ELECTRICAL SYSTEM

SECTION EL

GI
EM
LC
EC
FE
RS
AC
AV
EL
WH
CL
MT
AT
FA
RA
BR
ST
BT

CONTENTS

CONTENTS

CONTENTS

SRS Airbag • Pretensioner Seatbelt

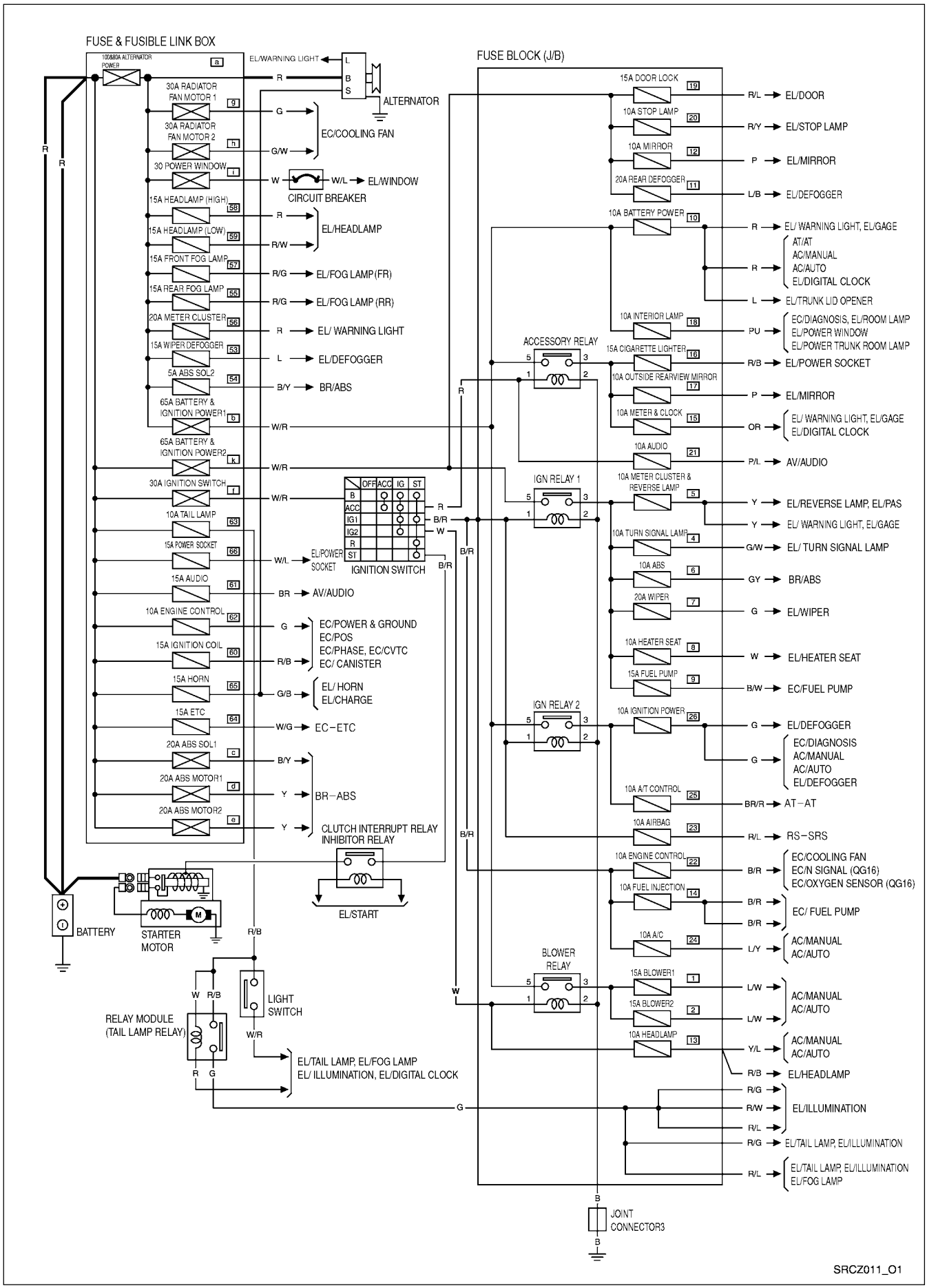
WARNING:

- **To install/remove the SRS airbag, pretensioner seatbelt system related components and harness, turn the ignition switch "OFF", disconnect the battery terminals and wait over 3 minutes. (This is to discharge all the remaining electricity in the airbag sensor unit's auxiliary power circuit.)**
- **Do not use air impact or electrical tools when installing/removing the components.**
- **Do not use any hand-held tools for harness used in SRS airbag and pretensioner seatbelt systems. Be careful with the harness not to tangle with or interfere with other components.**
- **Do not use any electrical test equipments such as circuit tester when inspecting the SRS airbag and pretensioner seatbelt circuit while installed unless the Service Manual instructs to do so. (The weak current in the tester can cause the SRS airbag to operate.)**
- **Do not insert any foreign materials such as a screwdriver in the airbag module and pretensioner seatbelt connector in order to prevent unintended operation due to static electricity.**
- **The harnesses used in SRS airbag and pretensioner are covered with yellow insulation for easy identification.**
- **Refer to "RS Restraint System" in this Service Manual for safe airbag system service information.**

General Precautions in Service

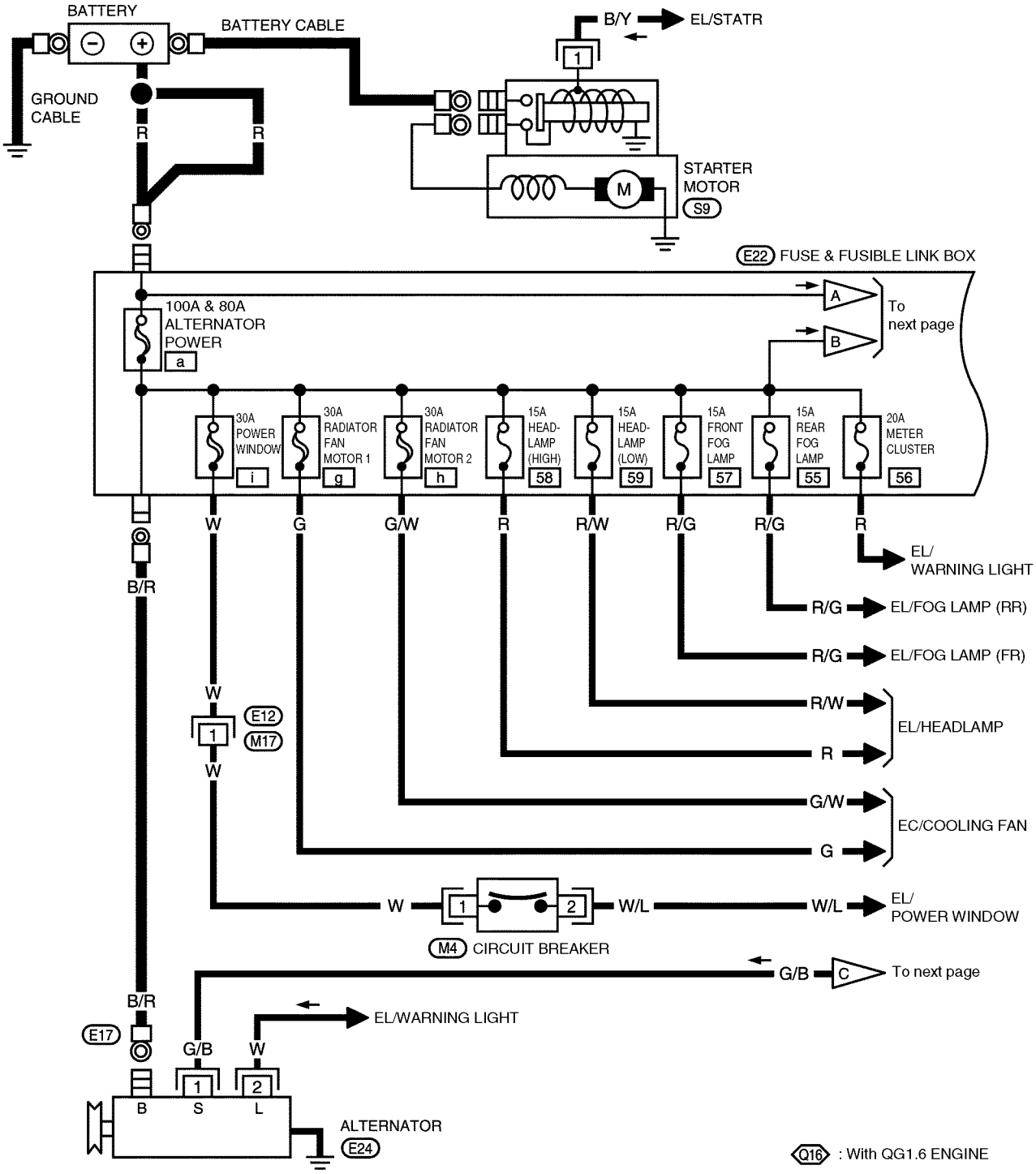
- Do not touch the bulb glass with bare hand or stain oil. Do not touch the bulb when lighted or right after turning off. It is extremely hot.
- When you leave the removed bulb for a long time, the bulb performance decreases due to lens and reflector dusting (dirty and dark). Perform the bulb replacement after preparing a new bulb.
- Aiming adjust screw should be turned towards tightening direction. (If have to be adjusted reverse direction, loosen enough and then tighten to adjust.)
- Do not use organic detergent (thinner or gasoline) when removing the dirt or sealant at the lamp.
- When replacing the bulb, grab the bulb socket and pull it out backwards right away. (When you pull it out sideways by grabbing the harness, the bulb may fall inside the lamp and it is hard to take it out.)

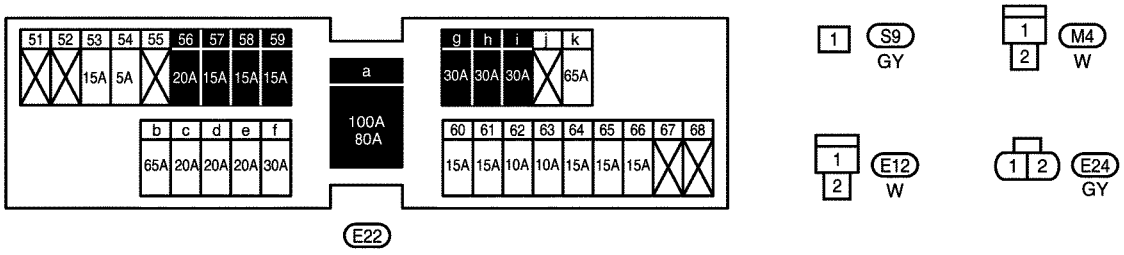
Circuit Diagram



Wiring Diagram

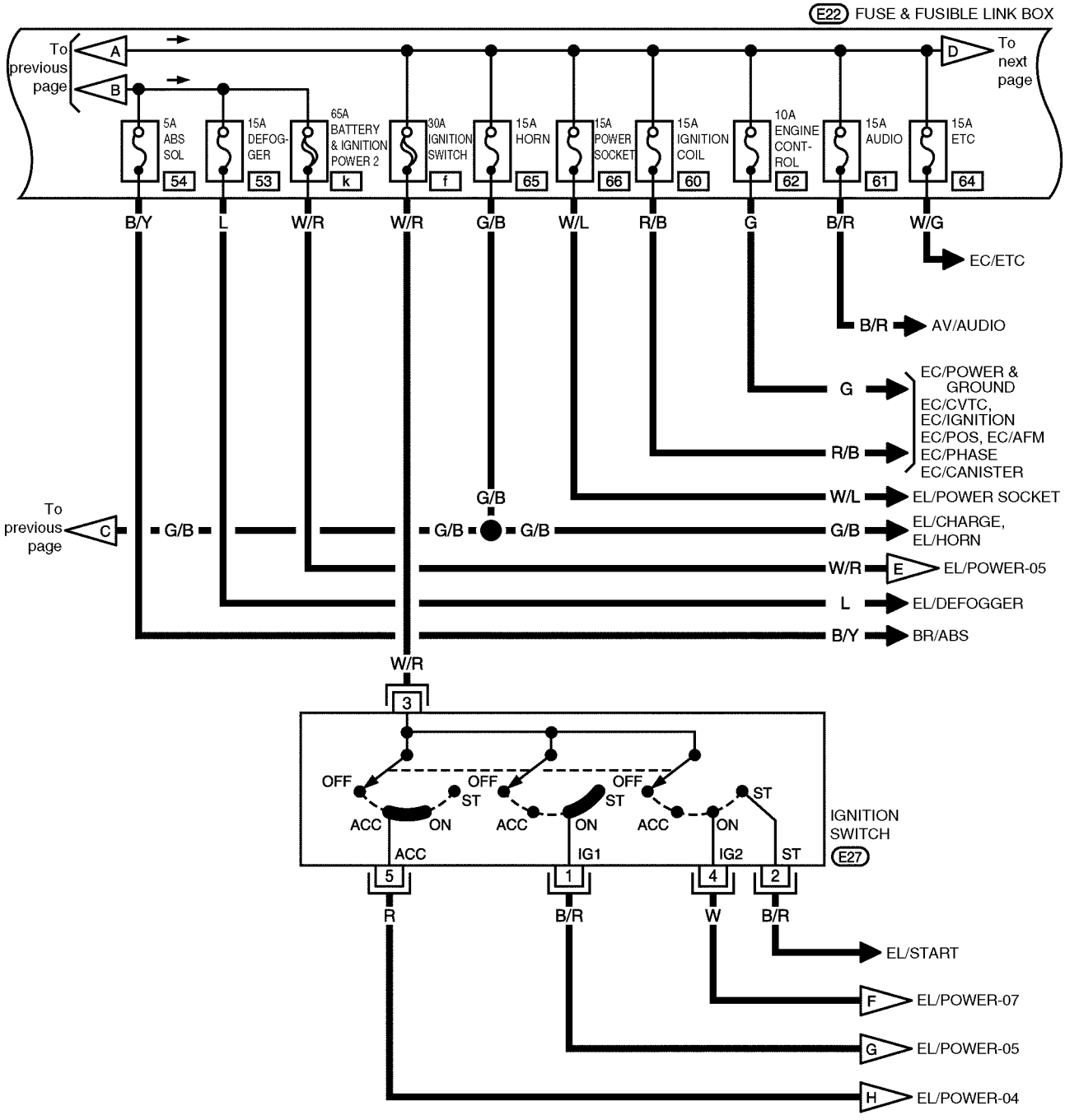
EL/Power- 01

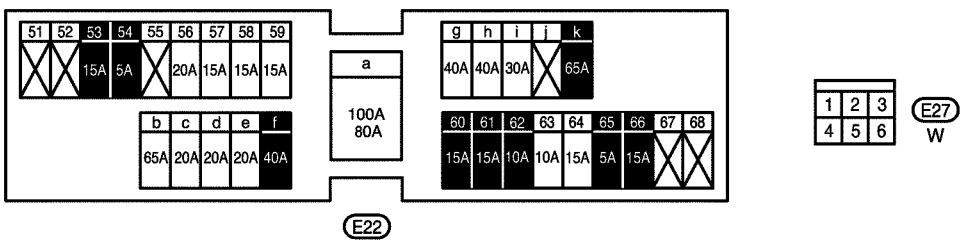




SRWZ047_01

Wiring Diagram





SRWZ048_O1

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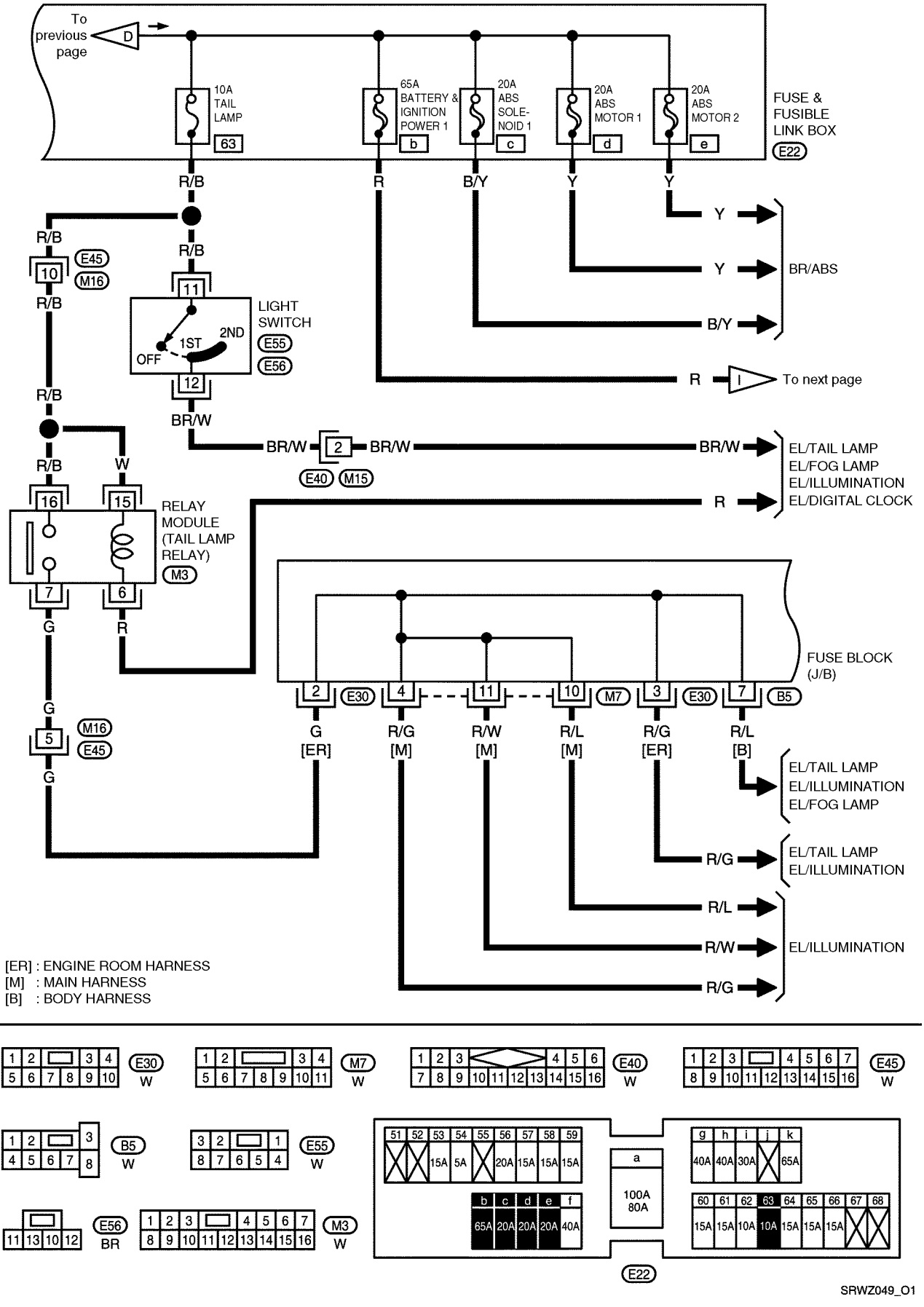
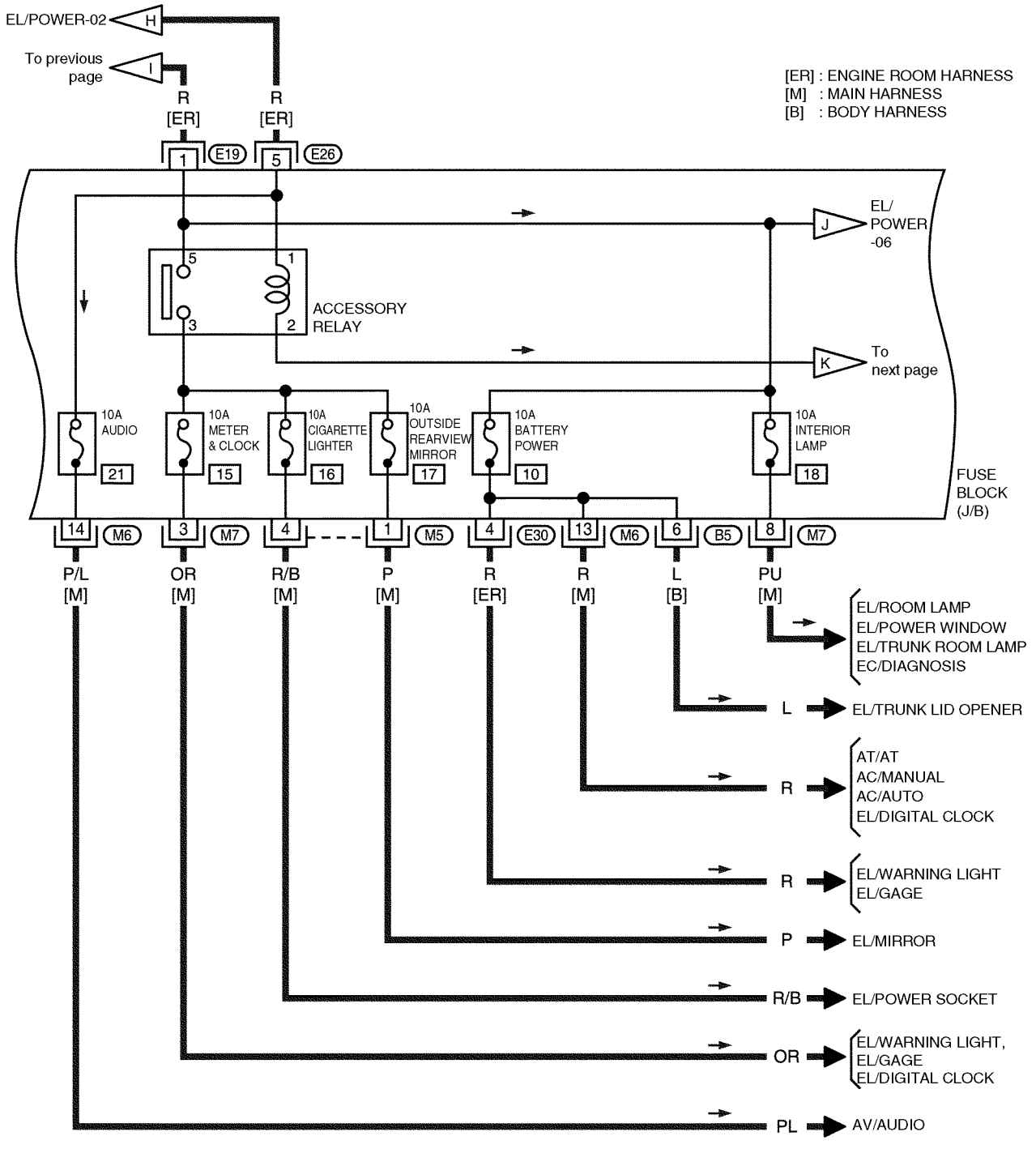
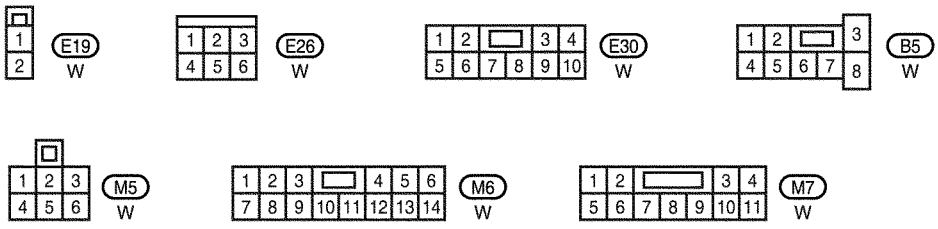


Wiring Diagram





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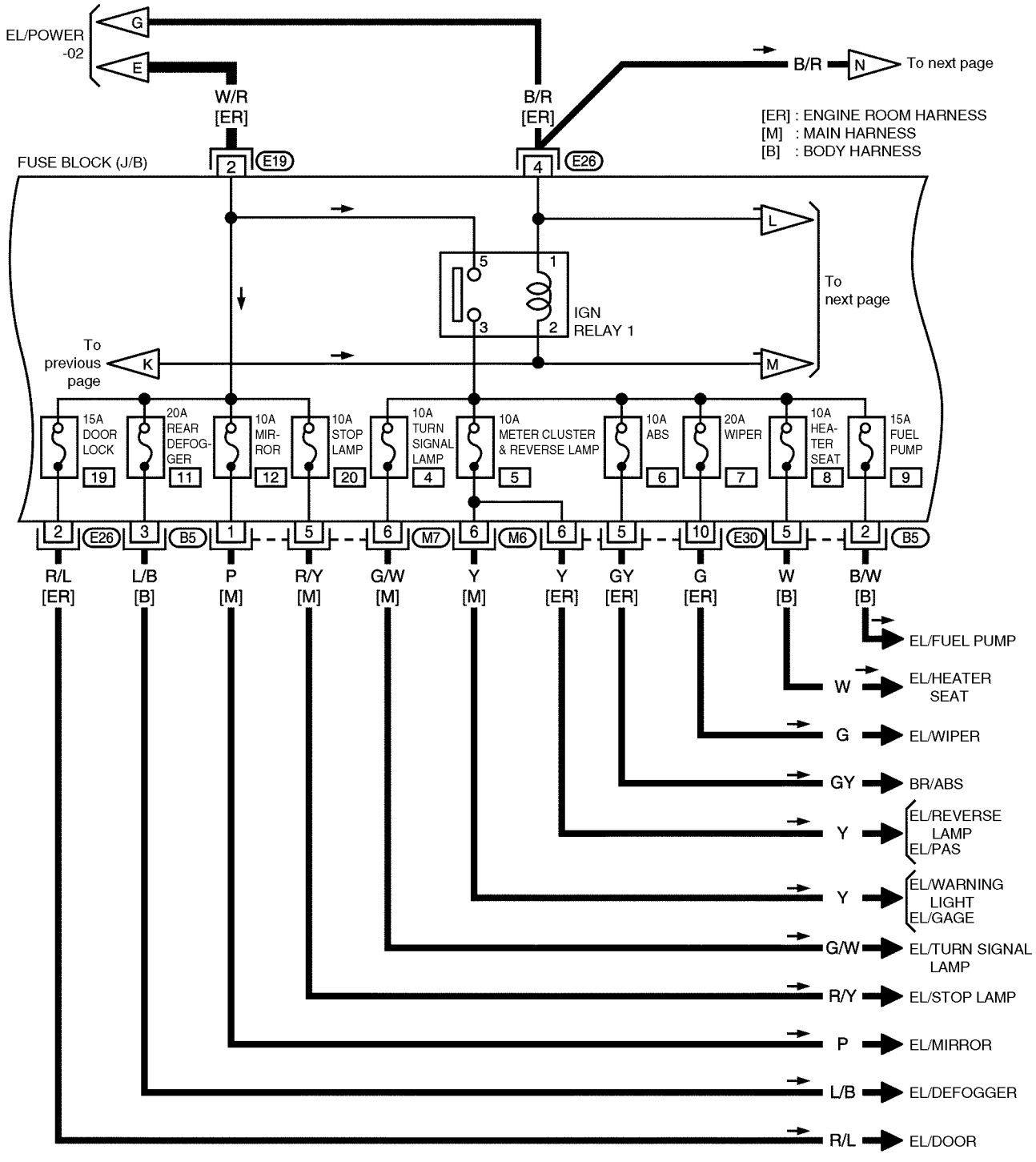
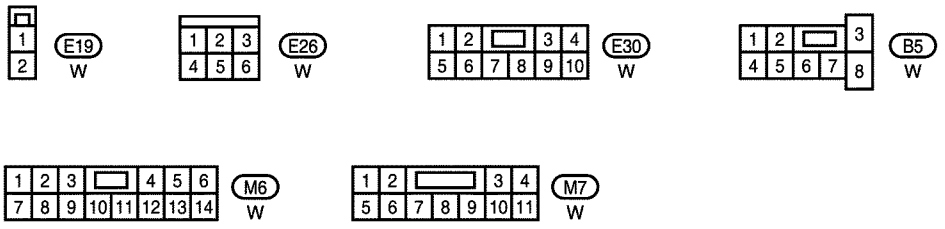
Wiring Diagram





SRWZ051_O1

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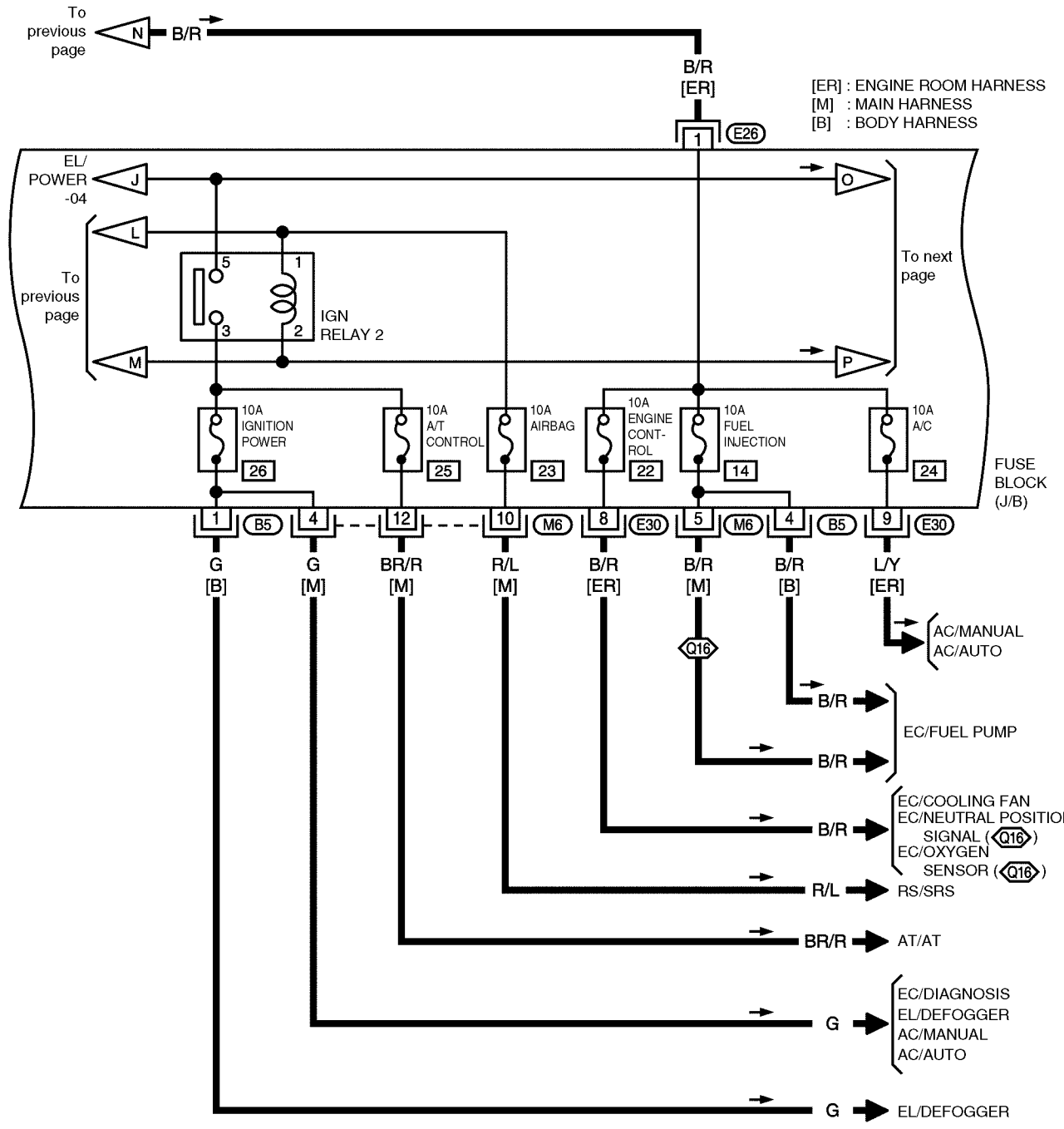
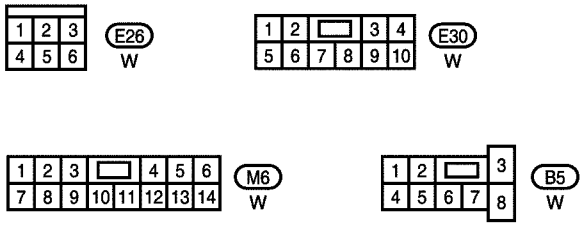
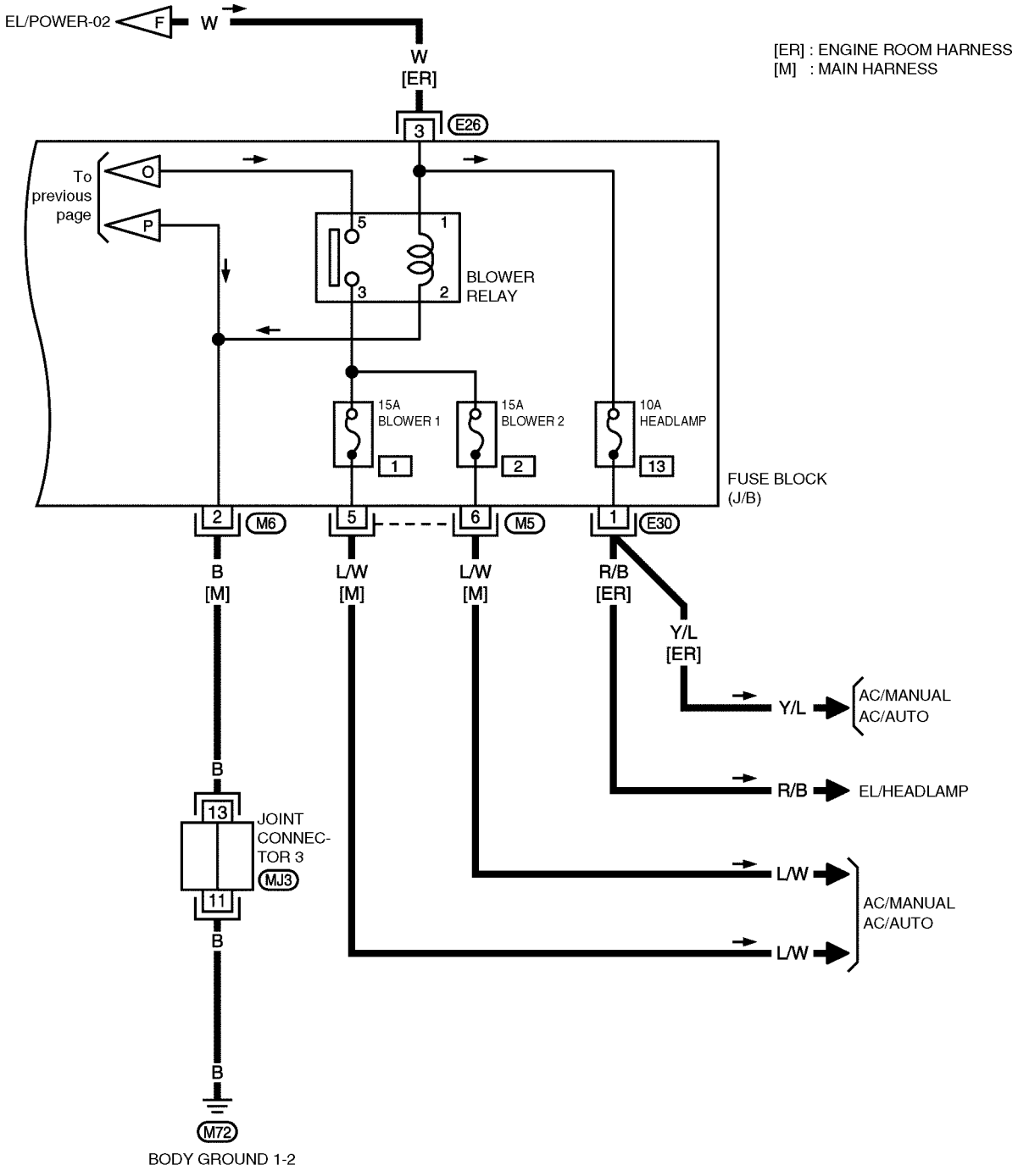


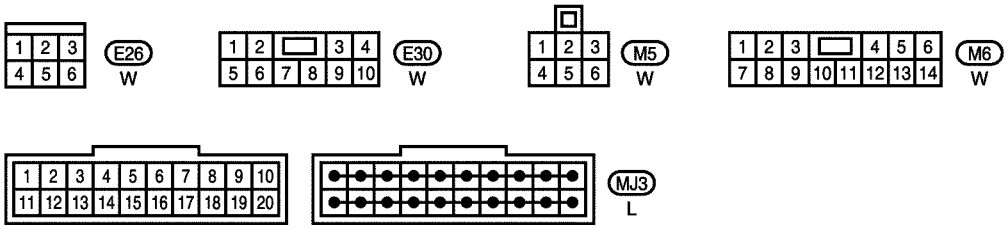
Q16 : With QG1.6 ENGINE



SRWZ052_O1

Wiring Diagram

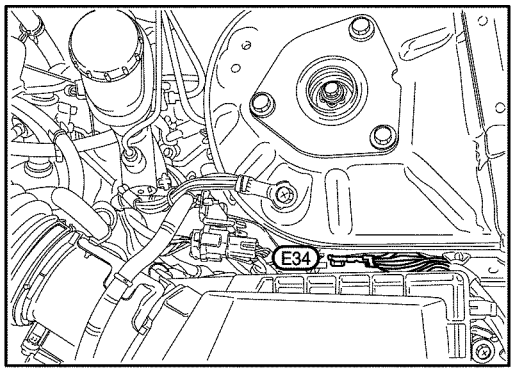


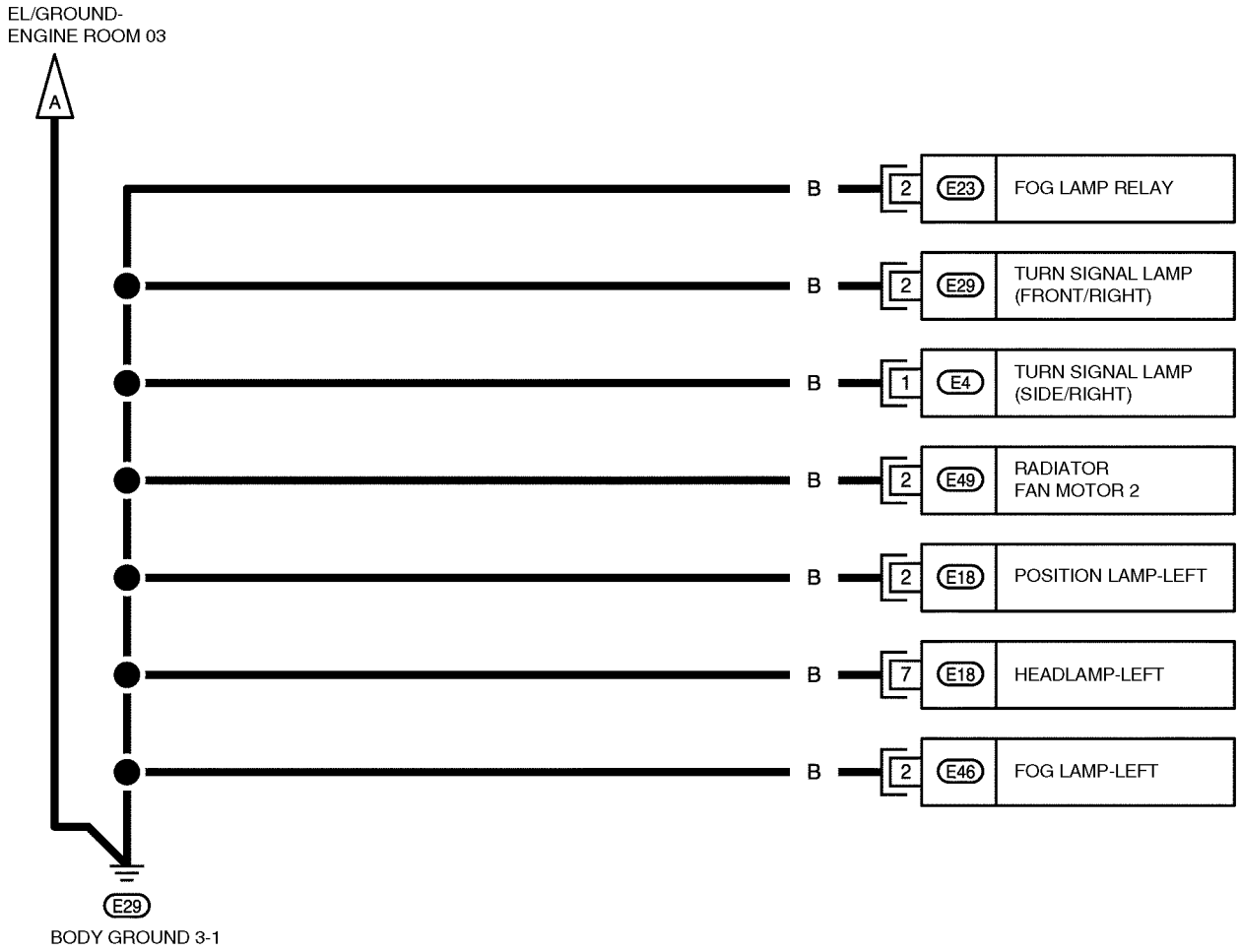


SRWZ053_O1

Wiring Diagram — EL/Ground-Engine Room 01

ENGINE ROOM HARNESS

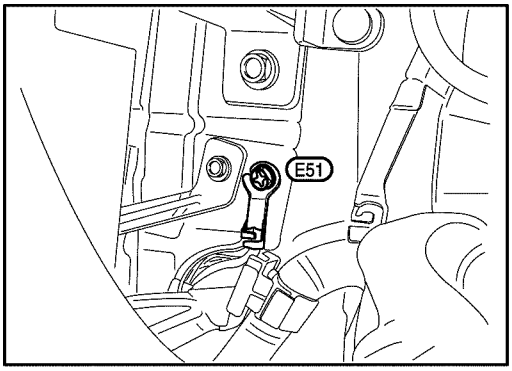


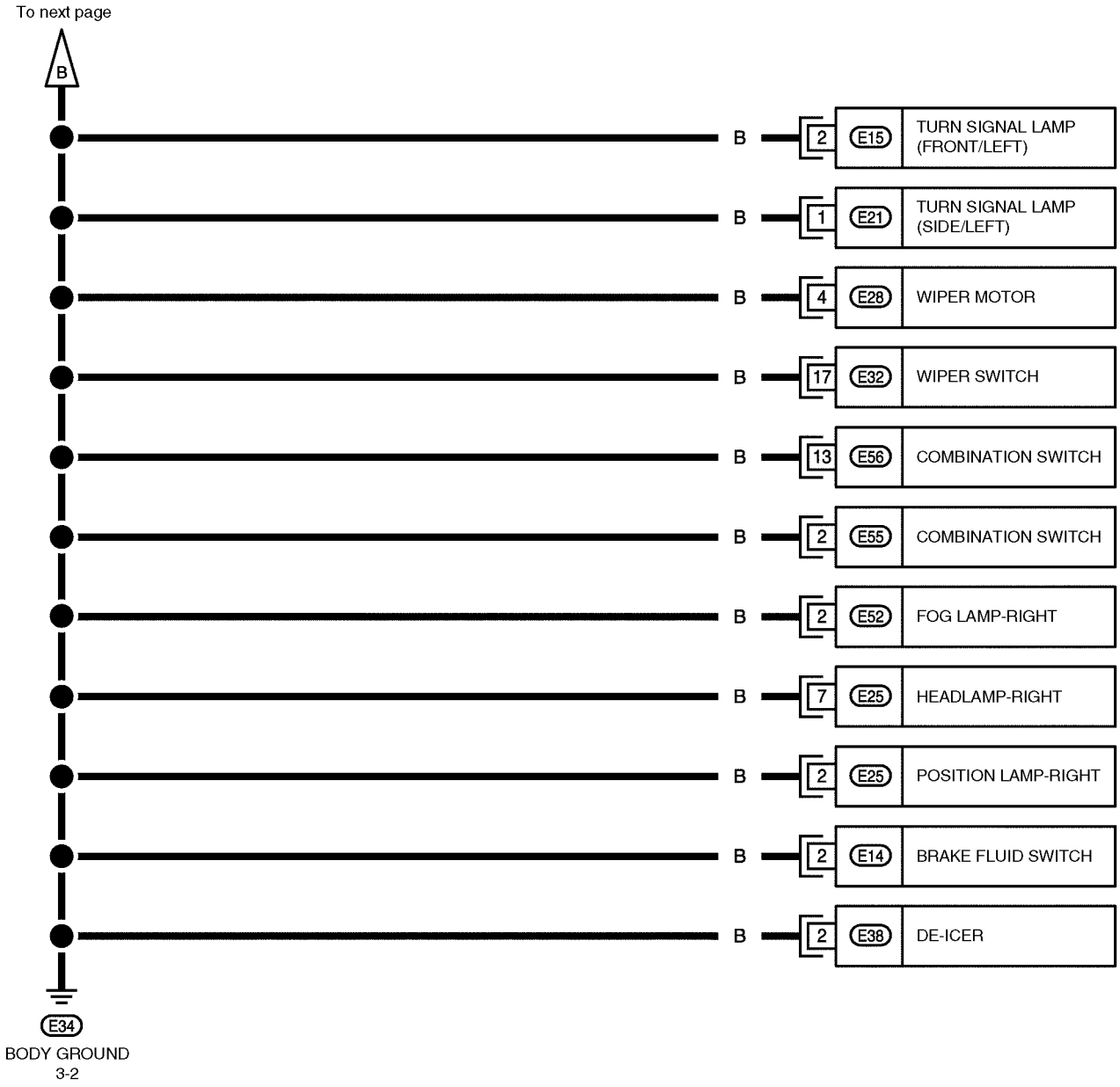


SRWZ055_O1

Wiring Diagram — EL/Ground-Engine Room 02

ENGINE ROOM HARNESS-CONTINUED

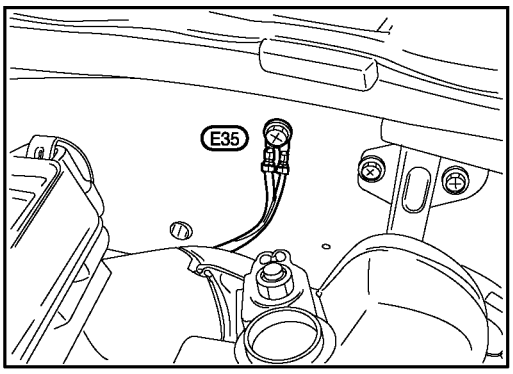


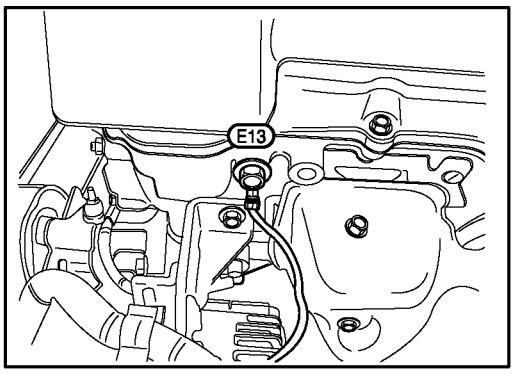


SRWZ056_O1

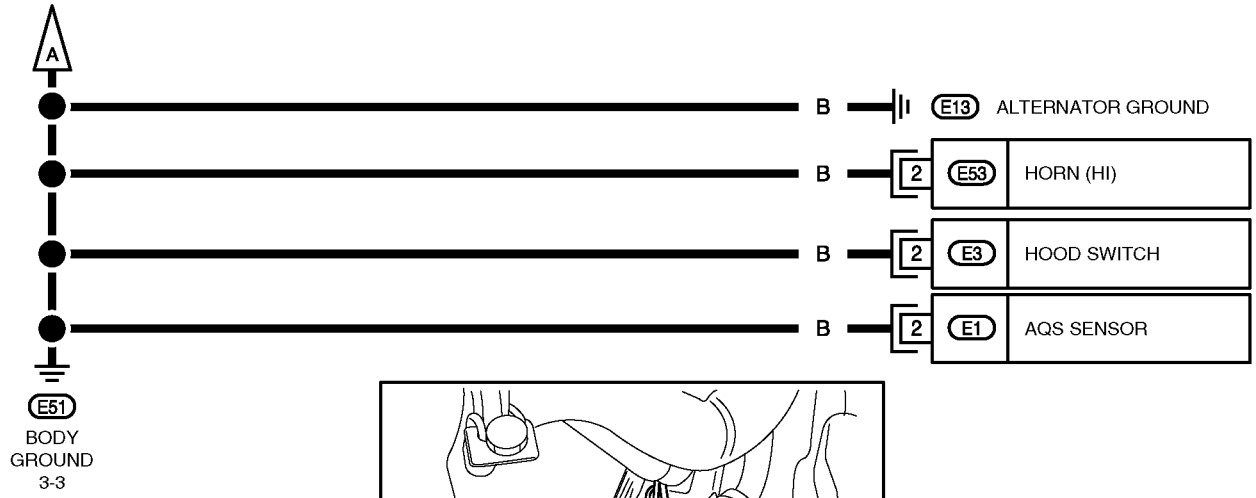
Wiring Diagram — EL/Ground-Engine Room 03

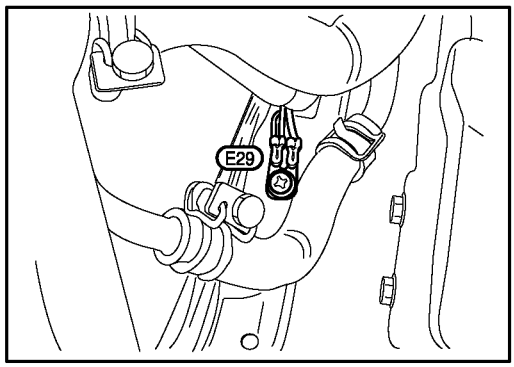
ENGINE ROOM HARNESS-CONTINUED





EL/GROUND-
ENGINE ROOM 01





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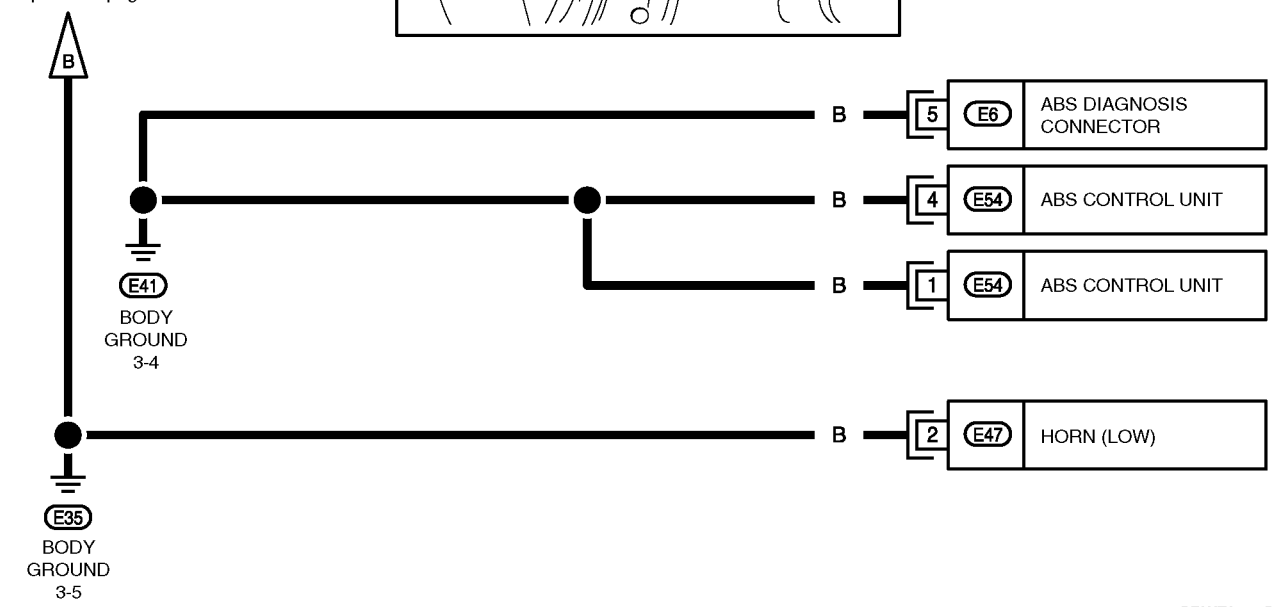
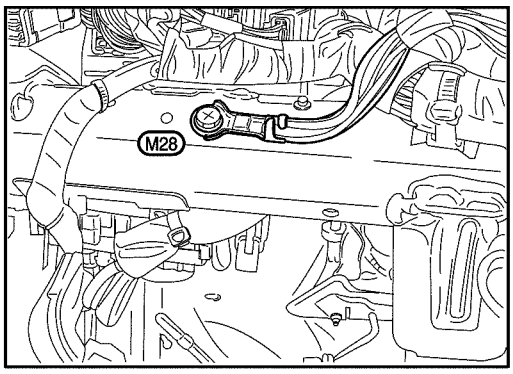
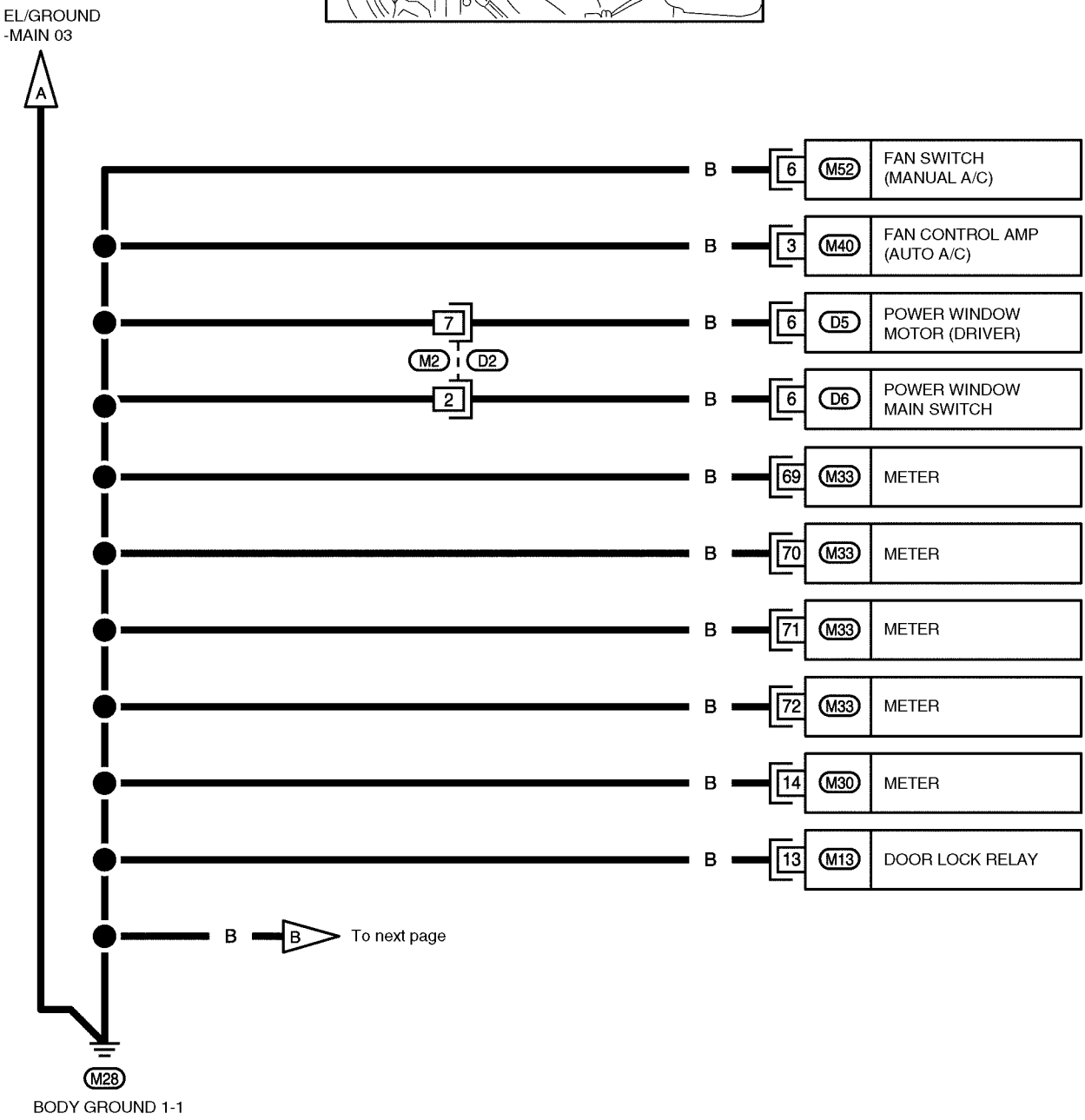


SRWZ057_O1

Wiring Diagram — EL/Ground-Main 01

MAIN HARNESS

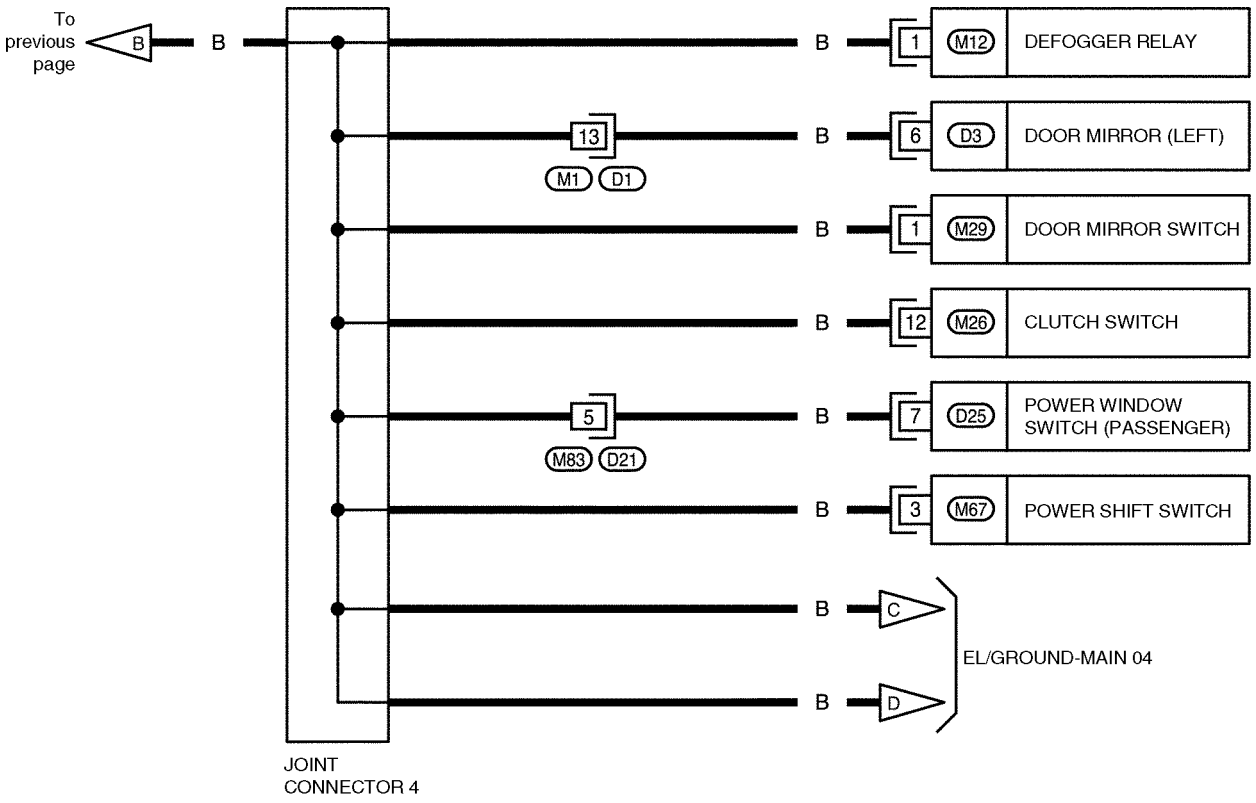




SRWZ058_O1

Wiring Diagram — EL/Ground-Main 02

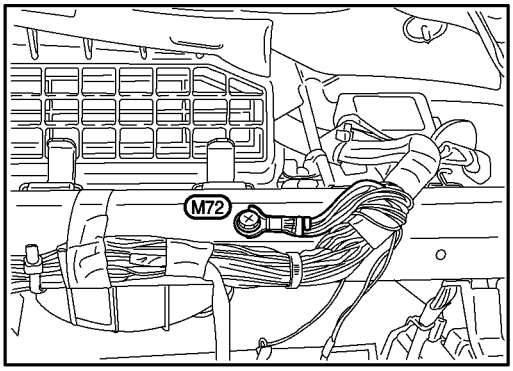
MAIN HARNESS-CONTINUED



SRWZ059_O1

Wiring Diagram — EL/Ground-Main 03

MAIN HARNESS-CONTINUED



EL/GROUND
-MAIN 01

A

Q16 : QG1.6 ENGINE

Q16 13 (M79) (S106) B → EL/GROUND-EGI (QG16)

5 (M83) (D21)	B	3	D25	POWER WINDOW SWITCH (PASSENGER)
	B	1	M64	HAZARD WARNING LAMP SWITCH
	B	3	M64	HAZARD WARNING LAMP SWITCH
	B	10	M49	AUDIO
	B	20	M44	TELEMATICS UNIT
	B	2	M57	ASH TRAY
	B	1	M56	CIGARETTE LIGHTER ILLUMINATION
	B	1	M61	POWER SOCKET
	B	2	M3	RELAY MODULE
	B	2	M66	DIGITAL CLOCK
	B	9	M60	A/T DEVICE
	B	11	M60	A/T DEVICE
7 (M83) (D21)	B	6	D22	DOOR MIRROR (RIGHT)
	B	4	M65	DOOR LOCK SWITCH

B → E
B → F

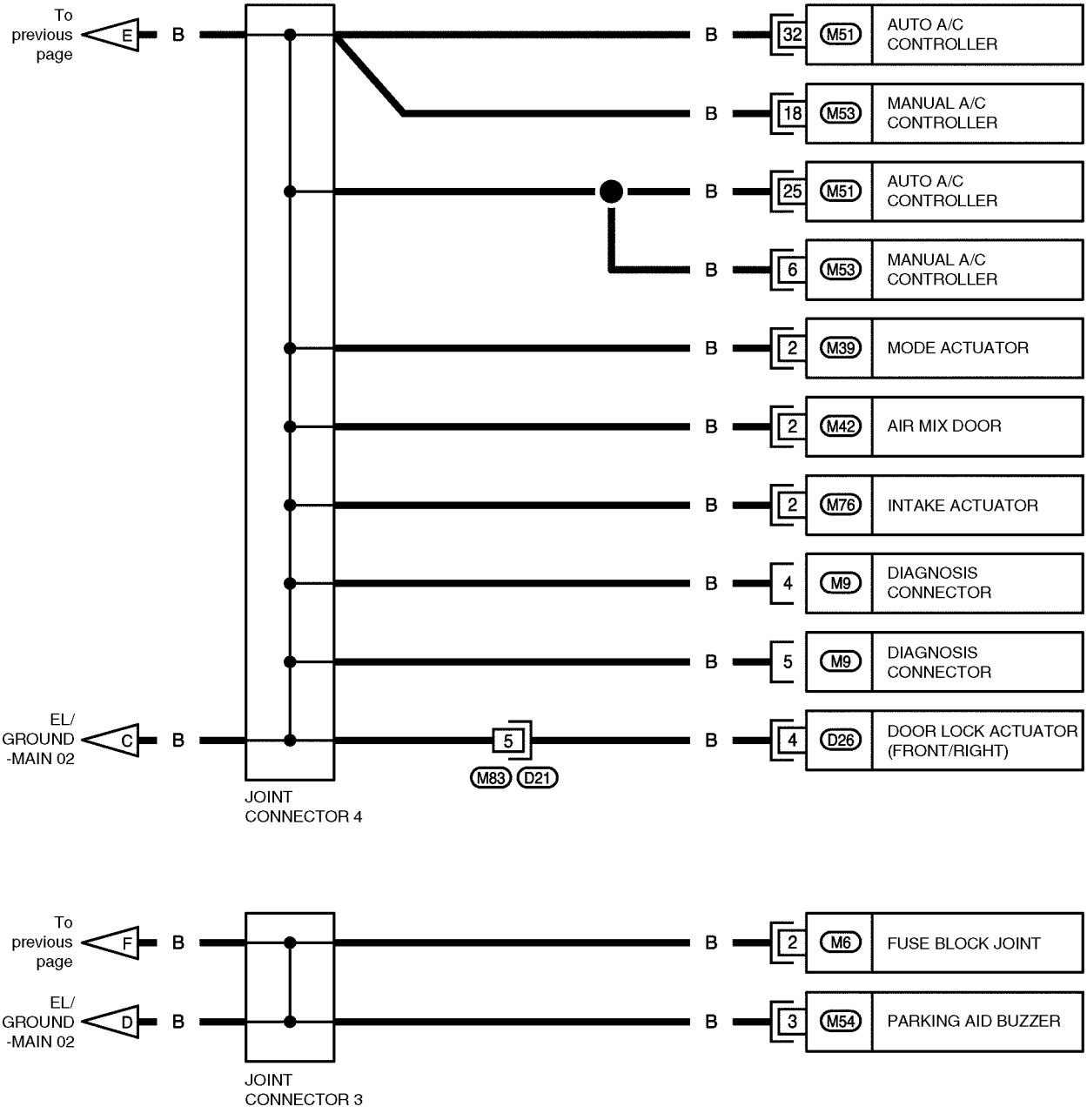
To next page

M72 BODY GROUND 1-2

SRWZ060_O1

Wiring Diagram — EL/Ground-Main 04

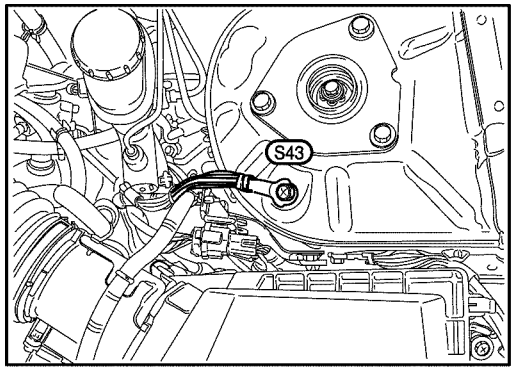
MAIN HARNESS-CONTINUED



SRWZ061_O1

Wiring Diagram — EL/Ground-EGI (QG16)

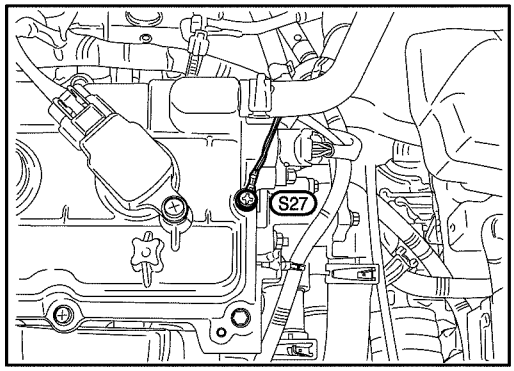
EGI HARNESS (QG16)



B → EL/GROUND-MAIN 03

B	1	S1	ENGINE CONTROL UNIT
B	115	S1	ENGINE CONTROL UNIT
B	116	S1	ENGINE CONTROL UNIT
B	25	S105	A/T CONTROL UNIT
B	48	S105	A/T CONTROL UNIT
B	1	S40	ETC SHIELD GROUND
B	1	S40	ETC SHIELD GROUND
B	1	S40	ETC SHIELD GROUND
B	2	S15	INHIBITOR SWITCH
B	2	S20	NEUTRAL POSITION SWITCH (M/T)

S34
BODY GROUND



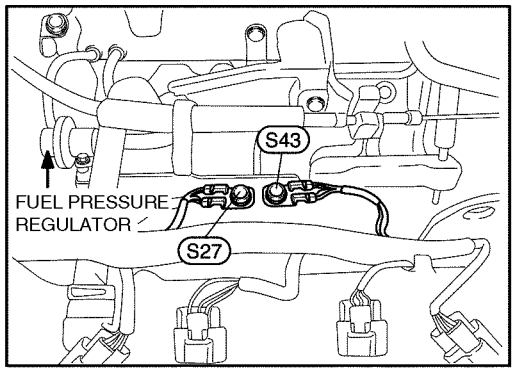
B	2	S25	IGNITION COIL #1
B	2	S26	IGNITION COIL #2
B	2	S31	IGNITION COIL #3
B	2	S35	IGNITION COIL #4

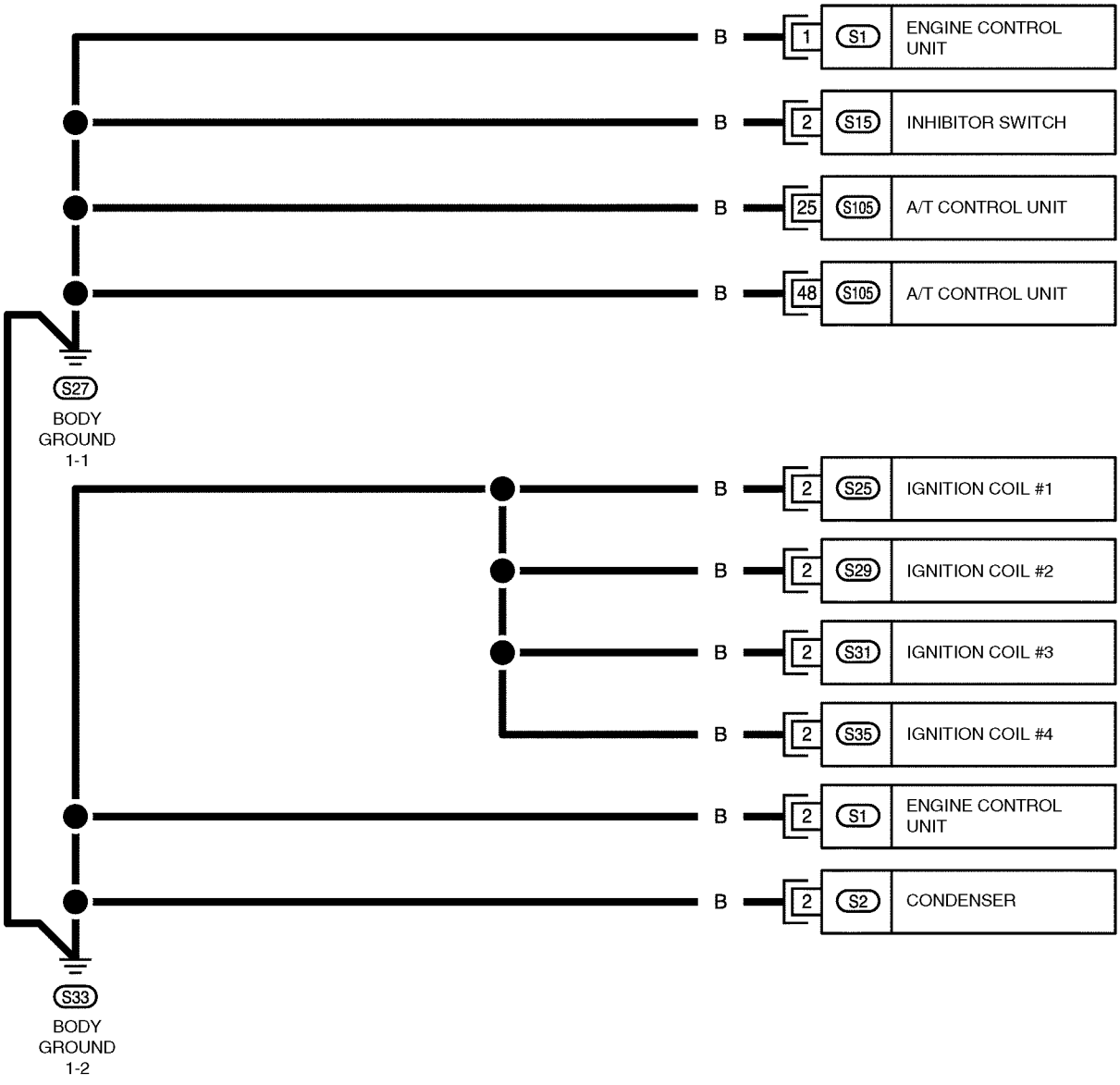
S27
BODY GROUND
1-1

SRWZ062_O1

Wiring Diagram — EL/Ground-EGI (QG15)

EGI HARNESS (QG15)

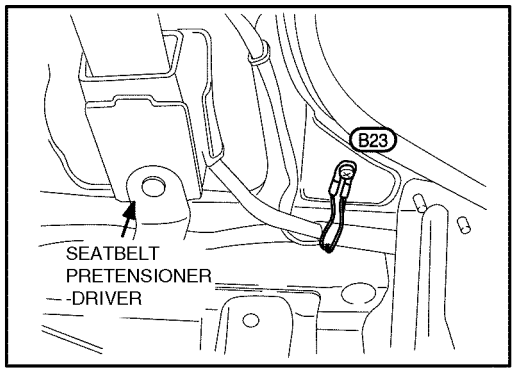




SRWZ063_O1

Wiring Diagram — EL/Ground-Body

BODY HARNESS



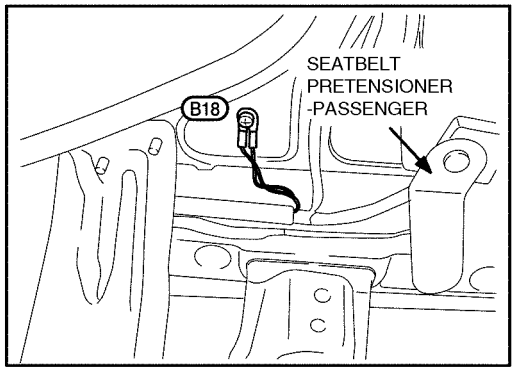
B — 4 — B28 — FUEL PUMP

B — 5 — B25 — D51 — 7 — D52 — POWER WINDOW SWITCH (REAR/LEFT)

B — 7 — 1 — D54 — DOOR LOCK ACTUATOR (REAR/LEFT)

B — 6 — B30 — T1 — EL/GROUND-TAIL

B23
BODY
GROUND 4-1



B — 4 — B12 — HEATER SEAT SWITCH (RIGHT)

B — 4 — B13 — HEATER SEAT SWITCH (LEFT)

B — 2 — B16 — HEATER SEAT (RIGHT)

B — 2 — B11 — HEATER SEAT (LEFT)

B — 2 — B10 — SEATBELT SWITCH

B — 5 — B20 — D41 — 7 — D52 — POWER WINDOW SWITCH (REAR/RIGHT)

B — 7 — 1 — D54 — DOOR LOCK ACTUATOR (REAR/RIGHT)

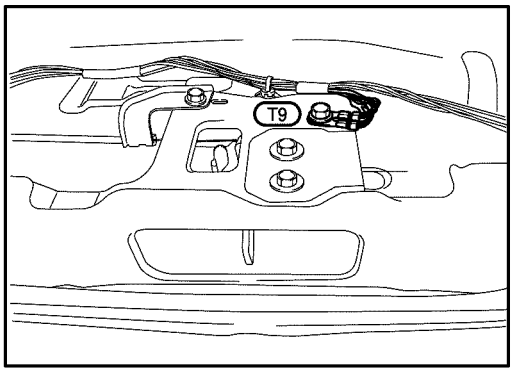
B — 11 — B15 — AIRBAG CONTROL UNIT

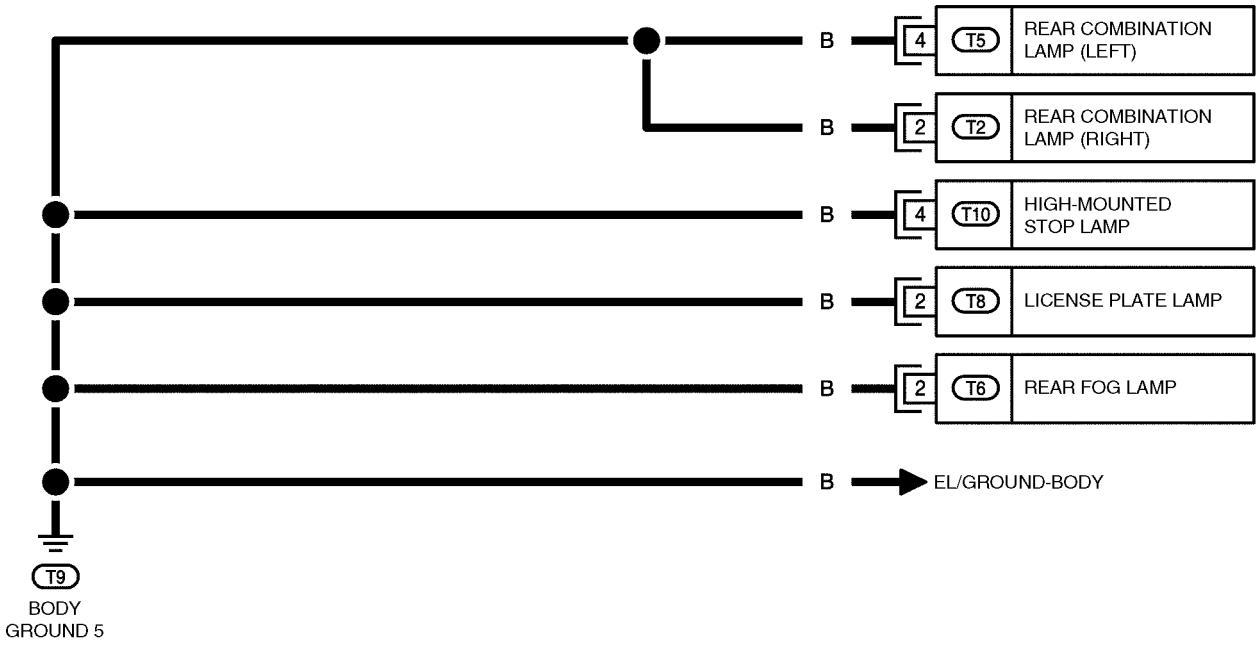
B18
BODY
GROUND 4-2

SRWZ064_O1

Wiring Diagram — EL/Ground-Tail

TAIL HARNESS



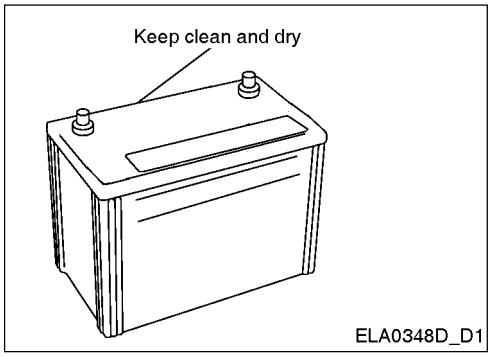


SRWZ065_O1

Precautions in Handling

CAUTION:

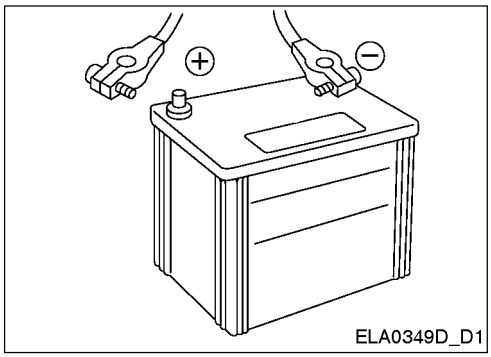
- **When you have to jump start the engine using battery and the jumper cable, use only 12 V battery.**
- **After battery cable connection, check if it is securely tightened on the terminal.**
- **During regular inspection, check the electrolyte level.**



OVER DISCHARGING PREVENTION

In order to prevent from battery over-discharging, be sure to follow as below.

- Always keep the battery surface (specially the upper surface) clean and dry.
- Keep the terminal connections clean and securely tightened.
- During regular inspection, check the electrolyte level.



- Disconnect the negative (-) terminal of the battery when not using the vehicle for a long period of time.
- Check the battery charge status.

  Check the electrolyte level periodically and check the battery charge status to prevent from over-discharge.

Inspection

ELECTROLYTE LEVEL

Visually inspect if the battery cell's electrolyte level is within the specified level (between MAX and MIN marks).

If the level is low, remove the cap and add the electrolyte to the MAX mark.

CAUTION:

- **The battery fluid has a strong corrosion characteristic so be careful not to stain in your skin, clothes or vehicle. When stained, wash it out with water. Also, do not touch or rub your eyes after touching the battery. If the battery fluid has stained in your eyes, skin or clothes, wash it out in running water for about 15 minutes and consult with a doctor if stained in your eyes.**
- **If the battery is contaminated, wash it with water or warm water.**
- **Use battery fluid or distilled water when adding. If you use tab water, it can cause reduction or discharging.**

Charging Procedure

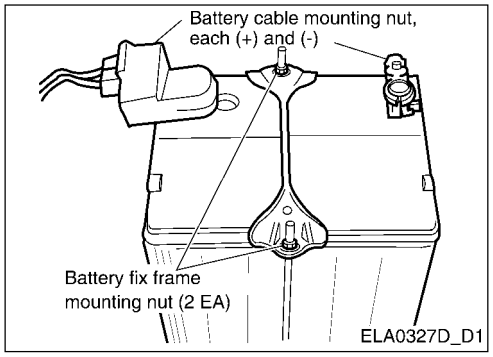
Perform the charging following the charger's instruction manual.

CAUTION:

- **There are 2 kinds of charging procedures: "Normal charge" and "Quick charge".**
  Normal charge: Charging used for battery capacity recovery.
  Quick charge: Charging used for emergency recovery just enough to start the engine.
- **Do not perform "Quick charge" for batteries not fully charged.**
  Normally perform the "Normal charge".
- **The standard charging rate is 1/10 of 5-hour rate capacity for "Normal charge" and 1/2 of 5-hour rate capacity for "Quick charge".**
- **Keep away from flammables when charging the battery.**
- **When connecting the battery to the charger, connect the lead wire first and then turn on the charger. If you turn on the charger first, it may cause sparks.**
- **The battery electrolyte temperature while charging must be maintained at under 45°C for "Normal charge" and under 55°C for "Quick charge".**
- **The quick charge dissipates a lot of heat since it is being charged at a high rate. Do not perform this charging for more than 30 minutes.**

REFERENCE:

- **While charging the battery, the charger's current decreases gradually. This indicates that the battery's voltage is increasing at a normal rate as it is being charged.**



Removal • Installation

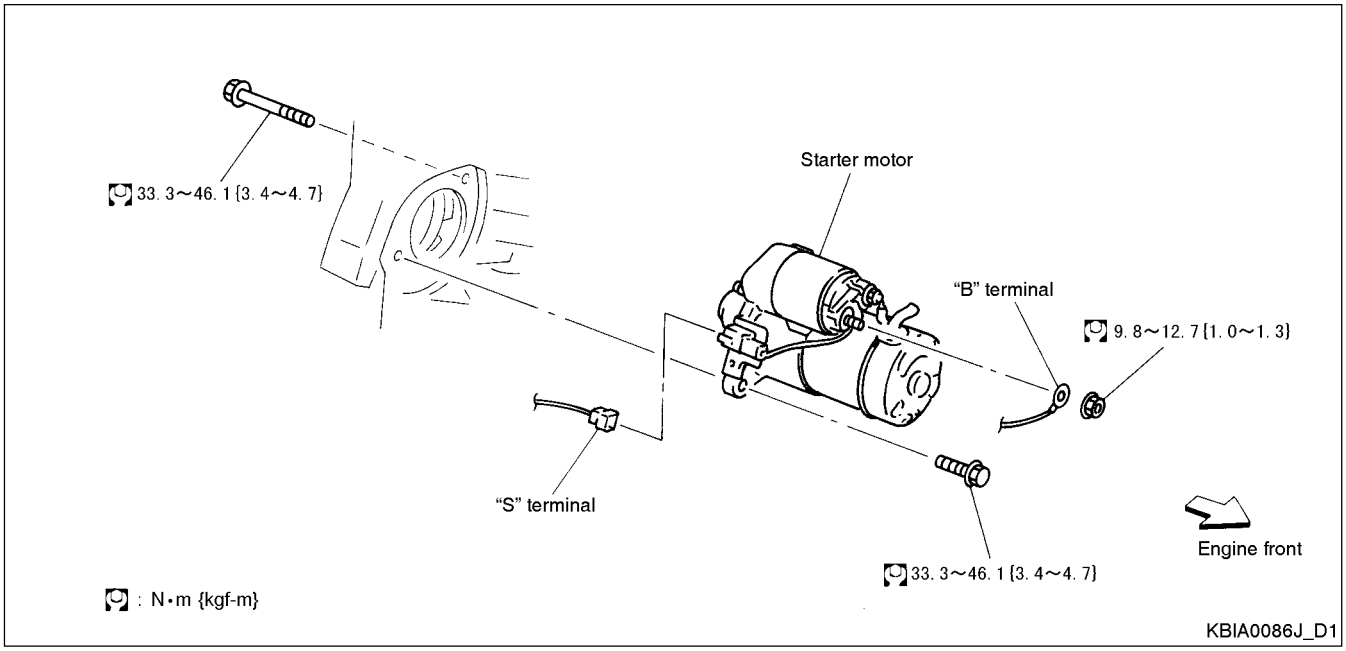
Consider the following cautions during operation.

CAUTION:

- **Remove the negative (-) terminal first and install the positive (+) terminal first.**
- **Tighten the bolts with the specified torque shown below.**

Battery fix frame
Mounting nut
Tightening torque:
3.5 - 5.3 N•m (0.35 - 0.55 kgf-m)
Battery cable
Tightening nut
Tightening torque:
3.0 - 5.1 N•m (0.30 - 0.51 kgf-m)

Removal • Installation of Starter Motor



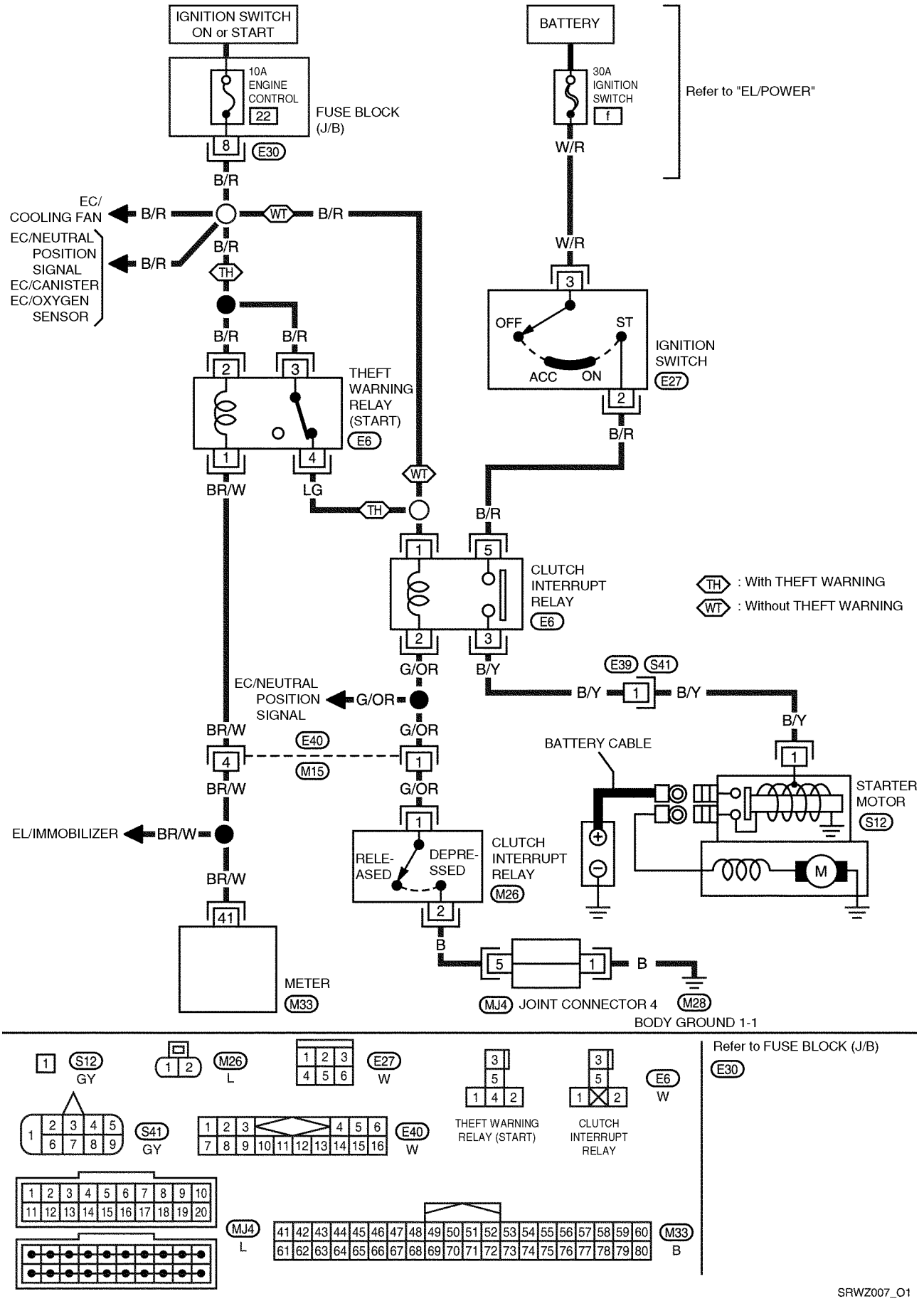
REMOVAL

1. Remove the negative (-) cable of the battery.
2. Remove the air duct.
3. Remove the starter motor upper mounting bolt.
4. Disconnect the starter motor "S" and "B" terminals from the bottom of the vehicle.
5. Remove the starter motor lower mounting bolt and remove the starter motor from under the vehicle.

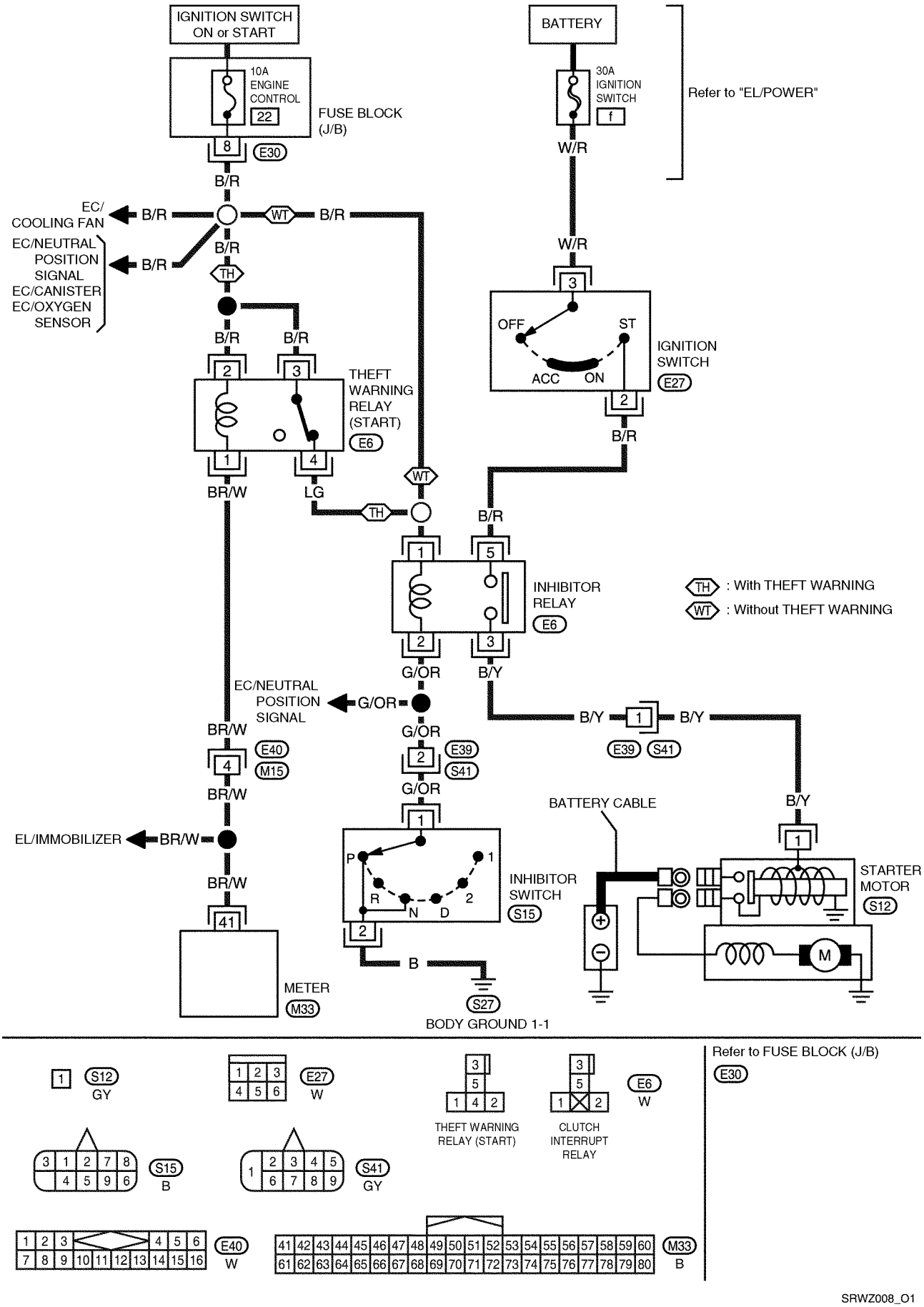
INSTALLATION

- Installation is in the reverse order of removal.

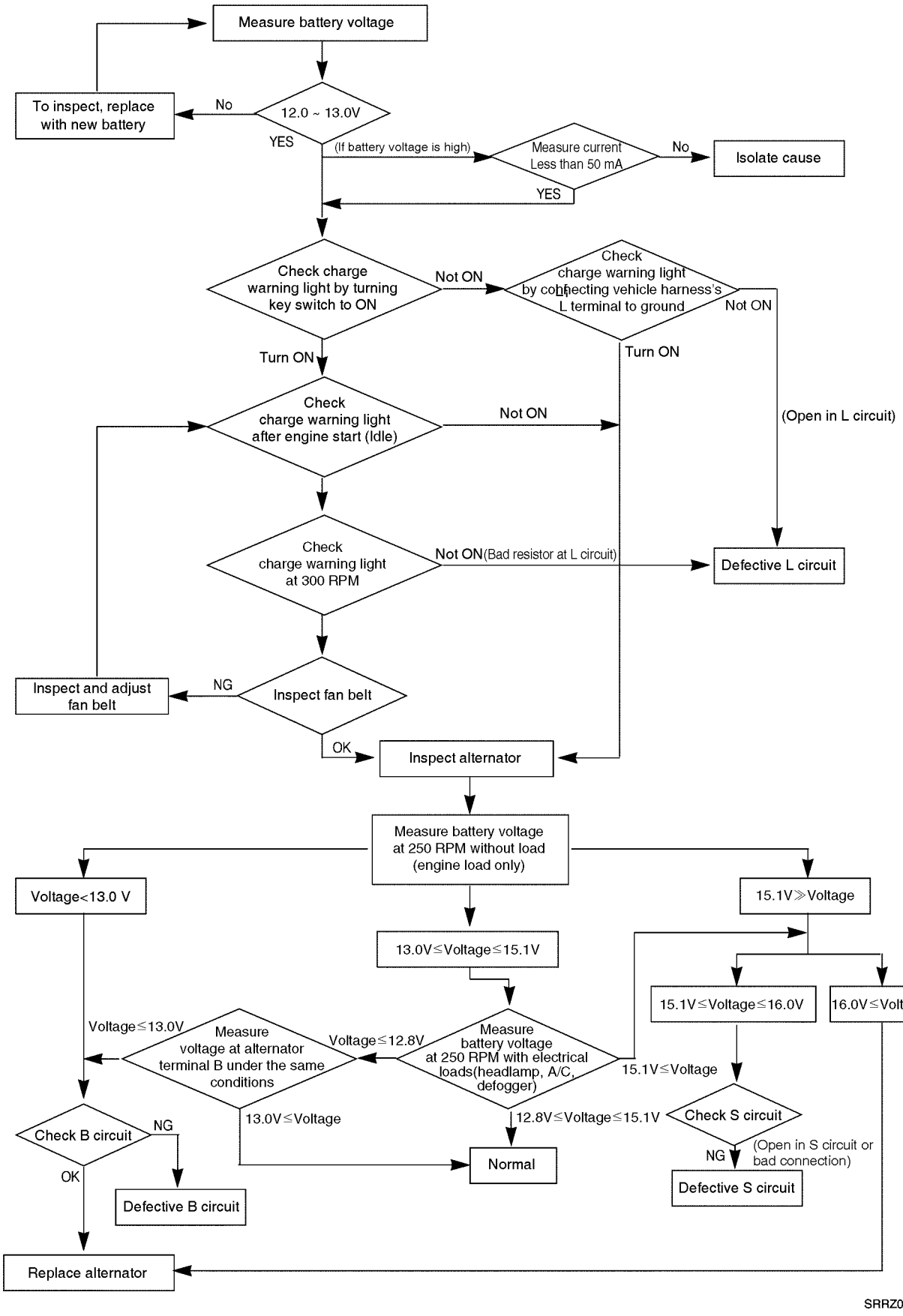
Wiring Diagram



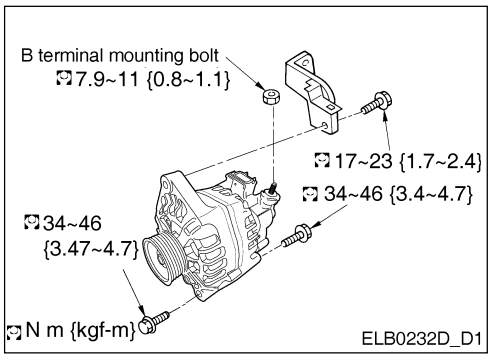
Wiring Diagram



Trouble Diagnosis

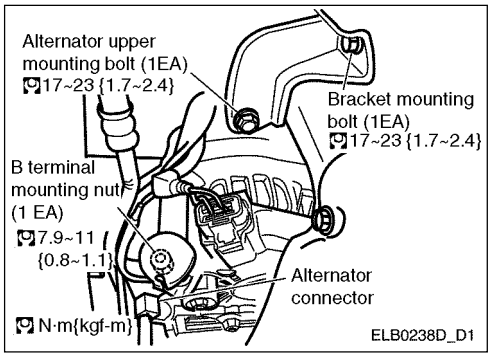


Removal • Installation of Alternator



REMOVAL

1. Remove the negative (-) terminal of the battery.
2. Remove the alternator belt.



3. Remove the alternator connector and B terminal mounting nut.
4. Remove the alternator bracket.
5. Remove the alternator mounting bolt and remove the alternator upwards.

INSTALLATION

Install in the reverse order of removal cautioning as below.

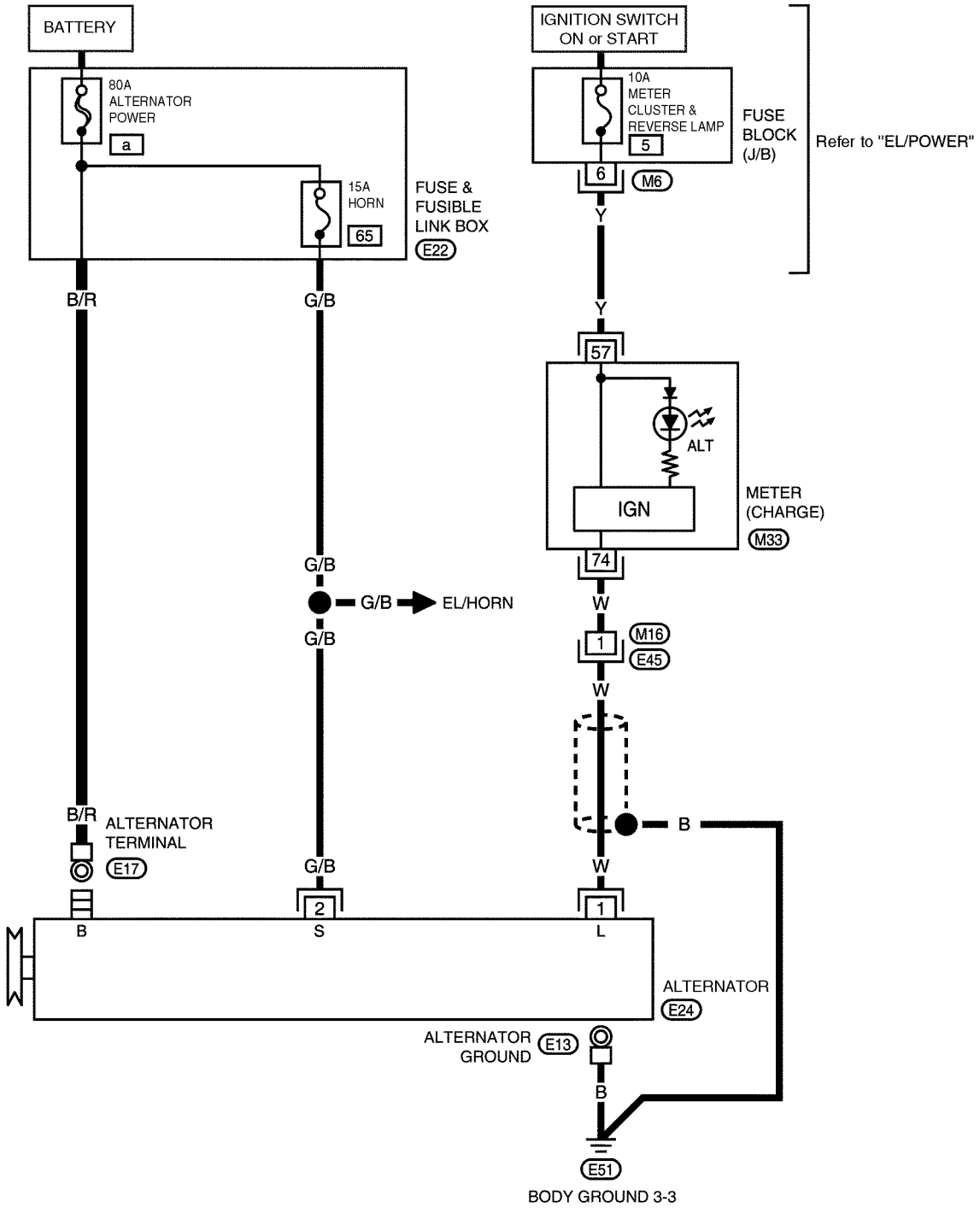
- Adjust the belt tension after installation.

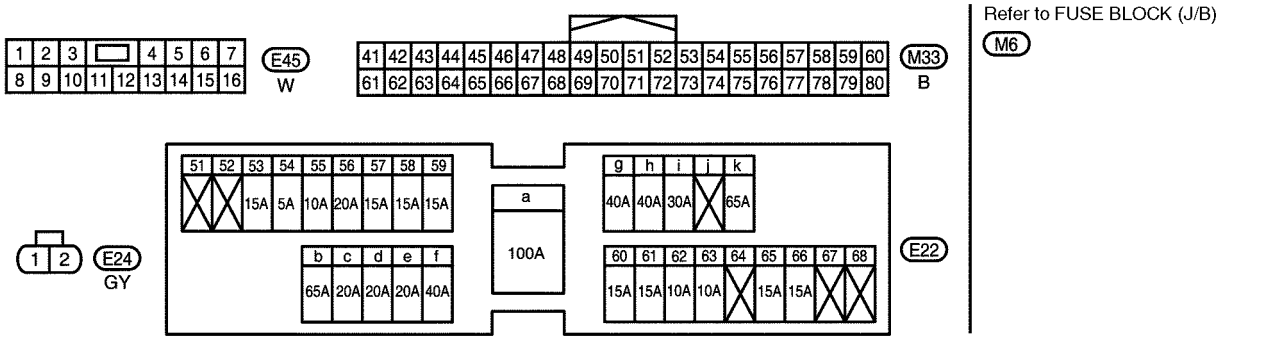
CAUTION:

- **Tighten the B terminal mounting nut extra carefully.**

Wiring Diagram

EL/Charge





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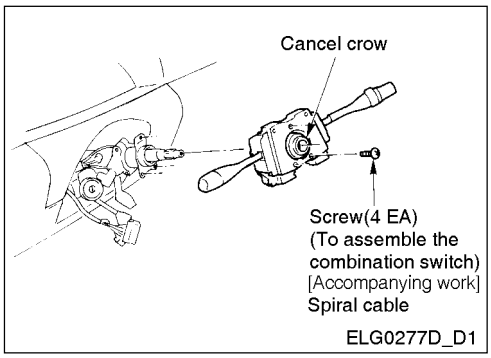
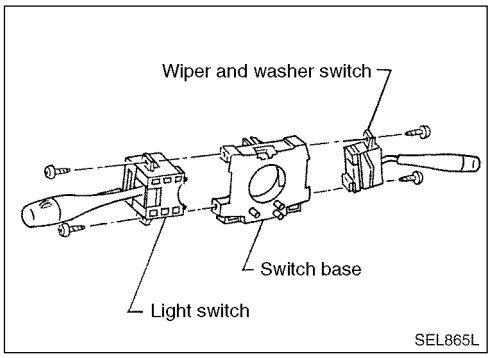


Removal • Installation of Combination Switch

CAUTION:

- **Refer to "Spiral Cable" in "Restraint System" in RS section (RS-13).**

- Each switch can be replaced respectively without removing the combination switch base.
- Remove the screws when removing the combination switch base.
- Install the cancel crow mark (R) downwards when installing the combination switch base.



Removal • Installation

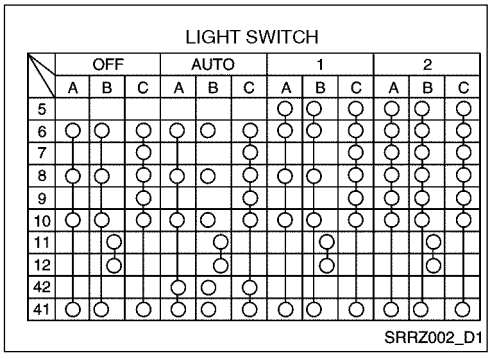
REMOVAL

When removing or installing the airbag module and the spiral cable, refer to the RS section (RS-13).

- Each switch can be replaced respectively without removing the combination switch base.
- Remove the switch base fixing screws to remove the combination switch base.

INSTALLATION

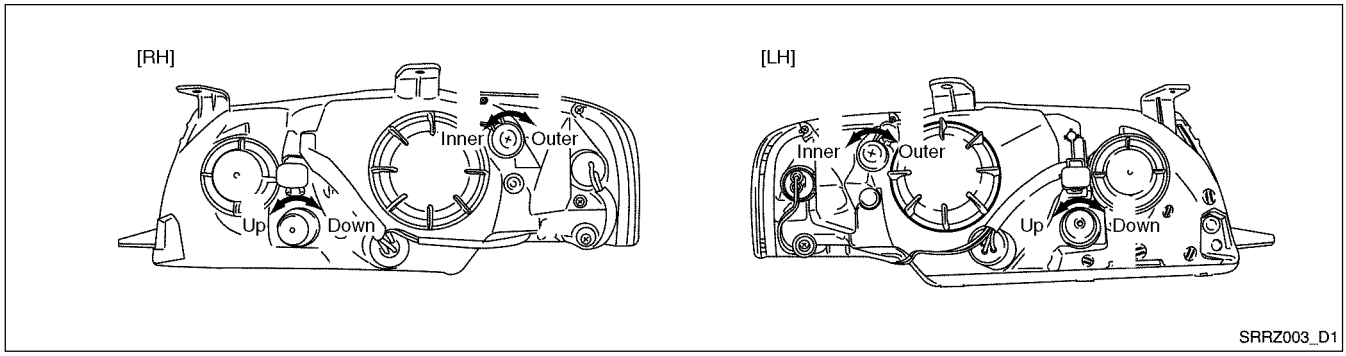
Installation is in the reverse order of removal.



Switch Circuit Inspection

Using a circuit tester, inspect the continuity between the terminals during light/turn signal switch operation.

Aiming Adjustment



- Adjust by rotating the aiming adjust screw.
- Refer to the illustration for adjust screw location.

CAUTION:

- **Turn the aiming adjust screw towards tightening direction. (If have to be adjusted reverse direction, loosen enough and then tighten to adjust.)**

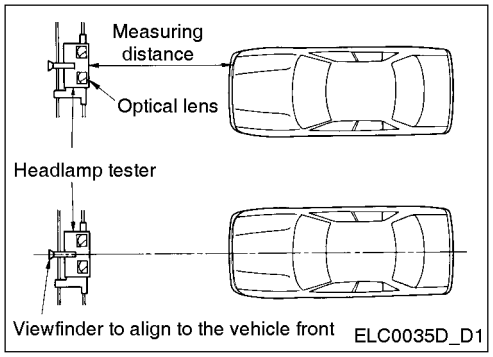
PREPARATION BEFORE ADJUSTMENT

1. Let the vehicle empty (Remove all objects from the vehicle's interior and trunk).
2. Clean the headlamp.

CAUTION:

- **Do not use any organic detergent (thinner or gasoline).**

3. Start the engine.
4. Let one person sit on the driver's seat.

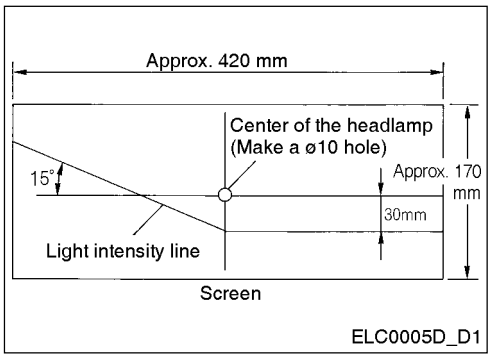


Adjustment Using an Optical Aimer

1. Park the vehicle in front of the tester and maintain the specified distance (1 or 3 m) between the headlamp and the tester lens.
2. Check if the vehicle is facing the tester directly by using viewfinder. If not facing directly, adjust the position by using a correction handle.
3. Turn on the headlamp (high beam) and move the tester so that the light illuminates the tester front.
4. Set the up and down, and, left and right angle adjust handle to the standard values and then rotate the aiming adjust screw so that the light beam points the center of indicator needle.

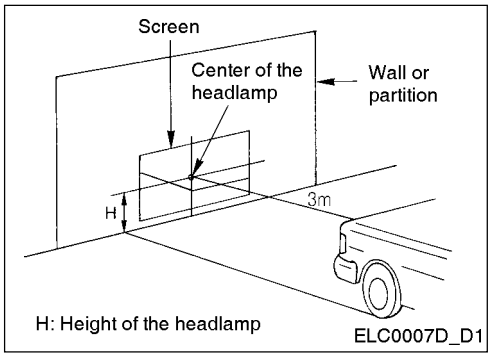
CAUTION:

- **Refer to tester's instruction manual for details.**

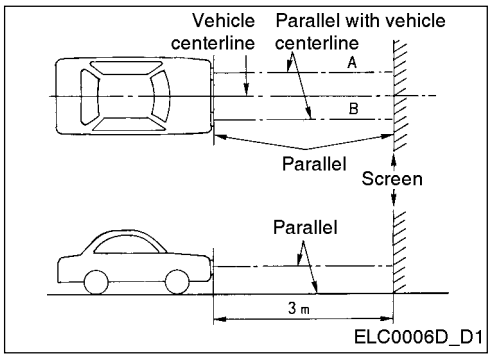


Adjustment Using an Aiming Screen (Adjustment by Using Beam Pattern)

1. Prepare an aiming screen (adjustment by using beam pattern) as shown in the illustration using a white paper board.



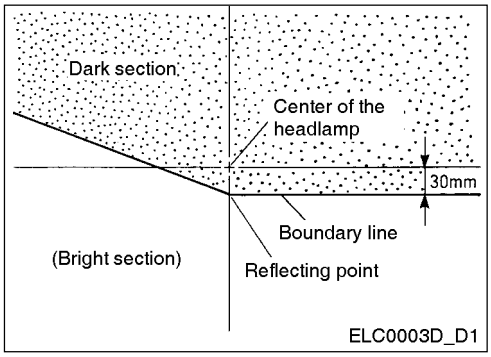
2. Park the vehicle in front of the wall or partition (perpendicular with the road) on the level ground.
3. Mark the center point of the headlamp on the wall or partition.
4. Place the aiming screen at the wall or partition so that the marked center point matches with the hole on the aiming screen and then fix it to be parallel with the road surface.



5. Maintain the 3 m of distance between the aiming screen and the headlamp in parallel as A = B.
6. Block the headlamp light that is not being adjusted with a partition.

CAUTION:

- **Do not cover the lens surface with a mask since it is the resin-type lens.**

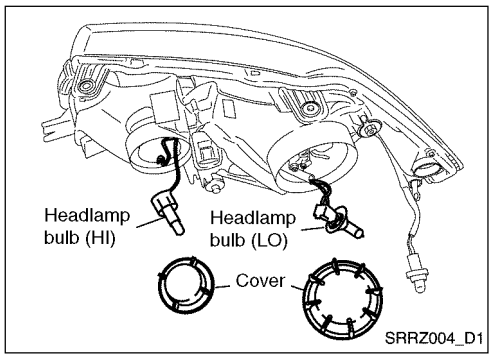


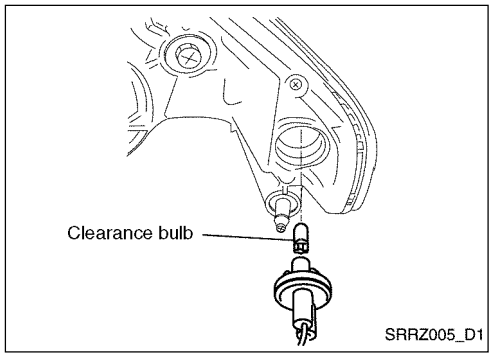
7. Inspect the headlamp (low beam).
8. Adjust the headlamp aiming as shown in the illustration to meet the brightness boundary line in the aiming screen.

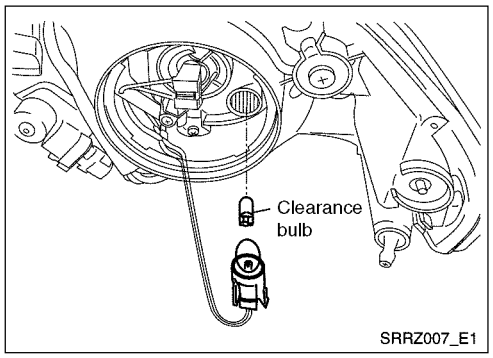
BRIGHTNESS INSPECTION

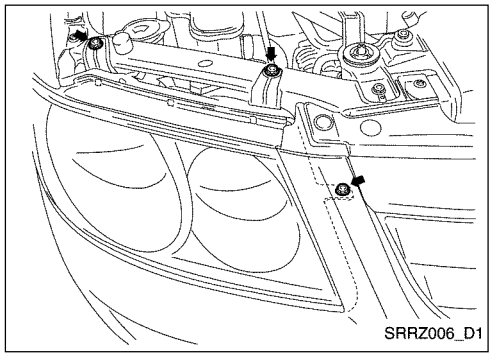
Standard Value:

More than 15,000 candelas (cd)









Bulb Replacement

1. Remove the headlamp connector.
2. Remove the headlamp cover.
3. Remove the retaining spring and remove the bulb.

4-lamp type
Headlamp (High): 12 V, 55 W (H1)
Headlamp (Low): 12 V, 55 W (H7)
Clearance lamp: 12 V, 5 W

CAUTION:

- **Do not touch the bulb glass with bare hand or stain oil. Do not touch the bulb when lighted or right after turning off. It is extremely hot.**
- **When you leave the removed bulb for a long time, the bulb performance decreases due to lens and reflector dusting (dirty and dark). Perform the bulb replacement after preparing a new bulb.**
- **After installing the bulb, securely fasten the headlamp cover to assure water resistance.**

Removal • Installation

REMOVAL

1. Remove the headlamp, clearance lamp and front turn signal lamp connectors.
2. Remove the front turn signal lamp. Refer to “Removal • Installation of Front Turn Signal Lamp” in “Turn Signal Lamp and Hazard Lamp” (EL-44).
3. Remove the bolts (3 EA) and remove the headlamp from the vehicle while disconnecting the lamp from the headlamp lower clip.

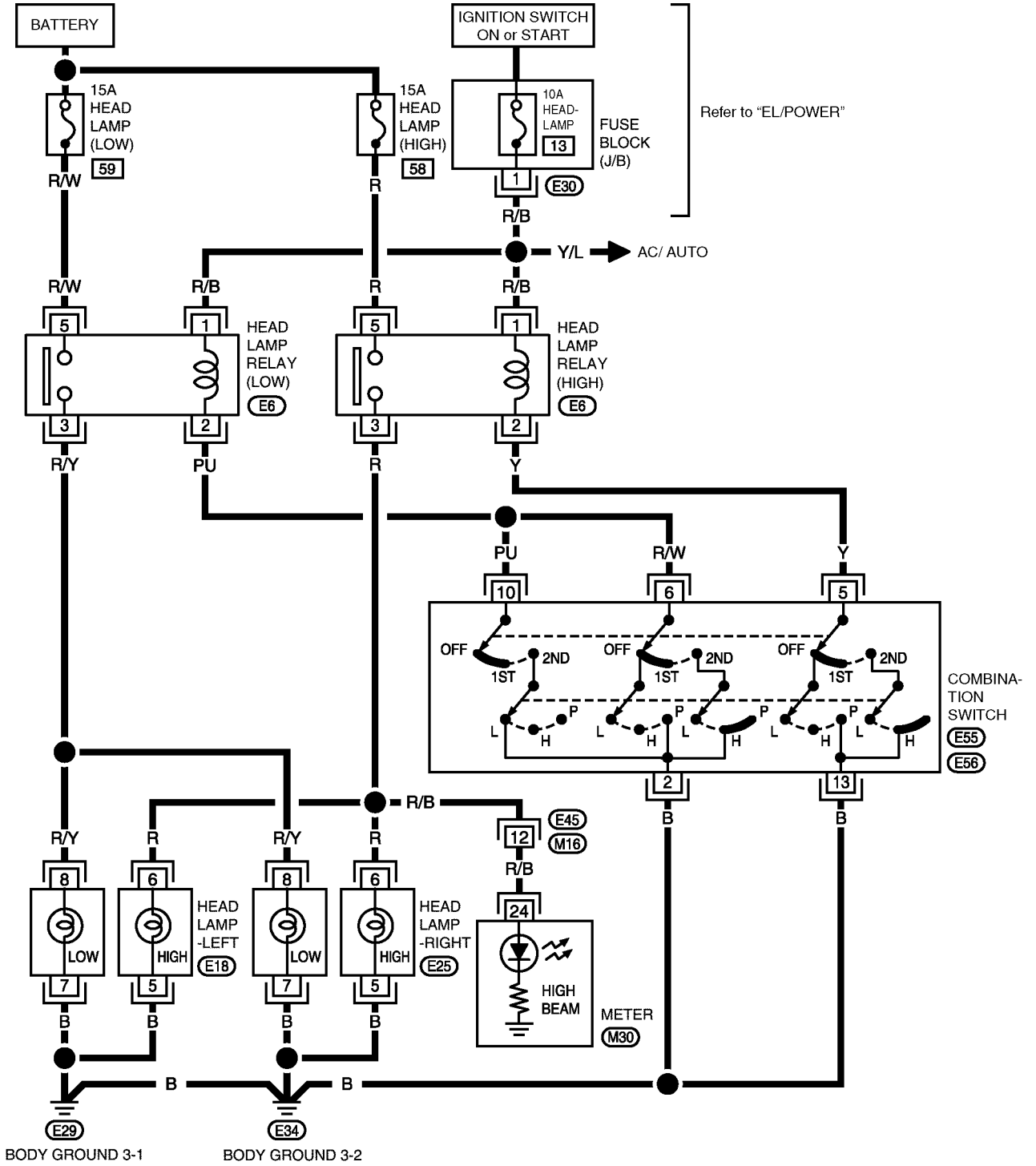
INSTALLATION

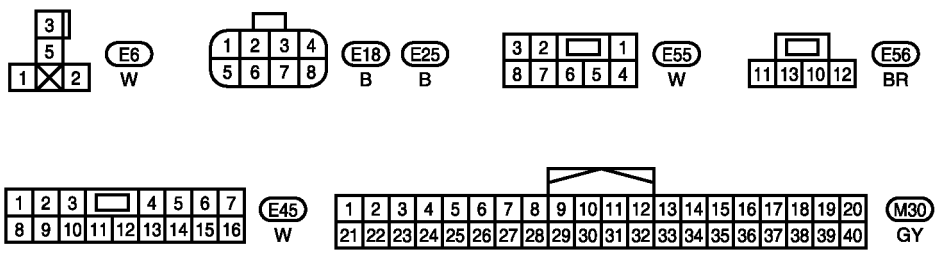
Install in the reverse order of removal cautioning as below.

Headlamp mounting screw
Tightening torque:
4.4 - 6.5 N•m (0.45 - 0.66 kgf-m)

Wiring Diagram

EL/Headlamp



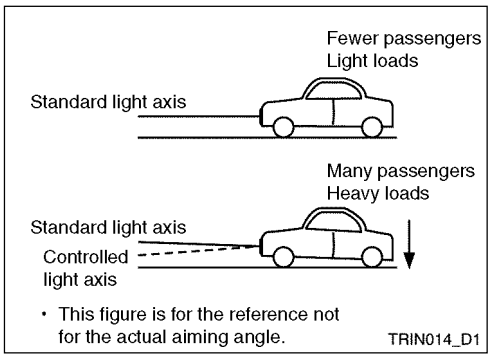


Refer to "FUSE BLOCK (J/B)"
E30

SRWZ001_O1

Trouble Diagnosis

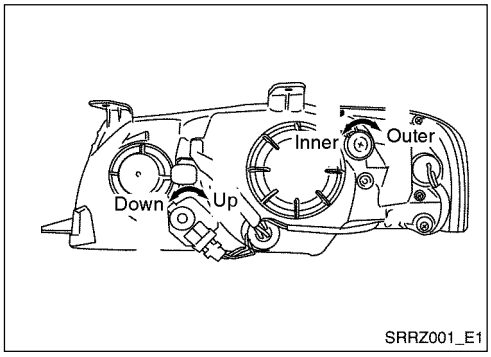
Symptoms	Probable cause	Corrective action
Headlamp high beam does not illuminate (both sides).	1. Bulb 2. Headlamp (high) relay 3. 15 A fuse 4. Lighting switch	1. Check bulb. 2. Check headlamp (high) relay. 3. Check 15 A fuse (No. 58, located in fusible link). 4. Check lighting switch.
Headlamp low beam does not illuminate (both sides).	1. Bulb 2. Headlamp (low) relay 3. 15 A fuse 4. Lighting switch	1. Check bulb. 2. Check headlamp (low) relay. 3. Check 15 A fuse (No. 59, located in fusible link). 4. Check lighting switch.
LH high beam does not operate, but LH low beam operates.	1. Bulb 2. Open in LH high beam circuit	1. Check bulb. 2. Check R wire between joint connector and LH headlamp for an open circuit.
LH low beam does not operate, but LH high beam operates.	1. Bulb 2. Open in LH low beam circuit	1. Check bulb. 2. Check R/Y wire between joint connector and LH headlamp for an open circuit.
RH high beam does not operate, but RH low beam operates.	1. Bulb 2. Open in RH high beam circuit	1. Check bulb. 2. Check R wire between joint connector and LH headlamp for an open circuit.
RH low beam does not operate, but RH high beam operates.	1. Bulb 2. Open in RH low beam circuit	1. Check bulb. 2. Check R/Y wire between joint connector and LH headlamp for an open circuit.
High beam indicator lamp does not operate.	1. Bulb 2. High beam circuit ground 3. Open in high beam circuit	1. Check bulb in combination meter. 2. Check combination meter ground. 3. Check wire between joint connector and combination meter for an open circuit.



Basic Operation

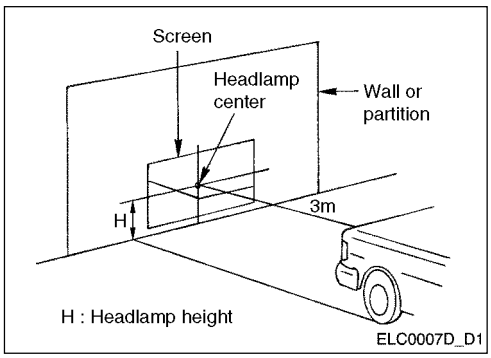
DESCRIPTION

- The headlamp levelling device is a device that adjusts the light axis by moving the headlamp's reflector up or down with the actuator built into the headlamp when the driver operates the levelling control switch according to the number of passengers and loads.
- When picking up passengers or loading luggage, the rear part of the vehicle is lowered and light axis is elevated. At this time, Operate the levelling control switch from 0 to 3rd position (4 stages) so that the light axis is lowered by the actuator.



AIMING ADJUSTMENT

- Adjust by turning the aiming adjustment screw.
- Refer to the figure for the location of the adjustment screw.
- Set the vehicle in unladen condition. (Unload all goods from passenger compartment and trunk compartment.)
- Remove any dirt from the fog lamps.
- Start engine.
- Have one person in driver's seat.

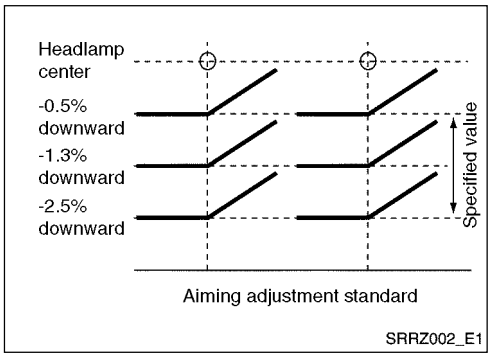


ADJUSTMENT USING AN OPTICAL AIMER

- For adjustment instructions, refer to EL-33.

ADJUSTMENT USING AN AIMING SCREEN (ADJUSTEMENT BY USING BEAM PATTERN)

- For adjustment instructions, refer to EL-34.



AIMING ADJUSTMENT STANDARD

- Set the distance between the aiming adjustment panel and the headlamp at intervals of 10 m and adjust the position so that the vehicle and the panel face each other.

  Position the headlamp levelling control switch to the 0th position and adjust the adjustment screw so that the height of the headlamp is 1.3 % (1.3 cm) lower than the of the center of the headlmap (H).

REFERENCE:

- **If the height "H" of the headlamp center is 100 cm, lower the headlamp height by 1.3 cm which is the 1.3% of the 100 cm so that the headlamp height is 98.7 cm.**

- Specified value of the aiming adjustment

  The headlamp height should be adjusted within -0.5% ~ -2.5% to the headlamp center height "H".

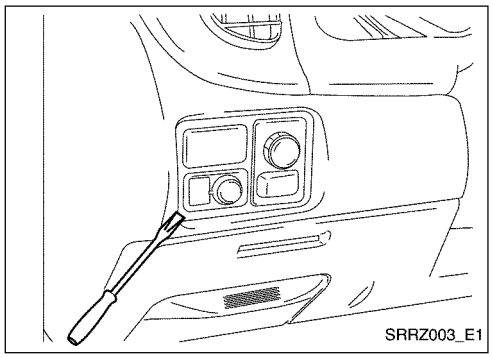
Switch Operation According to Passengers/Loads

REFERENCE DATA

Passengers/Loads	Headlamp levelling switch	Specified value of the aiming adjustment	Measured value		Remarks
			LH	RH	
1 person on the driver's seat	0 position	-0.5% ~ -2.5%	-1.3%	-1.3%	OK
2 persons on the driver's and the passenger's seats	0 position		-1.3%	-1.3%	OK
5 persons	1st position		-1.1%	-1.1%	OK
5 persons + loads in the trunk (120 kg)	2nd position		-0.9%	-0.9%	OK
1 person + loads in the trunk (385 kg)	3rd position		-0.9%	-0.9%	OK

CAUTION:

- **Reference value for 1 person = The weight is 75 kg and the initial aiming adjustment is set to -1.3%.**



Headlamp Levelling Control Switch

REMOVAL AND INSTALLATION

REMOVAL

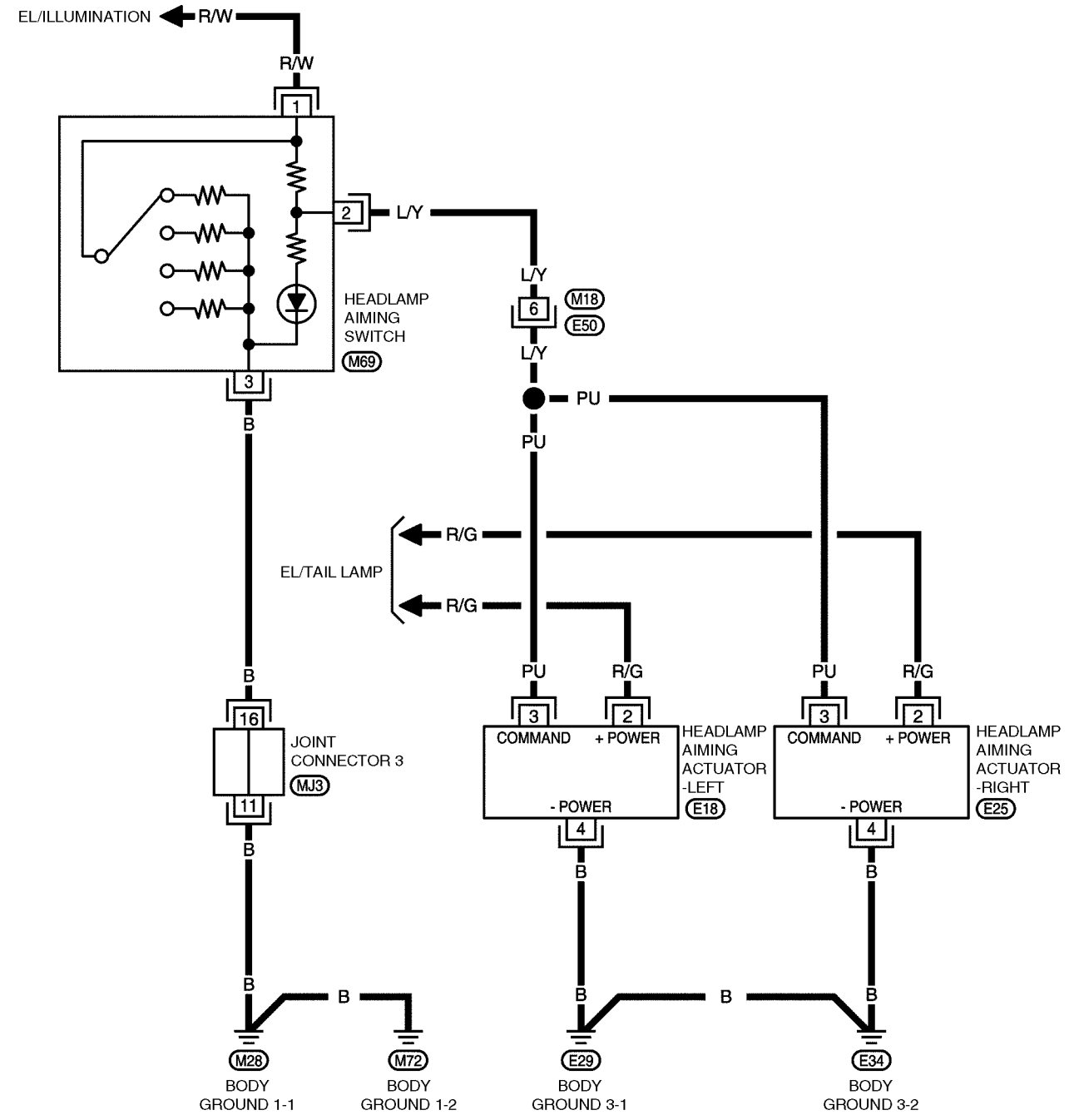
- Remove the headlamp levelling control switch by inserting a minus (-) screwdriver between the left side of the switch and the panel.
- Disconnect the connected connector.

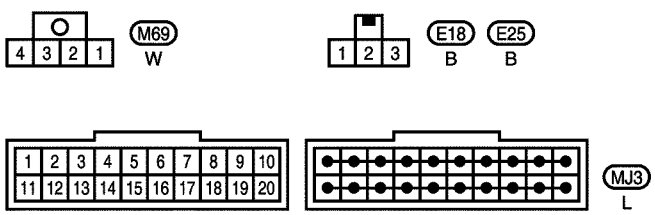
CAUTION:

When removing the switch

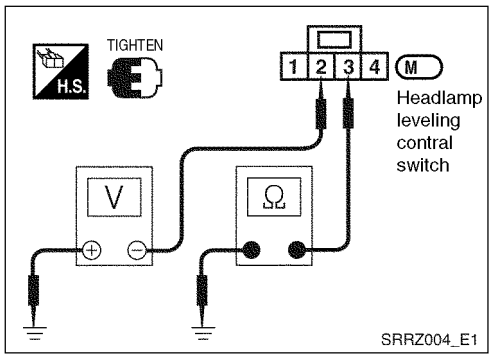
INSTALLATION

- Install in the reverse order of removal.


EL/ILLUMINATION
R/W
R/W
1
2
L/Y
HEADLAMP AIMING SWITCH
M69
3
B
L/Y
6
M18
E50
L/Y
PU
PU
R/G
EL/TAIL LAMP
R/G
B
16
JOINT CONNECTOR 3
MJ3
11
B
PU
R/G
3
2
COMMAND
+ POWER
- POWER
4
HEADLAMP AIMING ACTUATOR -LEFT
E18
PU
R/G
3
2
COMMAND
+ POWER
- POWER
4
HEADLAMP AIMING ACTUATOR -RIGHT
E25
B
B
B
B
B
B
M28
BODY GROUND 1-1
M72
BODY GROUND 1-2
E29
BODY GROUND 3-1
E34
BODY GROUND 3-2


M69
W
E18
E25
B
B
E50
GY
MJ3
L

SRWZ074_O1

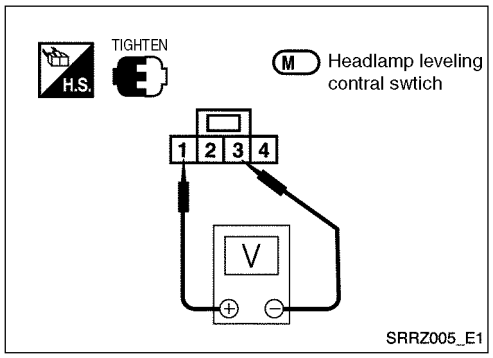


Headlamp Levelling Control Switch

CHECK POWER AND SWITCH GROUND

- Check the headlamp levelling control switch for the power terminal voltage and continuity between terminals.

Terminal No.	Signal	Condition	Measured value
2	Power	Ignition switch ON	Battery voltage
3	Ground	Ignition switch OFF	Continuity should exist

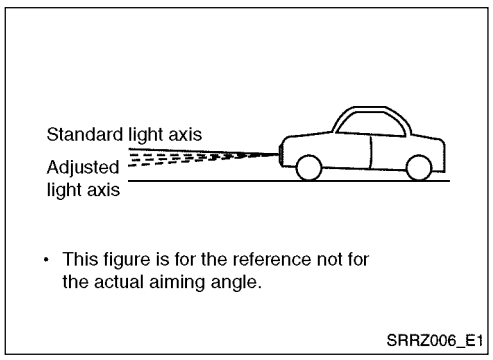


CHECK HEADLAMP LEVELLING CONTROL SWITCH SIGNAL

- Check the signal terminal voltage of the headlamp levelling control switch.

Terminal	Switch position	Measured voltage (V)	Tolerance range
1 - 3	0	9.75	± 5%
	1	7.96	
	2	7.09	
	3	4.89	

- If the measured value is out of the standard, replace the switch.



CHECK HEADLAMP LEVELLING ACTUATOR FOR OPERATION

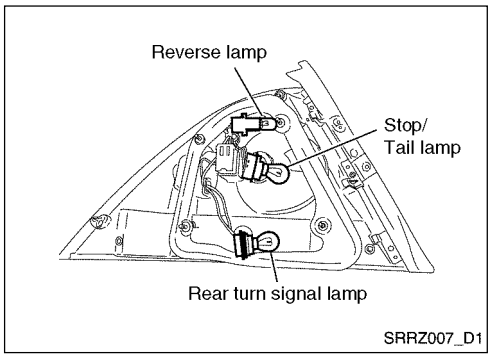
- Check if the light axis is adjusted by operating the headlamp levelling control switch from 0th to 3rd position while the headlamp is turned on.

OK or NG

OK → Connect all the connectors and diagnose again.

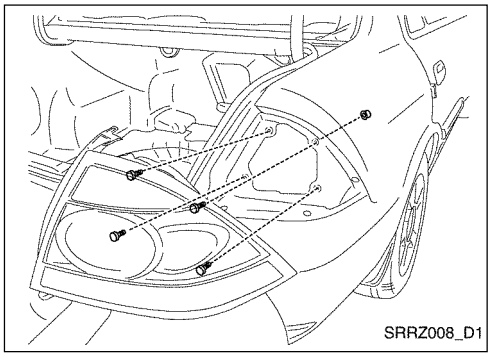
NG → Replace the headlamp assembly.

Rear Combination Lamp



Bulb Replacement

Stop/Tail lamp: 12 V, 21/5 W
Rear turn signal lamp: 12 V, 21 W
Reverse lamp: 12 V, 16 W



Removal • Installation

REMOVAL

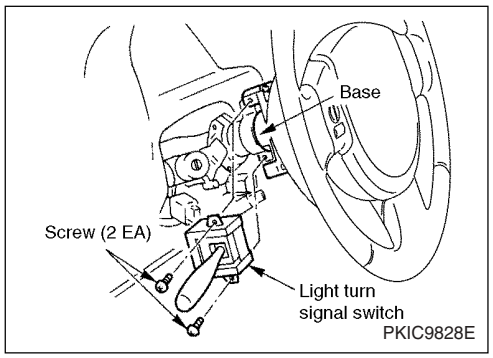
1. Remove the rear wheelhouse finisher. Refer to “Trunk Trim and Trunk Lid Trim” (BT-39).
2. Remove the nuts (4 EA) and remove the assembly from the vehicle by pressing the lamp from the trunk room.

INSTALLATION

Note the following, and install in the reverse order of removal.

Rear combination lamp mounting nut
Tightening torque:
2.5 - 3.8 N•m (0.26 - 0.39 kgf-m)

Light/Turn Signal Switch



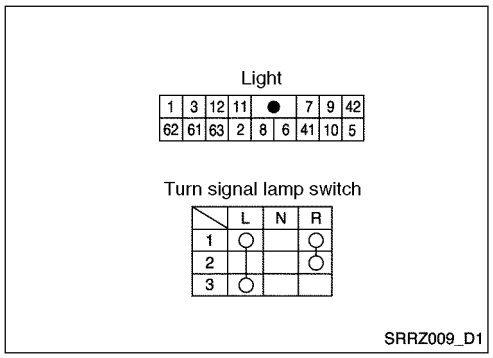
Removal • Installation

REMOVAL

1. Remove the steering column cover. Refer to “Steering Column” in ST section (ST-8).
2. Remove the light/turn signal switch connector.
3. Remove the screws (2 EA) and remove the light/turn signal switch from the base.

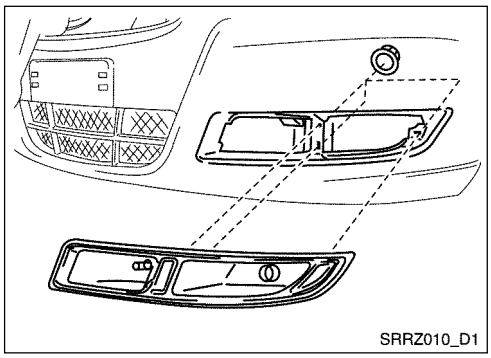
INSTALLATION

Installation is in the reverse order of removal.



Switch Circuit Inspection

Using a circuit tester, inspect the continuity between the terminals during light/turn signal switch operation.



Removal • Installation of Front Turn Signal Lamp

REMOVAL

Press the upper mounting section of the lamp using a minus (-) screwdriver, pull towards the front of the vehicle and remove.

Wrap the screwdriver with a tape or cloth to prevent from scratching the vehicle.

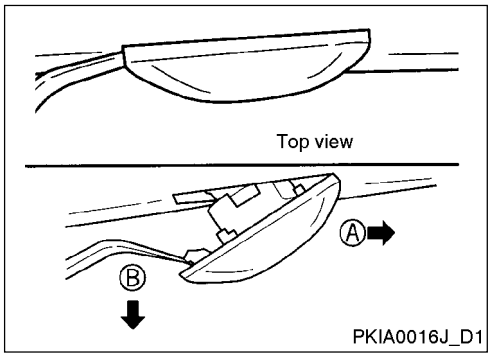
INSTALLATION

Insert the lamp mounts (2 EA) into the lamp mounting holes and install the lamp assembly by pressing it in.

Front turn signal lamp mounting nut

Tightening torque:

2.5 - 3.8 N•m (0.26 - 0.39 kgf-m)



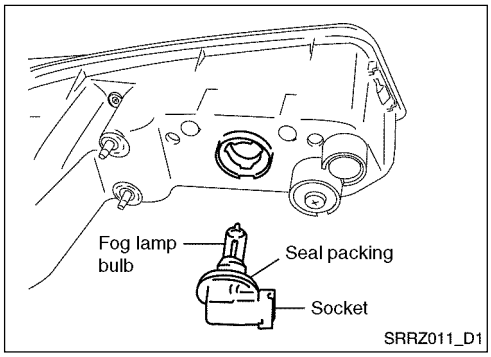
Removal • Installation of Side Turn Signal Lamp

REMOVAL

1. Press the side turn signal lamp towards the arrow A direction in the illustration. Pull towards the B direction and remove it from the vehicle.
2. Remove the side turn signal lamp connector.

INSTALLATION

Installation is in the reverse order of removal.



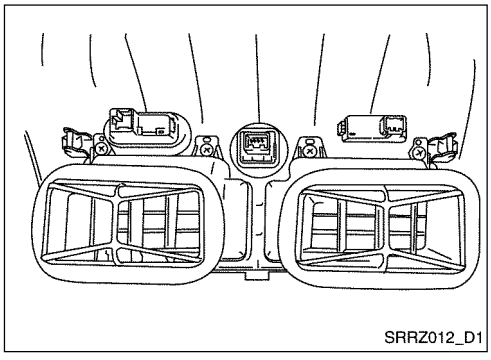
Bulb Replacement (Front Turn Signal Lamp)

Remove the bulb socket by turning it to the arrow direction in the figure.

Front turn signal lamp: 12 V, 21 W

Removal • Installation of Rear Turn Signal Lamp

Refer to “Removal • Installation” in “Rear Combination Lamp” (EL-42).



Removal • Installation of Hazard Switch

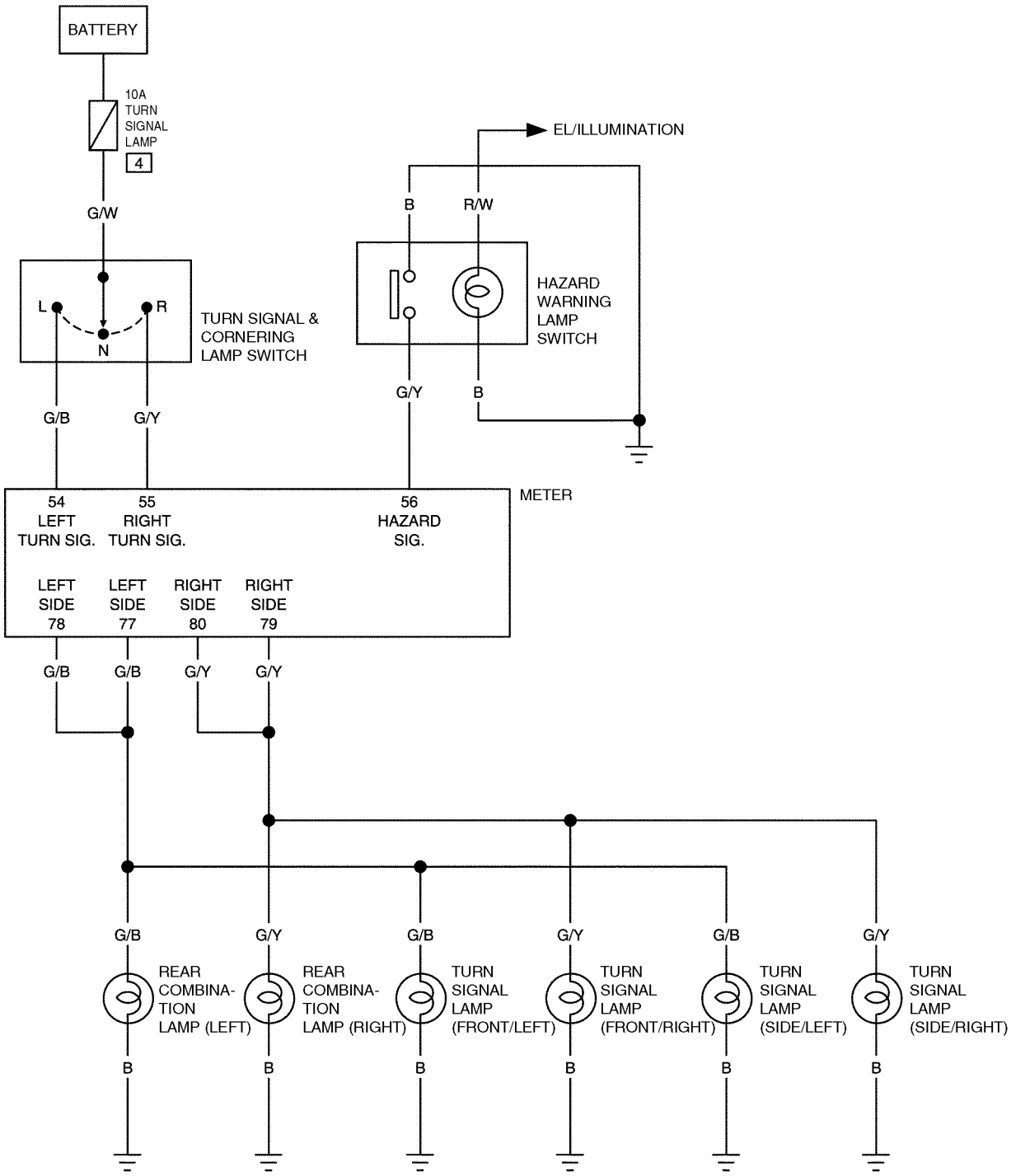
REMOVAL

1. Remove the cluster lid C. Refer to “Instrument Assembly” (BT-40).
2. Using a minus (-) screwdriver, press the hazard switch mount and remove from the cluster lid C.

INSTALLATION

Installation is in the reverse order of removal.

Circuit Diagram



Bulb Replacement - Clearance Lamp

Refer to “Bulb Replacement” in “Headlamp” (EL-35).

Bulb Replacement - Tail Lamp

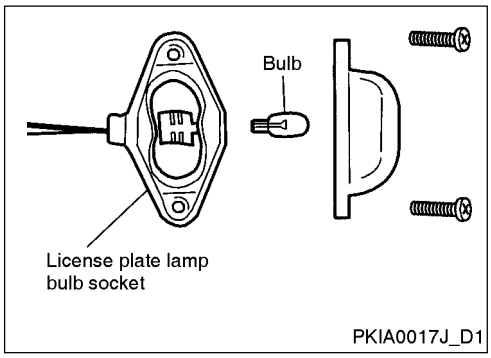
Refer to “Bulb Replacement” in “Rear Combination Lamp” (EL-42).

Removal • Installation of Clearance Lamp

Refer to “Removal • Installation” in “Headlamp” (EL-35).

Removal • Installation of Tail Lamp

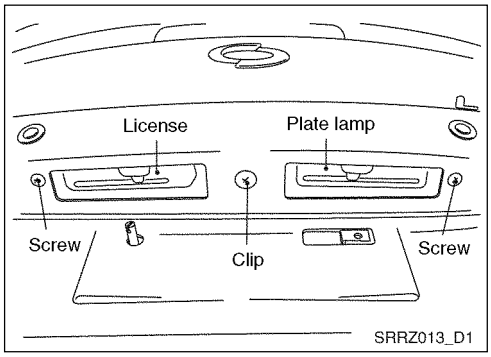
Refer to “Removal • installation” in “Rear Combination Lamp” (EL-42).



Bulb Replacement - License Plate Lamp

1. Using a screwdriver, unscrew the 2 screws at both ends of the lamp to remove and then remove the lens.
2. Replace the bulb.

License plate lamp: 12 V, 5 W



Removal • Installation of License Plate Lamp

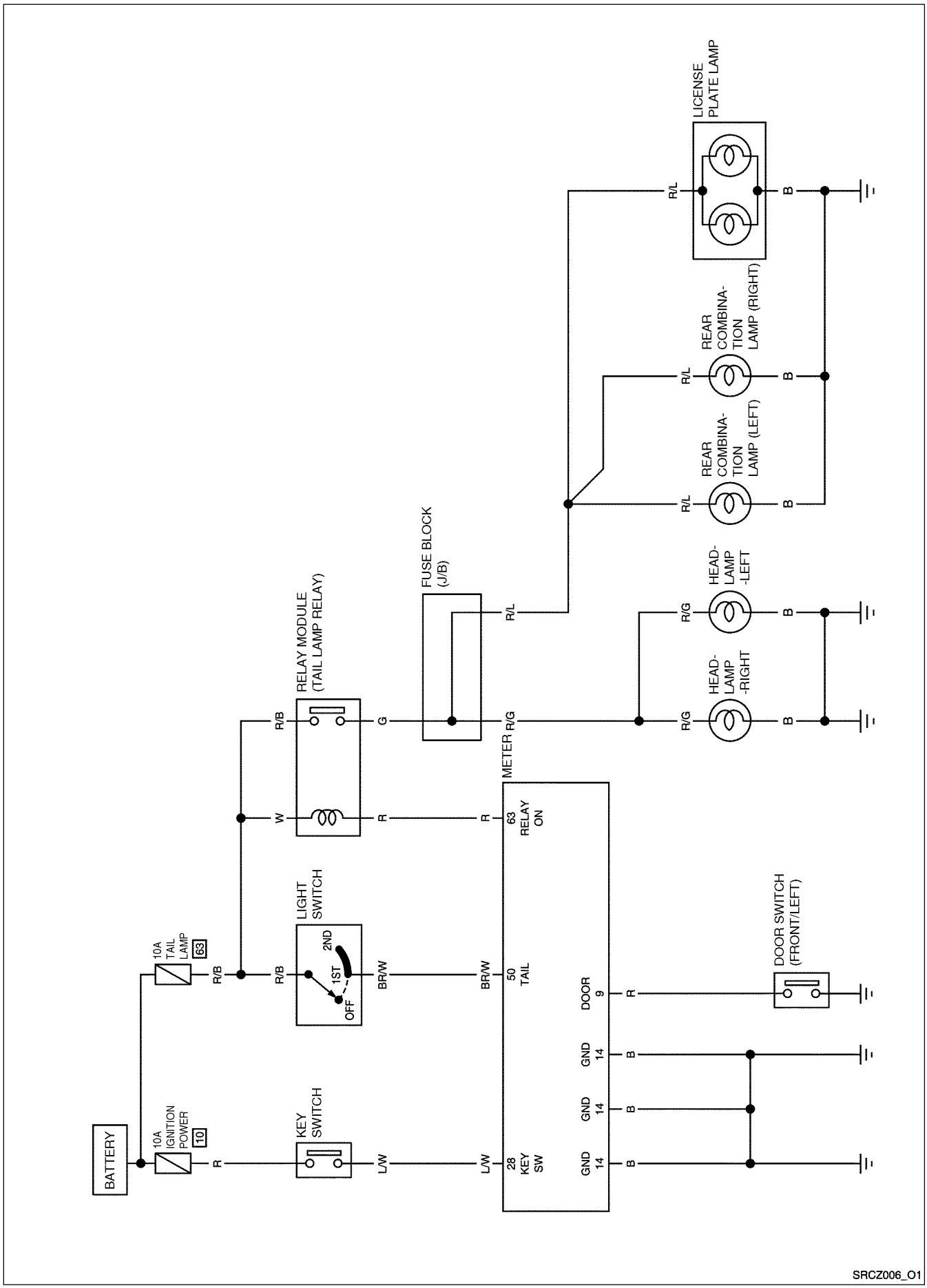
REMOVAL

1. Remove the screws on both sides and the clip on the center to remove the license plate lamp.
2. Remove the license plate lamp connector.

INSTALLATION

Installation is in the reverse order of removal.

Circuit Diagram

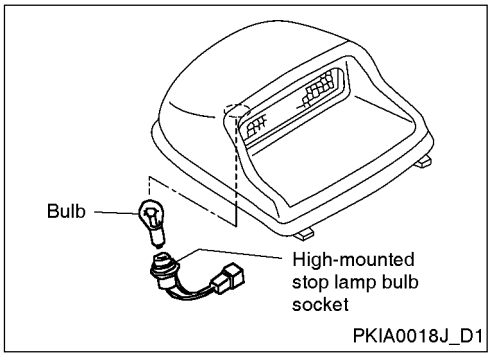


Bulb Replacement

Refer to “Bulb Replacement” in “Rear Combination Lamp” (EL-42).

Removal • Installation

Refer to “Removal • Installation” in “Rear Combination Lamp” (EL-42).

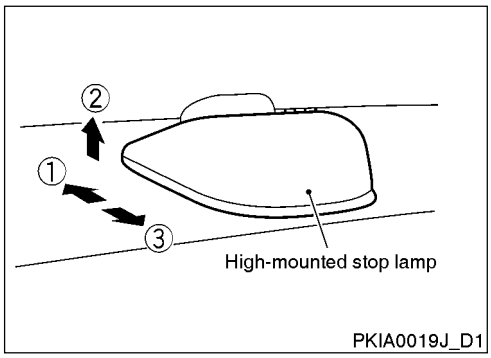


High-Mounted Stop Lamp

BULB REPLACEMENT

1. Remove the high-mounted stop lamp.
2. Remove the bulb socket by rotating it as shown in the illustration.

High-mounted stop lamp: 12 V, 21 W



Removal • Installation of High-Mounted Stop Lamp (Bulb Type)

REMOVAL

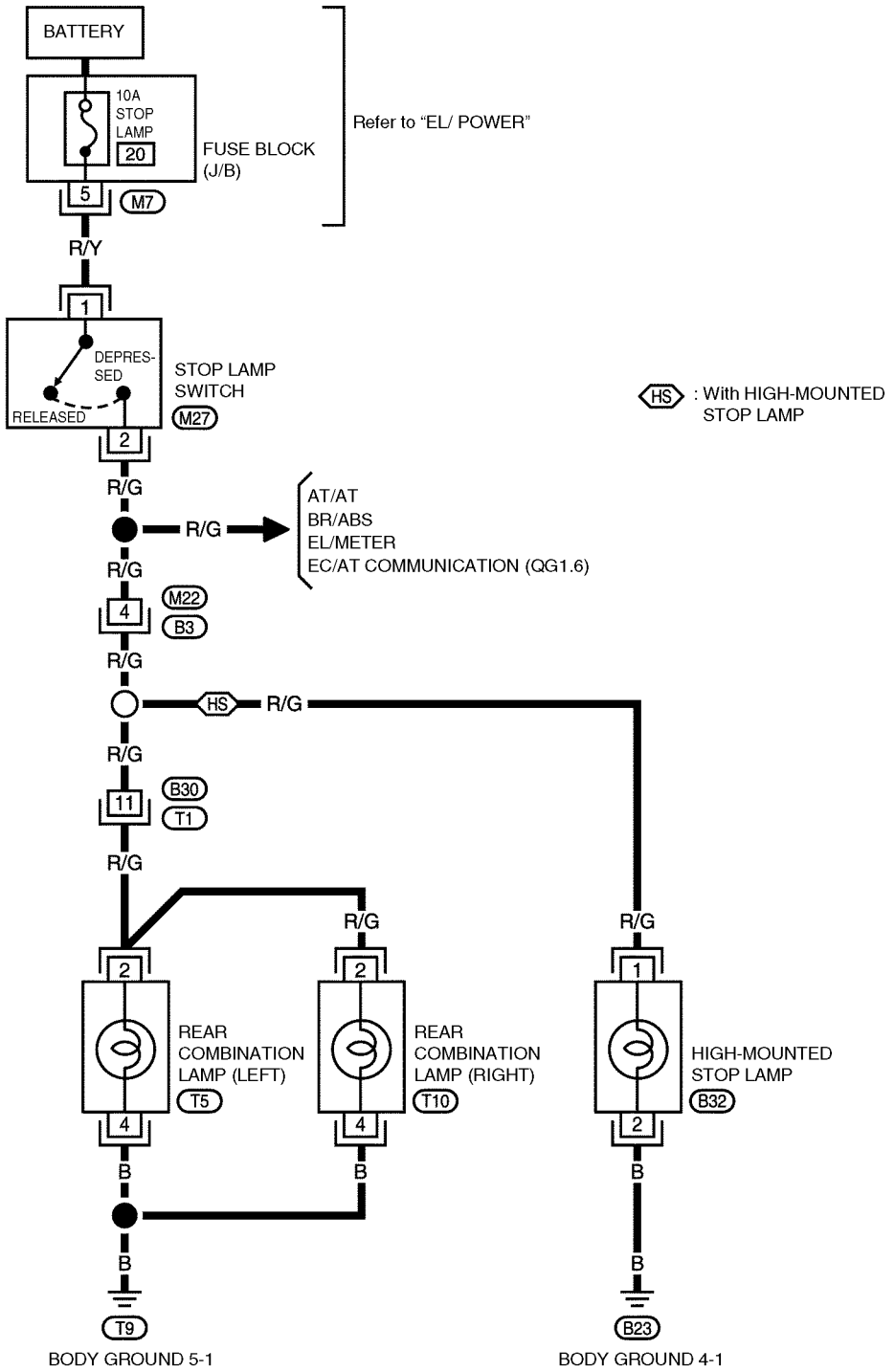
1. Push towards the rear of the vehicle.
2. Pull it upwards.
3. Pull towards the front of the vehicle and remove.
4. Remove the connector.

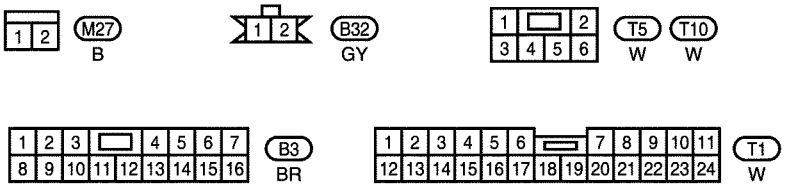
INSTALLATION

- Installation is in the reverse order of removal.

Wiring Diagram

EL/Stop Lamp





Refer to "FUSE BLOCK (J/B)"
M7

SRWZ022_O1

Bulb Replacement

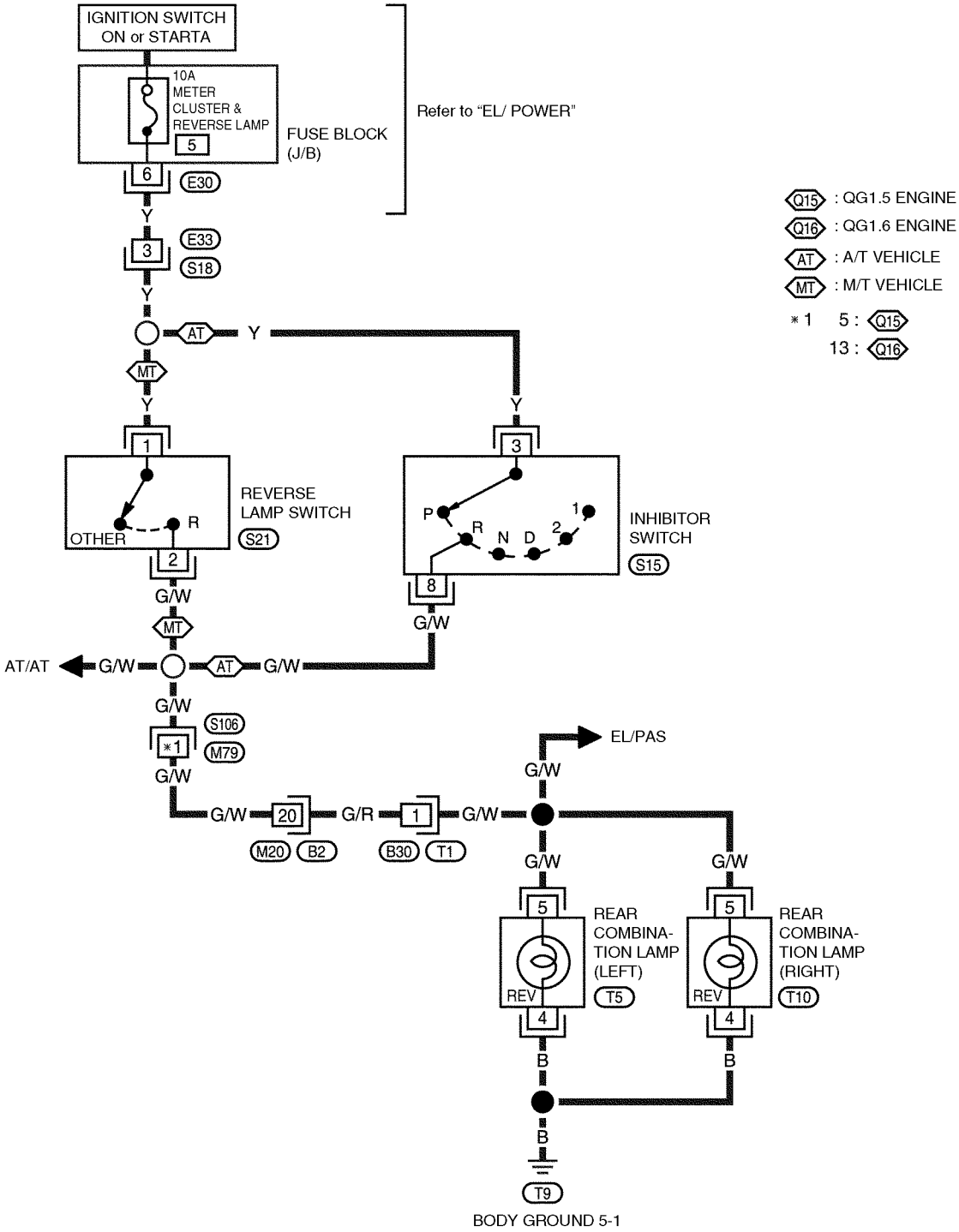
Refer to “Bulb Replacement” in “Rear Combination Lamp” (EL-42).

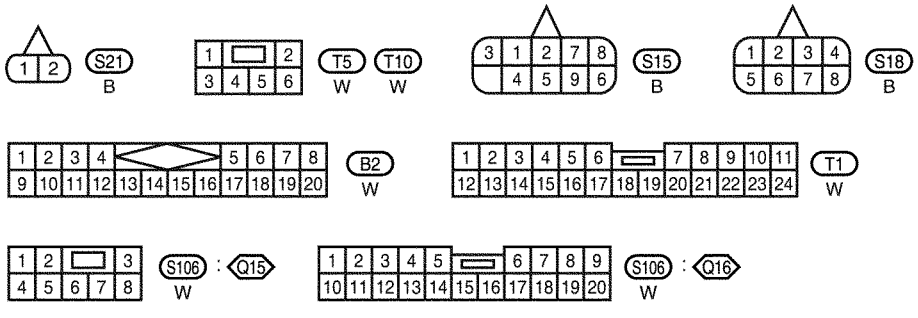
Removal • Installation

Refer to “Removal • Installation” in “Rear Combination Lamp” (EL-42).

Wiring Diagram

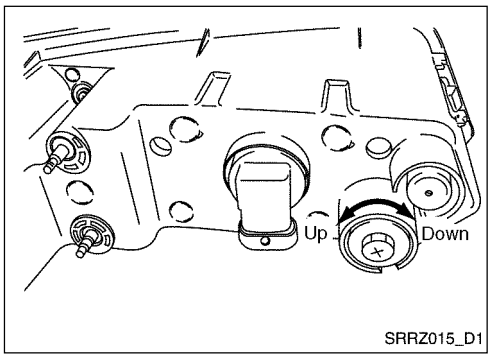
EL/Reverse Lamp





Refer to "FUSE BLOCK (J/B)"
E30

SRWZ021_O1



Aiming Adjustment

- Adjust the aiming by rotating the aiming adjust screw.
- Refer to the illustration for adjust screw location.

CAUTION:

- **Adjust the aiming adjust screw to the tightening direction. (If have to be adjusted reverse direction, loosen enough and then tighten to adjust.)**

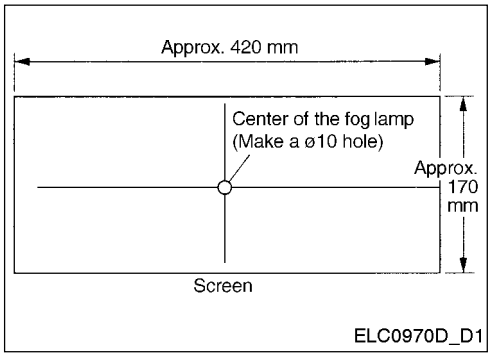
Inspection Before Adjustment

1. Adjust the tire pressure to specified values.
2. Let the vehicle empty. (Remove all objects from the vehicle's interior and trunk.)
3. Remove the dirt from the fog lamp.

CAUTION:

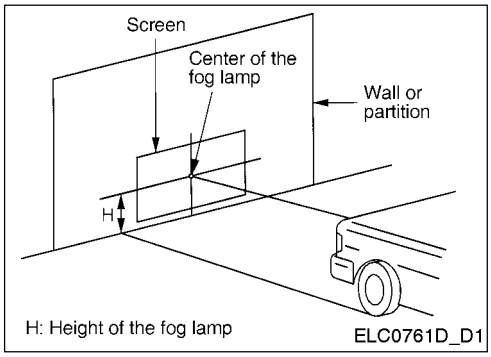
- **Do not use any organic detergent (thinner or gasoline).**

4. Start the engine.
5. Let one person sit on the driver's seat.

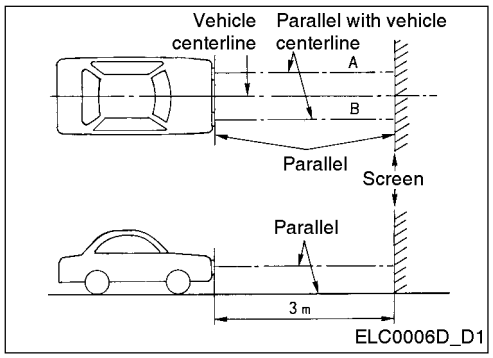


Adjustment Using an Aiming Screen (Adjustment by Using Beam Pattern)

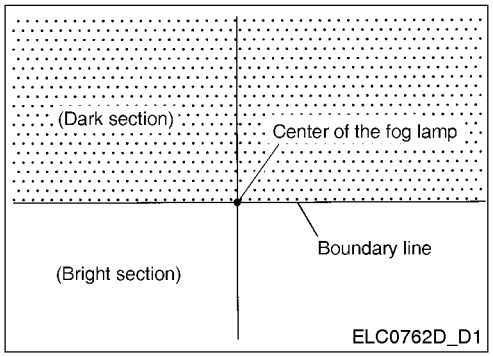
1. Prepare an aiming screen (adjustment by using beam pattern) as shown in the illustration using a white paper board.



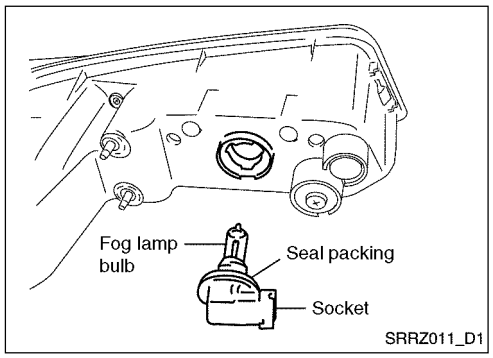
2. Park the vehicle in front of the wall or partition (perpendicular with the road) on the level ground.
3. Mark the center point of the fog lamp on the wall or partition.
4. Place the aiming screen at the wall or partition so that the marked center point matches with the hole on the aiming screen and then fix it to be parallel with the road surface.



5. Maintain the 3 m of distance between the aiming screen and the headlamp in parallel as A = B.
6. Block the headlamp light that is not being adjusted with a partition.
7. Inspect the fog lamp.



8. Adjust the fog lamp aiming as shown in the illustration to meet the brightness boundary line in the aiming screen.



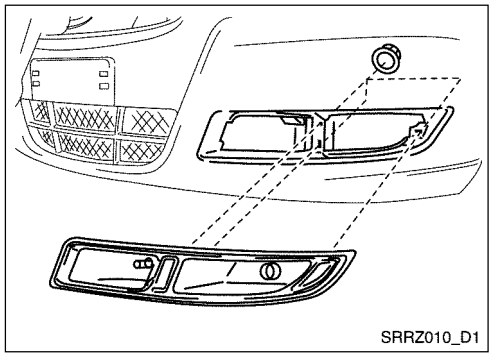
Bulb Replacement

1. Disconnect the harness connector and remove the bulb socket by rotating it counterclockwise.
2. Replace the whole assembly since the bulb is integrated into the socket.

Fog Lamp: 12 V, 35 W (H8)

CAUTION:

- **Do not touch the bulb glass with bare hand or stain oil. Do not touch the bulb when lighted or right after turning off. It is extremely hot.**
- **When you leave the removed bulb for a long time, the bulb performance decreases due to lens and reflector dusting (dirty and dark). Perform the bulb replacement after preparing a new bulb.**
- **When installing the bulb, securely fasten the resin cap to assure water resistance.**



Removal • Installation

REMOVAL

For details, refer to the “Removal • Installation of Turn Signal Lamp (front foglamp integrated type)” (EL-44).

INSTALLATION

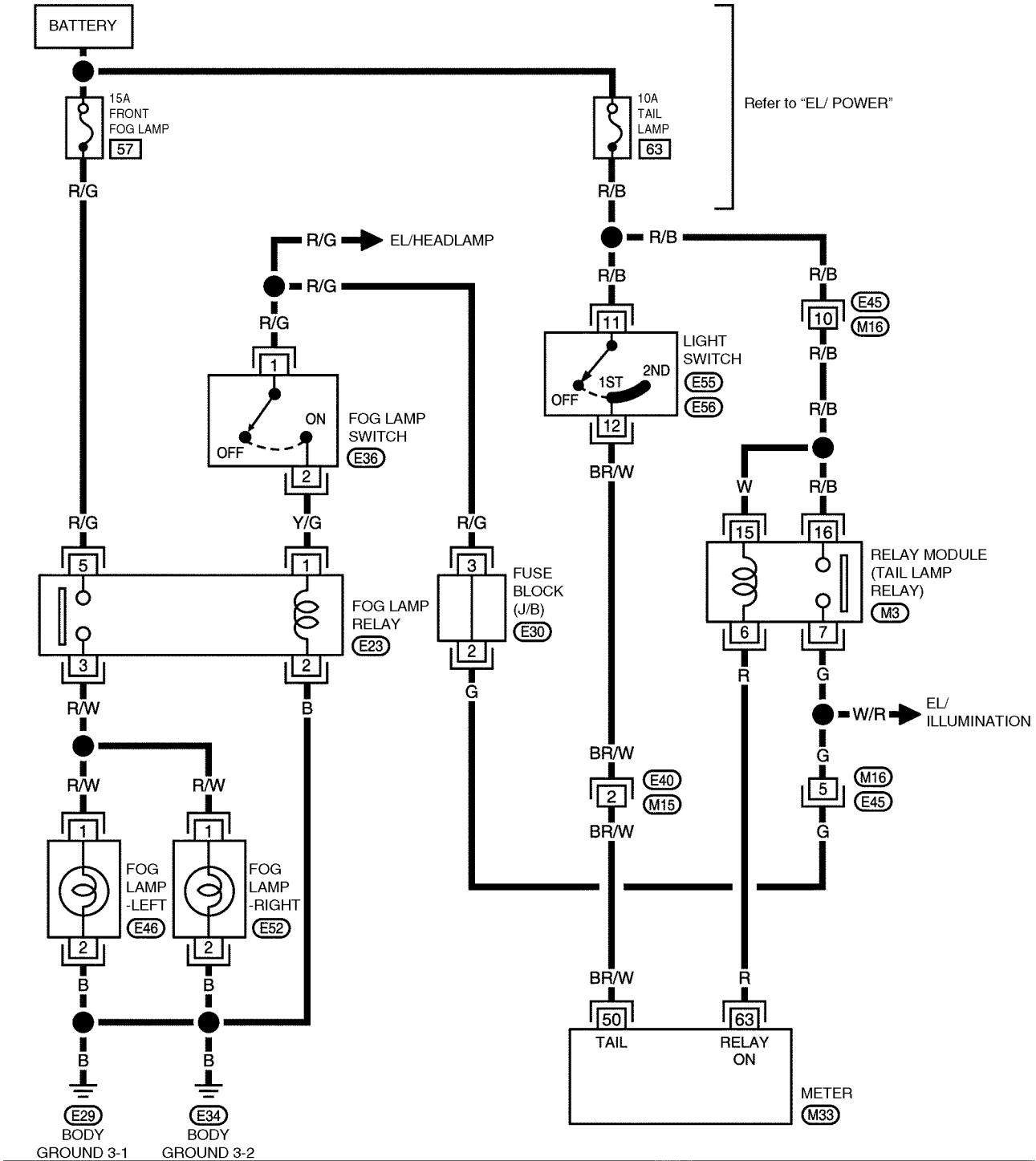
Install in the reverse order of removal cautioning as below.

Fog Lamp Mounting Screw

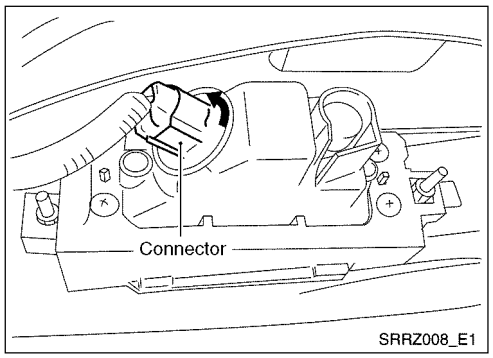
Tightening torque:

2.5 - 3.8 N•m (0.26 - 0.39 kgf-m)

Wiring Diagram — EL/Fog Lamp (FR)

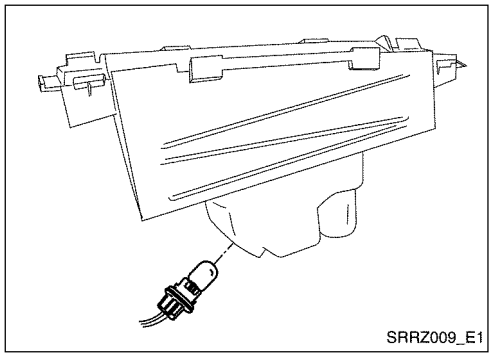


SRWZ020_O1



Bulb Replacement

1. Disconnect the harness connector and remove the bulb socket by rotating it counterclockwise.

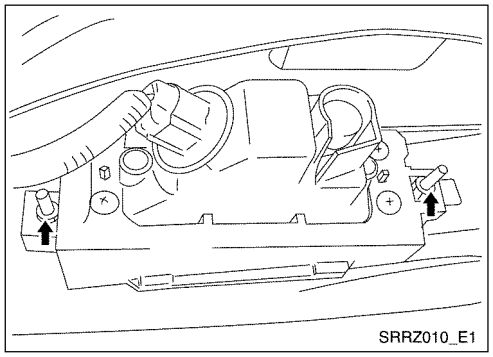


2. Replace the bulb by removing it from the socket.

   Rear Fog Lamp Bulb: 12 V, 21 W

CAUTION:

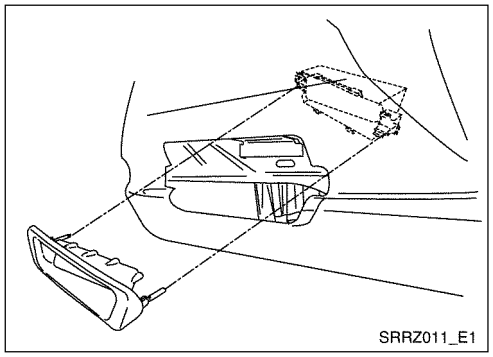
- **Be careful not to touch the surface of the bulb and do not let the oil get on it.**
  Also, do not touch the bulb while it is on or right after it is turned off since the bulb is hot.
- **Leaving the bulb removed from the headlamp housing for a long period of time can deteriorate the performance of the lens and reflector (dirt, clouding). Always prepare a new bulb and have it on hand when replacing the bulb.**
- **When installing bulb, be sure to install the bulb socket securely to insure watertightness.**



Removal • Installation

REMOVAL

1. Remove the rear fog lamp mounting nuts (2 EA).
2. Disconnect harness connector.

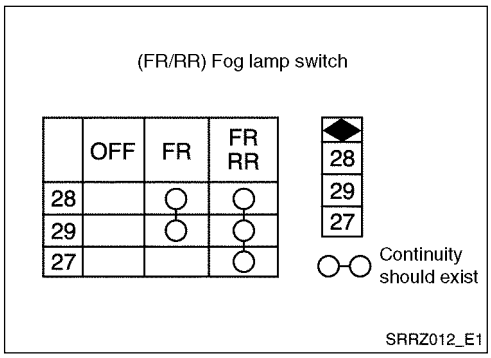


3. Remove the rear fog lamp cover and remove the rear fog lamp.

INSTALLATION

Note the following, and install in the reverse order of removal.

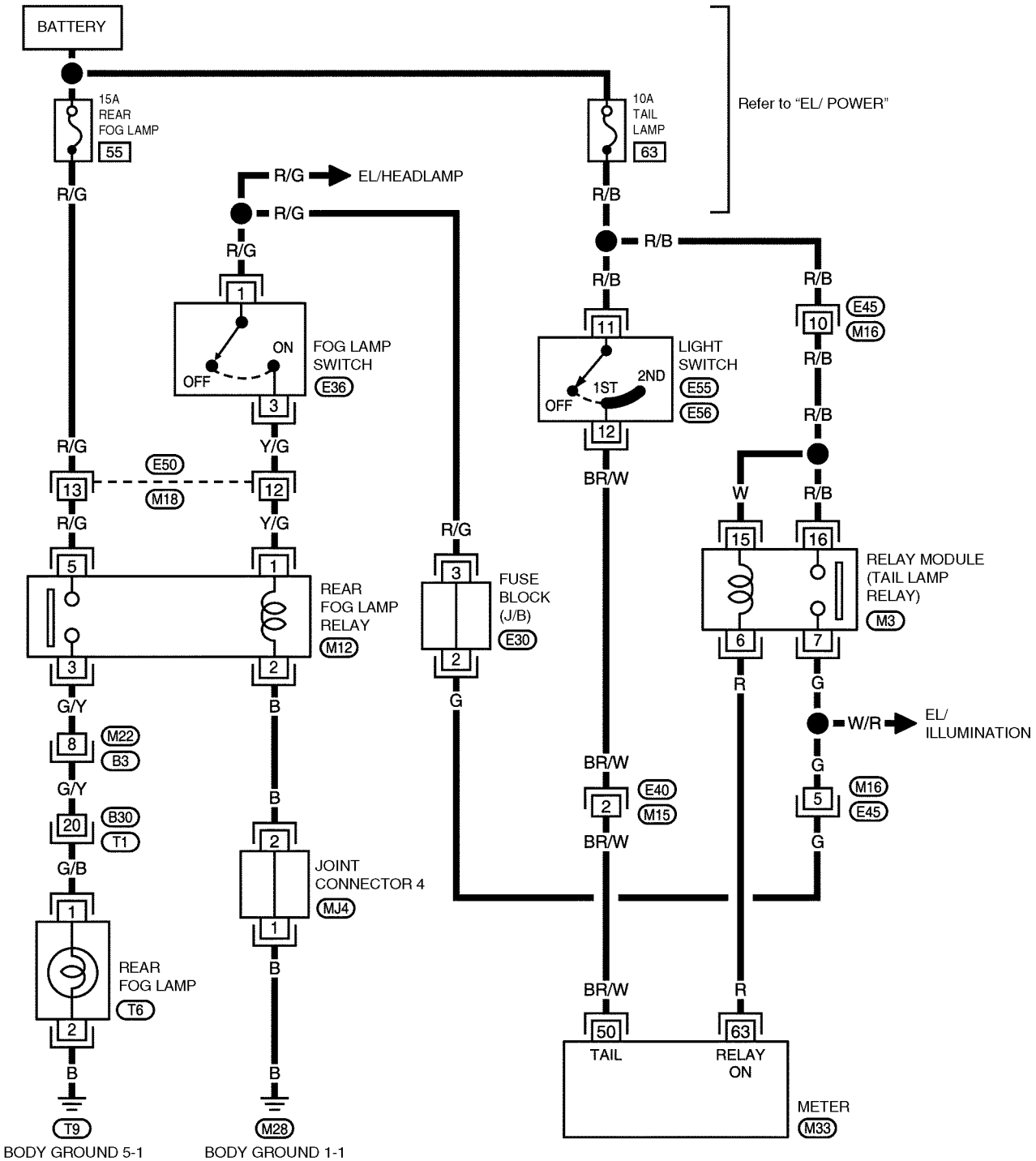
Rear fog lamp mounting nut
Tightening Torque: 2.5 - 3.8 N•m (0.26 - 0.39 kgf-m)

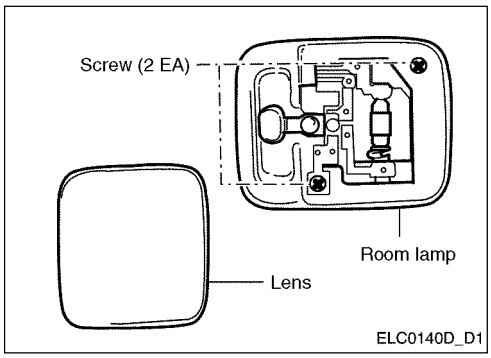


Switch Circuit Inspection

Check continuity between terminals of the rear fog lamp switch for operation using a circuit tester.

Wiring Diagram — EL/Fog Lamp (RR)

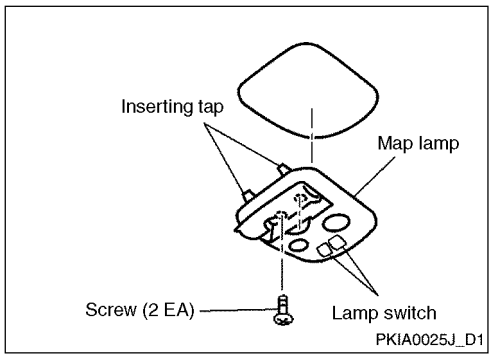




Bulb Replacement (Room Lamp)

Room lamp: 12 V, 10 W

1. Remove the room lamp lens using a flat-bladed (-) screwdriver.
2. Remove the bulb.

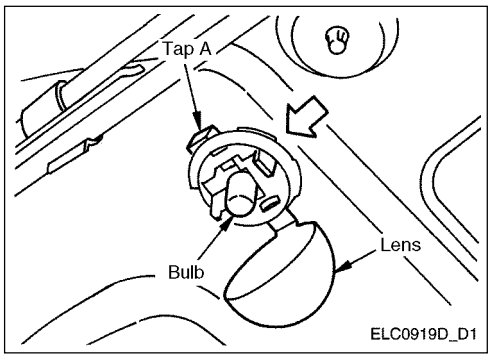


Bulb Replacement (Map Lamp)

Map lamp: Bulb 12 V/3.4 W (2 EA)

BULB REPLACEMENT

1. Remove the lens using a flat-bladed (-) screwdriver.
2. Remove the bulb.

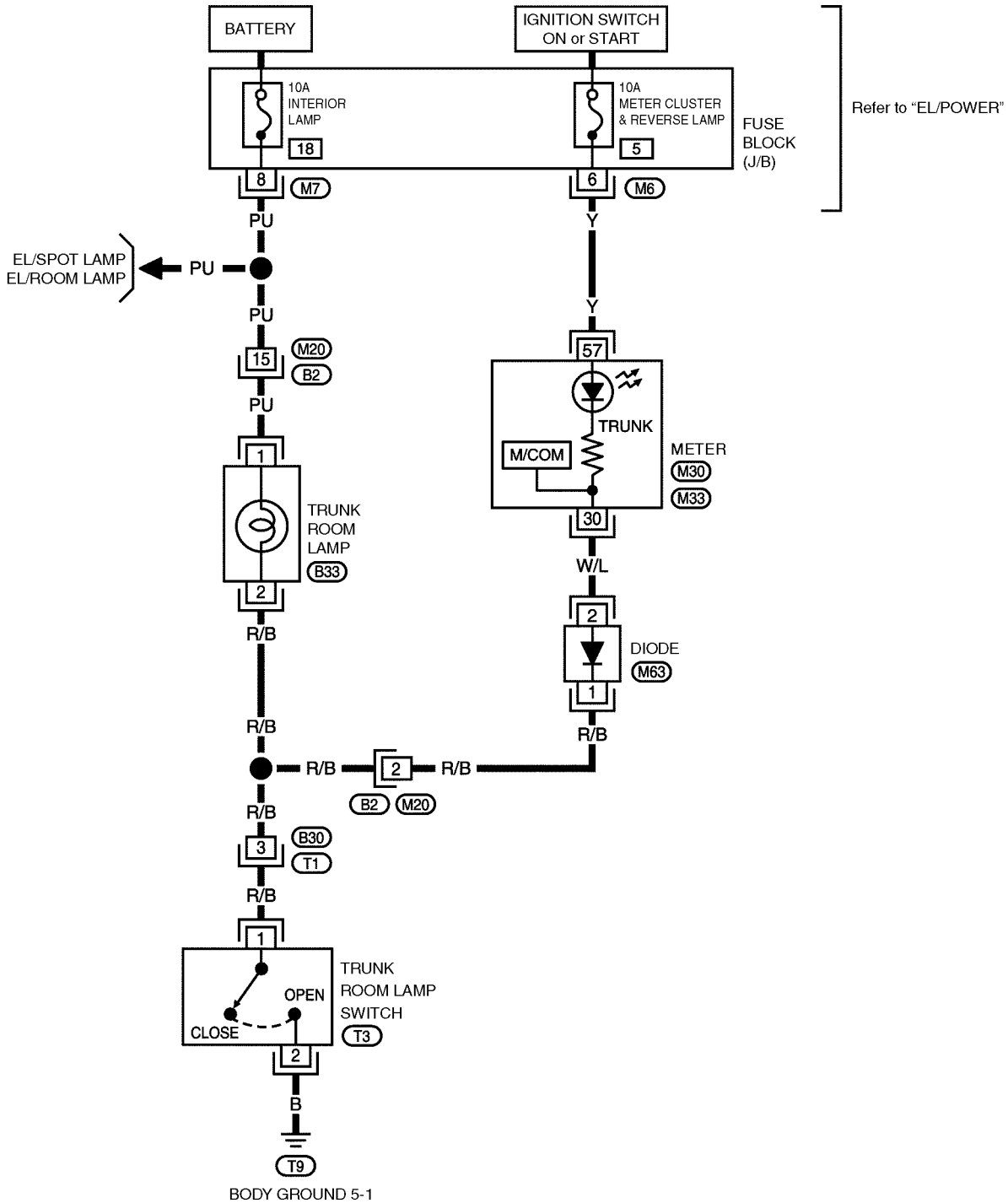


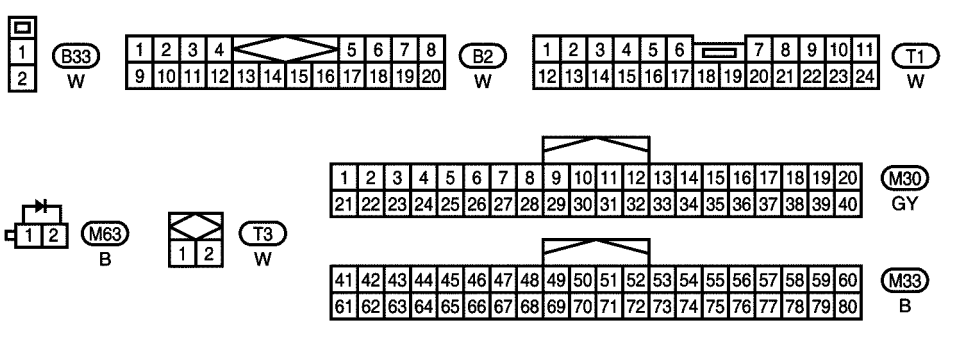
Bulb Replacement

1. Press the tap A to open the lans.
2. Remove the bulb by pulling downwards.

Trunk room lamp: 12 V, 3.4 W

Wiring Diagram — EL/Trunk Room Lamp





Refer to "FUSE BLOCK (J/B)"
M6 M7

SRWZ025_O1

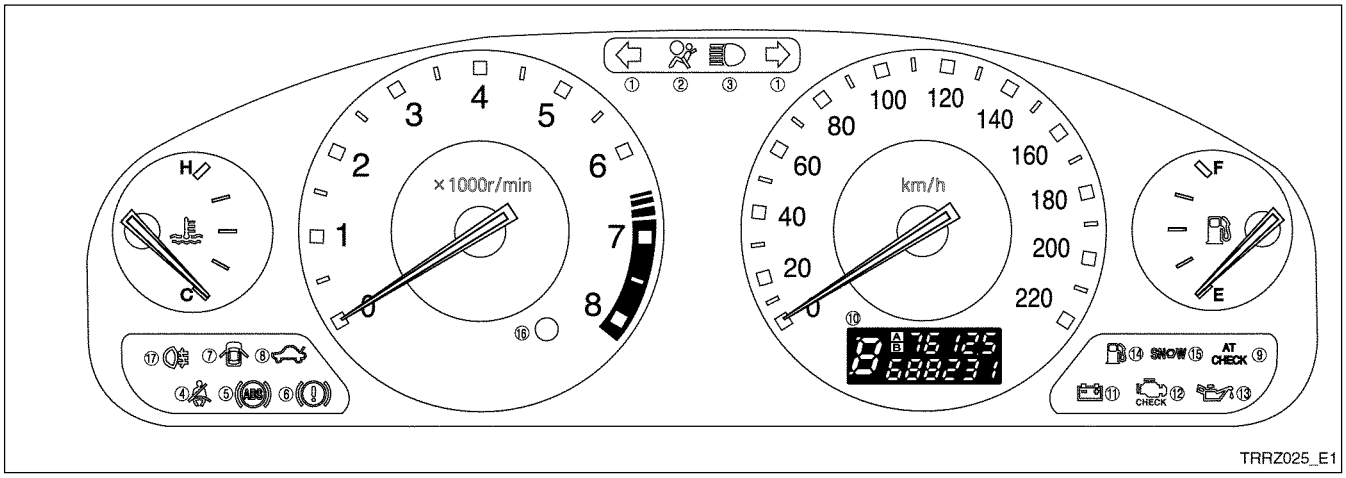
System Overview

GENERAL

- The 4-needle-analog-type combination meter is adopted.
- LED is used for warning lights and illuminations.
- The AT-ranges, odometer, and trip odometer are integrated in an LCD and the trip odometer has 2-mode.
- Various timing control function is adopted on the vehicle.

Design

4-NEEDLE-ANALOG-TYPE COMBINATION METER



1-4 WARNING LAMP AND INDICATOR LAMP

	Name
1	Turn signal indicator lamp
2	SRS airbag warning lamp
3	High-beam indicator lamp
4	Seat belt warning lamp
5	ABS warning lamp
6	Brake warning lamp
7	Door open warning lamp
8	Trunk lid ajar warning lamp
9	A/T warning lamp
10	Position indicator
11	Charge warning lamp
12	Malfunction indicator lamp (MIL)
13	Oil pressure warning lamp
14	Low-fuel warning lamp
15	SNOW indicator lamp
16	Security indicator
17	Rear fog lamp (Europe)

Telltable	Icon	Color
Turn L/R		Green
Fuel		Amber
Beam		Blue
Charge		Red
ABS		Amber
CHK eng.		Amber
Airbag		Red
Door		Red
Oil		Red
Snow		Amber
Brake		Red
Seatbelt		Red
Trunk		Red
Security Indicate		Red
A/T CHECK		Amber
Rear fog		Amber

Function

TIMER CONTROL FUNCTION OF COMBINATION METER

- Rear defogger control

  The rear defogger operates for 15 minutes when turning on the rear defogger switch with the ignition switch ON.

- Tail lamp control

  Tail lamp comes on and off according to the tail lamp switch signal.

  Tail lamp relay is off when turning off the key-in switch and driver's door switch with the light switch ON.

- Turn signal lamp/Hazard warning lamp control

  Turn signal lamp is controlled by the turn signal lamp switch signal.

  Hazard warning lamp blinks when receiving the collision signal or hazard warning lamp signal.

  Hazard warning lamp blinks twice when locking the doors with remote controller or relocking (automatically) the doors.

  Hazard warning lamp blinks once when unlocking the doors with remote controller.

  Hazard warning lamp blinks for 30 seconds with 1 Hz of frequency when operating panic function with remote controller.

  Hazard warning lamp blinks for 30 seconds with 1 Hz of frequency when operating anti-theft function.

  Hazard warning lamp blinks once when entering into the remote controller ID registration mode.

- Buzzer control

  Key-in alarm:

  Key-in alarm sounds with 2 kHz of frequency when the key-in switch is ON and driver's door switch is in open position with the ignition switch OFF.

  Seat belt alarm:

  Seat belt alarm sounds for a specific period when driving over a specified speed (set in combination meter control unit) while the seat beat switch is ON (not fastened).

  It stops when the vehicle speed is lower than 5 km/h than the specified speed.

  ** Trouble diagnosis – Refer to "CONFIGURATION" (EL-76).

  Vehicle speed sensitive door lock alarm:

  Warning buzzer sounds for approx. 0.5 seconds while driving when the auto door lock function is activated.

  ** Trouble diagnosis – Refer to "CONFIGURATION" (EL-76).

  Turn signal lamp/hazard warning lamp buzzer:

  Buzzer sounds when the ignition switch is defective or the turn signal lamp switch or hazard warning lamp switch is turned on while the ignition switch is in OFF position.

  Over-speed alarm:

  Warning buzzer sounds when the vehicle speed exceeds 120 km/h and stops when the vehicle speed goes below 115 km/h.

  ** Trouble diagnosis – Refer to "CONFIGURATION" (EL-76).

- Room lamp timer control

  Room lamps and key hole lamp come on when turning on the driver's door switch.

  Room lamps and key hole lamp are dimmed down by timer when turning the driver's door switch to OFF from ON.

  Room lamps and key hole lamp are turned on and off according to door switch operation.

- Room lamp battery saver relay control

  To prevent the battery from discharging, the combination meter turns off the battery saver relay after 30 minutes from when turning on the room lamps while the ignition switch and key-in switch are OFF.

- Shift lock solenoid control

  The A/T selector lever cannot be moved to any other positions from “P” when the detent switch (P-range detection) is ON and the brake switch is not in ON position.

  The A/T selector lever cannot be moved to “R” from “N” when the vehicle speed exceeds 14 km/h.

  The A/T selector lever can be moved to “P” from “N” for 3 minutes after turning the ignition switch to OFF from ON.

- Power window/folding mirror residual voltage control ** Refer to Power Window Wiring Diagram (EL-98).

  The power window relay is activated for approx. 30 seconds after turning the ignition switch to OFF from ON.

OTHER FUNCTIONS OF COMBINATION METER

- A/C signal transferring function

  It receives the A/C switch signal and blower switch signal from A/C controller and transfers them to engine control unit.

- Engine coolant temperature output function

  It sends the voltage signal to A/C control unit according to the engine coolant temperature information through CAN network.

  below 55°C: 12 V

  over 55°C: 0 V

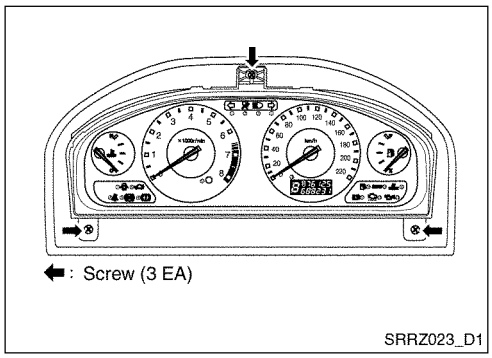
- Vehicle speed (2-pulse) output function

  It coverts the vehicle speed signals from ABS control unit or transmission vehicle speed sensor to 2-pulse signals and then sends them to TCM.

- Remote control system control ** Refer to EL-POWER DOOR LOCK/REMOTE KEYLESS ENTRY SYSTEM (EL-154).

- Immobilizer control ** Refer to ANTI-THEFT SYSTEM (IMMOBILIZER) (EL-165).

- Door lock control ** Refer to EL-POWER DOOR LOCK/REMOTE KEYLESS ENTRY SYSTEM (EL-154).



Removal • Installation of Combination Meter

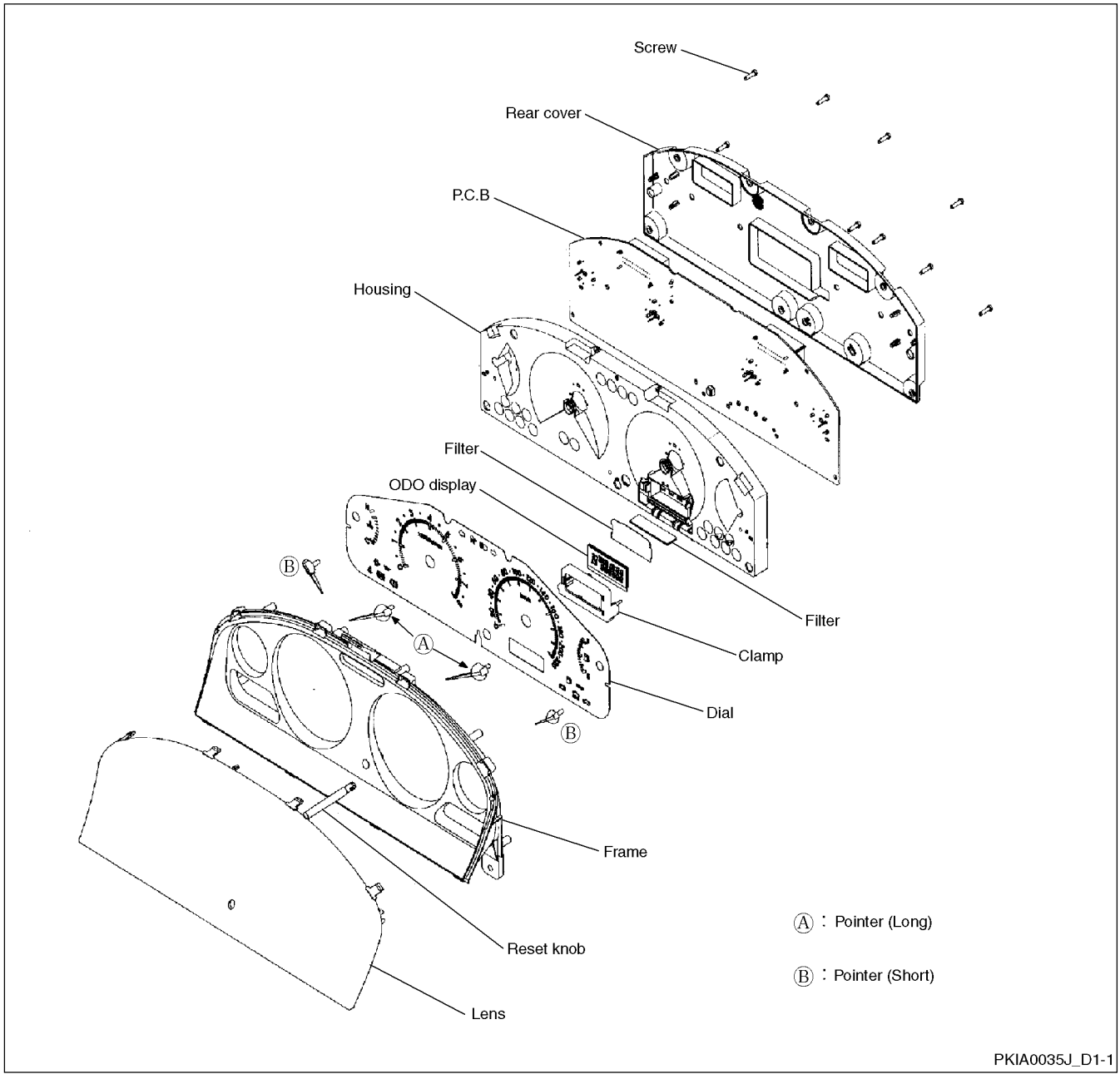
RELATED WORKS

- Column cover: Refer to “Steering Column” in ST section (ST-8).
- Cluster lid A: Refer to “Instrument Assembly” in BT section (BT-40).

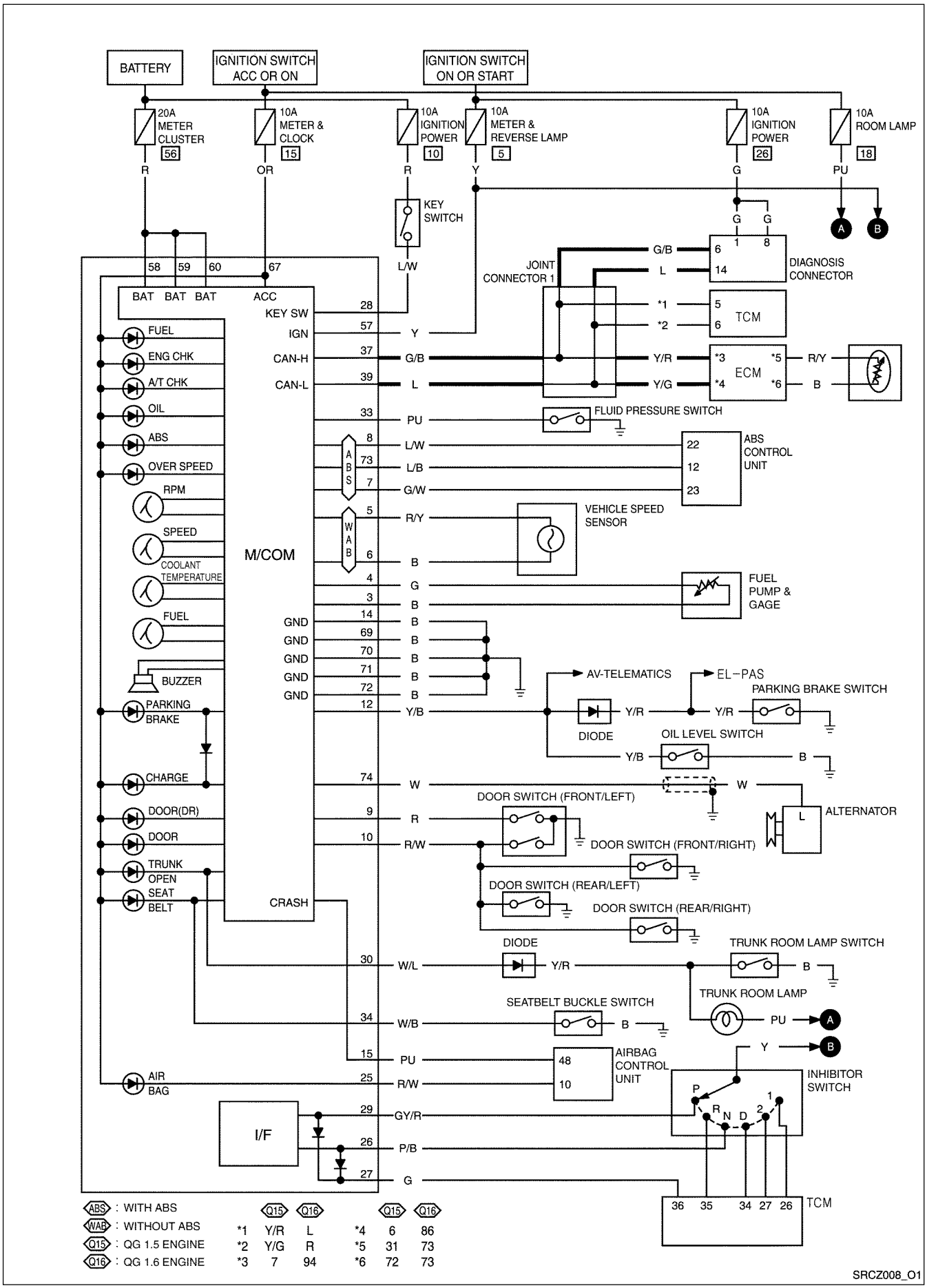
CAUTION:

- **When replacing combination meter, perform CONFIGURATION with CONSULT-II. Refer to EL-76.**

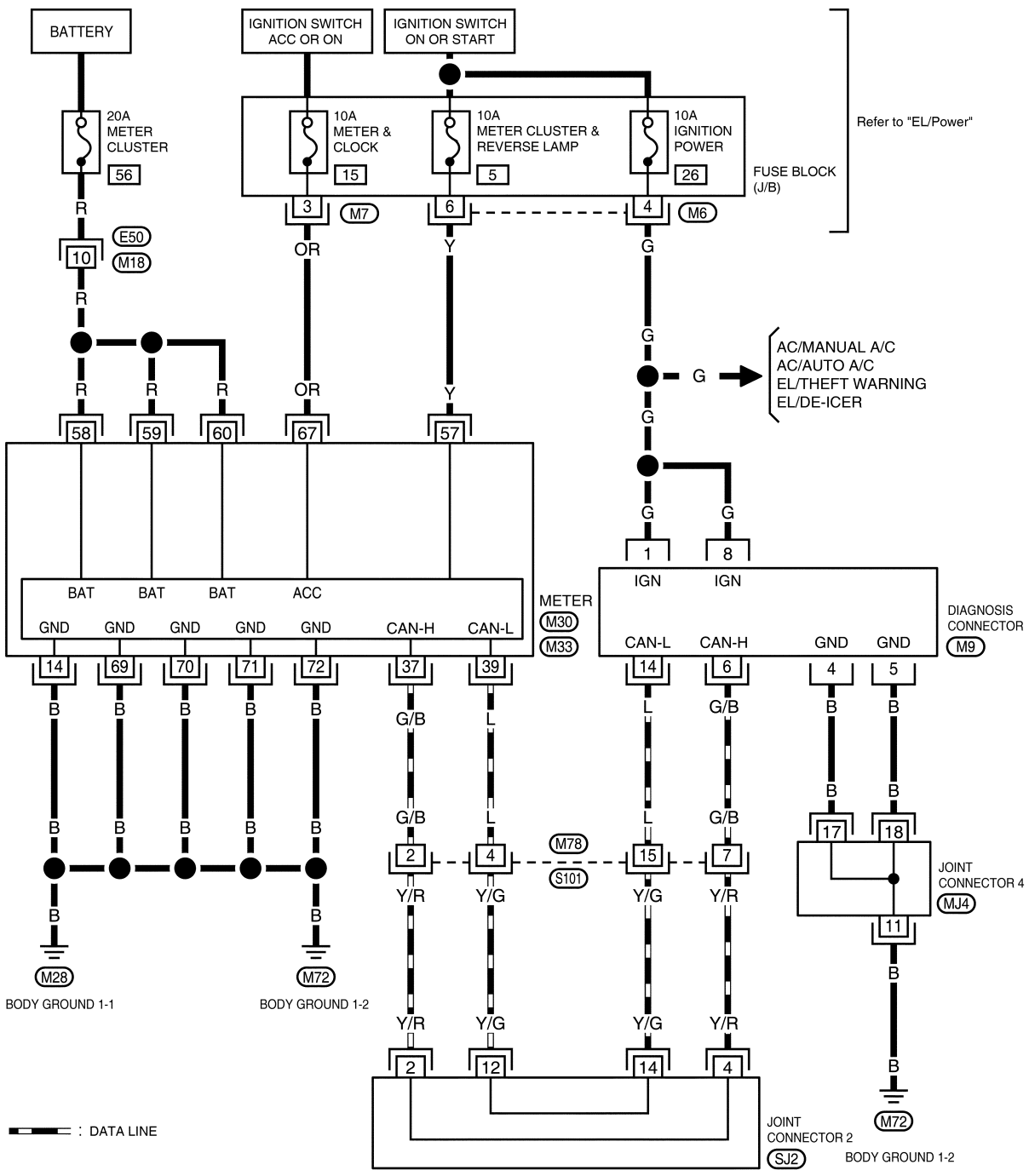
COMPONENTS DIAGRAM

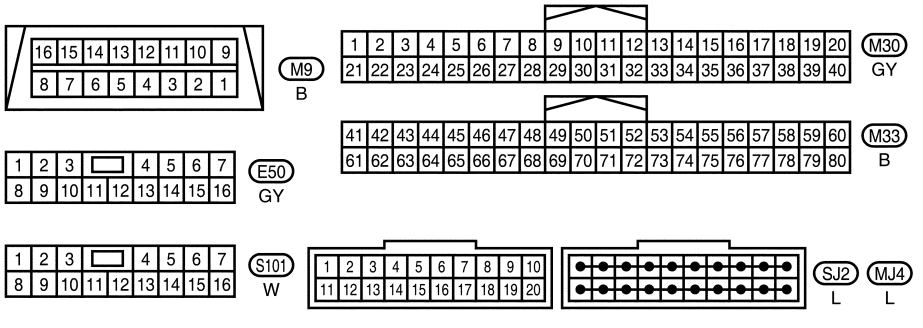


Circuit Diagram



Wiring Diagram — EL/Meter (Diagnosis)





SRWZ071_O1

Specifications

SPEEDOMETER AND TACHOMETER

Engine Model		QG16DE
Speedometer	Type	Stepper motor
	Max. reading	220 km/h
	Vehicle speed signal (Input)	42-pulse at ABS unit (vehicle with ABS) 8-pulse at vehicle speed sensor (vehicle without ABS)
	Vehicle speed signal (Output)	2-pulse (Single wave signal), 8-pulse (vehicle without ABS)
Tachometer	Type	Stepper motor
	Max. reading	8,000 RPM
	Red zone	6,600 - 8,000 RPM
	Revolution signal (Single wave signal)	2-pulse/revolution

FUEL LEVEL GAGE • COOLANT TEMPERATURE GAGE

Item	Specifications					
Fuel level gage	Type	Stepper motor				
	Needle position	E	1/4	1/2	3/4	F
	Fuel in the tank (L)/ Resistance (Ω)	Approx. 5.5/80 +3 0	Approx. 15/55.5 +1 -2	Approx. 26/33 +0 5	Approx. 37/18 +0 2	Approx. 52/6 +0 5
	Fuel level when low fuel level warning light is ON (L)	Approx. 9				
Coolant temperature gage	Type	Stepper motor				
	Needle position	C	Center		-	H
	Engine coolant temperature (°C)	Approx. 50	Approx. 70 - 105		Approx. 119	Approx. 130
	Resistance (Ω)	Approx. 405	Approx. 142.5 - 65.3		45.2	32.5

CONSULT-II Function (CLUSTER)

FUNCTION

Diagnostic test item	Check item, diagnostic test mode	Content
Inspection by part	SELF-DIAG RESULTS	Combination meter performs self-disgnosis of CAN communication
	DATA MONITOR	Displays the input data Combination meter in real time.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ACTIVE TEST	Gives a drive signal to a load to check the operation.
	CONFIGURATION	Function to READ/WRITE/NATS SETTING vehicle configuration of Combination meter.
	ECU PART NUMBER	Combination meter part number can be read.

CONSULT-II PROCEDURE

1. Turn ignition switch OFF.
2. Connect CONSULT-II to data link connector, which is located under the driver's dash panel.
3. Turn ignition switch ON.
4. Touch "START(X-BADGE VHCL)".
5. Touch "CLUSTER".
6. Perform each diagnostic test mode according to each service procedure.

SELF-DIAG RESULTS

Display item	Item list	Reference
C/U - EEPROM	Control unit - EEPROM	EL-78
BATTERY VOLTAGE	Battery voltage	EL-79
FUEL SENDER CIRC	Fuel gauge sensor circuit	EL-80
VHCL SPD OUT CIRC1	Vehicle speed output circuit 1- 2-pulse	EL-81
VHCL SPD OUT CIRC2	Vehicle speed output circuit 2 - 8-pulse	EL-82
RIGHT INDCT CIRC	Turn signal lamp circuit - RH	EL-85
LEFT INDCT CIRC	Turn signal lamp circuit - LH	EL-86
NEUTRAL SW CIRC	Park/Neutral Position (PNP) Switch	EL-89
REAR DEFOGGER RLY	Rear defogger relay circuit	EL-91
TAIL LAMP RLY CIRC	Tail lamp relay circuit	EL-94
POWER WINDOW RLY	Power window relay circuit	EL-97
BAT SAVER RLY CIRC	Battery saver relay circuit	EL-103
WATR TEMP OUT CIRC	Engine coolant temperature output circuit	EL-105
LOCK RLY CIRC	Door lock relay circuit	EL-106
UNLK RLY CIRC-DR	Driver’s door unlock relay circuit	EL-107
UNLK RLY CIR-OTHR	Other door unlock relay circuit	EL-107
AIR BAG-METER COMM	Air bag collision circuit	EL-112
AUDIBLE WARN CIRC	Alarm relay circuit	EL-117
THEFT-WARNING RLY	Anti-theft relay circuit	EL-118
CHAIN OF METER-ANT	Engine immobilizer	EL-122

DATA MONITOR

Memo of Parameter

Display item	Index name	Reference value and notes
FUEL LEV OUT	FUEL LEVEL OUTPUT	_
FUEL LEVEL	FUEL LEVEL	_
BATERY VOLTGE	BATTERY VOLTAGE	Battery voltage
RH IND CRRNT	RIGHT INDICATOR CURRENT	Change to 0-4,500mA when RH turn signal lamp operates
LH IND CRRNT	LEFT INDICATOR CURRENT	Change to 0-4,500mA when LH turn signal lamp operates
VHCL SPEED 1	VEHICLE SPEED 1	Output according to driving speed
VHCL SPEED 2	VEHICLE SPEED 2	Output according to driving speed
REGISTERD KEY	NUMBER OF KEYS PROGRAMMED	Number of keys registered to immobilizer

Input/Output Status

Display item	Index name	Reference value and notes
RESET KNOB SW	RESET KNOB SWITCH	Pressing reset knob - on Other - OFF
LH INDCT INFO	LEFT HAND INDICATOR INFORMATION	When turning on LH turn signal lamp - ON and OFF Other - OFF
RH INDCT INFO	RIGHT HAND INDICATOR INFORMATION	When turning on RH turn signal lamp - ON and OFF Other - OFF
P RANGE SW	P RANGE SWITCH	Selector lever in P range - ON Selector lever in ranges other than P - OFF
REVERSE SW	REVERSE SWITCH	In R range - ON Others - OFF
C/DOOR LK BTN	CENTRAL DOOR LOCKING BUTTON	Door lock/unlock button ON - ON Others - OFF
REAR DEF SW	HEATED REAR SRCEEN SWITCH	When pressing the rear defogger swich - ON Other - OFF
DETENT SW	DETENT SWITCH	Selector lever in P range - ON Selector lever in ranges other than P - OFF
AIR COND SW	AIR CONDITIONING SWITCH	Air conditioner switch ON - ON Air conditioner switch OFF - OFF
BLOWER SW	BLOWER FAN SWITCH	Blower switch ON - ON Blower switch OFF - OFF
S/B WARN	SEATBELT WARNING	Seat belt is fastened after IGN ON - OFF Seat belt is not fastened after IGN ON - OFF
SEAT BELT W/L	SEAT BELT WARNING LAMP	Seat belt is fastened after IGN ON - OFF Seat belt is not fastened after IGN ON - OFF
OIL PRESS SW	OIL PRESSURE SWITCH	Oil pressure reaches specified level after starting engine - OFF No oil pressure before starting engine - ON
STOP LAMP SW	STOP LAMP SWITCH	Depressing brake pedal - ON Releasing brake pedal - OFF

Display item	Index name	Reference value and notes
DOOR SW-DR	DRIVER DOOR SWITCH	Driver's door is closed - ON Driver's door is opened - OFF
DOOR SW-ALL	ALL DOOR SWITCH	All doors are closed - OFF Any door is open - ON
DOOR STAT -DR	DRIVER'S DOOR	Driver's door locked - LOCK Driver's door unlocked - UNLOCK
DOOR STAT-AS	PASSENGER'S DOOR	All doors (except driver's door) are locked - LOCK Any door (except driver's door) is unlocked - UNLOCK
HAZARD W/L BT	HAZARD WARNING LIGHTS BUTTON	When pressing the hazard warning lamp switch - ON Others - OFF
TRUNK R/L SW	TRUNK ROOM LAMP SWITCH	Trunk open - ON Trunk closed - OFF
HOOD SW	HOOD SWITCH	Hood open - ON Hood closed - OFF
+12V AFTR IGN	+ 12 V AFTER IGNITION	IGN SW ON - ON IGN SW OFF - OFF
TAIL LAMP SW	TAIL LAMP SWITCH	Tail lamp swich ON - ON Tail lamp swich OFF - OFF
KEY INSERTED	KEY INSERTED	It indicates the conditions of key-in switch.
N RANGE SW	N RANGE SWITCH	Selector lever in N range - ON Selector lever in ranges other than N - OFF
SHOCK SENSOR	IMPACT SIGNAL	When impact is detected at collision - ON Under normal condition - OFF
DOOR W/L	DOOR WARNING LAMP	Any door in open - ON All door are closed - OFF
ANTITHEFT IND	ANTI-THEFT INDICATOR	It comes on and off according to the anti-theft indicator operating conditions.
CLANT TMP W/L	COOLANT TEMPERATURE WARNING LIGHT	Engine coolant temperature warning lamp ON - ON Engine coolant temperature warning lamp OFF - OFF
MIL	ENGINE CHECK LAMP	MIL (malfunction indicator lamp) ON - ON MIL OFF - OFF
SNOW MODE IND	SNOW MODE INDICATOR	ON when SNOW switch is ON OFF when SNOW switch is OFF
LEFT IND	LEFT INDICATOR	When turning on LH turn signal lamp - ON and OFF Other - OFF
RH IND	RIGHT-HAND INDICATOR	When turning on RH turn signal lamp - ON and OFF Other - OFF
FUEL W/L	FUEL WARNING LAMP	Fuel in tank is approx. 9 liter after IGN ON - ON Others - OFF
AT CHECK LAMP	AT CHECK LAMP	A/T CHECK warning lamp ON - ON A/T CHECK warning lamp OFF - OFF
OIL PRESS W/L	OIL PRESSURE WARNING LIGHT	Oil pressure warning lamp ON - ON Oil pressure warning lamp OFF - OFF
BATTERY CHARG	BATTERY CHARGE	Battery charge lamp ON - ON Battery charge lamp OFF - OFF
REAR DEF RLY	HEATED REAR SCREEN CONTROL	While rear defogger is controlled - ON While rear defogger is NOT controlled - OFF

Display item	Index name	Reference value and notes
PWR RESI CTRL	POWER RESIDUAL CONTROL	When turning the power window relay & folding mirror relay ON - ON When turning the power window relay & folding mirror relay OFF - OFF
BAT S RLY CMD	BATTERY SAVER RELAY COMMAND	After 30 minutes from when turning the room lamp ON with ignition OFF and key - in switch OFF - OFF Other - ON
TAIL RLY CMD	TAIL LAMP RELAY COMMAND	Tail lamp relay ON - ON Tail lamp relay OFF - OFF
SELECT UNLCK1	DRIVER'S DOOR UNLOCK RELAY	Double step type door unlock eqipped vehicle
SELECT UNLCK2	OTHER DOORS UNLOCK RELAY	Double step type door unlock eqipped vehicle
DOOR L-RLY	LOCKING RELAY COMMAND	Door lock relay ON - ON Others - OFF
TRNK OPN MNTR	TRUNK OPEN ACTUATOR	Trunk open actuator is in operation - ON Trunk open actuator is not in operation - OFF
THEFT RELAY	ANTI-THEFT RELAY COMMAND	When operationg anti-theft relay during alarm operation - ON Other - OFF
HORN RELAY	HORN RELAY COMMAND	When operating horn or alarm buzzer - ON Other - OFF
DOOR-LK LAMP	DOOR LOCKING LAMP	When tail lamp is ON - ON Others - OFF
LH INDCT CTRL	LEFT HAND INDICATOR CONTROL	When turning on LH turn signal lamp - ON and OFF Other - OFF
RH INDCT CTRL	RIGHT HAND INDICATOR CONTROL	When turning on RH turn signal lamp - ON and OFF Other - OFF

Immobilizer Status (Only for Immobilizer System)

Display item	Index name	Reference value and notes
BLANK B/COMP	BLANK BODY COMPUTER	Immobilizer system is registered - YES Others - NO
K/CODE VALID	KEY CODE VALIDATED	Key code is validated: OK - YES Others - NO
KEY ID REGIST	KEY CODE REGISTERED	Key code is registered on combination meter
KEY ID RECEIV	RESPONSE RECEIVED	Key code response received by combination meter
KEY ID VALID	RESPONSE RECOGNIZED	Key code response is recognized between key and combination meter
BLANK KEY	BLANK KEY	Unregistered key is used
K/CODE REGIST	KEY CODE REGISTERED	Verification between key and combination meter: OK - YES Others - NO
LOCK MODE	INJECTION PROTECTED	ECM is protected - YES Others - NO
DISCORD ECM	BLANK INJECTION	ECM is registered - NO Others - YES

Vhicle Access Status (Only For Remote Keyless Entry System)

Display item	Index name	Reference value and notes
DOOR STAT-ALL	DOORS	All doors are locked - LOOK All doors are unlocked - UNLOCK
L OPN CMD S	LAST OPENING ELEMENT COMMAND SOURCE	Final door open source is the remote controller - R Final door open source is the door lock button - D
RF FRAME RCVD	R.F. FRAME RECEIVED (Note)	When receiving the signals from registered remote controller - YES When receiving the signals from unregistered remote controller - NO
RF KEY VALID	RF KEY VALID (Note)	If the remote controller is registered - YES If the remote controller is not registered - NO
KEYLESS LOCK	REMOTE LOCK BUTTON 1 (Note)	When briefly pressing the lock/unlock button on the registered remote controller - ON When pressing the lock/unlock button on the unregistered remote controller - OFF
KEYLESS UNLCK	REMOTE UNLOCK BUTTON 1 (Note)	
KEYLESS PANIC	REMOTE LOCK BUTTON 2 (Note)	When pressing and holding the lock/unlock button on the registered remote controller - ON When pressing and holding the lock/unlock button on the unregistered remote controller - OFF
KEYLES UNLCK2	REMOTE UNLOCK BUTTON 2 (Note)	

(Note) Perform the test only under the remote controller operating conditions.

ACTIVE TEST

Display item	Test item
INPANE WARNING LIGHT	INSTRUMENT PANEL WARNING LIGHTS
LCD INSTRUMENT SEGMENTS	LCD INSTRUMENTATION SEGMENTS
WATER TEMPERATURE GAUGE	WATER TEMPERATURE GAUGE
FUEL GAUGE	FUEL GAUGE
SPEEDOMETER	SPEEDOMETER
REV COUNTER	REV COUNTER
BUZZER	BUZZER
REAR SCREEN DEMISTER	REAR SCREEN DEMISTER
FOLDING MIRROR	FOLDING MIRROR RELAY
TAIL LAMP	TAIL LAMP
POWER WINDOWS	ELECTRIC WINDOWS RELAY
BATTERY SAVER RELAY	BATTERY SAVER RELAY
DOOR LOCK	DOOR LOCK RELAY
DRIVER DOOR UNLOCK	DRIVER DOOR UNLOCK RELAY
OTHER DOOR UNLOCK	OTHER DOORS UNLOCK RELAY
DOOR LOCKING LAMP	DOOR LOCKING LAMP
THEFT-WARNING RELAY	ANTI-THEFT RELAY
HORN	HORN RELAY
SELECTLEV LOCK ELECMAG	SELECTOR LEVER LOCKING ELECTROMAGNET
LEFT INDICATOR	LEFT INDICATOR
RIGHT-HAND INDICATOR	RIGHT-HAND INDICATOR
INTERIOR LIGHTING	INTERIOR LIGHTING
TRUNK OPEN	TRUNK OPEN

CAN DIAG SUPPORT MNTR

Refer to LAN section.

CONFIGURATION

Description

CONFIGURATION has three functions as follows:

- READ CONFIGURATION is the function to confirm vehicle configuration of current combination meter.
- WRITE CONFIGURATION is the function to write vehicle configuration on combination meter.
- NATS SETTING is the function to set immobilizer configuration on combination meter.

CAUTION:

- When replacing combination meter, you must perform WRITE CONFIGURATION with CONSULT-II.
- Complete the procedure of WRITE CONFIGURATION in order.
- If you set incorrect WRITE CONFIGURATION, incidents will occur.
- Configuration is different for each vehicle model. Confirm configuration of each vehicle model.

Read Configuration Procedure

1. Turn ignition switch OFF.
2. Connect CONSULT-II to data link connector, which is located under the driver's dash panel.
3. Turn ignition switch ON.
4. Touch "START(X-BADGE VHCL)".
5. Touch "CLUSTER".
6. Touch "CONFIGURATION".
7. Touch "READ CONFIGURATION".
8. Touch "PRINT" on "READ CONFIGURATION" screen.

Write Configuration Procedure

1. Turn ignition switch OFF.
2. Connect CONSULT-II to data link connector, which is located under the driver's dash panel.
3. Turn ignition switch ON.
4. Touch "START(X-BADGE VHCL)".
5. Touch "CLUSTER".
6. Touch "CONFIGURATION".
7. Touch "WRITE CONFIGURATION".
8. Using the followig flow chart, identify the correct model and cofiguration list. Confirm and/or change setting value for each item according to the configuration list.
9. Touch "CHNG SETTING" on "WRITE CONFIGURATION" screen.

CAUTION:

Make sure to touch "CHNG SETTING" even if the indicated configuration of brand-new combination meter is same as the desirable configuration.

If not, configuration which is set automatically by selecting vehicle model can not be memorized.

10. Touch "OK" on "WRITE CONFIGURATION" screen.
11. Wait until the next screen during setting.
12. Confirm "WRITE CONFIGURATION" is correctly executed by comparing sheet with applicable configuration list shown in step 9.

Display item	Index name	Possible setting value
VHCL SPD SOU	VEHICLE SPEED INPUT SOURCE (Note 1)	ABS, TRANSMISSION
OVERSPEED ALM	OVERSPEED ALARM	WITHOUT, WITH
S/BELT BUZZER	SEAT BELT REMINDER BUZZER	WITHOUT, WITH
AUT D-LK SET	AUTOMATIC LOCKING WHEN DRIVING (Note 2)	WITHOUT, WITH
SELECT UNLOCK	DOUBLE STEP DOOR UNLOCK	WITHOUT, WITH
KEYLESS ENTRY	MULTI REMOTE ENTRY	WITHOUT, WITH
S/B WARN SPD	SEATBELT WARNING SPEED	10, 15, 14, 20
S/B WARN TIME	SEATBELT WARNING BUZZER OPERATING TIME	0, 30, 60, 90, 120
AUT D-LK HOLD	AUTO DOOR LOCK SPEED	0, 40
TRANSMISSION	TRANSMISSION (Note 3)	MANUAL, AUTOMATIC

(Note 1) It should be set to ABS for the veicle equiped with ABS
(Note 2) It can be set manually. (The setting value is changed when pressing the central door lock switch for more than 5 seconds with the ignition switch ON.)
(Note 3) If Manual is set to the vehicle equipped with automatic transaxle, the selector leverinformation is not displayed.

NATS Setting

CAUTION:

- Setting of the immobilizer system (NATS) configuration can be changed only once after replacing combination meter.

Display item	Index name	Possible setting value
WITH NATS	WITH ENGINE IMMOBILIZER (Note)	NO, YES
WITHOUT NATS	WITHOUT ENGINE IMMOBILIZER (Note)	NO, YES

(Note) It is set to the veicle equiped with immobilizer.

Control unit - EEPROM

POSSIBLE CAUSE

Control unit - EEPROM **DEF : Internal circuit fault**

DTC Detecting Condition	**DEF : If the EEPROM set in control unit is failed.**

DIAGNOSIS PROCEDURE

Refer to Wiring Diagram (EL-83).

Check the power supply and ground circuits of control unit. Check the voltage between the control unit M33 terminal No. 58 and terminal No. 14, 69, 70: Power supply voltage Check the voltage between the control unit M33 terminal No. 59 and terminal No. 71: Power supply voltage Check the voltage between the control unit M33 terminal No. 60 and terminal No. 72: Power supply voltage Repair the circuit if necessary.
Erase the fault. If the fault cannot be erased, replace the combination meter.

Check after repair	Perform the fault detection procedure and check the malfunction does not occur again. Check the possible causes related to this failure to make sure there is no fault. Erase the fault memory.

Battery voltage

POSSIBLE CAUSE

Battery voltage **3.DEF : Abnormal voltage**

DTC Detecting Condition	**3.DEF : If the battery voltage is over 16 V**

DIAGNOSIS PROCEDURE

Refer to Wiring Diagram (EL-83).

Measure the battery voltage. Start the engine and measure the battery voltage and charging voltage. Specified value - approx. 13 V If necessary, replace the defective component with new one.
Check the power supply and ground circuits of control unit. Check the voltage between the control unit M33 terminal No. 58 and terminal No. 14, 69, 70: Power supply voltage Check the voltage between the control unit M33 terminal No. 59 and terminal No. 71: Power supply voltage Check the voltage between the control unit M33 terminal No. 60 and terminal No. 72: Power supply voltage Repair the circuit if necessary.

Check after repair	Perform the fault detection procedure and check the malfunction does not occur again. Check the possible causes related to this failure to make sure there is no fault. Erase the fault memory.

Fuel gauge sensor circuit

POSSIBLE CAUSE

Fuel gauge sensor circuit **CO: OpenCC.0: Short to ground**

DTC Detecting Condition	**This fault can be detected only when the ignition switch is in ON position.** **CO: If the resistance of fuel gauge sensor is over 100W** **CC.0: If the resistance of fuel gauge sensor is below 2W**

DIAGNOSIS PROCEDURE

Refer to Wiring Diagram (EL-84).

Inspect the fuel gauge sensor. Remove the fuel gauge sensor and measure the resistance of it. Fuel F position (approx. 52ℓ) - approx. 6Ω Fuel 3/4 position (approx. 37ℓ) - approx. 18Ω Fuel 1/2 position (approx. 33ℓ) - approx. 33Ω Fuel 1/4 position (approx. 15ℓ) - approx. 55Ω Fuel E position (approx. 5.5ℓ) - approx. 80Ω If necessary, replace the defective component with new one.
Check continuity between meter control unit and fuel gauge sensor. Disconnect M30 connector and B28 connector. M30 connector terminal No. 4 and B28 connector terminal No. 1 - approx. 0W M30 connector terminal No. 3 and B28 connector terminal No. 2 - approx. 0W M30 connector terminal No. 3, 4 and body - Continuity should not exist Repair the circuit if necessary.
Check the fuel gauge circuit for short to power supply. Disconnect the fuel gauge unit connector and the combination meter connector. Check the voltage between meter control unit M30 connector terminal No. 3, 4 and ground. Specified value: The voltage should not be detected. The control circuit is short to power supply circuit if the battery voltage is detected. Repair the circuit if necessary.

Check after repair	Perform the fault detection procedure and check the malfunction does not occur again. Check the possible causes related to this failure to make sure there is no fault. Erase the fault memory.

Vehicle speed output circuit 1 (2-pulse)

POSSIBLE CAUSE

Vehicle speed output circuit 1 (2-pulse) **CC.1 : Short to power**

DTC Detecting Condition	When driving the vehicle **CC.1: If the vehicle speed output circuit consumes more voltage than estimated**

DIAGNOSIS PROCEDURE

Refer to Wiring Diagram (EL-84).

Check the continuity between control unit and vehicle speed sensor. Disconnect the control unit and vehicle speed sensor connectors. Check the continuity between control unit M30 connector terminal No. 5 and vehicle speed sensor terminal No. 1. Continuity should exist. Check the continuity between control unit M30 connector terminal No. 6 and vehicle speed sensor terminal No. 2. Continuity should exist. Repair the circuit if necessary.
Inspect the vehicle speed sensor. Check the output voltage while rotating the sprocket of vehicle speed sensor by hand. Specified value - 0 ~ 5 V If necessary, replace the vehicle speed sensor.

Check after repair	Perform the fault detection procedure and check the malfunction does not occur again. Check the possible causes related to this failure to make sure there is no fault. Erase the fault memory.

Vehicle speed output circuit 2 (8-pulse)

POSSIBLE CAUSE

Vehicle speed output circuit 2 (8-pulse)

DTC Detecting Condition	**CC.1: If the vehicle speed output circuit consumes more voltage than estimated**

DIAGNOSIS PROCEDURE

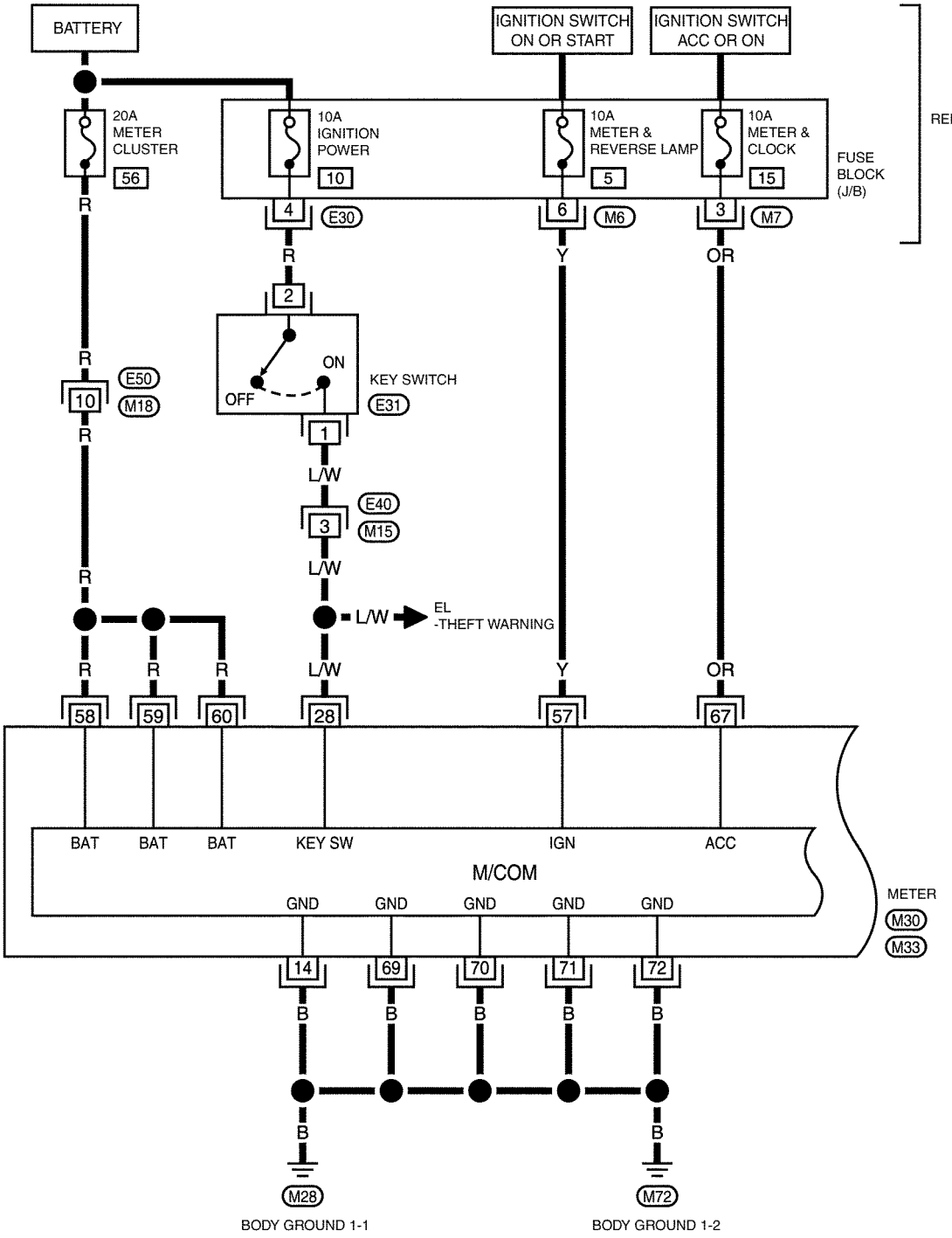
Refer to Wiring Diagram (EL-84).

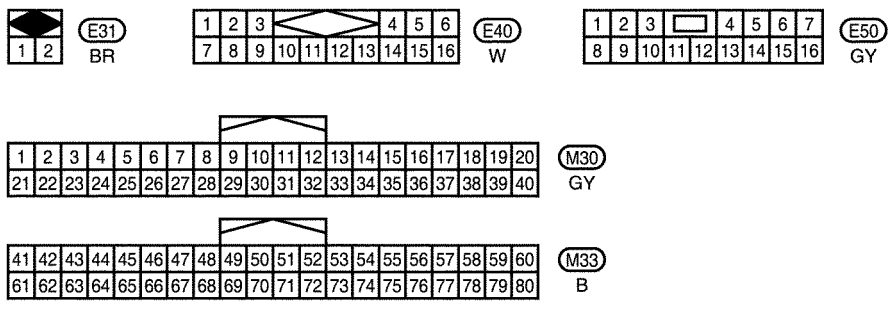
Check the continuity between control unit and vehicle speed sensor. Disconnect the control unit and vehicle speed sensor connectors. Check the continuity between control unit M30 connector terminal No. 7 and ABS C/U terminal No. 23. Continuity should exist. Repair the circuit if necessary.
Perform the diagnosis for ABS C/U. Refer to “TROUBLE DIAGNOSIS” (BR-43).

Check after repair	Perform the fault detection procedure and check the malfunction does not occur again. Check the possible causes related to this failure to make sure there is no fault. Erase the fault memory.

Wiring Diagram

EL/Gauge- 01





REFER TO FUSE BLOCK (J/B)

M6 M7 E30

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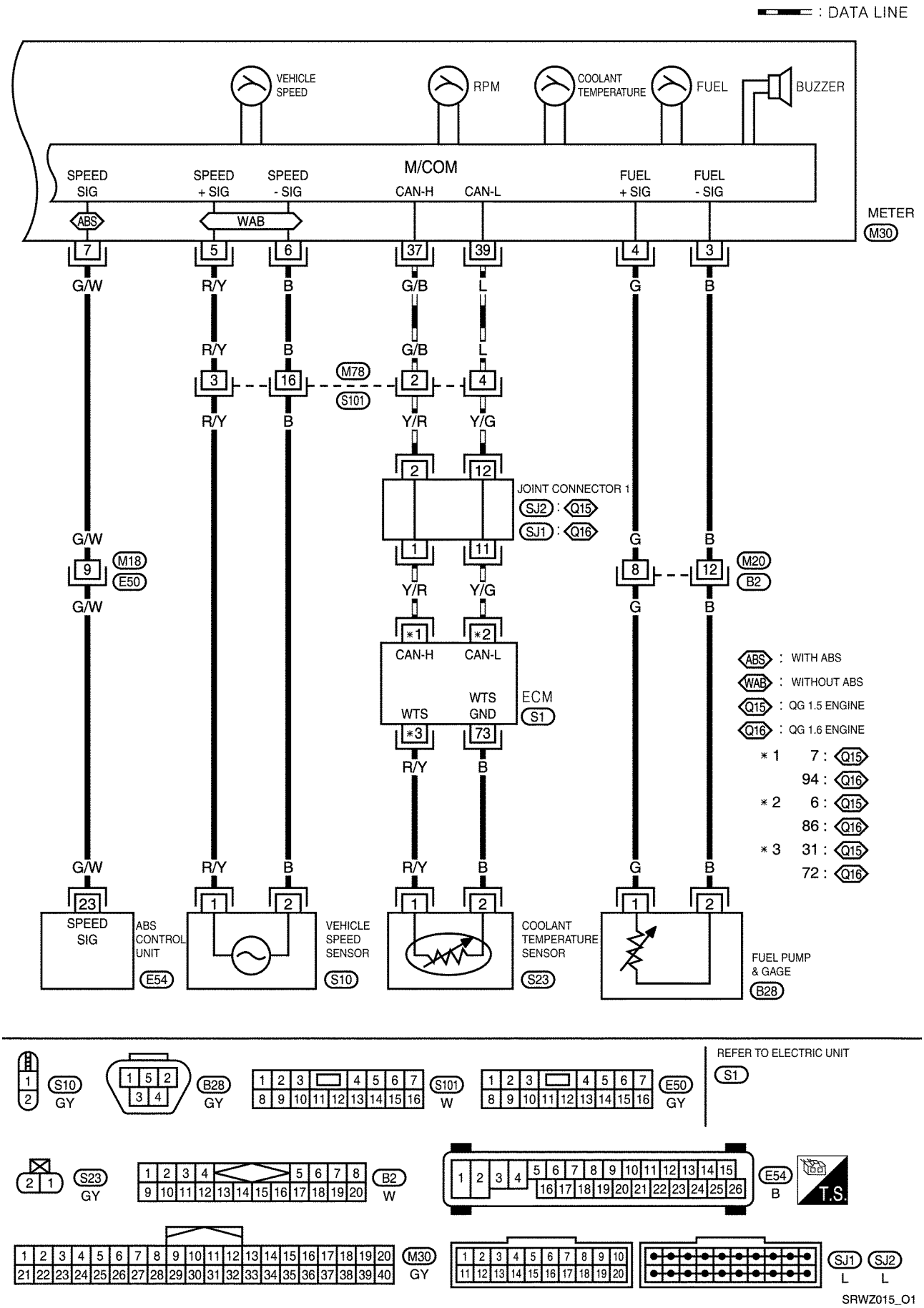
Wiring Diagram

EL/Gauge- 02



Turn signal lamp circuit - RH

POSSIBLE CAUSE

Turn signal lamp circuit - RH **CO: OpenCC.0: Short to ground CC.1: Short to power**

DTC Detecting Condition	When operating the RH turn signal lamp, **CO: If the RH turn signal lamp consumes less voltage than estimated (only for 21 W turn signal lamp),** **CC.0: If the RH turn signal lamp control circuit is short to ground,** CC.1: If the RH turn signal lamp control circuit is short to power

DIAGNOSIS PROCEDURE

Refer to Wiring Diagram (EL-87).

Check RH turn signal lamp bulbs and each turn signal lamp connector for tightening. Replace the burnt bulb and tighten the connector correctly.
Check the control voltage of RH turn signal lamp control circuit. Voltage of control unit M33 connector terminal No. 79 and 80 When controlling RH turn signal lamp - approx. 0 V and 12 V alternatively Others - approx. 0 V Repair the circuit if necessary.
Check the continuity of RH turn signal lamp control circuit. Disconnect the meter control unit, rear combination lamp, front turn signal lamp and side turn signal lamp connectors. Check the continuity between the control unit M33 connector terminal No. 79 or 80 and each turn signal lamp connector. Specified value: Continuity should exist. Repair the circuit if necessary.
Check the RH turn signal lamp control circuit for short to ground and short to power. Disconnect the meter control unit, rear combination lamp, front turn signal lamp and side turn signal lamp connectors. Check the continuity between the control unit M33 connector terminal No. 79 or 80 and ground. Specified value: Continuity should not exist. The control line is short to ground if there is continuity. Check the voltage between the control unit M33 connector terminal No. 79 or 80 and ground. Specified value: The voltage should not be detected. It is short to power if the battery voltage is detected. Repair the circuit if necessary.

Check after repair	Perform the fault detection procedure and check the malfunction does not occur again. Check the possible causes related to this failure to make sure there is no fault. Erase the fault memory.

Turn signal lamp circuit - LH

POSSIBLE CAUSE

Turn signal lamp circuit - LH **CO: OpenCC.0: Short to ground CC.1: Short to power**

DTC Detecting Condition	When operating the LH turn signal lamp, **CO: If the LH turn signal lamp consumes less voltage than estimated (only for 21 W turn signal lamp),** **CC.0: If the LH turn signal lamp control circuit is short to ground,** **CC.1: If the LH turn signal lamp control circuit is short to power**

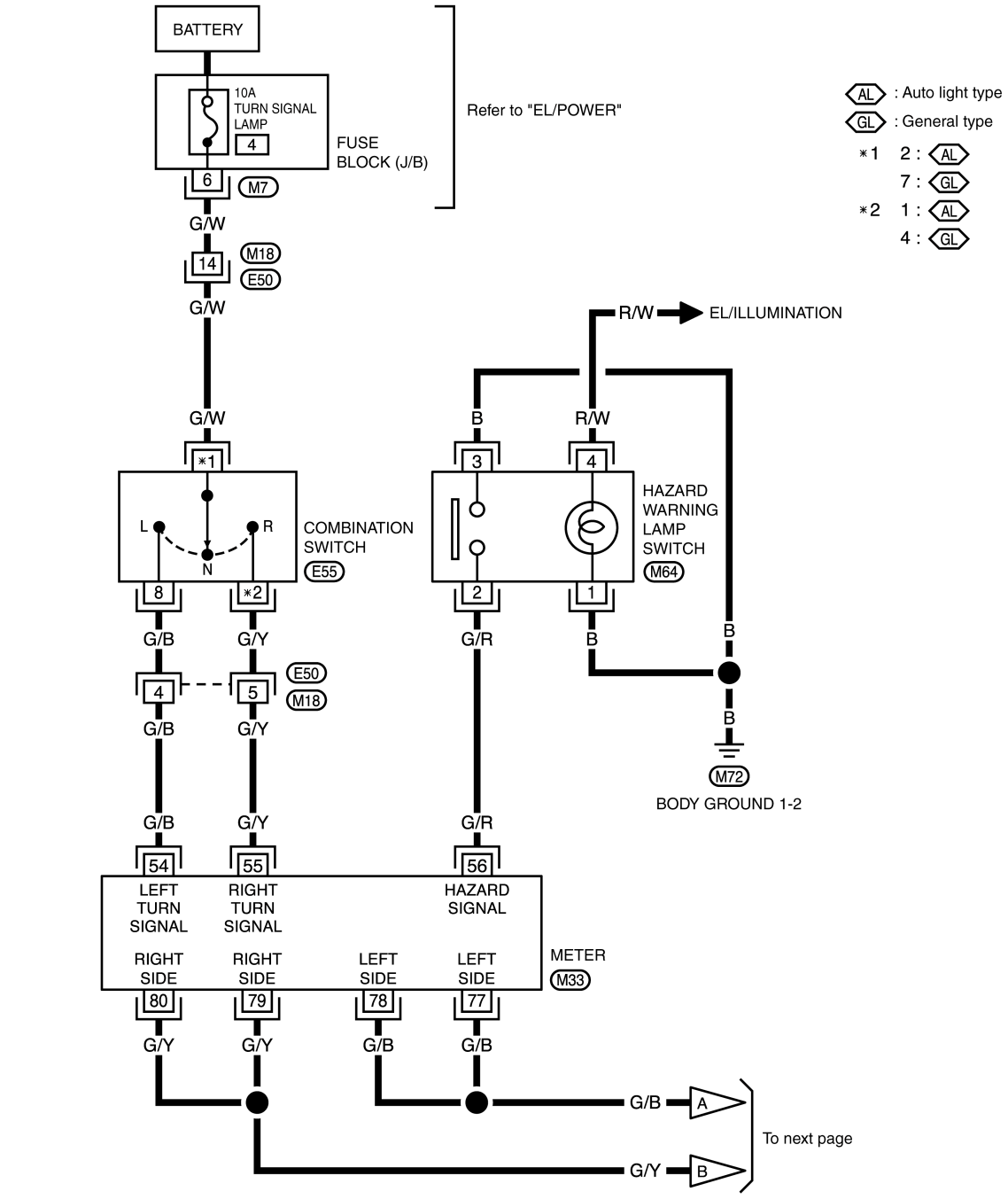
DIAGNOSIS PROCEDURE

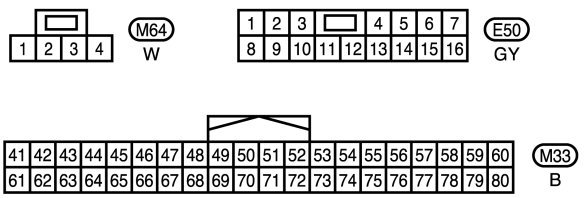
Refer to Wiring Diagram (EL-87).

Check LH turn signal lamp bulbs and each turn signal lamp connector for tightening. Replace the burnt bulb and tighten the connector correctly.
Check the control voltage of LH turn signal lamp control circuit. Voltage of control unit M33 connector terminal No. 77 and 78 When controlling LH turn signal lamp - approx. 0 V and 12 V alternatively Others - approx. 0 V Repair the circuit if necessary.
Check the continuity of LH turn signal lamp control circuit. Disconnect the meter control unit, rear combination lamp, front turn signal lamp and side turn signal lamp connectors. Check the continuity between the control unit M33 connector terminal No. 77 or 78 and each turn signal lamp connector. Specified value: Continuity should exist. Repair the circuit if necessary.
Check the LH turn signal lamp control circuit for short to ground and short to power. Disconnect the meter control unit, rear combination lamp, front turn signal lamp and side turn signal lamp connectors. Check the continuity between the control unit M33 connector terminal No. 77 or 78 and ground. Specified value: Continuity should not exist. The control line is short to ground if there is continuity. Check the voltage between the control unit M33 connector terminal No. 77 or 78 and ground. Specified value: The voltage should not be detected. It is short to power if the battery voltage is detected. Repair the circuit if necessary.

Check after repair	Perform the fault detection procedure and check the malfunction does not occur again. Check the possible causes related to this failure to make sure there is no fault. Erase the fault memory.

Wiring Diagram — EL/Turn Signal Lamp- 01

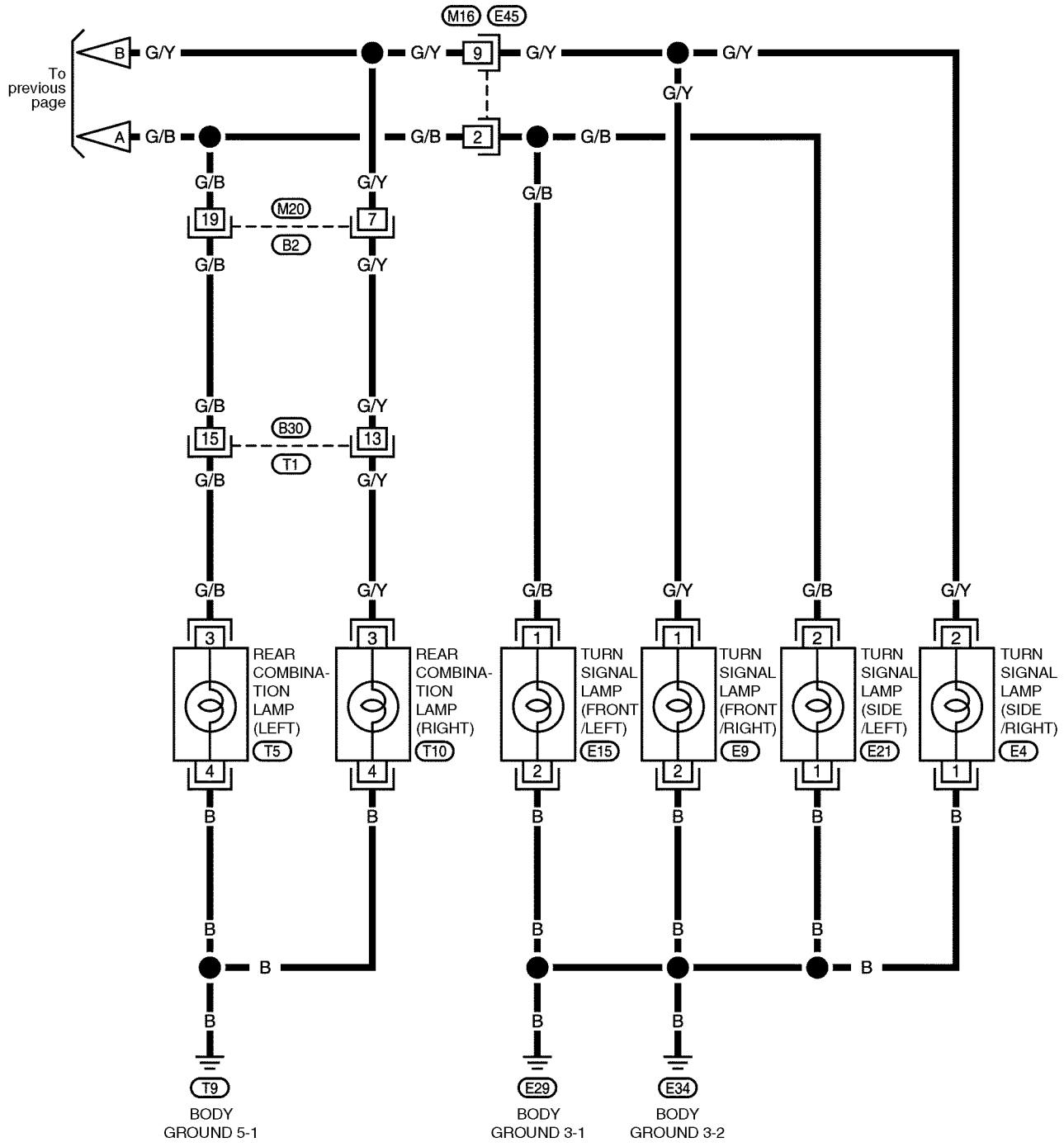


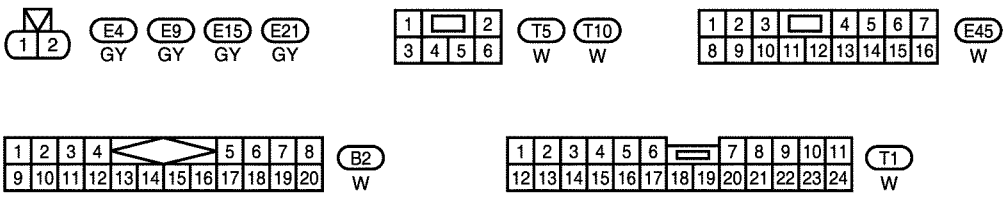


Refer to "FUSE BLOCK (J/B)"
M7

SRWZ018_D1

Wiring Diagram — EL/Turn Signal Lamp- 02





SRWZ019_O1

PNP switch circuit

POSSIBLE CAUSE

PNP switch circuit **CC.0: Short to ground**

DTC Detecting Condition	**CC.0: If there is a current consumption higher than normal.**

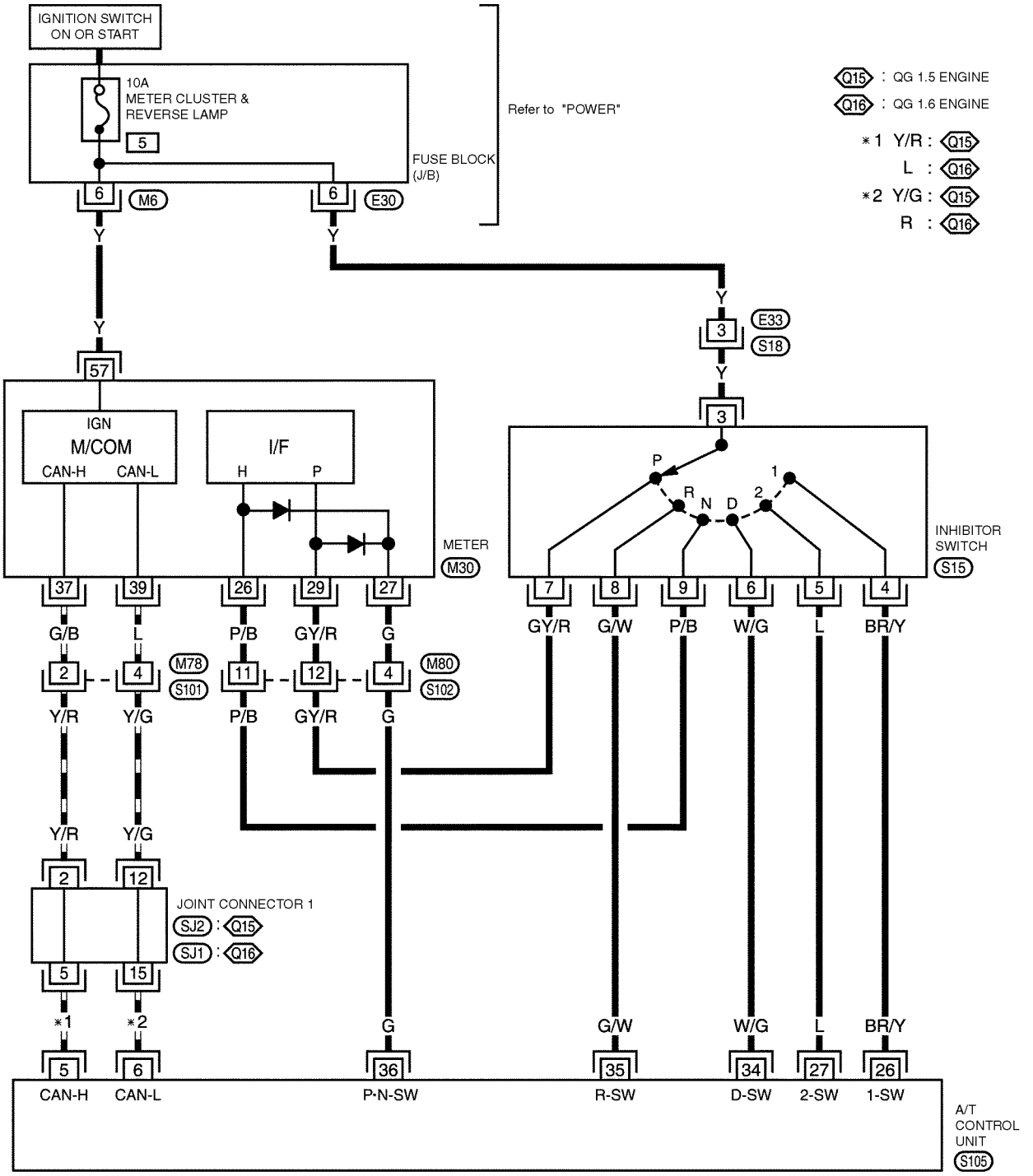
DIAGNOSIS PROCEDURE

Refer to Wiring Diagram (EL-90).

Check the inhibitor switch position. Check the control voltage of PNP switch circuit. Check the voltage between combination meter M30 connector terminal No. 29 and ground. Selector lever set in the “P” position - Battery voltage Other positions - approx. 0V Check the voltage between combination meter M30 connector terminal No. 26 and ground. Selector lever set in the “N” position - Battery voltage Other positions - approx. 0V Disconnect the inhibitor switch connector. Check the continuity between the inhibitor switch terminals 3 and 7. Selector lever set in the “P” position - Continuity should exist Check the continuity between the inhibitor switch terminals 3 and 9. Selector lever set in the “N” position - Continuity should exist Repair the circuit or replace the inhibitor switch and combination meter if necessary.

Check after repair	Perform the fault detection procedure and check the malfunction does not occur again. Check the possible causes related to this failure to make sure there is no fault. Erase the fault memory.

Wiring Diagram — EL/LCD Meter- 01



Rear defogger relay circuit

POSSIBLE CAUSE

Rear defogger relay circuit **CC.1: Short to power**

DTC Detecting Condition	When operating the rear defogger relay **CC.1: If the rear defogger relay control consumes more voltage than estimated**

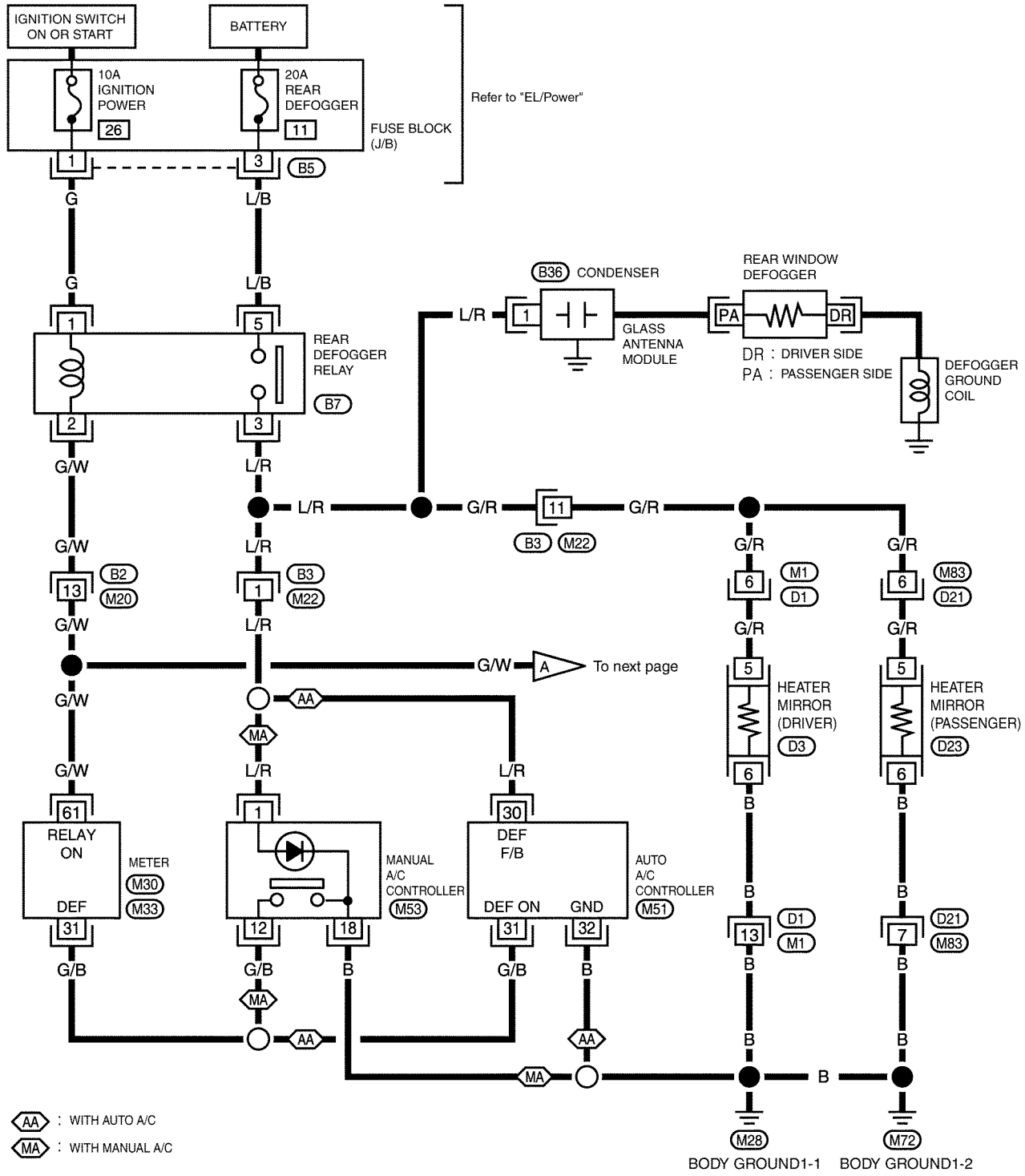
DIAGNOSIS PROCEDURE

Refer to Wiring Diagram (EL-92).

Check the control voltage of rear defogger relay. Voltage of control unit M33 connector terminal No. 61 When operating the rear defogger relay - approx. 1 V Others - approx. 12 V Repair the circuit if necessary.
Check the rear defogger relay control circuit for short to power. Disconnect the rear defogger relay, rear de-icer relay and combination meter. Check the voltage between the control unit M33 connector terminal No. 61 and ground. Specified value: The voltage should not be detected. The control circuit is short to power supply circuit if the battery voltage is detected. Repair the circuit if necessary.

Check after repair	Perform the fault detection procedure and check the malfunction does not occur again. Check the possible causes related to this failure to make sure there is no fault. Erase the fault memory.

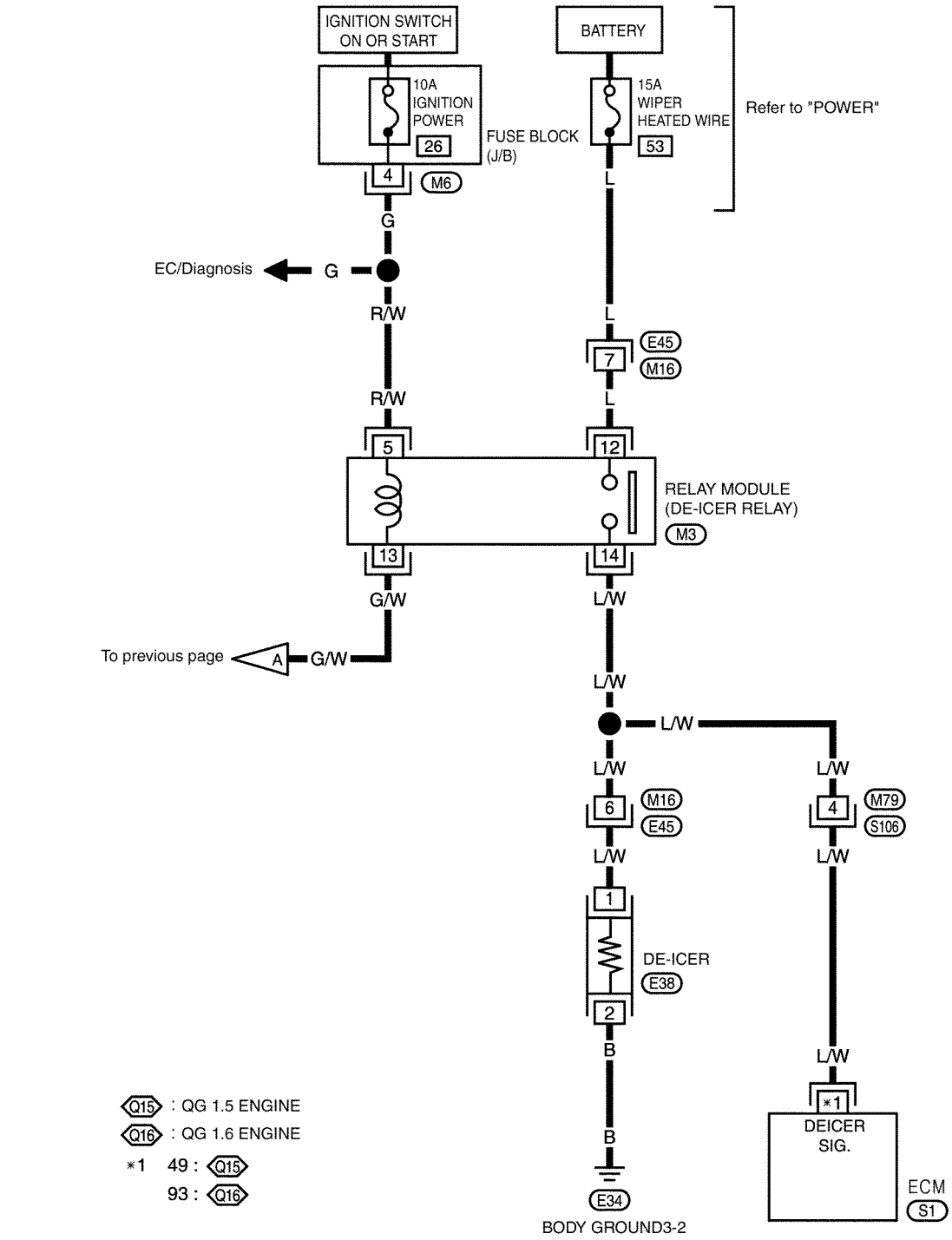
Wiring Diagram — EL/Defogger- 01

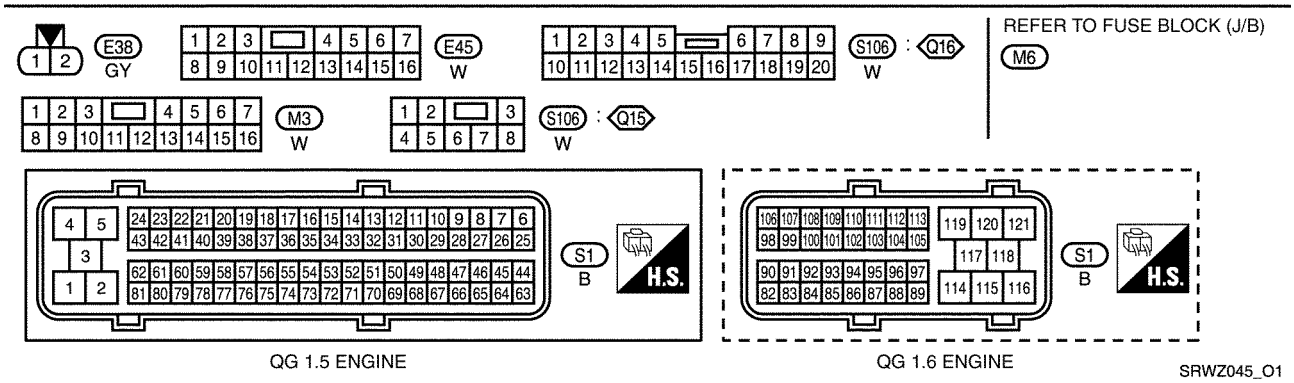


SRWZ006_O1

Wiring Diagram

EL/Defogger- 02





Tail lamp relay circuit

POSSIBLE CAUSE

Tail lamp relay circuit **CC.1: Short to power**

DTC Detecting Condition	When operating the tail lamp **CC.1: If the tail lamp relay control consumes more voltage than estimated**

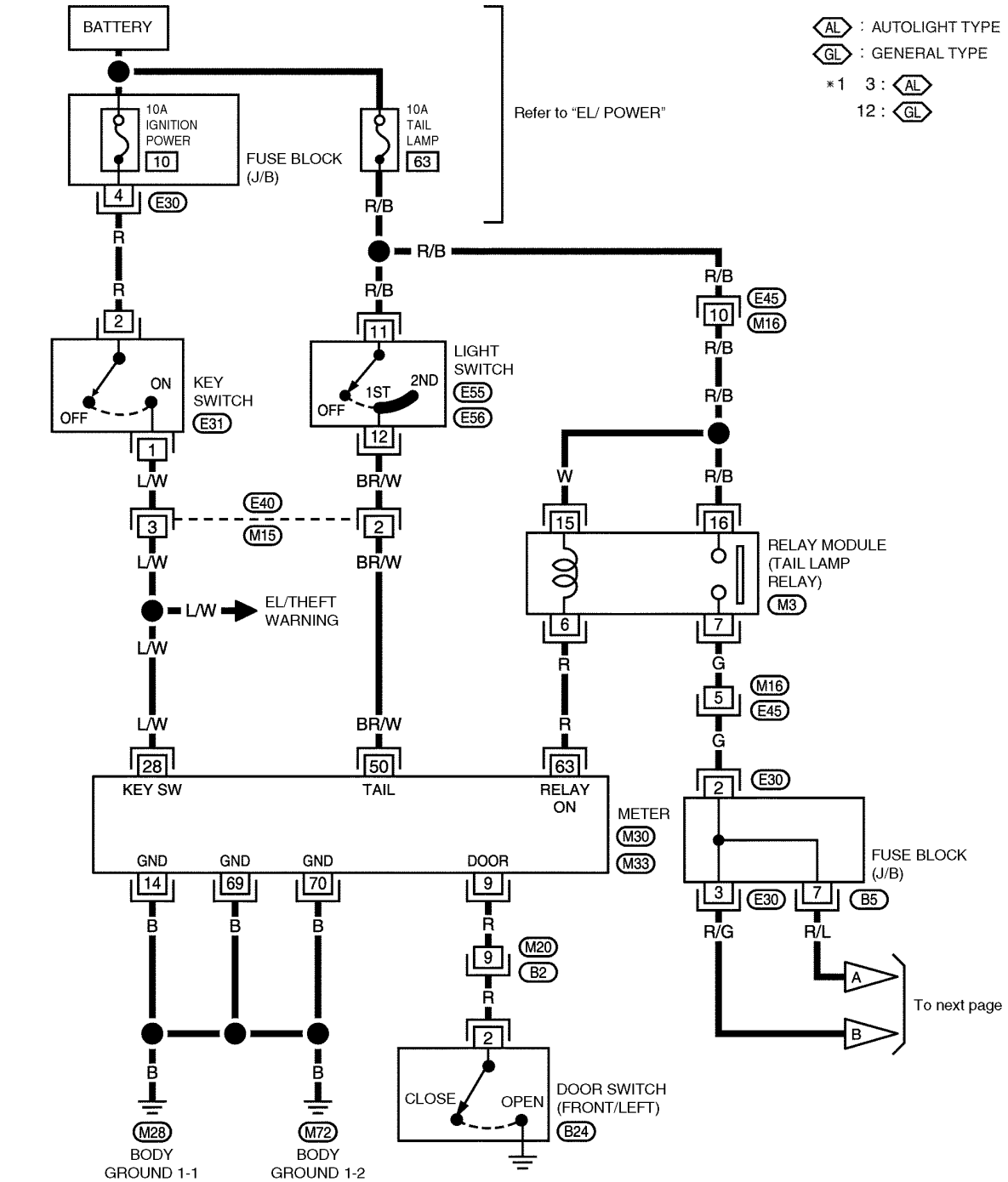
DIAGNOSIS PROCEDURE

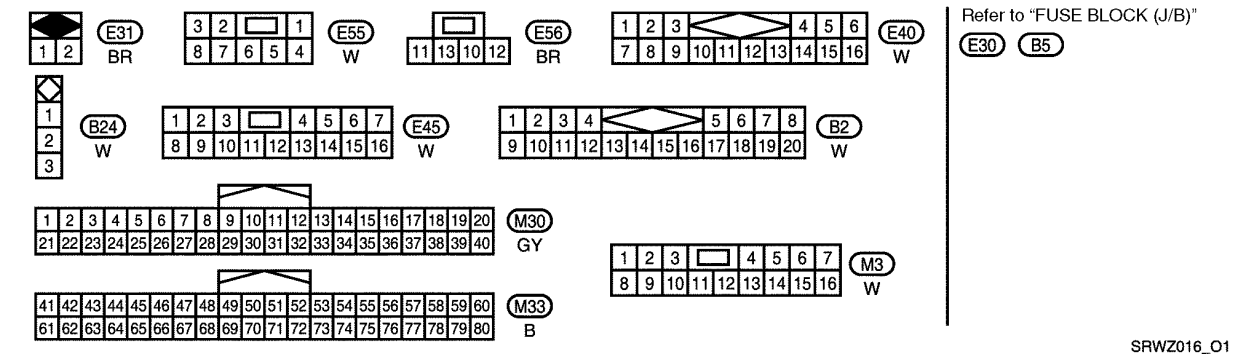
Refer to Wiring Diagram (EL-95).

Check the control voltage of tail lamp relay. Voltage of control unit M33 connector terminal No. 63 When depressing the tail lamp switch - approx. 1 V Others - approx. 12 V Repair the circuit if necessary.
Check the tail lamp relay control circuit for short to power. Disconnect the tail lamp relay and combination meter connectors. Check the voltage between the control unit M33 connector terminal No. 63 and ground. Specified value: The voltage should not be detected. The control circuit is short to power supply circuit if the battery voltage is detected. Repair the circuit if necessary.

Check after repair	Perform the fault detection procedure and check the malfunction does not occur again. Check the possible causes related to this failure to make sure there is no fault. Erase the fault memory.

Wiring Diagram — EL/Tail Lamp- 01



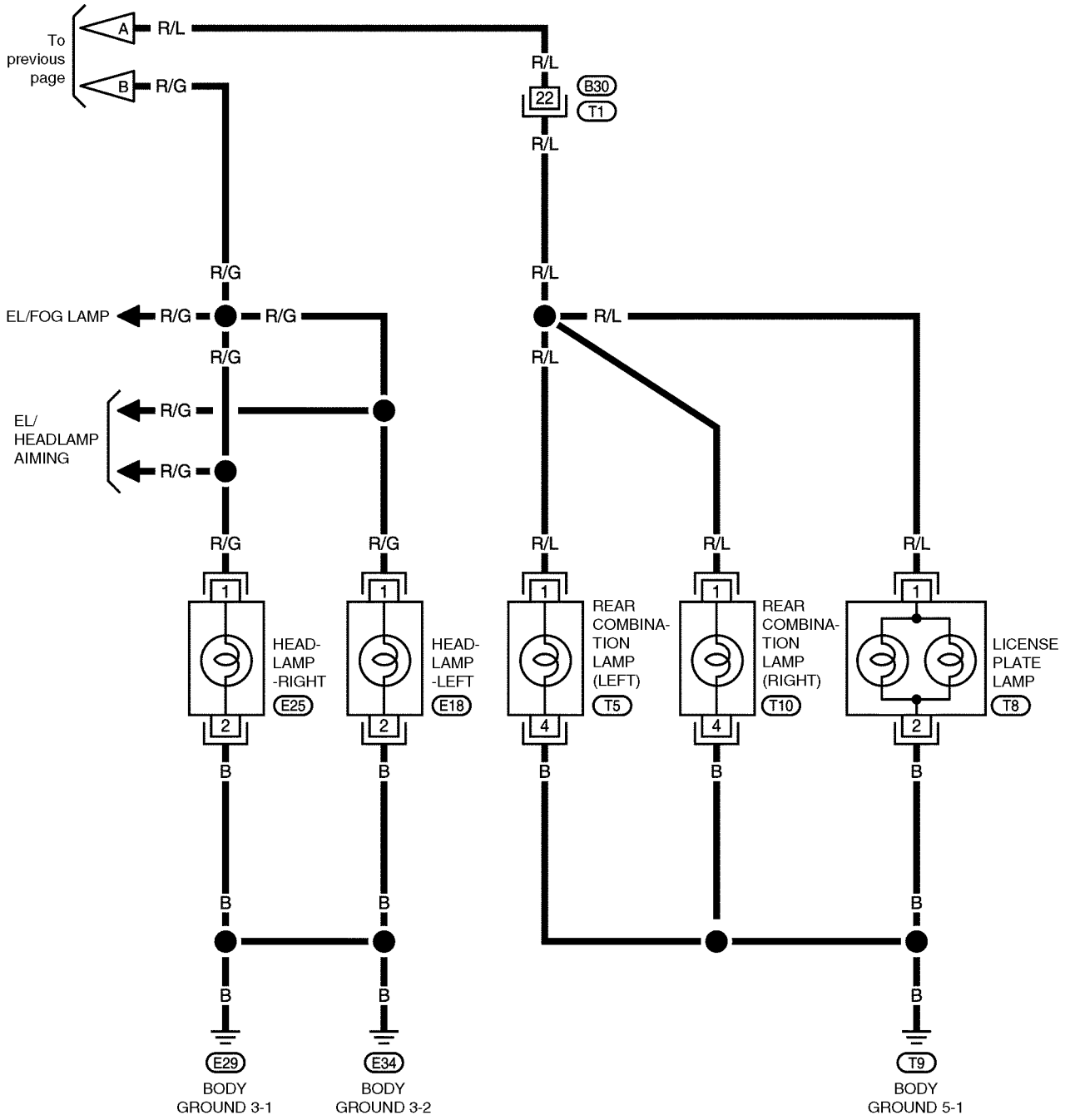


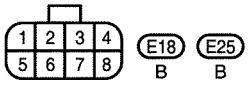
Refer to "FUSE BLOCK (J/B)"
E30 B5

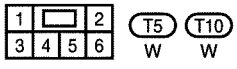
SRWZ016_O1

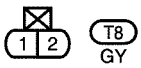
Wiring Diagram

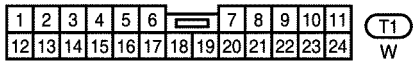
EL/Tail Lamp- 02











SRWZ017_O1

Power window relay circuit

POSSIBLE CAUSE

Power window relay circuit **CC.1: Short to power**

DTC Detecting Condition	When operating the power window relay **CC.1: If the power window relay control consumes more voltage than estimated**

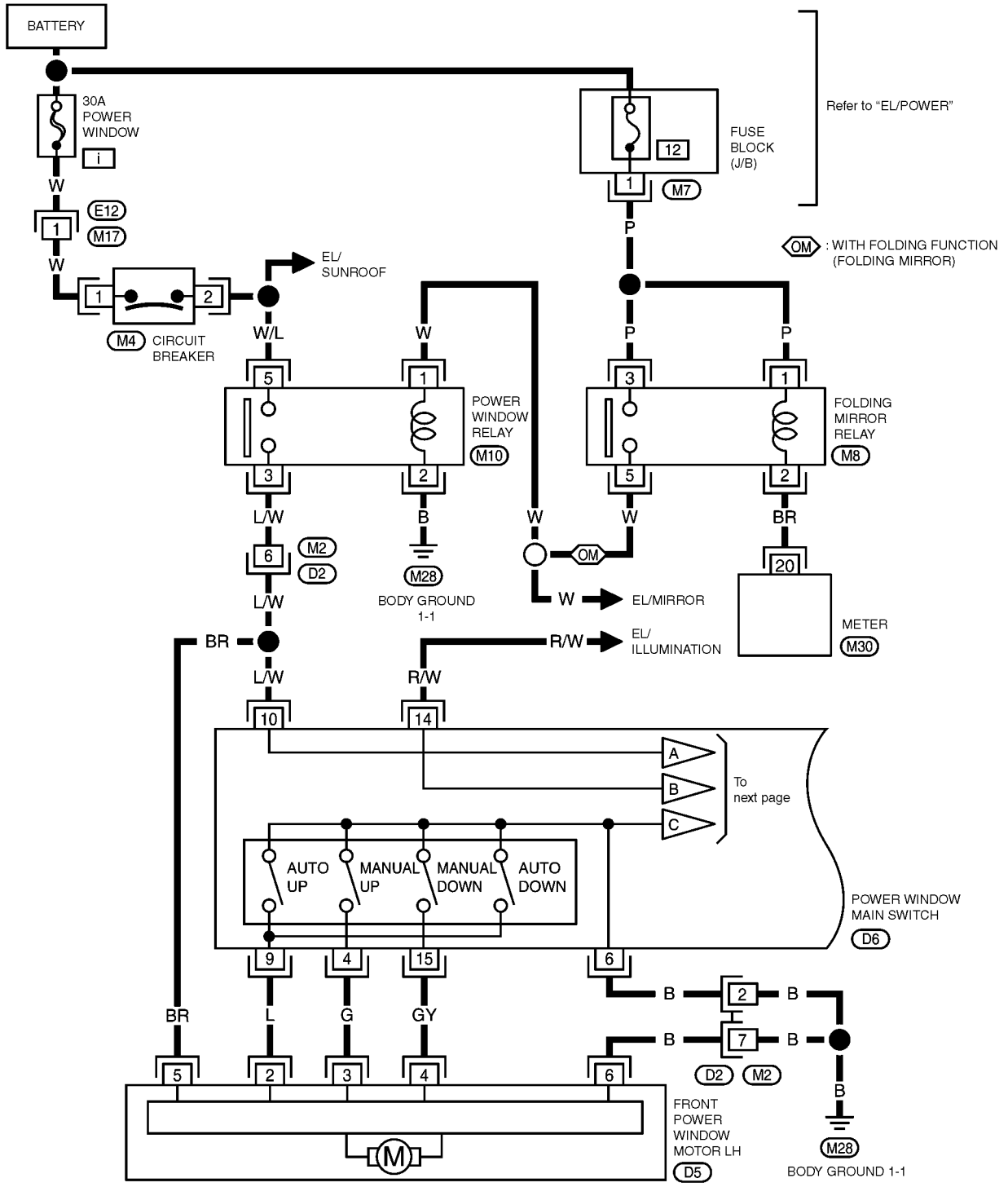
DIAGNOSIS PROCEDURE

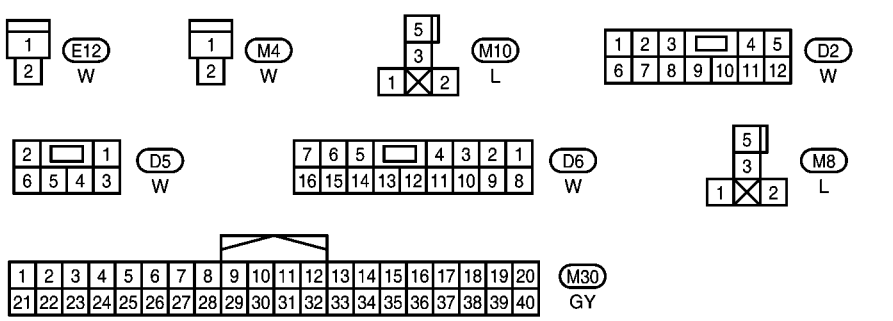
Refer to Wiring Diagram (EL-98).

Check the control voltage of power window relay. Check the voltage between the control unit M30 connector terminal No. 20 and ground. For 30 seconds after turning the ignition from ON to OFF - approx. 1 V After 30 seconds from when turning the ignition from ON to OFF - Battery voltage Repair the circuit if necessary.
Check the power window relay control circuit for short to power. Disconnect the power window relay, folding mirror relay and combination meter connectors. Check the voltage between the control unit M30 connector terminal No. 20 and ground. Specified value: The voltage should not be detected. The control circuit is short to power supply circuit if the battery voltage is detected. Repair the circuit if necessary.

Check after repair	Perform the fault detection procedure and check the malfunction does not occur again. Check the possible causes related to this failure to make sure there is no fault. Erase the fault memory.

Wiring Diagram — EL/Power Window (4DR)- 01

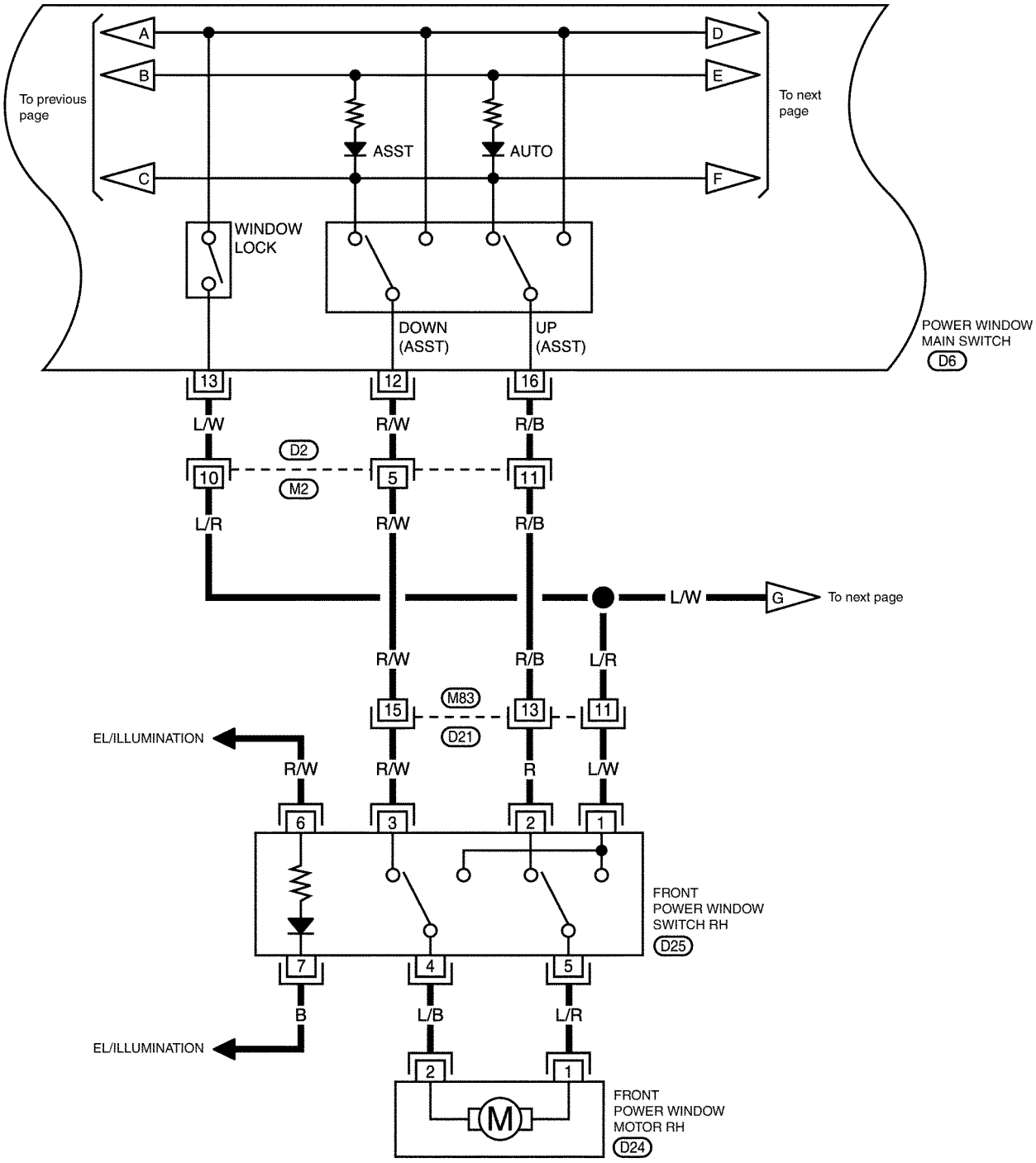


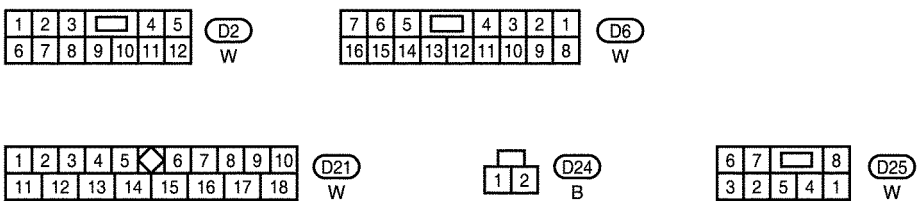


Refer to "FUSE BLOCK (J/B)"
M7

SRWZ033_O1

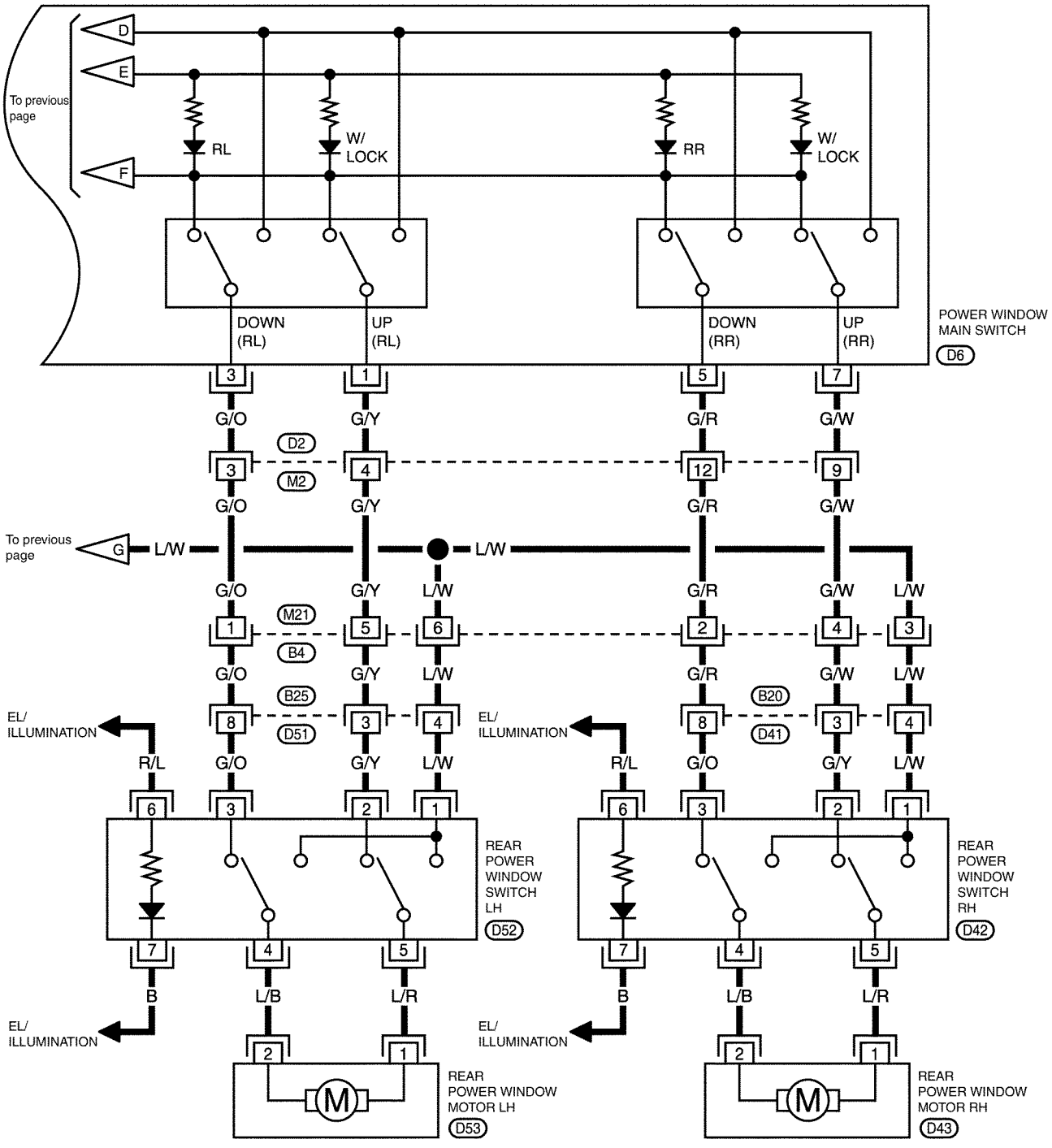
Wiring Diagram — EL/Power Window (4DR)- 02

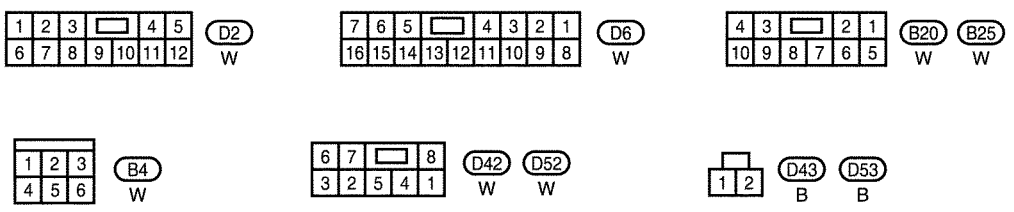




SRWZ034_O1

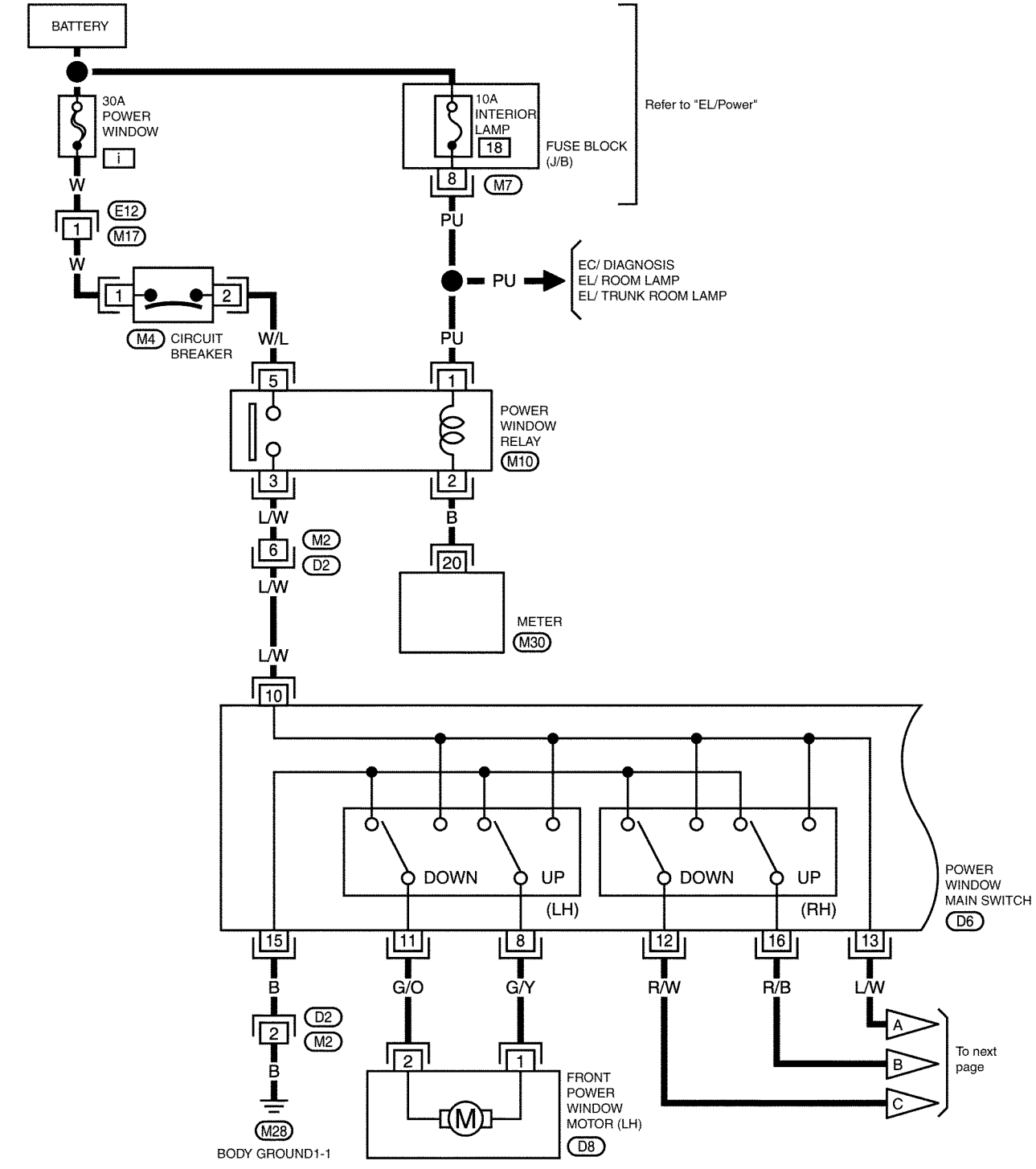
Wiring Diagram — EL/Power Window (4DR)- 03

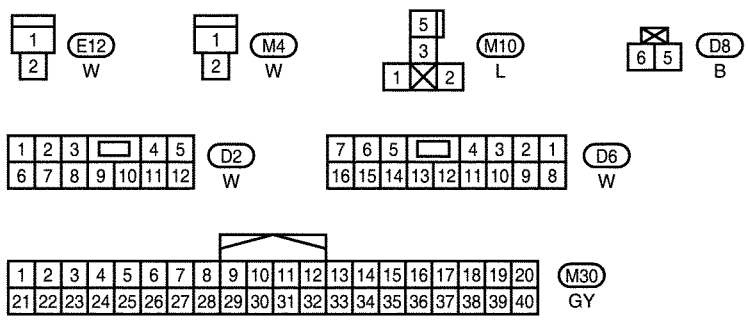




SRWZ035_O1

Wiring Diagram — EL/Power Window (2DR) - 01



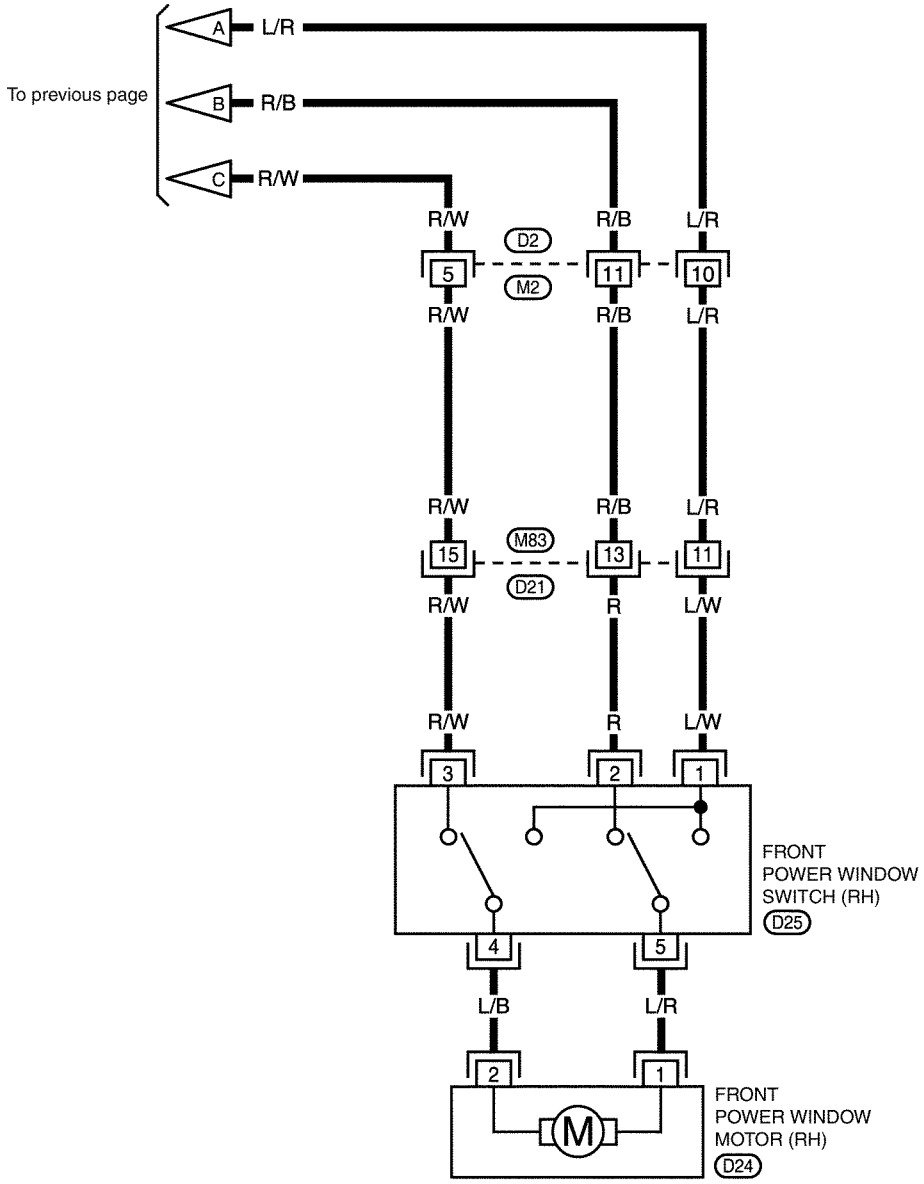


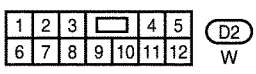
REFER TO FUSE BLOCK (J/B)

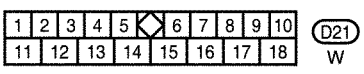
M7

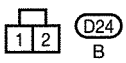
SRWZ075_O1

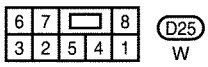
Wiring Diagram — EL/Power Window (2DR)- 02











SRWZ076_O1

Battery saver relay circuit

POSSIBLE CAUSE

Battery saver relay circuit **CC.1 : Short to power**

DTC Detecting Condition	When operating the battery saver relay **CC.1: If the battery saver relay control consumes more voltage than estimated**

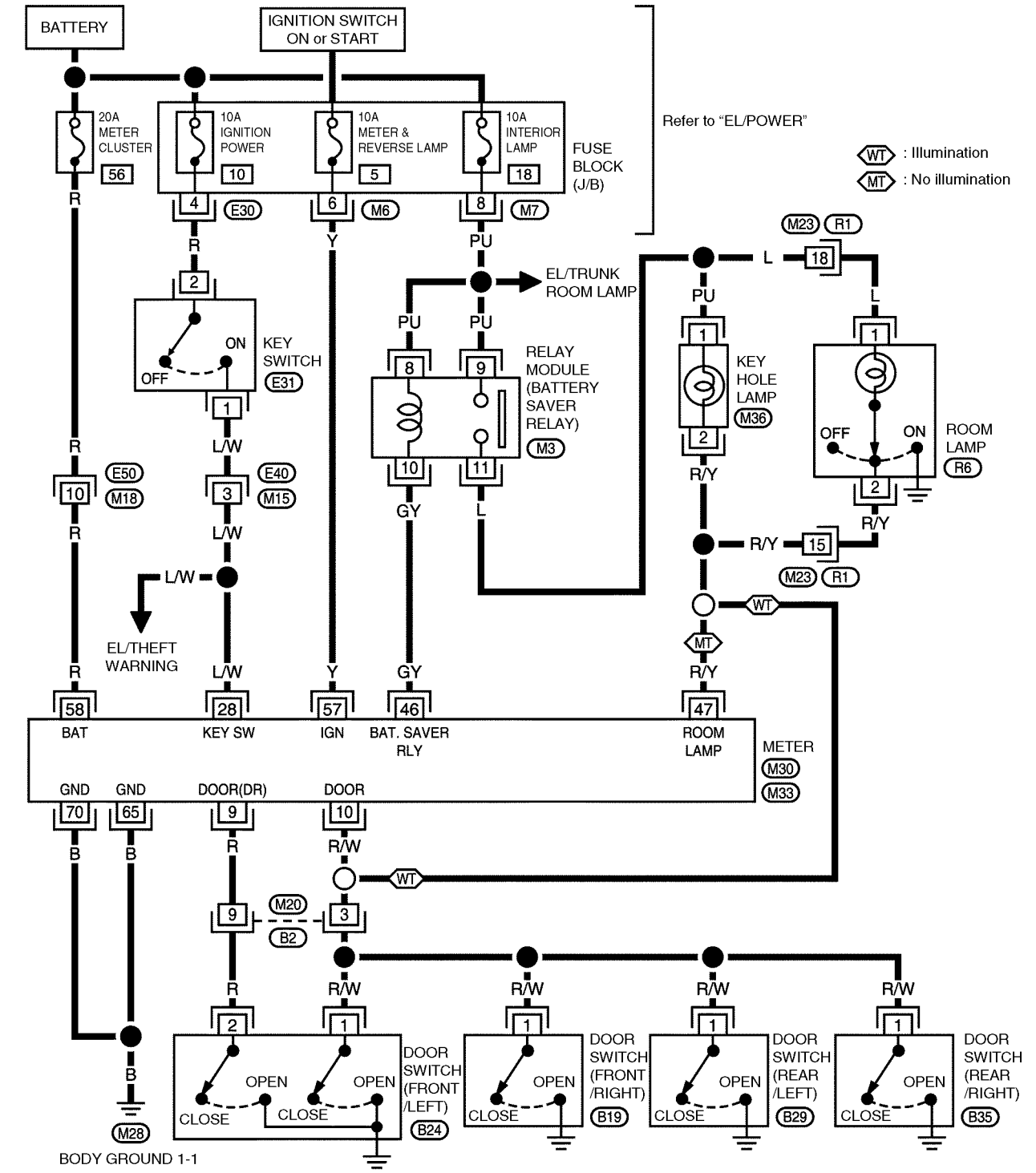
DIAGNOSIS PROCEDURE

Refer to Wiring Diagram (EL-104).

Check the control voltage of the battery saver relay. Check the voltage between the control unit M33 connector terminal No. 46 and ground. Ignition ON - approx. 1 V After 30 minutes from when turning the room lamp ON with ignition OFF and key-in switch OFF - approx. 12 V Repair the circuit if necessary.
Check the battery saver relay control circuit for short to power. Disconnect the battery saver relay and combination meter connectors. Check the voltage between the control unit M33 connector terminal No. 46 and ground. Specified value: The voltage should not be detected. The control circuit is short to power supply circuit if the battery voltage is detected. Repair the circuit if necessary.

Check after repair	Perform the fault detection procedure and check the malfunction does not occur again. Check the possible causes related to this failure to make sure there is no fault. Erase the fault memory.

Wiring Diagram — EL/Room Lamp



SRWZ023_O1

Engine coolant temperature output circuit

POSSIBLE CAUSE

Engine coolant temperature output circuit **CC.1: Short to power**

DTC Detecting Condition	**CC.1: If the engine coolant temperature output circuit consumes more voltage than estimated**

DIAGNOSIS PROCEDURE

Refer to Wiring Diagram (AC-15).

Check the signal of the engine coolant temperature output circuit. Check the voltage between the control unit M30 connector terminal No. 16 and ground. Specified value: Coolant temperature is below approx. 55°C - approx. 12 V Specified value: Coolant temperature is over approx. 55°C - approx. 0 V Repair the circuit if necessary.
Check the engine coolant temperature output circuit for short to power. Remove the meter control unit and automatic A/C controller connectors. Check the voltage between the control unit M30 connector terminal No. 16 and ground. Specified value: The voltage should not be detected. The control circuit is short to power supply circuit if the battery voltage is detected. Repair the circuit if necessary.

Check after repair	Perform the fault detection procedure and check the malfunction does not occur again. Check the possible causes related to this failure to make sure there is no fault. Erase the fault memory.

Door lock relay circuit

POSSIBLE CAUSE

Door lock relay circuit **CC.1: Short to power**

DTC Detecting Condition	When operating the door lock relay **CC.1: If the door lock relay control consumes more voltage than estimated**

DIAGNOSIS PROCEDURE

Refer to Wiring Diagram (EL-108).

Check the control voltage of door lock relay. Check the voltage between the control unit M33 connector terminal No. 65 and ground. Door locked - approx. 1 V Others - approx. 12 V Repair the circuit if necessary.
Check the door lock relay control circuit for short to power. Disconnect the door lock relay and combination meter connectors. Check the voltage between the control unit M33 connector terminal No. 65 and ground. Specified value: The voltage should not be detected. The control circuit is short to power supply circuit if the battery voltage is detected. Repair the circuit if necessary.

Check after repair	Perform the fault detection procedure and check the malfunction does not occur again. Check the possible causes related to this failure to make sure there is no fault. Erase the fault memory.

Driver's door unlock relay circuit, Other door unlock relay circuit

POSSIBLE CAUSE

Driver's door unlock relay circuit **Other door unlock relay circuit** **CC.1: Short to power**

DTC Detecting Condition	When operating the door unlock relay **CC.1: If the door unlock relay control consumes more voltage than estimated**

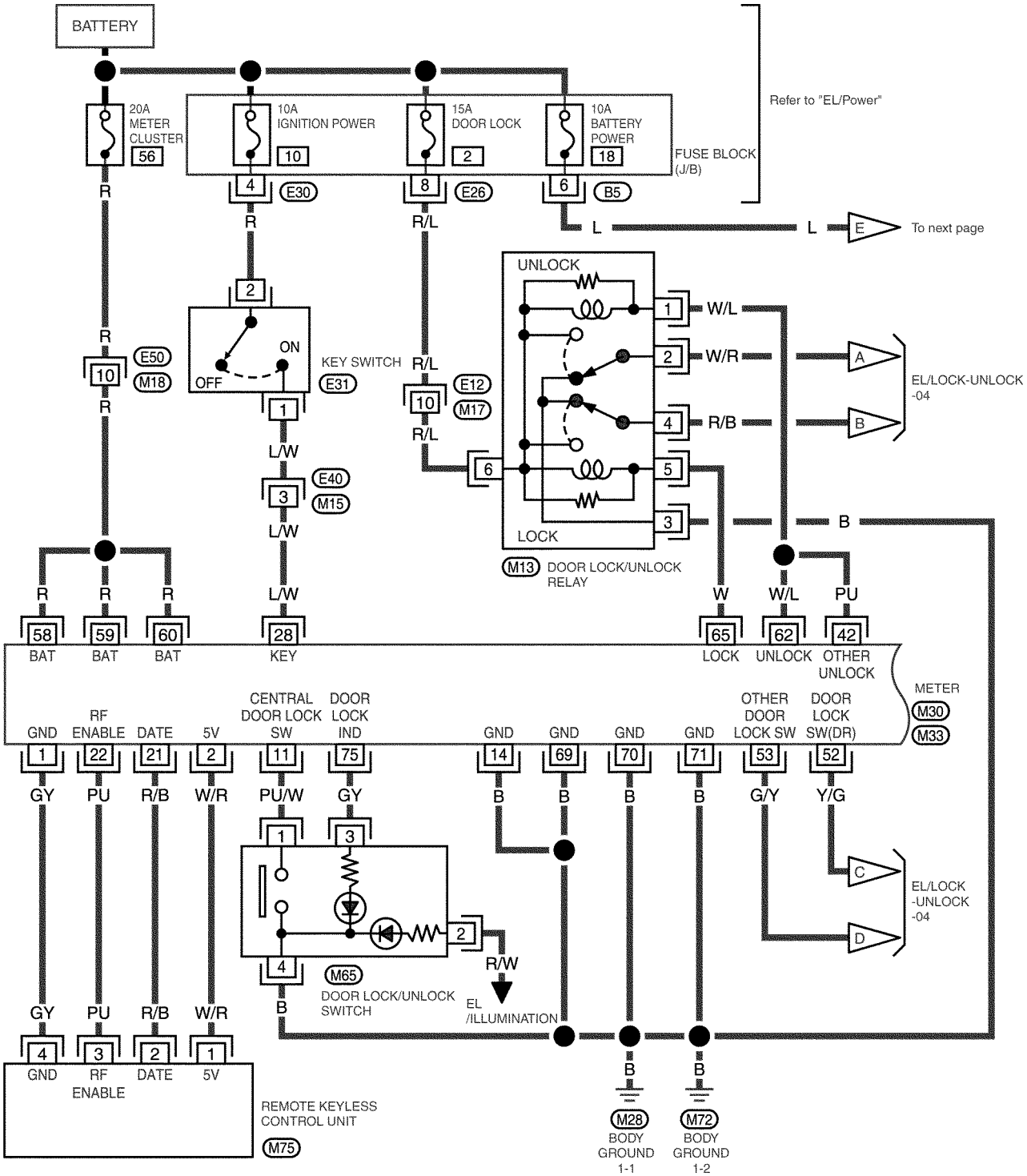
DIAGNOSIS PROCEDURE

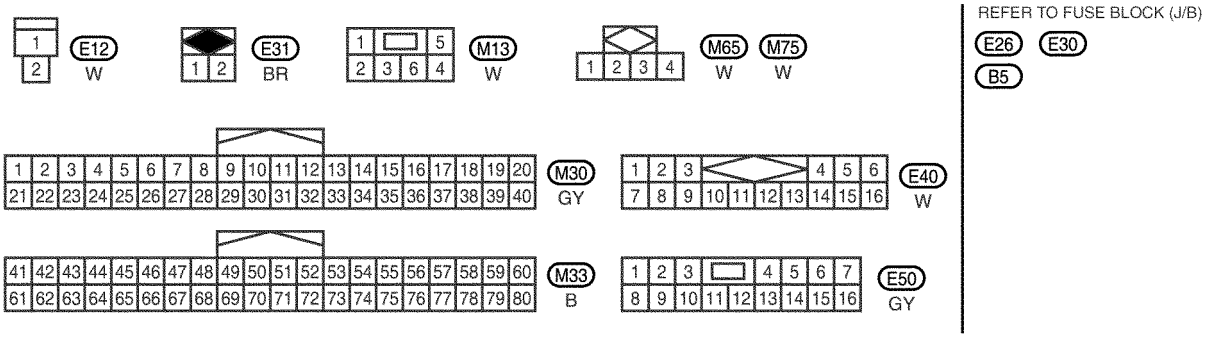
Refer to Wiring Diagram (EL-108).

Check the control voltage of door unlock relay. Check the voltage between the control unit M33 connector terminal No. 62 or 42 and ground. Door locked - approx. 1 V Others - approx. 12 V Repair the circuit if necessary.
Check the door unlock relay control circuit for short to power. Disconnect the door lock relay and combination meter connectors. Check the voltage between the control unit M33 connector terminal No. 62 or 42 and ground. Specified value: The voltage should not be detected. The control circuit is short to power supply circuit if the battery voltage is detected. Repair the circuit if necessary.

Check after repair	Perform the fault detection procedure and check the malfunction does not occur again. Check the possible causes related to this failure to make sure there is no fault. Erase the fault memory.

Wiring Diagram — EL/Lock-Unlock- 01

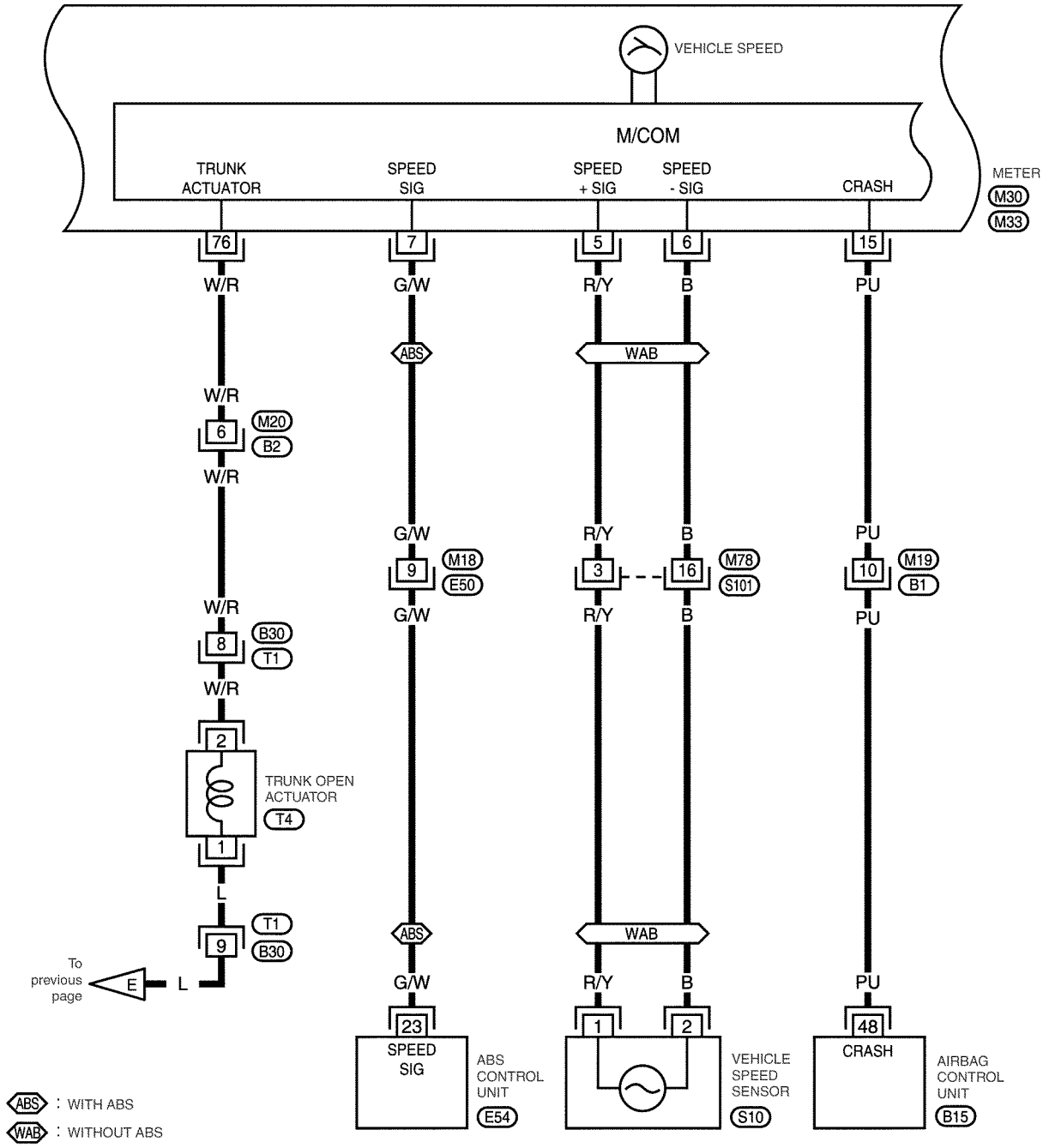


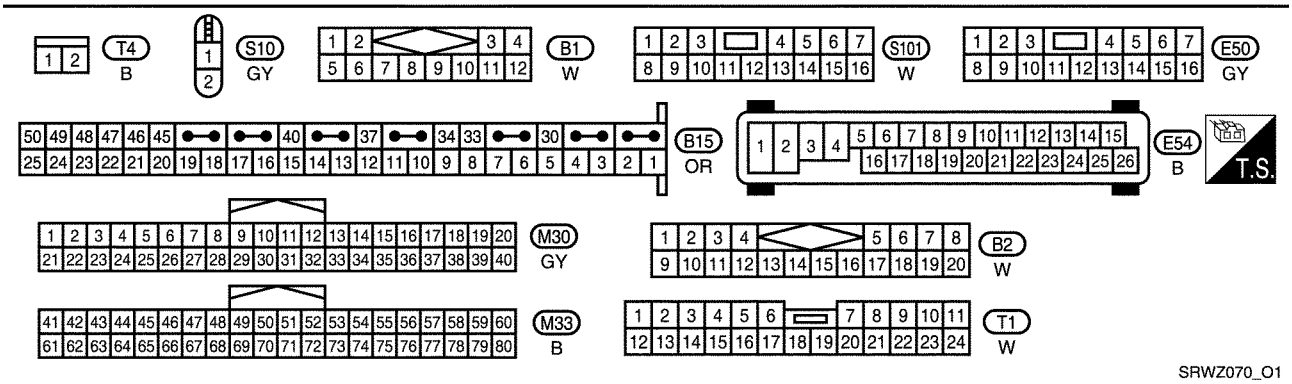


REFER TO FUSE BLOCK (J/B)
E26 E30 B5

SRWZ031_01

Wiring Diagram — EL/Lock-Unlock- 02

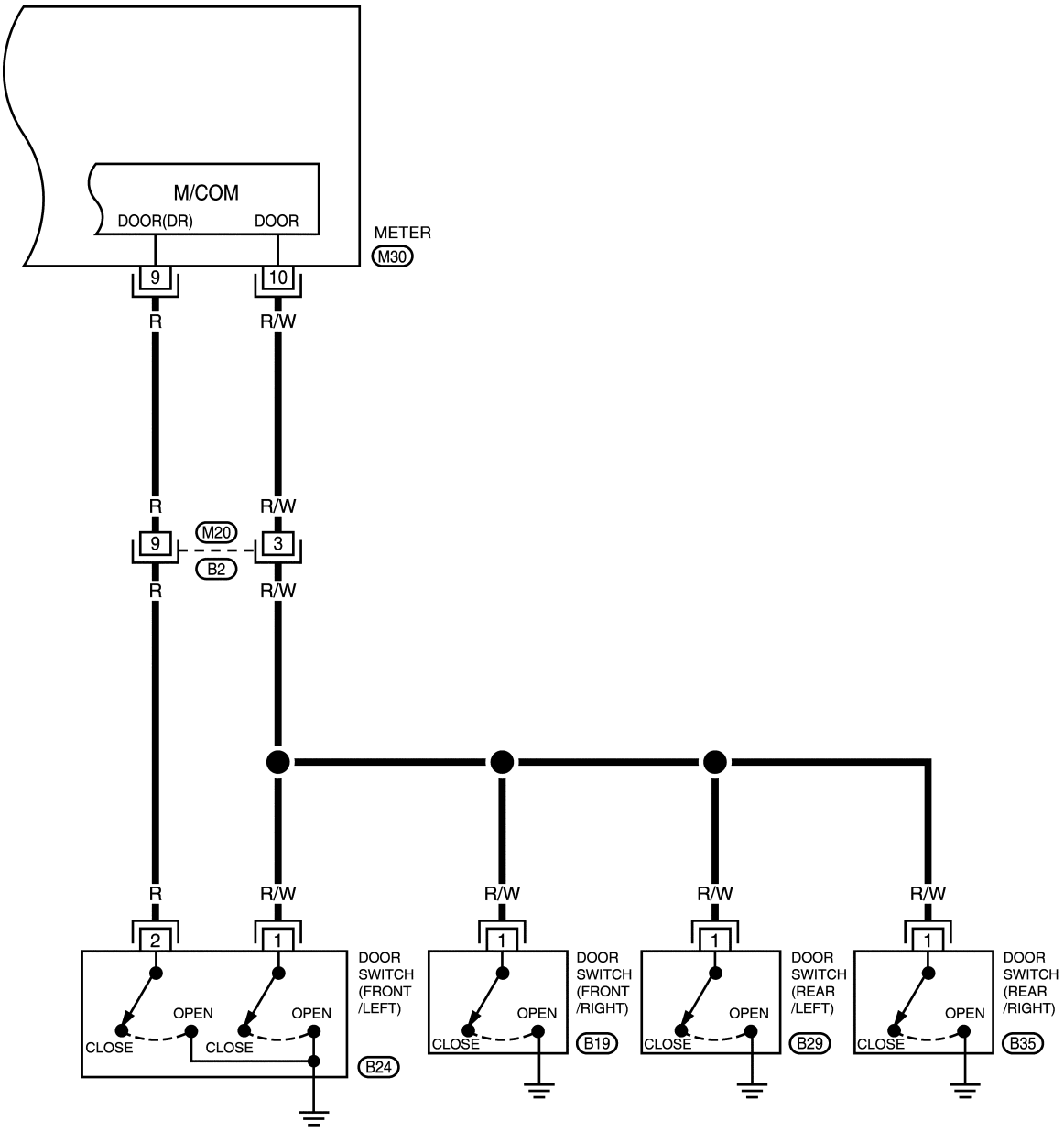


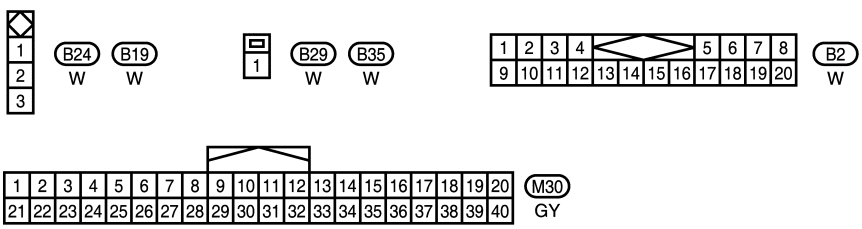


SRWZ070_O1

Wiring Diagram

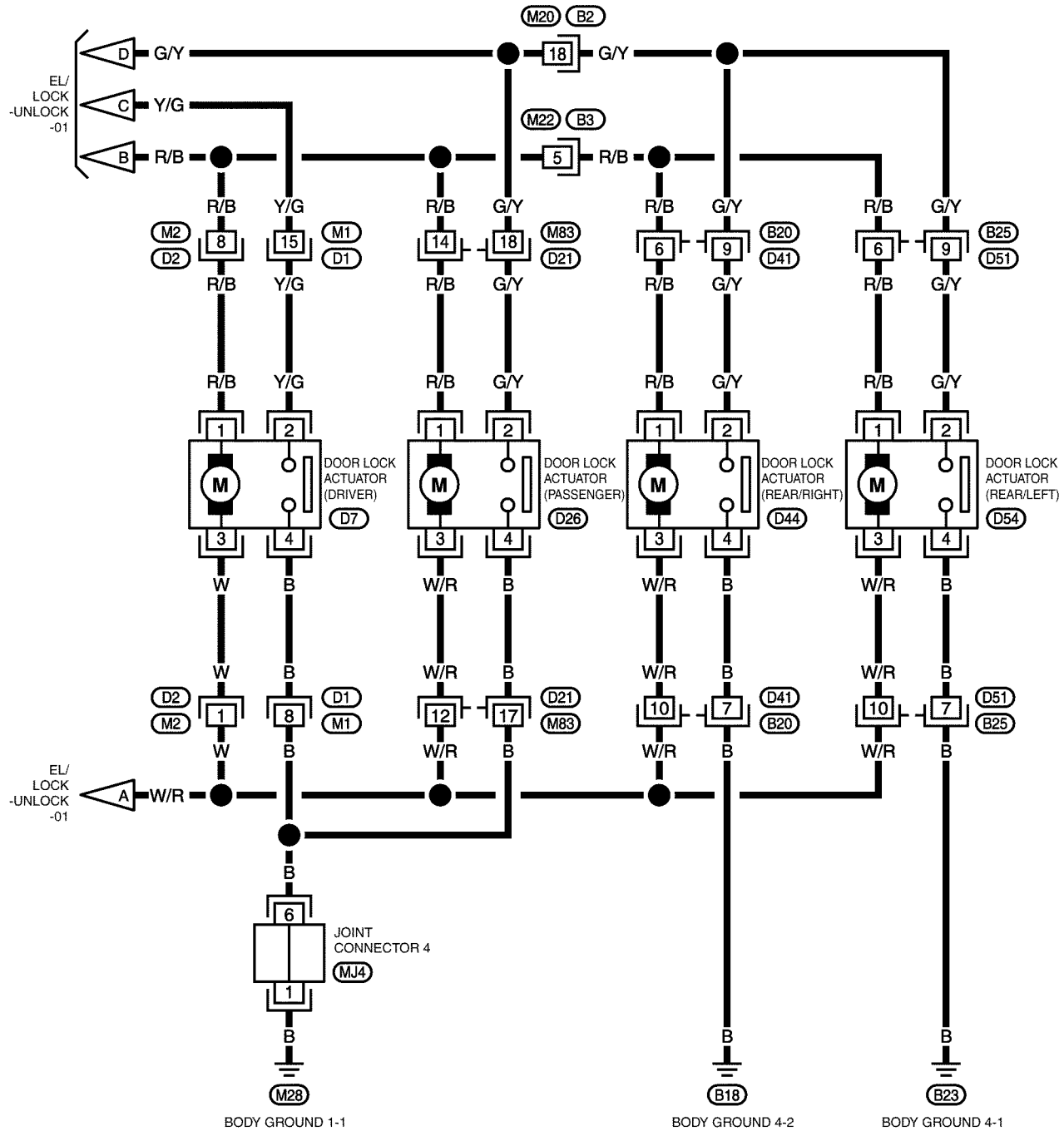
EL/Lock-Unlock- 03

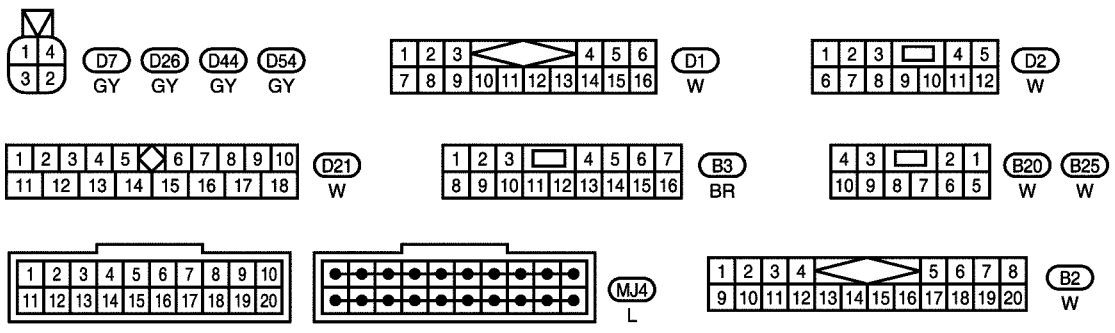




SRWZ072_O1

Wiring Diagram — EL/Lock-Unlock- 04





SRWZ032_O1

Air bag collision circuit

POSSIBLE CAUSE

Air bag collision circuit **1.DEF: No signal**

DTC Detecting Condition	**1.DEF: If there is no air bag collision signal input within 3 seconds after turning the ignition ON** **If there is no diagnosis pulse within 1.5 seconds after generating the diagnosis pulse**

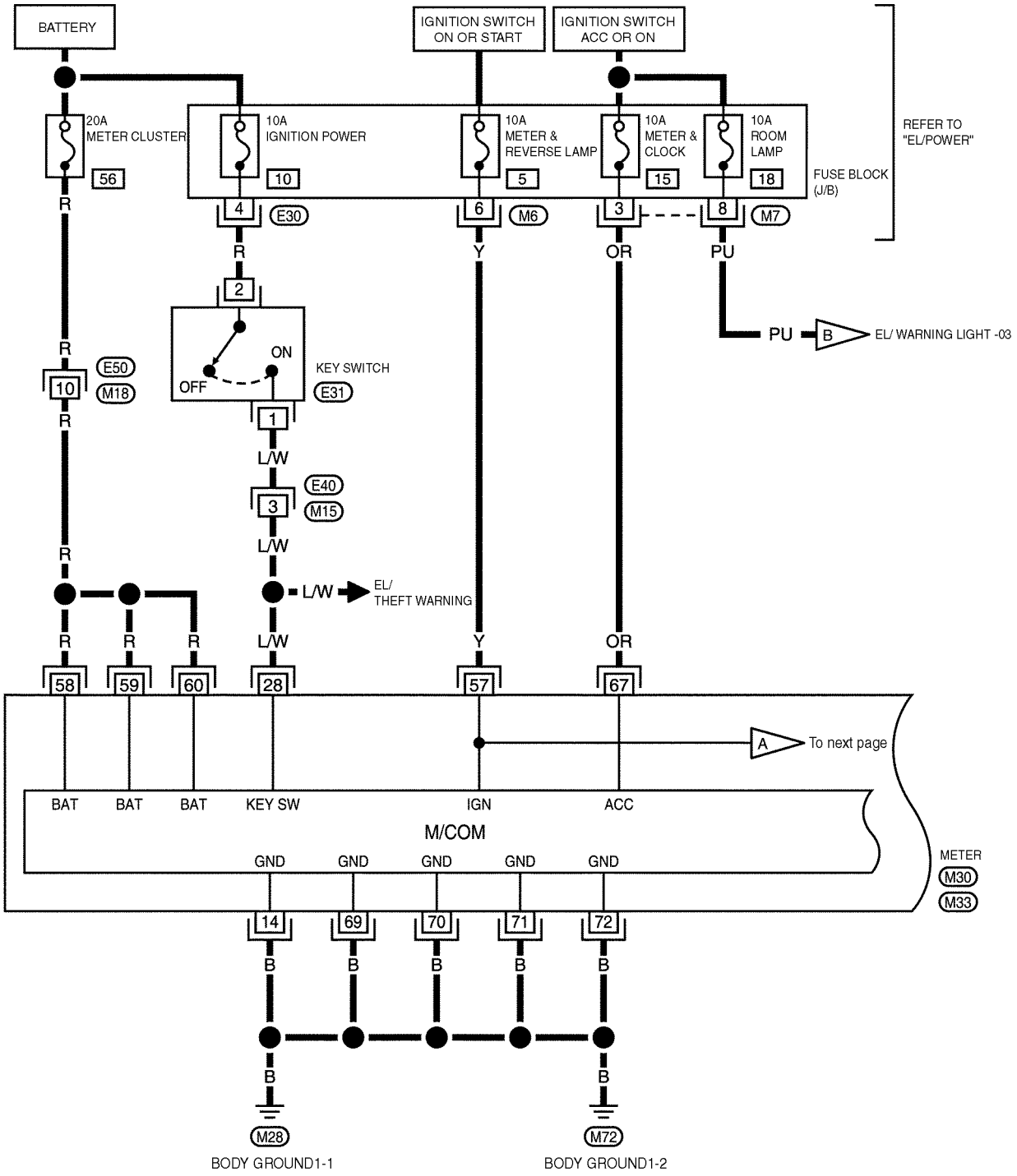
DIAGNOSIS PROCEDURE

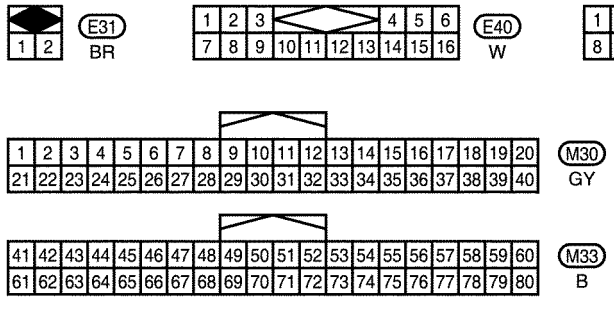
Refer to Wiring Diagram (EL-115).

Check the continuity of the air bag collision circuit. Disconnect the meter control unit and air bag control unit connectors. The meter control unit M30 connector terminal No. 15 and the air bag control unit B 15 connector terminal No. 48 Specified value: approx. 0W Repair the circuit if necessary.
Check the continuity between the air bag collision circuit and body. Disconnect the meter control unit and air bag control unit connectors. Check the continuity between the meter control unit M30 connector terminal No. 15 and body. Specified value: Continuity should no exist. Repair the circuit if necessary.
Check the air bag collision circuit for short to power. Disconnect the meter control unit and air bag control unit connectors. Check the voltage between the meter control unit M30 connector terminal No. 15 and body. Specified value: The voltage should not be detected. The control circuit is short to power supply circuit if the battery voltage is detected. Repair the circuit if necessary.
Replace the air bag unit and combination meter control unit if the fault stays.

Check after repair	Perform the fault detection procedure and check the malfunction does not occur again. Check the possible causes related to this failure to make sure there is no fault. Erase the fault memory.

Wiring Diagram — EL/Warning Light- 01

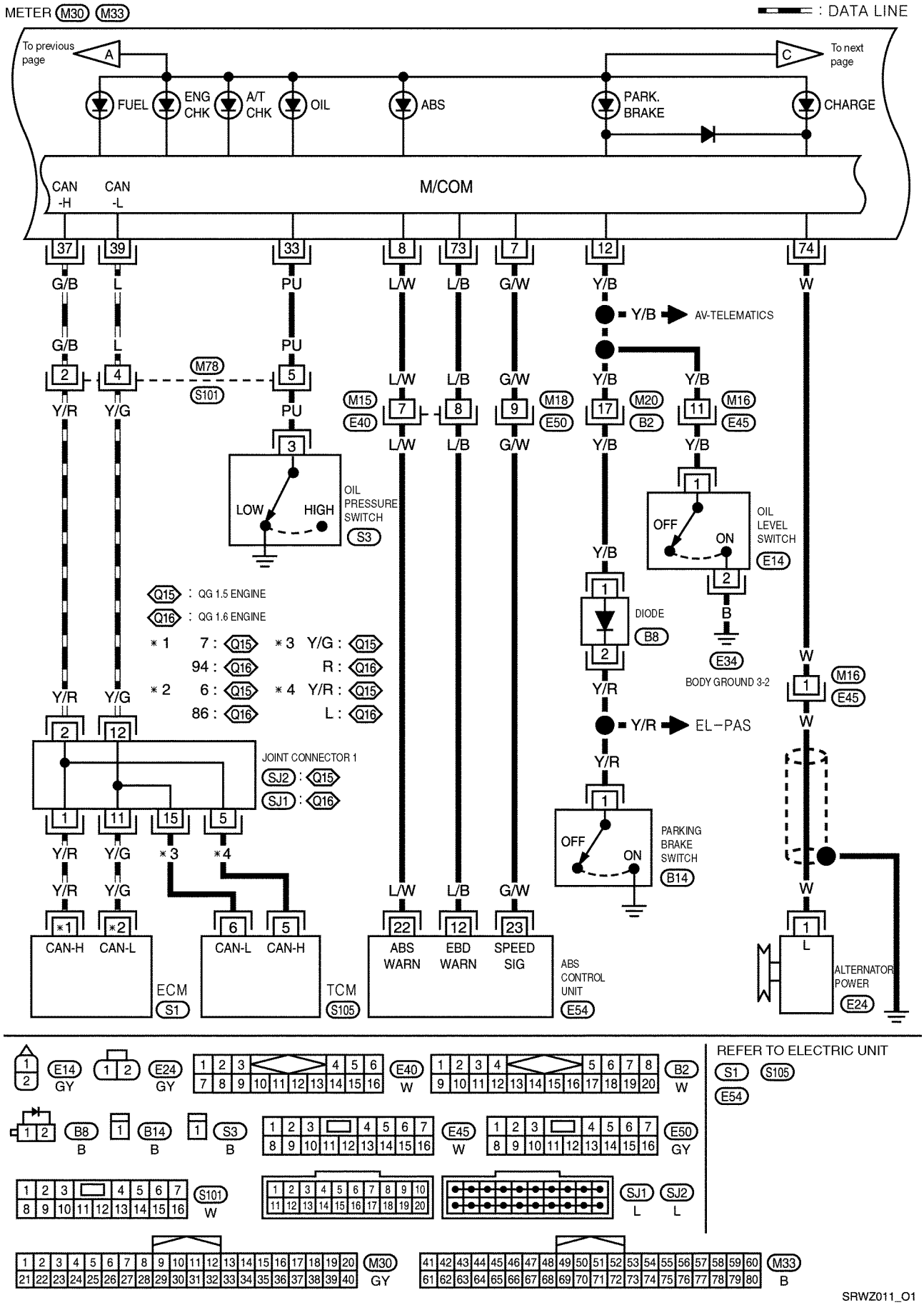




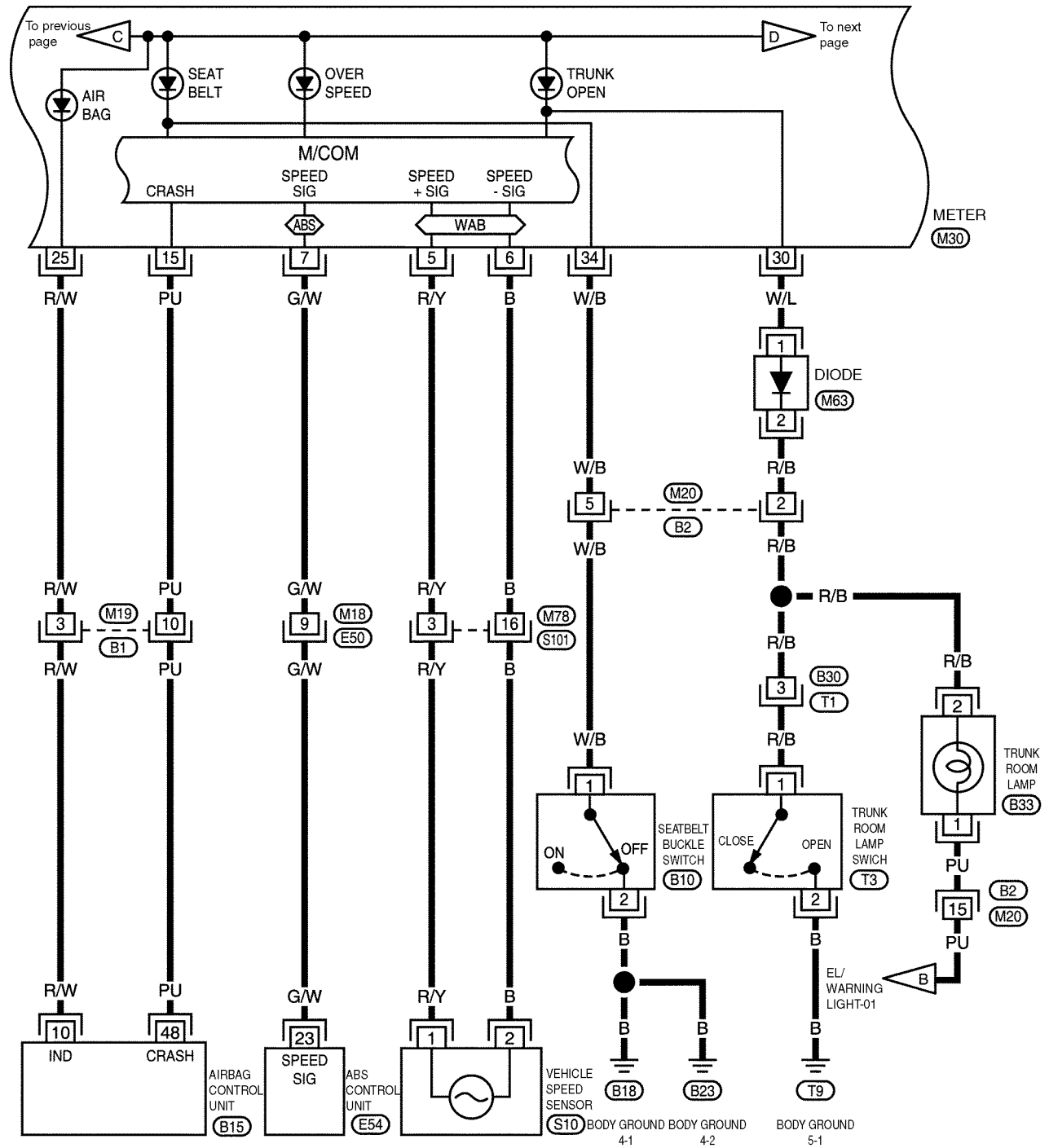
REFER TO FUSE BLOCK (J/B)
M6 M7 E30

SRWZ010_O1

Wiring Diagram — EL/Warning Light- 02



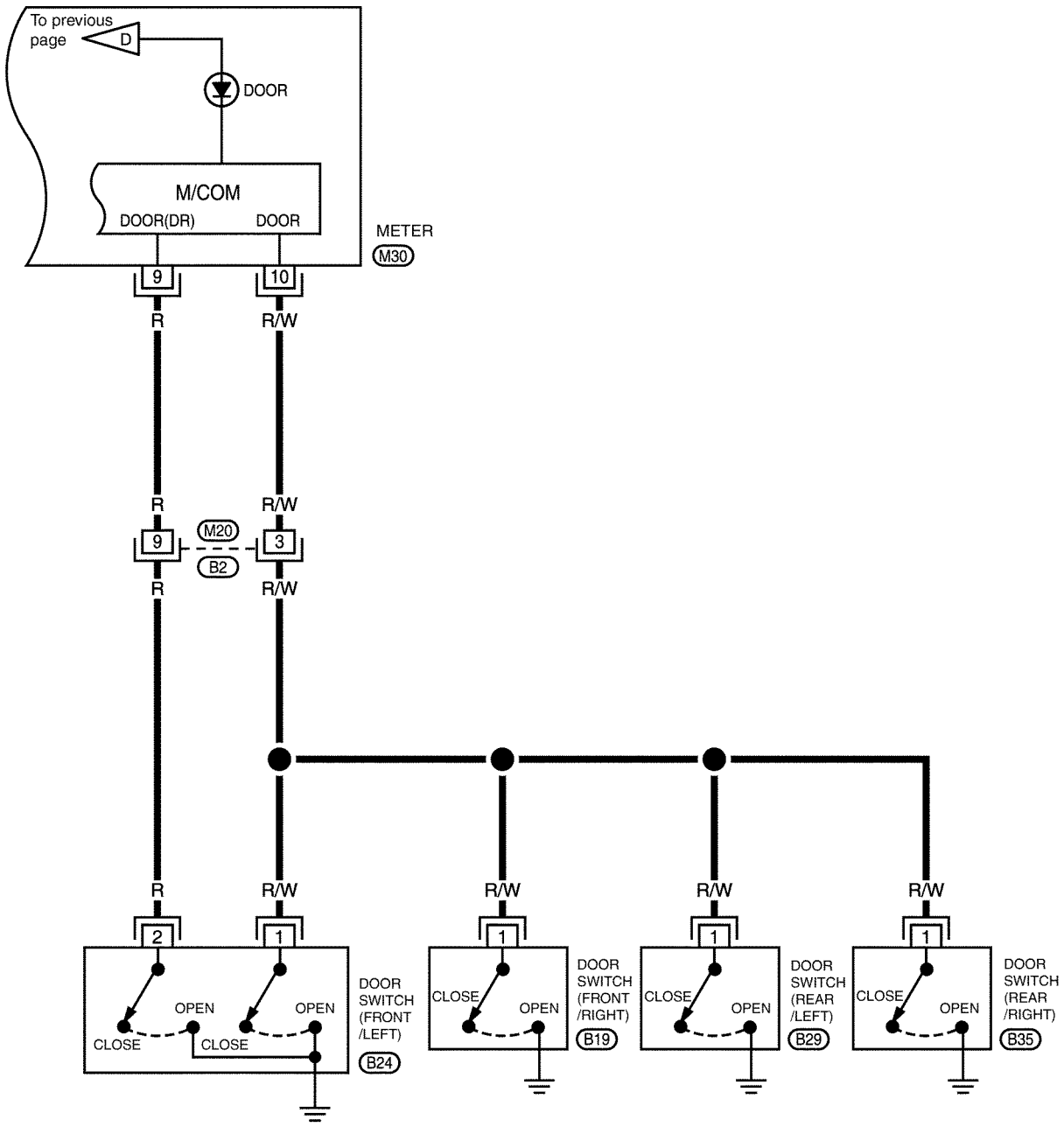
Wiring Diagram — EL/Warning Light- 03

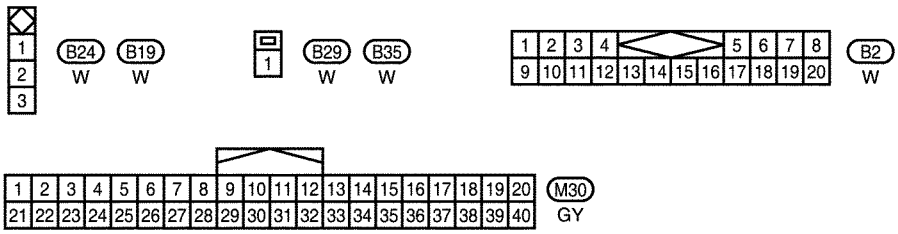


SRWZ012_O1

Wiring Diagram

EL/Warning Light- 04





SRWZ013_O1

Alarm relay circuit

POSSIBLE CAUSE

Alarm relay circuit **CC.1: Short to power**

DTC Detecting Condition	When operating the alarm relay **CC.1: If the alarm relay control consumes more voltage than estimated**

DIAGNOSIS PROCEDURE

Refer to Wiring Diagram (EL-119).

Check the control voltage of alarm relay. Check the voltage between the control unit M33 connector terminal No. 45 and ground. Alarm relay controlled - approx. 1 V Others - approx. 12 V Repair the circuit if necessary.
Check the alarm relay control circuit for short to power. Disconnect the horn relay and combination meter connectors. Check the voltage between the control unit M33 connector terminal No. 45 and ground. Specified value: The voltage should not be detected. The control circuit is short to power supply circuit if the battery voltage is detected. Repair the circuit if necessary.

Check after repair	Perform the fault detection procedure and check the malfunction does not occur again. Check the possible causes related to this failure to make sure there is no fault. Erase the fault memory.

Anti-theft relay circuit

POSSIBLE CAUSE

<u>Anti-theft relay circuit</u> **CC.1: Short to power**

DTC Detecting Condition	When operating the anti-theft relay **CC.1: If the anti-theft relay control consumes more voltage than estimated**

DIAGNOSIS PROCEDURE

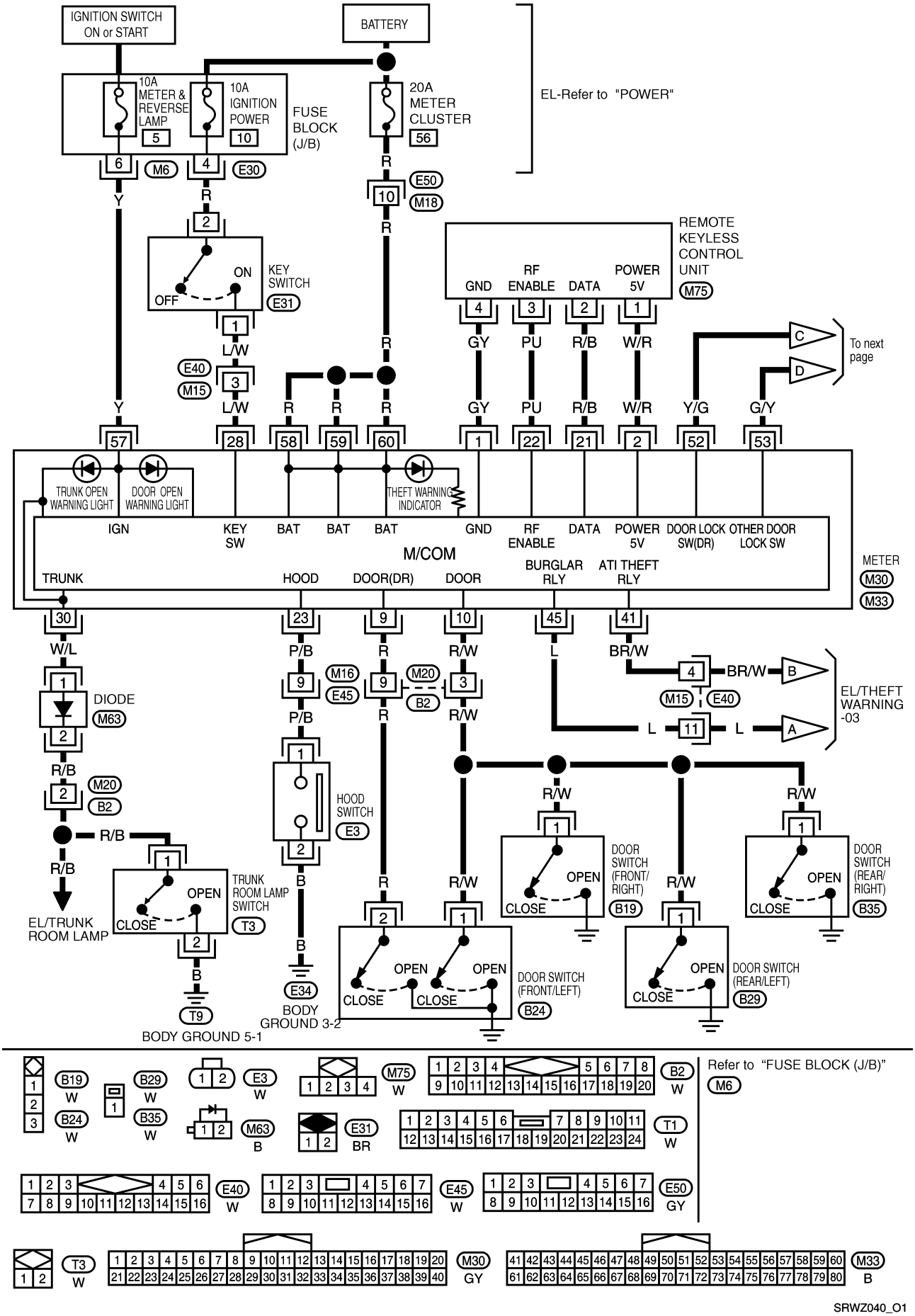
Refer to Wiring Diagram (EL-119).

Check the control voltage of anti-theft relay. Check the voltage between the control unit M33 connector terminal No. 41 and ground. Anti-theft relay controlled - approx. 1 V Others - approx. 12 V Repair the circuit if necessary.
Check the anti-theft relay control circuit for short to power. Disconnect the anti-theft relay and combination meter connectors. Check the voltage between the control unit M33 connector terminal No. 41 and ground. Specified value: The voltage should not be detected. The control circuit is short to power supply circuit if the battery voltage is detected. Repair the circuit if necessary.

Check after repair	Perform the fault detection procedure and check the malfunction does not occur again. Check the possible causes related to this failure to make sure there is no fault. Erase the fault memory.

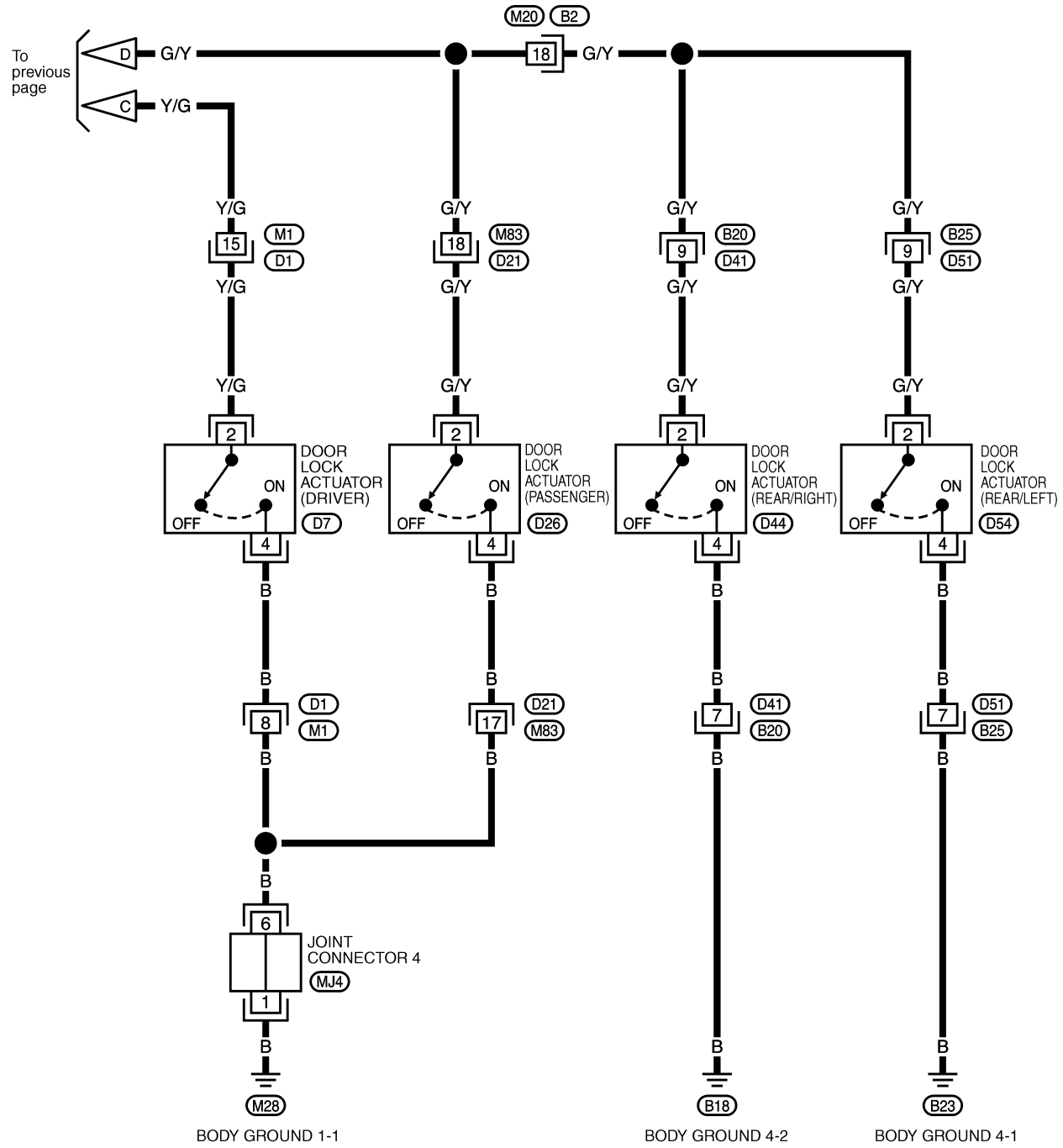
Wiring Diagram

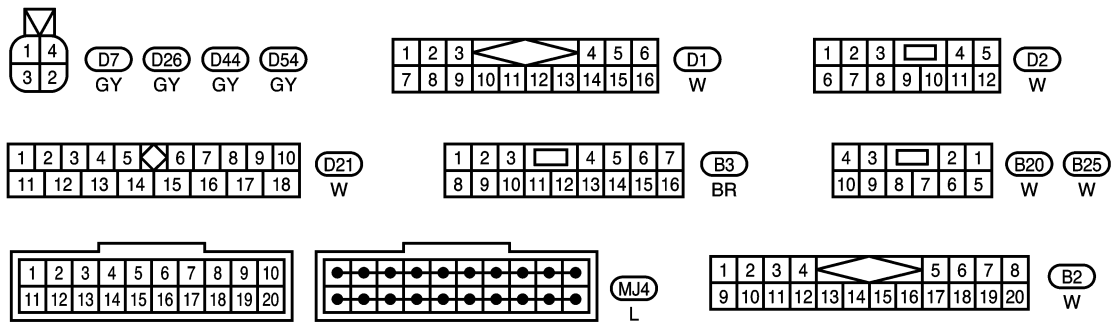
EL/Anti-Theft- 01



SRWZ040_O1

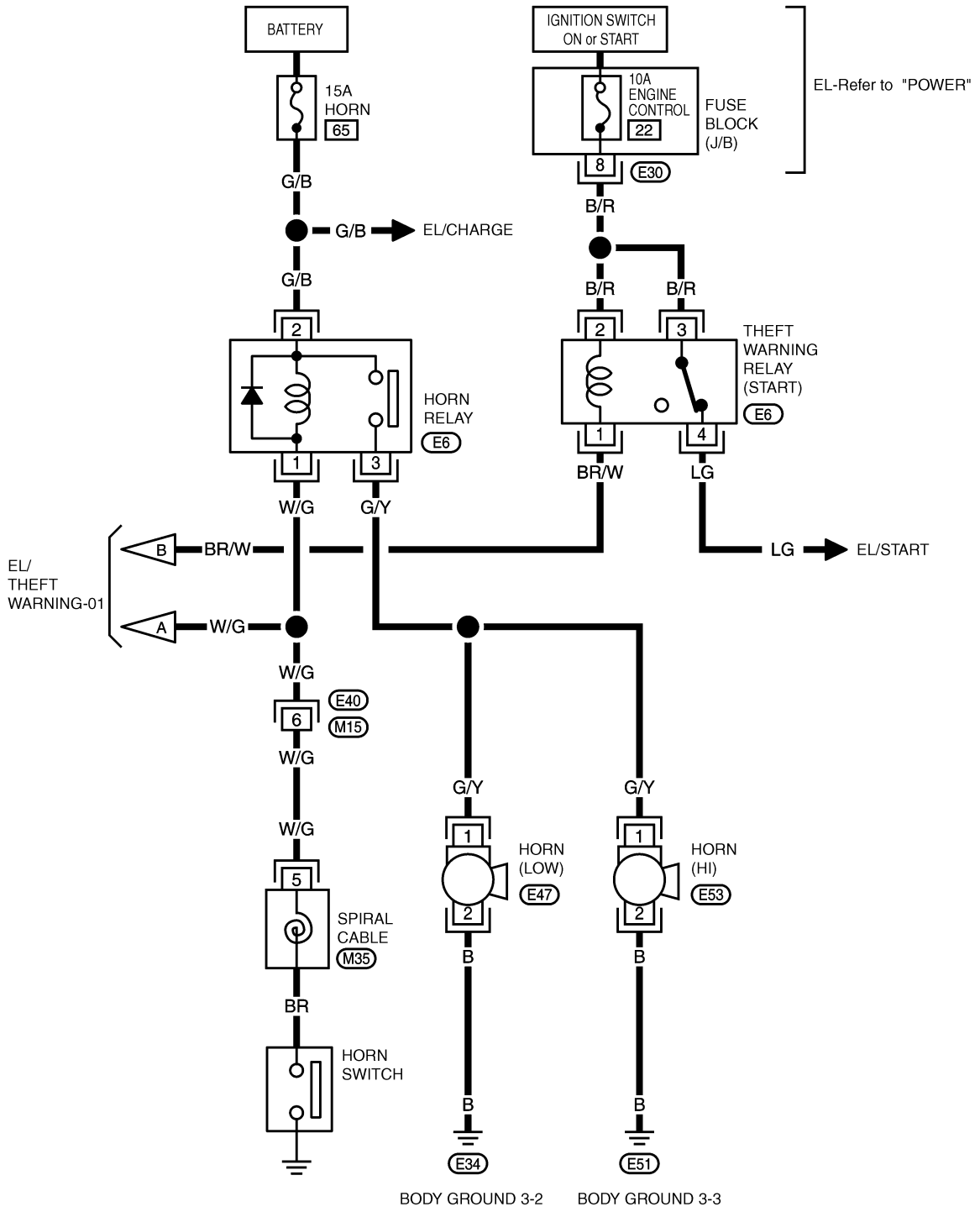
Wiring Diagram

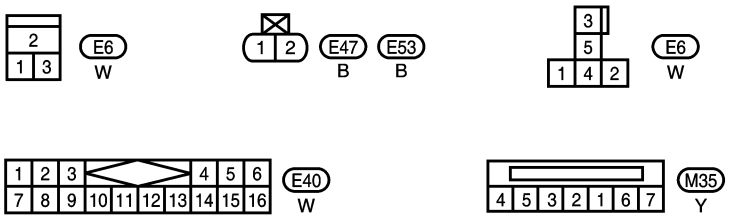




SRWZ069_O1

Wiring Diagram





Refer to "FUSE BLOCK (J/B)"
E30

SRWZ041_O1

Engine immobilizer circuit

POSSIBLE CAUSE

Engine immobilizer circuit

DTC Detecting Condition	**If no signal come from immobilizer antenna.**

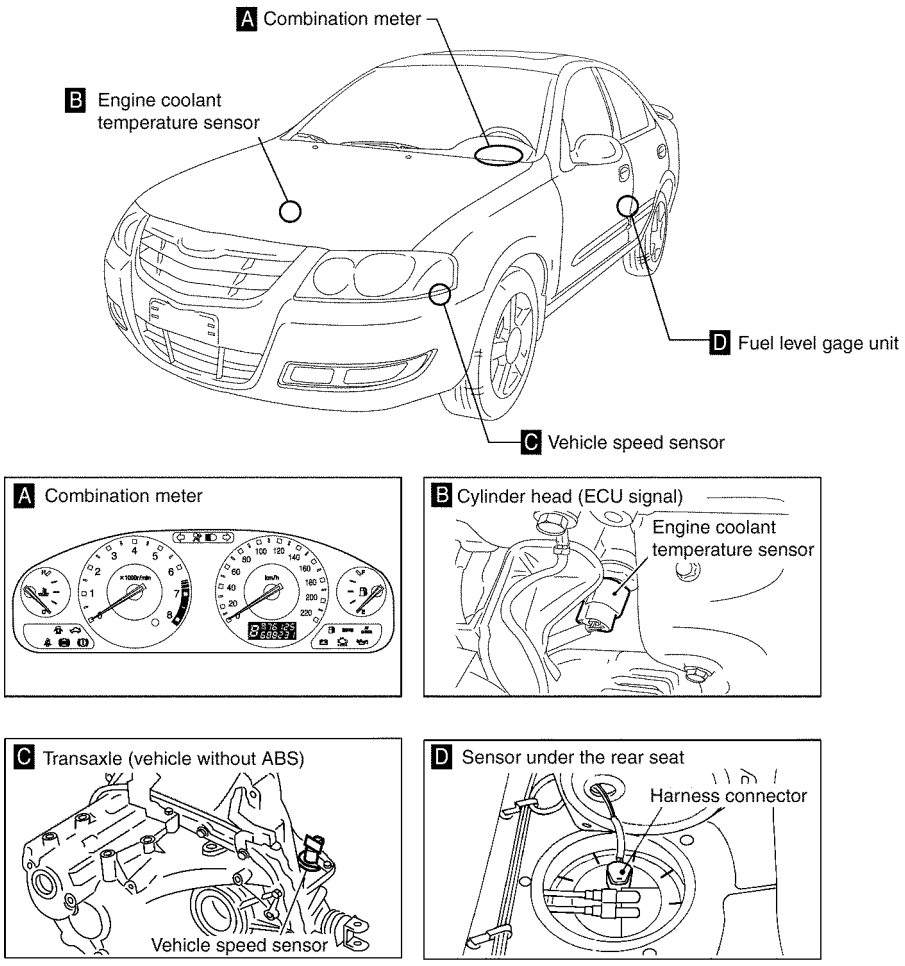
DIAGNOSIS PROCEDURE

Refer to Wiring Diagram (EL-169).

Refer to EL - Immobilizer Antenna Inspection (EL-171).

Check after repair	Perform the fault detection procedure and check the malfunction does not occur again. Check the possible causes related to this failure to make sure there is no fault. Erase the fault memory.

Components Location



CAN Communication System Description

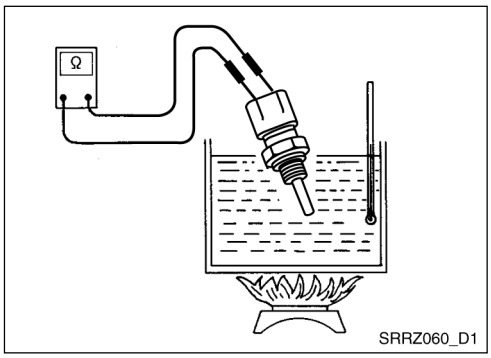
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Refer to LAN section.

Meter CAN Communication System

The meter receives data from the ECCS control unit through the communication line using the CAN communication to get the required engine coolant temperature signal and the engine speed signal so that the data are displayed in the gauge.

Refer to LAN section.



Component Inspection

ENGINE COOLANT TEMPERATURE SENSOR SIGNAL

- Send the engine coolant temperature value detected by the engine ECM to the meter using the CAN communication line.
- Remove the engine coolant temperature sensor and check as indicated in the figure.

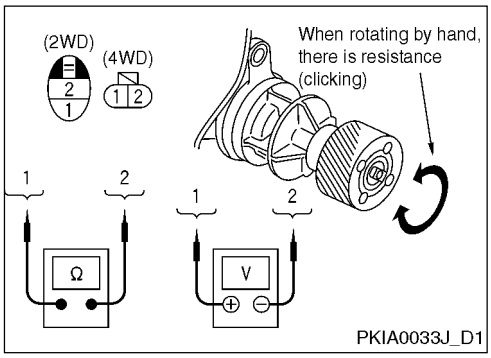
Resistance

When the temperature is 20°C: Approx. 2.5 kΩ

When the temperature is 80°C: Approx. 0.3 kΩ

CHECK CAN COMMUNICATION LINE

Meter Terminal No.	ECM Terminal No.	Measured condition	Measured value
37	QG 15: 7 / QG 16: 94	Check continuity between terminals	Approx. 0 Ω
39	QG 15: 6 / QG 16: 86		



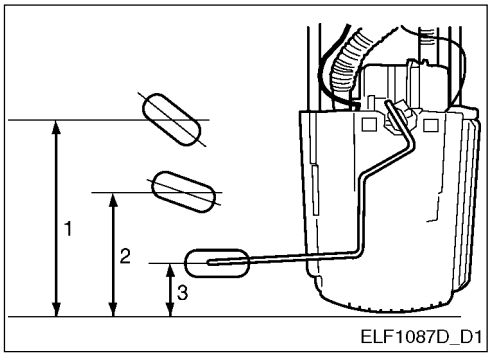
VEHICLE SPEED SENSOR

- Detect the vehicle speed with the signal of the vehicle speed sensor if the vehicle is not equipped with ABS.
- Remove the vehicle speed sensor from the vehicle.
- Measure the vehicle speed sensor voltage and resistance.

Terminal No.	Condition	Voltage (V)	Resistance (Ω)
1 - 2	Rotate the sensor with hand	Approx. 0 - 5	-
	-	-	Approx. 180 - 250

- The ABS control unit detects the wheel speed sensor signal and sends it to the meter if the vehicle is equipped with ABS.

Meter Terminal No.	ABS control unit terminal No.	Measured condition	Measured value
7	23	Check continuity between terminals	Approx. 0 Ω



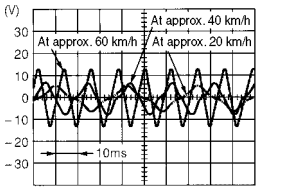
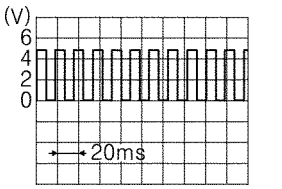
FUEL LEVEL GAGE UNIT (SENSOR SIDE)

- Remove the fuel level gage unit from the vehicle.
- Make flat the gage flange.
- Measure the gage resistance by locating fuel level gage to full, 1/2 and empty.

Terminal No.		Float position		Resistance
3	5	Full (1)	Approx. 160.3	Approx. 6
		1/2 (2)	Approx. 97.5	Approx. 33
		Empty (3)	Approx. 32	Approx. 80

Meter Control Unit Input/Output Signal Standards

Refer to Wiring Diagram (EL-83).

Terminal No.	Signal	Measurement		Standard value
		Key switch	Operation or status	
58, 59, 60	Battery power	OFF	-	Approx. 12 V
28	Ignition power	ON	-	Approx. 12 V
57	Ignition switch ON or OFF	ON, START	-	Approx. 12 V
67	Ignition switch ACC or ON	ACC or ON	-	Approx. 12 V
14, 69, 70, 71, 72	Ground	ON	-	Approx. 0 V
4	Fuel level gage signal	ON	-	Refer to “Fuel Level Gage Unit” in “Components Inspection” (EL-124)
37	CAN - H	-	-	-
39	CAN - L	-	-	-
5	Vehicle speed signal (vehicle without ABS)	ON	When speedometer is operating (At approx. 20 km/h) At 40 km/h (At approx. 40 km/h) At 60 km/h (At approx. 20 km/h) At 20 km/h	 SRDX0350D_D1
7	Vehicle speed signal (USO)	ON	When speedometer is operating (Vehicle speed in approx. 20 km/h)	 SRDX714_D1

Fuel Level Gage System

The following symptoms are not malfunction.

Fuel Level Gage

- Sometimes the needle moves when fuel inside the tank moves while vehicle driving or according to driving conditions.
- While filling the fuel into the tank when the key switch is ON, the needle rises slower than actual level.

Low Fuel Level Warning Light

- Sometimes the warning light turning on timing varies when the fuel inside the tank moves during driving or due to vehicle positions.

Inspection Procedure

1. Connector Inspection

1. Turn the key switch OFF.
2. Inspect the meter and fuel level gage unit terminals (meter, unit and harness sides) for looseness or bend.

Inspection results are OK?

OK → Go to No. 2.

NG → Repair the terminal or connector.

2. Continuity Inspection

1. Remove the meter and fuel level gage unit connectors.
2. Check the continuity between the meter terminal No. 3 and fuel level gage unit terminal No. 2.
3. Check the continuity between the meter terminal No. 4 and fuel level gage unit terminal No. 1.

Is there continuity?

OK → Go to No. 3.

NG → Repair the terminal or connector.

3. Fuel Level Gage Unit Inspection

Inspect the components. Refer to “FUEL LEVEL GAGE UNIT” (EL-124).

Inspection results are OK?

OK → Go to No. 4.

NG → Replace the fuel level gage unit.

4. Installation Status Check

Inspect for any interference or entanglement in the fuel level gage unit’s installation, float arm and the components inside the tank.

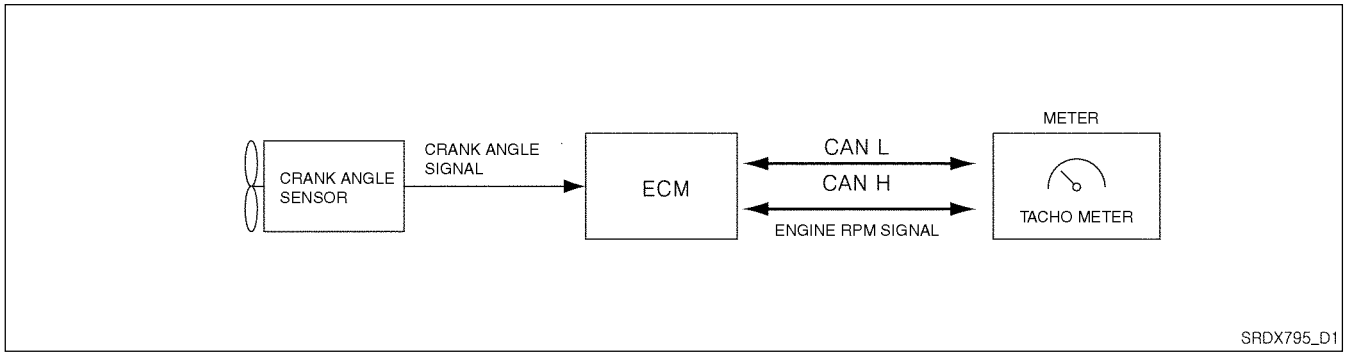
Inspection results are OK?

OK → Replace the meter control unit.

NG → Install the fuel level gage unit correctly.

Tachometer System

1. Tachometer Circuit Inspection



2. Connector Inspection

1. Turn the key switch OFF.
2. Inspect the meter and ECCS control unit terminals (meter, control unit, and harness sides) for looseness or bend.

Inspection results are OK?

OK → Go to No. 3.

NG → Repair the terminal or connector.

3. Continuity Inspection

1. Turn the key switch OFF.
2. Disconnect the meter connector.
3. Check the CAN communication line. (Refer to LAN section.)

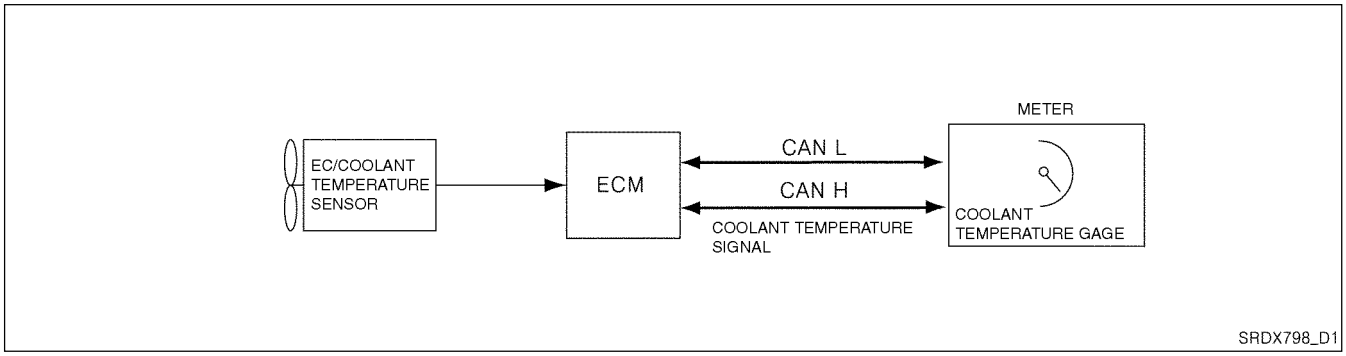
Inspection results are OK?

OK → Replace the meter control unit.

NG → Repair the harness or connector.

Coolant Temperature Gage System

1. Coolant Temperature Gage Circuit Inspection



2. Connector Inspection

1. Turn the key switch OFF.
2. Inspect the meter and ECCS control unit terminals (meter, control unit, and harness sides) for looseness or bend.

Inspection results are OK?

OK → Go to No. 3.

NG → Repair the terminal or connector.

3. Continuity Inspection

1. Disconnect the meter and thermal transmitter connectors.
2. Check the CAN communication line. (Refer to LAN section.)

Is there continuity?

OK → Replace the meter control unit.

NG → Repair the harness or connector.

Vehicle Speed System

INSPECTION PROCEDURE (VEHICLE WITHOUT ABS)

1. Connector Inspection

1. Turn the key switch OFF.
2. Inspect the meter and vehicle speed sensor terminals (meter, vehicle speed sensor and harness sides) for looseness or bend.

Inspection results are OK?

OK → Go to No. 2.

NG → Repair the terminal or connector.

2. Wave Inspection

1. Remove the meter connector.
2. Start the engine.
3. Check the wave between the meter terminal No. 5 and body ground.

   Refer to “Meter Control Unit Input/Output Signal Standards” (EL-125) for between the terminal No. 5 and body ground.

Inspection results are OK?

OK → Replace the meter control unit.

NG → Go to No. 3.

3. Continuity Inspection

1. Turn the key switch OFF.
2. Remove the meter and vehicle speed sensor connectors.
3. Check the continuity between the meter terminal No. 49 and vehicle speed sensor terminal No. 1 and between the meter terminal No. 50 and vehicle speed sensor terminal No. 2.

Is there continuity?

OK → Go to No. 4.

NG → Repair the harness or connector.

4. Vehicle Speed Sensor Inspection

Inspect the component. Refer to “VEHICLE SPEED SENSOR” (EL-124).

Inspection results are OK?

OK → Replace the meter control unit.

NG → Replace the vehicle speed sensor.

Inspection Procedure (Vehicle with ABS)

1. Connector Inspection

1. Turn the key switch OFF.
2. Inspect the meter and vehicle speed sensor terminals (meter, vehicle speed sensor and harness sides) for looseness or bend.

Inspection results are OK?

OK → Go to No. 2.

NG → Repair the terminal or connector.

2. Wave Inspection

1. Remove the meter connector.
2. Start the engine.
3. Check the wave between the meter terminal No. 7 and body ground.

   Check the wave between the meter terminal No. 7 and body ground. (Refer to the “Meter Control Unit Input/Output Signal Reference Values” in EL-125.)

Inspection results are OK?

OK → Replace the meter control unit.

NG → Go to No. 3.

3. Continuity Inspection

1. Turn the key switch OFF.
2. Remove the meter and ABS control unit connectors.
3. Check the continuity between the meter terminal No. 7 and ABS control unit terminal No. 23.

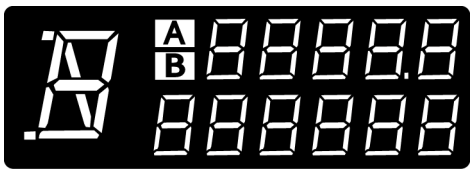
Is there continuity?

OK → Go to No. 4.

NG → Repair harness or connectors.

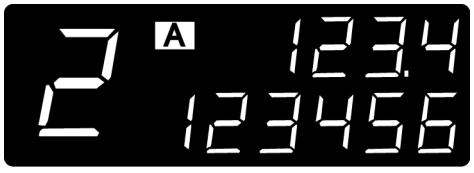
Odometer • Trip Odometer Display

The odometer and trip odometer mode converts as follows.



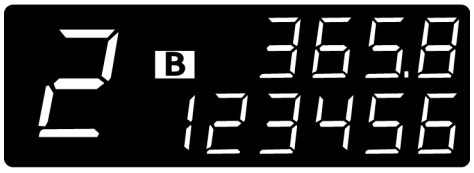
- The TRIP odometer consists of 25 stages. The displaying unit of odometer is kilometer and trip odometer is 0.1 kilometer.
- The A/T indicator displays P-R-N-D-2-1 according to the shift lever position.

1. Change between Odometer and Trip Odometer



- The A TRIP odometer displays 123.4 km and odometer displays 123,456 km.

Press the ODO/TRIP knob.



- The B TRIP odometer displays 365.8 km and odometer displays 123,456 km.

Press the ODO/TRIP knob.

- When the TRIP knob is pressed for over 0.8 seconds during TRIP A display, the traveled distance memorized in TRIP A is reset to 0.0 km.

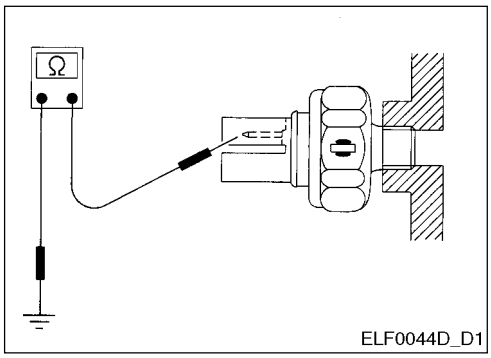
Press the ODO/TRIP knob for less than 0.8 seconds.

- When the ODO/TRIP knob is pressed for over 0.8 seconds during TRIP B display, the traveled distance memorized in TRIP B is reset to 0.0 km.

- When the battery terminal is disconnected, the odometer continues the calculation, but the trip odometers will be reset to 0.0 km.

Trip odometer (Display range)
0.0 km → 9999.9 km → 0.0 km
Odometer (Display range)
0.0 km → 999,999 km

- The odometer does not count over 999,999 km.

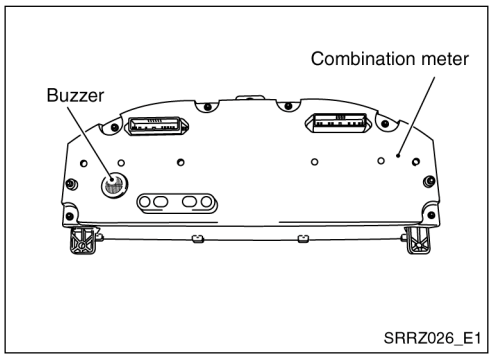


Component Inspection

OIL PRESSURE SWITCH

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

	Oil Pressure (kgf/cm^2)	Continuity
While engine stopped	Under 0.02 - 0.029 (0.2 - 0.3)	Yes
While engine running	More than 0.02 - 0.029 (0.2 - 0.3)	No



System Description

1. Ignition Key Warning

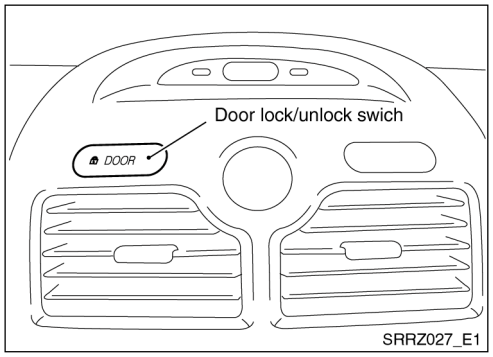
- The buzzer sounds when opening the door while the key is inserted in the ignition key cylinder (key detect switch ON) and the ignition switch is not in the “ON” position.
- When the key is removed (key detect switch OFF) during alarming, the buzzer stops.
- When the ignition switch moves to the “ON” position or driver’s door is closed (door switch OFF) during alarming, the buzzer stops.

2. Turn Signal/Harzard Warning Lamp Operation Buzzer

- The buzzer sounds through the meter buzzer which sounded through the flasher unit when the turn signal/hazard warning lamp operate.

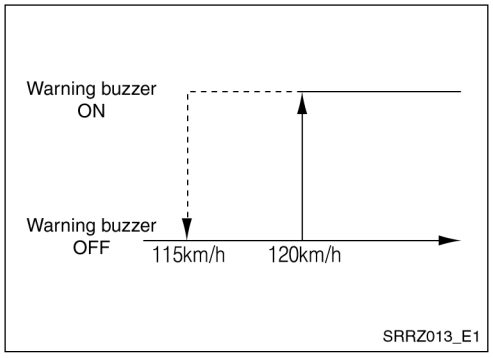
3. Seat Belt Warning Chime

- The warning chime sounds when the driver does not wear the seat belt and the vehicle speed exceeds 10 km/h.
- The warning chime does not sound when the vehicle speed is less than 10 km/h.
- The chime sounds at 0.5 seconds interval.



4. Vehicle Speed Sensitive Door Lock Emabling/Disabling Alarm

- The alarm sounds once when emabling/disabling alarm the vehicle speed sensitive door lock function while the vehicle speed is over 40 km/h.
- The door lock function is emabling/disabling alarm when pressing the door lock switch for more than 3 seconds within 20 seconds while the ignition switch is in the “ON” position.

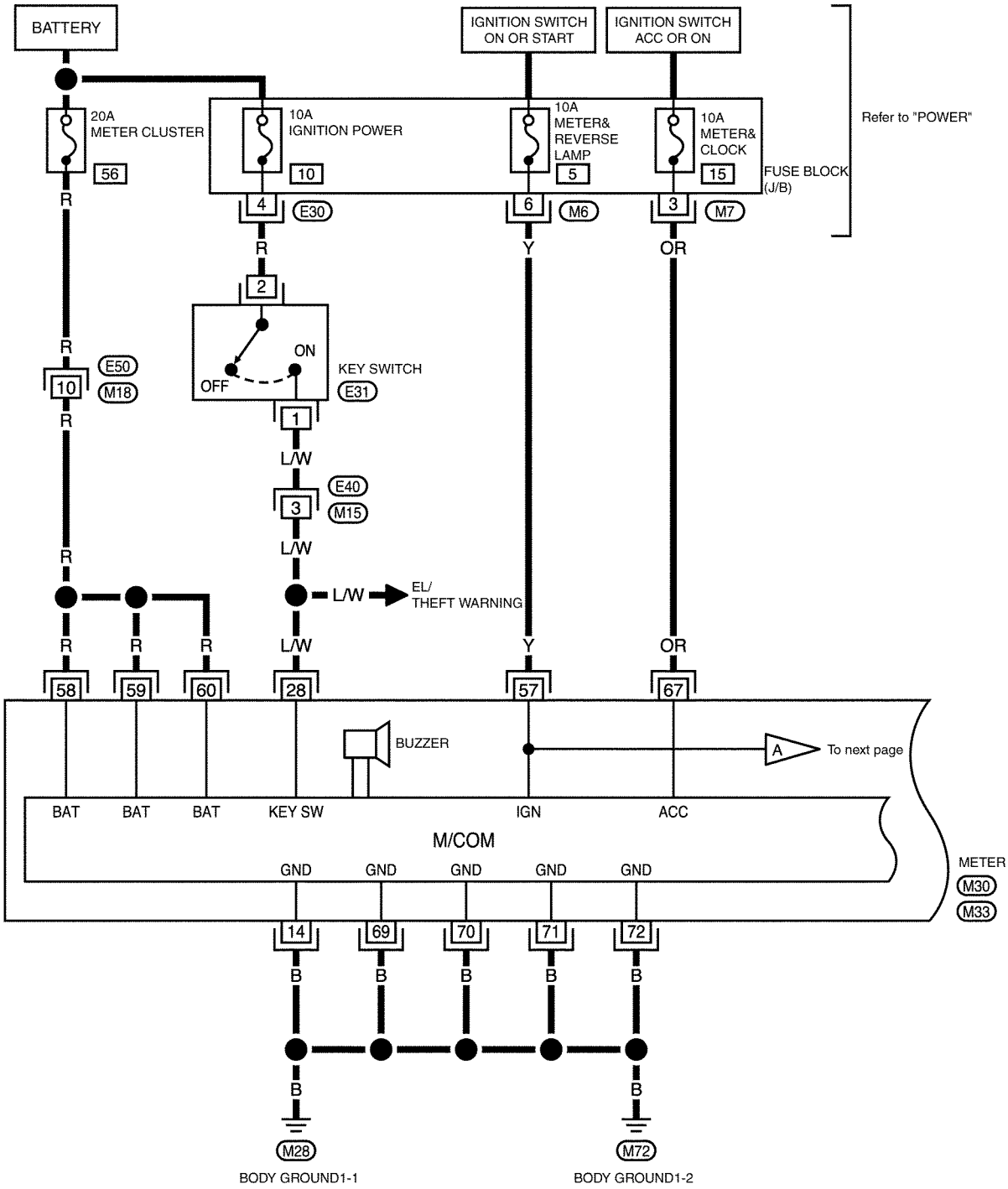


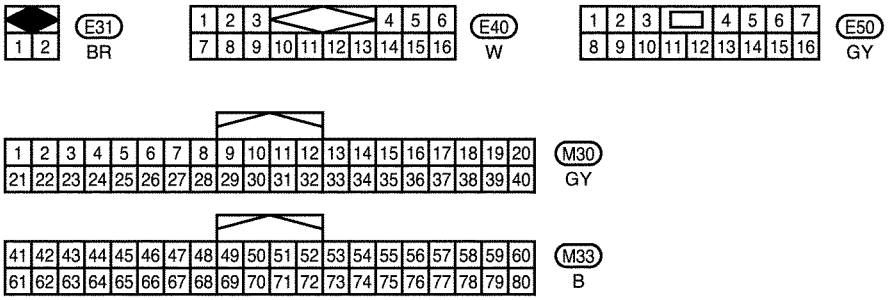
5. Over Speed Alarm (For Middle East)

- The alarm sounds through the buzzer in meter when the vehicle speed exceeds 120 km/h.
- The alarm stops when the vehicle speeds is less than 115 km/h.

Wiring Diagram

EL/Alarm (Buzzer)- 01





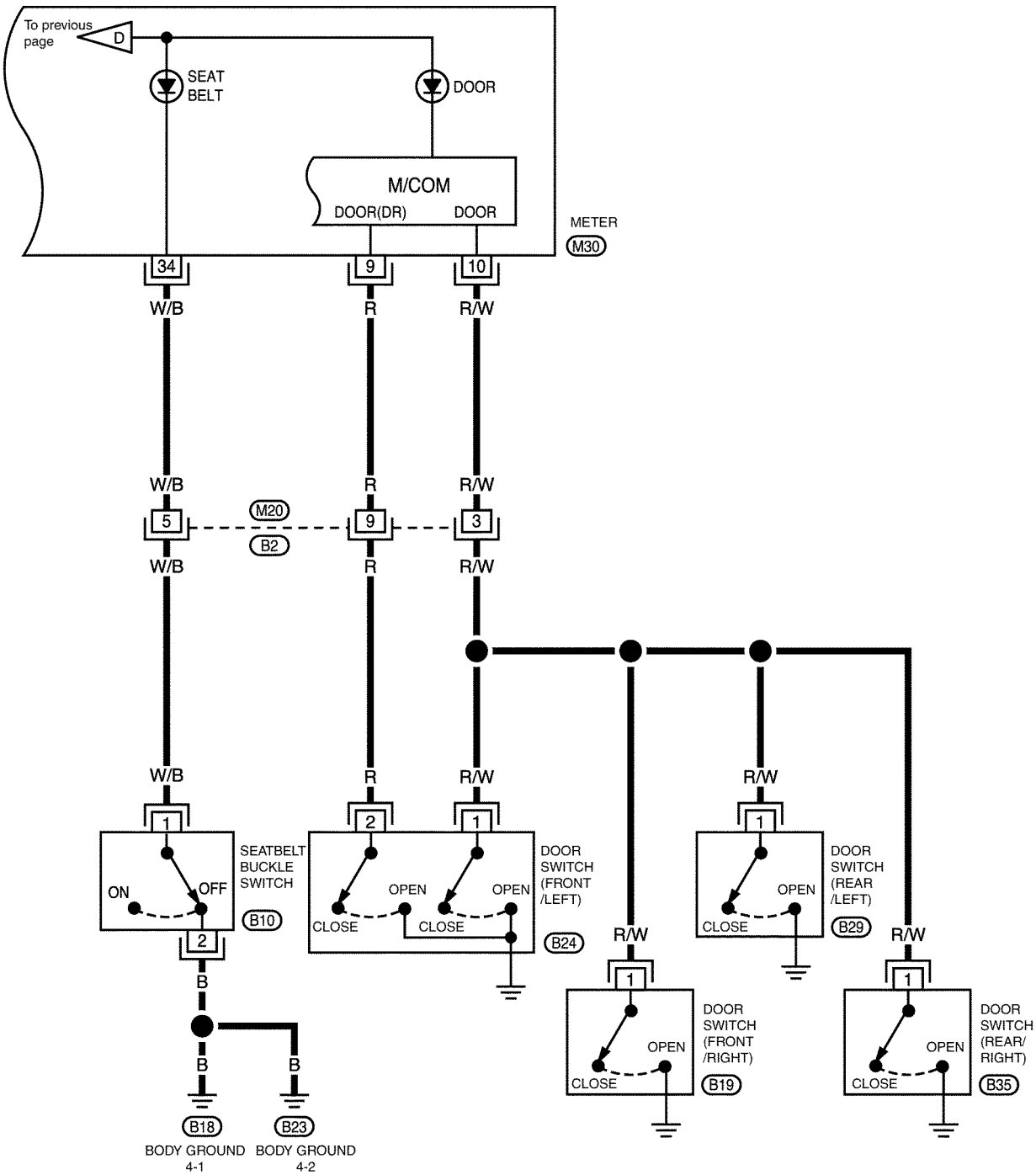
REFER TO FUSE BLOCK (J/B)

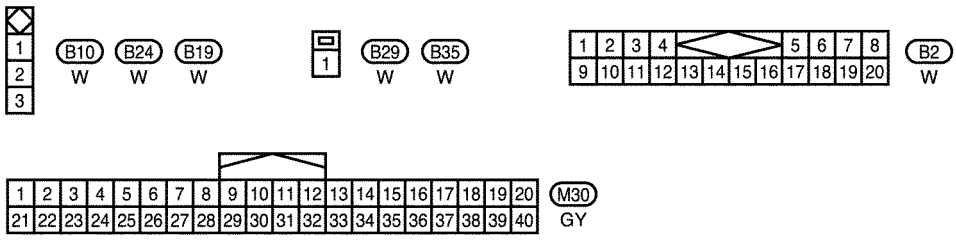
M6 M7

E30

SRWZ067_O1

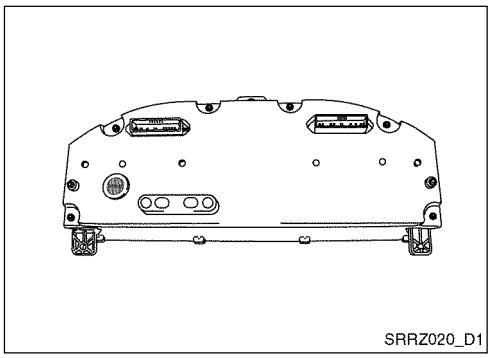
Wiring Diagram





SRWZ068_O1

Key Coupled Illumination System


SRRZ020_D1

Room Lamp Timer Control

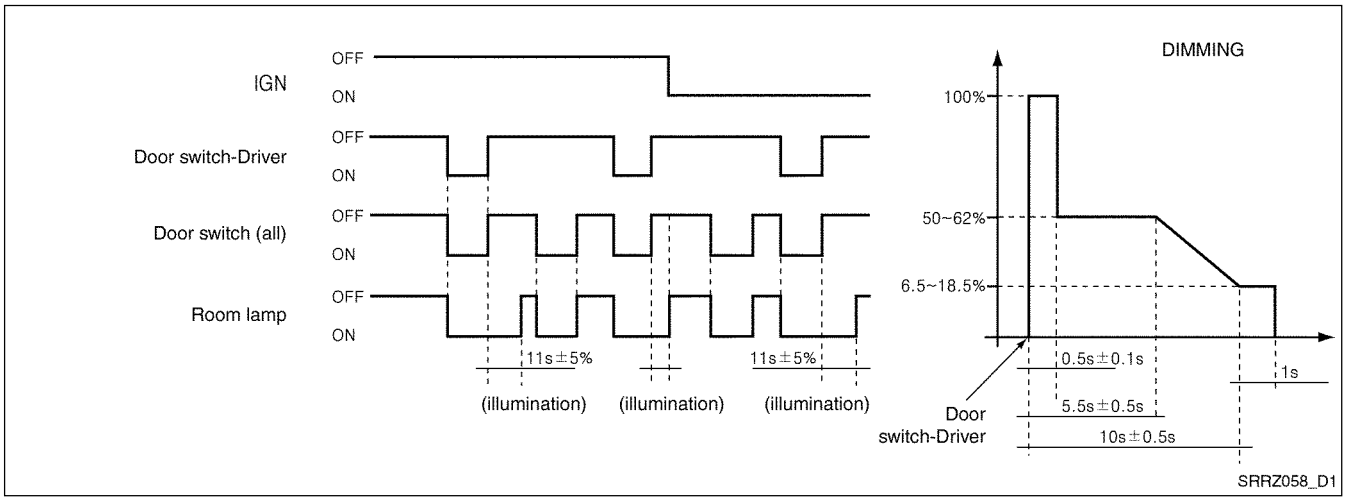
- When the room lamp switch is at neutral position, the room lamp and ignition key hole lamp turning on and off is controlled by the timer according to driver's door switch signal and all door switch signals.
- The timer is controlled by the meter control unit in the combination meter.

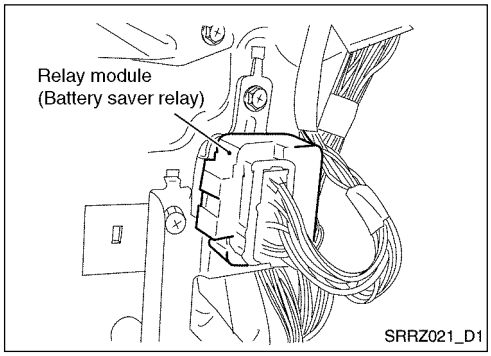
Basic Operations

- The room lamp and ignition key hole lamp turns on when the driver's door switch is ON (door open).
- When the driver's door switch goes from ON (door open) to OFF (door closed), the lamps gradually dims by the meter timer.
- The lamps turns on when all door switches turn on and turns off when all door switches turn off.

Room Lamp Timer

- The timer operates only when the driver's door switch turns from ON to OFF.
- The timer operates for max. 10 seconds.
- When a new timer operation signal is inputted during the timer operation, the newly inputted timer operation signal takes priority.
- When all door switch signal is inputted during the timer operation, the timer function cancels.





Room Lamp Battery Saver Control

- The battery saver relay control cuts off the battery supply of the battery saver relay in the relay module by the combination meter if the room lamp is on for more than 30 minutes while the ignition key is "OFF" and the ignition switch is in the "OFF" position.

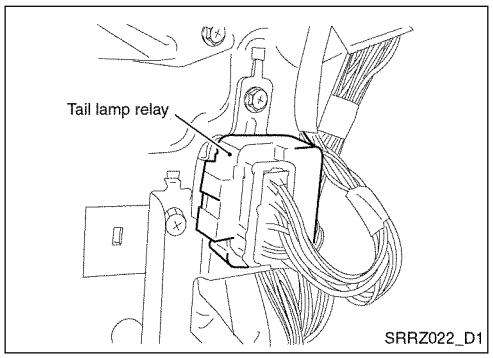
Basic Operations

- The battery saver mode is activated when the IGN, ACC, key switch, hazard warning switch and light switch are OFF and the room lamp and the map lamp are turned off after 30 minutes.

CAUTION:

- **The lamps are turned off when the room lamp switch is ON.**

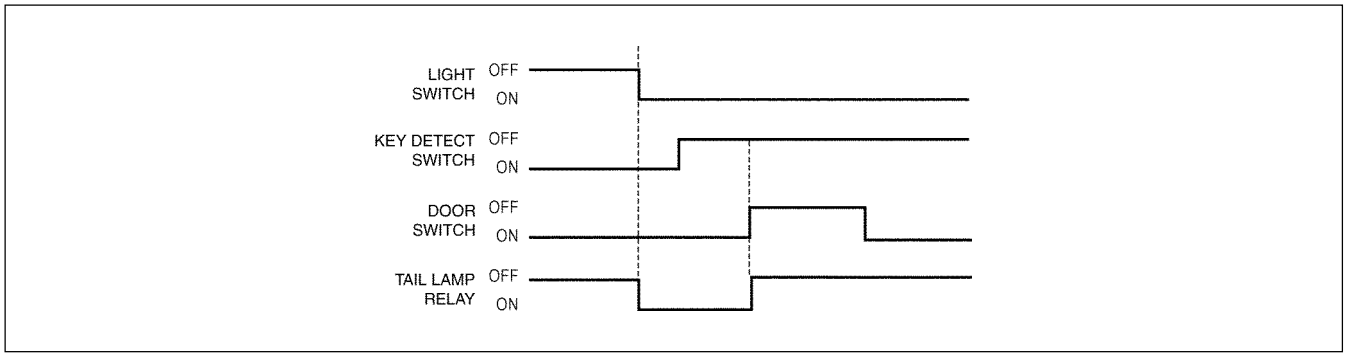
Tail Lamp Auto Cut Control



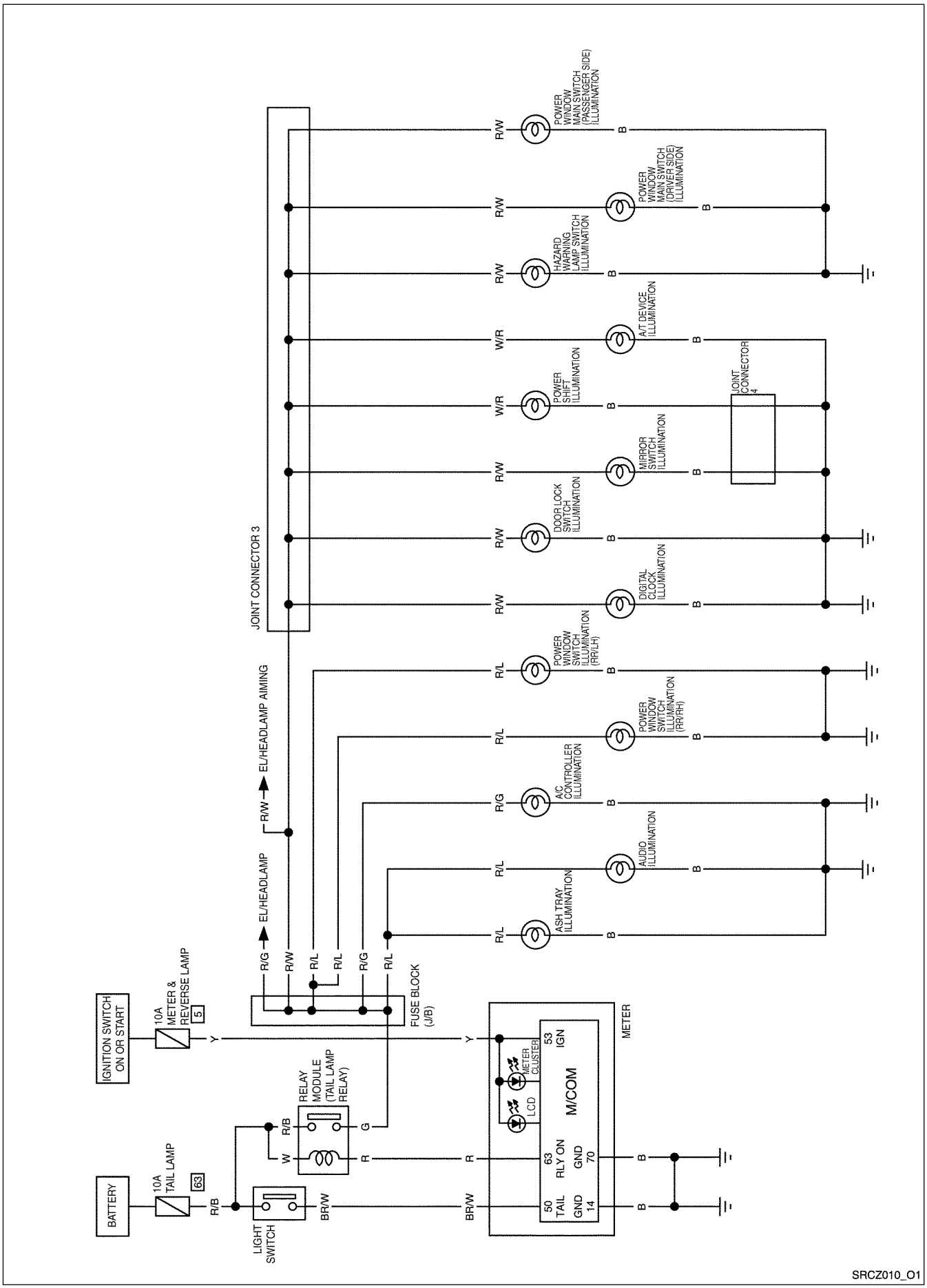
DESCRIPTION

- The meter integrated BCM cuts the power supply to tail lamp relay in relay module (Tail lamp OFF) when opening the driver's door after removing the ignition key even though the light switch is in "ON" position.
- The tail lamp is turned on again when inserting the key or turning the lamp switch OFF and then ON.

BASIC OPERATION

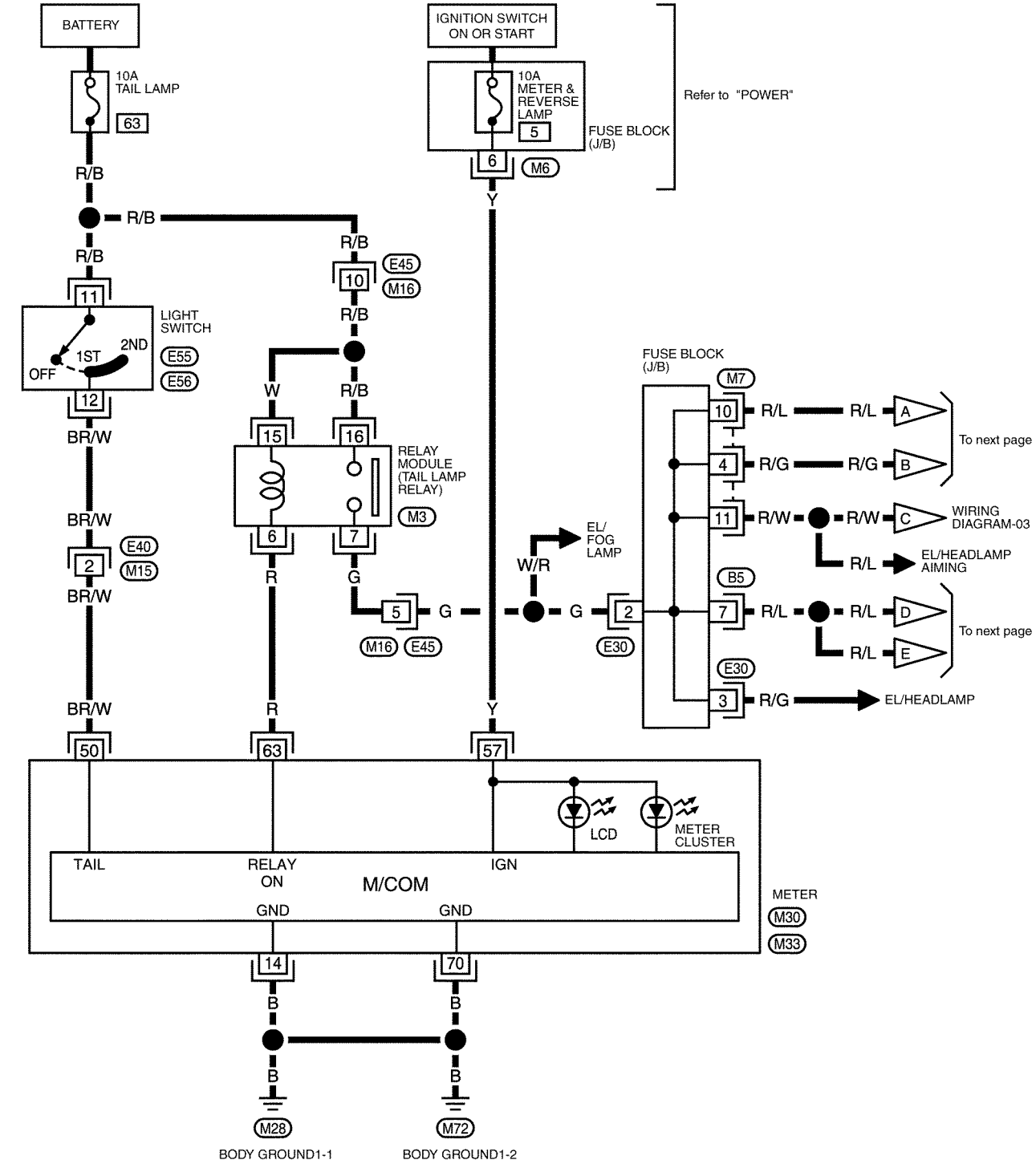


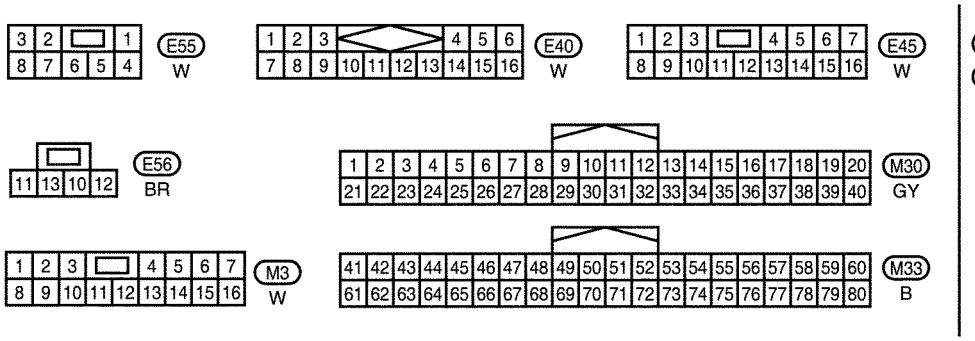
Circuit Diagram



Wiring Diagram

EL/Illumination- 01



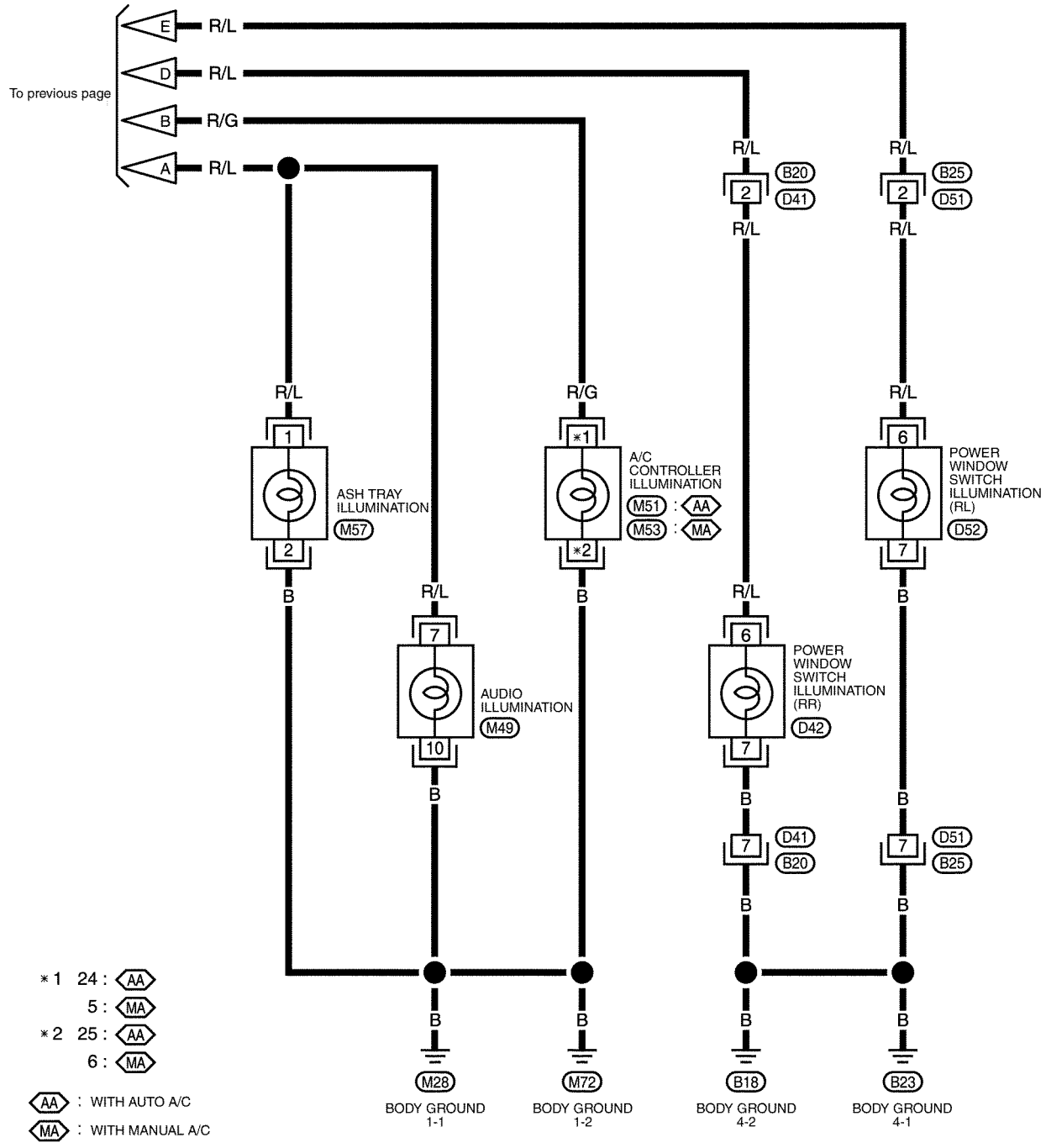


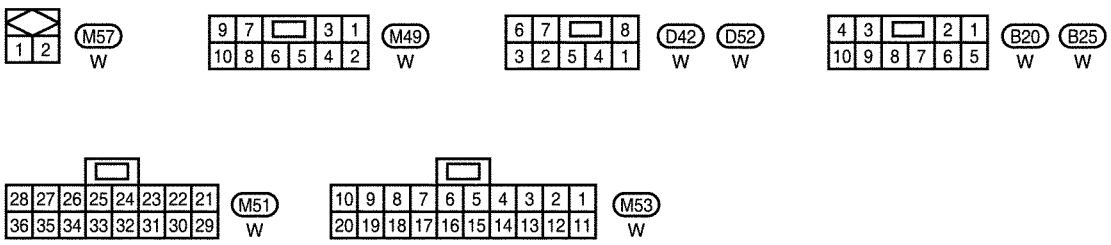
REFER TO FUSE BLOCK (J/B)

E30 B5 M6 M7

SRWZ027_O1

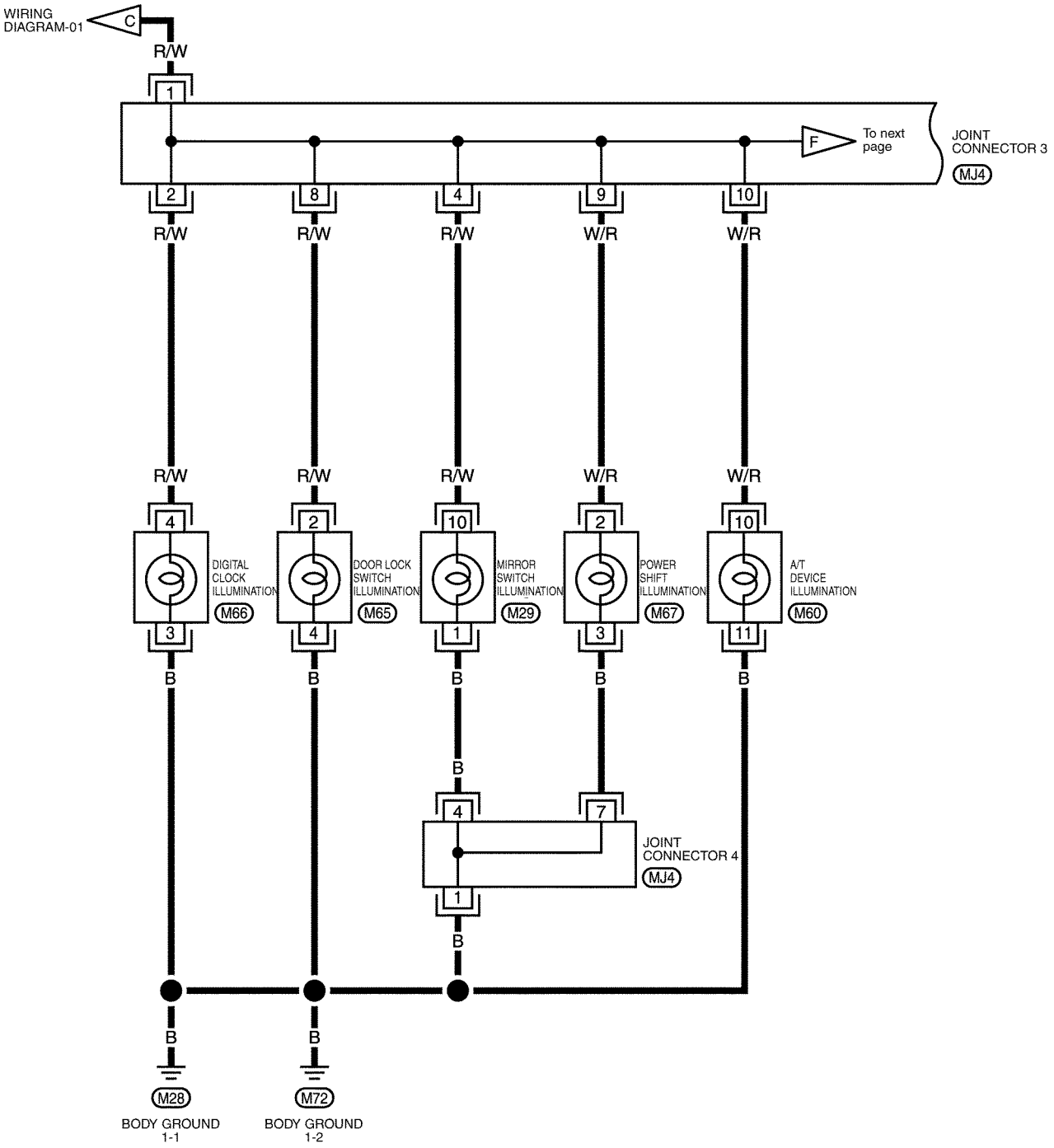
Wiring Diagram

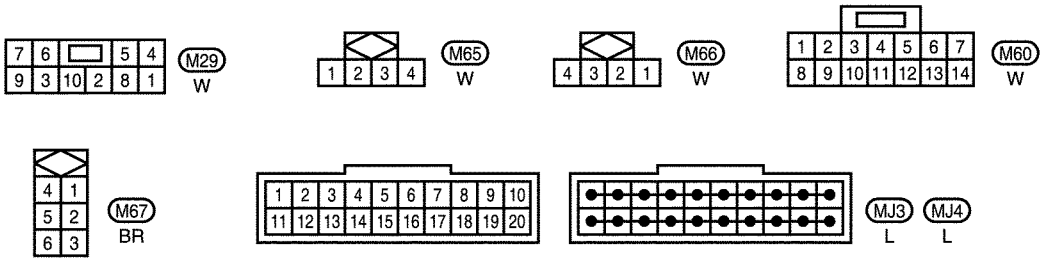




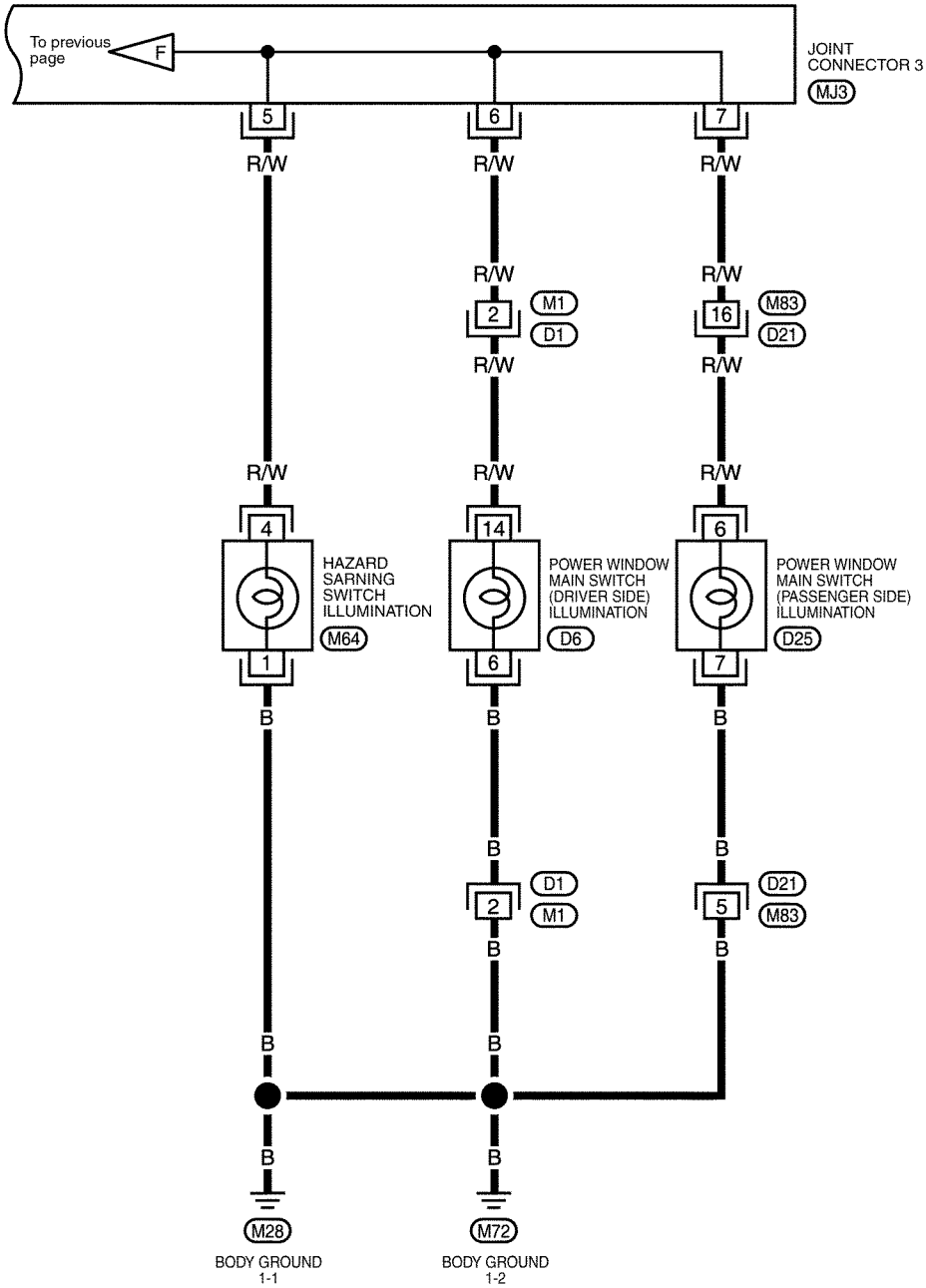
SRWZ028_O1

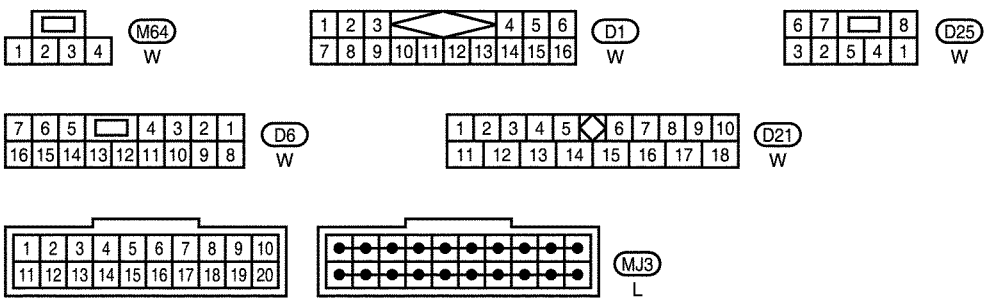
Wiring Diagram





SRWZ029_O1


To previous page
F
JOINT CONNECTOR 3
MJ3
5
6
7
R/W
M1
D1
M83
D21
16
2
4
14
6
1
7
HAZARD SARNING SWITCH ILLUMINATION
M64
POWER WINDOW MAIN SWITCH (DRIVER SIDE) ILLUMINATION
D6
POWER WINDOW MAIN SWITCH (PASSENGER SIDE) ILLUMINATION
D25
B
5
M28
M72
BODY GROUND 1-1
BODY GROUND 1-2


M64
W
D1
D25
D6
D21
MJ3
L

SRWZ030_O1

Meter Control Unit Input/Output Signal Standards

Refer to Wiring Diagram (EL-104).

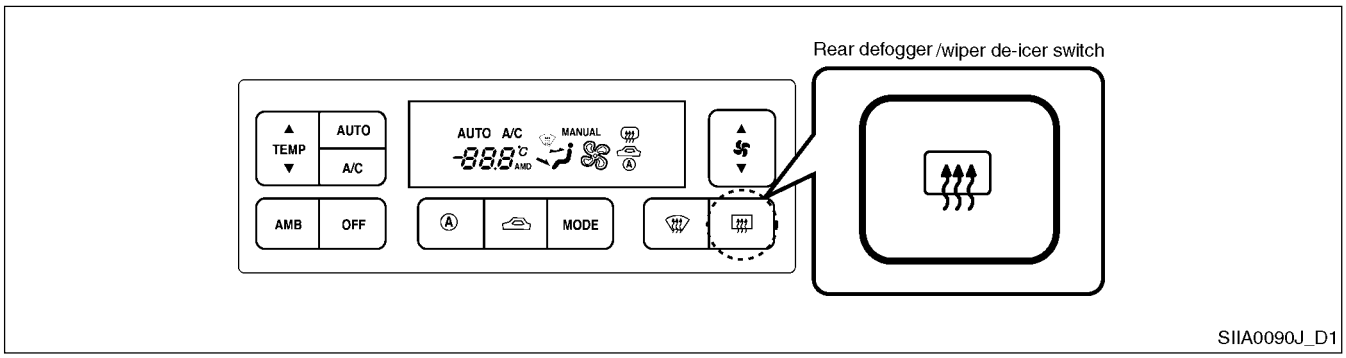
Terminal No.	Signal	Measurement					Standard value (V)
		Key switch	Operation or Status				
10	Door switch signal	OFF	Open any one door Close all doors				Approx. 0
9	Driver's door switch signal	OFF	Driver's door switch		ON (Open)		Approx. 12
					OFF (Close)		
65, 70	Ground	ON	-				Approx. 5
47	Room lamp signal	OFF	Room lamp switch: Neutral	Insert the key	Each door switch	ON (Open)	Approx. 0
						OFF (Close)	Approx. 12
		-	Room lamp switch: Neutral	Close all doors	Remove the inserted key		Approx. 0
					Turn the key switch to "ON"		Approx. 12
58	Battery power	OFF	-				Approx. 12
57	Ignition power	ON	-				Approx. 12

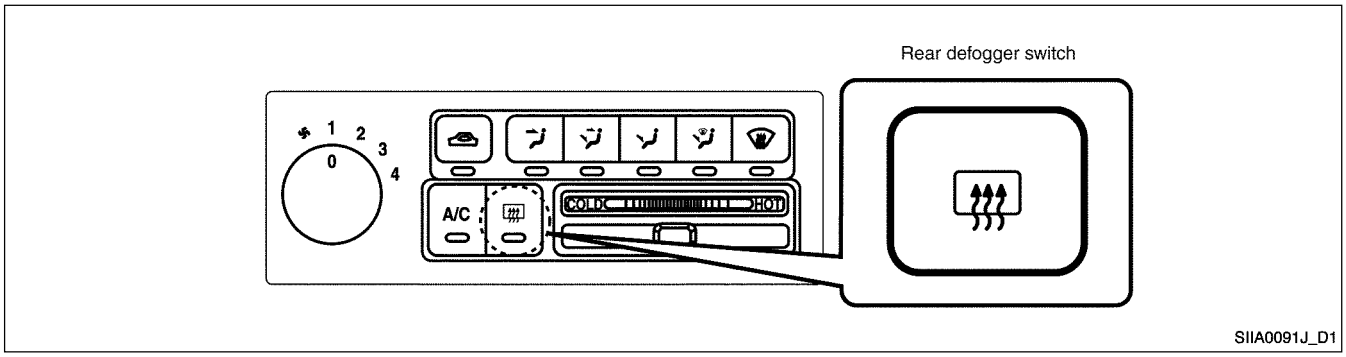
System - General

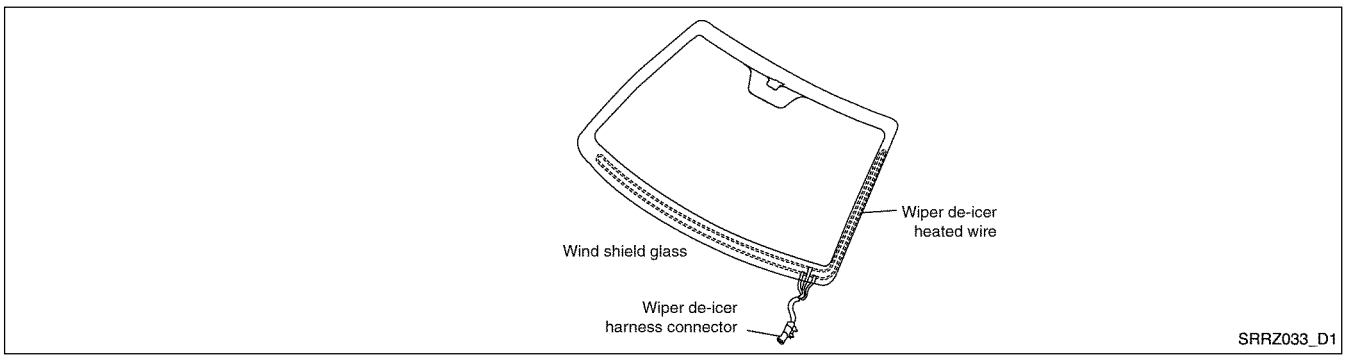
TIMER FUNCTION

- The rear window defogger and the wiper de-icer (optional) operate simultaneously when operating the switch.
- While the key switch is ON, the rear defogger/wiper de-icer are turned on when turning the defogger/de-icer switch to ON position. The timer operates for about 15 minutes.
- While the timer function is operating, the timer function and the rear defogger output stops when the rear defogger switch is turned off.
- The timer control is performed by the meter control unit in the combination meter.
- The wiper de-icer heated wire is routed to the botton and left-end of windshield glass.
- The wiper de-icer prevents the wiper blade and glass from freezing.

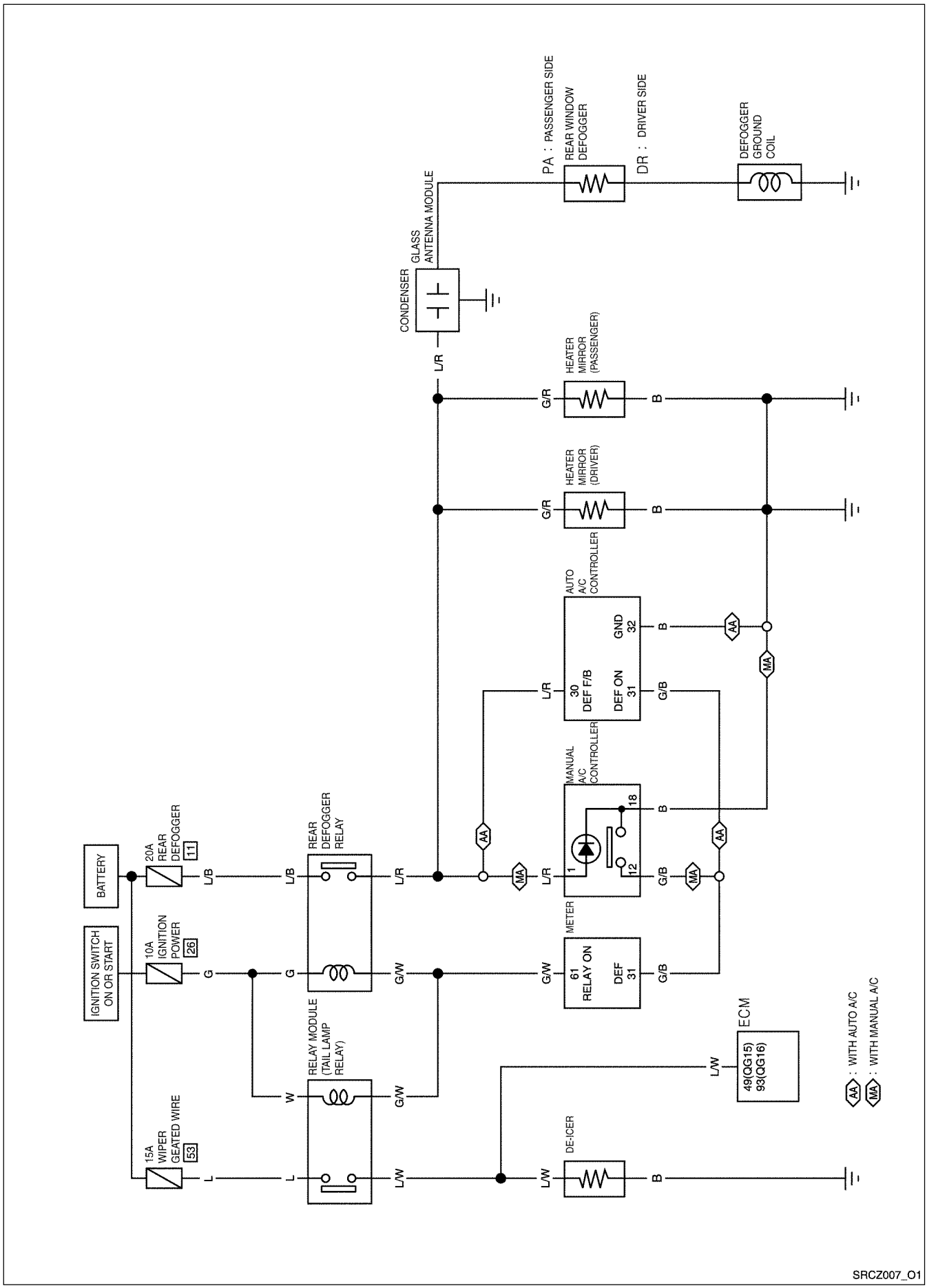
COMPONENTS LOCATION







Circuit Diagram



Meter Control Unit Input/Output Signal Standards

Terminal No.	Signal	Operation conditions			Standard value (V)
		Key switch	Operation		
31	Rear defogger switch/de-icer signal	OFF	Rear defogger switch (Switch is pressed in)	ON	Approx. 0
				OFF	Approx. 12
61	Rear defogger/de-icer relay control signal	ON	Rear defogger switch	ON	Approx. 0 During rear defogger output: For approx. 15 min.
				OFF	Approx. 12

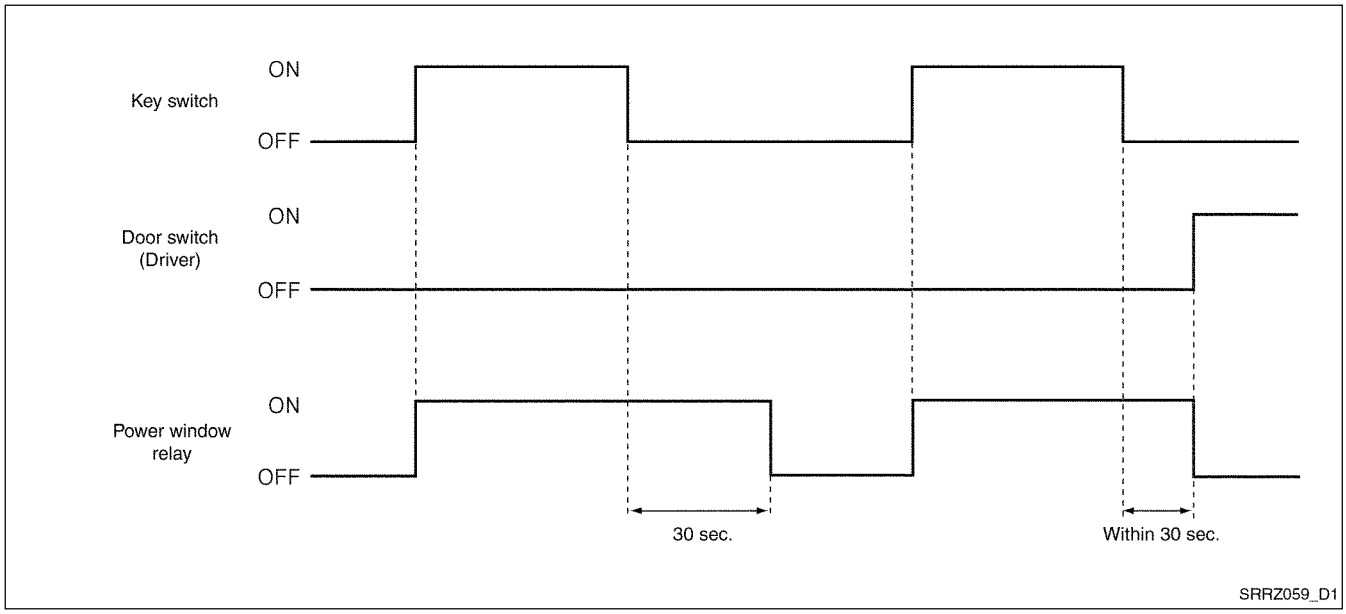
System - General

TIMER FUNCTION

- The timer function allows the driver's power window operation for about 30 seconds after the key switch has been turned off. But when the driver's door changes from open (door switch ON) to closed (door switch OFF) or key switch changes from OFF to ON, the timer is reset.

OPERATING CONDITIONS

- When driver's door glass is not in fully closed position (limit switch ON).
- Operation when the key switch is ON.
- Operation when key switch is other than ON (during timer operation).



WHEN OPERATING POWER WINDOW

All the window switches except the driver's window switch become inoperative if operating the power window lock switch.

Anti-Pinch Function

The anti-pinch function enables a window to automatically reverse when something is caught in the window as it is closing. When the control unit detects an obstacle, the window will be lowered 150 mm down immediately.

CAUTION:

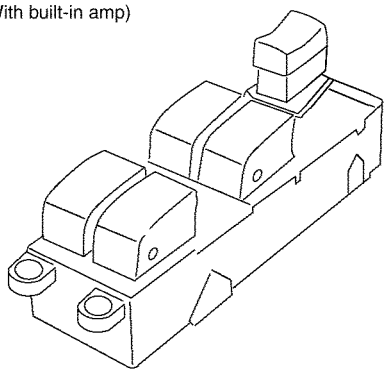
- **The anti-pinch function may be activativated if an impact or load is given to window glass by environment or weather condition.**
- **Reset the system after performing the followings:**
  Removal and installation of the motor from the regulator assembly.

OPERATING CONDITIONS

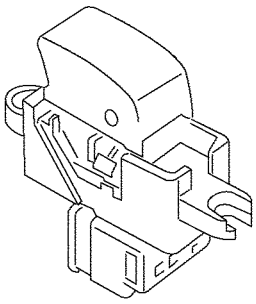
- When driver's door glass is not in fully closed position.
- Window up operation (automatic) when the ignition switch is ON.
- Window up operation when ignition switch is other than ON (during timer operation).

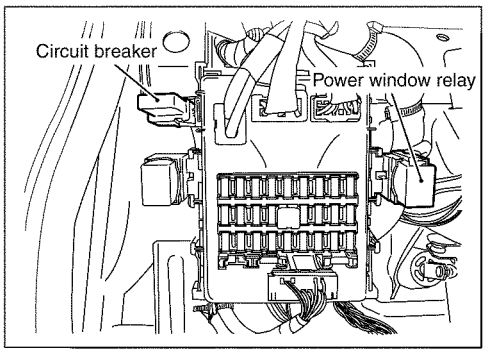
Components Location

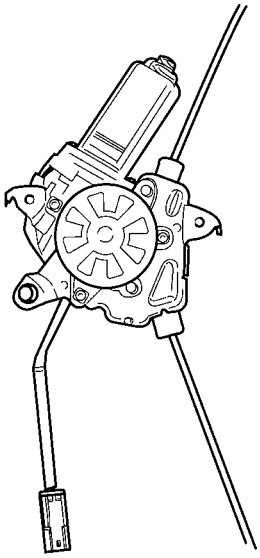
Power window main switch
(With built-in amp)



Passenger, rear left/right
power window switch



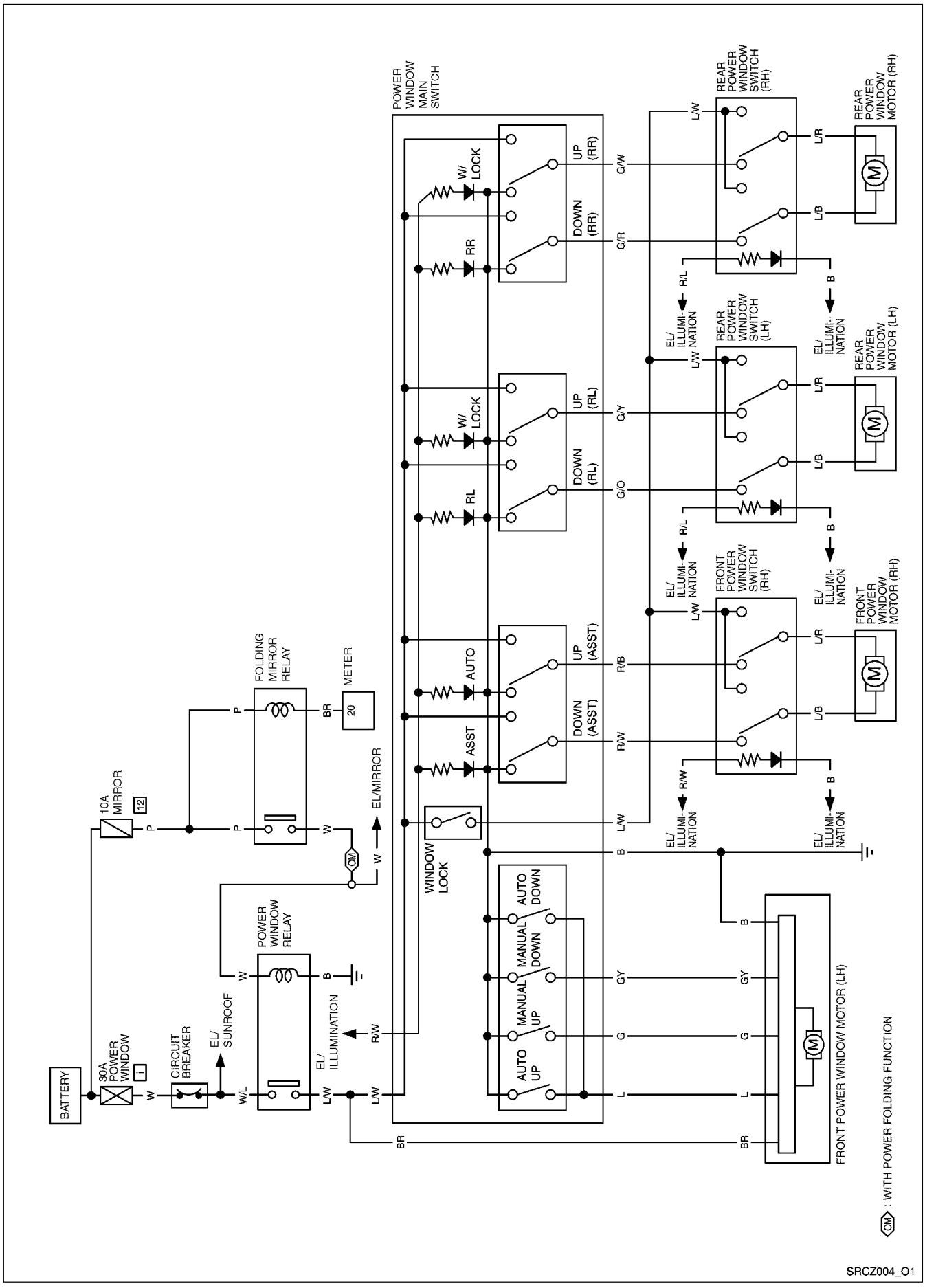




Driver's power window motor

SIIA0070J_D1

Circuit Diagram



Power Window Main Switch Input/Output Signal Standards

Refer to Wiring Diagram (EL-98).

Terminal No.	Signal	Measurement			Standard value (V)
		Key switch		Operation or conditions	
11	Battery power	-		-	Approx. 12
16	Passenger power window UP signal	ON	Power window lock switch OFF operation (Switch ON)	Main switch right rear seat switch DOWN operation (Motor operating)	Approx. 12
				Main switch passenger switch DOWN operation (Motor operating)	Approx. 0
			Power window lock switch ON operation (Switch OFF)	Main switch passenger switch UP operation (Motor not operating)	Approx. 12
				Main switch passenger switch DOWN operation (Motor not operating)	Approx. 12
			Other than the conditions above		Approx. 0
12	Passenger power window DOWN signal	ON	Power window lock switch OFF operation (Switch ON)	Main switch right rear seat switch DOWN operation (Motor operating)	Approx. 12
				Main switch passenger switch UP operation (Motor operating)	Approx. 0
			Power window lock switch ON operation (Switch OFF)	Main switch passenger switch DOWN operation (Motor not operating)	Approx. 12
				Main switch passenger switch DOWN operation (Motor not operating)	Approx. 12
			Other than the conditions above		Approx. 0
4	Driver power window motor UP signal	ON or other than ON (During timer operation)		During UP operation: Other than the above During DOWN operation: Other than the above	Approx. 12 Approx. 0
15	Driver power window motor DOWN signal	ON or other than ON (During timer operation)		During UP operation: Other than the above During DOWN operation: Other than the above	Approx. 12 Approx. 0
7	Right rear seat window UP signal	ON	Power window lock switch OFF operation (Switch ON)	Main switch right rear seat switch DOWN operation (Motor operating)	Approx. 12
				Main switch right rear seat switch DOWN operation (Motor operating)	Approx. 0
			Power window lock switch ON operation (Switch OFF)	Main switch left rear seat switch UP operation (Motor not operating)	Approx. 12
				Main switch left rear seat switch DOWN operation (Motor not operating)	Approx. 12
			Other than the conditions above		Approx. 0

Terminal No.	Signal	Measurement			Standard value (V)
		Key switch		Operation or conditions	
5	Right rear seat window DOWN signal	ON	Power window lock switch OFF operation (Switch ON)	Main switch right rear seat switch DOWN operation (Motor operating)	Approx. 12
				Main switch right rear seat switch UP operation (Motor operating)	Approx. 0
			Power window lock switch ON operation (Switch OFF)	Main switch left rear seat switch DOWN operation (Motor not operating)	Approx. 12
				Main switch left rear seat switch UP operation (Motor not operating)	Approx. 12
			Other than the conditions above		Approx. 0
20	Power window relay operation signal	ON	Refer to the “Operation Conditions” in the “System Description” (EL-147).		-
10	Power for passenger and rear seats power window switch	ON	-		Approx. 12
1	Rear left seat power window UP signal	ON	Power window lock switch OFF operation (Switch ON)	Main switch right rear seat switch DOWN operation (Motor operating)	Approx. 12
				Main switch left rear seat switch DOWN operation (Motor operating)	Approx. 0
			Power window lock switch ON operation (Switch OFF)	Main switch left rear seat switch UP operation (Motor not operating)	Approx. 12
				Main switch left rear seat switch DOWN operation (Motor not operating)	Approx. 12
			Other than the conditions above		Approx. 0
3	Rear left seat power window DOWN signal	ON	Power window lock switch OFF operation (Switch ON)	Main switch right rear seat switch DOWN operation (Motor operating)	Approx. 12
				Main switch left rear seat switch UP operation (Motor not operating)	Approx. 0
			Power window lock switch ON operation (Switch OFF)	Main switch right rear seat switch DOWN operation (Motor operating)	Approx. 12
				Main switch left rear seat switch UP operation (Motor not operating)	Approx. 12
			Other than the conditions above		Approx. 0
6	Ground		-		Approx. 0

Each Power Window Switch Input/Output Signal Standards

Refer to Wiring Diagram (EL-98).

Terminal No.	Signal	Measurement			Standard value (V)
		Key switch		Operation or conditions	
1	Power of the power window switch	ON		-	Approx. 12
4	Power window motor DOWN signal	ON		DOWN operation	Approx. 12
				UP operation	Approx. 0
				Other than above	Approx. 0
2	Power window UP signal	ON	Power window lock switch OFF operation (Switch ON)	Power window switch UP operation (Motor operating)	Approx. 0
				Power window switch DOWN operation (Motor operating)	Approx. 0
			Power window lock switch ON operation (Switch OFF)	Power window switch UP operation (Motor not operating)	Approx. 12
				Power window switch DOWN operation (Motor not operating)	Approx. 12
			Other than the conditions above		Approx. 0
5	Power window motor DOWN signal	ON		DOWN operation	Approx. 12
				UP operation	Approx. 0
				Other than above	Approx. 0
3	Power window DOWN signal	ON	Power window lock switch OFF operation (Switch ON)	Power window switch UP operation (Motor operating)	Approx. 0
				Power window switch DOWN operation (Motor operating)	Approx. 0
			Power window lock switch ON operation (Switch OFF)	Power window switch UP operation (Motor not operating)	Approx. 12
				Power window switch DOWN operation (Motor not operating)	Approx. 12
			Other than the conditions above		Approx. 0

Trouble Diagnosis by Symptoms

Inspect if the other systems that use the signals as follows is operating properly.

Symptom	Defective system	Possible cause
The timer function does not stop by the driver's door switch ON/OFF operation	Driver's door switch route	● Defective harness or connection ● Defective harness between the driver's door switch and power window switch
	Power window main switch inside	● Defect power window main switch
The driver's door glass does not reverse the operation at the full close position	Door glass main operation	● Foreign material stuck at the glass or glass run rubber ● Wear or deformation of glass run rubber ● Overly depressed or protruded vehicle's chassis
	Power window main switch inside	● Defect power window main switch
The driver's door glass reverses the operation during UP operation	Door glass main operation	● Foreign material stuck at the glass or glass run rubber ● Wear or deformation of glass run rubber ● Overly depressed or protruded vehicle's chassis
	Power window main switch inside	● Defect power window main switch
The driver's door glass reverses the operation at situations other than the above	Door glass main operation	● Foreign material stuck at the glass or glass run rubber ● Wear or deformation of glass run rubber ● Overly depressed or protruded vehicle's chassis
	Power window main switch inside	● Defect power window main switch

System Description (Power Door Lock System)

1. Door Lock/Unlock Function

1. All door locks and unlocks are operated by the driver's door key cylinder operation.
   - It outputs the all door lock signal if the driver's door lock switch is turned from "ON" to "OFF".
   - It outputs the all door unlock signal if the driver's door lock switch is turned from "OFF" to "ON".
2. The door lock and unlock are operated by the door lock/unlock switch operation.
   - The door lock/unlock switch is the automatic return type switch. It outputs the lock or unlock signal according to current condition everytime it is pushed.

     However, the meter does not output the door lock/unlock signal when operating the door lock/unlock switch while the system is armed by the remote controller.
3. All door locks and unlocks are operated by moving the driver's door lock knob.
4. All door locks and unlocks are operated by operating the remote controller.

   For details, refer to "Remote Keyless Entry System" (EL-156).

2. Key Reminder Function

- This function prevents the doors from locking when the ignition key is in key cylinder.

3. Vehicle Speed Sensing Auto Door Lock Function

- When the vehicle speed exceeds 40 km/h, all doors are automatically locked.
- The vehicle speed at which the door lock operates can be selected 8 km/h or 40 km/h by the diagnostic device.

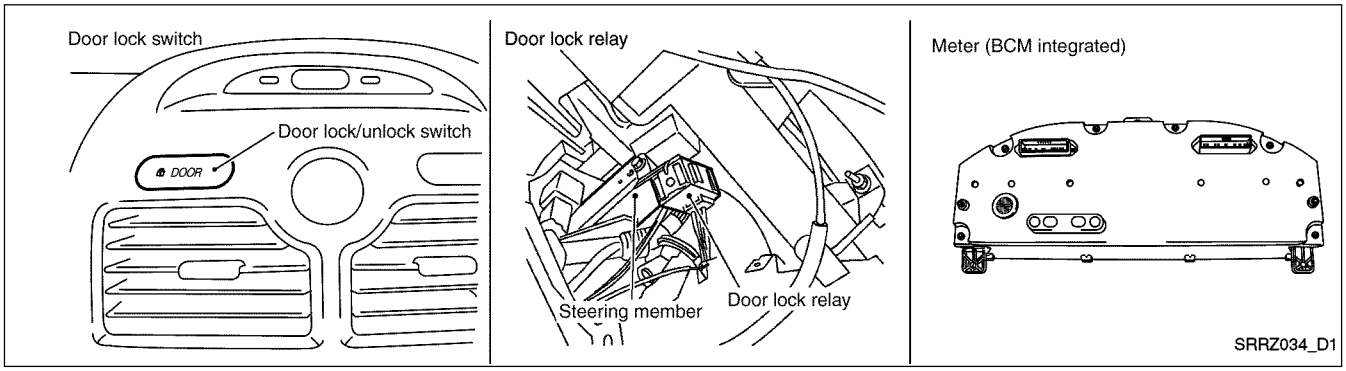
4. Door Unlock Function Under Collision

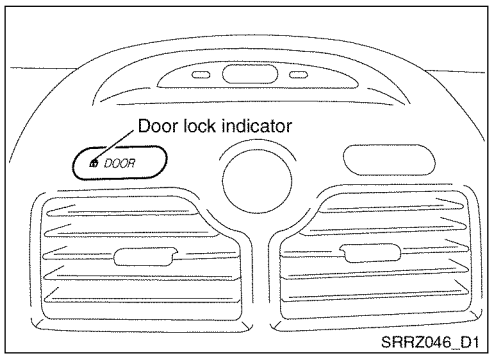
- To improve the safety, the meter receives the collision signal from airbag unit and unlocks all doors.
- The "Vehicle Speed Sensing Auto Door Lock Function" does not operate after this function is operated by collision.

REFERENCE:

The function may not operate due to the electric damage on parts.

Component Parts





Door Lock Indicator

BASIC OPERATION (ON)

- There is a red (🔒) lock mark on the door lock/unlock switch and it turns on when the door lock/unlock function is operated.

OPERATING CONDITIONS

- The red door lock indicator comes on to notify tha the doors are in the lock condition when the ignition key is in the “ON” position and all the doors are locked.

Trouble Diagnosis

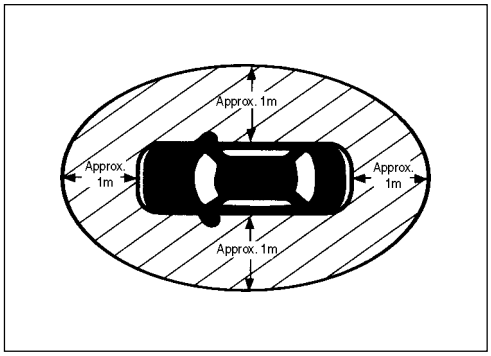
Refer to COMBINATION METER - TROUBLE DIAGNOSIS (EL-69).

System Description (Remote Keyless Entry System)

- The keyless entry unit receives the signal from the transmitter (meter integrated type) by remote controller operation. Then, it sends this signal to BCM (Body Control Module) to compare to the ID registered in BCM. Only if the ID is identical with it, doors can be locked and unlocked.
- The trunk lid can be unlocked by remote controller.
- When the doors are locked or unlocked by remote controller, supply power to hazard warning lamp flashes as follows: LOCK operation (flash once) UNLOCK operation (flash twice).
- Panic Alarm Function: Press and hold the door lock switch in remote controller to operate panic alarm.
- New remote controller can be registered when missing. Up to 4 remote controller can be registered (can register more remote controllers, but only latest 6 are available).

Operation

Function	Description
Lock	● When pressing lock switch in remote controller, all doors are locked and hazard lamps flash twice.
Unlock	● When pressing unlock switch in remote controller, all doors are unlocked and hazard lamps flash once. ● If no operations are performed within 30 seconds after unlocking with the remote controller, such as opening the door(s) or trunk, inserting the key into the ignition key cylinder or operating the remote controller, all doors are locked automatically and the active check function does not operate (auto lock function).
Trunk lid open	● When trunk open request switch is pushed for approx. 0.5 seconds, trunk lid is opened.
Panic Alarm	● When pressing lock switch in remote controller for more than 1.5 seconds, anti-theft alarm (horn) relay and hazard relay are turned on for approx. 30 seconds to operate hazard flasher and warning alarm.

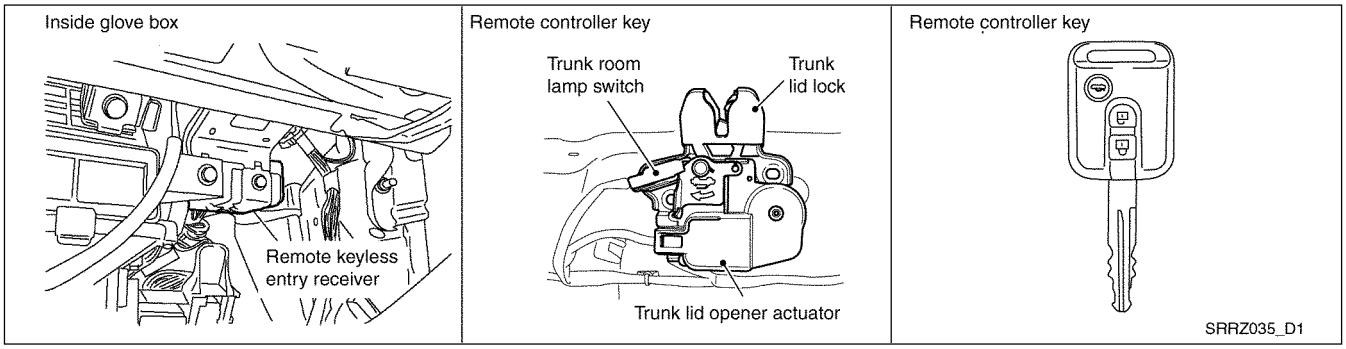


Operating Range

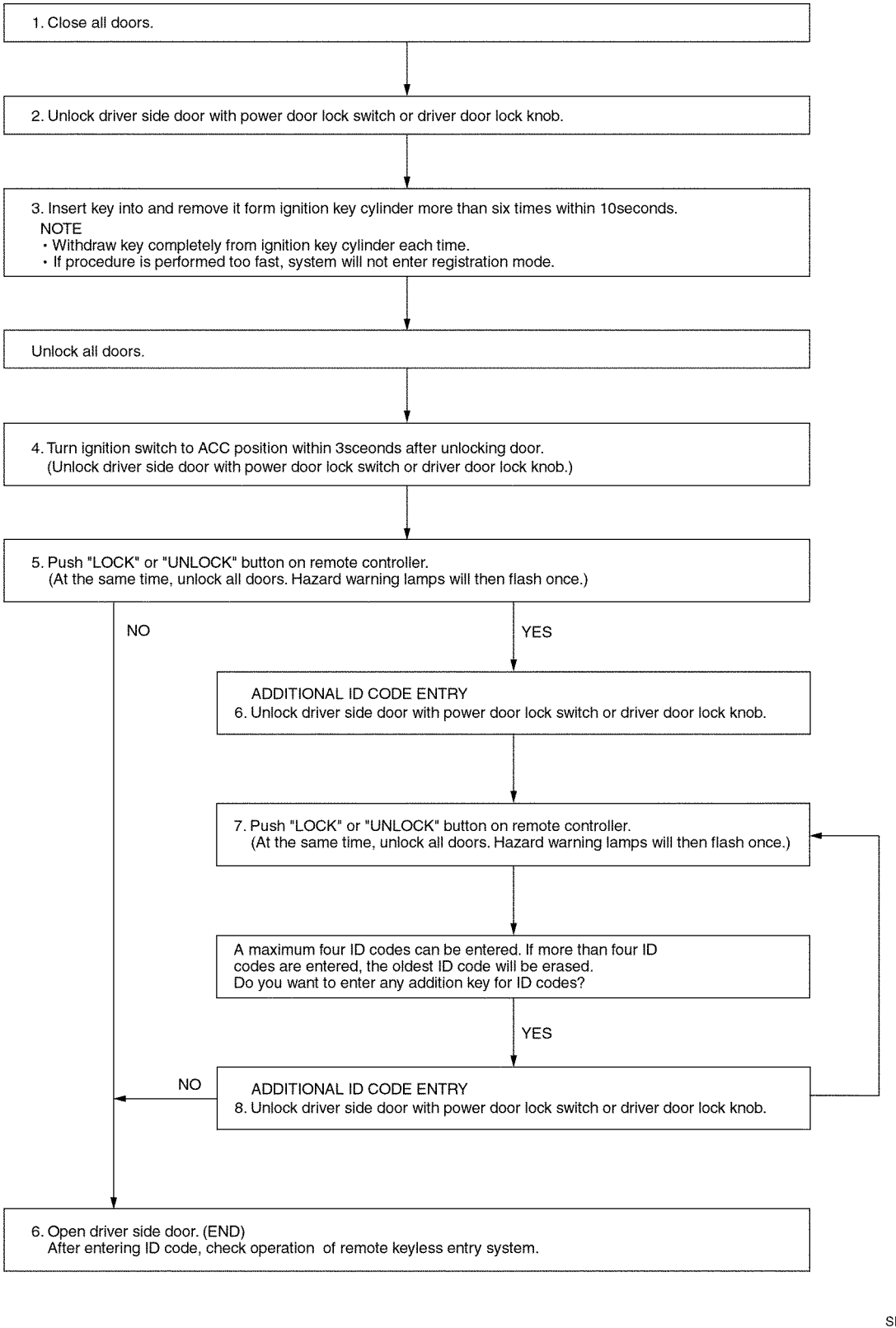
- To securely operate the remote controller, operate it within 1 m from outside door handle in front doors or center of trunk rear end.
- Operating range of remote controller is 5 m from center point of vehicle. However, it may varies according to the surroundings.

CAUTION:

If there are two vehicles equipped with the keyless entry system at same place, the remote controller may not work properly.



Remote Controller ID Set Up with Ignition Key Operation

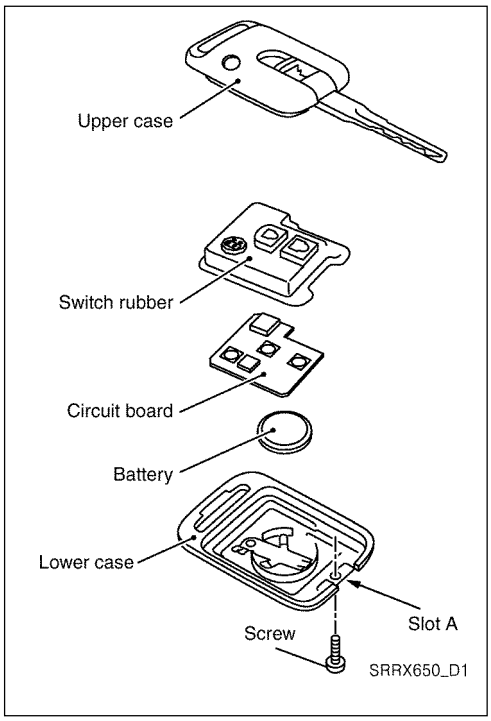


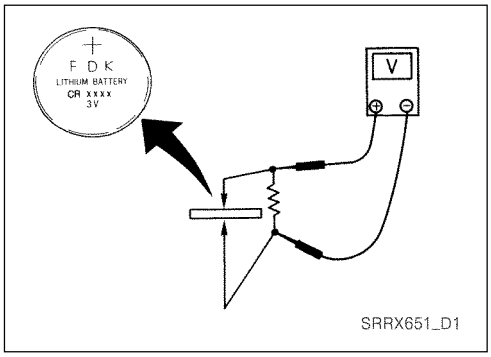
SRRX649_D1

CAUTION:

- **If a remote controller is lost, the ID code of the lost remote controller must be erased to prevent unauthorized use. However, when the ID code of a lost remote controller is not known, all controller ID codes should be erased. To erase all ID codes in memory, register one ID code (remote controller) four times. After all ID codes are erased, the ID codes of all remaining and/or new remote controllers 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 remote controllers, repeat the procedure "Additional ID code entry" for each new remote controllers.**

  Entry of maximum four ID codes is allowed. When more than four ID codes are entered, the oldest ID code will be erased.
- **Even if same ID code that is already in the memory is input, the same ID code can be entered. The code is counted as an additional code.**





Remote Controller Inspection

DISASSEMBLY AND ASSEMBLY OF KEY INTEGRATED REMOTE CONTROLLER

1. Remove case mounting screw.
2. Insert a flat-bladed screwdriver into slot A and pry off the case.

CAUTION:

Be careful not to touch the printed circuits directly.

3. Replace the battery.
   - Remove the battery from the lower case and replace it.

CAUTION:

When replacing battery, be sure to keep dirt, grease, and other foreign materials off the electrode contact area.

4. Assemble the separated case halves and tighten the screws.

   After replacing components, check to make sure all remote controller functions work normally.

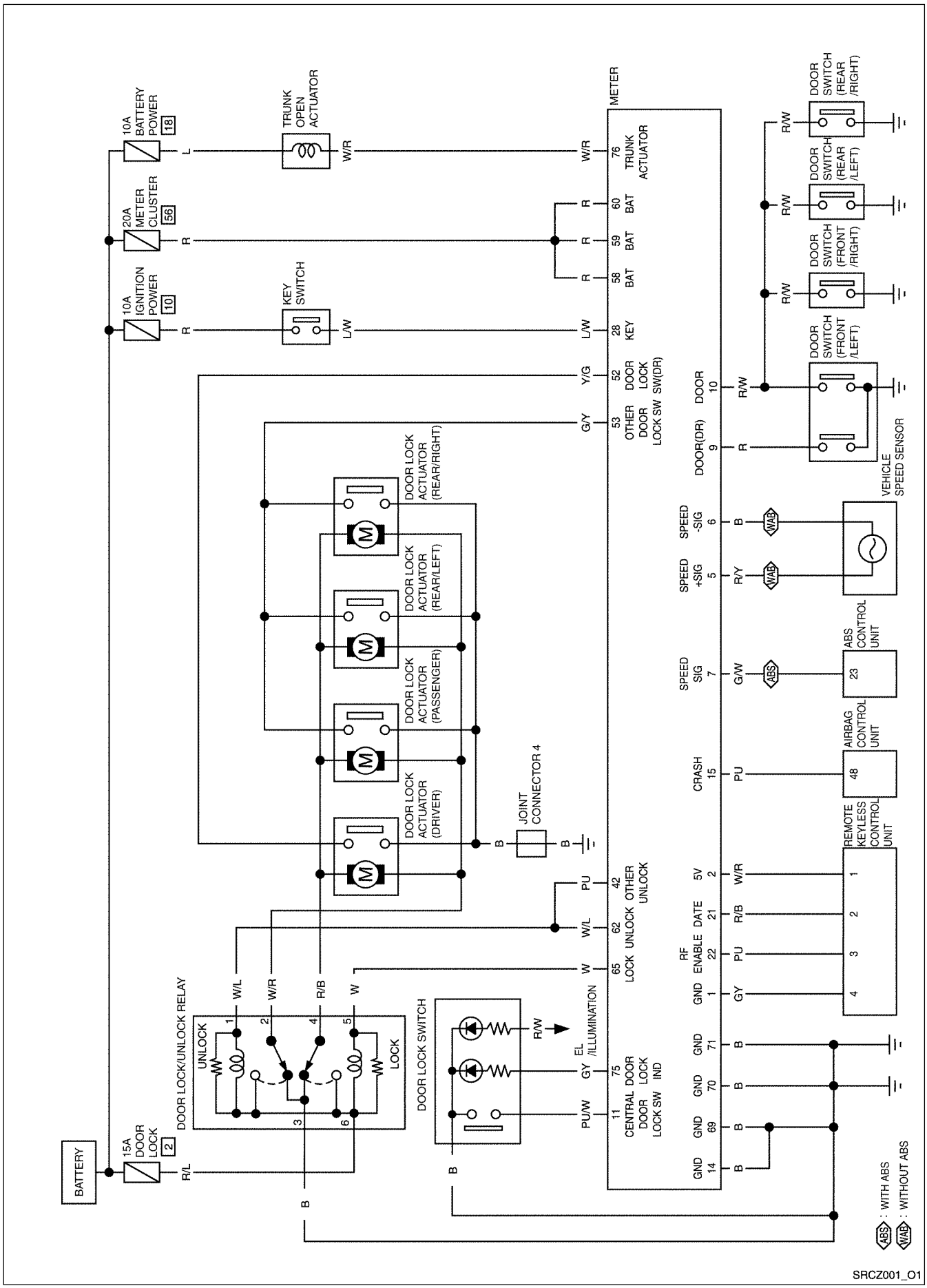
REMOTE CONTROLLER BATTERY INSPECTION

Check voltage by connecting a resistance (approximately 300Ω) so that the current value becomes about 10 mA.

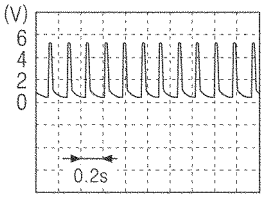
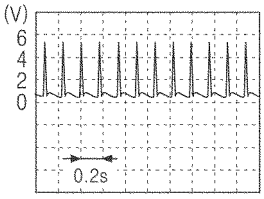
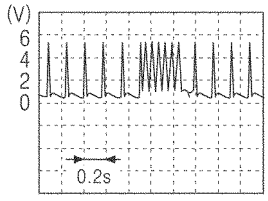
Judgement standard (Approx.):

Approx. 2.5 V - Approx. 3.0 V

Circuit Diagram



Combination Meter (Meter Control Unit) Input/Output Signal Standards

Terminal No.	Signal	Operation or condition	Standard value (V)
58, 59, 60	Battery power supply	-	Power voltage
28	IGN power supply	Ignition switch ON	Power voltage
52	Driver's door lock switch signal	Unlocked (ON)	Approx. 0 V
		Locked (OFF)	Approx. 5 V
53	Passenger's (rear) door lock switch signal	Unlocked (ON)	Approx. 0 V
		Locked (OFF)	Approx. 5 V
2	Keyless tuner power supply	-	Approx. 5 V
1	Keyless tuner ground	-	Approx. 0 V
22	Keyless tuner power supply	-	 SRDX233_D1
21	Keyless tuner signal	Waiting	 SRDX234_D1
		When signal is received	 SRDX235_D1
65	Door lock actuator lock signal	During lock operation	Varies approx. 12 V→0 V→12 V
62	Door lock actuator unlock signal	During unlock operation	Varies approx. 12 V→0 V→12 V
14, 69, 70, 71	Ground	-	Approx. 0 V

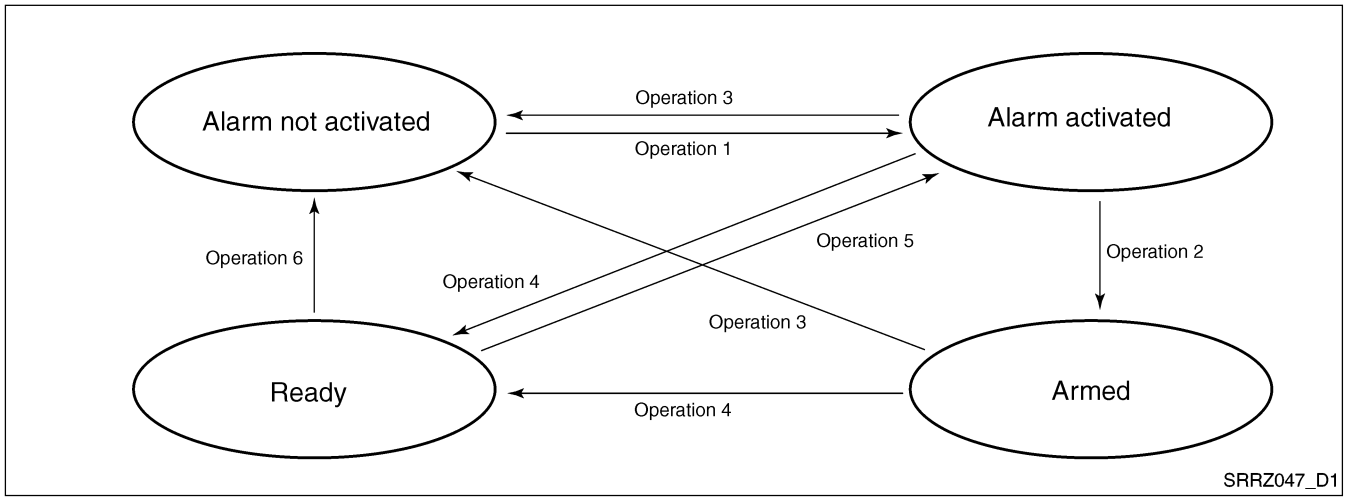
Trouble Diagnosis

Refer to COMBINATION METER - TROUBLE DIAGNOSIS (EL-69).

Description

The anti-theft system is set by operating the remote controller's lock button. There are four modes which are alarm activated mode, armed mode, alarm cancellation mode and ready mode, and the anti-theft indicator indicates the current condition according to the current mode by flashing indicator.

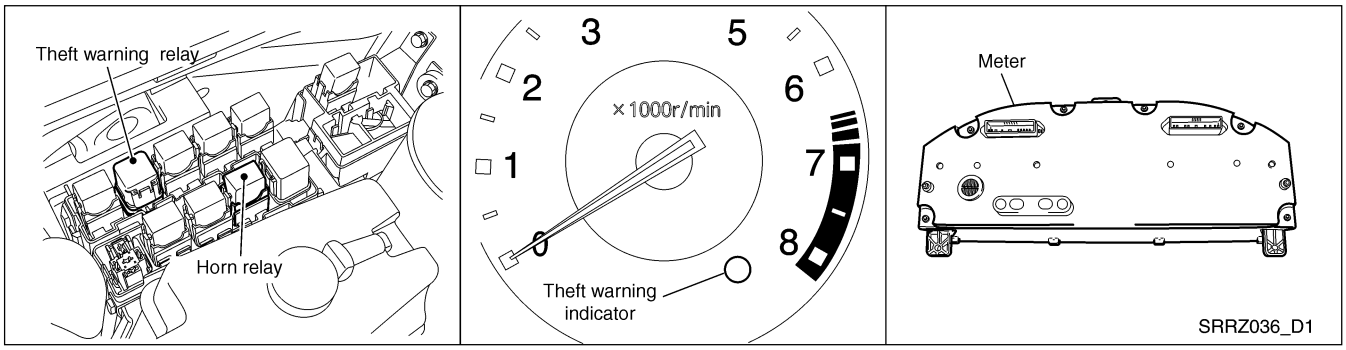
BASIC OPERATION



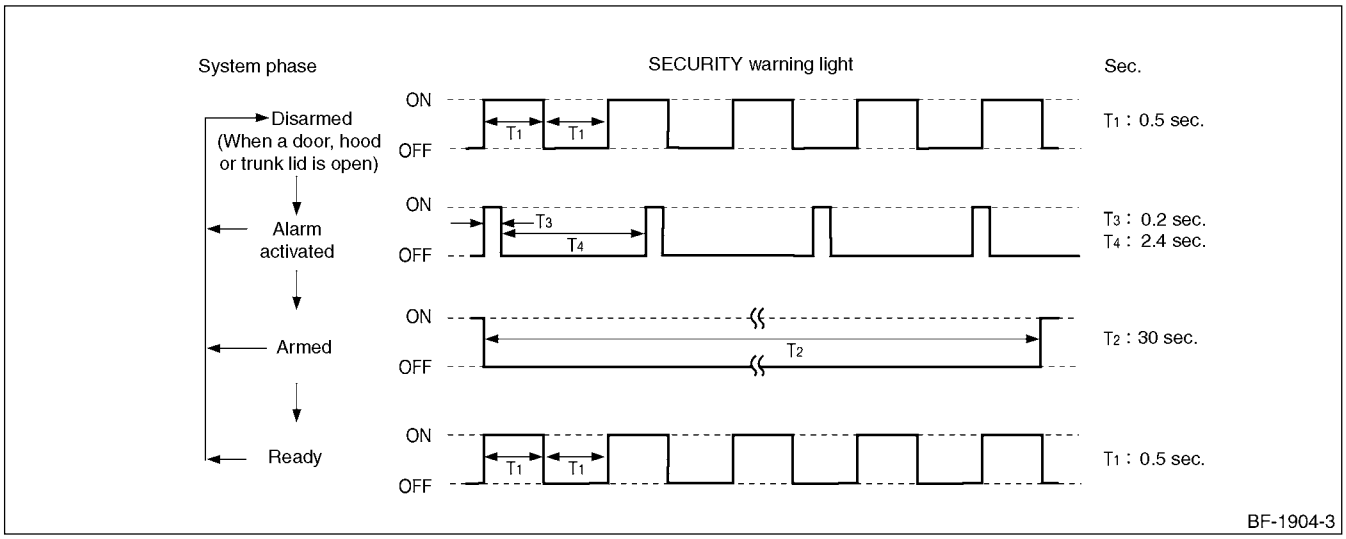
OPERATING CONDITIONS

Operation	Previous condition	Current condition	Condition and function
Operation 1	Alarm not activated	Alarm activated	● The alarm is activated when operating the door lock by the remote controller or operating the auto lock function under the following conditions: ignition switch OFF, key switch OFF, all door switch OFF, hood switch OFF, trunk lid open switch OFF and driver's door lock switch OFF.
Operation 2	Alarm activated	Armed	● The system is armed when receiving hood switch ON signal, trunk open switch ON signal or door lock switch ON signal while reconnecting the battery after the battery is discharged. ● The theft warning alarm (horn) relay and theft warning alarm (hazard) relay are turned ON for 30 seconds to indicate the theft warning state. This state remains until the cancel condition is inputted for theft warning alarm (start) cancellation relay operation.
Operation 3	Alarm activated/ Armed	Alarm not activated	● When door is unlocked using the remote controller or ● When the key switch is in the "ON" position and the ignition switch is in the "ON" position, the alarm is deactivated.
Operation 4	Alarm activated/ Armed	Ready	● When door is unlocked using the remote controller or ● When opening the trunk lid using the remote controller, it goes to the ready mode.
Operation 5	Ready	Alarm activated	● When the trunk lid open switch is turned OFF, the alarm is activated again.
Operation 6	Ready	Alarm not activated	● The alarm is deactivated when receiving door switch ON signal, hood switch ON signal, one of door lock switch ON signal, key switch ON signal or the ignition switch ON signal.

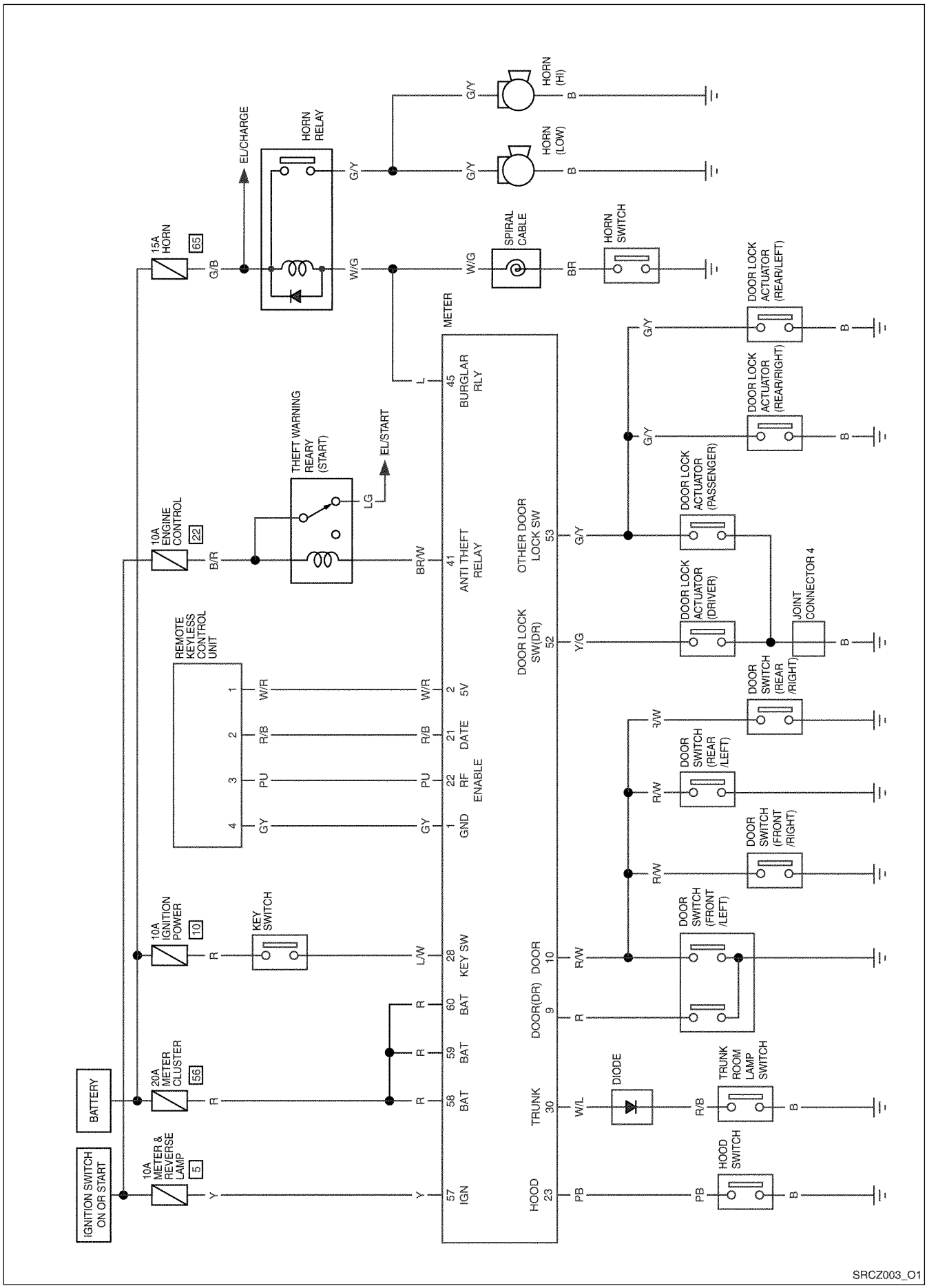
Component Parts Location



ANTI-THEFT INDICATOR OPERATION



Circuit Diagram



Meter Input/Output Signal Standards

Terminal No.	Signal	Operation or condition	Standard value (V)
58, 59, 60	Battery power supply	-	Approx. 12 V
57	IGN power supply	Ignition switch	Approx. 12 V
9	Driver's door lock switch input signal	Driver's door is closed (OFF)	Approx. 12 V
		Driver's door is opened (ON)	Approx. 0 V
10	All door's switch input signal	All doors are closed (OFF)	Approx. 12 V
		One of doors is opened	Approx. 0 V

Trouble Diagnosis

Refer to COMBINATION METER - TROUBLE DIAGNOSIS (EL-69).

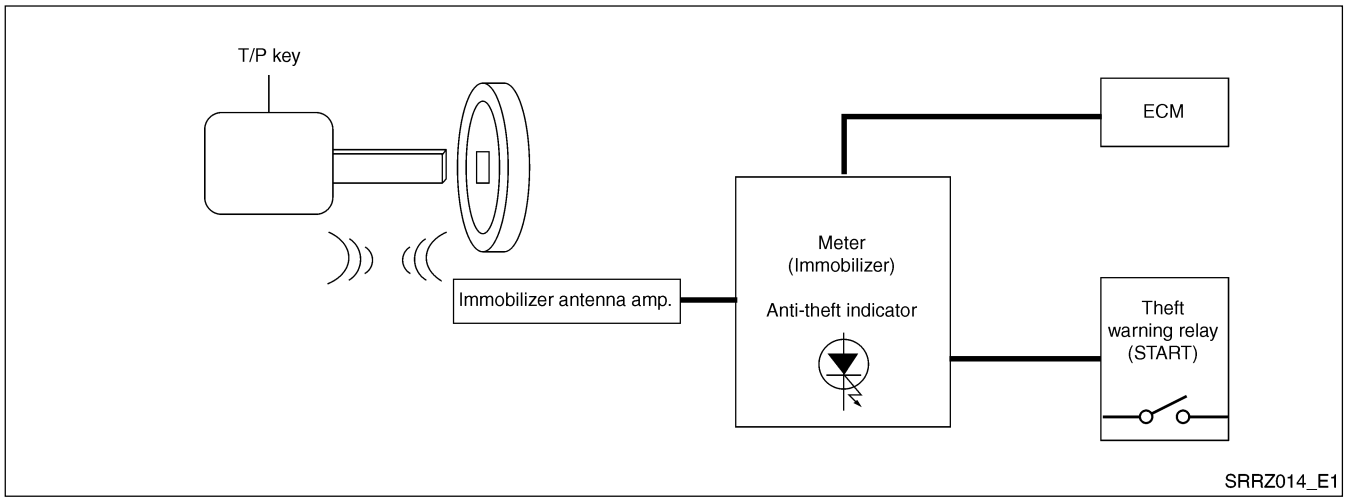
Description

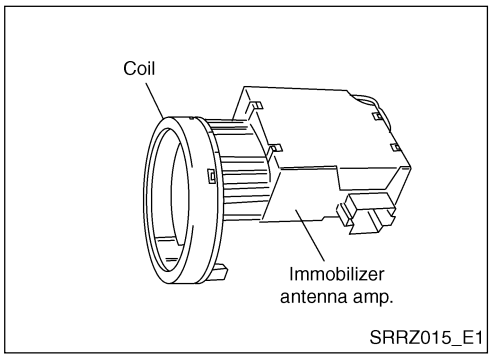
Anti-Theft System has the following immobilizer functions:

- Engine immobilizer shows high anti-theft performance to prevent engine start by other than the owner (registered key: ignition key, mechanical key).
- Only a key with key ID registered in ECM and meter can start engine. If the code data received from TP key does not match, the immobilizer antenna communicates with the meter. Then it cuts off the power to the engine start circuit and ECM controls the fuel supply so that the engine cannot be started.
- Anti-theft indicator warns outsiders that the vehicle is equipped with the anti-theft system.
- During trouble diagnosis or when the ECM or the meter have been replaced or if the additional TP key was registered, registration(*1) is required.

  (*1) : All keys kept by the owner of the vehicle should be registered.
- If the owner requires, mechanical key ID can be registered for up to 4 keys.

System Description





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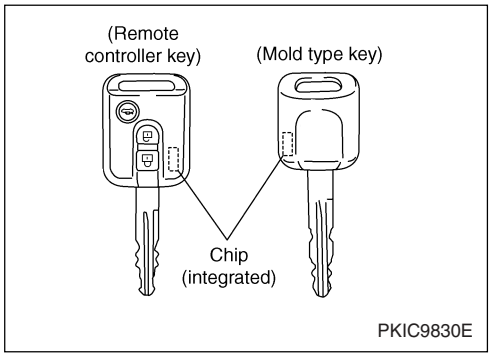

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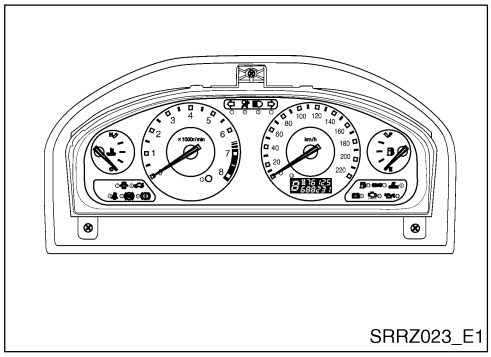
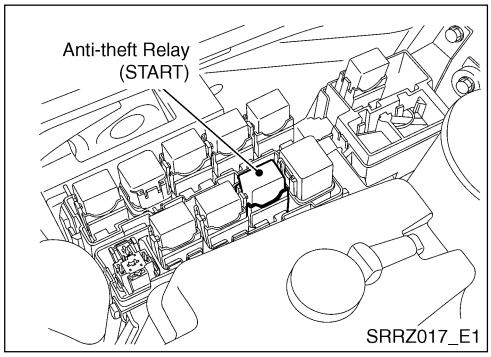

SRRZ023_E1



SRRZ017_E1

System Composition

IMMOBILIZER ANTENNA AMP.

- When the ignition switch is “ON”, the coil becomes magnetic as the power supplies to the coil and the magnetic field forms around the coil.
- The immobilizer antenna receives the ID code from the meter through the communication line and sends the meter the data according to the matching condition of the ID code received from the TP key.

TP KEY

- There is a chip integrated in the TP key. The TP key transfers the ID code to the immobilizer antenna amp. with the power of the magnetic field formed by the oil on the antenna.

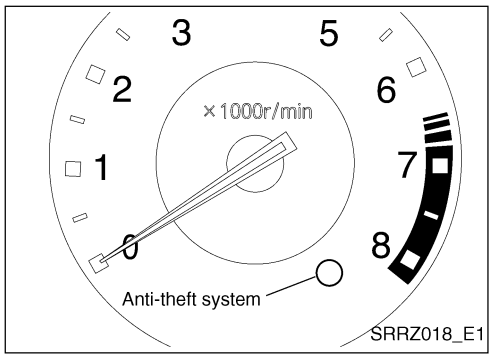
UNIFIED METER

- The unified meter receives the ID code data from the immobilizer antenna amp. and turns on the anti-theft indicator. If the ID code matches, the engine can be started through the communication with ECM and CAN. If the ID code does not match, ECM controls the fuel supply and cuts off the power supply to the anti-theft relay (START) so that the engine cannot be started.

ANTI-THEFT RELAY (START) CONTROL

- The anti-theft relay (START) control is controlled by the meter. If the ID code does not match and the communication between ECM and CAN fails, it cuts off the power supply to the anti-theft relay (START) when the ignition switch is “ON”.

Security Indicator



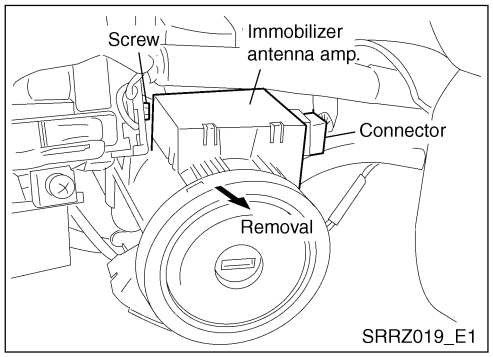
Indicator ON Condition

The immobilizer indicator operates when the ignition key is “ON”.

1. If the indicator comes on and goes off in 2~3 seconds
   The engine can be started when the system is in a normal condition.
2. If the indicator does not go off but comes on
   - The indicator comes on when there is an error with the ECM. If there is no code registered in the ECM or there is a communication malfunction between the ECM and the meter, the indicator comes on and does not go off.
3. If the indicator does not go off but flashes
   - The indicator flashes when there in an error with the TP key. If the TP key is not registered or TP key is out of the specified distance, the indicator keeps flashing.

REFERENCE:

For other “ON” conditions of the indicator, refer to the “Anti-theft indicator operation” in “Anti-theft system” (EL-161).



Removal and Installation Immobilizer Antenna Amp.

REMOVAL

CAUTION:

- **Before servicing SRS, turn ignition switch OFF, disconnect both battery cables and wait at least 3 minutes.**

1. Remove the steering column cover. Refer to ST-8.
2. Disconnect the immobiliser antenna amp. connector, remove the screw and immobiliser antenna amp.

INSTALLATION

Install in the reverse order of removal.

ID Code Entry Procedure When Replacing Parts

TP KEY REPLACEMENT/ADDITION MODE

Refer to CONSULT-II OPERATION MANUAL NATS.

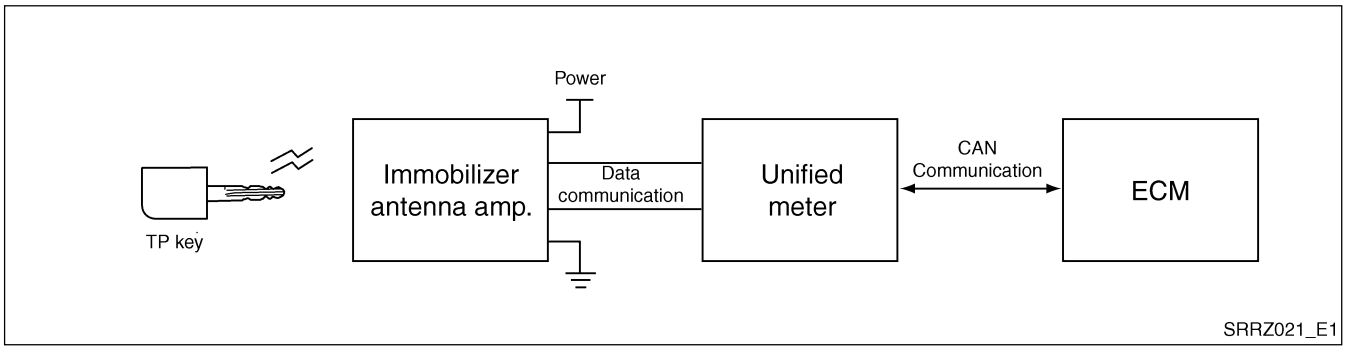
METER REPLACEMENT MODE

Refer to CONSULT-II OPERATION MANUAL NATS.

ECM REPLACEMENT MODE

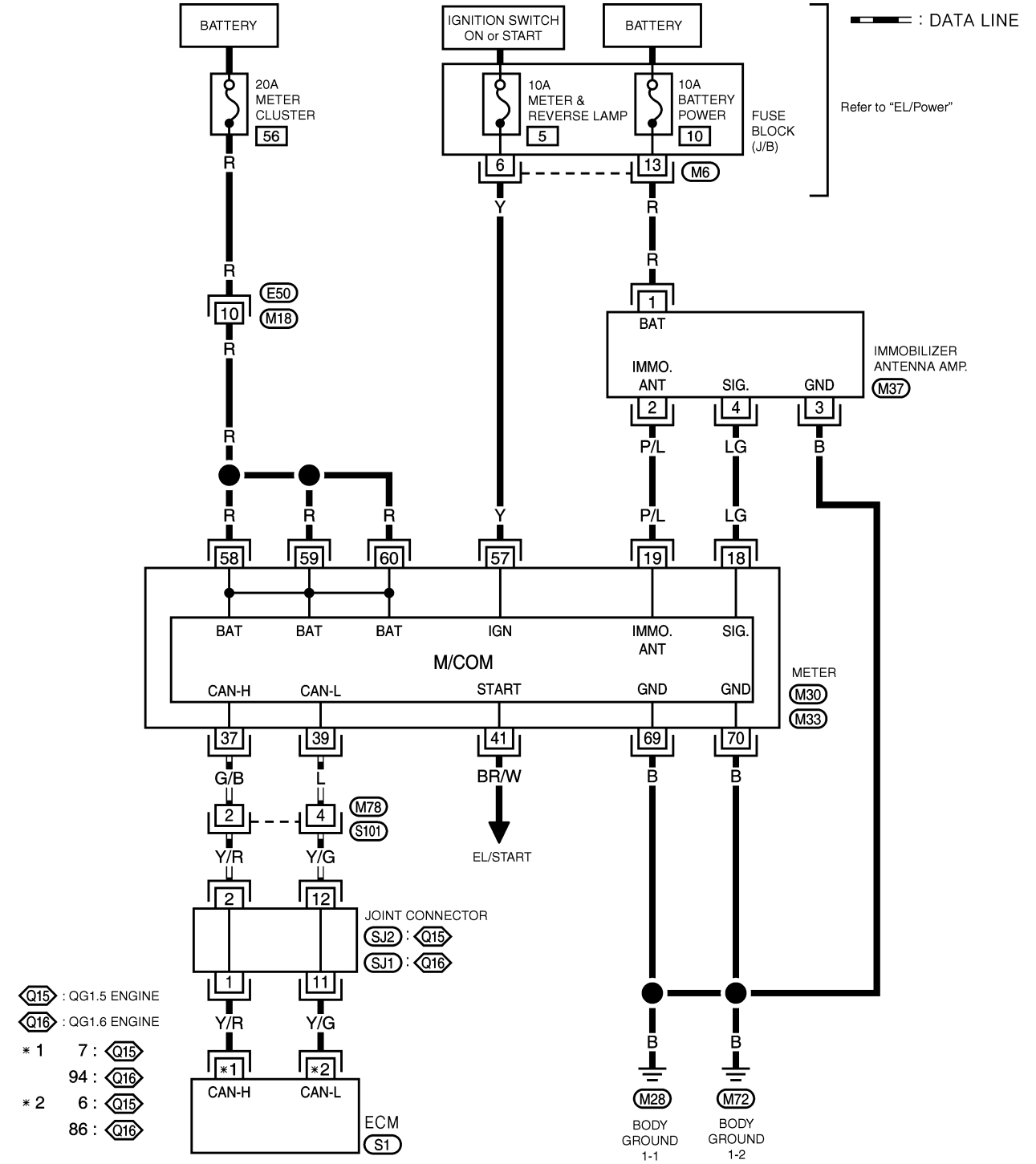
Refer to CONSULT-II OPERATION MANUAL NATS.

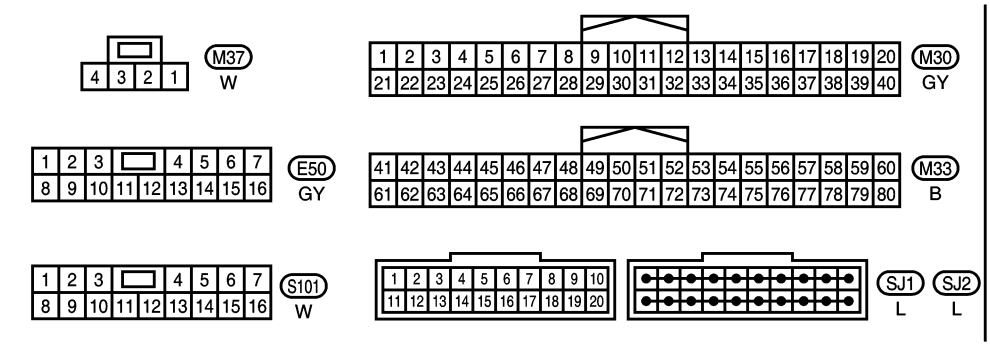
Normal Engine Starting Procedure



1. When the ignition switch is “ON”, ECM sends the security code to the meter and requests for the reply from the meter.
2. The meter calculate the security code and send the result to the ECM.
3. The ECM compares the result with its calculation result. If the result is OK, the ECM replies with OK and the engine can be started.

Wiring Diagram — EL/Immobilizer





Refer to "FUSE BLOCK (J/B)"
M6

Refer to "ELECTRICAL UNIT"
S1

SRWZ044_O1

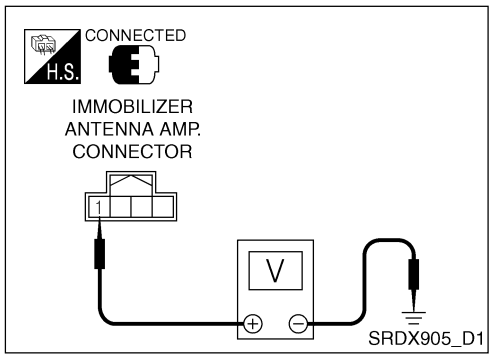
Terminals and Reference Values for Meter

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
57	Y	IGN power supply	ON	-	Battery voltage
58, 59, 60	R	Battery power supply	OFF	-	Battery voltage
41	BR/W	Anti-theft relay signal	ON	-	Battery voltage
37	G/B	CAN-H	-	-	-
39	L	CAN-L	-	-	-
18	LG	Immobilizer antenna amp. signal	-	Ignition switch: OFF → ON	Pointer of analog tester moves when the ignition switch is "ON".
19	P/L	Immobilizer antenna amp. signal	-	Ignition switch: OFF → ON	Pointer of analog tester moves when the ignition switch is "ON".
67, 70	B	Ground	-	-	0 (V)

Trouble Diagnosis

Refer to COMBINATION METER - TROUBLE DIAGNOSIS (EL-69).

Immobilizer Antenna Inspection



1.Check Power Supply Circuit Of Immobilizer

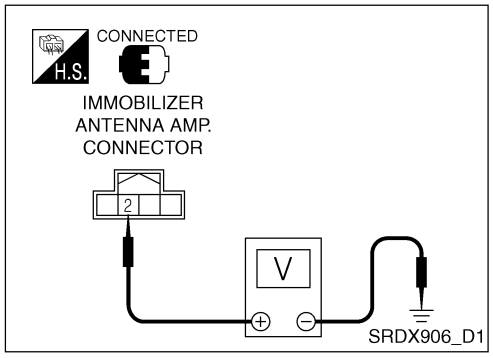
Check voltage between immobilizer antenna amp. harness connector terminal 1 and ground with tester.

1 - Ground : Power voltage

OK or NG

OK → GO TO 2.

NG → Check harness for open or short between immobilizer antenna amp. and fuse.



2. Check Immobiliser Antenna Amp. Signal Line- 1

Check voltage between immobilizer antenna amp. harness connector terminal 2 and ground with analogue tester.

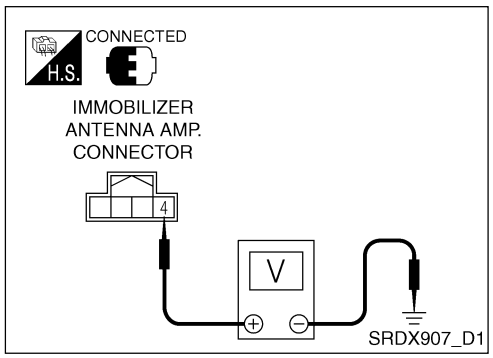
Before inserting mechanical key in ignition switch: Approx. 0 V

After inserting mechanical key in ignition switch: Pointer of tester should move.

OK or NG

OK → GO TO 3.

NG → Check harness for open or short between immobilizer antenna amp. and meter.



3. Check Immobiliser Antenna Amp. Signal Line- 2

Check voltage between immobilizer antenna amp. harness connector terminal 4 and ground with analogue tester.

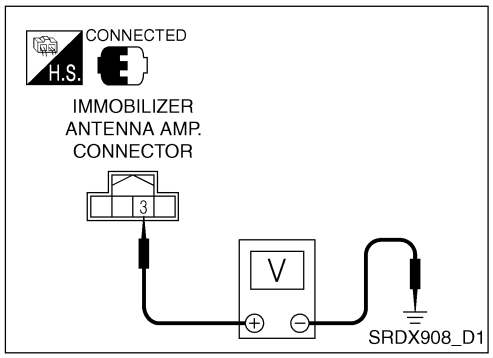
Before inserting mechanical key in ignition switch: Approx. 0 V

After inserting mechanical key in ignition switch: Pointer of tester should move.

OK or NG

OK → GO TO 4.

NG → Check harness for open or short between immobilizer antenna amp. and meter.



4. Check Immobiliser Antenna Amp. Ground Line Circuit

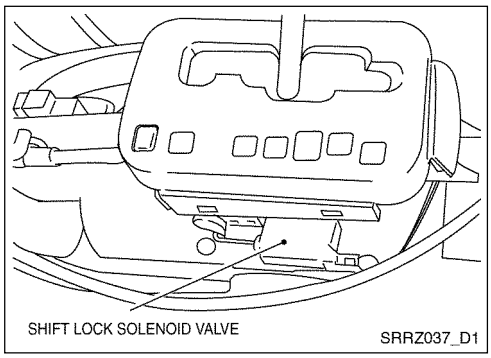
1. Turn ignition switch OFF.
2. Check continuity between immobiliser antenna amp. connector terminal 3 and ground.

3 - Ground : Continuity should exist.

OK or NG

OK → Immobiliser antenna amp. is malfunctioning.

NG → Check harness for open or short between immobilizer antenna amp. and ground.



Description

When combination meter (BCM integrated) detects the P range signal and the brake switch signal, it operates the solenoid valve to control the shift lever from P to R range or from N to R range.

Basic Operation

1. P Range Lock Control

When the brake switch signal is detected by depressing the brake pedal, the shift lock solenoid valve operates so that the shift from P range is possible while the ignition switch is “ON”.

2. N Range Lock Control

If the vehicle speed exceeds 14 km/h, the shift lock solenoid valve operates so that the shift from N to R range is not possible.

If the vehicle speed becomes below 8 km/h, the shift lock solenoid valve is disengaged so that the shift is possible.

3. 3-minute Timer Control

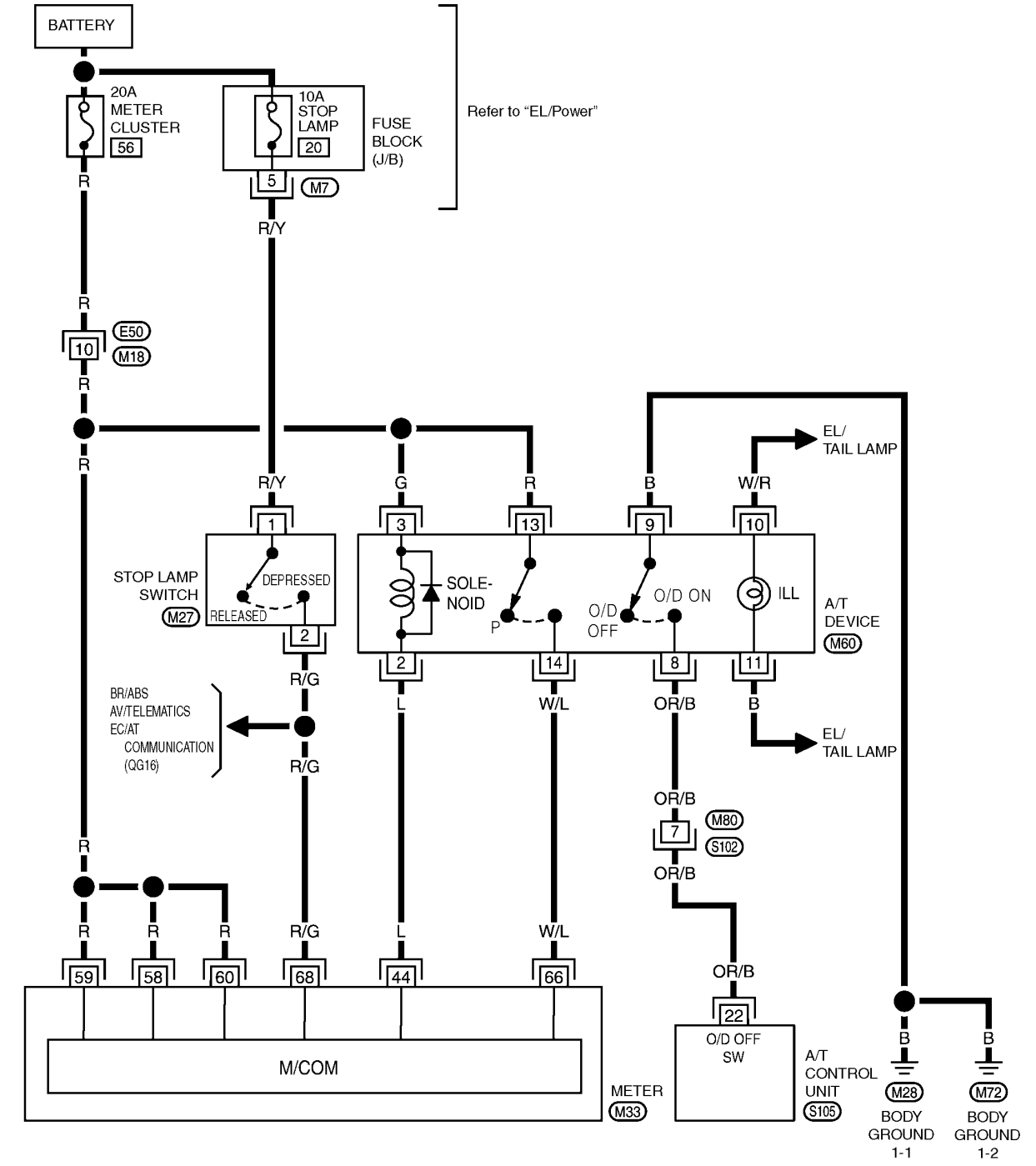
The shift from N to P range is possible within 3 minutes after turning the ignition switch from “ON” to “OFF”.

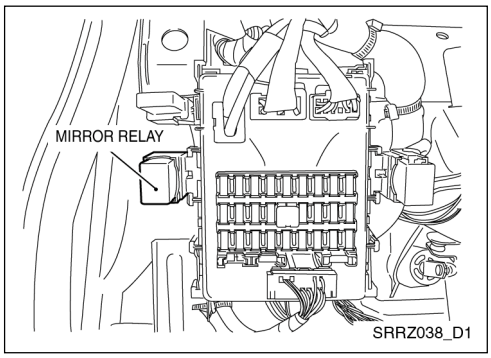
Operation Check

Refer to the “INSPECTION TIPS” (AT-115).

Wiring Diagram

AT/Device

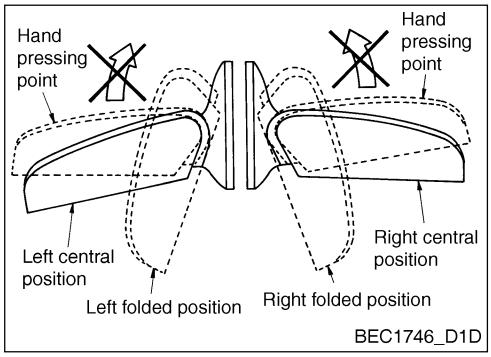




Timer Function

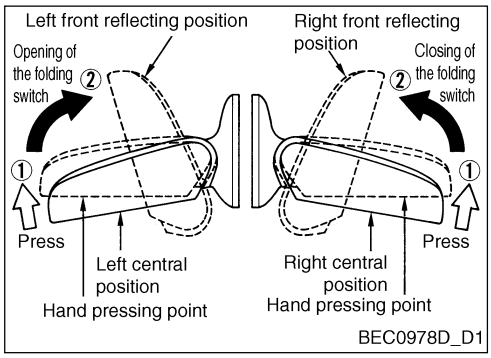
The operation of mirrors can be continued for 30 seconds even after turning the ignition key switch to “OFF” position with the power mirror timer function.

The power supplies to the mirror switch by operating the mirror relay when the ignition key switch is “OFF”.



Precautions in Handling Electrical Folding Mirror

- Do not attempt to fold the power folding mirror manually. If have to, always fold it until it clicks to the folded position. (When the mirror is unfolded to its original position by hand, there may be vibration during driving, chattering or no folding operation.)

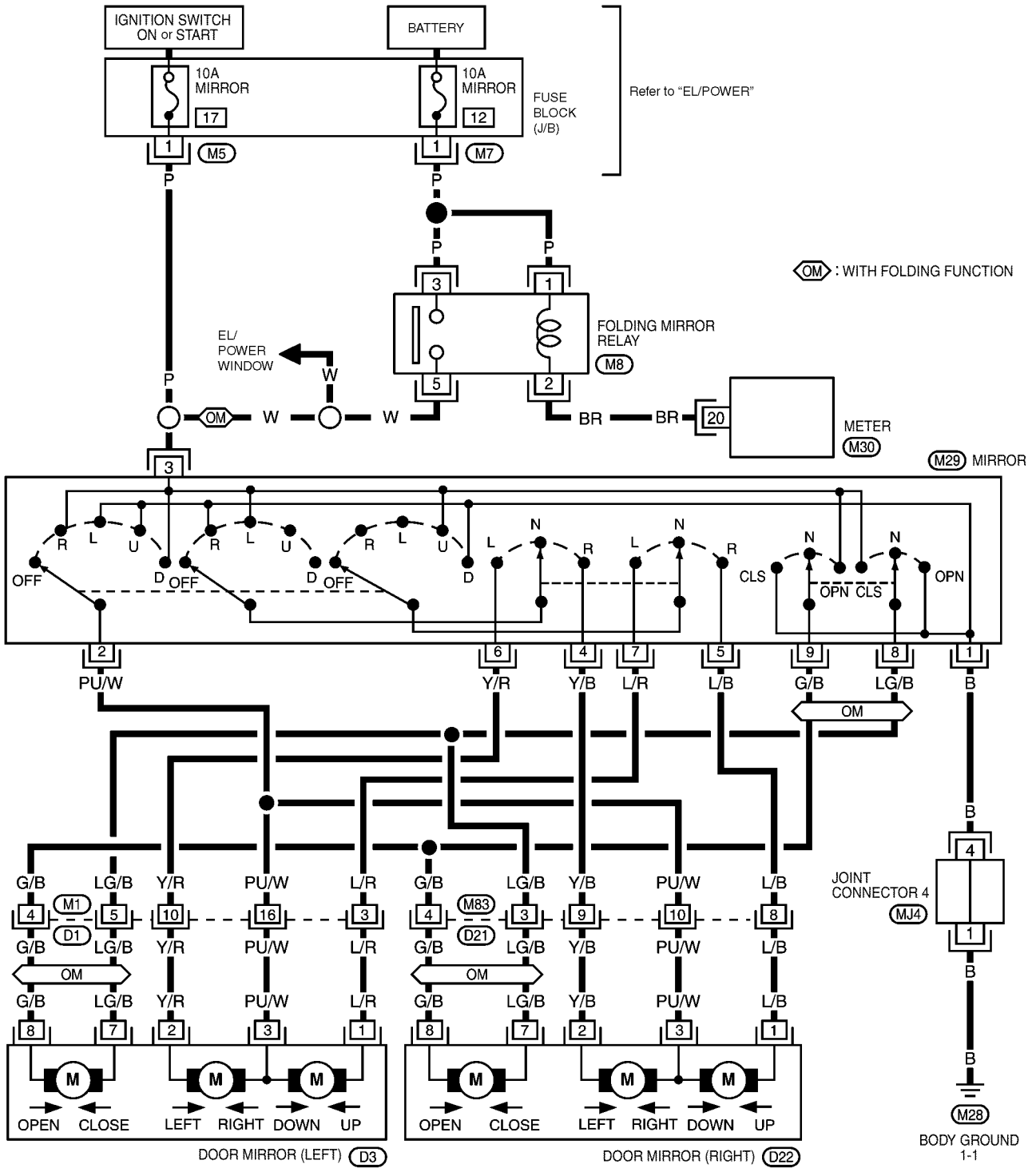


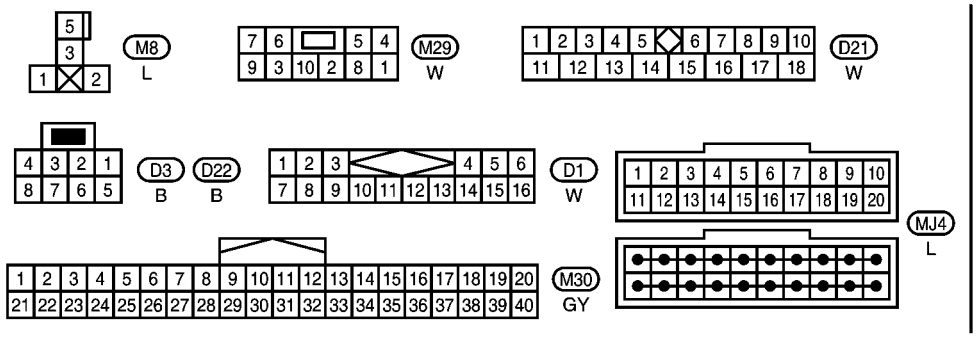
CAUTION:

- **Do not fold the mirror assembly towards the front too much, it may brake.**
- **When folding the mirror with mirror folding switch, a “click” may be heard. This is not a malfunction.**
- **The left and right rearview mirrors are installed in little different positions from the center of the vehicle. The right mirror folds a little slower than the left mirror.**
- **When the mirror is folded towards vehicle front by hand and press the folding switch towards opening direction, the mirror body moves towards vehicle front but it is not a malfunction. Fold the mirrors all the way (towards rear of the vehicle) with the switch.**
- **The power folding mirror sometimes may not operate it the switch is operated over 5 times consecutively (to prevent from overheating). Let the system cool for about 5 minutes and it will come back normal.**

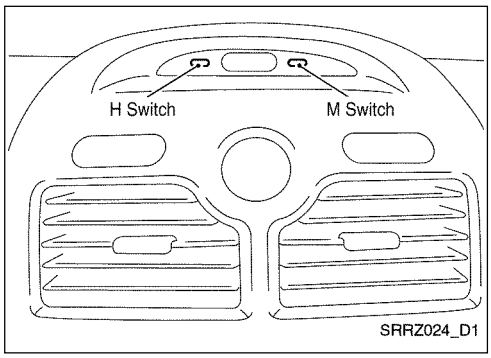
Wiring Diagram

EL/Mirror



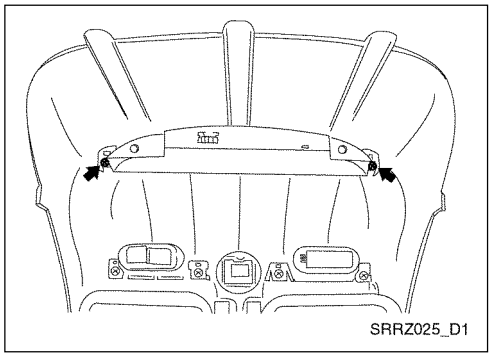


SRWZ036_O1



Clock Adjustment

- To adjust the hour, press the “H” adjusting button. To adjust the minutes, press the “M” button.



Removal • Installation of Clock

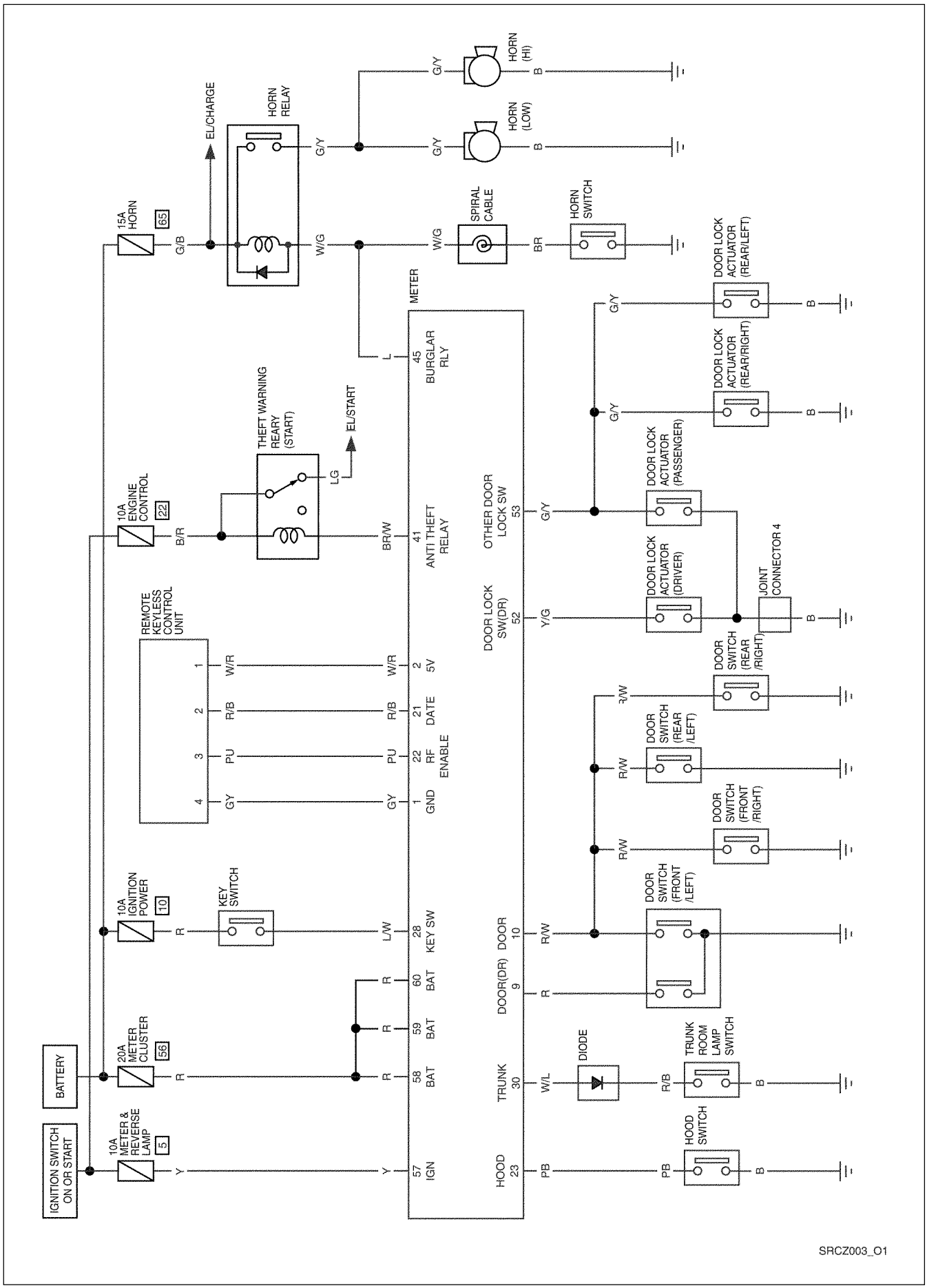
REMOVAL

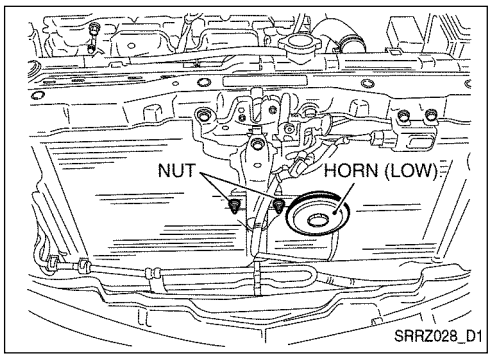
1. Remove the clluster lid C (refer to BT-40).
2. Remove screws (2) and remove the clock.

INSTALLATION

Install in the reverse order of removal.

Circuit Diagram





Removal and Installation

REMOVAL

1. Remove the radiator grille.
2. Remove the horn mounting nuts.

CAUTION:

Use FT bolts for horn installation.

INSTALLATION

Installation is in the reverse order of removal.

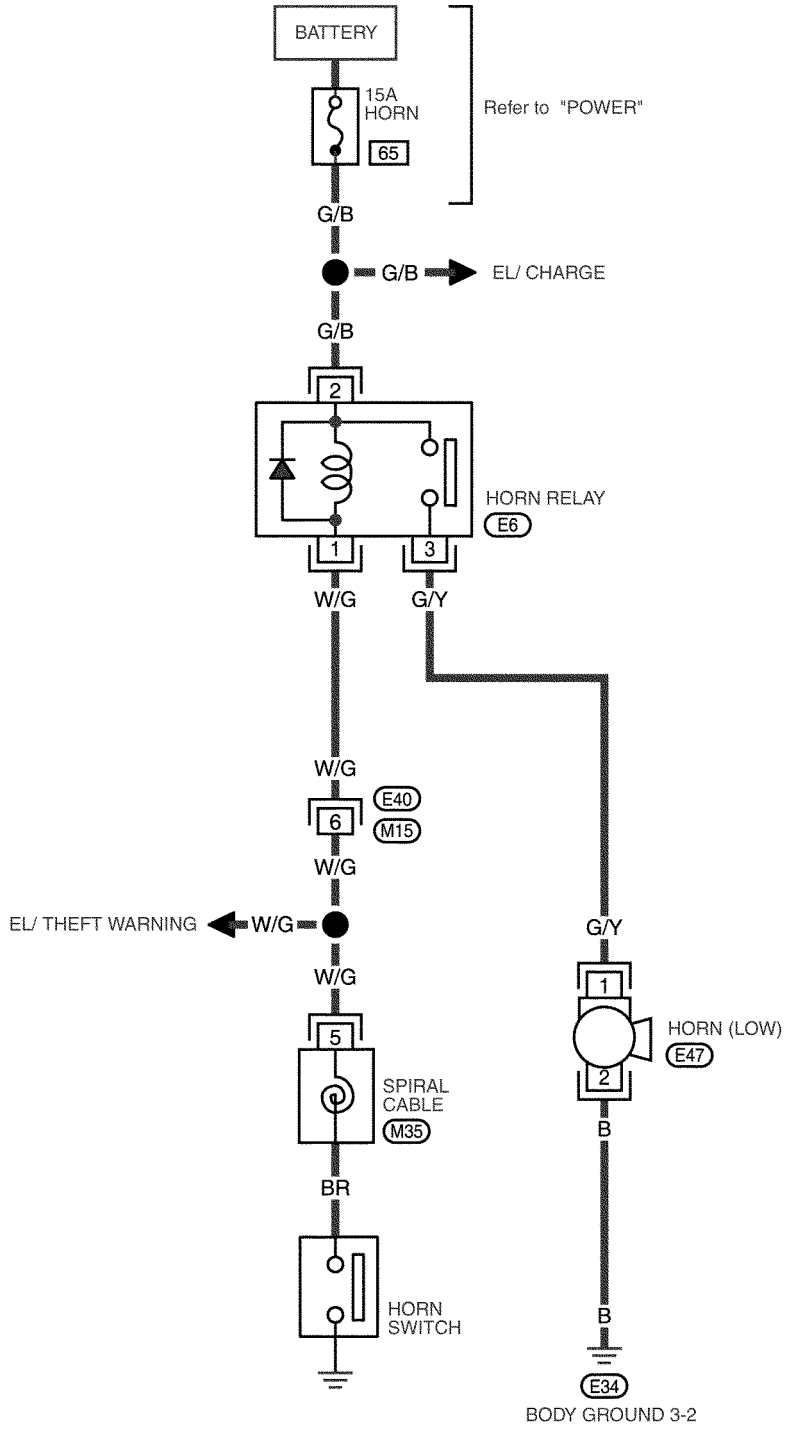
Horn mounting nut

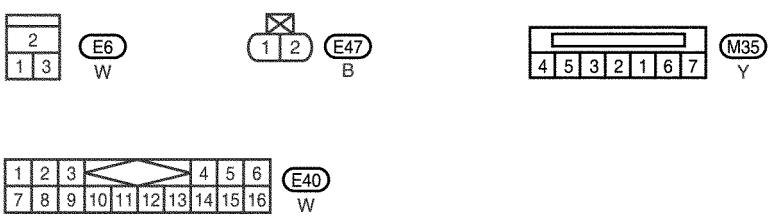
Tightening torque:

15.7 - 18.6 N•m (1.6 - 1.9 kgf•m)

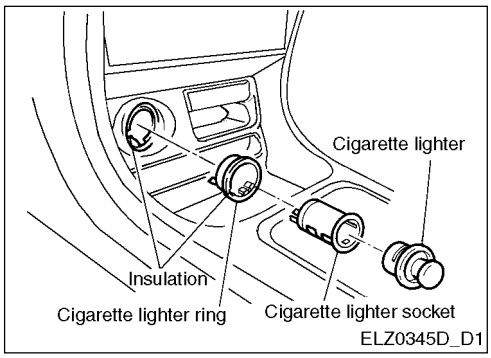
Wiring Diagram

EL/Horn





SRWZ039_O1



Removal • Installation of Cigarette Lighter

REMOVAL

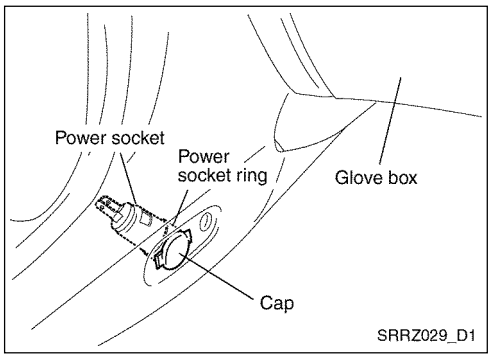
1. Remove the A/T finisher or M/T finisher. Refer to “Instrument Assembly” (BT-40).
2. Release the screws (2 EA) that holds the cluster lid C lower. Remove the cluster lid C lower.
3. Pull out the cigarette lighter.
4. Push the cigarette lighter socket from the back of the cluster lid C lower and remove.
5. Remove the cigarette lighter ring.

INSTALLATION

Install in the reverse order of removal cautioning as below.

CAUTION:

- **To install, align the cigarette lighter ring with open ends of the cluster lid C lower.**



Removal • Installation of Power Socket

REMOVAL

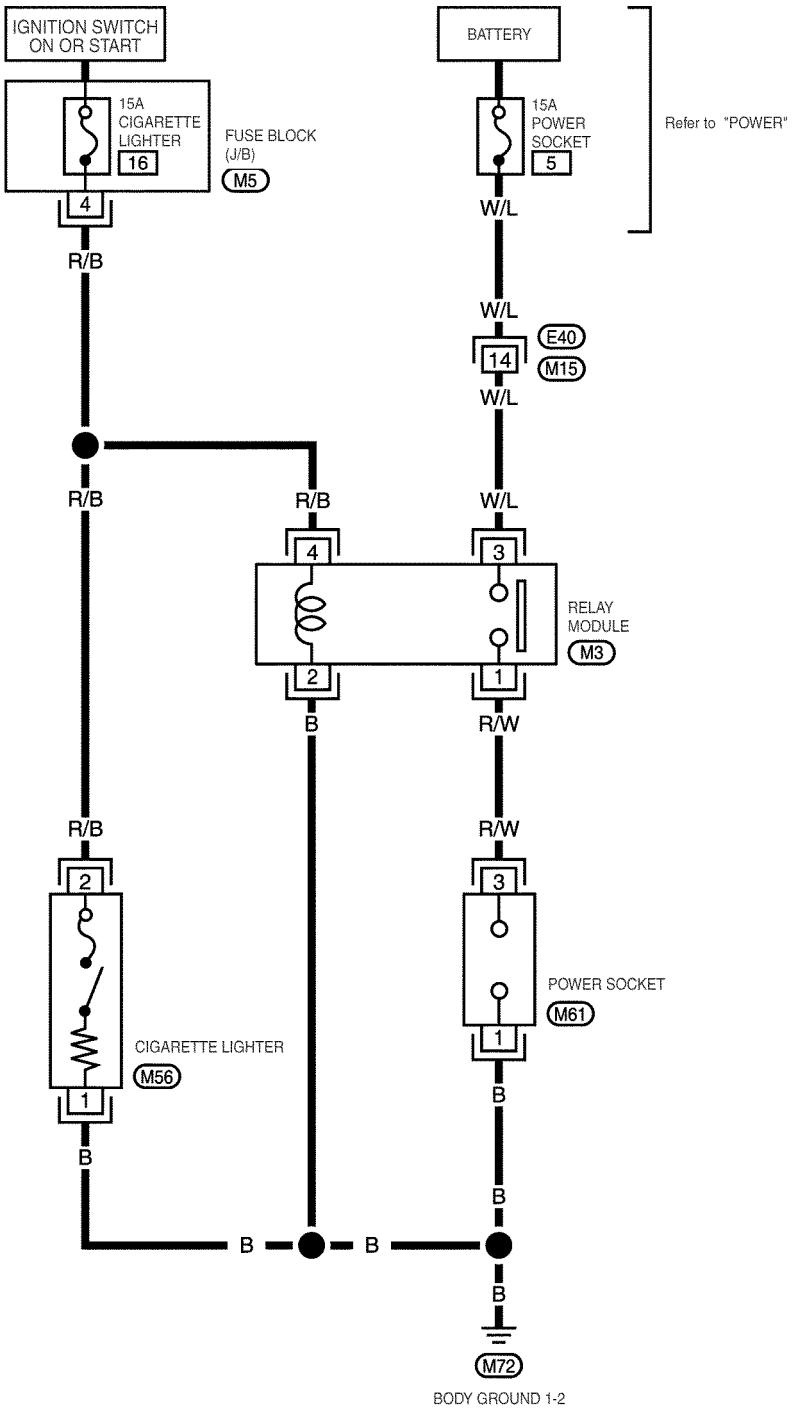
Open the power socket cap and remove the power socket by pressing the power socket ring’s groove using a flat-bladed screwdriver.

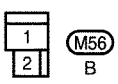
INSTALLATION

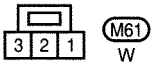
Install in the reverse order of removal cautioning as below.

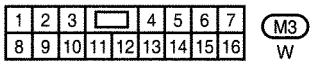
Wiring Diagram

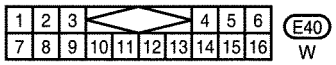
EL/Power Socket





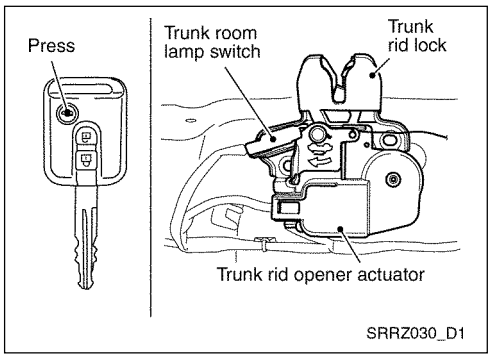






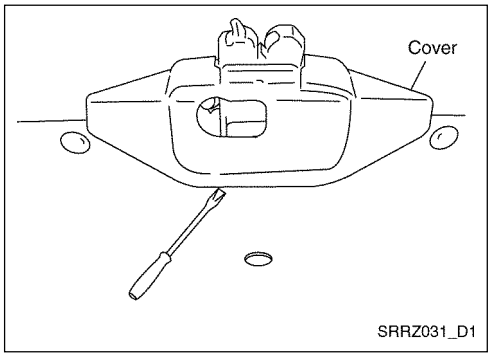
REFER TO FUSE BLOCK (J/B)
M5

SRWZ005_O1



Operation

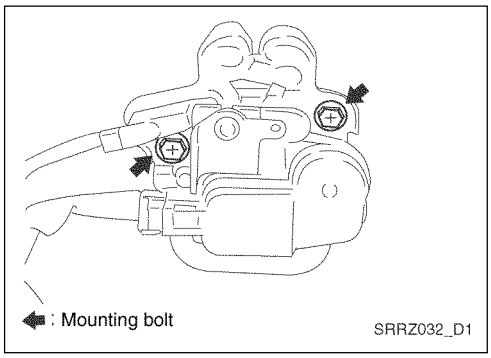
- When pressing the trunk open button in the remote controller, the remote keyless entry receiver detects the signal and sends it to BCM (meter integrated). Then, the trunk lid opener actuator is operated by the BCM signal.
- There is an phosphorescent emergency release lever to release the trunk lid lock inside the trunk.



Removal • Installation

REMOVAL

1. Remove the cover of the trunk lid opener using a flat bladed screwdriver.
2. Remove both bolts and then remove the trunk lid opener actuator.
3. Disconnect the connected harness connector.



INSTALLATION

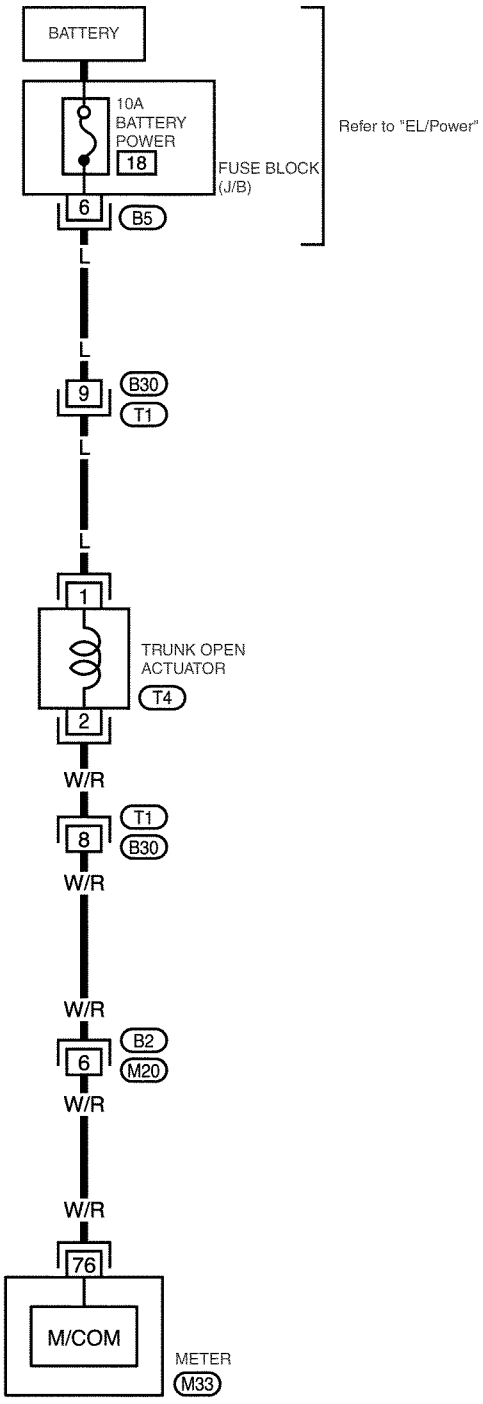
Install in the reverse order of removal.

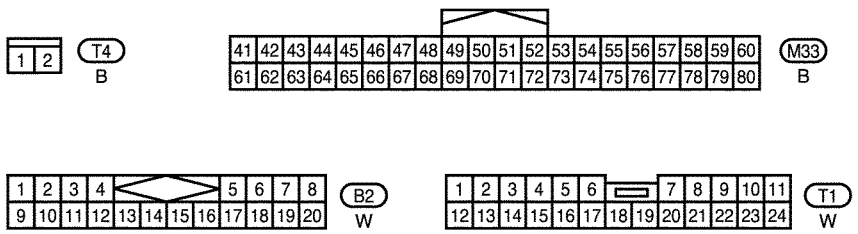
Trunk lid opener mounting bolt

Tightening torque:

5.8 N•m (0.59 kg•m)

Wiring Diagram



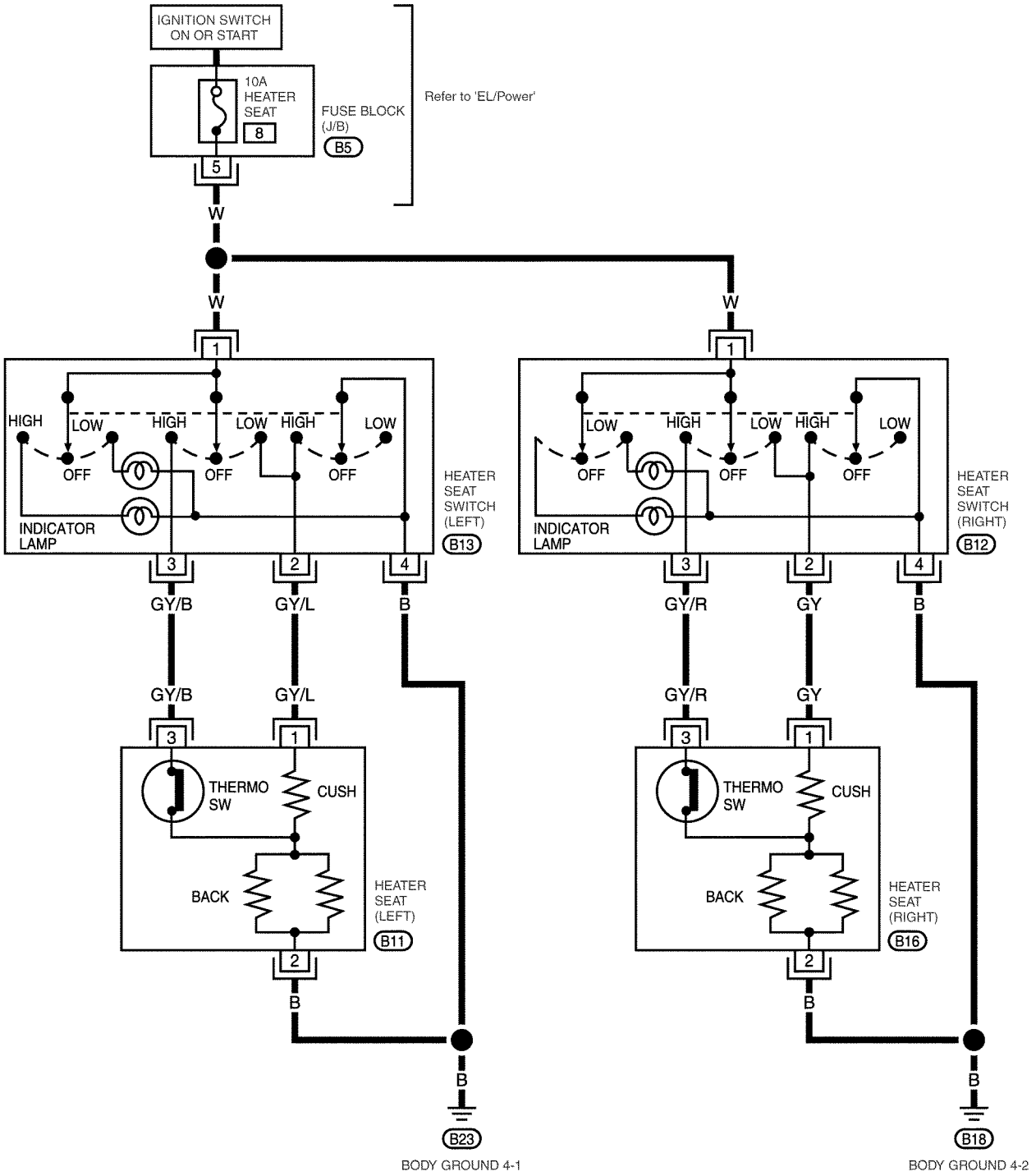


REFER TO FUSE BLOCK (J/B)

B5

SRWZ066_O1

Wiring Diagram — EL/Heater Seat



REFER TO FUSE BLOCK (J/B)
B5

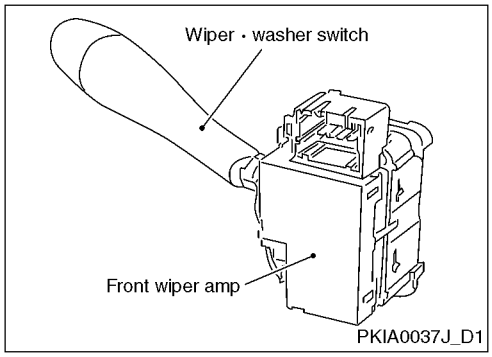
SRWZ004_O1

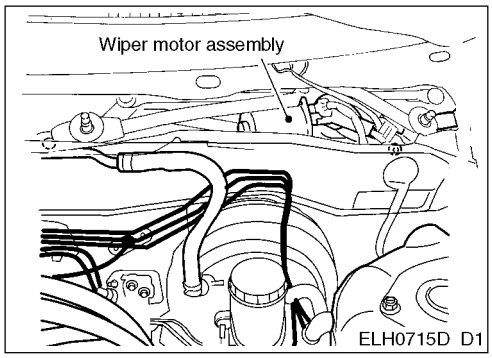
System - General

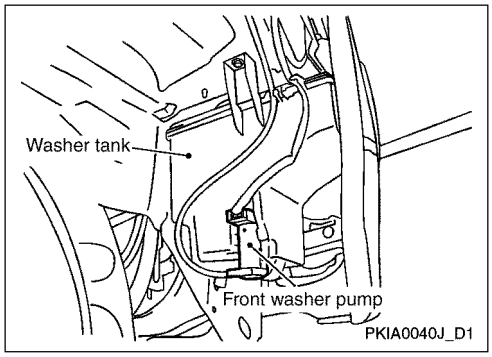
FRONT WIPER INTERMITTENT OPERATION

The intermittent operation can set the wiper motor to operate the wiper arm within the intervals 2 to 13 seconds. It is controlled by the wiper amp in the wiper switch and when the wiper switch is at INT, ground is supplied to the wiper amp. The operation interval is controlled by the signal transmitted to the wiper amp from the wiper volume switch in the wiper switch.

Components Location

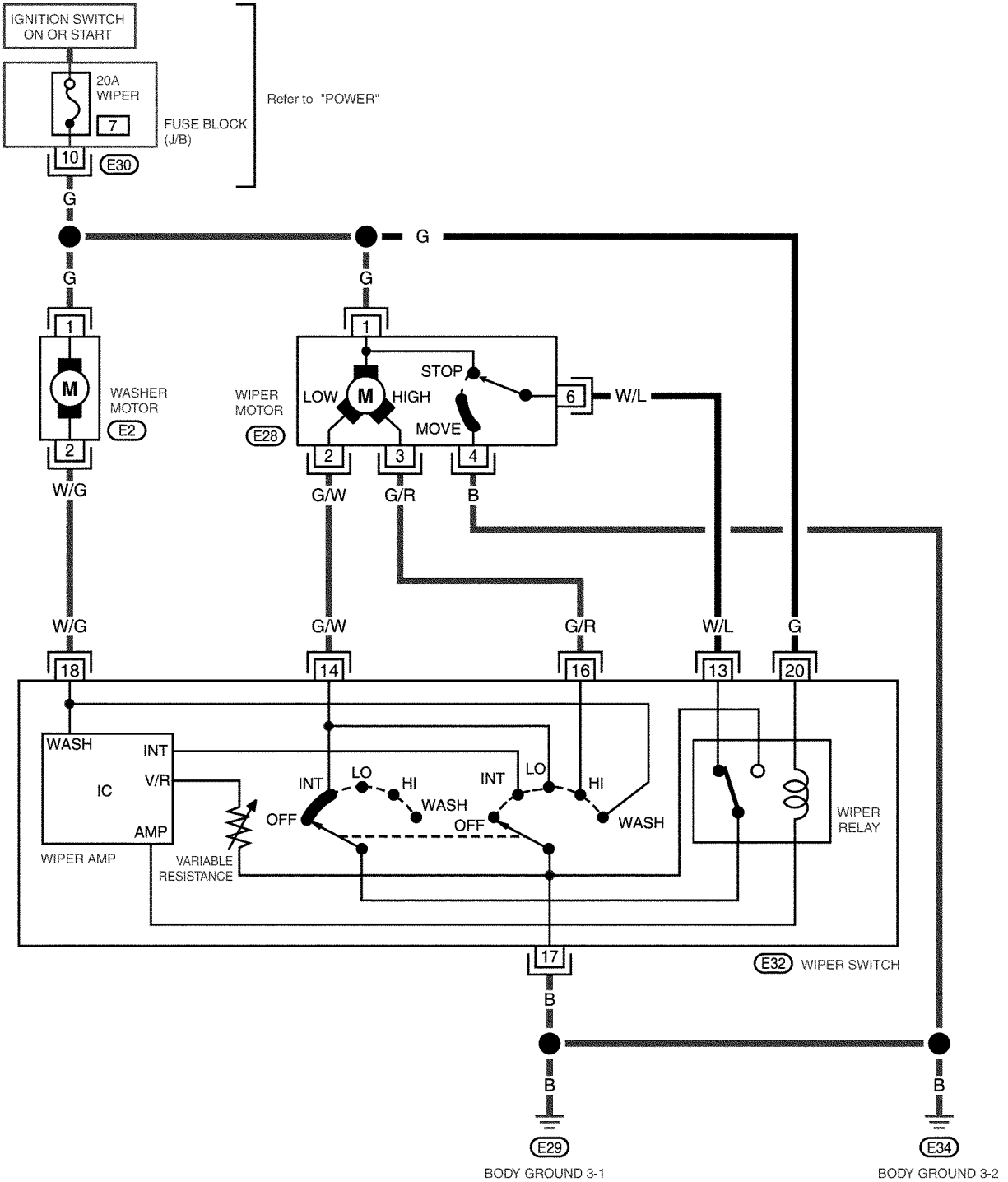




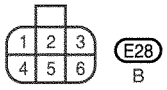


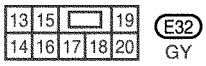
Wiring Diagram

EL/Wiper



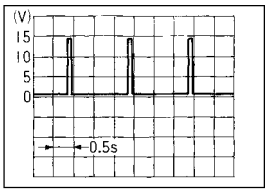
REFER TO FUSE BLOCK (J/B)
E30





SRWZ037_O1

Front Wiper Amp Input/Output Signal Standards

Terminal No.	Signal	Measurement			Standard value (V)
		Key switch	Operation		
13	Wiper motor position detect signal	ON	Wiper switch: LO position		 ELH0542D_D1
16	Wiper motor HI signal	ON	Wiper switch	OFF	Approx. 12
				HI	Approx. 0
14	Wiper motor LO signal	ON	Wiper switch	OFF	Approx. 12
				LO	Approx. 0
17	Ground	ON	-		Approx. 0
18	Washer operation detect signal	ON	Washer motor OFF		Approx. 0
			Washer motor ON		Approx. 12
20	Ignition power	ON	-		Approx. 12