

SECTION **BL**

BODY, LOCK & SECURITY SYSTEM

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PRECAUTIONS

< SERVICE INFORMATION >

SERVICE INFORMATION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000001721365

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. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/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.

Precaution for work

INFOID:000000001721366

- After removing and installing the opening/closing parts, be sure to carry out fitting adjustments to check their operation.
- Check the lubrication level, damage, and wear of each part. If necessary, grease or replace it.

PREPARATION

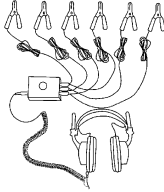
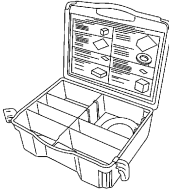
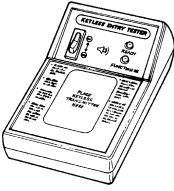
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PREPARATION

Special Service Tool

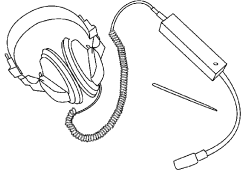
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The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
<p style="text-align: center;">—</p> <p>(J-39570) Chassis ear</p> <div style="text-align: center;">  <p>SIA0993E</p> </div>	<p>Locating the noise</p>
<p style="text-align: center;">—</p> <p>(J-43980) NISSAN Squeak and Rattle Kit</p> <div style="text-align: center;">  <p>SIA0994E</p> </div>	<p>Repairing the cause of noise</p>
<p style="text-align: center;">—</p> <p>(J-43241) Remote Keyless Entry Tester</p> <div style="text-align: center;">  <p>LEL946A</p> </div>	<p>Used to test key fobs</p>

Commercial Service Tool

INFOID:000000001721368

(Kent-Moore No.) Tool name	Description
<p>(J-39565) Engine ear</p> <div style="text-align: center;">  <p>SIA0995E</p> </div>	<p>Locating the noise</p>

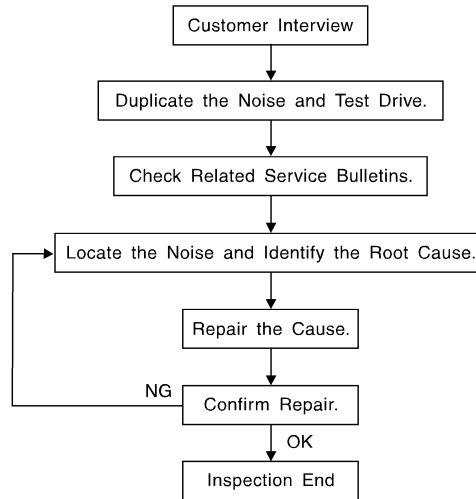
SQUEAK AND RATTLE TROUBLE DIAGNOSES

< SERVICE INFORMATION >

SQUEAK AND RATTLE TROUBLE DIAGNOSES

Work Flow

INFOID:000000001721369



SBT842

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's 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 detailed description or the 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 sounding/sometimes repeating/often brought on by driver action.
- Tick—(Like a clock second hand)
Tick characteristics include gentle contacting of light materials/loose components/can be caused by driver action or 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.
- 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 location of the noise. This information can be used to duplicate the same conditions when you confirm the repair.

SQUEAK AND RATTLE TROUBLE DIAGNOSES

< SERVICE INFORMATION >

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 (electrical 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 a 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 mechanic's 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 (0.059 in) thick]

Insulates connectors, harness, etc.

76268-9E005: 100×135 mm (3.94×5.31 in)/76884-71L01: 60×85 mm (2.36×3.35 in)/76884-71L02: 15×25 mm (0.59×0.98 in)

INSULATOR (Foam blocks)

Insulates components from contact. Can be used to fill space behind a panel.

73982-9E000: 45 mm (1.77 in) thick, 50×50 mm (1.97×1.97 in)/73982-50Y00: 10 mm (0.39 in) thick, 50×50 mm (1.97×1.97 in)

INSULATOR (Light foam block)

80845-71L00: 30 mm (1.18 in) thick, 30×50 mm (1.18×1.97 in)

FELT CLOTH TAPE

Used to insulate where movement does not occur. Ideal for instrument panel applications.

68370-4B000: 15×25 mm (0.59×0.98 in) pad/68239-13E00: 5 mm (0.20 in) 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.

SQUEAK AND RATTLE TROUBLE DIAGNOSES

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SILICONE GREASE

Used instead 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

INFOID:000000001721370

Refer to Table of Contents for specific component removal and installation information.

INSTRUMENT PANEL

Most incidents are caused by contact and movement between:

1. The cluster 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 harnesses 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 silicone 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 harnesses behind audio and A/C control unit

The instrument panel repair and isolation procedures also apply to the 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

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 tape or insulator foam blocks from the NISSAN Squeak and Rattle Kit (J-43980) to repair the noise.

TRUNK

Trunk noises are often caused by a loose jack or loose items put into the trunk by the owner.

In addition look for:

1. Trunk lid bumpers out of adjustment
2. Trunk lid striker out of adjustment
3. The trunk lid torsion bars knocking together
4. A loose license plate or bracket

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SQUEAK AND RATTLE TROUBLE DIAGNOSES

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Most of these incidents can be repaired by adjusting, securing or insulating the item(s) or component(s) causing the noise.

SUNROOF/HEADLINING

Noises in the sunroof/headlining 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. Sun visor 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.

OVERHEAD CONSOLE (FRONT AND REAR)

Overhead console noises are often caused by the console panel clips not being engaged correctly. Most of these incidents are repaired by pushing up on the console at the clip locations until the clips engage.

In addition look for:

1. Loose harness or harness connectors.
2. Front console map/reading lamp lense loose.
3. Loose screws at console attachment points.

SEATS

When isolating seat noise it's important to note the position the seat is 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.

Cause of seat noise include:

1. Headrest rods and holder
2. A squeak between the seat pad cushion and frame
3. The rear seatback 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 noise 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 noise include:

1. Any component mounted to the engine wall
2. Components that pass through 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 cannot 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. Repairs can usually be made by moving, adjusting, securing, or insulating the component causing the noise.

SQUEAK AND RATTLE TROUBLE DIAGNOSES

< SERVICE INFORMATION >

Diagnostic Worksheet

INFOID:000000001721371

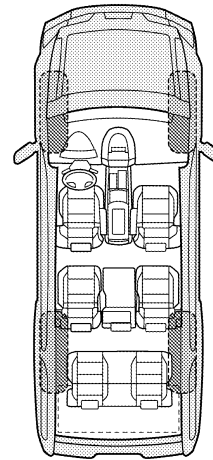
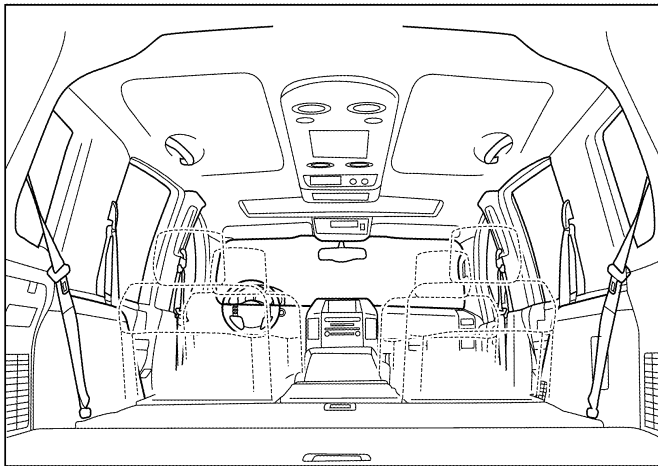
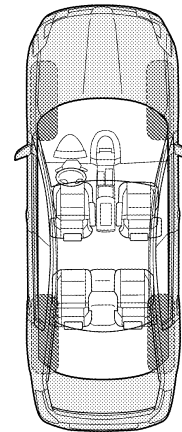
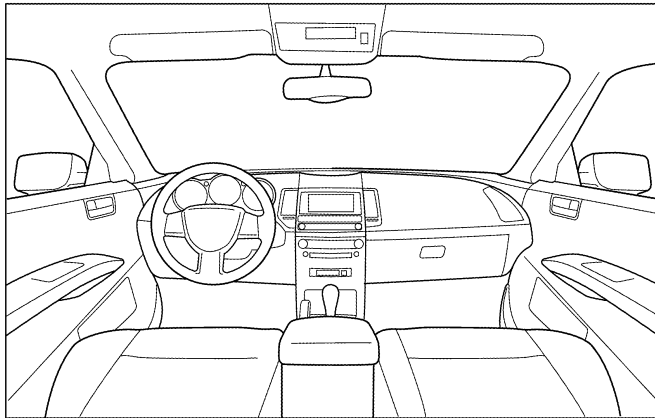
Dear Customer:

We are concerned about your satisfaction with your vehicle. Repairing a squeak or rattle sometimes can be very difficult. To help us fix your vehicle 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.

SQUEAK & RATTLE DIAGNOSTIC WORKSHEET

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 page 2 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 DIAGNOSES

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SQUEAK & RATTLE DIAGNOSTIC WORKSHEET - page 2

Briefly describe the location where the noise occurs:

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

- | | |
|---|--|
| <input type="checkbox"/> Anytime | <input type="checkbox"/> After sitting out in the rain |
| <input type="checkbox"/> 1st 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 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 at the 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

LAI0071E

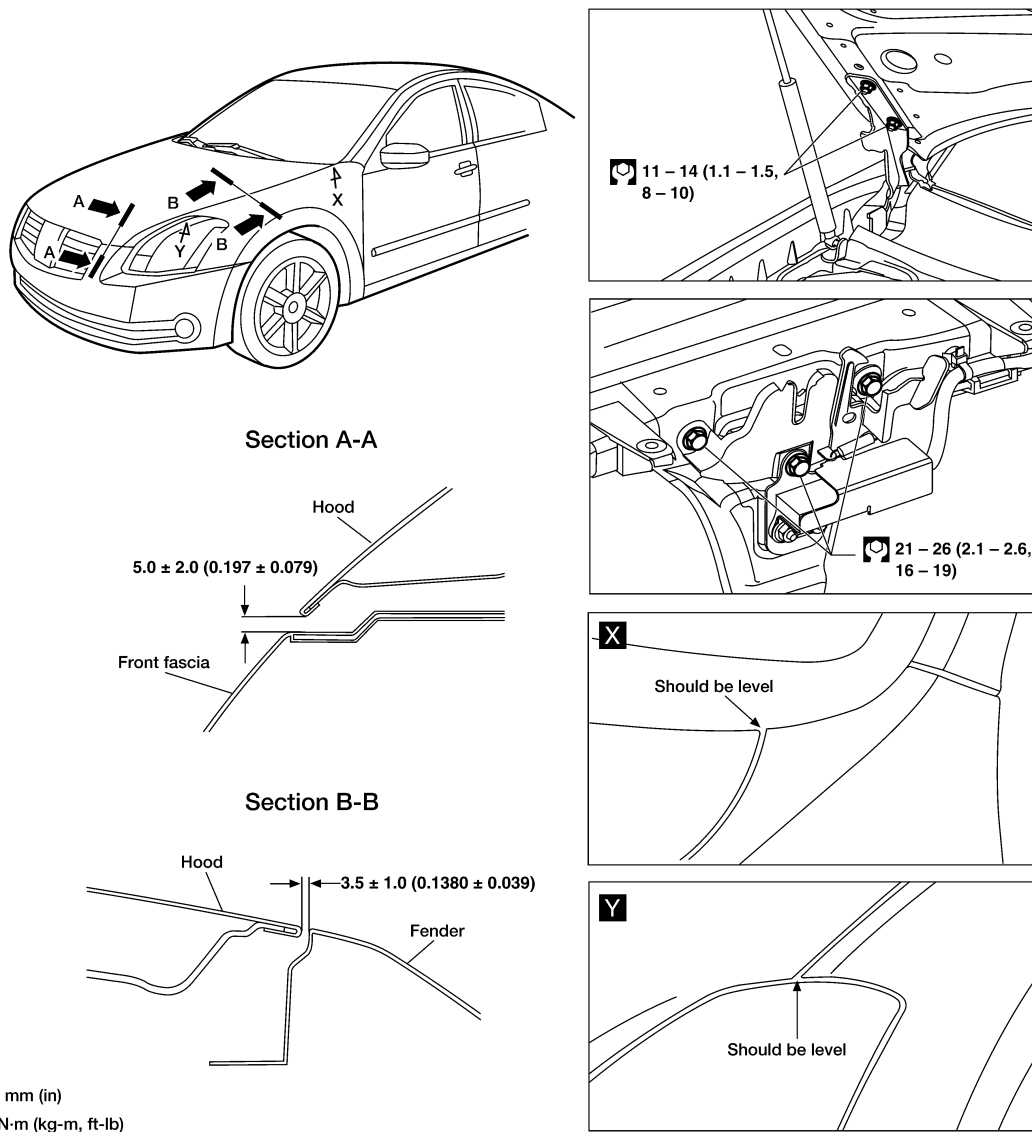
HOOD

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HOOD

Fitting Adjustment

INFOID:000000001721372



WIA0478E

Front end height adjustment and lateral/longitudinal clearance adjustment.

1. Remove the radiator grille. Refer to [EI-17, "Removal and Installation"](#).
2. Loosen the hood lock temporarily, and align the hood striker and lock so that the centers of striker and lock become vertically aligned as viewed from the front, by moving the hood lock laterally.
3. Tighten the hood lock bolts to the specified torque.

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HOOD

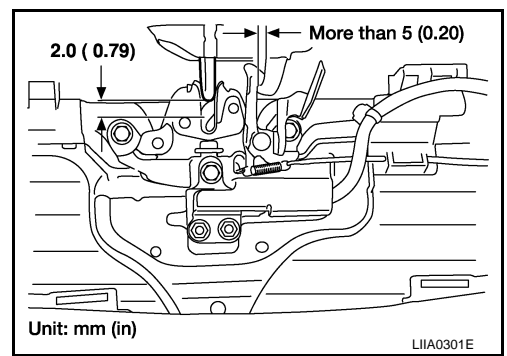
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4. Check that the secondary latch is properly engaged with the secondary striker with hood's own weight by dropping it from approx. 200 mm (7.87 in) height or by pressing it lightly approx. 3 kg (29 N).

CAUTION:

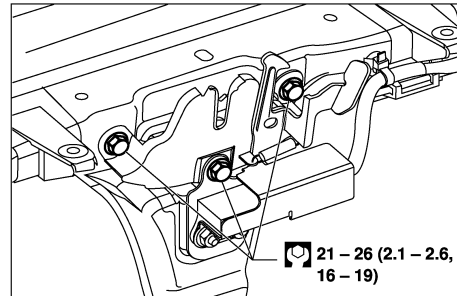
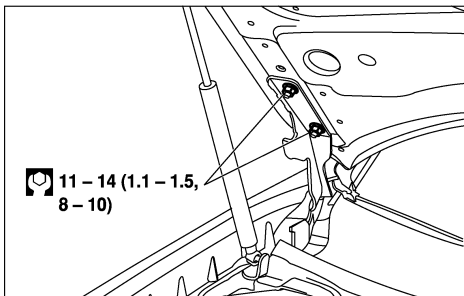
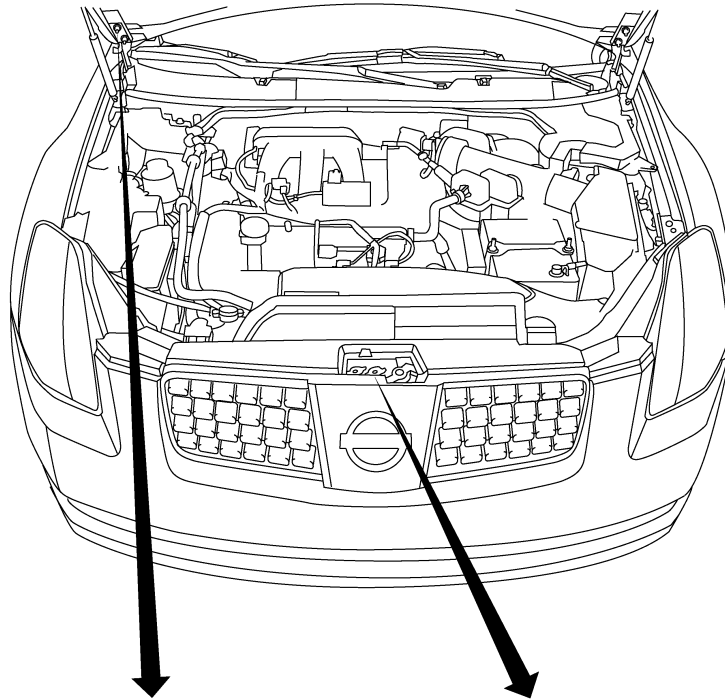
Do not drop the hood from 300 mm (11.81 in) height or higher.

5. If necessary, loosen the hood lock bolts and move the hood lock up or down so that the striker and lock are engaged firmly with the hood closed.
6. Tighten the hood lock bolts to the specified torque.
7. Install the radiator grille. Refer to [EI-17, "Removal and Installation"](#).



Removal and Installation of Hood Assembly

INFOID:000000001721373



N·m (kg·m, ft·lb)

LIA0302E

1. Support the hood with suitable tool.
2. Separate the hood stays from the hood.

HOOD

< SERVICE INFORMATION >

3. Remove the hood assembly.

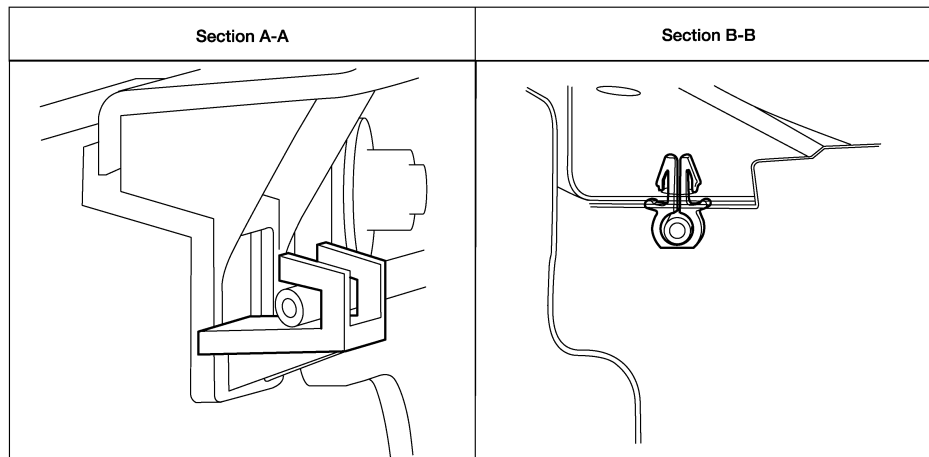
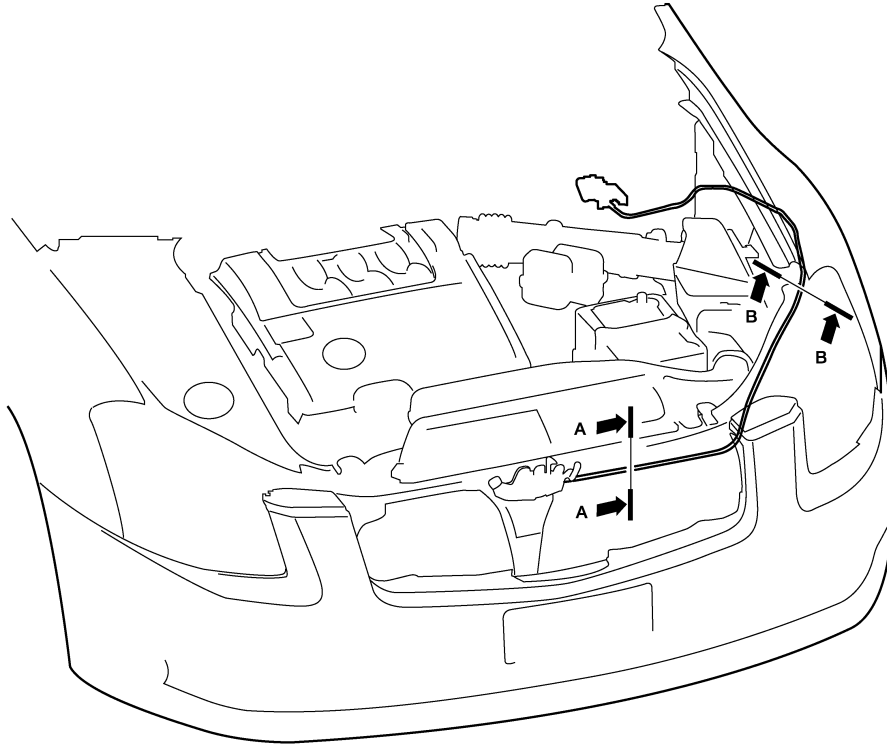
Installation is in the reverse order of removal.

NOTE:

Align the hood. Refer to [BL-11. "Fitting Adjustment"](#).

Removal and Installation of Hood Lock Control

INFOID:000000001721374



LIA0303E

Removal

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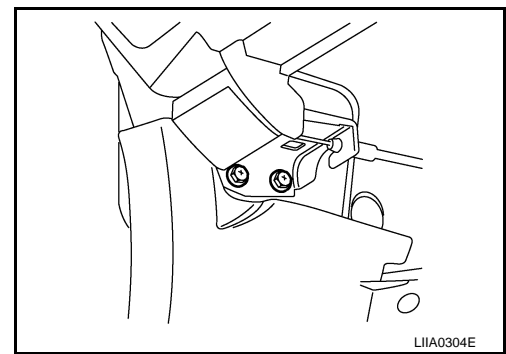
HOOD

< SERVICE INFORMATION >

1. Disconnect the hood lock cable from the hood lock, and un-clip it from the radiator core upper support and hoodledge.
2. Remove the screws and the hood opener.
3. Remove the grommet on the instrument panel, and pull the hood lock cable into the passenger compartment.

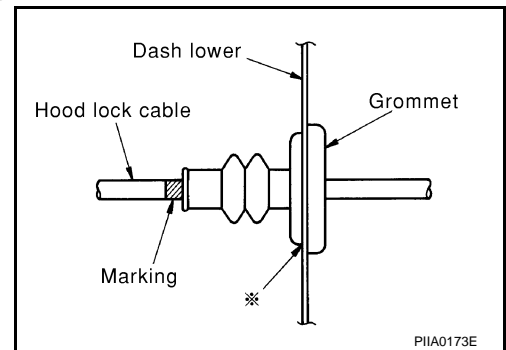
CAUTION:

While pulling, be careful not to damage (peeling) the outside of the hood lock cable.

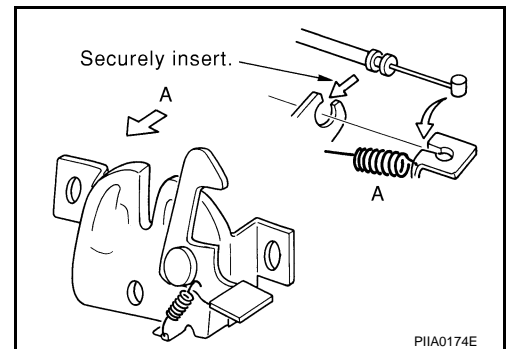


Installation

1. Pull the hood lock cable through the lower dash hole into the engine compartment. Be careful not to bend the cable too much, keeping the radius 100 mm (3.94 in) or more.
2. Check that the cable is not offset from the positioning grommet, and push the grommet into the panel hole securely.
3. Apply the sealant around the grommet (at * mark).



4. Attach the cable securely to the lock.
5. After installing, check the hood lock adjustment and hood opener operation. Refer to [BL-14, "Hood Lock Control Inspection"](#).



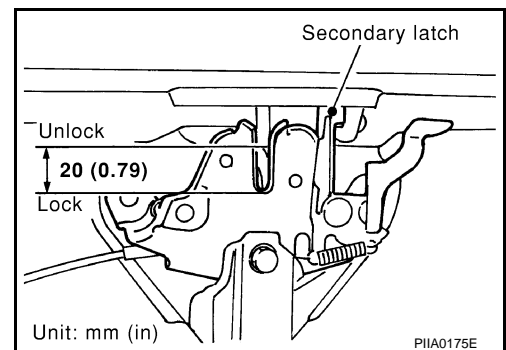
Hood Lock Control Inspection

INFOID:000000001721375

CAUTION:

If the hood lock cable is bent or deformed, replace it.

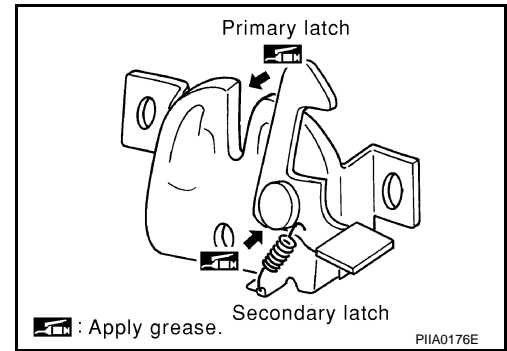
1. Remove the front grille. Refer to [EI-17](#).
2. Check that the secondary latch is properly engaged with the secondary striker with hood's own weight by dropping it from approx. 200 mm (7.87 in) height.
3. While operating the hood opener, carefully check that the front end of the hood is raised by approx. 20 mm (0.79 in). Also check that the hood opener returns to the original position.



HOOD

< SERVICE INFORMATION >

4. Check the hood lock lubrication condition. If necessary, apply "body grease" to the points shown.
5. Install the front grille. Refer to [EI-17](#).



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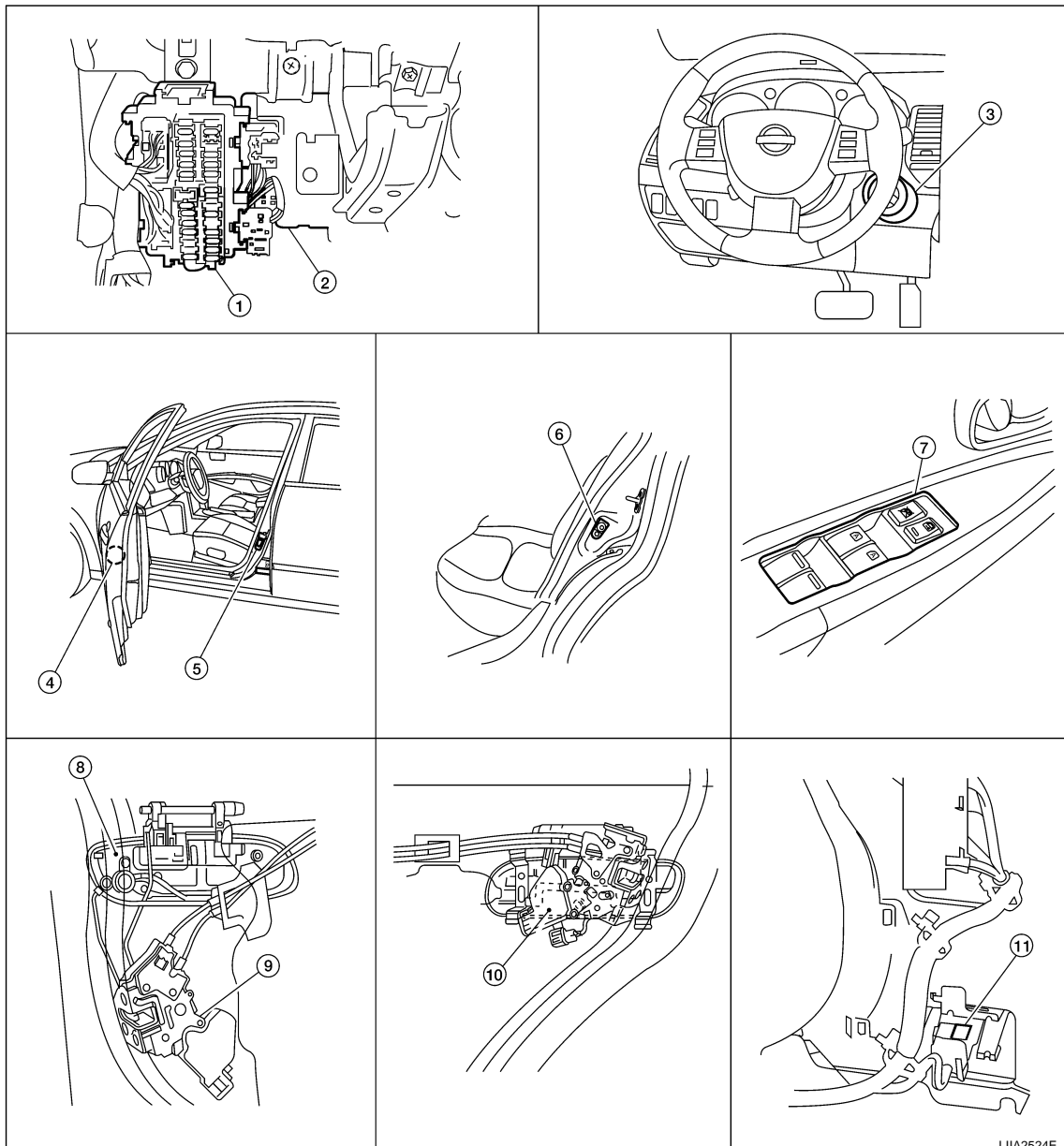
POWER DOOR LOCK SYSTEM

< SERVICE INFORMATION >

POWER DOOR LOCK SYSTEM

Component Parts and Harness Connector Location

INFOID:000000001721376



- | | | |
|--|--|---|
| 1. Fuse block (J/B)
(View with instrument panel LH removed) | 2. BCM M18, M19, M20 | 3. Key switch and ignition knob switch
M73 |
| 4. Front door lock assembly LH
(key cylinder switch) D51 | 5. Front door switch LH B8
Front door switch RH B108 | 6. Rear door switch LH B18, RH B116 |
| 7. Main power window and door lock/unlock
switch D7, D8 | 8. Outside handle | 9. Front door lock assembly (actuator)
LH D51, RH D151 |
| 10. Rear door lock actuator LH D205, RH
D305 | 11. Passenger select unlock relay B22
(View with LH kick panel removed) | |

System Description

INFOID:000000001721377

Power is supplied at all times

- to BCM terminal 70
- through 50A fusible link (letter **f**, located in the fuse and fusible link box)

POWER DOOR LOCK SYSTEM

< SERVICE INFORMATION >

- to BCM terminal 57
- through 10A fuse [No. 21, located in the fuse block (J/B)] A
- to passenger select unlock relay terminal 2
- through 10A fuse [No. 3, located in the fuse block (J/B)] and
- to key switch and ignition knob switch terminals 1 and 3 B
- through 10A fuse [No. 2, located in the fuse block (J/B)].
- With ignition knob pushed, power is supplied
- through key switch and ignition knob switch (ignition knob switch) terminal 2
- to Intelligent Key unit terminal 27. C
- With ignition key inserted, power is supplied
- through key switch and ignition knob switch (key switch) terminal 4
- to BCM terminal 37 and
- to Intelligent Key unit terminal 7. D
- Ground is supplied to terminal 67 of BCM through body grounds M57, M61 and M79.
- When the door is locked or unlocked with main power window and door lock/unlock switch, ground is supplied E
- to CPU of main power window and door lock/unlock switch
- through main power window and door lock/unlock switch terminal 17
- through body grounds M57, M61 and M79.
- Then main power window and door lock/unlock switch operation signal is supplied F
- to BCM terminal 22
- through main power window and door lock/unlock switch terminal 14.
- When the door is locked or unlocked with power window and door lock/unlock switch RH, ground is supplied G
- to CPU of power window and door lock/unlock switch RH
- through front power window switch RH terminal 11
- through body grounds M57, M61 and M79.
- Then power window and door /lock/unlock switch RH operation signal is supplied H
- to BCM terminal 22
- through power window and door lock/unlock switch RH terminal 16.
- When the door is locked with front door lock assembly LH (key cylinder switch), ground is supplied BL
- to main power window and door lock/unlock switch terminal 4
- through front door lock assembly LH (key cylinder switch) terminals 1 and 5
- through body grounds M57, M61 and M79.
- Then front door lock assembly LH (key cylinder switch) operation signal is supplied J
- to BCM terminal 22
- through main power window and door lock/unlock switch terminal 14.
- When the door is unlocked with front door lock assembly LH (key cylinder switch), ground is supplied K
- to main power window and door lock/unlock switch terminal 6
- through front door lock assembly LH (key cylinder switch) terminals 6 and 5
- through body grounds M57, M61 and M79.
- Then front door lock assembly LH (key cylinder switch) operation signal is supplied L
- to BCM terminal 22
- through main power window and door lock/unlock switch terminal 14.
- BCM is connected to main power window and door lock/unlock switch and front power window switch RH through a serial link. M
- When the front door switch LH is ON (door is open), ground is supplied
- to BCM terminal 47
- through front door switch LH terminal 2
- through front door switch LH case ground. N
- When the front door switch RH is ON (door is open), ground is supplied
- to BCM terminal 12
- through front door switch RH terminal 2
- through front door switch RH case ground. O
- When the rear door switch LH is ON (door is open), ground is supplied
- to BCM terminal 48 P
- through rear door switch LH terminal 1
- through rear door switch LH case ground.
- When the rear door switch RH is ON (door is open), ground is supplied
- to BCM terminal 13
- through rear door switch RH terminal 1
- through rear door switch RH case ground.

OUTLINE

POWER DOOR LOCK SYSTEM

< SERVICE INFORMATION >

Functions available by operating the door lock and unlock switches on driver's door and passenger's door

- Interlocked with the locking operation of door lock and unlock switch, door lock actuators of all doors are locked.
- Interlocked with the unlocking operation of door lock and unlock switch, door lock actuators of all doors are unlocked.

Functions available by operating the front door lock assembly LH (key cylinder switch)

- Interlocked with the locking operation of front door lock assembly LH (key cylinder switch), door lock actuators of all doors are locked.
- When front door lock assembly LH (key cylinder switch) is unlocked, front door lock actuator LH is unlocked.
- When front door lock assembly LH (key cylinder switch) is unlocked for the second time within 5 seconds after the first operation, door lock actuators on all doors are unlocked.

Key reminder door system

When door lock and unlock switch is operated to lock doors with ignition key inserted in key cylinder and any door open, all door lock actuators are locked and then unlocked.

CAN Communication System Description

INFOID:000000001721378

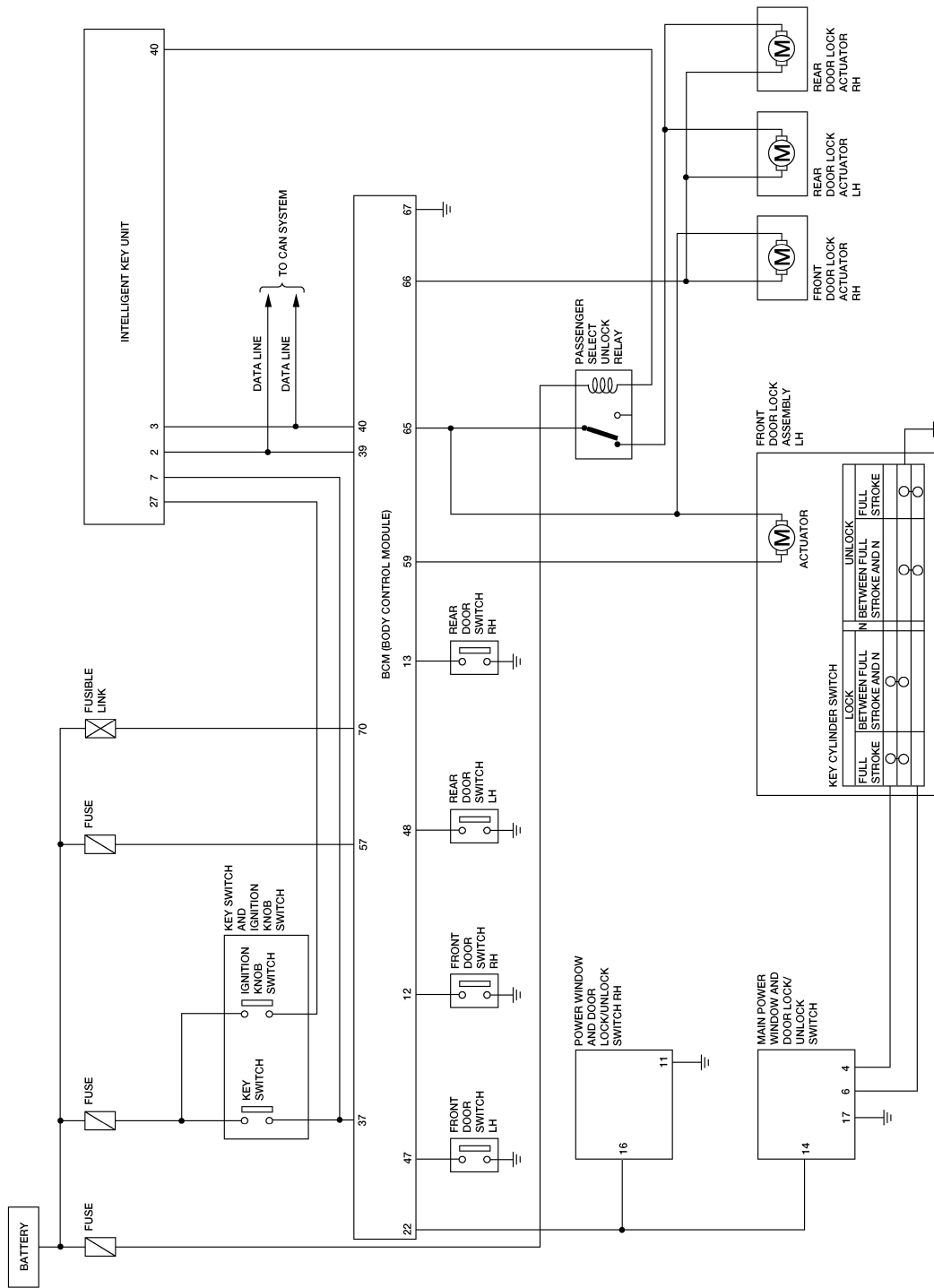
Refer to [LAN-3](#).

POWER DOOR LOCK SYSTEM

< SERVICE INFORMATION >

Schematic

INFOID:000000001721379



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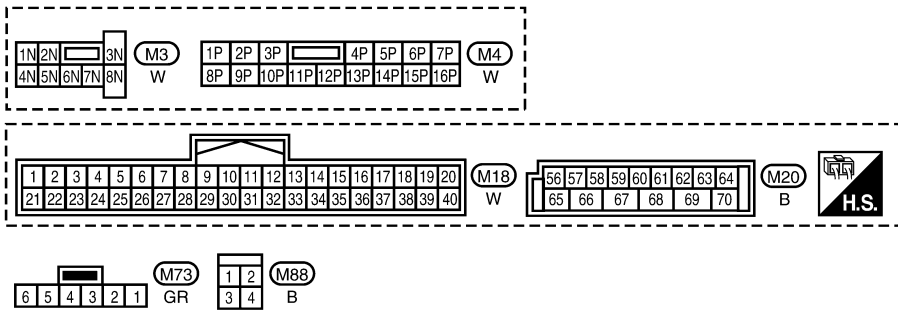
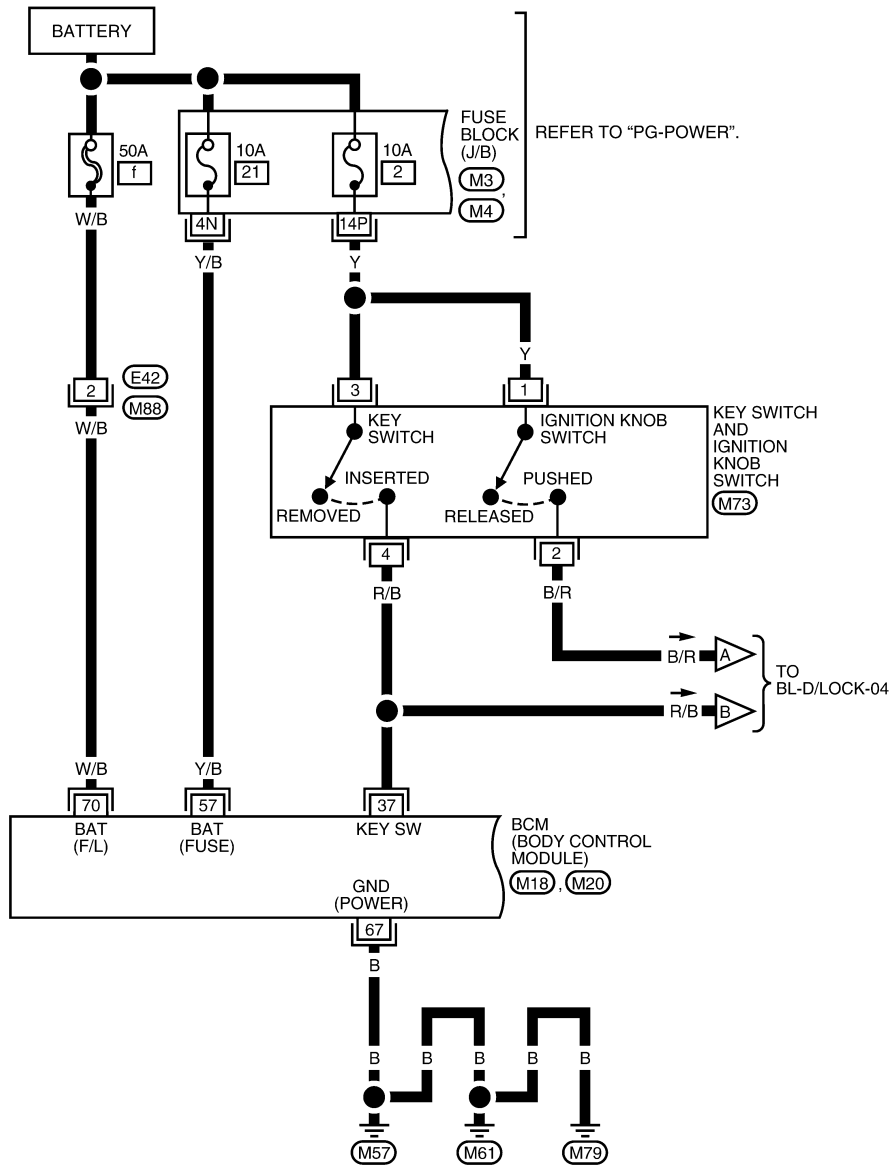
POWER DOOR LOCK SYSTEM

< SERVICE INFORMATION >

Wiring Diagram - D/LOCK -

INFOID:000000001721380

BL-D/LOCK-01

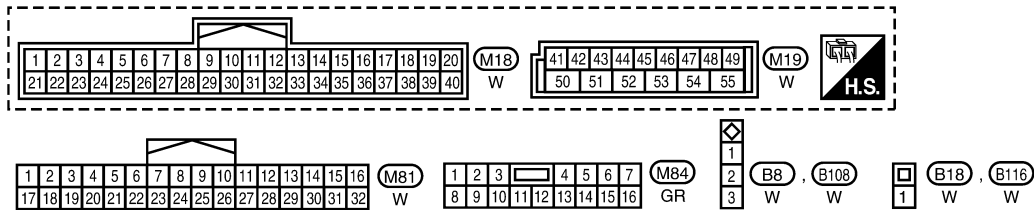
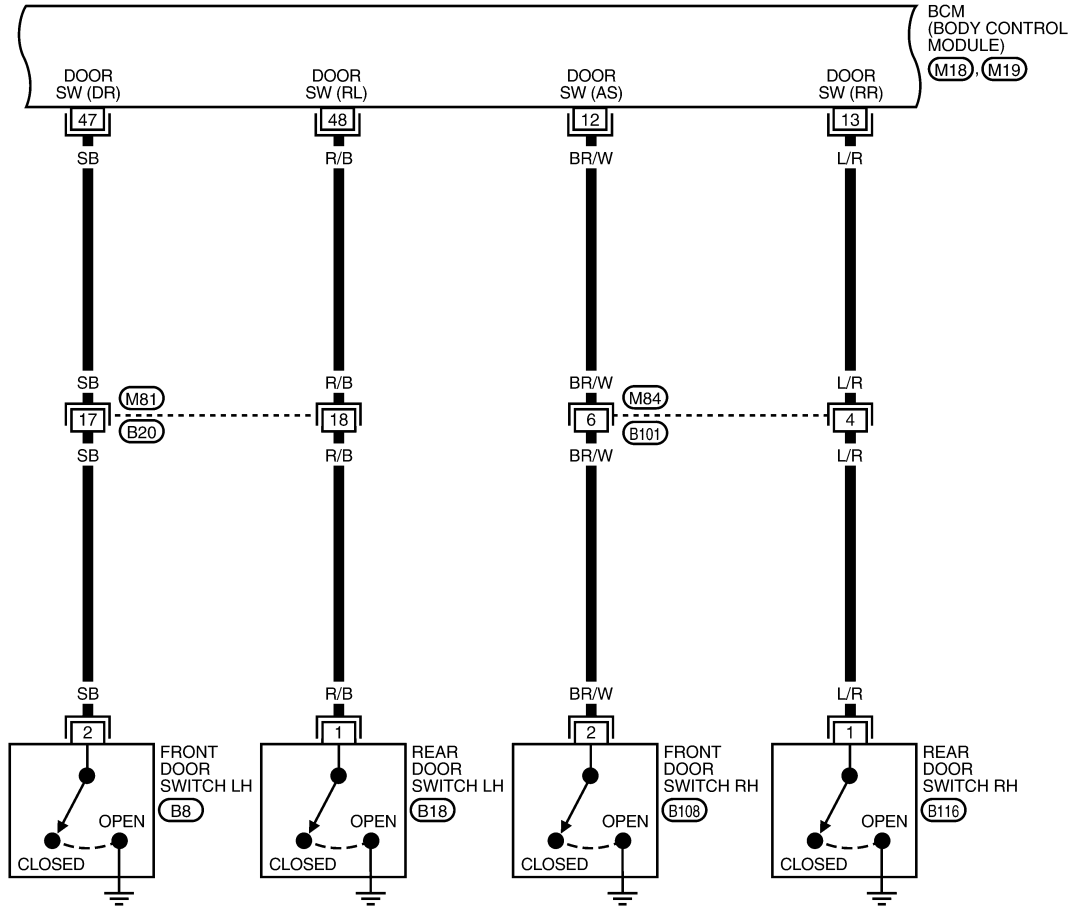


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POWER DOOR LOCK SYSTEM

< SERVICE INFORMATION >

BL-D/LOCK-02

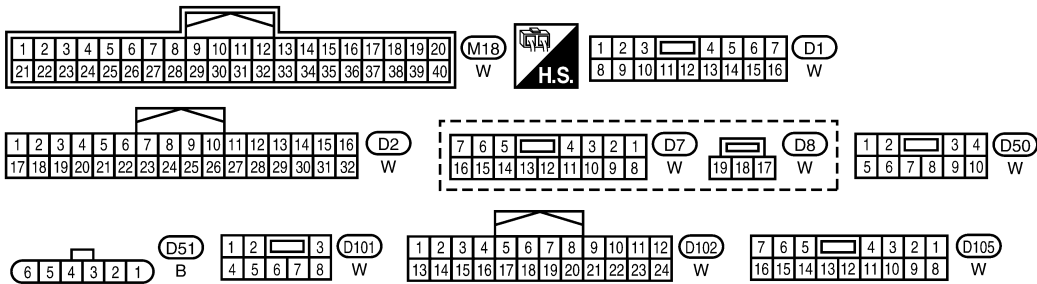
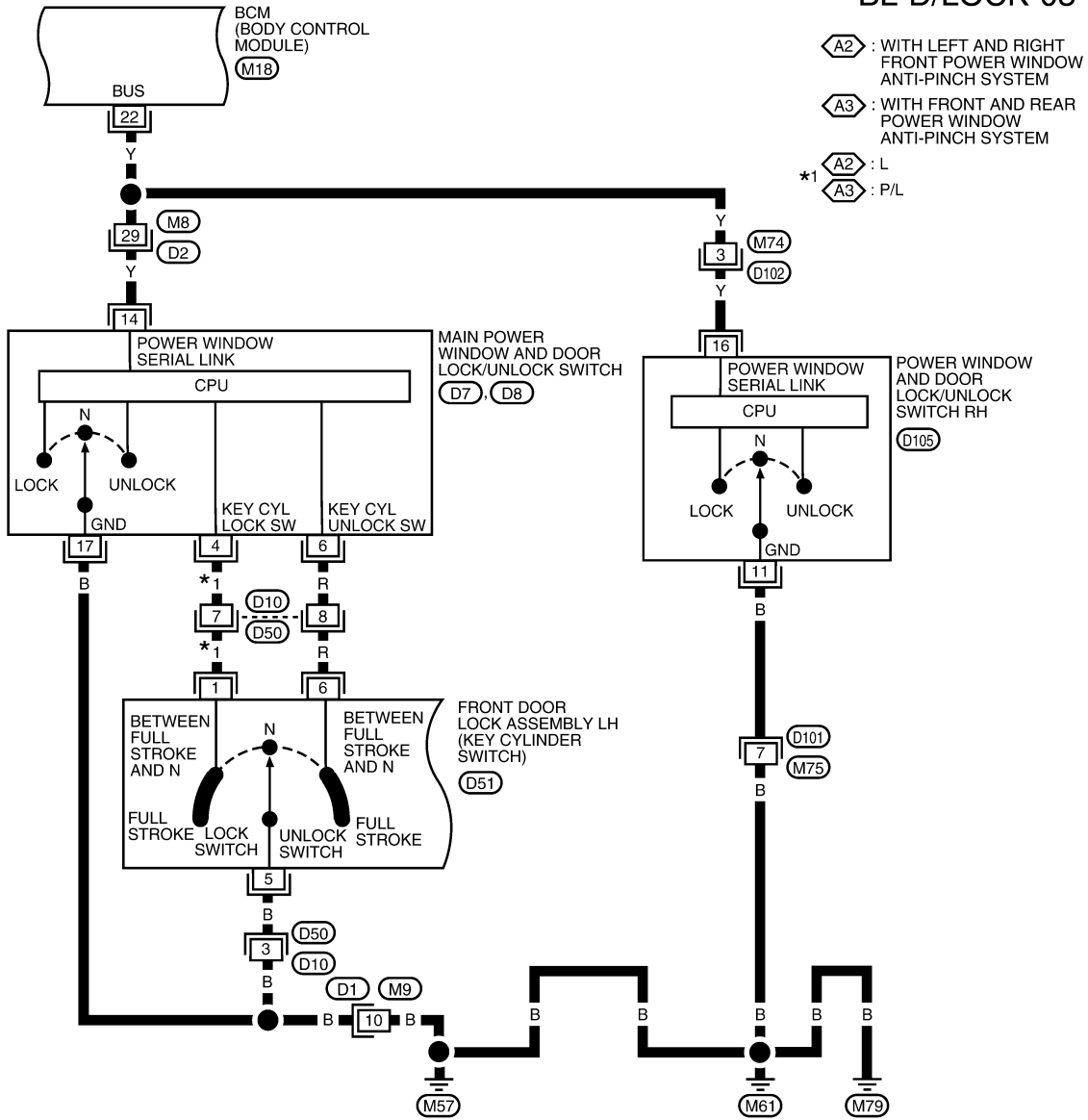


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POWER DOOR LOCK SYSTEM

< SERVICE INFORMATION >

BL-D/LOCK-03

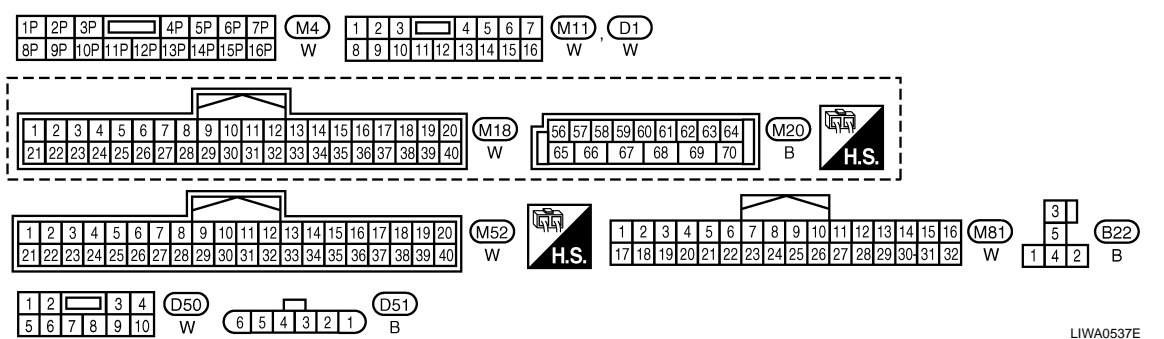
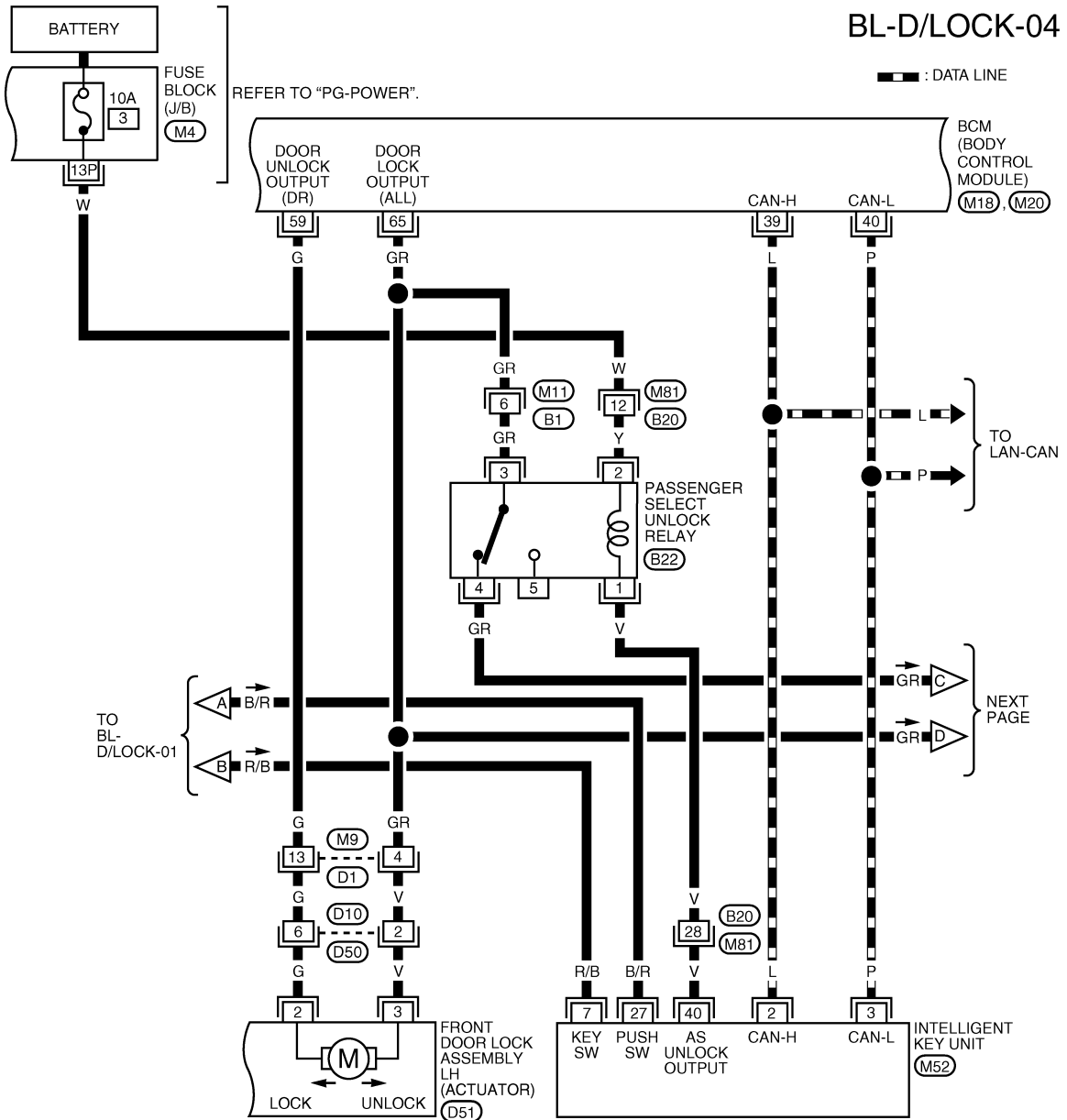


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POWER DOOR LOCK SYSTEM

< SERVICE INFORMATION >

BL-D/LOCK-04



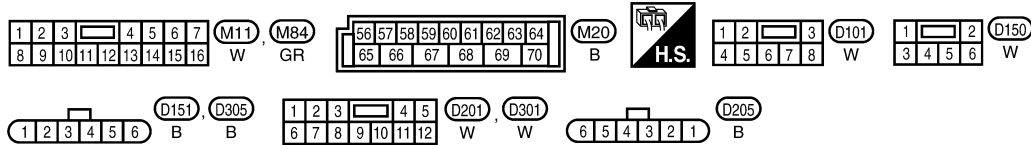
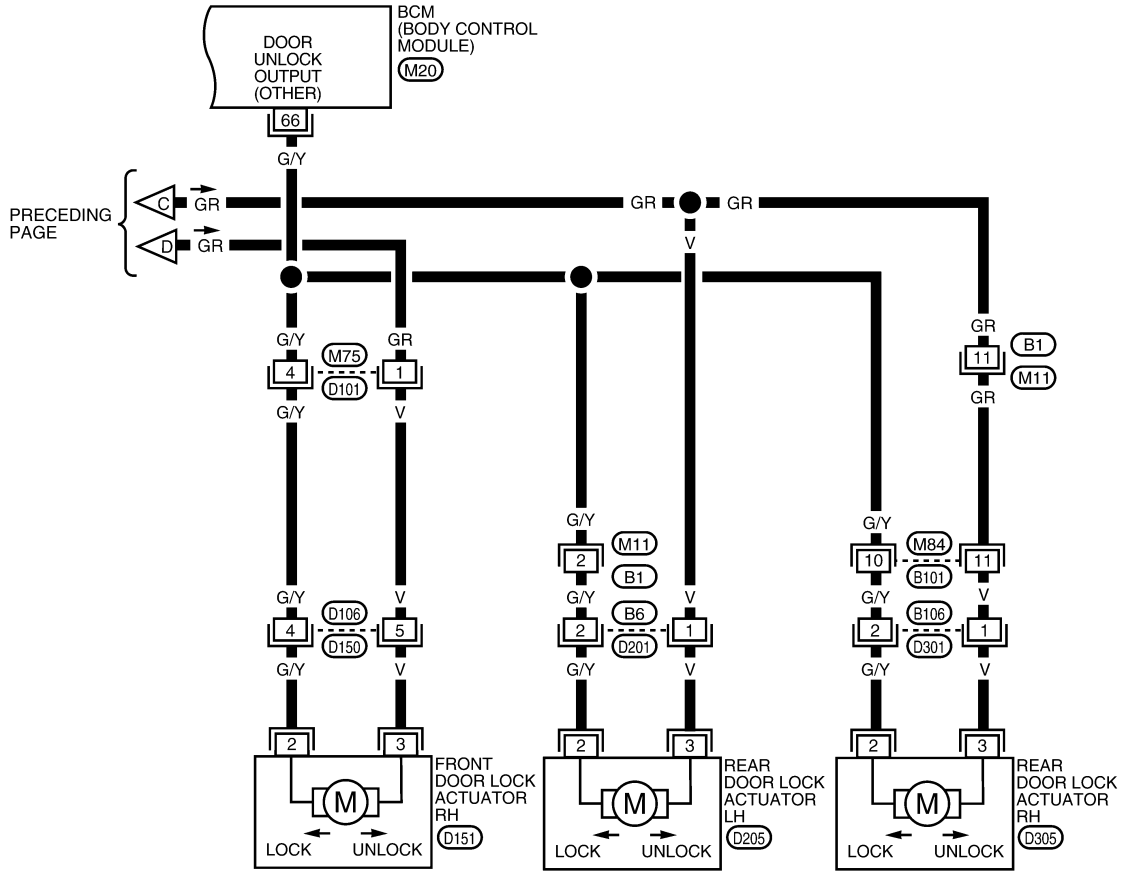
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POWER DOOR LOCK SYSTEM

< SERVICE INFORMATION >

BL-D/LOCK-05



Terminal and Reference Value for BCM

Refer to [BCS-11, "Terminal and Reference Value for BCM"](#).

Work Flow

1. Check the symptom and customer's requests.
2. Understand the outline of system. Refer to [BL-16, "System Description"](#).

WIWA1892E

INFOID:000000001721381

INFOID:000000001721382

POWER DOOR LOCK SYSTEM

< SERVICE INFORMATION >

3. According to the trouble diagnosis chart, repair or replace the cause of the malfunction. Refer to [BL-26](#), "[Trouble Diagnosis Symptom Chart](#)".
4. Does power door lock system operate normally? OK: GO TO 5, NG: GO TO 3.
5. Inspection End.

CONSULT-III Function (BCM)

INFOID:000000001721383

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received date is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

WORK SUPPORT

Work item	Description
DOOR LOCK-UNLOCK SET	Select unlock mode can be changed in this mode. Selects ON-OFF of select unlock mode.
ANTI-LOCK OUT SET	Key reminder door mode can be changed in this mode. Selects ON-OFF of key reminder door mode.

DATA MONITOR

Monitor item "OPERATION"	Content
IGN ON SW	"ON/OFF" Indicates [ON/OFF] condition of ignition switch.
KEY ON SW	"ON/OFF" Indicates [ON/OFF] condition of key switch.
CDL LOCK SW	"ON/OFF" Indicates [ON/OFF] condition of lock signal from lock/unlock switch LH and RH.
CDL UNLOCK SW	"ON/OFF" Indicates [ON/OFF] condition of unlock signal from lock/unlock switch LH and RH.
DOOR SW-DR	"ON/OFF" Indicates [ON/OFF] condition of front door switch LH.
DOOR SW-AS	"ON/OFF" Indicates [ON/OFF] condition of front door switch RH.
DOOR SW-RR	"ON/OFF" Indicates [ON/OFF] condition of rear door switch RH.
DOOR SW-RL	"ON/OFF" Indicates [ON/OFF] condition of rear door switch LH.
KEY CYL LK-SW	"ON/OFF" Indicates [ON/OFF] condition of lock signal from key cylinder.
KEY CYL UN-SW	"ON/OFF" Indicates [ON/OFF] condition of unlock signal from key cylinder.
I-KEY LOCK	"ON/OFF" Indicates [ON/OFF] condition of lock signal from door request switch.
I-KEY UNLOCK	"ON/OFF" Indicates [ON/OFF] condition of unlock signal from door request switch.

ACTIVE TEST

Test item	Content
ALL LOCK	This test is able to check all door lock actuators lock operation. These actuators lock when "ON" on CONSULT-III screen is touched.
ALL UNLOCK	This test is able to check all door lock actuators unlock operation. These actuators unlock when "ON" on CONSULT-III screen is touched.

POWER DOOR LOCK SYSTEM

< SERVICE INFORMATION >

Test item	Content
DR UNLOCK	This test is able to check front door lock actuator LH unlock operation. These actuators lock when "ON" on CONSULT-III screen is touched.
OTHER UNLOCK	This test is able to check door lock actuators (except front door lock actuator LH) unlock operation. These actuators unlock when "ON" on CONSULT-III screen is touched.

Trouble Diagnosis Symptom Chart

INFOID:000000001721384

Symptom	Repair order	Refer to page
Key reminder door function does not operate properly.	1. BCM power supply and ground circuit check	BCS-15
	2. Door switch check	BL-26
	3. Key switch and ignition knob switch (insert) check	BL-27
	4. Replace BCM.	BCS-18
Power door lock does not operate with door lock and unlock switch on main power window and door lock/unlock switch or power window and door lock/unlock switch RH	1. Door lock/unlock switch check	BL-28
	2. Replace BCM.	BCS-18
One or both rear door lock actuators do not operate.	1. Passenger select unlock relay circuit check	BL-33
Front door lock assembly LH (actuator) does not operate.	1. Front door lock assembly LH (actuator) check	BL-30
Specific door lock actuator does not operate.	1. Door lock actuator check (Front RH, Rear LH/RH)	BL-31
Power door lock does not operate with front door lock assembly LH (key cylinder switch) operation.	1. Front door lock assembly LH (key cylinder switch) check	BL-32
	2. Replace BCM.	BCS-18
Power door lock does not operate.	1. BCM power supply and ground circuit check	BCS-15
	2. Door lock/unlock switch check	BL-28
	3. Replace BCM.	BCS-18

BCM Power Supply and Ground Circuit Inspection

INFOID:000000001721385

Refer to [BCS-15, "BCM Power Supply and Ground Circuit Inspection"](#).

Door Switch Check

INFOID:000000001721386

1. CHECK DOOR SWITCHES INPUT SIGNAL

 With CONSULT-III

Check door switches ("DOOR SW-DR", "DOOR SW-AS", "DOOR SW-RL", "DOOR SW-RR") in DATA MONITOR mode with CONSULT-III. Refer to [BL-25, "CONSULT-III Function \(BCM\)"](#).

- When doors are open:

DOOR SW-DR : ON
DOOR SW-AS : ON
DOOR SW-RL : ON
DOOR SW-RR : ON

- When doors are closed:

DOOR SW-DR : OFF
DOOR SW-AS : OFF
DOOR SW-RL : OFF
DOOR SW-RR : OFF

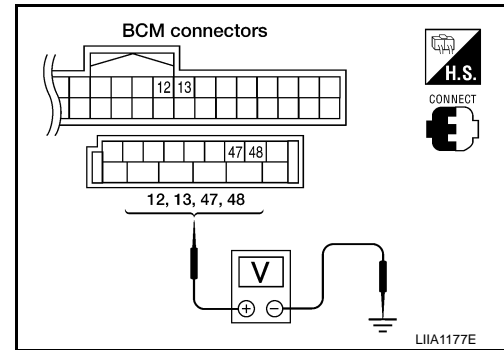
POWER DOOR LOCK SYSTEM

< SERVICE INFORMATION >

Without CONSULT-III

Check voltage between BCM connector M18 or M19 terminals 12, 13, 47, 48 and ground.

Connector	Item	Terminals		Condition	Voltage (V) (Approx.)
		(+)	(-)		
M19	Front door switch LH	47	Ground	Open ↓ Closed	0 ↓ Battery voltage
	Rear door switch LH	48			
M18	Front door switch RH	12			
	Rear door switch RH	13			



OK or NG

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

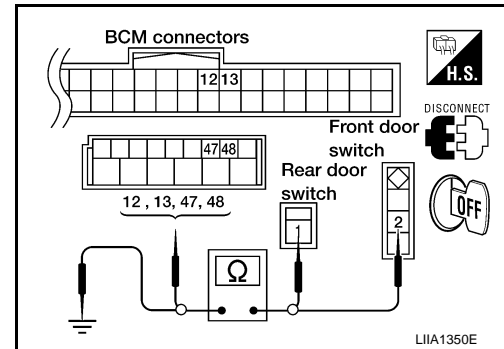
2. CHECK DOOR SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect door switch and BCM.
3. Check continuity between door switch connector B8 (Front LH) or B108 (Front RH) terminal 2, B18 (Rear LH) or B116 (Rear RH) terminal 1 and BCM connector M18, M19 terminals 12, 13, 47 and 48.

- 2 - 47** : Continuity should exist.
- 2 - 12** : Continuity should exist.
- 1 - 48** : Continuity should exist.
- 1 - 13** : Continuity should exist.

4. Check continuity between door switch connector B8 (Front LH) or B108 (Front RH) terminal 2, B18 (Rear LH) or B116 (Rear RH) terminal 1 and ground.

- 2 - Ground** : Continuity should not exist.
- 1 - Ground** : Continuity should not exist.



OK or NG

- OK >> GO TO 3.
- NG >> Repair or replace harness.

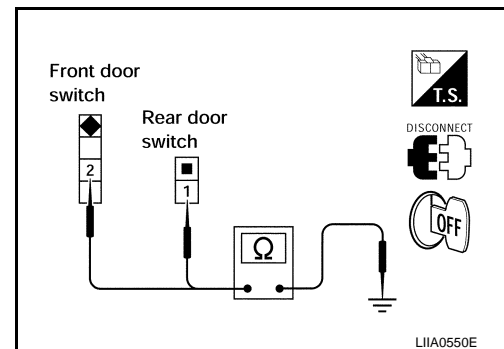
3. CHECK DOOR SWITCHES

Check continuity between door switch terminal and switch case ground.

Component	Terminals	Condition of switch	Continuity
Front door switch LH/RH	2 - Case ground	Pushed	No
		Released	Yes
Rear door switch LH/RH	1 - Case ground	Pushed	No
		Released	Yes

OK or NG

- OK >> Check door switch case ground condition.
- NG >> Replace door switch.



Key Switch and Ignition Knob Switch (Insert) Check

INFOID:000000001721387

1. CHECK KEY SWITCH AND IGNITION KNOB SWITCH INPUT SIGNAL

POWER DOOR LOCK SYSTEM

< SERVICE INFORMATION >

With CONSULT-III

Check key switch "KEY ON SW" in DATA MONITOR mode with CONSULT-III. Refer to [BL-25. "CONSULT-III Function \(BCM\)"](#).

- When key is inserted to ignition key cylinder:

KEY ON SW : ON

- When key is removed from ignition key cylinder:

KEY ON SW : OFF

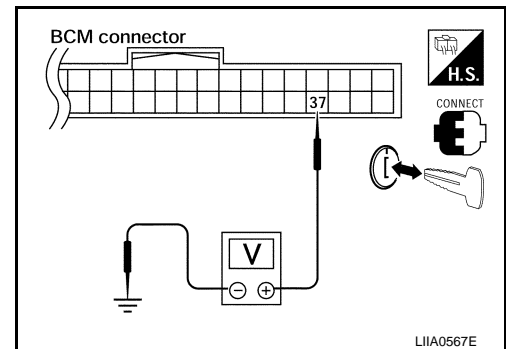
Without CONSULT-III

Check voltage between BCM connector M18 terminal 37 and ground.

Connector	Terminals		Condition	Voltage (V) (Approx.)
	(+)	(-)		
M18	37	Ground	Key is inserted.	Battery voltage
			Key is removed.	0

OK or NG

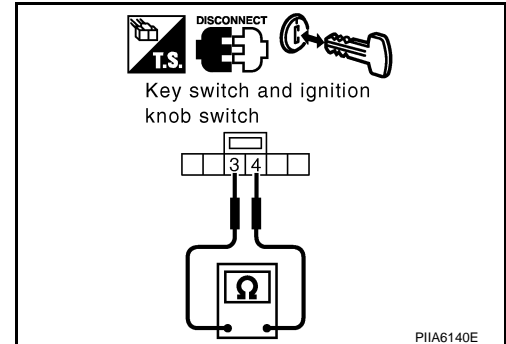
- OK >> Key switch circuit is OK.
 NG >> GO TO 2.



2. CHECK KEY SWITCH AND IGNITION KNOB SWITCH (INSERT)

- Disconnect key switch and ignition knob switch.
- Check continuity between key switch and ignition knob switch connector terminals.

Terminals	Condition	Continuity
3 - 4	Key is inserted.	Yes
	Key is removed.	No



OK or NG

- OK >> Check the following:
- 10A fuse [No. 2, located in the fuse block (J/B)]
 - Harness for open or short between key switch and fuse.
 - Harness for open or short between BCM and key switch and ignition knob.
- NG >> Replace key switch and ignition knob switch.

Door Lock/Unlock Switch Check

INFOID:000000001721388

1. CHECK DOOR LOCK/UNLOCK SWITCH OUTPUT SIGNAL

With CONSULT-III

Check door lock/unlock switch ("CDL LOCK SW", "CDL UNLOCK SW") in DATA MONITOR mode in CONSULT-III. Refer to [BL-25. "CONSULT-III Function \(BCM\)"](#)

- When door lock/unlock switch is turned to LOCK:

CDL LOCK SW : ON

- When door lock/unlock switch is turned to UNLOCK:

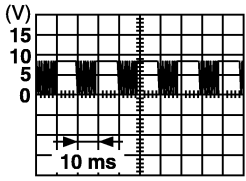
POWER DOOR LOCK SYSTEM

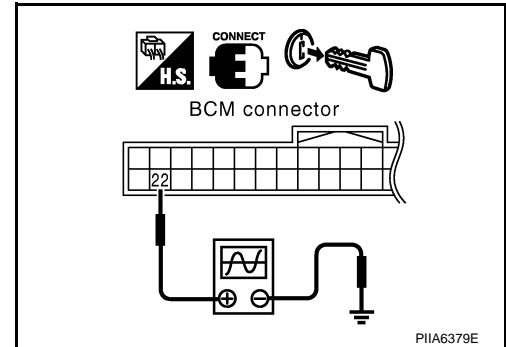
< SERVICE INFORMATION >

CDL UNLOCK SW : ON

⊗ Without CONSULT-III

1. Remove key from ignition key cylinder.
2. Check the signal between BCM connector M18 terminal 22 and ground with oscilloscope when door lock/unlock switch is turned to LOCK or UNLOCK.
3. Make sure the signals which are shown in the figure below can be detected during 10 seconds just after the door lock/unlock switch is turned to LOCK or UNLOCK.

Connector	Terminals		Voltage (V) (Approx.)
	(+)	(-)	
M18	22	Ground	 PIIA1297E



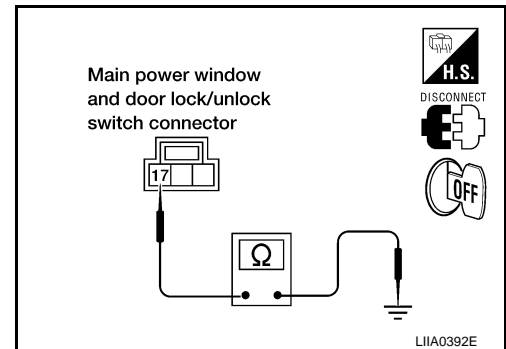
OK or NG

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

2. CHECK DOOR LOCK/UNLOCK SWITCH GROUND HARNESS

1. Turn ignition switch OFF.
2. Disconnect main power window and door lock/unlock switch or power window and door lock/unlock switch RH.
3. Check continuity between main power window and door lock/unlock switch connector D8 terminal 17 and ground.

17 - Ground : Continuity should exist.

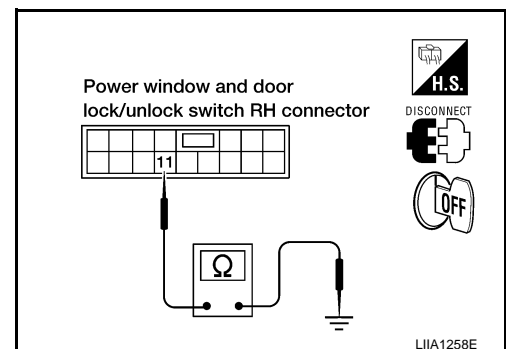


4. Check continuity between power window and door lock/unlock switch RH connector D105 terminal 11 and ground

11 - Ground : Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair or replace harness.



3. CHECK POWER WINDOW SERIAL LINK CIRCUIT

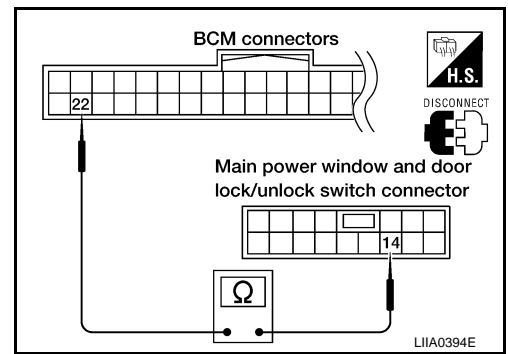
1. Disconnect BCM.

POWER DOOR LOCK SYSTEM

< SERVICE INFORMATION >

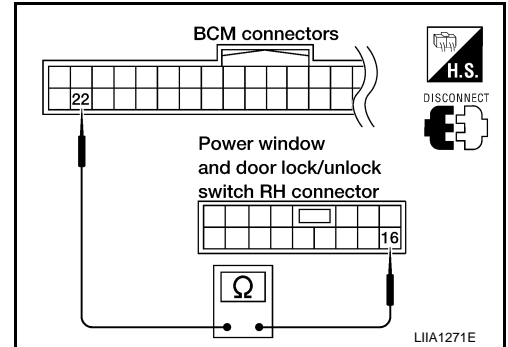
- Check continuity between BCM connector M18 terminal 22 and main power window and door lock/unlock switch connector D7 terminal 14.

22 - 14 : Continuity should exist.



- Check continuity between BCM connector M18 terminal 22 and power window and door lock/unlock switch RH connector D105 terminal 16.

22 - 16 : Continuity should exist.

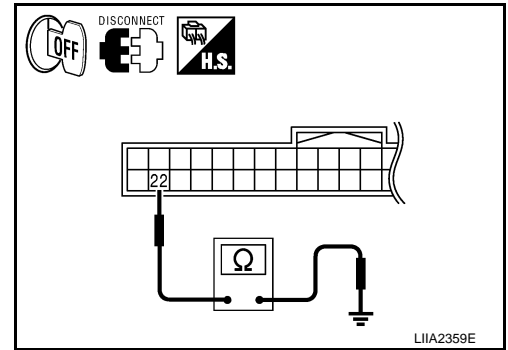


- Check continuity between BCM connector M18 terminal 22 and ground.

22 - Ground : Continuity should not exist.

OK or NG

- OK >> Replace main power window and door lock/unlock switch or power window and door lock/unlock switch RH.
- NG >> Repair or replace harness.



Front Door Lock Assembly LH (Actuator) Check

INFOID:000000001721389

1. CHECK FRONT DOOR LOCK ASSEMBLY LH (ACTUATOR) HARNESS

- Turn ignition switch OFF.
- Disconnect BCM and front door lock assembly LH (actuator).
- Check continuity between BCM connector M20 (A) terminals 59, 65 and front door lock assembly LH (actuator) connector (B) D51 terminals 2, 3.

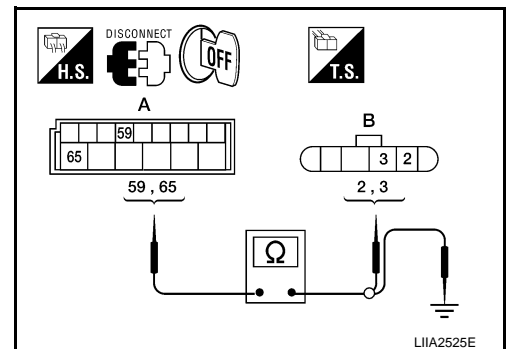
Connector	Terminal	Connector	Terminal	Continuity
M20	59	D51	2	Yes
	65		3	Yes

- Check continuity between BCM connector M20 terminals 59, 65 and body ground.

Connector	Terminals	Continuity
M20	59	No
	65	No

OK or NG

- OK >> GO TO 2.



POWER DOOR LOCK SYSTEM

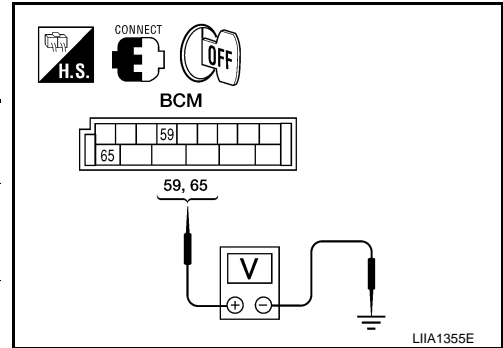
< SERVICE INFORMATION >

NG >> Repair or replace harness.

2. CHECK FRONT DOOR LOCK ASSEMBLY LH SIGNAL

1. Reconnect BCM.
2. Check voltage between BCM connector M20 terminals 59, 65 and ground.

Connector	Terminals		Condition	Voltage (V) (Approx.)
	(+)	(-)		
M20	59	Ground	Main power window and door lock/unlock switch is turned to UNLOCK	0 → Battery voltage
	65		Main power window and door lock/unlock switch is turned to LOCK	0 → Battery voltage



OK or NG

- OK >> Replace front door lock assembly LH (actuator). Refer to [BL-101. "Removal and Installation"](#).
 NG >> Replace BCM. Refer to [BCS-18. "BCM"](#).

Door Lock Actuator Check (Front RH and Rear LH/RH)

INFOID:000000001721390

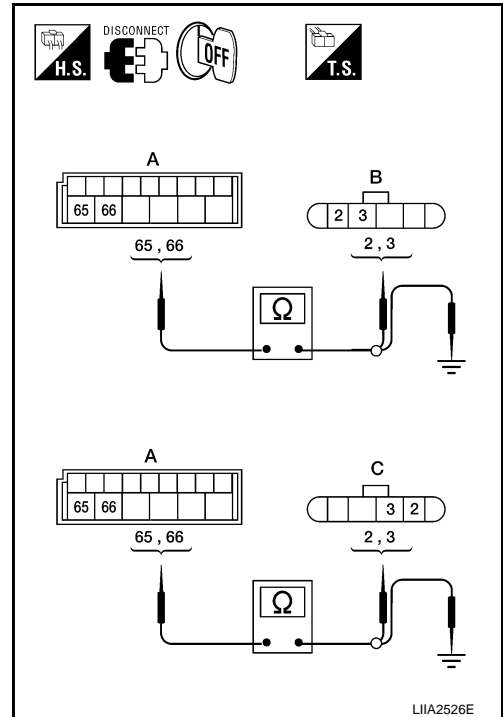
1. CHECK DOOR LOCK ACTUATOR HARNESS

NOTE:

Insure that the passenger select unlock relay remain connected during this test.

1. Turn ignition switch OFF.
2. Disconnect BCM and each door lock actuator.
3. Check continuity between BCM connector (A) M20 terminals 65, 66 and front door lock actuator RH connector (B) D151, rear door lock actuator RH connector (B) D305, rear door lock actuator LH connector (C) D205 terminals 2, 3.

Connector	Terminal	Connector	Terminal	Continuity
M20	65	D151, D205, D305	3	Yes
	66		2	Yes



4. Check continuity between BCM connector (A) M20 terminals 65, 66 and body ground.

Connector	Terminals	Continuity

POWER DOOR LOCK SYSTEM

< SERVICE INFORMATION >

M20	65	Ground	No
	66		No

OK or NG

OK >> GO TO 2.

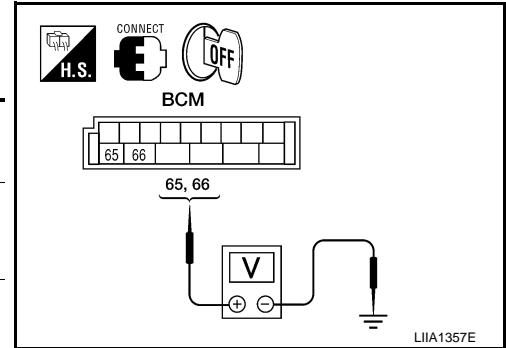
NG >> Check the following:

- Front door: Repair or replace harness.
- Rear doors: Repair or replace harness or passenger select unlock relay.

2. CHECK DOOR LOCK ACTUATOR SIGNAL

1. Reconnect BCM.
2. Check voltage between BCM connector M20 terminals 65, 66 and ground.

Connector	Terminals		Condition	Voltage (V) (Approx.)
	(+)	(-)		
M20	65	Ground	Main power window and door lock/unlock switch is turned to UNLOCK	0 → Battery voltage
	66		Main power window and door lock/unlock switch is turned to LOCK	0 → Battery voltage



OK or NG

OK >> Replace front door lock assembly RH or rear door lock actuator LH/RH. Refer to [BL-101](#) or [BL-104](#).

NG >> Replace BCM. Refer to [BCS-18. "BCM"](#).

Front Door Lock Assembly LH (Key Cylinder Switch) Check

INFOID:000000001721391

1. CHECK FRONT DOOR LOCK ASSEMBLY (KEY CYLINDER SWITCH)

Ⓜ With CONSULT-III

Check front door lock assembly LH (key cylinder switch) ("KEY CYL LK-SW") and ("KEY CYL UN-SW") in DATA MONITOR mode in CONSULT-III. Refer to [BL-25. "CONSULT-III Function \(BCM\)"](#).

- When key inserted in front key cylinder is turned to LOCK:

KEY CYL LK-SW : ON

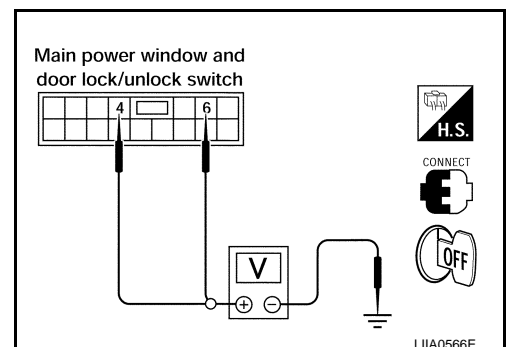
- When key inserted in front key cylinder is turned to UNLOCK:

KEY CYL UN-SW : ON

ⓧ Without CONSULT-III

Check voltage between main power window and door lock/unlock switch connector D7 terminals 4, 6 and ground.

Connector	Terminals		Condition	Voltage (V) (Approx.)
	(+)	(-)		
D7	4	Ground	Neutral/Unlock	5
			Lock	0
	6		Neutral/Lock	5
			Unlock	0



POWER DOOR LOCK SYSTEM

< SERVICE INFORMATION >

OK or NG

- OK >> Front door lock assembly (key cylinder switch) signal is OK.
- NG >> GO TO 2.

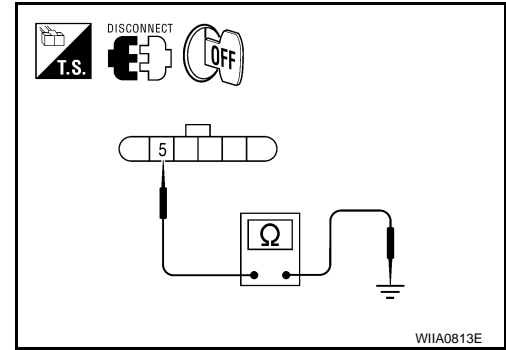
2.CHECK DOOR KEY CYLINDER SWITCH LH GROUND HARNESS

1. Turn ignition switch OFF.
2. Disconnect front door lock assembly LH (key cylinder switch).
3. Check continuity between front door lock assembly LH (key cylinder switch) connector D51 terminal 5 and body ground.

Connector	Terminals	Continuity
D51	5 – Ground	Yes

OK or NG

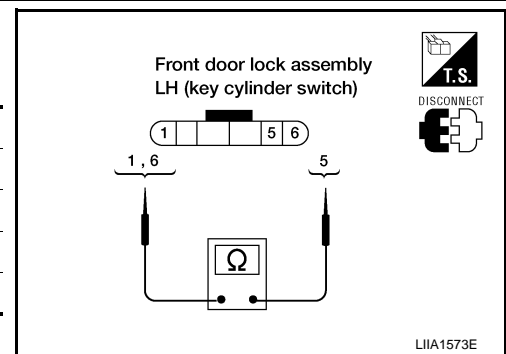
- OK >> GO TO 3.
- NG >> Repair or replace harness.



3.CHECK DOOR KEY CYLINDER SWITCH LH

Check continuity between front door lock assembly LH (key cylinder switch) terminals.

Terminals	Door key cylinder switch position	Continuity
1 – 5	Neutral/Unlock	No
	Lock	Yes
5 – 6	Neutral/Lock	No
	Unlock	Yes



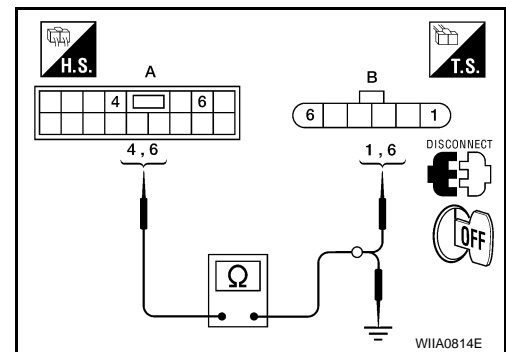
OK or NG

- OK >> GO TO 4.
- NG >> Replace front door lock assembly LH (key cylinder switch). Refer to [BL-101](#).

4.CHECK DOOR KEY CYLINDER HARNESS

Check continuity between main power window and door lock/unlock switch connector (A) D7 terminals 4, 6 and front door lock assembly LH (key cylinder switch) connector (B) D51 terminals 1, 6 and body ground.

Connector	Terminal	Connector	Terminal	Continuity
A: Main power window and door lock/unlock switch	4	B: Front door lock assembly LH (key cylinder switch)	1	Yes
	6		6	Yes
	4	Ground	No	
	6	Ground	No	



OK or NG

- OK >> Replace main power window and door lock/unlock switch.
- NG >> Repair or replace harness.

Passenger Select Unlock Relay Circuit Inspection

INFOID:000000001721392

1.CHECK PASSENGER SELECT UNLOCK RELAY CIRCUIT

NOTE:

POWER DOOR LOCK SYSTEM

< SERVICE INFORMATION >

Passenger select unlock relay must remain connected during this step.

1. Turn ignition switch OFF.
2. Disconnect BCM and inoperative rear door lock actuator.
3. Check continuity between BCM connector (A) M20 terminal 65 and rear door lock actuator LH connector (B) D205 terminal 3 or rear door lock actuator RH connector (C) D305 Terminal 3.

65 - 3 : Continuity should exist.

4. Check continuity between BCM connector M20 terminals 65 and body ground.

65 - Ground : Continuity should not exist.

OK or NG

- OK >> GO TO 4.
- NG >> GO TO 2.

2. CHECK PASSENGER SELECT UNLOCK RELAY INPUT

1. Disconnect passenger select unlock relay.
2. Check continuity between BCM connector (A) M20 terminal 65 and passenger select unlock relay connector (B) B22 terminal 3.

65 - 3 : Continuity should exist.

3. Check continuity between BCM connector (A) M20 terminals 65 and body ground.

65 - Ground : Continuity should not exist.

OK or NG

- OK >> GO TO 3.
- NG >> Repair or replace harness between BCM and relay.

3. CHECK PASSENGER SELECT UNLOCK RELAY OUTPUT

1. Disconnect inoperative rear door lock actuator.
2. Check continuity between passenger select unlock relay connector (A) B22 terminal 4 and rear door lock actuator LH connector (B) D205 or rear door lock actuator RH connector (C) D305 terminal 3.

4 - 3 : Continuity should exist.

3. Check continuity between passenger select unlock relay connector (A) B22 terminal 4 and ground.

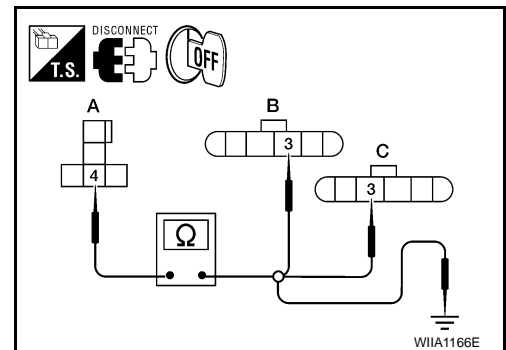
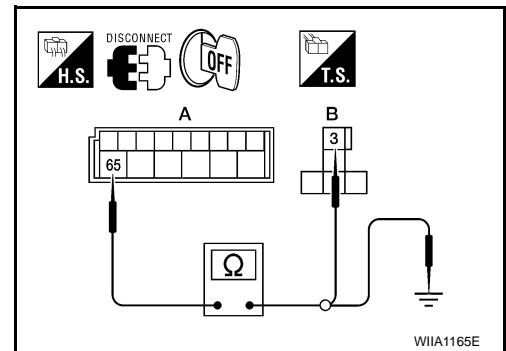
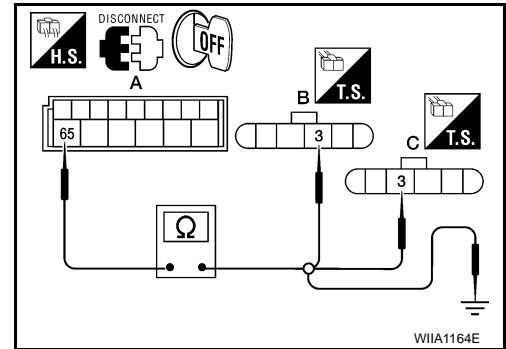
4 - Ground : Continuity should not exist.

OK or NG

- OK >> Replace passenger select unlock relay.
- NG >> Repair or replace harness between relay and actuator.

4. CHECK REAR DOOR LOCK ACTUATOR ASSEMBLY

1. Reconnect BCM.

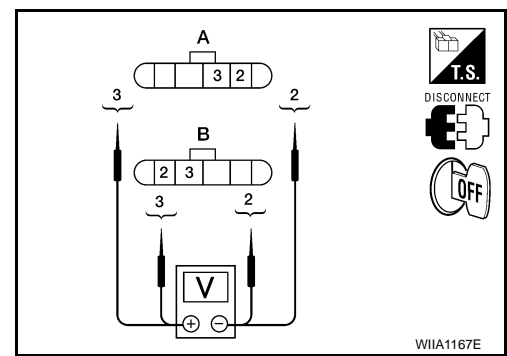


POWER DOOR LOCK SYSTEM

< SERVICE INFORMATION >

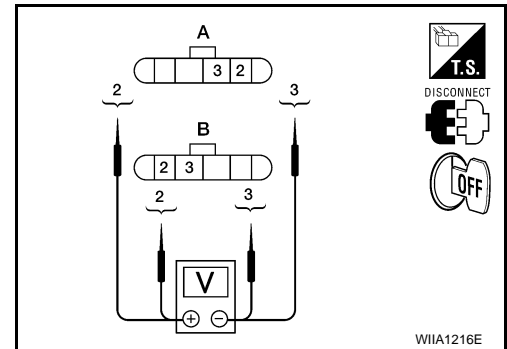
2. Check voltage between rear door lock actuator connector LH (A) D205 or rear door lock actuator connector RH (B) D305 terminals 2 and 3.

Connector	Terminals		Condition	Voltage (V) (Approx.)
	(+)	(-)		
A: D205 (LH) B: D305 (RH)	3	2	Main power window and door lock/unlock switch is turned to LOCK	0 → Battery voltage



3. Check voltage between rear door lock actuator connector LH (A) D205 or rear door lock actuator connector RH (B) D305 terminals 2 and 3.

Connector	Terminals		Condition	Voltage (V) (Approx.)
	(+)	(-)		
A: D205 (LH) B: D305 (RH)	2	3	Main power window and door lock/unlock switch is turned to UNLOCK	0 → Battery voltage



OK or NG

- OK >> Replace rear door lock actuator. Refer to [BL-104](#).
 NG >> Repair or replace harness between actuator and splice.

A
B
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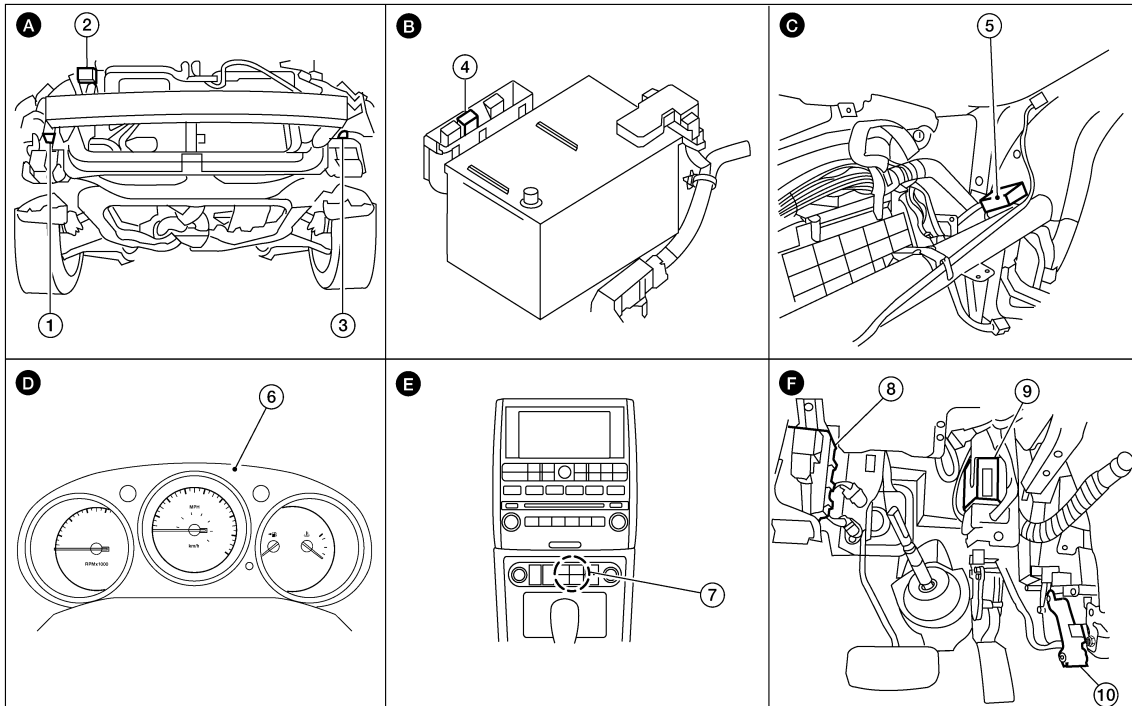
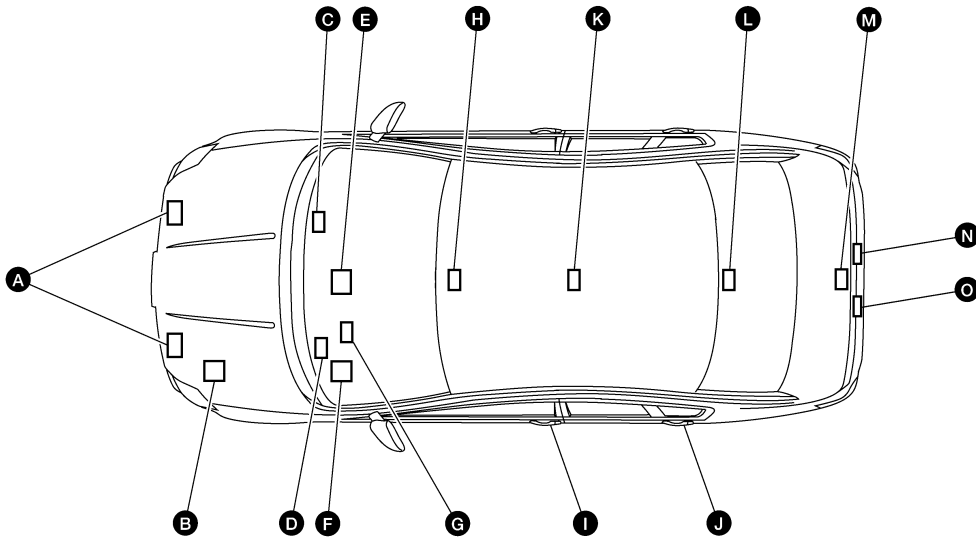
INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

INTELLIGENT KEY SYSTEM

Component Parts and Harness Connector Location

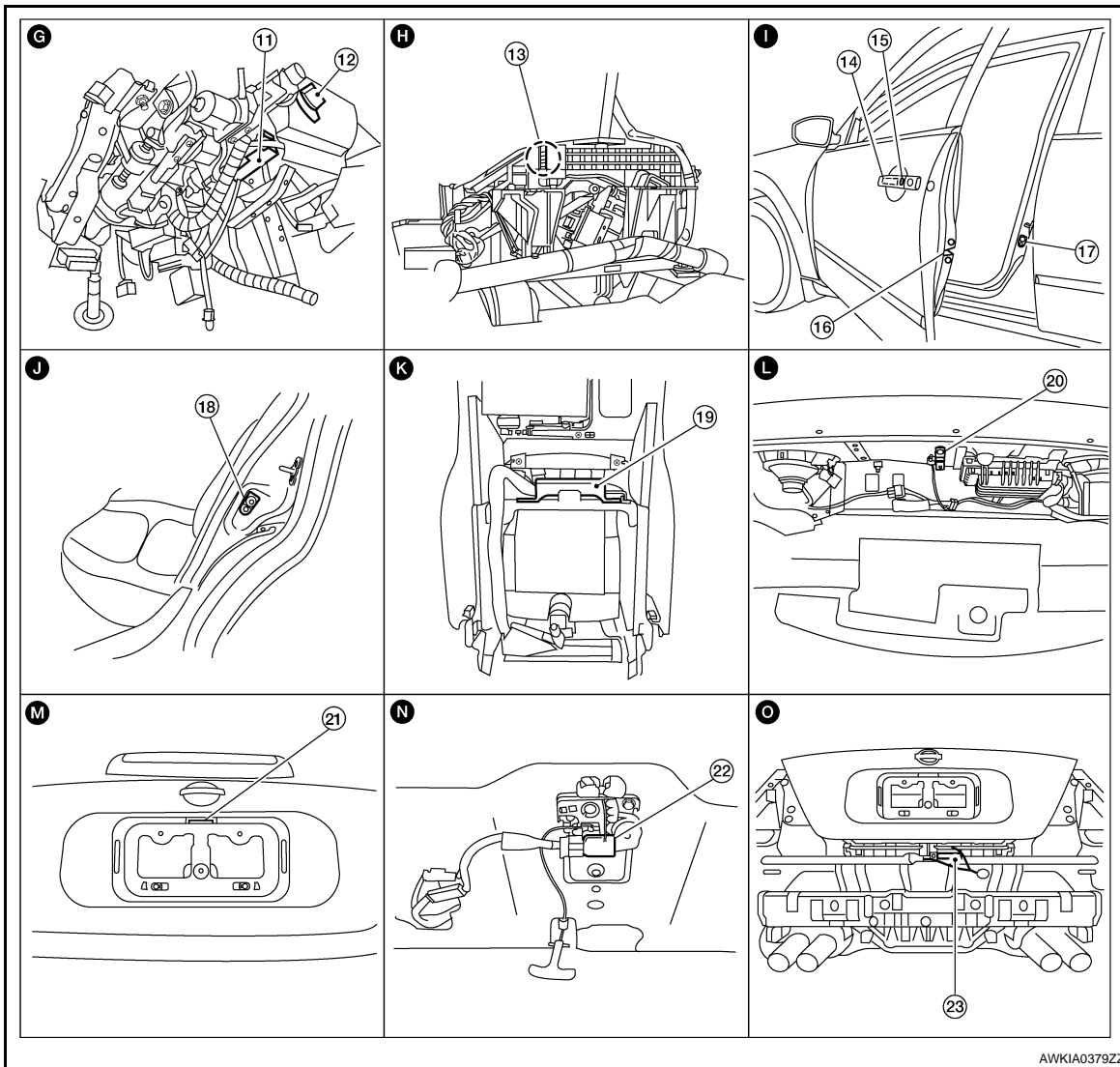
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AWKIA0378ZZ

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >



AWKIA0379ZZ

- | | | |
|--|--|---|
| 1. Horn (High) E108
(View with front fascia removed) | 2. Intelligent key warning buzzer E127
(Front of vehicle) | 3. Horn (Low) E3 |
| 4. Horn relay H-1 | 5. Remote keyless entry receiver M78
(View with instrument panel removed) | 6. Combination meter M24 |
| 7. Unified meter and A/C amp. M49, M50 | 8. BCM M18, M19, M20
(Bottom view of instrument panel LH) | 9. Intelligent Key unit M52 |
| 10. Instrument panel antenna M76 | 11. Steering lock solenoid M72
(Bottom view of instrument panel LH) | 12. Key switch and ignition knob switch M73 |
| 13. CVT device (detention switch key) M34
(View with front console removed) | 14. Front outside antenna LH D61, RH D161 | 15. Front door request switch LH D62, RH D162 |
| 16. Front door lock actuator LH (door unlock sensor) D51 | 17. Front door switch LH B8, RH B108 | 18. Rear door switch LH B18, RH B116 |
| 19. Front console antenna M174
(Bottom view of front console) | 20. Rear parcel shelf antenna B110
(Bottom view of rear parcel shelf) | 21. Trunk opener request switch T6 |
| 22. Trunk lamp switch and trunk release solenoid T103 | 23. Rear bumper antenna B23
(View with rear fascia removed) | |

System Description

INFOID:000000001721394

- The Intelligent Key system is a system that makes it possible to lock and unlock the door locks (door lock/unlock function), open the trunk (trunk open function), and start the engine (engine start function) by carrying around the Intelligent Key (without some key operation), which operates based on the results of electronic ID verification using two-way communications between the Intelligent Key and the vehicle (Intelligent Key unit).

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

CAUTION:

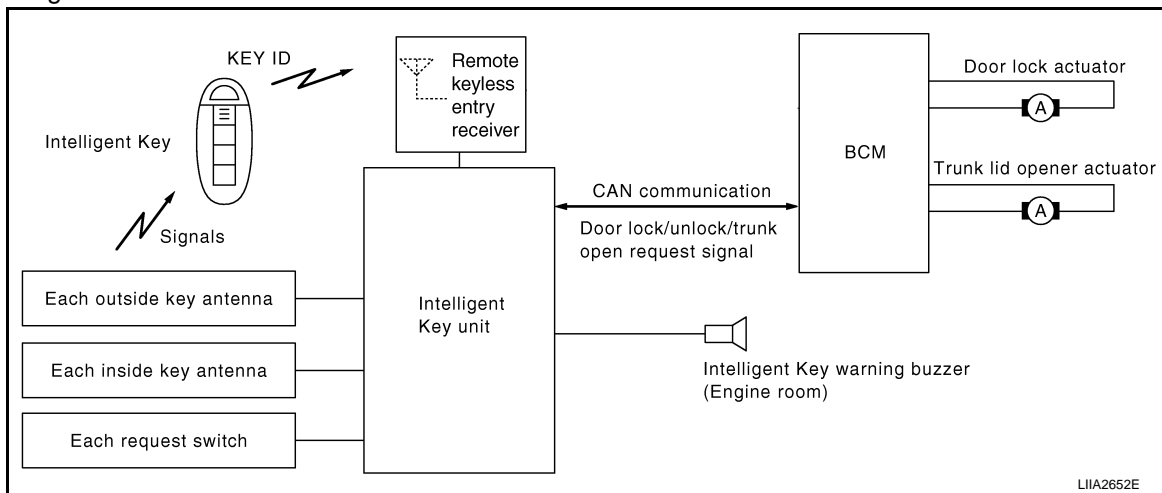
The driver should always carry the Intelligent Key

- Operation of the remote control buttons on the Intelligent Key also provides the same functions as the remote control entry system (Remote keyless entry functions).
- If an action that does not meet the operating conditions of the Intelligent Key system is taken, the chime (inside vehicle) goes off to inform the driver (Warning chime functions).
- When a door lock is locked or unlocked with request switch or remote control button operation, the hazard lamps flash and the Intelligent Key warning buzzer (front of vehicle) sounds (Hazard and horn reminder function).
- Even if the Intelligent Key battery is completely discharged, the door locks can be locked and unlocked and the engine started with the mechanical key built into the Intelligent Key.
- The settings for each function can be changed with the CONSULT-III.
- If an Intelligent Key is lost, a new Intelligent Key can be registered. A maximum of 4 Intelligent Keys can be registered.
- It has been made possible to diagnose the system and register an Intelligent Key with the CONSULT-III.

DOOR LOCK/UNLOCK/TRUNK OPEN FUNCTION

Only when pressing the request switch, it is possible to lock and unlock the door and open the trunk by carrying around the Intelligent Key (without some key operation).

System Diagram



Operation Description

- When the Intelligent Key unit detects that each request switch is pressed, it starts the outside antenna corresponding to the pressed request switch and sends the request signal to the Intelligent Key. And then, make sure that the Intelligent Key is near the door or the trunk.
- If the Intelligent Key is within the outside antenna detection area, it receives the request signal and sends the key ID signal to the Intelligent Key unit.
- Intelligent Key receives the key ID signal and compares it with the registered key ID.
- If the key ID check result is OK, the Intelligent Key unit sends the door lock/unlock or trunk open request signal to BCM (Body control module) via CAN communication line.
- Intelligent Key unit sends the door lock/unlock signal and sounds Intelligent Key warning buzzer (front of vehicle) warning (lock: 2 times, unlock: 1 time, trunk open: 4 times) at the same time.
- When BCM receives the door lock/unlock signal, it operates door lock actuator and flashes the hazard lamp (lock: 2 times, unlock: 1 time) at the same time as an operation check.
- When BCM receives the trunk open request signal, it operates the trunk lid opener actuator and opens the trunk.

Operation Condition

If the following conditions are not satisfied, door lock/unlock or trunk open operations will not response even if the request switch is operated.

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Each request switch operation	Operation condition
Lock operation	<ul style="list-style-type: none"> All doors are closed Intelligent Key is outside the vehicle Intelligent Key is within outside key antenna detection area even if another Intelligent Key is inside the vehicle OFF position warning chime is not operated
Unlock Operation	<ul style="list-style-type: none"> Intelligent Key is outside the vehicle Intelligent Key is within outside key antenna detection area
Trunk open operation	<ul style="list-style-type: none"> Intelligent Key is in the outside key antenna (rear bumper) detection area and Intelligent Key is not inside vehicle. Intelligent Keys are in the outside key antenna (rear bumper) detection area and Intelligent Key is inside vehicle. But both Intelligent Key IDs are different. Trunk cancel switch is ON

Outside Key Antenna Detection Area

The outside key antenna detection area of door lock/unlock function is in the range of approximately 80 cm (31.50 in) surrounding the driver and passenger door handles. The outside key antenna detection area of trunk open function is in the range of approximately 80 cm (31.50 in) surrounding Trunk opener request switch. However, this operating range depends on the ambient conditions.

Key Reminder Function

Key reminder functions have the following 2 functions.

Key reminder function	Operation condition	Operation
When the door is open to closed	Key reminder function is operated when <ul style="list-style-type: none"> Intelligent Key is inside the vehicle Any door is open All doors are locked by door lock and unlock switch or door lock knob All doors are closed 	<ul style="list-style-type: none"> All doors unlock operation Sound Intelligent Key warning buzzer (front of vehicle) for 3 seconds
When the trunk is closed	Key reminder function is operated when <ul style="list-style-type: none"> Trunk lid opener cancel switch is ON Intelligent Key is inside trunk room All doors are closed All doors are locked Trunk is closed 	<ul style="list-style-type: none"> Trunk open operation. Sound Intelligent Key warning buzzer (front of vehicle) for 10 seconds

CAUTION:

- The above function operates when the Intelligent Key is inside the vehicle. However, there may be times when the Intelligent Key cannot be detected, and this function will not operate when the Intelligent Key is on the instrument panel, rear parcel shelf, or in the glove box. Also, this system sometimes does not operate if the Intelligent Key is in the door pocket of an open door.
- While the key reminder function is operated when the trunk is open/closed and the chime sounds, if the following operations are performed, the key reminder function is cleared and chime sounds are stopped.
 - Remote control door lock button operation of Intelligent Key
 - Remote control door unlock button operation of Intelligent Key
 - When the trunk is closed, the Intelligent Key is not inside the vehicle
 - When any door is open

Selective Unlock Function for Driver Side

When a LOCK signal is sent from front door request switch LH or RH, all doors will be locked. When an UNLOCK signal is sent from front door request switch LH or RH once, that door will be unlocked. Then, if an UNLOCK signal is sent from the same front door request switch again within 5 seconds, all other doors will be unlocked.

Hazard and Horn Reminder

When doors are locked or unlocked by a door request switch, Intelligent Key unit sends hazard request signal to BCM via CAN communication line. BCM flashes hazard warning lamps as a reminder. Intelligent Key unit sends a chirp signal to the Intelligent Key warning buzzer (engine room) as a reminder. The hazard and buzzer reminder has a horn chirp mode (C mode) and a non-horn chirp mode (S mode).

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Operating function of hazard and horn reminder

	C mode		S mode	
	Lock	Unlock	Lock	Unlock
Door request switch operation	Lock	Unlock	Lock	Unlock
Hazard warning lamp flash	Twice	Once	Twice	—
Warning buzzer (engine room)	Twice	Once	—	—

Hazard and buzzer reminders do not operate if any door switch is ON (any door is OPEN).

How to change hazard and horn reminder mode

With CONSULT-III

Hazard and horn reminder can be changed using “HAZARD ANSWER BACK”, “ANSWER BACK WITH I-KEY LOCK” and “ANSWER BACK WITH I-KEY UNLOCK” mode in “WORK SUPPORT”. Refer to [BL-64, "CONSULT-III Application Item"](#).

Without CONSULT-III

Refer to Owner's Manual for instructions.

Auto Door Lock Function

When all doors are locked, ignition knob switch is OFF (when ignition switch is not pressed) and key switch is OFF (when mechanical key is not inserted in key cylinder), doors are unlocked with a door request switch. When Intelligent Key unit does not receive the following signals within 1 minute, all doors are locked.

- Door switch is ON (door is opened)
- Door is locked
- Ignition knob switch is ON (ignition switch is pressed)
- Key switch is ON (mechanical key is inserted in key cylinder)

Auto door lock mode can be changed by “AUTO RELOCK TIMER” mode in “WORK SUPPORT”. Refer to [BL-64, "CONSULT-III Application Item"](#).

Room Lamp Operation

When the following conditions are met:

- Condition of interior lamp switch is in DOOR position
- Door switch is OFF (when all the doors are closed)

Intelligent Key system turns on interior lamp (for 30 seconds) by receiving UNLOCK signal from a door request switch. For detailed description, refer to [LT-110, "System Description"](#).

List of Operation Related Parts

Parts marked with × are the parts related to operation.

Door lock/trunk open function	Intelligent Key	Key switch	Ignition knob switch	Door unlock sensor	Door switch	Trunk lamp switch	Front door request switch (LH, RH)	Trunk opener request switch	Door lock actuator	Trunk lid opener actuator	Inside key antenna	Front outside antenna (LH, RH)	Rear bumper antenna	Intelligent Key warning buzzer	Intelligent Key unit	CAN communication system	BCM	Hazard warning lamp
Door lock/unlock function by request switch	×			×	×		×		×		×	×			×	×	×	
Door lock/unlock function by mechanical key									×									×
Trunk open function by the trunk opener switch	×					×		×		×	×		×		×	×	×	
Hazard and horn reminder function														×	×	×	×	×
Key reminder function	×			×	×		×	×	×		×	×	×	×	×	×	×	×
Selective unlock function by request switch (LH side)	×						×		×		×	×			×	×	×	
Auto door lock function	×	×	×		×		×								×	×	×	

INTELLIGENT KEY SYSTEM

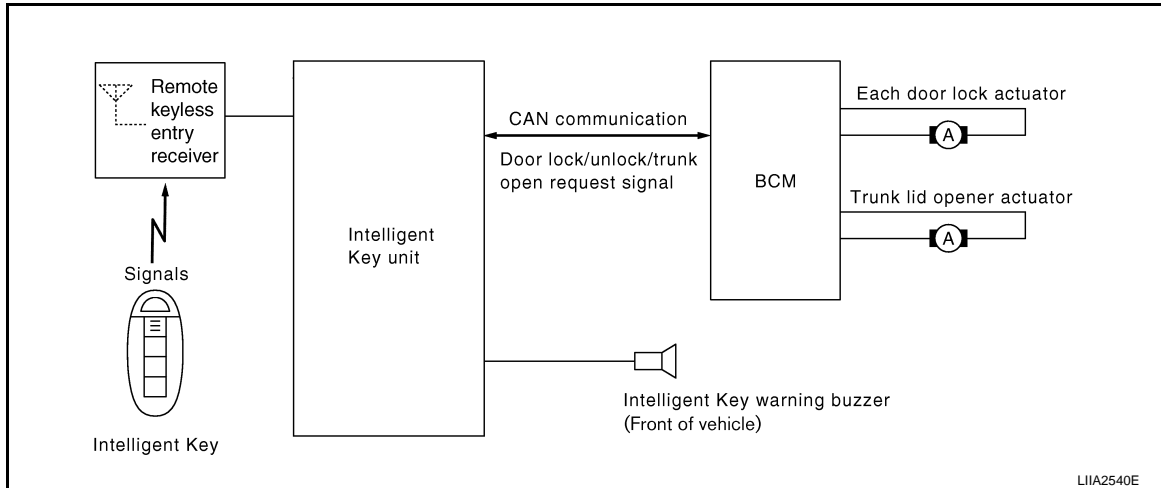
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REMOTE KEYLESS ENTRY FUNCTIONS

Door Lock/Unlock Function

The Intelligent Key has the same functions as the remote control entry system. Therefore, it can be used in the same manner as the remote control transmitter by operating the door lock/unlock button and trunk open button.

System Diagram



Door Lock/Unlock Function

- When door lock/unlock button of the Intelligent Key is pressed, lock signal or unlock signal is sent from Intelligent Key to Intelligent Key unit.
- Intelligent Key unit sends the door lock/unlock request signal to BCM via CAN communication line.
- When BCM receives the door lock/unlock signal, it operates door lock actuator and flashes the hazard lamp (lock: 2 times, unlock: 1 time) at the same time as an operation check.

Trunk Open Function

- When pressing the trunk button of the Intelligent Key, the trunk open signal is sent from the Intelligent Key to the Intelligent Key unit.
- Intelligent Key unit sends trunk open request signal to BCM via CAN communication line and sounds Intelligent Key warning buzzer (front of vehicle) 4 times at the same time.
- When BCM receives the trunk open request signal, it operates the trunk lid opener actuator and opens the trunk.

Operation Condition

Remote control operation	Operation condition
Lock	<ul style="list-style-type: none"> • All doors closed • OFF position warning chime is not operated.
Unlock	—
Trunk open	<ul style="list-style-type: none"> • Ignition switch is in OFF position. • Press and hold the trunk open button for 0.5 second or more

Selective Unlock Function

When a LOCK signal is sent from remote control of Intelligent Key, all doors will be locked.

When an UNLOCK signal is sent from remote control of Intelligent Key once, driver's door will be unlocked.

Then, if an UNLOCK signal is sent from remote control of Intelligent Key again within 5 seconds, all other door will be unlocked.

Hazard and Horn Reminder

When doors are locked or unlocked by remote control of Intelligent Key, Intelligent Key unit sends hazard and horn request signal to BCM via CAN communication line.

BCM flashes hazard warning lamps as a reminder and sends horn chirp signal to IPDM E/R. IPDM E/R sounds horn as a reminder.

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

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Operating function of hazard and horn reminder

	C mode		S mode	
	Lock	Unlock	Lock	Unlock
Remote control of Intelligent Key operation	Lock	Unlock	Lock	Unlock
Hazard warning lamp flash	Twice	Once	Twice	—
Horn sound	Once	—	—	—

Hazard and horn reminder does not operate if any door switch is ON (any door is OPEN).

How to change hazard and horn reminder mode

④ With CONSULT-III

Hazard and horn reminder can be changed using “HORN WITH KEYLESS LOCK” and “HAZARD ANSWER BACK” mode in “WORK SUPPORT”. Refer to [BL-64, "CONSULT-III Application Item"](#).

⊗ Without CONSULT-III

Refer to Owner's Manual for instructions.

Auto Door Lock Function

When all doors are locked, ignition knob switch is OFF (when ignition switch is not pressed) and key switch is OFF (when mechanical key is not inserted in key cylinder), doors are unlocked with remote control of Intelligent Key. When Intelligent Key unit does not receive the following signals within 30 seconds, all doors are locked.

- Door switch is ON (door is opened)
- Door is locked
- Ignition knob switch is ON (ignition switch is pressed)
- Key switch is ON (mechanical key is inserted in key cylinder)

Auto door lock mode can be changed by “AUTO RELOCK TIMER” mode in “WORK SUPPORT”. Refer to [BL-64, "CONSULT-III Application Item"](#).

Panic Alarm Function

When ignition knob switch is OFF (when ignition switch is not pressed) and key switch is OFF (when mechanical key is not inserted in key cylinder), Intelligent Key unit receives PANIC ALARM signal from remote control of Intelligent Key.

Intelligent Key unit sends alarm request signal to BCM via CAN communication line.

BCM turns on and off headlamp intermittently and sends theft warning horn signal to IPDM E/R. Then, IPDM E/R turns on and off horn intermittently.

The headlamp flashes and the horn sounds intermittently.

The alarm automatically turns off:

- After 25 seconds
- When Intelligent Key unit receives any signal from remote control of Intelligent Key
- When a door request switch is pressed (Intelligent Key is outside vehicle)

Panic alarm function mode can be changed by “PANIC ALARM DELAY” mode in “WORK SUPPORT”. Refer to [BL-64, "CONSULT-III Application Item"](#).

Keyless Power Window Down (Open) Function

All power windows open when the unlock button on remote control of Intelligent Key is activated and kept pressed for more than 3 seconds with the ignition switch OFF. The windows keep opening if the unlock button is continuously pressed.

The power window opening stops when the following operations are performed:

- When the unlock button is kept pressed more than 15 seconds.
- When the ignition switch is turned ON while the power window opening is operated.
- When the unlock button is released.

While retained power operation activate, Keyless power window down (open) Function cannot be operated.

Keyless power window down operation mode can be changed by “P/W DOWN DELAY” mode in “WORK SUPPORT”. Refer to [BL-64, "CONSULT-III Application Item"](#).

Room Lamp Illumination Operation

When the following conditions are met:

- Condition of interior lamp switch is in DOOR position
- Door switch OFF (when all the doors are closed)

Intelligent Key system turns on interior lamp (for 30 seconds) by receiving UNLOCK signal from remote control of Intelligent Key. For detailed description, refer to [LT-110, "System Description"](#).

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

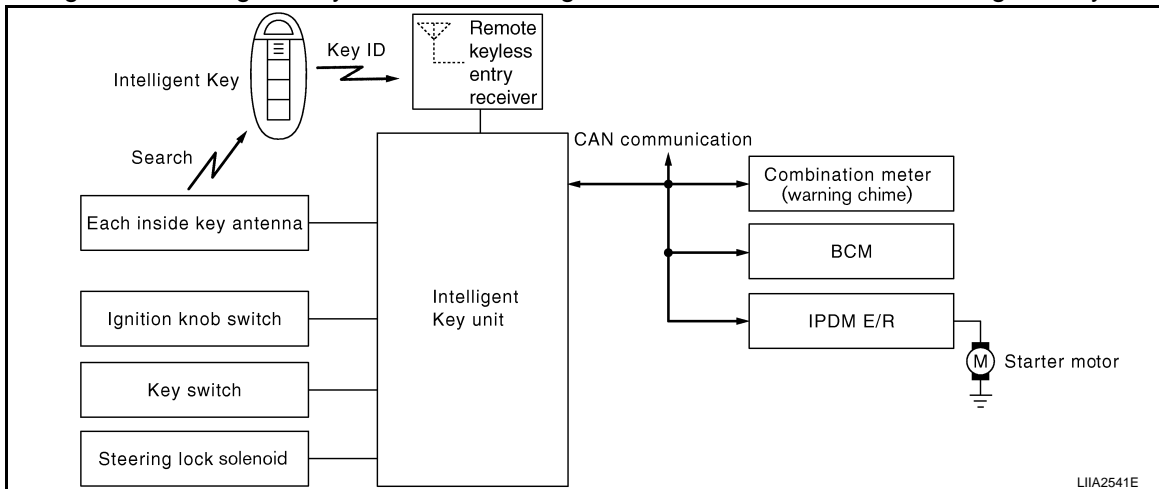
List of Operation Related Parts

Parts marked with × are the parts related to operation.

Remote keyless entry functions	Intelligent Key	Key switch	Ignition knob switch	Front door request switch (LH, RH)	Door switch	Trunk lamp switch	Door lock actuator	Trunk lid opener actuator	Intelligent Key warning buzzer	Intelligent Key unit	CAN communication system	BCM	Combination meter	Hazard warning lamp	Horn	IPDM E/R	Head lamp
Door lock/unlock function by remote control button	×				×		×			×	×	×					
Trunk open function by remote control button	×					×		×		×	×	×					
Hazard and horn reminder function	×								×	×	×	×	×	×	×	×	
Selective unlock function	×				×		×			×	×	×					
Keyless power window down (open) function	×	×								×		×					
Auto door lock function	×	×	×		×					×	×	×					
Panic alarm function	×			×						×	×	×			×	×	×

ENGINE START FUNCTION

When the registered Intelligent Key is carried, the engine can be started without inserting the key.



When ignition knob switch is ON (press ignition switch), Intelligent Key unit searches Intelligent Key in the vehicle using inside key antenna.

When Intelligent Key is inside the vehicle, it performs the following operation.

- Illuminate green "KEY" warning lamp in combination meter.
- Released steering lock and ignition switch can be turned from OFF to ACC, ON or START position.

NOTE:

If Intelligent Key is not registered, "KEY" warning lamp in combination meter illuminates red.

- Intelligent Key sends engine start signal via CAN communication line.

When ignition switch turns to START position, BCM sends starter request signal to IPDM E/R. Then, engine starts.

Even if Intelligent Key battery runs down, Intelligent Key unit can start engine with mechanical key built into Intelligent Key. For details, refer to [BL-129](#).

All of the originally supplied Intelligent Key IDs have been registered in Intelligent Key system.

If requested by the vehicle owner, a maximum of four Intelligent Key IDs can be registered into the Intelligent Key system components.

List of Operation Related Parts

Parts marked with × are the parts related to operation.

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Engine start functions	Intelligent Key	Key switch	Ignition knob switch	Inside key antenna	Intelligent Key unit	CAN communication system	BCM	Combination meter	IPDM E/R	NATS antenna amp.	steering lock solenoid
Engine start function by the Intelligent Key	×		×	×	×	×	×	×	×		×
Engine start function by the mechanical key		×			×	×	×		×	×	×

WARNING CHIME/BUZZER/LAMPS FUNCTION

Operation Description

The following warning chime (combination meter), intelligent key warning buzzer (front of vehicle), and warning lamps "KEY" and "P-SHIFT" (combination meter) are given to the user as warning information while using the intelligent key system.

- Ignition switch warning chime
- Ignition key warning chime
- OFF position warning chime
- OFF position warning chime (after door closed)
- Take away warning chime
- Take away warning chime (from window)
- Door lock operation warning chime
- Intelligent key low battery warning
- P position warning

NOTE:

For key-in-ignition warning chime related issues only, refer to [DI-50](#).

Operation Condition

Operation	Condition	Intelligent Key warning sound	Warning lamp illuminates
Ignition switch warning chime	<ul style="list-style-type: none"> • Key switch is OFF. • Ignition switch is in the ACC, OFF or LOCK position. [ignition switch is pressed (ignition knob switch is ON)]. • Driver door is open. 	Chime (Instrument panel)	—
Ignition key warning chime (When mechanical key is used)	<ul style="list-style-type: none"> • Mechanical key is inserted in ignition switch (key switch is ON). • Ignition switch is in the ACC, OFF or LOCK position. • Driver door is open. 	Chime (Instrument panel)	—
OFF position warning chime	<ul style="list-style-type: none"> • Ignition switch is turned from ACC to OFF. [ignition switch is pressed (ignition knob switch is ON)]. • Ignition switch is in the LOCK position and pressed for 1 second. 	Chime (Instrument panel)	—
OFF position warning chime (after door closed)	When driver door is opened and then closed while the OFF position warning chime above is operating.	Buzzer (front of vehicle)	—
Take away warning chime	<ul style="list-style-type: none"> • Engine is running. • Door open to close. • Intelligent Key is not found inside vehicle. 	Buzzer (front of vehicle)	"KEY" (red) blinking
Take away warning chime (from window)	<ul style="list-style-type: none"> • Engine is running. • Door is closed. • Intelligent Key is not found inside vehicle. 	Chime (Instrument panel)	"KEY" (red) blinking

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Operation	Condition	Intelligent Key warning sound	Warning lamp illuminates
Door lock operation warning chime	When request switch is pushed under the following conditions: <ul style="list-style-type: none"> All door are closed. Door is unlocked. Intelligent Key is inside vehicle. 	Buzzer (front of vehicle)	—
Intelligent Key low battery warning	When Intelligent Key battery is low, Intelligent Key unit is detected after ignition switch is turned ON.	—	“KEY” (green) blinking
P position warning	When selector lever is in other than P position, ignition switch is turned from ON to OFF.	—	“P-SHIFT”

List of Operation Related Parts

Parts marked with × are the parts related to operation.

Warning and alarm functions	Intelligent Key	Key switch	Ignition knob switch	Ignition switch ACC position input signal	Ignition switch ON position input signal	Door switch	Door request switch	Inside key antenna	Front outside antenna (LH, RH)	Rear bumper antenna	Intelligent Key warning buzzer	Intelligent Key unit	CAN communication system	BCM	Combination meter	CVT device (detention switch key)
Ignition switch warning chime			×		×	×						×				
Ignition key warning chime (When mechanical key used)		×			×	×							×	×	×	
OFF position warning chime			×	×	×						×	×				
OFF position warning chime (after door close)			×	×	×	×					×	×				
Take away warning chime	×		×			×		×			×	×				×
Take away warning chime (from window)	×		×			×		×			×	×				×
Door lock operation warning chime	×		×			×	×	×	×		×	×				
Intelligent Key low battery warning	×				×			×				×			×	
P position warning					×							×			×	×

CHANGE SETTINGS FUNCTION

The settings for each function can be changed with the CONSULT-III.

Changing Settings Using CONSULT-III

The settings for the Intelligent Key system functions can be changed using CONSULT-III (WORK SUPPORT). Refer to [BL-64, "CONSULT-III Application Item"](#).

NOTE:

Once a function setting is changed, it will remain effective even if the battery is disconnected.

INTELLIGENT KEY REGISTRATION

Intelligent Key-ID registration is performed using the CONSULT-III.

CAUTION:

- After a new Intelligent Key-ID is registered, be sure to check the function.
- When registering an additional Intelligent Key-ID, take any Intelligent Keys already registered and Intelligent Keys for any other vehicles out of the vehicle before starting.

CONSULT-III can be used to check and delete Intelligent Key-IDs.

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

STEERING LOCK SOLENOID REGISTRATION

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Steering Lock Solenoid ID Registration

CAUTION:

- The method for registering a steering lock solenoid ID depends on the status of the steering lock solenoid and Intelligent Key unit (new or old unit).
- After registration is completed, press ignition switch with an Intelligent Key in the vehicle so that it can be turned, and confirm that it cannot be turned even when ignition switch is pressed without an Intelligent Key in the vehicle.

For further information, see the CONSULT-III Operation Manual NATS-IVIS/NVIS.

CAN Communication System Description

INFOID:000000001721395

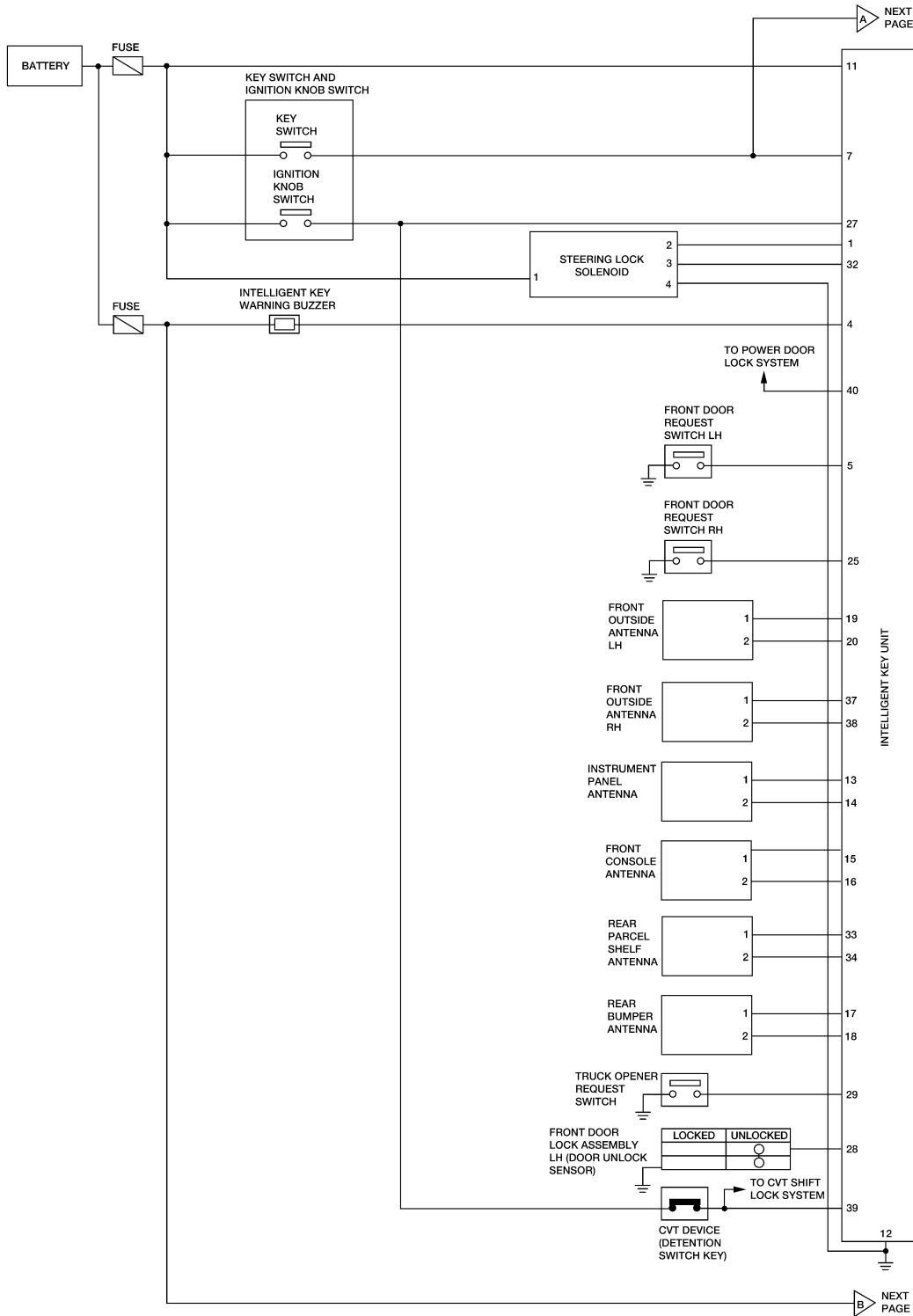
Refer to [LAN-3](#).

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Schematic

INFOID:000000001721396



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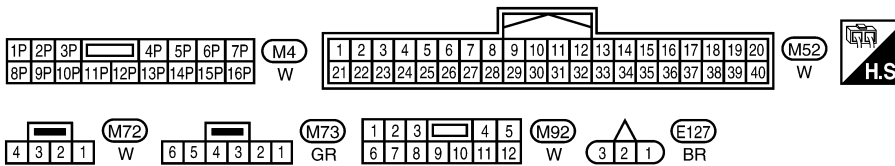
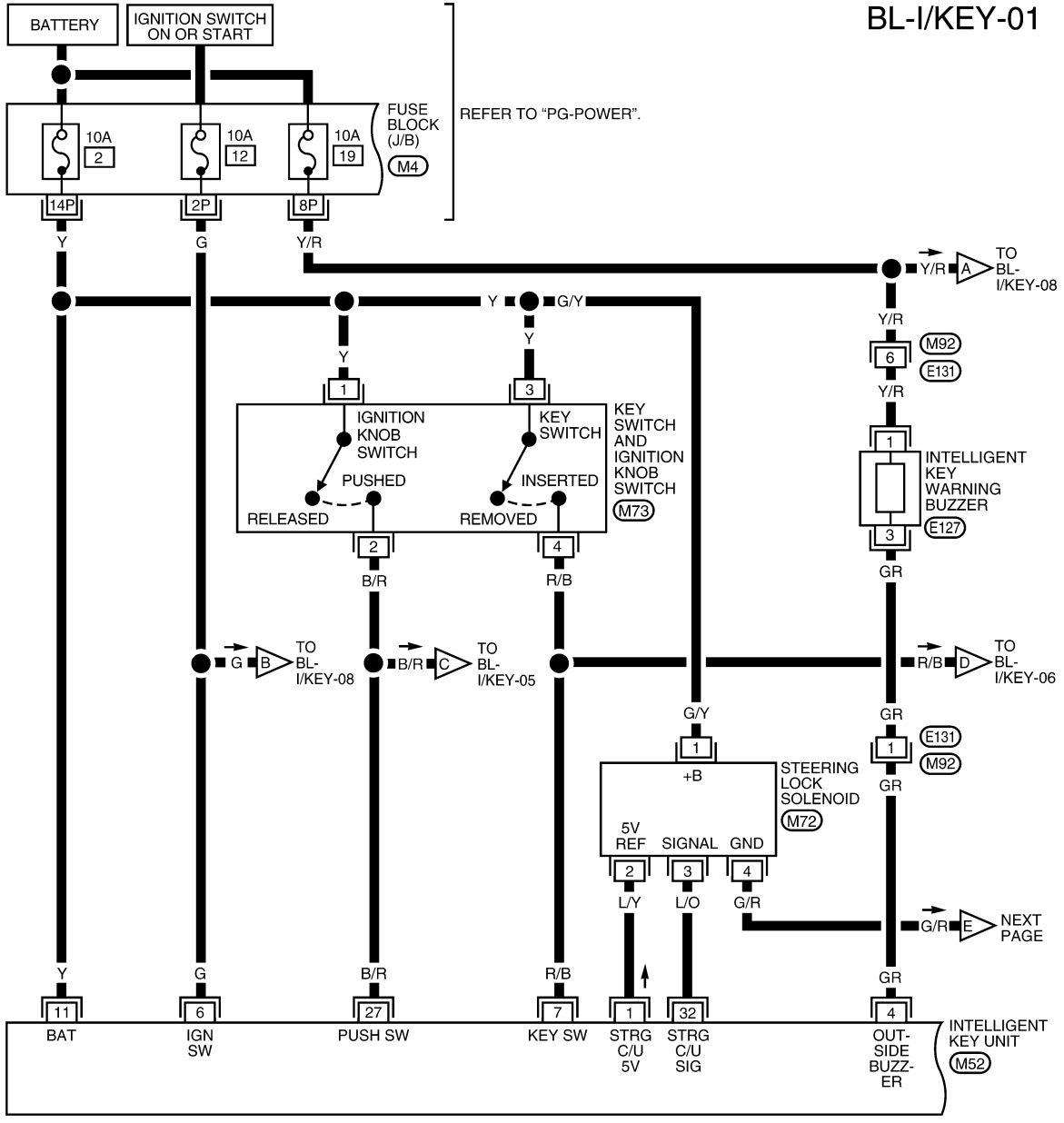
INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Wiring Diagram - I/KEY-

INFOID:000000001721397

BL-I/KEY-01

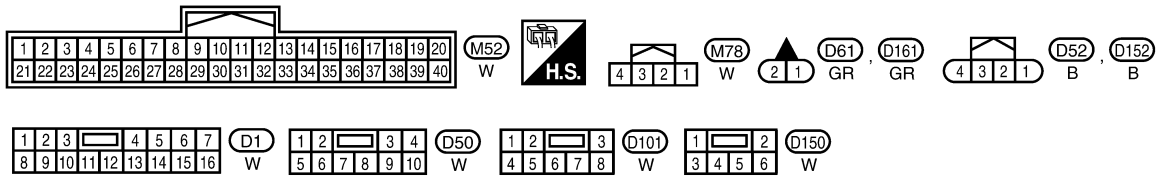
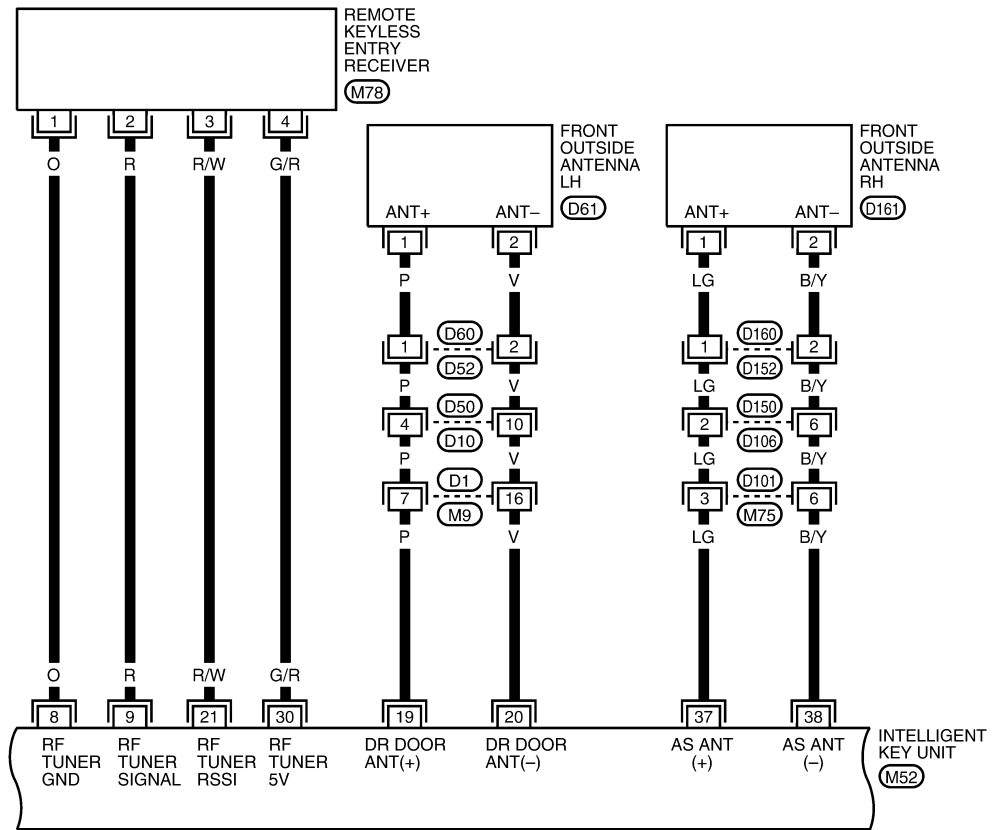


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INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

BL-I/KEY-03

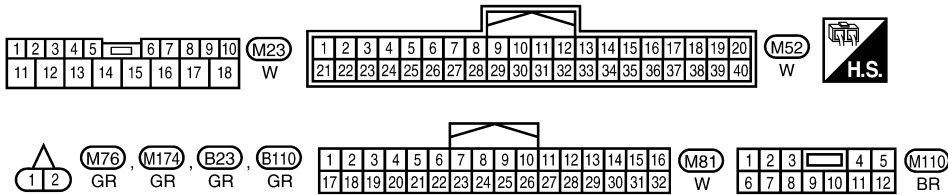
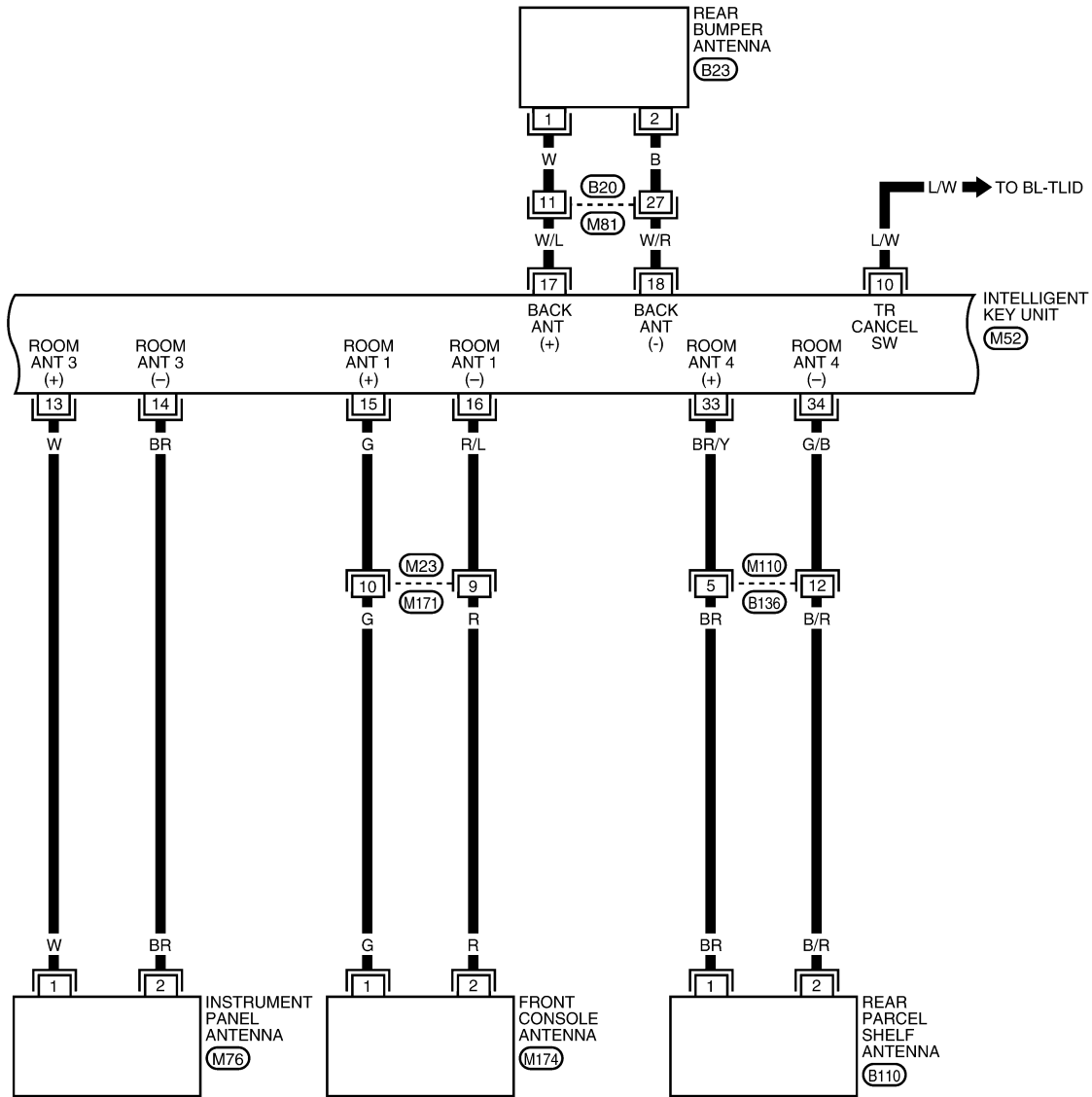


LIWA0542E

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

BL-I/KEY-04



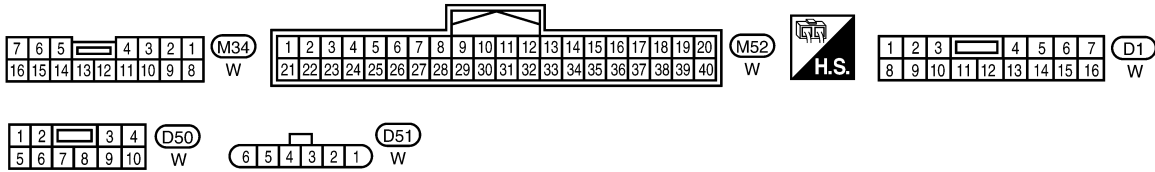
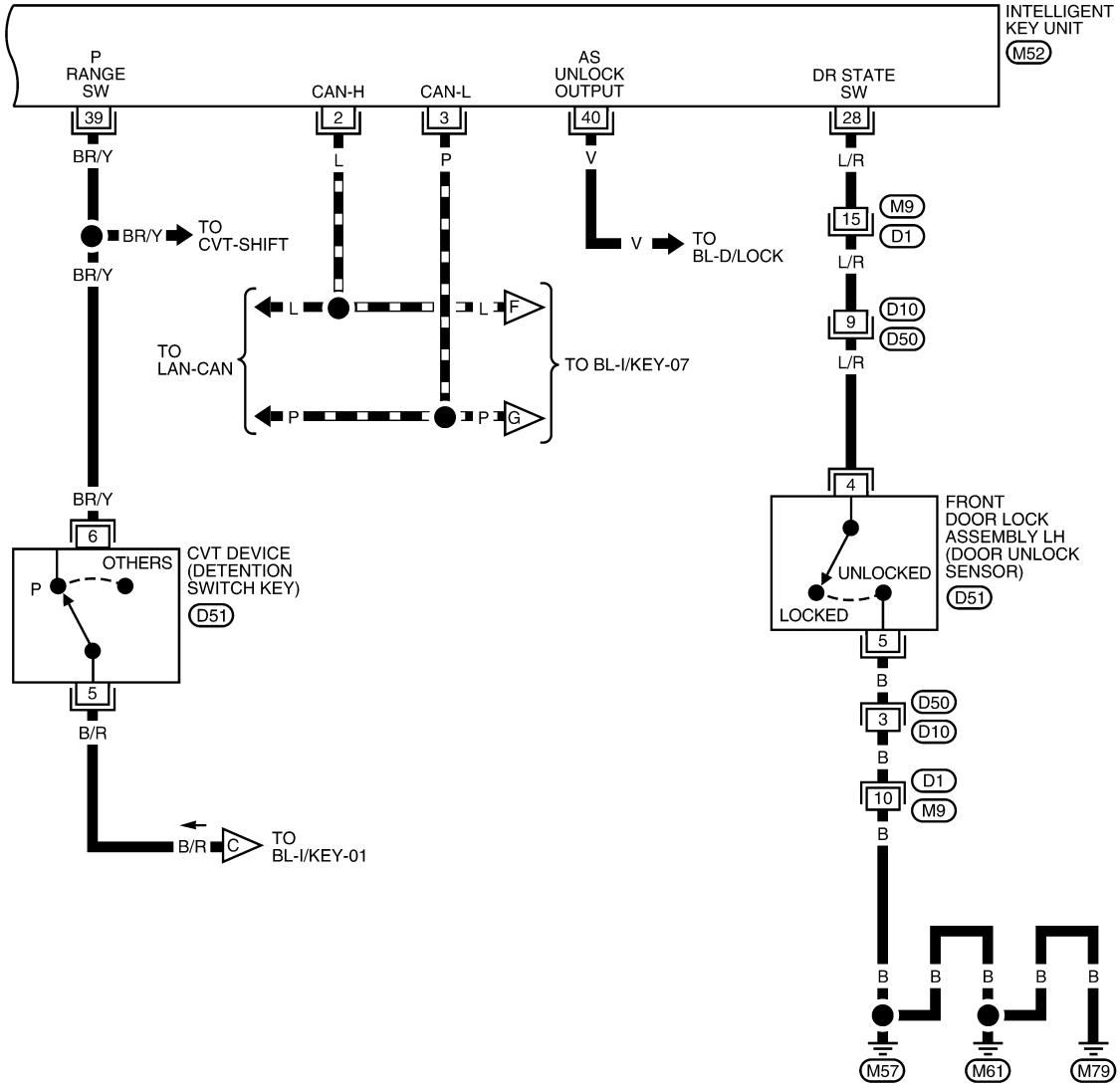
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INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

BL-I/KEY-05

▬ : DATA LINE

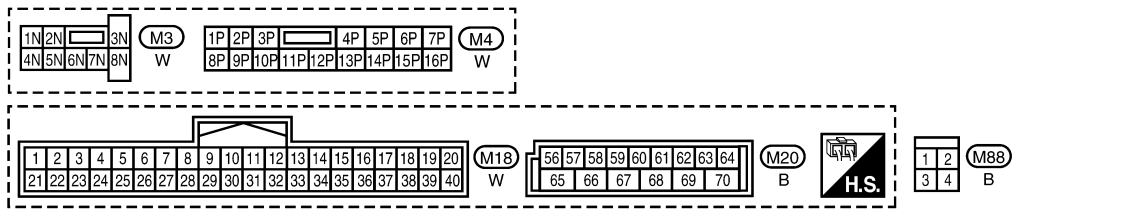
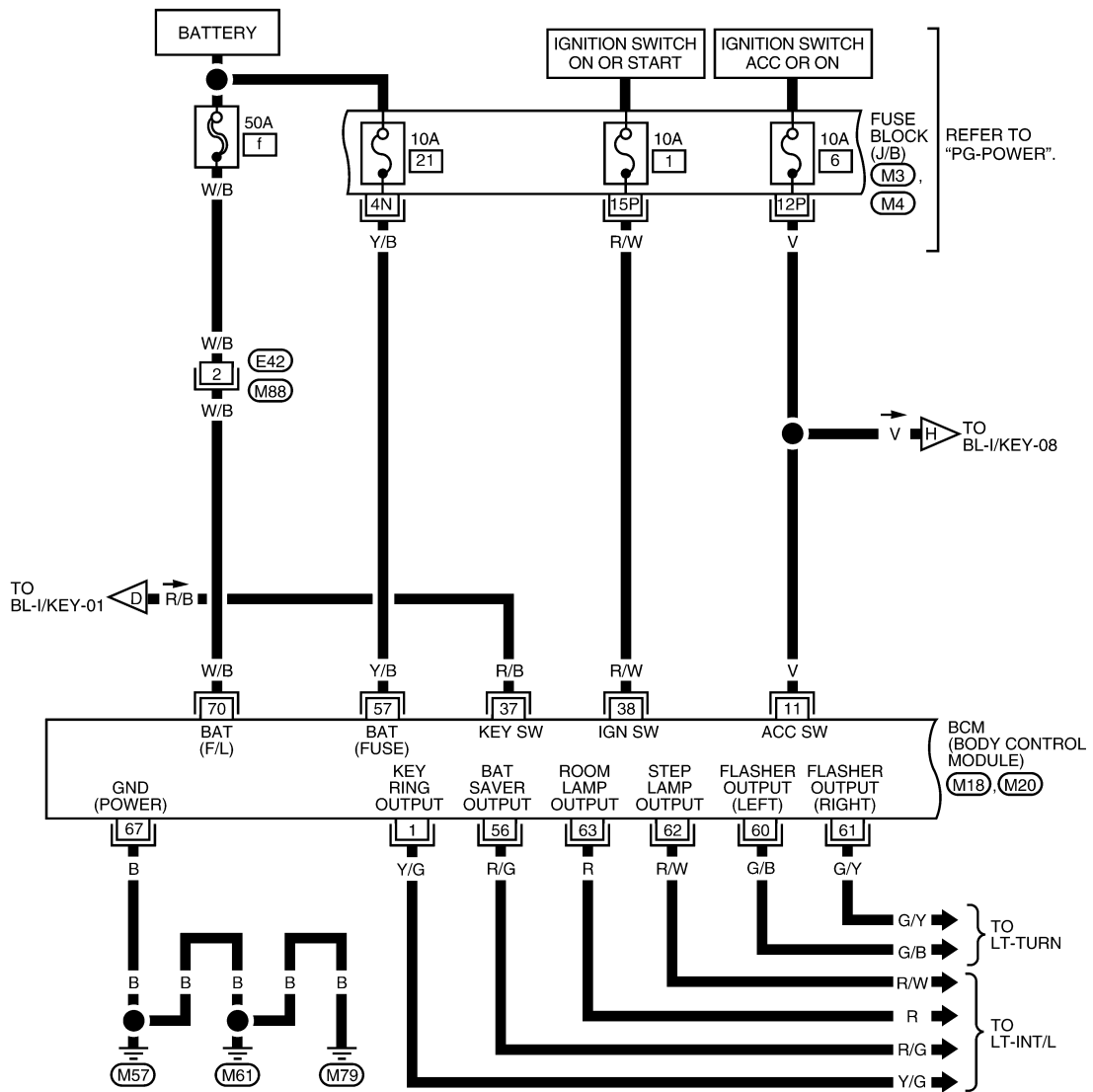


ALKWA0200GE

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

BL-I/KEY-06



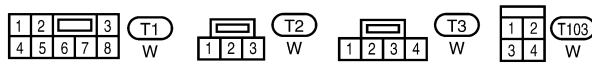
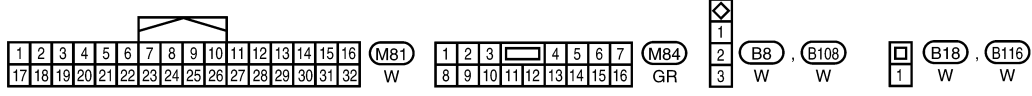
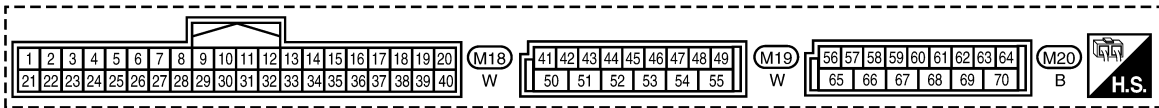
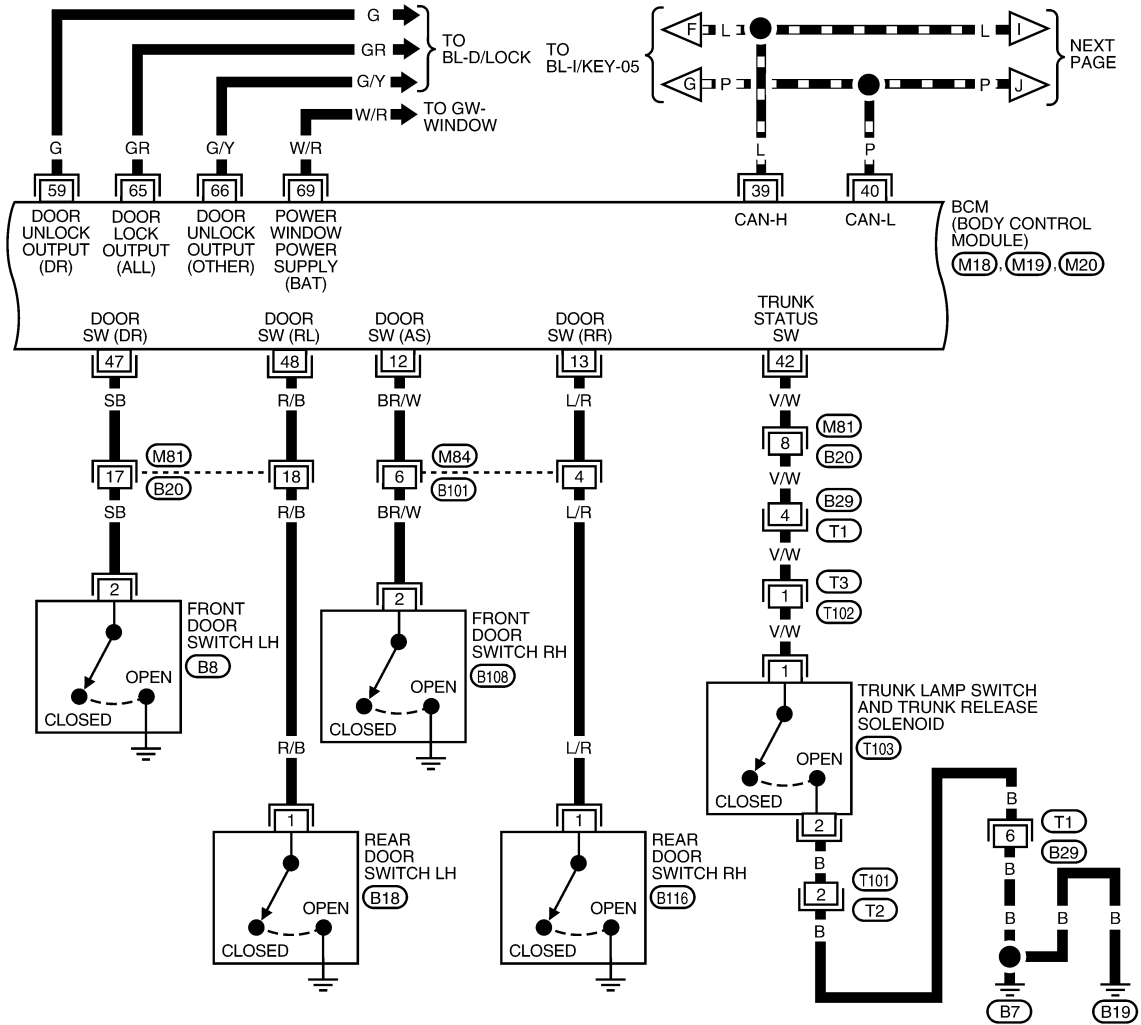
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INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

BL-I/KEY-07

— : DATA LINE



ALKWA0202GE

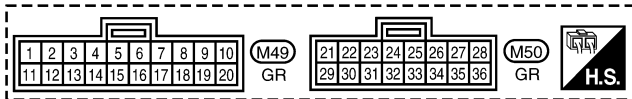
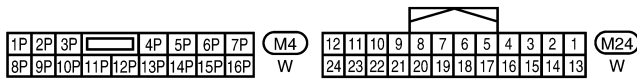
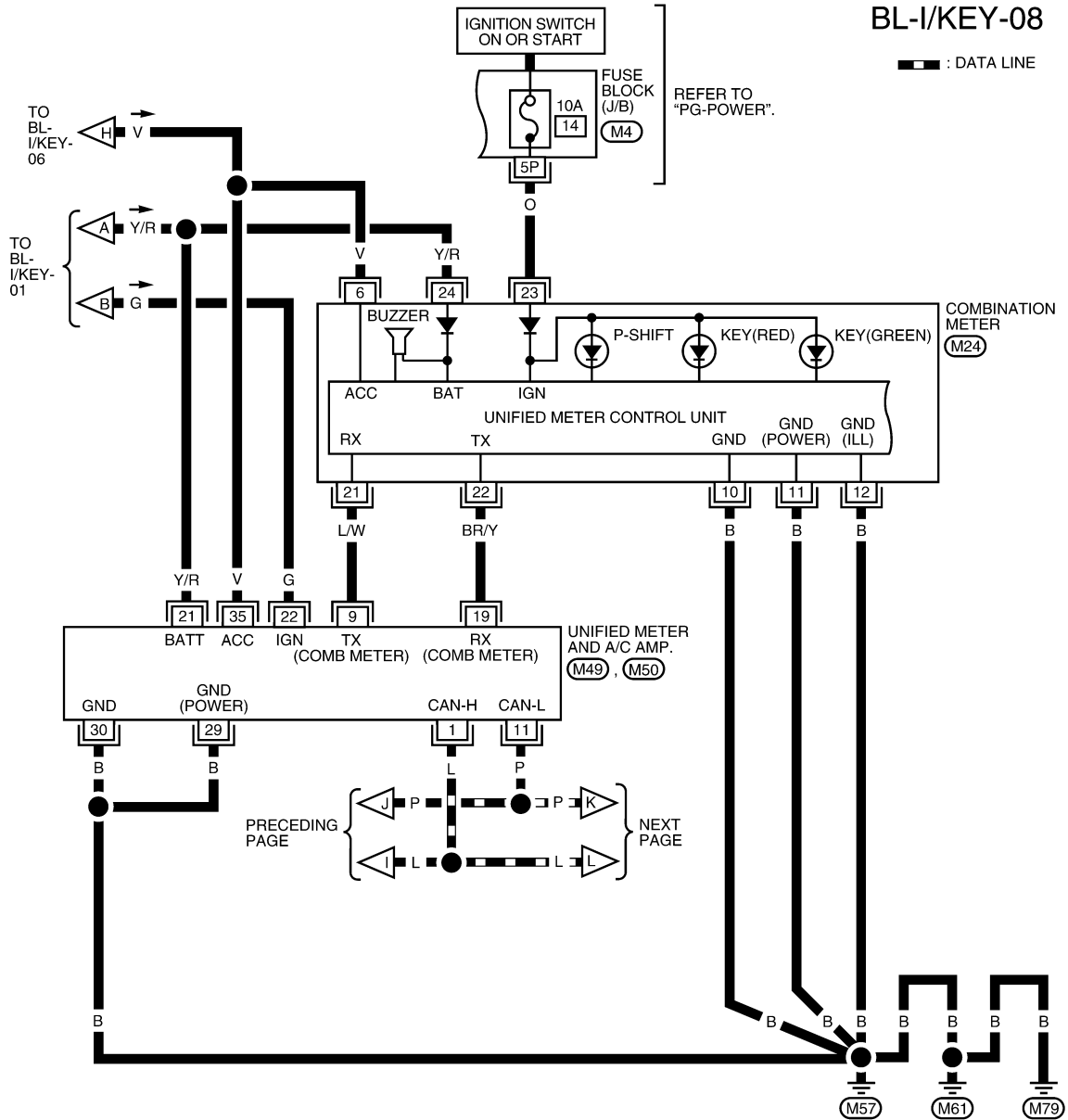
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INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

BL-I/KEY-08

— : DATA LINE



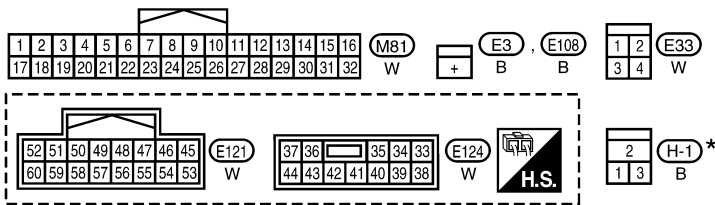
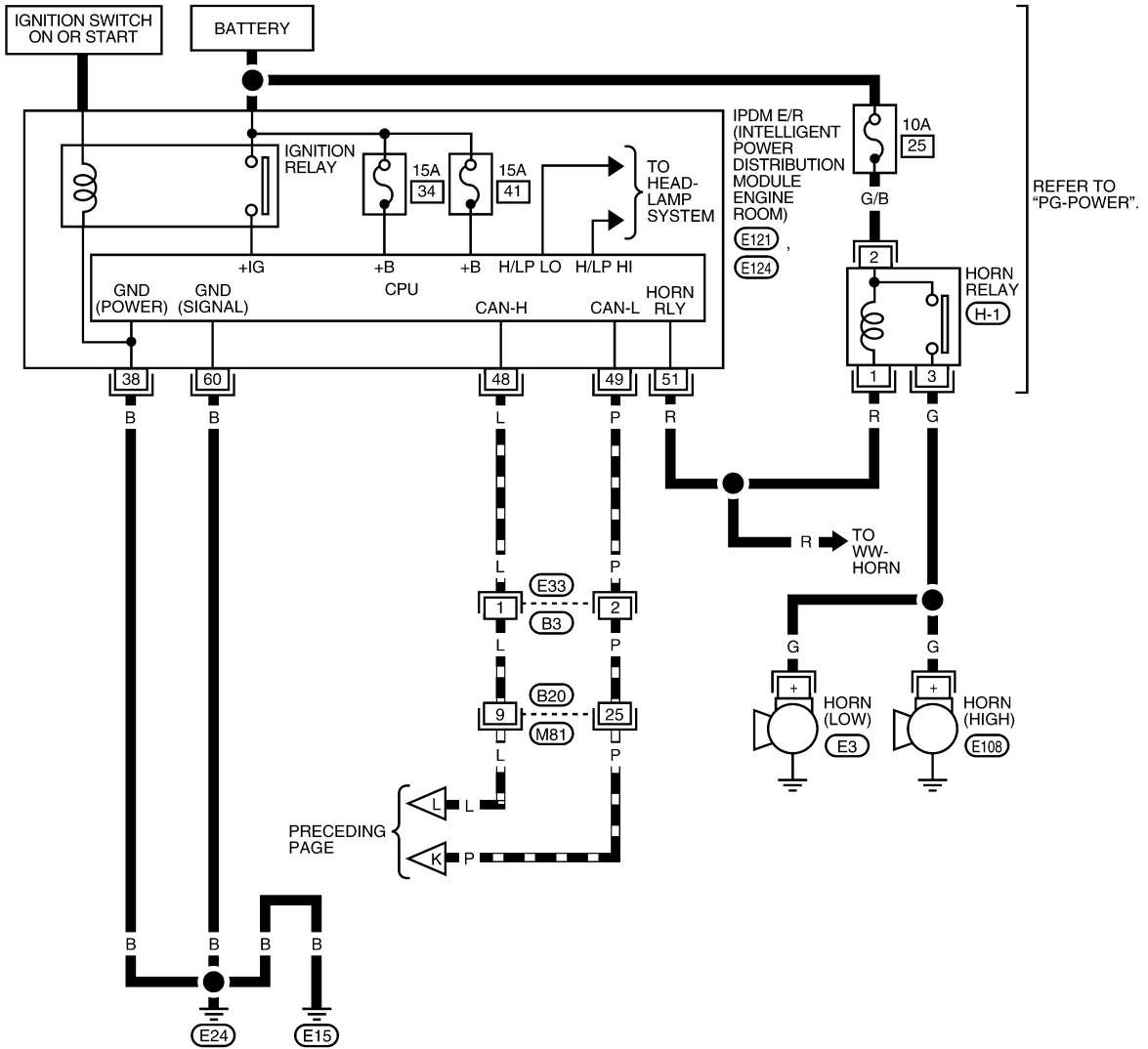
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INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

BL-I/KEY-09

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

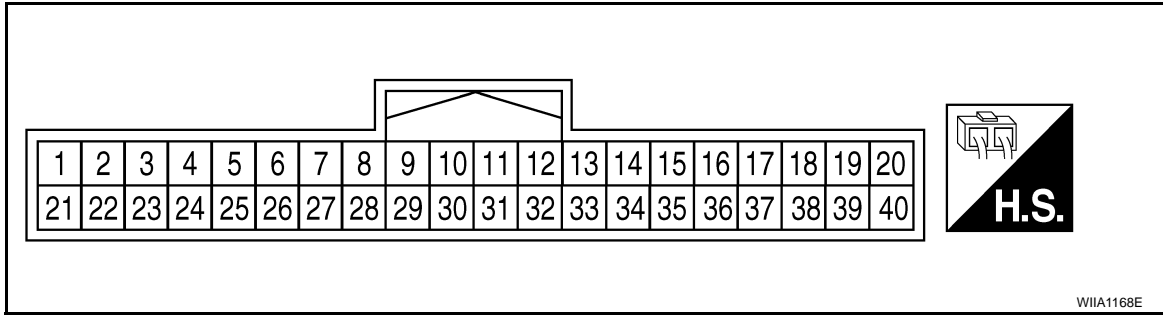
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INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Intelligent Key Unit Harness Connector Terminal Layout

INFOID:000000001721399



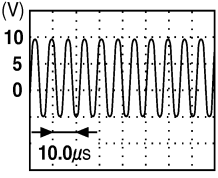
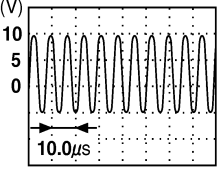
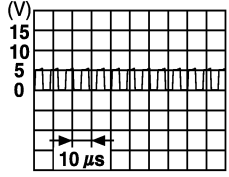
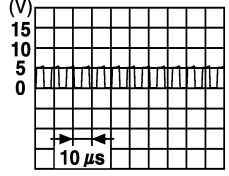
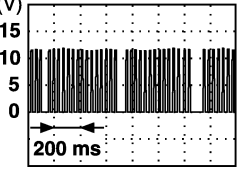
Terminal and Reference Value for Intelligent Key Unit

INFOID:000000001721399

Terminal	Wire Color	Item	Condition		Voltage (V) Approx.
			Ignition Switch Position	Operation or Conditions	
1	L/Y	Steering lock solenoid power supply	LOCK	—	5
2	L	CAN-H	—	—	—
3	P	CAN-L	—	—	—
4	GR	Intelligent Key warning buzzer (front of vehicle)	LOCK	Operate door request switch.	Buzzer OFF Battery voltage
					Buzzer ON 0
5	B/W	Front door request switch LH	—	Press front door request switch LH.	0
				Other than above	Battery voltage
6	G	Ignition switch (ON)	ON	—	Battery voltage
7	R/B	Key switch	LOCK	Insert mechanical key into ignition key cylinder.	Battery voltage
				Remove mechanical key from ignition key cylinder.	0
8	O	Remote keyless entry receiver ground	—	—	0
9	R	Remote keyless entry receiver signal	—	When remote keyless entry receiver receives signal from keyfob.	
				Stand-by	
10	L/W	Trunk lid opener cancel switch	—	ON	0
				OFF	Battery voltage
11	Y	Power source (Fuse)	—	—	Battery voltage
12	B	Ground	—	—	0

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Terminal	Wire Color	Item	Condition		Voltage (V) Approx.
			Ignition Switch Position	Operation or Conditions	
13	W	Instrument panel antenna (+) signal	LOCK	Any door open → all door close	 PIIB7441E
14	BR	Instrument panel antenna (-) signal			
15	G	Front console antenna (+) signal	LOCK	Press ignition knob switch: ON (Ignition knob switch)	 PIIB7441E
16	R/L	Front console antenna (-) signal			
17	W/L	Rear bumper antenna (+) signal	LOCK	Press trunk opener request switch.	 SIIA1910J
18	W/R	Rear bumper antenna (-) signal			
19	P	Front outside antenna LH (+) signal	LOCK	Press front door request switch LH.	 SIIA1910J
20	V	Front outside antenna LH (-) signal			
21	R/W	Remote keyless entry receiver RSSI signal	—	—	 PIIA2344E
25	P/L	Front door request switch RH	—	Press front door request switch RH.	0
				Other than above	Battery voltage
27	B/R	Ignition knob switch	—	Press ignition switch.	Battery voltage
				Return ignition switch to LOCK position.	0
28	L/R	Unlock sensor (driver side)	—	Door (driver side) is locked.	5
				Door (driver side) is unlocked.	0
29	G/W	Trunk opener request switch	—	Press trunk opener request switch.	0
				Other than above	Battery voltage
30	G/R	Remote keyless entry receiver power supply	—	—	5

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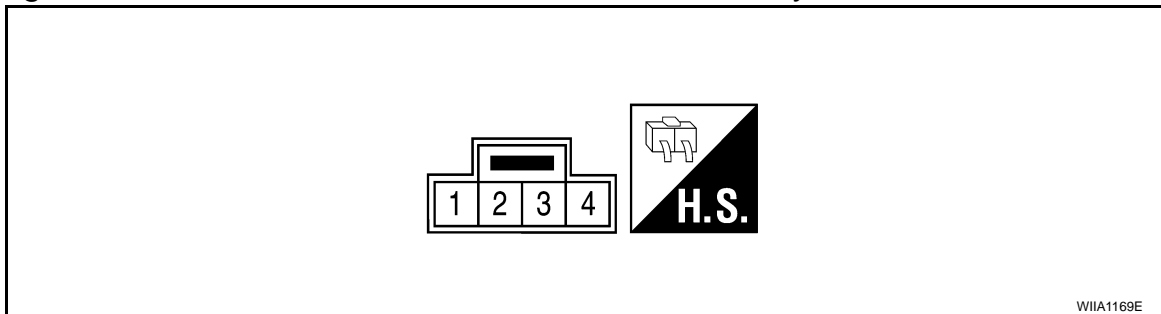
INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Terminal	Wire Color	Item	Condition		Voltage (V) Approx.
			Ignition Switch Position	Operation or Conditions	
32	L/O	Steering lock solenoid communication signal	LOCK	When Intelligent Key is inside vehicle, press ignition knob switch.	
				Other than above	5
33	BR/Y	Rear parcel shelf antenna (+) signal	LOCK	Press ignition knob switch: ON (Ignition knob switch)	
34	G/B	Rear parcel shelf antenna (-) signal			
37	LG	Front outside antenna (+) signal RH	LOCK	Press front door request switch RH.	
38	B/Y	Front outside antenna (-) signal RH			
39	BR/Y	P range switch	—	Selector lever is in "P" position.	0
				Other than above	Battery voltage
40	V	AS unlock output	—	UNLOCK with rear door locks disabled.	0
				Other than above	Battery voltage

Steering Lock Solenoid Harness Connector Terminal Layout

INFOID:000000001721400



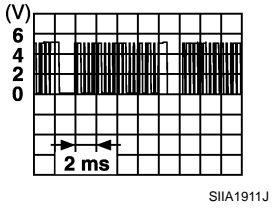
Terminal and Reference Value for Steering Lock Solenoid

INFOID:000000001721401

Terminal	Wire Color	Signal Designation	Condition		Voltage (V) Approx.
			Ignition Switch Position	Operation or Conditions	
1	G/Y	Power source (fuse)	LOCK	—	Battery voltage
2	L/Y	Steering lock solenoid power supply	LOCK	—	5

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Terminal	Wire Color	Signal Designation	Condition		Voltage (V) Approx.
			Ignition Switch Position	Operation or Conditions	
3	L/O	Steering lock solenoid communication signal	LOCK	When Intelligent Key is inside vehicle, press ignition knob switch.	
			—	Other than the above	
4	G/R	Steering lock solenoid ground	—	—	0

Terminal and Reference Value for BCM

INFOID:000000001721402

Refer to [BCS-11, "Terminal and Reference Value for BCM"](#).

Terminal and Reference Value for IPDM E/R

INFOID:000000001721403

Refer to [PG-25, "Terminal and Reference Value for IPDM E/R"](#).

Terminal and Reference Value for Combination Meter

INFOID:000000001721404

Refer to [DI-12, "Terminal and Reference Value for Combination Meter"](#).

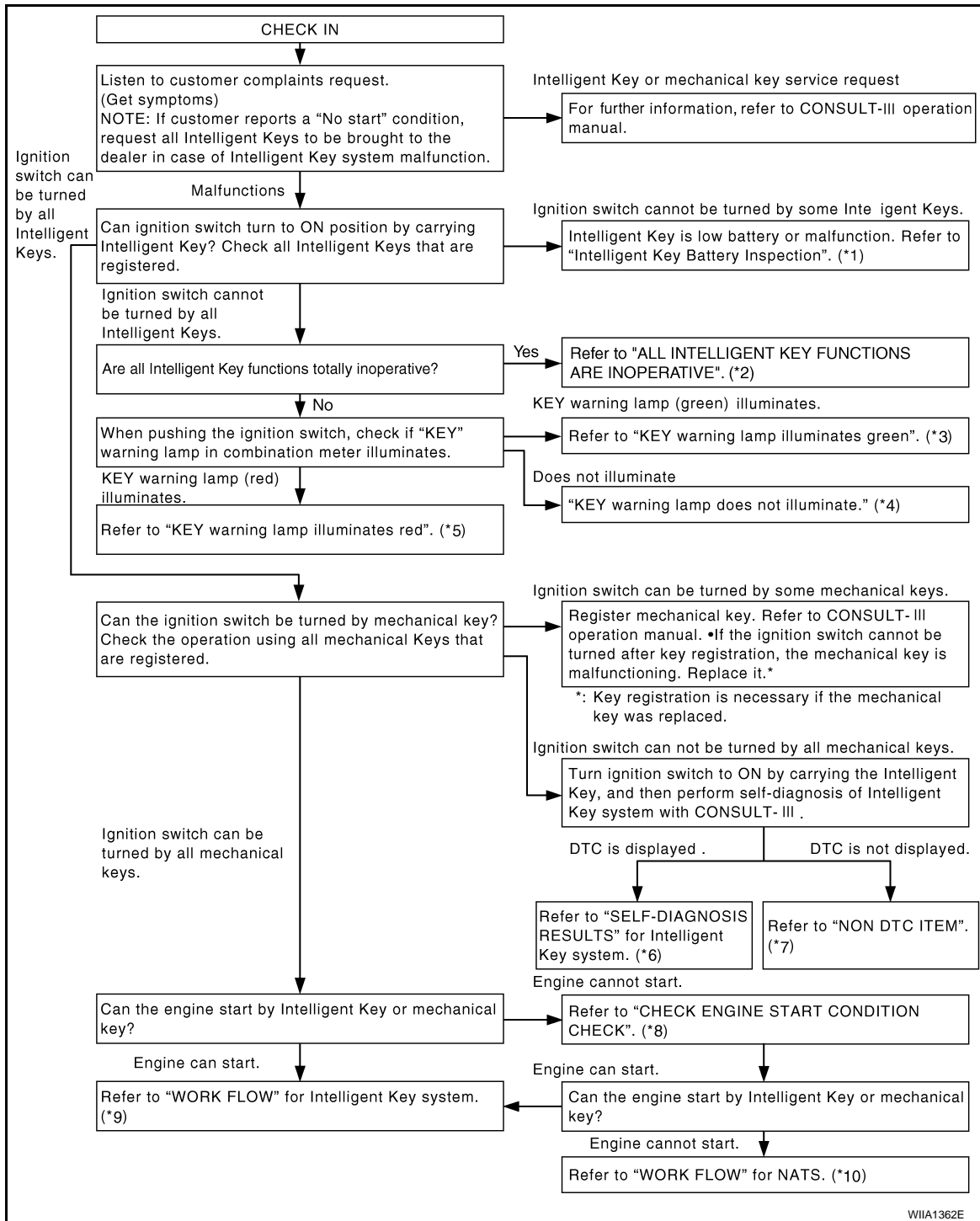
Trouble Diagnosis Procedure

INFOID:000000001721405

PRELIMINARY CHECK

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >



WIIA1362E

*1: [BL-96](#)

*4: [BL-66](#)

*7: [BL-66](#)

*10: "WORK FLOW"

*2: [BL-66](#)

*5: [BL-66](#)

*8: [BL-66](#)

*3: [BL-66](#)

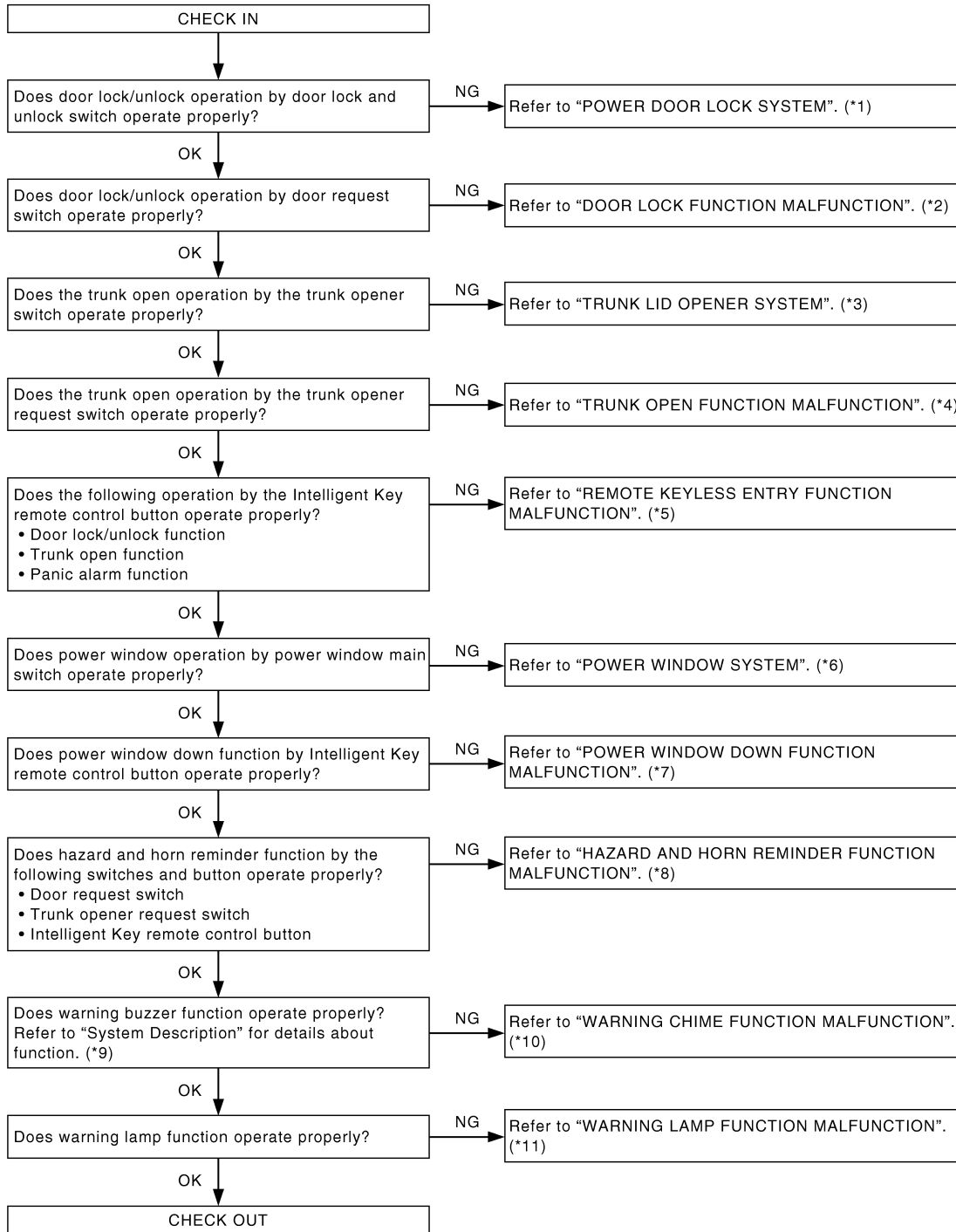
*6: [BL-64](#)

*9: "WORK FLOW"

WORK FLOW

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >



PIIB4186E

*1: [BL-16](#)

*4: [BL-66](#)

*7: [BL-66](#)

*10: [BL-66](#)

*2: [BL-66](#)

*5: [BL-66](#)

*8: [BL-66](#)

*11: [BL-66](#)

*3: [BL-107](#)

*6: [GW-17](#)

*9: [BL-37](#)

CONSULT-III Functions (INTELLIGENT KEY)

INFOID:000000001721406

CONSULT-III can display each diagnostic item using the diagnostic test modes as shown below.

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Part to be diagnosed	Test item, Diagnosis mode	Description
Intelligent Key	WORK SUPPORT	Changes settings for each function.
	SELF-DIAG RESULTS	Intelligent Key unit performs CAN communication diagnosis.
	DATA MONITOR	Displays Intelligent Key unit input data in real time.
	CAN DIAG SUPPORT MONITOR	The results of transmit/receive diagnosis of CAN Communication can be read.
	ACTIVE TEST	Operation of electrical loads can be checked by sending driving signal to then.
	ECU PART NUMBER	Displays Intelligent Key unit part No.

CONSULT-III Application Item

INFOID:000000001721408

SELF-DIAGNOSTIC RESULTS

Self-diag results	Description	Diagnosis procedure	Reference page
CAN COMM	Malfunction is detected in CAN communication.	CAN communication system check.	LAN-38
CAN COMM2	Intelligent Key unit internal malfunction	CAN communication system check.	LAN-38
STRG COMM	Malfunction is detected in communication of Intelligent Key unit and steering lock solenoid.	Steering lock solenoid check.	BL-90
I-KEY C/U	Intelligent Key unit internal malfunction	Replace Intelligent Key unit.	BL-97
IMMU	NATS malfunction	Check NATS.	BL-129

WORK SUPPORT

Monitor item	Description
CONFIRM KEY FOB ID	It can be checked whether Intelligent Key ID code is registered or not in this mode.
TAKE OUT FROM WINDOW WARN	Take away warning chime (from window) mode can be changed to operate (ON) or not operate (OFF) with this mode. The operation mode will be changed when "CHANGE SETT" on CONSULT-III screen is touched.
LOW BAT OF KEY FOB WARN	Intelligent Key low battery warning mode can be changed to operate (ON) or not operate (OFF) with this mode. The operation mode will be changed when "CHANGE SETT" on CONSULT-III screen is touched.
ANSWER BACK FUNCTION	The condition of answer back function can be changed to operate (ON) or not operate (OFF) with this mode. The operation mode will be changed when "CHANGE SETT" on CONSULT-III screen is touched.
SELECTIVE UNLOCK FUNCTION	Selective unlock function mode can be changed to operate (ON) or not operate (OFF) with this mode. The operation mode will be changed when "CHANGE SETT" on CONSULT-III screen is touched.
ANTI KEY LOCK IN FUNCTION	Key reminder function mode can be changed to operate (ON) or not operate (OFF) with this mode. The operation mode will be changed when "CHANGE SETT" on CONSULT-III screen is touched.
HORN WITH KEYLESS LOCK	Horn reminder function mode by Intelligent Key remote control button can be changed to operate (ON) or not operate (OFF) with this mode. The operation mode will be changed when "CHANGE SETT" on CONSULT-III screen is touched.
HAZARD ANSWER BACK	Hazard reminder function mode can be selected from the following with this mode. The operation mode will be changed when "CHANGE SETT" on CONSULT-III screen is touched. <ul style="list-style-type: none"> • LOCK ONLY: Door lock operation only • UNLOCK ONLY: Door unlock operation only • LOCK/UNLOCK: Lock/Unlock operation • OFF: Non-operation

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Monitor item	Description
ANSWER BACK WITH I-KEY LOCK	Horn reminder function (lock operation) mode by any front door request or trunk opener request switch can be selected from the following with this mode. The operation mode will be changed when "CHANGE SETT" on CONSULT-III screen is touched. <ul style="list-style-type: none"> • HORN CHIRP: Sound horn • BUZZER: Sound buzzer • OFF: Non-operation
ANSWER BACK WITH I-KEY UNLOCK	Horn reminder function (unlock operation) mode by a door request switch can be changed to operate (ON) or not operate (OFF) with this mode.
AUTO RELOCK TIMER	Auto door lock timer mode can select the following with this mode. <ul style="list-style-type: none"> • 1 minute • 5 minute • OFF: Non-operation
PANIC ALARM DELAY	Panic alarm button's pressing time on Intelligent Key remote control button can be selected from the following with this mode. The operation mode will be changed when "CHANGE SETT" on CONSULT-III screen is touched. <ul style="list-style-type: none"> • 0.5 second • 1.5 second • OFF: Non-operation
TRUNK/GLASS HATCH OPEN	Hazard and horn reminder function mode by trunk request switch can be changed to operate (ON) or not operate (OFF) with this mode. The operation mode will be changed when "CHANGE SETT" on CONSULT-III screen is touched.
TRUNK OPEN DELAY	Trunk button's pressing time on Intelligent Key remote control button can be selected from the following with this mode. The operation mode will be changed when "CHANGE SETT" on CONSULT-III screen is touched. <ul style="list-style-type: none"> • 0.5 second • 1.5 second • OFF: Non-operation
P/W DOWN DELAY	Unlock button's pressing time on Intelligent Key remote control button can be selected from the following with this mode. The operation mode will be changed when "CHANGE SETT" on CONSULT-III screen is touched. <ul style="list-style-type: none"> • 3 seconds • 5 seconds • OFF: Non-operation
LOCK/UNLOCK BY I-KEY	Door lock/unlock function by any front door request or trunk opener request switch mode can be changed to operate (ON) or not operate (OFF) with this mode. The operation mode will be changed when "CHANGE SETT" on CONSULT-III screen is touched.

DATA MONITOR

Monitor item	Content
PUSH SW	Indicates [ON/OFF] condition of ignition knob switch.
KEY SW	Indicates [ON/OFF] condition of key switch.
DR REQ SW	Indicates [ON/OFF] condition of front door request switch LH.
AS REQ SW	Indicates [ON/OFF] condition of front door request switch RH.
BD/TR REQ SW	Indicates [ON/OFF] condition of trunk opener request switch.
IGN SW	Indicates [ON/OFF] condition of ignition switch in ON position.
ACC SW	Indicates [ON/OFF] condition of ignition switch in ACC position.
P RANGE SW	Indicates [ON/OFF] condition of CVT device (detention switch key).
TR CANCEL SW*	Indicates [ON/OFF] condition of trunk cancel switch.
DOOR LOCK SIG*	Indicates [ON/OFF] condition of door lock signal from Intelligent Key remote control button.
DOOR UNLOCK SIG*	Indicates [ON/OFF] condition of door unlock signal from Intelligent Key remote control button.
KEYLESS TRUNK*	Indicates [ON/OFF] condition of trunk open signal from Intelligent Key remote control button.
KEYLESS PANIC*	Indicates [ON/OFF] condition of panic alarm signal from Intelligent Key remote control button.
DOOR SW DR*	Indicates [OPEN/CLOSE] condition of front door switch driver side from BCM via CAN communication line.

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Monitor item	Content
DOOR SW AS*	Indicates [OPEN/CLOSE] condition of front door switch passenger side from BCM via CAN communication line.
DOOR SW RR*	This item is displayed, but cannot be monitored.
DOOR SW RL*	This item is displayed, but cannot be monitored.
DOOR BK SW*	This item is displayed, but cannot be monitored.
TRUNK SW*	Indicates [OPEN/CLOSE] condition of trunk lamp switch from BCM via CAN communication line.
VEHICLE SPEED*	Indicates [km/h] condition of vehicle speed.

*: Select "SELECTION FROM MENU".

ACTIVE TEST

Test item	Description
DOOR LOCK/UNLOCK	<p>This test is able to check door lock/unlock operation.</p> <ul style="list-style-type: none"> • The all door lock actuators are unlocked when "ALL UNLK" on CONSULT-III screen is touched. • The door lock actuator (driver side) is unlocked when "DR UNLK" on CONSULT-III screen is touched. • The door lock actuator (passenger side) is unlocked when "AS UNLK" on CONSULT-III screen is touched. • The trunk is unlocked when "BK UNLK" on CONSULT-III screen is touched. • The all door lock actuators are locked when "LOCK" on CONSULT-III screen is touched.
ANTENNA	<p>This test is able to check Intelligent Key antenna operation. When the following conditions are met, hazard warning lamps flash.</p> <ul style="list-style-type: none"> • Inside key antenna (Instrument panel) detects Intelligent Key, when "RM ANT1" on CONSULT-III screen is touched. • Inside key antenna (Front console) detects Intelligent Key, when "RM ANT2" on CONSULT-III screen is touched. • Inside key antenna (Trunk room) detects Intelligent Key, when "LAG ANT" on CONSULT-III screen is touched. • Outside key antenna (LH side) detects Intelligent Key, when "DR ANT" on CONSULT-III screen is touched. • Outside key antenna (RH side) detects Intelligent Key, when "AS ANT" on CONSULT-III screen is touched. • Rear bumper antenna detects Intelligent Key, when "BD ANT" on CONSULT-III screen is touched.
OUTSIDE BUZZER	<p>This test is able to check Intelligent Key warning buzzer (front of vehicle) operation. Intelligent Key warning buzzer (front of vehicle) sounds when "ON" on CONSULT-III screen is touched.</p>
INSIDE BUZZER (CHIME)	<p>This test is able to check Intelligent Key warning chime (combination meter) operation.</p> <ul style="list-style-type: none"> • Take away warning chime sounds when "TAKE OUT" on CONSULT-III screen is touched. • Ignition switch warning chime sounds when "KNOB" on CONSULT-III screen is touched. • Ignition key warning chime sounds when "KEY" on CONSULT-III screen is touched.
INDICATOR	<p>This test is able to check warning lamp operation.</p> <ul style="list-style-type: none"> • "KEY" Warning lamp (Green) illuminates when "BLUE ON" on CONSULT-III screen is touched. • "KEY" Warning lamp (Red) illuminates when "RED ON" on CONSULT-III screen is touched. • "P-SHIFT" Warning lamp illuminates when "KNOB ON" on CONSULT-III screen is touched. • "KEY" Warning lamp (Green) flashes when "BLUE IND" on CONSULT-III screen is touched. • "KEY" Warning lamp (RED) flashes when "BLUE IND" on CONSULT-III screen is touched. • "P-SHIFT" Warning lamp flashes when "KNOB ON" on CONSULT-III screen is touched.

Trouble Diagnosis Symptom Chart

INFOID:000000001721409

ALL INTELLIGENT KEY FUNCTIONS ARE INOPERATIVE

NOTE:

- Before performing the diagnosis in the following table, check "Trouble Diagnosis Procedure". Refer to [BL-61, "Trouble Diagnosis Procedure"](#).
- Make sure that vehicle is under the condition shown in "Conditions of vehicle" before starting diagnosis, and check each symptom.
- If the following "symptoms" are detected, check systems shown in the "Diagnoses/service procedure" column in this order.

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

- Check if ignition switch turns using mechanical key. If it turns, check if “ENGINE START BY I-KEY” in “WORK SUPPORT” mode is ON.

Conditions of Vehicle (Operating Conditions)

- Intelligent Key is registered.
- Key is not inserted in ignition switch.
- One or more registered Intelligent Keys are in the vehicle.

Symptom	Diagnosis/service procedure	Reference page
All doors, trunk and ignition switch do not respond to Intelligent Key command.	1. Intelligent Key battery inspection check.	BL-96
	2. Remote Keyless Entry Function check.	BL-96
	3. Intelligent Key unit power supply and ground circuit check.	BL-73
	4. Remote keyless entry receiver check.	BL-88
	5. Replace Intelligent Key unit.	BL-97

KEY WARNING LAMP (GREEN) ILLUMINATES

NOTE:

- Before performing the diagnosis in the following table, check “Trouble Diagnosis Procedure”. Refer to [BL-61](#), “[Trouble Diagnosis Procedure](#)”.
- Make sure that vehicle is under the condition shown in “Conditions of vehicle” before starting diagnosis, and check each symptom.
- If the following “symptoms” are detected, check systems shown in the “Diagnoses/service procedure” column in this order.

Conditions of Vehicle (Operating Conditions)

- Intelligent Key is registered.
- Key is not inserted in ignition switch.
- One or more registered Intelligent Keys are in the vehicle.

Symptom	Diagnosis/service procedure	Reference page
Ignition switch does not turn on with Intelligent Key. [KEY warning lamp (green) illuminates].	1. Steering lock solenoid check.	BL-90
	2. Replace Intelligent Key unit.	BL-97

KEY WARNING LAMP (RED) ILLUMINATES

NOTE:

- Before performing the diagnosis in the following table, check “Trouble Diagnosis Procedure”. Refer to [BL-61](#), “[Trouble Diagnosis Procedure](#)”.
- Make sure that vehicle is under the condition shown in “Conditions of vehicle” before starting diagnosis, and check each symptom.
- If the following “symptoms” are detected, check systems shown in the “Diagnoses/service procedure” column in this order.

Conditions of Vehicle (Operating Conditions)

- Intelligent Key is registered.
- Key is not inserted in ignition switch.
- One or more registered Intelligent Keys are in the vehicle.

Symptom	Diagnosis/service procedure	Reference page
Ignition switch does not turn on with Intelligent Key. [KEY warning lamp (red) illuminates].	1. Inside key antenna check.	BL-87
	2. Replace Intelligent Key unit.	BL-97

KEY WARNING LAMP DOES NOT ILLUMINATE

NOTE:

- Before performing the diagnosis in the following table, check “Trouble Diagnosis Procedure”. Refer to [BL-61](#), “[Trouble Diagnosis Procedure](#)”.
- Make sure that vehicle is under the condition shown in “Conditions of vehicle” before starting diagnosis, and check each symptom.

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

- If the following “symptoms” are detected, check systems shown in the “Diagnoses/service procedure” column in this order.
- Check if ignition switch turns using mechanical key. If it turns, check if “ENGINE START BY I-KEY” in “WORK SUPPORT” mode is ON.

Conditions of Vehicle (Operating Conditions)

- Intelligent Key is registered.
- Key is not inserted in ignition switch.
- One or more registered Intelligent Keys are in the vehicle.

Symptom	Diagnosis/service procedure	Reference page
Ignition switch does not turn on with Intelligent Key. [KEY warning lamp does not illuminate].	1. Intelligent Key unit power supply and ground circuit check.	BL-73
	2. Ignition knob switch check.	BL-76
	3. Key switch check.	BL-74
	4. Replace Intelligent Key unit.	BL-97

NON DTC ITEM

NOTE:

- Before performing the diagnosis in the following table, check “Trouble Diagnosis Procedure”. Refer to [BL-61](#), “[Trouble Diagnosis Procedure](#)”.
- Make sure that vehicle is under the condition shown in “Conditions of vehicle” before starting diagnosis, and check each symptom.
- If the following “symptoms” are detected, check systems shown in the “Diagnoses/service procedure” column in this order.

Conditions of Vehicle (Operating Conditions)

- Intelligent Key is registered.
- Multiple mechanical keys are not set in a keyfob.
(If mechanical keys are near the ignition switch, the operation may not work properly).

Symptom	Diagnosis/service procedure	Reference page
Non DTC Item	1. Key switch check.	BL-74
	2. NATS antenna amp. check	BL-134

ENGINE START CONDITION CHECK

NOTE:

- Before performing the diagnosis in the following table, check “Trouble Diagnosis Procedure”. Refer to [BL-61](#), “[Trouble Diagnosis Procedure](#)”.
- If the following “symptoms” are detected, check systems shown in the “Diagnoses/service procedure” column in this order.

Symptom	Diagnosis/service procedure	Reference page
Engine start condition check	1. CVT device (detention switch key) check.	BL-92

DOOR LOCK/UNLOCK FUNCTION MALFUNCTION

NOTE:

- Before performing the diagnosis in the following table, check “Trouble Diagnosis Procedure”. Refer to [BL-61](#), “[Trouble Diagnosis Procedure](#)”.
- Make sure that vehicle is under the condition shown in “Conditions of vehicle” before starting diagnosis, and check each symptom.
- If the following “symptoms” are detected, check systems shown in the “Diagnosis/procedure” column in this order.

Conditions of Vehicle (Operating Conditions)

- “LOCK/UNLOCK BY I-KEY” is ON when setting on CONSULT-III.
- Ignition switch is not depressed.
- All doors are closed.

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Symptom	Diagnosis/service procedure	Reference page	
Door lock/unlock do not operate by request switch.	1. Door switch check.	BL-77	A
	2. Ignition knob switch check.	BL-76	B
	3. Replace Intelligent Key unit.	BL-97	B
Door lock/unlock does not operate by request switch (LH side).	1. Front door request switch LH check.	BL-80	C
	2. Front outside antenna LH check.	BL-85	C
	3. Replace Intelligent Key unit.	BL-97	C
Door lock/unlock does not operate by request switch (RH side).	1. Front door request switch RH check.	BL-80	D
	2. Front outside antenna RH check.	BL-85	D
	3. Replace Intelligent Key unit.	BL-97	D
Selective unlock function does not operate by front door request switch LH (other door lock functions operate properly).	1. Check "SELECT UNLOCK FUNCTION" setting in "WORK SUPPORT".	BL-64	E
	2. Replace Intelligent Key unit.	BL-97	E
Auto lock function does not operate properly.	1. Check "AUTO RELOCK TIMER" setting in "WORK SUPPORT".	BL-64	F
	2. Key switch check.	BL-74	G
	3. Ignition knob switch check.	BL-76	G
	4. Door switch check.	BL-77	H
	5. Replace Intelligent Key unit.	BL-97	H
Key reminder function does not operate properly.	1. Check "ANTI KEY LOCK IN FUNCTION" setting in "WORK SUPPORT".	BL-64	I
	2. Door switch check.	BL-77	BL
	3. Inside key antenna check.	BL-87	BL
	4. Front door lock actuator LH (door unlock sensor) check.	BL-83	BL
	5. Intelligent Key battery inspection.	BL-96	J
	6. Replace Intelligent Key unit.	BL-97	J

REMOTE KEYLESS ENTRY FUNCTION MALFUNCTION

NOTE:

- Before performing the diagnosis in the following table, check "Trouble Diagnosis Procedure". Refer to [BL-61, "Trouble Diagnosis Procedure"](#).
- Make sure that vehicle is under the condition shown in "Conditions of vehicle" before starting diagnosis, and check each symptom.
- If the following "symptoms" are detected, check systems shown in the "Diagnosis/service procedure" column in this order.

Conditions of Vehicle (Operating Conditions)

- Ignition switch is not depressed.
- All doors are closed.

Symptom	Diagnosis/service procedure	Reference page	
All of the remote keyless entry functions do not operate.	1. Intelligent Key battery and function inspection.	BL-96	O
	2. Remote Keyless Entry function check.	BL-96	P
	3. Replace Intelligent Key unit.	BL-97	P
Selective unlock function does not operate by Intelligent Key remote control button.	1. Check "SELECT UNLOCK FUNCTION" setting in "WORK SUPPORT".	BL-64	
	2. Intelligent Key battery inspection.	BL-96	
	3. Replace Intelligent Key unit.	BL-97	

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Symptom	Diagnosis/service procedure	Reference page
Auto lock function does not operate properly.	1. Check "AUTO RELOCK TIMER" setting in "WORK SUPPORT".	BL-64
	2. Key switch check.	BL-74
	3. Ignition knob switch check.	BL-76
	4. Door switch check.	BL-77
	5. Replace Intelligent Key unit.	BL-97
Key reminder function does not operate properly.	1. Check "ANTI KEY LOCK IN FUNCTION" setting in "WORK SUPPORT".	BL-64
	2. Door switch check.	BL-77
	3. Inside key antenna check.	BL-87
	4. Front door lock actuator LH (door unlock sensor) check.	BL-83
	5. Intelligent Key battery inspection.	BL-96
	6. Replace Intelligent Key unit.	BL-97
Panic alarm function does not operate properly.	1. Check "PANIC ALARM DELAY" setting in "WORK SUPPORT".	BL-64
	2. Theft warning operation check.	BL-112
	3. Intelligent Key battery inspection.	BL-96
	4. Key switch check.	BL-74
	5. Ignition knob switch check.	BL-76
	6. Replace Intelligent Key unit.	BL-97
Trunk open function does not operate properly.	1. Check "TRUNK OPEN DELAY" setting in "WORK SUPPORT".	BL-64
	2. Trunk lid opener system check.	BL-107
	3. Trunk lamp switch check.	BL-79
	4. Intelligent Key battery inspection.	BL-96
	5. Replace Intelligent Key unit.	BL-97

TRUNK OPEN FUNCTION MALFUNCTION

NOTE:

- Before performing the diagnosis in the following table, check "Trouble Diagnosis Procedure". Refer to [BL-61](#), "[Trouble Diagnosis Procedure](#)".
- Make sure that vehicle is under the condition shown in "Conditions of vehicle" before starting diagnosis, and check each symptom.
- If the following "symptoms" are detected, check systems shown in the "Diagnosis/service procedure" column in this order.

Conditions of Vehicle (Operating Conditions)

- "LOCK/UNLOCK BY I-KEY" is ON when setting on CONSULT-III.
- Trunk cancel switch is in ON position.

Symptom	Diagnosis procedure	Reference page
Trunk open function does not operate by trunk opener request switch.	1. Trunk opener request switch check.	BL-82
	2. Rear bumper antenna check.	BL-85
	3. Replace Intelligent Key unit.	BL-97

HAZARD AND HORN REMINDER FUNCTION MALFUNCTION

NOTE:

- Before performing the diagnosis in the following table, check "Trouble Diagnosis Procedure". Refer to [BL-61](#), "[Trouble Diagnosis Procedure](#)".
- Make sure that vehicle is under the condition shown in "Conditions of vehicle" before starting diagnosis, and check each symptom.
- If the following "symptoms" are detected, check systems shown in the "Diagnosis/service procedure" column in this order.

Conditions of Vehicle (Operating Conditions)

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

- Ignition switch is not depressed.
- All doors are closed.

Symptom	Diagnosis/service procedure	Reference page
Hazard reminder does not operate properly by request switch. (Horn reminder operates properly).	1. Check "HAZARD ANSWER BACK" setting in "WORK SUPPORT".	BL-64
	2. Hazard function with hazard switch check.	BL-95
	3. Replace Intelligent Key unit	BL-97
Horn reminder does not operate properly by request switch. (Hazard reminder operates properly).	1. Check "ANSWER BACK WITH I-KEY LOCK" or "ANSWER BACK WITH I-KEY UNLOCK" setting in "WORK SUPPORT".	BL-64
	2. Intelligent Key warning buzzer (front of vehicle) check.	BL-85
	3. Horn function check.	BL-95
	4. IPDM E/R operation check.	BL-95
	5. Replace Intelligent Key unit.	BL-97
Hazard reminder does not operate properly by Intelligent Key remote control button. (Horn reminder operates properly).	1. Check "HAZARD ANSWER BACK" setting in "WORK SUPPORT".	BL-64
	2. Hazard function check.	BL-95
	3. Replace Intelligent Key unit.	BL-97
Horn reminder does not operate properly by Intelligent Key remote control button (door lock/unlock button). (Hazard reminder operates properly).	1. Check "HORN WITH KEYLESS LOCK" setting in "WORK SUPPORT".	BL-64
	2. Intelligent Key warning buzzer (front of vehicle) check.	BL-85
	3. Horn function check.	BL-95
	4. IPDM E/R operation check.	BL-95
	5. Replace Intelligent Key unit.	BL-97
Horn reminder does not operate properly by trunk opener request switch.	1. Check "TRUNK/GLASS HATCH OPEN" setting in "WORK SUPPORT".	BL-64
	2. Intelligent Key warning buzzer (front of vehicle) check.	BL-85
	3. Lid trunk opener system check.	BL-107
	4. Replace Intelligent Key unit.	BL-97

POWER WINDOW DOWN FUNCTION MALFUNCTION

NOTE:

- Before performing the diagnosis in the following table, check "Trouble Diagnosis Procedure". Refer to [BL-61, "Trouble Diagnosis Procedure"](#).
- If the following "symptoms" are detected, check systems shown in the "Diagnoses/service procedure" column in this order.

Conditions of Vehicle (Operating Conditions)

- Key is not inserted in ignition key cylinder.
- One or more registered Intelligent Keys are in the vehicle.

Symptom	Diagnosis/service procedure	Reference page
Power window down function does not operate properly.	1. Check "P/W DOWN DELAY" setting in "WORK SUPPORT".	BL-64
	2. Intelligent Key battery inspection.	BL-96

WARNING CHIME FUNCTION MALFUNCTION

NOTE:

- Before performing the diagnosis in the following table, check "Trouble Diagnosis Procedure". Refer to [BL-61, "Trouble Diagnosis Procedure"](#).
- Make sure that vehicle is under the condition shown in "Conditions of vehicle" before starting diagnosis, and check each symptom.
- If the following "symptoms" are detected, check systems shown in the "Diagnosis/service procedure" column in this order.

Conditions of Vehicle (Operating Conditions)

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Each warning chime function is ON when setting on CONSULT-III.

Symptom	Diagnosis/service procedure	Reference page
Ignition switch warning chime does not operate.	1. Ignition knob switch check.	BL-76
	2. Door switch check.	BL-77
	3. Key switch check.	BL-74
	4. Intelligent Key warning chime (combination meter) check.	BL-84
	5. Replace Intelligent Key unit.	BL-97
Ignition key warning chime does not operate properly. (When mechanical key is used)	1. Key switch (Intelligent Key unit input) check.	BL-74
	2. Key switch (BCM input) check.	BL-75
	3. Door switch check.	BL-77
	4. Warning chime check.	BL-84
	5. Replace Intelligent Key unit.	BL-97
OFF position warning chime does not operate.	1. Ignition knob switch check.	BL-76
	2. Key switch check.	BL-74
	3. Power supply and ground circuit check.	BL-73
	4. Intelligent Key warning chime (combination meter) check.	BL-84
	5. Replace Intelligent Key unit.	BL-97
OFF position warning chime (after door closed) does not operate properly.	1. Ignition knob switch check.	BL-76
	2. Intelligent Key warning buzzer (front of vehicle) check.	BL-85
	3. Replace Intelligent Key unit.	BL-97
Take away warning chime does not operate properly.	1. Door switch check.	BL-77
	2. Power supply and ground circuit check.	BL-73
	3. Intelligent Key battery inspection.	BL-96
	4. Inside key antenna check.	BL-87
	5. Intelligent Key warning buzzer (front of vehicle) check.	BL-85
	6. Replace Intelligent Key unit.	BL-97
Take away warning chime (from window) does not operate properly.	1. Check "TAKE OUT FROM WINDOW WARN" setting in "WORK SUPPORT".	BL-64
	2. Inside key antenna check.	BL-87
	3. Power supply and ground circuit check	BL-73
	4. Intelligent Key battery inspection.	BL-96
	5. Intelligent Key warning chime (combination meter) check.	BL-84
	6. Replace Intelligent Key unit.	BL-97
Door lock operation warning chime does not operate properly.	1. Door switch check.	BL-77
	2. Ignition knob switch check.	BL-76
	3. Front door request switch LH check.	BL-80
	4. Front outside antenna LH check.	BL-85
	5. Inside key antenna check.	BL-87
	6. Intelligent Key warning buzzer (front of vehicle) check.	BL-85
	7. Replace Intelligent Key unit.	BL-97

WARNING LAMP FUNCTION MALFUNCTION

NOTE:

- Before performing the diagnosis in the following table, check "Trouble Diagnosis Procedure". Refer to [BL-61](#), "[Trouble Diagnosis Procedure](#)".
- If the following "symptoms" are detected, check systems shown in the "Diagnosis/service procedure" column in this order.

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Symptom	Diagnosis/service procedure	Reference page
Intelligent Key low battery warning does not operate properly.	1. Check "LOW BAT OF KEY FOB WARN" setting in "WORK SUPPORT".	BL-64
	2. Intelligent Key battery inspection.	BL-96
	3. KEY warning lamp (green) check.	BL-94
	4. Replace Intelligent Key unit.	BL-97
P position warning lamp does not illuminate properly.	1. CVT device (detention switch key) check.	BL-92
	2. "P-SHIFT" warning lamp (red) check.	BL-93
	3. Replace Intelligent Key unit.	BL-97
Take away warning lamp does not illuminate properly. (Take away warning chime is operated).	1. KEY warning lamp (red) check.	BL-94
	2. Replace Intelligent Key unit.	BL-97
Ignition switch warning lamp does not illuminate properly. (Ignition switch warning chime is operated).	1. KEY warning lamp (red) check.	BL-94
	2. Replace Intelligent Key unit.	BL-97

CAN Communication System Inspection

INFOID:000000001721410

1. CHECK SELF-DIAGNOSTIC RESULTS

Ⓜ With CONSULT-III

- Connect CONSULT-III, and turn ignition switch ON.
- Touch "INTELLIGENT KEY" on "SELECT SYSTEM" screen.
- Touch "SELF-DIAG RESULTS" on "SELECT DIAG MODE" screen.
- Check display content in self-diagnostic results.

CONSULT-III display item	DTC code
NO DTC IS DETECTED	—
CAN COMM	U1000
CAN COMM2	U1010

OK or NG

NO DTC IS DETECTED>> INSPECTION END

CAN COMM [U1000]>> Refer to [LAN-41](#), "CAN System Specification Chart".

CAN COMM2 [U1010]>> Replace Intelligent Key unit. Refer to [BL-97](#), "Removal and Installation of Intelligent Key Unit".

Power Supply and Ground Circuit Inspection

INFOID:000000001721411

1. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect Intelligent Key unit connector.
3. Check voltage between Intelligent Key unit harness connector M52 terminals 6, 11 and ground.

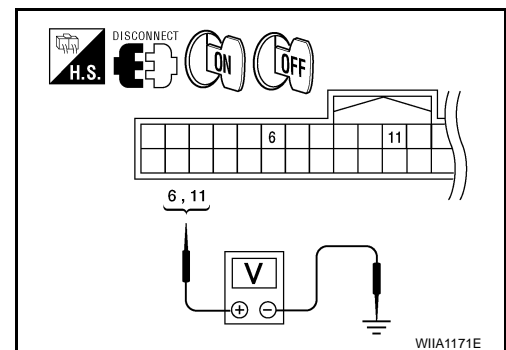
Connector	Terminals		Ignition switch position	
	(+)	(-)	OFF	ON
M52	6	Ground	0V	Battery voltage
	11		Battery voltage	Battery voltage

OK or NG

OK >> GO TO 2.

NG >> Repair or replace Intelligent Key power supply circuit.

2. CHECK GROUND CIRCUIT



INTELLIGENT KEY SYSTEM

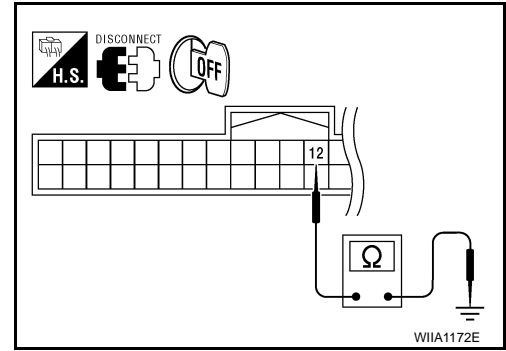
< SERVICE INFORMATION >

Check continuity between Intelligent Key unit harness connector M52 terminal 12 and ground.

12 - Ground : Continuity should exist.

OK or NG

- OK >> Power supply and ground circuits are OK.
- NG >> Repair or replace the Intelligent Key unit ground circuit.



INFOID:000000001721412

Key Switch (Intelligent Key Unit Input) Check

1. CHECK KEY SWITCH

With CONSULT-III

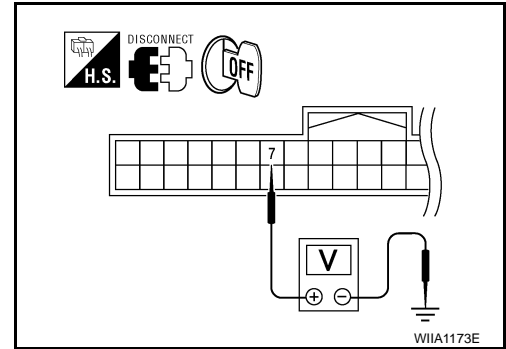
Check key switch ("KEY SW") in "DATA MONITOR" mode with CONSULT-III.

Monitor item	Condition
KEY SW	Insert mechanical key into ignition switch: ON
	Remove mechanical key from ignition switch: OFF

Without CONSULT-III

1. Turn ignition switch OFF.
2. Disconnect Intelligent Key unit harness connector.
3. Check voltage between Intelligent Key unit harness connector M52 terminal 7 and ground.

Connector	Terminals		Condition	Voltage (V) (Approx.)
	(+)	(-)		
M52	7	Ground	Insert mechanical key into ignition switch	Battery voltage
			Remove mechanical key from ignition switch	0



OK or NG

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

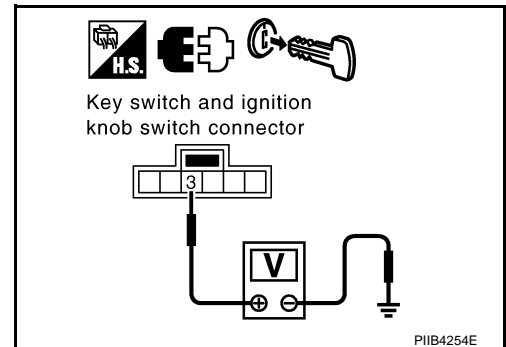
2. CHECK KEY SWITCH POWER SUPPLY CIRCUIT

1. Remove mechanical key from ignition switch.
2. Disconnect key switch and ignition knob switch connector.
3. Check voltage between key switch and ignition knob switch harness connector M73 terminal 3 and ground.

3 - Ground : Battery voltage

OK or NG

- OK >> GO TO 3.
- NG >> Repair or replace key switch and ignition knob switch power supply circuit.



3. CHECK KEY SWITCH OPERATION

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Check continuity between key switch and ignition knob switch terminals 3 and 4.

Component	Terminals		Condition	Continuity
Key switch	3	4	Insert mechanical key into ignition switch.	Yes
			Remove mechanical key from ignition switch.	No

OK or NG

OK >> GO TO 4.

NG >> Replace key cylinder assembly (built-in key switch).

4. CHECK KEY SWITCH CIRCUIT

- Check continuity between Intelligent Key unit harness connector (A) M52 terminal 7 and key switch and ignition knob switch harness connector (B) M73 terminal 4.

7 - 4 : Continuity should exist.

- Check continuity between Intelligent Key unit harness connector (A) M52 terminal 7 and ground.

7 - Ground : Continuity should not exist.

OK or NG

OK >> Check the condition of harness and harness connector.

NG >> Repair or replace harness between Intelligent Key unit and key switch and ignition knob switch.

Key Switch (BCM Input) Check

1. CHECK KEY SWITCH POWER SUPPLY CIRCUIT

- Remove mechanical key from ignition switch.
- Disconnect key switch and ignition knob switch connector.
- Check voltage between key switch and ignition knob switch harness connector M73 terminal 3 and ground.

3 - Ground : Battery voltage.

OK or NG

OK >> GO TO 2.

NG >> Check harness between key switch and ignition knob switch and fuse.

2. CHECK KEY SWITCH

Check continuity between key switch and ignition knob switch terminals 3 and 4.

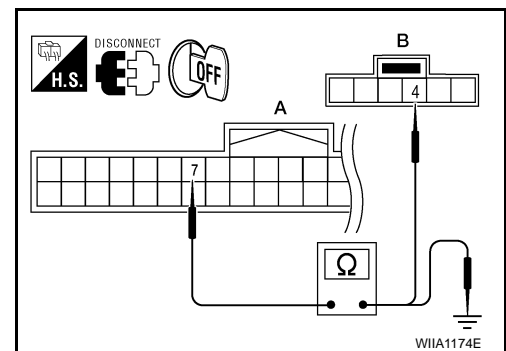
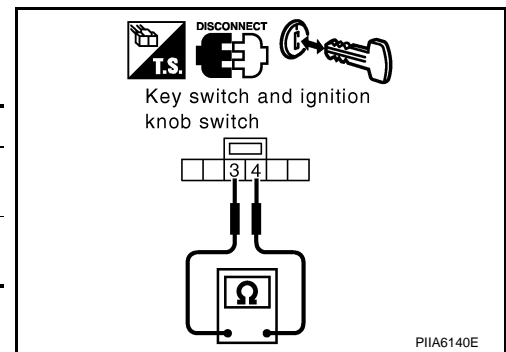
Component	Terminals		Condition	Continuity
Ignition switch	3	4	Insert mechanical key into ignition switch.	Yes
			Remove mechanical key from ignition switch.	No

OK or NG

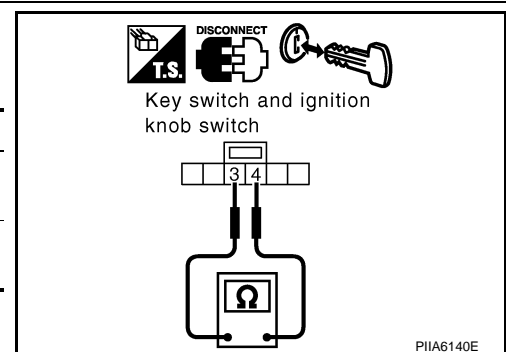
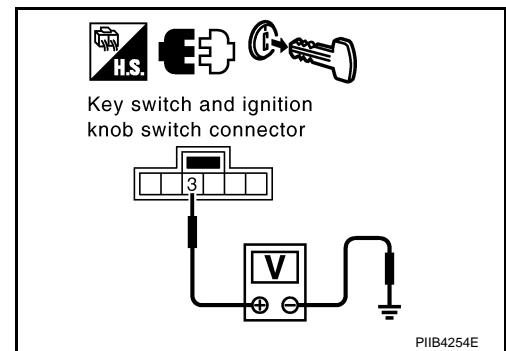
OK >> GO TO 3.

NG >> Replace key cylinder assembly (built-in key switch).

3. CHECK KEY SWITCH SIGNAL CIRCUIT



INFOID:000000001721413



INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M18 terminal 37 and key switch and ignition knob switch harness connector M73 terminal 4.

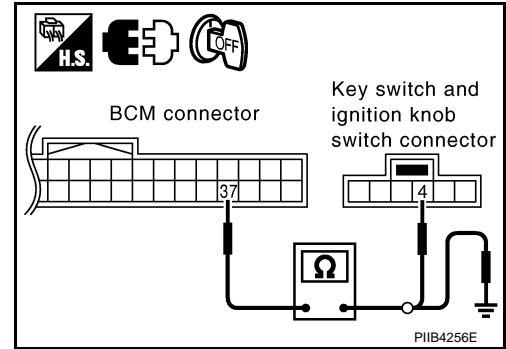
37 – 4 : Continuity should exist.

3. Check continuity between BCM harness connector M18 terminal 37 and ground.

37 – Ground : Continuity should not exist.

OK or NG

- OK >> Key switch (BCM input) circuit is OK.
 NG >> Repair or replace harness between key switch and ignition knob switch and BCM.



Ignition Knob Switch Check

INFOID:000000001721414

1. CHECK IGNITION KNOB SWITCH

With CONSULT-III

Display "PUSH SW" on DATA MONITOR screen, and check if ON/OFF display is linked to ignition switch operation.

Monitor item	Condition
PUSH SW	Ignition switch is pushed: ON
	Ignition switch is released: OFF

Without CONSULT-III

1. Turn ignition switch OFF.
2. Disconnect Intelligent Key unit connector.
3. Check voltage between Intelligent Key unit harness connector M52 terminal 27 and ground.

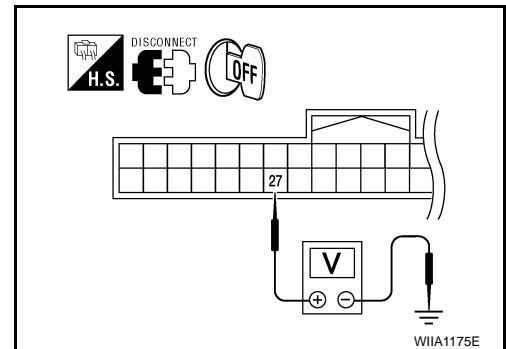
Connector	Terminals		Condition	Voltage (V) (Approx.)
	(+)	(-)		
M52	27	Ground	Ignition switch is pushed	Battery voltage
			Ignition switch is released	0

OK or NG

- OK >> Ignition knob switch is OK.
 NG >> GO TO 2.

2. CHECK IGNITION KNOB SWITCH POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect key switch and ignition knob switch connector.
3. Check voltage between key switch and ignition knob switch harness connector M73 terminal 1 and ground.



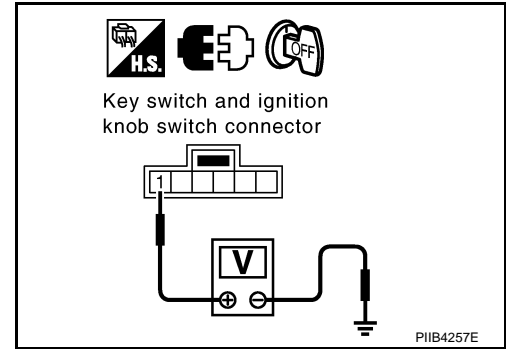
INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

1 - Ground : Battery voltage

OK or NG

- OK >> GO TO 3.
- NG >> Repair or replace key switch and ignition knob switch power supply circuit.



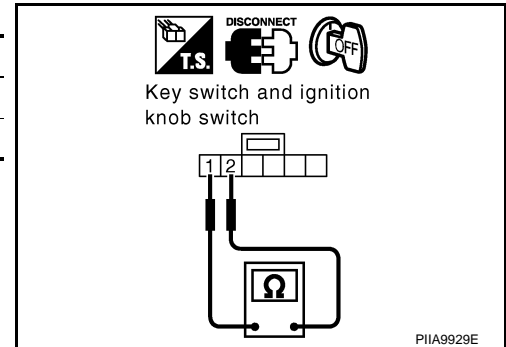
3.CHECK IGNITION KNOB SWITCH OPERATION

Check continuity between key switch and ignition knob switch terminals 1 and 2.

Component	Terminals		Condition	Continuity
Ignition knob switch	1	2	Ignition switch is pushed	Yes
			Ignition switch is released	No

OK or NG

- OK >> GO TO 4.
- NG >> Replace key switch and ignition knob switch.



4.CHECK IGNITION KNOB SWITCH CIRCUIT

1. Check continuity between Intelligent Key unit harness connector (A) M52 terminal 27 and key switch and ignition knob switch harness connector (B) M73 terminal 2.

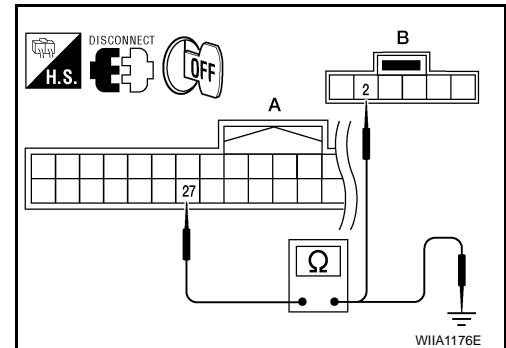
27 - 2 : Continuity should exist.

2. Check continuity between Intelligent Key unit harness connector M52 terminal 27 and ground.

27 - Ground : Continuity should not exist.

OK or NG

- OK >> Check the condition of harness and harness connector.
- NG >> Repair or replace harness between Intelligent Key unit and key switch and ignition knob switch.



Door Switch Check

INFOID:000000001721415

1.CHECK DOOR SWITCHES INPUT SIGNAL

With CONSULT-III

Check door switches ("DOOR SW-DR", "DOOR SW-AS", "DOOR SW-RL", "DOOR SW-RR") in DATA MONITOR mode with CONSULT-III. Refer to [BL-25. "CONSULT-III Function \(BCM\)".](#)

- When doors are open:

DOOR SW-DR : ON
DOOR SW-AS : ON
DOOR SW-RL : ON
DOOR SW-RR : ON

- When doors are closed:

DOOR SW-DR : OFF
DOOR SW-AS : OFF

INTELLIGENT KEY SYSTEM

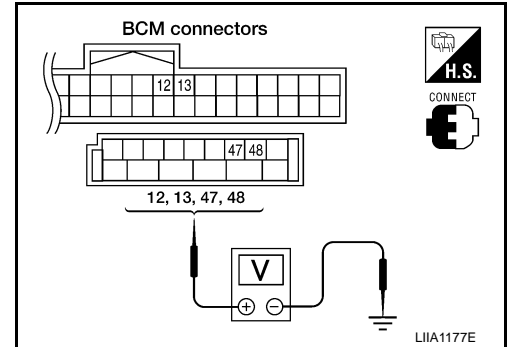
< SERVICE INFORMATION >

DOOR SW-RL : OFF
DOOR SW-RR : OFF

⊗ Without CONSULT-III

Check voltage between BCM connector M18 or M19 terminals 12, 13, 47, 48 and ground.

Connector	Item	Terminals		Condition	Voltage (V) (Approx.)
		(+)	(-)		
M19	Front door switch LH	47	Ground	Open ↓ Closed	0 ↓ Battery voltage
	Rear door switch LH	48			
M18	Front door switch RH	12			
	Rear door switch RH	13			



OK or NG

OK >> Door switch circuit is OK.

NG >> GO TO 2.

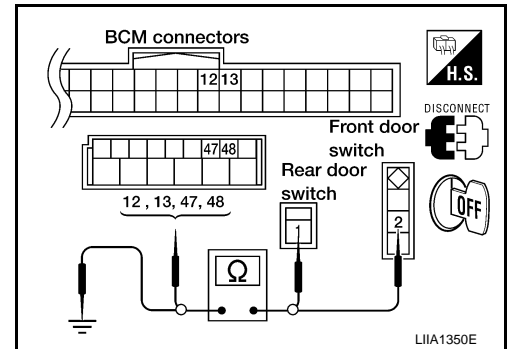
2. CHECK DOOR SWITCH CIRCUIT

- Turn ignition switch OFF.
- Disconnect door switch and BCM.
- Check continuity between door switch connector B8 (Front LH) or B108 (Front RH) terminal 2, B18 (Rear LH) or B116 (Rear RH) terminal 1 and BCM connector M18, M19 terminals 12, 13, 47 and 48.

2 - 47 : Continuity should exist.
2 - 12 : Continuity should exist.
1 - 48 : Continuity should exist.
1 - 13 : Continuity should exist.

- Check continuity between door switch connector B8 (Front LH) or B108 (Front RH) terminal 2, B18 (Rear LH) or B116 (Rear RH) terminal 1 and ground.

2 - Ground : Continuity should not exist.
1 - Ground : Continuity should not exist.



OK or NG

OK >> GO TO 3.

NG >> Repair or replace harness.

3. CHECK DOOR SWITCHES

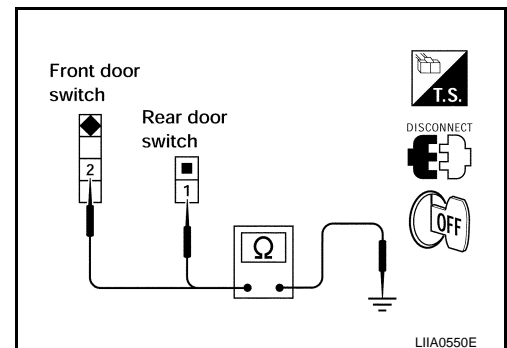
Check continuity between door switch terminal and switch case ground.

Component	Terminals	Condition of switch	Continuity
Front door switch LH/RH	2 - Case ground	Pushed	No
		Released	Yes
Rear door switch LH/RH	1 - Case ground	Pushed	No
		Released	Yes

OK or NG

OK >> Check door switch case ground condition.

NG >> Replace door switch.



INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Trunk Lamp Switch Check

INFOID:000000001721416

1. CHECK TRUNK LAMP SWITCH INPUT SIGNAL

With CONSULT-III

Check ("TRUNK SW") in "DATA MONITOR" mode with CONSULT-III.

Monitor item	Trunk condition	
TRUNK SW	OPEN	: ON
	CLOSE	: OFF

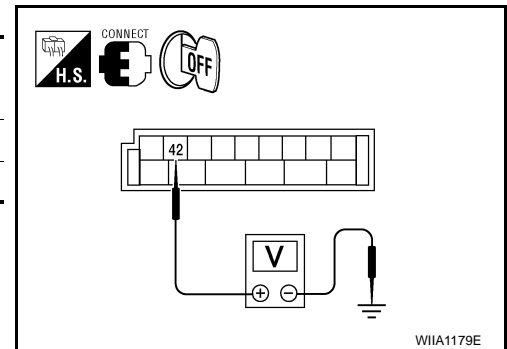
Without CONSULT-III

- Turn ignition switch OFF.
- Check voltage between BCM harness connector M19 terminal 42 and ground.

Connector	Terminals		Trunk condition	Voltage (V) (Approx.)
	(+)	(-)		
M19	42	Ground	CLOSE	Battery voltage
			OPEN	0

OK or NG

- OK >> Trunk lamp switch circuit is OK.
 NG >> GO TO 2.



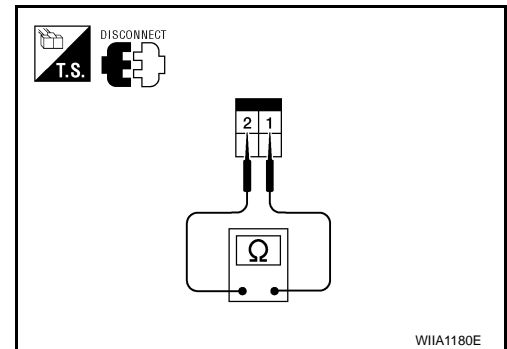
2. CHECK TRUNK LAMP SWITCH

- Turn ignition switch OFF.
- Disconnect trunk lamp switch connector.
- Check continuity between trunk lamp switch terminals 1 and 2.

Terminals		Trunk condition	Continuity
1	2		
		Closed	No
		Open	Yes

OK or NG

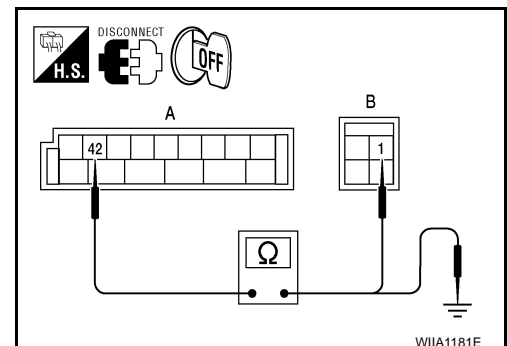
- OK >> GO TO 3.
 NG >> Replace trunk lamp switch and trunk release solenoid.



3. CHECK TRUNK LAMP SWITCH CIRCUIT

- Disconnect BCM connector M19.
- Check continuity between BCM harness connector M19 terminal 42 and trunk lamp switch harness connector (B) T103 terminal 1.

42 – 1 : Continuity should exist.



- Check continuity between BCM harness connector (A) M19 terminal 42 and ground.

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

42 – Ground : Continuity should not exist.

OK or NG

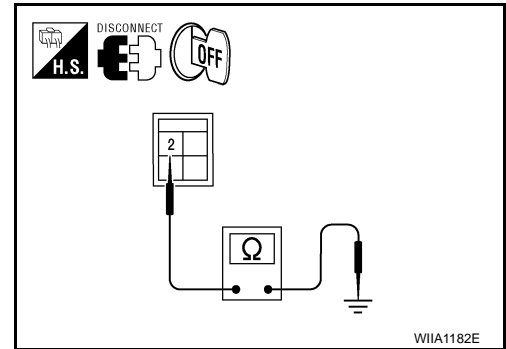
OK >> GO TO 4.

NG >> Repair or replace harness between BCM and trunk lamp switch.

4. CHECK TRUNK LAMP SWITCH GROUND CIRCUIT

Check continuity between trunk lamp switch harness connector T103 terminal 2 and ground.

2 – Ground : Continuity should exist.



OK or NG

OK >> Check connection of harness and connector.

NG >> Repair or replace trunk lamp switch ground circuit.

Front Door Request Switch Check

INFOID:000000001721417

1. CHECK FRONT DOOR REQUEST SWITCH

Ⓢ With CONSULT-III

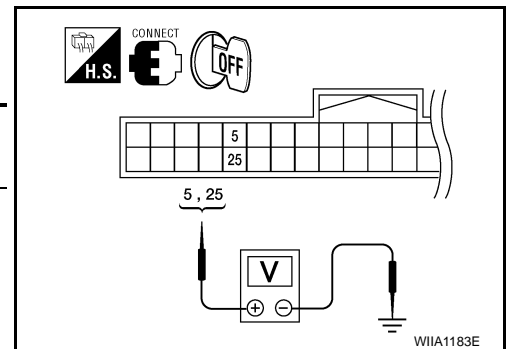
Check front door request switch (“DR REQ SW” or “AS REQ SW”) in “DATA MONITOR” mode.

Monitor item	Condition
DR REQ SW	Front door request switch is pressed: ON
AS REQ SW	Front door request switch is released: OFF

ⓧ Without CONSULT-III

1. Turn ignition switch OFF.
2. Check voltage between Intelligent Key Unit harness connector M52 terminals 5, 25 and ground.

Connector	Item	Terminals		Condition	Voltage (V) (Approx.)
		(+)	(-)		
M52	Front door request switch LH	5	Ground	Door request switch is pressed ↓	0 ↓
	Front door request switch RH	25		Door request switch is released	Battery voltage



OK or NG

OK >> Front door request switch is OK.

NG >> GO TO 2.

2. CHECK FRONT DOOR REQUEST SWITCH OPERATION

1. Turn ignition switch OFF.
2. Disconnect front door request switch connector.

INTELLIGENT KEY SYSTEM

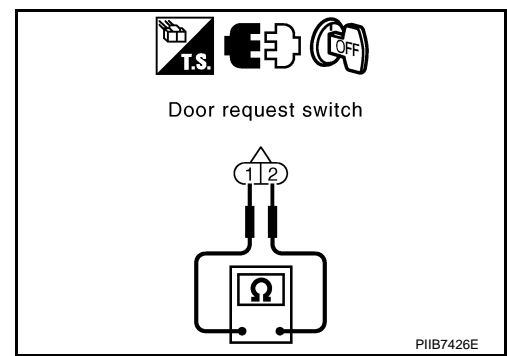
< SERVICE INFORMATION >

- Check continuity between front door request switch terminals 1 and 2.

Component	Terminals		Condition	Continuity
Front door request switch (LH or RH)	1	2	Front door request switch is pressed	Yes
			Front door request switch is released	No

OK or NG

- OK >> GO TO 3.
 NG >> Replace front door request switch.



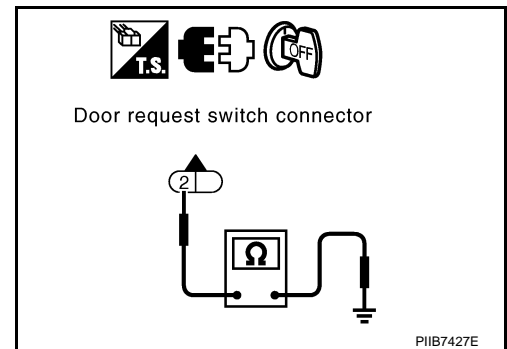
3. CHECK FRONT DOOR REQUEST SWITCH GROUND CIRCUIT

Check continuity between front door request switch harness connector D62 (driver door), D162 (passenger door) terminal 2 and ground.

2 - Ground : Continuity should exist.

OK or NG

- OK >> GO TO 4.
 NG >> Repair or replace door request switch ground circuit.



4. CHECK FRONT DOOR REQUEST SWITCH CIRCUIT

- Disconnect Intelligent Key Unit connector.
- Check continuity between Intelligent Key Unit harness connector (A) M52 terminals 5 (driver door), 25 (passenger door) and front door request switch harness connector (B) D62 (LH), D162 (RH) terminal 1.

Driver side 5 - 1 : Continuity should exist.

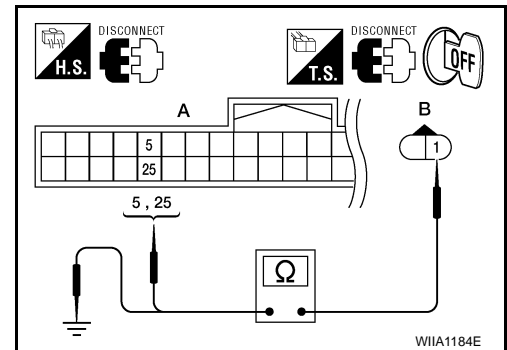
Passenger side 25 - 1 : Continuity should exist.

- Check continuity between front door request switch harness connector D62 (driver door), D162 (passenger door), terminal 1 and ground.

1 - Ground : Continuity should not exist.

OK or NG

- OK >> GO TO 5.
 NG >> Repair or replace harness between Intelligent Key Unit and front door request switch.



5. CHECK FRONT DOOR REQUEST SWITCH SIGNAL

- Connect Intelligent Key Unit connector.
- Check voltage between front door request switch harness connector D62 (driver door), D162 (passenger door) terminal 1 and ground.

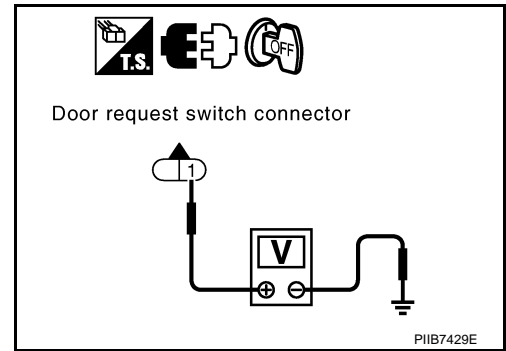
INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Driver side **1 - Ground** **: Battery voltage**
Passenger side **1 - Ground** **: Battery voltage**

OK or NG

- OK >> Check condition of harness and connector.
 NG >> Replace Intelligent Key Unit. Refer to [BL-97, "Removal and Installation of Intelligent Key Unit"](#).



Trunk Opener Request Switch Check

INFOID:000000001721418

1. CHECK TRUNK OPENER REQUEST SWITCH

With CONSULT-III

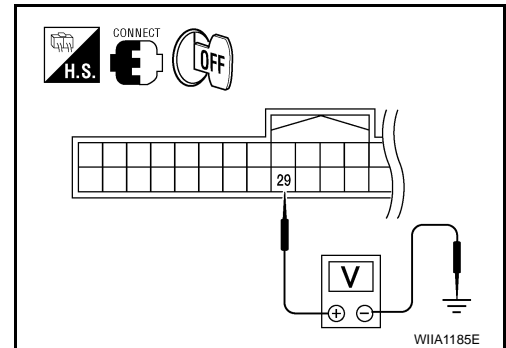
Check trunk opener request switch ("BD/TR REQ SW") in "DATA MONITOR" mode.

Monitor item	Condition
BD/TR REQ SW	Trunk opener request switch is pressed: ON
	Trunk opener request switch is released: OFF

Without CONSULT-III

- Turn ignition switch OFF.
- Check voltage between Intelligent Key Unit connector M52 terminal 29 and ground.

Connector	Terminals		Condition	Voltage (V) (Approx.)
	(+)	(-)		
M52	29	Ground	Trunk opener request switch is pressed	0
			Trunk opener request switch is released	5



OK or NG

- OK >> Trunk opener request switch is OK.
 NG >> GO TO 2.

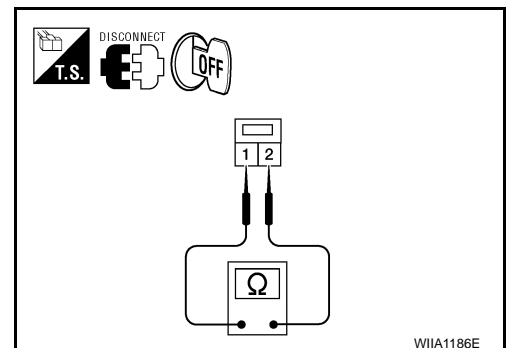
2. CHECK TRUNK OPENER REQUEST SWITCH OPERATION

- Turn ignition switch OFF.
- Disconnect trunk opener request switch connector.
- Check continuity between trunk opener request switch terminals 1 and 2.

Component	Terminals	Condition	Continuity
Trunk opener request switch	1 2	Trunk opener request switch is pressed	Yes
		Trunk opener request switch is released	No

OK or NG

- OK >> GO TO 3.
 NG >> Replace trunk opener request switch.



3. CHECK TRUNK OPENER REQUEST SWITCH GROUND CIRCUIT

Check continuity between trunk opener request switch harness connector T6 terminal 2 and ground.

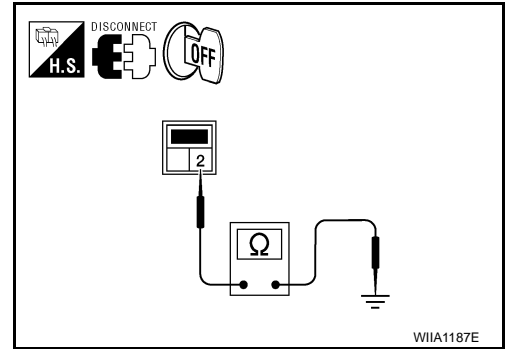
INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

2 - Ground : Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair or replace trunk opener request switch ground circuit.



4. CHECK TRUNK OPENER REQUEST SWITCH CIRCUIT

1. Disconnect Intelligent Key unit connector.
2. Check continuity between Intelligent Key Unit harness connector M52 terminals 29 and trunk opener request switch harness connector T6 terminal 1.

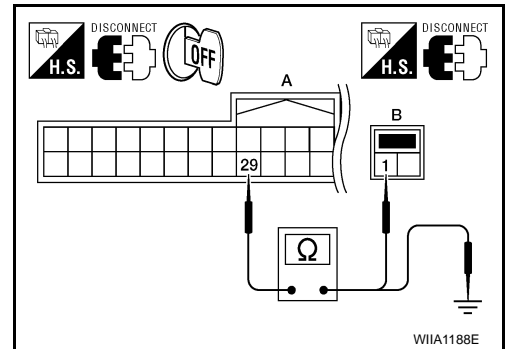
29 - 1 : Continuity should exist.

3. Check continuity between Intelligent Key Unit harness connector M52 terminal 29 and ground.

29 - Ground : Continuity should not exist.

OK or NG

- OK >> GO TO 5.
- NG >> Repair or replace harness between Intelligent Key Unit and trunk opener request switch.



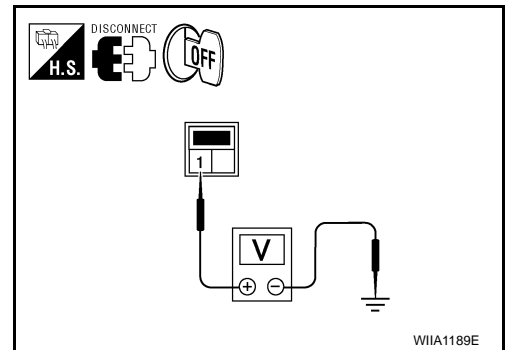
5. CHECK TRUNK OPENER REQUEST SWITCH SIGNAL

1. Connect Intelligent Key Unit connector.
2. Check voltage between trunk opener request switch harness connector T6 terminal 1 and ground.

1 - Ground : Battery voltage

OK or NG

- OK >> Check condition of harness and connector.
- NG >> Replace Intelligent Key Unit. Refer to [BL-97. "Removal and Installation of Intelligent Key Unit"](#).



Front Door Lock Actuator LH (Door Unlock Sensor) Check

INFOID:000000001721419

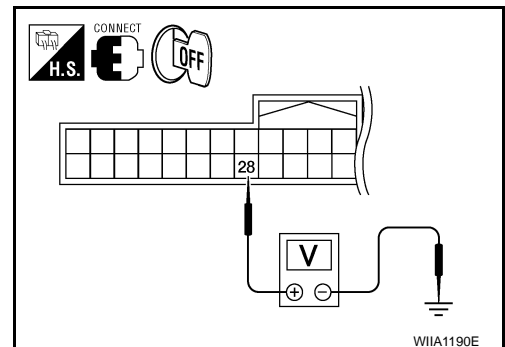
1. CHECK UNLOCK SENSOR POWER SUPPLY

Check voltage between Intelligent Key unit connector terminal 28 and ground.

Connector	Terminals		Condition	Voltage (V) (Approx.)
	(+)	(-)		
M52	28	Ground	Driver side door lock is locked	5
			Driver side door lock is un-locked	0

OK or NG

- OK >> front door lock actuator LH (door unlock sensor) is OK.
- NG >> GO TO 2.



INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

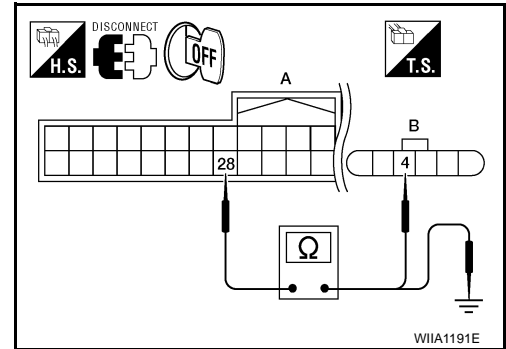
2. CHECK UNLOCK SENSOR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect Intelligent Key unit and front door lock actuator LH (door unlock sensor) connector.
3. Check continuity between Intelligent Key unit harness connector (A) M52 terminal 28 and front door lock actuator LH (door unlock sensor) harness connector (B) D51 terminal 4.

28 – 4 : Continuity should exist.

4. Check continuity between Intelligent Key unit harness connector (A) M52 terminal 28 and ground.

28 – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 3.

NG >> Repair or replace harness between Intelligent Key unit and front door lock actuator LH (door unlock sensor).

3. CHECK UNLOCK SENSOR GROUND CIRCUIT

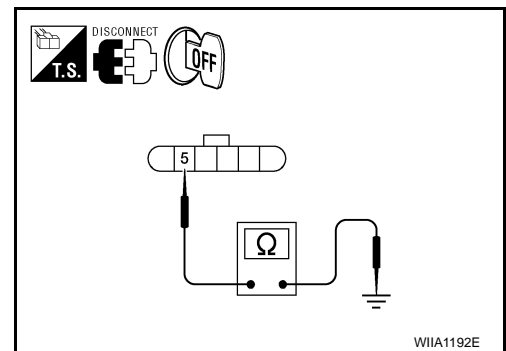
Check continuity between front door lock actuator LH (door unlock sensor) harness connector D51 terminal 5 and ground.

5 – Ground : Continuity should exist.

OK or NG

OK >> GO TO 4.

NG >> Repair or replace harness.



4. CHECK INTELLIGENT KEY UNIT OUTPUT SIGNAL

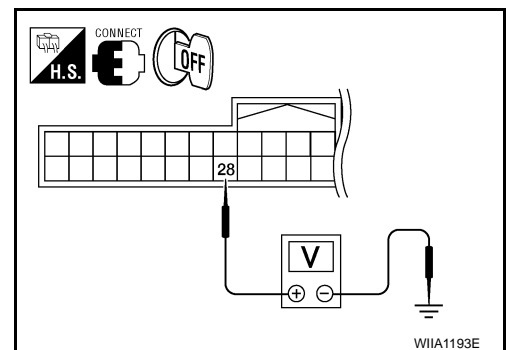
1. Connect Intelligent Key unit harness connector.
2. Check voltage between Intelligent Key unit harness connector M52 terminal 28 and ground.

28 – Ground : Approx. 5V

OK or NG

OK >> Replace front door lock actuator LH (door unlock sensor).

NG >> Replace Intelligent Key unit. Refer to [BL-97. "Removal and Installation of Intelligent Key Unit"](#).



Intelligent Key Warning Chime (Combination Meter) Check

INFOID:000000001721420

1. CHECK INTELLIGENT KEY WARNING CHIME (COMBINATION METER) OPERATION

Using CONSULT-III, enter "INTELLIGENT KEY" menu and select "ACTIVE TEST". Activate "INSIDE BUZZER" and listen for a chime response.

OK or NG

OK >> Warning chime is OK.

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

NG >> Refer to [DI-50](#).

Check Intelligent Key Warning Buzzer (Front of Vehicle)

INFOID:000000001721421

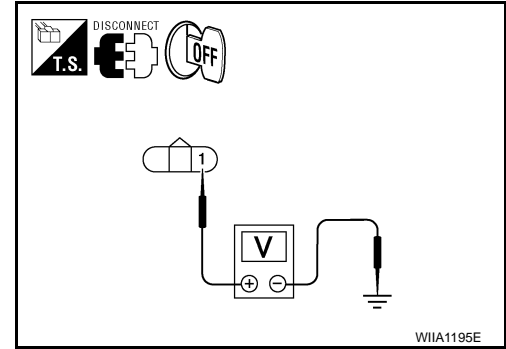
1. CHECK INTELLIGENT KEY WARNING BUZZER (FRONT OF VEHICLE) POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect Intelligent Key warning buzzer (front of vehicle) connector.
3. Check voltage between Intelligent Key warning buzzer (front of vehicle) harness connector E127 terminal 1 and ground.

1 - Ground : Battery voltage

OK or NG

- OK >> GO TO 2.
NG >> Repair or replace Intelligent Key warning buzzer (front of vehicle) power supply circuit.



2. CHECK INTELLIGENT KEY WARNING BUZZER (FRONT OF VEHICLE) CIRCUIT

1. Disconnect Intelligent Key unit connector.
2. Check continuity between Intelligent Key unit harness connector (A) M52 terminal 4 and Intelligent Key warning buzzer (front of vehicle) harness connector E127 terminal 3.

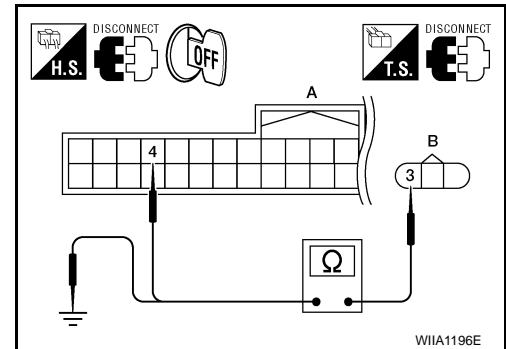
4 - 3 : Continuity should exist.

3. Check continuity between Intelligent Key warning buzzer (front of vehicle) harness connector E127 terminal 3 and ground.

3 - Ground : Continuity should not exist.

OK or NG

- OK >> GO TO 3.
NG >> Repair or replace harness between Intelligent Key warning buzzer (front of vehicle) and Intelligent Key unit.



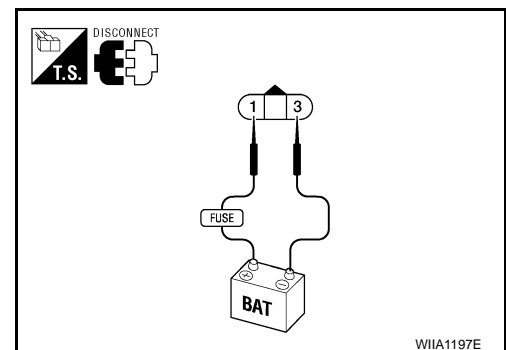
3. CHECK INTELLIGENT KEY WARNING BUZZER (FRONT OF VEHICLE) OPERATION

Connect battery power supply to Intelligent Key warning buzzer (front of vehicle) harness connector E127 terminals 1 and 3, and check the operation.

1 (BAT+) - 3 (BAT-) : The buzzer sounds

OK or NG

- OK >> Intelligent Key warning buzzer (front of vehicle) is OK.
NG >> Replace Intelligent Key warning buzzer (front of vehicle).



Outside Key Antenna Check

INFOID:000000001721422

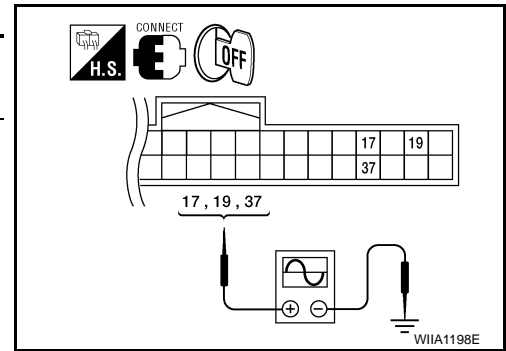
1. CHECK OUTSIDE KEY ANTENNA INPUT SIGNAL

1. Turn ignition switch OFF.
2. Check signal between Intelligent Key unit connector M52 terminals 17, 19, 37 and ground with an oscilloscope.

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Connector	Item	Terminals		Condition	Signal (Reference value)
		(+)	(-)		
M52	Rear bumper antenna	17	Ground	Request switch is pushed	
	Front outside antenna LH	19			
	Front outside antenna RH	37			



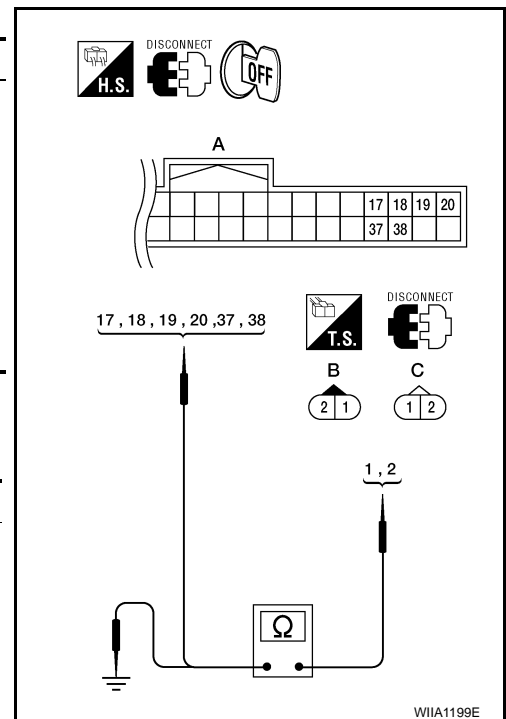
OK or NG

- OK >> Outside key antenna is OK.
- NG >> GO TO 2.

2. CHECK OUTSIDE KEY ANTENNA CIRCUIT

1. Disconnect Intelligent Key unit connector and outside key antenna connector.
2. Check continuity between each outside key antenna harness connector (B) D61 (driver side) or D161 (passenger side), rear bumper antenna connector (C) B23 terminals 1, 2 and Intelligent Key unit harness connector (A) M52 terminals 17, 18, 19, 20, 37, and 38.

Item	Connector	Terminal	Connector	Terminal	Continuity
Rear bumper antenna	C: B23	1	A: M52	17	Yes
		2		18	
Front outside antenna LH	B: D61	1		19	
		2		20	
Front outside antenna RH	B: D161	1		37	
		2		38	



3. Check continuity between each outside key antenna harness connector terminals 1, 2 and ground.

Item	Connector	Terminal	Continuity
Rear bumper antenna	C: B23	1	Ground
		2	
Front outside antenna LH	B: D61	1	
		2	
Front outside antenna RH	B: D161	1	
		2	

OK or NG

- OK >> GO TO 3.
- NG >> Replace harness between outside key antenna and Intelligent Key unit.

3. CHECK OUTSIDE KEY ANTENNA POWER SUPPLY

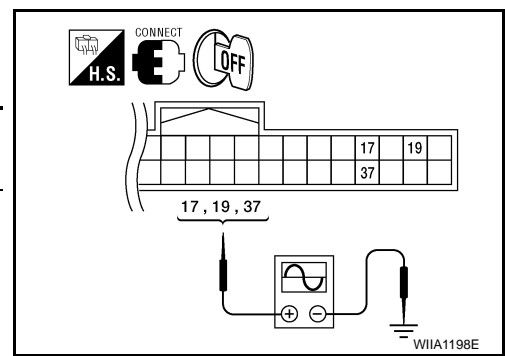
1. Replace outside key antenna. (New antenna or other antenna)
2. Connect Intelligent Key unit connector and outside key antenna connector.

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

- Check signal between Intelligent Key unit connector terminals 17, 19, 37 and ground with an oscilloscope.

Connector	Item	Terminals		Condition	Signal (Reference value)
		(+)	(-)		
M52	Rear bumper	17	Ground	Request switch is pushed	
	LH side	19			
	RH side	37			



OK or NG

- OK >> Replace outside key antenna.
- NG >> Replace Intelligent Key unit. Refer to [BL-97. "Removal and Installation of Intelligent Key Unit"](#).

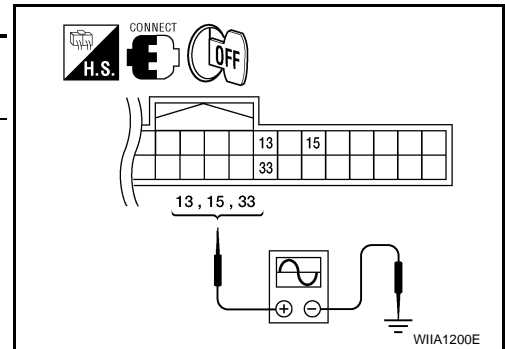
Inside Key Antenna Check

INFOID:000000001721423

1. CHECK INSIDE KEY ANTENNA POWER SUPPLY SIGNAL

- Turn ignition switch OFF.
- Check signal between Intelligent Key unit connector and ground with an oscilloscope.

Connector	Item	Terminals		Condition	Signal (V) (Reference value)
		(+)	(-)		
M52	Rear parcel shelf antenna	33	Ground	Any door is open → All doors are closed	
	Front console antenna	15			
	Instrument panel antenna	13			



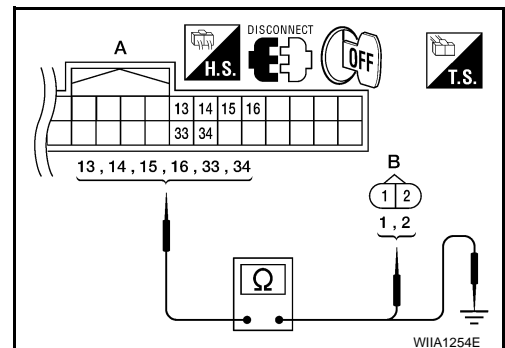
OK or NG

- OK >> Inside key antenna is OK.
- NG >> GO TO 2.

2. CHECK INSIDE KEY ANTENNA

- Disconnect Intelligent Key unit connector and inside key antenna connectors.
- Check continuity between inside key antenna harness connector (B) M76 (instrument panel), M174 (front console), B110 (rear parcel shelf) terminals 1, 2 and Intelligent Key unit harness connector (A) M52 terminals 13, 14, 15, 16, 33 and 34.

Item	Connector	Terminal	Connector	Terminal	Continuity
Instrument panel antenna	B: M76	1	A: M52	13	Yes
		2		14	
Front console antenna	B: M174	1		15	
		2		16	
Rear parcel shelf antenna	B: B110	1		33	
		2		34	



INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

- Check continuity between Intelligent Key unit harness connector (A) M52 terminals 13, 14, 15, 16, 33, 34 and ground.

Item	Connector	Terminals	Continuity	
Intelligent Key unit	A: M52	13	Ground	No
		14		
		15		
		16		
		33		
		34		

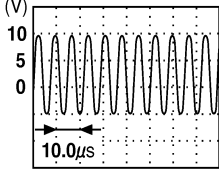
OK or NG

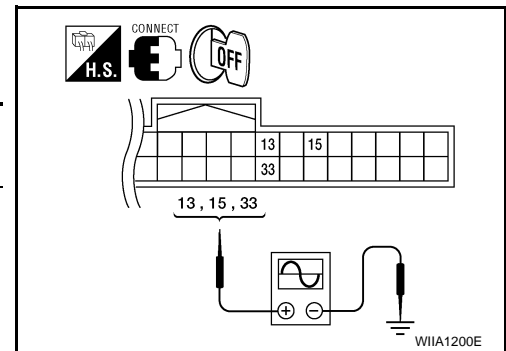
OK >> GO TO 3.

NG >> Repair or replace harness between inside key antenna and Intelligent Key unit.

3. CHECK INSIDE KEY ANTENNA POWER SUPPLY SIGNAL

- Replace inside key antenna. (New antenna or other antenna)
- Connect Intelligent Key unit connector.
- Check signal between Intelligent Key unit connector and ground with oscilloscope.

Connector	Item	Terminals		Condition	Signal (V) (Reference value)
		(+)	(-)		
M52	Rear parcel shelf antenna	33	Ground	Any door is open → All doors are closed	
	Front console antenna	15	Ground	Ignition switch is pushed.	
	Instrument panel antenna	13			



OK or NG

OK >> Replace inside key antenna.

NG >> Replace Intelligent Key unit. Refer to [BL-97. "Removal and Installation of Intelligent Key Unit"](#).

Remote Keyless Entry Receiver Check

INFOID:000000001721424

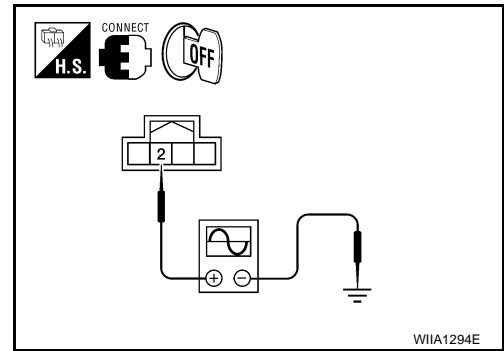
1. CHECK REMOTE KEYLESS ENTRY RECEIVER OUTPUT SIGNAL

- Turn ignition switch OFF.
- Check remote keyless entry receiver signal with an oscilloscope.

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Terminals			Keyfob condition	Signal (Reference value)
(+)		(-)		
Remote keyless entry receiver connector	Terminal			
M78	2	Ground	No function	<p>OCC3879D</p>
			Any button is pressed	<p>OCC3880D</p>



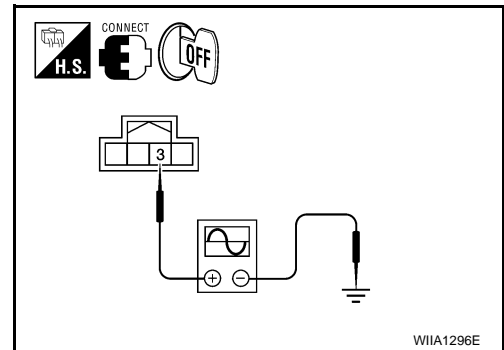
OK or NG

- OK >> GO TO 2.
- NG >> GO TO 5.

2. REMOTE KEYLESS ENTRY RECEIVER VOLTAGE CIRCUIT INSPECTION

Check voltage between remote keyless entry receiver connector M78 terminal 3 and ground using an oscilloscope.

Terminals			Keyfob condition	Signal (Reference value)
(+)		(-)		
Remote keyless entry receiver connector	Terminal			
M78	3	Ground		<p>PIIA2344E</p>



OK or NG

- OK >> GO TO 3.
- NG >> GO TO 5.

3. REMOTE KEYLESS ENTRY RECEIVER 5-VOLT CIRCUIT INSPECTION

INTELLIGENT KEY SYSTEM

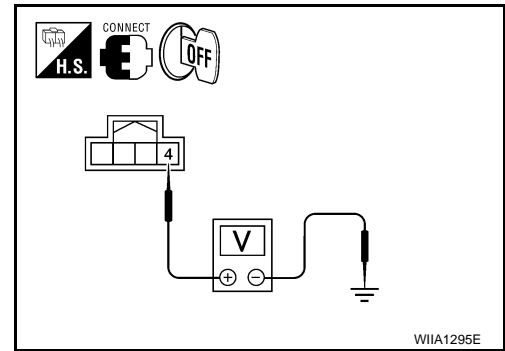
< SERVICE INFORMATION >

Check voltage between remote keyless entry receiver connector M78 terminal 4 and ground.

4 - Ground : 5 volt.

OK or NG

- OK >> GO TO 4.
- NG >> GO TO 5.



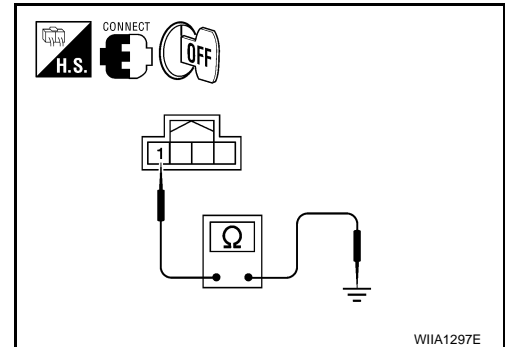
4. REMOTE KEYLESS ENTRY RECEIVER GROUND CIRCUIT INSPECTION

Check continuity between remote keyless entry receiver connector M78 terminal 1 and ground.

1 - Ground : Continuity should exist.

OK or NG

- OK >> Replace remote keyless entry receiver. Refer to [BL-97. "Removal and Installation of Remote Keyless Entry \(RKE\) Receiver"](#).
- NG >> GO TO 5.



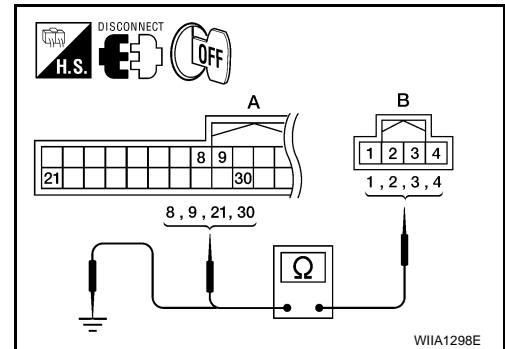
5. HARNESS INSPECTION BETWEEN INTELLIGENT KEY UNIT AND RKE RECEIVER

1. Disconnect remote keyless entry receiver and Intelligent Key unit connectors.
2. Check continuity between Intelligent Key unit connector (A) M52 terminals 8, 9, 21, 30 and remote keyless entry receiver connector (B) M78 terminals 1, 2, 3, 4.

1 - 8 : Continuity should exist.
2 - 9 : Continuity should exist.
3 - 21 : Continuity should exist.
4 - 30 : Continuity should exist.

3. Check continuity between remote keyless entry receiver connector (B) M78 terminals 1, 2, 3, 4 and ground.

1 - Ground : Continuity should not exist.
2 - Ground : Continuity should not exist.
3 - Ground : Continuity should not exist.
4 - Ground : Continuity should not exist.



OK or NG

- OK >> Remote keyless entry receiver circuits are OK.
- NG >> Repair or replace the harness between the remote keyless entry receiver and Intelligent Key unit.

Steering Lock Solenoid Check

INFOID:000000001721425

1. CHECK STEERING LOCK SOLENOID POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect steering lock solenoid connector.
3. Check voltage between steering lock solenoid harness connector M72 terminal 1 and ground.

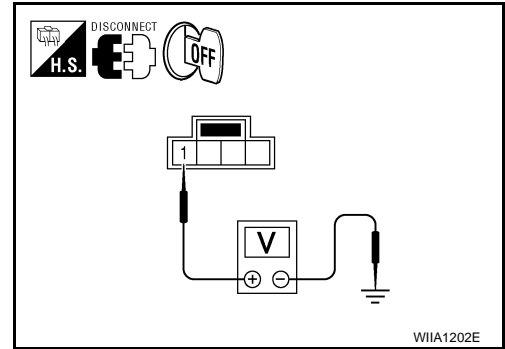
INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

1 - Ground : Battery voltage

OK or NG

- OK >> GO TO 2.
- NG >> Repair or replace steering lock solenoid power supply circuit.



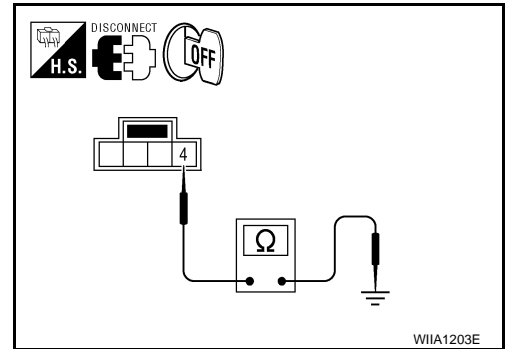
2. CHECK STEERING LOCK SOLENOID GROUND CIRCUIT

Check continuity between steering lock solenoid harness connector M72 terminal 4 and ground.

4 - Ground : Continuity should exist.

OK or NG

- OK >> GO TO 3.
- NG >> Repair or replace the steering lock solenoid ground circuit.



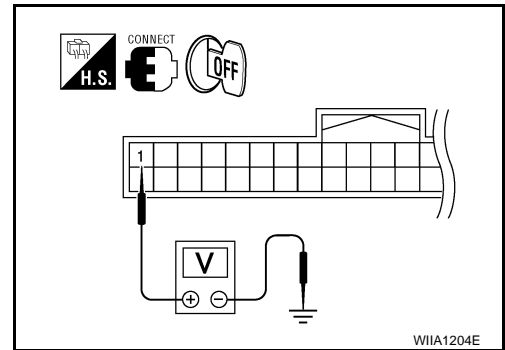
3. CHECK INTELLIGENT KEY UNIT OUTPUT SIGNAL

1. Connect steering lock solenoid connector.
2. Check voltage between Intelligent Key unit harness connector M52 terminal 1 and ground.

1 - Ground : Approx. 5V

OK or NG

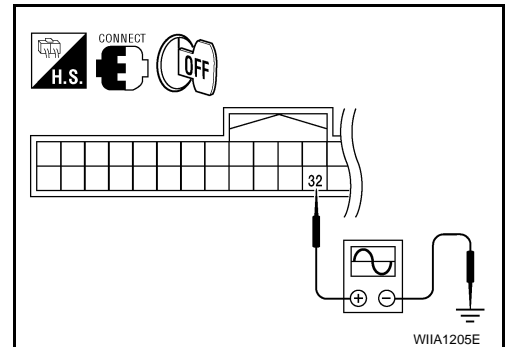
- OK >> GO TO 4.
- NG >> Replace Intelligent Key unit. Refer to [BL-97, "Removal and Installation of Intelligent Key Unit"](#).



4. CHECK STEERING LOCK COMMUNICATION SIGNAL

Check signal between Intelligent Key unit connector M52 terminal 32 and ground with oscilloscope.

Connector	Terminals		Condition	Signal (V) (Reference value)
	(+)	(-)		
M52	32	Ground	Ignition switch is pushed	<p>SIIA1911J</p>



OK or NG

- OK >> GO TO 5.
- NG >> Replace Intelligent Key unit. Refer to [BL-97, "Removal and Installation of Intelligent Key Unit"](#).

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

5. CHECK STEERING LOCK SOLENOID COMMUNICATION CIRCUIT

1. Disconnect Intelligent Key unit and steering lock solenoid connectors.
2. Check continuity between Intelligent Key unit harness connector (B) M52 terminals 1, 32 and steering lock solenoid connector (A) M72 terminals 2, 3.

1 - 2 : Continuity should exist.

32 - 3 : Continuity should exist.

3. Check continuity between steering lock solenoid harness connector (A) M72 terminals 2, 3 and ground.

2 - Ground : Continuity should not exist.

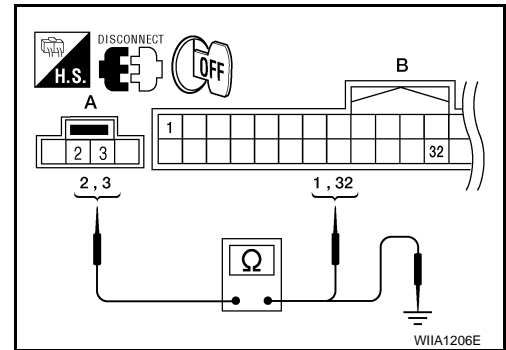
3 - Ground : Continuity should not exist.

OK or NG

OK >> Replace steering lock solenoid.

- After replacing steering lock solenoid, perform registration procedure. Refer to [BL-37, "System Description"](#).

NG >> Repair or replace harness between steering lock solenoid and Intelligent Key unit.



CVT Device (Detention Switch Key) Check

INFOID:000000001721427

1. CHECK CVT DEVICE (DETENTION SWITCH KEY) INPUT SIGNAL

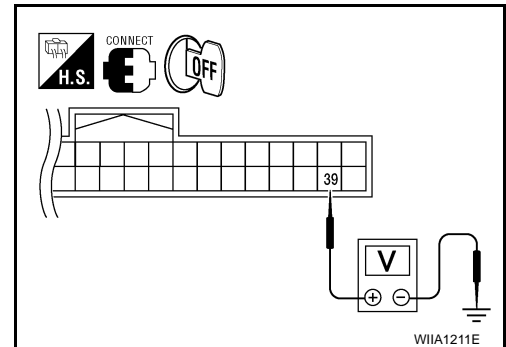
1. Turn ignition switch OFF.
2. While pressing the ignition knob switch, check voltage between Intelligent Key unit harness connector M52 terminal 39 and ground.

Connector	Terminals		Condition	Voltage (V) (Approx.)
	(+)	(-)		
M52	39	Ground	Selector lever is in "P" position	Battery voltage
			Other than above	0

OK or NG

OK >> Replace Intelligent Key unit. Refer to [BL-97, "Removal and Installation of Intelligent Key Unit"](#).

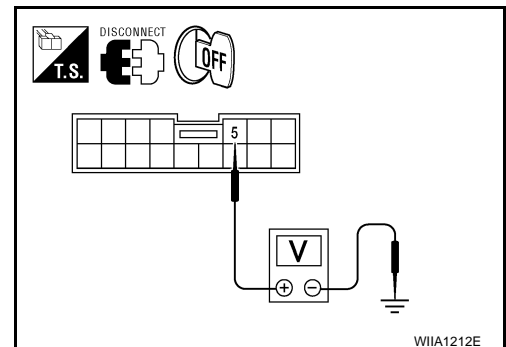
NG >> GO TO 2.



2. CHECK CVT DEVICE (DETENTION SWITCH KEY) POWER SUPPLY CIRCUIT

1. Disconnect CVT device (detention switch key) connector.
2. While pressing the ignition knob switch, check voltage between CVT device (detention switch key) harness connector M34 terminal 5 and ground.

5 - Ground : Battery voltage.



OK or NG

OK >> GO TO 3.

NG >> Repair or replace harness or ignition knob switch.

3. CHECK CVT DEVICE (DETENTION SWITCH KEY)

Check continuity between CVT device (detention switch key) terminals 5 and 6.

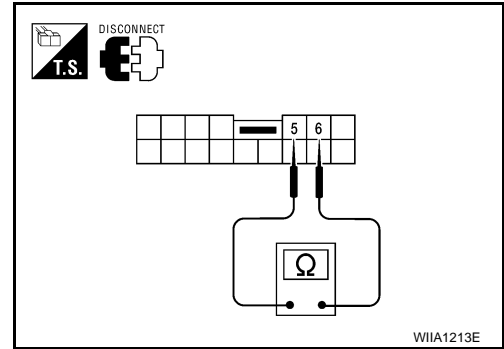
INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Component	Terminals		Condition	Continuity
CVT device (detention switch key)	5	6	Selector lever is in "P" position	Yes
			Other than above	No

OK or NG

- OK >> GO TO 4.
 NG >> Replace CVT device (detention switch key).



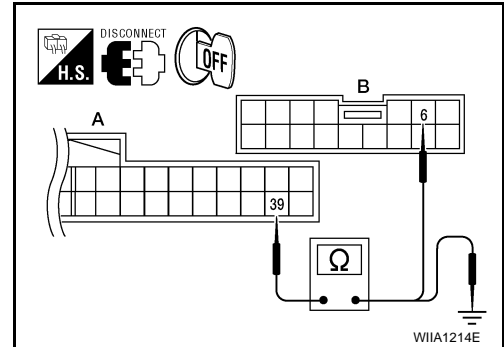
4. CHECK CVT DEVICE (DETENTION SWITCH KEY) CIRCUIT

1. Disconnect Intelligent Key unit connector.
2. Check continuity between Intelligent Key unit harness connector (A) M52 terminal 39 and CVT device (detention switch key) harness connector (B) M34 terminal 6.

39 – 6 : Continuity should exist.

3. Check continuity between Intelligent Key unit harness connector (A) M52 terminals 39 and ground.

39 – Ground : Continuity should not exist.



OK or NG

- OK >> CVT device (detention switch key) circuit is OK.
 NG >> Repair or replace harness.

"P-SHIFT" Warning Lamp Check

INFOID:000000001721428

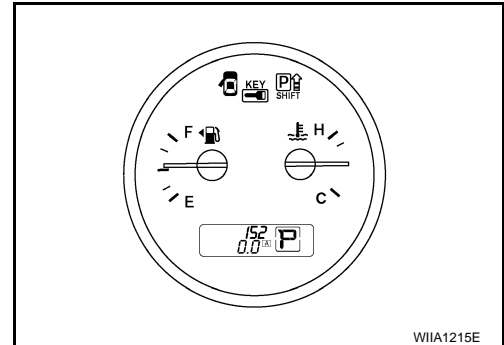
1. CHECK WARNING LAMP OPERATION

With CONSULT-III

- Check "INDICATOR" in "ACTIVE TEST" mode with CONSULT-III.
 - Select "KNOB ON".
- "P-SHIFT" warning lamp should illuminate.

Without CONSULT-III

1. Turn ignition switch OFF.
2. While monitoring the combination meter warning lamps, turn ignition switch ON. "P-SHIFT" warning lamp should illuminate for 1 second to perform a bulb check.



OK or NG

- OK >> INSPECTION END
 NG >> Check combination meter. Refer to [DI-5](#).

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

"KEY" Warning Lamp (RED) Check

INFOID:000000001721429

1. CHECK WARNING LAMP OPERATION

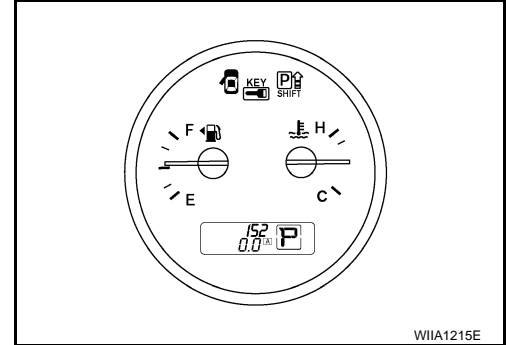
With CONSULT-III

- Check "INDICATOR" in "ACTIVE TEST" mode with CONSULT-III.
- Select "RED ON".

"KEY" warning lamp (red) should illuminate.

Without CONSULT-III

1. Turn ignition switch OFF.
2. Ensure Intelligent Key is outside and away from the vehicle.
3. While monitoring the combination meter warning lamps, push the ignition knob switch.
4. The "KEY" warning lamp (red) should illuminate indicating that the Intelligent Key is not nearby.



WIA1215E

OK or NG

- OK >> INSPECTION END
- NG >> Check combination meter. Refer to [DI-5](#).

"KEY" Warning Lamp (GREEN) Check

INFOID:000000001721430

1. CHECK WARNING LAMP OPERATION

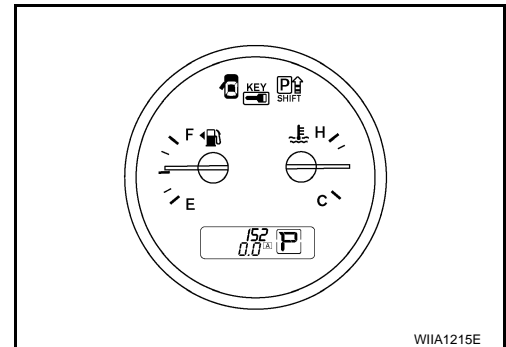
With CONSULT-III

- Check "INDICATOR" in "ACTIVE TEST" mode with CONSULT-III.
- Select "BLUE ON".

"KEY" warning lamp (green) should illuminate.

Without CONSULT-III

1. Turn ignition switch OFF.
2. Ensure Intelligent Key is in your possession inside the vehicle.
3. While monitoring the combination meter warning lamps, push the ignition knob switch.
4. The "KEY" warning lamp (green) should illuminate indicating that the Intelligent Key is nearby.



WIA1215E

OK or NG

- OK >> INSPECTION END
- NG >> Check combination meter. Refer to [DI-5](#).

INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Hazard Function Check

INFOID:000000001721431

1.CHECK HAZARD WARNING LAMP

Does hazard warning lamp flash with hazard switch?

YES or NO

- YES >> Hazard warning lamp circuit is OK.
- NO >> Check hazard circuit. Refer to [LT-66](#).

Check Horn Function

INFOID:000000001721432

First perform the "SELF-DIAG RESULTS" in "BCM" with CONSULT-III, then perform the trouble diagnosis of malfunction system indicated "SELF-DIAG RESULTS" of "BCM". Refer to [BCS-17, "CAN Communication Inspection Using CONSULT-III \(Self-Diagnosis\)"](#).

1.CHECK HORN FUNCTION

Does horn sound with horn switch?

YES or NO

- YES >> Horn circuit is OK.
- NO >> Check horn circuit. Refer to [WW-22](#).

IPDM E/R Operation Check

INFOID:000000001721433

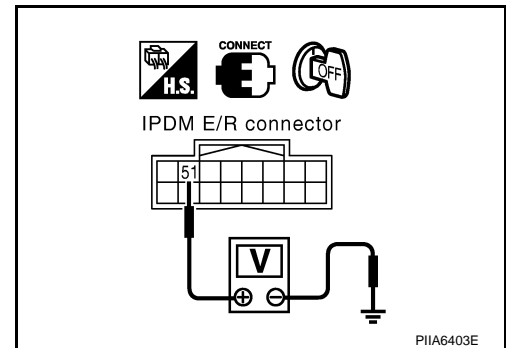
1.CHECK IPDM E/R INPUT SIGNAL

Check voltage between IPDM E/R harness connector E121 terminal 51 and ground.

51 – Ground : Battery voltage

OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-29, "Removal and Installation of IPDM E/R"](#).
- NG >> GO TO 2.



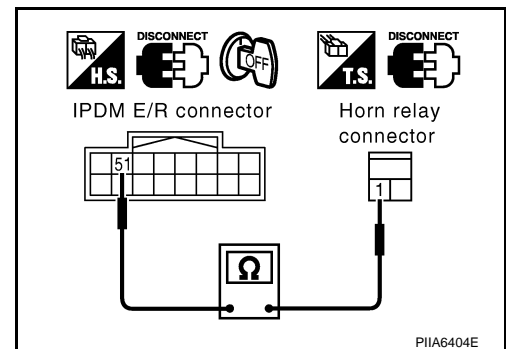
2.CHECK IPDM E/R CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R and horn relay connector.
3. Check continuity between IPDM E/R harness connector E121 terminal 51 and horn relay harness connector H-1 terminal 1.

51 – 1 : Continuity should exist.

OK or NG

- OK >> Check harness connection.
- NG >> Repair or replace harness.

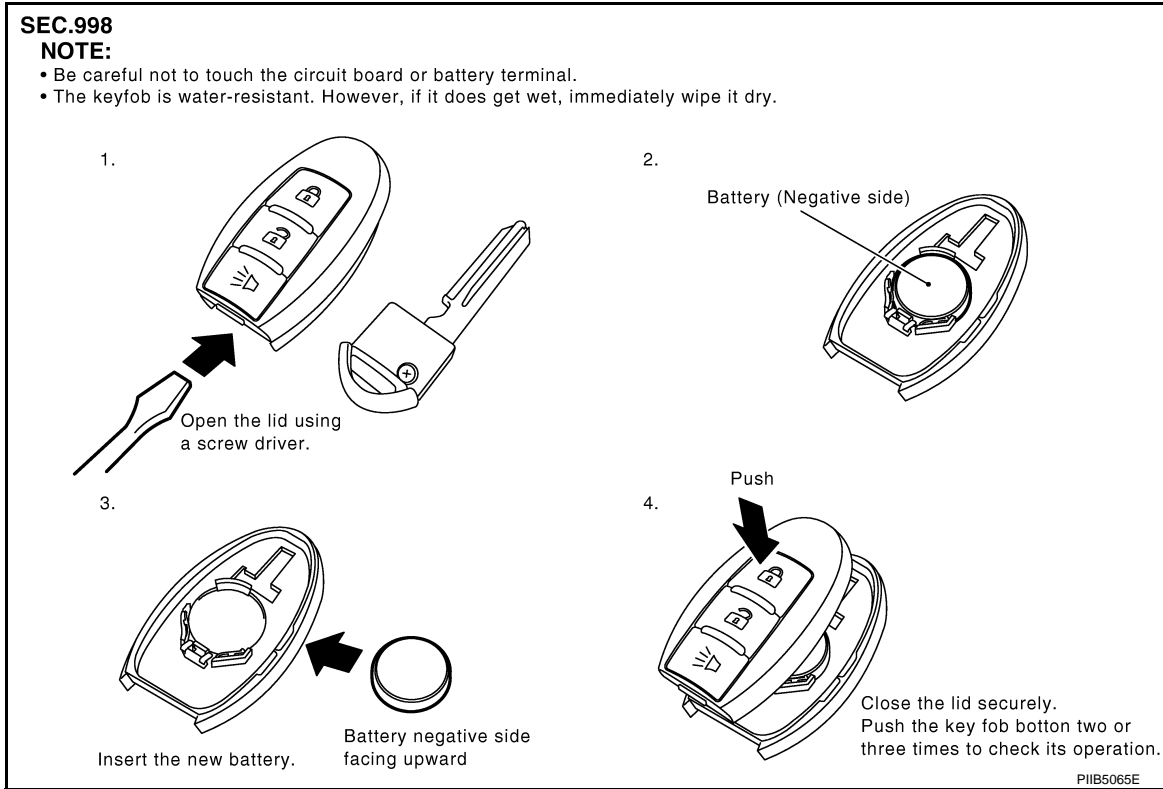


INTELLIGENT KEY SYSTEM

< SERVICE INFORMATION >

Intelligent Key Battery Replacement

INFOID:000000001721434



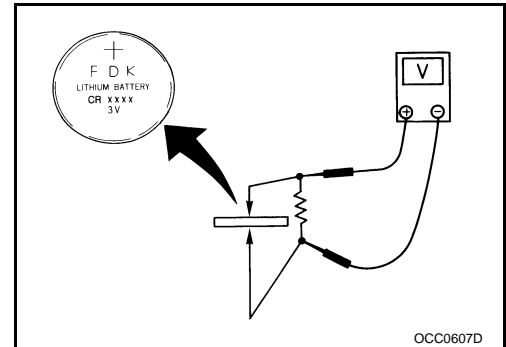
INTELLIGENT KEY BATTERY INSPECTION

1. Remove battery to measure voltage across battery positive (+) and negative (-) terminals.
2. Check by connecting a resistance (approximately 300Ω) so that the current value becomes about 10 mA.

Standard : Approx. 2.5 - 3.0V

NOTE:

Key fob does not function if battery is not installed correctly.



Remote Keyless Entry Function

INFOID:000000001721435

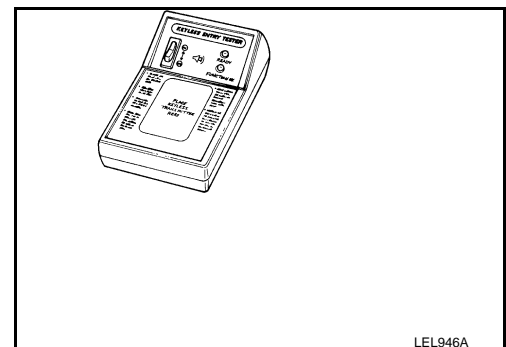
1. CHECK KEYFOB FUNCTION

Check keyfob function using Remote Keyless Entry Tester J-43241. Does the test pass?

YES or NO

YES >> Keyfob is OK.

NO >> Replace keyfob. Refer to [BL-37. "System Description"](#).



INTELLIGENT KEY SYSTEM

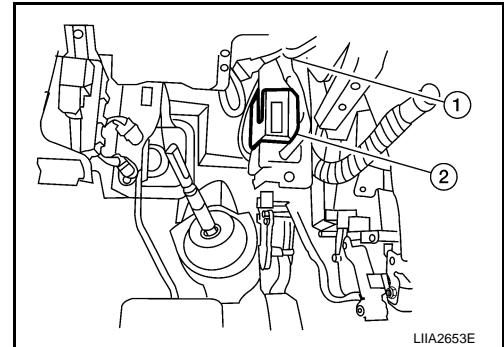
< SERVICE INFORMATION >

Removal and Installation of Intelligent Key Unit

INFOID:000000001721436

REMOVAL

1. Remove the lower driver instrument panel. Refer to [IP-14, "Lower Driver Instrument Panel"](#).
2. Remove the screw (1), disconnect the harness connector and remove the Intelligent Key unit (2).



INSTALLATION

Installation is in the reverse order of removal.

Removal and Installation of Remote Keyless Entry (RKE) Receiver

INFOID:000000001721437

REMOVAL

1. Remove the glove box assembly. Refer to [IP-15, "Glove Box Assembly and Housing"](#).
2. Disconnect Intelligent Key unit connector, remove the nut and the Remote keyless Entry (RKE) receiver.

INSTALLATION

Installation is in the reverse order of removal.

A
B
C
D
E
F
G
H
J
K
L
M
N
O
P

BL

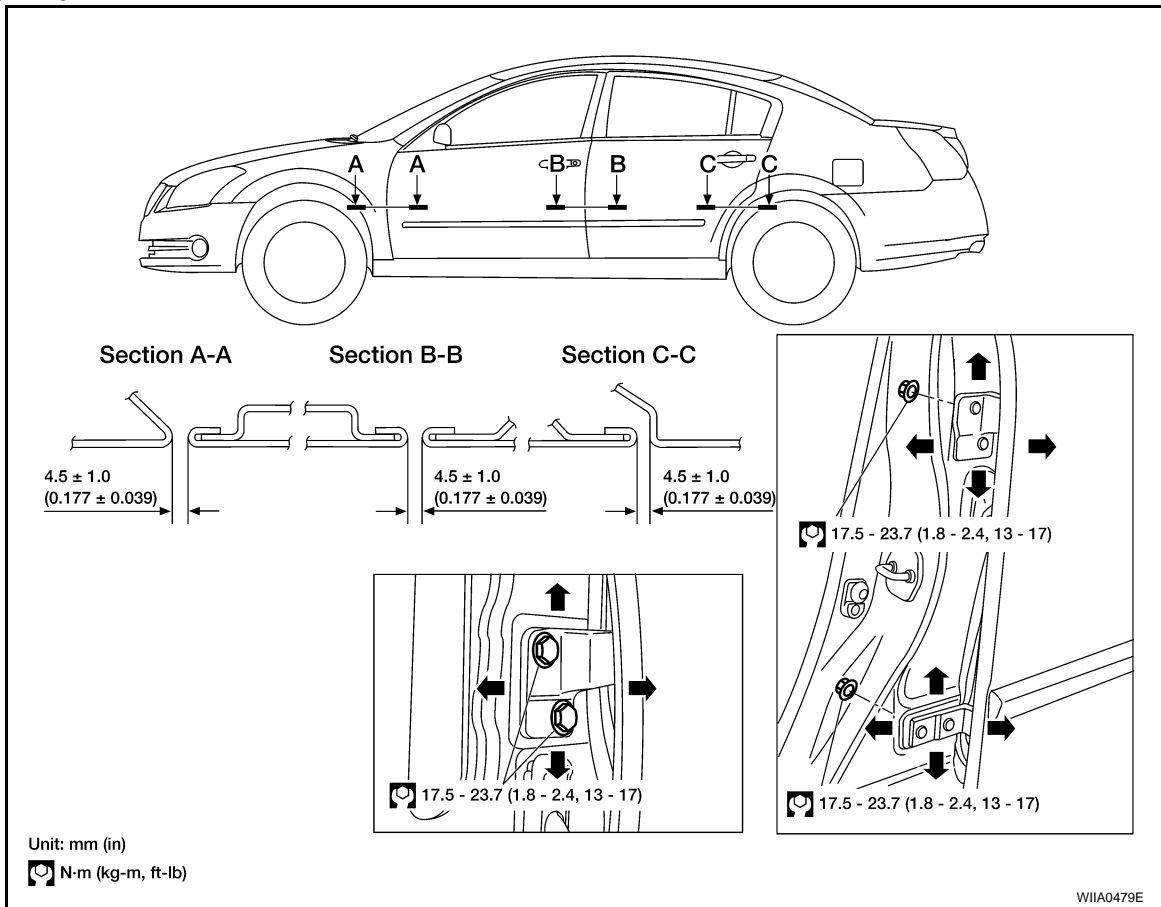
DOOR

< SERVICE INFORMATION >

DOOR

Fitting Adjustment

INFOID:000000001721438



Front door

Longitudinal clearance and surface height adjustment at front end

1. Remove the front fender. Refer to [EI-19](#).
2. Loosen the hinge bolts. Raise the front door at rear end to adjust.
3. Install the front fender. Refer to [EI-19](#).

Rear door

Longitudinal clearance and surface height adjustment at front end

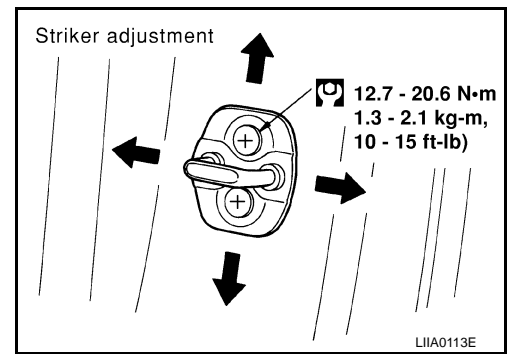
1. Remove the center pillar upper garnish. Refer to [EI-33. "Removal and Installation"](#).
2. Accessing from inside the vehicle, loosen the nuts. Open the rear door, and raise the rear door at rear end to adjust.
3. Install the center pillar upper garnish. Refer to [EI-33. "Removal and Installation"](#).

Striker adjustment

DOOR

< SERVICE INFORMATION >

1. Adjust the striker so that it becomes parallel with the lock insertion direction.

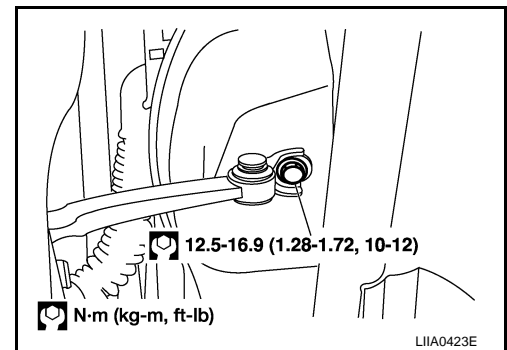


Removal and Installation

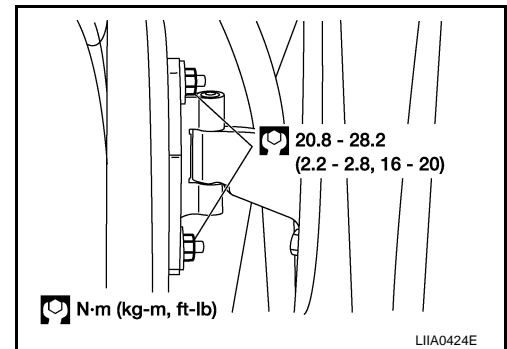
INFOID:000000001721439

CAUTION:

- When removing and installing the door assembly, support the door with a jack and shop cloth to protect the door and body.
 - When removing and installing door assembly, be sure to carry out the fitting adjustment.
 - Check the hinge rotating part for poor lubrication. If necessary, apply "body grease".
1. Remove the door window and module assembly. Refer to [GW-69. "Door Module Assembly"](#).
 2. Remove the door harness.
 3. Remove the check link cover.
 4. Remove the check link hinge pillar bolt.



5. Remove the door-side hinge nuts and bolts, and remove the door assembly.
- Installation is in the reverse order of removal.



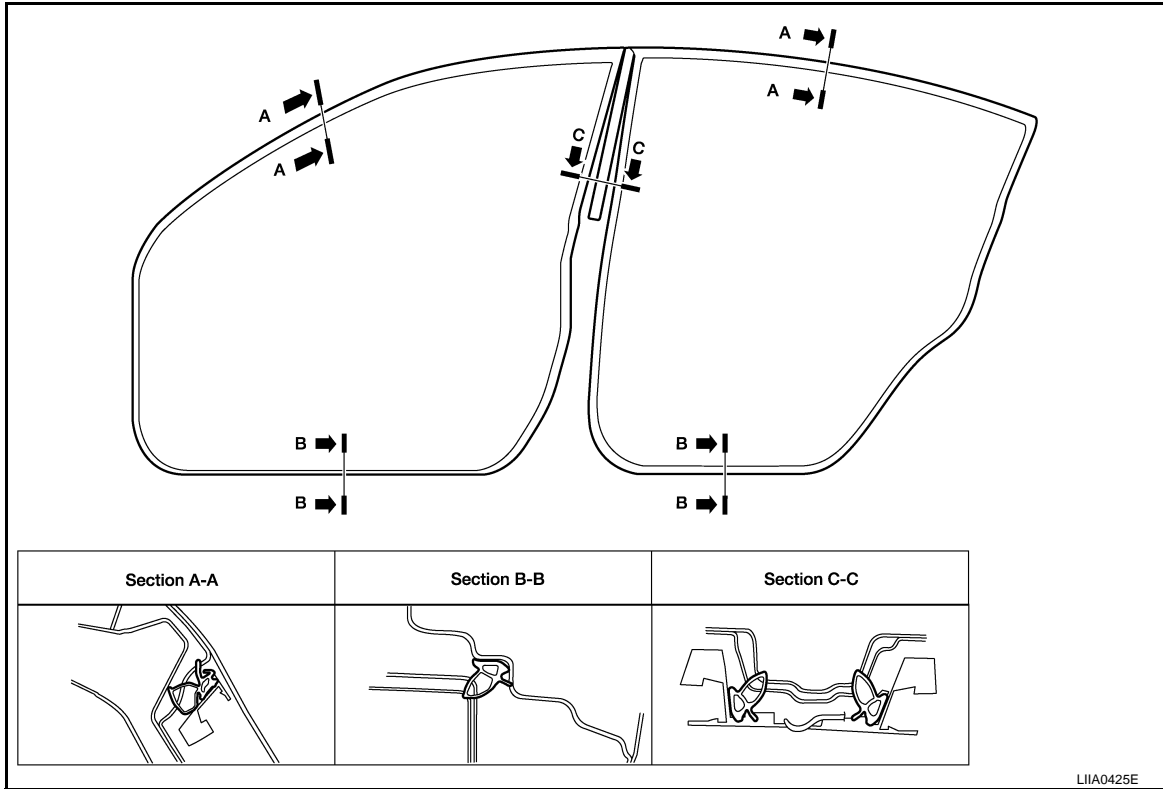
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DOOR

< SERVICE INFORMATION >

Door Weatherstrip

INFOID:000000001721440



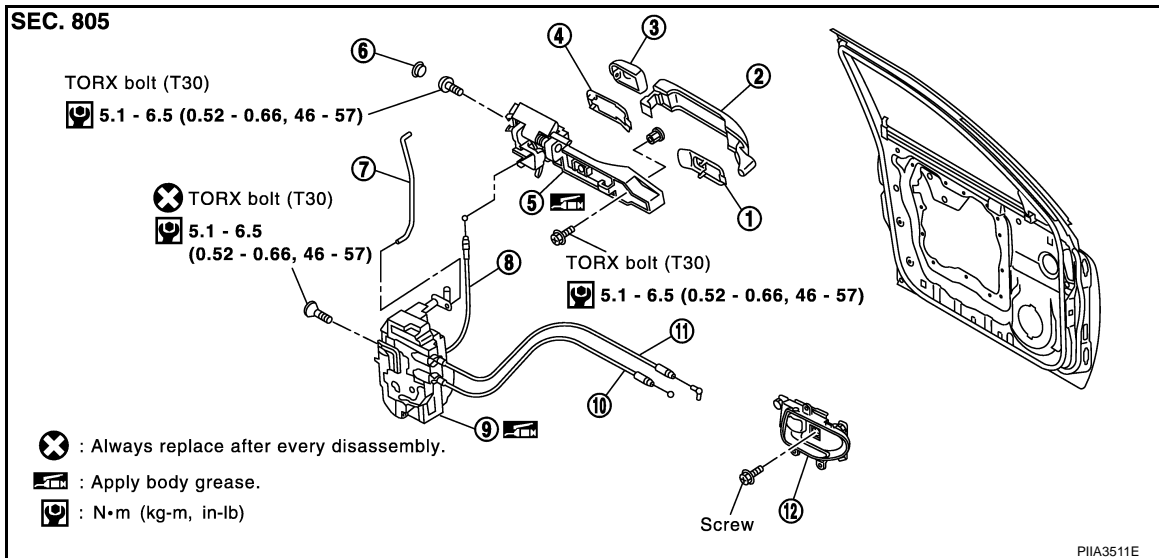
FRONT DOOR LOCK

< SERVICE INFORMATION >

FRONT DOOR LOCK

Component Structure

INFOID:000000001721441



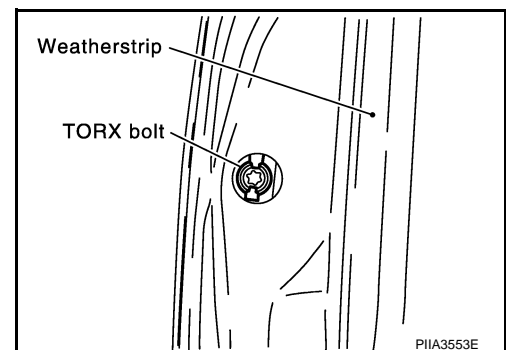
- | | | |
|--|---------------------------|---|
| 1. Front gasket | 2. Outside handle | 3. Door key cylinder assembly (Driver side)
Outside handle escutcheon (Passenger side) |
| 4. Rear gasket | 5. Outside handle bracket | 6. Grommet |
| 7. Key cylinder rod (Driver side only) | 8. Outside handle cable | 9. Door lock assembly |
| 10. Inside handle cable | 11. Lock knob cable | 12. Inside handle |

Removal and Installation

INFOID:000000001721442

REMOVAL

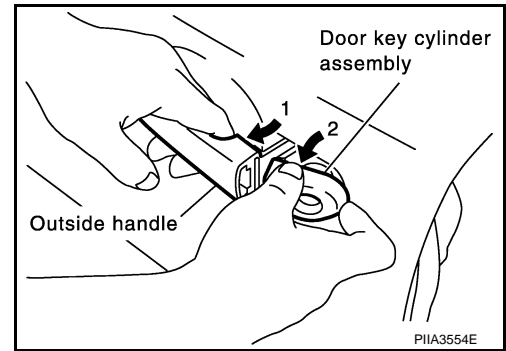
1. Remove the front door window and front door module assembly. Refer to [GW-69, "Door Module Assembly"](#).
2. Disconnect the key cylinder rod, if equipped.
3. Remove door side grommet, and remove door key cylinder assembly (driver side) and outside handle escutcheon (passenger side) bolt (TORX T30) from grommet hole.



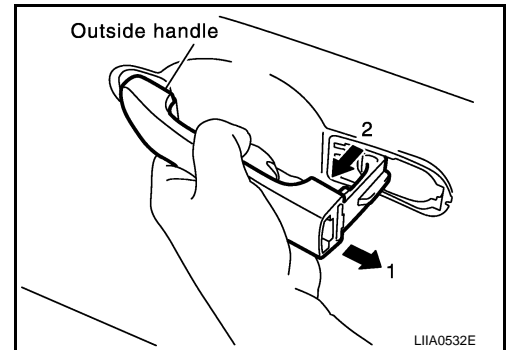
FRONT DOOR LOCK

< SERVICE INFORMATION >

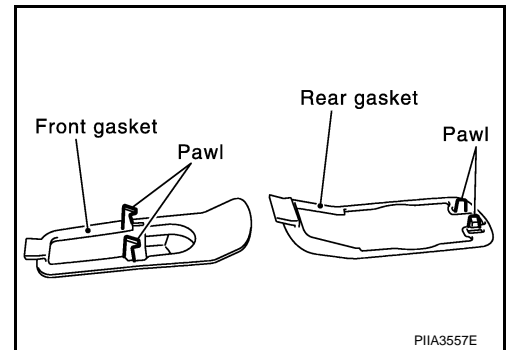
4. While pulling the outside handle, remove door key cylinder assembly (driver side) or outside handle escutcheon (passenger side)..



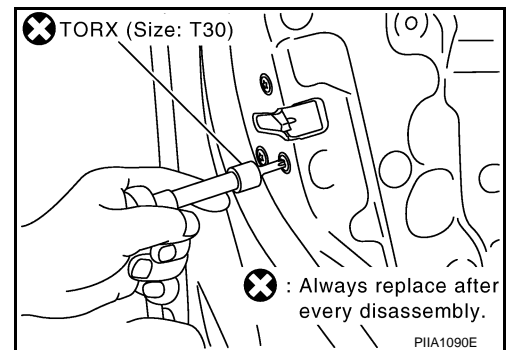
5. Disconnect I-Key harness (if equipped).
6. While pulling outside handle, slide toward rear of vehicle to remove outside handle.



7. Separate outside handle and remove the I-key antenna.
8. Remove the front and rear gaskets.



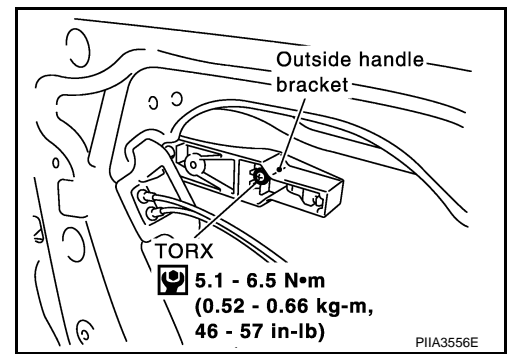
9. Remove the TORX bolts (T30), remove the door lock assembly.



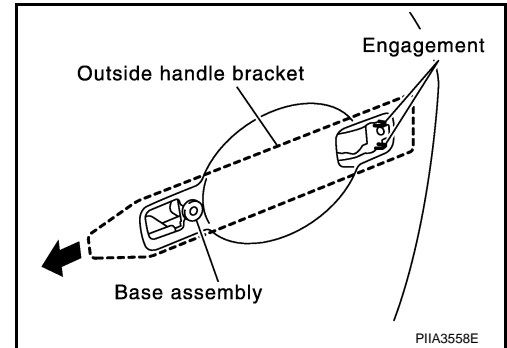
FRONT DOOR LOCK

< SERVICE INFORMATION >

10. Remove the TORX bolt (T30) of the outside handle bracket.

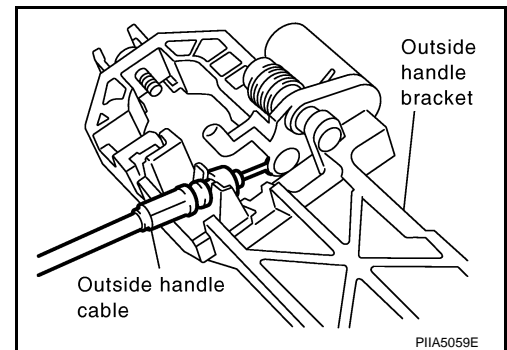


11. While pulling outside handle bracket, slide toward rear of vehicle to remove outside handle bracket and door lock assembly.



12. Disconnect the door lock actuator connector.

13. Disconnect the outside handle cable from the outside handle bracket.



INSTALLATION

Installation is in the reverse order of removal.

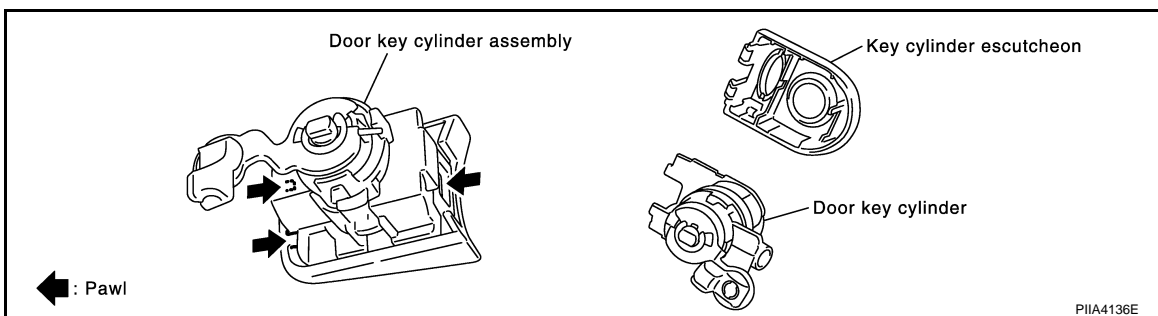
CAUTION:

To install each rod, be sure to rotate the rod holder until a click is felt.

Disassembly and Assembly

INFOID:000000001721443

DOOR KEY CYLINDER ASSEMBLY

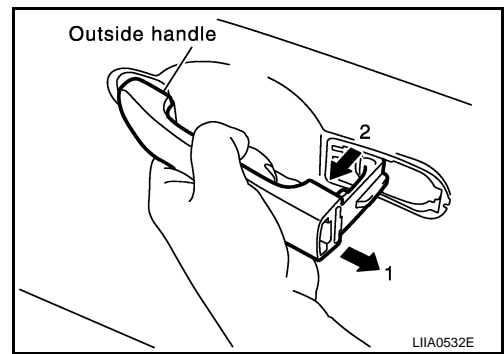


Remove the key cylinder escutcheon pawl and remove the door key cylinder.

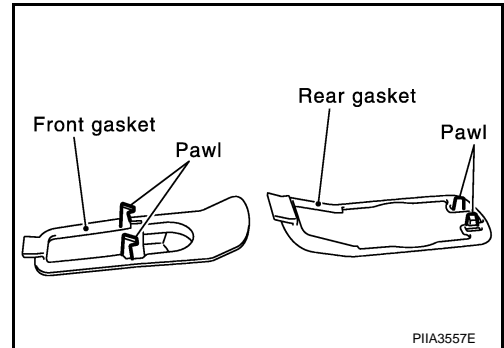
REAR DOOR LOCK

< SERVICE INFORMATION >

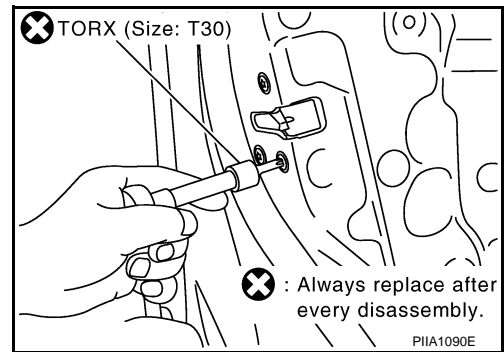
4. While pulling outside handle, slide toward rear of vehicle to remove outside handle.



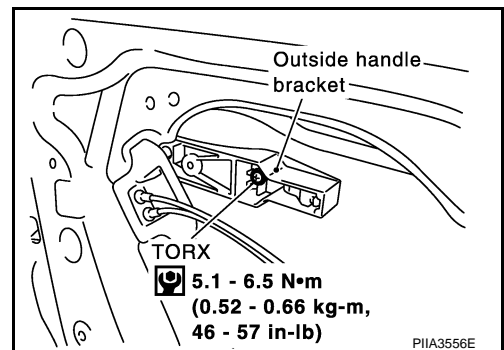
5. Remove the front gasket and rear gasket.



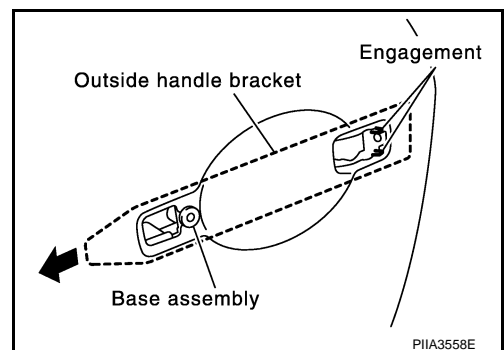
6. Remove the TORX bolts (T30), remove the door lock assembly.



7. Remove the TORX bolt (T30), and remove the outside handle bracket.



8. While pulling outside handle, slide toward rear of vehicle to remove outside handle and door lock assembly.

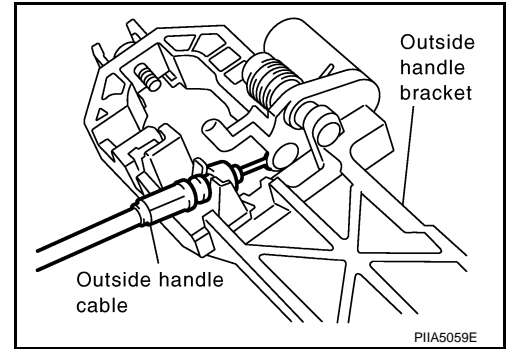


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REAR DOOR LOCK

< SERVICE INFORMATION >

9. Disconnect the door lock actuator connector.
10. Disconnect the outside handle cable from the outside handle bracket.



INSTALLATION

Installation is in the reverse order of removal.

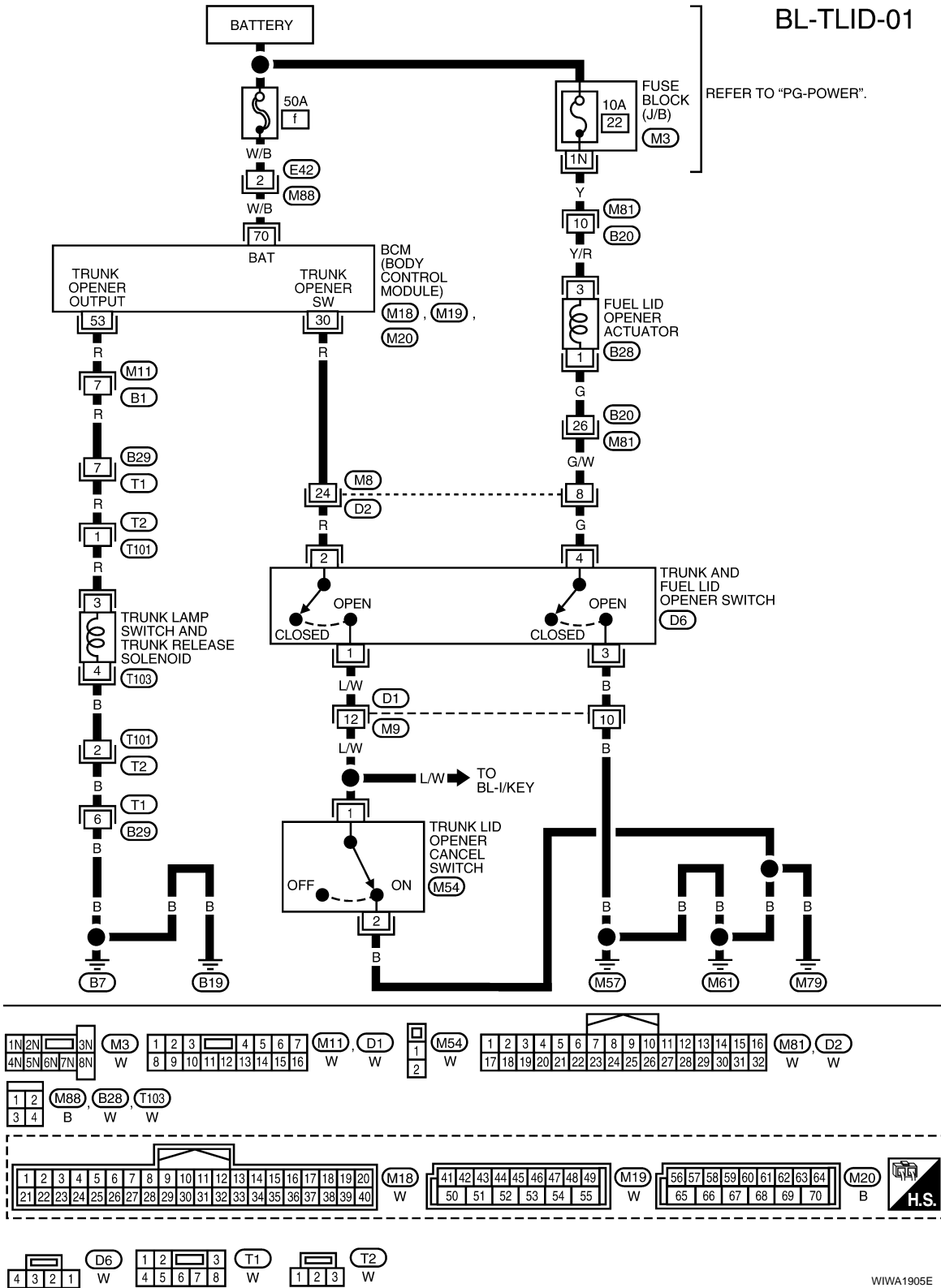
TRUNK LID AND FUEL FILLER LID OPENER

< SERVICE INFORMATION >

TRUNK LID AND FUEL FILLER LID OPENER

Wiring Diagram - TLID -

INFOID:000000001721446



Terminal and Reference Value for BCM

INFOID:000000001721447

Refer to [BCS-11, "Terminal and Reference Value for BCM"](#).

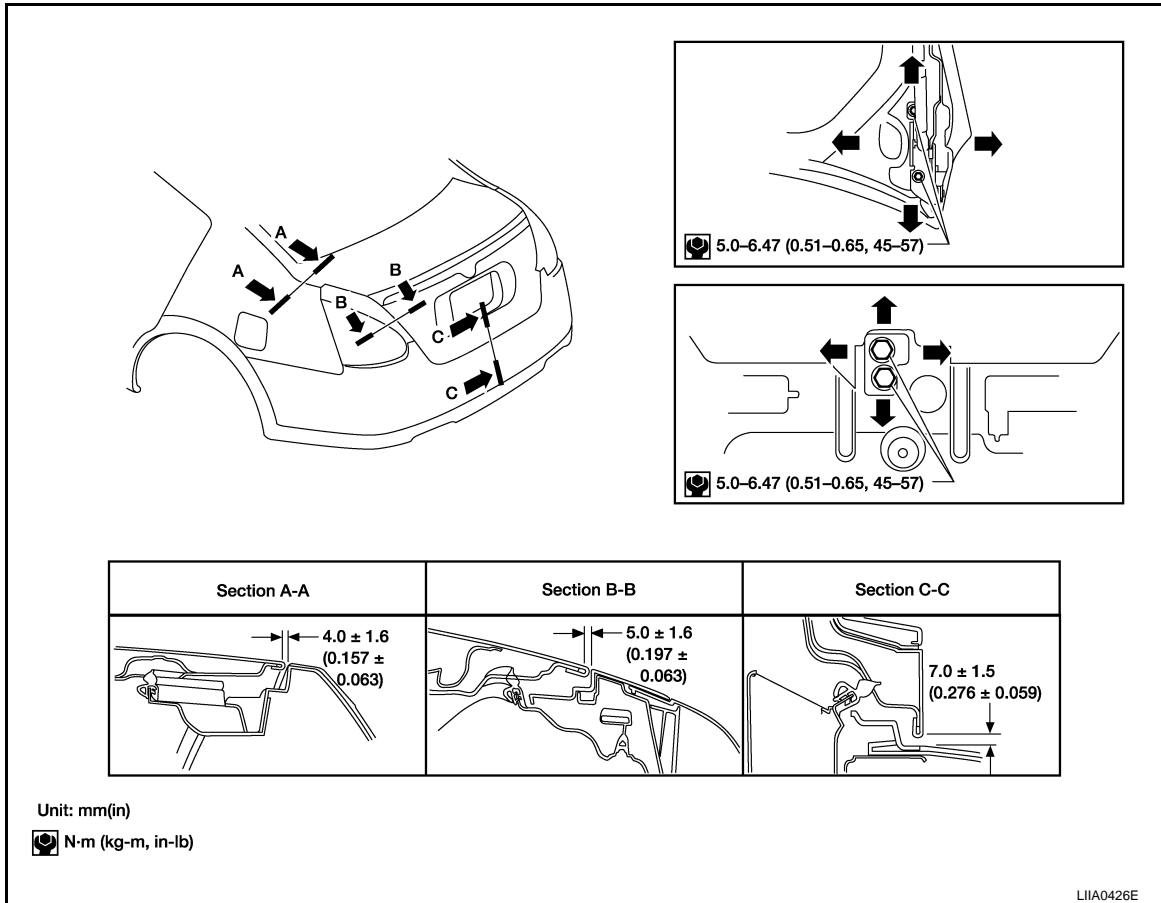
TRUNK LID AND FUEL FILLER LID OPENER

< SERVICE INFORMATION >

Terminal	Wire Color	Item	Condition	Voltage (V) (Approx.)
30	R	Trunk lid opener switch	OFF → ON	Battery voltage → 0
53	R	Trunk lid opener release solenoid	When trunk lid opener release solenoid is operated using key fob (ON → OFF)	0 → Battery voltage
70	W/B	Battery power supply	—	Battery voltage

Fitting Adjustment

INFOID:000000001721448



Longitudinal and lateral clearance adjustment

1. With the striker released, loosen the trunk lid hinge bolts and close the trunk lid.
2. Make the lateral clearance and the clearance to the rear window glass equal, and open the trunk lid to tighten the bolts to the specified torque.

Surface height adjustment

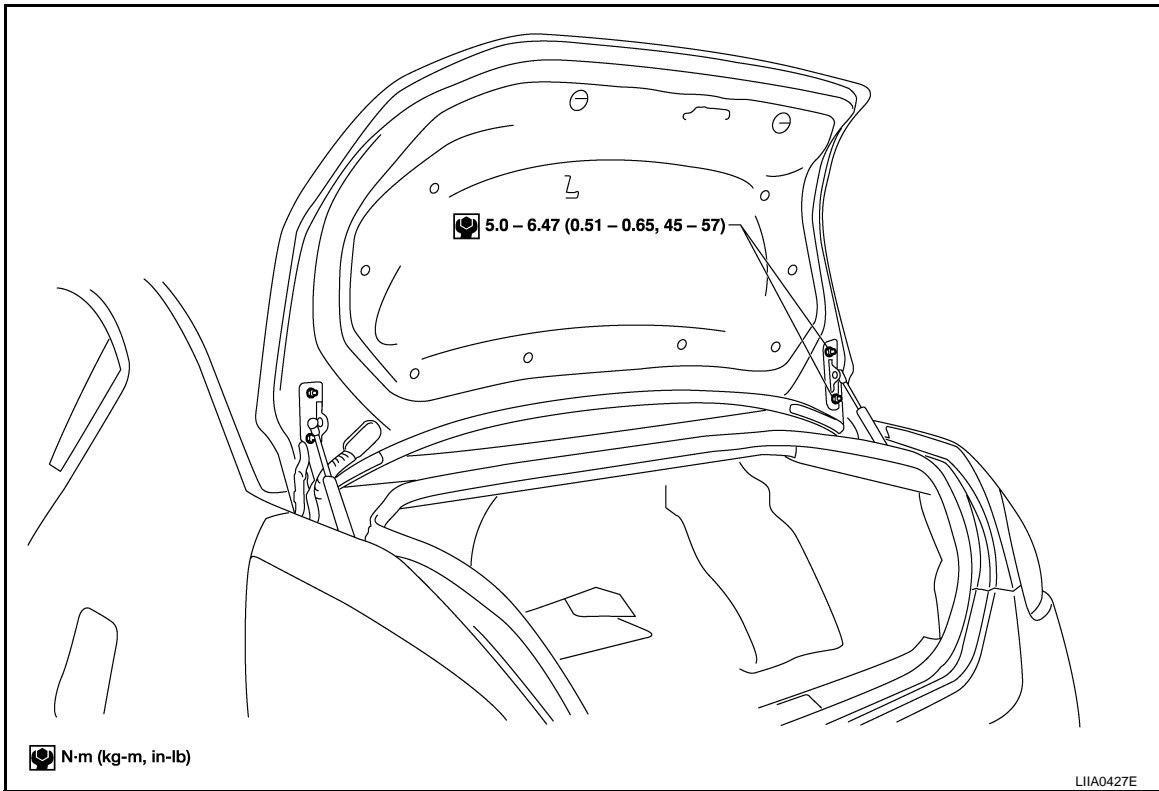
1. Loosen the striker bolts. Raise the striker to the top position, and temporarily tighten the upper bolt.
2. Close the trunk lid lightly and adjust the surface height, then open the trunk lid and tighten the striker bolts to the specified torque.

TRUNK LID AND FUEL FILLER LID OPENER

< SERVICE INFORMATION >

Removal and Installation of Trunk Lid Assembly

INFOID:000000001721449



1. Remove the trunk lid finisher. Refer to [EI-39](#).
2. Remove the trunk lid wire harness.
3. Remove the bolts and the trunk lid assembly.

CAUTION:

After installing, apply touch-up paint (body color) to the head of the hinge bolts.

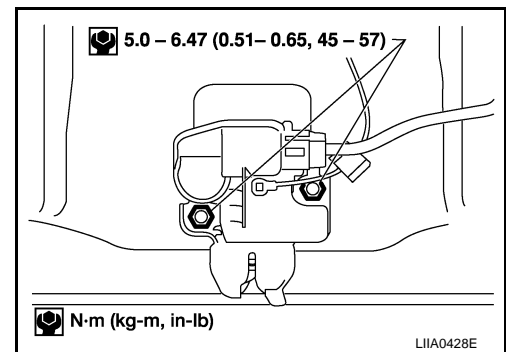
Installation is in the reverse order of removal.

Removal and Installation of Trunk Lid Lock

INFOID:000000001721450

Lock removal

1. Remove the trunk lid finisher. Refer to [EI-39](#).
2. Disconnect the release cable.
3. After disconnecting the harness connector, remove the bolts and the trunk lid lock.



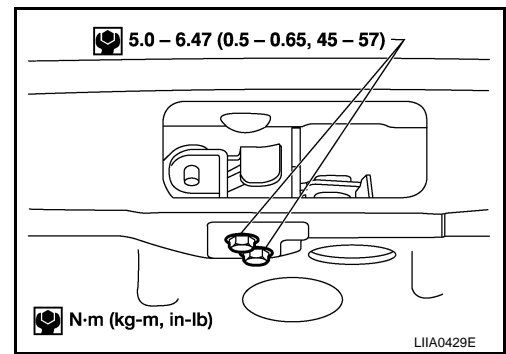
Striker removal

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TRUNK LID AND FUEL FILLER LID OPENER

< SERVICE INFORMATION >

1. Remove the trunk rear plate and trunk rear finisher. Refer to [EL-39](#).
2. After removing the cable connection, remove the bolts, disconnect the release cable, and remove the striker from the trunk lock support.



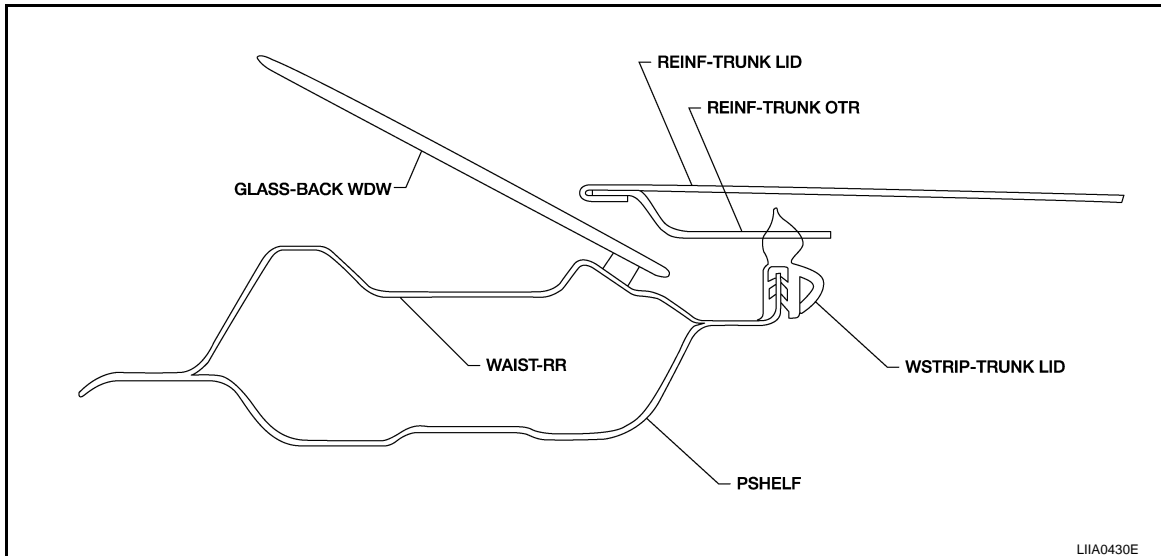
Lock and striker installation

Installation is in the reverse order of removal.

- After installing, close the trunk lid lightly. Perform the lock and surface height adjustment. Refer to [BL-108](#), "[Fitting Adjustment](#)".
- After installing, check the operation.

Removal and Installation of Trunk Lid Weatherstrip

INFOID:000000001721451



1. At rear side, align the weatherstrip seam to the center of the striker.
2. After installing, pull the weatherstrip lightly to check for looseness.

CAUTION:

The weatherstrip should fit tightly onto the corners and trunk lid rear plate.

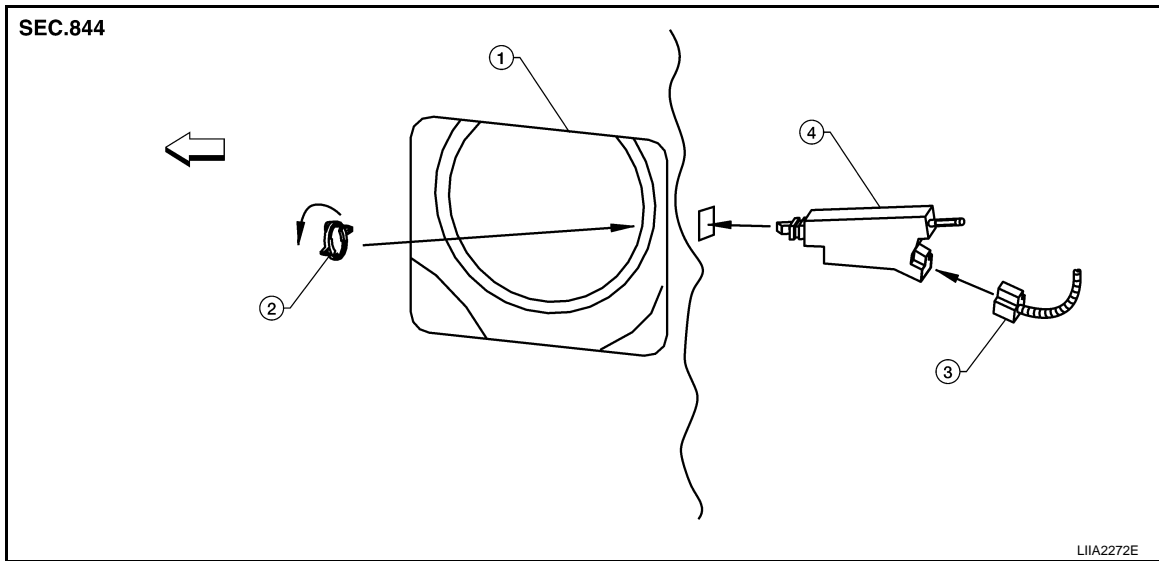
Fuel Filler Lid Opener

INFOID:000000001721452

REMOVAL

TRUNK LID AND FUEL FILLER LID OPENER

< SERVICE INFORMATION >



1. Fuel filler lid opening (LH rear fender) 2. Lock ring 3. Electrical connector
4. Fuel filler lid opener actuator

1. Remove LH trunk side finisher. Refer to [EI-39](#).
2. Open fuel filler lid.
3. Disconnect fuel filler lid opener actuator electrical connector.
4. Remove lock ring and fuel filler lid opener actuator.
 - Turn lock ring 1/4 turn counter-clockwise to remove.

INSTALLATION

Installation is in the reverse order of removal.

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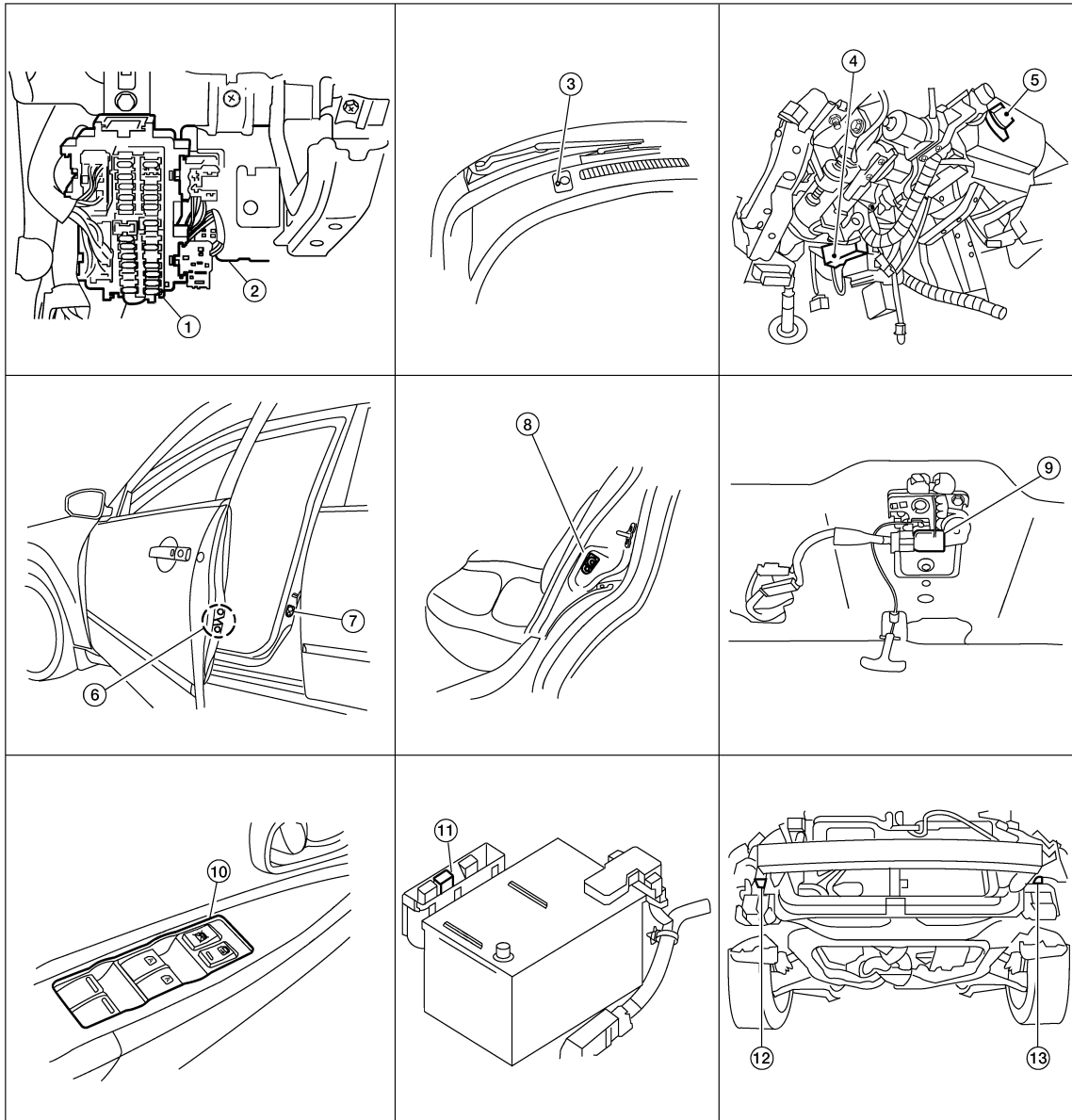
VEHICLE SECURITY (THEFT WARNING) SYSTEM

< SERVICE INFORMATION >

VEHICLE SECURITY (THEFT WARNING) SYSTEM

Component Parts and Harness Connector Location

INFOID:000000001721453



LIA2532E

- | | | |
|---|---|--|
| 1. Fuse block (J/B)
(View with instrument panel removed) | 2. BCM M18, M19, M20 | 3. Security indicator lamp M37 |
| 4. Intelligent Key unit M52
(Bottom view of instrument panel LH) | 5. Key switch and ignition knob switch
M73 | 6. Front door lock assembly LH |
| 7. Front door switch LH B8, RH B108 | 8. Rear door switch LH B18, RH B116 | 9. Trunk lamp switch and trunk release
solenoid T103 |
| 10. Main power window and door lock/un-
lock switch D7, D8 | 11. Horn relay H-1 | 12. Horn (High) E108
(View with front fascia removed) |
| 13. Horn (Low) E3 | | |

System Description

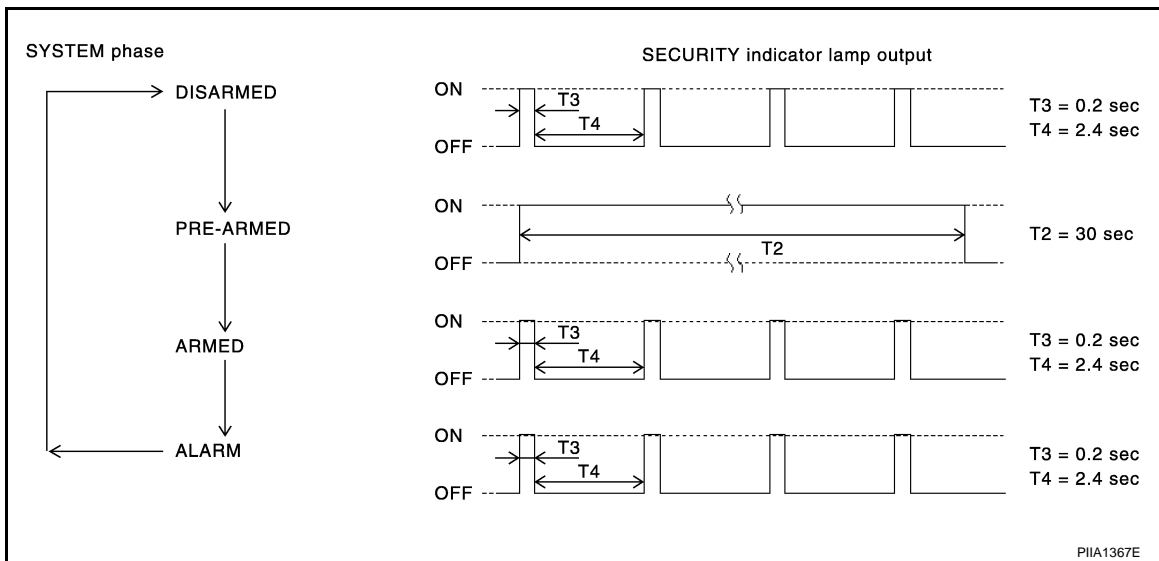
INFOID:000000001721454

DESCRIPTION

Operation Flow

VEHICLE SECURITY (THEFT WARNING) SYSTEM

< SERVICE INFORMATION >



Setting the vehicle security system

Initial condition

- Ignition switch is in OFF position.

Disarmed phase

- When the vehicle is being driven or when doors or trunk lid is open, the vehicle security system is set in the disarmed phase on the assumption that the owner is inside or near the vehicle.

Pre-armed phase and armed phase

- The vehicle security system turns into the "pre-armed" phase (security lamp illuminates) when the BCM receives LOCK signal from front door key cylinder switch or Intelligent Key after trunk and all doors are closed.
- Trunk lid and all doors are closed after front doors are locked by Intelligent key, request switch, key or door lock and unlock switch.

The security indicator lamp illuminates for 30 seconds. then, the system automatically shifts into the "armed" phase.

Canceling the set vehicle security system

When one of the following operations is performed, the armed phase is canceled.

1. Unlock the doors with the request switch, key or Intelligent Key.
2. Open the trunk lid with the key or the Intelligent Key. When the trunk lid is closed after opening the trunk lid with the Intelligent Key, the system returns to the armed phase.

Activating the alarm operation of the vehicle security system

Make sure the system is in the armed phase.

When one of the following operations is performed, the system sounds the horns and flashes the head-lamps for about 50 seconds.

1. Any door is opened before unlocking door with key or Intelligent Key.
2. Door is unlocked without using request switch, key or Intelligent Key.
3. Trunk lid is opened without using request switch, key or Intelligent Key.

POWER SUPPLY AND GROUND

Power is supplied at all times

- through 10A fuse [No.19, located in the fuse block (J/B)]
- to security indicator lamp terminal 1 and
- through 50A fusible link (letter f, located in the fuse and fusible link box)
- to BCM terminal 70
- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to BCM terminal 57
- through 10A fuse (No. 25, located in the fuse and fusible link box)
- to horn relay terminal 2
- through 15A fuses (No. 34 and No. 41, located in the IPDM E/R)

VEHICLE SECURITY (THEFT WARNING) SYSTEM

< SERVICE INFORMATION >

- to IPDM E/R internal CPU.

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

- through 10A fuse [No. 6, located in the fuse block (J/B)]
- to BCM terminal 11.

Ground is supplied

- to BCM terminal 67
- through body grounds M57, M61 and M79.

INITIAL CONDITION TO ACTIVATE THE SYSTEM

The operation of the vehicle security system is controlled by the doors and trunk lid.

To activate the vehicle security system, BCM must receive signals indicating the doors and trunk lid are closed and the doors are locked.

When a door is open, BCM terminal 12, 13, 47 or 48 receives a ground signal from each door switch.

When front door LH is unlocked, BCM terminal 22 receives a signal from terminal 14 of main power window and door lock/unlock switch.

When front door RH or either rear door is unlocked, BCM terminal 22 receives a signal from terminal 16 of power window and door lock/unlock switch RH.

When the trunk lid is open, BCM terminal 42 receives a ground signal

- from terminal 2 of the trunk lamp and trunk release solenoid switch
- through body grounds B7 and B19.

VEHICLE SECURITY SYSTEM ALARM OPERATION

The vehicle security system is triggered by

- opening a door
- opening the trunk lid
- unlocking door without using the request switch, key or Intelligent Key.

The vehicle security system will be triggered once the system is in armed phase,

- when BCM receives a ground signal at terminals 12, 13, 47, 48 (door switch), or terminal 42 (trunk lamp switch and trunk release solenoid).

Power is supplied at all times

- to horn relay terminal 2
- through 15A fuse (No. 25, located in fuse and fusible link box).

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

- from IPDM E/R terminal 51
- to horn relay terminal 1.

The headlamps flash and the horn sounds 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 or the trunk lid must be unlocked with the request switch, key or Intelligent Key.

When the key is used to unlock a door, BCM terminal 22 receives signal

- from terminal 14 of the main power window and door lock/unlock switch.

When the BCM receives either one of these signals or unlock signal from Intelligent Key or front door lock assembly LH (key cylinder switch), 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, ground is supplied intermittently

- from IPDM E/R terminal 51
- to horn relay terminal 1.

The headlamp flashes and the horn sounds intermittently.

The alarm automatically turns off after 25 seconds or when BCM receives any signal from keyfob.

CAN Communication System Description

INFOID:000000001721455

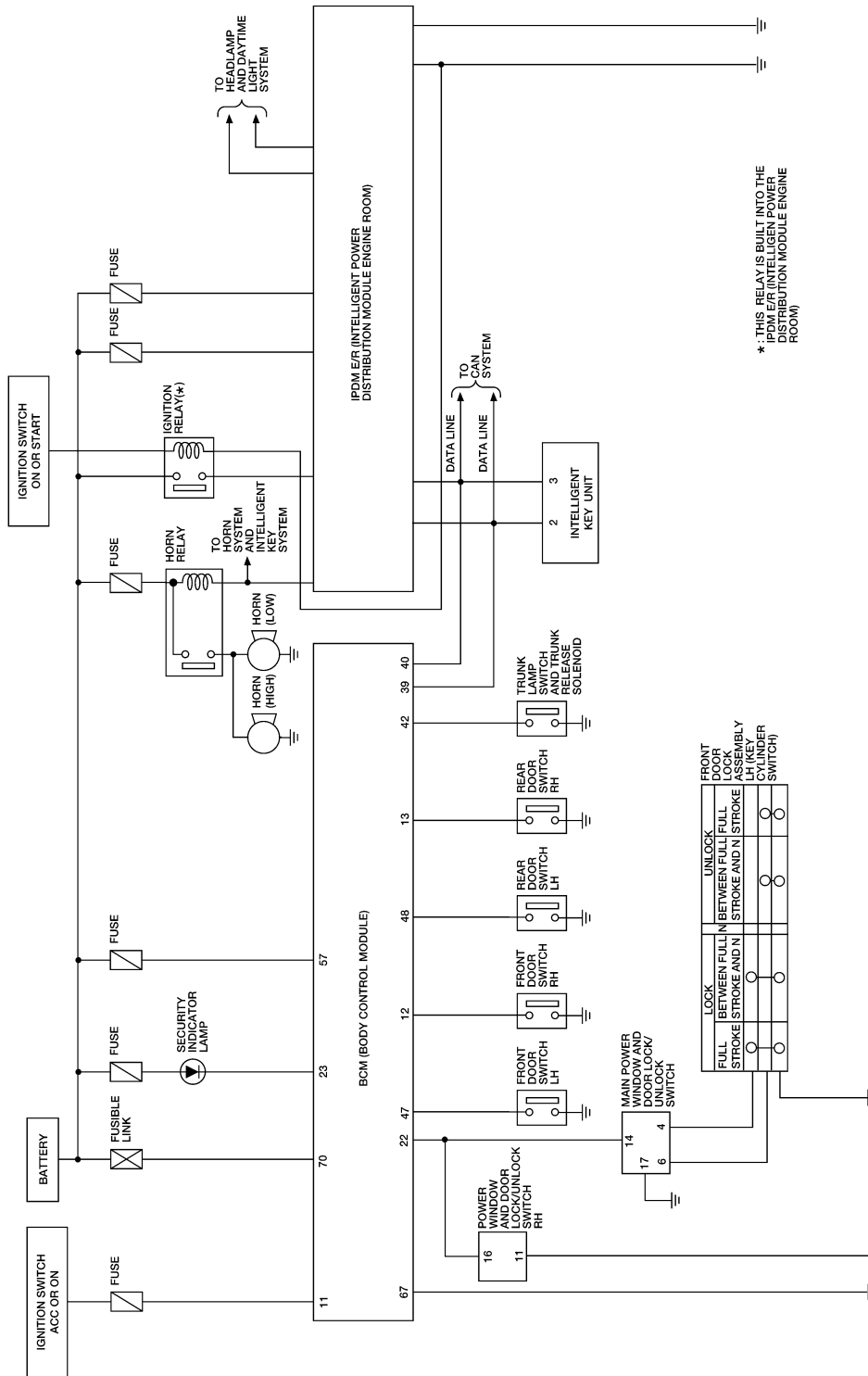
Refer to [LAN-3](#).

VEHICLE SECURITY (THEFT WARNING) SYSTEM

< SERVICE INFORMATION >

Schematic

INFOID:000000001721456



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VEHICLE SECURITY (THEFT WARNING) SYSTEM

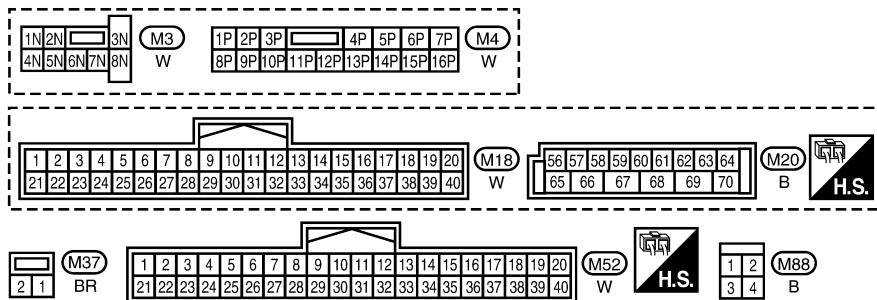
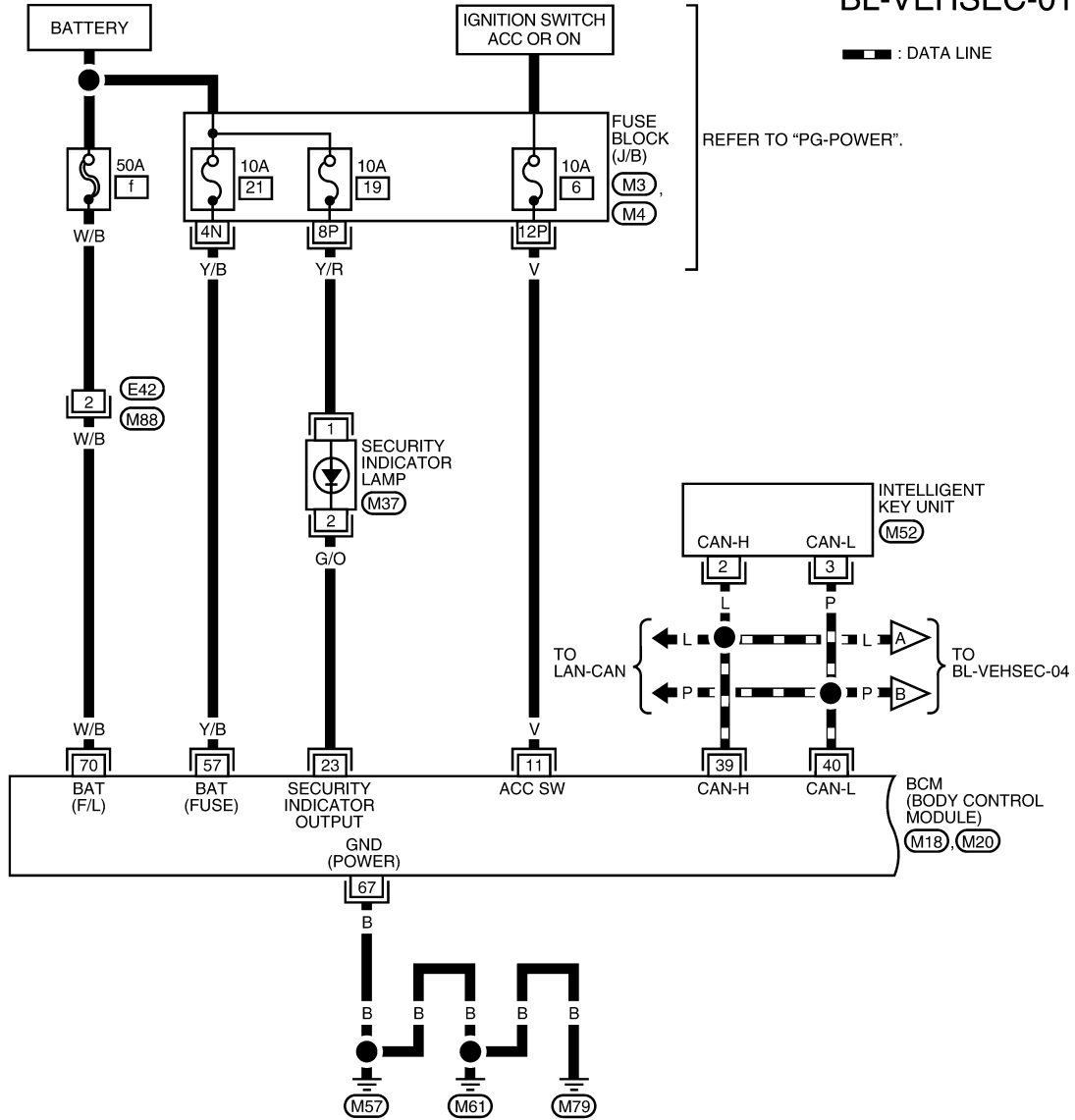
< SERVICE INFORMATION >

Wiring Diagram - VEHSEC -

INFOID:000000001721457

BL-VEHSEC-01

— : DATA LINE

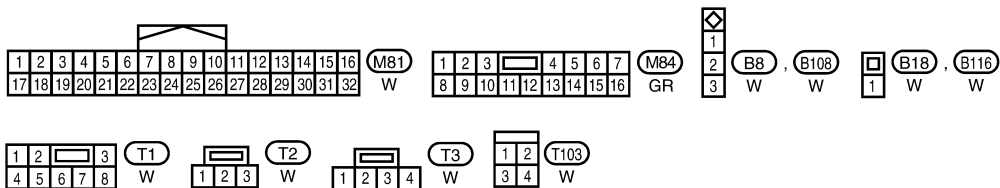
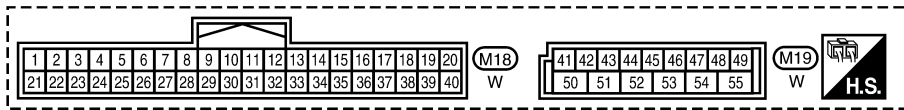
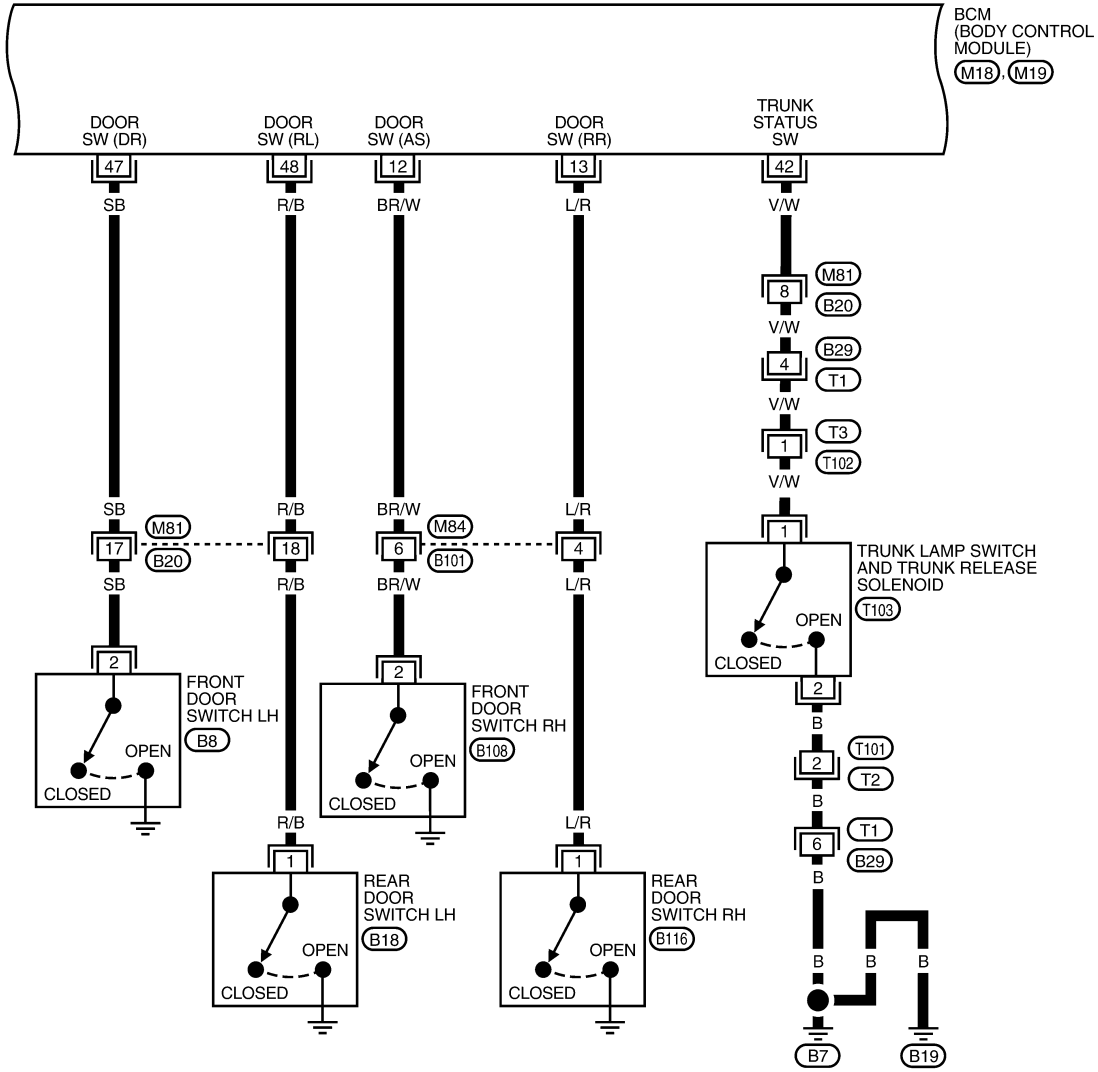


WIWA1907E

VEHICLE SECURITY (THEFT WARNING) SYSTEM

< SERVICE INFORMATION >

BL-VEHSEC-02



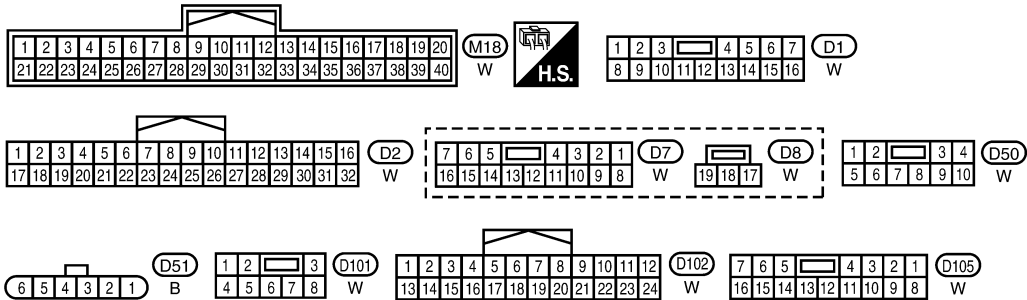
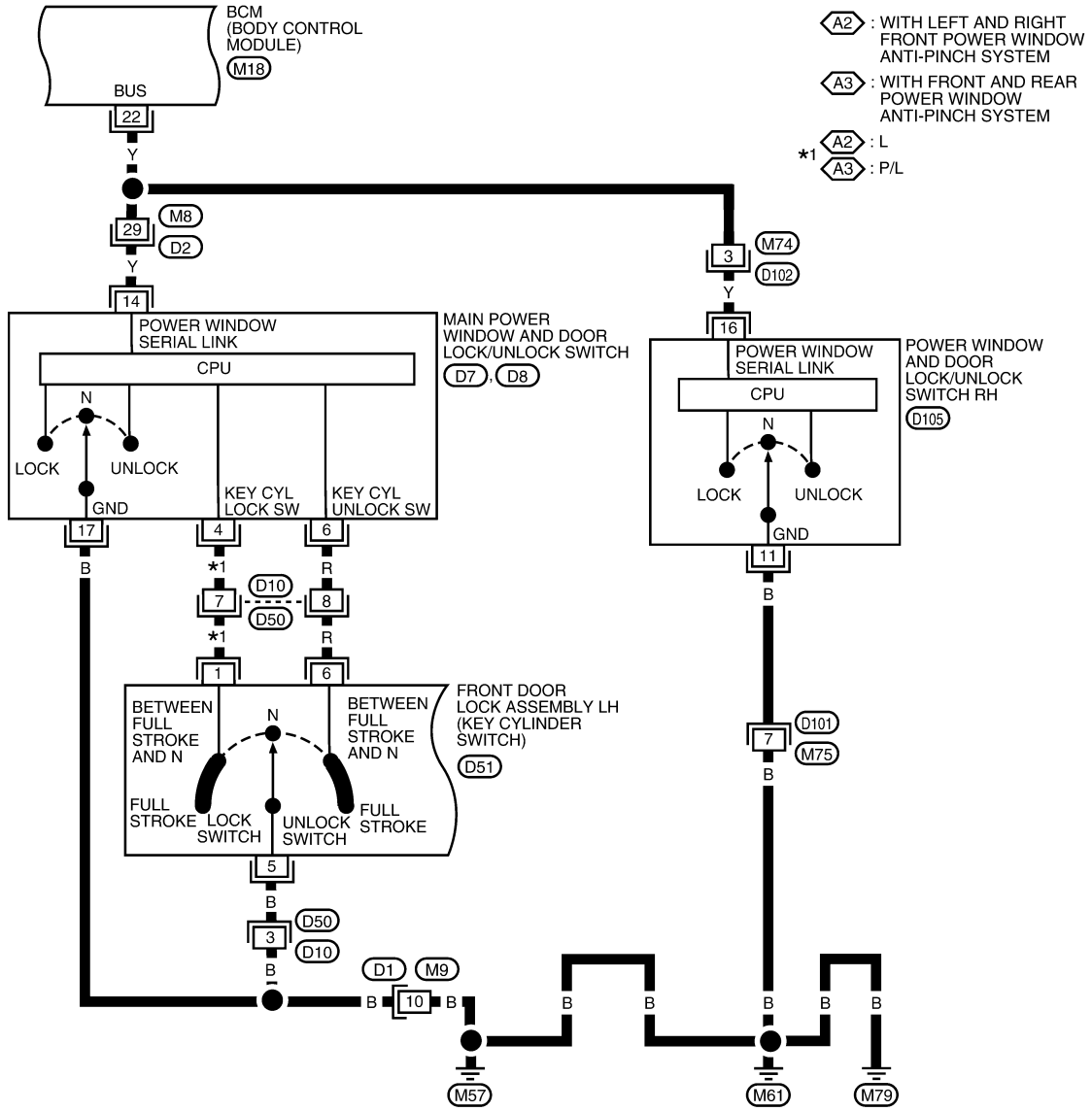
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VEHICLE SECURITY (THEFT WARNING) SYSTEM

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BL-VEHSEC-03

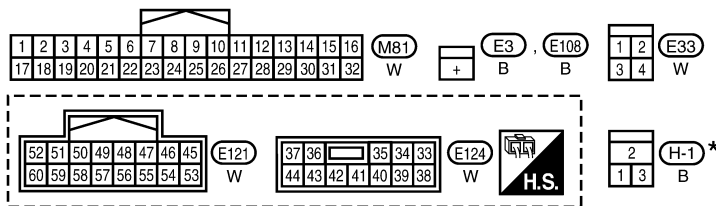
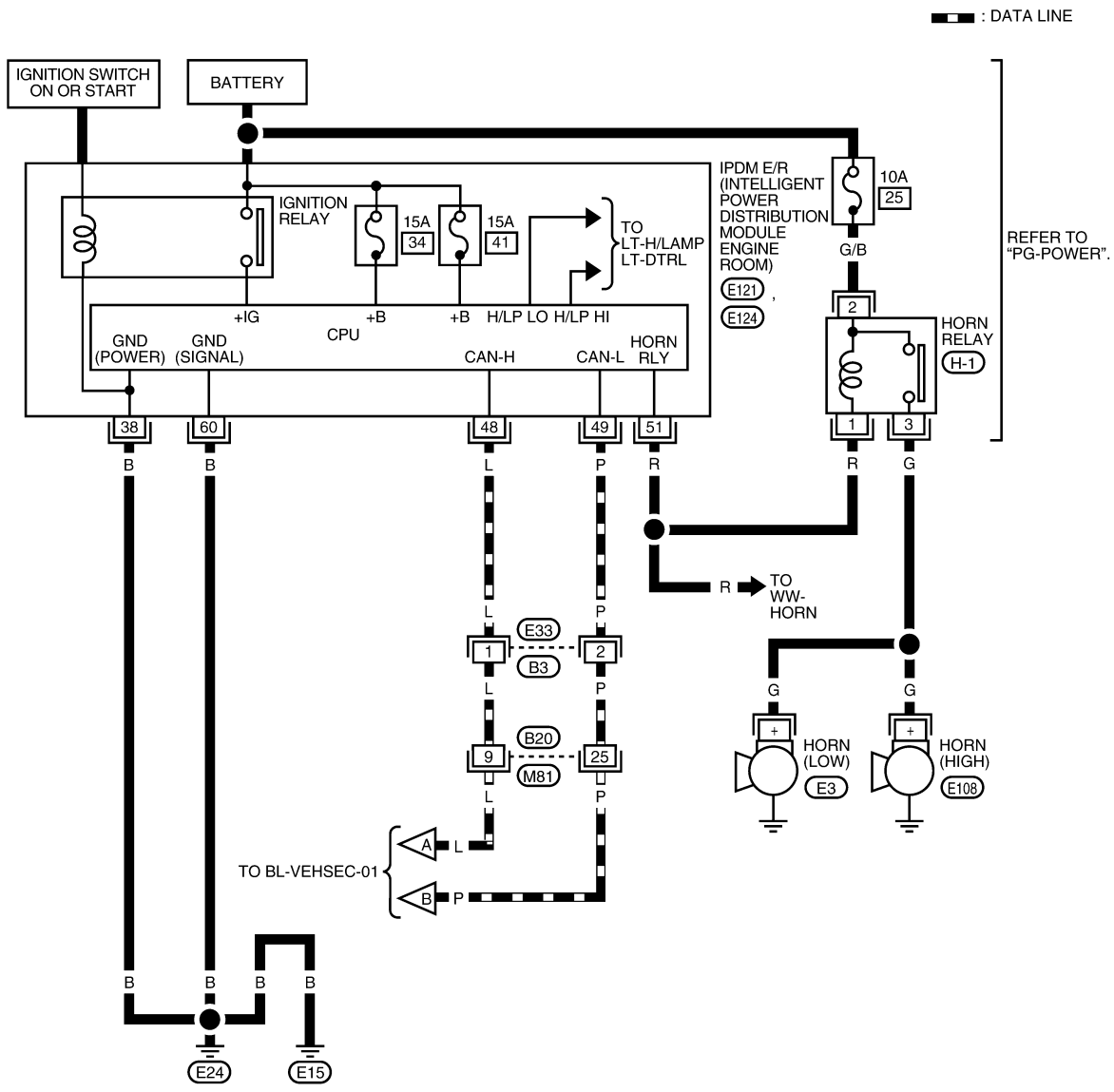


WIWA1909E

VEHICLE SECURITY (THEFT WARNING) SYSTEM

< SERVICE INFORMATION >

BL-VEHSEC-04



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

WIWA1910E

Terminal and Reference Value for BCM

Refer to [BCS-11, "Terminal and Reference Value for BCM"](#).

Terminal and Reference Value for IPDM E/R

Refer to [PG-25, "Terminal and Reference Value for IPDM E/R"](#).

INFOID:000000001721459

VEHICLE SECURITY (THEFT WARNING) SYSTEM

< SERVICE INFORMATION >

CONSULT-III Function (BCM)

INFOID:000000001721460

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received date is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

CONSULT-III APPLICATION ITEM

Work Support

Test Item	Description
SECURITY ALARM SET	This mode can confirm and change security alarm ON-OFF setting.
THEFT ALM TRG	The switch which triggered vehicle security alarm is recorded. This mode is able to confirm and erase the record of vehicle security alarm. The trigger data can be erased by touching "CLEAR" on CONSULT-III screen.

Data Monitor

Monitored Item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
ACC ON SW	Indicates [ON/OFF] condition of ignition switch in ACC position.
I-KEY LOCK	Indicates [ON/OFF] condition of lock signal from keyfob.
I-KEY UNLOCK	Indicates [ON/OFF] condition of unlock signal from keyfob.
I-KEY TRUNK	Indicates [ON/OFF] condition of trunk open signal from keyfob.
TRNK OPNR SW	Indicates [ON/OFF] condition of trunk opener switch.
TRUNK CYL SW	Indicates [ON/OFF] condition of trunk key cylinder switch.
TRNK OPN MNTR	Indicates [ON/OFF] condition of trunk lid status.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch LH.
DOOR SW-AS	Indicates [ON/OFF] condition of front door switch RH.
DOOR SW-RR	Indicates [ON/OFF] condition of rear door switch RH.
DOOR SW-RL	Indicates [ON/OFF] condition of rear door switch LH.
KEY CYL LK SW	Indicates [ON/OFF] condition of lock signal from key cylinder switch.
KEY CYL UN SW	Indicates [ON/OFF] condition of unlock signal from key cylinder switch.
CDL LOCK SW	Indicates [ON/OFF] condition of lock signal from door lock/unlock switch LH and RH.
CDL UNLOCK SW	Indicates [ON/OFF] condition of unlock signal from door lock/unlock switch LH and RH.

Active Test

VEHICLE SECURITY (THEFT WARNING) SYSTEM

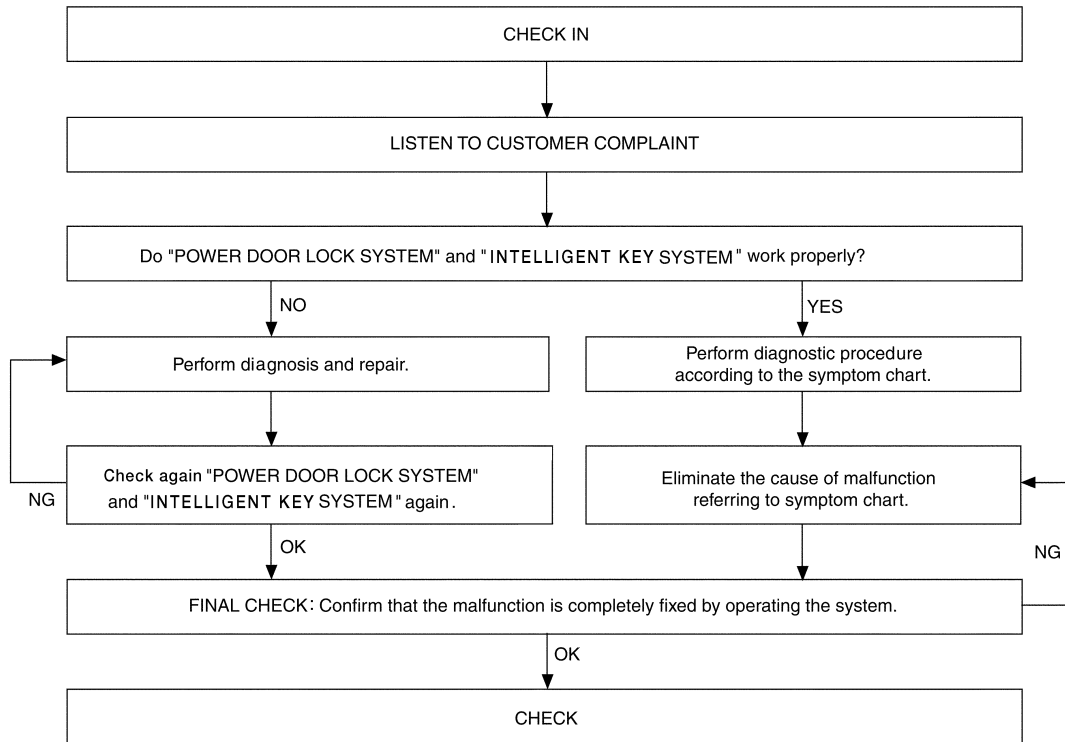
< SERVICE INFORMATION >

Test Item	Description
THEFT IND	This test is able to check security indicator lamp operation. The lamp will be turned on when "ON" on CONSULT-III screen is touched.
VEHICLE SECURITY HORN	This test is able to check vehicle security horn operation. The horns will be activated for 0.5 seconds after "ON" on CONSULT-III screen is touched.
HEADLAMP (HI)	This test is able to check vehicle security lamp operation. The headlamps will be activated for 0.5 seconds after "ON" on CONSULT-III screen is touched.

Trouble Diagnosis

INFOID:000000001721461

WORK FLOW



- For "POWER DOOR LOCK SYSTEM" diagnosis, refer to [BL-16](#).
- For "INTELLIGENT KEY SYSTEM" diagnosis, refer to [BL-36](#).

LIA2533E

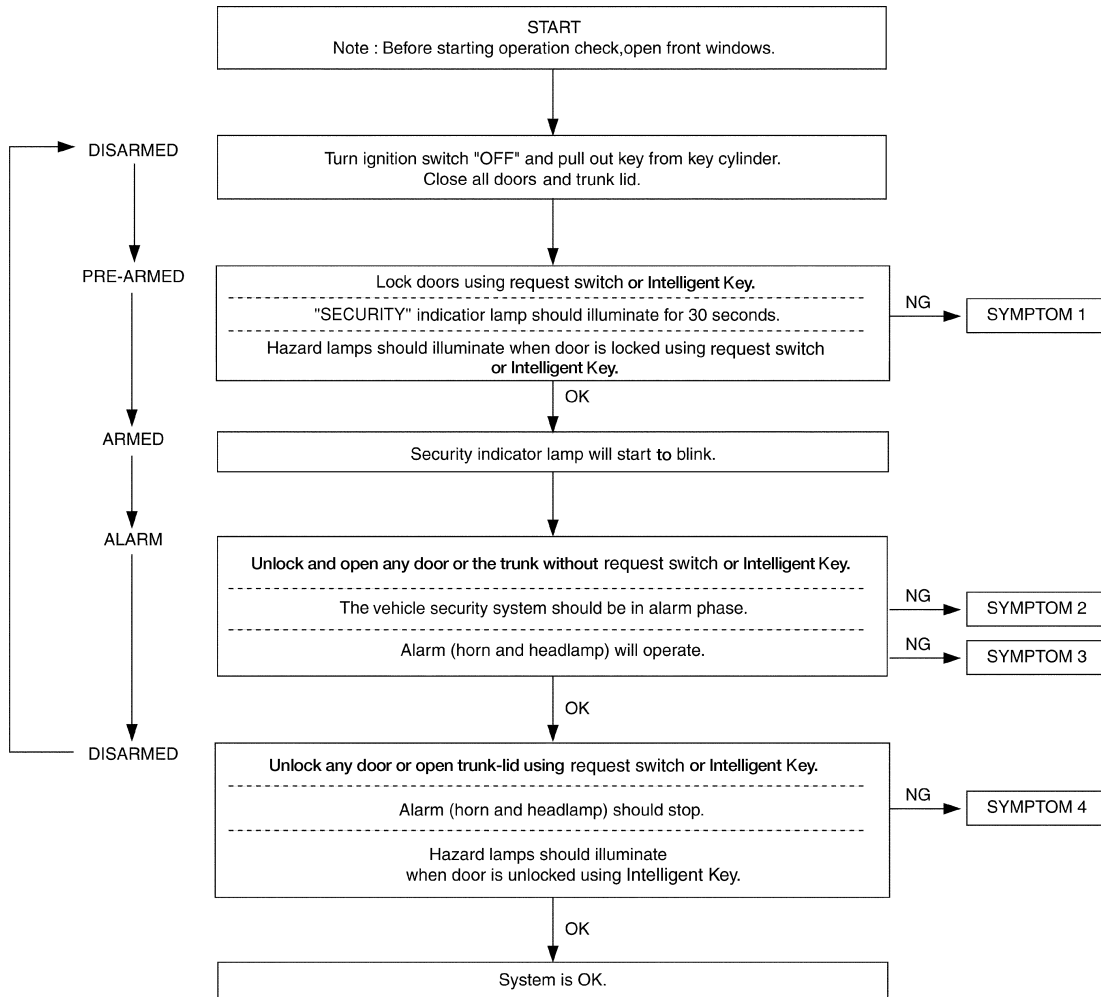
VEHICLE SECURITY (THEFT WARNING) SYSTEM

< SERVICE INFORMATION >

Preliminary Check

INFOID:000000001721462

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



LIA2534E

After performing preliminary check, go to symptom chart. Refer to [BL-123. "Symptom Chart"](#).

VEHICLE SECURITY (THEFT WARNING) SYSTEM

< SERVICE INFORMATION >

Symptom Chart

INFOID:000000001721463

	SYMPTOM	PROCEDURE	Diagnostic procedure
1	Vehicle security system cannot be set by	All items	Diagnostic Procedure 1 (Door, trunk lamp and trunk release solenoid switch check) Refer to BL-123, "Diagnosis Procedure 1" .
			If the above systems are "OK", replace BCM. Refer to BCS-18, "BCM" .
		Lock/unlock switch	Diagnostic Procedure 6 (Door lock/unlock switch check) Refer to BL-127, "Diagnosis Procedure 6" .
			If the above systems are "OK", check main power window and door lock/unlock switch. Refer to GW-17 .
		Door outside key (driver)	Diagnostic Procedure 3 (Door key cylinder switch check) Refer to BL-127, "Diagnosis Procedure 3" .
			If the above systems are "OK", check main power window and door lock/unlock switch. Refer to GW-17 .
		Intelligent Key	Check remote keyless entry function. Refer to BL-66, "Trouble Diagnosis Symptom Chart" .
			If the above systems are "OK", replace BCM. Refer to BCS-18, "BCM" .
		Request switch	Check Intelligent Key entry function. Refer to BL-37, "System Description" .
			If the above systems are "OK", replace BCM. Refer to BCS-18, "BCM" .
2	Security indicator does not turn "ON".	Security indicator lamp	Diagnostic Procedure 2 (Security indicator lamp check) Refer to BL-126, "Diagnosis Procedure 2" .
			If the above systems are "OK", replace BCM. Refer to BCS-18, "BCM" .
3	*1 Vehicle security system does not alarm when	Any door is opened.	Diagnostic Procedure 1 (Door and trunk lamp switch check) Refer to BL-123, "Diagnosis Procedure 1" .
			If the above systems are "OK", replace BCM. Refer to BCS-18, "BCM" .
4	Vehicle security alarm does not activate.	Horn alarm	Diagnostic Procedure 4 (Vehicle security horn alarm check). Refer to BL-127, "Diagnosis Procedure 4" .
			If the above systems are "OK", check horn system. Refer to WW-22 .
		Headlamp alarm	Diagnostic Procedure 5 (Headlamp alarm check). Refer to BL-127, "Diagnosis Procedure 5" .
			If the above systems are "OK", replace BCM. Refer to BCS-18, "BCM" .
5	Vehicle security system cannot be canceled by	Door outside key (driver)	Diagnostic Procedure 3 (Door key cylinder switch check). Refer to BL-127, "Diagnosis Procedure 3" .
			If the above systems are "OK", check main power window and door lock/unlock switch. Refer to GW-17 .
		Request switch	Check Intelligent Key entry function. Refer to BL-37, "System Description" .
			If the above systems are "OK", replace BCM. Refer to BCS-18, "BCM" .
		Intelligent Key	Check remote keyless entry function. Refer to BL-66, "Trouble Diagnosis Symptom Chart" .
			If the above systems are "OK", replace BCM. Refer to BCS-18, "BCM" .

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

Diagnosis Procedure 1

INFOID:000000001721464

1-1 DOOR SWITCH CHECK

1.CHECK DOOR SWITCHES INPUT SIGNAL

 With CONSULT-III

Check door switches ("DOOR SW-DR", "DOOR SW-AS", "DOOR SW-RL", "DOOR SW-RR") in DATA MONITOR mode with CONSULT-III. Refer to [BL-25, "CONSULT-III Function \(BCM\)"](#).

VEHICLE SECURITY (THEFT WARNING) SYSTEM

< SERVICE INFORMATION >

- When doors are open:

DOOR SW-DR : ON
DOOR SW-AS : ON
DOOR SW-RL : ON
DOOR SW-RR : ON

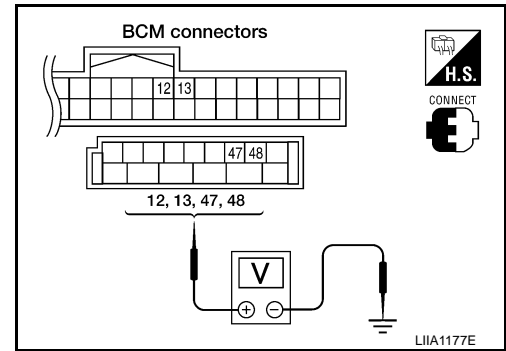
- When doors are closed:

DOOR SW-DR : OFF
DOOR SW-AS : OFF
DOOR SW-RL : OFF
DOOR SW-RR : OFF

Without CONSULT-III

Check voltage between BCM connector M18 or M19 terminals 12, 13, 47, 48 and ground.

Connector	Item	Terminals		Condition	Voltage (V) (Approx.)
		(+)	(-)		
M19	Front door switch LH	47	Ground	Open ↓ Closed	0 ↓ Battery voltage
	Rear door switch LH	48			
M18	Front door switch RH	12			
	Rear door switch RH	13			



OK or NG

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

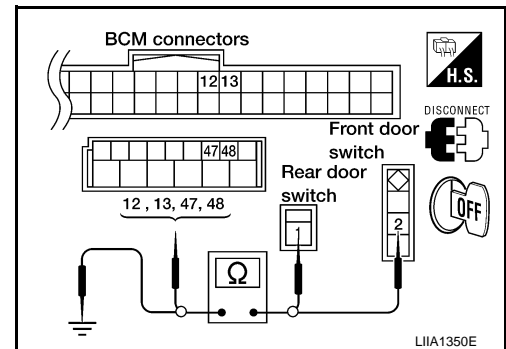
2. CHECK DOOR SWITCH CIRCUIT

- Turn ignition switch OFF.
- Disconnect door switch and BCM.
- Check continuity between door switch connector B8 (Front LH) or B108 (Front RH) terminal 2, B18 (Rear LH) or B116 (Rear RH) terminal 1 and BCM connector M18, M19 terminals 12, 13, 47 and 48.

2 - 47 : Continuity should exist.
2 - 12 : Continuity should exist.
1 - 48 : Continuity should exist.
1 - 13 : Continuity should exist.

- Check continuity between door switch connector B8 (Front LH) or B108 (Front RH) terminal 2, B18 (Rear LH) or B116 (Rear RH) terminal 1 and ground.

2 - Ground : Continuity should not exist.
1 - Ground : Continuity should not exist.



OK or NG

- OK >> GO TO 3.
 NG >> Repair or replace harness.

3. CHECK DOOR SWITCHES

Check continuity between door switch connector terminal and switch case ground.

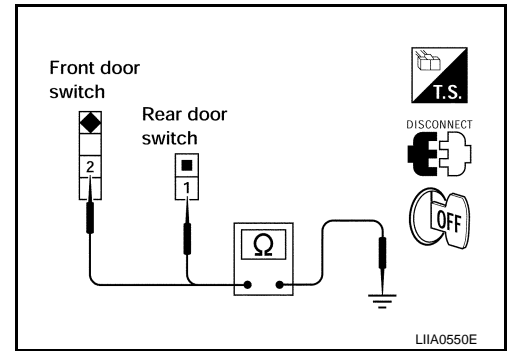
VEHICLE SECURITY (THEFT WARNING) SYSTEM

< SERVICE INFORMATION >

Component	Terminals	Condition of switch	Continuity
Front door switch LH/RH	2 – Case ground	Pushed	No
		Released	Yes
Rear door switch LH/RH	1 – Case ground	Pushed	No
		Released	Yes

OK or NG

- OK >> Check door switch case ground condition.
 NG >> Replace door switch.



1-2 TRUNK LAMP AND TRUNK RELEASE SOLENOID SWITCH CHECK

1. CHECK TRUNK LAMP SWITCH INPUT SIGNAL

With CONSULT-III

Check (“TRUNK SW”) in “DATA MONITOR” mode with CONSULT-III.

Monitor item	Trunk condition
TRUNK SW	OPEN : ON
	CLOSE : OFF

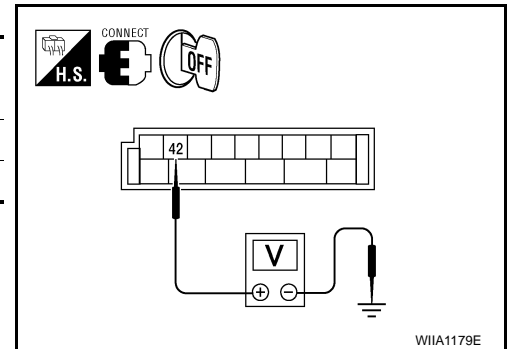
Without CONSULT-III

- Turn ignition switch OFF.
- Check voltage between BCM harness connector M19 terminal 42 and ground.

Connector	Terminals		Trunk condition	Voltage (V) (Approx.)
	(+)	(-)		
M19	42	Ground	CLOSE	Battery voltage
			OPEN	0

OK or NG

- OK >> Trunk lamp switch circuit is OK.
 NG >> GO TO 2.



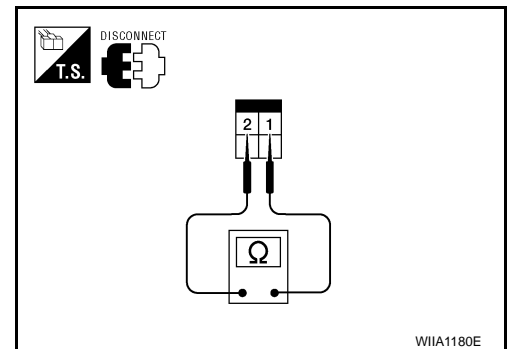
2. CHECK TRUNK LAMP SWITCH

- Turn ignition switch OFF.
- Disconnect trunk lamp switch connector.
- Check continuity between trunk lamp switch terminals 1 and 2.

Terminals	Trunk condition	Continuity
1 2	Closed	No
	Open	Yes

OK or NG

- OK >> GO TO 3.
 NG >> Replace trunk lamp switch and trunk release solenoid.



3. CHECK TRUNK LAMP SWITCH CIRCUIT

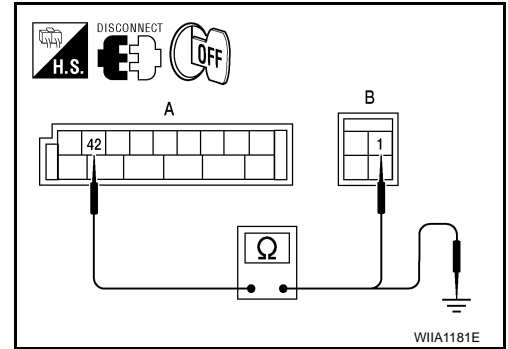
- Disconnect BCM connector M19.

VEHICLE SECURITY (THEFT WARNING) SYSTEM

< SERVICE INFORMATION >

- Check continuity between BCM harness connector M19 terminal 42 and trunk lamp switch harness connector (B) T103 terminal 1.

42 – 1 : Continuity should exist.



- Check continuity between BCM harness connector (A) M19 terminal 42 and ground.

42 – Ground : Continuity should not exist.

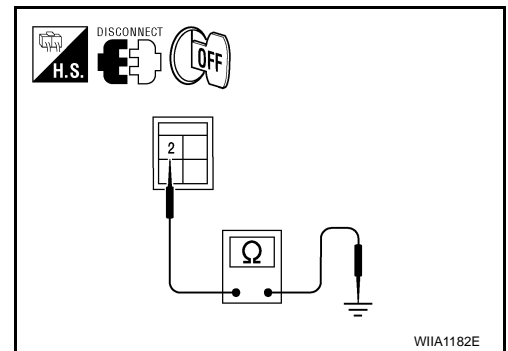
OK or NG

- OK >> GO TO 4.
- NG >> Repair or replace harness between BCM and trunk lamp switch.

4. CHECK TRUNK LAMP SWITCH GROUND CIRCUIT

Check continuity between trunk lamp switch harness connector T103 terminal 2 and ground.

2 – Ground : Continuity should exist.



OK or NG

- OK >> Check connection of harness and connector.
- NG >> Repair or replace trunk lamp switch ground circuit.

Diagnosis Procedure 2

INFOID:000000001721465

SECURITY INDICATOR LAMP CHECK

1. SECURITY INDICATOR LAMP ACTIVE TEST

With CONSULT-III

Check "THEFT IND" in "ACTIVE TEST" mode with CONSULT-III.

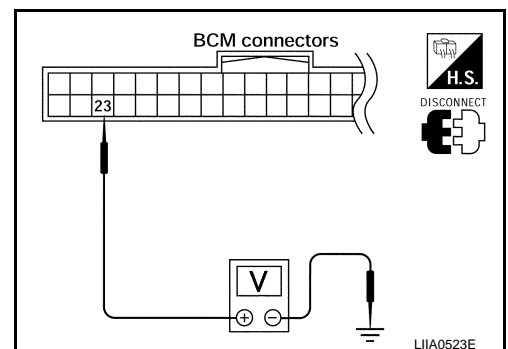
Without CONSULT-III

- Disconnect BCM.
- Check voltage between BCM harness connector M18 terminal 23 and ground.

Connector	Terminals		Voltage (V) (Approx.)
	(+)	(-)	
M18	23	Ground	Battery voltage

OK or NG

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



VEHICLE SECURITY (THEFT WARNING) SYSTEM

< SERVICE INFORMATION >

2. SECURITY INDICATOR LAMP CHECK

Check indicator lamp condition.

OK or NG

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

3. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and security indicator lamp.
3. Check continuity between BCM connector (A) M18 terminal 23 and security indicator lamp harness connector (B) M37 terminal 2.

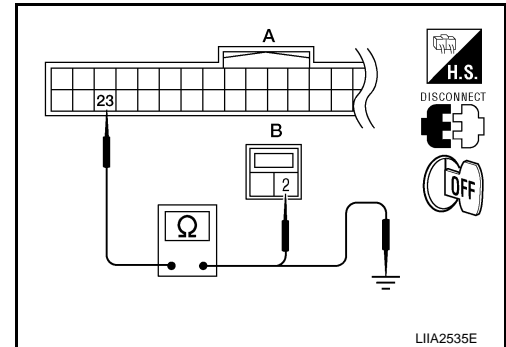
23 - 2 : Continuity should exist.

4. Check continuity between BCM connector (A) M18 terminal 23 and ground.

23 - Ground : Continuity should not exist.

OK or NG

- OK >> Check the following:
 - 10A fuse [No. 19, located in fuse block (J/B)]
 - Harness for open or short between security indicator lamp and fuse
- NG >> Repair or replace harness.



Diagnosis Procedure 3

INFOID:000000001721466

1. FRONT DOOR LOCK ASSEMBLY LH (KEY CYLINDER SWITCH) CHECK

Check front door lock assembly LH (key cylinder switch) with key.

Do doors lock/unlock when using the key?

- YES >> Front door lock assembly LH (key cylinder switch) is OK.
- NO >> Check front door lock assembly LH (key cylinder switch) circuit. Refer to [BL-32. "Front Door Lock Assembly LH \(Key Cylinder Switch\) Check"](#).

Diagnosis Procedure 4

INFOID:000000001721467

VEHICLE SECURITY HORN ALARM CHECK

1. CHECK HORN OPERATION

Check if horn sounds with horn switch.

Does horn operate?

- YES >> Check harness for open or short between IPDM E/R and horn relay.
- NO >> Check horn circuit. Refer to [WW-22](#).

Diagnosis Procedure 5

INFOID:000000001721468

VEHICLE SECURITY HEADLAMP ALARM CHECK

1. CHECK VEHICLE SECURITY HEADLAMP ALARM OPERATION

Check if headlamps operate with lighting switch.

Do headlamps come on when turning switch ON?

- YES >> Headlamp alarm is OK.
- NO >> Check headlamp system. Refer to [LT-5](#).

Diagnosis Procedure 6

INFOID:000000001721469

DOOR LOCK/UNLOCK SWITCH CHECK

VEHICLE SECURITY (THEFT WARNING) SYSTEM

< SERVICE INFORMATION >

1. CHECK DOOR LOCK/UNLOCK SWITCH INPUT SIGNAL

Check if power door lock operates with door lock/unlock switch.

Do doors lock/unlock when using each door lock/unlock switch?

YES >> Door lock/unlock switch is OK.

NO >> Refer to [BL-28, "Door Lock/Unlock Switch Check"](#).

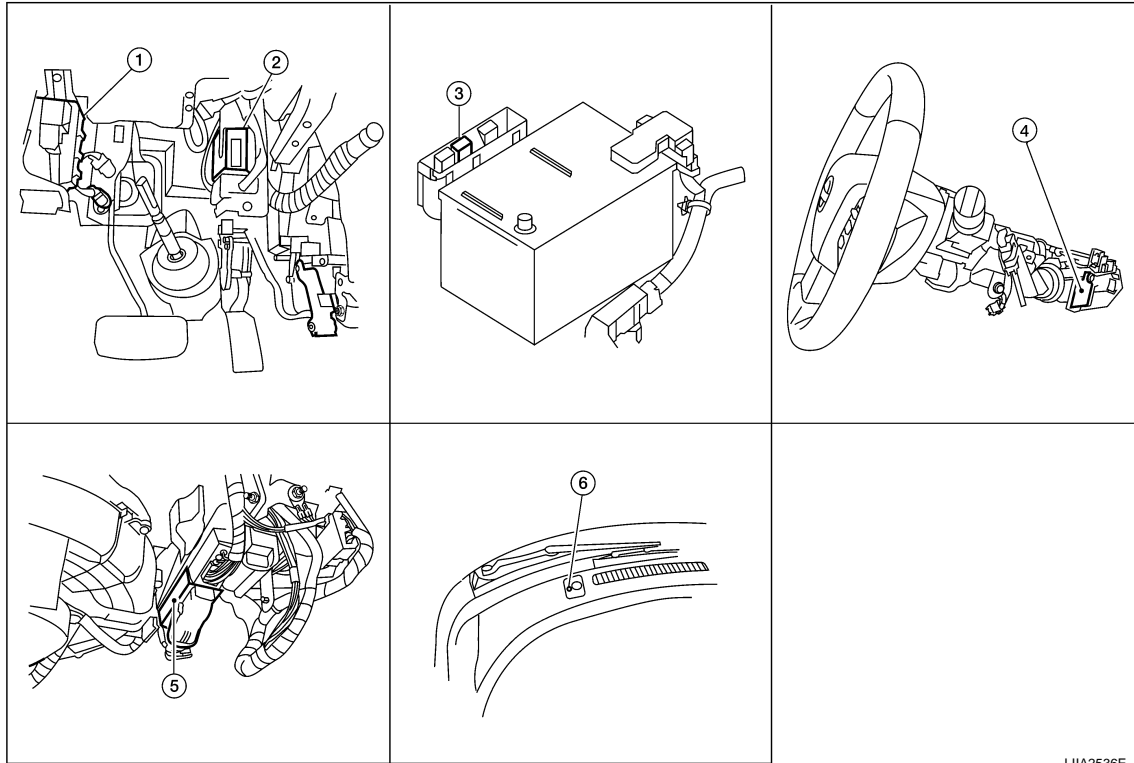
NVIS(NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

< SERVICE INFORMATION >

NVIS(NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

Component Parts and Harness Connector Location

INFOID:000000001721470



LIA2536E

- | | | |
|--|---|--------------------------------|
| 1. BCM M18, M19, M20
(view with instrument panel removed) | 2. Intelligent Key unit M52 | 3. Horn relay H-1 |
| 4. NATS antenna amp. M21 | 5. ECM
(view with glove box removed) | 6. Security indicator lamp M37 |

System Description

INFOID:000000001721471

NVIS (Nissan Vehicle Immobilizer System-NATS) has the following immobilizer functions:

- Since only NVIS (NATS) registered keys (mechanical key and Intelligent Key), whose IDs have been registered into the ECM and BCM, allow the engine to run, operation of a stolen vehicle without a NVIS (NATS) registered key is prevented by NVIS (NATS).
NVIS (NATS) will immobilize the engine if someone tries to start it without the registered key of NVIS (NATS).
- All of the originally supplied ignition key IDs have been NVIS (NATS) registered.
If requested by the vehicle owner, a maximum of five key IDs can be registered into the NVIS (NATS) components.
- The security indicator blinks when the ignition switch is in OFF or ACC position. NVIS (NATS) warns outsiders that the vehicle is equipped with the anti-theft system.
- When NVIS (NATS) detects a malfunction, the security indicator lamp lights up while ignition key is in the ON position.
- NVIS (NATS) trouble diagnoses, system initialization and additional registration of other NVIS (NATS) ignition key IDs must be carried out using CONSULT-III hardware and CONSULT-III NVIS (NATS) software.
When NVIS (NATS) initialization has been completed, the ID of the inserted ignition key is automatically NVIS (NATS) registered. Then, if necessary, additional registration of other NVIS (NATS) ignition key IDs can be carried out.
Regarding the procedures of NVIS (NATS) initialization and NVIS (NATS) ignition key ID registration, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.
- **When servicing a malfunction of the NVIS (NATS) (indicated by lighting up of security indicator lamp) or registering another NVIS (NATS) ignition key ID, it may be necessary to re-register original key identification. Therefore, be sure to receive ALL KEYS from vehicle owner.**

NVIS(NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

< SERVICE INFORMATION >

System Composition

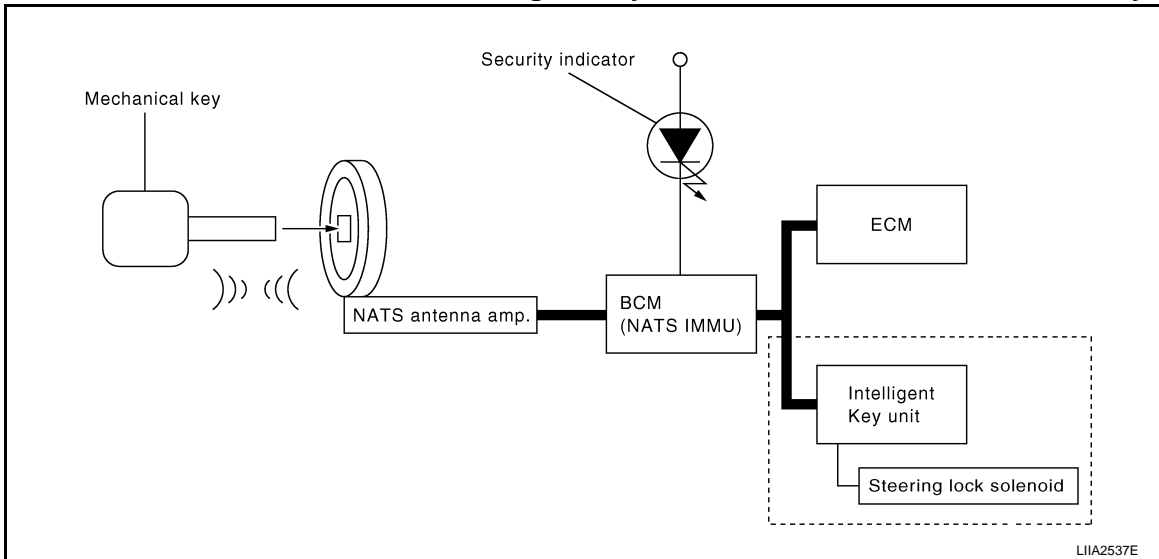
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The immobilizer function of the NVIS (NATS) consists of the following:

- Mechanical key (built into Intelligent Key)
- NATS antenna amp. located in the ignition key cylinder
- Body control module (BCM)
- Engine control module (ECM)
- Security indicator
- Steering lock solenoid
- Intelligent Key unit

NOTE:

Communication between ECM, BCM and Intelligent Key unit uses the CAN communication system.



ECM Re-communicating Function

INFOID:000000001721473

The following procedure can automatically perform re-communication of ECM, BCM and Intelligent Key unit, but only when the ECM has been replaced with a new one which has never been energized on-board. (In this step, initialization procedure by CONSULT-III is not necessary)

NOTE:

- When registering new Key IDs or replacing the ECM other than brand new, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.
- If multiple keys are attached to the key holder, separate them before work.
- Distinguish keys with unregistered key ID from those with registered ID.

1. Install ECM.
2. Using a registered key (*1), turn ignition switch to ON.
*1: To perform this step, use the key that has been used before performing ECM replacement.
3. Maintain ignition switch in ON position for at least 5 seconds.
4. Turn ignition switch to OFF.
5. Start engine.
If engine can be started, procedure is completed.
If engine cannot be started, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS and initialize control unit.

NVIS(NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

< SERVICE INFORMATION >

CONSULT-III

INFOID:000000001721476

CONSULT-III DIAGNOSTIC TEST MODE FUNCTION

CONSULT-III DIAGNOSTIC TEST MODE	Description
C/U INITIALIZATION	When replacing any of the following components, C/U initialization and re-registration of all NATS ignition keys are necessary. [(NATS ignition key/BCM/ECM)]
SELF-DIAG RESULTS	Detected items (screen terms) are as shown in the chart. Refer to "NVIS (NATS) SELF-DIAGNOSTIC RESULTS ITEM CHART".

NOTE:

- When any initialization is performed, all IDs previously registered will be erased and all NATS ignition keys must be registered again.
- The engine cannot be started with an unregistered key. In this case, the system will show "DIFFERENCE OF KEY" or "LOCK MODE" as a self-diagnostic result on the CONSULT-III screen.
- In rare case, "CHAIN OF ECM-IMMU" might be stored as a self-diagnostic result during key registration procedure, even if the system is not malfunctioning.

NVIS (NATS) SELF-DIAGNOSTIC RESULTS ITEM CHART

Detected items [NVIS (NATS) program card screen terms]	P No. Code (Self-diagnostic result of "ENGINE")	Malfunction is detected when.....	Reference page
CHAIN OF ECM-IMMU [P1612]	NATS MAL-FUNCTION P1612	Communication impossible between ECM and BCM In rare case, "CHAIN OF ECM-IMMU" might be stored during key registration procedure, even if the system is not malfunctioning.	Refer to BL-136 .
DIFFERENCE OF KEY [P1615]	NATS MAL-FUNCTION P1615	BCM can receive the key ID signal but the result of ID verification between key ID and BCM is NG.	Refer to BL-137 .
CHAIN OF IMMU-KEY [P1614]	NATS MAL-FUNCTION P1614	BCM cannot receive the key ID signal.	Refer to BL-139 .
ID DISCORD, IMM-ECM [P1611]	NATS MAL-FUNCTION P1611	The result of ID verification between BCM and ECM is NG. System initialization is required.	Refer to BL-137 .
LOCK MODE [P1610]	NATS MAL-FUNCTION P1610	When the starting operation is carried out five or more times consecutively under the following conditions, NVIS (NATS) will shift the mode to one which prevents the engine from being started. <ul style="list-style-type: none"> • Unregistered ignition key is used. • BCM or ECM's malfunctioning. 	Refer to BL-138 .
DON'T ERASE BEFORE CHECKING ENG DIAG	—	All engine trouble codes except NVIS (NATS) trouble code has been detected in ECM.	Refer to BL-134 .

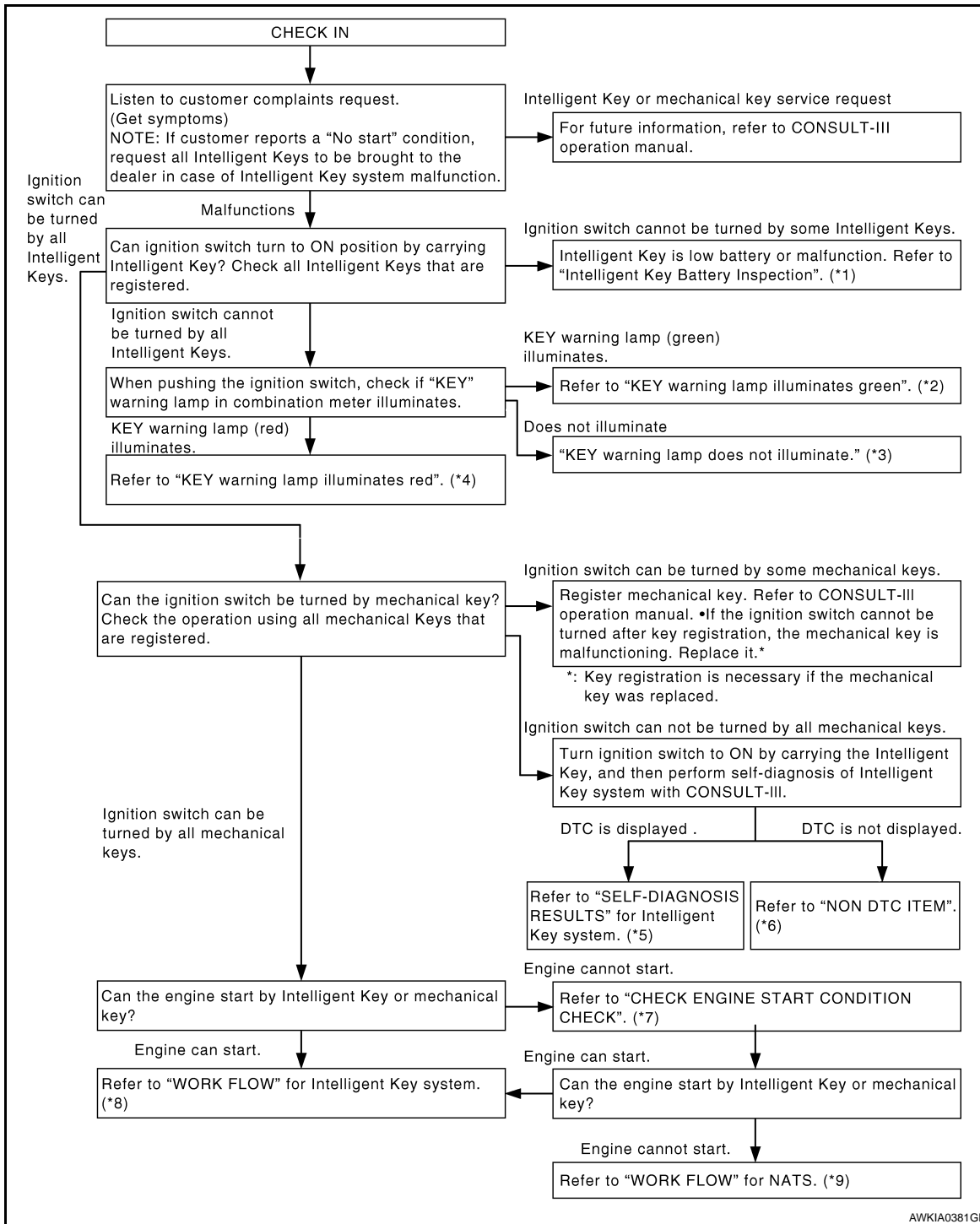
Trouble Diagnosis Procedure

INFOID:000000001721477

PRELIMINALY CHECK

NVIS(NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

< SERVICE INFORMATION >



- *1: [BL-96](#)
- *4: [BL-66](#)
- *7: [BL-66](#)

- *2: [BL-66](#)
- *5: [BL-64](#)
- *8: [BL-61](#)

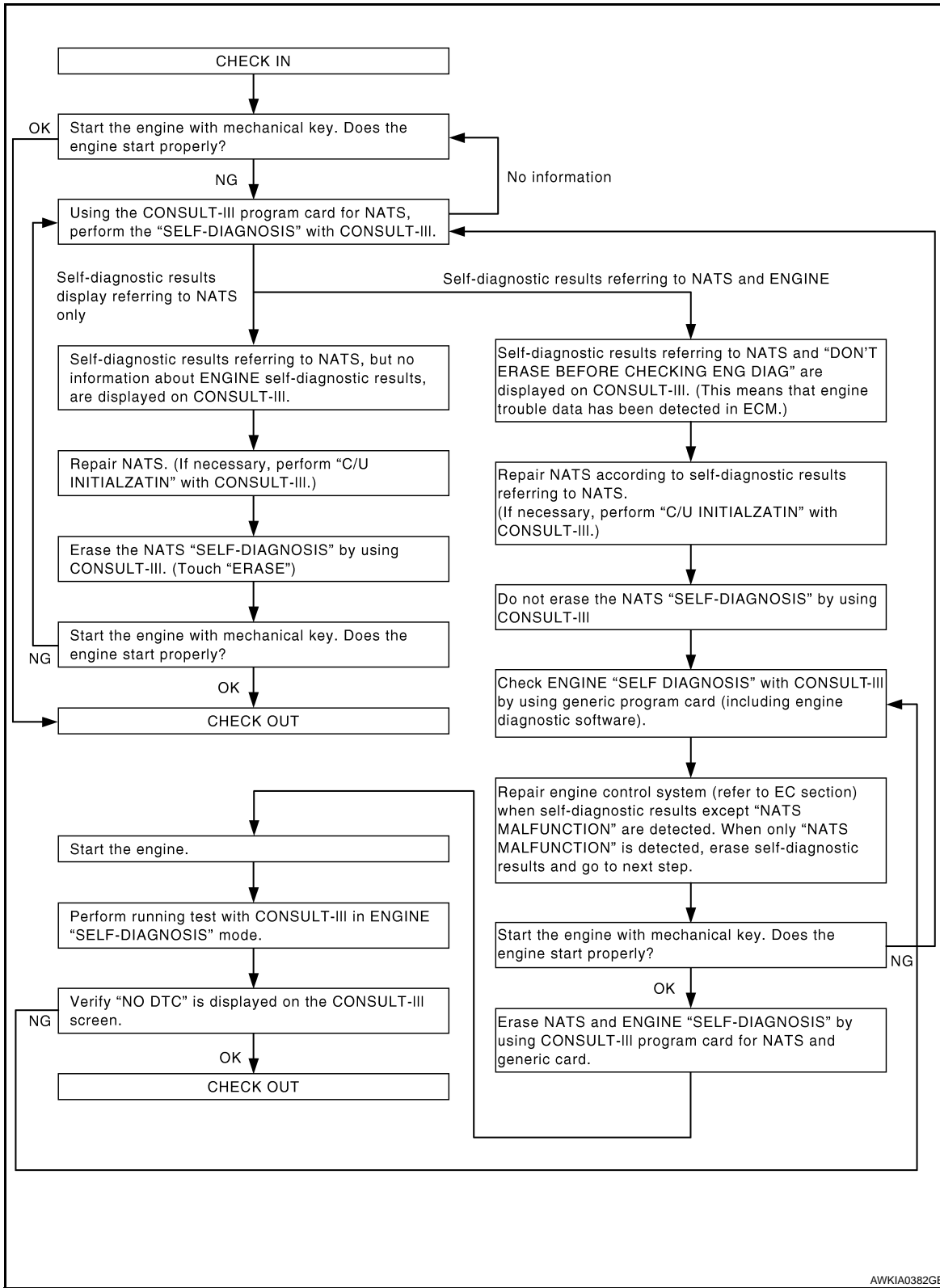
- *3: [BL-66](#)
- *6: [BL-66](#)
- *9: [BL-134](#)

NVIS(NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

< SERVICE INFORMATION >

Work Flow

INFOID:000000001721478



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Trouble Diagnosis

INFOID:000000001721479

SYMPTOM MATRIX CHART 1

NVIS(NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

< SERVICE INFORMATION >

Self-diagnosis related item

Symptom	Displayed "SELF-DIAG RESULTS" on CONSULT-III screen.	Diagnostic Procedure (Reference page)	System (Malfunctioning part or mode)	Reference Part No. Of Illustration On System Diagram	
<ul style="list-style-type: none"> • Security indicator lighting up* • Engine cannot be started 	CHAIN OF ECM-IMMU [P1612]	PROCEDURE 1 (BL-136)	In rare case, "CHAIN OF ECM-IMMU" might be stored during key registration procedure, even if the system is not malfunctioning.	—	A
			Open circuit in battery voltage line of BCM circuit	C1	B
			Open circuit in ignition line of BCM circuit	C2	C
			Open circuit in ground line of BCM circuit	C3	D
			Open or short circuit between BCM and ECM communication line	C4	E
			ECM	B	F
			BCM	A	G
			DIFFERENCE OF KEY [P1615]	PROCEDURE 2 (BL-137)	Unregistered key
	CHAIN OF IMMU-KEY [P1614]	PROCEDURE 5 (BL-139)	BCM	A	H
			Malfunction of key ID chip	E5	BL
			Communication line between ANT/ AMP and BCM: Open circuit or short circuit of battery voltage line or ground line	E1	J
			Open circuit in power source line of ANT/ AMP circuit	E2	K
			Open circuit in ground line of ANT/ AMP circuit	E3	L
			Open circuit in ground line of ANT/ AMP circuit	E4	M
			NATS antenna amp.	E6	N
			BCM	A	
	ID DISCORD, IMM-ECM [P1611]	PROCEDURE 3 (BL-137)	System initialization has not yet been completed.	F	
			ECM	B	
LOCK MODE [P1610]	PROCEDURE 4 (BL-138)	LOCK MODE	D		
Security indicator lighting up*	DON'T ERASE BEFORE CHECKING ENG DIAG	WORK FLOW (BL-134)	Engine trouble data and NVIS (NATS) trouble data have been detected in ECM	—	O

*: When NVIS (NATS) detects trouble, the security indicator lights up while ignition key is in the "ON" position.

SYMPTOM MATRIX CHART 2

NVIS(NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

< SERVICE INFORMATION >

Non self-diagnosis related item

Symptom	Diagnostic Procedure (Reference page)	System (Malfunctioning part or mode)	Reference Part No. Of Illustration On System Diagram
Security indicator does not light up*.	PROCEDURE 6 (BL-141)	Combination meter (security indicator lamp)	—
		Open circuit between fuse and BCM	—
		BCM	A

*: CONSULT-III self-diagnostic results display screen "no malfunction is detected".

Diagnosis Procedure 1

INFOID:000000001721480

Self-diagnostic results:

"CHAIN OF ECM-IMMU" displayed on CONSULT-III screen

First perform the "SELF-DIAG RESULTS" in "BCM" with CONSULT-III, then perform the trouble diagnosis of malfunction system indicated "SELF-DIAG RESULTS" of "BCM". Refer to [BL-132, "CONSULT-III"](#).

1. CONFIRM SELF-DIAGNOSTIC RESULTS

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

NOTE:

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

Is "CHAIN OF ECM-IMMU" displayed?

Yes >> GO TO 2.

No >> GO TO [BL-134, "Trouble Diagnosis"](#).

2. CHECK POWER SUPPLY CIRCUIT FOR BCM

- Turn ignition switch OFF.
- Disconnect BCM.
- Check voltage between BCM connector M20 terminals 57, 70 and ground.

57 - Ground : Battery voltage

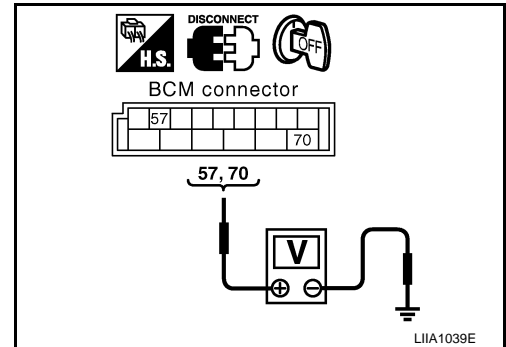
70 - Ground : Battery voltage

OK or NG

OK >> GO TO 3.

NG >> Check the following:

- 50A fusible link (letter f, located in fuse and fusible link box)
- Harness for open or short between fuse and BCM.
- Harness for open or short between fuse and BCM.



3. CHECK IGN SW. ON SIGNAL

- Turn ignition switch ON.
- Check voltage between BCM connector M18 terminal 38 and ground.

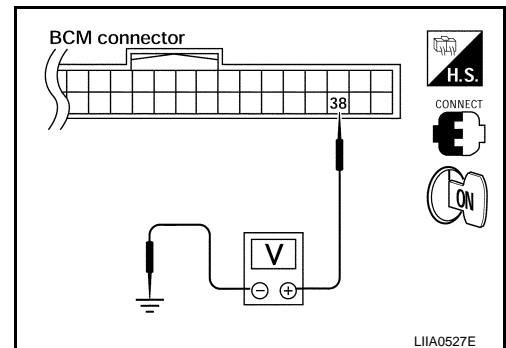
38 - Ground : Battery voltage

OK or NG

OK >> GO TO 4.

NG >> Check the following:

- 10A fuse [No. 1, located in the fuse block (J/B)]
- Harness for open or short between fuse and BCM.



4. CHECK GROUND CIRCUIT FOR BCM

NVIS(NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

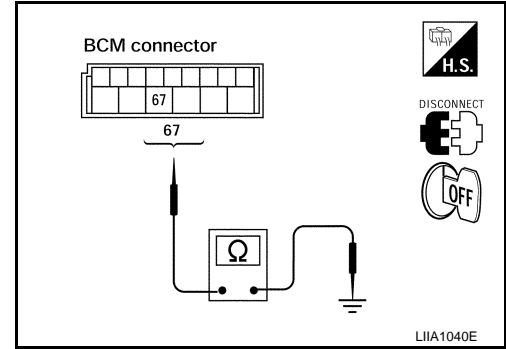
< SERVICE INFORMATION >

1. Turn ignition switch OFF.
2. Check continuity between BCM connector M20 terminal 67 and ground.

67 - Ground : Continuity should exist.

OK or NG

- OK >> GO TO 5.
NG >> Repair or replace harness.



5. REPLACE BCM

1. Replace BCM. Refer to [BCS-18. "BCM"](#).
2. Perform initialization with CONSULT-III.
For initialization, refer to "CONSULT-III Operation Manual NATS-IVIS/NVIS".

Does the engine start?

- YES >> BCM is malfunctioning.
- Replace BCM.
 - For initialization, refer to "CONSULT-III Operation Manual NATS-IVIS/NVIS".
 - For re-communicating function, refer to [BL-130. "ECM Re-communicating Function"](#).
- NO >> ECM is malfunctioning.
- Replace ECM.
 - Perform initialization or re-communicating function.
 - For initialization, refer to "CONSULT-III Operation Manual NATS-IVIS/NVIS".
 - For re-communicating function, refer to [BL-130. "ECM Re-communicating Function"](#).

Diagnosis Procedure 2

INFOID:000000001721481

Self-diagnostic results:

"DIFFERENCE OF KEY" displayed on CONSULT-III screen

1. CONFIRM SELF-DIAGNOSTIC RESULTS

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

Is "DIFFERENCE OF KEY" displayed?

- YES >> GO TO 2.
NO >> GO TO [BL-134. "Trouble Diagnosis"](#).

2. PERFORM INITIALIZATION WITH CONSULT-III

Perform initialization with CONSULT-III. Re-register all NATS ignition key IDs.

For initialization and registration of NATS ignition key IDs, refer to "CONSULT-III Operation Manual NATS-IVIS/NVIS".

NOTE:

If the initialization is not completed or malfunctions, CONSULT-III shows message on the screen.

Can the system be initialized and can the engine be started with re-registered NATS ignition key?

- YES >> • Ignition key ID was unregistered.
- NO >> • BCM is malfunctioning.
- Replace BCM. Refer to [BCS-18. "BCM"](#).
 - Perform initialization with CONSULT-III.
 - For initialization, refer to "CONSULT-III Operation Manual NATS-IVIS/NVIS".

Diagnosis Procedure 3

INFOID:000000001721482

Self-diagnostic results:

"ID DISCORD, IMM-ECM" displayed on CONSULT-III screen

1. CONFIRM SELF-DIAGNOSTIC RESULTS

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

NVIS(NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

< SERVICE INFORMATION >

NOTE:

“ID DISCORD IMM-ECM”:

Registered ID of BCM is in discord with that of ECM.

Is “ID DISCORD. IMM-ECM” displayed?

YES >> GO TO 2.

NO >> GO TO [BL-134, "Trouble Diagnosis"](#).

2.PERFORM INITIALIZATION WITH CONSULT-III

Perform initialization with CONSULT-III. Re-register all NATS ignition key IDs.

For initialization, refer to “CONSULT-III Operation Manual NATS-IVIS/NVIS”.

NOTE:

If the initialization is not completed or malfunctions, CONSULT-III shows message on the screen.

Can the system be initialized?

YES >> • Start engine. (END)

- System initialization had not been completed.

NO >> ECM is malfunctioning.

- Replace ECM.

- Perform initialization with CONSULT-III.

For initialization, refer to “CONSULT-III Operation Manual NATS-IVIS/NVIS”.

Diagnosis Procedure 4

INFOID:000000001721483

Self-diagnostic results:

“LOCK MODE” displayed on CONSULT-III screen

1.CONFIRM SELF-DIAGNOSTIC RESULTS

Confirm SELF-DIAGNOSTIC RESULTS “LOCK MODE” is displayed on CONSULT-III screen.

Is “LOCK MODE” displayed?

YES >> GO TO 2.

NO >> GO TO [BL-134, "Trouble Diagnosis"](#).

2.ESCAPE FROM LOCK MODE

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

Does engine start?

YES >> System is OK (Now system is escaped from “LOCK MODE”).

NO >> GO TO 3.

3.PERFORM INITIALIZATION WITH CONSULT-III

Perform initialization with CONSULT-III.

For initialization, refer to “CONSULT-III Operation Manual NATS-IVIS/NVIS”.

NOTE:

If the initialization is not completed or malfunctions, CONSULT-III shows the message on the screen.

Can the system be initialized?

YES >> System is OK.

NO >> GO TO 4.

4.PERFORM INITIALIZATION WITH CONSULT-III AGAIN

1. Replace BCM.
2. Perform initialization with CONSULT-III.
For initialization, refer to “CONSULT-III Operation Manual NATS-IVIS/NVIS”.

NOTE:

If the initialization is not completed or malfunctions, CONSULT-III shows the message on the screen.

Can the system be initialized?

YES >> System is OK. BCM is malfunctioning.

NO >> • ECM is malfunctioning.

NVIS(NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

< SERVICE INFORMATION >

- Replace ECM.
- Perform initialization with CONSULT-III.
For initialization, refer to "CONSULT-III Operation Manual NATS-IVIS/NVIS".

Diagnosis Procedure 5

INFOID:000000001721484

Self-diagnostic results:

"CHAIN OF IMMU-KEY" displayed on CONSULT-III screen

1.CONFIRM SELF-DIAGNOSTIC RESULTS

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

Is "CHAIN OF IMMU-KEY" displayed?

YES >> GO TO 2.

NO >> GO TO [BL-134, "Trouble Diagnosis"](#).

2.CHECK NATS ANTENNA AMP. INSTALLATION

Check NATS antenna amp. installation. Refer to [BL-142, "How to Replace NATS Antenna Amp"](#).

OK or NG

OK >> GO TO 3.

NG >> Reinstall NATS antenna amp. correctly.

3.CHECK NVIS (NATS) IGNITION KEY ID CHIP

Start engine with another registered NATS ignition key.

Does the engine start?

YES >> • Ignition key ID chip is malfunctioning.

• Replace the ignition key.

• Perform initialization with CONSULT-III.

For initialization, refer to "CONSULT-III Operation Manual NATS-IVIS/NVIS".

NO >> GO TO 4.

4.CHECK POWER SUPPLY FOR NATS ANTENNA AMP.

1. Turn ignition switch ON.

2. Check voltage between NATS antenna amp. connector M21 terminal 1 and ground.

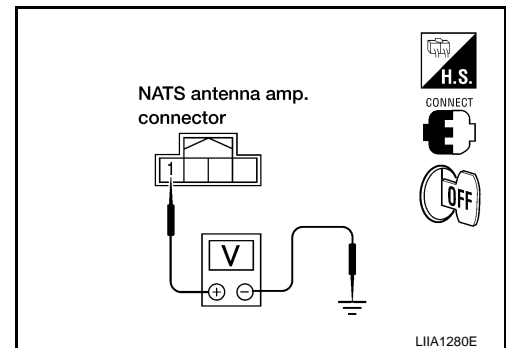
1 - Ground

: Battery voltage

OK or NG

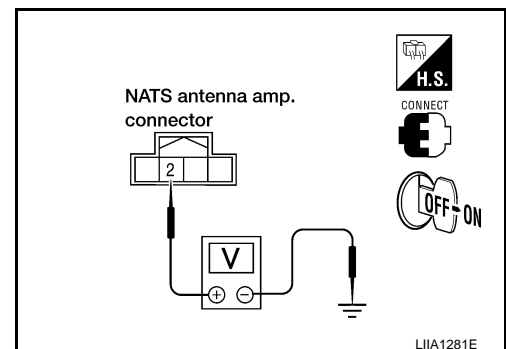
OK >> GO TO 5.

NG >> Repair or replace fuse or harness.



5.CHECK NATS ANTENNA AMP. SIGNAL LINE- 1

Check voltage between NATS antenna amp. connector M21 terminal 2 and ground with analog tester.



NVIS(NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

< SERVICE INFORMATION >

Terminals		Position of ignition key cylinder	Voltage (V) (Approx.)
(+)	(-)		
2	Ground	Before inserting ignition key	Battery voltage
		After inserting ignition key	Pointer of tester should move for approx. 30 seconds, then return to battery voltage
		Just after turning ignition switch ON	Pointer of tester should move for approx. 1 second, then return to battery voltage

OK or NG

OK >> GO TO 6.

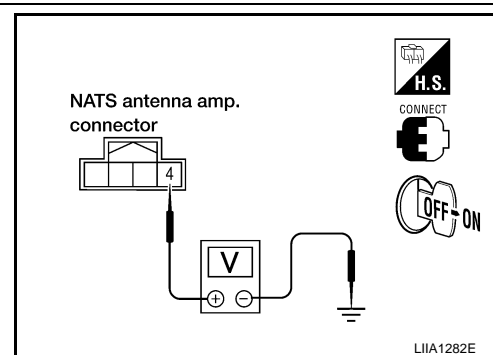
NG >> • Repair or replace harness.

NOTE:

If harness is OK, replace BCM, perform initialization with CONSULT-III. For initialization, refer to "CONSULT-III Operation Manual NATS-IVIS/NVIS".

6.CHECK NATS ANTENNA AMP. SIGNAL LINE- 2

Check voltage between NATS antenna amp. connector M21 terminal 4 and ground with analog tester.



Terminals		Position of ignition key cylinder	Voltage (V) (Approx.)
(+)	(-)		
4	Ground	Before inserting ignition key	Battery voltage
		After inserting ignition key	Pointer of tester should move for approx. 30 seconds, then return to battery voltage
		Just after turning ignition switch ON	Pointer of tester should move for approx. 1 second, then return to battery voltage

OK or NG

OK >> GO TO 7.

NG >> • Repair or replace harness.

NOTE:

If harness is OK, replace BCM, refer to [BCS-18, "BCM"](#). Perform initialization with CONSULT-III. For initialization, refer to "CONSULT-III Operation Manual NATS-IVIS/NVIS".

7.CHECK NATS ANTENNA AMP. GROUND LINE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect NATS antenna amp. connector.
3. Check continuity between NATS antenna amp. connector M21 terminal 3 and ground.

NVIS(NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

< SERVICE INFORMATION >

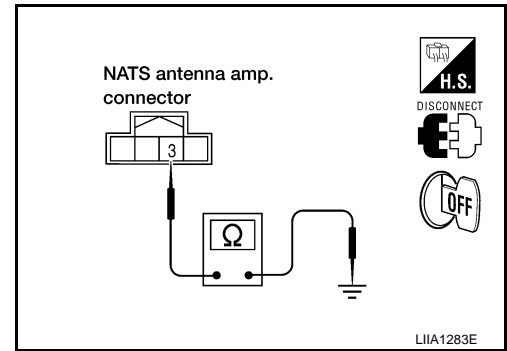
3 - Ground : Continuity should exist.

OK or NG

- OK >> NATS antenna amp. is malfunctioning.
- NG >> • Repair or replace harness.

NOTE:

If harness is OK, replace BCM, refer to [BCS-18](#), "[BCM](#)". Perform initialization with CONSULT-III. For initialization, refer to "CONSULT-III Operation Manual NATS-IVIS/NVIS".



Diagnosis Procedure 6

INFOID:000000001721485

“SECURITY INDICATOR LAMP DOES NOT LIGHT UP”

1. CHECK FUSE

Check 10A fuse [No.19, located in the fuse block (J/B)].

OK or NG

- OK >> GO TO 2.
- NG >> Replace fuse.

2. CHECK SECURITY INDICATOR LAMP

1. Install 10A fuse.
2. Start engine and turn ignition switch OFF.
3. Check the security indicator lamp lights up.

Security indicator lamp should light up.

OK or NG

- OK >> Inspection End.
- NG >> GO TO 3.

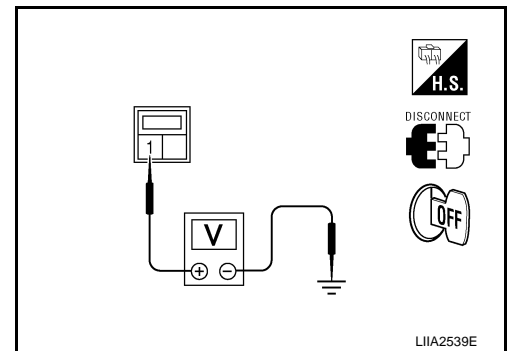
3. CHECK SECURITY INDICATOR LAMP POWER SUPPLY CIRCUIT

1. Disconnect security indicator lamp.
2. Check voltage between security indicator lamp connector M37 terminal 1 and ground.

1 - Ground : Battery voltage

OK or NG

- OK >> GO TO 4.
- NG >> Repair or replace harness.



4. CHECK BCM (NATS CONTROL UNIT) FUNCTION

1. Connect security indicator lamp.
2. Disconnect BCM.

NVIS(NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

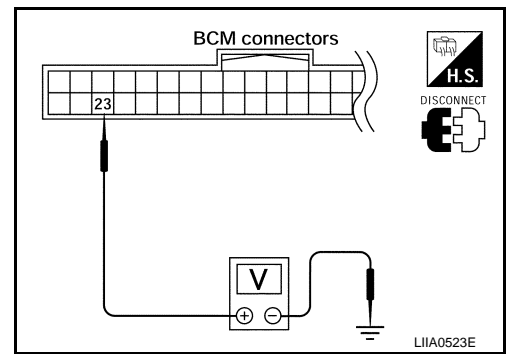
< SERVICE INFORMATION >

3. Check voltage between BCM connector M18 terminal 23 and ground.

23 - Ground : Battery voltage

OK or NG

- OK >> BCM is malfunctioning.
- Replace BCM. Refer to [BCS-18. "BCM"](#).
 - Perform initialization with CONSULT-III.
 - For initialization, refer to "CONSULT-III Operation Manual NATS-IVIS/NVIS".
- NG >> Check the following:
- Harness for open or short between security indicator lamp and BCM (NATS control unit).
 - Indicator lamp condition

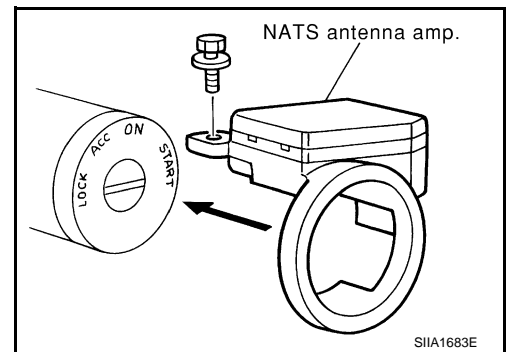


How to Replace NATS Antenna Amp

INFOID:000000001721486

NOTE:

- If NATS antenna amp. is not installed correctly, NVIS (NATS) system will not operate properly and SELF-DIAG RESULTS on CONSULT-III screen will show "LOCK MODE" or "CHAIN OF IMMU-KEY".
- Initialization is not necessary when only NATS antenna amp. is replaced with a new one.



HOMELINK UNIVERSAL TRANSCEIVER

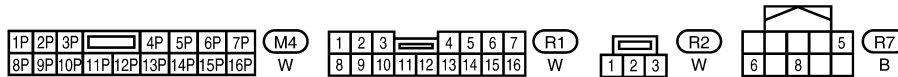
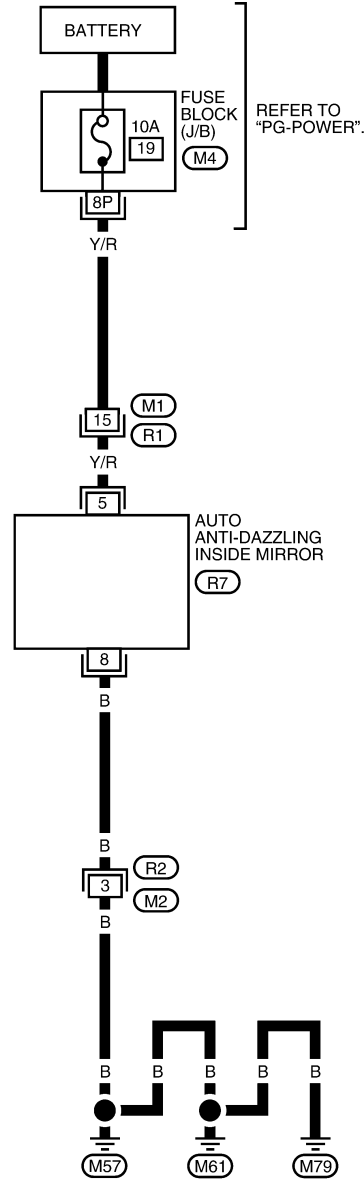
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HOMELINK UNIVERSAL TRANSCEIVER

Wiring Diagram - TRNSCV -

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BL-TRNSCV-01



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WIWA1913E

Trouble Diagnosis

DIAGNOSTIC PROCEDURE

SYMPTOM: Transmitter does not activate receiver.

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HOMELINK UNIVERSAL TRANSCEIVER

< SERVICE INFORMATION >

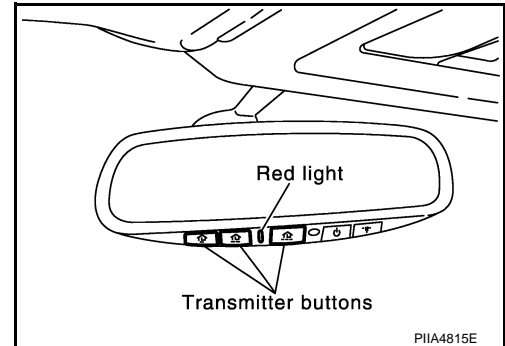
Before conducting the procedure given below, make sure that system receiver (garage door opener, etc.) operates with original, hand-held transmitter. If NG, receiver or hand-held transmitter is malfunctioning, not vehicle related.

1. ILLUMINATE CHECK

- Turn ignition switch OFF.
- Does red light (LED) of transmitter illuminate when any button is pressed?

YES or NO

- YES >> GO TO 2.
- NO >> GO TO 3.



2. TRANSMITTER CHECK

Check transmitter with Tool.*

*For details, refer to Technical Service Bulletin.

OK or NG

- OK >> Receiver or hand-held transmitter malfunction, not vehicle related.
- NG >> Replace transmitter.

3. POWER SUPPLY CHECK

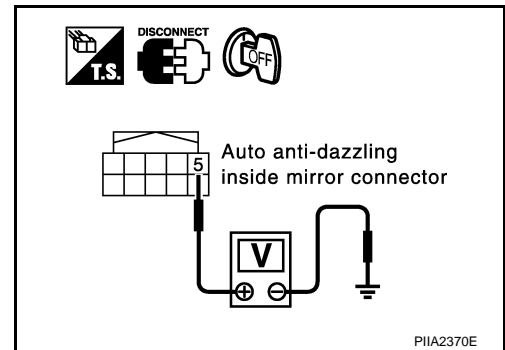
1. Disconnect transmitter.
2. Check voltage between auto anti-dazzling inside mirror (integrated homelink transmitter) connector R7 terminal 5 and ground.

5 - Ground

: Battery voltage

OK or NG

- OK >> GO TO 4.
- NG >> Repair or replace fuse or harness.



4. GROUND CIRCUIT CHECK

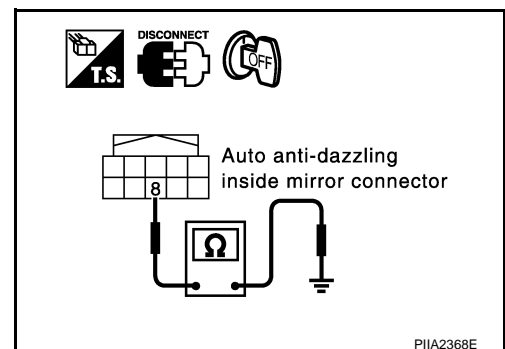
Check continuity between auto anti-dazzling inside mirror (integrated homelink transmitter) connector R7 terminal 8 and body ground.

8 - Ground

: Continuity should exist.

OK or NG

- OK >> Replace inside mirror assembly. Refer to [GW-74, "Removal"](#).
- NG >> Repair or replace harness.



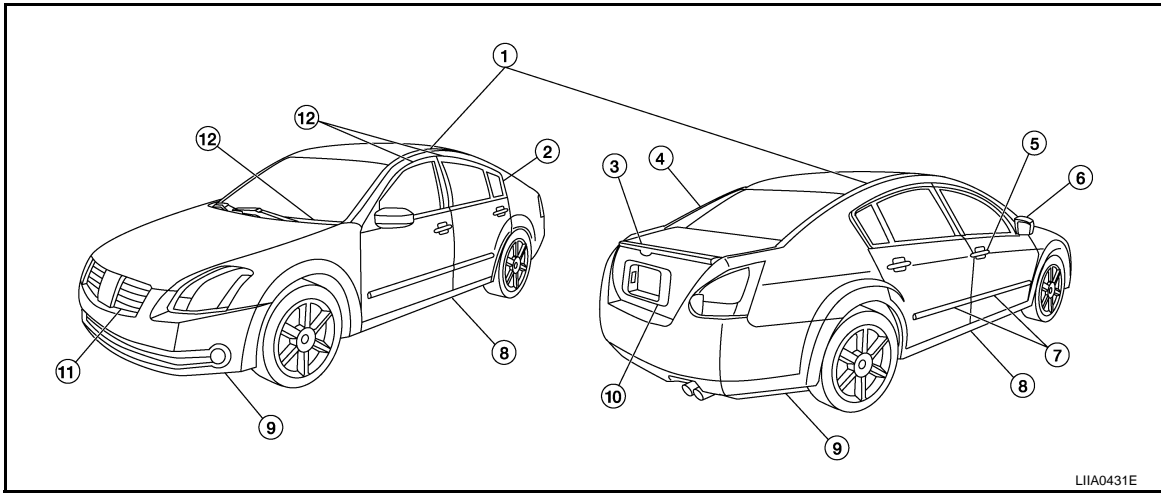
BODY REPAIR

< SERVICE INFORMATION >

BODY REPAIR

Body Exterior Paint Color

INFOID:000000001721489



Component			Color code	A15	BW9	C43	K12	KH3	K50	QX3	W40
			Description	Sonoma Sunset	Majestic Blue	Pebble Beach	Radiant Silver	Super Black	Dark Slate	Winter Frost	Precision Gray
			Paint type	2PM	2PM	M	M	2S	M	3P	M
			Clear coat	t	t	t	t	t	t	t	t
1	Roof side molding		Chrome	Cr	Cr	Cr	Cr	Cr	Cr	Cr	Cr
2	Rear door sash Cover		Black	KH3	KH3	KH3	KH3	KH3	KH3	KH3	KH3
3	Rear Spoiler		Body color	A15	BW9	C43	K12	KH3	KY1	QX3	W40
4	Rear pillar trim	Base	Black	KH3	KH3	KH3	KH3	KH3	KH3	KH3	KH3
		Body	Chrome	Cr	Cr	Cr	Cr	Cr	Cr	Cr	Cr
5	Outside handle		Body color	A15	BW9	C43	K12	KH3	K50	QX3	W40
6	Outside mirror	Body	Body color	A15	BW9	C43	K12	KH3	K50	QX3	W40
		Base	Black	AG01	AG01	AG01	AG01	AG01	AG01	AG01	AG01
7	Side guard molding	Body	Body color	A15	BW9	C43	K12	KH3	K50	QX3	W40
8	Center mud-guard		Body color	A15	BW9	C43	K12	KH3	K50	QX3	W40
9	Bumper fascia	Body	Body color	A15	BW9	C43	K12	KH3	K50	QX3	W40
10	Trunk lid finisher		Body color	A15	BW9	C43	K12	KH3	K50	QX3	W40
11	Radiator grille	Center	Chromium-plate +Smoke Clear	Cr+HFM09	Cr+HFM09	Cr+HFM09	Cr+HFM09	Cr+HFM09	Cr+HFM09	Cr+HFM09	Cr+HFM09

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BODY REPAIR

< SERVICE INFORMATION >

Component			Color code	A15	BW9	C43	K12	KH3	K50	QX3	W40
			Description	Sonoma Sunset	Majestic Blue	Pebble Beach	Radiant Silver	Super Black	Dark Slate	Winter Frost	Precision Gray
			Paint type	2PM	2PM	M	M	2S	M	3P	M
			Clear coat	t	t	t	t	t	t	t	t
12	Cowl top cover		Black	AG01	AG01	AG01	AG01	AG01	AG01	AG01	AG01
13	Door sash		Black tape	X	X	X	X	X	X	X	X

M: Metallic; 2S: 2-Coat Solid, 2P: 2-Coat Pearl; 2PM: 2-Coat Pearl/Metallic; 3P: 3-Coat Pearl; t: New Cross Linking Clear Coat

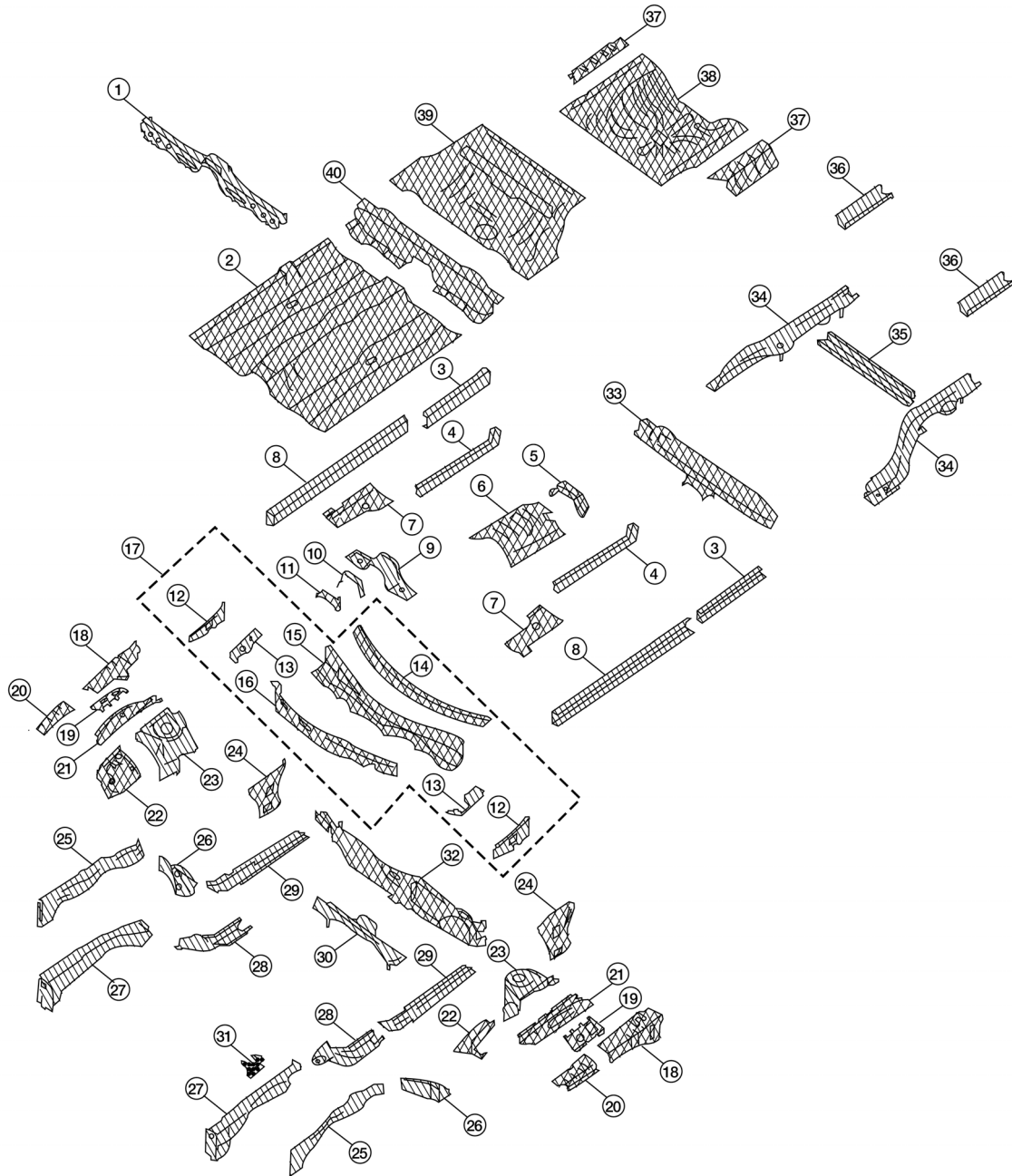
BODY REPAIR




< SERVICE INFORMATION >

Body Component Parts

INFOID:000000001721490

UNDERBODY COMPONENT PARTS



-  : Indicates both-side anti-corrosive pre-coated steel portions
-  : Indicates high strength steel (HSS) portions
-  : Indicates both-side anti-corrosive pre-coated steel and (HSS) portions

1. 2nd crossmember assembly
2. Front floor assembly
3. Inner sill extension RH/LH
4. Front side member rear extension RH/LH

BL-147

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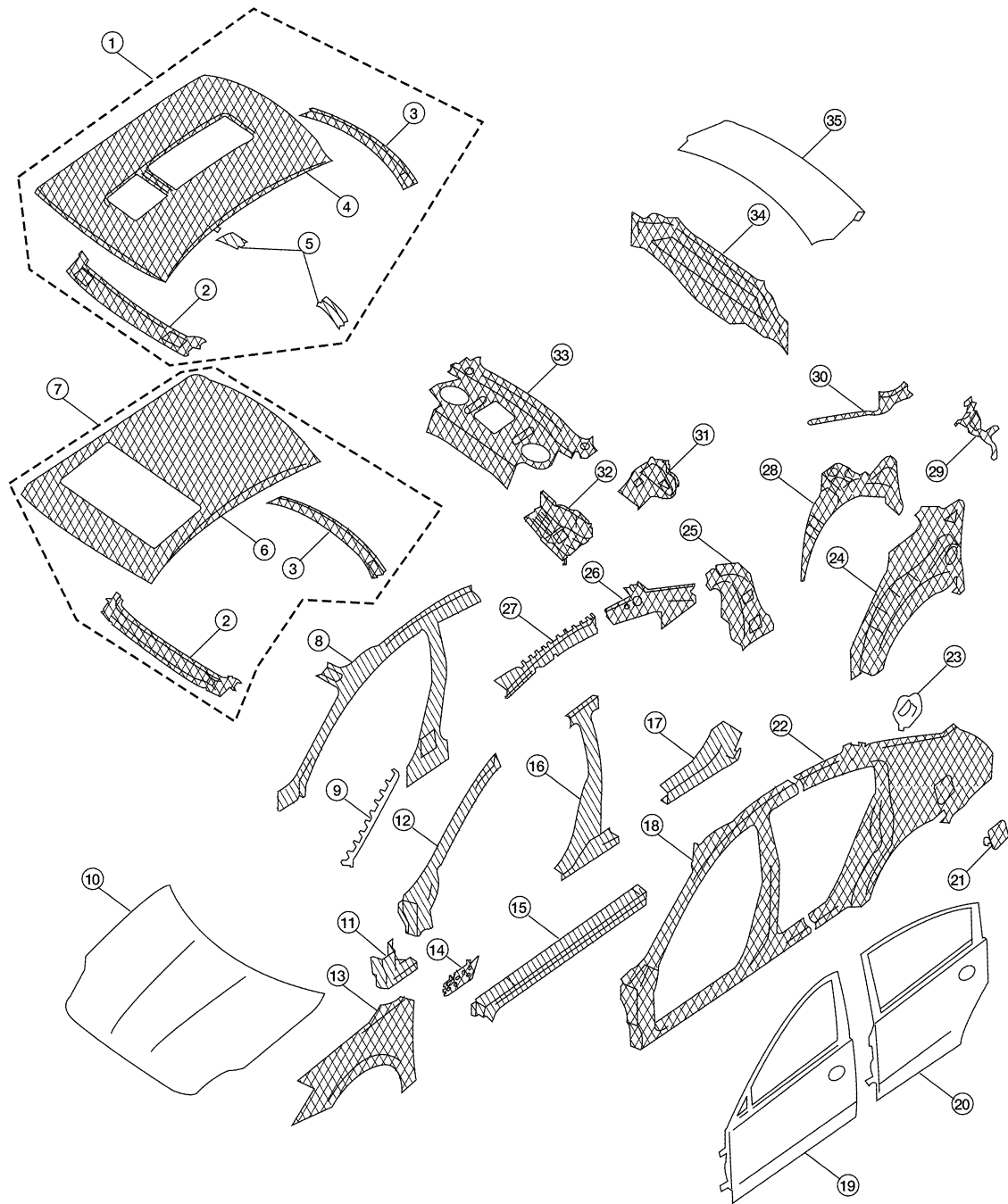
BODY REPAIR




< SERVICE INFORMATION >

5. Rear floor reinforcement
6. Parking brake reinforcement assembly
7. Front floor reinforcement RH/LH
8. Inner sill assembly RH/LH
9. Front floor reinforcement
10. Transmission control mounting reinforcement
11. Instrument stay bracket.
12. Cowl top side assembly RH/LH
13. Cowl top side brace RH/LH
14. Cowl top center assembly
15. Upper dash assembly
16. Front cowl top assembly
17. Air box assembly
18. Rear hoodledge reinforcement RH/LH
19. Hoodledge reinforcement gusset RH/LH
20. Front hoodledge reinforcement assembly RH/LH
21. Upper hoodledge assembly RH/LH
22. Lower front hoodledge assembly RH/LH
23. Lower rear hoodledge assembly RH/LH
24. Dash side assembly RH/LH
25. Front side member front closing plate assembly RH/LH
26. Front side member outrigger RH/LH
27. Front side member assembly RH/LH
28. Front side member extension RH/LH
29. Front side member center extension RH/LH
30. Lower dash crossmember assembly
31. Engine mounting bracket member assembly
32. Lower dash assembly
33. Rear seat crossmember
34. Rear side member assembly RH/LH
35. Rear center crossmember assembly
36. Rear side member extension RH/LH
37. Rear floor side RH/LH
38. Rear floor rear
39. Rear floor front
40. Rear floor front extension

BODY REPAIR

< SERVICE INFORMATION > BODY COMPONENT PARTS



-  : Indicates both-side anti-corrosive precoated steel portions
-  : Indicates high strength steel (HSS) portions
-  : Indicates both-side anti-corrosive precoated steel and (HSS) portions

LIA1832E

1. Skyview roof assembly
2. Front roof rail assembly
3. Rear roof rail assembly
4. Skyview roof panel

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BODY REPAIR

< SERVICE INFORMATION >

5. 2nd roof bow bracket RH/LH
6. Sunroof roof panel
7. Sunroof assembly
8. Body side inner assembly RH/LH
9. Front pillar outer reinforcement RH/LH
10. Hood assembly
11. Front pillar lower hinge brace RH/LH
12. Front pillar upper hinge brace RH/LH
13. Fender RH/LH
14. Front pillar lower reinforcement RH/LH
15. Outer sill reinforcement assembly RH/LH
16. Center pillar reinforcement RH/LH
17. Rear sill outer reinforcement RH/LH
18. Front body side outer RH/LH
19. Front door assembly RH/LH
20. Rear door assembly RH/LH
21. Fuel filler assembly
22. rear body side outer RH/LH
23. Fuel filler base
24. Rear wheel outer RH/LH
25. Rear pillar inner reinforcement RH/LH
26. Rear pillar inner RH/LH
27. Outer roof side rail reinforcement RH/LH
28. Rear wheel inner RH/LH
29. Rear fender corner assembly RH/LH
30. Rear fender extension RH/LH
31. Parcel shelf side assembly RH/LH
32. Rear wheel inner, inner reinforcement RH/LH
33. Parcel shelf assembly
34. Rear panel assembly
35. Trunk lid assembly

Corrosion Protection

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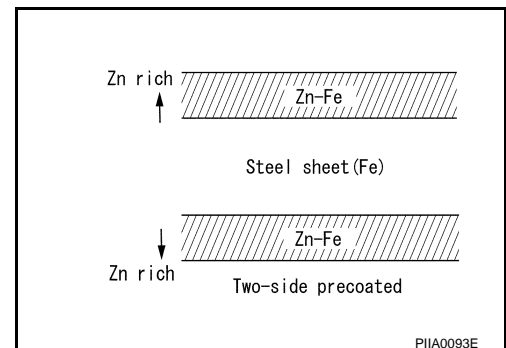
DESCRIPTION

To provide improved corrosion prevention, the following anti-corrosive measures have been implemented in NISSAN production plants. When repairing or replacing body panels, it is necessary to use the same anti-corrosive measures.

ANTI-CORROSIVE PRECOATED STEEL (GALVANNEALED STEEL)

To improve reparability and corrosion resistance, a new type of anti-corrosive precoated steel sheet has been adopted replacing conventional zinc-coated steel sheet.

Galvannealed steel is electroplated and heated to form Zinc-iron alloy, which provides excellent and long term corrosion resistance with cationic electrode position primer.



BODY REPAIR

< SERVICE INFORMATION >

Nissan Genuine Service Parts are fabricated from galvanized steel. Therefore, it is recommended that GENUINE NISSAN PARTS or equivalent be used for panel replacement to maintain the anti-corrosive performance built into the vehicle at the factory.

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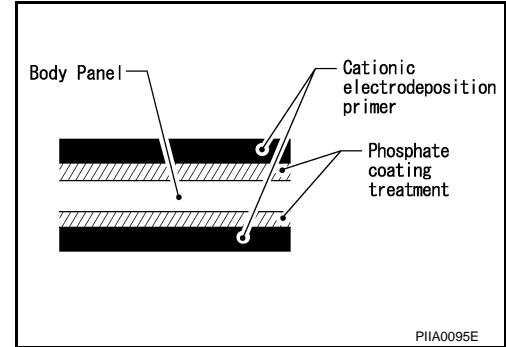
PHOSPHATE COATING TREATMENT AND CATIONIC ELECTRODEPOSITION PRIMER

A phosphate coating treatment and a cationic electrodeposition primer, which provide excellent corrosion protection, are employed on all body components.

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CAUTION:

Confine paint removal during welding operations to an absolute minimum.



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Nissan Genuine Service Parts are also treated in the same manner. Therefore, it is recommended that GENUINE NISSAN PARTS or equivalent be used for panel replacement to maintain anti-corrosive performance built into the vehicle at the factory.

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ANTI-CORROSIVE WAX

To improve corrosion resistance, anti-corrosive wax is applied inside the body sill and inside other closed sections. Accordingly, when replacing these parts, be sure to apply anti-corrosive wax to the appropriate areas of

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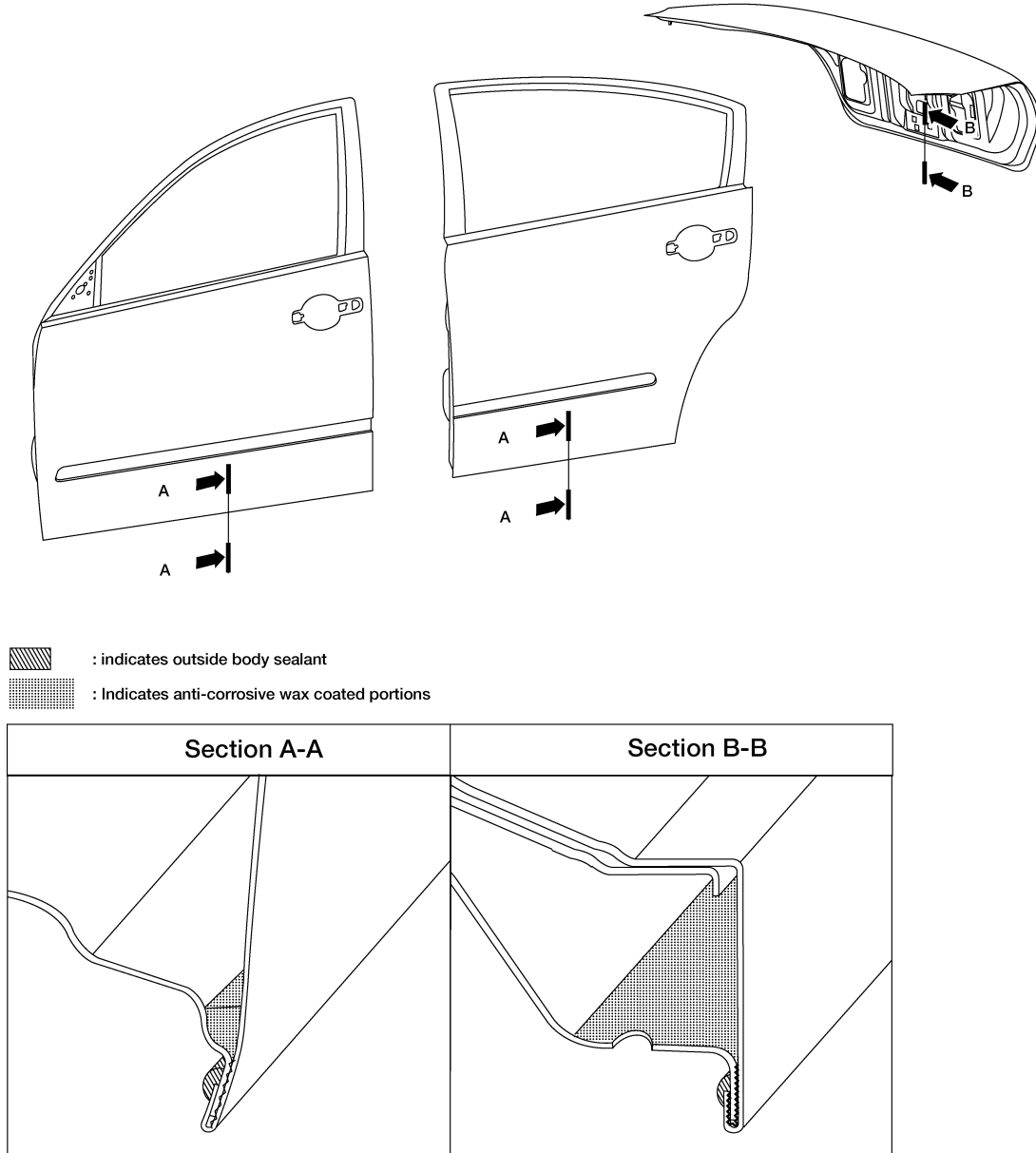
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BODY REPAIR

< SERVICE INFORMATION >

the new parts. Select an excellent anti-corrosive wax which will penetrate after application and has a long shelf life.



LIA0266E

UNDERCOATING

The underside of the floor and wheelhouse are undercoated to prevent rust, vibration, noise and stone chipping. Therefore, when such a panel is replaced or repaired, apply undercoating to that part. Use an undercoating which is rust preventive, soundproof, vibration-proof, shock-resistant, adhesive, and durable.


Precautions in undercoating

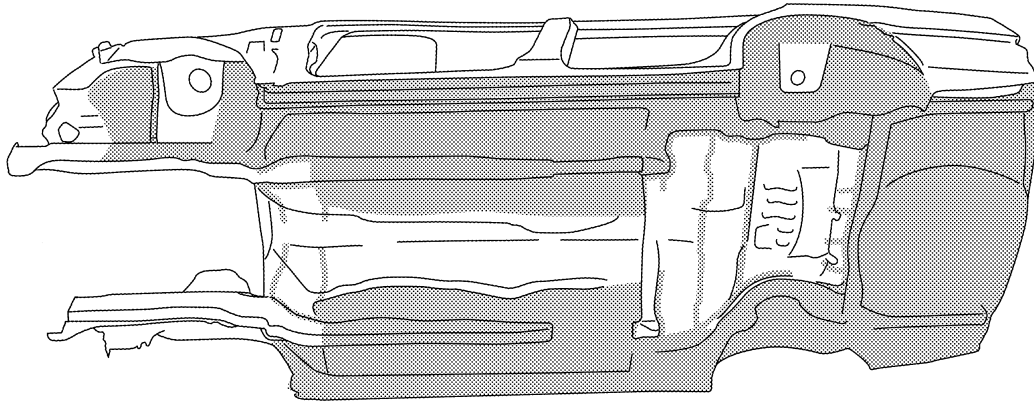
1. Do not apply undercoating to any place unless specified (such as the areas above the muffler and three way catalyst which are subjected to heat).
2. Do not undercoat the exhaust pipe or other parts which become hot.
3. Do not undercoat rotating parts.

BODY REPAIR

< SERVICE INFORMATION >

4. Apply bitumen wax after applying undercoating.

 : Indicates undercoated portions.



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INFOID:000000001721492

Body Sealing

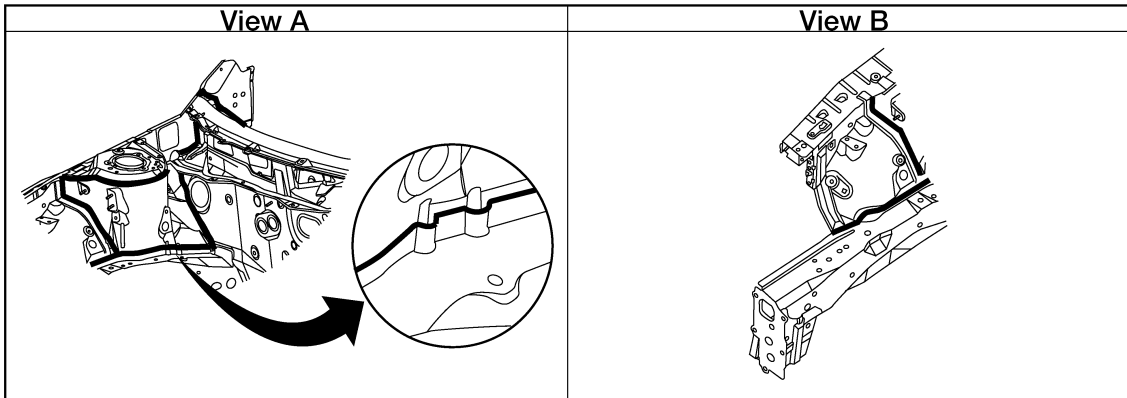
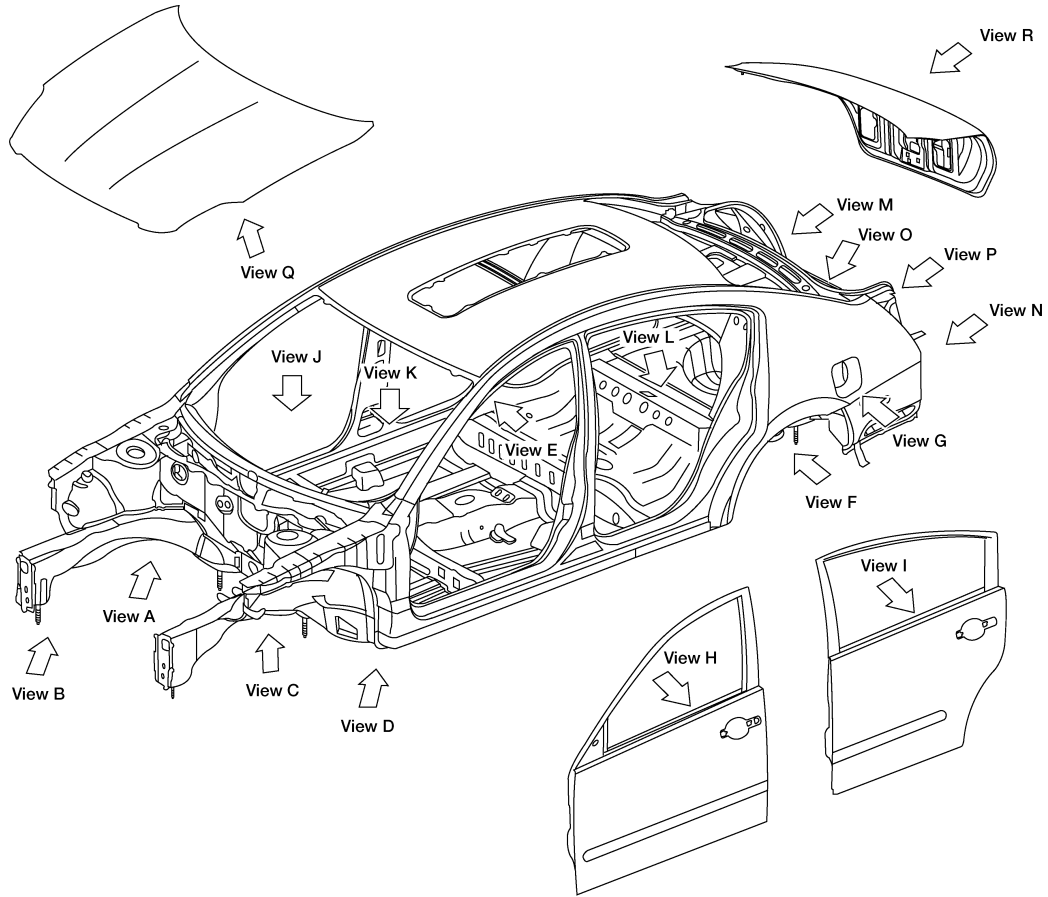
DESCRIPTION

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BODY REPAIR

< SERVICE INFORMATION >

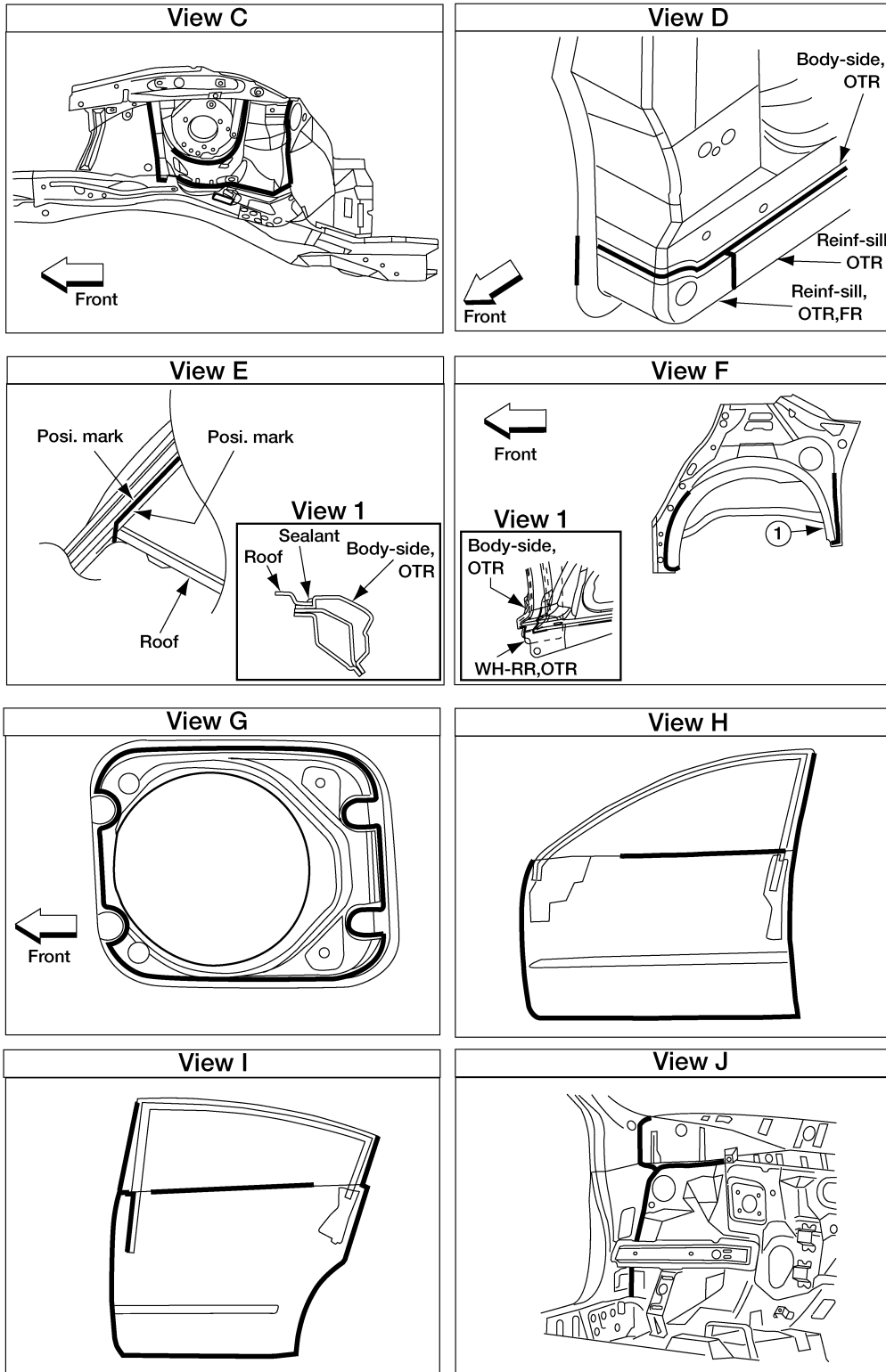
The following figure shows the areas which are sealed at the factory. Sealant which has been applied to these areas should be smooth and free from cuts or gaps. Care should be taken not to apply an excess amount of sealant and not to allow other unaffected parts to come into contact with the sealant.



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BODY REPAIR

< SERVICE INFORMATION >

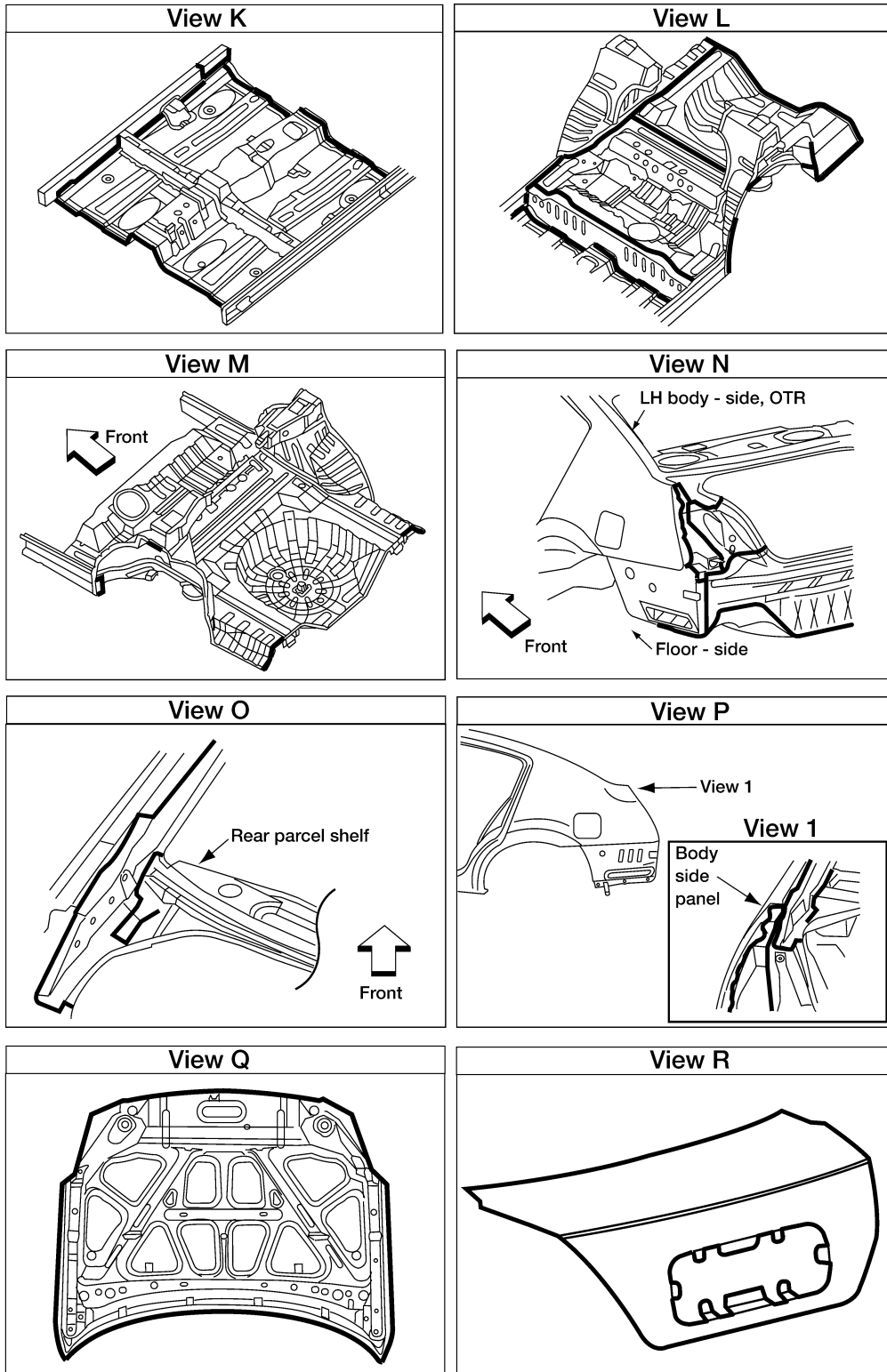


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BODY REPAIR

< SERVICE INFORMATION >



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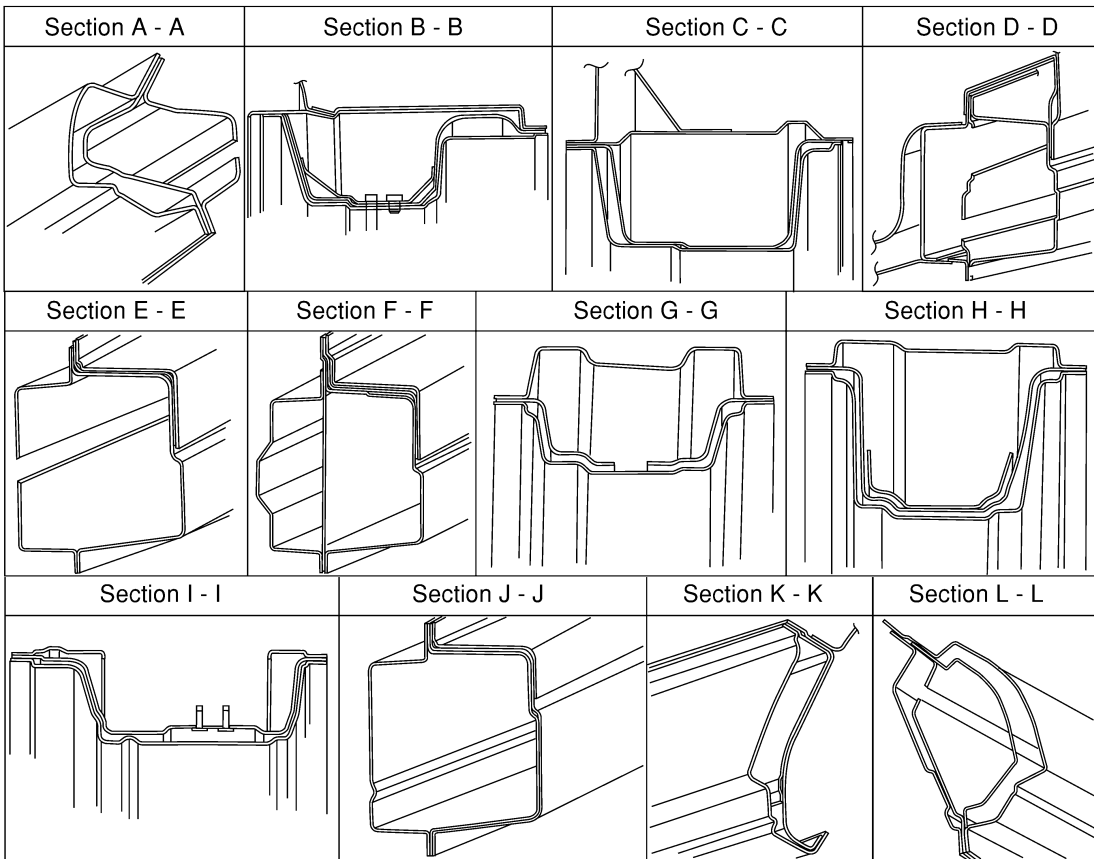
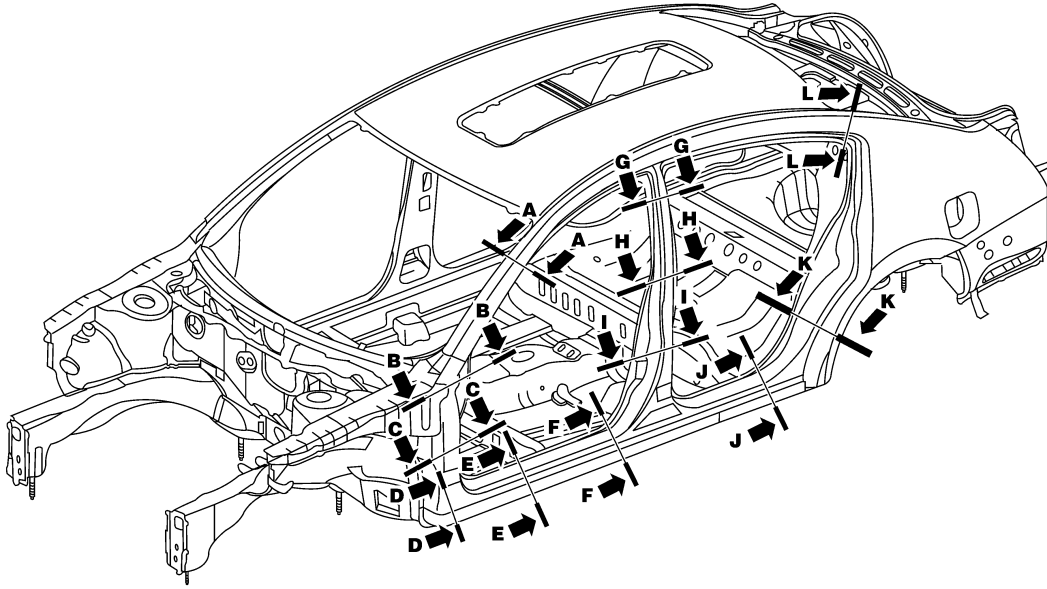
BODY REPAIR

< SERVICE INFORMATION >

Body Construction

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BODY CONSTRUCTION



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Body Alignment

BODY CENTER MARKS

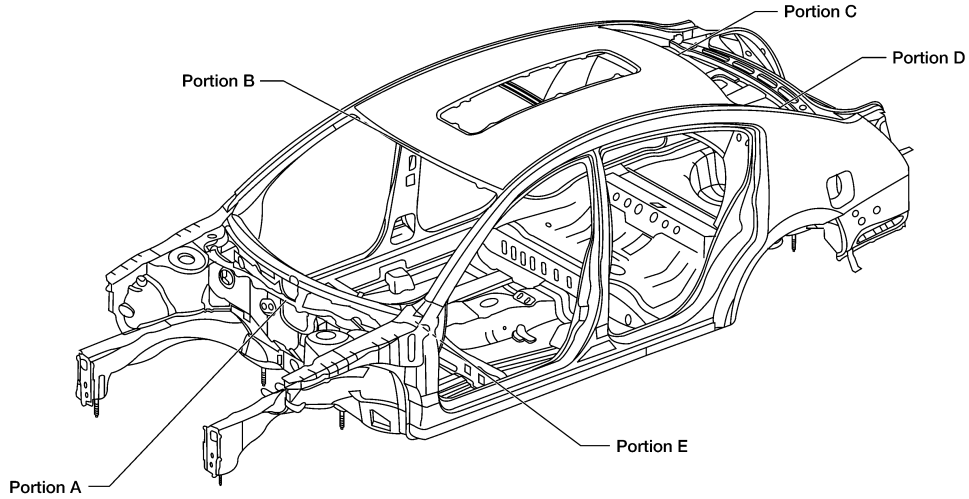
L1A0509E

INFOID:000000001721494

BODY REPAIR

< SERVICE INFORMATION >

A mark has been placed on each part of the body to indicate the vehicle center. When repairing parts damaged by an accident which might affect the vehicle frame (members, pillars, etc.), more accurate and effective repair will be possible by using these marks together with body alignment specifications.



<p style="text-align: center;">Portion A</p> <p style="text-align: center;">Embossment</p> <p style="text-align: center;">Front</p> <p>I Dashboard upper</p>	<p style="text-align: center;">Portion B,C</p> <p style="text-align: center;">Embossment</p> <p>I Front roof I Rear roof</p>
<p style="text-align: center;">Portion D</p> <p style="text-align: center;">Embossment</p> <p>I Rear waist panel</p>	<p style="text-align: center;">Portion E</p> <p style="text-align: center;">Front</p> <p style="text-align: center;">Hole (12x14)</p> <p>I Front floor</p>

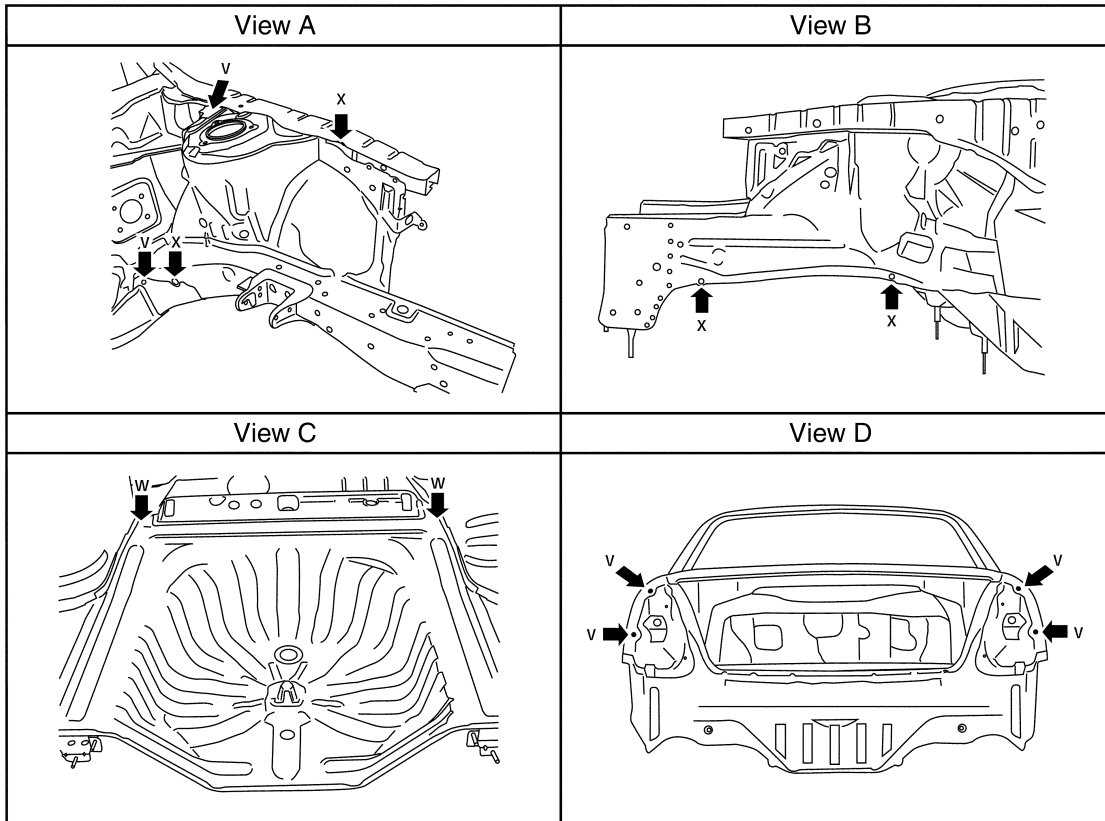
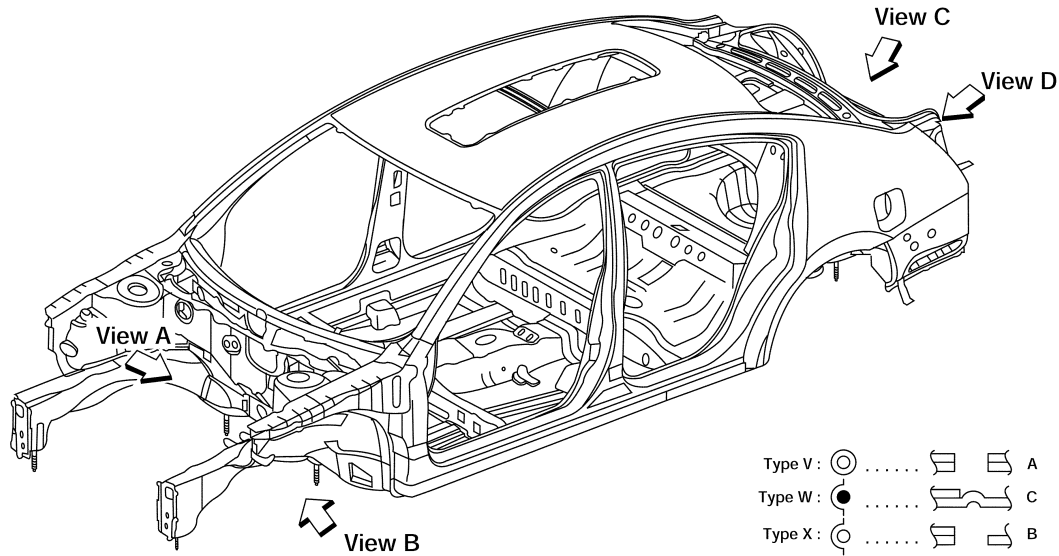
LIA0510E

PANEL PARTS MATCHING MARKS

BODY REPAIR

< SERVICE INFORMATION >

A mark has been placed on each body panel to indicate the parts matching positions. When repairing parts damaged by an accident which might affect the vehicle structure (members, pillars, etc.), more accurate and effective repair will be possible by using these marks together with body alignment specifications.



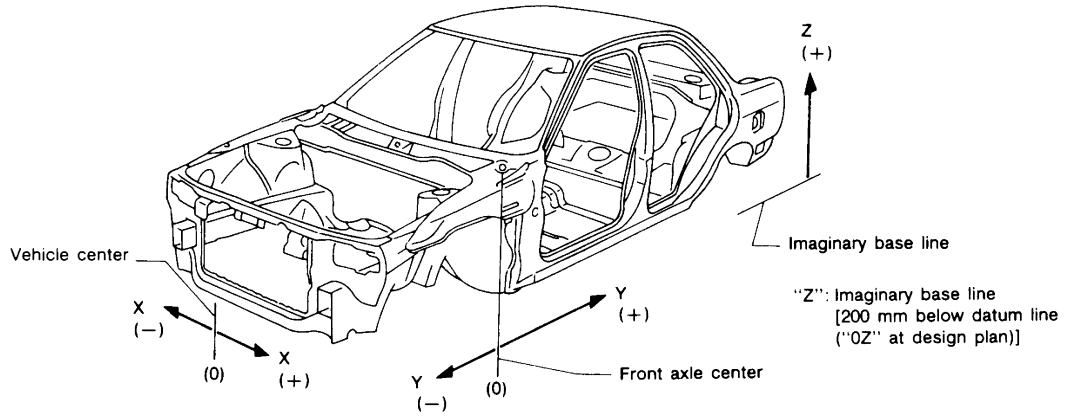
LIA0511E

DESCRIPTION

- All dimensions indicated in the figures are actual.
- When using a tracking gauge, adjust both pointers to equal length. Then check the pointers and gauge itself 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 REPAIR

< SERVICE INFORMATION >



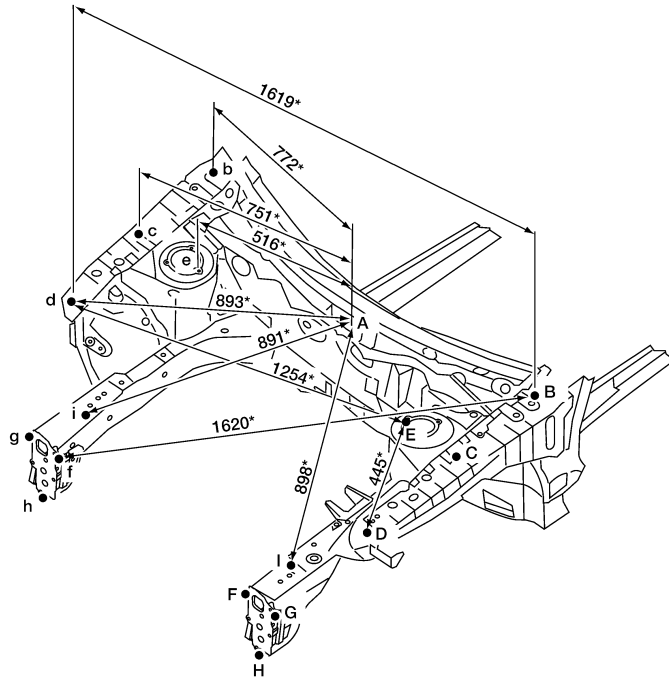
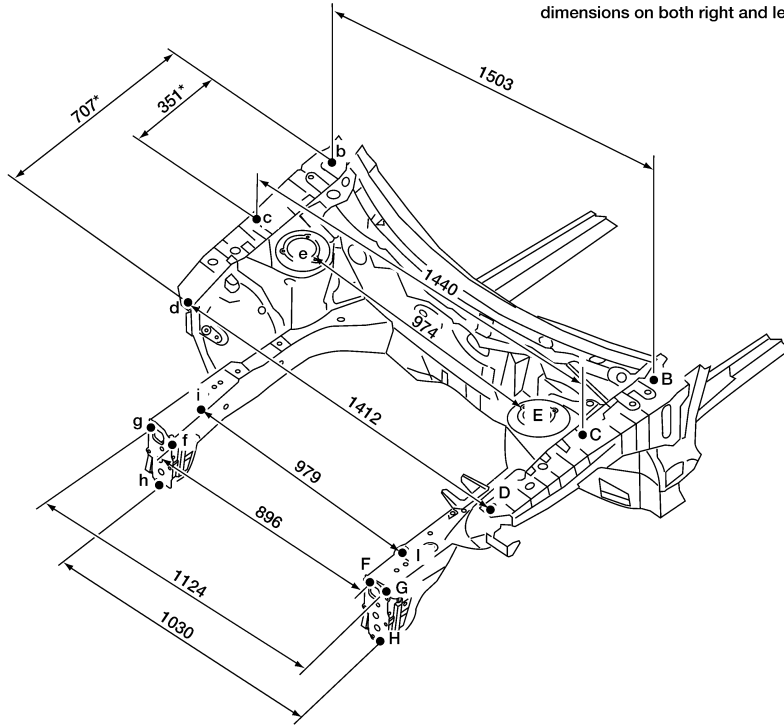
PIIA0104E

Engine Compartment

BODY REPAIR

< SERVICE INFORMATION > MEASUREMENT

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



Unit: mm

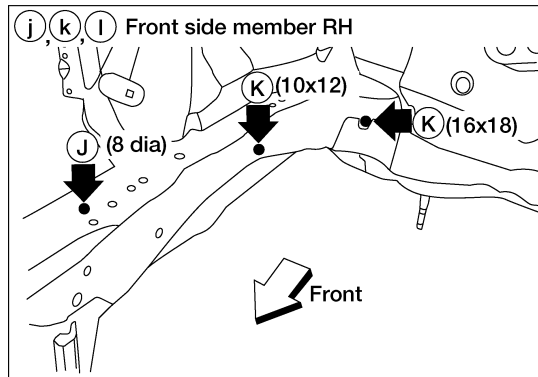
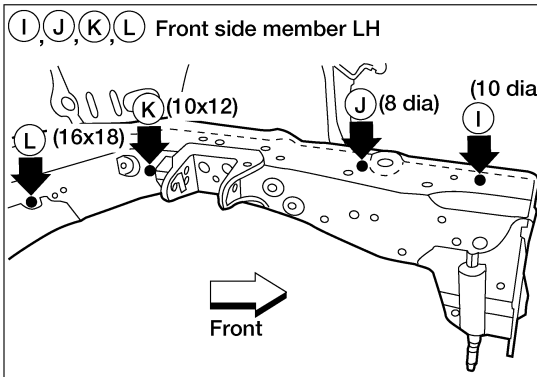
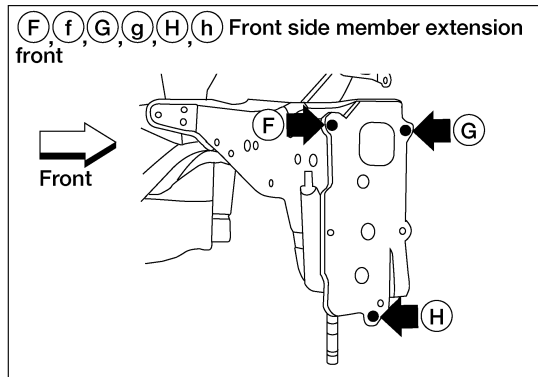
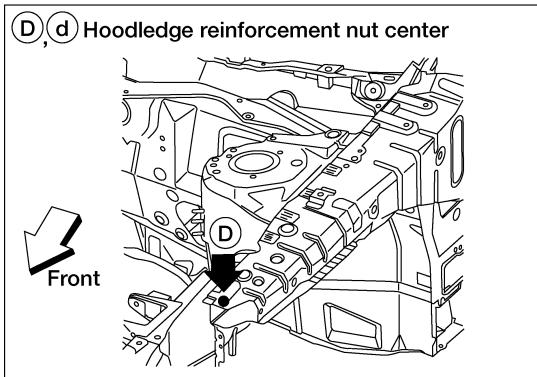
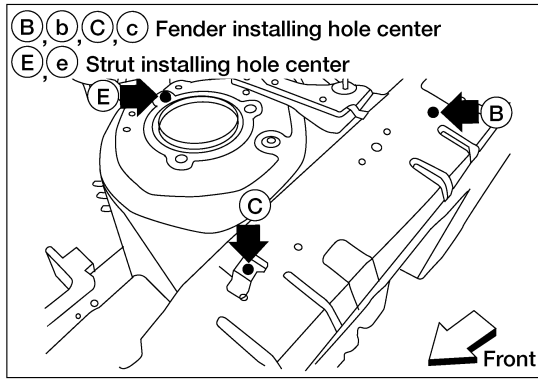
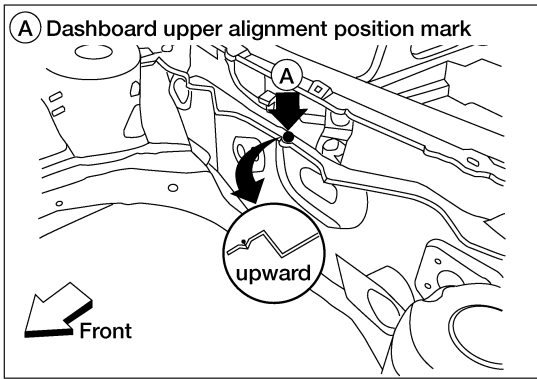
WIIA0480E

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BODY REPAIR

< SERVICE INFORMATION >

MEASUREMENT POINTS



Underbody

LIA0551E

BODY REPAIR

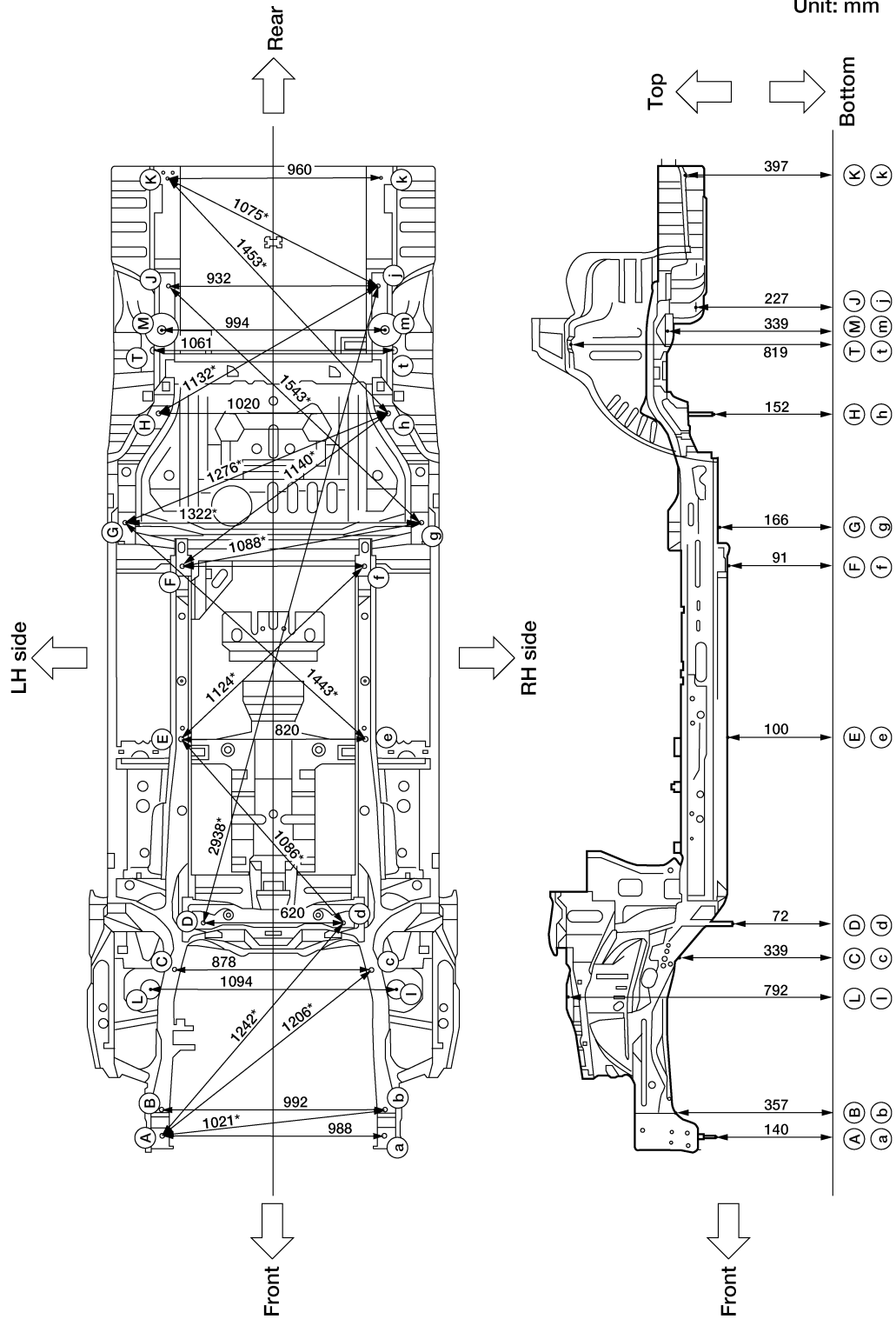
< SERVICE INFORMATION >

MEASUREMENT

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 this figure are actual.



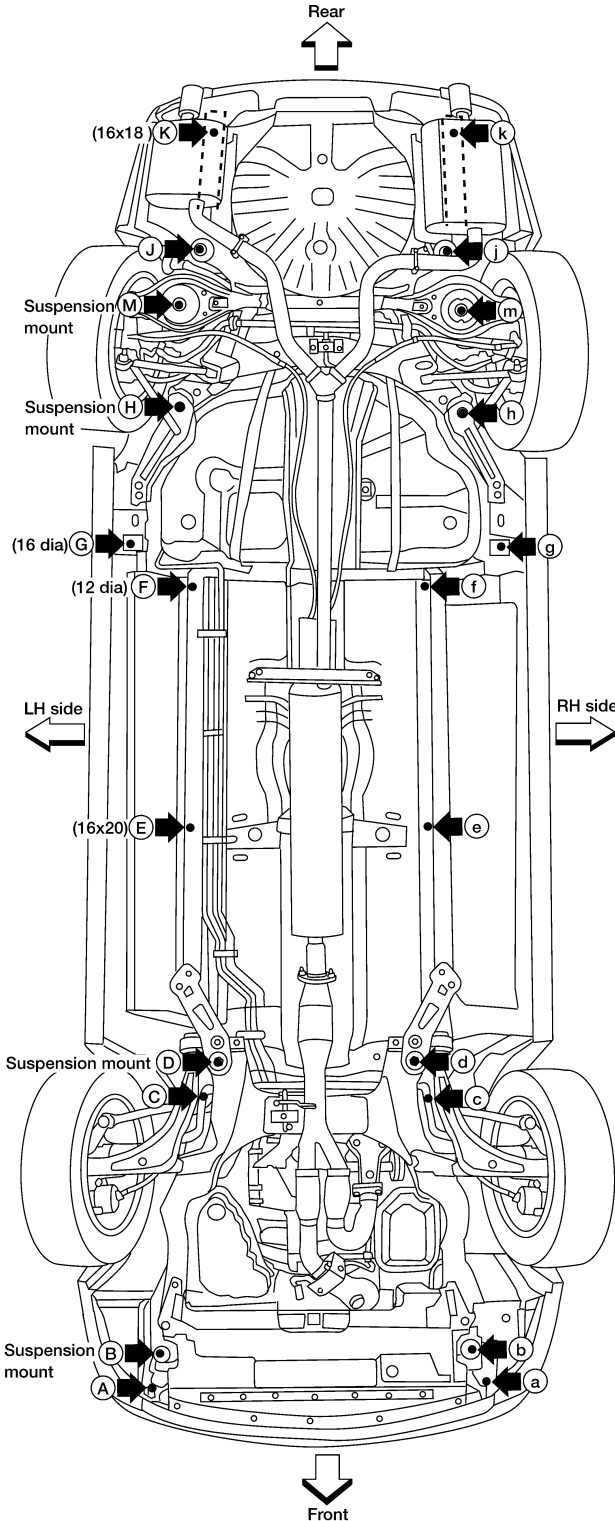
WIIA1163E

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BODY REPAIR

< SERVICE INFORMATION >

MEASUREMENT POINTS



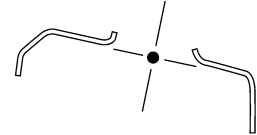
Coordinates:

- (A, a)
X : ±494
Y : -617
Z : 141
- (B, b)
X : ±495
Y : -500
Z : 357
- (C, c)
X : ±438
Y : 122
Z : 339
- (D, d)
X : ±309
Y : 327
Z : 387
- (E, e)
X : ±410
Y : 1140
Z : 100
- (F, f)
X : ±407
Y : 1912
Z : 91
- (G, g)
X : ±661
Y : 2105
Z : 166
- (H, h)
X : ±510
Y : 2587
Z : 152
- (M, m)
X : ±497
Y : 2961
Z : 338
- (J, j)
X : ±465
Y : 3157
Z : 226
- (K, k)
X : ±479
Y : 3636
Z : 397

Strut tower centers

Coordinates:

- (L, l) Front
X : ±547
Y : 28
Z : 791
- (T, t) Rear
X : ±530
Y : 2857
Z : 817



Unit: mm

Passenger Compartment

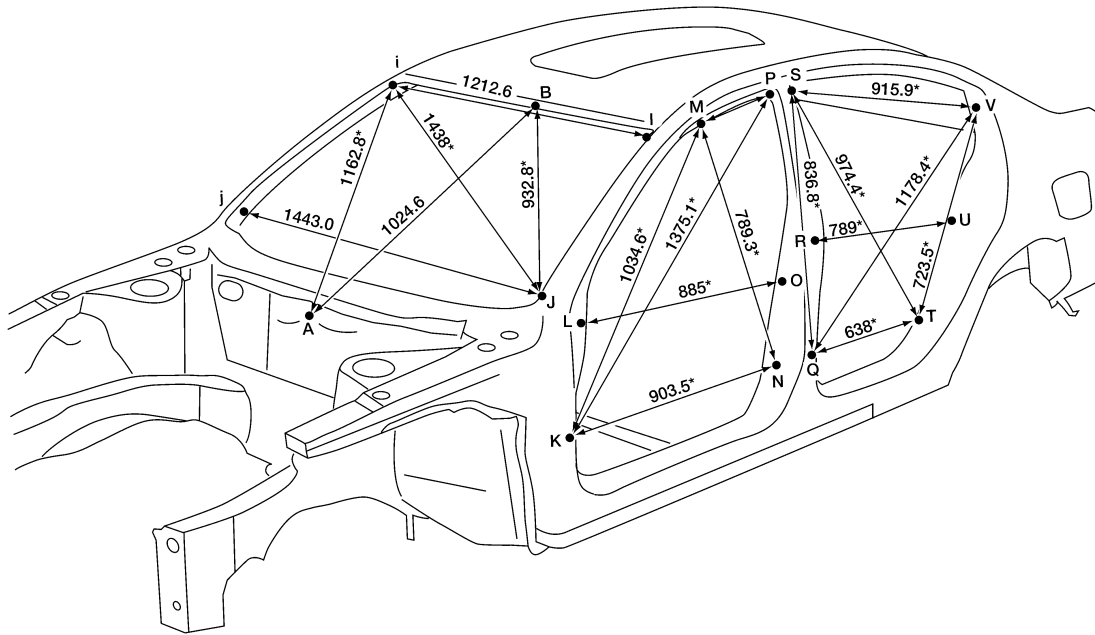
WIIA0488E

BODY REPAIR

< SERVICE INFORMATION >

MEASUREMENT

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



Unit: mm

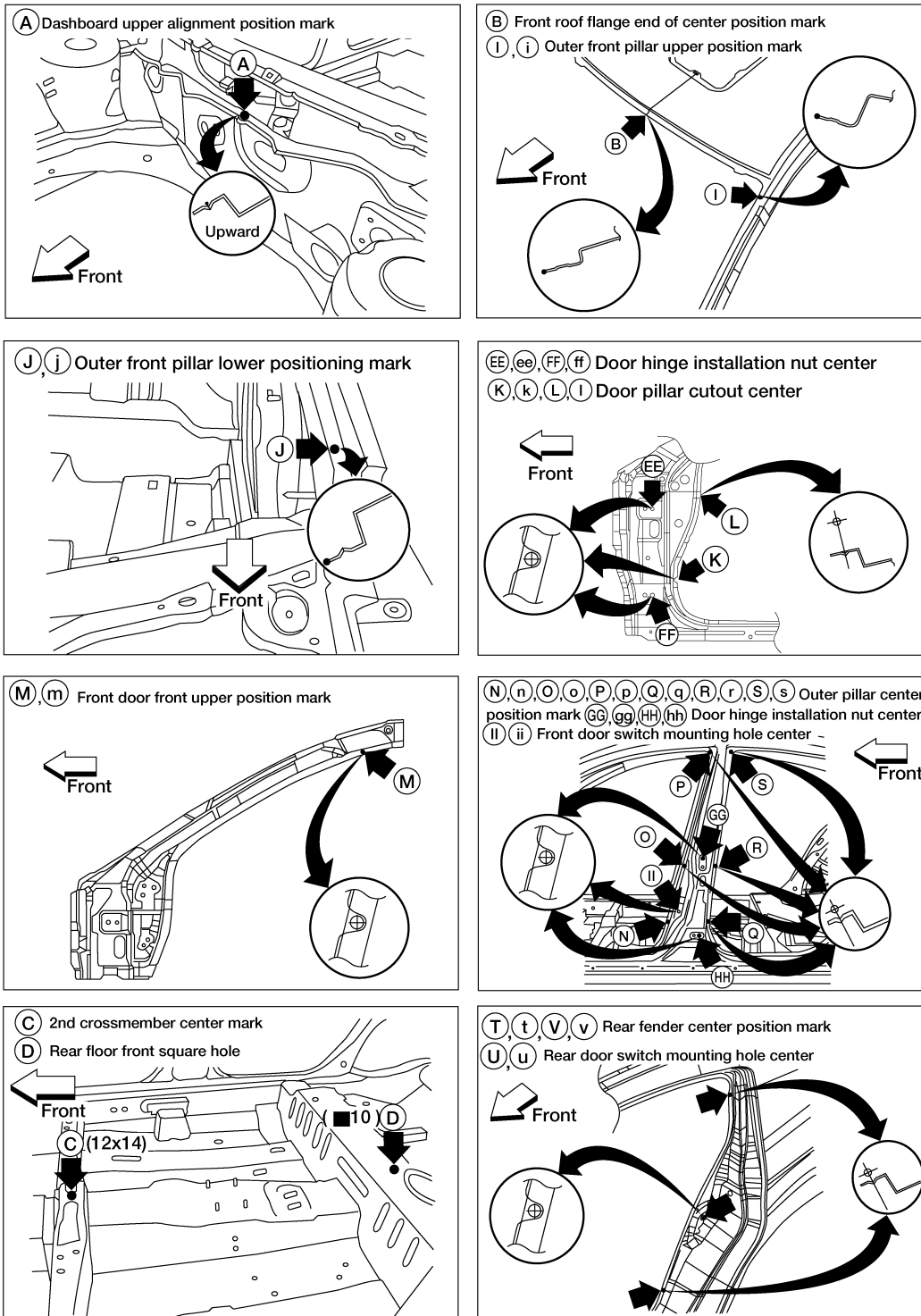
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BODY REPAIR

< SERVICE INFORMATION >

MEASUREMENT POINTS



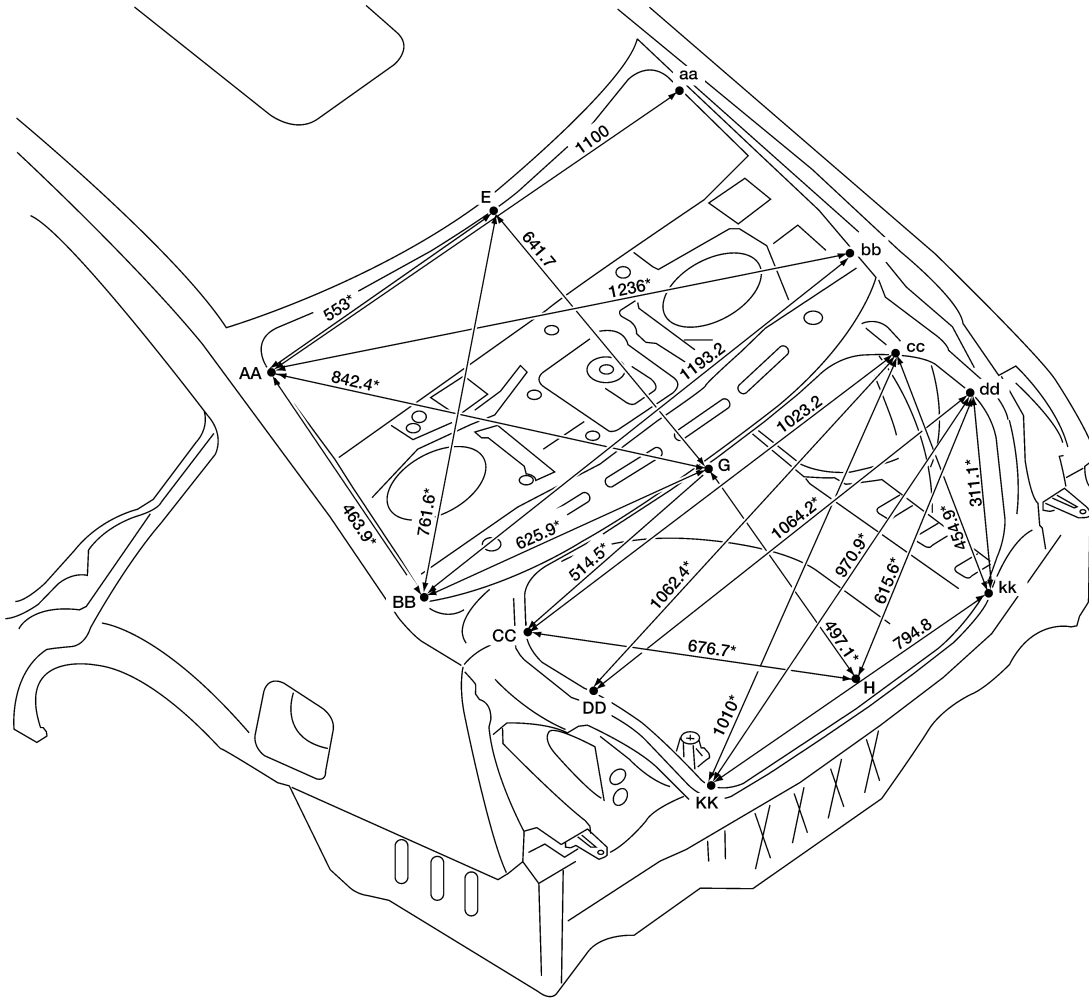
LIA0555E

Rear Body

BODY REPAIR

< SERVICE INFORMATION >
MEASUREMENT

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



Unit: mm

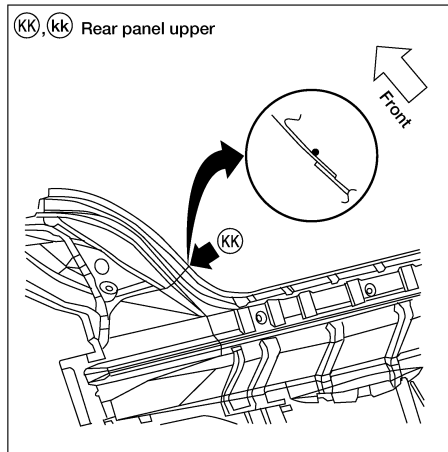
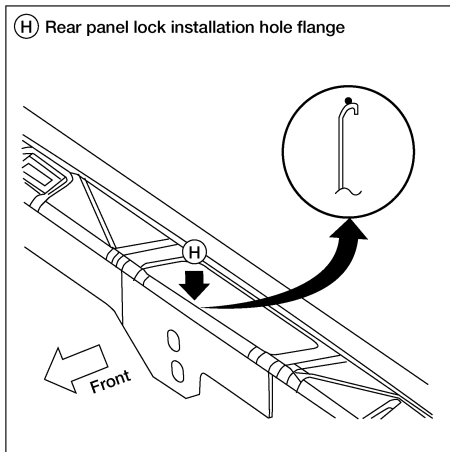
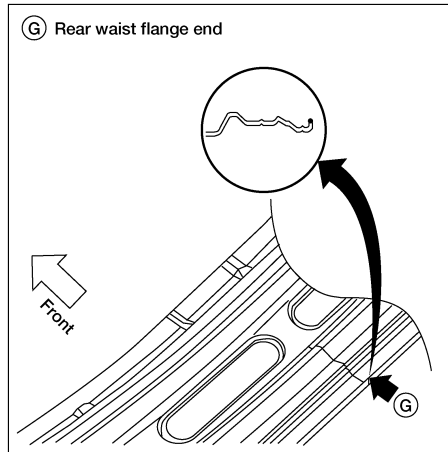
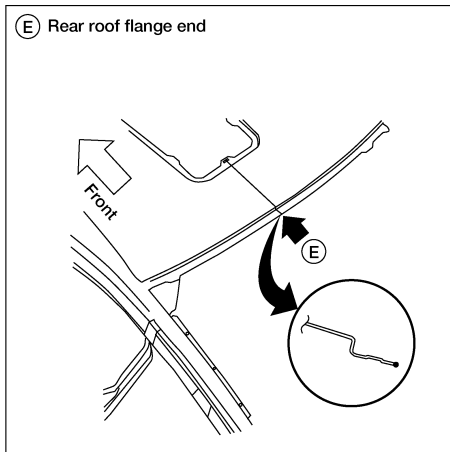
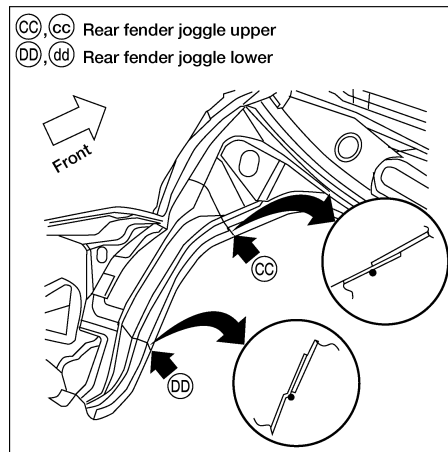
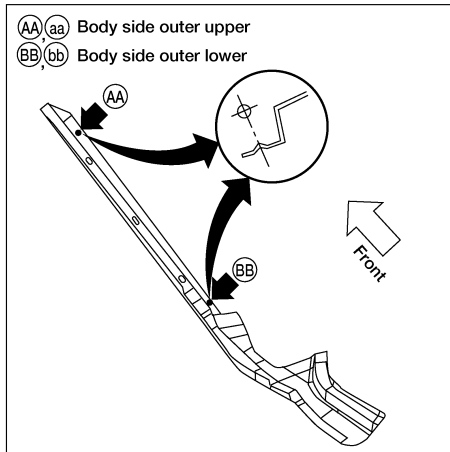
WIIA0490E

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BODY REPAIR

< SERVICE INFORMATION >

MEASUREMENT POINTS



Handling Precaution for Plastics

HANDLING PRECAUTIONS FOR PLASTICS

LIA0554E

INFOID:000000001721495

BODY REPAIR

< SERVICE INFORMATION >

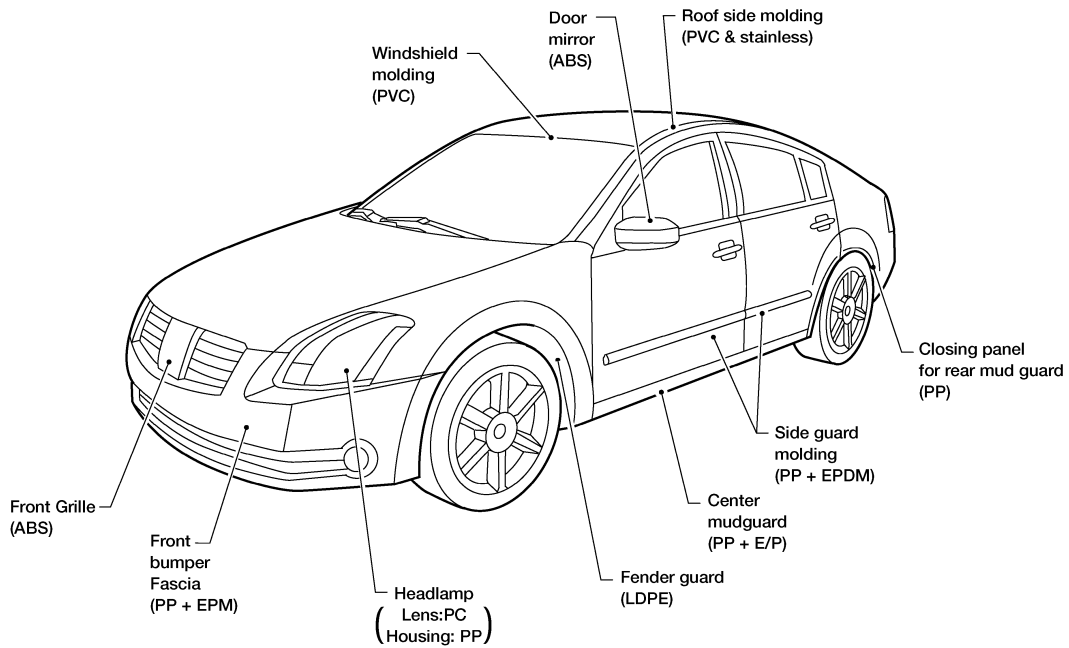
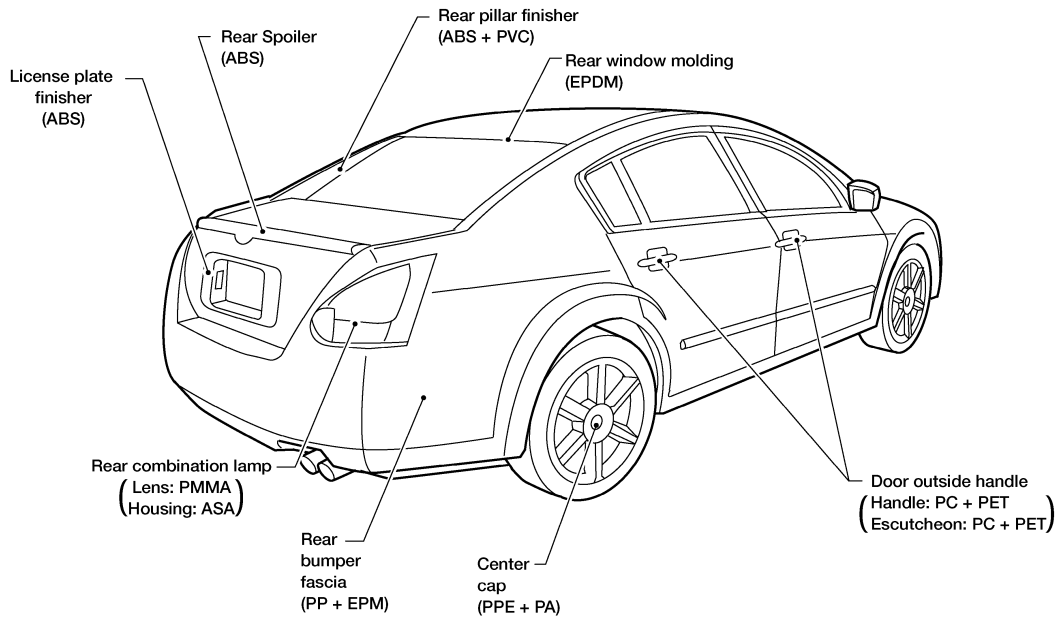
Abbreviation	Material name	Heat resisting temperature °C (°F)	Resistance to gasoline and solvents	Other cautions
PE	Polyethylene	60 (140)	Gasoline and most solvents are harmless if applied for a very short time (wipe up quickly).	Flammable
PVC	Polyvinyl Chloride	80 (176)	Same as above.	Poison gas is emitted when burned.
EPM/EPDM	Ethylene Propylene (Diene) rubber	80 (176)	Same as above.	Flammable
TPO/TPR	Thermoplastic Olefine/ Thermoplastic Rubber	80 (176)	Same as above.	Flammable
PP	Polypropylene	90 (194)	Same as above.	Flammable, avoid battery acid.
UP	Polyester thermoset	90 (194)	Same as above.	Flammable
PS	Polystyrene	80 (176)	Avoid solvents.	Flammable
ABS	Acrylonitrile Butadiene Styrene resin	80 (176)	Avoid gasoline and solvents.	
AES	Acrylonitrile Ethylene Styrene	80 (176)	Same as above.	
PMMA	Polymethyl Methacrylate	85 (185)	Same as above.	
AAS	Acrylonitrile Acrylic Styrene	85 (185)	Same as above.	
AS	Acrylonitrile Styrene	85 (185)	Same as above.	
EVA	Polyvinyl Ethyl Acetate	90 (194)	Same as above.	
ASA	Acrylonitrile Styrene Acrylate	100 (222)	Same as above.	Flammable
PPO/PPE	Polyphenylene Oxide/ Polyphenylene Ether	110 (230)	Same as above.	
PC	Polycarbonate	120 (248)	Same as above.	
PAR	Polyacrylate	180 (356)	Same as above.	
L-LDPE	Linear Low Density PE	45 (100)	Gasoline and most solvents are harmless.	Flammable
PUR	Polyurethane	90 (194)	Same as above.	
TPU	Thermoplastic Urethane	110 (230)	Same as above.	
PPC	Polypropylene Composite	115 (239)	Same as above.	Flammable
POM	Polyacetal	120 (248)	Same as above.	Avoid battery acid.
PBT+PC	Polybutylene Terephthalate+Polycarbonate	120 (248)	Same as above.	Flammable
PA	Polyamide (Nylon)	140 (284)	Same as above.	Avoid immersing in water.
PBT	Polybutylene Terephthalate	140 (284)	Same as above.	
FRP	Fiber Reinforced Plastics	170 (338)	Same as above.	Avoid battery acid.
PET	Polyethylene Terephthalate	180 (356)	Same as above.	
PEI	Polyetherimide	200 (392)	Same as above.	

1. When repairing and painting a portion of the body adjacent to plastic parts, consider their characteristics (influence of heat and solvent) and remove them if necessary or take suitable measures to protect them.
2. Plastic parts should be repaired and painted using methods suiting the materials' characteristics.

BODY REPAIR

< SERVICE INFORMATION >

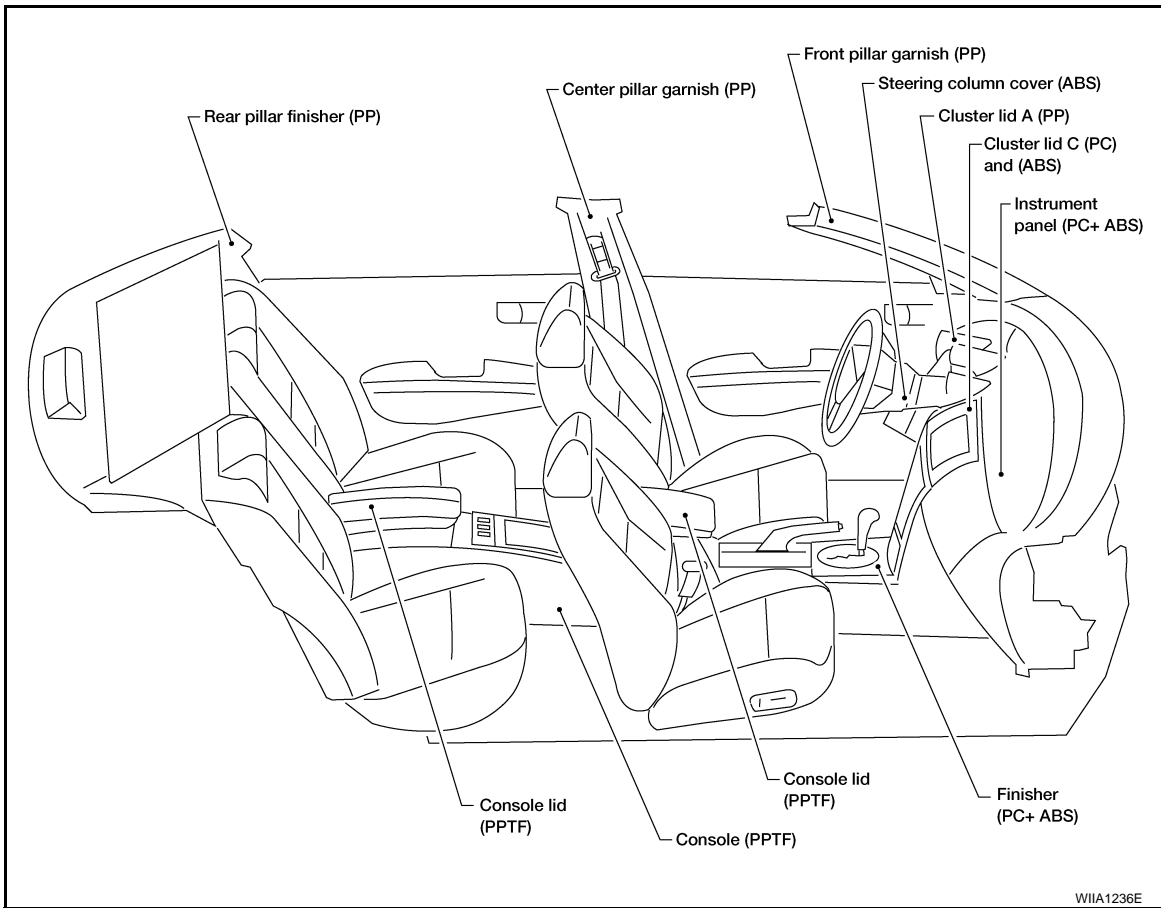
LOCATION OF PLASTIC PARTS



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BODY REPAIR

< SERVICE INFORMATION >



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Precaution in Repairing High Strength Steel

INFOID:000000001721496

High strength steel is used for body panels in order to reduce vehicle weight. Accordingly, precautions in repairing automotive bodies made of high strength steel are described below:

High strength steel (hss) used in nissan vehicles

Tensile strength	Nissan/Infiniti designation	Major applicable parts
373 N/mm ² (38kg/mm ² ,54klb/sq in)	SP130	<ul style="list-style-type: none"> • Front side member assembly • Upper hoodledge • Upper pillar hinge brace assembly • Rear side member extension • Other reinforcements
785-981 N/mm ² (80-100kg/mm ² 114-142klb/sq in)	SP150	<ul style="list-style-type: none"> • Front bumper reinforcement • Rear bumper reinforcement

SP130 is the most commonly used HSS.

SP150 HSS is used only on parts that require much more strength.

Read the following precautions when repairing HSS:

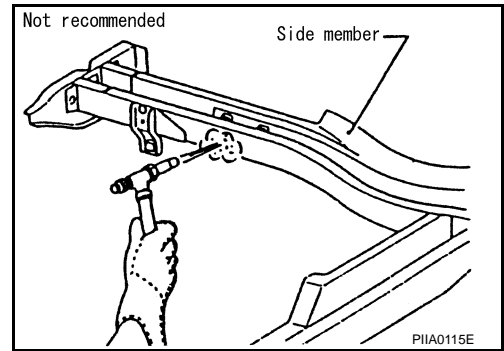
1. Additional points to consider

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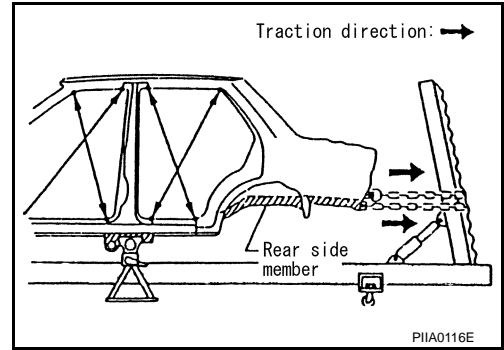
BODY REPAIR

< SERVICE INFORMATION >

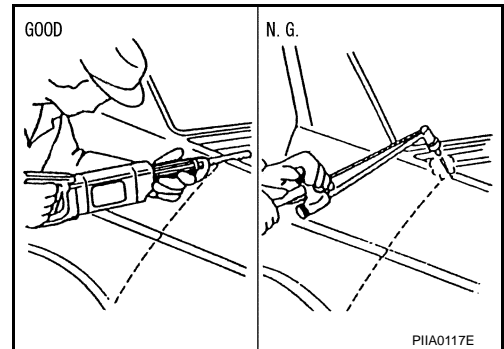
- The repair of reinforcements (such as side members) by heating is not recommended since it may weaken the component. When heating is unavoidable, do not heat HSS parts above 550°C (1,022°F). Verify heating temperature with a thermometer. (Crayon-type and other similar type thermometer are appropriate.)



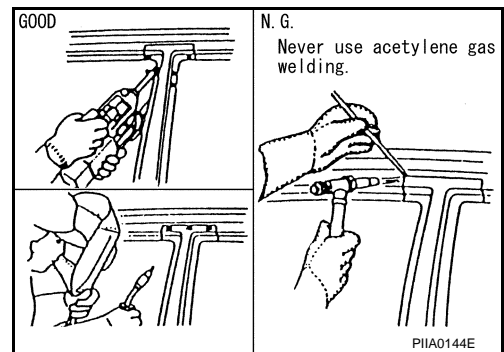
- When straightening body panels, use caution in pulling any HSS panel. Because HSS is very strong, pulling may cause deformation in adjacent portions of the body. In this case, increase the number of measuring points, and carefully pull the HSS panel.



- When cutting HSS panels, avoid gas (torch) cutting if possible. Instead, use a saw to avoid weakening surrounding areas due to heat. If gas (torch) cutting is unavoidable, allow a minimum margin of 50 mm (1.97in).



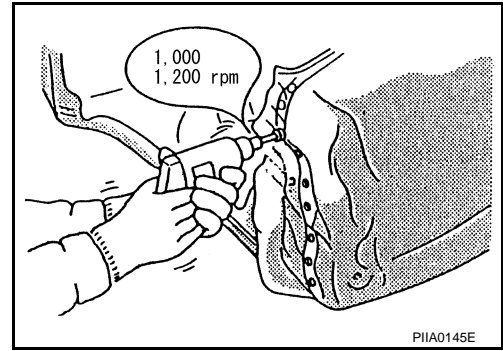
- When welding HSS panels, use spot welding whenever possible in order to minimize weakening surrounding areas due to heat. If spot welding is impossible, use M.I.G. welding. Do not use gas (torch) welding because it is inferior in welding strength.



BODY REPAIR

< SERVICE INFORMATION >

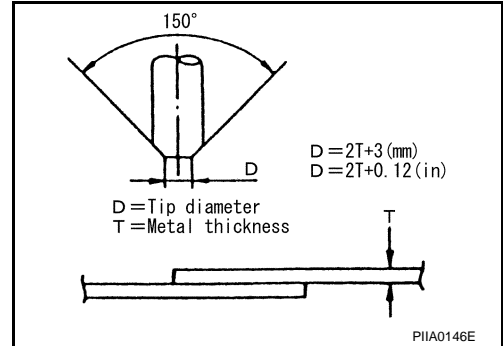
- The spot weld on HSS panels is harder than that of an ordinary steel panel. Therefore, when cutting spot welds on a HSS panel, use a low speed high torque drill (1,000 to 1,200 rpm) to increase drill bit durability and facilitate the operation.
- SP150 HSS panels with a tensile strength of 785 to 981 N/mm² (80 to 100 kg/mm², 114 to 142 klb/sq in), used as reinforcement in the door guard beams, is too strong to repair. When these HSS parts are damaged, the outer panels also sustain substantial damage; therefore, the assembly parts must be replaced.



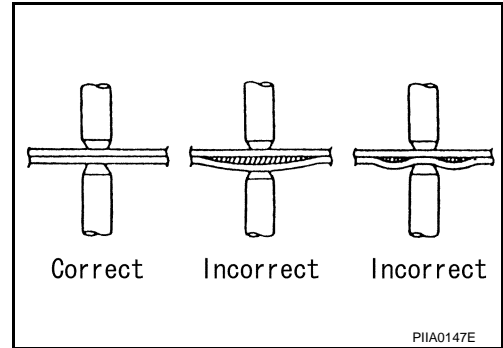
2. Precautions in spot welding HSS

This work should be performed under standard working conditions. Always note the following when spot welding HSS:

- The electrode tip diameter must be sized properly according to the metal thickness.



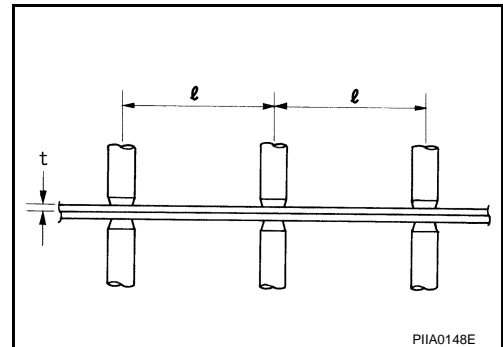
- The panel surfaces must fit flush to each other, leaving no gaps.



- Follow the specifications for the proper welding pitch.

Thickness (t)	Minimum pitch (ℓ)
0.6 (0.024)	10 (0.39) or over
0.8 (0.031)	12 (0.47) or over
1.0 (0.039)	18 (0.71) or over
1.2 (0.047)	20 (0.79) or over
1.6 (0.063)	27 (1.06) or over
1.8 (0.071)	31 (1.22) or over

Unit:mm



Foam Repair

INFOID:000000001721497

During factory body assembly, foam insulators are installed in certain body panels and locations around the vehicle. Use the following procedure(s) to replace any factory-installed foam insulators.

URETHANE FOAM APPLICATIONS

Use commercially available spray foam for sealant (foam material) repair of material used on vehicle. Read instructions on product for fill procedures.

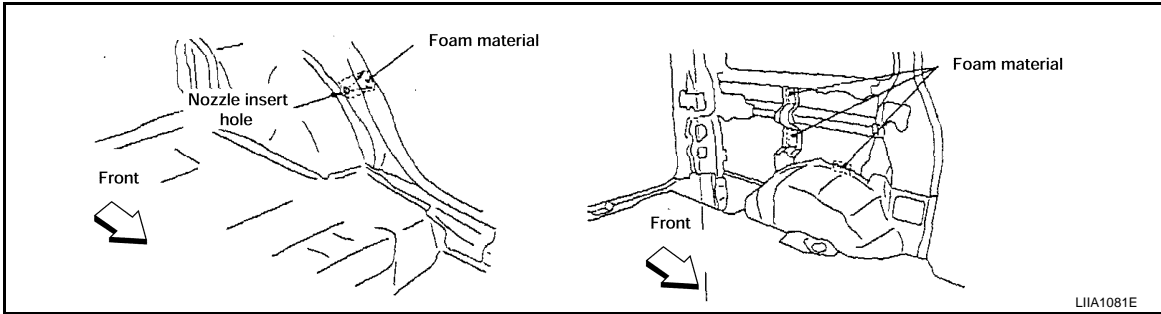
FILL PROCEDURES

- Fill procedures after installation of service part.
 - Remove foam material remaining on vehicle side.

BODY REPAIR

< SERVICE INFORMATION >

- Clean area in which foam was removed.
- Install service part.
- Insert nozzle into hole near fill area and fill foam material or fill in enough to close gap with the service part.



2. Fill procedures before installation of service part.
 - Remove foam material remaining on vehicle side.
 - Clean area in which foam was removed.
 - Fill foam material on wheelhouse outer side.

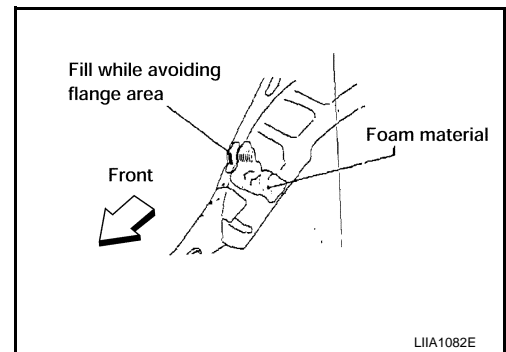
NOTE:

Fill in enough to close gap with service part while avoiding flange area.

- Install service part.

NOTE:

Refer to label for information on working times.



Replacement Operation

INFOID:000000001721498

DESCRIPTION

This section is prepared for technicians who have attained a high level of skill and experience in repairing collision-damaged vehicles and also use modern service tools and equipment. Persons unfamiliar with body repair techniques should not attempt to repair collision-damaged vehicles by using this section.


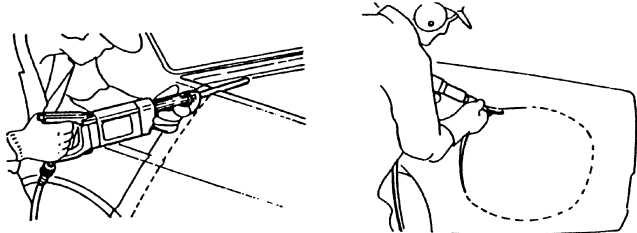



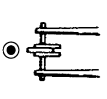





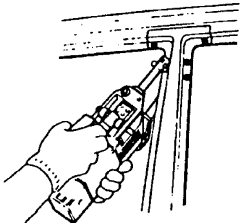
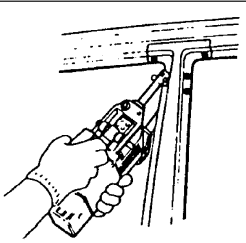



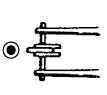













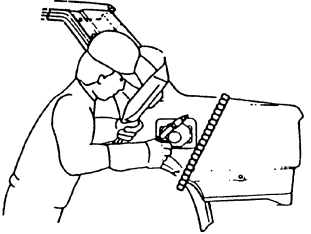

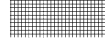
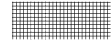
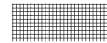



Technicians are also encouraged to read Body Repair Manual (Fundamentals) in order to ensure that the original functions and quality of the vehicle can be maintained. The Body Repair Manual (Fundamentals) contains additional information, including cautions and warnings, that are not including in this manual. Technicians should refer to both manuals to ensure proper repairs.

Please note that this information is prepared for worldwide usage, and as such, certain procedures may not apply in some regions or countries.

BODY REPAIR

< SERVICE INFORMATION >

The symbols used in this section for cutting and welding / brazing operations are shown below.

 Saw cut or air chisel cut							
<table border="1"> <tr> <td data-bbox="302 464 378 590">Spot weld</td> <td data-bbox="378 464 638 590">  2-spot welds </td> <td data-bbox="532 506 638 590">  </td> </tr> <tr> <td data-bbox="302 590 378 705"></td> <td data-bbox="378 590 638 705">  3-spot welds </td> <td data-bbox="532 611 638 705">  </td> </tr> </table>	Spot weld	 2-spot welds			 3-spot welds		<p>2-spot welds (2-panel overlapping portions)</p>  <p>3-spot welds (3-panel overlapping portions)</p>  
Spot weld	 2-spot welds						
	 3-spot welds						
<table border="1"> <tr> <td data-bbox="302 705 378 831">MIG plug weld</td> <td data-bbox="378 705 638 831">  MIG plug weld </td> <td data-bbox="532 747 638 831">  </td> </tr> <tr> <td data-bbox="302 831 378 953">MIG seam weld/ Point weld</td> <td data-bbox="378 831 638 953">  MIG seam weld/ Point weld </td> <td data-bbox="532 873 638 953">  </td> </tr> </table>	MIG plug weld	 MIG plug weld		MIG seam weld/ Point weld	 MIG seam weld/ Point weld		
MIG plug weld	 MIG plug weld						
MIG seam weld/ Point weld	 MIG seam weld/ Point weld						
<p>Brazing</p>  							
<p>Soldering</p>  							
<p>Sealing</p> 							

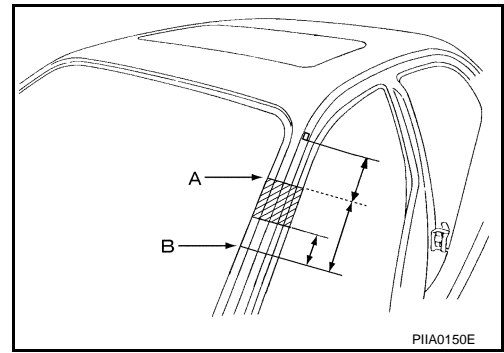
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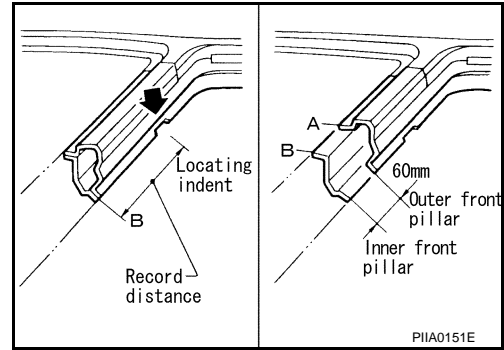
BODY REPAIR

< SERVICE INFORMATION >

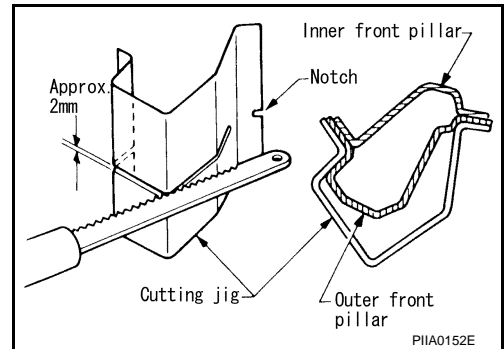
- Front pillar butt joint can be determined anywhere within shaded area as shown in the figure. The best location for the butt joint is at position A due to the construction of the vehicle. Refer to the front pillar section.



- Determine cutting position and record distance from the locating indent. Use this distance when cutting the service part. Cut outer front pillar over 60 mm above inner front pillar cut position.

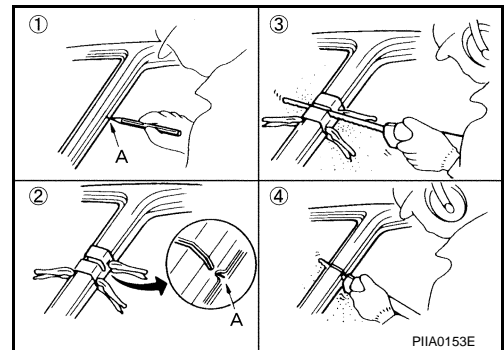


- Prepare a cutting jig to make outer pillar easier to cut. Also, this will permit service part to be accurately cut at joint position.



- An example of cutting operation using a cutting jig is as follows.

1. Mark cutting lines.
A: Cut position of outer pillar
B: Cut position of inner pillar
2. Align cutting line with notch on jig. Clamp jig to pillar.
3. Cut outer pillar along groove of jig. (At position A)
4. Remove jig and cut remaining portions.
5. Cut inner pillar at position B in same manner.



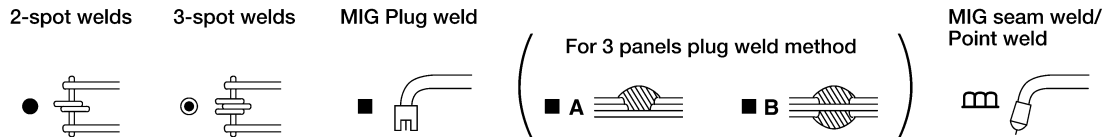
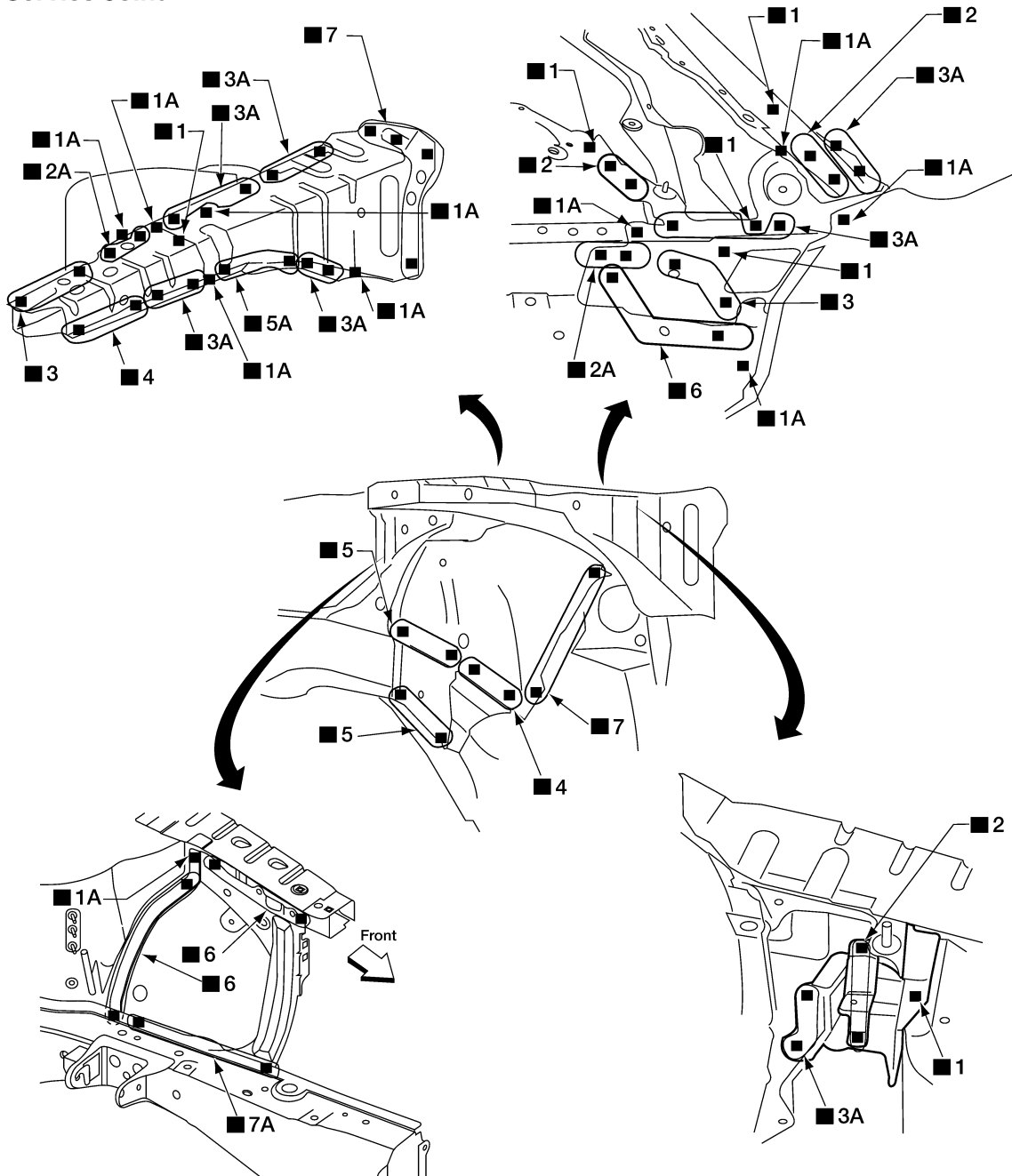
HOODLEDGE

BODY REPAIR

< SERVICE INFORMATION >

- Work after radiator core support has been removed.

Service Joint



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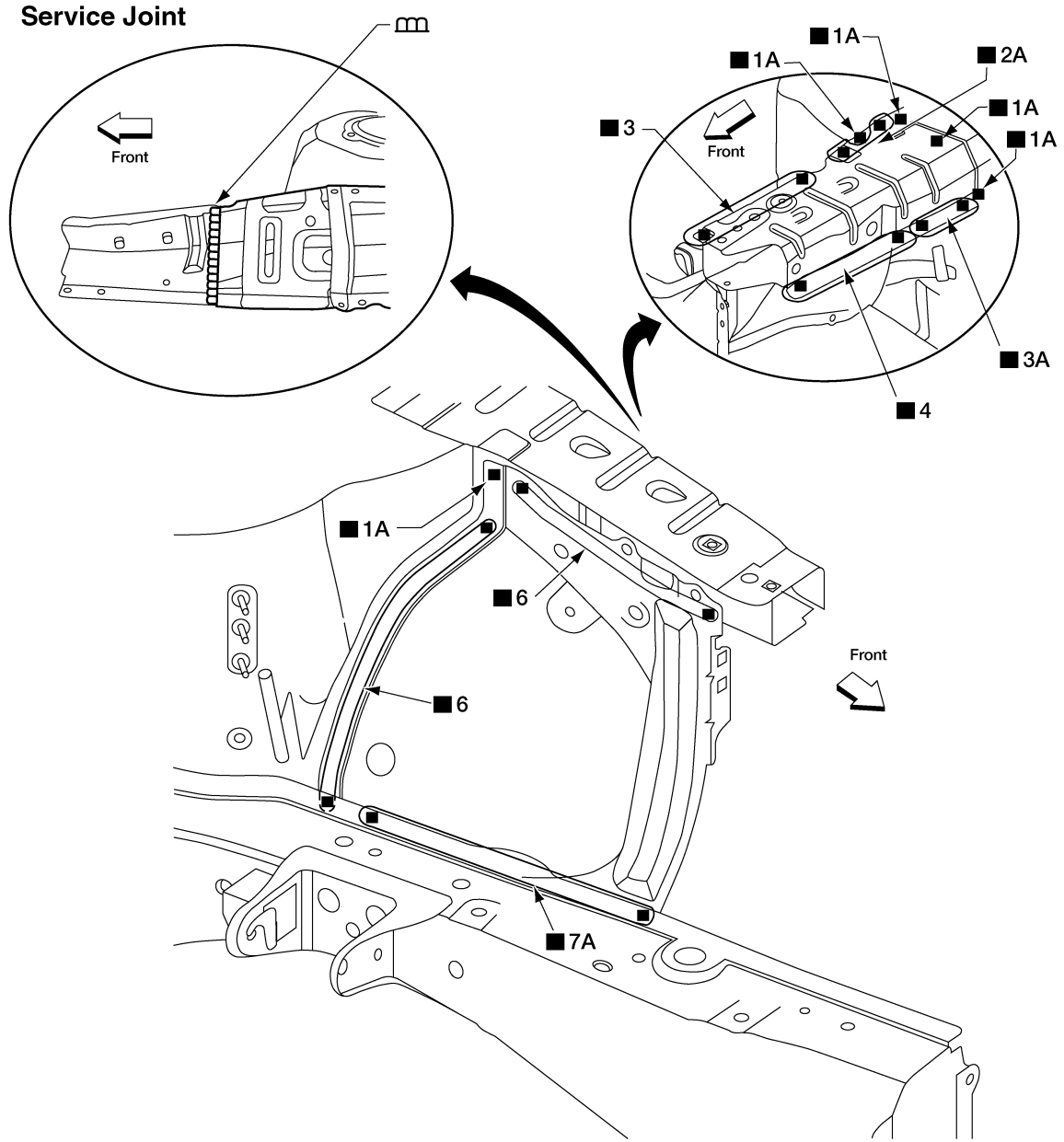
HOODLEDGE (PARTIAL REPLACEMENT)

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BODY REPAIR

< SERVICE INFORMATION >

- Work after radiator core support has been removed.



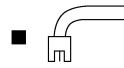
2-spot welds



3-spot welds



MIG Plug weld



For 3 panels plug weld method



MIG seam weld/
Point weld



LIA0538E

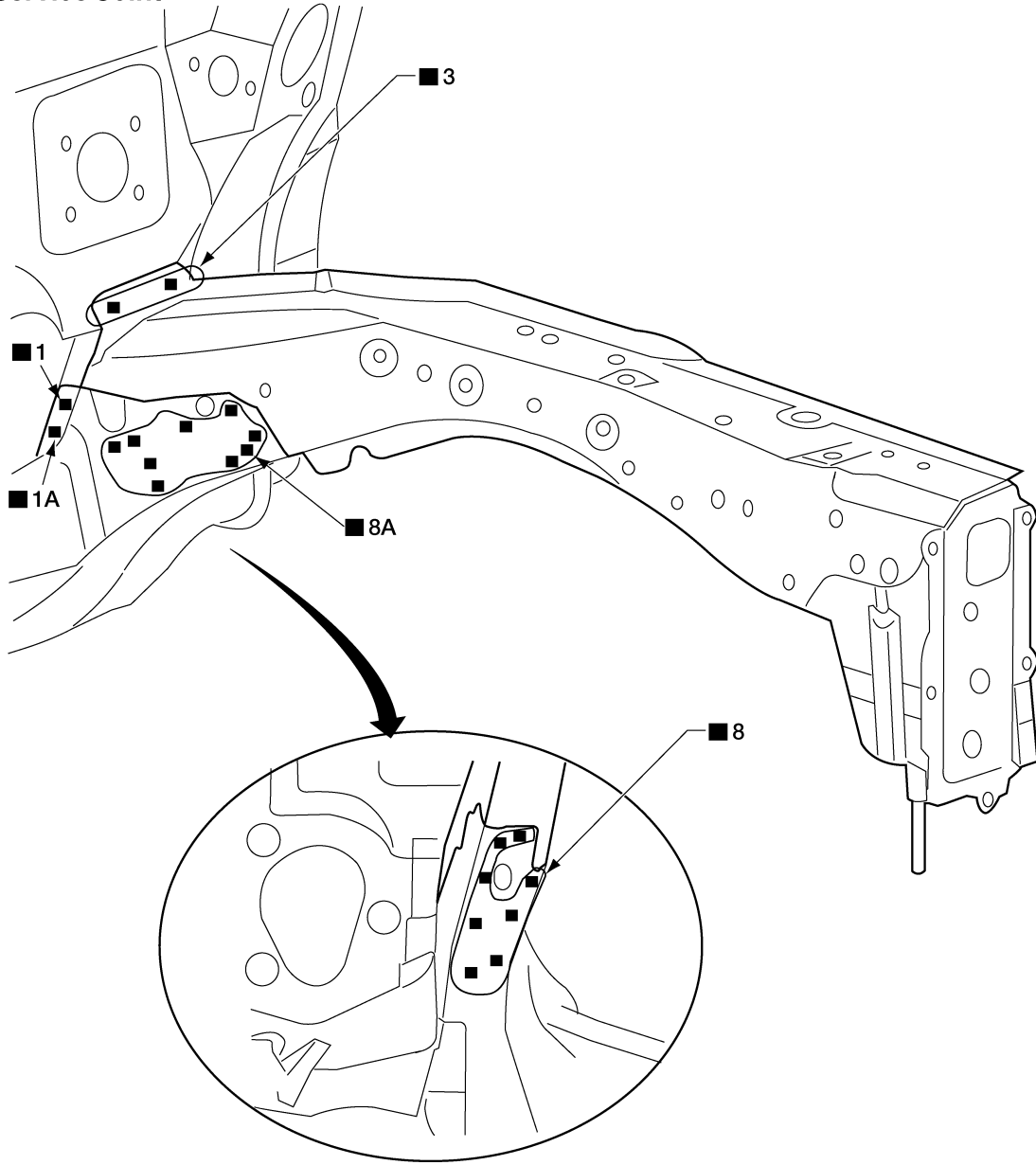
FRONT SIDE MEMBER

BODY REPAIR

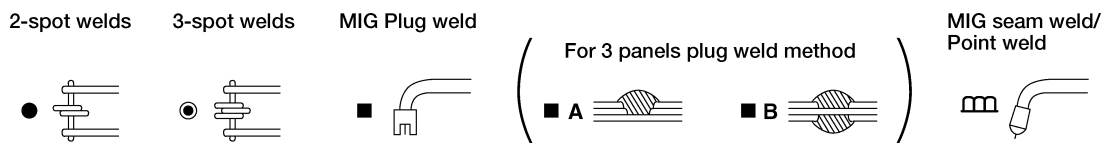
< SERVICE INFORMATION >

- Work after hoodledge and radiator core support have been removed.

Service Joint



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LIA0539E

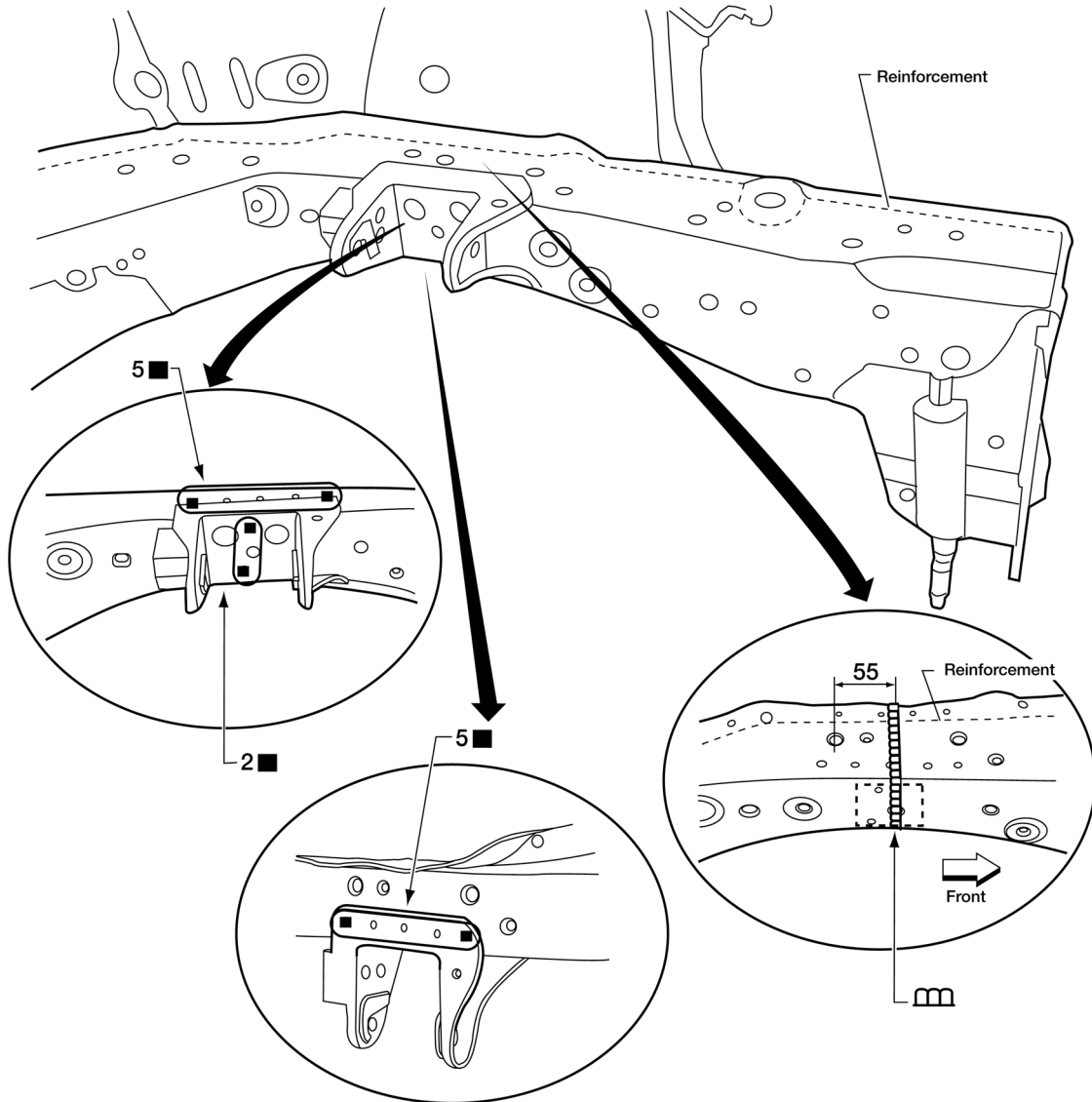
FRONT SIDE MEMBER (PARTIAL REPLACEMENT)

BODY REPAIR

< SERVICE INFORMATION >

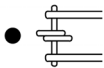
- Work after radiator core support has been removed.

Service Joint

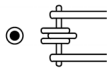


Unit: mm

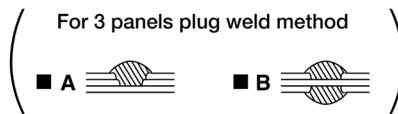
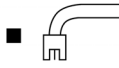
2-spot welds



3-spot welds



MIG Plug weld



MIG seam weld/
Point weld



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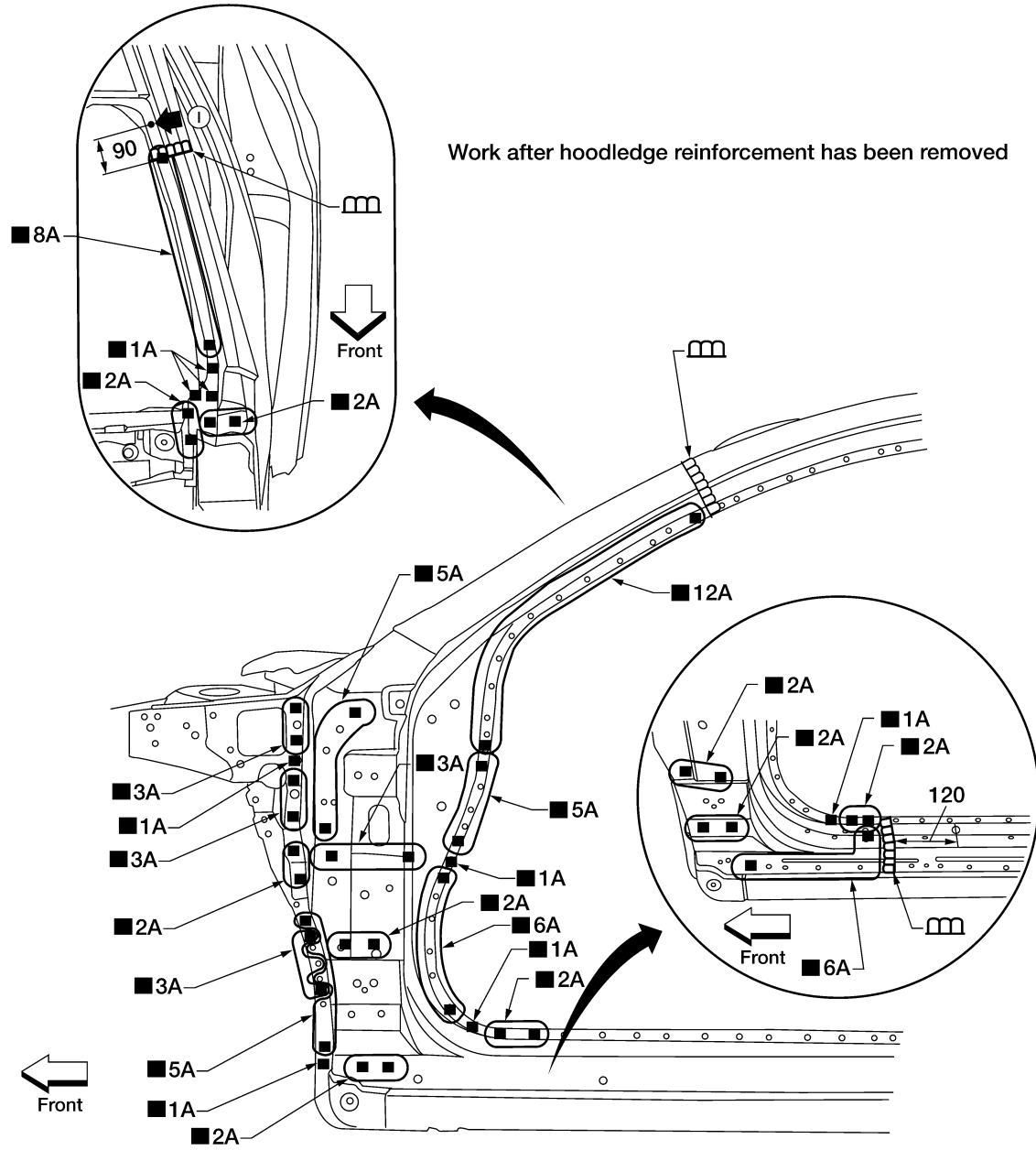
FRONT PILLAR

BODY REPAIR

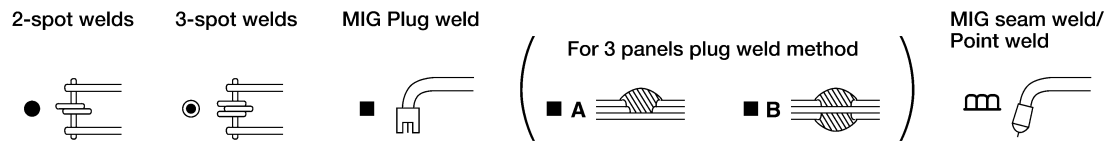
< SERVICE INFORMATION >

- Work after rear hoodledge reinforcement has been removed.

Service Joint



Unit: mm



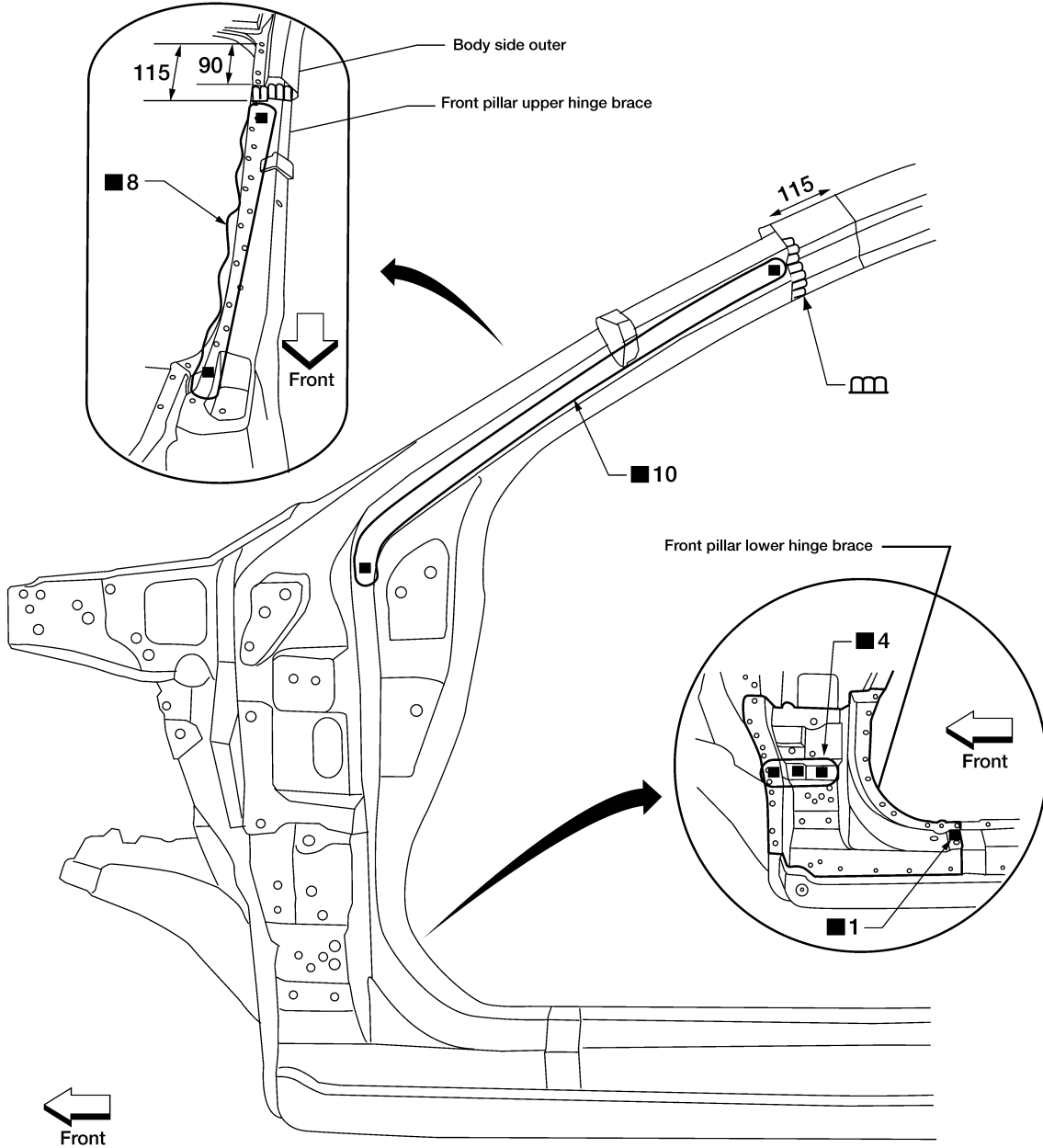
WIIA0482E

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BODY REPAIR

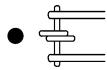
< SERVICE INFORMATION >

Service Joint

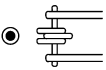


Unit: mm

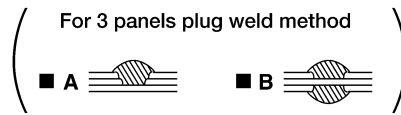
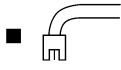
2-spot welds



3-spot welds



MIG Plug weld



MIG seam weld/
Point weld

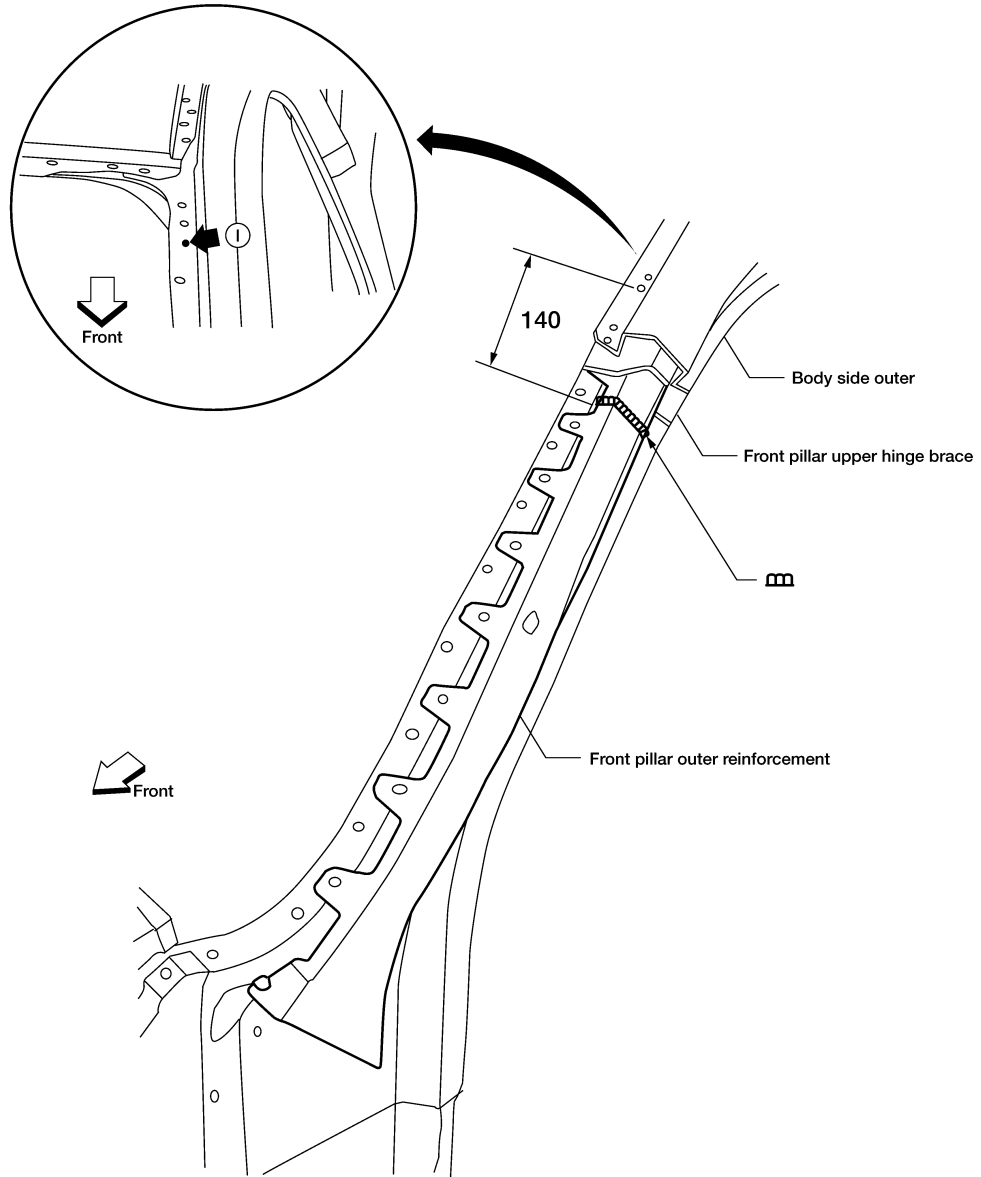


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BODY REPAIR

< SERVICE INFORMATION >

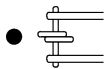
Service Joint



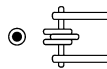
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Unit: mm

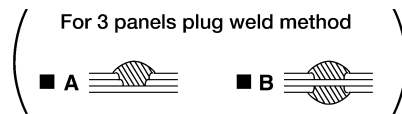
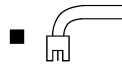
2-spot welds



3-spot welds



MIG Plug weld



MIG seam weld/
Point weld

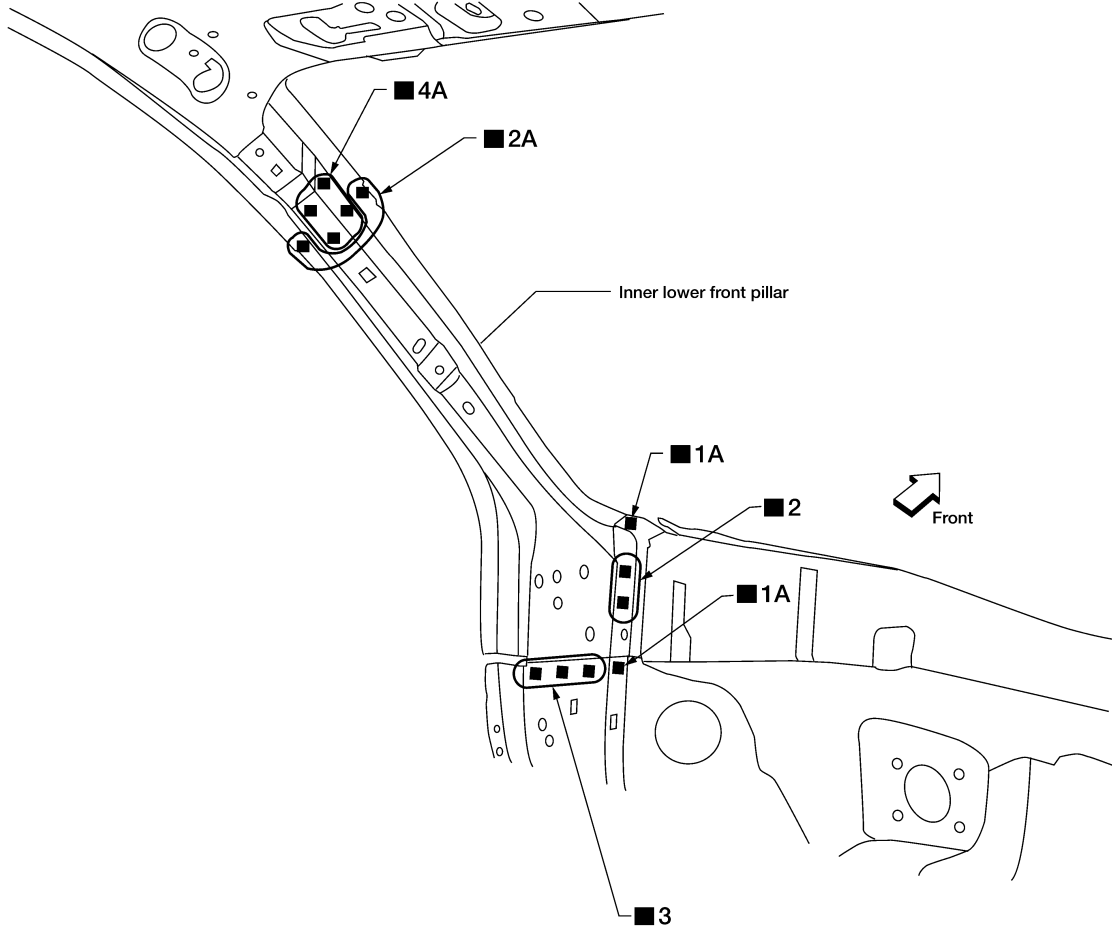


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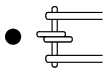
BODY REPAIR

< SERVICE INFORMATION >

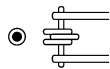
Service Joint



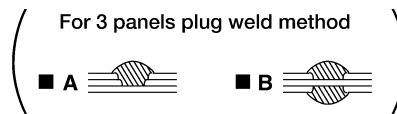
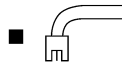
2-spot welds



3-spot welds



MIG Plug weld



MIG seam weld/
Point weld



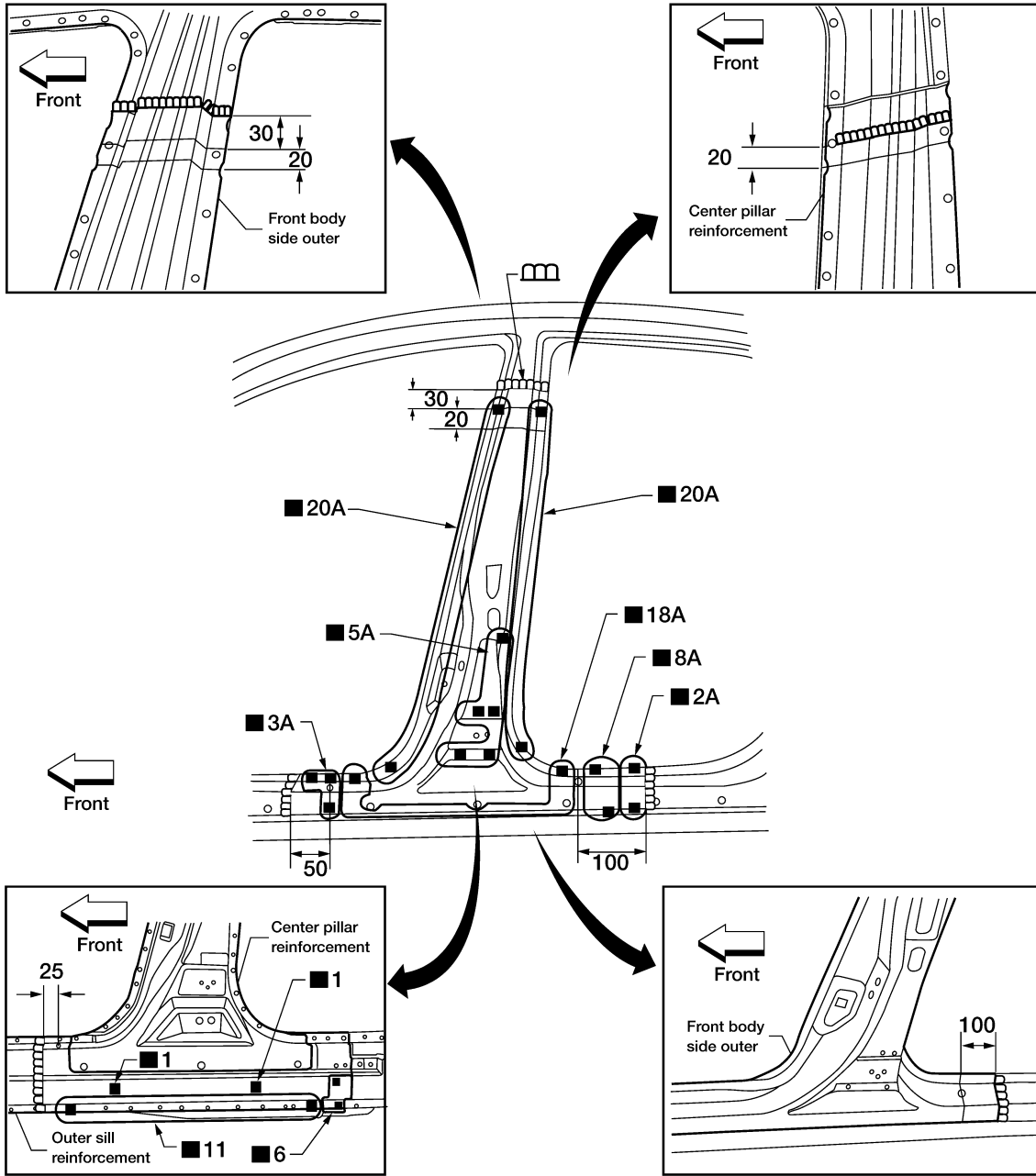
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BODY REPAIR

< SERVICE INFORMATION >

CENTER PILLAR

Service Joint



Unit: mm

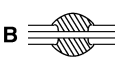
2-spot welds

3-spot welds

MIG Plug weld

For 3 panels plug weld method

MIG seam weld/
Point weld



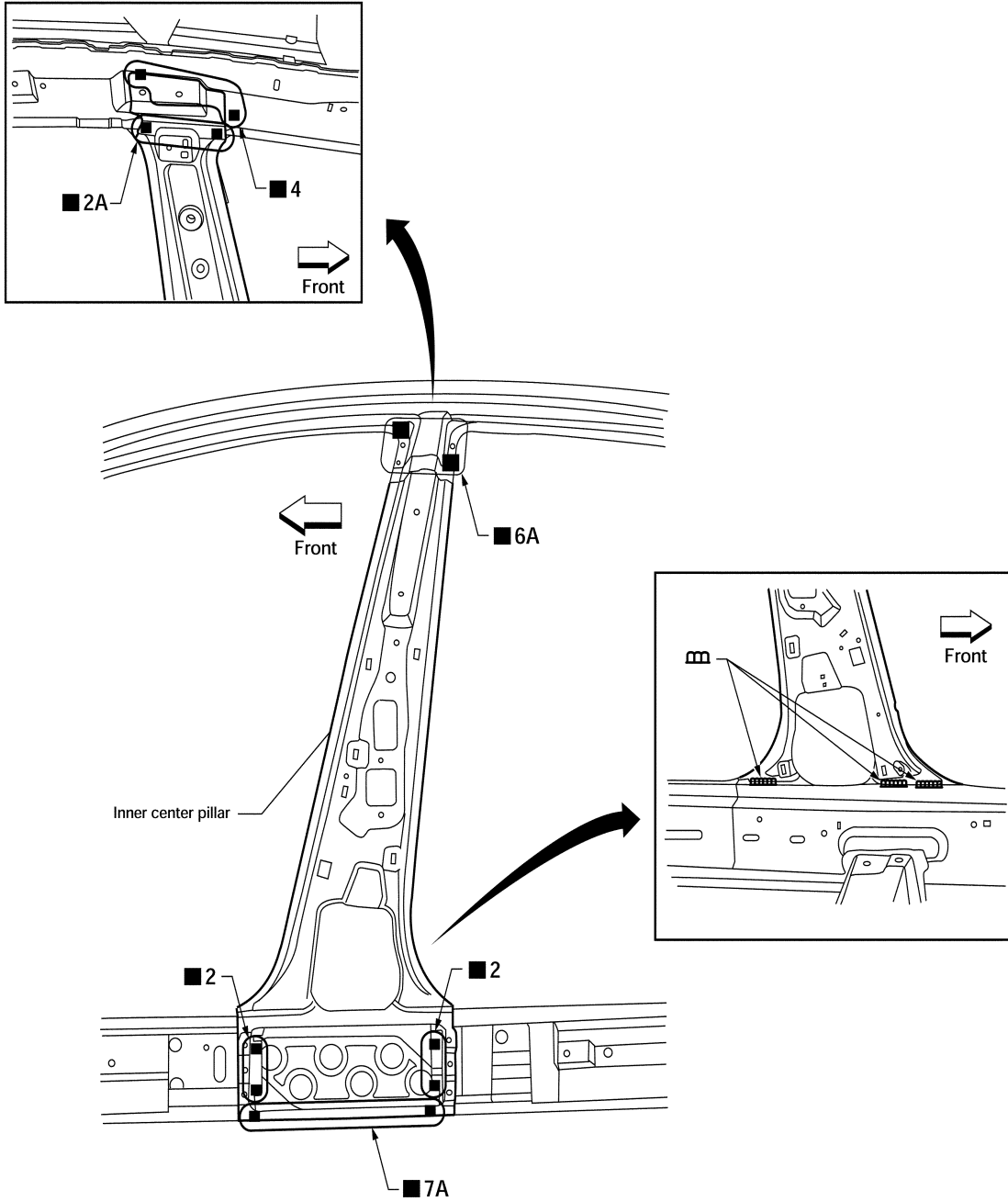
WIIA0485E

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BODY REPAIR

< SERVICE INFORMATION >

Service Joint



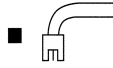
2-spot welds



3-spot welds



MIG Plug weld



For 3 panels plug weld method



MIG seam weld/
Point weld



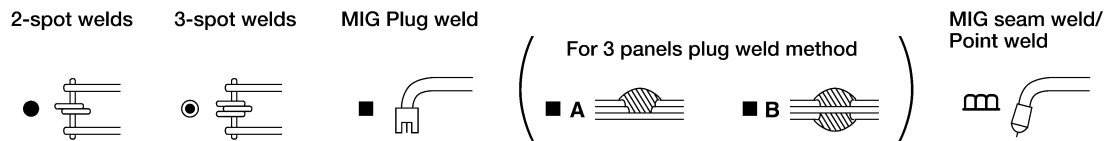
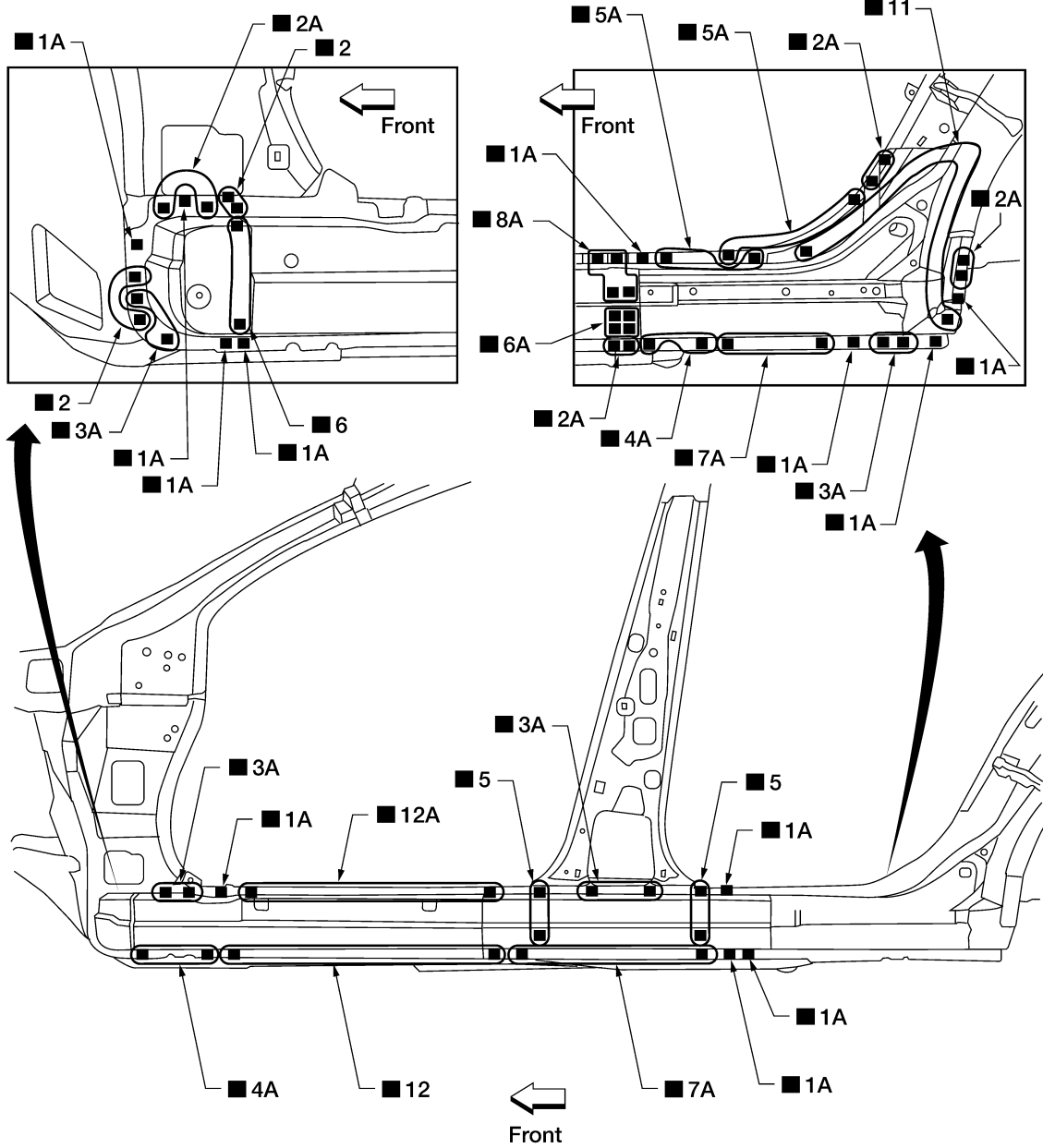
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BODY REPAIR

< SERVICE INFORMATION >

OUTER SILL

Service Joint



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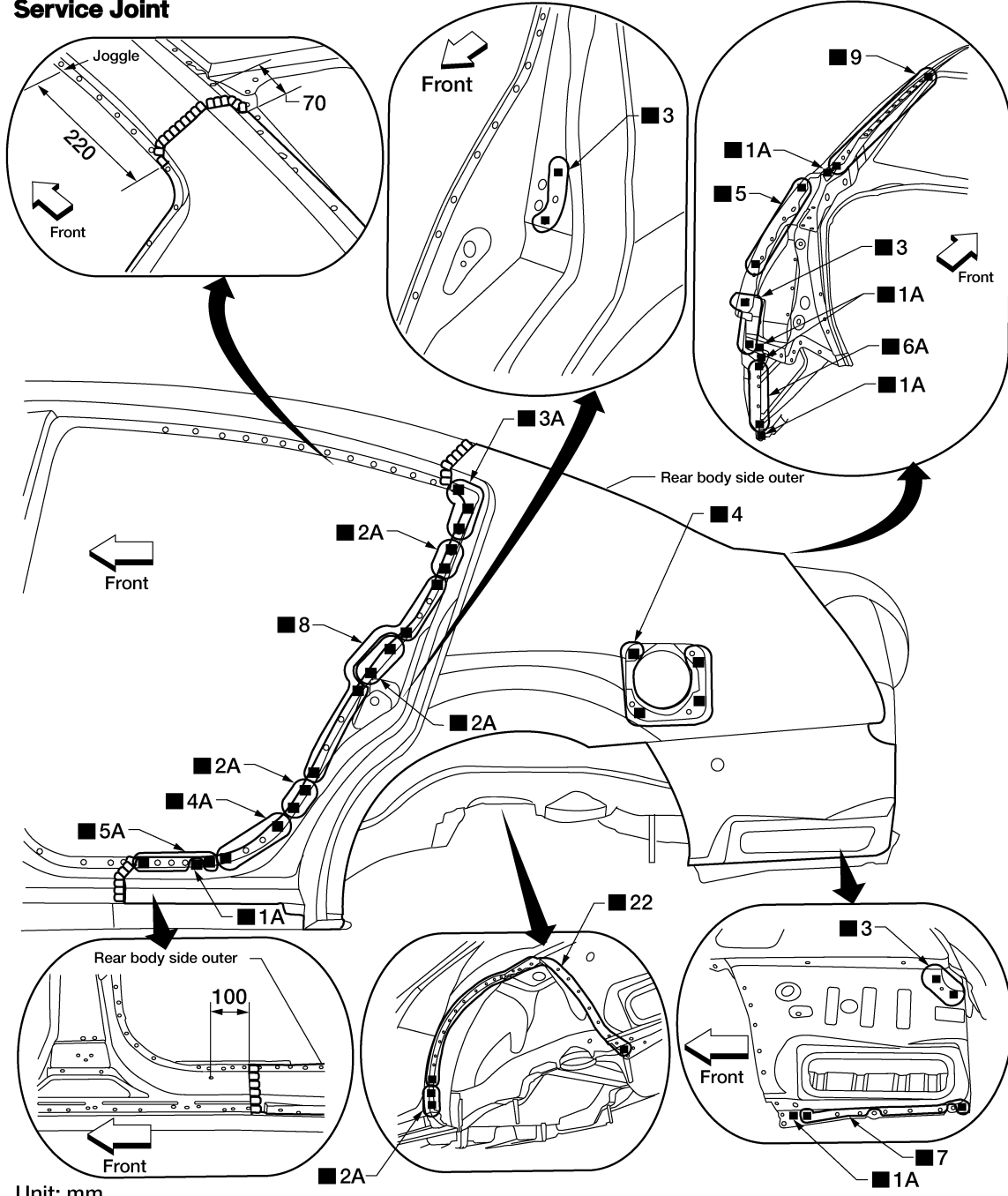
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BODY REPAIR

< SERVICE INFORMATION >

REAR FENDER

Service Joint

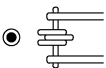


Unit: mm

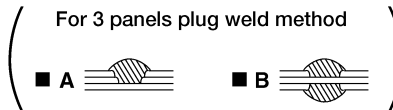
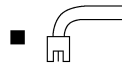
2-spot welds



3-spot welds



MIG Plug weld



MIG seam weld/
Point weld



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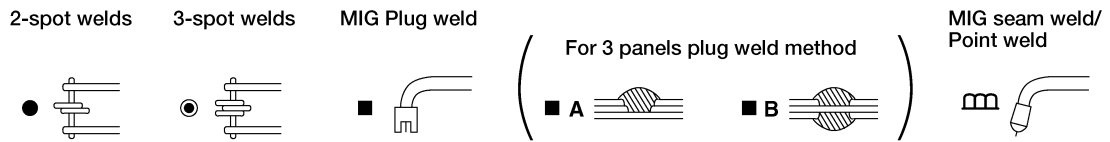
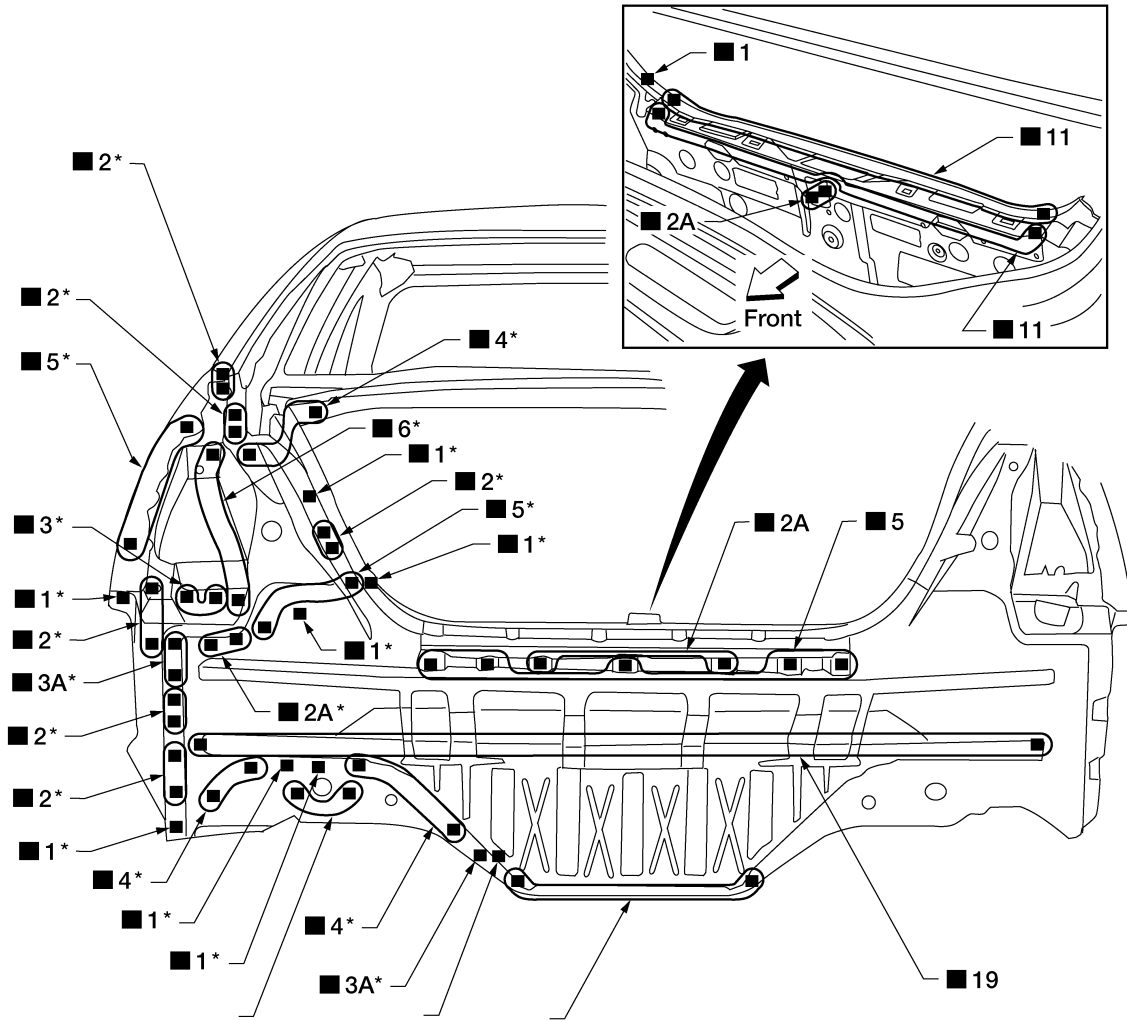
BODY REPAIR

< SERVICE INFORMATION >

REAR PANEL

Service Joint

★ Indicates that there is an equivalent welding portion with the same dimensions on the opposite side



WIIA0390E

REAR FLOOR REAR

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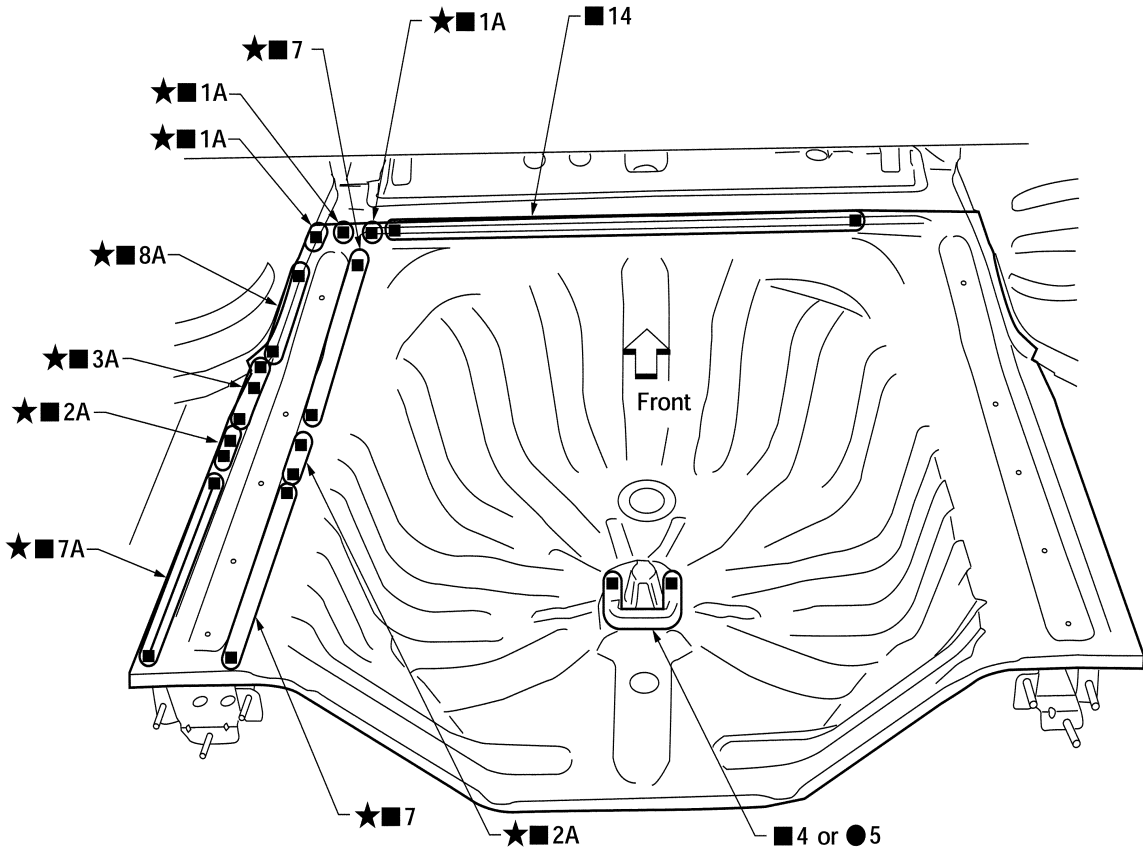
BODY REPAIR

< SERVICE INFORMATION >

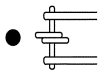
- Work after rear panel has been removed.

Service Joint

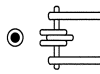
★ Indicates that there is an equivalent welding portion with the same dimensions on the opposite side



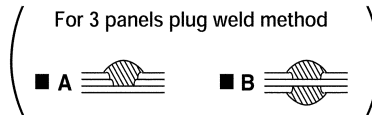
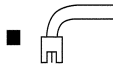
2-spot welds



3-spot welds



MIG Plug weld



MIG seam weld/
Point weld



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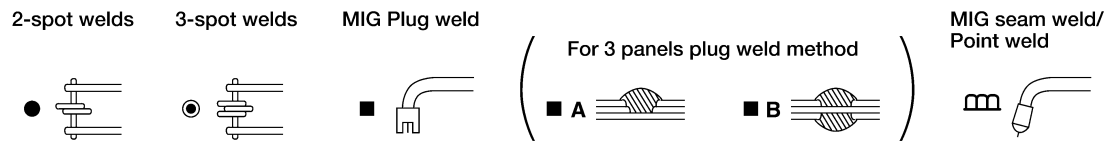
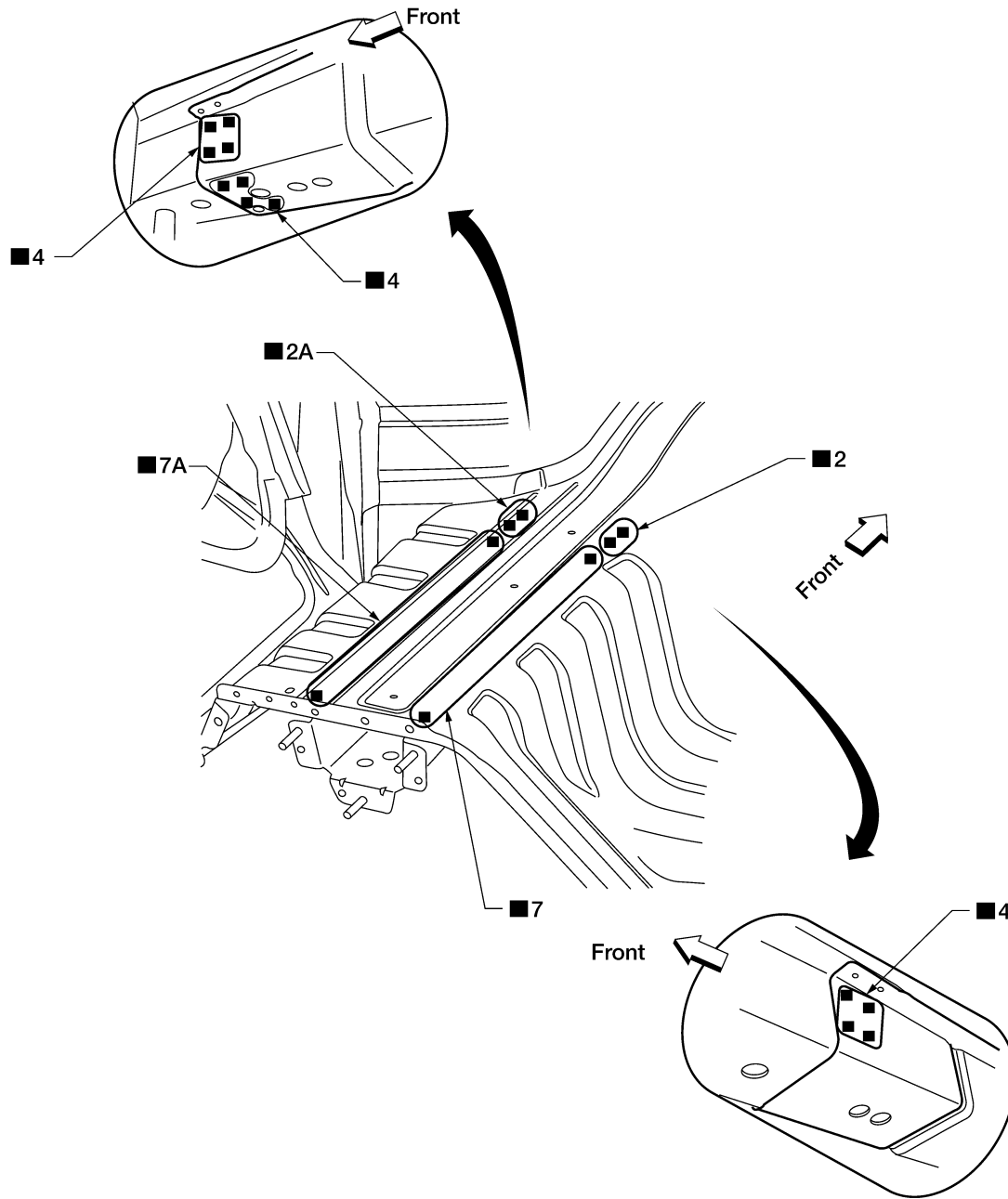
REAR SIDE MEMBER EXTENSION

BODY REPAIR

< SERVICE INFORMATION >

- Work after rear panel and rear end crossmember have been removed.

Service Joint



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