

SECTION **BL**

BODY, LOCK & SECURITY SYSTEM

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PRECAUTIONS

PRECAUTIONS

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

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The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

The vehicle may be equipped with a passenger air bag deactivation switch. Because no rear seat exists where a rear-facing child restraint can be placed, the switch is designed to turn off the passenger air bag so that a rear-facing child restraint can be used in the front passenger seat. The switch is located in the center of the instrument panel, near the ashtray. When the switch is turned to the ON position, the passenger air bag is enabled and could inflate for certain types of collision. When the switch is turned to the OFF position, the passenger air bag is disabled and will not inflate. A passenger air bag OFF indicator on the instrument panel lights up when the passenger air bag is switched OFF. The driver air bag always remains enabled and is not affected by the passenger air bag deactivation switch.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SRS section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.
- The vehicle may be equipped with a passenger air bag deactivation switch which can be operated by the customer. When the passenger air bag is switched OFF, the passenger air bag is disabled and will not inflate. When the passenger air bag is switched ON, the passenger air bag is enabled and could inflate for certain types of collision. After SRS maintenance or repair, make sure the passenger air bag deactivation switch is in the same position (ON or OFF) as when the vehicle arrived for service.

Service Notice

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- When removing or installing various parts, place a cloth or padding on the vehicle body to prevent scratches.
- Handle trim, molding, instruments, grille, etc. carefully during removing or installing. Be careful not to soil or damage them.
- Apply sealing compound where necessary when installing parts.
- When applying sealing compound, be careful that the sealing compound does not protrude from parts.
- When replacing any metal parts (for example body outer panel, members, etc.), be sure to take rust prevention measures.

PREPARATION

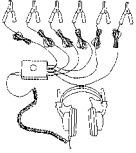
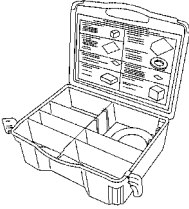
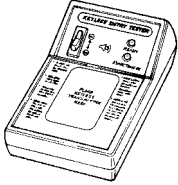
PREPARATION

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Special Service Tools

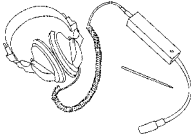
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The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
<p>— (J-39570) Chassis Ear</p>  <p>ABT465</p>	<p>Locating the noise</p>
<p>— (J-43980) Nissan Squeak and Rattle Kit</p>  <p>ABT474</p>	<p>Locating the noise</p>
<p>— (J-43241) Remote keyless entry tester</p>  <p>LEL946A</p>	<p>Used to test keyfobs</p>

Commercial Service Tools

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Tool name (Kent-Moore No.)	Description
<p>Engine Ear (J-39565)</p>  <p>ABT466</p>	<p>Locating the noise</p>

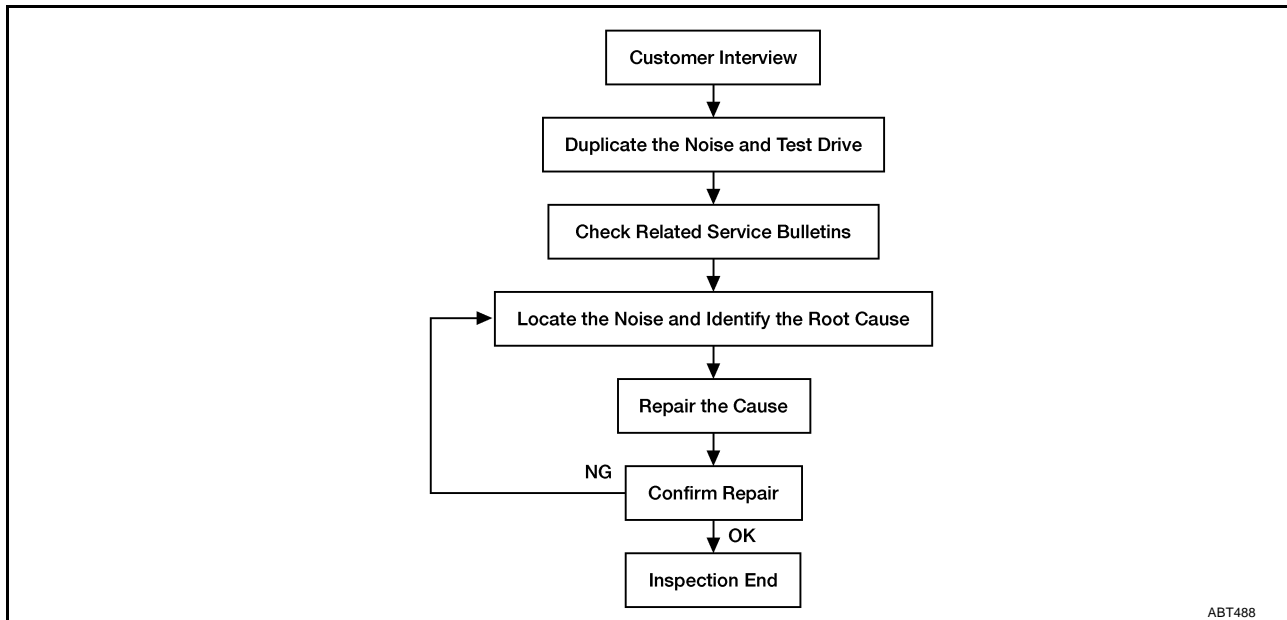
SQUEAK AND RATTLE TROUBLE DIAGNOSIS

SQUEAK AND RATTLE TROUBLE DIAGNOSIS

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Squeak and Rattle Trouble Diagnoses WORK FLOW

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Customer Interview

Interview the customer, if possible, to determine the conditions that exist when the noise occurs. Use the Diagnostic Worksheet during the interview to document the facts and conditions when the noise occurs and any customer comments; refer to [BL-9, "DIAGNOSTIC WORKSHEET"](#). This information is necessary to duplicate the conditions that exist when the noise occurs

- The customer may not be able to provide a detail description or location of the noise. Attempt to obtain all the facts and conditions that exist when the noise occurs (or does not occur).
- If there is more than one noise in the vehicle, be sure to diagnose and repair the noise that the customer is concerned about. This can be accomplished by test driving the vehicle with the customer.
- After identifying the type of noise, isolate the noise in terms of its characteristics. The noise characteristics are provided so the customer, service adviser and technician are all speaking the same language when defining the noise.
 - Squeak-(Like tennis shoes on a clean floor)
 - Squeak characteristics include the light contact / fast movement / brought on by road conditions / hard surfaces = higher pitch noise / softer surfaces = lower pitch noises / edge to surface = chirping.
 - Creak-(Like walking on an old wooden floor)
 - Creak characteristics include firm contact / slow movement / twisting with a rotational movement / pitch dependent on materials / often brought on by activity.
 - Rattle-(Like shaking a baby rattle)
 - Rattle characteristics include the fast repeated contact / vibration or similar movement / loose parts / missing clip or fastener / incorrect clearance.
 - Knock-(Like a knock on a door)
 - Knock characteristics include hollow sound / something repeating / often brought on by driver action.
 - Tick-(Like a clock second hand)
 - Tick characteristics include light contact of light material / loose components / can be caused by driver action on road conditions.
 - Thump-(Heavy, muffled knock noise)
 - Thump characteristics include softer knock / dead sound often brought on by activity.
 - Buzz-(Like a bumble bee)
 - Buzz characteristics include high frequency rattle / firm contact
- Often the degree of acceptable noise level will vary depending upon the person. A noise that you may judge as acceptable may be very irritating to the customer.

SQUEAK AND RATTLE TROUBLE DIAGNOSIS

- Weather conditions, especially humidity and temperature, may have a great effect on noise level.

Duplicate the Noise and Test Drive

If possible, drive the vehicle with the customer until the noise is duplicated. Note any additional information on the Diagnostic Worksheet regarding the conditions or locations of the noise. This information can be used to duplicate the same conditions when you confirm the repair.

If the noise can be duplicated easily during the test drive, to help identify the source of the noise, try to duplicate the noise with the vehicle stopped by doing one or all of the following:

1. Close a door.
 2. Tap or push / pull around the area where the noise appears to be coming from.
 3. Rev the engine.
 4. Use a floor jack to recreate vehicle "twist".
 5. At idle, apply engine load (electric load, half-clutch on M/T model, drive position on A/T model).
 6. Raise the vehicle on a hoist and hit a tire with rubber hammer.
- Drive the vehicle and attempt to duplicate the conditions the customer states exist when the noise occurs.
 - If it is difficult to duplicate the noise, drive the vehicle slowly on an undulating or rough road to stress the vehicle body.

Check Related Service Bulletins

After verifying the customer concern or symptom, check ASIST for Technical Service Bulletins (TSBs) related to that concern or symptom.

If a TSB relates to the symptom, follow the procedure to repair the noise.

Locate the Noise and Identify the Root Cause

1. Narrow down the noise to a general area. To help pinpoint the source of the noise, use a listening tool (Chassis Ear : J-39570, Engine Ear : J-39565 and mechanics stethoscope).
2. Narrow down the noise to a more specific area and identify the cause of the noise by:
 - Removing the components in the area that you suspect the noise is coming from.
 - Do not use too much force when removing clips and fasteners, otherwise clips and fasteners can be broken or lost during the repair, resulting in the creation of new noise.
 - Tapping or pushing/pulling the component that you suspect is causing the noise.
 - Do not tap or push/pull the component with excessive force, otherwise the noise will be eliminated only temporarily.
 - Feeling for a vibration with your hand by touching the component(s) that you suspect is (are) causing the noise.
 - Placing a piece of paper between components that you suspect are causing the noise.
 - Looking for loose components and contact marks.

Refer to [BL-7, "GENERIC SQUEAK AND RATTLE TROUBLESHOOTING"](#)

Repair the Cause

- If the cause is a loose component, tighten the component securely.
- If the cause is insufficient clearance between components:
 - Separate components by repositioning or loosening and retightening the component, if possible.
 - Insulate components with a suitable insulator such as urethane pads, foam blocks, felt cloth tape or urethane tape. A Nissan Squeak and Rattle Kit (J-43980) is available through your authorized Nissan Parts Department.

CAUTION:

Do not use excessive force as many components are constructed of plastic and may be damaged. Always check with the Parts Department for the latest parts information.

- The following materials are contained in the Nissan Squeak and Rattle Kit (J-43980) Each item can be ordered separately as needed.
- URETHANE PADS (1.5 mm thick)
 - insulates connectors, harness, etc.
- 76268–9E005: 100 x 135 mm / 76884–71L01: 60 x 85 mm / 76884–71L02: 15 x 25 mm
- INSULATOR (foam blocks)

SQUEAK AND RATTLE TROUBLE DIAGNOSIS

- Insulates components from contact. Can be used to fill space behind a panel.
- 73982–9E000: 45 mm thick, 50 x 50 mm / 73982–50Y00: 10 mm thick, 50 x 50 mm
- INSULATOR (Light foam block)
- 80845–71L00: 30 mm thick, 30 x 50 mm
- FELT CLOTH TAPE
- Used to insulate where movement does not occur. Ideal for instrument panel applications.
- 68370–4B000: 15 x 25 mm pad / 68239–13E00: 5 mm wide tape roll
- The following materials, not found in the kit, can also be used to repair squeaks and rattles.
- UHMW (TEFLON) TAPE
- Insulates where slight movement is present. Ideal for instrument panel applications.
- SILICONE GREASE
- Used in place of UHMW tape that will be visible or not fit.
- Note: Will only last a few months.
- SILICONE SPRAY
- Use when grease cannot be applied.
- DUCT TAPE
- Use to eliminate movement.

Confirm the Repair

Confirm that the cause of a noise is repaired by test driving the vehicle. Operate the vehicle under the same conditions as when the noise originally occurred. Refer to the notes on the Diagnostic Worksheet.

GENERIC SQUEAK AND RATTLE TROUBLESHOOTING

Instrument Panel

Most incidents are caused by contact and movement between:

1. The lid A and instrument panel
2. Acrylic lens and combination meter housing
3. Instrument panel to front pillar garnish
4. Instrument panel to windshield
5. Instrument panel mounting pins
6. Wiring harness behind the combination meter
7. A/C defroster duct and duct joint

These incidents can usually be located by tapping or moving the components to duplicate the noise or by pressing on the components while driving to stop the noise. Most of these incidents can be repaired by applying felt cloth tape or silicon spray (in hard to reach areas). Urethane pads can be used to insulate wiring harness.

CAUTION:

Do not use silicone spray to isolate a squeak or rattle. If you saturate the area with silicone, you will not be able to recheck the repair.

Center Console

Components to pay attention to include:

1. Shifter assembly cover to finisher
2. A/C control unit and cluster lid C
3. Wiring harness behind audio and A/C control unit

The instrument panel repair and isolation procedures also apply to center console.

Doors

Pay attention to the:

1. Finisher and inner panel making a slapping noise
2. Inside handle escutcheon to door finisher
3. Wiring harnesses tapping
4. Door striker out of alignment causing a popping noise on starts and stops

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SQUEAK AND RATTLE TROUBLE DIAGNOSIS

Tapping or moving the components or pressing on them while driving to duplicate the conditions can isolate many of these incidents. You can usually insulate the areas with felt cloth or insulator foam blocks from the Nissan Squeak and Rattle Kit (J-43980) to repair the noise.

Sunroof and Headliner

Noises in the sunroof and headliner area can often be traced to one of the following:

1. Sunroof lid, rail, linkage or seals making a rattle or light knocking noise
2. Sunvisor shaft shaking in the holder
3. Front or rear windshield touching headliner and squeaking

Again, pressing on the components to stop the noise while duplicating the conditions can isolate most of these incidents. Repairs usually consist of insulating with felt cloth tape.

Seats

When isolating seat noises it's important to note the position the seat in and the load placed on the seat when the noise is present.

These conditions should be duplicated when verifying and isolating the cause of the noise.

Causes of seat noise include:

1. Headrest rods and holders
2. A squeak between the seat pad cushion and frame
3. The rear seat back lock and bracket

These noises can be isolated by moving or pressing on the suspected components while duplicating the conditions under which the noise occurs. Most of these incidents can be repaired by repositioning the component or applying urethane tape to the contact area.

Underhood

Some interior noises may be caused by components under the hood or on the engine wall. The noise is then transmitted into the passenger compartment.

Causes of transmitted underhood noises include:

1. Any components mounted to the engine wall
2. Components that pass thru the engine wall
3. Engine wall mounts and connectors
4. Loose radiator mounting pins
5. Hood bumpers out of adjustment
6. Hood striker out of adjustment

These noises can be difficult to isolate since they can not be reached from the interior of the vehicle. The best method is to secure, move or insulate one component at a time and test drive the vehicle. Also, engine RPM or load can be changed to isolate the noise.

Repair can usually be made by moving, adjusting, securing, or insulating the component causing the noise.

SQUEAK AND RATTLE TROUBLE DIAGNOSIS

DIAGNOSTIC WORKSHEET



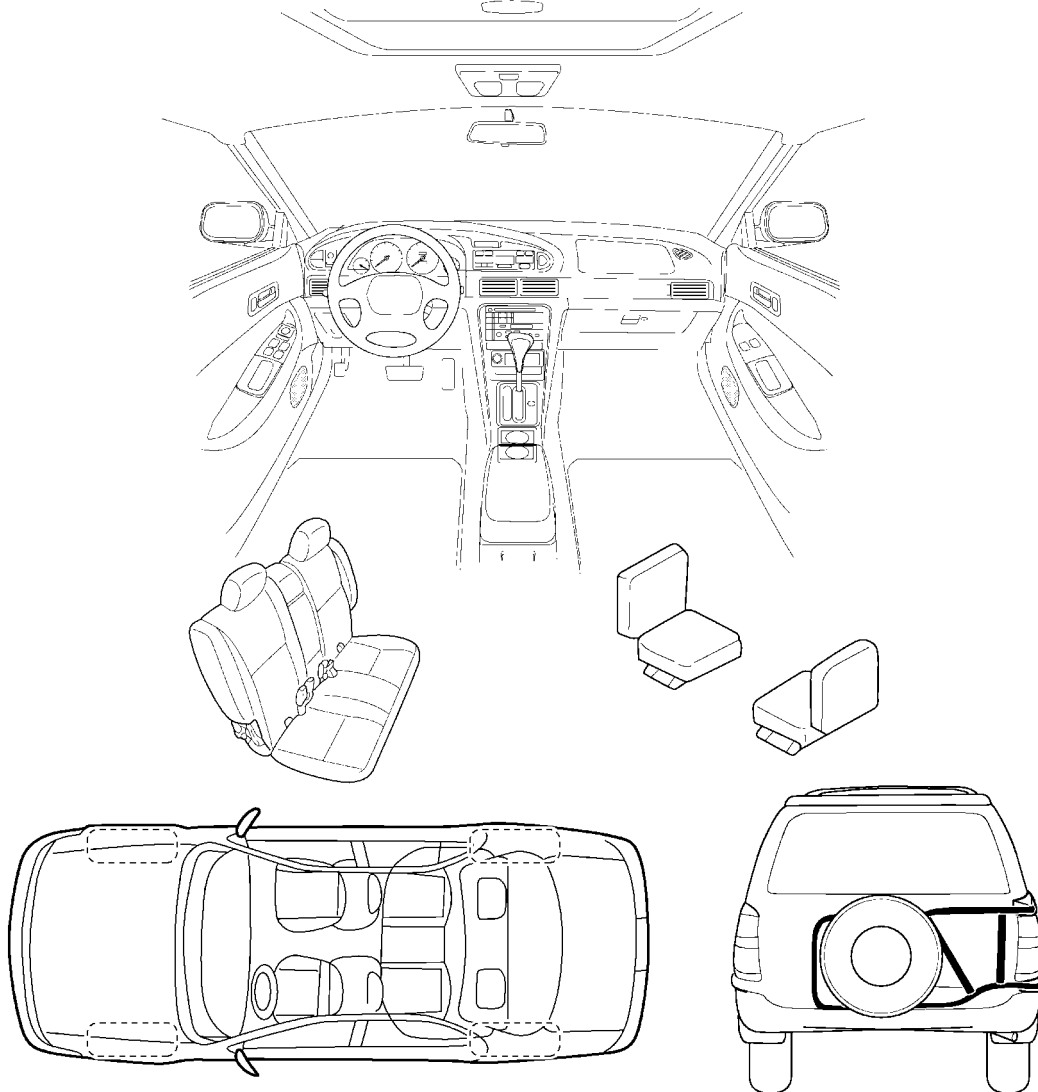
SQUEAK & RATTLE DIAGNOSTIC WORKSHEET

Dear Nissan Customer:

We are concerned about your satisfaction with your Nissan vehicle. Repairing a squeak or rattle sometimes can be very difficult. To help us fix your Nissan right the first time, please take a moment to note the area of the vehicle where the squeak or rattle occurs and under what conditions. You may be asked to take a test drive with a service advisor or technician to ensure we confirm the noise you are hearing.

I. WHERE DOES THE NOISE COME FROM? (circle the area of the vehicle)

The illustrations are for reference only, and may not reflect the actual configuration of your vehicle.



Continue to the back of the worksheet and briefly describe the location of the noise or rattle. In addition, please indicate the conditions which are present when the noise occurs.

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SQUEAK AND RATTLE TROUBLE DIAGNOSIS

SQUEAK & RATTLE DIAGNOSTIC WORKSHEET- page 2

Briefly describe the location where the noise occurs:

II. WHEN DOES IT OCCUR? (check the boxes that apply)

- | | |
|--------------------------------------------------------------|-------------------------------------------------------|
| <input type="checkbox"/> anytime | <input type="checkbox"/> after sitting out in the sun |
| <input type="checkbox"/> 1 st time in the morning | <input type="checkbox"/> when it is raining or wet |
| <input type="checkbox"/> only when it is cold outside | <input type="checkbox"/> dry or dusty conditions |
| <input type="checkbox"/> only when it is hot outside | <input type="checkbox"/> other: _____ |

III. WHEN DRIVING:

- through driveways
- over rough roads
- over speed bumps
- only at about ____ mph
- on acceleration
- coming to a stop
- on turns : left, right or either (circle)
- with passengers or cargo
- other: _____
- after driving ____ miles or ____ minutes

IV. WHAT TYPE OF NOISE?

- squeak (like tennis shoes on a clean floor)
- creak (like walking on an old wooden floor)
- rattle (like shaking a baby rattle)
- knock (like a knock on a door)
- tick (like a clock second hand)
- thump (heavy, muffled knock noise)
- buzz (like a bumble bee)

TO BE COMPLETED BY DEALERSHIP PERSONNEL

Test Drive Notes:

	YES	NO	Initials of person performing
Vehicle test driven with customer	<input type="checkbox"/>	<input type="checkbox"/>	_____
- Noise verified on test drive	<input type="checkbox"/>	<input type="checkbox"/>	_____
- Noise source located and repaired	<input type="checkbox"/>	<input type="checkbox"/>	_____
- Follow up test drive performed to confirm repair	<input type="checkbox"/>	<input type="checkbox"/>	_____

VIN: _____ Customer Name: _____

W.O. #: _____ Date: _____

This form must be attached to Work Order

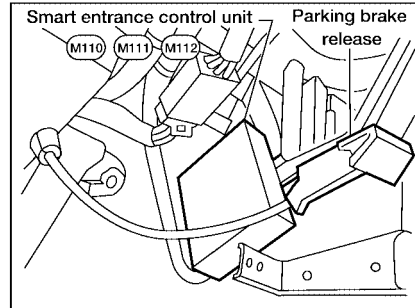
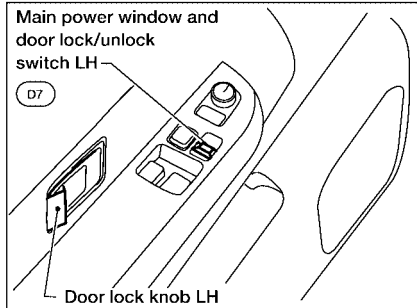
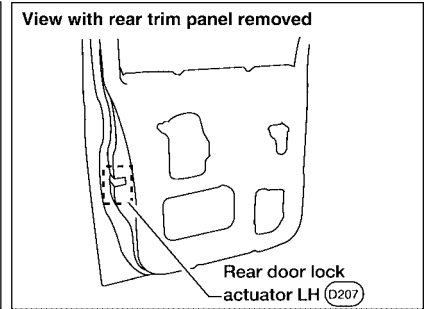
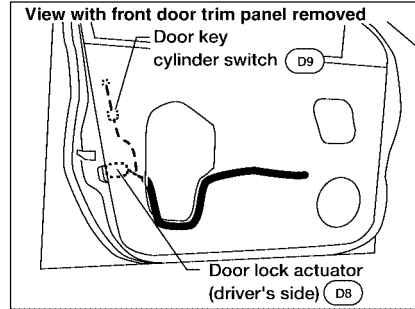
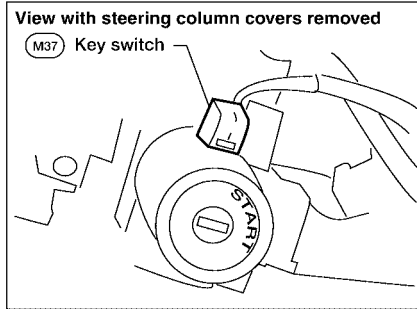
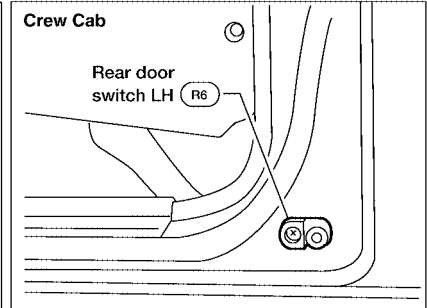
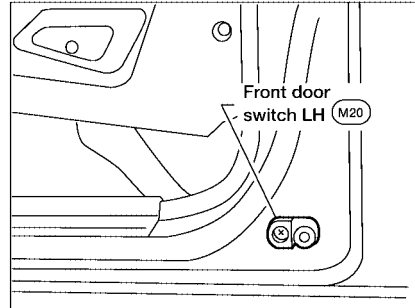
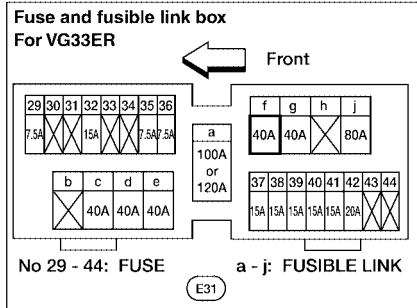
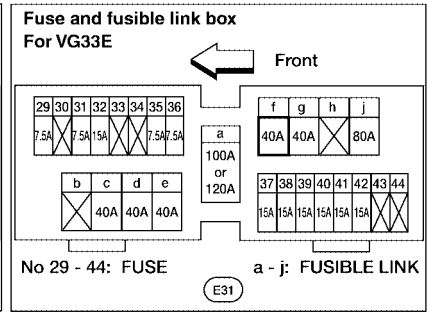
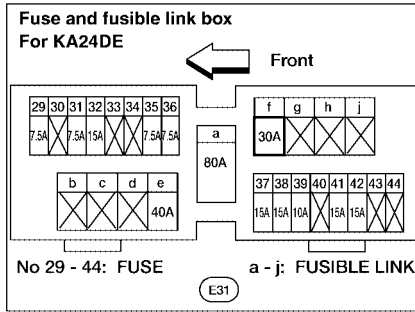
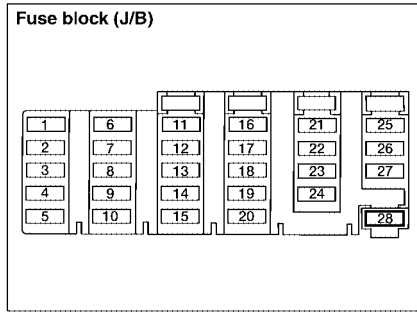
POWER DOOR LOCK SYSTEM

POWER DOOR LOCK SYSTEM

Component Parts and Harness Connector Location

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POWER DOOR LOCK SYSTEM

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System Description

Power is supplied at all times

- through 30A fusible link [letter f , located in the fuse and fusible link box (with KA24DE)] or
- through 40A fusible link [letter f , located in the fuse and fusible link box (with VG33E and VG33ER)]
- to circuit breaker terminal +
- through circuit breaker terminal –
- to smart entrance control unit terminal 51.

Power is supplied at all times

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

Ground is supplied

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

INPUT

With the key in the ignition key cylinder, power is supplied

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

With front door LH open, ground is supplied

- to smart entrance control unit terminal 1
- through front door switch LH terminal 2
- through front door switch LH terminal 3
- through body grounds M14 and M68.

With front door RH open, ground is supplied

- to smart entrance control unit terminal 2
- through front door switch RH terminal +.

With rear door LH or RH (Crew Cab) open, ground is supplied

- to smart entrance control unit terminal 3
- through rear door switch LH and/or RH terminals +.

With the key inserted in the front door key cylinder switch LH and turned to LOCK, ground is supplied

- to smart entrance control unit terminal 11
- through front door key cylinder switch LH terminal 1
- through front door key cylinder switch LH terminal 2
- through body grounds M14 and M68.

With the key inserted in the front door key cylinder switch LH and turned to UNLOCK, ground is supplied

- to smart entrance control unit terminal 10
- through front door key cylinder switch LH terminal 3
- through front door key cylinder switch LH terminal 2
- through body grounds M14 and M68.

With the main power window and door lock/unlock switch pressed to LOCK, ground is supplied

- to smart entrance control unit terminal 5
- through main power window and door lock/unlock switch terminal 15
- through main power window and door lock/unlock switch terminal 10
- through body grounds M14 and M68.

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

- to smart entrance control unit terminal 5
- through door lock/unlock switch RH terminal 6
- through door lock/unlock switch RH terminal 4

POWER DOOR LOCK SYSTEM

- through body grounds M14 and M68.

With the main power window and door lock/unlock switch pressed to UNLOCK, ground is supplied

- to smart entrance control unit terminal 4
- through main power window and door lock/unlock switch terminal 11
- through main power window and door lock/unlock switch terminal 10
- through body grounds M14 and M68.

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

- to smart entrance control unit terminal 4
- through door lock/unlock switch RH terminal 3
- through door lock/unlock switch RH terminal 4
- through body grounds M14 and M68.

OUTPUT

Unlock

Ground is supplied

- to front door lock actuator LH and RH terminal 4 and rear door lock actuator LH and RH (Crew Cab) terminal 3
- through smart entrance control unit terminal 54.

FRONT DOOR LH

Power is supplied

- to front door lock actuator LH terminal 2
- through smart entrance control unit terminal 55.

FRONT DOOR RH

Power is supplied

- to front door lock actuator RH terminal 2
- through smart entrance control unit terminal 56.

REAR DOOR LH AND RH (CREW CAB)

Power is supplied

- to rear door lock actuator LH and RH terminal 1
- through smart entrance control unit terminal 56.

With power and ground applied as described, the doors are unlocked.

Lock

Ground is supplied

- to front door lock actuator LH terminal 1
- through smart entrance control unit terminal 55 and
- to front door lock actuator RH terminal 2 and rear door lock actuator LH and RH (Crew Cab) terminal 1
- through smart entrance control unit terminal 56.

Power is supplied

- to front door lock actuator LH and RH terminal 4 and rear door lock actuator LH and RH (Crew Cab) terminal 3
- through smart entrance control unit terminal 54.

With power and ground applied as described, the doors are locked.

OPERATION

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

A

B

C

D

E

F

G

H

BL

J

K

L

M

POWER DOOR LOCK SYSTEM

Key Reminder

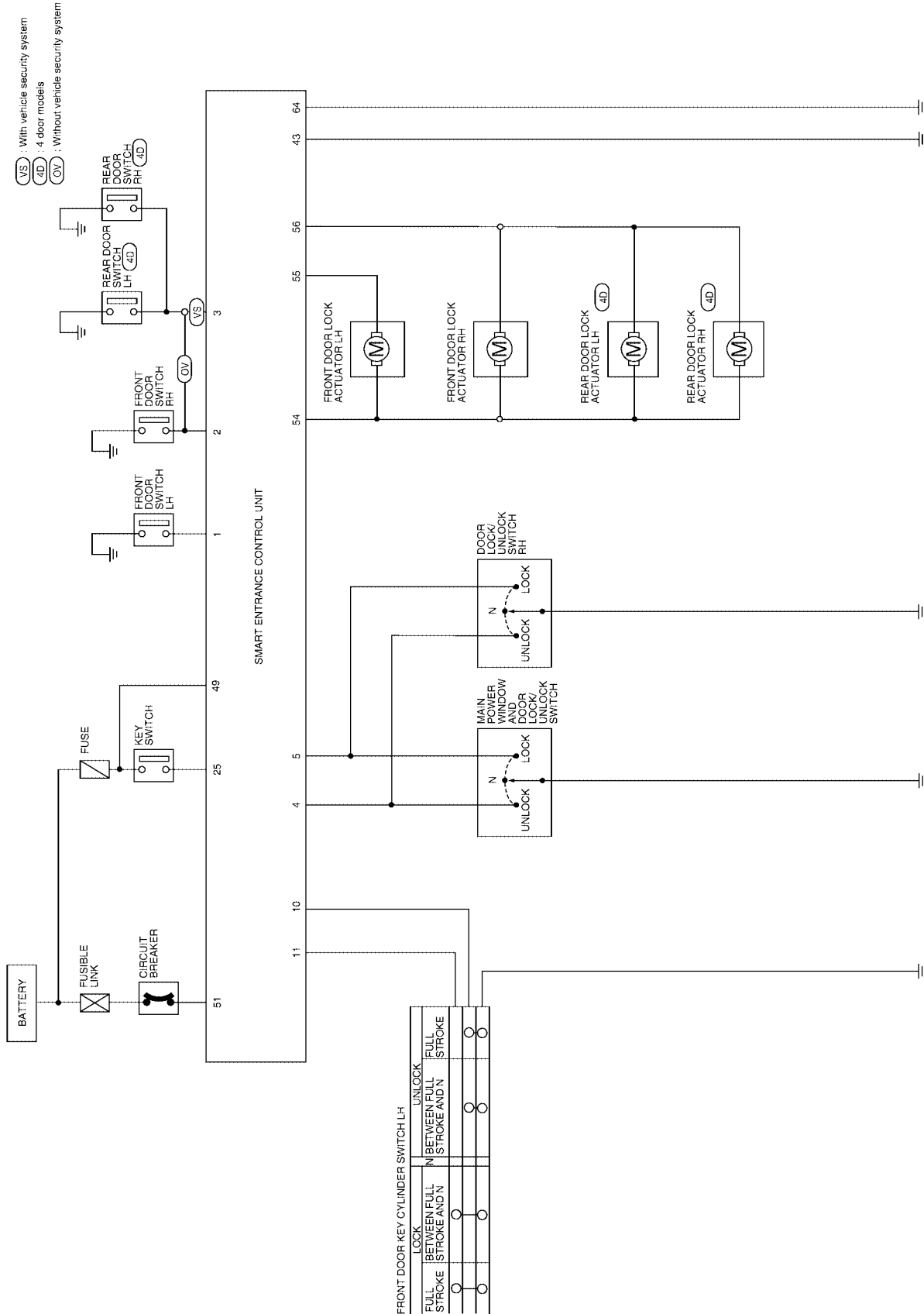
When performing a door locking operation using either the main power window and door lock/unlock switch, the door lock/unlock switch RH, the front door LH lock knob or a keyfob, all the doors will lock and then will immediately unlock if the

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

POWER DOOR LOCK SYSTEM

Circuit Diagram

EIS000XY



A
B
C
D
E
F
G
H
I
J
K
L
M

BL

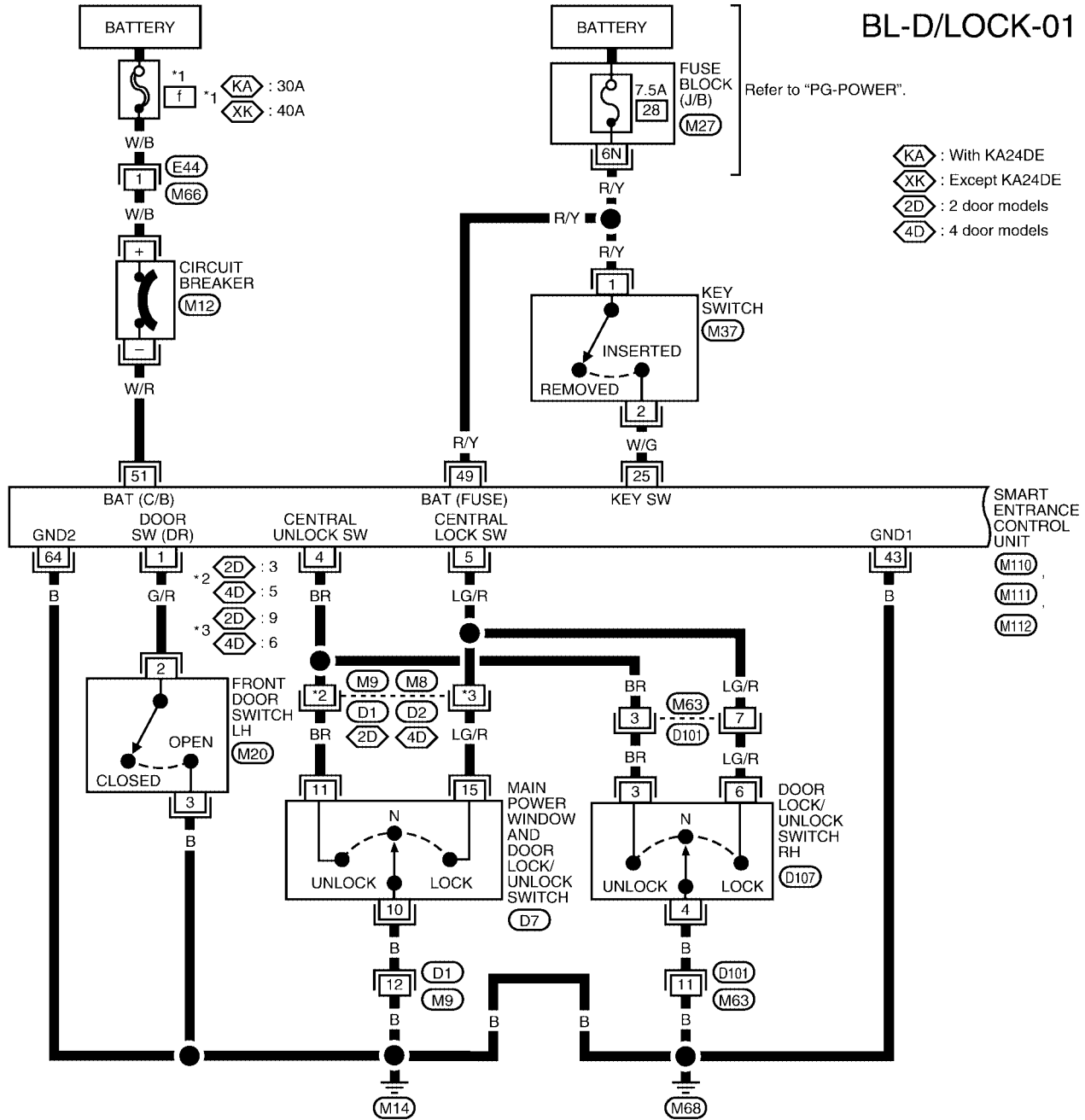
WIWA0098E

POWER DOOR LOCK SYSTEM

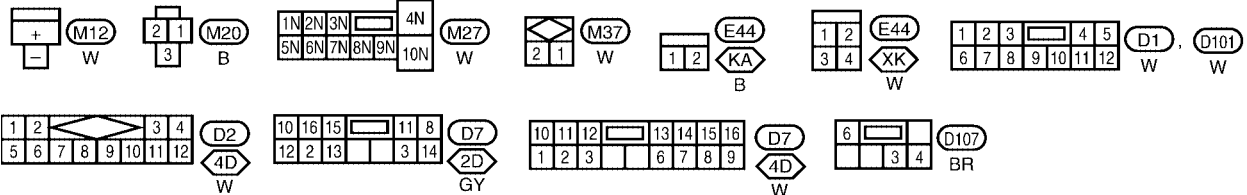
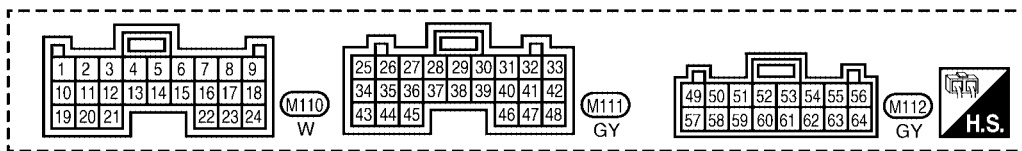
EIS000XZ

Wiring Diagram — D/LOCK —
FIG. 1

BL-D/LOCK-01



- ⬡ KA : With KA24DE
- ⬡ XK : Except KA24DE
- ⬡ 2D : 2 door models
- ⬡ 4D : 4 door models

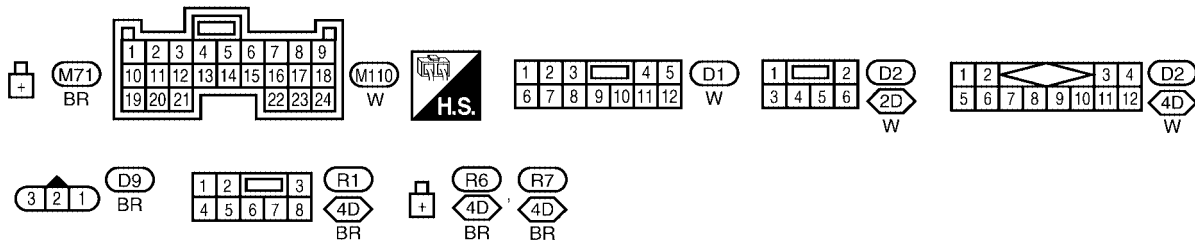
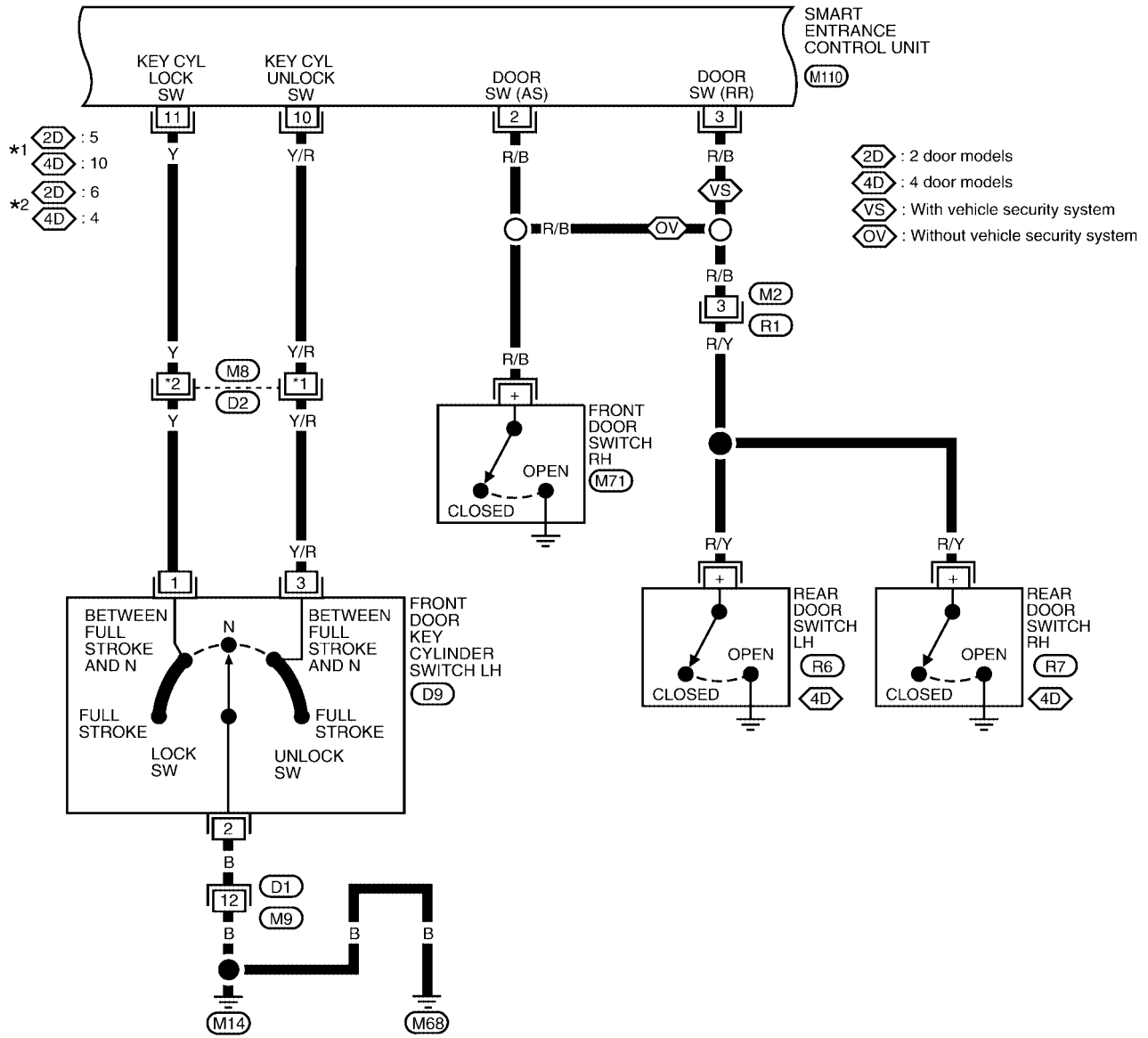


WIWA0099E

POWER DOOR LOCK SYSTEM

FIG. 2

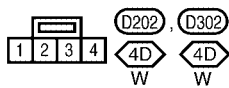
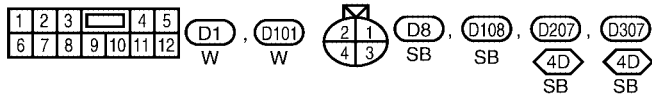
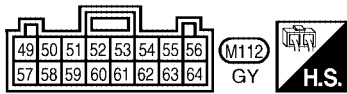
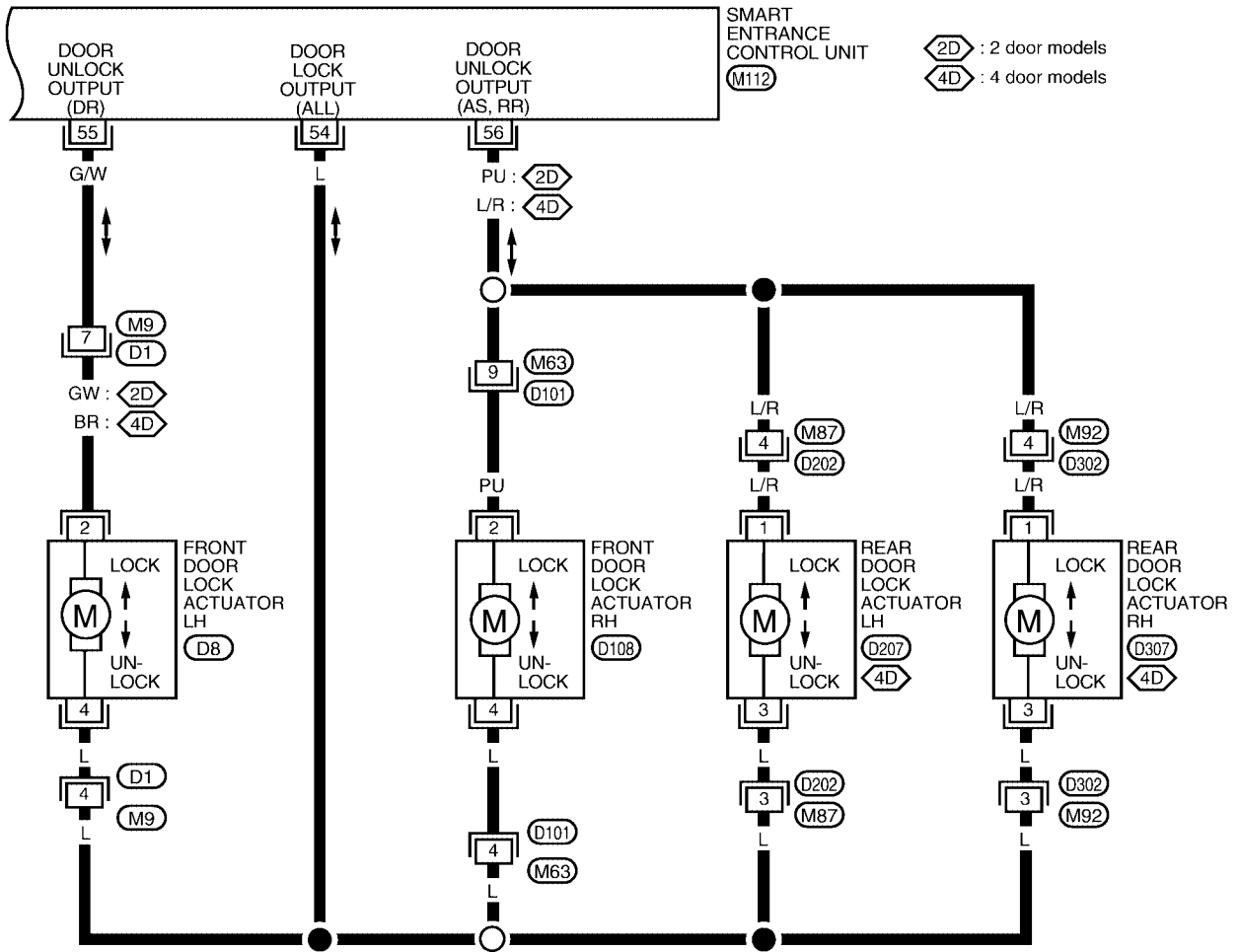
BL-D/LOCK-02



POWER DOOR LOCK SYSTEM

FIG. 3

BL-D/LOCK-03



POWER DOOR LOCK SYSTEM

Trouble Diagnoses SYMPTOM CHART

EIS000Y0

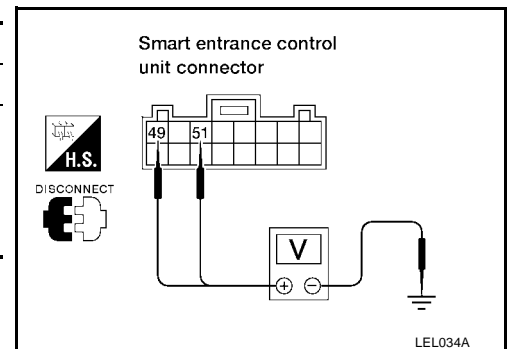
REFERENCE PAGE (BL-)	BL-19	BL-20	BL-21	BL-23	BL-24	BL-25
SYMPTOM	MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK	DOOR SWITCH CHECK	KEY SWITCH (INSERT) CHECK	DOOR LOCK/UNLOCK SWITCH CHECK	FRONT DOOR KEY CYLINDER SWITCH CHECK	DOOR LOCK ACTUATOR CHECK
Key reminder door system does not operate properly.	X	X	X			X
Specific door lock actuator does not operate.	X					X
Power door lock does not operate with door lock and unlock switch (LH and RH) on door trim.	X			X		
Power door lock does not operate with front door key cylinder operation.	X				X	
Power door lock does not operate with back door key cylinder operation.	X					

X: Applicable

MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK

Main Power Supply Circuit Check

Terminal		Ignition switch			
(+)		(-)	OFF	ACC	ON
Connector	Terminal (wire color)	Ground	Battery voltage	Battery voltage	Battery voltage
M112	49 (R/Y)				
M112	51 (W/R)				



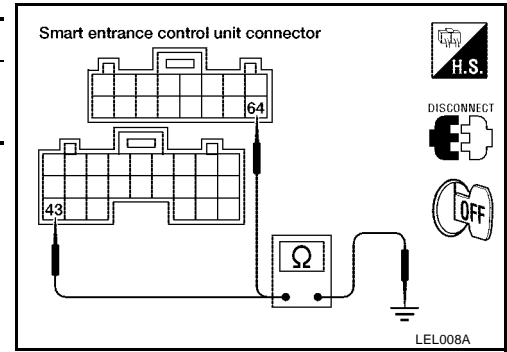
If NG, check the following.

- 30A fusible link [(KA24DE) letter **f** , located in the fuse and fusible link box]
- 40A fusible link [(except KA24DE) letter **f** , located in the fuse and fusible link box]
- 7.5A fuse [No. 28, located in the fuse block (J/B)]
- Circuit breaker
- Harness for open or short between circuit breaker and fuse
- Harness for open or short between circuit breaker and smart entrance control unit
- Harness for open or short between smart entrance control unit and fuse

POWER DOOR LOCK SYSTEM

Ground Circuit Check

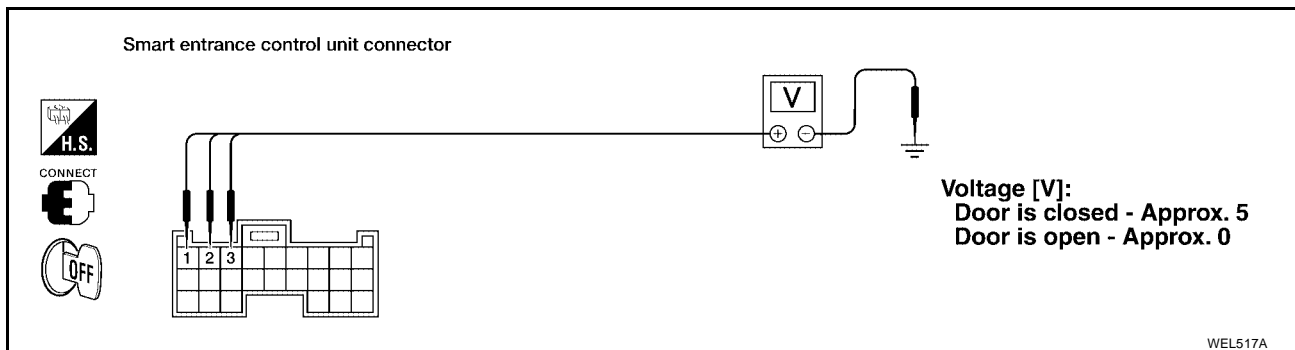
Connector	Terminals (wire color)	Continuity
M111	43 (B) - Ground	Yes
M112	64 (B) - Ground	



DOOR SWITCH CHECK

1. CHECK FRONT DOOR SWITCH INPUT SIGNAL

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



Refer to [BL-16, "Wiring Diagram — D/LOCK —"](#) .

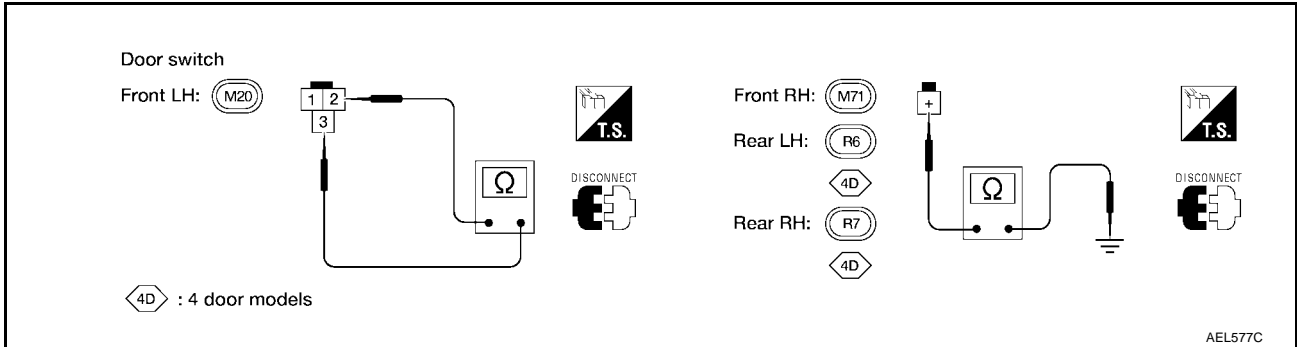
OK or NG

- OK >> Door switch is OK.
- NG >> GO TO 2.

POWER DOOR LOCK SYSTEM

2. CHECK FRONT DOOR SWITCH

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



	Terminals	Condition	Continuity
Front door switch LH	2 - 3	Closed	No
		Open	Yes
Front door switch RH and rear door switches	(+)- Ground	Closed	No
		Open	Yes

OK or NG

OK >> Check the following

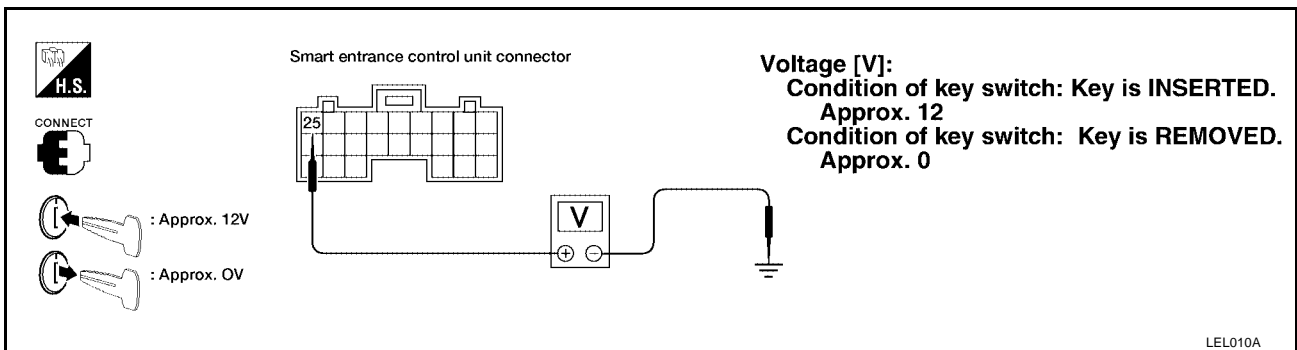
- Front door switch LH ground circuit or front door switch RH ground condition
- Harness for open or short between smart entrance control unit and door switch

NG >> Replace door switch.

KEY SWITCH (INSERTED) CHECK

1. CHECK KEY SWITCH INPUT SIGNAL

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



2. Refer to [BL-16, "Wiring Diagram — D/LOCK —"](#).

OK or NG

OK >> Key switch is OK.

NG >> GO TO 2.

POWER DOOR LOCK SYSTEM

2. CHECK KEY SWITCH POWER SUPPLY

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

Battery voltage should exist.

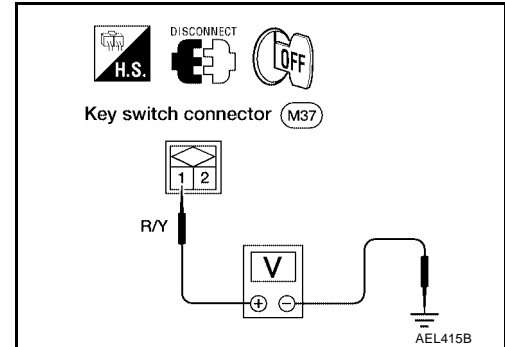
Refer to [BL-16, "Wiring Diagram — D/LOCK —"](#).

OK or NG

OK >> GO TO 3.

NG >> Check the following

- 7.5A fuse [No. 28, located in the fuse block (J/B)]
- Harness for open or short between key switch and fuse



3. CHECK KEY SWITCH

Check continuity between key switch terminals 1 and 2.

Continuity

Condition of key switch : Key is inserted.

Yes

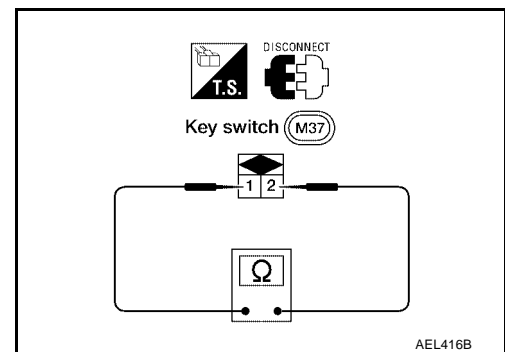
Condition of key switch : Key is removed.

No

OK or NG

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

NG >> Replace key switch.



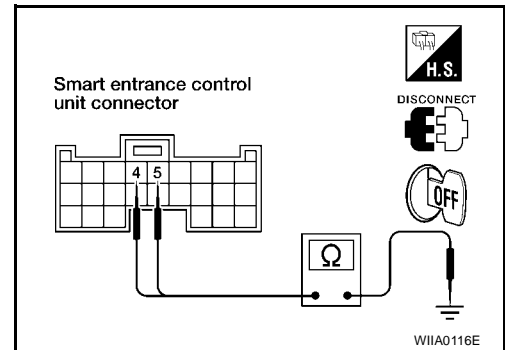
POWER DOOR LOCK SYSTEM

DOOR LOCK/UNLOCK SWITCH CHECK

1. CHECK DOOR LOCK/UNLOCK SWITCH INPUT SIGNAL

1. Disconnect smart entrance control unit harness connector.
2. Check continuity between smart entrance control unit harness connector M110 terminal 4 (BR) or 5 (LG/R) and ground.
Refer to [BL-16, "Wiring Diagram — D/LOCK —"](#).

Terminals		Door lock/unlock switch (LH or RH) condition	Continuity
(+)	(-)		
4	Body ground	N and Locked	No
		Unlocked	Yes
5	Body ground	N and Unlocked	No
		Locked	Yes

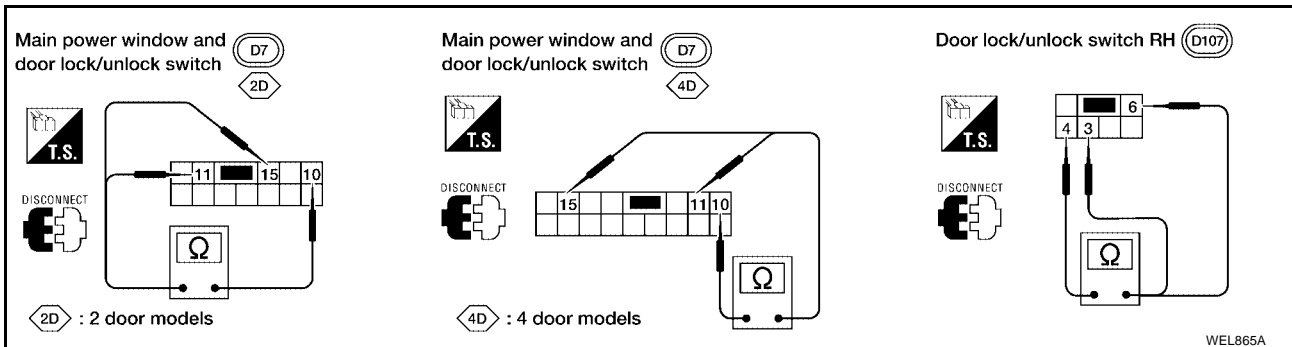


OK or NG

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

2. CHECK DOOR LOCK/UNLOCK SWITCH

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



Condition	Terminals			Condition	Terminals		
	10	11	15		3	4	6
Lock	○	—	○	Lock		○	○
N	No continuity			N	No continuity		
Unlock	○	—	○	Unlock	○	—	○

OK or NG

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

POWER DOOR LOCK SYSTEM

DOOR KEY CYLINDER SWITCH CHECK

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

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

Terminals		Key position	Voltage [V]
(+)	(-)		
11	Ground	Neutral	Approx. 5
		Lock	0
10	Ground	Neutral	Approx. 5
		Unlock	0

WEL518A

Refer to [BL-16, "Wiring Diagram — D/LOCK —"](#) .

OK or NG

- OK >> Door key cylinder switch is OK.
- NG >> GO TO 2.

2. CHECK DOOR KEY CYLINDER SWITCH

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

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

LEL032A

OK or NG

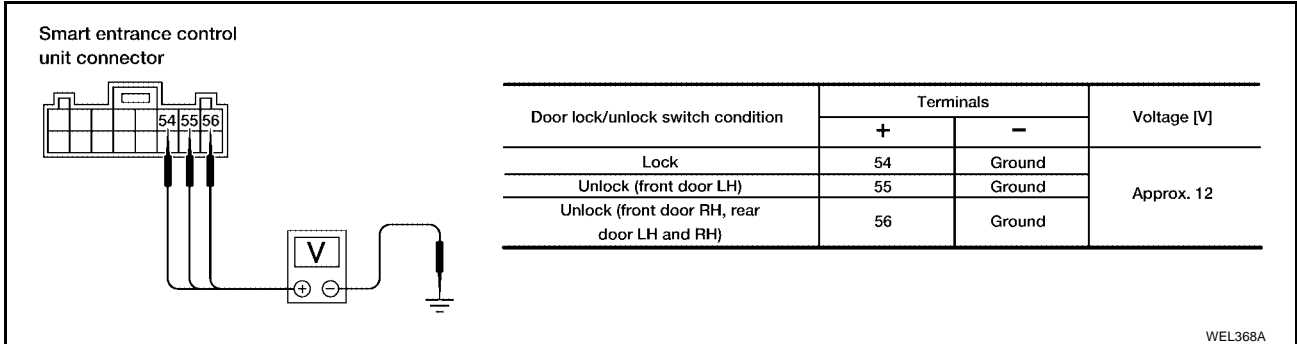
- OK >> Check the following
 - Door key cylinder switch ground circuit
 - Harness for open or short between smart entrance control unit and door key cylinder switch
- NG >> Replace door key cylinder switch.

POWER DOOR LOCK SYSTEM

DOOR LOCK ACTUATOR CHECK

1. CHECK DOOR LOCK ACTUATOR CIRCUIT

Check voltage for door lock actuator circuits on smart entrance control unit connector M112 terminal 54 (L), 55 (G/W) or 56 [PU (2-door) or L/R (4-door)] and ground.



Refer to [BL-16, "Wiring Diagram — D/LOCK —"](#) .

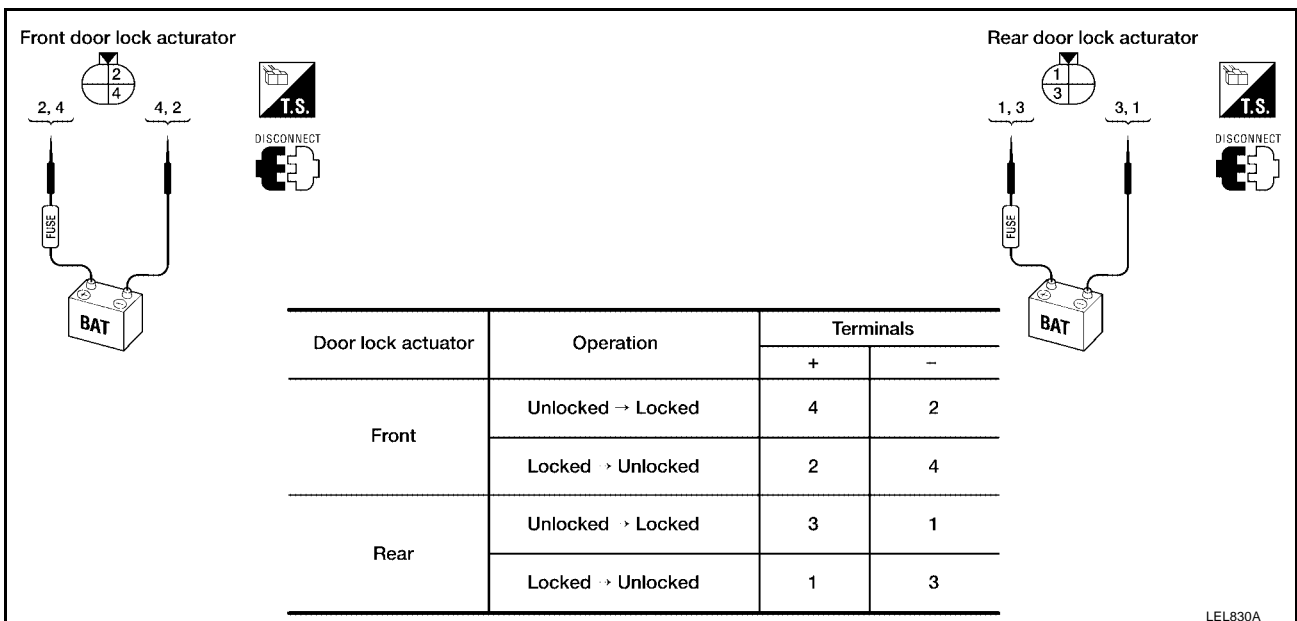
OK or NG

OK >> GO TO 2.

NG >> Replace smart entrance control unit. (Before replacing smart entrance control unit, perform other procedures indicated in "SYMPTOM CHART".)

2. CHECK DOOR LOCK ACTUATOR

- Disconnect door lock actuator harness connector.
 - D8 Front door lock actuator LH
 - D108 Front door lock actuator RH
 - D207 Rear door lock actuator LH (4 door models)
 - D307 Rear door lock actuator RH (4 door models)
- Apply 12V direct current to door lock actuator and check operation.



OK or NG

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

NG >> Replace door lock actuator.

DOOR

PFP:80100

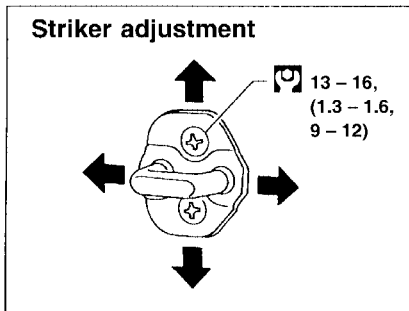
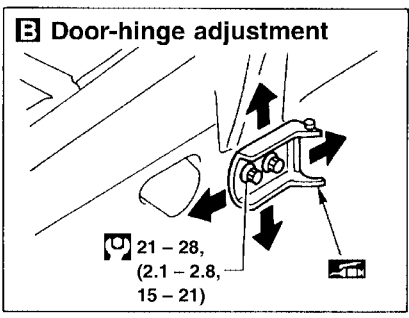
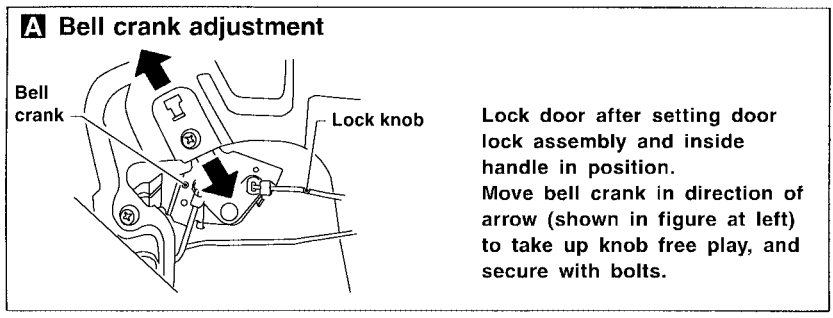
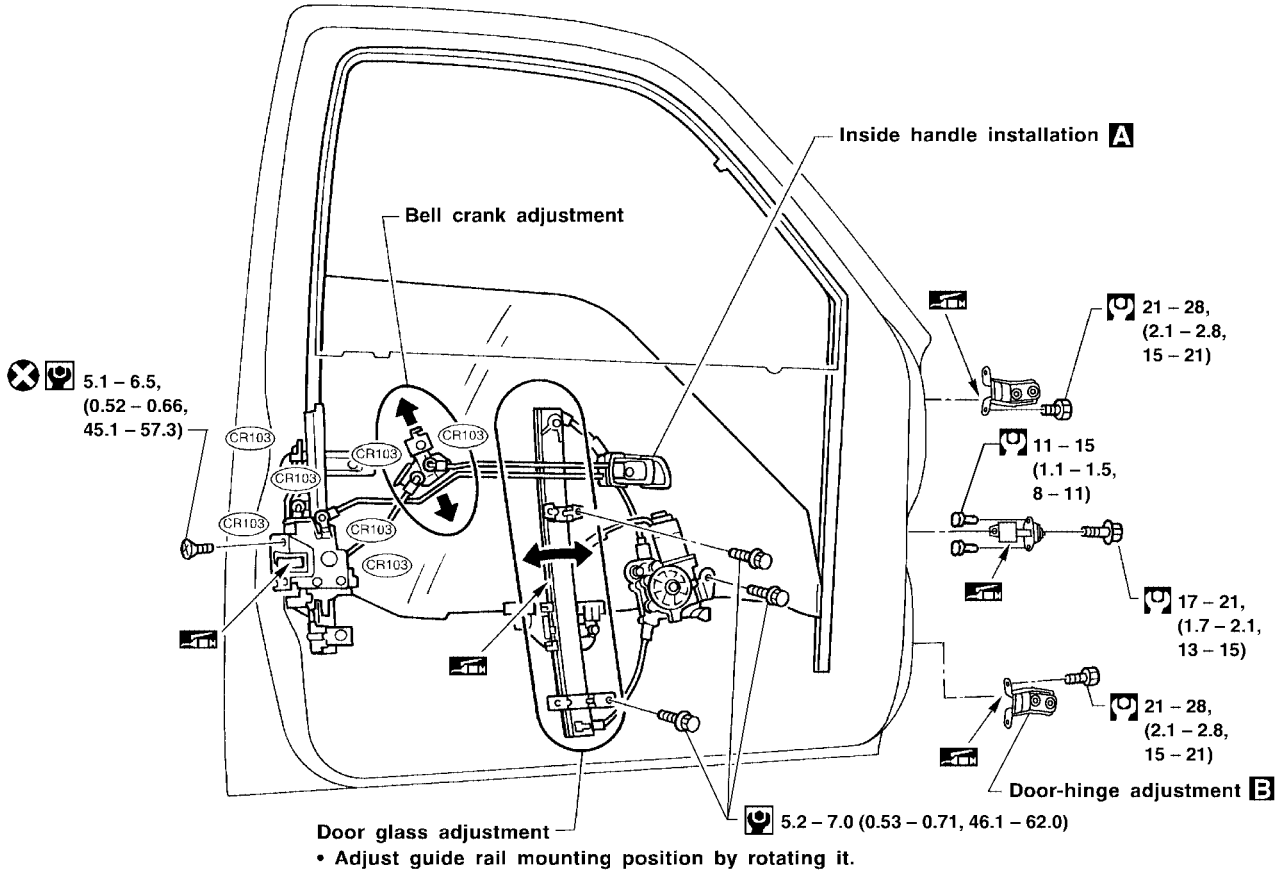
EIS000Y1

DOOR

Front Door

- For removal of door trim, refer to [EI-24, "Removal and Installation"](#) .
- After adjusting door or door lock, check door lock operation.

SEC. 800•803•805



- : N-m (kg-m, in-lb)
- : N-m (kg-m, ft-lb)
- : Grease-up point (Do not apply too much grease as it will drip)

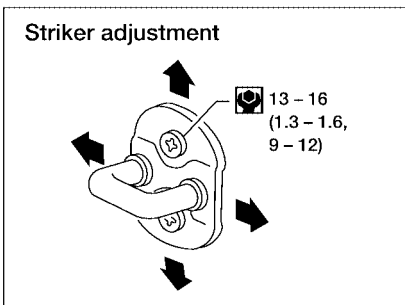
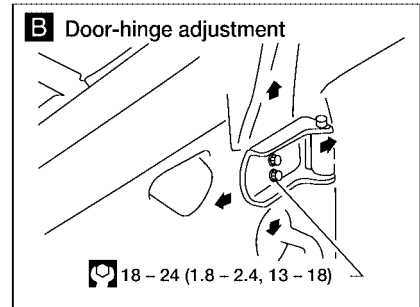
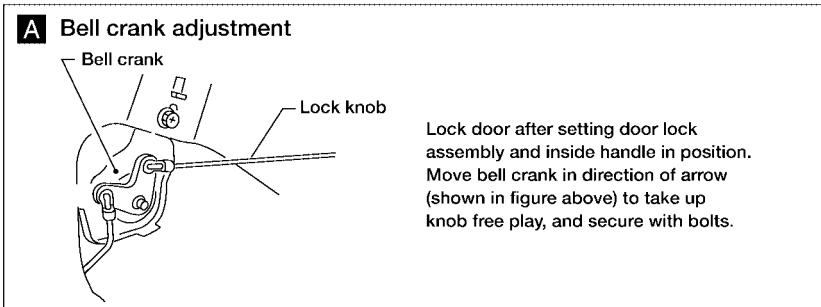
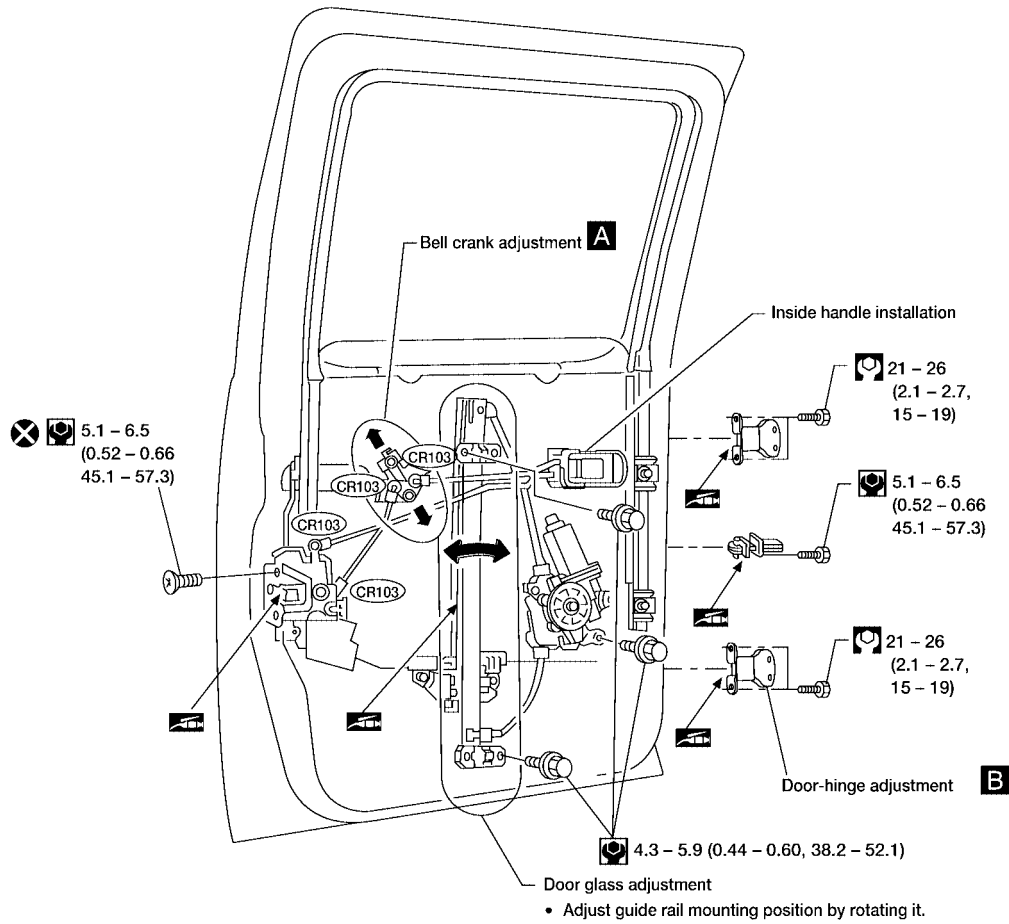
WBT109

DOOR

Rear Door

EIS000Y2

SEC. 820 • 823 • 825



- : N·m (kg·m, in·lb)
- : N·m (kg·m, ft·lb)
- : Grease-up point (Do not apply too much grease as it will drip)

WBT110

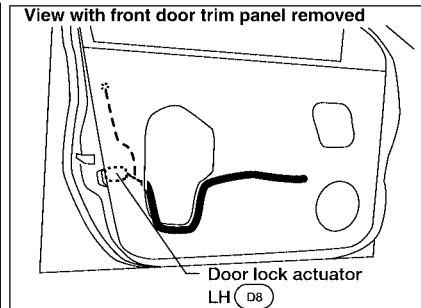
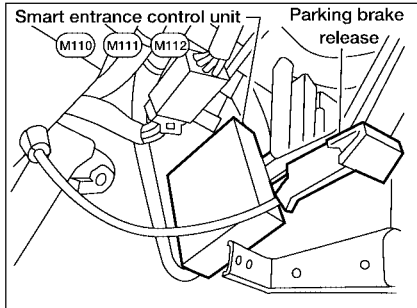
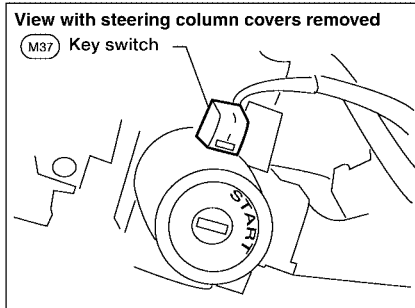
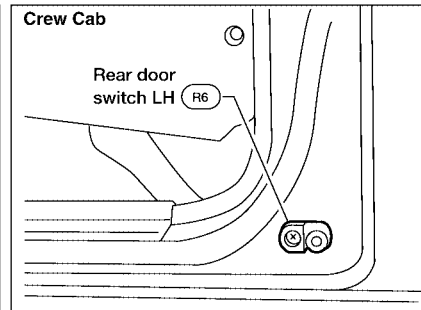
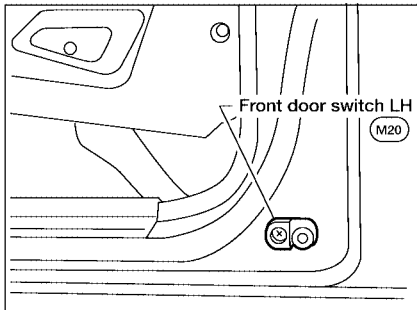
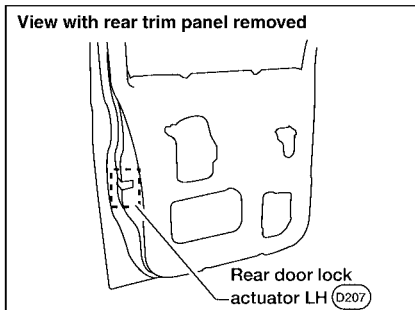
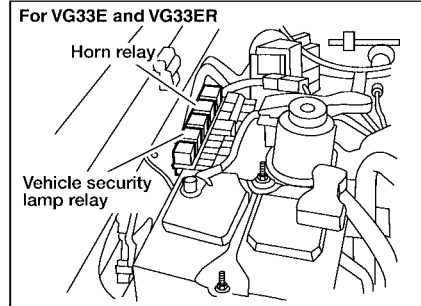
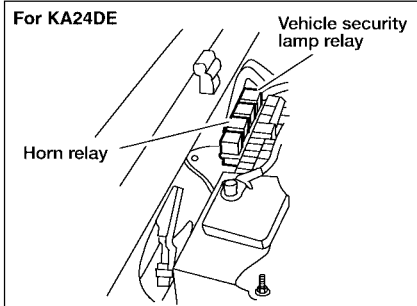
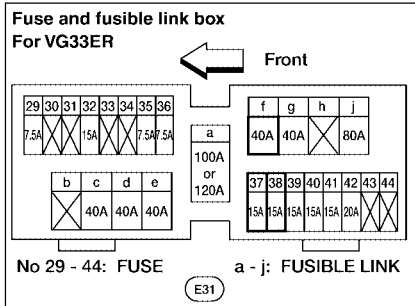
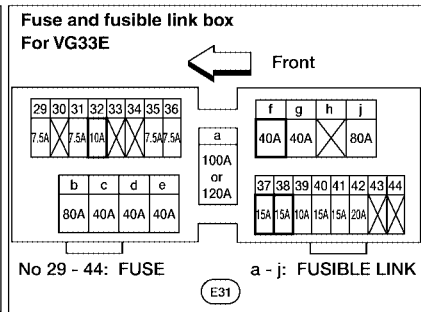
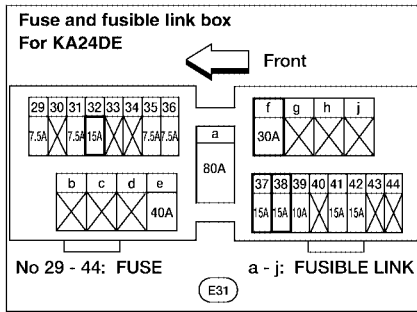
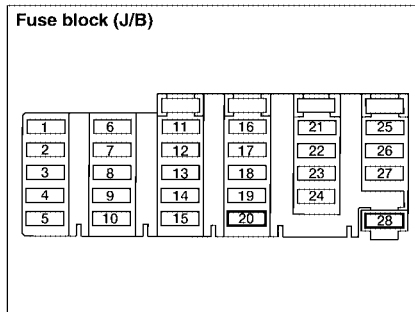
REMOTE KEYLESS ENTRY SYSTEM

PF2:28596

EIS000V0

REMOTE KEYLESS ENTRY SYSTEM

Component Parts and Harness Connector Location



WIIA0117E

REMOTE KEYLESS ENTRY SYSTEM

EIS000VP

System Description

POWER SUPPLY AND GROUND

Power is supplied at all times

- through 30A fusible link [letter f , located in the fuse and fusible link box (with KA24DE)] or
- through 40A fusible link [letter f , located in the fuse and fusible link box (with VG33E and VG33ER)]
- to circuit breaker terminal +
- through circuit breaker terminal –
- to smart entrance control unit terminal 51.

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

- through 7.5A fuse [No. 20, located in the fuse block (J/B)]
- to smart entrance control unit terminal 26.

Power is supplied at all times

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

Power is supplied at all times

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

Power is supplied at all times

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

Power is supplied at all times

- through 15A fuse (No. 32, located in the fuse and fusible link box)
- to horn relay terminal 2.

Ground is supplied

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

INPUTS

With the key switch in the INSERTED (key is in ignition key cylinder) position, power is supplied

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

With front door LH open, ground is supplied

- to smart entrance control unit terminal 1
- through front door switch LH terminal 2
- through front door switch LH terminal 3
- through body grounds M14 and M68.

With front door RH open, ground is supplied

- to smart entrance control unit terminal 2
- through front door switch RH terminal +.

With rear door LH or RH (Crew Cab) open, ground is supplied

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

Keyfob signal input

- through internal antenna.

The remote keyless entry system controls operation of the

- power door locks
- interior lamp

A

B

C

D

E

F

G

H

BL

J

K

L

M

REMOTE KEYLESS ENTRY SYSTEM

- panic alarm
- hazard and horn reminder.

OPERATION PROCEDURE

Power Door Lock Operation

When the keyfob sends a LOCK signal with the key switch in the REMOVED position (key is not in ignition key cylinder), the smart entrance control unit locks all doors.

When the keyfob sends an UNLOCK signal once, the smart entrance control unit unlocks the front door LH. Then, if the keyfob sends another UNLOCK signal within 5 seconds, the smart entrance control unit unlocks all other doors.

Key Reminder

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

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

Hazard and Horn Reminder

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

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

Ground is supplied

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

Horn relay is now energized, and hazard warning lamp flashes and horn sounds as a reminder.

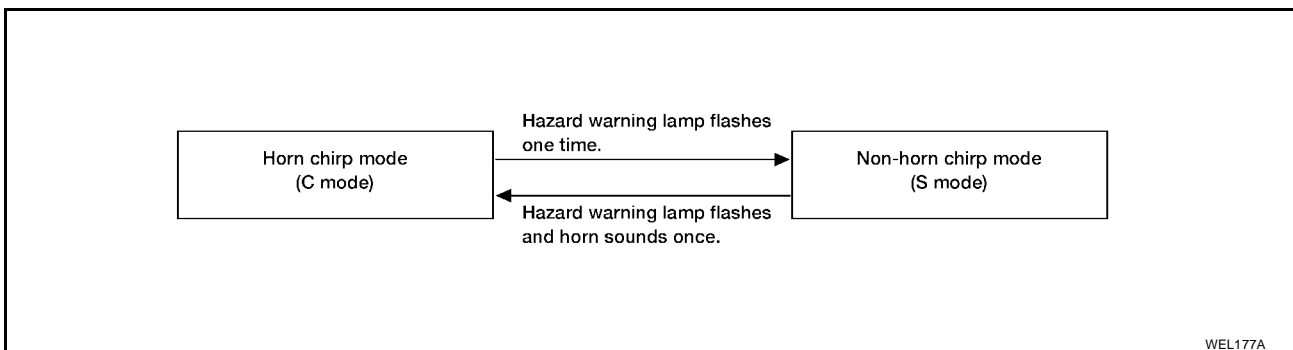
The hazard and horn reminder has a horn chirp mode (C mode) and a non-horn chirp mode (S mode).

Operating function of hazard and horn reminder

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

How to change hazard and horn reminder mode

When LOCK and UNLOCK signals are sent from the keyfob for more than 2 seconds at the same time, the hazard and horn reminder mode is changed and hazard warning lamp flashes and horn sounds as follows:



Interior Lamp Operation

When all door switches are in CLOSED position, the remote keyless entry system turns on the room lamp for 30 seconds with input of UNLOCK signal from a keyfob.

For detailed description, refer to [LT-34, "INTERIOR ROOM LAMP"](#).

REMOTE KEYLESS ENTRY SYSTEM

Panic Alarm Operation

When keyfob sends a PANIC ALARM signal with key switch in the REMOVED (key is not in ignition key cylinder) position, remote keyless entry system operates the horn and headlamps intermittently. For detailed description, refer to [BL-43, "VEHICLE SECURITY \(THEFT WARNING\) SYSTEM"](#) .

Auto Relock Operation

All the doors will automatically lock again unless any one of the doors is opened or ignition switch is turned from OFF to ON within 5 minutes after the keyfob unlocks all the doors under the following conditions

- key switch is in INSERTED position (key is in ignition key cylinder) and
- ignition switch is in the OFF position and
- all door switches are in CLOSED position (doors are closed)

A
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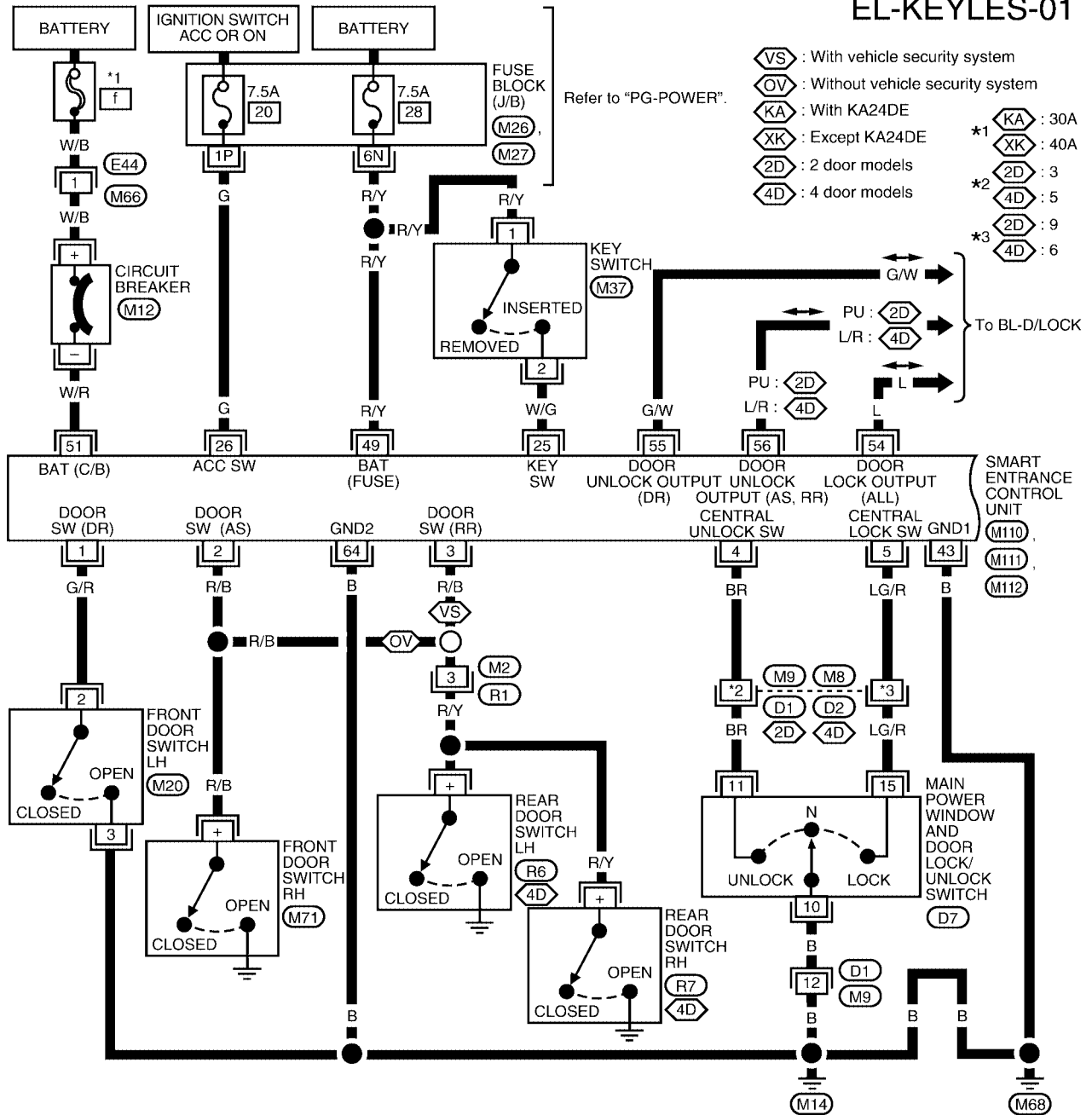
BL

REMOTE KEYLESS ENTRY SYSTEM

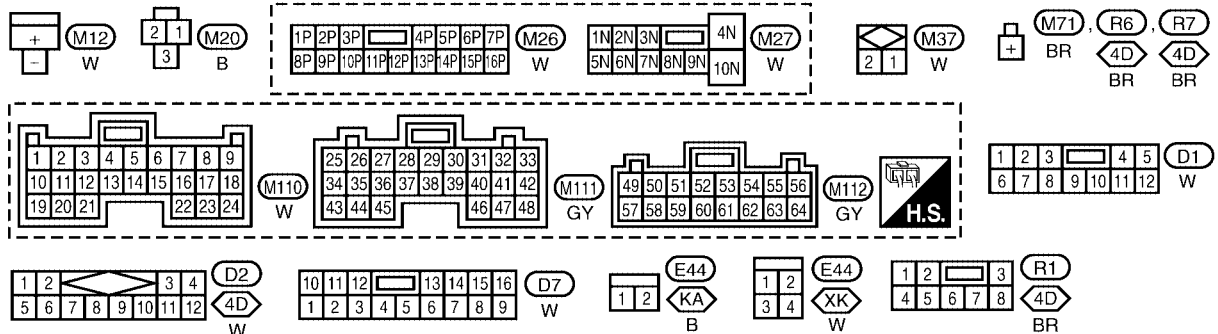
EIS000V9

Wiring Diagram — KEYLES —
FIG. 1

EL-KEYLES-01



- ⬡VS : With vehicle security system
 - ⬡OV : Without vehicle security system
 - ⬡KA : With KA24DE
 - ⬡XK : Except KA24DE
 - ⬡2D : 2 door models
 - ⬡4D : 4 door models
- *1 ⬡KA : 30A
 - ⬡XK : 40A
 - *2 ⬡2D : 3
 - ⬡4D : 5
 - *3 ⬡2D : 9
 - ⬡4D : 6

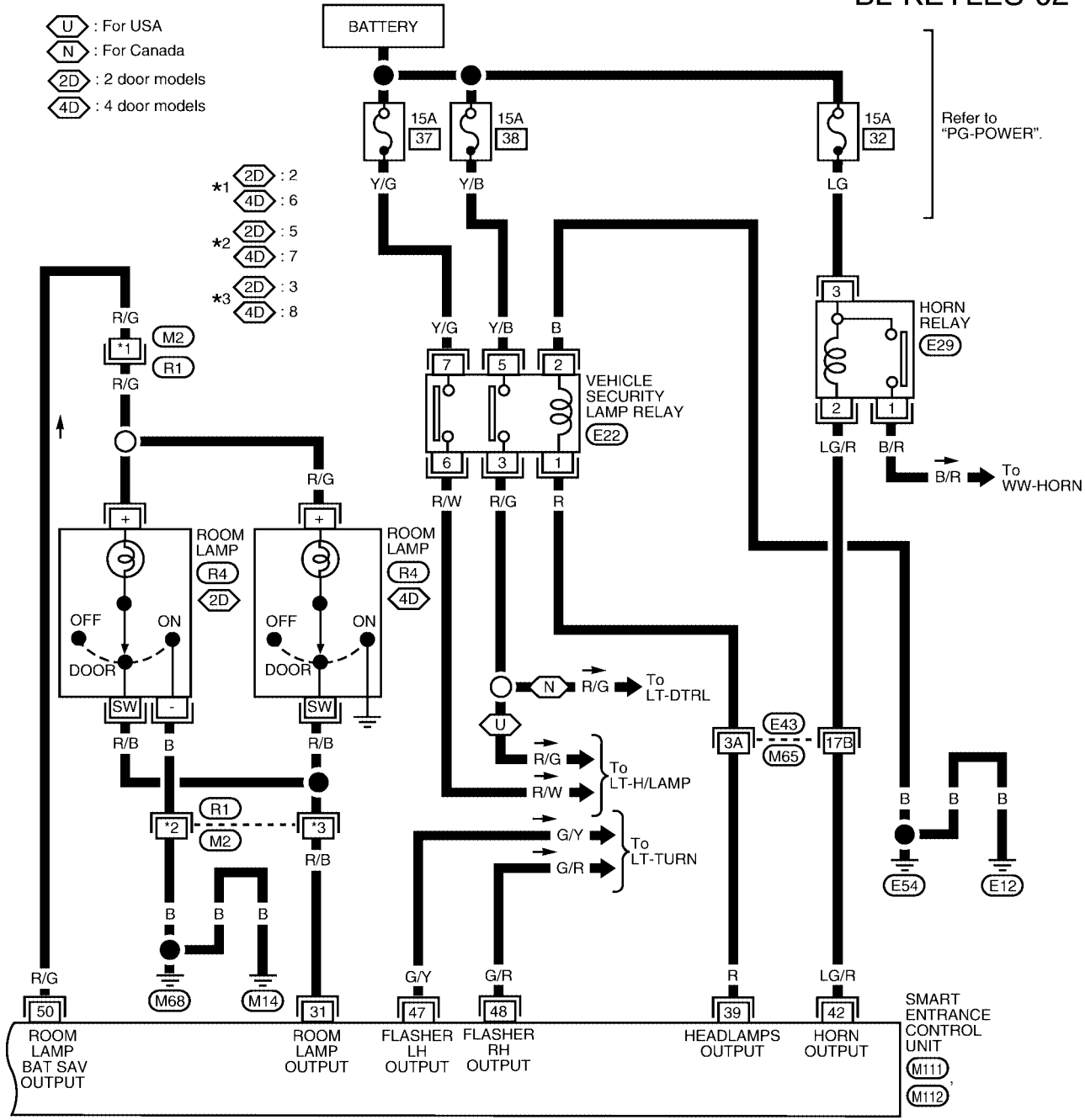


WIWA0102E

REMOTE KEYLESS ENTRY SYSTEM

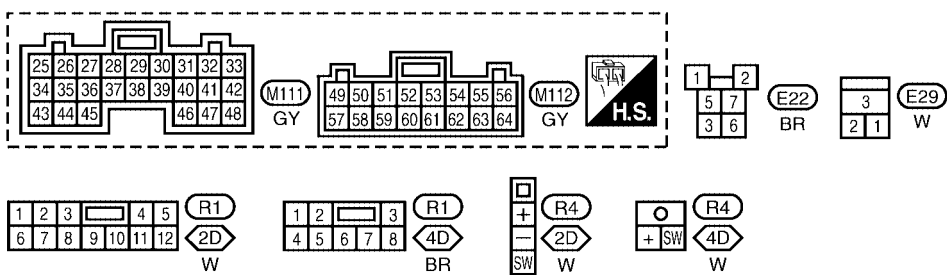
FIG. 2

BL-KEYLES-02



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

REMOTE KEYLESS ENTRY SYSTEM

EIS000VR

Trouble Diagnoses SYMPTOM CHART

NOTE:

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

Symptom	Diagnoses/service procedure	Reference page (BL-)
All functions of remote keyless entry system do not operate.	1. Keyfob battery check	BL-42
	2. Keyfob check (use Remote Keyless Entry Tester J-43241).	—
	3. Power supply and ground circuit check	BL-35
	4. Replace keyfob. Refer to ID Code Entry Procedure.	BL-41
The new ID of keyfob cannot be entered.	1. Keyfob battery check	BL-42
	2. Keyfob check (use Remote Keyless Entry Tester J-43241).	—
	3. Power supply and ground circuit check	BL-35
	4. Key switch (inserted) check	BL-38
	5. Door switch check	BL-37
	6. Replace keyfob. Refer to ID Code Entry Procedure.	BL-41
Door lock or unlock does not function (If the power door lock system does not operate manually, check power door lock system. Refer to, BL-19 , "Trouble Diagnoses".)	1. Key switch (inserted) check	BL-38
	2. Keyfob check (use Remote Keyless Entry Tester J-43241).	—
	3. Door switch check	BL-37
	4. Replace keyfob. Refer to ID Code Entry Procedure.	BL-41
Hazard indicator does not flash twice when pressing lock button of keyfob.	1. Hazard reminder check	BL-39
	2. Keyfob check (use Remote Keyless Entry Tester J-43241).	—
	3. Replace keyfob. Refer to ID Code Entry Procedure.	BL-41
Room lamp does not activate properly.	1. Room lamp operation check	BL-39
	2. Door switch check	BL-37
Panic alarm (horn and headlamps) does not activate when panic alarm button is pressed continuously for more than 1.5 seconds.	1. Vehicle security operation check. Refer to "PRELIMINARY CHECK", "VEHICLE SECURITY SYSTEM".	BL-52
	2. Keyfob check (use Remote Keyless Entry Tester J-43241).	—
	3. Replace keyfob. Refer to ID Code Entry Procedure.	BL-41

NOTE:

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

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

REMOTE KEYLESS ENTRY SYSTEM

KEYFOB BATTERY CHECK

1. CHECK KEYFOB BATTERY

Remove battery (refer to [BL-42, "Keyfob Battery Replacement"](#)) and measure voltage across battery positive and negative terminals, (+) and (-).

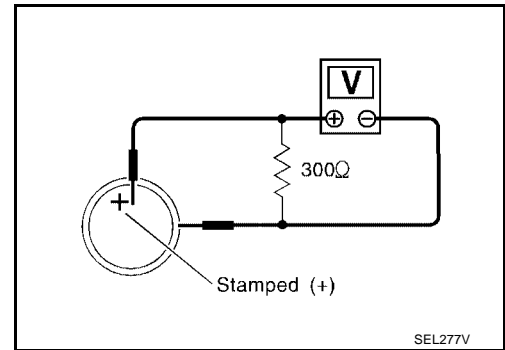
Voltage [V] : 2.5 - 3.0

NOTE:

Keyfob does not function if battery is not installed correctly.

OK or NG

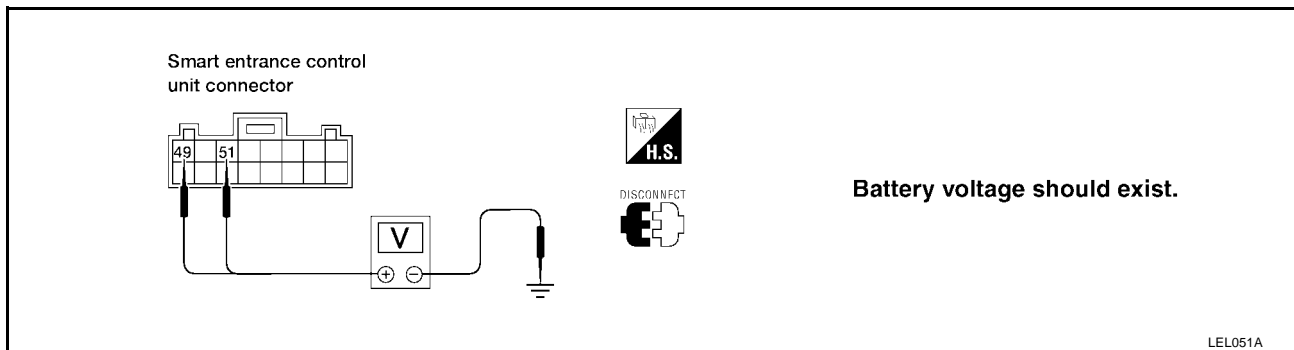
- OK >> Check keyfob battery terminals for corrosion and damage.
NG >> Replace battery.



POWER SUPPLY AND GROUND CIRCUIT CHECK

1. CHECK MAIN POWER SUPPLY CIRCUIT FOR CONTROL UNIT

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



Refer to [BL-32, "Wiring Diagram — KEYLES —"](#).

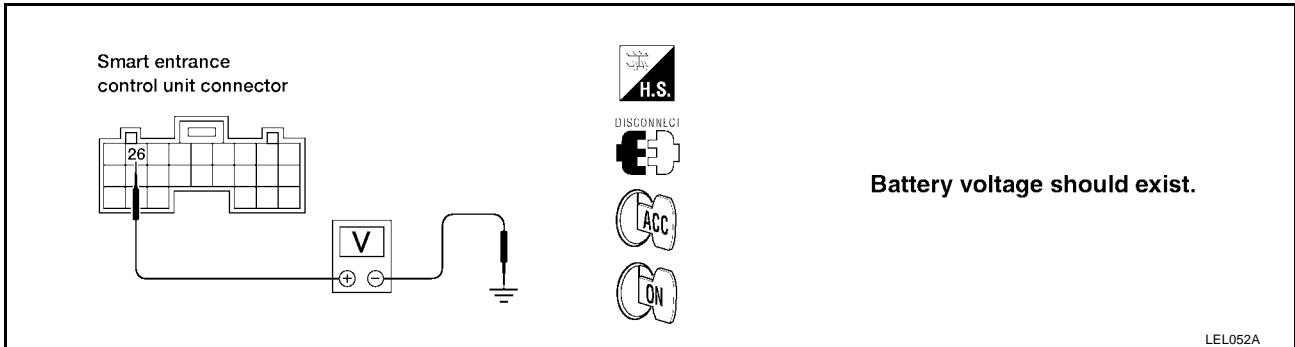
OK or NG

- OK >> GO TO 2.
NG >> Check the following.
- 30A fusible link (with KA24DE), 40A fusible link (with VG33E and VG33ER) (letter f , located in fuse and fusible link box)
 - 7.5A fuse [No. 28, located in fuse block (J/B)]
 - M12 circuit breaker
 - Harness for open or short between smart entrance control unit and circuit breaker
 - Harness for open or short between smart entrance control unit and fuse.

REMOTE KEYLESS ENTRY SYSTEM

2. CHECK IGNITION SWITCH ACC CIRCUIT

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



Refer to [BL-32, "Wiring Diagram — KEYLES —"](#) .

OK or NG

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

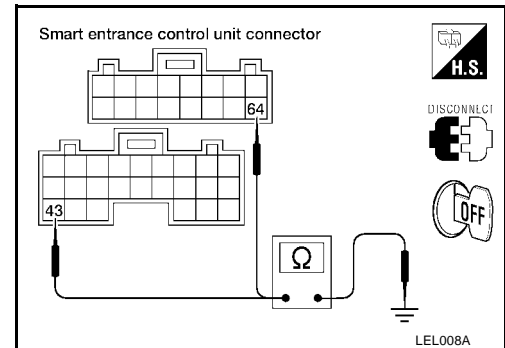
3. CHECK GROUND CIRCUIT FOR CONTROL UNIT

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

Refer to [BL-32, "Wiring Diagram — KEYLES —"](#) .

OK or NG

- OK >> Power supply and ground circuits are OK.
- NG >> Check ground harness.

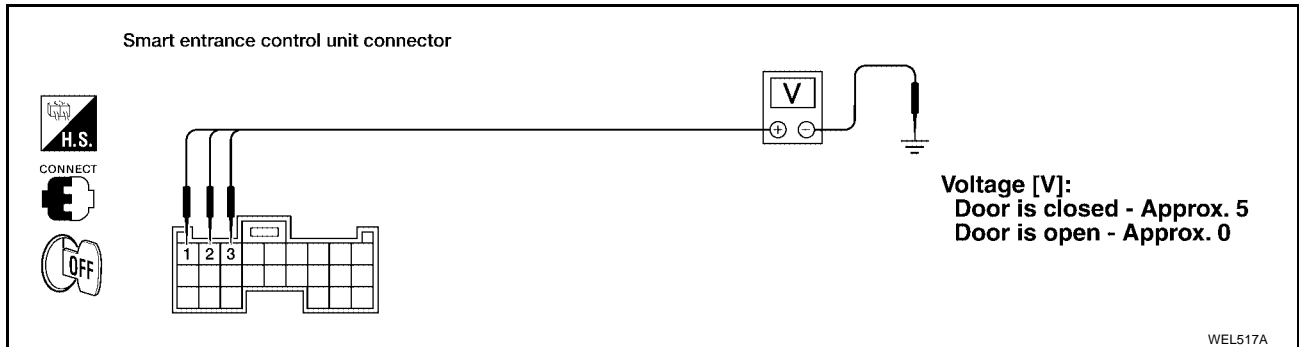


REMOTE KEYLESS ENTRY SYSTEM

DOOR SWITCH CHECK

1. CHECK DOOR SWITCH INPUT SIGNAL

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



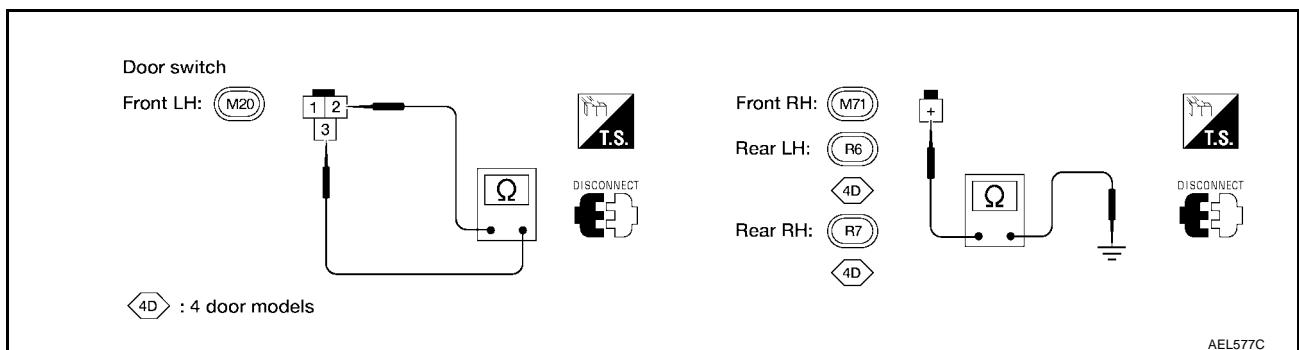
Refer to [BL-32, "Wiring Diagram — KEYLES —"](#).

OK or NG

- OK >> Door switch is OK.
- NG >> GO TO 2.

2. CHECK DOOR SWITCH

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



Door switch is pressed : Continuity should not exist.

Door switch is released : Continuity should exist.

OK or NG

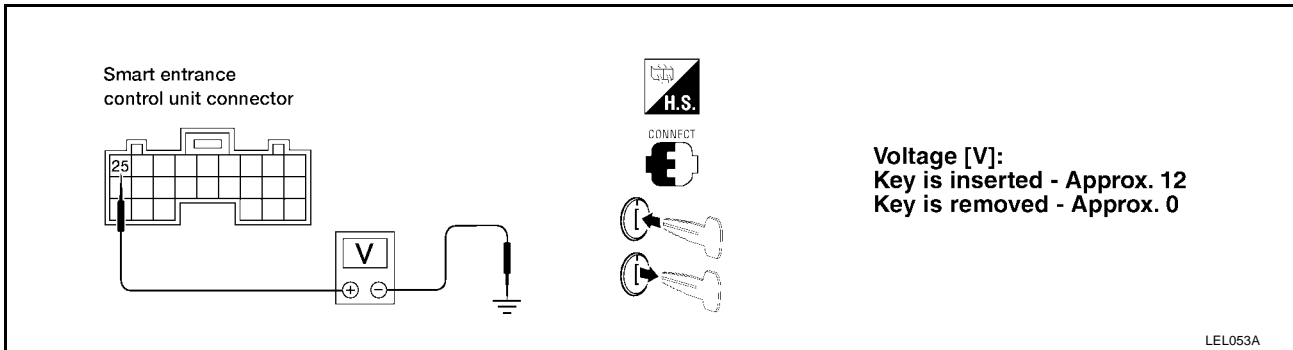
- OK >> Check the following.
 - Front door switch LH ground circuit or door switch ground condition
 - Harness for open or short between smart entrance control unit and door switch
- NG >> Replace door switch.

REMOTE KEYLESS ENTRY SYSTEM

KEY SWITCH (INSERTED) CHECK

1. CHECK KEY SWITCH INPUT SIGNAL

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



Refer to [BL-32, "Wiring Diagram — KEYLES —"](#) .

OK or NG

- OK >> Key switch is OK.
- NG >> GO TO 2.

2. CHECK KEY SWITCH POWER SUPPLY

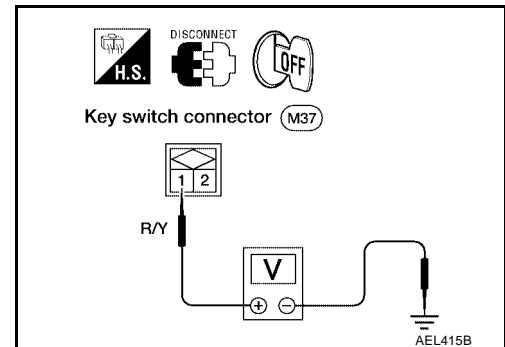
1. Disconnect key switch harness connector.
2. Check voltage between key switch harness connector terminal 1 and ground.

Battery voltage should exist.

Refer to [BL-32, "Wiring Diagram — KEYLES —"](#) .

OK or NG

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



3. CHECK KEY SWITCH (INSERTED)

Check continuity between terminals 1 and 2.

Continuity

Condition of key switch : Key is inserted.

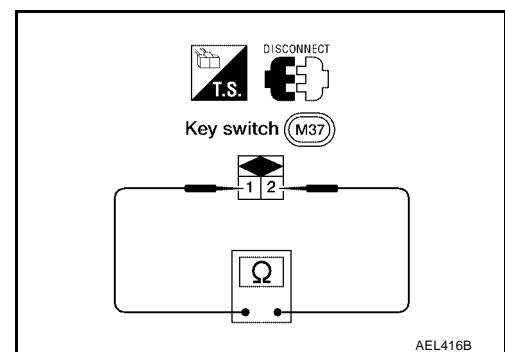
Yes

Condition of key switch : Key is removed.

No

OK or NG

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



REMOTE KEYLESS ENTRY SYSTEM

HAZARD REMINDER CHECK

1. CHECK HAZARD INDICATOR

Check if hazard indicator flashes with hazard switch.

Does hazard indicator operate?

Yes >> GO TO 2.

No >> Check "hazard indicator" circuit. Refer to [LT-29, "Trouble Diagnoses"](#) .

2. CHECK KEYFOB OPERATION

Check door lock/unlock operation with keyfob.

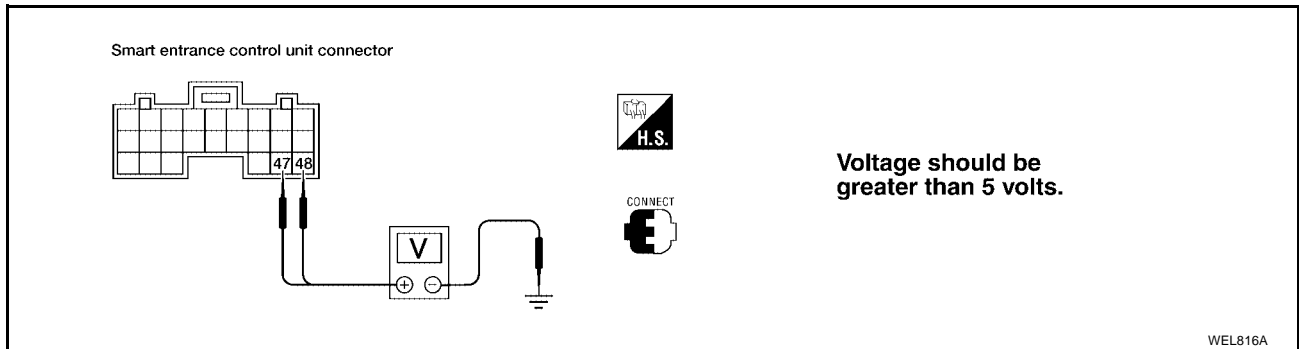
Does door lock/unlock operate?

Yes >> GO TO 3.

No >> Check keyfob battery. Refer to [BL-35, "KEYFOB BATTERY CHECK"](#) .

3. CHECK HAZARD REMINDER OUTPUT SIGNAL

Measure voltage between smart entrance control unit connector M111 terminals 47 (G/Y) and 48 (G/R), and ground with CONSULT-II or voltmeter when hazard reminder is operated.



OK or NG

OK >> Check harness for open or short between smart entrance control unit and turn signal lamps.

NG >> Replace smart entrance control unit.

INTERIOR ROOM LAMP OPERATION CHECK

1. CHECK INTERIOR ROOM LAMP

Check if the interior room lamp switch is in the "ON" position and the lamp illuminates.

Does interior room lamp illuminate?

Yes >> GO TO 2.

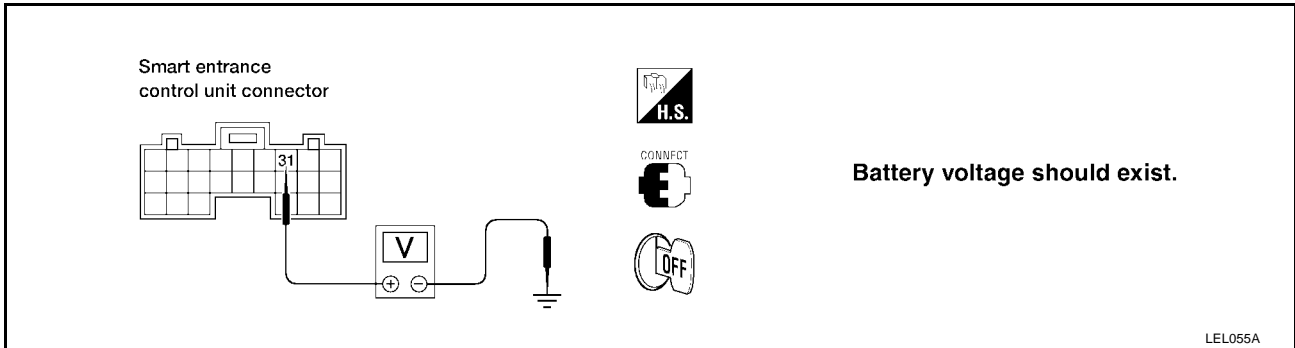
No >> Check the following.

- Harness for open or short between smart entrance control unit and interior room lamp
- Interior room lamp

REMOTE KEYLESS ENTRY SYSTEM

2. CHECK INTERIOR ROOM LAMP CIRCUIT

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



Refer to [BL-32, "Wiring Diagram — KEYLES —"](#).

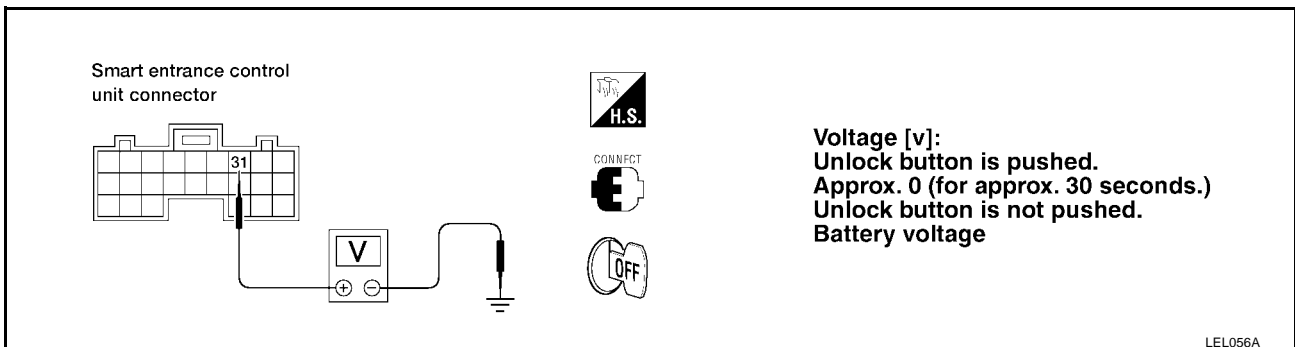
OK or NG

OK >> GO TO 3.

NG >> Repair harness between smart entrance control unit and interior room lamp.

3. CHECK CONTROL UNIT OUTPUT

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



OK or NG

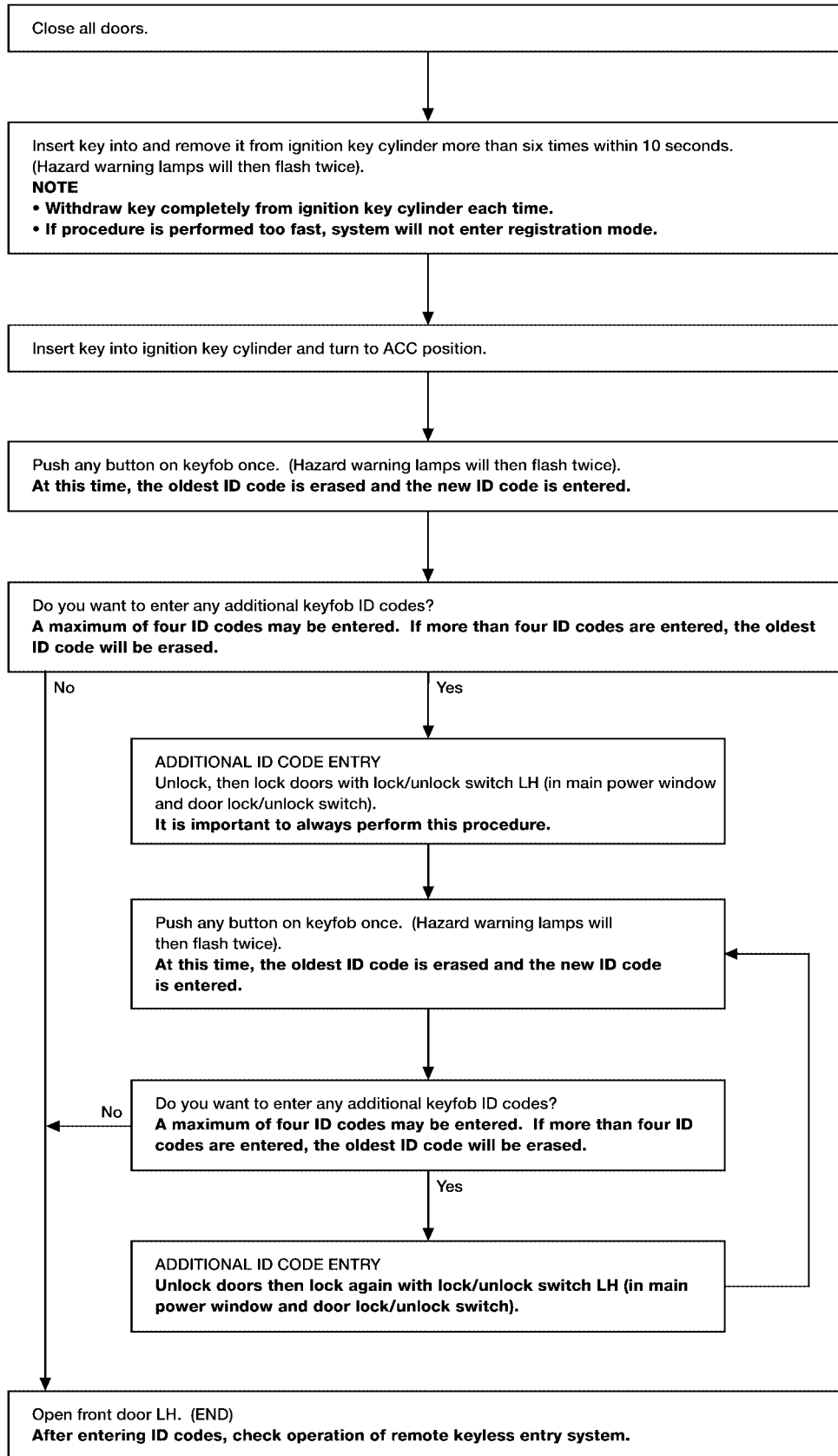
OK >> Check system again.

NG >> Replace smart entrance control unit.

REMOTE KEYLESS ENTRY SYSTEM

EIS000VS

ID Code Entry Procedure



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NOTE:

- If a keyfob is lost, the ID code of the lost keyfob must be erased to prevent unauthorized use.

WEL817A

REMOTE KEYLESS ENTRY SYSTEM

To erase all ID codes in memory, register one ID code (keyfob) four times. After all ID codes are erased, the ID codes of all remaining and/or new keyfobs must be re-registered.

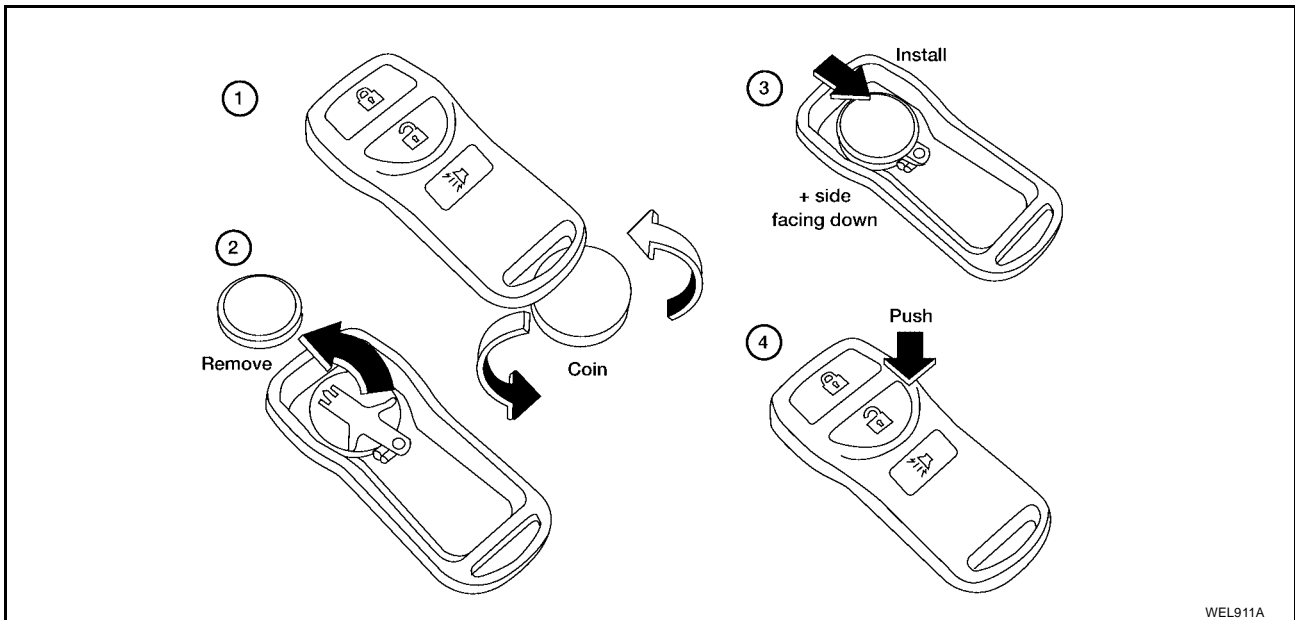
- When registering an additional keyfob, the existing ID codes in memory may or may not be erased. If four ID codes are stored in memory when an additional code is registered, only the oldest code is erased. If less than four ID codes are stored in memory when an additional ID code is registered, the new ID code is added and no ID codes are erased.
- If you need to activate more than two additional new keyfobs, repeat the procedure "ADDITIONAL ID CODE ENTRY" for each new keyfob.
- Entry of a maximum of four ID codes is allowed. When more than four ID codes are entered, the oldest ID code will be erased.
- If an ID code has already been registered in the memory, the same ID code can be entered in the memory again. Each registration of an ID code counts as an additional code.

Keyfob Battery Replacement

EIS000VT

NOTE:

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



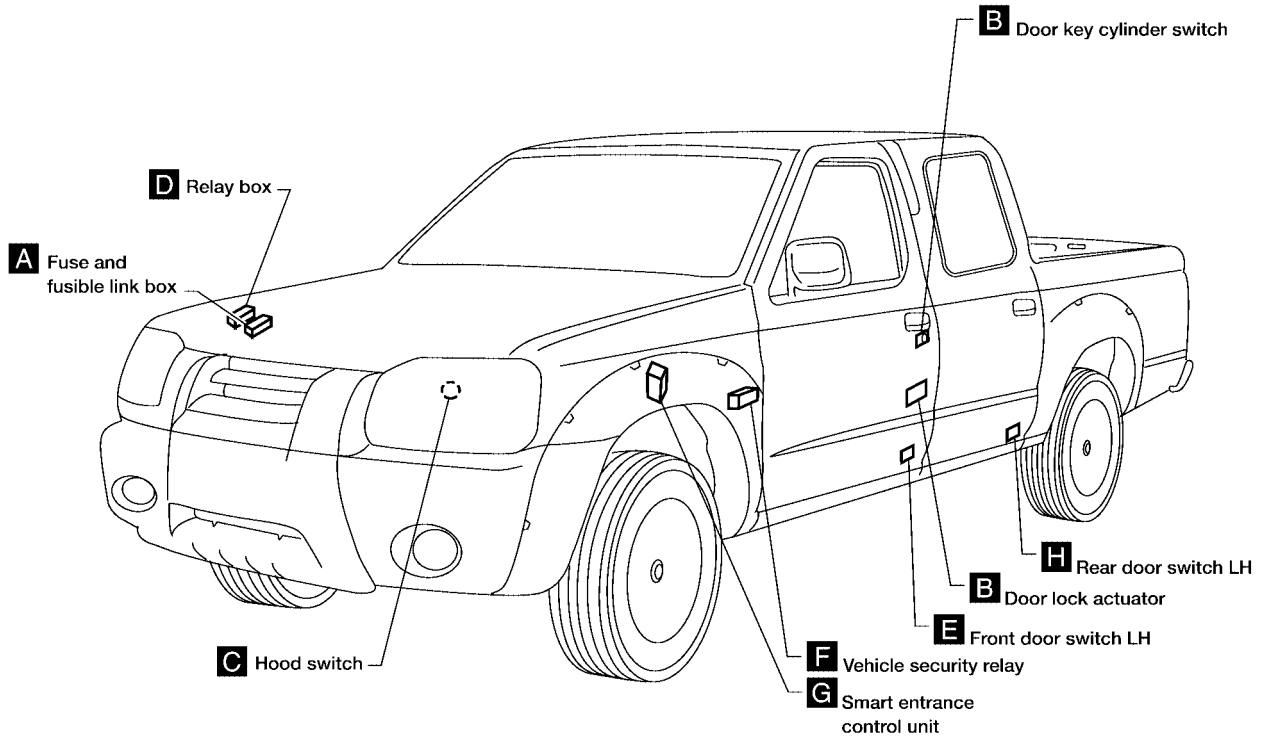
VEHICLE SECURITY (THEFT WARNING) SYSTEM

VEHICLE SECURITY (THEFT WARNING) SYSTEM

Component Parts and Harness Connector Location

PF0:00100

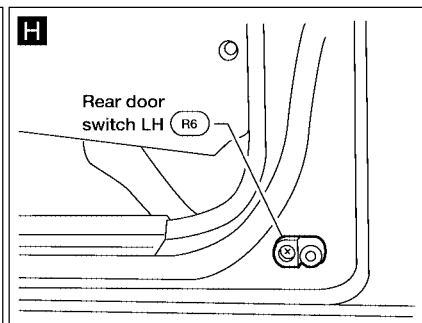
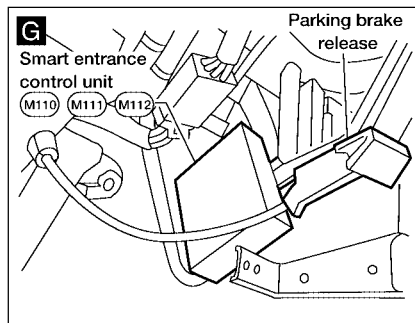
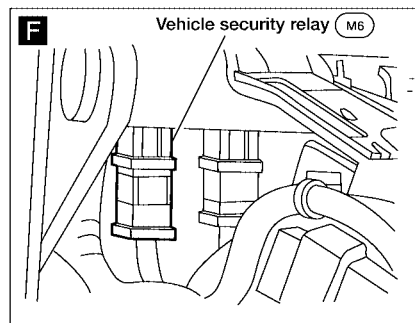
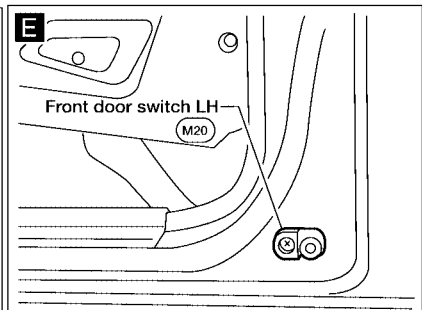
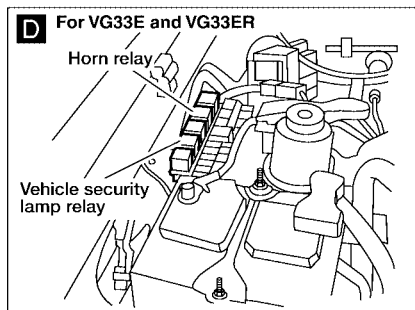
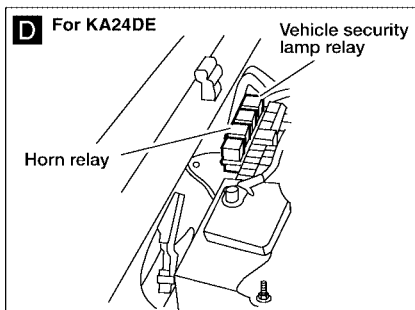
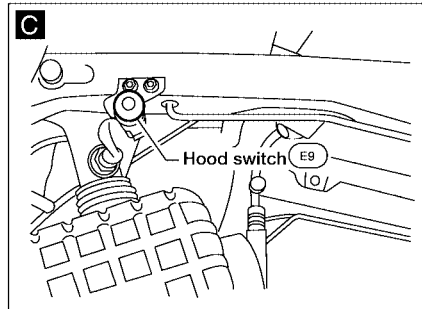
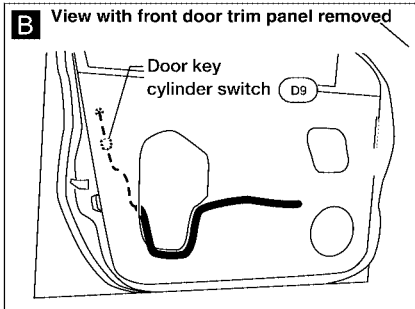
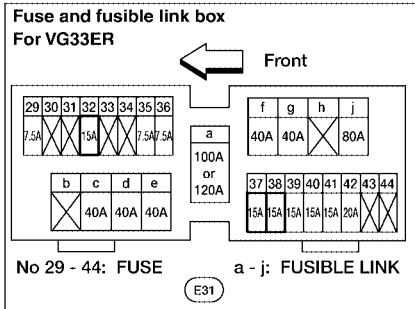
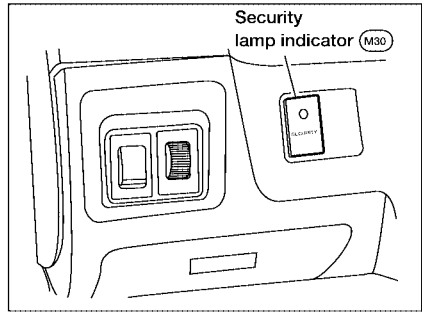
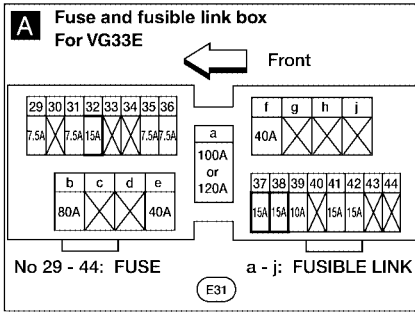
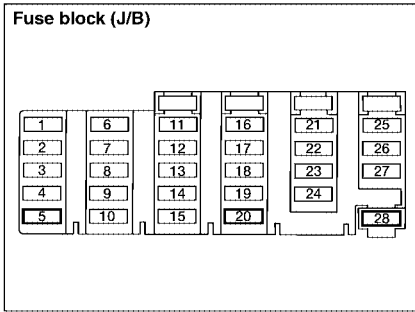
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VEHICLE SECURITY (THEFT WARNING) SYSTEM

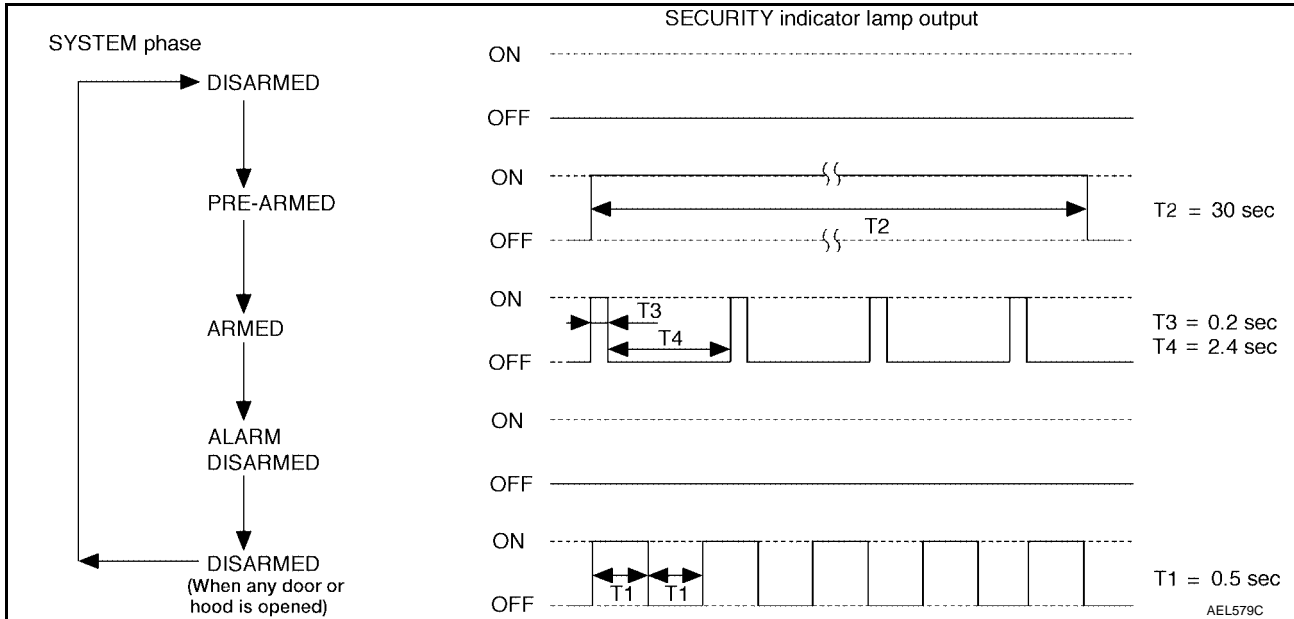


VEHICLE SECURITY (THEFT WARNING) SYSTEM

EIS000VV

System Description DESCRIPTION

1. Operation Flow



2. Setting the Vehicle Security System

Initial condition

1. Close all doors.
2. Close hood.

Disarmed phase

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

Pre-armed phase and armed phase

The vehicle security system turns into the "pre-armed" phase when hood and all doors are closed and the doors are locked by key or keyfob. (The security indicator lamp illuminates.)

After about 30 seconds, the system automatically shifts into the "armed" phase (the system is set). (The security indicator lamp blinks every 2.6 seconds.)

3. Canceling the Set Vehicle Security System

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

4. Activating the Alarm Operation of the Vehicle Security System

Make sure the system is in the armed phase. (The security indicator lamp blinks every 2.6 seconds.)

When either of the following operations 1) or 2) is performed, the horn and headlamps operate intermittently for about 50 seconds. (At the same time, the system disconnects the starting system circuit.)

1. Engine hood or any door is opened before unlocking door with key or keyfob.
2. Door is opened without first using key or keyfob.

POWER SUPPLY AND GROUND

Power is supplied at all times

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

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

- through 7.5A fuse [No. 20, located in the fuse block (J/B)]
- to smart entrance control unit terminal 26.

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

- through 10A fuse [No. 5, located in the fuse block (J/B)]

VEHICLE SECURITY (THEFT WARNING) SYSTEM

- to smart entrance control unit terminal 27.

Ground is supplied

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

INITIAL CONDITION TO ACTIVATE THE SYSTEM

To activate the vehicle security system, the smart entrance control unit must receive signals indicating the doors and hood are closed and the doors are locked.

When a door is open, smart entrance control unit terminal 1, 2, or 3 (Crew Cab) receives a ground signal from the corresponding door switch.

When the hood is open, ground is supplied

- to smart entrance control unit terminal 6
- through hood switch terminal +
- through hood switch terminal –
- through body grounds E12 and E54.

When the doors are locked with key or keyfob and none of the described conditions exist, the vehicle security system will automatically shift to armed phase.

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

If the key is used to lock doors, ground is supplied to smart entrance control unit terminal 11

- through front door key cylinder switch LH terminal 1
- through front door key cylinder switch LH terminal 2
- through body grounds M14 and M68.

If this signal or lock signal from keyfob is received by the smart entrance control unit, the vehicle security system will activate automatically.

Once the vehicle security system has been activated, smart entrance control unit terminal 38 supplies ground to security indicator lamp terminal 2.

The security lamp will illuminate for approximately 30 seconds and then blink.

The vehicle security system is now in armed phase.

VEHICLE SECURITY SYSTEM ALARM OPERATION

The vehicle security system is triggered by

- opening a door
- opening the hood.

Once the vehicle security system is in armed phase, if the smart entrance control unit receives a ground signal at terminal 1, 2, or 3 (Crew Cab) or 6 (hood switch), the vehicle security system will be triggered. The horn and headlamps operate intermittently and the starting system is interrupted.

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

- through 10A fuse [No. 5, located in the fuse block (J/B)].
- to vehicle security relay terminal 2.

If the vehicle security system is triggered, ground is supplied

- to vehicle security relay terminal 1
- through smart entrance control unit terminal 40.

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

Power is supplied at all times

- through 15A fuse (No. 32, located in fuse and fusible link box)
- to horn relay terminal 3.

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

- to vehicle security lamp relay terminal 1
- through smart entrance control unit terminal 39.

Ground is supplied

- to vehicle security lamp relay terminal 2
- through body grounds E54 and E12.

VEHICLE SECURITY (THEFT WARNING) SYSTEM

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

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

The horn and headlamps operate intermittently.

The alarm automatically turns off after 50 seconds but will reactivate if the vehicle is tampered with again.

VEHICLE SECURITY SYSTEM DEACTIVATION

To deactivate the vehicle security system, a door must be unlocked with the key or keyfob.

When the key is used to unlock the door, smart entrance control unit terminal 10 receives a ground signal

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

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

PANIC ALARM OPERATION

Remote keyless entry system may or may not operate vehicle security system (horn and headlamps) as required.

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

- to vehicle security lamp relay terminal 1
- through smart entrance control unit terminal 39

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

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

The horn and headlamps operate intermittently.

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

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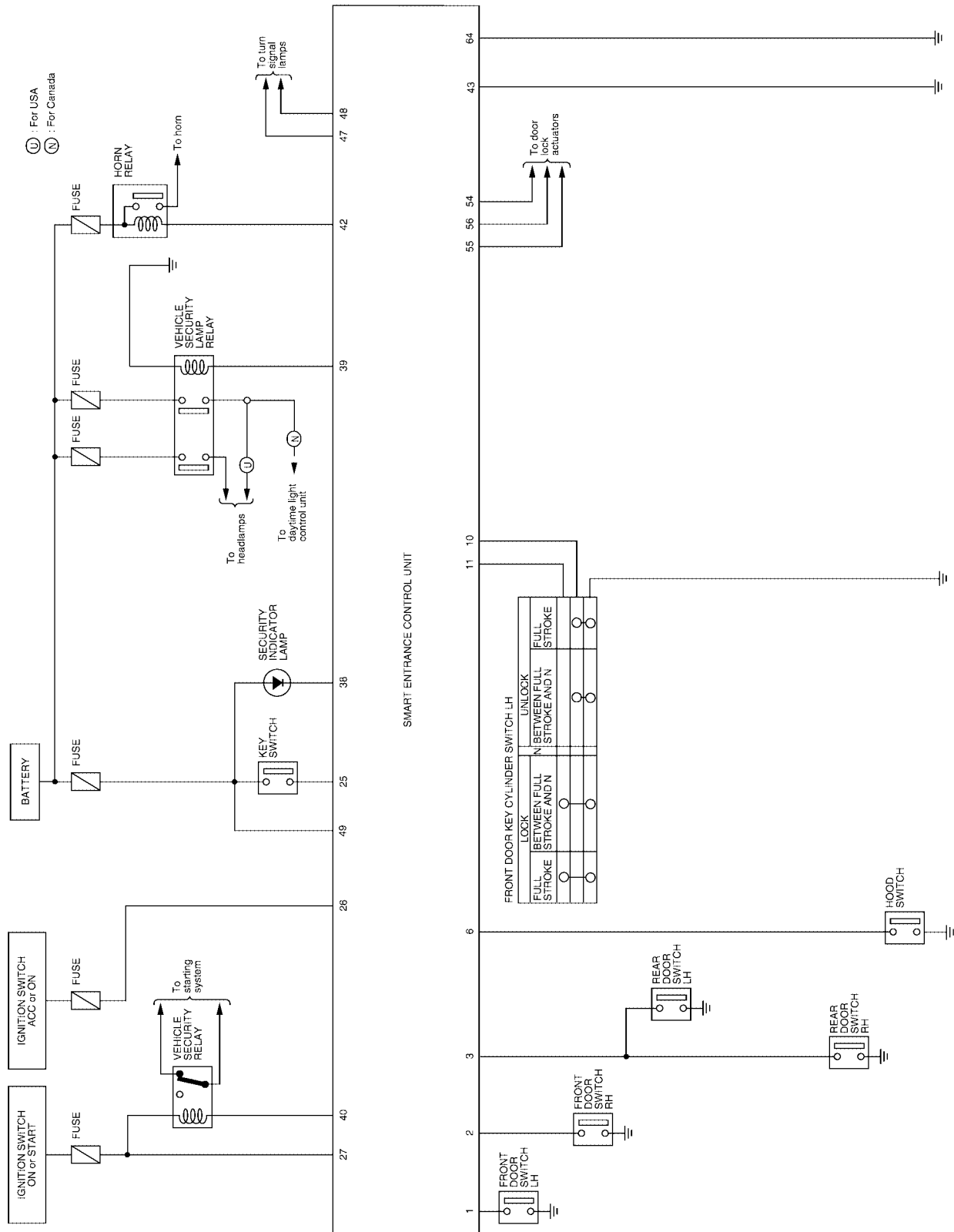
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VEHICLE SECURITY (THEFT WARNING) SYSTEM

Circuit Diagram

EIS000VVW

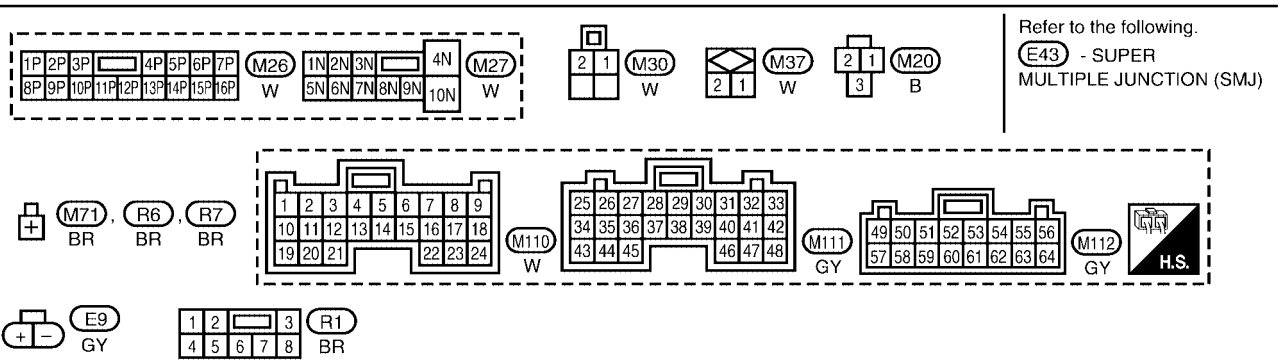
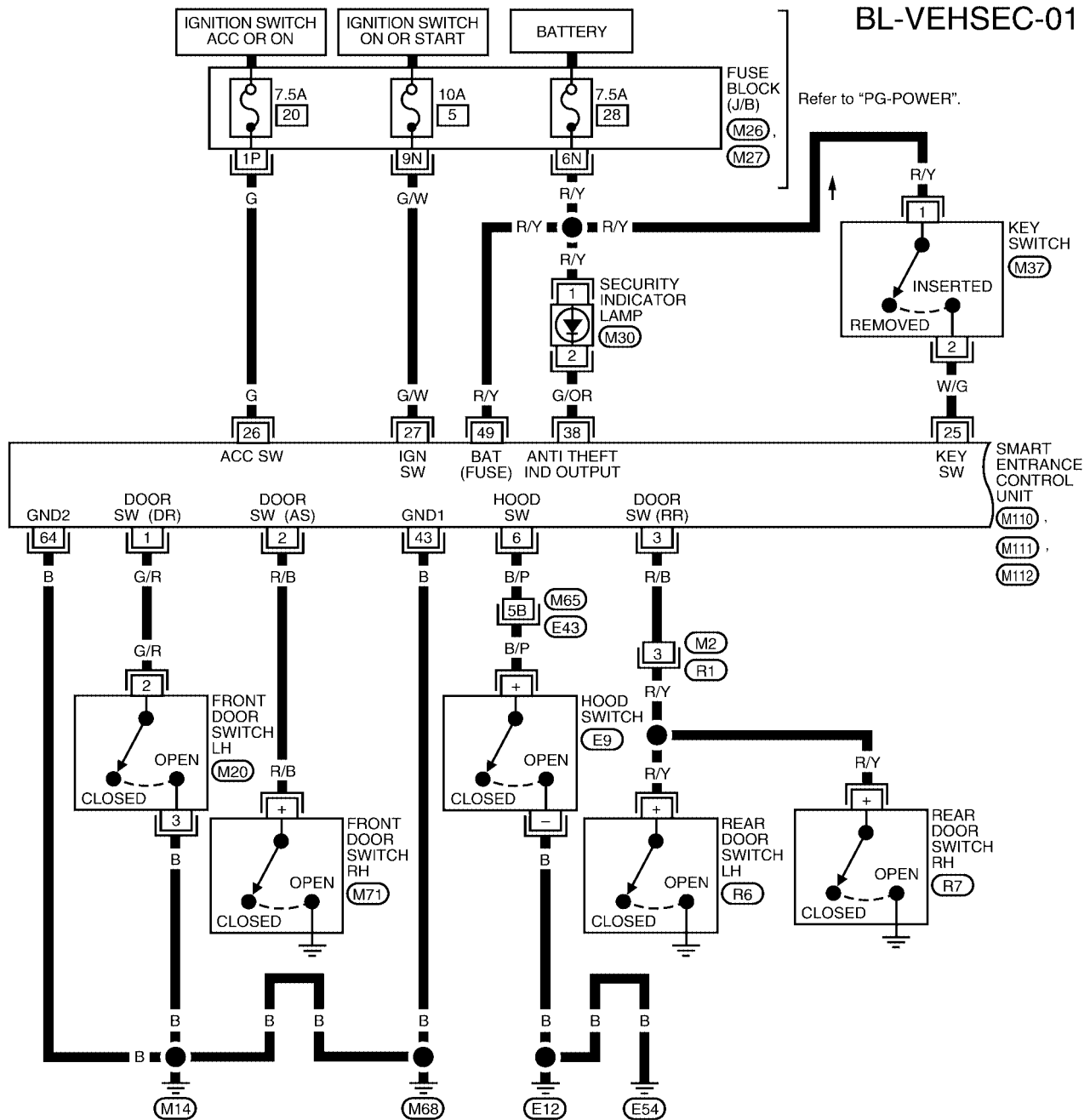


WIWA0104E

VEHICLE SECURITY (THEFT WARNING) SYSTEM

Wiring Diagram — VEHSEC —
FIG. 1

EIS000VX

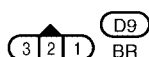
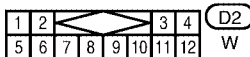
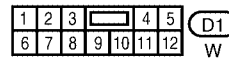
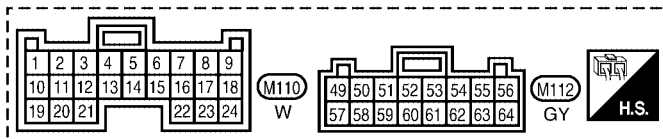
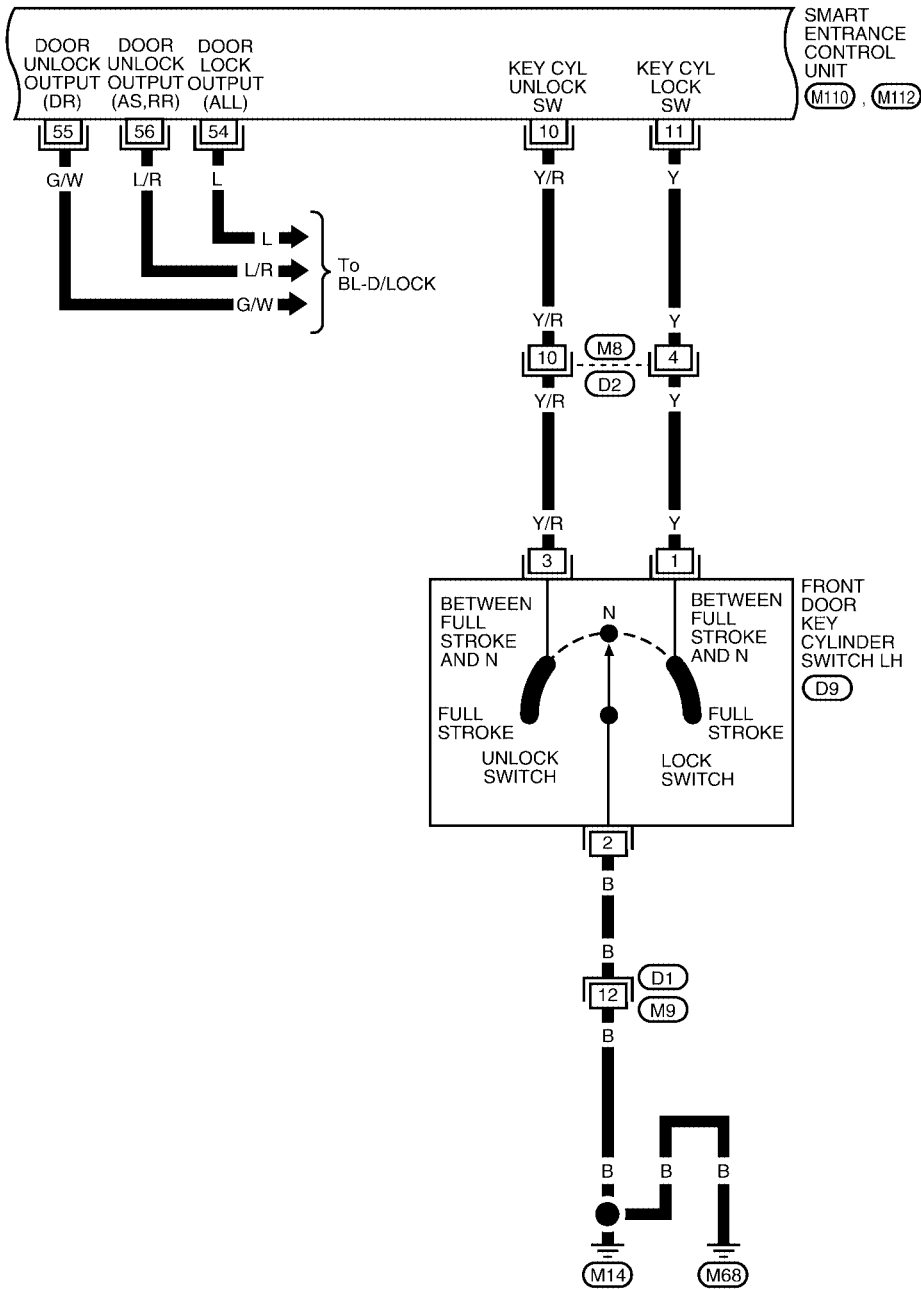


WIWA0105E

VEHICLE SECURITY (THEFT WARNING) SYSTEM

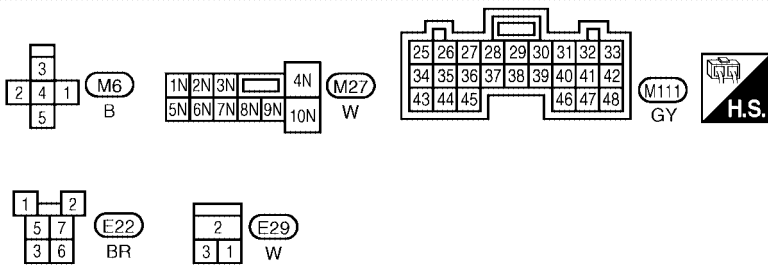
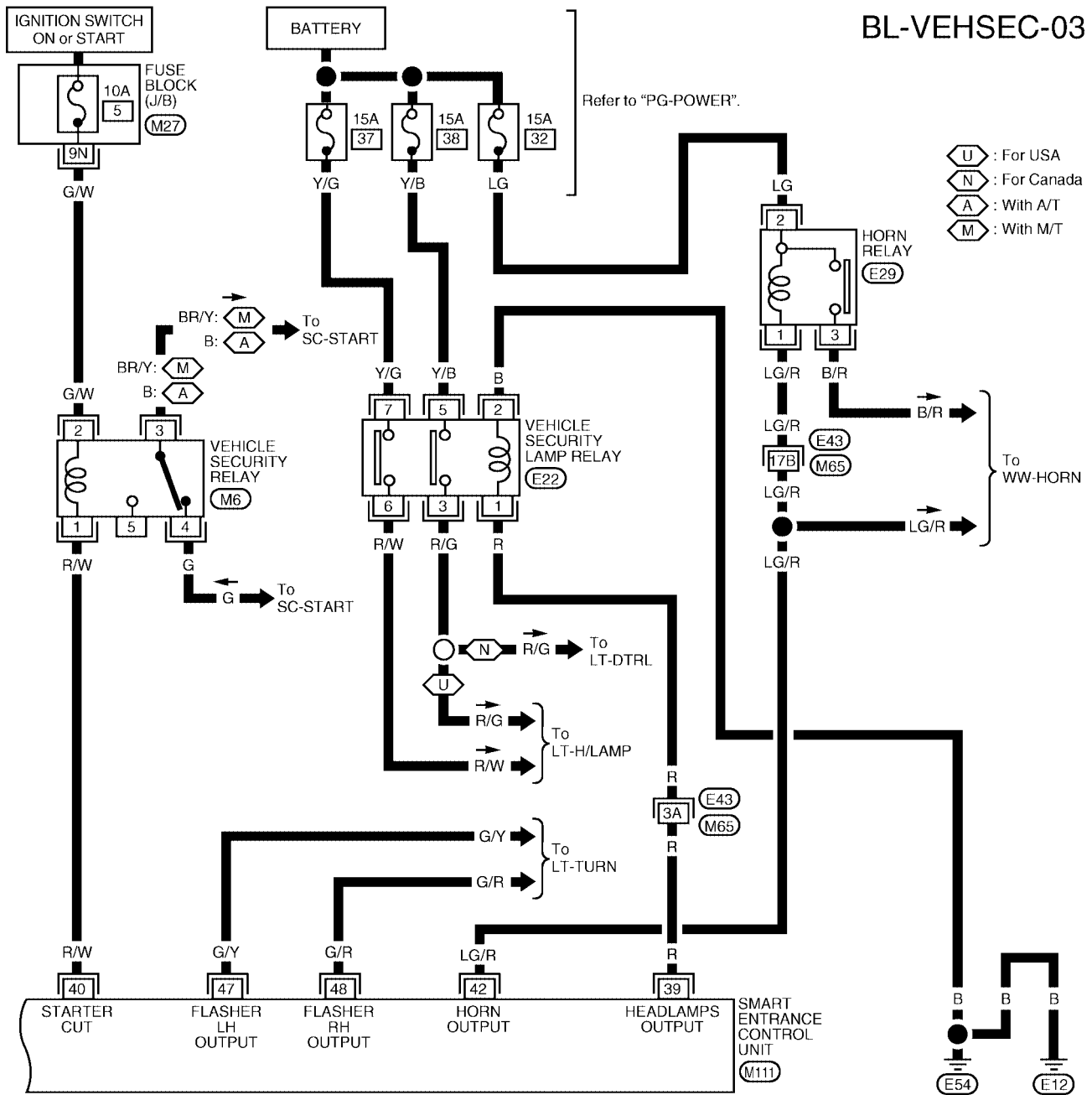
FIG. 2

BL-VEHSEC-02



VEHICLE SECURITY (THEFT WARNING) SYSTEM

FIG. 3



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

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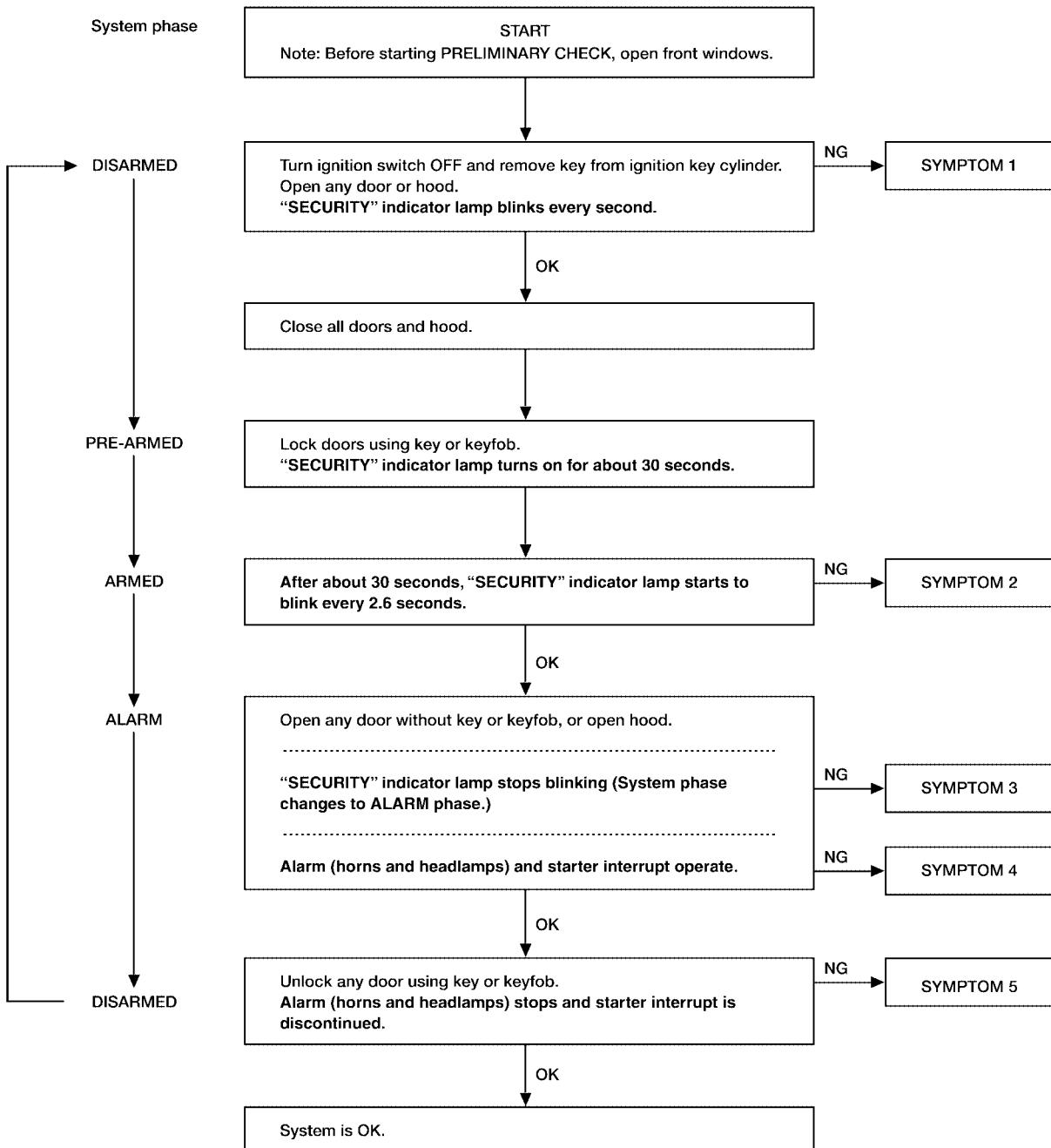
BL

VEHICLE SECURITY (THEFT WARNING) SYSTEM

EIS000VY

Trouble Diagnoses PRELIMINARY CHECK

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



WEL907A

After performing "PRELIMINARY CHECK", go to [BL-53. "SYMPTOM CHART"](#) .

VEHICLE SECURITY (THEFT WARNING) SYSTEM

SYMPTOM CHART

REFERENCE PAGE (BL-)		BL-52	BL-54	BL-55	BL-58	BL-59	BL-60	BL-60	BL-62	BL-34
SYMPTOM		PRELIMINARY CHECK	POWER SUPPLY AND GROUND CIRCUIT CHECK	DOOR AND HOOD SWITCH CHECK	SECURITY INDICATOR LAMP CHECK	DOOR KEY CYLINDER SWITCH CHECK	VEHICLE SECURITY HORN ALARM CHECK	VEHICLE SECURITY HEADLAMP ALARM CHECK	STARTER INTERRUPT SYSTEM CHECK	Check "REMOTE KEYLESS ENTRY" system.
1	Vehicle security indicator does not turn ON or blink.	X	X		X					
2	Vehicle security system cannot be set by ...	All items	X	X	X					
		Door outside key	X				X			
		Keyfob	X							
3	*1 Vehicle security system does not alarm when ...	Any door is opened.	X		X					
		Front door LH or RH (King Cab) is unlocked without using key or keyfob.	X							
4	Vehicle security alarm does not activate.	All function	X	X	X					
		Horn alarm	X					X		
		Headlamp alarm	X						X	
		Starter interrupt	X							X
5	Vehicle security system cannot be canceled by ...	Door outside key	X				X			
		Keyfob	X							

X : Applicable

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

Before starting trouble diagnoses above, perform [BL-52, "PRELIMINARY CHECK"](#) .

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

VEHICLE SECURITY (THEFT WARNING) SYSTEM

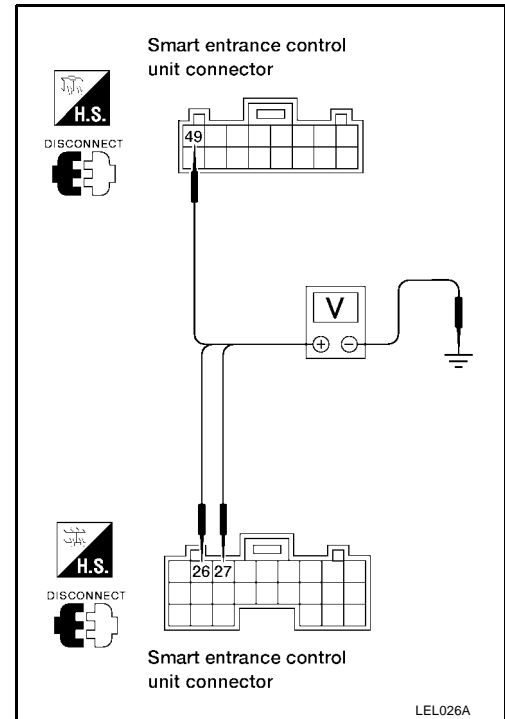
POWER SUPPLY AND GROUND CIRCUIT CHECK

Power Supply Circuit Check

Terminals		Ignition switch position		
(+)	(-)	OFF	ACC	ON
M112 - 49 (R/Y)	Ground	Battery voltage	Battery voltage	Battery voltage
M111 - 26 (G)	Ground	0V	Battery voltage	Battery voltage
M111 - 27 (G/W)	Ground	0V	0V	Battery voltage

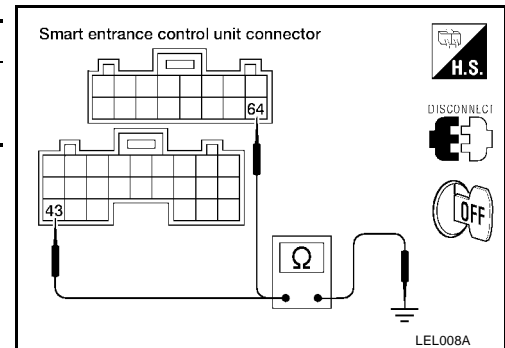
If NG, check the following.

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



Ground Circuit Check

Terminals	Continuity
M111 - 43 (B) - Ground	Yes
M112 - 64 (B) - Ground	



VEHICLE SECURITY (THEFT WARNING) SYSTEM

DOOR AND HOOD SWITCH CHECK

Door Switch Check

1. PRELIMINARY CHECK

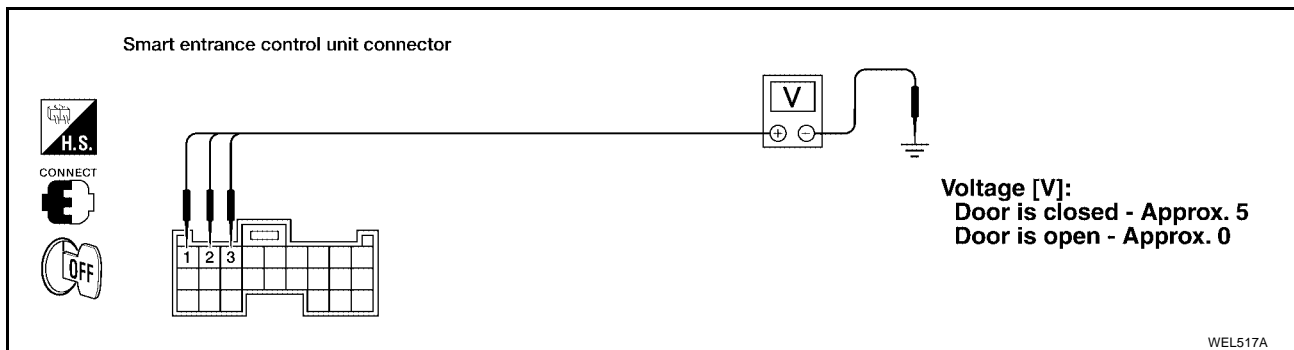
1. Turn ignition switch OFF and remove key from ignition key cylinder.
2. Close all doors and hood.
“SECURITY” indicator lamp should turn off.
3. Open any passenger door.
“SECURITY” indicator lamp should blink every 2.6 seconds.

OK or NG

- OK >> Door switch is OK. Check hood switch. Refer to [BL-56, "Hood Switch Check"](#) .
NG >> GO TO 2.

2. CHECK DOOR SWITCH INPUT SIGNAL

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



Refer to [BL-49, "Wiring Diagram — VEHSEC —"](#) .

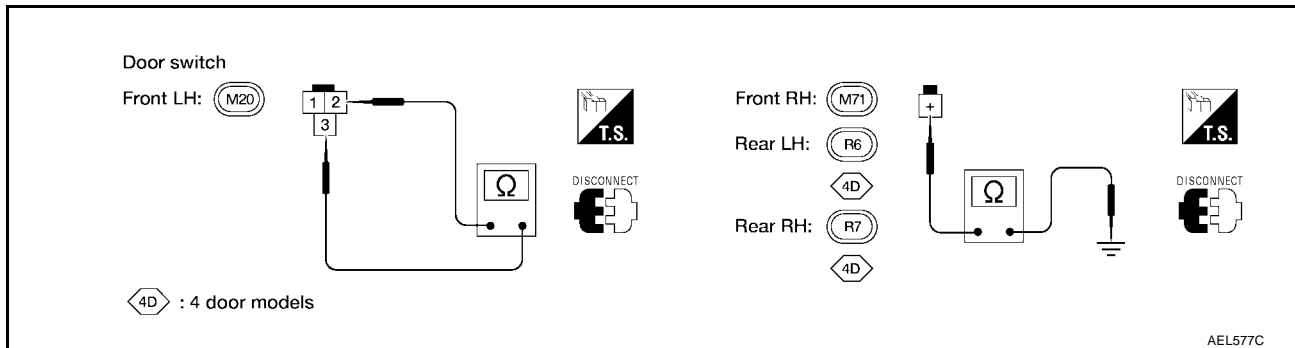
OK or NG

- OK >> Door switch is OK. Check hood switch. Refer to [BL-56, "Hood Switch Check"](#) .
NG >> GO TO 3.

VEHICLE SECURITY (THEFT WARNING) SYSTEM

3. CHECK DOOR SWITCH

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



Continuity :

Front door switch LH terminals 2 - 3

Door switch is pressed - No

Door switch is released - Yes

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

Door switch is pressed - No

Door switch is released - Yes

OK or NG

OK >> Check the following.

- Front door switch LH ground circuit or door switch ground condition
- Harness for open or short between smart entrance control unit and door switch

NG >> Replace door switch.

Hood Switch Check

1. PRELIMINARY CHECK

1. Turn ignition switch OFF and remove key from ignition key cylinder.
2. Close all doors and hood.
“SECURITY” indicator lamp should turn off.
3. Open hood.
“SECURITY” indicator lamp should blink every 2.6 seconds.

OK or NG

OK >> Hood switch is OK.

NG >> GO TO 2.

2. CHECK HOOD SWITCH FITTING CONDITION

OK or NG

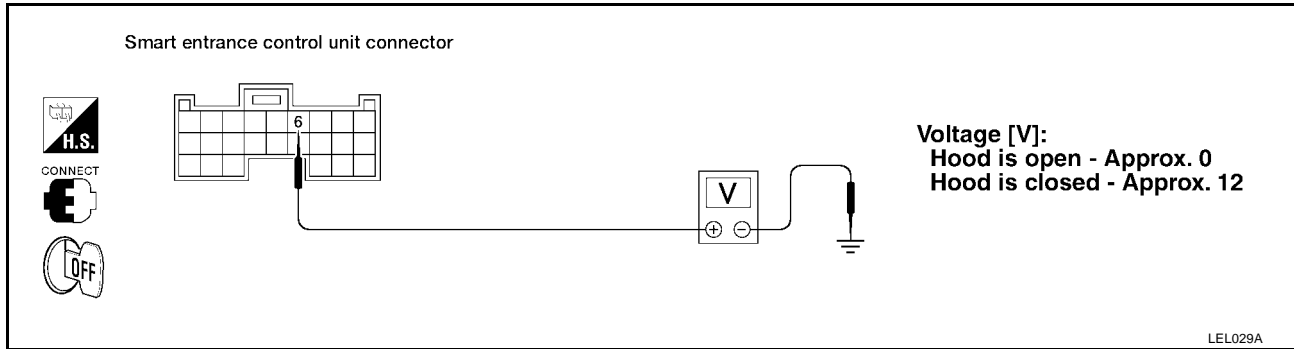
OK >> GO TO 3.

NG >> Adjust installation of hood switch or hood.

VEHICLE SECURITY (THEFT WARNING) SYSTEM

3. CHECK HOOD SWITCH INPUT SIGNAL

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



Refer to [BL-49, "Wiring Diagram — VEHSEC —"](#).

OK or NG

- OK >> Hood switch is OK.
- NG >> GO TO 4.

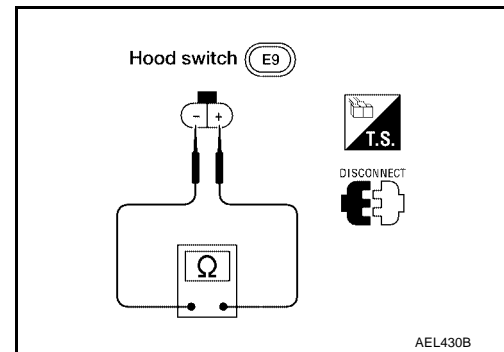
4. CHECK HOOD SWITCH

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

Continuity :
Condition : **Pressed**
No
Condition : **Released**
Yes

OK or NG

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

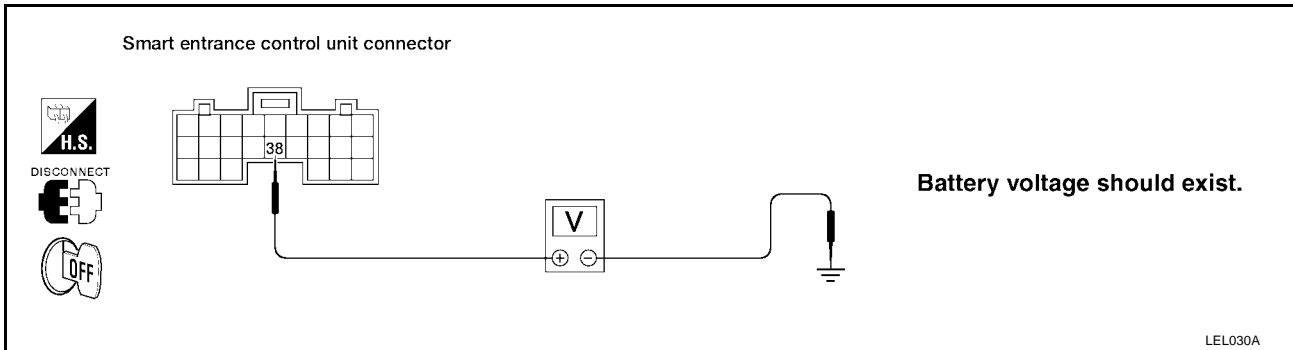


VEHICLE SECURITY (THEFT WARNING) SYSTEM

SECURITY INDICATOR LAMP CHECK

1. CHECK INDICATOR LAMP OUTPUT SIGNAL

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



Refer to [BL-49, "Wiring Diagram — VEHSEC —"](#).

OK or NG

- OK >> Security indicator lamp is OK.
NG >> GO TO 2.

2. CHECK INDICATOR LAMP

OK or NG

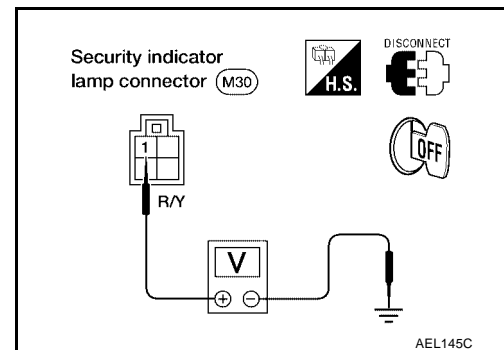
- OK >> GO TO 3.
NG >> Replace indicator lamp.

3. CHECK POWER SUPPLY CIRCUIT FOR INDICATOR LAMP

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

Does battery voltage exist?

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



VEHICLE SECURITY (THEFT WARNING) SYSTEM

DOOR KEY CYLINDER SWITCH CHECK

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

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

Terminals		Key position	Voltage [V]
(+)	(-)		
11	Ground	Neutral	Approx. 5
		Lock	0
10	Ground	Neutral	Approx. 5
		Unlock	0

WEL518A

Refer to [BL-49, "Wiring Diagram — VEHSEC —"](#).

OK or NG

- OK >> Door key cylinder switch is OK.
- NG >> GO TO 2.

2. CHECK DOOR KEY CYLINDER SWITCH

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

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

LEL032A

OK or NG

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

VEHICLE SECURITY (THEFT WARNING) SYSTEM

VEHICLE SECURITY HORN ALARM CHECK

1. CHECK VEHICLE SECURITY HORN ALARM

1. Sound horn by depressing horn switch on steering wheel.

Horn should sound

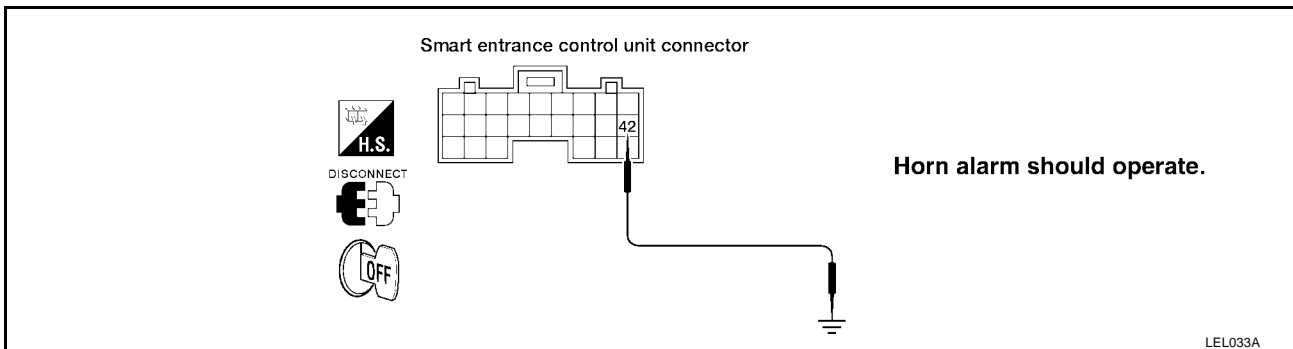
OK or NG

OK >> GO TO 2.

NG >> Refer to [WW-10, "Wiring Diagram — HORN —"](#).

2. CHECK HORN ALARM OPERATION

1. Disconnect smart entrance control unit harness connector.
2. Apply ground to smart entrance control unit harness connector M111 terminal 42 (LG/R).



Refer to [BL-49, "Wiring Diagram — VEHSEC —"](#).

OK or NG

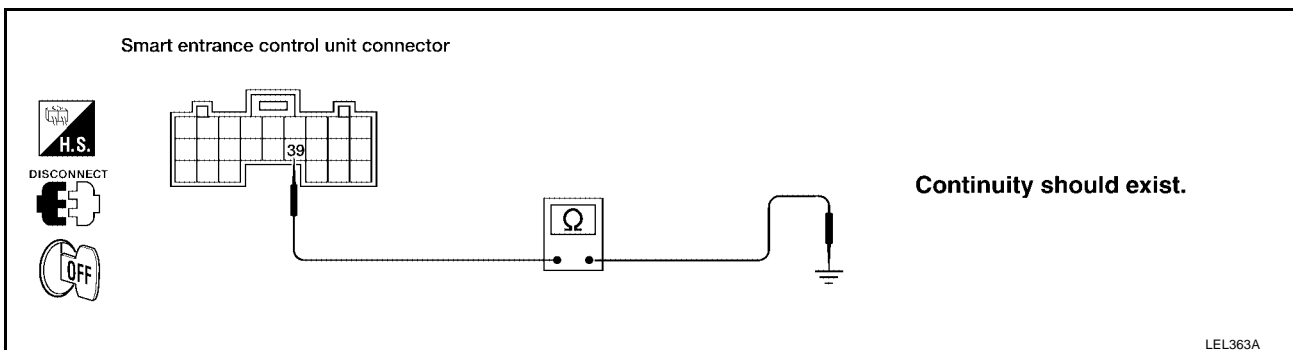
OK >> Replace smart entrance control unit.

NG >> Repair harness or connectors.

VEHICLE SECURITY HEADLAMP ALARM CHECK

1. CHECK VEHICLE SECURITY LAMP CIRCUIT

1. Disconnect smart entrance control unit harness connector.
2. Check continuity between smart entrance control unit M111 terminal 39 (R) and ground.



Refer to [BL-49, "Wiring Diagram — VEHSEC —"](#).

OK or NG

OK >> GO TO 2

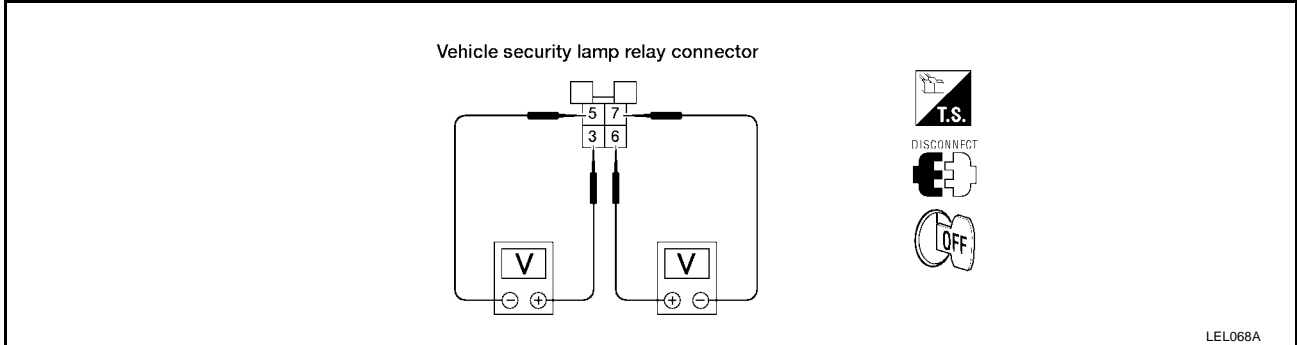
NG >> Check the following

- Harness for open or short between smart entrance control unit and vehicle security lamp relay
- Vehicle security lamp relay ground circuit
- Vehicle security lamp relay.

VEHICLE SECURITY (THEFT WARNING) SYSTEM

2. CHECK VEHICLE SECURITY LAMP RELAY CIRCUIT

1. Check voltage between vehicle security lamp relay harness connector E22 terminal 3 (R/G) and 5 (Y/B).
Battery voltage should exist.
2. Check voltage between vehicle security lamp relay harness connector E22 terminal 6 (R/W) and 7 (Y/G).



Battery voltage should exist.

OK or NG

OK >> GO TO 3

NG >> Check the following

- Harness for open or short between vehicle security lamp relay and headlamps
- Harness for open or short between vehicle security lamp relay and fuse

3. CHECK VEHICLE SECURITY LAMP RELAY

Check vehicle security lamp relay.

Refer to [BL-63, "Vehicle Security Lamp Relay"](#).

OK or NG

OK >> Replace smart entrance control unit.

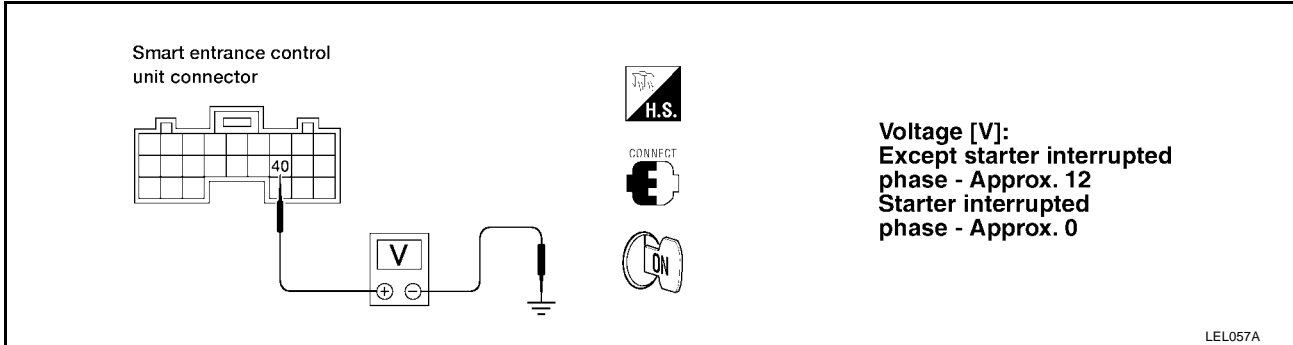
NG >> Replace vehicle security lamp relay.

VEHICLE SECURITY (THEFT WARNING) SYSTEM

STARTER INTERRUPT SYSTEM CHECK

1. CHECK STARTER MOTOR INTERRUPT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between smart entrance control unit connector M111 terminal 40 (R/W) and ground.



Refer to [BL-49, "Wiring Diagram — VEHSEC —"](#) .

OK or NG

OK >> GO TO 2

NG >> Check the following.

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

2. CHECK VEHICLE SECURITY RELAY

Check vehicle security relay.

Refer to [BL-63, "Vehicle Security Relay"](#) .

OK or NG

OK >> Check system again.

NG >> Replace relay.

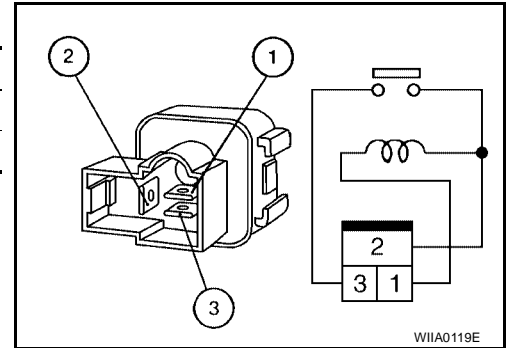
VEHICLE SECURITY (THEFT WARNING) SYSTEM

ELECTRICAL COMPONENTS INSPECTION

Horn Relay

Check continuity between terminals 3 and 5.

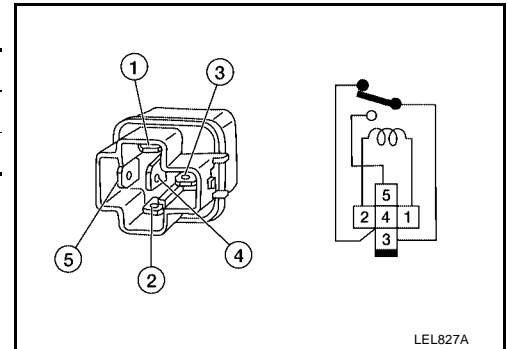
Conditions	Continuity
12V direct current supply between terminals 1 and 2	Yes
No current supply	No



Vehicle Security Relay

Check continuity between terminals 3 and 5.

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



Vehicle Security Lamp Relay

Check continuity between terminals 3 and 5, and terminals 6 and 7.

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

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BODY (ALIGNMENT)

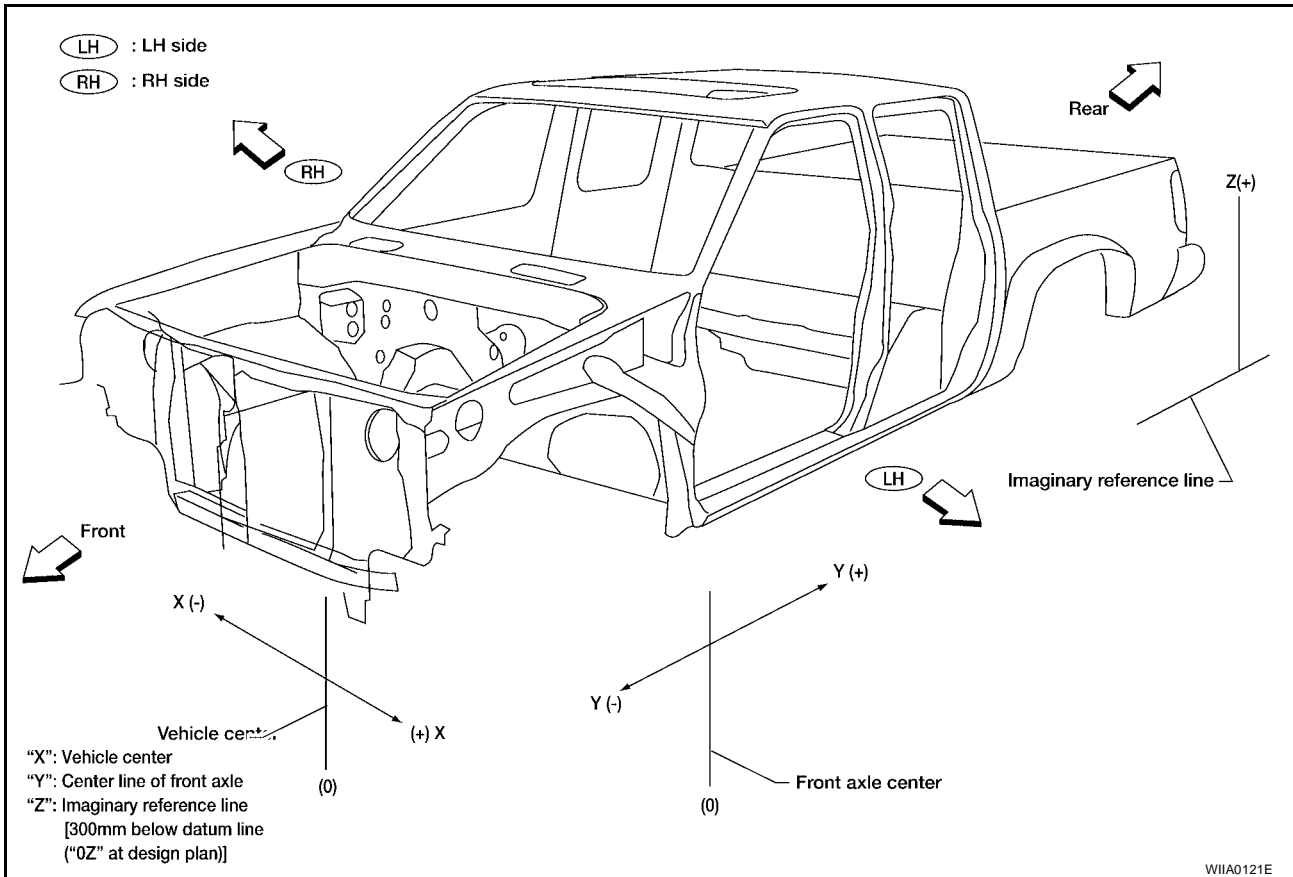
PFP:74312

BODY (ALIGNMENT)

EIS000WC

Alignment

- All dimensions indicated in the figures are actual.
- When using a tracking gauge, adjust both pointers to equal length, then check pointers and the gauge to make sure there is no free play.
- When a measuring tape is used, check to be sure there is no elongation, twisting or bending.
- Measurements should be taken at the center of the mounting holes.
- An asterisk (*) following the value at the measuring point indicates that the measuring point on the other side is symmetrically the same value.
- The coordinates of the measurement points are the distances measured from the standard line of "X", "Y" and "Z".



BODY (ALIGNMENT)

ENGINE COMPARTMENT

Measurement

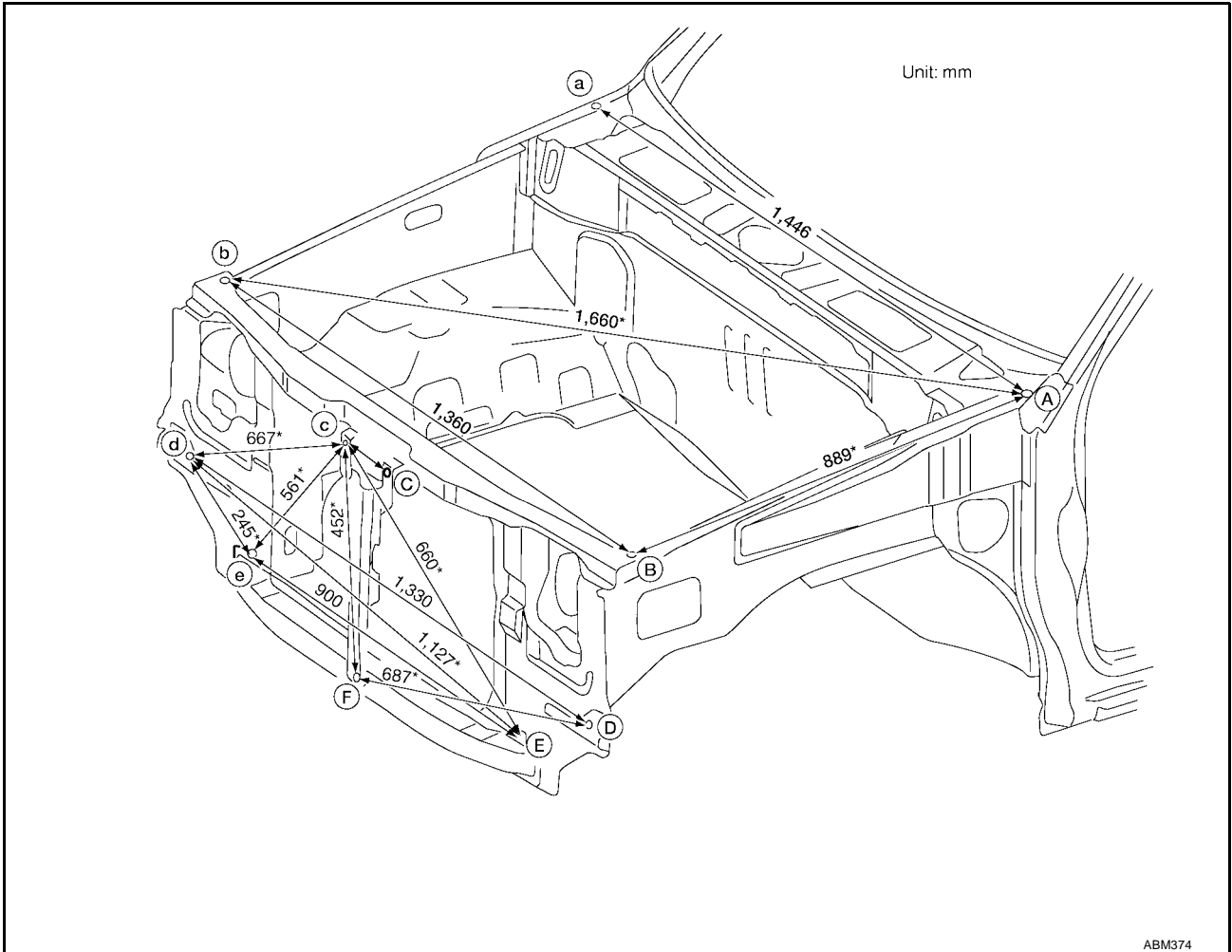
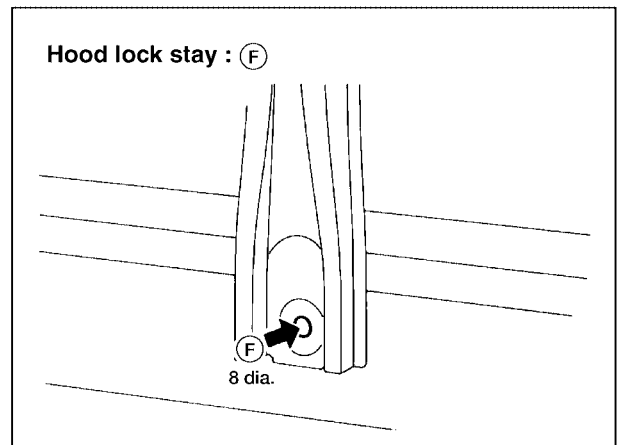
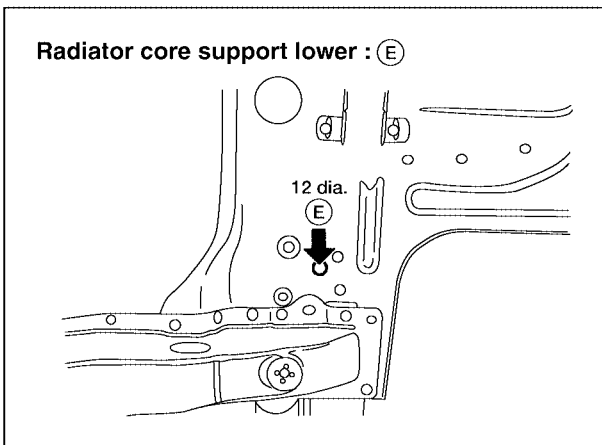
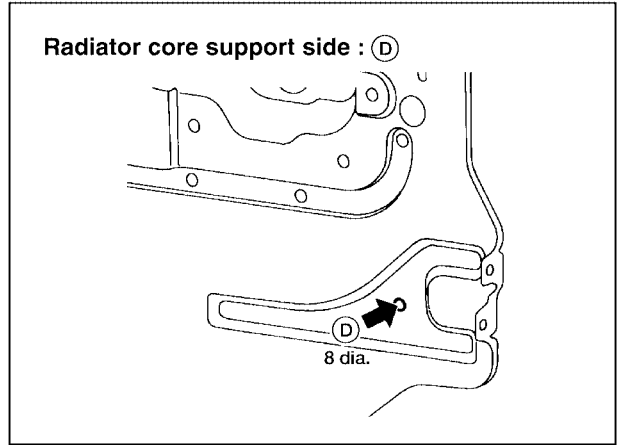
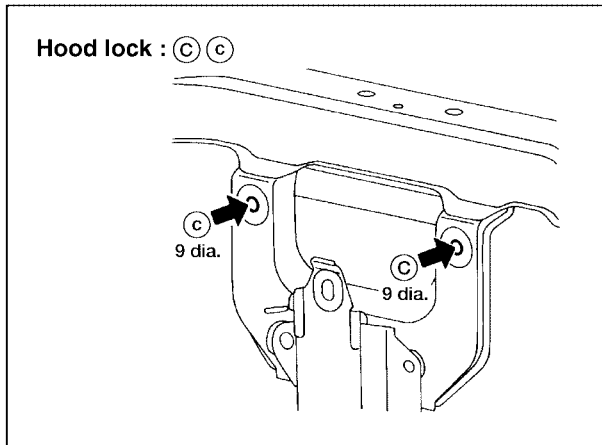
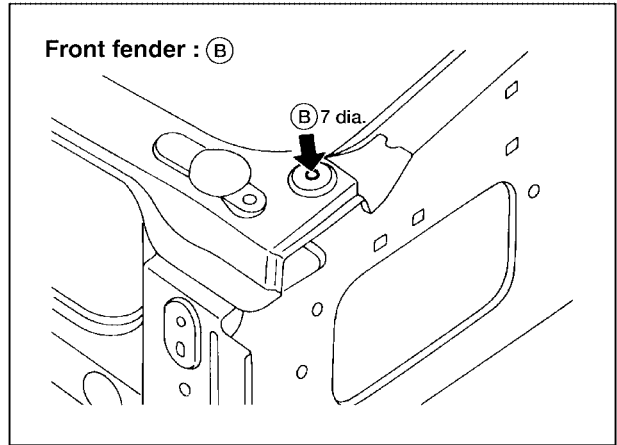
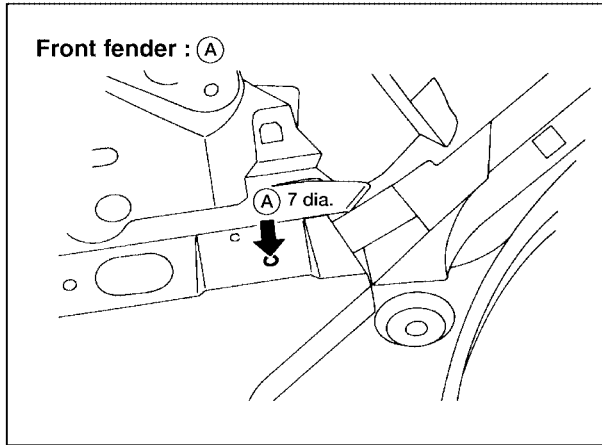


Figure marked with * indicates symmetrically identical dimensions on both right-hand and left-hand sides of the vehicle.

BODY (ALIGNMENT)

Measurement Points



Unit: mm

WIIA0122E

BODY (ALIGNMENT)

UNDERBODY

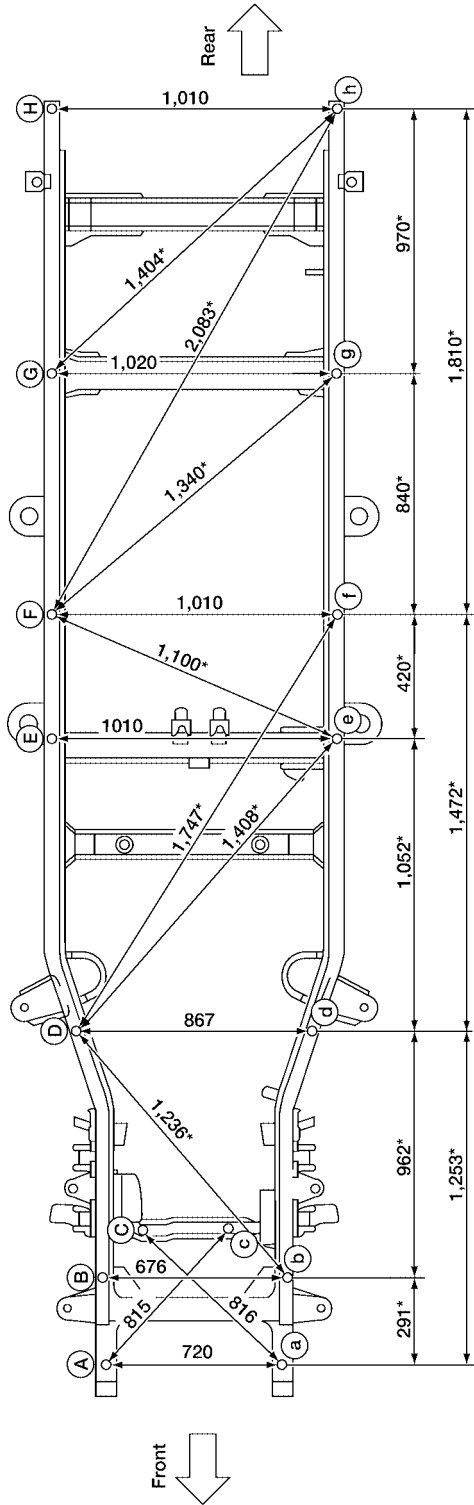
Measurement — 2WD-4WD Models

Figures marked with a * indicate symmetrically identical dimensions on both right and left hand sides of the vehicle.

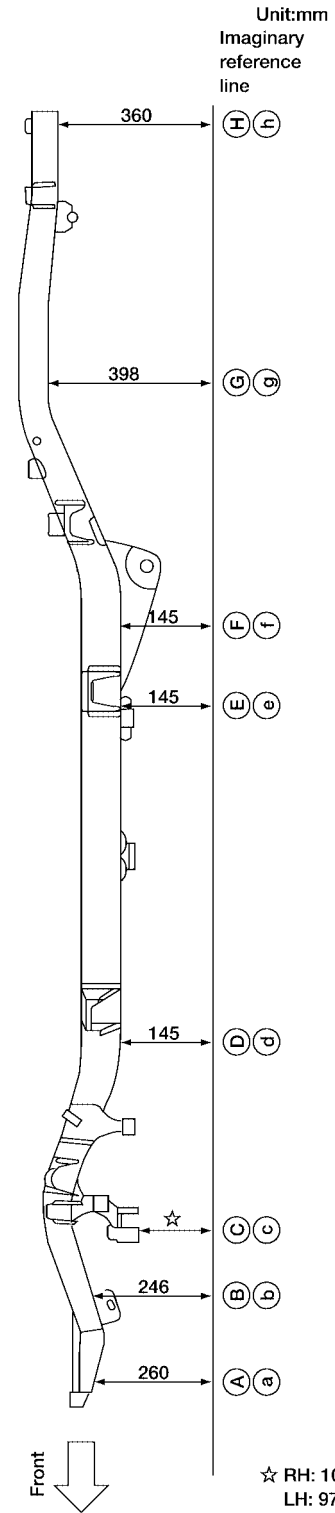
As viewed from underside.

All dimensions indicated in the figure are actual.

LH side



RH side



☆ RH: 105
LH: 97

WBT181

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BODY (ALIGNMENT)

Measurement — Crew Cab Long Bed

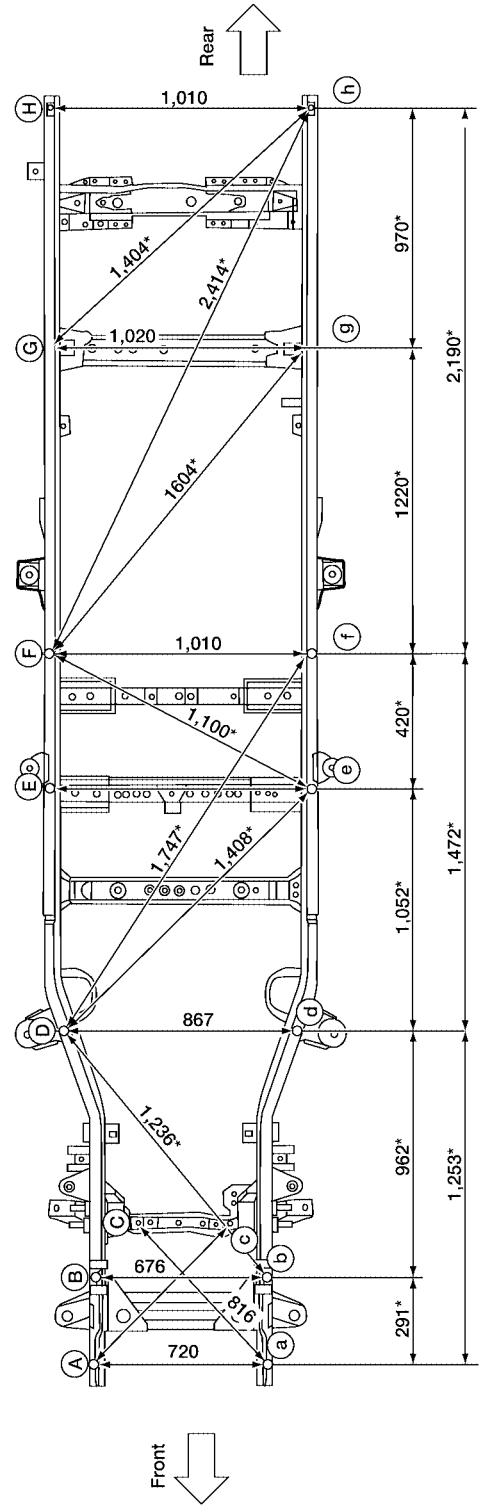
Unit: mm

Figures marked with a * indicate symmetrically identical dimensions on both right and left hand sides of the vehicle.

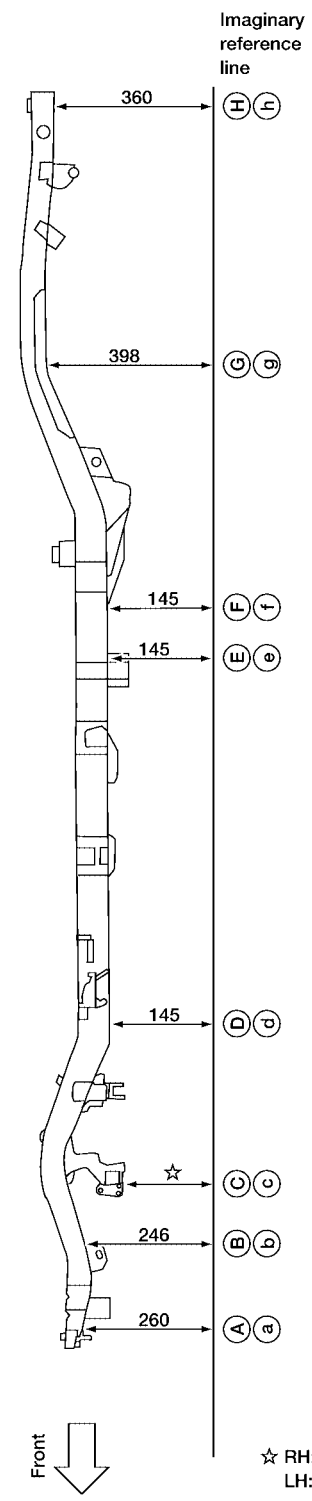
As viewed from underside.

All dimensions indicated in the figure are actual.

LH side



RH side

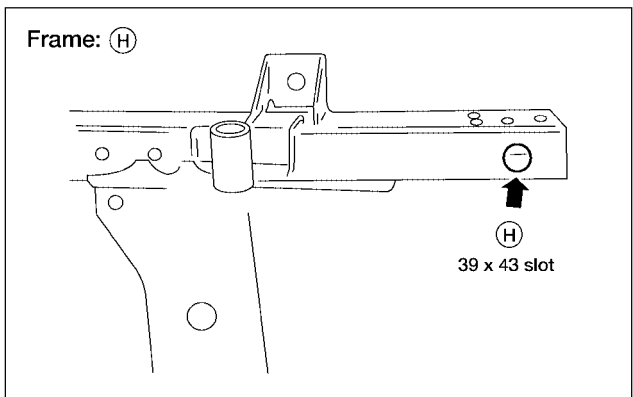
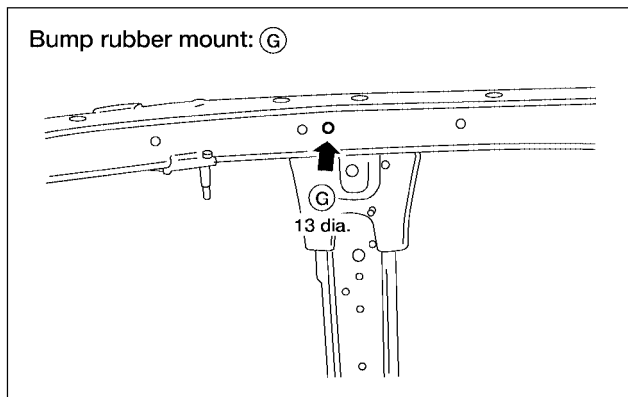
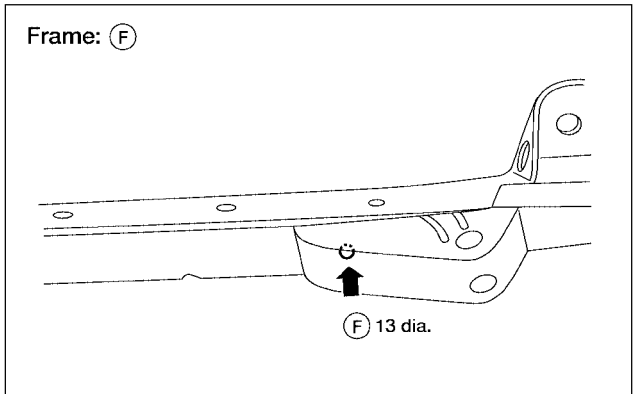
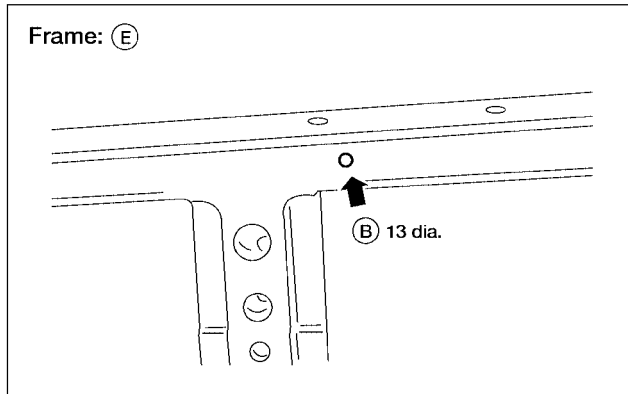
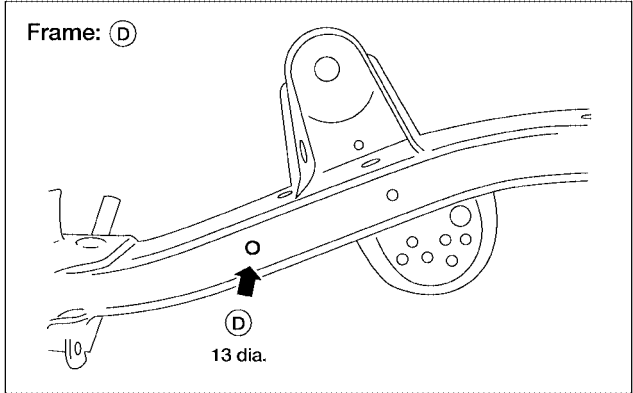
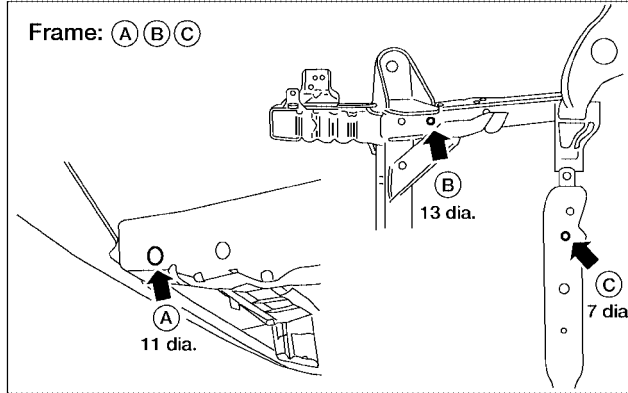


☆ RH: 105
LH: 97

BODY (ALIGNMENT)

Measurement Points — 2WD-4WD Models

Unit: mm



Coordinates:	(A), (a)	(B), (b)	(C), (c)	(D), (d)	(E), (e)	(F), (f)	(G), (g)	(H), (h)
X:	360	338	200	433.7	505	510	510	505
Y:	-700	-409	-129	550	1600	2020	2860	3830
Z:	260	-129	RH 105 LH 97	145.4	145	145	398	360

Unit: mm

WHIA0124E

BODY (ALIGNMENT)
