
3. Check voltage between vehicle security lamp relay harness connector E22 terminals 6 (R/W) and 7 (Y/G).
   Battery voltage should exist.

Vehicle security lamp relay connector



LEL068A

OK or NG

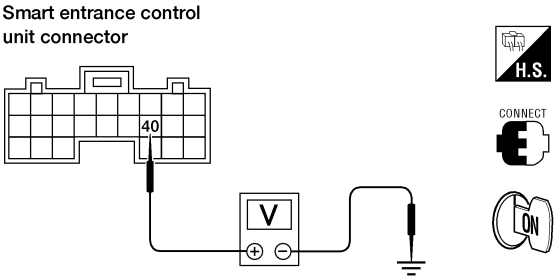
OK	▶	Check harness for open or short between vehicle security lamp relay and smart entrance control unit.
NG	▶	**Check the following.** ● Harness for open or short between fuses and vehicle security lamp relay ● Harness for open or short between vehicle security lamp relay and headlamps

STARTER INTERRUPT SYSTEM CHECK

=NGEL0123S11

1	CHECK STARTER MOTOR INTERRUPT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between smart entrance control unit connector M111 terminal 40 (R/W) and ground.



Voltage [V]:
Except starter interrupted phase - Approx. 12
Starter interrupted phase - Approx. 0

LEL057A

Refer to "Wiring Diagram —VEHSEC—", 228.

OK or NG

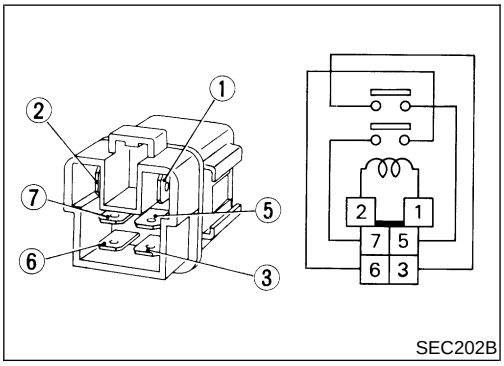
OK	▶	GO TO 2.
NG	▶	**Check the following.** ● 10A fuse [No. 5, located in fuse block (J/B)] ● Harness for open or short between vehicle security relay and fuse ● Harness for open or short between smart entrance control unit and vehicle security relay

2	CHECK VEHICLE SECURITY RELAY

Check vehicle security relay.
Refer to "VEHICLE SECURITY RELAY", 241.

OK or NG

OK	▶	Check system again.
NG	▶	Replace relay.



SEC202B

Electrical Components Inspection

NGEL0214

VEHICLE SECURITY RELAY

NGEL0214S01

Check continuity between terminals 3 and 4.

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

Description

NGEL0124

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

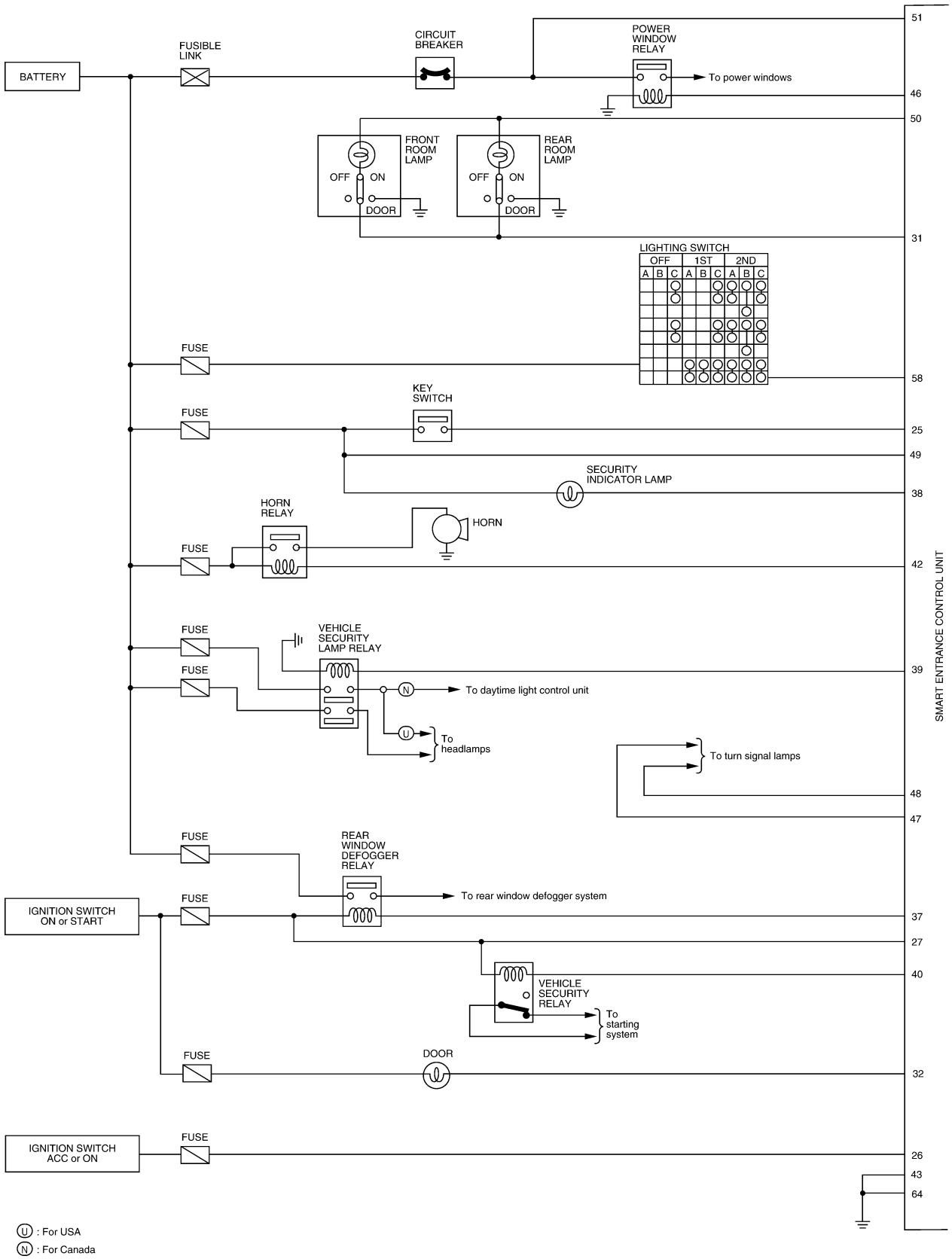
- Warning chime
- Rear window defogger timer
- Power window
- Power door lock
- Remote keyless entry
- Vehicle security
- Room lamp

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

System	Input	Output
Warning chime	Key switch (Insert) Ignition switch (ON) Lighting switch (1st) Seat belt buckle switch Front door switch LH	Warning chime
Rear window defogger timer	Ignition switch (ON or START) Rear window defogger switch	Rear window defogger relay
Power window	Ignition switch (ON) Door switches	Power window relay
Power door lock	Door lock/unlock switch Key switch (insert) Door switches Door key cylinder switches	Door lock actuator
Remote keyless entry	Key switch (Insert) Ignition switch (ACC) Door switches Antenna (keyfob signal) Door lock/unlock switches	Horn relay Vehicle security lamp relay Door lock actuator Room lamp
Vehicle security	Ignition switch (ACC, ON) Door switches Hood switch Door lock/unlock switches Door key cylinder switch (lock/unlock)	Horn relay Vehicle security lamp relay Vehicle security relay (Starter interrupt) Security indicator lamp
Room lamp	Door switches Ignition switch Key switch (insert)	Room lamp

Circuit Diagram

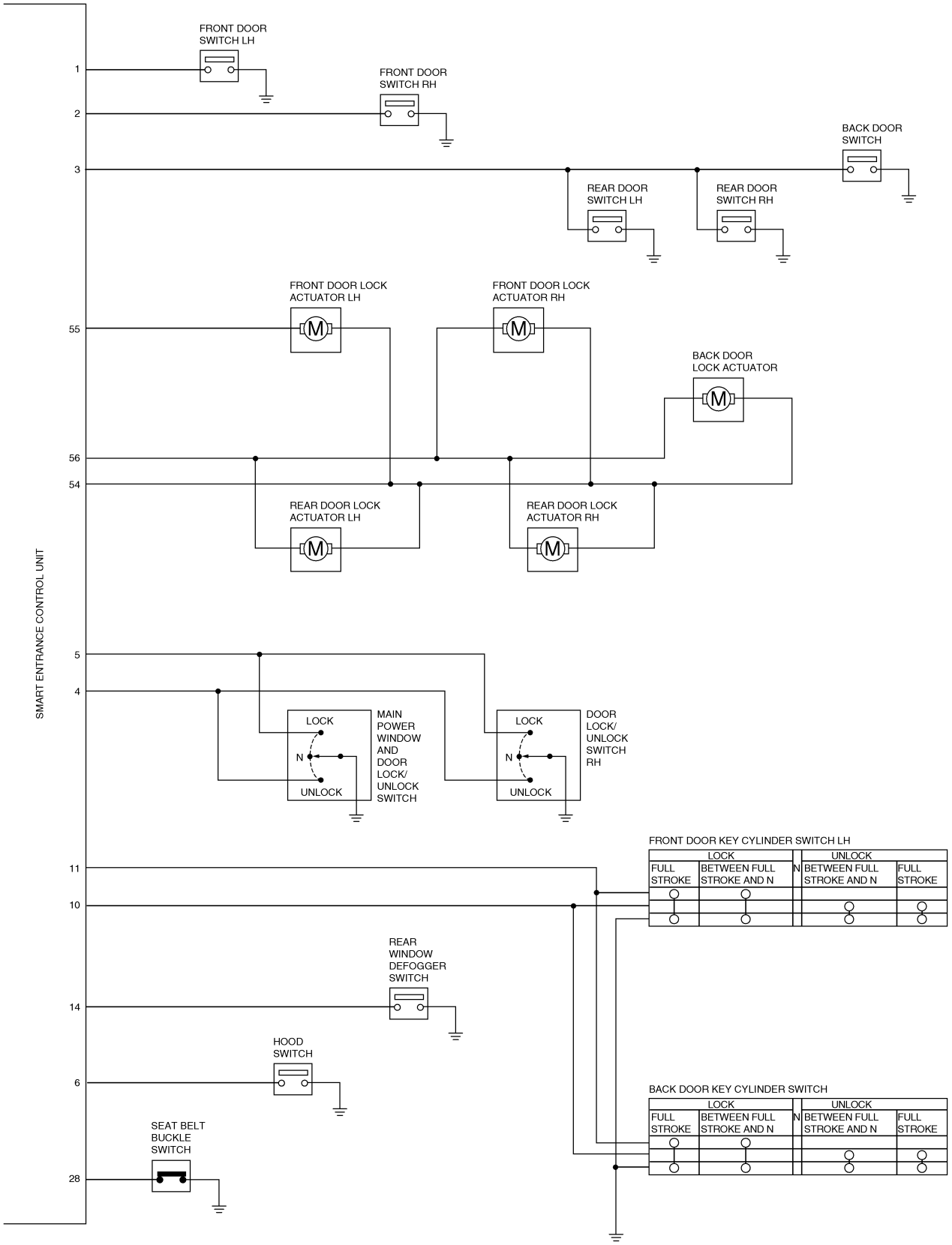
NGEL0125



Ⓤ : For USA
Ⓝ : For Canada

WEL775A

Circuit Diagram (Cont'd)



LEL721

Smart Entrance Control Unit Inspection Table

NGEL0126

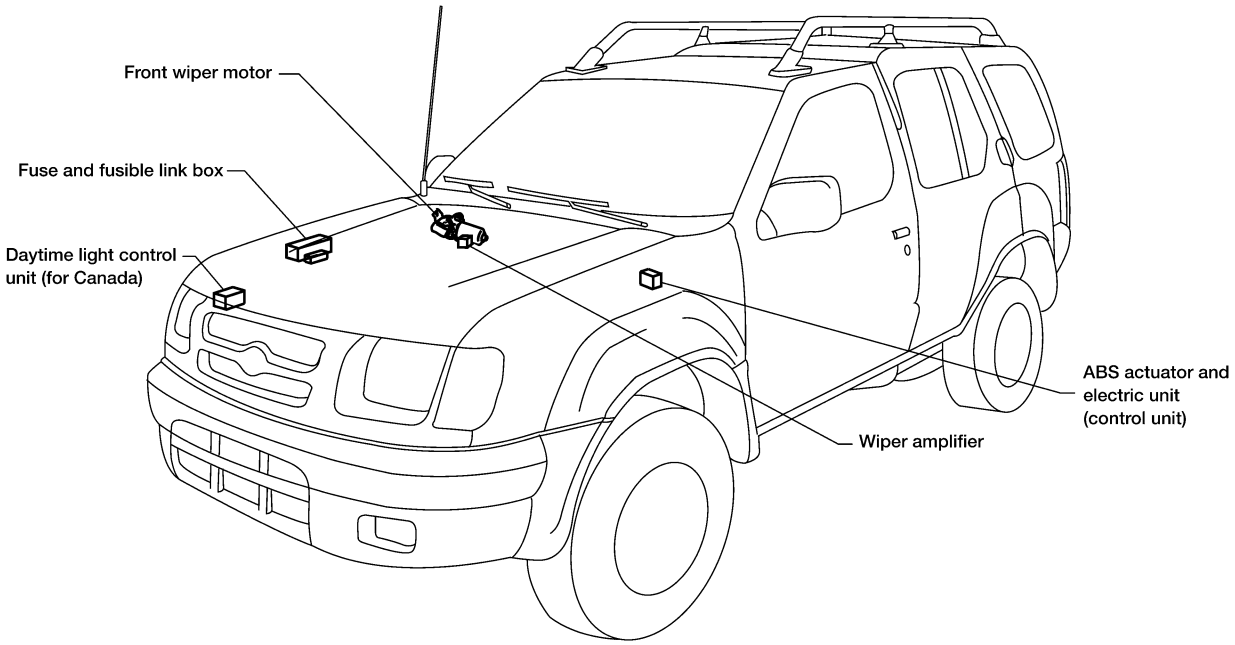
Terminal No.	Wire color	Connections	Operated condition	Voltage (Approximate values)
1	G/R	Front door switch LH	OFF (Closed) → ON (Open)	12V → 0V
2	G/B	Front door switch RH	OFF (Closed) → ON (Open)	12V → 0V
3	R/B	Rear door switch LH and RH, back door switch	OFF (Closed) → ON (Open)	12V → 0V
4	BR	Main power window and door lock/unlock switch, door lock/unlock switch RH	Neutral → Unlock	12V → 0V
5	LG/R	Main power window and door lock/unlock switch, door lock/unlock switch RH	Neutral → Lock	12V → 0V
6	B/P	Hood switch	ON (Open) → OFF (Closed)	0V → 12V
10	Y/R	Front door key cylinder unlock switch LH or back door key cylinder unlock switch	OFF (Neutral) → ON (Unlock)	12V → 0V
11	Y	Front door key cylinder lock switch LH or back door key cylinder lock switch	OFF (Neutral) → ON (Lock)	12V → 0V
14	G/B	Rear window defogger switch	OFF → ON	12V → 0V
25	W/G	Ignition key switch (Insert)	Key inserted → Key removed from ignition key cylinder	12V → 0V
26	G	Ignition switch (ACC)	ACC position	12V
27	G/W	Ignition switch (ON)	Ignition key is in ON position	12V
28	B/P	Seat belt buckle switch	Unfastened → Fastened (Ignition key is in ON position)	0V → 12V
31	R/B	Room lamp	When interior lamp is operated using keyfob. (Interior lamp switch in DOOR position)	12V → 0V
32	R/B	Door ajar indicator lamp	OFF → ON (Ignition key is in ON position)	12V → 0V
37	G/R	Rear window defogger relay	OFF → ON (Ignition key is in ON position)	12V → 0V
38	G/OR	Security indicator lamp	Turns off → Turns on	12V → 0V
39	R	Vehicle security lamp relay	When panic alarm is operated using keyfob or when alarm is activated	12V → 0V
40	R/W	Vehicle security relay (Starter cut)	OFF → ON (Ignition key is in ON position)	12V → 0V
42	R	Horn relay	When panic alarm is operated using keyfob or when alarm is activated	12V → 0V
43	B	Ground	—	—
46	G/W	Power window relay	Ignition key is in ON position → 45 seconds after ignition key is turned to OFF position	12V → 0V
47	GY	Turn signal lamp LH	When doors are locked using keyfob	12V → 0V
48	P/B	Turn signal lamp RH	When doors are locked using keyfob	12V → 0V
49	G	Power source (Fuse)	—	12V
50	R/G	Battery saver (Room lamp)	Turns off → Turns on	12V → 0V
51	W/R	Power source (C/B)	—	12V

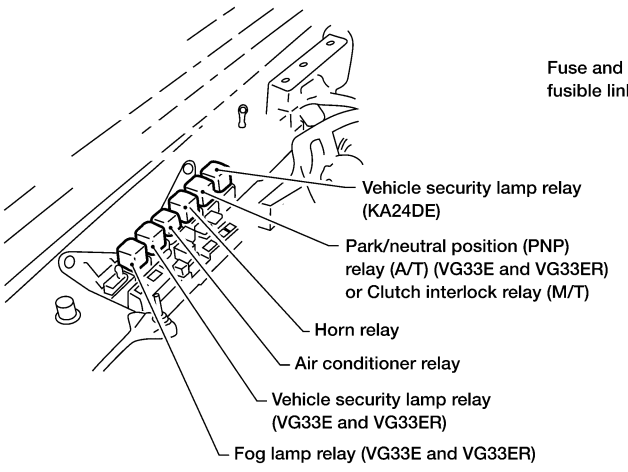
Smart Entrance Control Unit Inspection Table (Cont'd)

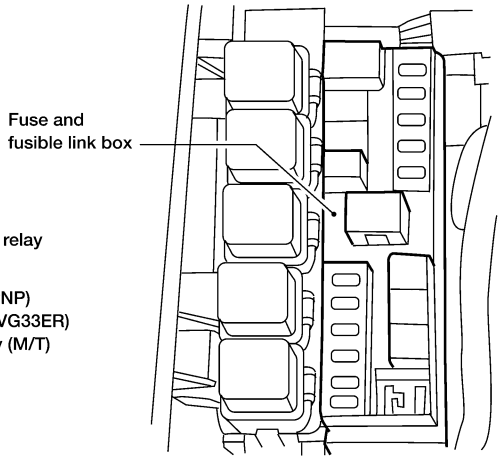
Terminal No.	Wire color	Connections	Operated condition		Voltage (Approximate values)
54	L	Front door lock actuator LH and RH, rear door lock actuator LH and RH	Main power window and door lock/unlock switch, door lock/unlock switch RH	Lock	12V
				Neutral, unlock	0V
55	G/W	Front door lock actuator LH	Main power window and door lock/unlock switch, door lock/unlock switch RH	Unlock	12V
				Neutral, lock	0V
56	L/R	Front door lock actuator RH, rear door lock actuator LH and RH, back door lock actuator	Main power window and door lock/unlock switch, door lock/unlock switch RH	Unlock	12V
				Neutral, lock	0V
58	L/R	Lighting switch	1ST, 2ND positions: ON → OFF		12V → 0V
64	B	Ground	—		—

Engine Compartment

NGEL0129



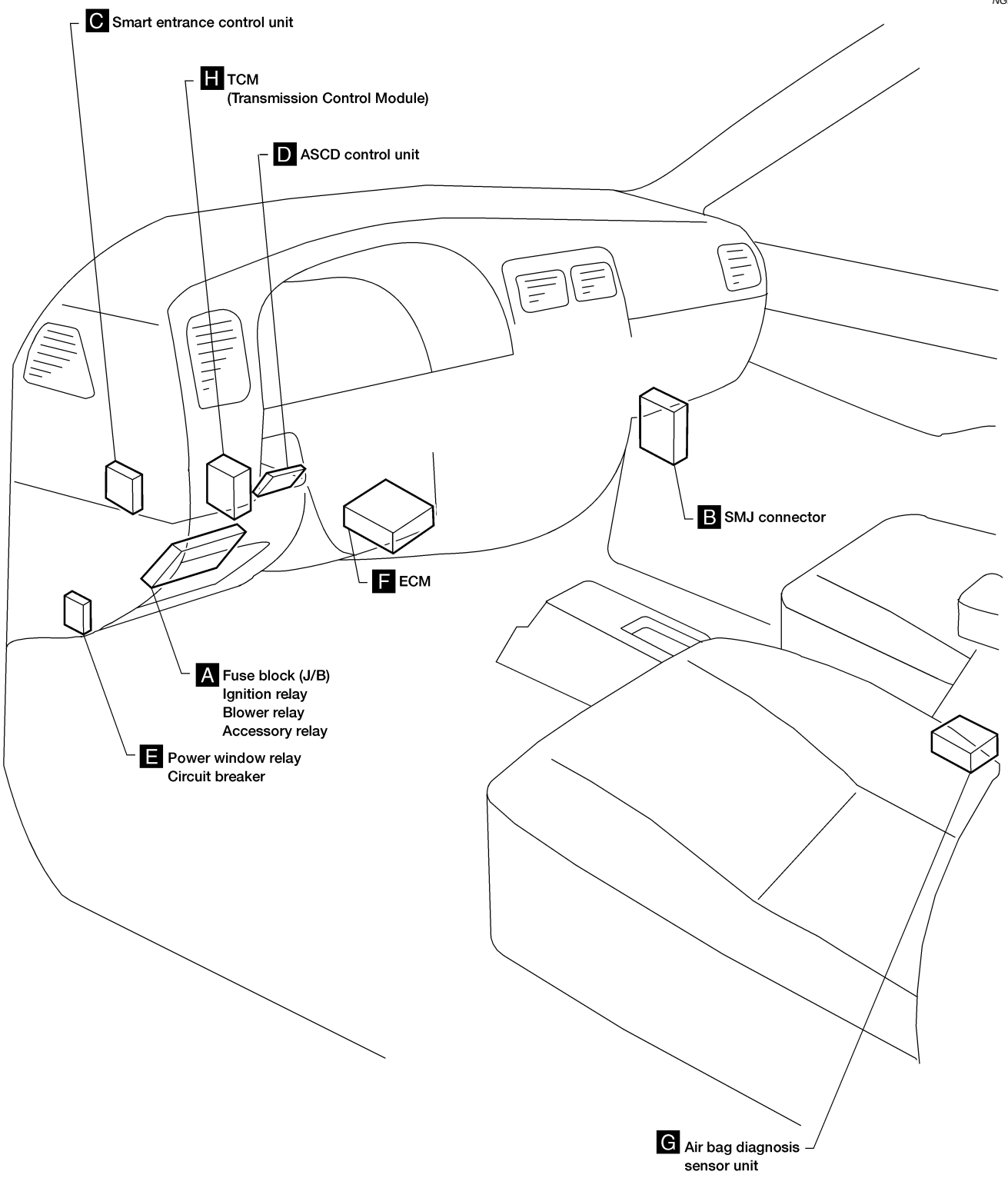




WEL919A

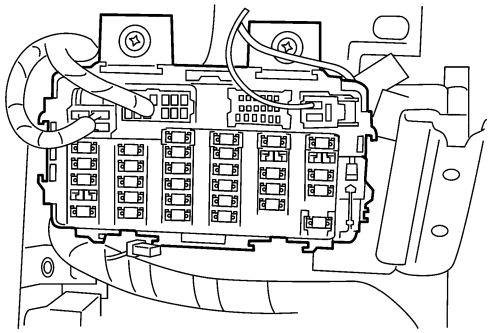
Passenger Compartment

NGEL0130

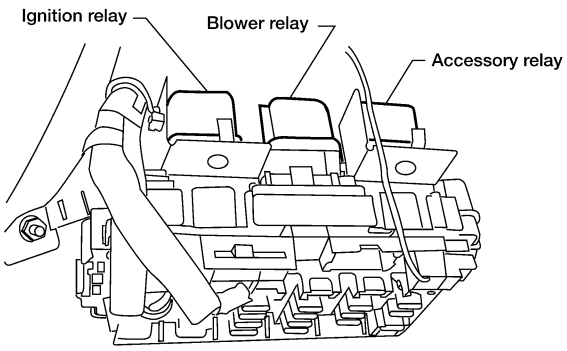


AEL157C

A

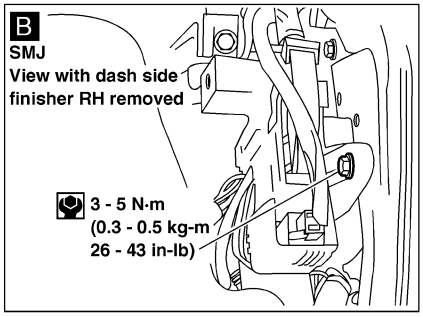


Rear view of fuse block (J/B)

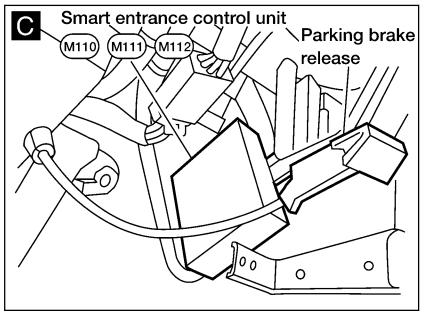


B
SMJ
View with dash side finisher RH removed

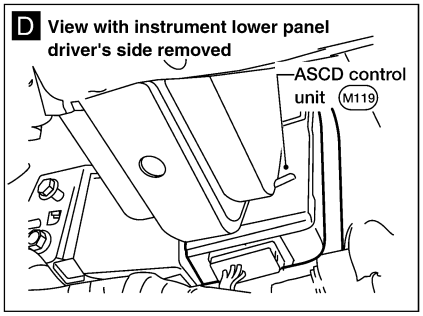
3 - 5 N·m
(0.3 - 0.5 kg-m
26 - 43 in-lb)



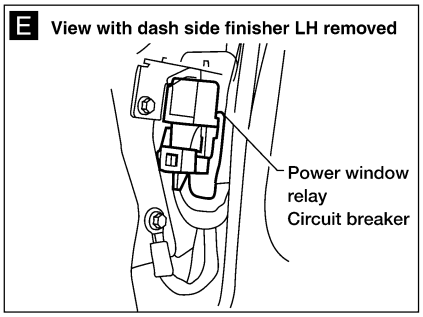
C Smart entrance control unit



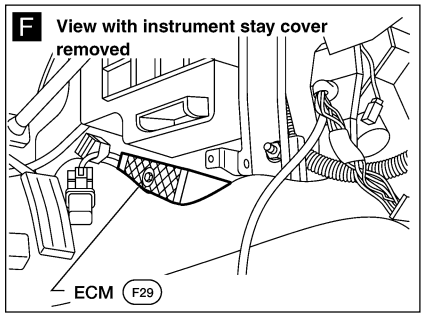
D View with instrument lower panel driver's side removed



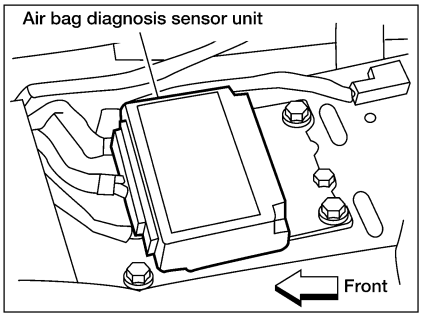
E View with dash side finisher LH removed



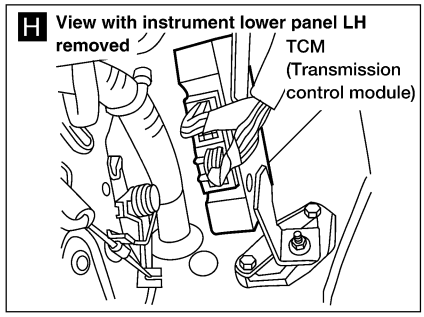
F View with instrument stay cover removed



Air bag diagnosis sensor unit



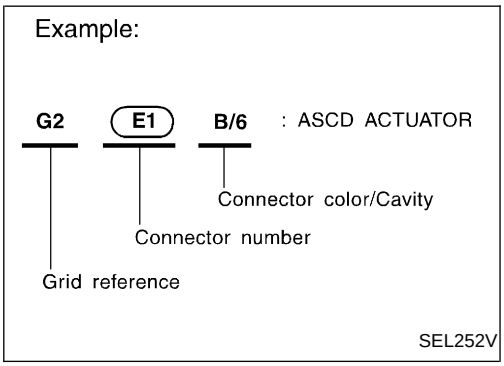
H View with instrument lower panel LH removed



WEL140B

How to Read Harness Layout

NGEL0172



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

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

TO USE THE GRID REFERENCE

NGEL0172S01

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

CONNECTOR SYMBOL

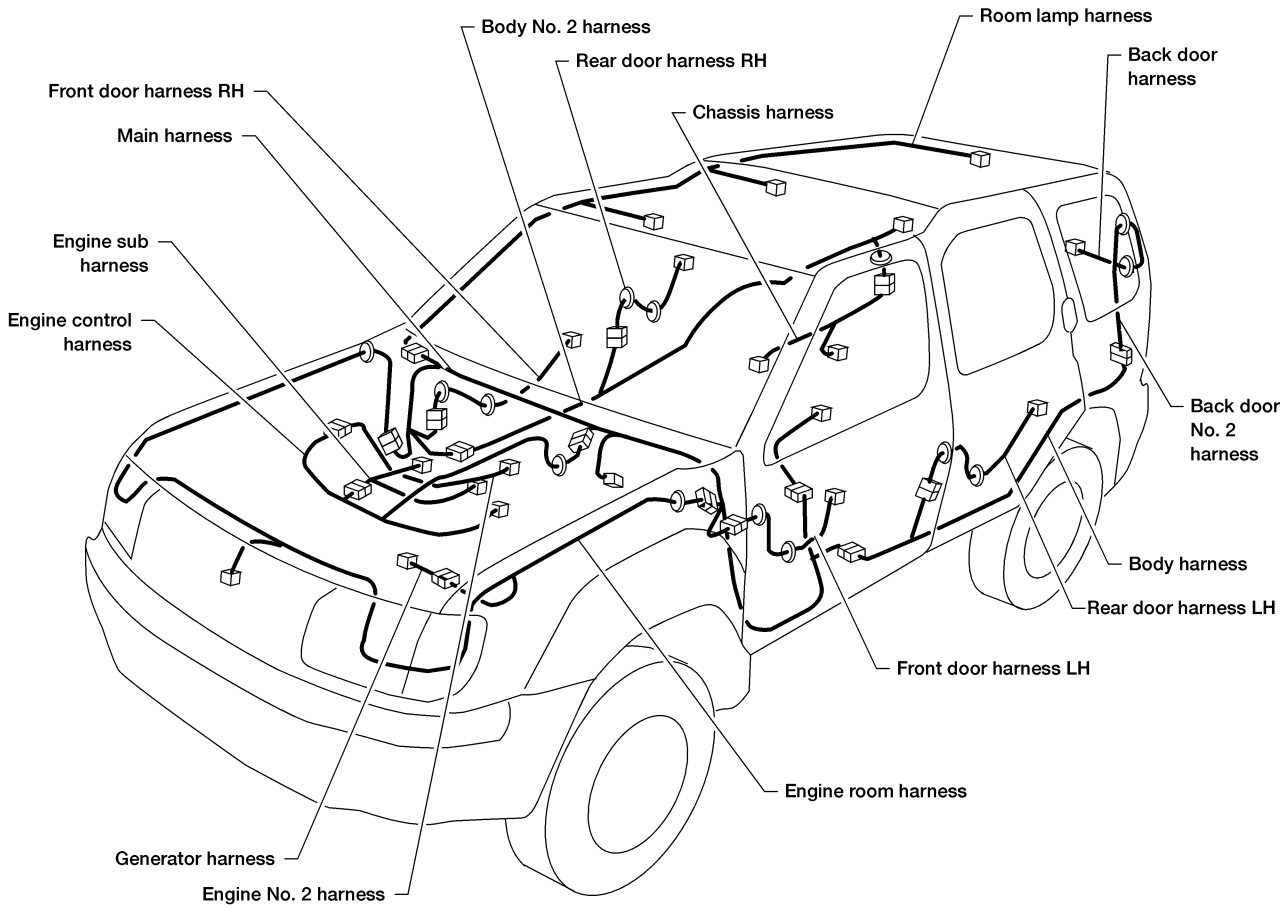
NGEL0172S02

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

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

Outline

NGEL0173

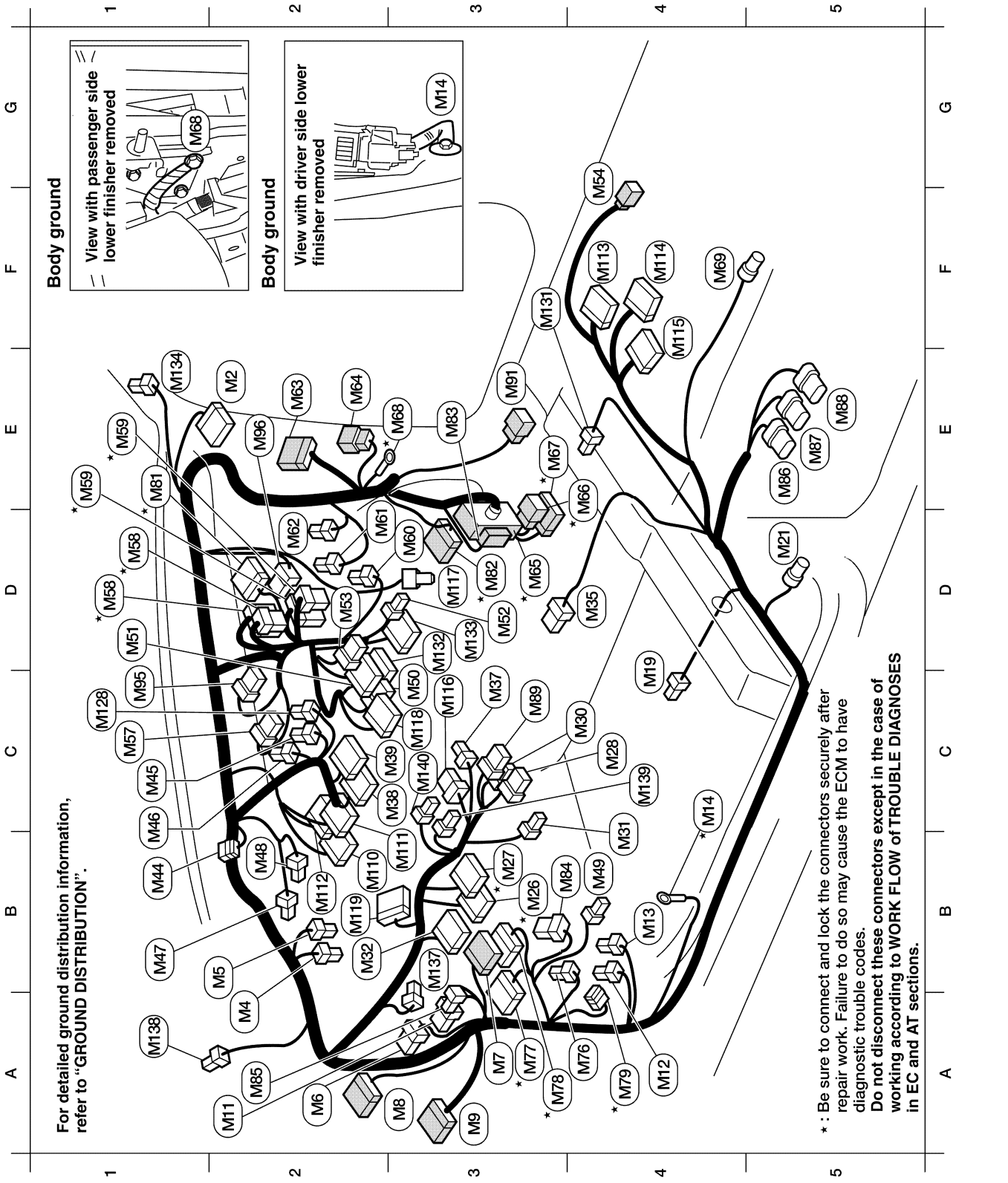


LEL161A

NOTE:
For detailed ground distribution information, refer to “Ground Distribution”, EL-18.

Main Harness

NGEL0174



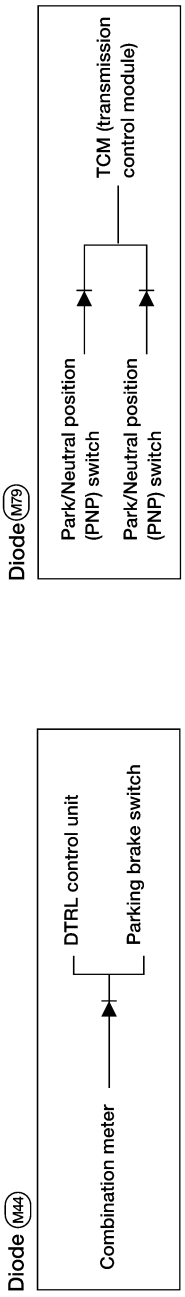
WEL141B

E1 (M2) W/10 : To (R1)
A2 (M4) L/2 : ASCD clutch switch (with M/T)
B2 (M5) L/2 : Clutch interlock switch (with M/T)
A2 (M6) B/5 : Vehicle security relay (with power door locks)
A3 (M7) W/18 : To (E53)
A2 (M8) W/12 : To (D2)
A3 (M9) W/12 : To (D1)
A2 (M11) W/8 : Warning chime unit (without power door locks)
A4 (M12) W/2 : Circuit breaker (with power door locks)
B4 (M13) L/4 : Power window relay (with power windows)
A4 (M14) : Body ground
C4 * (M19) W/3 : Seat belt buckle switch
(M21) GY/4 : Rear heated oxygen sensor (with KA24DE engine)
D5
B3 (M26) W/16 : Fuse block (J/B)
B3 * (M27) W/10 : Fuse block (J/B)
C4 * (M28) W/3 : Illumination control switch
C4 (M30) W/4 : Security indicator lamp (with power door locks)
B4 (M31) W/3 : Fuse block (J/B)
B3 (M32) W/16 : Data link connector
D4 (M35) W/6 : A/T device (with A/T)
C3 (M37) W/2 : Key switch
B2 (M38) W/24 : Combination meter
B2 (M39) BR/24 : Combination meter
B1 (M44) SB/4 : Diode - 1
C1 (M45) B/3 : Combination flasher unit
B1 (M46) L/4 : Fuel pump relay
B1 (M47) B/2 : Stop lamp switch
B2 (M48) L/2 : ASCD brake switch (A/T shift lock brake switch)

B4 (M49) W/2 : Parking brake switch
C3 (M50) W/6 : Audio unit
D1 (M51) W/10 : Audio unit
D3 (M52) W/2 : Cigarette lighter socket
D2 (M53) W/8 : Hazard switch
E4 (M54) W/2 : To (M141)
C1 (M57) W/6 : Fan switch
D1 * (M58) W/6 : To (M141) (with KA24DE engine)
D1 * (M58) W/16 : To (F28) (with VG33E engine)
D1 * (M58) W/20 : To (F28) (with VG33ER engine)
E1 * (M59) W/8 : To (F27) (with KA24DE engine)
E1 * (M59) W/18 : To (F27) (with VG33E and VG33ER engine)
D3 (M60) W/3 : Thermo control amplifier
D2 (M61) BR/4 : Fan resistor
D2 (M62) W/2 : Blower motor
E2 (M63) W/12 : To (D101)
E2 * (M64) W/6 : To (D102)
E3 (M65) SMJ : To (E43)
E3 * (M66) W/4 : To (E44)
E3 * (M67) W/18 : To (B101)
E3 (M68) - : Body ground
F4 (M69) B/3 : G-sensor
A4 * (M76) B/5 : ATP relay (with A/T)
A3 * (M77) W/24 : TCM (with A/T)
A3 * (M78) GY/24 : TCM (with A/T)
A4 * (M79) SB/6 : Diode - 2 (with A/T)
E1 * (M81) W/20 : To (M36) (with KA24DE engine)

E1 * (M81) W/24 : To (M36) (with VG33E and VG33ER engine)
D3 * (M82) W/24 : To (E74) (with VG33E and VG33ER engine)
E3 (M83) W/10 : To (B102)
B4 (M84) L/4 : Rear window defogger relay
A2 (M85) W/4 : Rear window defogger timer
E5 (M86) GY/8 : To (B1)
E5 (M87) B/8 : To (B2)
E5 (M88) GY/8 : To (B3)
C3 (M89) W/6 : Rear wiper switch
E3 (M91) W/8 : To (B103)
C1 (M95) B/12 : Air control
E2 (M96) B/6 : Intake door motor
B2 (M110) W/24 : Smart entrance control unit
B2 (M111) GY/24 : Smart entrance control unit
B2 (M112) GY/16 : Smart entrance control unit
E4 (M113) Y/12 : Air bag unit
E4 (M114) Y/20 : Air bag unit
E4 (M115) Y/12 : Air bag unit
B3 (M116) Y/7 : To (M201)
D3 (M117) Y/2 : Passenger air bag module
C3 (M118) W/16 : Audio unit
B2 (M119) BR/24 : ASCD control unit
E4 (M131) W/3 : Seat belt buckle switch RH
D3 (M132) W/12 : Audio amplifier
D3 (M133) W/12 : Audio amplifier
E1 (M134) BR/2 : Pillar tweeter RH
B3 (M137) Y/4 : To (E88)
A1 (M138) BR/2 : Pillar tweeter LH
B3 (M139) Y/6 : To (M207)
B3 (M140) GY/8 : To (M208)

WEL142B



★: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

WEL972A

Engine Room Harness

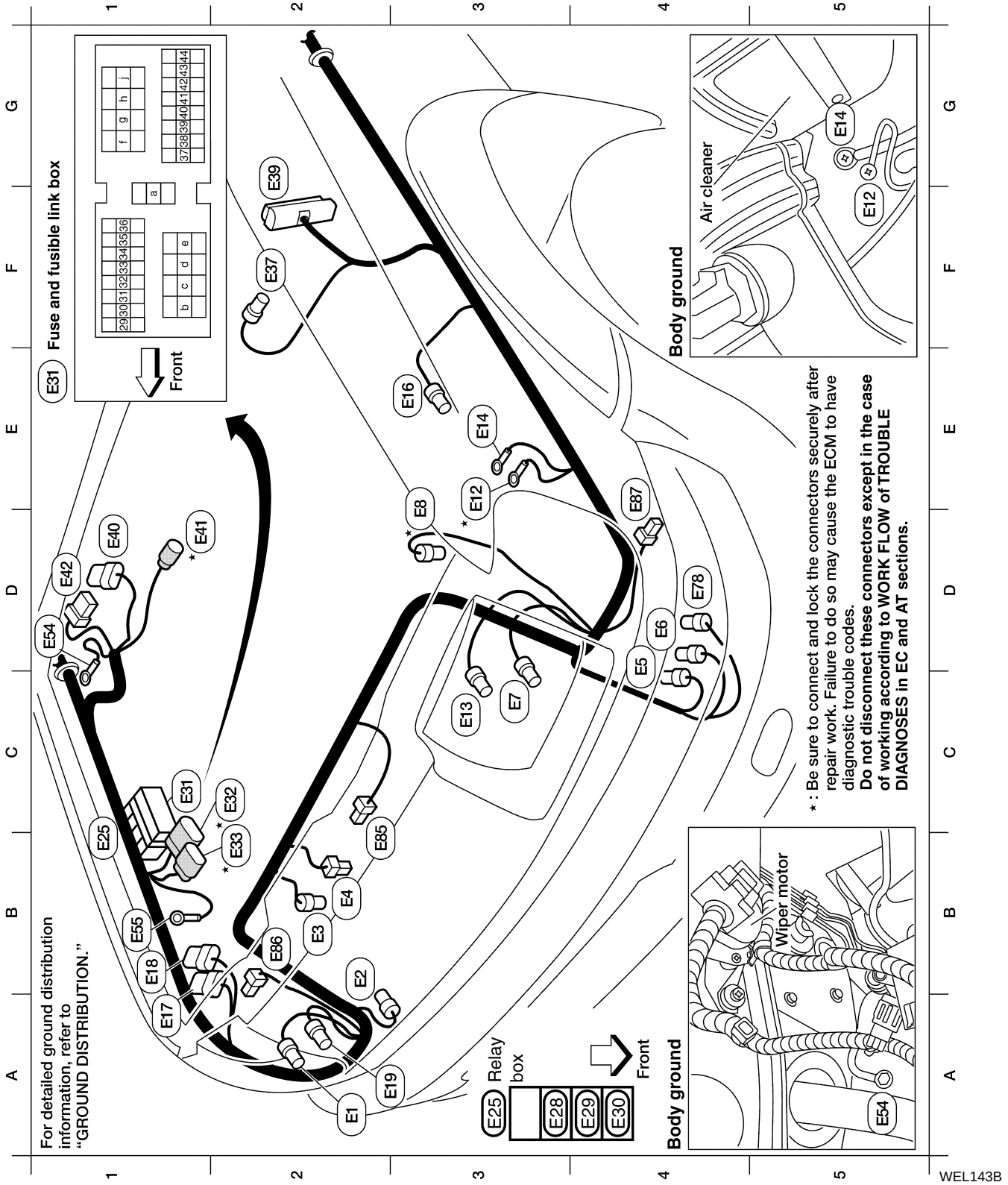
KA24DE

Engine Compartment

NGEL0175

NGEL0175S01

NGEL0175S0101



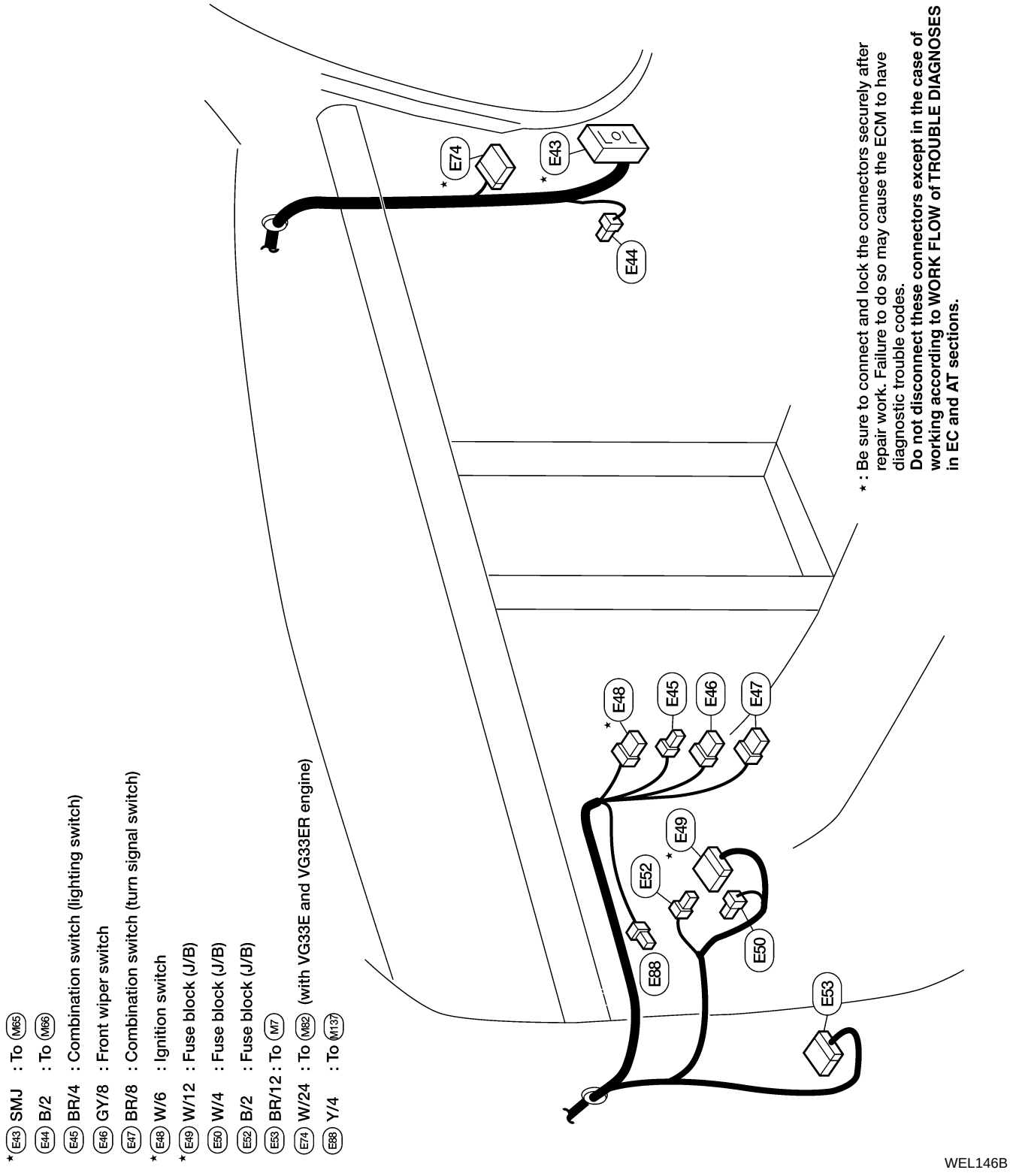
A2 (E1) B/3 : Headlamp RH
B2 (E2) GY/2 : Front wheel sensor RH
B2 (E3) B/2 : Dual-pressure switch
B2 (E4) B/1 : Horn
C4 (E5) BR/2 : Washer fluid level switch (for Canada)
D4 (E6) GY/2 : Front washer motor
C3 (E7) B/3 : Headlamp LH
D3 *(E8) B/2 : Intake air temperature sensor
D3 *(E12) – : Body ground
C3 (E13) GY/3 : Front combination lamp LH
E3 (E14) – : Body ground
E3 (E16) BR/2 : Front wheel sensor LH
A1 (E17) GY/8 : Daytime light control unit (with DTRL)
B1 (E18) GY/6 : Daytime light control unit (with DTRL)
A2 (E19) GY/3 : Front combination lamp RH
B1 (E25) – : Relay box
A3 (E28) L/4 : Clutch interlock relay
A4 (E29) L/4 : Horn relay
A4 (E30) L/4 : A/C relay
C1 (E31) – : Fuse and fusible link box
C2 *(E32) GY/9 : To (E202)
B2 *(E33) GY/6 : To (E201)
F2 (E37) GY/2 : Brake fluid level switch
F2 (E39) B/25 : ABS actuator and electric unit (control unit)
D1 *(E41) GY/3 : To (F25)
D1 (E42) GY/6 : Front wiper motor
C1 *(E54) – : Body ground
B1 (E55) – :Battery
D4 (E78) BR/2 :Rear washer motor
C2 (E85) Y/2 :Crash zone sensor
B2 (E86) BR/2 :Side marker lamp RH
D4 (E87) BR/2 :Side marker lamp LH

*: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

WEL145B

Passenger Compartment

NGEL0175S0102

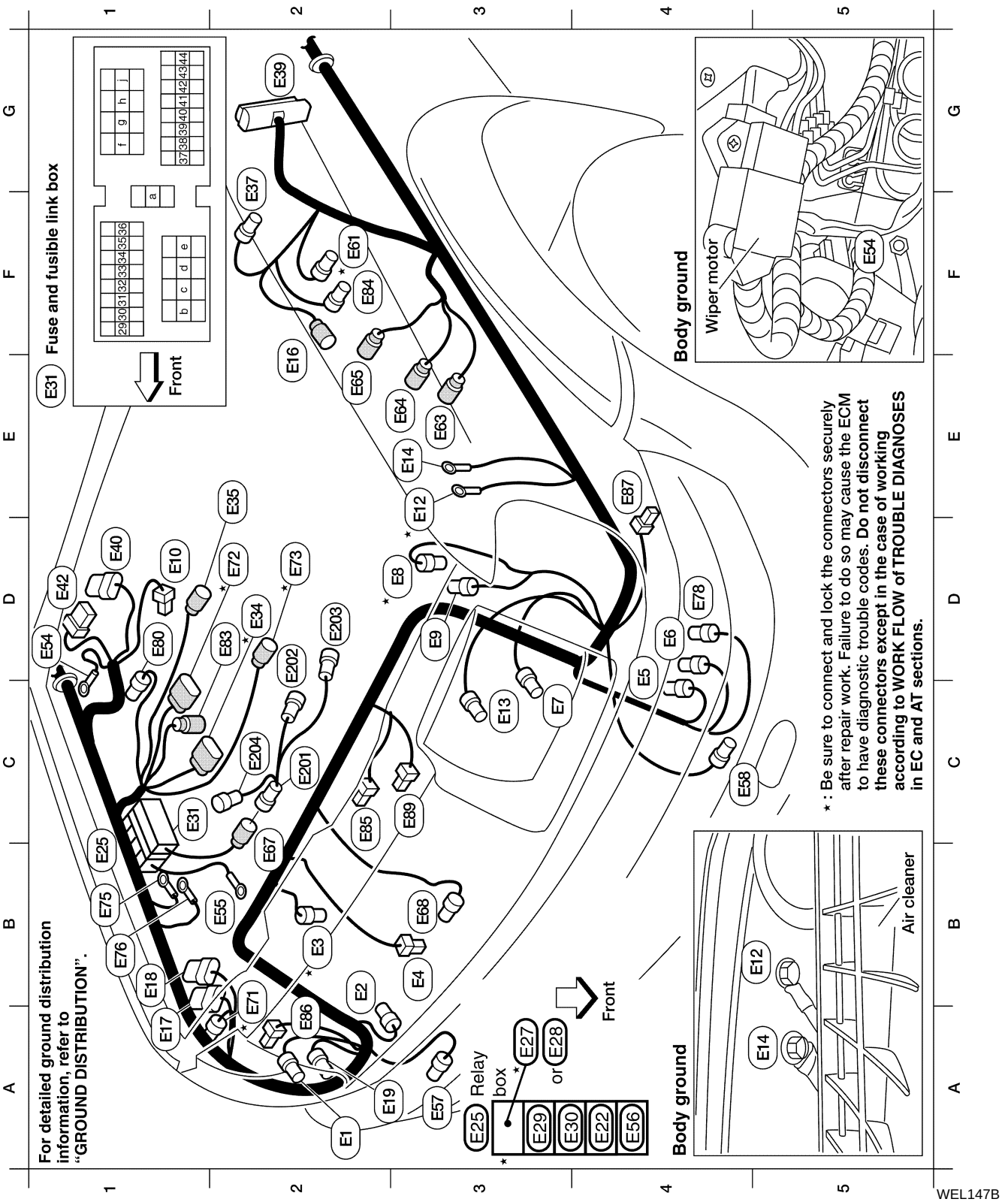


WEL146B

VG33E AND VG33ER
Engine Compartment

=NGEL0175S02

NGEL0175S0201



WEL147B

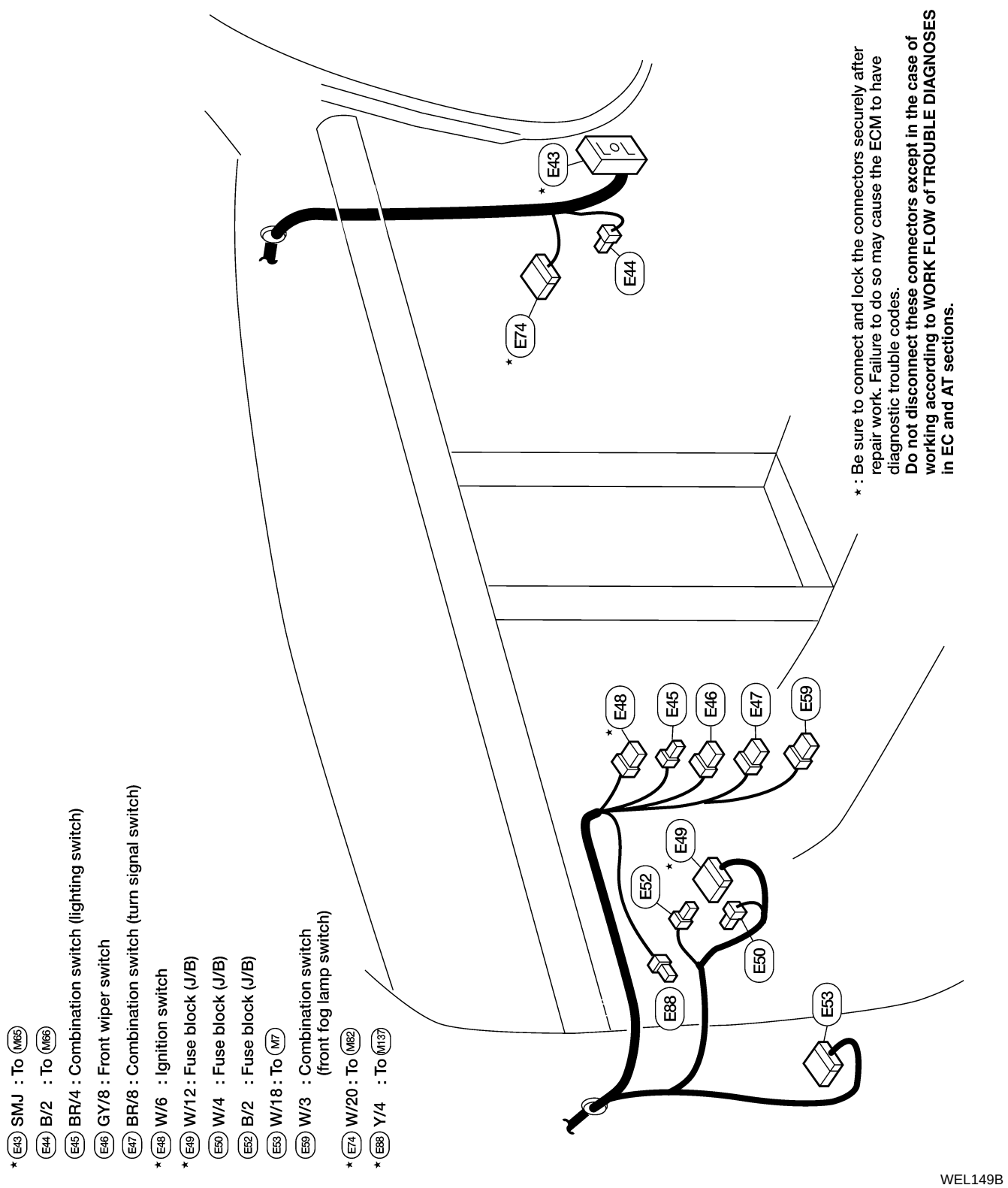
A2 (E1) B/3 : Head lamp RH
B2 (E2) GY/2 : Front wheel sensor RH
B2 *(E3) B/4 : Triple-pressure switch
B3 (E4) B/1 : Horn
C4 (E5) BR/2 : Washer fluid level switch (for Canada)
D4 (E6) GY/2 : Front washer motor
C3 (E7) B/3 : Headlamp LH
D3 *(E8) B/2 : Intake air temperature sensor
D3 (E9) GY/2 : Hood switch (with vehicle security system)
D1 (E10) B/1 : Vehicle security horn (with vehicle security system)
D3 *(E12) – : Body ground
C3 (E13) GY/3 : Front combination lamp LH
E3 (E14) – : Body ground
E2 (E16) BR/2 : Front wheel sensor LH
A1 (E17) GY/8 : Daytime light control unit (with DTRL)
B1 (E18) GY/6 : Daytime light control unit (with DTRL)
A2 (E19) GY/3 : Front combination lamp RH
B3 (E22) BR/6 : Vehicle security lamp relay (with vehicle security system)
C1 (E25) - : Relay box
A3 (E27) BR/6 : Park/neutral position (PNP) relay (with A/T)
A4 (E28) L/4 : Clutch interlock relay (with M/T)
A4 (E29) W/3 : Horn relay
A4 (E30) L/4 : A/C relay
C1 (E31) - : Fuse and fusible link box
C2 (E34) GY/8 : Park/neutral position (PNP) switch (with A/T)
D2 (E35) GY/2 : Park/neutral position (PNP) switch (with A/T)
G2 (E37) GY/2 : Brake fluid level switch
G2 *(E39) B/25 : ABS actuator and electric unit (control unit)
D1 (E42) W/6 : Front wiper motor
D1 *(E54) - : Body ground
B2 (E55) - : Battery
B4 *(E56) L/4 : Front fog lamp relay
A3 (E57) B/2 : Front fog lamp RH
C4 (E58) B/2 : Front fog lamp LH
E2 *(E61) L/2 : EVAP canister purge volume control solenoid valve
E3 (E63) GY/1 : To (A3)
E3 (E64) GY/1 : To (A4)
E2 (E65) GY/4 : To (A5)
C2 (E67) GY/1 : To (E201)
B3 (E68) GY/2 : Ambient air temperature switch
B2 (E71) GY/2 : Dropping resistor
C1 *(E72) BR/8 : Terminal cord assembly
C2 *(E73) GY/3 : Revolution sensor
B1 (E75) – : To (E31)
B1 *(E76) – : To (E31)
D4 *(E78) BR/2 : Rear washer motor
D1 (E80) GY/6 : ASCD motor actuator
*C1 (E83) BR/4 : Turbine revolution sensor
F2 (E84) B/2 : Supercharger bypass valve control solenoid valve
C2 (E85) Y/2 : Crash zone sensor
B2 (E86) BR/2 : Side marker lamp RH
D4 (E87) BR/2 : Side marker lamp LH
B3 (E88) B/2 : Ambient air temperature sensor
- (E201) GY/1 : To (E67)
- (E202) GY/1 : Starter motor
- (E203) - : Starter motor
- (E204) - : Battery

*: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

WEL148B

Passenger Compartment

NGEL0175S0202



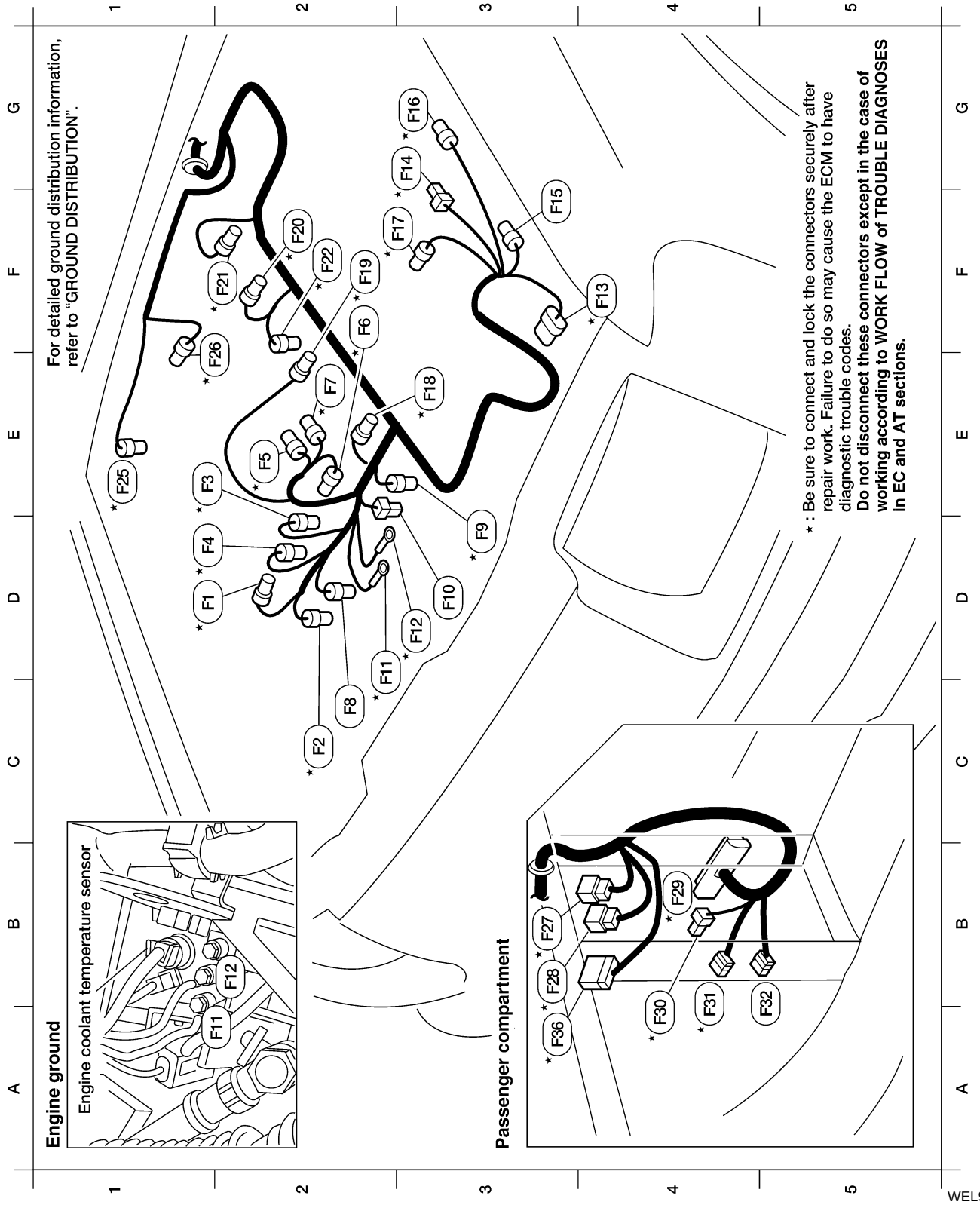
WEL149B

Engine Control Harness

NGEL0176

KA24DE

NGEL0176S01



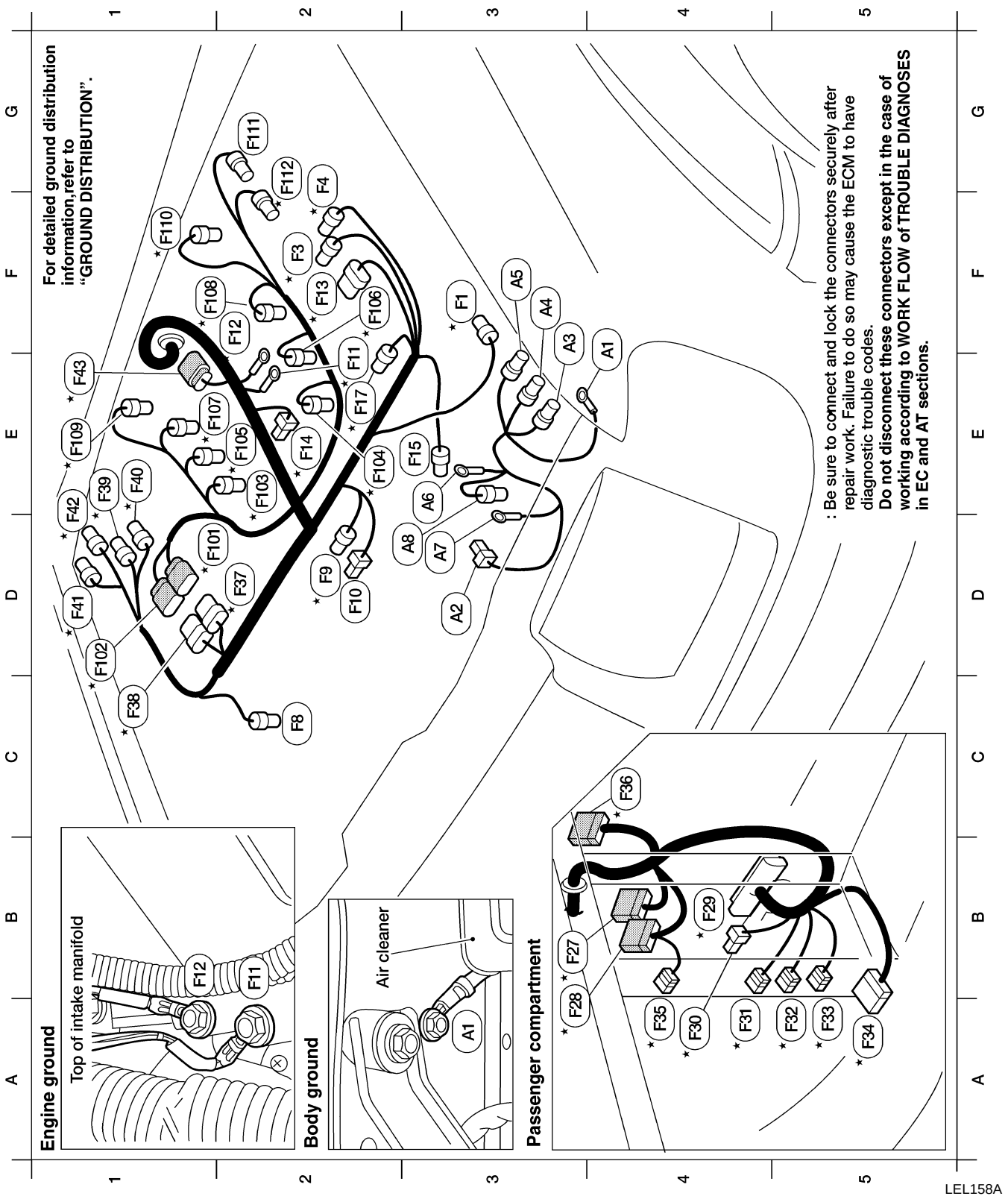
D2 *F1 BR/4 : Mass air flow sensor
C2 *F2 GY/2 : Knock sensor
D2 *F3 BR/3 : Throttle position sensor
D2 *F4 GY/3 : Throttle position switch (closed throttle position switch and wide open throttle position switch)
E2 *F5 GY/2 : EGR temperature sensor
F2 *F6 BR/2 : IACV-AAC valve
E2 *F7 PU/2 : IACV-FICD solenoid valve
C2 F8 B/1 : Power steering oil pressure switch
D3 *F9 GY/2 : Engine coolant temperature sensor
D3 F10 B/1 : Thermal transmitter
D2 *F11 - : Engine ground
D3 *F12 - : Engine ground
F4 *F13 GY/6 : Distributor (camshaft position sensor)
G3 *F14 GY/2 : Resistor
F3 F15-1 B/1 : A/C compressor
G3 *F16 GY/3 or SB/3 : Heated oxygen sensor 1 (front)
F3 *F17 GY/2 : Distributor (ignition coil)
E3 *F18 B/2 : Injector No. 1
F2 *F19 B/2 : Injector No. 2
F2 *F20 B/2 : Injector No. 3
F2 *F21 B/2 : Injector No. 4
F2 *F22 G/2 : EGRC-solenoid valve
E1 *F25 GY/3 : To E41
E2 *F26 L/2 : EVAP canister purge volume control solenoid valve
B3 *F27 W/8 : To M59
B3 *F28 W/6 : To M58
B4 *F29 GY/124 : ECM
A4 *F30 L/4 : ECM relay
A4 *F31 GY/6 : Joint connector-1 (early production)
A5 F32 GY/6 : Joint connector-2 (early production)
A3 *F36 W/20 : To M81

*: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

WEL150B

VG33E

NGEL0176S02



Engine control harness

F3 * (F1) BR/4 : Mass air flow sensor
F2 * (F3) BR/4 : Throttle position sensor
F2 (F4) GY/3 : Throttle position switch (closed throttle position switch and wide open throttle position switch)
C2 (F8) B/2 : Power steering oil pressure switch
D2 * (F9) GY/2 : Engine coolant temperature sensor
D2 (F10) B/1 : Thermal transmitter
E2 * (F11) – : Engine ground
F2 * (F12) – : Engine ground
F2 * (F13) GY/6 : Distributor (camshaft position sensor)
E2 * (F14) GY/2 : Resistor
E3 (F15) B/1 : A/C compressor
E2 * (F17) GY/2 : Distributor (ignition coil)
B3 * (F27) W/18 : To (M59)
A3 * (F28) W/16 : To (M58)
B4 * (F29) GY/124 : ECM
A4 * (F30) L/4 : ECM relay
A4 * (F31) GY/6 : Joint connector-1 (early production)
A5 * (F32) GY/6 : Joint connector-2 (early production)
A5 * (F33) GY/6 : Joint connector-3 (early production)
A5 * (F34) GY/6 : Joint connector-4 (early production)
A4 * (F35) SB/2 : Diode
C4 * (F36) W/24 : To (M81)
D2 * (F37) B/8 : To (F101)
C1 * (F38) GY/8 : To (F102)
E1 * (F39) GY/4 : Heated oxygen sensor (rear) (bank 2)
E1 * (F40) GY/3 : Heated oxygen sensor (front) (bank 2)

Engine control harness (continued)

D1 * (F41) GY/3 : Heated oxygen sensor (front) (bank 1)
D1 * (F42) GY/4 : Heated oxygen sensor (rear) (bank 1)
E1 * (F43) GY/8 : To (F201)

Engine sub harness

D2 * (F101) B/8 : To (F37)
D1 * (F102) GY/8 : To (F38)
E2 * (F103) B/2 : Injector No. 1
E2 * (F104) B/2 : Injector No. 2
E2 * (F105) B/2 : Injector No. 3
F2 * (F106) B/2 : Injector No. 4
E2 * (F107) B/2 : Injector No. 5
F1 * (F108) B/2 : Injector No. 6
E1 * (F109) GY/2 : Knock sensor
F1 * (F110) GY/2 : Crankshaft position sensor (OBD)
G2 (F111) GY/2 : IACV-FICD solenoid valve
G2 * (F112) BR/2 : IACV-AAC valve

Generator harness

F4 (A1) – : Body ground
D3 (A2) B/1 : Oil pressure switch
F3 (A3) GY/1 : To (E63)
F3 (A4) GY/1 : To (E64)
F3 (A5) GY/4 : To (E65)
E3 (A6) – : Generator
D3 (A7) – : Generator
D3 (A8) GY/2 : Generator

Diode (F35)

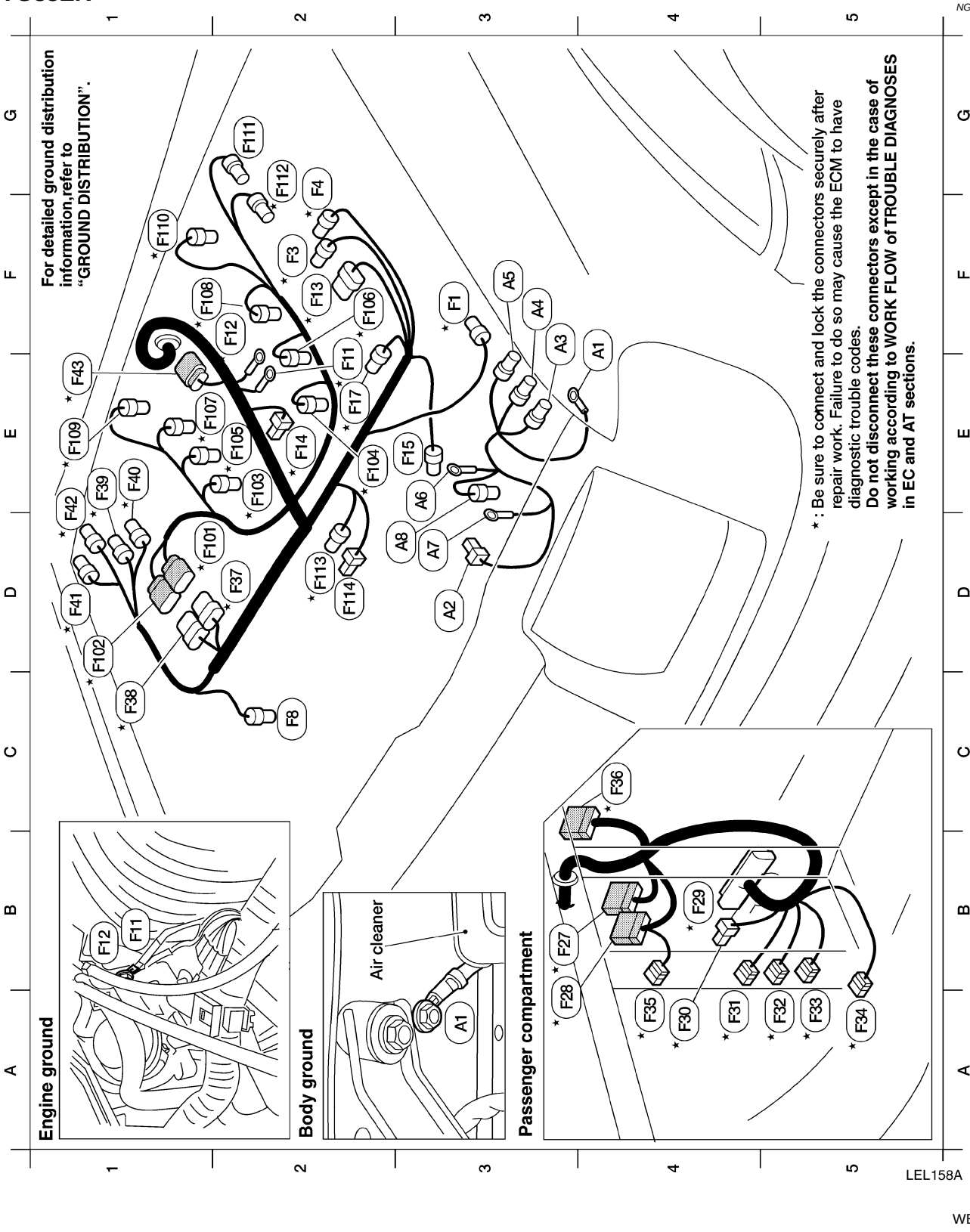
IACV-FICD solenoid valve — ECM

★ : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

WEL151B

VG33ER

NGEL0176S05



WEL152B

Engine control harness

F3 *F1 BR/4 : Mass air flow sensor
F2 *F3 BR/3 : Throttle position sensor
F2 F4 GY/3 : Throttle position switch (closed throttle position switch and wide open throttle position switch)
C2 F8 B/2 : Power steering oil pressure switch
E2 *F11 – : Engine ground
F2 *F12 – : Engine ground
F2 *F13 GY/6 : Distributor (camshaft position sensor)
E2 *F14 GY/2 : Resistor
E3 F15 B/1 : A/C compressor
E2 *F17 GY/2 : Distributor (ignition coil)
B3 *F27 W/18 : To M59
A3 *F28 W/20 : To M58
B4 *F29 GY/124 : ECM
A4 *F30 L/4 : ECM relay
A4 *F31 GY/6 : Joint connector-1 (early production)
A5 *F32 GY/6 : Joint connector-2 (early production)
A5 *F33 GY/6 : Joint connector-3 (early production)
A5 *F34 GY/6 : Joint connector-4 (early production)
A4 *F35 SB/2 : Diode
C4 *F36 W/24 : To M81
D2 *F37 G/10 : To F101
C1 *F38 GY/10 : To F102
E1 *F39 GY/4 : Heated oxygen sensor 2 (rear) (bank 2)
E1 *F40 GY/3 : Heated oxygen sensor 1 (front) (bank 2)

Engine control harness (continued)

D1 *F41 GY/3 : Heated oxygen sensor 1 (front) (bank 1)
D1 *F42 GY/4 : Heated oxygen sensor 2 (rear) (bank 1)
E1 *F43 GY/8 : To F201

Engine sub harness

D2 *F101 B/8 : To F37
D1 *F102 GY/10 : To F38
E2 *F103 B/2 : Injector No. 1
E2 *F104 B/2 : Injector No. 2
E2 *F105 B/2 : Injector No. 3
F2 *F106 B/2 : Injector No. 4
E2 *F107 B/2 : Injector No. 5
F1 *F108 B/2 : Injector No. 6
E1 *F109 GY/2 : Knock sensor
F1 *F110 GY/2 : Crankshaft position sensor (OBD)
G2 F111 GY/2 : IACV-FICD solenoid valve
G2 *F112 BR/2 : IACV-AAC valve
D2 *F113 GY/2 :Engine coolant temperature sensor
D2 *F114 B/1 :Thermal transmitter

Generator harness

F4 A1 – : Body ground
D3 A2 B/1 : Oil pressure switch
F3 A3 GY/1 : To E63
F3 A4 GY/1 : To E64
F3 A5 GY/4 : To E65
E3 A6 – : Generator
D3 A7 – : Generator
D3 A8 GY/2 : Generator

Diode F35

IACV-FICD solenoid valve → ECM

*: Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

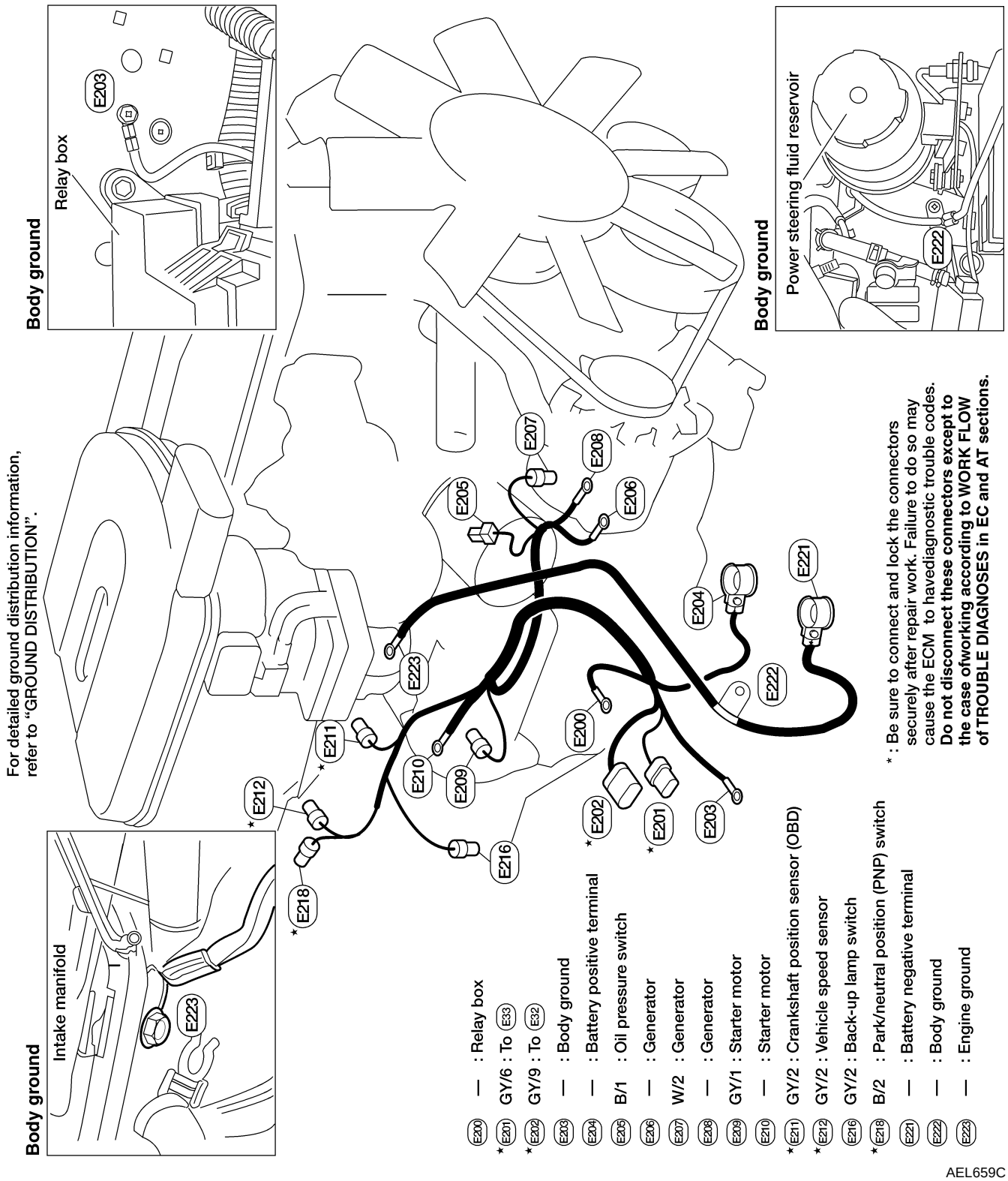
WEL153B

Engine No. 2 Harness

KA24DE

NGEL0177

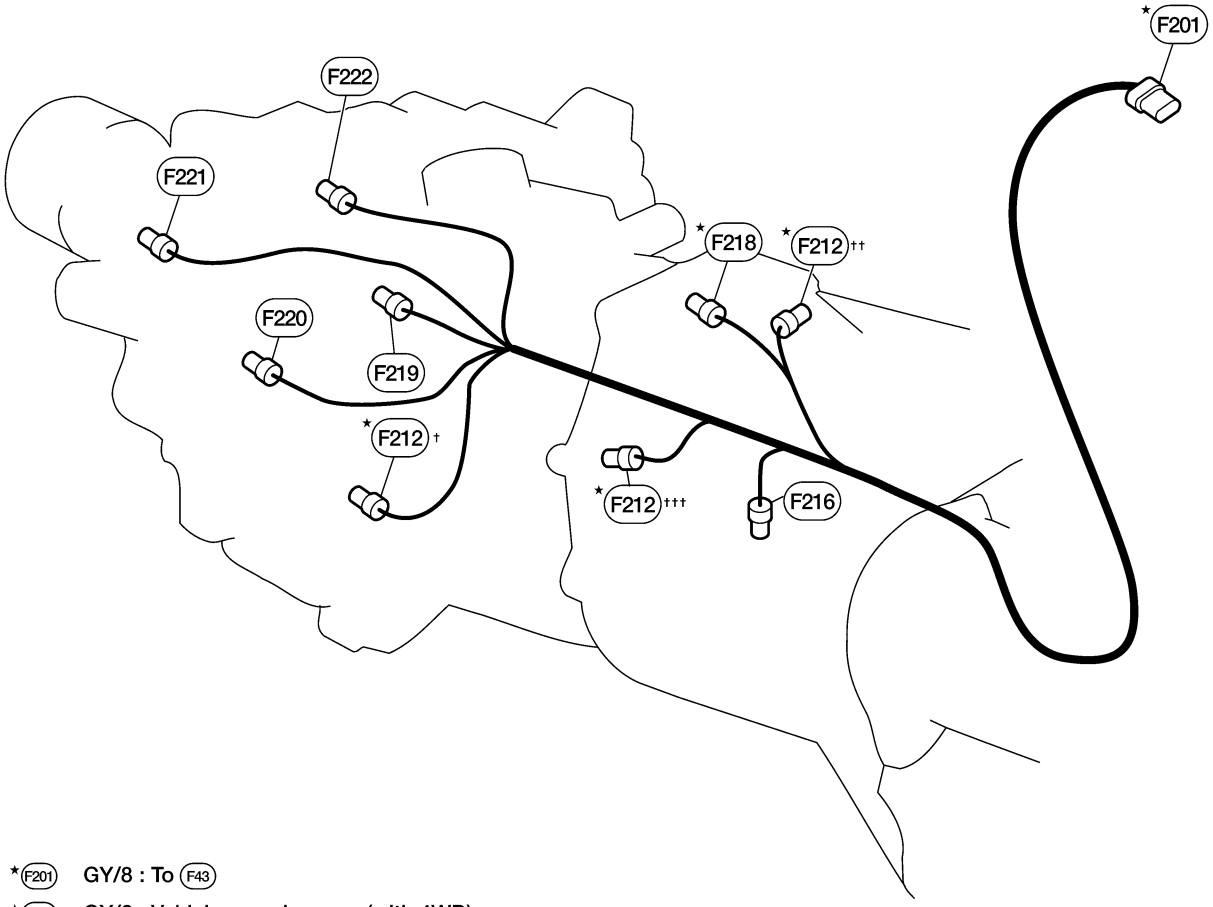
NGEL0177S01



AEL659C

VG33E

NGEL0177S02



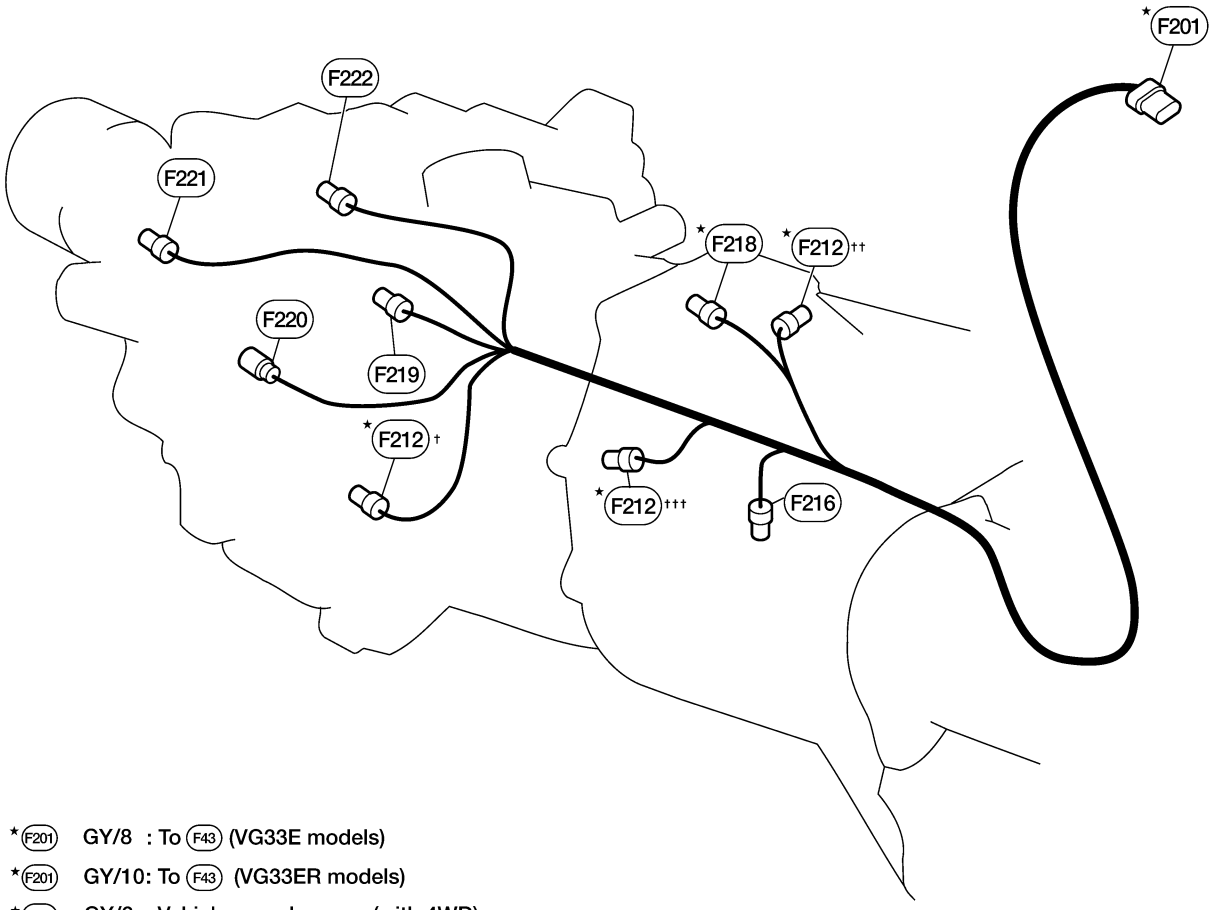
*(F201) GY/8 : To (F43)
*(F212)† GY/2 : Vehicle speed sensor (with 4WD)
*(F212)†† GY/2 : Vehicle speed sensor (with 2WD M/T)
*(F212)††† GY/2 : Vehicle speed sensor (with 2WD A/T)
(F216) GY/2 : Back-up lamp switch (with M/T)
*(F218) B/2 : Park/neutral position (PNP) switch (with M/T)
(F219) GY/1 : 4WD switch (with M/T)
(F220) GY/1 : 4WD switch (with M/T)
(F221) GY/2 : 4WD switch (with A/T)
(F222) B/2 : Transfer neutral position switch (with A/T)

* : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

LEL350A

VG33ER

NGEL0177S03



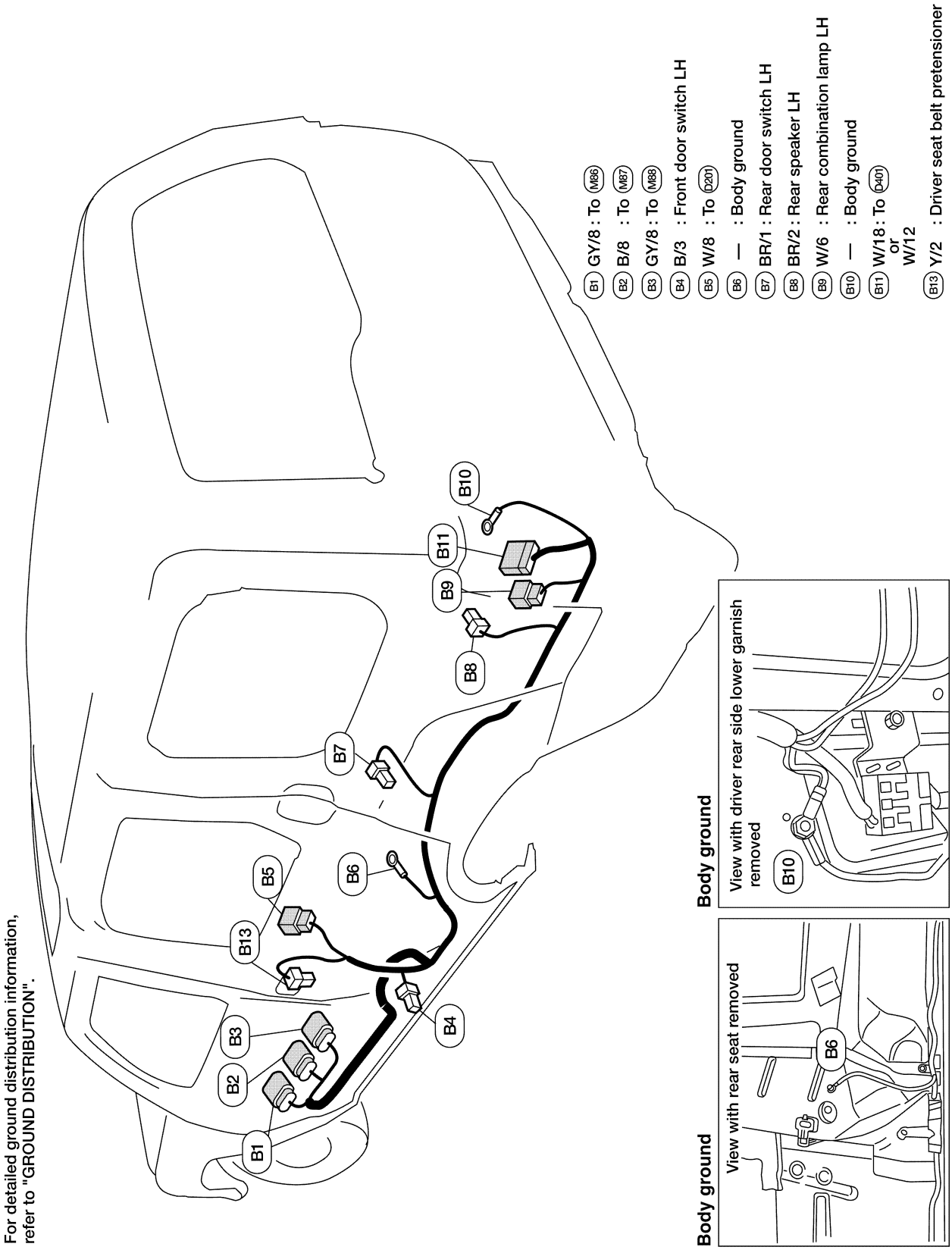
*(F201) GY/8 : To (F43) (VG33E models)
*(F201) GY/10: To (F43) (VG33ER models)
*(F212†) GY/2 : Vehicle speed sensor (with 4WD)
*(F212††) GY/2 : Vehicle speed sensor (with 2WD M/T)
*(F212†††) GY/2 : Vehicle speed sensor (with 2WD A/T)
(F216) GY/2 : Back-up lamp switch (with M/T)
*(F218) B/2 : Park/neutral position (PNP) switch (with M/T)
(F219) GY/1 : 4WD switch (with M/T)
(F220) GY/1 : 4WD switch (with M/T)
(F221) GY/2 : 4WD switch (with A/T)
(F222) B/2 : Transfer neutral position switch (with A/T)

* : Be sure to connect and lock the connectors securely after repair work. Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

WEL474A

Body Harness

NGEL0180



WEL154B

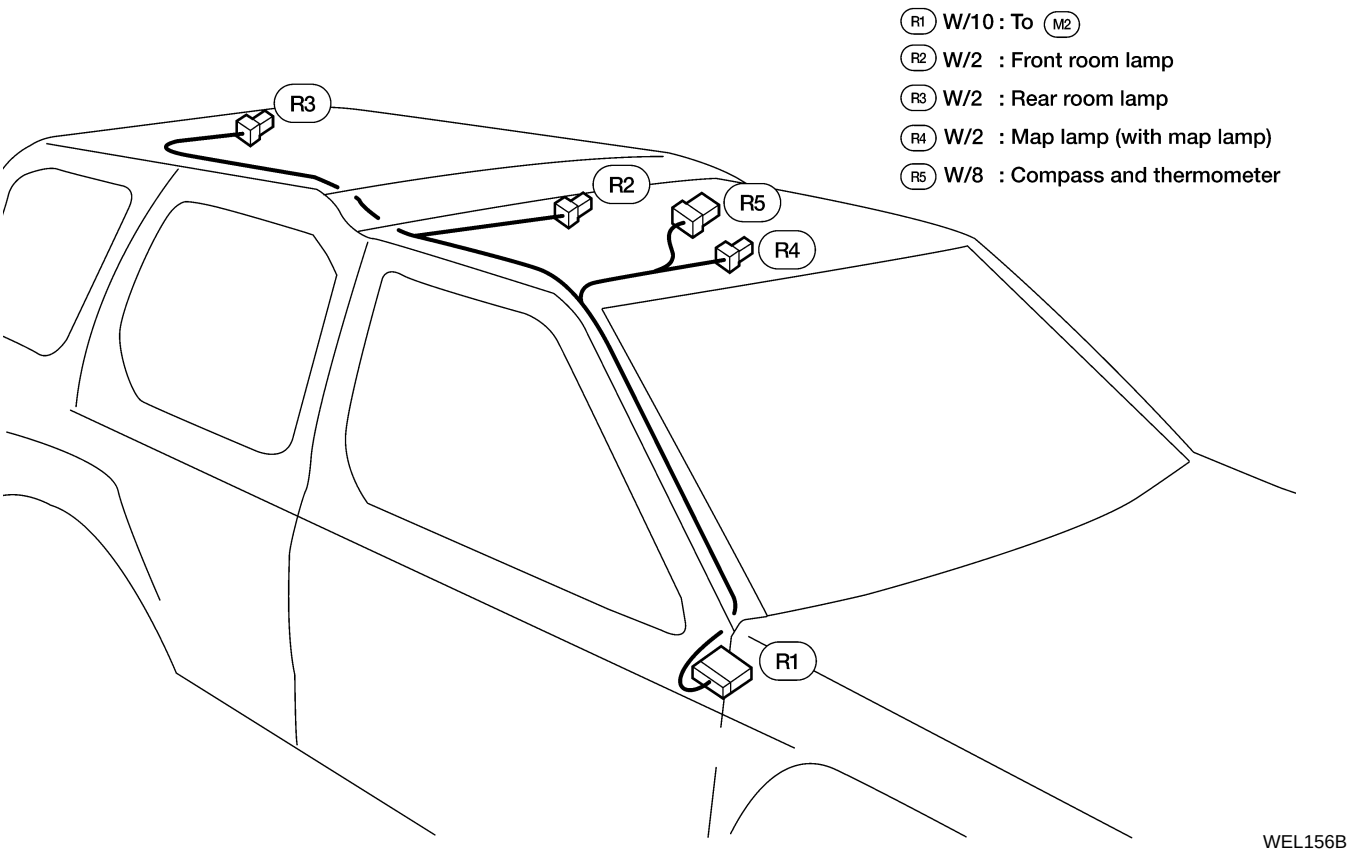
Body No. 2 and Chassis Harness

NGEL0201

WEL155B

Room Lamp Harness

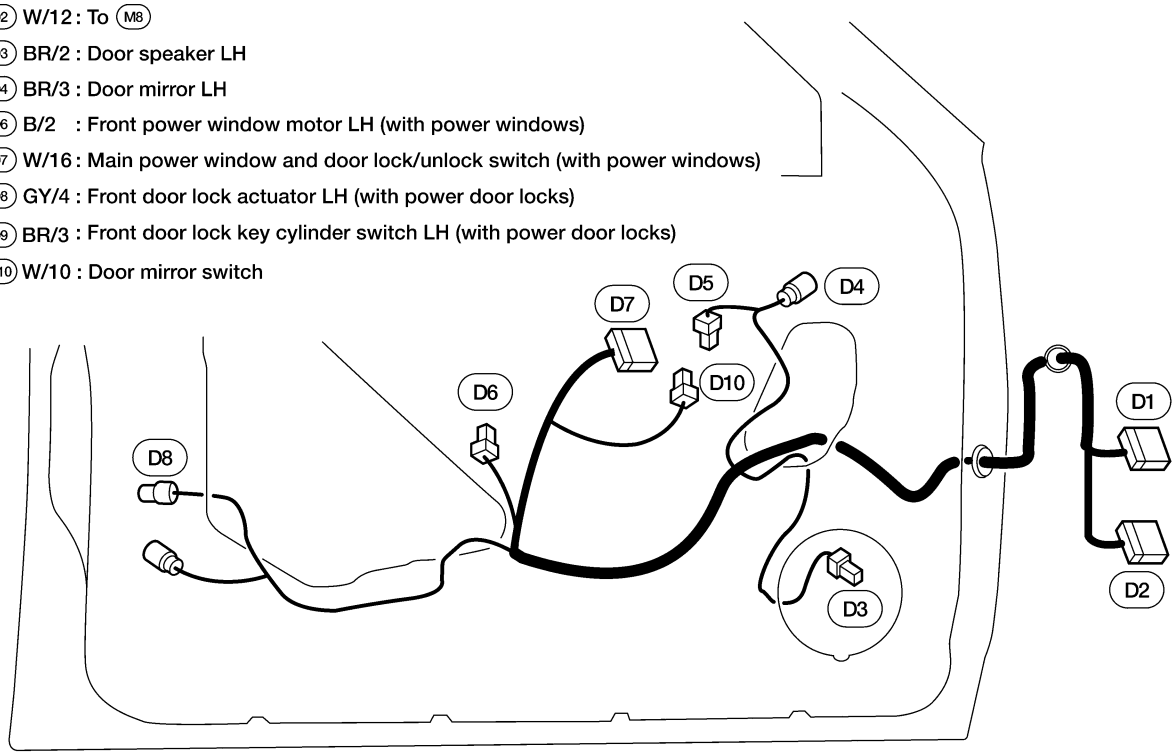
NGEL0202



Front Door Harness

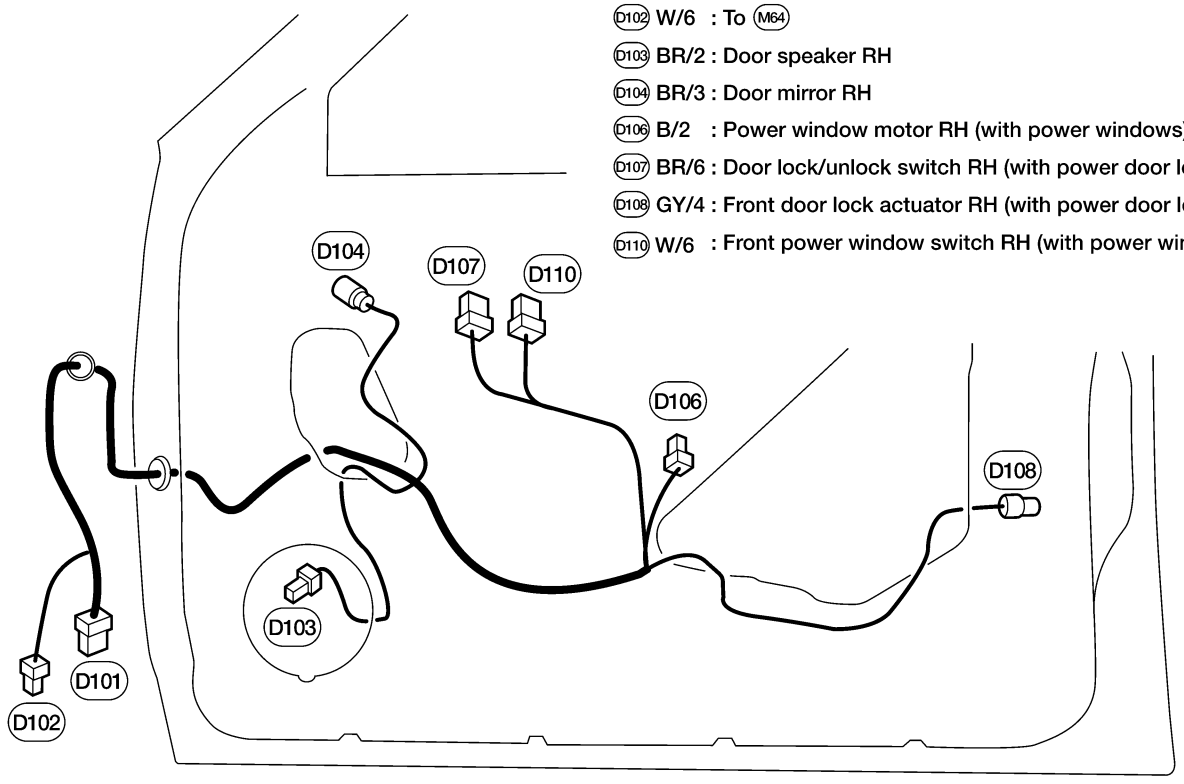
NGEL0182

(D1) W/12 : To (M9)
(D2) W/12 : To (M8)
(D3) BR/2 : Door speaker LH
(D4) BR/3 : Door mirror LH
(D6) B/2 : Front power window motor LH (with power windows)
(D7) W/16 : Main power window and door lock/unlock switch (with power windows)
(D8) GY/4 : Front door lock actuator LH (with power door locks)
(D9) BR/3 : Front door lock key cylinder switch LH (with power door locks)
(D10) W/10 : Door mirror switch



WEL928A

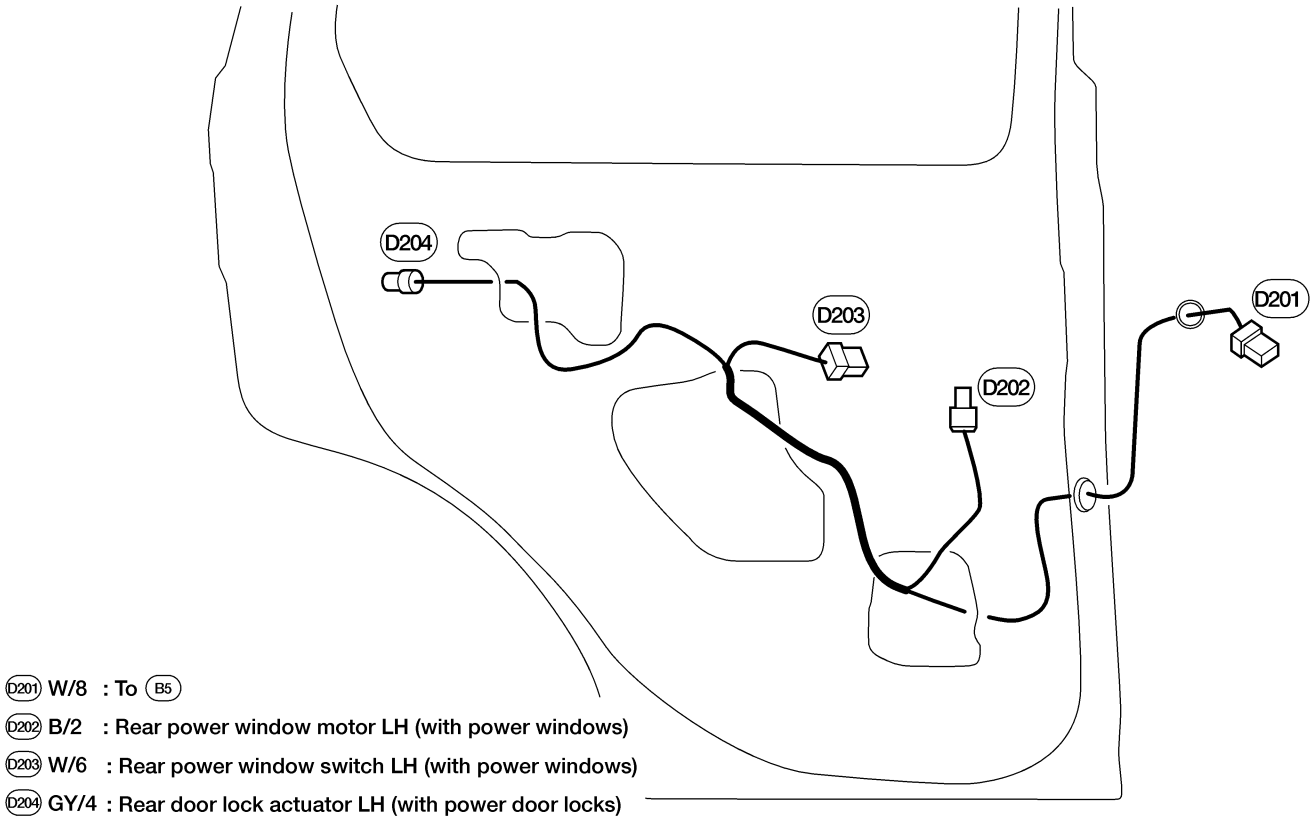
(D101) W/12 : To (M63)
(D102) W/6 : To (M64)
(D103) BR/2 : Door speaker RH
(D104) BR/3 : Door mirror RH
(D106) B/2 : Power window motor RH (with power windows)
(D107) BR/6 : Door lock/unlock switch RH (with power door locks)
(D108) GY/4 : Front door lock actuator RH (with power door locks)
(D110) W/6 : Front power window switch RH (with power windows)



WEL929A

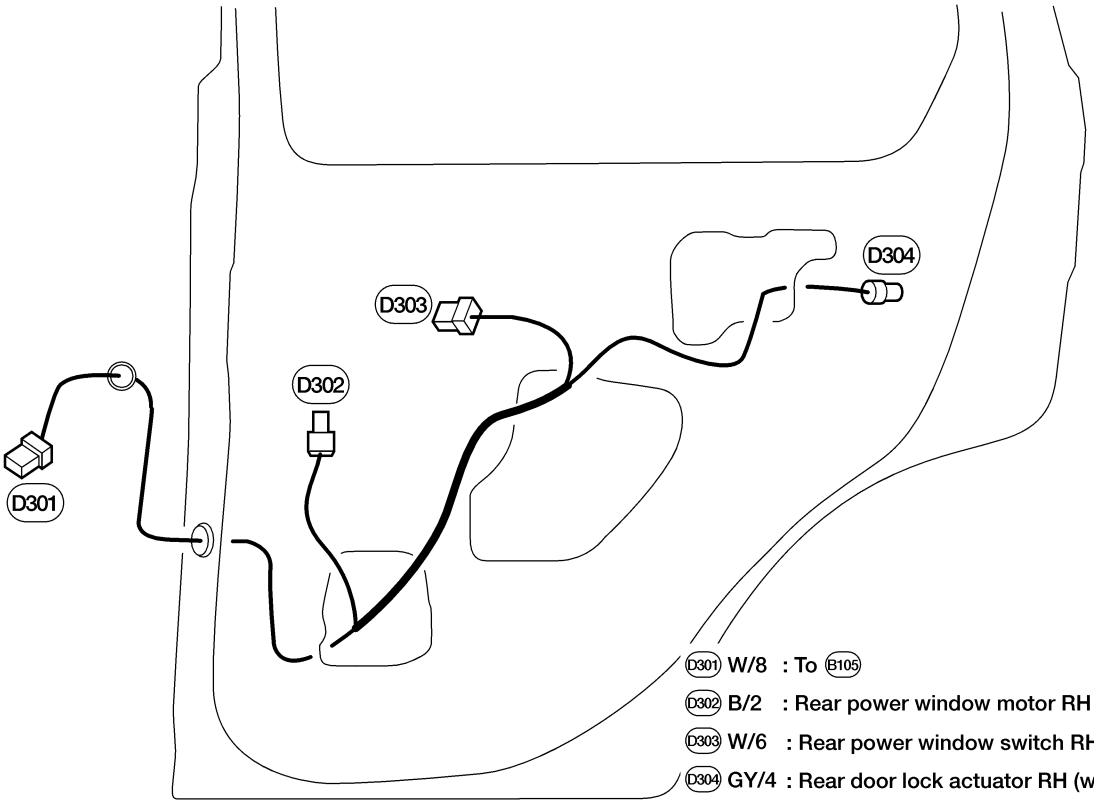
Rear Door Harness

NGEL0183



D201 W/8 : To B5
D202 B/2 : Rear power window motor LH (with power windows)
D203 W/6 : Rear power window switch LH (with power windows)
D204 GY/4 : Rear door lock actuator LH (with power door locks)

LEL147A

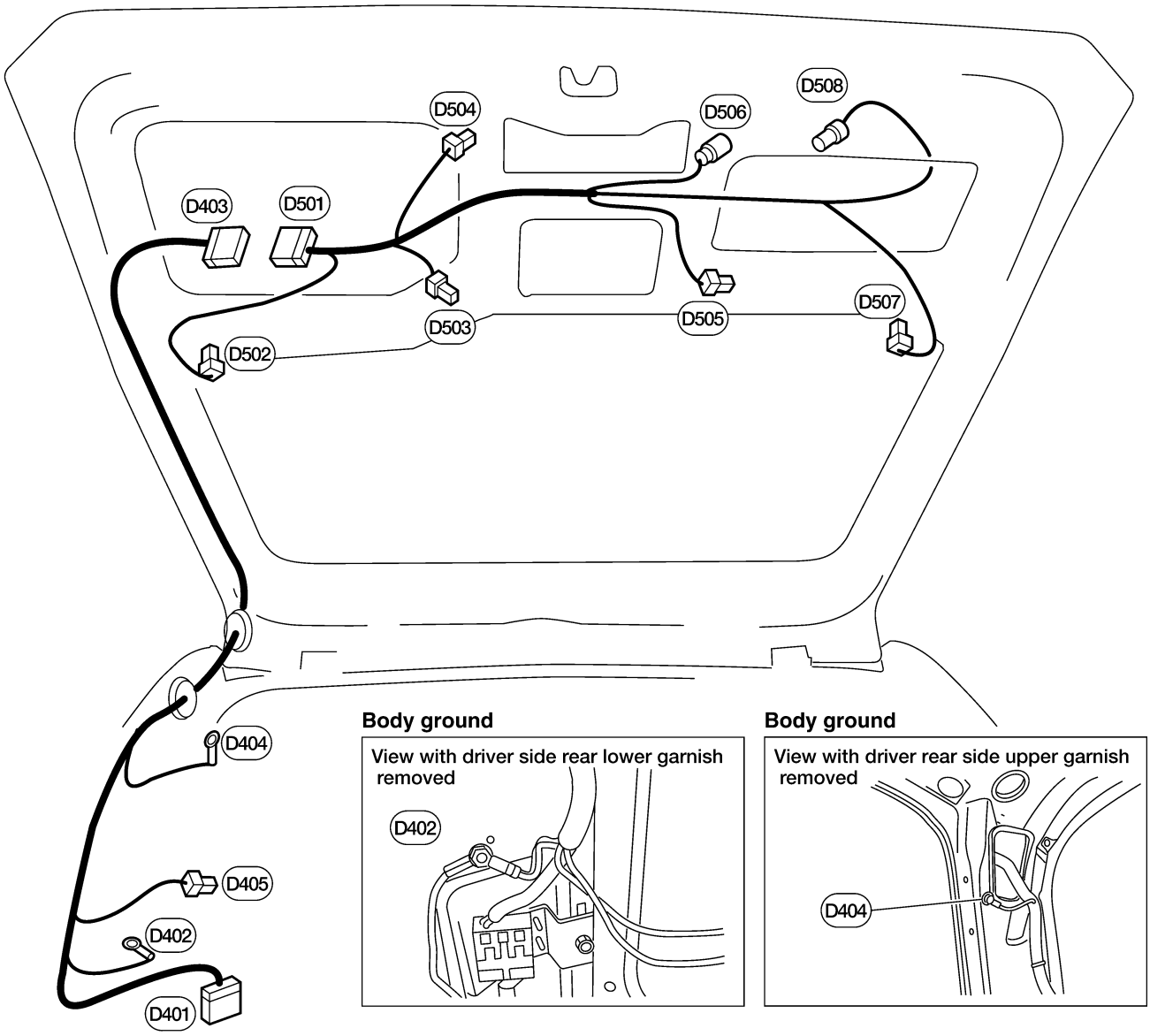


D301 W/8 : To B105
D302 B/2 : Rear power window motor RH (with power windows)
D303 W/6 : Rear power window switch RH (with power windows)
D304 GY/4 : Rear door lock actuator RH (with power door locks)

LEL148A

Back Door Harness

NGEL0199



Back Door No. 2 Harness

- (D401) W/18 or W/12 : To (B11)
- (D402) — : Body ground
- (D403) W/18 or W/12 : To (D501)
- (D404) — : Body ground
- (D405) B/2 : Rear power socket

Back Door Harness

- (D501) W/18 or W/12 : To (D403)
- (D502) B/1 : Rear window defogger (+)
- (D503) W/2 : High mounted stop lamp
- (D504) B/2 : Back door switch
- (D505) W/4 : Rear wiper motor (with rear wiper)
- (D506) BR/3 : Back door key cylinder switch (with power door locks)
- (D507) B/1 : Rear window defogger (-)
- (D508) GY/4 : Back door lock actuator (with power door locks)

WEL655A

BULB SPECIFICATIONS

Headlamp

Headlamp

NGEL0144S03

Item	Wattage (W)	Bulb No.*
High/Low (Semi-sealed beam)	65/55	9007 (HB5)

*: Always check with the Parts Department for the latest parts information.

Exterior Lamp

NGEL0144S01

Item		Wattage (W)	Bulb No.*
Front fog lamp		55	H3
Front turn signal lamp		27	1156A
Parking lamp		3.8	194
Rear combination lamp	Turn signal lamp	27	3157AK
	Stop/Tail lamp	27/7	3057K
	Back-up lamp	16	921
License plate lamp		3.8	168
High-mounted stop lamp		12.8	912

*: Always check with the Parts Department for the latest parts information.

Interior Lamp

NGEL0144S02

Item	Wattage (W)	Bulb No.*
Room lamp	8	82
Map lamp (with compass and thermometer)	8	168
Map lamp (without compass and thermometer)	8	82

*: Always check with the Parts Department for the latest parts information.

WIRING DIAGRAM CODES (CELL CODES)

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

Code	Section	Wiring Diagram Name
1STSIG	AT	A/T 1ST Signal
2NDSIG	AT	A/T 2ND Signal
3RDSIG	AT	A/T 3RD Signal
4THSIG	AT	A/T 4TH Signal
A/C	HA	Air Conditioner
AAC/V	EC	IACV-AAC Valve
ABS	BR	Anti-lock Brake System
ASCD	EL	Automatic Speed Control Device
AT/C	EC	A/T Control
ATDIAG	EC	A/T Diagnosis Communication Line
AUDIO	EL	Audio
BA/FTS	AT	A/T Fluid Temperature Sensor and Transmission Control Module (TCM) Power Supply
BACK/L	EL	Back-up Lamp
BYPS/V	EC	Vacuum Cut Valve Bypass Valve
CHARGE	SC	Charging System
CHIME	EL	Warning Chime
CIGAR	EL	Cigarette Lighter
CKPS	EC	Crankshaft Position Sensor (OBD)
CMPS	EC	Camshaft Position Sensor
COMPAS	EL	Compass and Thermometer
D/LOCK	EL	Power Door Lock
DEF	EL	Rear Window Defogger
DTRL	EL	Headlamp - With Daytime Light System
ECTS	EC	Engine Coolant Temperature Sensor
EGRC1	EC	EGR Function (KA24DE)
EGRC/V	EC	EGRC - Solenoid Valve (KA24DE)
EGR/TS	EC	EGR Temperature Sensor
ENGSS	AT	Engine Speed Signal
F/FOG	EL	Front Fog Lamp
FLS1	EC	Fuel Level Sensor Unit
FLS2	EC	Fuel Level Sensor Unit
FLS3	EC	Fuel Level Sensor Unit
F/PUMP	EC	Fuel Pump
FICD	EC	IACV-FICD Solenoid Valve
FTTS	EC	Fuel Tank Temperature Sensor
FTS	AT	A/T Fluid Temperature Sensor
FUEL	EC	Fuel Injection System Function (KA24DE)
FUELB1	EC	Fuel Injection System Function (Bank 1) (VG33E and VG33ER)
FUELB2	EC	Fuel Injection System Function (Bank 2) (VG33E and VG33ER)
H/LAMP	EL	Headlamp
HO2S1	EC	Heated Oxygen Sensor 1 (Front) (KA24DE)
HO2S2	EC	Heated Oxygen Sensor 2 (Rear) (KA24DE)
HO2S2H	EC	Heated Oxygen Sensor 2 Heater (Rear) (KA24DE)
HO2SH	EC	Heated Oxygen Sensor 1 Heater (Front) (KA24DE)
HORN	EL	Horn
IATS	EC	Intake Air Temperature Sensor
IGN/SG	EC	Ignition Signal
ILL	EL	Illumination
INJECT	EC	Injector
KEYLES	EL	Remote Keyless Entry System
KS	EC	Knock Sensor
LPSV	AT	Line Pressure Solenoid Valve
MAFS	EC	Mass Air Flow Sensor
MAIN	AT	Main Power Supply and Ground Circuit
MAIN	EC	Main Power Supply and Ground Circuit
METER	EL	Speedometer, Tachometer, Temp., Oil and Fuel Gauges
MIL/DL	EC	MIL and Data Link Connector
MIRROR	EL	Door Mirror
NONDTC	AT	Non-detectable Items
O2H1B1	EC	Heated Oxygen Sensor 1 (Front) Heater Bank 1 (VG33E and VG33ER)

Code	Section	Wiring Diagram Name
O2H1B2	EC	Heated Oxygen Sensor 1 (Front) Heater Bank 2 (VG33E and VG33ER)
O2H2B1	EC	Heated Oxygen Sensor 2 (Rear) Heater Bank 1 (VG33E and VG33ER)
O2H2B2	EC	Heated Oxygen Sensor 2 (Rear) Heater Bank 2 (VG33E and VG33ER)
O2S1B1	EC	Heated Oxygen Sensor 1 (Front) Bank 1 (VG33E and VG33ER)
O2S1B2	EC	Heated Oxygen Sensor 1 (Front) Bank 2 (VG33E and VG33ER)
O2S2B1	EC	Heated Oxygen Sensor 2 (Rear) Bank 1 (VG33E and VG33ER)
O2S2B2	EC	Heated Oxygen Sensor 2 (Rear) Bank 2 (VG33E and VG33ER)
OVRCSV	AT	Overrun Clutch Solenoid Valve
PGC/V	EC	EVAP Canister Purge Volume Control Solenoid Valve
PNP/SW	AT	Park/Neutral Position Switch
PNP/SW	EC	Park/Neutral Position Switch
POWER	EL	Power Supply Routing
PRE/SE	EC	EVAP Control System Pressure Sensor
PST/SW	EC	Power Steering Oil Pressure Switch
ROOM/L	EL	Interior Room Lamp
S/CHGR	EC	Supercharger bypass valve control solenoid valve (VG33ER)
S/SIG	EC	Start Signal
SHIFT	AT	A/T Shift Lock System
SRS	RS	Supplemental Restraint System
SSV/A	AT	Shift Solenoid Valve A
SSV/B	AT	Shift Solenoid Valve B
START	SC	Starting System
STOP/L	EL	Stop lamp
SW/V	EC	MAP/BARO Switch Solenoid Valve
T/TOW	EL	Trailer Tow
TAIL/L	EL	Parking, License and Tail Lamps
TCCSIG	AT	A/T TCC Signal (Lock Up)
TCV	AT	Torque Converter Clutch Solenoid Valve
TP/SW	EC	Throttle Position Switch
TPS	AT	Throttle Position Sensor
TPS	EC	Throttle Position Sensor
TRSA/T	AT	Turbine Revolution Sensor
TURN	EL	Turn Signal and Hazard Warning Lamps
VEHSEC	EL	Vehicle Security System
VENT/V	EC	EVAP Canister Vent Control Valve
VSS	EC	Vehicle Speed Sensor
VSSAT	AT	Vehicle Speed Sensor A/T (Revolution Sensor)
VSSMTR	AT	Vehicle Speed Sensor MTR
WARN	EL	Warning Lamps
WINDOW	EL	Power Window
WIP/R	EL	Rear Wiper and Washer
WIPER	EL	Front Wiper and Washer