SECTION BL

BODY, LOCK & SECURITY SYSTEM

CONTENTS

PRECAUTIONS

PFP:00001

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

EIS000OI

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

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.**

Precautions for work

EIS000G9

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

Wiring Diagnosis and trouble Diagnosis

EIS000GA

When you read wiring diagrams, refer to the followings:

- "HOW TO READ WIRING DIAGRAMS" in GI section
- "POWER SUPPLY ROUTING" for power distribution circuit in PG section

When you perform trouble diagnosis, refer to the followings:

- "HOW TO FOLLOW TEST GROUP IN TROUBLE DIAGNOSIS" in GI section
- "HOW TO PERFORM EFFICIENT DIAGNOSIS FOR AN ELECTRICAL INCIDENT" in GI section
  Check for any Service bulletins before servicing the vehicle.

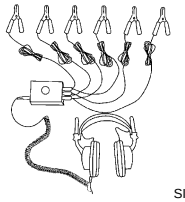
PREPARATION

PFP:00002

Special Service Tools

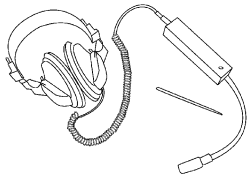
EIS000YZ

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

Tool number (Kent-Moore No.) Tool name	Description
(J-39570) Chassis ear  SIIA0993E	Location the noise
(J-43980) NISSAN Squeak and Rattle Kit  SIIA0994E	Repairing the cause of noise

Commercial Service Tools

EIS000Z0

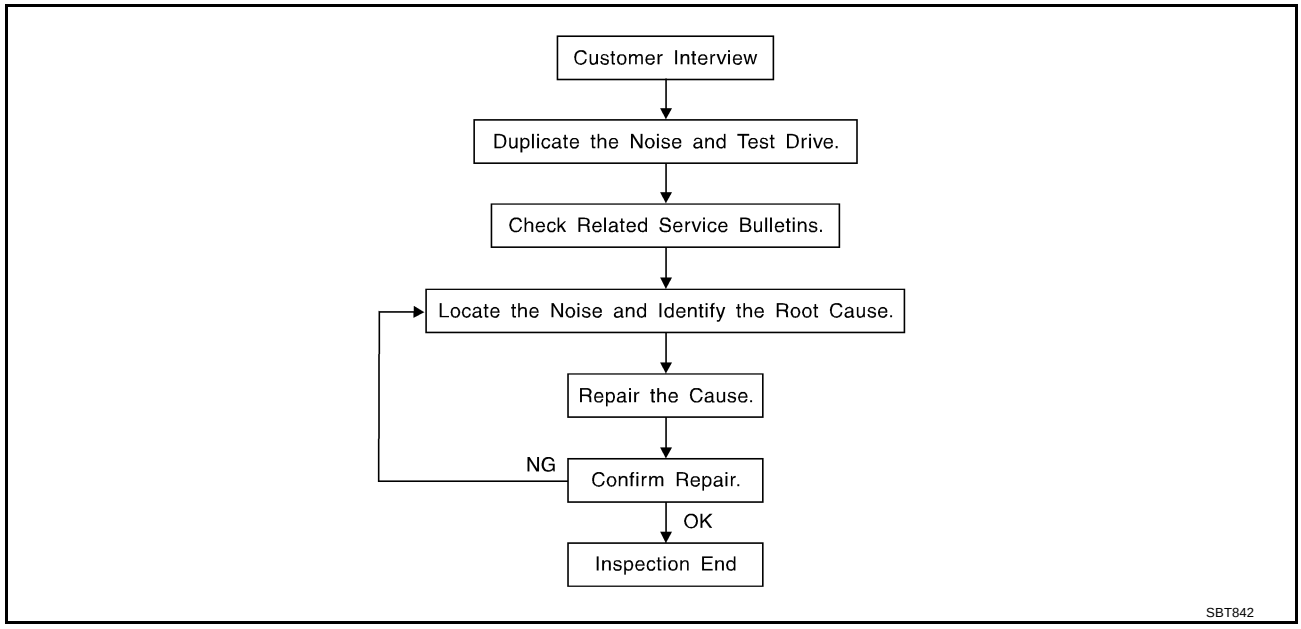
Tool name	Description
Engine ear  SIIA0995E	Location the noise

SQUEAK AND RATTLE TROUBLE DIAGNOSES

PFP:00000

Work Flow

EIS000Z1



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 BL-11, "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 drought 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.
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 mechanics stethoscope).
2. Narrow down the noise to a more specific area and identify the cause of the noise by:

- removing the components in the area that you suspect the noise is coming from.
  Do not use too much force when removing clips and fasteners, otherwise clips and fastener 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-8, "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 [1.5mm(0.059 in) thick]
Insulates connectors, harness, etc.
76268-9E005: 100×135mm(3.94×5.31 in)/76884-71L01: 60×85mm(2.36×3.35 in)/76884-71L02: 15×25mm(0.59×0.98 in)
INSULATOR (Foam blocks)
Insulates components from contact.Can be used to fill space behind a panel.
73982-9E000: 45mm(1.77 in) thick, 50×50mm(1.97×1.97 in)/73982-50Y00: 10mm(0.39 in) think, 50×50mm(1.97×1.97 in)
INSULATOR (Light foam block)
80845-71L00: 30mm(1.18 in) thick, 30×50mm(1.18×1.97 in)
FELT CLOTHTAPE
Used to insulate where movement does not occur.Ideal for instrument panel applications.
68370-4B000: 15×25mm(0.59×0.98 in) pad/68239-13E00: 5mm(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.
SILICONE GREASE
Used in 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

EIS000Z2

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 silicon spray (in hard to reach areas).Urethane pads can be used to insulate wiring harness.

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

CENTER CONSOLE

Components to pay attention to include:

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

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

SUNROOF/HEADLINER

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

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

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

SEATS

When isolating seat 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 seat back lock and bracket

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

UNDERHOOD

Some interior 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 noise 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.

Diagnostic Worksheet

EIS000Z3

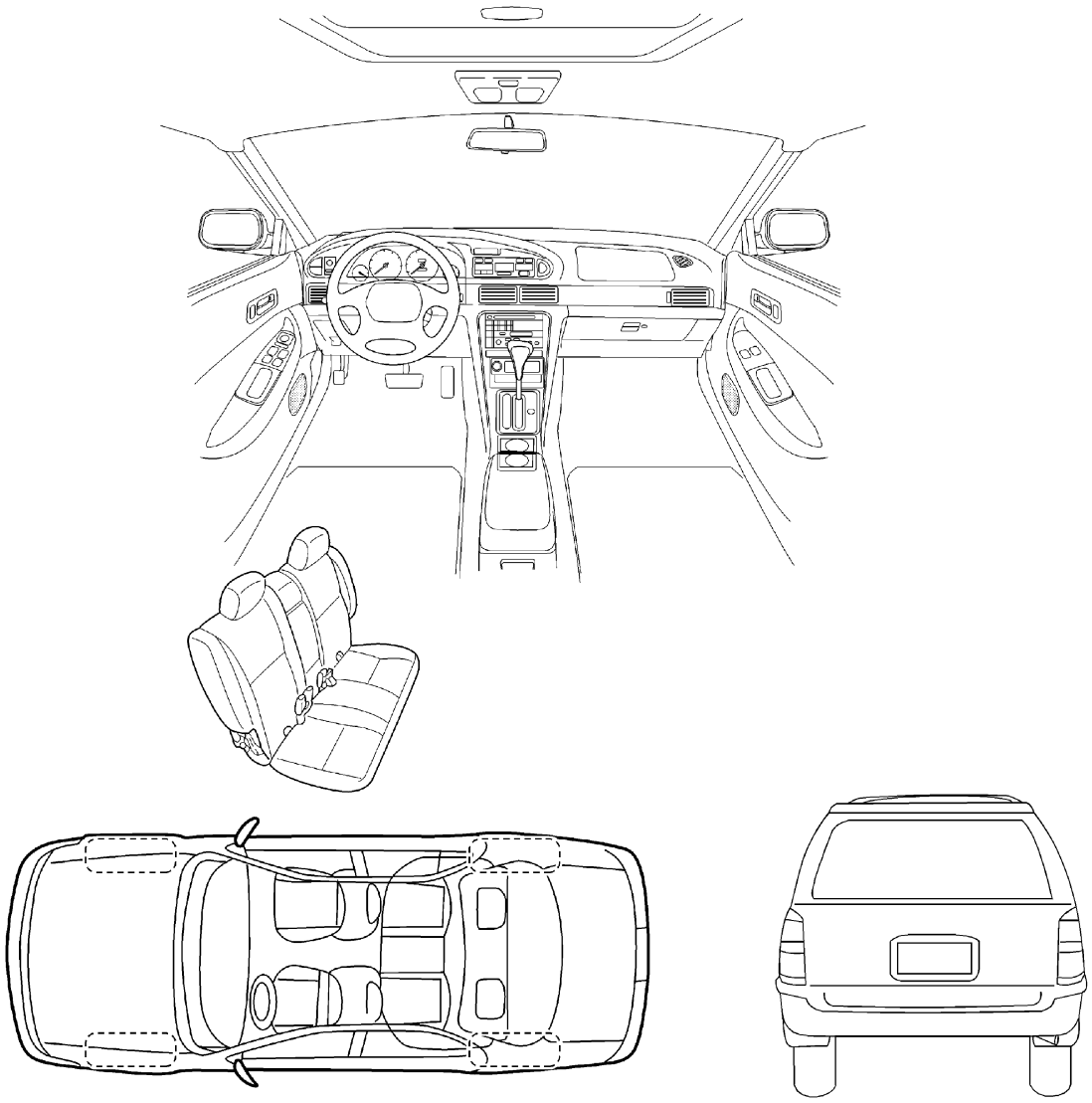
INFINITI

SQUEAK & RATTLE DIAGNOSTIC WORKSHEET

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

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

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



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

SBT860

SQUEAK & RATTLE DIAGNOSTIC WORKSHEET- page 2

Briefly describe the location where the noise occurs:

_____

_____

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

- ❑ anytime
- ❑ 1st time in the morning
- ❑ only when it is cold outside
- ❑ only when it is hot outside
- ❑ after sitting out in the sun
- ❑ when it is raining or wet
- ❑ dry or dusty conditions
- ❑ other: _____

III. WHEN DRIVING:

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

IV. WHAT TYPE OF NOISE?

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

TO BE COMPLETED BY DEALERSHIP PERSONNEL
Test Drive Notes:

_____

_____

	YES	NO	Initials of person performing
Vehicle test driven with customer	❑	❑	_____
- Noise verified on test drive	❑	❑	
- Noise source located and repaired	❑	❑	_____
- Follow up test drive performed to confirm repair	❑	❑	_____

VIN: _____ Customer Name: _____

W.O. #: _____ Date: _____

SBT844

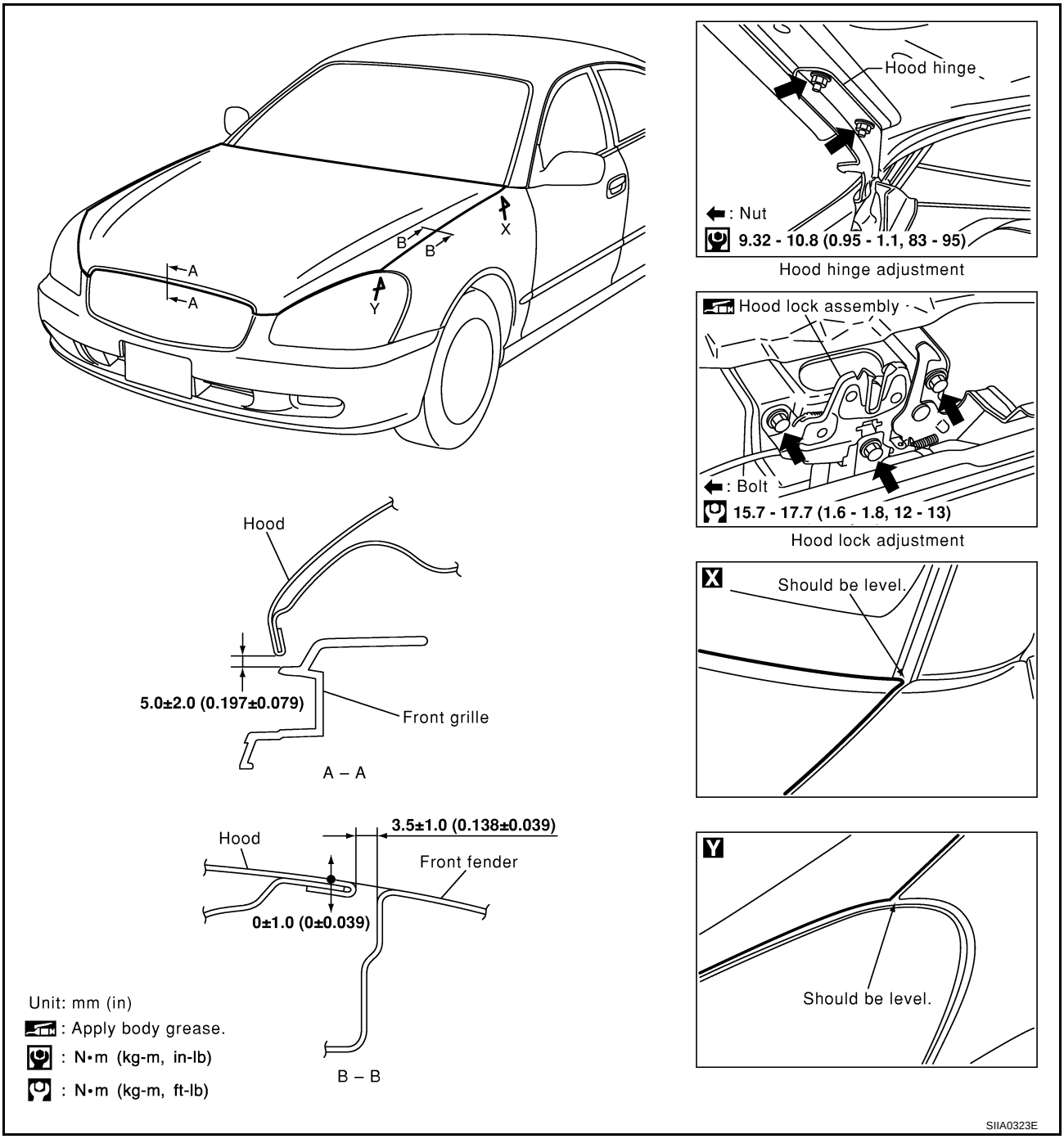
This form must be attached to Work Order

HOOD

PFP:F5100

Fitting Adjustment

EIS000GD



FRONT END HEIGHT ADJUSTMENT AND LATERAL/LONGITUDINAL CLEARANCE ADJUSTMENT

1. Remove the hood lock and adjust the height by rotating the bumper rubber until the hood becomes 1 to 1.5 mm (0.04 to 0.059 in) higher than the fender.
2. Temporarily tighten the food lock, and position it by engaging it with the food striker. Check the lock and striker for looseness, and tighten the lock mounting bolt to the specified torque.

SURFACE HEIGHT ADJUSTMENT

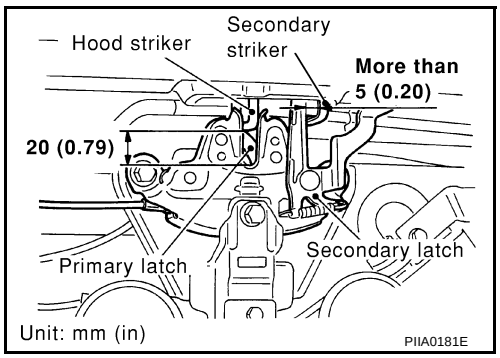
1. Remove the hood lock, and adjust the surface height difference of the hood and fender according to the fitting standard dimension, by rotating RH and LH bumper rubbers.
2. Install the hood lock temporarily, and align the food striker and lock so that the centers of striker and lock become vertical viewed from the front, by moving the hood lock laterally.

3. 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:

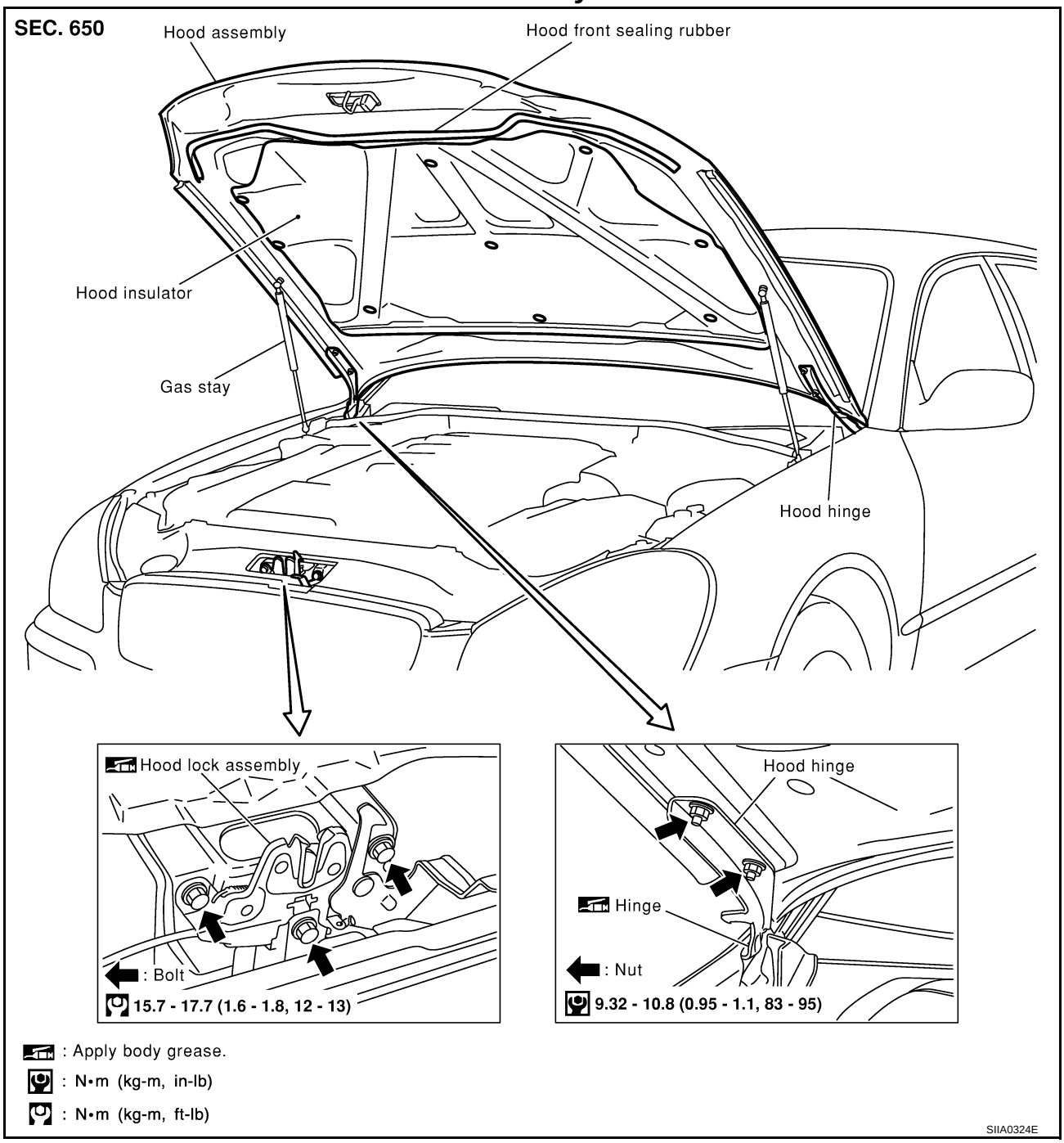
   Do not drop the hood from 300 mm (11.81 in) height or higher.

4. Move the hood lock up and down so that the striker and lock are engaged firmly with the hood closed.
5. Tighten the lock mounting bolts to the specified torque.



Removal and Installation of Hood Assembly.

EIS000GE

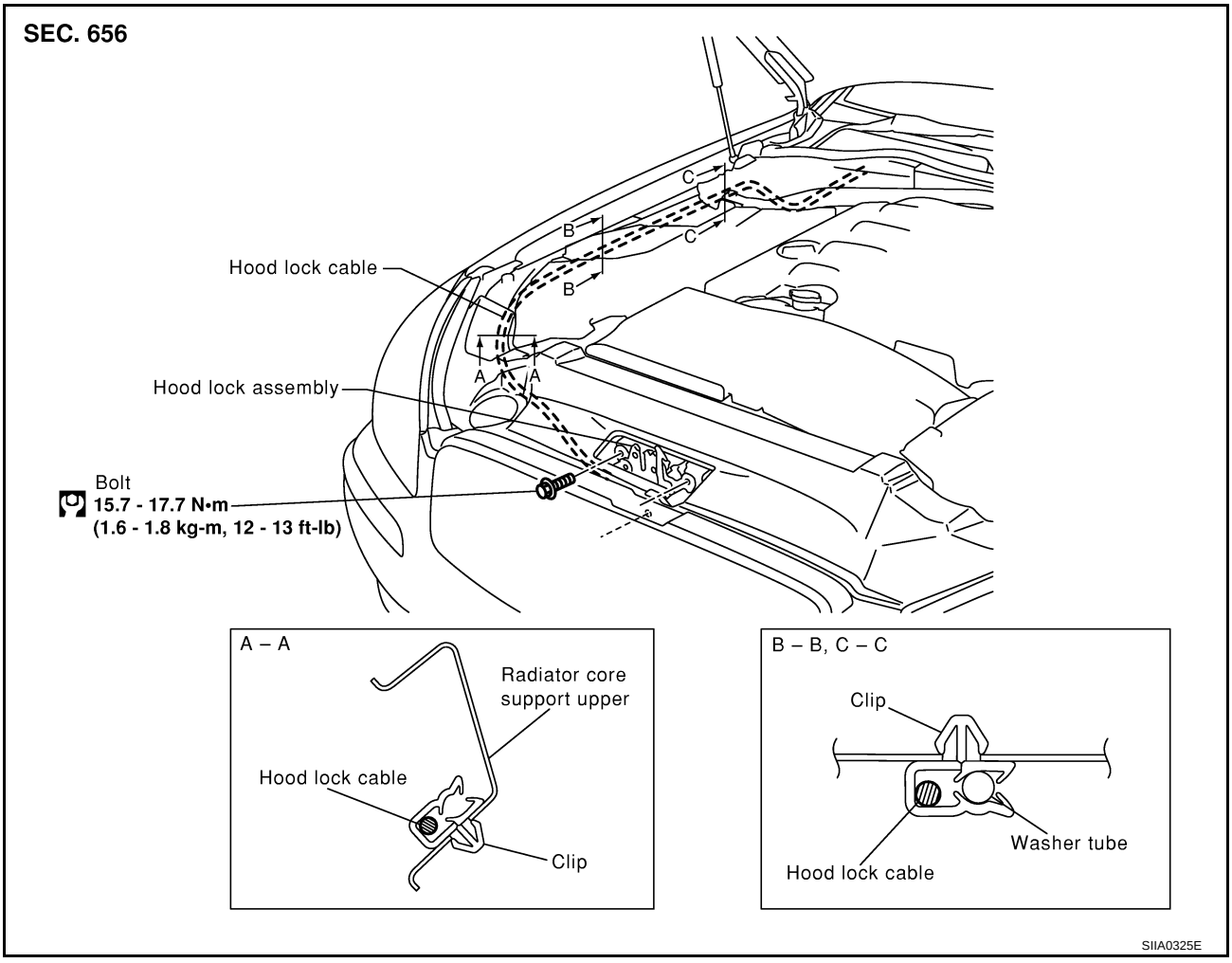


1. Remove stud balls on the hood stays at the body side.
2. Remove the hinge mounting nuts on the hood to remove the hood assembly.

Install in the reverse order of removal.

Removal and Installation of Hood Lock Control.

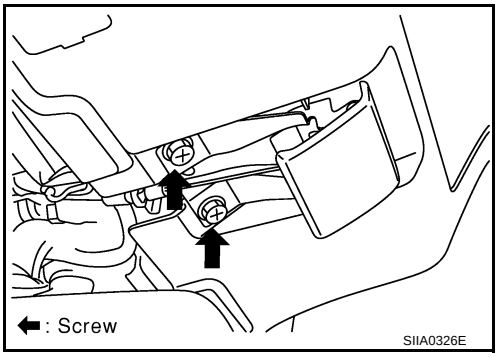
EIS000GF



REMOVAL

1. Disconnect the hood lock cable from the hood lock, and clip it from the radiator core upper support and hood ledge.
2. Remove the mounting screws, and remove the hood opener.
3. Remove the grommet on the dash board, and pull the hood lock cable toward the passenger compartment.

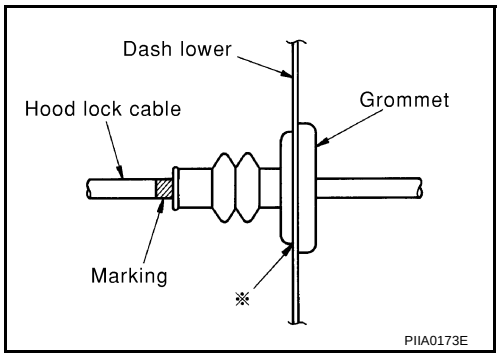
CAUTION:
While pulling, be careful not to damage (peeling) the outside of the hood lock cable.



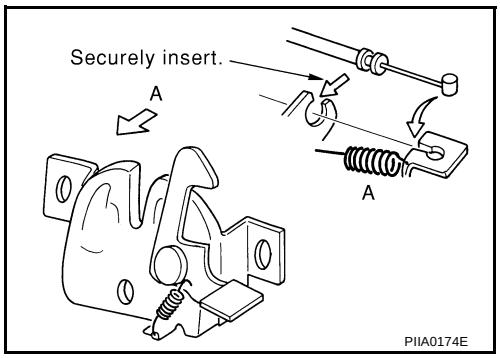
INSTALLATION

1. Pull the hood lock cable through the panel hole to the engine compartment.

   CAUTION:
   Be careful not to bend the cable too much, keeping the radius 100mm (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 to the grommet (at * mark) properly.



4. Install the cable securely to the lock.
5. After installing, check the hood lock adjustment and hood opener operation.

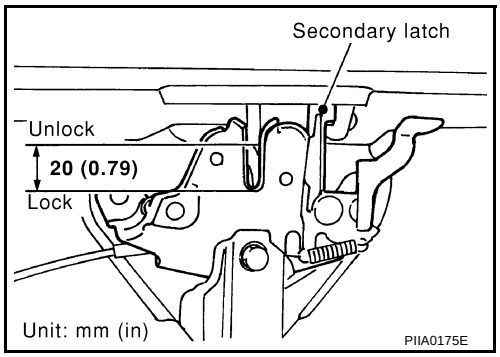


Hood Lock Control Inspection.

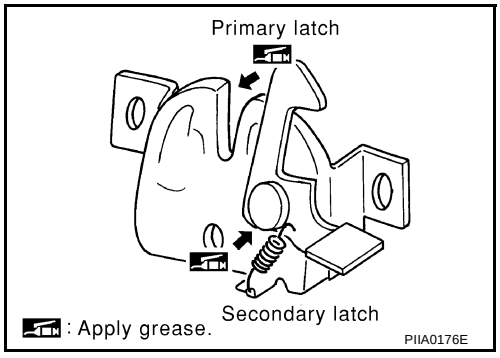
EIS000GG

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

1. 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.
2. 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.



3. Check the hood lock lubrication condition. If necessary, apply "body grease" to the points shown in the figure.

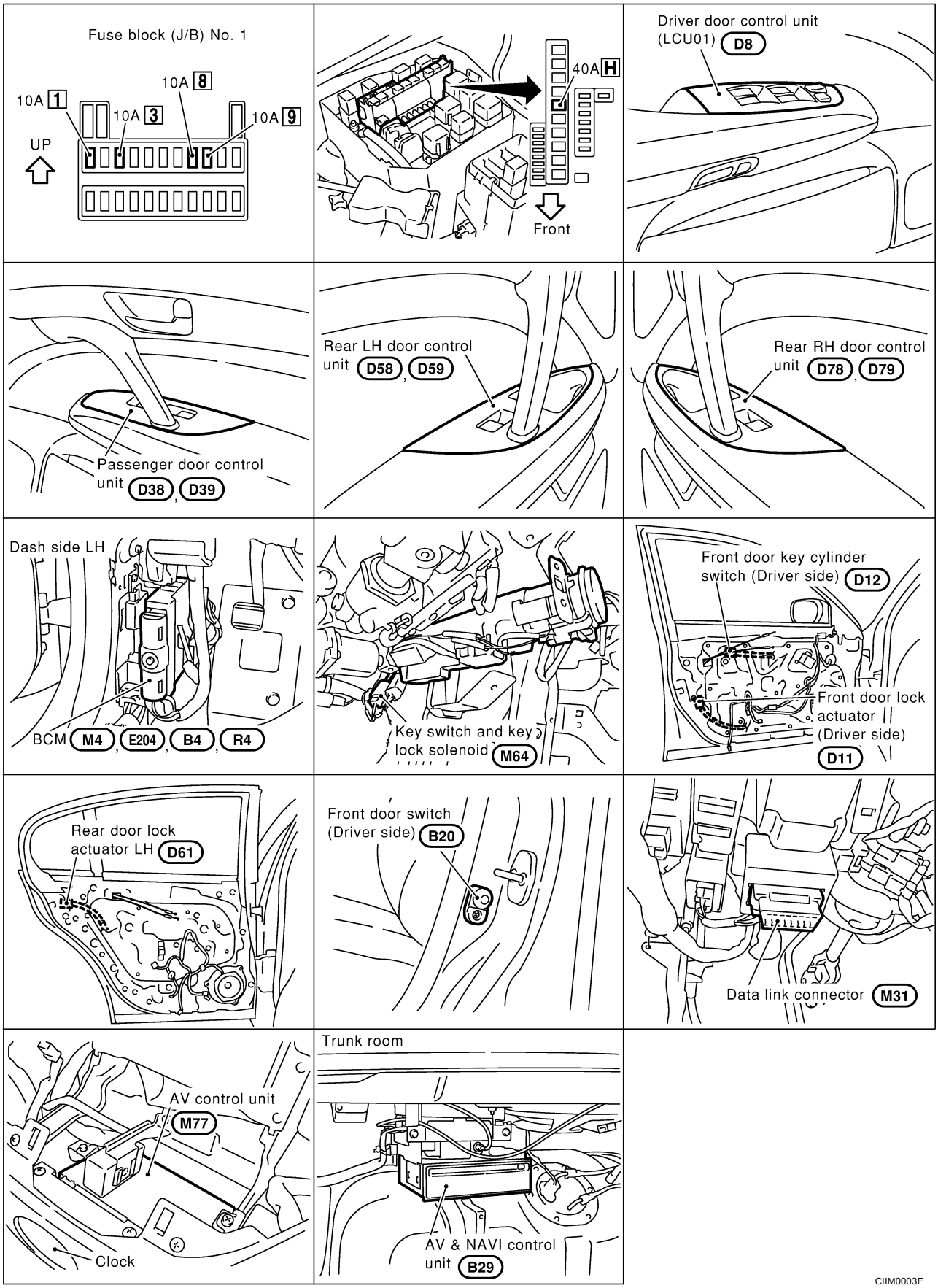


POWER DOOR LOCK SYSTEM

PFP:24814

Component Parts and Harness Connector Location

EIS000QL



CIIM0003E

System Description

EIS0010I

POWER SUPPLY AND GROUND

Power is supplied at all times

- through 10A fuse [No. 8, located in the fuse block (J/B) No.1]
- to key switch terminal 3.

Power is supplied to BCM terminal 69 through key switch terminal 4 when key switch is inserted in the electronic key cylinder.
BCM is connected to LCU01 as DATA LINE A-3.
When door switch is in OPEN position, ground is supplied

- to BCM terminal 33, 37, 142 or 143
- through door switch terminal 1

When door is unlocked, ground is supplied

- to door LCU terminal 6 or each door control unit 13
- from terminal 2 of each door unlock sensor.

When the door is locked with the emergency key, ground is supplied

- to LCU01 terminal 10
- through terminal 3 of the key cylinder switch LH
- through body grounds M24 and M114.

When the door is unlocked with the emergency key, ground is supplied

- to LCU01 terminal 9
- through terminal 1 of the key cylinder switch LH
- through body grounds M24 and M114.

OPERATION

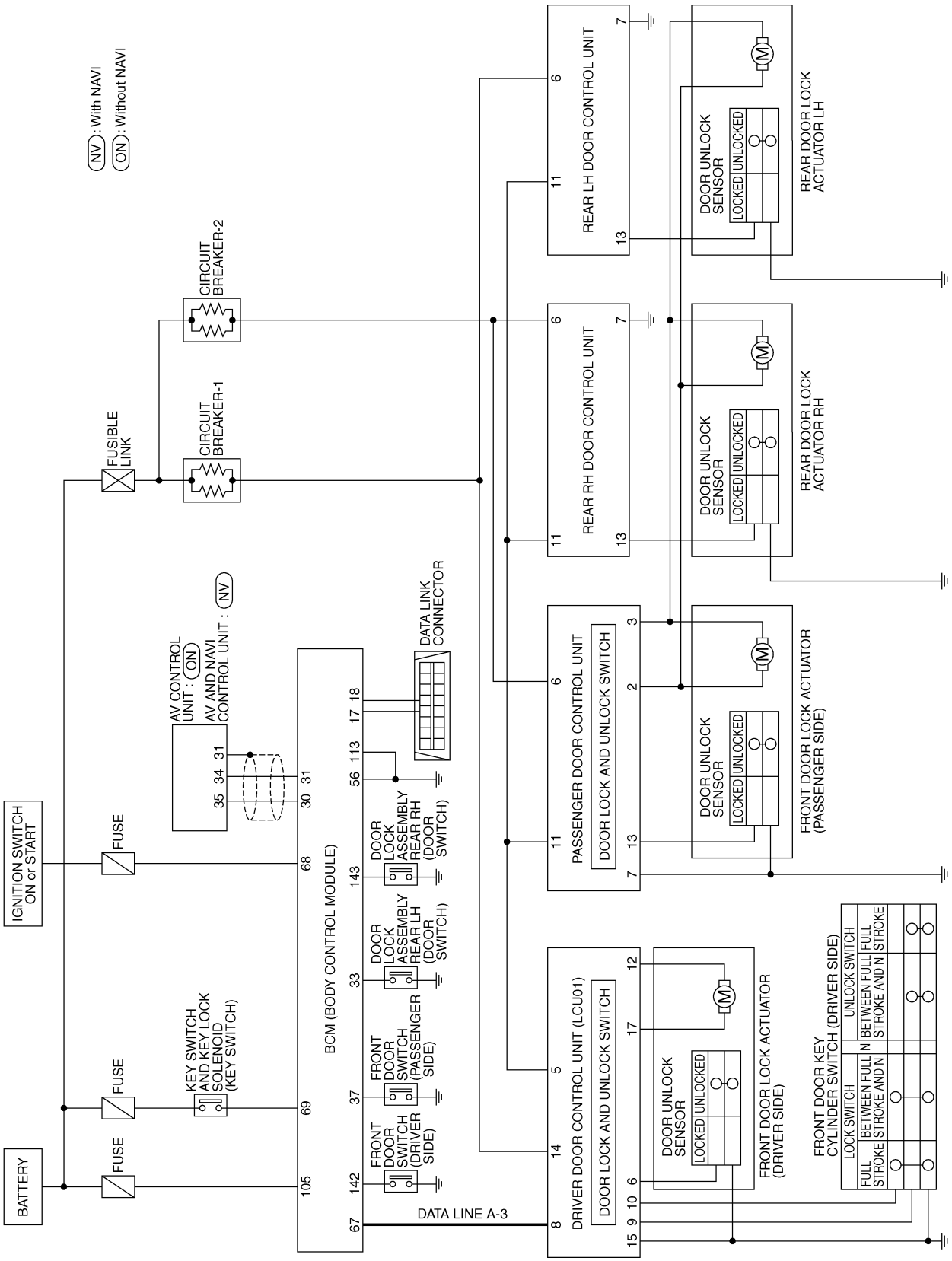
- The lock & unlock switch (SW) on driver's door trim can lock and unlock all doors.
- With the lock knob on front LH door set to "LOCK", all doors are locked. (Signals from front door unlock sensor)
- With the door key inserted in the key cylinder on front LH door, turning it to "LOCK", will lock all doors; turning it to "UNLOCK" once unlocks the corresponding door; turning it to "UNLOCK" again within 3 seconds after the first unlock operation unlocks all of the other doors. (Signals from front door key cylinder switch)

Key Reminder Door System

However, if the electronic key is in the electronic key cylinder and one or more of the doors are open, setting the lock & unlock switch, lock knob, or the door key to "LOCK" locks the doors once but then immediately unlocks them. (Combination signals from key switch, door switch and door unlock sensor)

Schematic

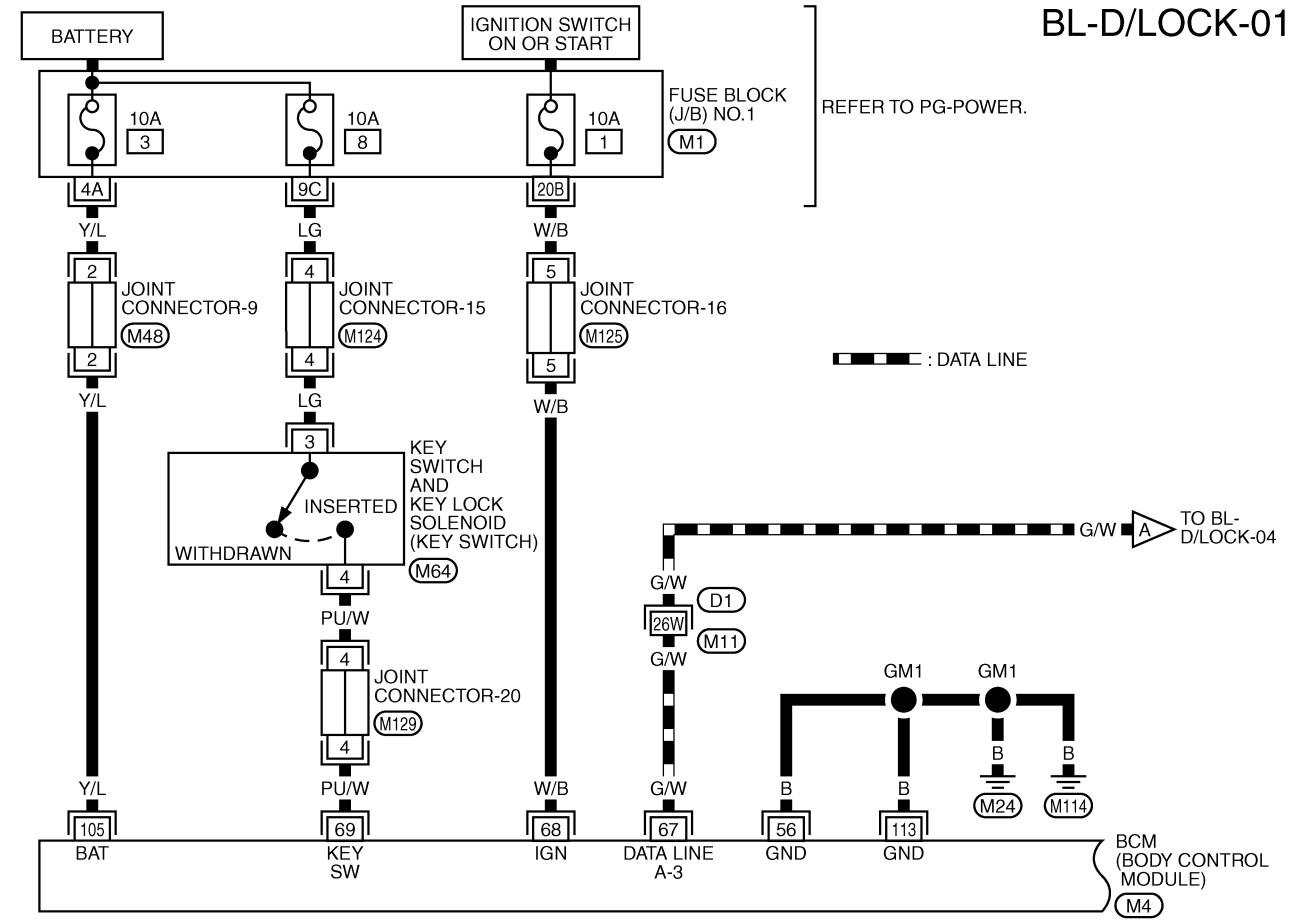
EIS0010J

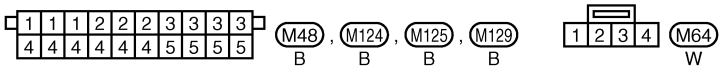


TIWM0005E

Wiring Diagram – D/LOCK –

EIS000QN





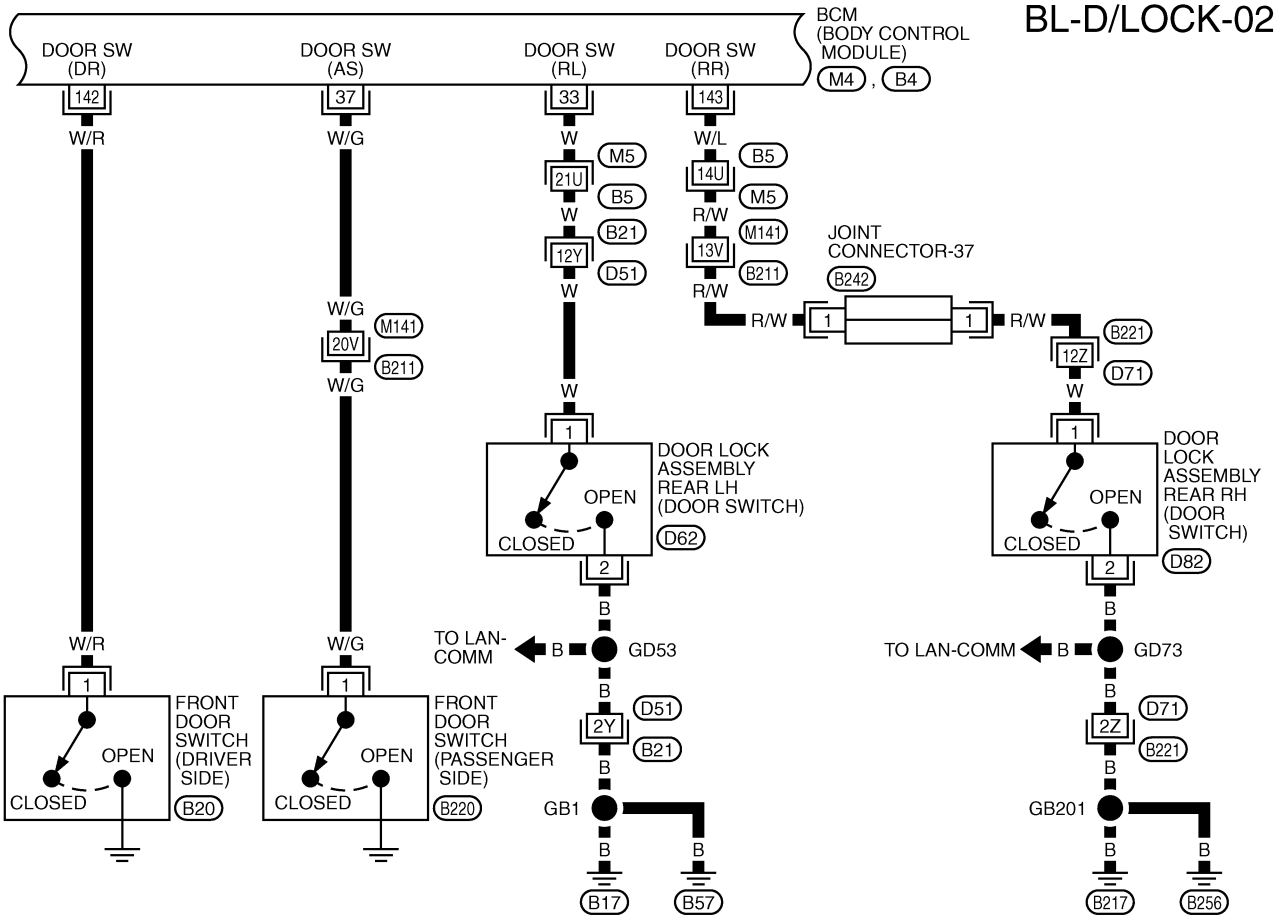
REFER TO THE FOLLOWING.

(D1) -SUPER MULTIPLE JUNCTION (SMJ)

(M1) -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

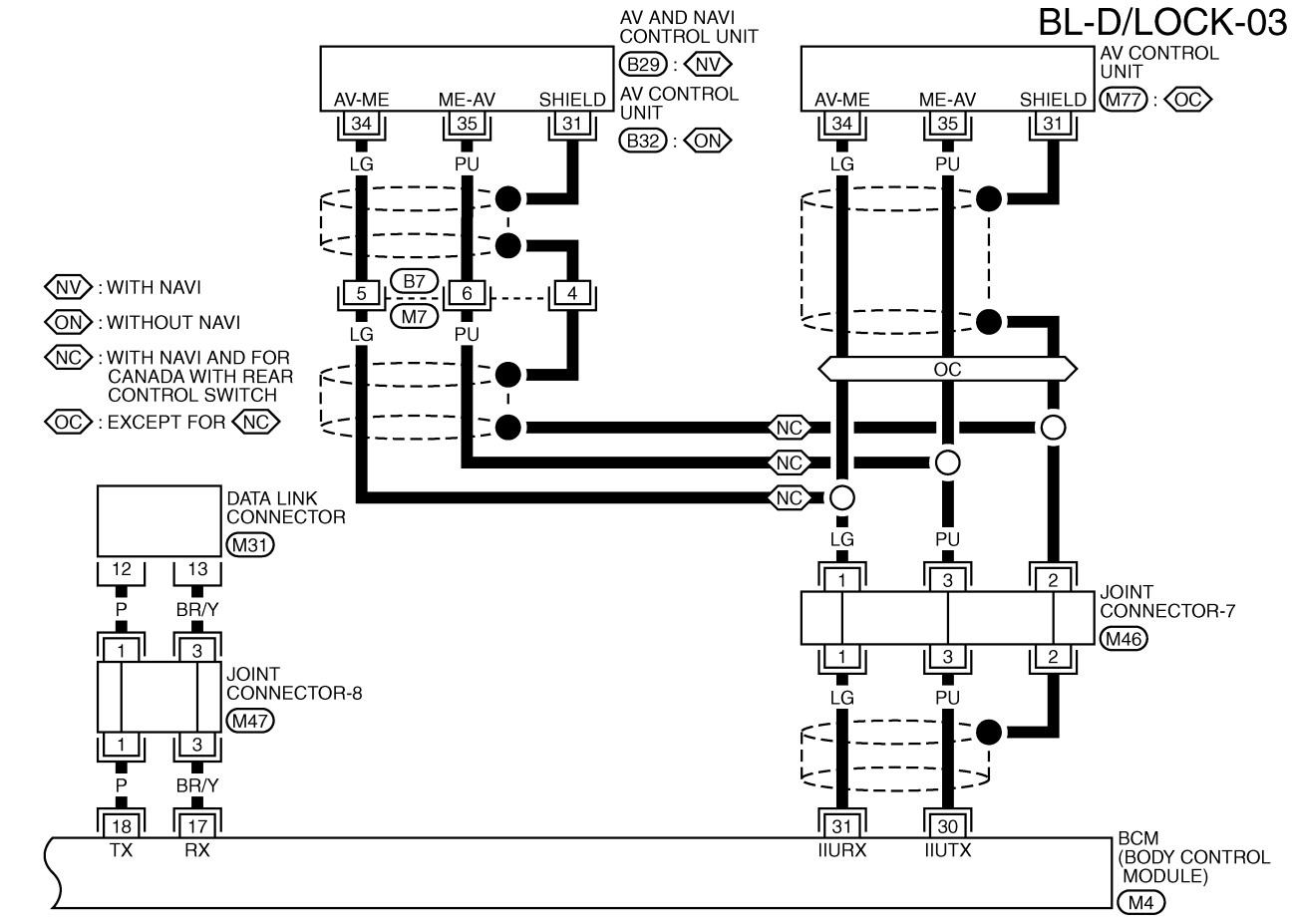
(M4) -ELECTRICAL UNITS

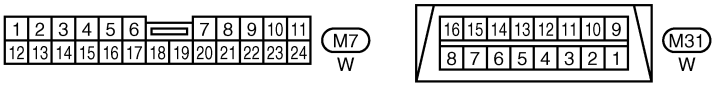
TIWM0006E

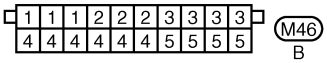


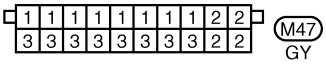
REFER TO THE FOLLOWING.
M5 , B21 , B211 , B221 -SUPER MULTIPLE JUNCTION (SMJ)
M4 , B4 -ELECTRICAL UNITS

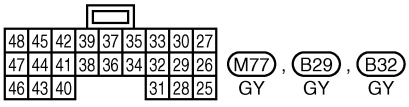
TIWM0007E





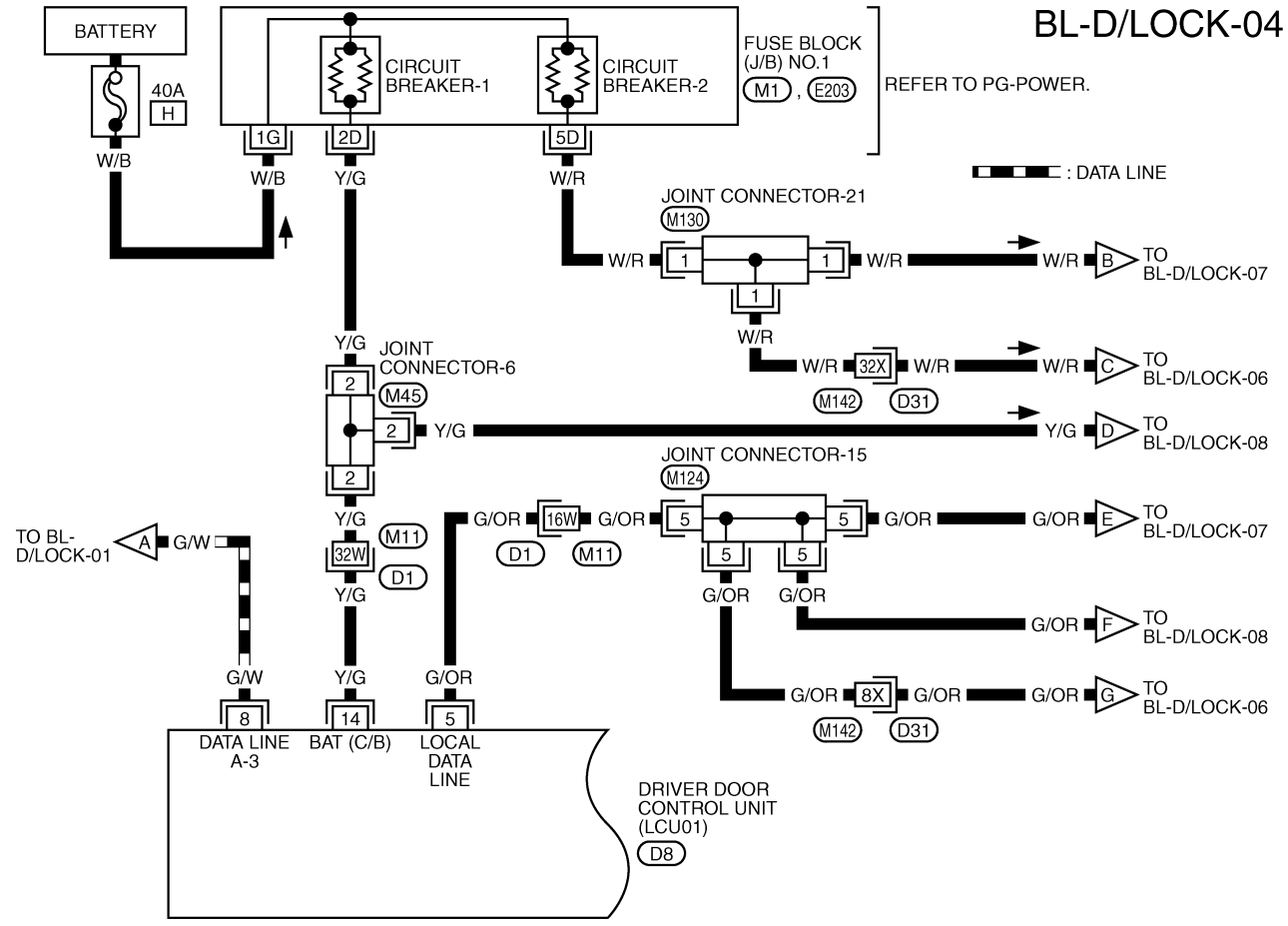


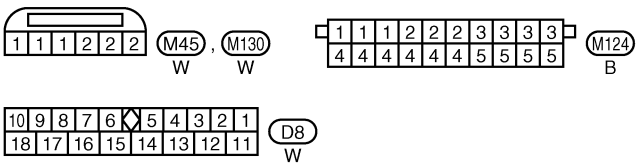




REFER TO THE FOLLOWING.
M4 -ELECTRICAL UNITS

TIWM0009E





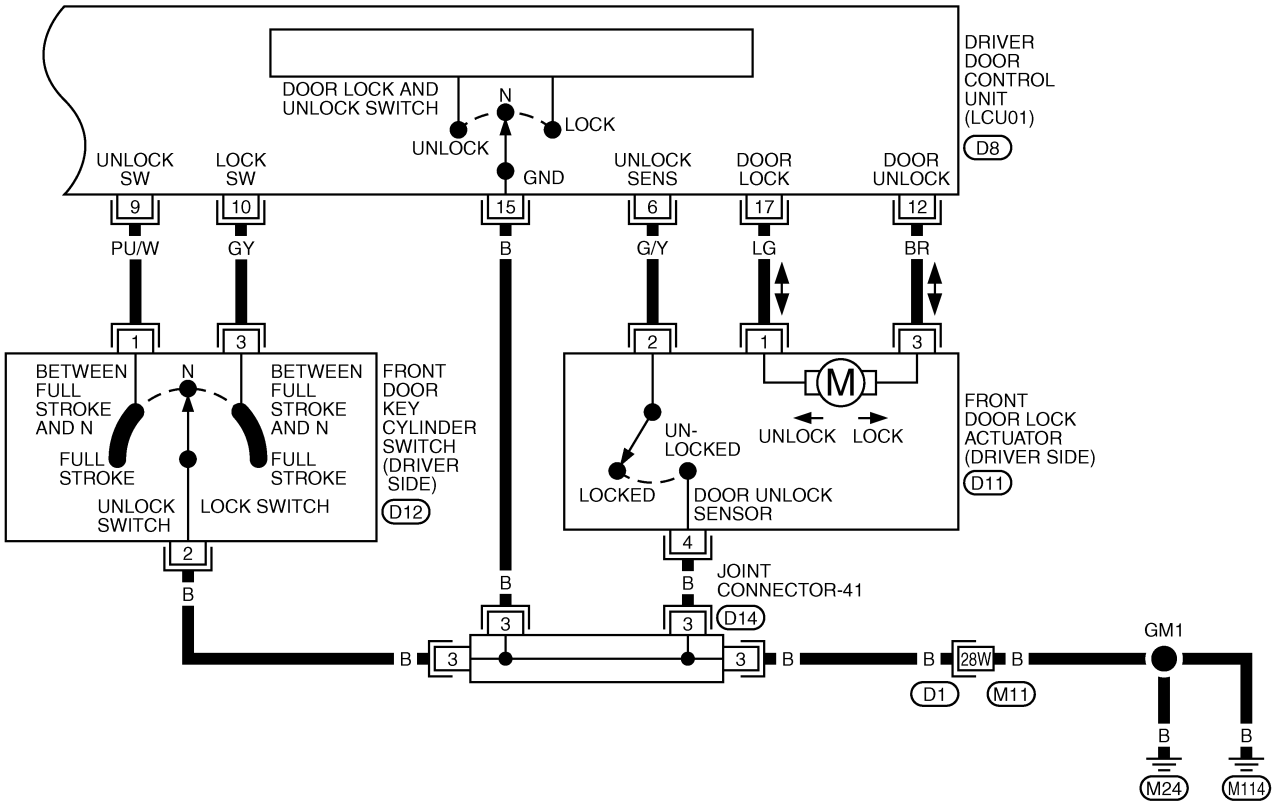
REFER TO THE FOLLOWING.

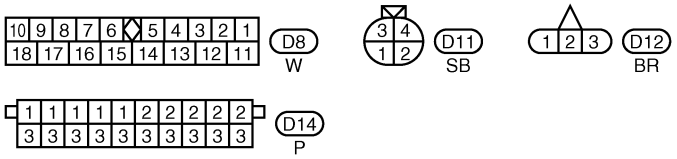
D1 , D31 -SUPER MULTIPLE JUNCTION (SMJ)

M1 , E203 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TIWM0010E

BL-D/LOCK-05



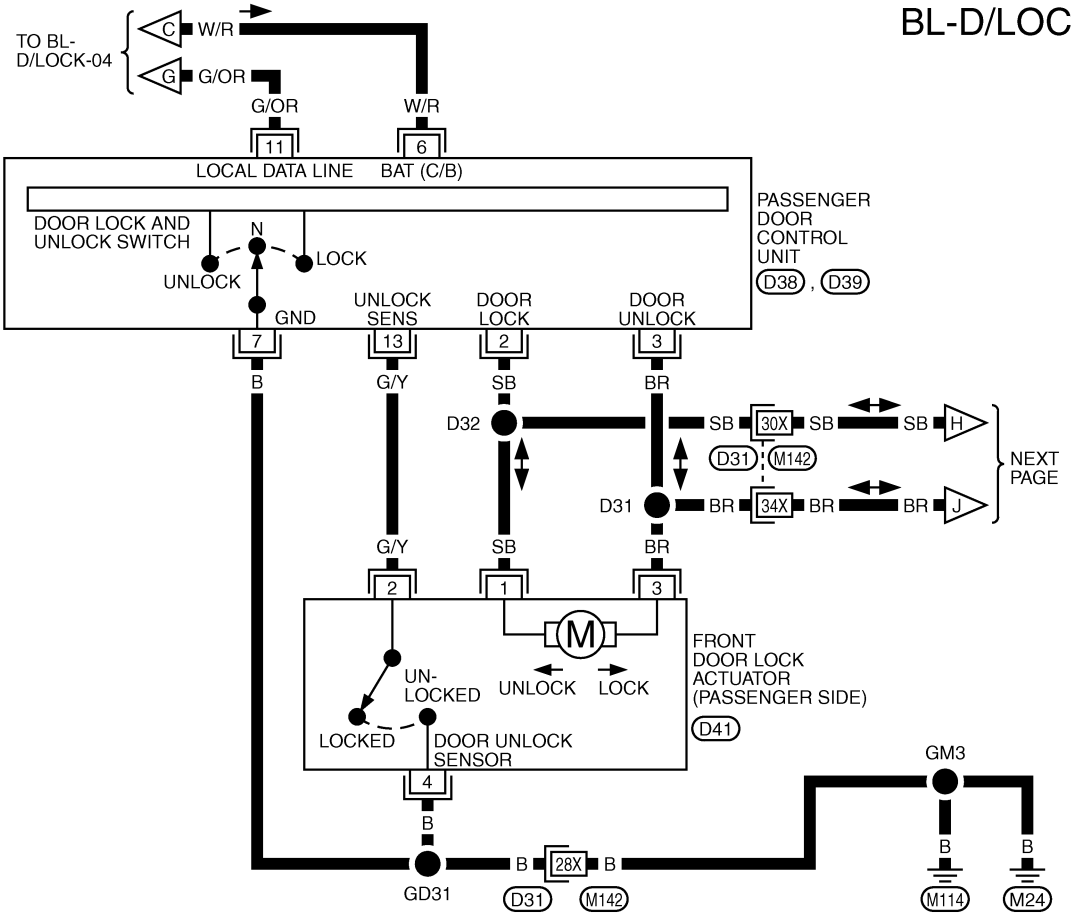


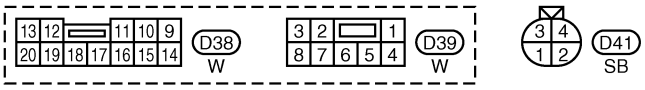
REFER TO THE FOLLOWING.

D1 -SUPER MULTIPLE JUNCTION (SMJ)

TIWM0011E

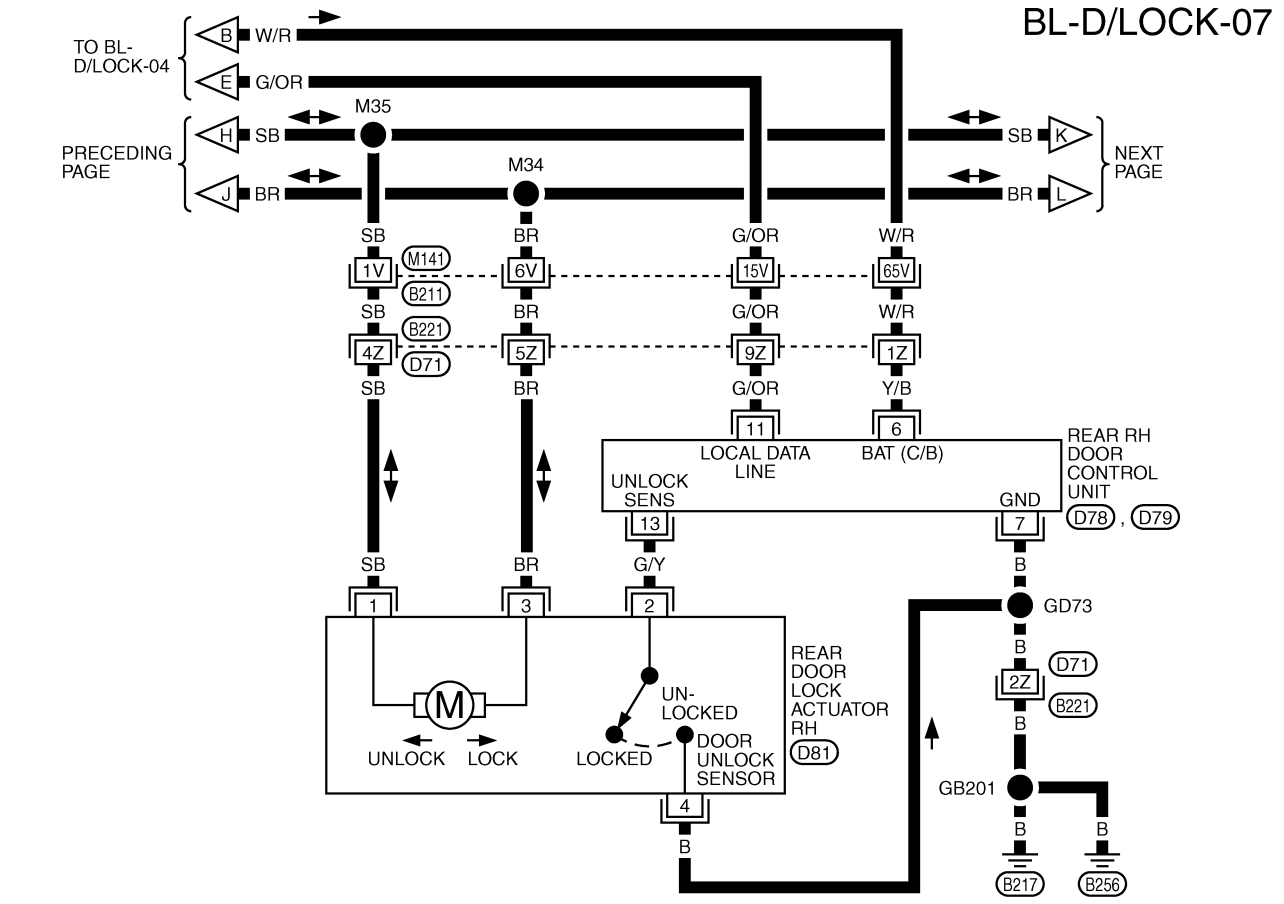
BL-D/LOCK-06





REFER TO THE FOLLOWING.
D31 -SUPER MULTIPLE JUNCTION (SMJ)

TIWM0012E



TIWM0013E

Terminals and Reference Value for BCM

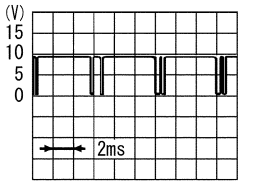
EIS000QO

TERMINAL	WIRE COLOR	ITEM	CONDITION	VOLTAGE
17	BR/Y	Data link RX	—	—
18	P	Data link TX	—	—
30	PU	IIU TX	—	—
31	LG	IIU RX	—	—
33	W	Rear LH door switch	Door open (ON) →close (OFF)	0V → Battery voltage
37	W/G	Passenger door switch	Door open (ON) →close (OFF)	0V → Battery voltage
56	B	Ground	—	0V
67	G/W	Data line A-3	—	—

TERMINAL	WIRE COLOR	ITEM	CONDITION	VOLTAGE
68	W/B	IGN power supply	—	Battery voltage
69	PU/W	Electronic key switch (insert)	Key Inserted (ON) → key removed from IGN key cylinder (OFF)	Battery voltage→0V
105	Y/L	BAT power supply	—	Battery voltage
113	B	Ground	—	0V
142	W/R	Driver door switch	Door open (ON) →close (OFF)	0V → Battery voltage
143	W/L	Rear RH door switch	Door open (ON) →close (OFF)	0V → Battery voltage

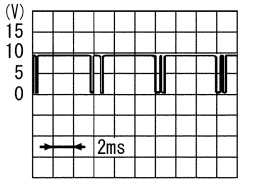
Terminals and Reference Value for Driver Door Control Unit (LCU01)

EIS000QP

TERMINAL	WIRE COLOR	ITEM	CONDITION	VOLTAGE
5	G/OR	Local communication line	—	 SIIA0591J
6	G/Y	Door unlock sensor	OFF (Locked) → ON (unlocked)	5V → 0V
8	G/W	Data line A-3	—	—
9	PU/W	Door key cylinder unlock switch	OFF (Neutral) → ON (Unlocked)	5V → 0V
10	GY	Door key cylinder lock switch	OFF (Neutral) → ON (Locked)	5V → 0V
12	BR	Driver door lock actuator (Unlock)	Door lock & unlock switch (Free → Unlocked)	0V → Battery voltage
14	Y/G	Power source (PTC)	—	Battery voltage
15	B	Ground	—	0V
17	LG	Driver door lock actuator (Lock)	Door lock & unlock switch (Free → Locked)	0V → Battery voltage

Terminals and Reference Value for Passenger and Rear LH, RH Door Control Units

EIS000SC

TERMINAL	WIRE COLOR	ITEM	CONDITION	VOLTAGE
*2	SB	Door lock actuator (Lock)	Door lock & unlock switch (Free → Locked)	0V → Battery voltage
*3	BR	Door lock actuator (Unlock)	Door lock & unlock switch (Free → Unlocked)	0V → Battery voltage
6	W/R (Y/R)	Power source (PTC)	—	Battery voltage
7	B	Ground	—	0V
11	G/OR	Local communication line	—	 SIIA0591J
13	G/Y	Door unlock sensor	OFF (Locked) → ON (unlocked)	5V → 0V

*Only for passenger door control unit.
( ): Wire color for rear RH/LH door control unit.

Work Flow

EIS00134

1. Check the trouble symptom and customer's requests.
2. Understand the outline of system. Refer to BL-18, "System Description" .
3. Perform the preliminary check. Refer to BL-28, "Preliminary Check" .
4. Perform the communication inspection. If CONSULT-II is used, refer to BL-31, "IVMS COMMUNICATION INSPECTION" section. If CONSULT-II is not used, refer to BL-35, "COMMUNICATION DIAGNOSIS" . Is the communication diagnosis result OK? If OK, GO TO step 7. If NG, GO TO step 5.
5. Repair or replace depending on the diagnosis result.
6. Perform the communication diagnosis again. If CONSULT-II is used, refer to BL-31, "IVMS COMMUNICATION INSPECTION" . If CONSULT-II is not used, refer to BL-35, "COMMUNICATION DIAGNOSIS" . Is communication diagnosis result OK? If OK, GO TO step 7. If NG, GO TO step 5.
7. Perform the self-diagnosis. If CONSULT-II is used, If CONSULT-II is not used, Is self-diagnosis result OK? If OK, GO TO step 11. If NG, GO TO step 8.
8. Repair or replace depending on the diagnosis result.
9. Perform the self-diagnosis again. If CONSULT-II is used refer to BL-33, "SELF-DIAGNOSIS RESULTS" , If CONSULT-II is not used, refer to BL-39, "POWER DOOR LOCK SYSTEM SELF SELF-DIAGNOSIS" . Is self-diagnosis result OK? If OK, GO TO step 11. If NG, GO TO step 8.
10. Referring to Trouble diagnosis chart, repair or replace the cause of the incident. Refer to BL-40, "Symptom Chart"
11. Does power door lock system operate normally? If it operates normally, GO TO step 12. If NG, GO TO step 10.
12. Inspection END.

Preliminary Check

EIS00135

POWER SUPPLY AND GROUND CIRCUIT INSPECTION

1. FUSE INSPECTION

- Check if any of the following fuses in BCM are blown.

Unit	Power source	Fuse No.
BCM	Battery power supply	3
	IGN power supply	1

Refer to BL-20, "Wiring Diagram – D/LOCK –" .

Is inspection result OK?

YES >> GO TO 2.

NO >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse, refer to PG-2, "POWER SUPPLY ROUTING" .

2. POWER SUPPLY CIRCUIT INSPECTION

Remove the connectors for BCM and driver door LCU or passenger, rear LH, RH door control units, measure the voltage between terminal No. (refer to the "Chart" below) of connector and body ground.

Unit	Terminals (wire color)		Power source	condition	Voltage
Connector	(+)	(–)			
BCM (M4)	105 (Y/L)	Body ground	Battery power supply	Ignition switch OFF	Battery voltage
	68 (W/B)		IGN power supply	Ignition switch ON	Battery voltage
Driver door LCU (D8)	14 (Y/G)		Battery power supply	Ignition switch OFF	Battery voltage
Passenger door control unit (D39)	6 (W/R)		Battery power supply	Ignition switch OFF	Battery voltage
Rear LH door control unit (D59)	6 (Y/B)				
Rear RH door control unit (D79)	6 (Y/B)				

OK or NG?

OK >> GO TO 3.
NG >> Check harness for opened short.

3. GROUND CIRCUIT INSPECTION

Check the continuity between the following terminals connector for BCM, driver door LCU, passenger or rear RH, LH door control units and body ground.

Unit	Terminal (wire color)		Signal	Ignition switch	Continuity
Connector	(+)	(–)			
BCM (M4)	56 (B) and 113 (B)	Body ground	Ground	Ignition switch OFF	Continuity should exist
Driver door LCU (D8)	15 (B)		Ground	Ignition switch OFF	Continuity should exist
Passenger door control unit (D39)	7 (B)		Ground	Ignition switch OFF	Continuity should exist
Rear LH door control unit (D59)					
Rear RH door control unit (D79)					

OK or NG?

OK >> Power supply and ground circuit is.
NG >> Repair or replace harness.

CONSULT–II Function

EIS00136

- CONSULT-II executes the following functions by combining data reception and command transmission via the communication line from BCM. IVMS communication inspection, work support (only function setting of seats and steering wheel), self-diagnosis, data monitor, and active test display.

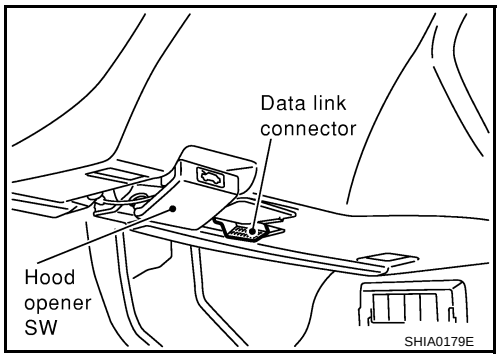
DIAGNOSTIC ITEMS DESCRIPTION

IVMS diagnosis position	Diagnosis mode	Description
IVMS– COMM CHECK	IVMS– COMM DIAGNOSIS	Diagnosis of continuity in the communication line(s), and of the function of the IVMS-communication interface between the body control module and the local control units, accoplished by transmitting a signal from the body control module to the local control units.
	WAKE–UP DIAGNOSIS	Diagnosis of the“ wake-up” function of local control units by having a technician input the switch data into the local control unit that is in the temporary “sleep” condition.

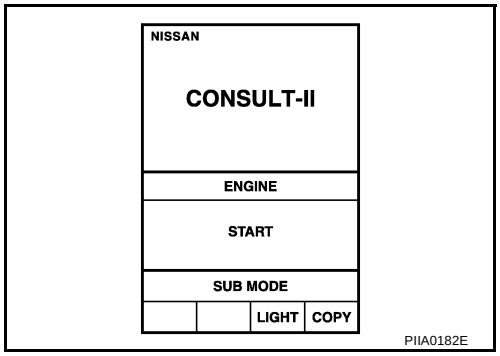
IVMS diagnosis position	Diagnosis mode	Description
Each system inspection .	Work support	Changes the setting for each function.
	Self-diagnosis results	Carries out self-diagnosis.
	Data monitor	Displays data relative to the body control module (BCM) input signals and various control related data for each system.
	Active test	Turns on/off actuators, relay and according to the commands transmitted by the CONSULT-II unit.
BCM PART NUMBER		Displays BCM part No.

CONSULT-II BASIC OPERATION PROCEDURE

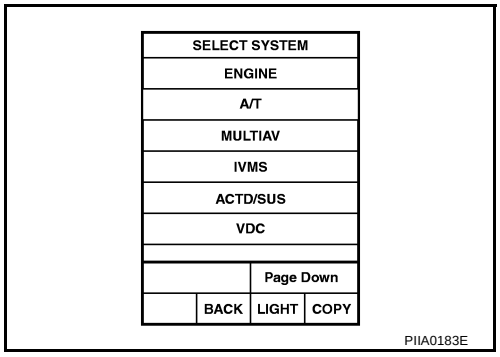
1. With the ignition switch OFF, connect CONSULT–II to the data link connector, and turn the ignition switch ON.



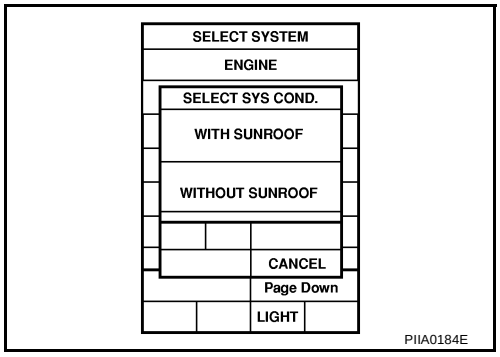
2. Touch "START".



3. Touch "IVMS".



4. Check the model specification, touch either "WITH SUNROOF" or "WITHOUT SUNROOF".
5. Touch "OK". If the selection is wrong, touch "CANCEL".



6. Select the desired part to be diagnosed on the "SELECT TEST ITEM" screen.

IVMS COMMUNICATION INSPECTION

- IVMS contains the IVMS communication diagnosis and wake–up diagnosis.

IVMS Communication Diagnosis.

- IVMS communication diagnosis consists of the communication diagnosis, sleep diagnosis, and inactive communication diagnosis between BCM and each local unit (LCU), and display the results on the CONSULT–ll screen.

  NOTE:
  Sleep is a power saving function when a vehicle is stationary (all BCM related electrical equipment: OFF, and the timer: OFF).
- The function also stores the communication malfunction records and inactive communication records, and displays the data on the CONSULT–II screen (Error record diagnosis)

Malfunction description	CONSULT–II display item	Description
Communication error	COMM DATA	● Communicating with each LCU is judged sound when the communication is normally completed and the transmitted data and received data are identically the same. In other cases, it is judged malfunctioning. If the communication is inactive, no diagnosis result is displayed.
Inactive communication	NO RESPONSE	● Communicating with each LCU is judged sound when at least one time communication is normally completed within three trials. In other cases, it is judged malfunctioning.
Sleep malfunction	SLEEP	● Check that each LCU enters sleep mode.
Communication error *	PAST COMM DATA	● The records when communication signal malfunctions were continuously detected while the communication was normal are displayed. Or the records when a malfunction is detected during the past sleep mode are displayed.
Inactive communication*	PAST NO RESPONSE	● The records when inactive communications were continuously detected while the communication was normal are displayed.

*: malfunctioning item record

Operation Procedure

1. Touch "IVMS-COMM CHECK" on "SELECT TEST ITEM".
2. Touch "IVMS-COMM DIAGNOSIS" on "SELECT DIAG ITEM" screen.
3. Touch "START" on "IVMS-COMM DIAGNOSIS" screen to start the diagnosis.
4. After the diagnosis is completed, the malfunctioning system is displayed.
5. When the malfunctioning items are displayed, touch "PRINT" to record.
6. Touch "ERASE".
7. Perform the communication inspection again to check that any malfunctioning item is displayed.
8. Check the displayed items.

Wake-Up Diagnosis

- The wake-up diagnosis is carried out when BCM detects the wake-up signal from each local unit (LCU). When the switch shown on the screen is operated as instructed, each local control unit (LCU) outputs the wake-up signal. If BCM cannot detect a wake-up signal, it is judged malfunctioning. The malfunctioning local control unit (LCU) is displayed on the screen.

NOTE:
If any unspecified switch is operated, "Switch data not match" is displayed as a malfunctioning system.

Operation Procedure

1. Touch "IVMS-COMM CHECK" on "SELECT TEST ITEM" screen.
2. Touch "WAKE-UP DIAGNOSIS" on "SELECT DIAG ITEM" screen.
3. Touch "START" on "WAKE-UP DIAGNOSIS" screen to start the diagnosis.
4. Touch "NEXT" to select the local control unit (LCU) to be diagnosed.
5. Check that any malfunction is displayed. If necessary, touch "PRINT" to record.
6. Perform the inspection to the malfunctioning item.

Malfunction Code Table

Malfunctioning item	Display unit	CONSULT–II IVMS communication diagnosis content	Self-diagnosis trouble code No.	Malfunctioning system and reference
COMM DATA	One LCU is displayed.	POWER WINDOW C/U–DR "COMM DATA"	24	Replace the displayed LCU.
		DOOR MIRROR C/U–RH "COMM DATA"	27	
		DOOR MIRROR C/U–LH "COMM DATA"	37	
		POWER SEAT C/U–DR "COMM DATA"	47	
	Multiple LCUs are displayed	BCM "COMM FAIL1" ,"COMM FAIL2"	Displays in order of 24 →27→37→47 →and cycles from 24.	Communication system A: Refer to BL-33, "COMMUNICATION SYSTEM A" .
NO RESPONSE	One LCU is displayed.	POWER WINDOW C/U–DR "NO RESPONSE"	25	Communication system B: Refer to BL-33, "COMMUNICATION SYSTEM B" .
		DOOR MIRROR C/U–RH "NO RESPONSE"	28	
		DOOR MIRROR C/U–LH "NO RESPONSE"	38	
		POWER SEAT C/U–DR "NO RESPONSE"	48	
	Multiple LCUs are displayed	BCM/HARNESS	Displays in order of 25→28→38→48 and cycles from 25.	Communication system C: Refer to BL-33, "COMMUNICATION SYSTEM C" .
SLEEP malfunction	One LCU is displayed.	POWER WINDOW C/U–DR "SLEEP"	No self-diagnosis function	Replace the displayed LCU.
		DOOR MIRROR C/U–RH "SLEEP"		
		DOOR MIRROR C/U–LH "SLEEP"		
		POWER SEAT C/U–DR "SLEEP"		
	Multiple LCUs are displayed	All the above control units are displayed.	No self-diagnosis function	Communication system A: Refer to BL-33, "COMMUNICATION SYSTEM A" .

NOTE:

- For a specific local control unit (LCU), either "PAST COMM DATA" or "PAST NO RESPONSE" may be displayed instead of the above results. This is caused by the data record, so erase the records.
  (The display only shows the incident records, they are not malfunctions caused during the diagnosis. One possible cause is that an irreproducible incident symptom occurred.)
- Follow the steps below to erase the memory
  Perform either disconnect BCM battery power supply or erase memory with CONSULT-II.
- With the battery connected, if the local control unit (LCU) connector is disconnected and left for approximately 1 minute, the BCM stores "NO RESPONSE" record.

COMMUNICATION SYSTEM A

1. BCM INSPECTION

Replace the BCM with a known-good one, and carry out the communication diagnosis. Refer to BL-31, "IVMS COMMUNICATION INSPECTION" .

OK or NG?

OK >> Replace the BCM.
NG >> GO TO 2.

2. LCU INSPECTION

1. Replace with the previously installed BCM.
2. Replace the LCU with a known-good one, and carry out the communication diagnosis. Refer to BL-31, "IVMS COMMUNICATION INSPECTION" .

OK or NG?

OK >> Replace the LCU.
NG >> Repair or replace harness.

COMMUNICATION SYSTEM B

1. CONNECTOR INSPECTION

Check the terminals (at the control unit and harness) on the malfunctioning LCU for disconnection, bend, and other malfunctions.

OK or NG?

OK >> GO TO 2.
NG >> Repair the terminals and connectors.

2. LCU INSPECTION

Replace the LCU with a known-good one, and carry out the communication diagnosis. Refer toBL-31, "IVMS COMMUNICATION INSPECTION" .

OK or NG?

OK >> Replace the LCU.
NG >> Repair the communication harness between the indicated LCU and BCM.

COMMUNICATION SYSTEM C

1. CONNECTOR INSPECTION

Check the terminals (at the control unit and harness) on BCM and LCU for disconnection, bend, and other malfunctions.

OK or NG?

OK >> GO TO 2.
NG >> Repair the terminals and connectors.

2. BCM INSPECTION

Replace the BCM with a known-good one, and carry out the communication diagnosis. Refer to BL-31, "IVMS COMMUNICATION INSPECTION" .

OK or NG?

OK >> Replace the BCM.
NG >> Repair the communication harness between the LCU and BCM control.

SELF-DIAGNOSIS RESULTS

Operation Procedure

1. Touch "DOOR LOCK" on the "SELECT TEST ITEM" screen.
2. Touch "SELF-DIAG RESULTS" on the "SELECT DIAG MODE" screen.
3. Touch "START" on the "SELF DIAG RESULTS" screen.

4. Door lock actuator automatically locks/unlocks all the doors before the door lock actuator self-diagnosis start.
5. After the diagnosis is completed, the malfunctioning system name is displayed.
6. When the malfunctioning items are displayed, touch "PRINT" to keep the records.
7. Touch "ERASE".
8. Perform the self-diagnosis again to check that any malfunctioning item is displayed.
9. Perform out the inspection to the displayed items. If "No failure" is displayed, the malfunctioning item recorded at first shall be checked.

Self-Diagnostic Result List

Malfunctioning system.	Malfunction detecting condition
DOOR LOCK MOTOR-DR	The circuit for the driver side door lock actuator/unlock sensor is malfunctioning.
DOOR LOCK MOTOR-AS	The circuit for the passenger side door lock actuator/unlock sensor is malfunctioning.
DOOR LOCK MOTOR-RR/RH	The circuit for the rear RH side door lock actuator/unlock sensor is malfunctioning.
DOOR LOCK MOTOR-RR/LH	The circuit for the rear LH side door lock actuator/unlock sensor is malfunctioning.
NO DTC IS DETECTED/FURTHER TESTING MAY BE REQUIRED	No malfunction in the above items.

DATA MONITOR

Operation Procedure

1. Touch "DOOR LOCK" on "SELECT TEST ITEM" screen.
2. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Touch "MAINSIGNALS" or "SELECTION FROM MENU" on "DATA MONITOR" screen.

MAIN SIGNALS	Monitors the main items.
SELECTION FROM MENU	Selects and monitors the items.

4. Touch "START".
5. If "SELECTION FROM MENU" is selected, touch the desired monitor item. If "MAIN SIGNALS" is selected, the main item required to control is monitored.
6. During monitoring, touching "COPY" can start recording the monitor item status.

Data Monitor Item

Monitored item	Description
IGN KEY SW	Indicates [ON/OFF] condition of electronic key switch.
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
DOOR LK SW-LK	Indicates [ON/OFF] condition of lock signal from lock/unlock switch front LH.
DOOR LK SW-UN	Indicates [ON/OFF] condition of unlock signal from lock/unlock switch front LH.
LOCK SIG-DE	Indicates [ON/OFF] condition of driver door unlock signal from door lock sensor.
LOCK SIG-AS	Indicates [ON/OFF] condition of passenger door unlock signal from door lock sensor.
LOCK SIG-RR/LH	Indicates [ON/OFF] condition of rear LH door unlock signal from door lock sensor.
LOCK SIG-RR/RH	Indicates [ON/OFF] condition of rear RH door unlock signal from door lock sensor.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch LH.
DOOR SW-AS	Indicates [ON/OFF] condition of front door switch RH.
KEY CYL UN-DR	Indicates [ON/OFF] condition of unlock signal from driver door key cylinder.
KEY CYL LK-DR	Indicates [ON/OFF] condition of lock signal from driver door key cylinder.
MAIN/S UNLK AS	Indicates [ON/OFF] condition of unlock signal from lock/unlock switch front RH
MAIN/S LOCK AS	Indicates [ON/OFF] condition of lock signal from lock/unlock switch front RH

ACTIVE TEST

Operation Procedure

1. Touch "DOOR LOCK" on "SELECT TEST ITEM" screen.

2. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Touch the item to be tested, and check the operation.
4. During the operation check, touching "OFF" deactivates the operation.

Active Test Item

Test item.	Malfunction detecting condition
DR LOCK MTR-ALL	This test is able to check all door lock actuators lock operation. These actuators lock when “ON” on CONSULT-II screen is touched.

On Board Diagnosis

EIS00137

ON BOARD DIAGNOSTIC RESULTS INDICATOR LAMP

- Front map lamps and step lamps (all seats) act as the indicators for the on board diagnosis.

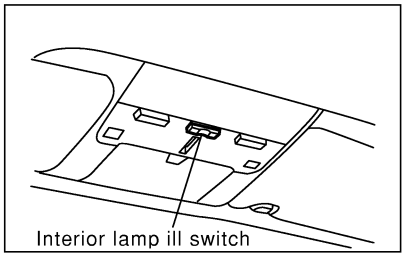
DIAGNOSIS ITEM

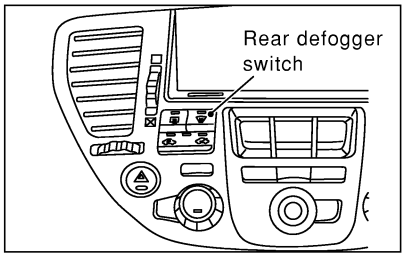
Diagnosis item	Content
IVMS communication diagnosis	Diagnosis any abnormality or inability of communication between BCM and LCU (DATA LINE A-3).
Switch monitor	Monitoring conditions of switches connected to BCM, LCU and Door control unit.
Power door lock system self-diagnosis	Diagnose malfunctions in the each door lock actuator system.

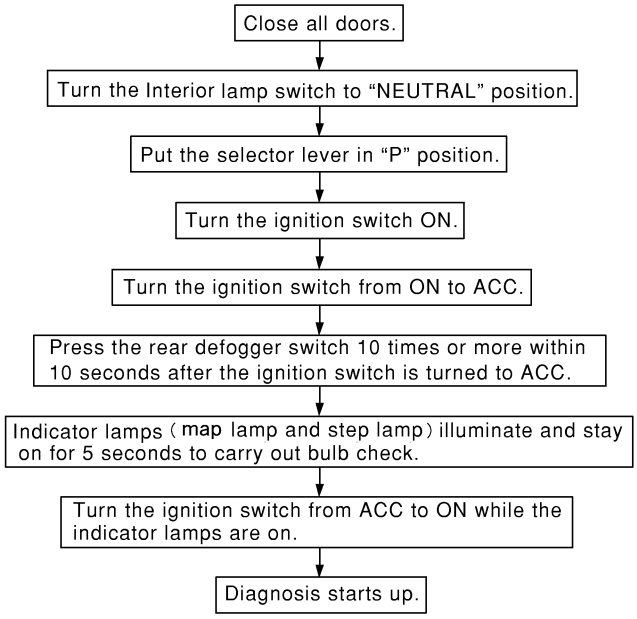
COMMUNICATION DIAGNOSIS

- Check the communication between BCM and local control unit (LCU).

How To Perform Communication Diagnosis



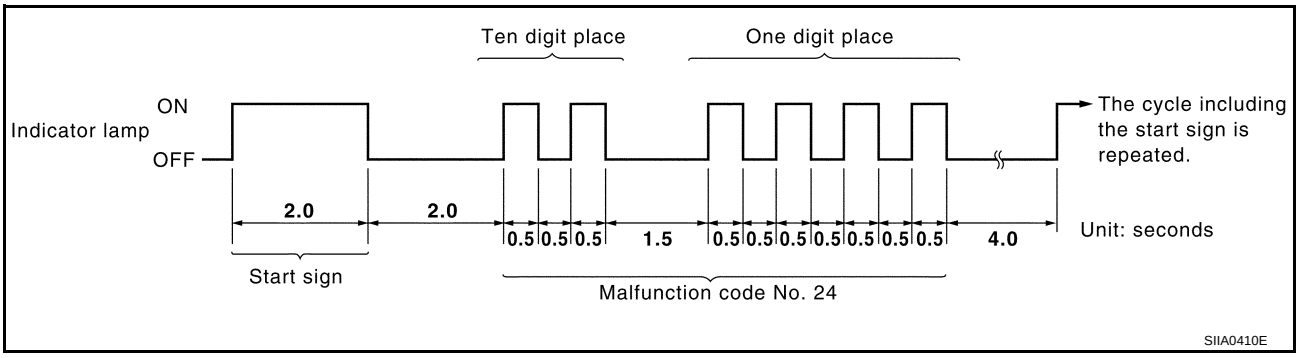




SIIA0409E

Description

In this mode, a malfunction code is indicated by the number of flashes from the front map lamps and step lamps as shown below:



SIIA0410E

After indicator lamp turns on for 2 seconds then off for 2 seconds, it flashes [cycling ON (0.5 sec.)/OFF (0.5 sec.)] to indicate a malfunction code of the first digit. Then, 1 second after indicator lamp turns off, it again flashes [cycling ON (0.5 sec.)/OFF (0.5 sec.)] to indicate a malfunction code of the second digit.
For example, the indicator lamp goes on and off for 0.5 seconds twice and after 1.0 seconds, it goes on and off for 0.5 seconds four times. This indicates malfunction code.

Malfunction Code Table

Malfunctioning item	Display unit	CONSULT–II IVMS communication diagnosis content	Self-diagnosis trouble code No.	Malfunctioning system and reference
COMM DATA	One LCU is displayed.	POWER WINDOW C/U–DR "COMM DATA"	24	Replace the displayed LCU.
		DOOR MIRROR C/U–RH "COMM DATA"	27	
		DOOR MIRROR C/U–LH "COMM DATA"	37	
		POWER SEAT C/U–DR "COMM DATA"	47	
	Multiple LCUs are displayed	BCM "COMM FAIL1" ,"COMM FAIL2"	Displays in order of 24 →27→37→47 →and cycles from 24.	Communication system A: Refer to BL-37, "COMMUNICATION SYSTEM A" .
NO RESPONSE	One LCU is displayed.	POWER WINDOW C/U–DR "NO RESPONSE"	25	Communication system B: Refer to BL-37, "COMMUNICATION SYSTEM B" .
		DOOR MIRROR C/U–RH "NO RESPONSE"	28	
		DOOR MIRROR C/U–LH "NO RESPONSE"	38	
		POWER SEAT C/U–DR "NO RESPONSE"	48	
	Multiple LCUs are displayed	BCM/HARNESS	Displays in order of 25→28→38→48 and cycles from 25.	Communication system C: Refer to BL-37, "COMMUNICATION SYSTEM C" .
SLEEP malfunction	One LCU is displayed.	POWER WINDOW C/U–DR "SLEEP"	No self-diagnosis function	Replace the displayed LCU.
		DOOR MIRROR C/U–RH "SLEEP"		
		DOOR MIRROR C/U–LH "SLEEP"		
		POWER SEAT C/U–DR "SLEEP"		
	Multiple LCUs are displayed	All the above control units are displayed.	No self-diagnosis function	Communication system A: Refer to BL-37, "COMMUNICATION SYSTEM A" .

NOTE:

- For a specific local control unit (LCU), either "PAST COMM DATA" or "PAST NO RESPONSE" may be displayed instead of the above results. This is caused by the data record, so erase the records.
  (The display only shows the fault records, they are not malfunctions caused during the diagnosis. One possible cause is that an irreproducible fault symptom occurred.)
- Follow the steps below to erase the memory
  Carry out either disconnect BCM battery power supply or erase memory with CONSULT-II.
- With the battery connected, if the local control unit (LCU) connector is disconnected and left for approximately 1 minute, the BCM stores "NO RESPONSE" record.

Cancel Of Communication Diagnosis

If the following conditions are satisfied, the communication diagnosis is cancelled.

- Turn ignition switch OFF.
- Drive the vehicle more than 7 km/h (4 MPH).
- Ten minutes have passed since the diagnosis result indication start without any diagnosis cancel operation.

COMMUNICATION SYSTEM A

1. BCM INSPECTION

Replace the BCM with a known-good one, and carry out the communication diagnosis. Refer to BL-35, "COMMUNICATION DIAGNOSIS" .

OK or NG?

OK >> Replace BCM.
NG >> GO TO 2.

2. LCU INSPECTION

1. Replace with the BCM.
2. Replace the LCU with a known-good one, and carry out the communication diagnosis. Refer toBL-35, "COMMUNICATION DIAGNOSIS" .

OK or NG?

OK >> Replace LCU.
NG >> Repair or replace harness.

COMMUNICATION SYSTEM B

1. CONNECTOR INSPECTION

Check the terminals (at the control unit and harness) on the malfunctioning LCU for disconnection, bend, and other malfunctions.

OK or NG?

OK >> GO TO 2.
NG >> Repair the terminals and connectors.

2. LCU INSPECTION

Replace the LCU with a known-good one, and carry out the communication diagnosis. Refer to BL-41, "Communication Line Check" .

OK or NG?

OK >> Replace LCU.
NG >> Repair communication harness between the indicated LCU and BCM.

COMMUNICATION SYSTEM C

1. CONNECTOR INSPECTION

Check the terminals (at the control unit and harness) on BCM and LCU for disconnection, bend, misalignment, and other malfunctions.

OK or NG?

OK >> GO TO 2.
NG >> Repair terminals and connectors.

2. BCM INSPECTION

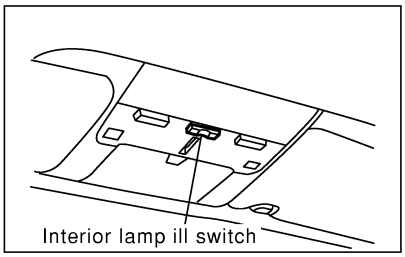
Replace the BCM with a known-good one, and carry out the communication diagnosis. Refer to BL-35, "COMMUNICATION DIAGNOSIS" .

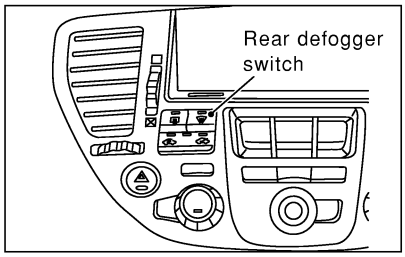
OK or NG?

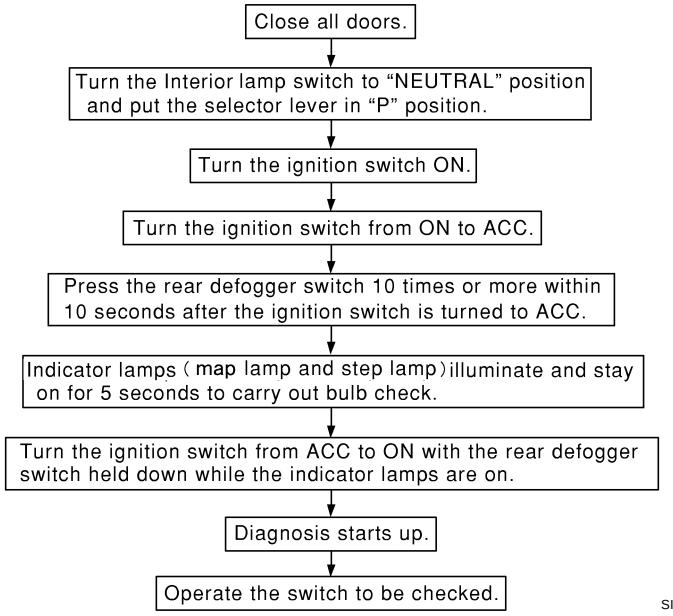
OK >> Replace BCM.
NG >> Repair the communication harness between LCU and BCM control.

SWITCH MONITOR

How To Perform Switch Monitor



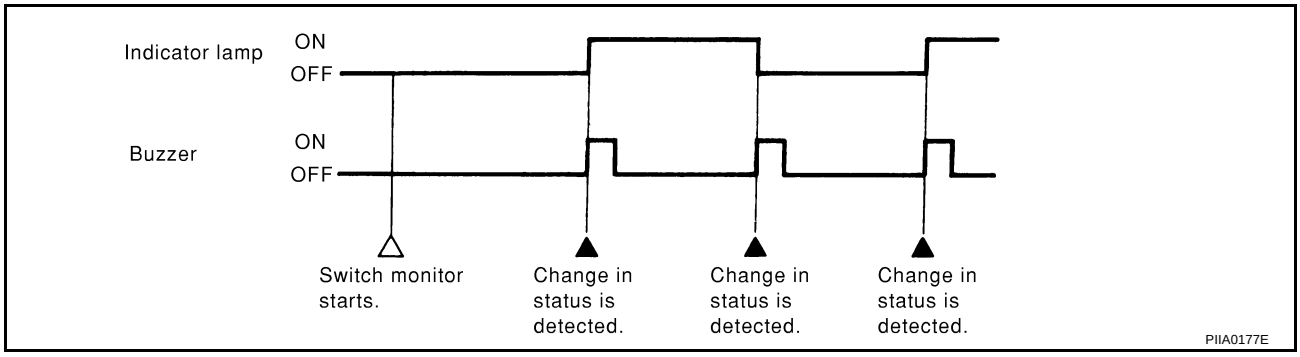




SIIA0411E

Description

In this mode, when BCM detects the input signal from a switch in IVMS as shown below, the detection is indicated by the front map lamp and front step lamps with buzzer.



PIIA0177E

Switch Monitor Item

- The status of the switch (except the ignition switch, interior lamp switch, and map lamp switch) as input to each control unit can be monitored.

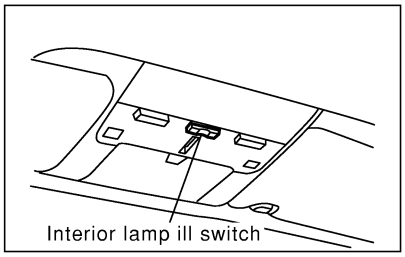
Control unit name.	Item
BCM	All door switch
	Electronic key (lock / unlock switch and trunk switch)
Driver door control unit (LCU01)	Door lock and unlock switch (LOCK / UNLOCK)
	Driver door unlock sensor
Passenger door control unit	Passenger door unlock sensor
Rear LH door control unit	Rear LH door unlock sensor
Rear RH door control unit	Rear RH door unlock sensor

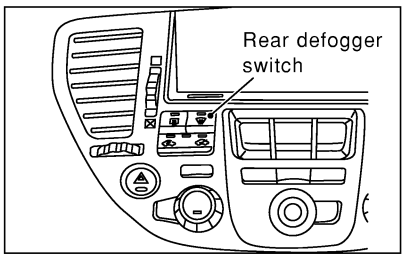
Cancel Of Switch Monitor.

- Turn ignition switch OFF.
- Drive the vehicle at more than 7 km/h (4MPH).

POWER DOOR LOCK SYSTEM SELF SELF-DIAGNOSIS

How To Perform Self-Diagnosis



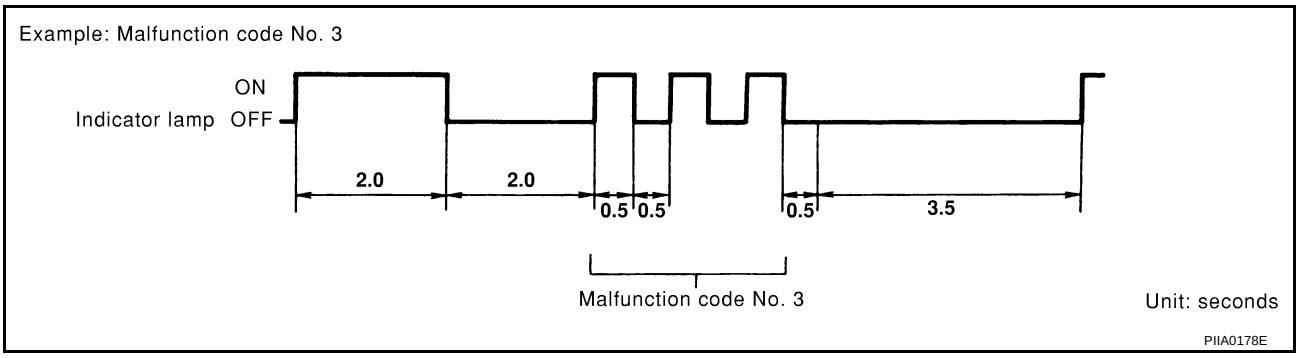


Close all doors.
↓
Turn the Interior lamp switch to “NEUTRAL” position.
↓
Put the selector lever in “P” position.
↓
Turn the ignition switch to ON.
↓
Turn the lighting switch to ON (1st).
↓
Turn the ignition switch from ON to ACC.
↓
Press the rear defogger switch 10 times or more within 10 seconds after the ignition switch is turned to ACC.
↓
Indicator lamps(map lamp and step lamp)illuminate and stay) on for 5 seconds to carry out bulb check.
↓
Turn the ignition switch from ACC to ON while the indicator lamps are on.
↓
Self-diagnosis starts and all door lock actuators are automatically locked and then unlocked.
↓
After the above procedure is completed, run the vehicle at min. 35 km/h.
↓
Diagnosis result indication starts.

SIIA0535E

Description

In this mode, a malfunction code is indicated by the number of flashes from the front map lamps and step lamps as shown below:



After indicator lamp turns ON for 2 seconds and then turns OFF, it flashes to indicate a malfunction code. For example, the indicator lamp goes on and off for 0.5 seconds three times. This indicates malfunction code.

Malfunction Code Table

Code No.	Detected items	Diagnostic procedure
1	Driver door lock actuator / unlock sensor	Refer to BL-42, "Door Unlock Sensor Check" .
2	Passenger door lock actuator / unlock sensor	
3	Rear RH door lock actuator / unlock sensor	
4	Rear LH door lock actuator / unlock sensor	
9	No malfunction in the above items	

Cancel Of Self-Diagnosis

- Turn ignition switch OFF.

Symptom Chart

EIS0010K

- Before carrying out the inspection on the following table, carry out the preliminary check. Refer to BL-28, "Preliminary Check" .

Symptom	malfunctioning system and reference
Power door lock does not operate with door lock and unlock switch on power window main switch.	Door lock and unlock switch check. Refer to BL-40, "Door Lock & Unlock Switch Check" .
	Communication line check. Refer to BL-41, "Communication Line Check" .
	If above systems are “OK”, replace driver door control unit (LCU).
Power door lock does not operate with driver door lock knob switch.	Door unlock sensor check (driver side). Refer toBL-42, "Door Unlock Sensor Check" .
	Door lock actuator check – Driver –. Refer to BL-42, "Door Lock Actuator Check – Driver –" .
	Communication line check. Refer to BL-41, "Communication Line Check" .
	If above systems are “OK”, replace driver door control unit (LCU).
Specific door lock actuator does not operate.	Door unlock sensor check. Refer to BL-42, "Door Unlock Sensor Check" .
	Door lock actuator chack (Passenger, Rear LH, RH). Refer to BL-43, "Door Lock Actuator Check – Passenger, Rear LH,RH –" .
	Communication line check.
	If above systems are “OK”, replace door control unit.
Key reminder door system does not operate properly.	Door unlock sensor check. Refer to BL-42, "Door Unlock Sensor Check" .
	Key switch check. Refer to BL-44, "Electronic Key Switch Check." .
	If above systems are “OK”, replace BCM.

Door Lock & Unlock Switch Check

EIS0010L

1. CHECK DOOR LOCK AND UNLOCK SWITCH

With CONSULT-II

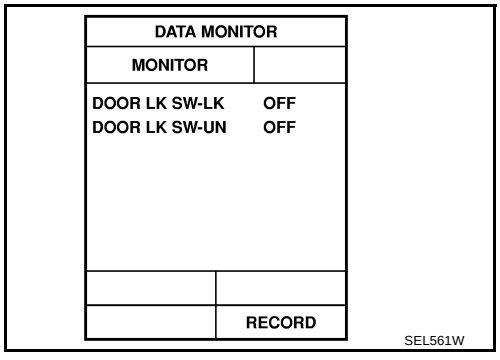
See “DOOR LK SW-LK or UN” in DATA MONITOR mode.

- When door lock and unlock switch is turned to lock :

  DOOK LK SW–LK OFF → ON

- When lock and unlock switch is turned to unlock :

  DOOK LK SW–UN OFF → ON



Without CONSULT-II

- Check door lock and unlock switch operation in Switch monitor mode.
  (Refer to BL-38, "SWITCH MONITOR" .)

OK or NG ?

OK >> Replace driver door control unit (LCU).
NG >> Replace key switch.

Communication Line Check

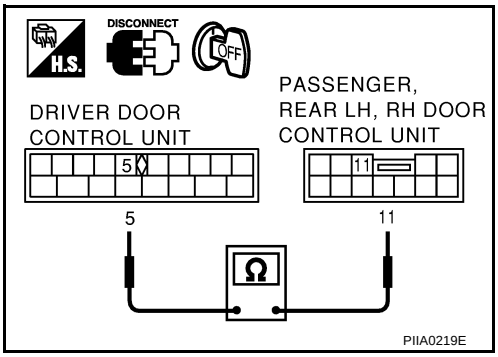
EIS0010M

1. CHECK COMMUNICATION CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect connectors for driver door control unit (LCU) and malfunctioning door control unit.
3. Check continuity between driver door control unit (LCU) harness connector terminal 5 and malfunctioning door control unit harness connector terminal 11.

Terminals				Continuity
Driver door control unit (LCU) (+)		Passenger door control unit (–)		
Connector	Terminal	Connector	Terminal	
D8	5 (G/OR)	D37	11 (G/OR)	Yes

Terminals				Continuity
Driver door control unit (LCU) (+)		Passenger door control unit (–)		
Connector	Terminal	Connector	Terminal	
D8	5 (G/OR)	D58 (LH) D78 (RH)	11 (G/OR)	Yes



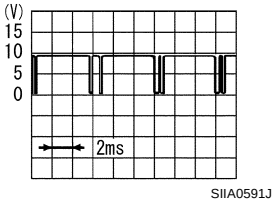
OK or NG ?

OK >> GO TO 2.
NG >> ● Repair or replace harness.

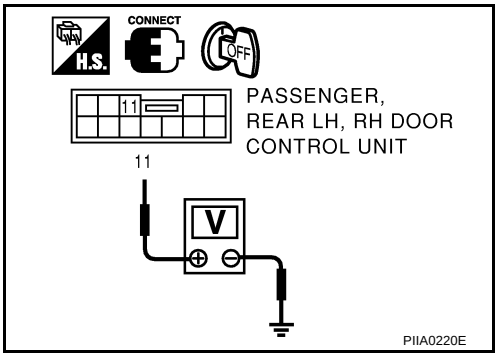
2. CHECK COMMUNICATION SIGNAL

- Connect driver door control unit (LCU) and malfunctioning door control unit connector.
- Check voltage between malfunctioning door control unit harness connector terminal 11 and body ground.

Terminals			Voltage
Passenger door control unit (+)		(–)	
Connector	Terminal	Ground	
D38	11 (G/OR)		
Rear LH, RH door control unit			
Terminals			
Rear door control unit (+)		(–)	
Connector	Terminal	Ground	
D58 (LH) D78 (RH)	11 (G/OR)		



SIIA0591J



OK or NG ?

OK >> Communication signal is OK.
NG >> ● All door control unit (passenger, rear LH or RH) connected are NG.→ Replace Driver door LCU.
● Any of door control unit (passenger, rear LH or RH door control unit) connected are NG.→ Replace malfunctioning door control unit.

Door Unlock Sensor Check

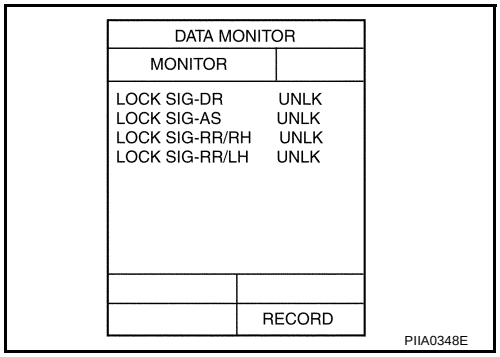
EIS0010N

1. CHECK DOOR UNLOCK SENSOR INPUT SIGNAL

With CONSULT–II

- Check door unlock sensor (“LOCK SIG”) in"DATA MONITOR" mode with CONSULT–II.

When door is open : LOCK SIG LOCK
When door is closed : LOCK SIG UNLOCK



Without CONSULT–II

- Check door lock knob operation in Switch monitor mode. (Refer to BL-38, "SWITCH MONITOR" .)

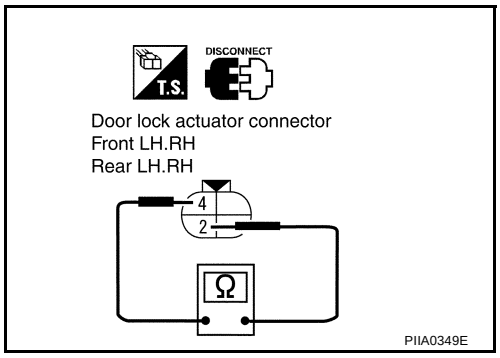
OK or NG?

OK >> Door unlock sensor is OK.
NG >> GO TO 2.

2. CHECK DOOR UNLOCK SENSOR

1. Disconnect door lock actuator connector.
2. Check continuity between door lock actuator (door unlock sensor) terminal 2(G/Y) and 4(B).

Actuator connector		Terminals	Condition	Continuity
Front door	LH : D11	2 (G/Y) – 4 (B)	Locked	No
	RH : D41			
Rear door	LH : D61		Unlocked	Yes
	RH : D81			



OK or NG?

OK >> Check the following.
- Ground circuit for door unlock sensor
- Harness for open or short between door LCU or door control unit and door unlock sensor

NG >> Replace door lock actuator.

Door Lock Actuator Check – Driver –

EIS0010O

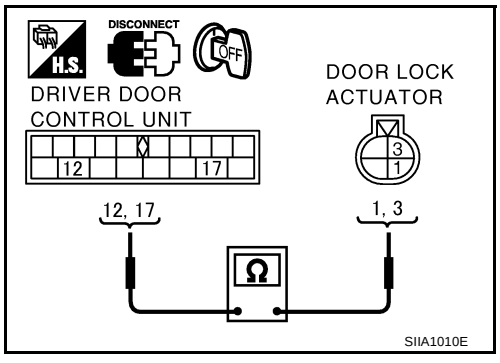
1. CHECK DOOR LOCK ACTUATOR HARNESS

1. Turn the ignition switch OFF.
2. Disconnect driver door control unit (LCU) and door lock actuator connector.
3. Check continuity between driver door control unit (LCU) harness connector D8 terminals 12(BR), 17(LG) and front door lock actuator harness connector D11 terminals 1(LG), 3(BR).

12(BR) – 3(BR) : Continuity should exist.
17(LG) – 1(LG) : Continuity should exist.

4. Check continuity between door control unit (LCU) harness connector D8 terminals 12(BR), 17(LG) and body ground.

12(BR) – ground : Continuity should not exist.
17(LG) – ground : Continuity should not exist.



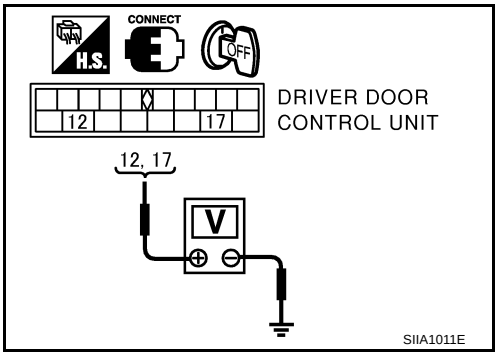
OK or NG?

OK >> GO TO 2.
NG >> Repair or replace harness.

2. CHECK OUTPUT SIGNAL

- Connect driver door LCU01 connector.
- Check voltage between driver door LCU01 harness connector D8 terminal 12(BR), 17(LG) and body ground.

Door lock operation	Terminals		Voltage (V)
	+	-	
Unlock	12 (BR)	Ground	0V → Battery voltage
Lock	17(LG)	Ground	0V → Battery voltage



OK or NG?

OK >> Replace driver door lock actuator.
NG >> Replace driver door LCU01.

Door Lock Actuator Check – Passenger, Rear LH,RH –

EIS0010P

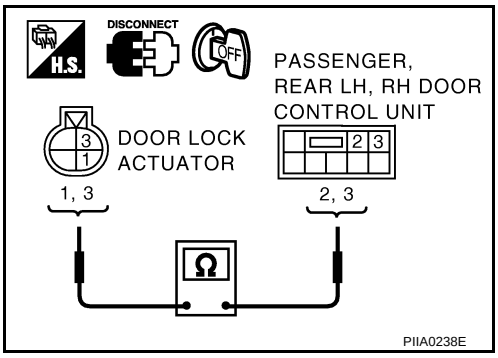
1. CHECK DOOR LOCK ACTUATOR HARNESS

1. Turn the ignition switch OFF.
2. Disconnect passenger door control unit and door lock actuator connector.
3. Check continuity between passenger door control unit harness connector D39 terminals 2(SB), 3(BR) and door lock actuator harness connector D41(Passenger), D81(Rear RH) or D61(Rear LH) terminals 1(SB), 3(BR).

   1(SB) – 2(SB) : Continuity should exist.
   3(BR) – 3(BR) : Continuity should exist.

4. Check continuity between door control unit harness connector D39 terminals 2(SB), 3(BR) and body ground.

   2(SB) – ground : Continuity should not exist.
   3(BR) – ground : Continuity should not exist.



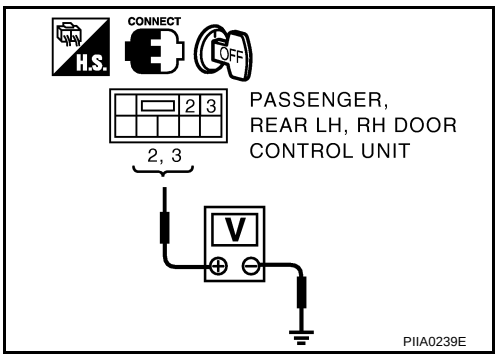
OK or NG?

OK >> GO TO 2.
NG >> Repair or replace harness.

2. CHECK OUTPUT SIGNAL

- Connect passenger door connector.
- Check voltage between passenger door control unit harness connector D41 terminals 1(SB), 3(BR) and body ground.

Door lock operation	Terminals		Voltage (V)
	+	-	
Unlock	3 (BR)	Ground	0V → Battery voltage
Lock	2(SB)	Ground	0V → Battery voltage



OK or NG?

OK >> Replace door lock actuator.
NG >> Replace passenger door control unit.

Electronic Key Switch Check.

EIS0013Q

1. CHECK KEY SWITCH

With CONSULT-II

- Check electronic key cylinder switch “IGN KEY SW” in “DATA MONITOR” mode with CONSULT-II.
  When key is inserted in electronic key cylinder :

  IGN KEY SW ON

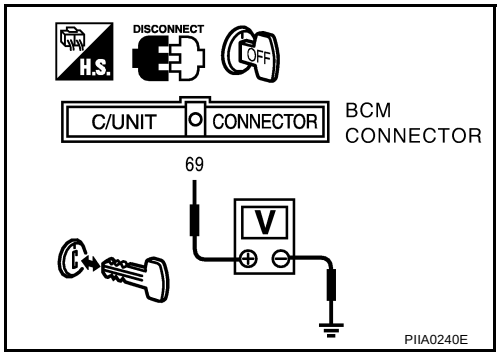
  When key is removed from electronic key cylinder :

  IGN KEY SW OFF

Without CONSULT-II

1. Disconnect BCM connector.
2. Check voltage between harness connector M4 terminls 69 (PU/W) and body ground.

Condition	Voltage (V)
Key is inserted	Battery Voltage
Key is removed	0V



OK or NG ?

OK >> electronic key switch is OK .
NG >> GO TO 2.

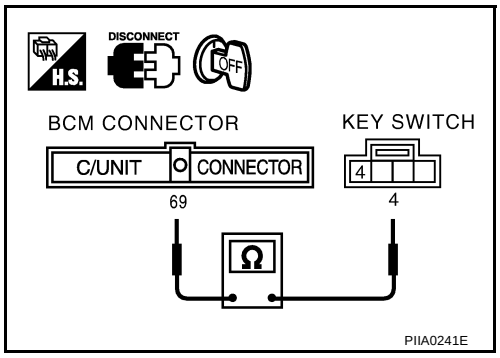
2. CHECK KEY SWITCH CIRCUIT

1. Remove the key from the electronic key cylinder.
2. Disconnect key switch connector.
3. Check continuity between BCM harness conector M4 terminal 69(PU/W) and key switch harness connector M64 terminal 4(PU/W) for the key detection switch.

   : Continuity should exist.

4. Check continuity between BCM harness connector M4 terminal 69(PU/W) and body ground.

   : Continuity should not exist.



OK or NG ?

OK >> Replace key switch.
NG >> Repair or replace harness.

REMOTE KEYLESS ENTRY SYSTEM

PFP:28596

System Description

EIS0028D

POWER SUPPLY AND GROUND

BCM is connected to LCU01 as DATA LINE A-3.
Power is supplied at all times

- through 10A fuse [No. 8, located in the fuse block (J/B)]
- to key switch terminal 3.

When the key switch is in ON position (key is inserted in ignition key cylinder), power is supplied

- through key switch terminal 4
- to BCM terminal 69

When any of the four door switches is in OPEN position, ground is supplied

- to BCM terminal 33, 37, 142, 143
- through door switches body grounds.

When a front LH door is unlocked, driver door LCU terminal 6 receives a ground signal from terminal 2 of front LH door unlock sensor.
When a front RH, rear LH or RH door is unlocked, each door control unit terminal 13 receiver a ground signal from terminal 2 of each door unlock sensor.
Electronic key signal input

- through multi remote control receiver
- to BCM terminal 27

The remote keyless entry system controls operation of the

- power door lock
- trunk lid opener
- panic alarm
- hazard and horn reminder

OPERATING PROCEDURE

BCM can receive signals from electronic key when key switch is in OFF position (key is not in cylinder). It then sends the signals to LCU01 as DATA LINE A-3.

POWER DOOR LOCK OPERATION

When BCM receives a LOCK signal from electronic key, BCM will then send a LOCK signal

- from its terminals 67 (DATA LINE A-3)
- to front LH door control unit (LCU) terminal 8.

When an UNLOCK signal is sent from electronic key once, driver's door will be unlocked.
Then, if an UNLOCK signal is sent from electronic key again within 3 seconds, all other doors will be unlocked.
For detailed description, refer to BL-18, "System Description" .

HAZARD AND HORN REMINDER

Power is supplied at all times

- through 15A fuse (No. 56, located in the fusible link and fuse box)
- to horn relay terminal 2.

When BCM receives a LOCK or UNLOCK signal from electronic key, ground is supplied

- to combination flasher unit relay terminal 6
- through BCM terminal 7 and
- to horn relay terminal 1
- through BCM terminal 127

combination flasher unit and horn relay are now engaged, and hazard warning lamps flash and horn sounds as a reminder.)

OPERATING FUNCTION OF HAZARD AND HORN REMINDER

This vehicle is set in hazard indicator and horn mode when you first receive the vehicle.

Hazard Indicator And Horn Mode

When the LOCK button is pushed, the hazard indicator flashes twice and horn chirps once.
When the UNLOCK button is pushed, the hazard indicator flashes once.

Hazard Indicator Only Mode

When the LOCK button is pushed, the hazard indicator flashes twice.
When the UNLOCK button is pushed, neither the hazard indicator nor the hone operates.

MODE (Push “LOCK” and “UNLOCK” buttons for more than 2 seconds to switch)		Switching indicator	LOCK	UNLOCK
Hazard indicator and horn →	HAZARD INDICATOR ONLY	HAZARD – 3 times	HAZARD – twice	No operation
Hazard indicator only →	HAZARD INDICATOR AND HORN	HAZARD – once HORN – once	HAZARD – twice HORN – once	HAZARD – once

TRUNK LID OPENER OPERATION

Power is supplied at all times

- through 20A fuse [No. 15, located in the fuse block (J/B)]
- to trunk lid opener actuator terminal 1.

When a TRUNK OPEN signal is sent from electronic key without the electronic key inserted in the ignition key cylinder, if the trunk lid opener cancel switch is in the ON position, ground is supplied

- through 10A fuse [No.3, located in the fuse block (J/B)]
- to trunk lid opener relay
- through trunk lid cancel switch terminals 1 and 2, and
- through BCM terminal 109

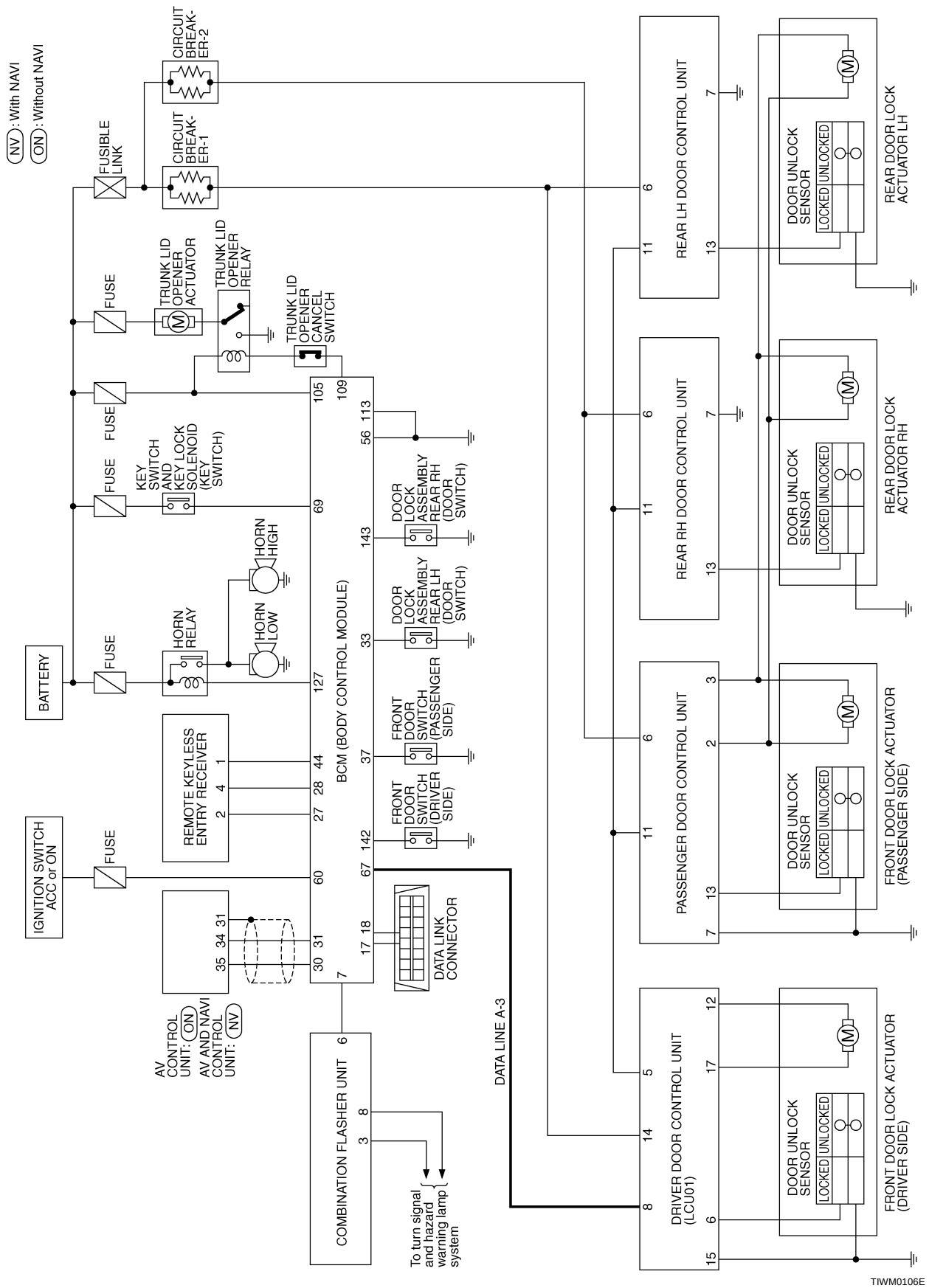
Then power and ground are supplied, trunk lid opener actuator opens trunk lid.

PANIC ALARM OPERATION

Remote keyless entry system activates horn and head lamps intermittently when an ALARM signal is sent from electronic key to remote keyless entry system without the electronic key inserted in the ignition key cylinder. For detailed description, refer to BL-100, "VEHICLE SECURITY (THEFT WARNING) SYSTEM" .

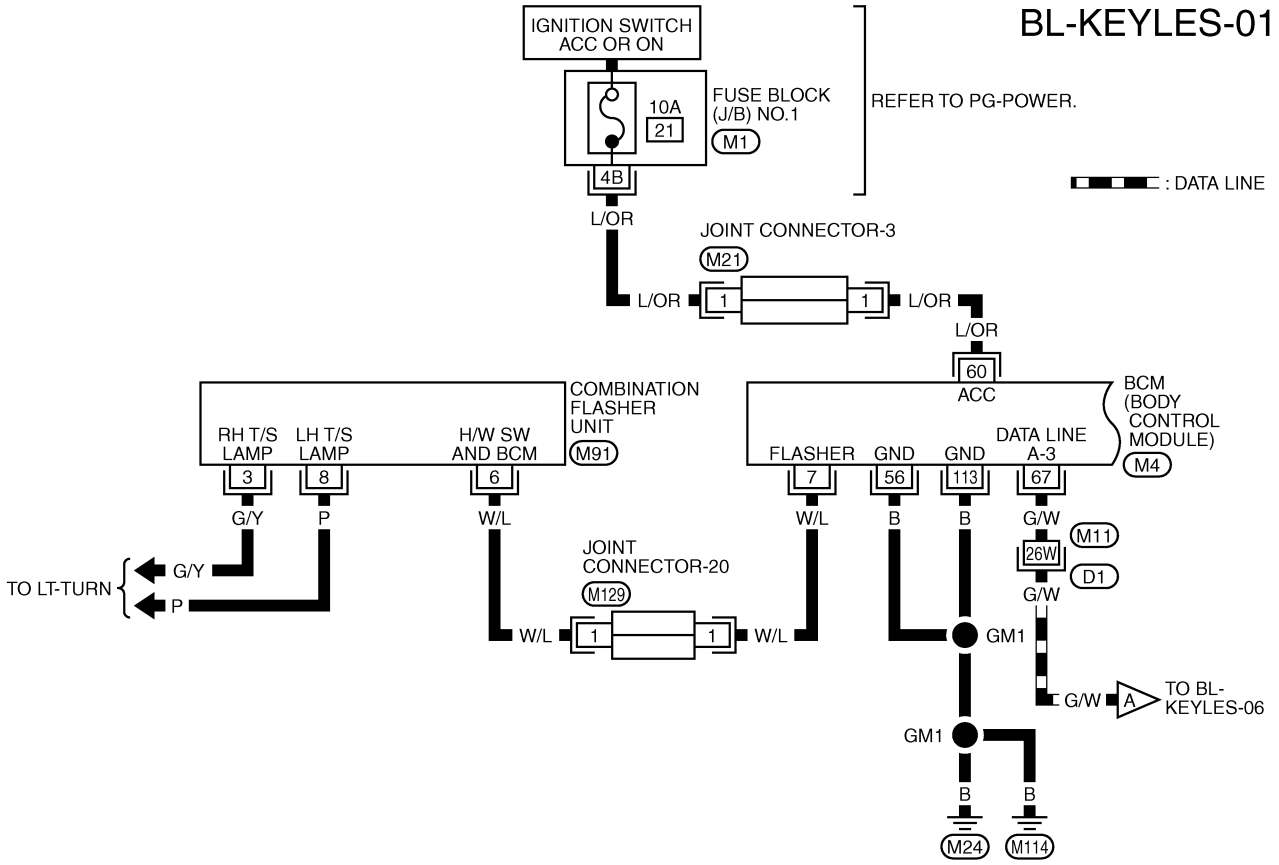
Schematic

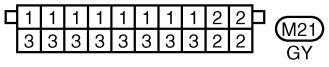
EIS0028E

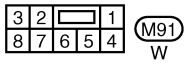


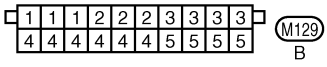
Wiring Diagram – KEYLES –

EIS0028F









REFER TO THE FOLLOWING.

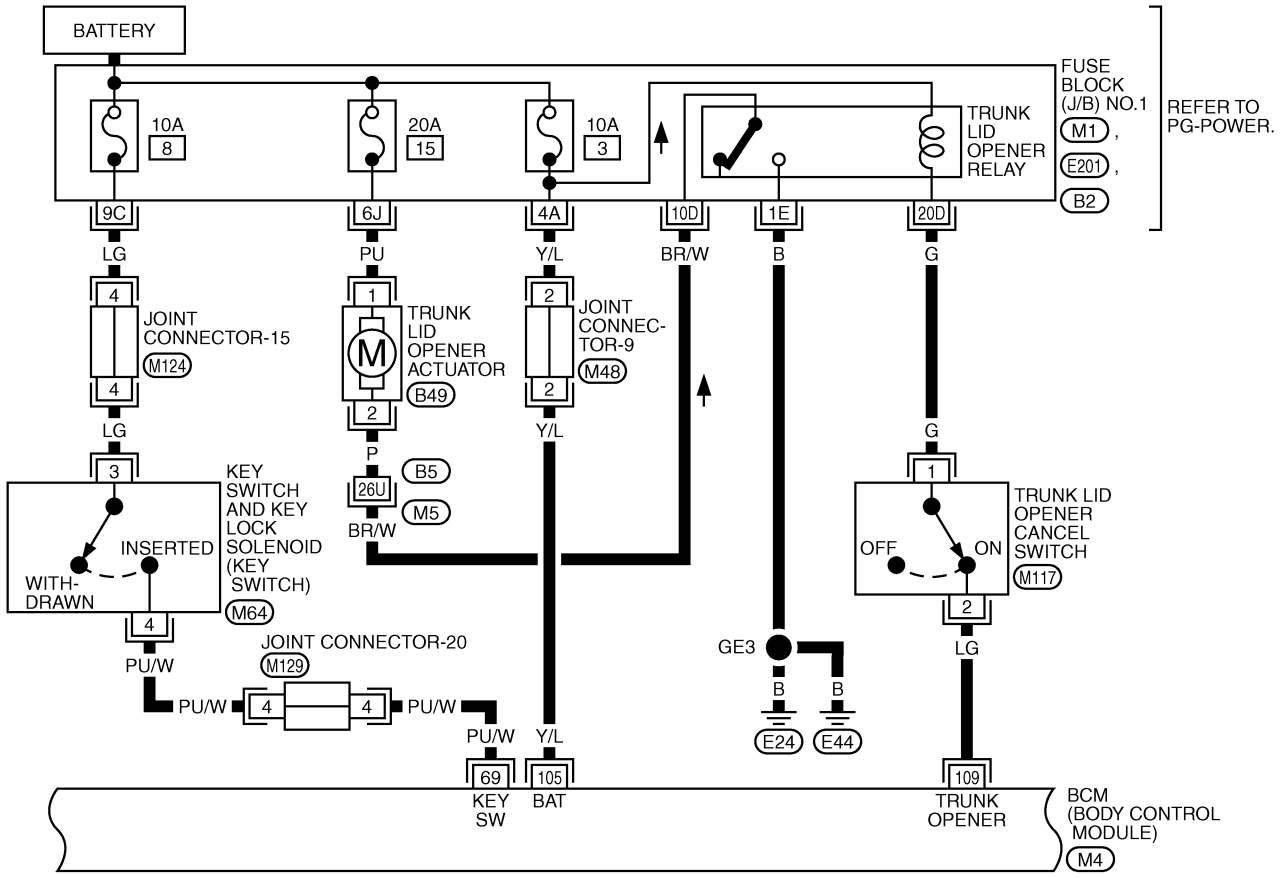
(D1) -SUPER MULTIPLE JUNCTION (SMJ)

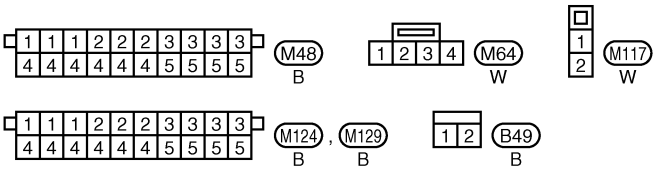
(M1) -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

(M4) -ELECTRICAL UNITS

TIWM0107E

BL-KEYLES-02





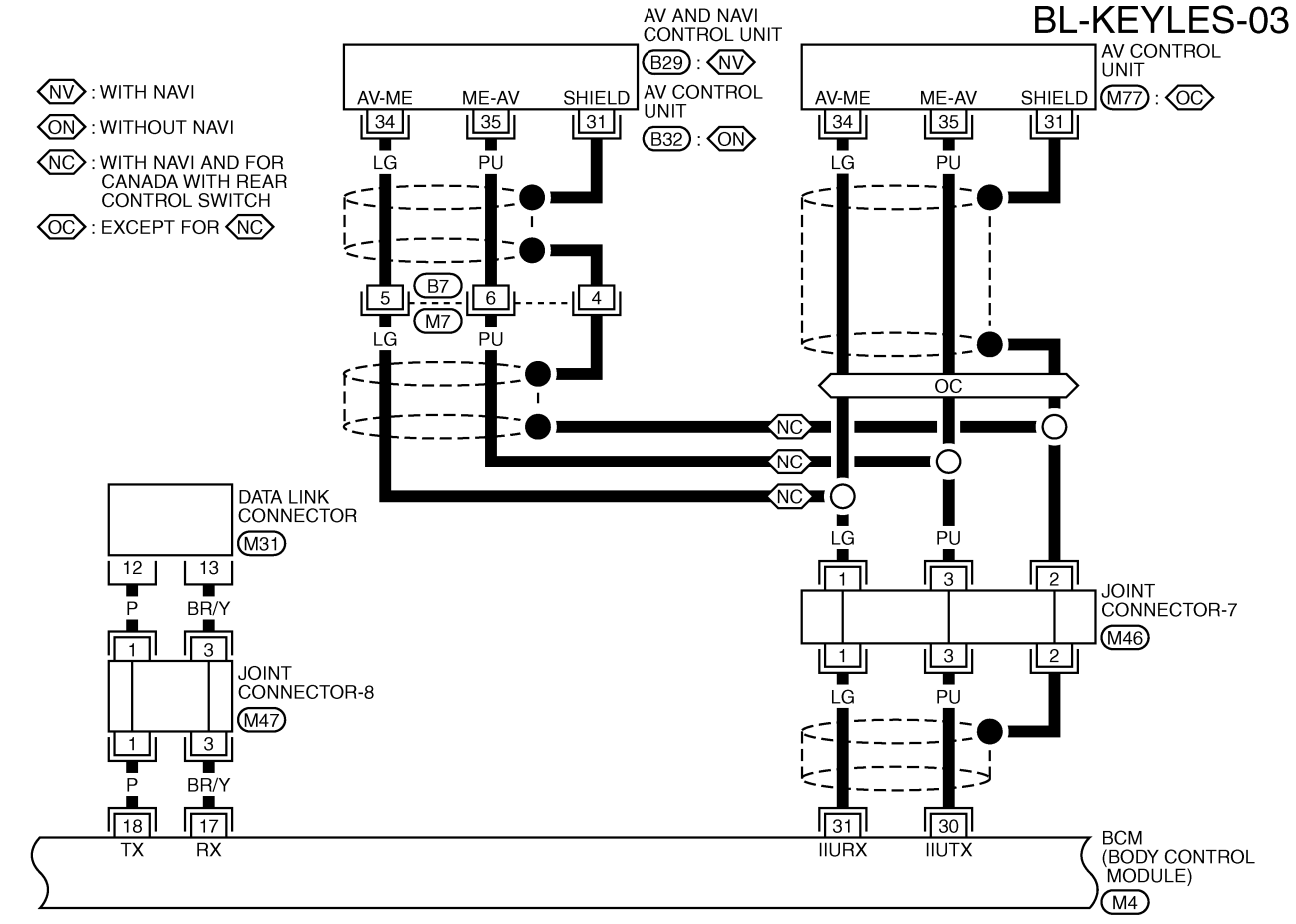
REFER TO THE FOLLOWING.

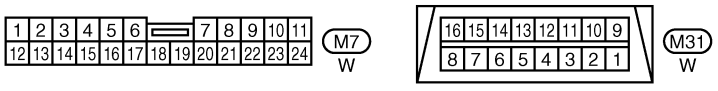
M5 -SUPER MULTIPLE JUNCTION (SMJ)

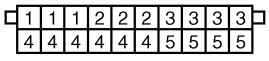
M1 , E201 , B2 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

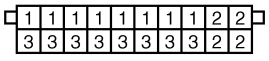
M4 -ELECTRICAL UNITS

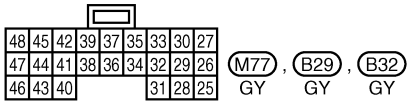
TIWM0108E







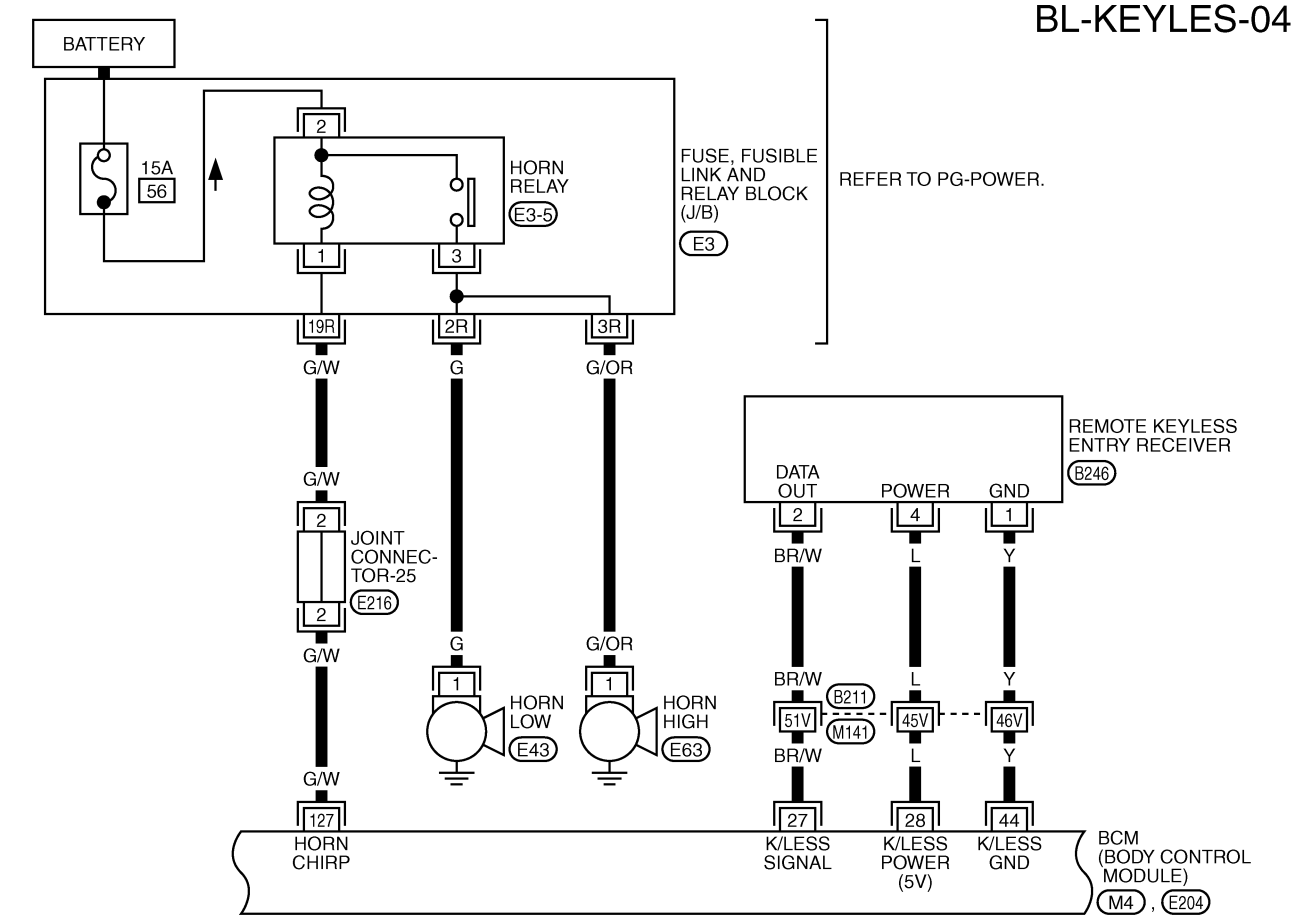


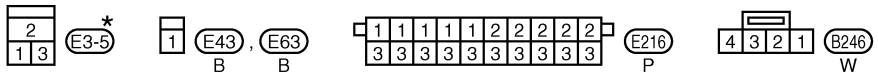


REFER TO THE FOLLOWING.
M4 -ELECTRICAL UNITS

TIWM0109E

BL-KEYLES-04





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

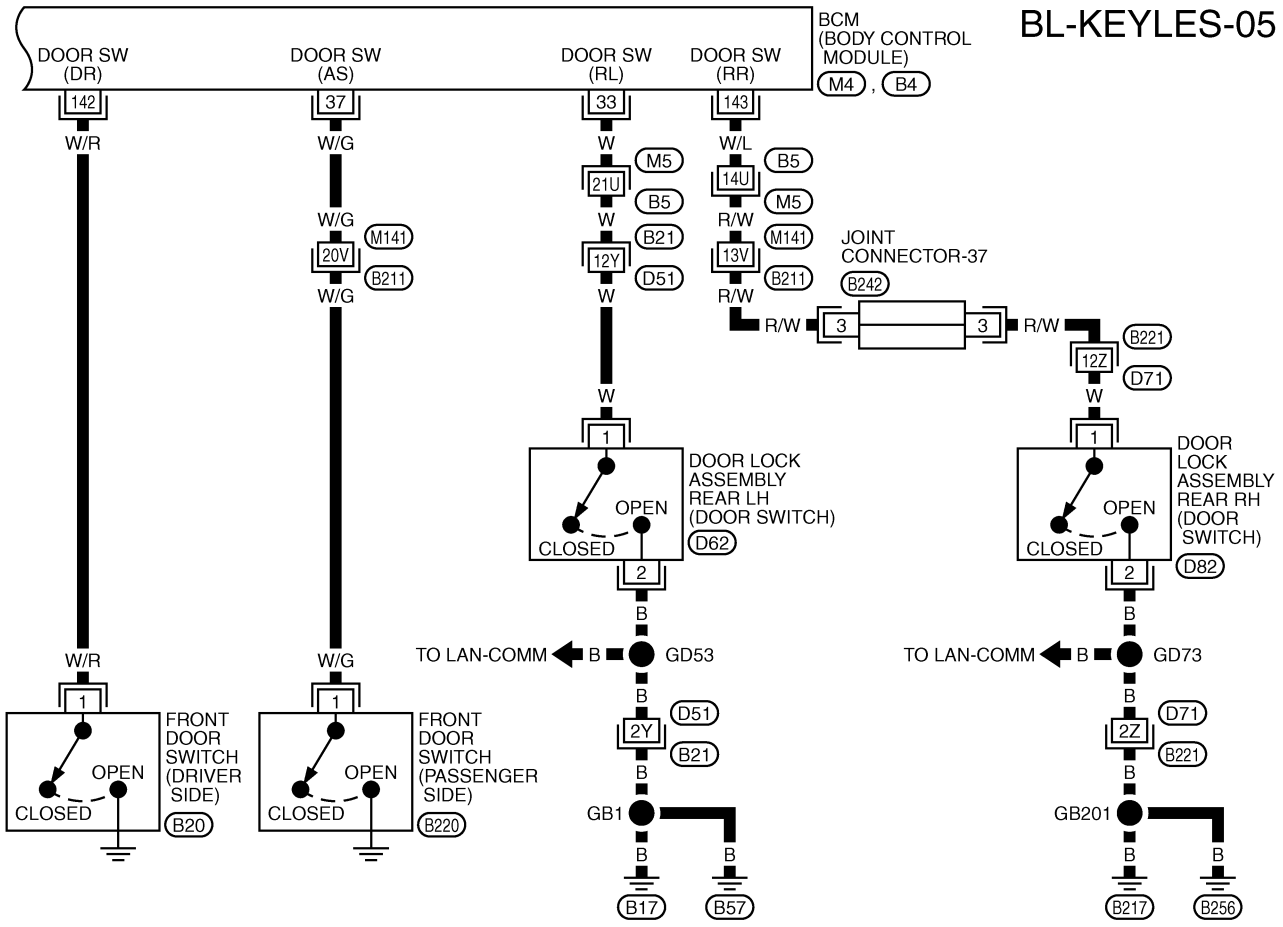
REFER TO THE FOLLOWING.

B211 -SUPER MULTIPLE JUNCTION (SMJ)

E3 -FUSE,FUSIBLE LINK AND RELAY BLOCK (J/B)

M4 , E204 -ELECTRICAL UNITS

TIWM0110E



B20 , B220 W W

B242 OR

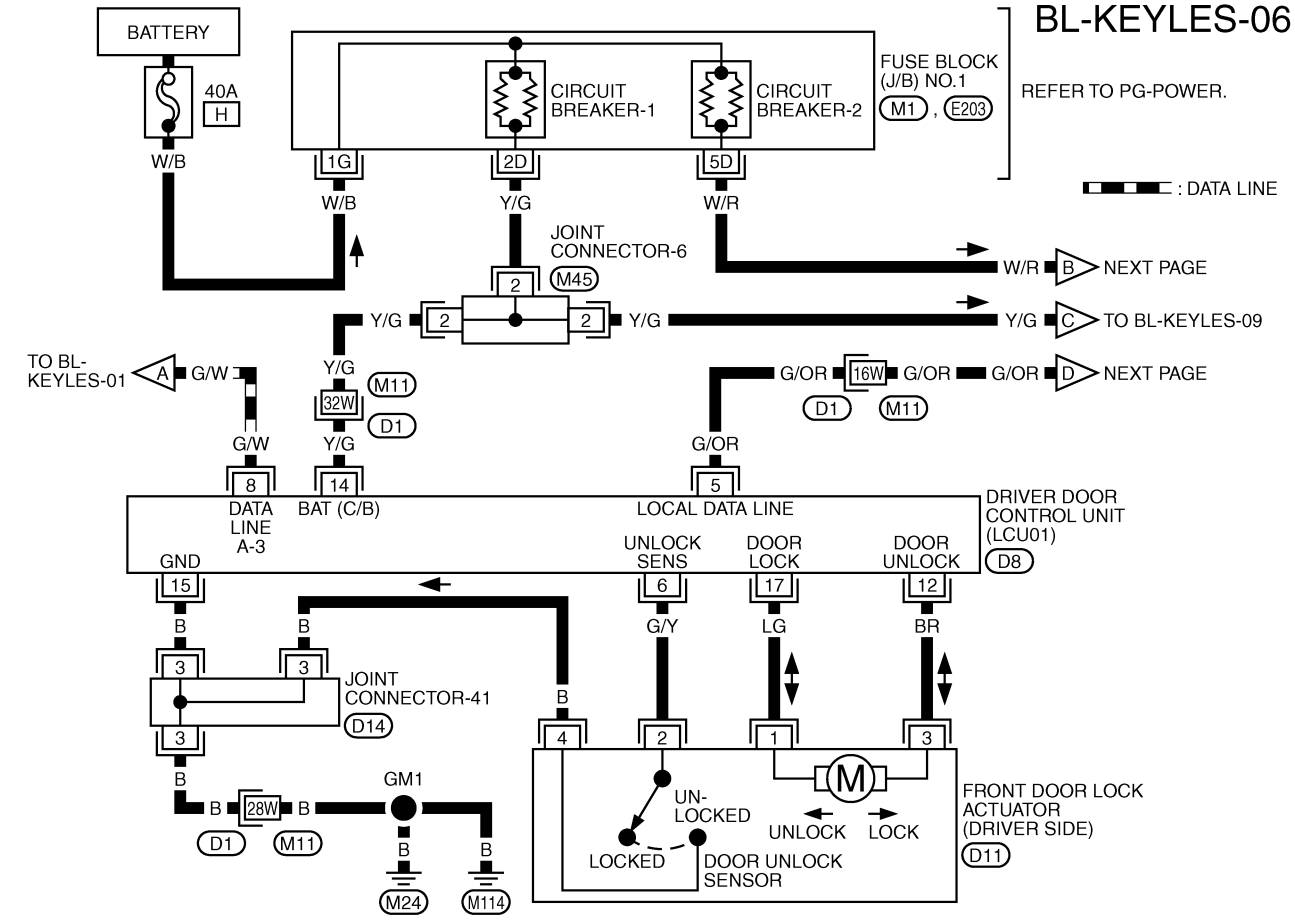
D62 , D82 B B

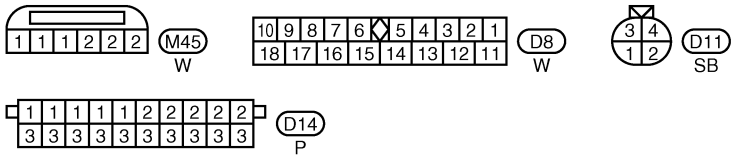
REFER TO THE FOLLOWING.

M5 , B21 , B211 , B221 -SUPER MULTIPLE JUNCTION (SMJ)

M4 , B4 -ELECTRICAL UNITS

TIWM0111E



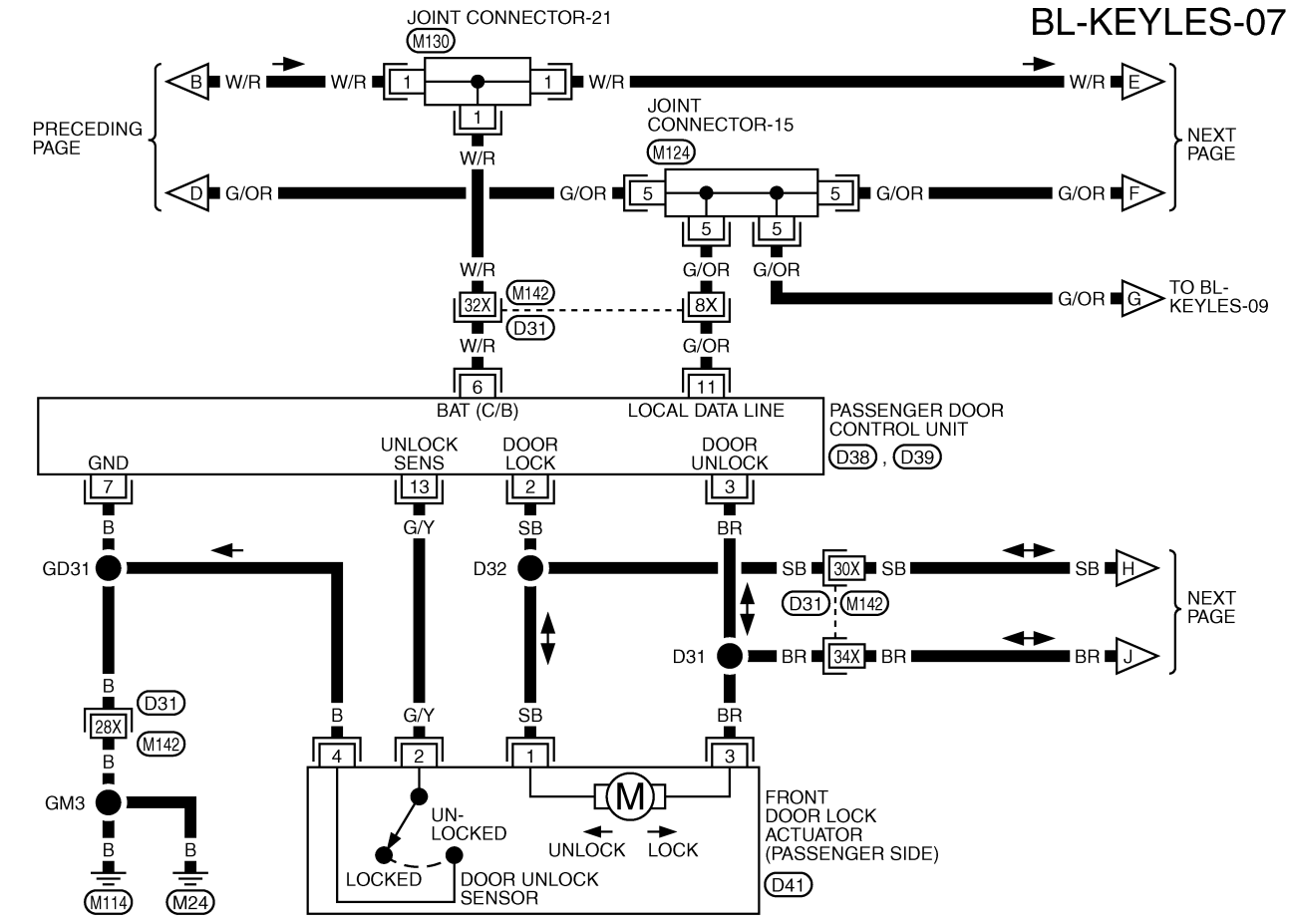


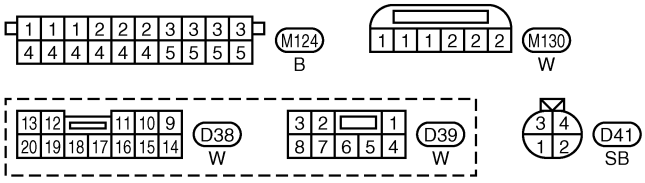
REFER TO THE FOLLOWING.

D1 -SUPER MULTIPLE JUNCTION (SMJ)

M1 , E203 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

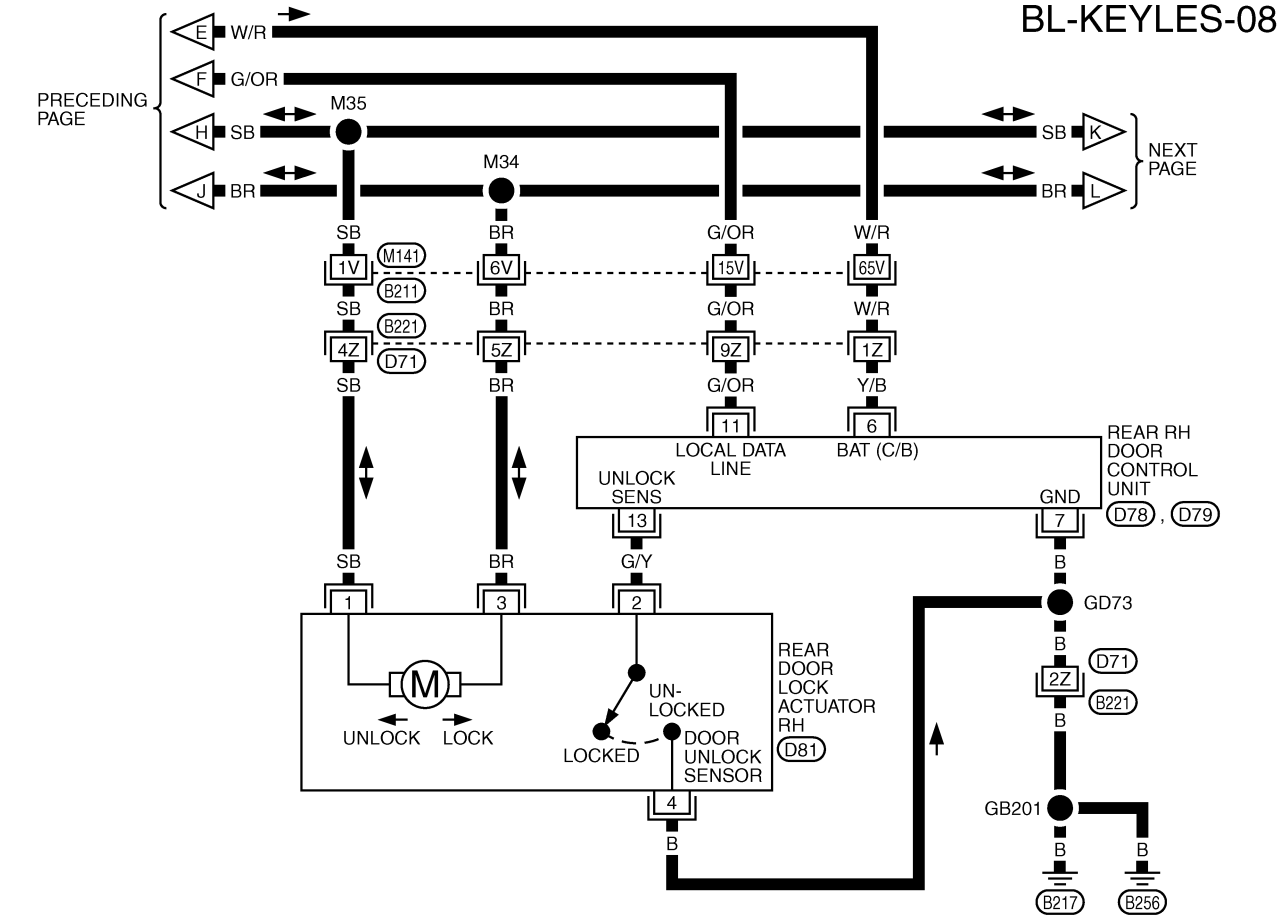
TIWM0112E





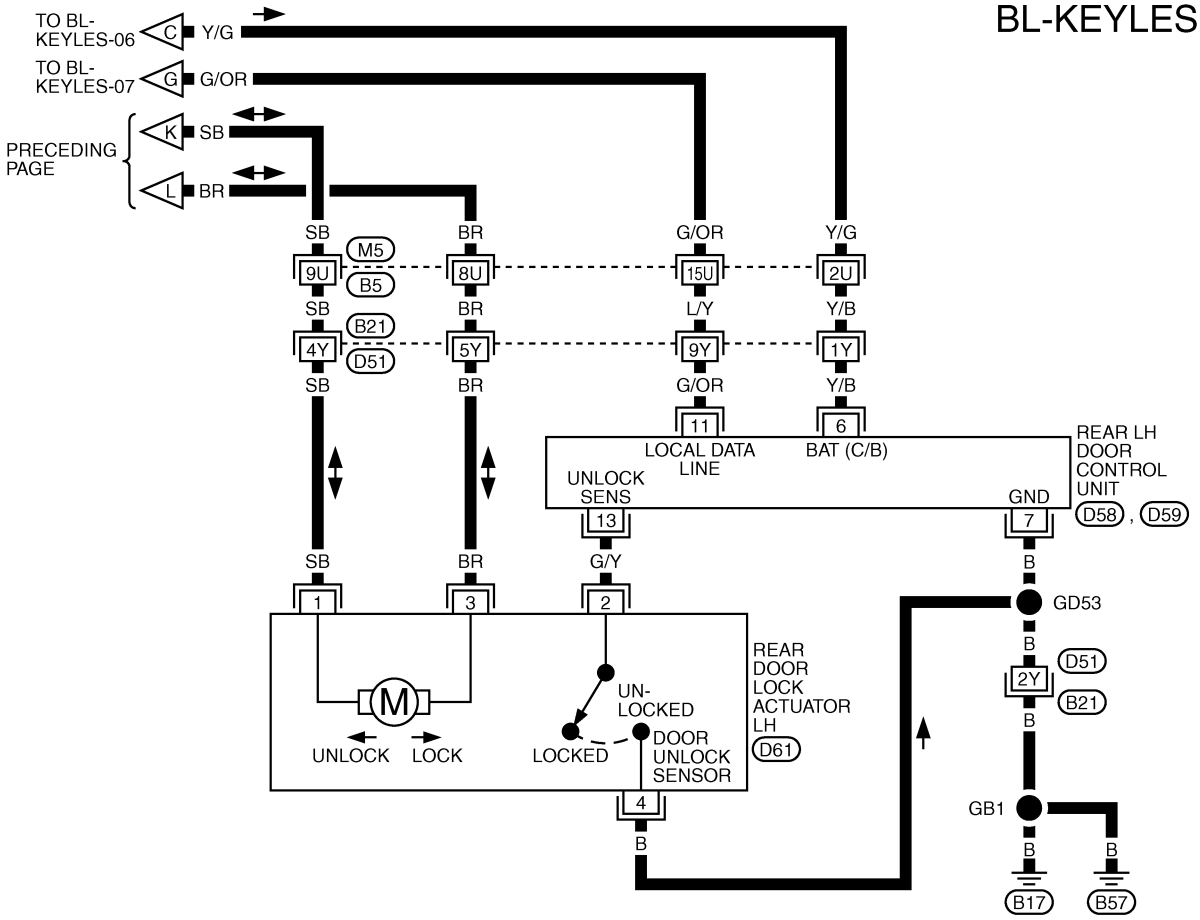
REFER TO THE FOLLOWING.
D31 -SUPER MULTIPLE JUNCTION (SMJ)

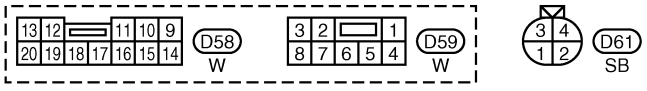
TIWM0113E


BL-KEYLES-08
PRECEDING PAGE
E W/R
F G/OR
H SB
J BR
M35
M34
SB K
BR L
NEXT PAGE
SB 1V M141 B211
BR 6V
G/OR 15V
W/R 65V
SB 4Z B221 D71
BR 5Z
G/OR 9Z
W/R 1Z
SB
BR
G/OR 11
Y/B 6
LOCAL DATA LINE
BAT (C/B)
REAR RH DOOR CONTROL UNIT D78, D79
UNLOCK SENS 13
GND 7
SB 1
BR 3
G/Y 2
B
GD73
B D71 2Z B221 B
GB201
B B
B217 B256
M
UNLOCK LOCK
UN-LOCKED
LOCKED
DOOR UNLOCK SENSOR
REAR DOOR LOCK ACTUATOR RH D81
4
B
13 12 11 10 9 20 19 18 17 16 15 14 D78 W
3 2 1 8 7 6 5 4 D79 W
3 4 1 2 D81 SB
REFER TO THE FOLLOWING.
B211, B221 -SUPER MULTIPLE JUNCTION (SMJ)

TIWM0114E

BL-KEYLES-09



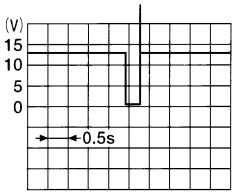
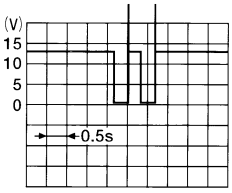
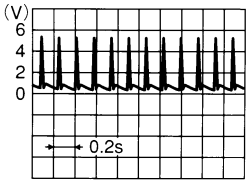
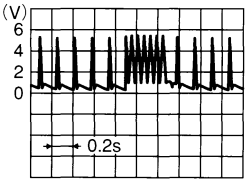
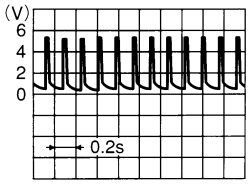
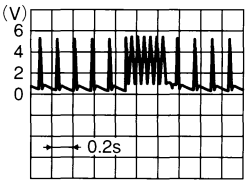


REFER TO THE FOLLOWING.
M5 , B21 -SUPER MULTIPLE JUNCTION (SMJ)

TIWM0115E

Terminal and Reference Value for BCM

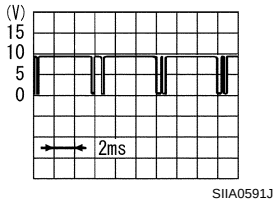
EIS0028G

TER-MINAL	WIRE COLOR	ITEM	CONDITION	VOLTAGE
7	W/L	Combination flasher unit	Door locking with electronic key (Twice)	 ELN0504D
			Door unlocking with electronic key (Once)	 ELN0505D
17	BR/Y	Data line RX	—	—
18	P	Data line TX	—	—
27	BR/W	Multi-remote control receiver (Pulse)	stand-by	 OCC3879D
			Press any of the electronic key switches	 OCC3880D
28	L	Multi-remote control receiver (Power supply)	stand-by	 OCC3881D
			Press any of the electronic key switches	 OCC3880D
30	PU	IIUTX	—	—
31	LG	IIU RX	—	—
33	W	Rear LH door switch	Door open (ON) →close (OFF)	0V → Battery voltage
37	W/G	Passenger door switch	Door open (ON) →close (OFF)	0V → Battery voltage
44	Y	Multi-remote control receiver (Ground)	—	0V

TER-MINAL	WIRE COLOR	ITEM	CONDITION	VOLTAGE
56	B	Ground	—	0V
60	L/OR	ACC power supply	—	Battery voltage
67	G/W	Data line A-3	—	—
69	PU/W	Ignition key switch (insert)	Key Inserted (ON) → key removed from IGN key cylinder (OFF)	Battery voltage → 0V
105	Y/L	BAT power supply	—	Battery voltage
109	LG	Trunk lid opener cancel switch	Trunk lid opener cancel switch ON → OFF	Battery voltage → 0V
113	B	Ground	—	0V
127	G/W	Horn relay	When panic alarm is operated using electronic key (ON → OFF)	Battery voltage → 0V
142	W/R	Driver door switch	Door open (ON) →close (OFF)	0V → Battery voltage
143	W/L	Rear RH door switch	Door open (ON) →close (OFF)	0V → Battery voltage

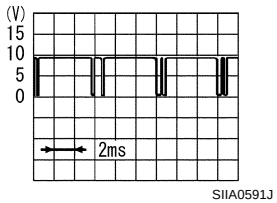
Terminal and Reference Value for Driver Door Control Unit (LCU01)

EIS0028H

TERMI-NAL	WIRE COLOR	ITEM	CONDITION	VOLTAGE
5	G/OR	Local communication line	—	 SIIA0591J
6	G/Y	Door unlock sensor	OFF (Locked) → ON (unlocked)	5V → 0V
8	G/W	Data line A-3	—	—
12	BR	Driver door lock actuator (Unlock)	Door lock & unlock switch (Free → Unlock)	0V → Battery voltage
14	Y/G	Power source (PTC)	—	Battery voltage
15	B	Ground	—	0V
17	LG	Driver door lock actuator (Lock)	Door lock & unlock switch (Free → Lock)	0V → Battery voltage

Passenger And Rear LH, RH Door Control Unit Terminal Reference Value

EIS0028I

TERMI-NAL	WIRE COLOR	ITEM	CONDITION	Standard (V)
*2	SB	Door lock actuator (Lock)	Door lock & unlock switch (Free → Lock)	0V → Battery voltage
*3	BR	Door lock actuator (Unlock)	Door lock & unlock switch (Free → Unlock)	0V → Battery voltage
6	W/R	Power source (PTC)	—	Battery voltage
7	B	Ground	—	0V
11	G/OR	Local communication line	—	 SIIA0591J
13	G/Y	Door unlock sensor	OFF (Locked) → ON (unlocked)	5V → 0V

NOTE:
*Only for passenger door control unit.

Work Flow

EIS0028J

1. Check the symptom and customer's requests.
2. Understand the outline of system. Refer to BL-45, "System Description" .
3. Perform the preliminary check. Refer to BL-59, "Preliminary Check" .
4. Perform the communication inspection. If CONSULT-II is used, refer to BL-62, "IVMS COMMUNICATION INSPECTION" . If CONSULT-II is not used, refer toBL-66, "COMMUNICATION DIAGNOSIS" . Is the communication diagnosis result OK? If OK, GO TO step 7. If NG, GO TO step 5.
5. Repair or replace depending on the diagnosis result.
6. Perform the communication diagnosis again. If CONSULT-II is used, refer to BL-62, "IVMS COMMUNICATION INSPECTION" . If CONSULT-II is not used, refer to BL-66, "COMMUNICATION DIAGNOSIS" . Is communication diagnosis result OK? If OK, GO TO step 7. If NG, GO TO step 5.
7. Referring to Trouble diagnosis chart, repair or replace the cause of the incident.Refer to BL-71, "Trouble Diagnosis Chart by Symptom" .
8. Does the remote keyless entry system operate normally? If it operates normally, GO TO step 9. If NG, GO TO step 7.
9. Inspection end.

Preliminary Check

EIS0028K

POWER SUPPLY AND GROUND CIRCUIT INSPECTION

1. FUSE INSPECTION

- Check if any of the following fuses in the BCM are blown.

Unit	Power source	Fuse No.
BCM	Battery power supply	3
	ACC power supply	21

Refer to BL-48, "Wiring Diagram – KEYLES –" .

OK or NG?

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse, refer to PG-2, "POWER SUPPLY ROUTING" .

2. POWER SUPPLY CIRCUIT INSPECTION

Remove the connectors for BCM and driver door control unit (LCU) or passenger, rear LH, RH door control units, measure the voltage between the terminal No. (Refer to the "Chart" below) of the connector and body ground.

(+)		(–)	Power source	Condition	Voltage
Unit	Terminal (wire color)				
BCM	105 (Y/L)	Body ground	Battery power supply	Ignition switch OFF	Battery voltage
	60 (L/OR)		ACC power supply	Ignition switch ACC	Battery voltage
Driver door LCU	14 (Y/G)		Battery power supply	Ignition switch OFF	Battery voltage
Passenger door control unit.	6 (W/R)		Battery power supply	Ignition switch OFF	Battery voltage
Rear LH door control unit.	6 (Y/B)				
Rear RH door control unit.	6 (Y/B)				

OK or NG?

OK >> GO TO 3.
NG >> Check harness for open or short.

3. GROUND CIRCUIT INSPECTION

Check the continuity between the following terminals on the vehicle-side connector for BCM, driver door LCU, passenger or rear LH, RH door control units and body ground.

(+)		(–)	Signal	Condition	Continuity
Unit	Terminal (wire color)				
IVMS control unit	56 (B) and 113 (B)	Body ground	Ground	Ignition switch OFF	Continuity should exist
Driver door LCU	15 (B)		Ground	Ignition switch OFF	Continuity should exist
Passenger door control unit.	7 (B)		Ground	Ignition switch OFF	Continuity should exist
Rear LH door control unit.					
Rear RH door control unit.					

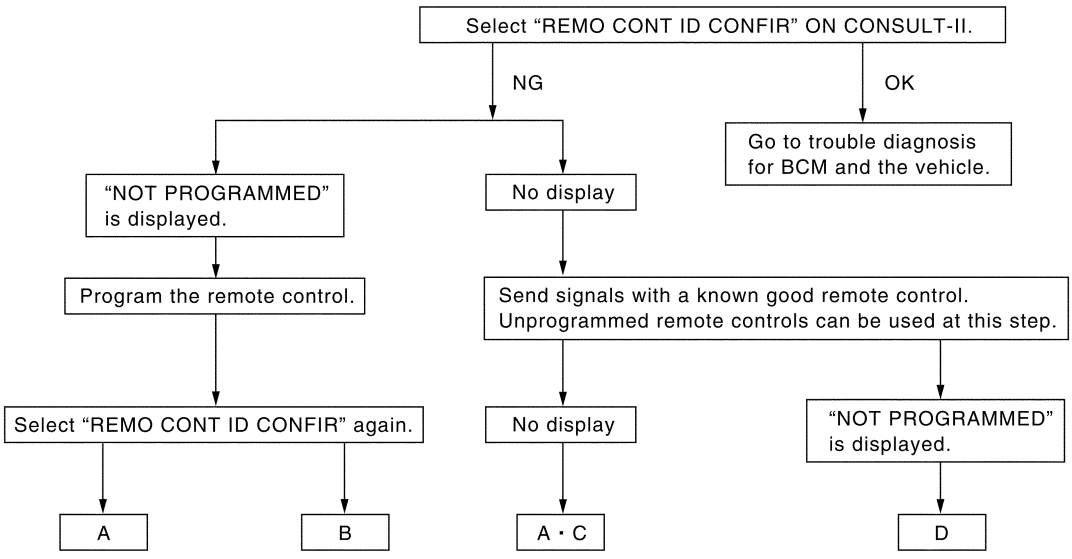
OK or NG?

OK >> Power supply and ground circuit is "OK".
NG >> Repair or replace harness.

SYSTEM INSPECTION

- When the Remote Keyless Entry System is malfunctioning, determine which part has caused the incident, before carrying out the trouble diagnosis.
- Using the following diagnosis flowchart, determine whether the electronic key or the vehicle component (multi remote control receiver or BCM) has a malfunction and confirm the part to be checked.

Inspection with CONSULT-II



SIIA0563E

A : Replace BCM
B : electronic key not registered
C :Multi remote control receiver inspection. Refer to BL-78, "Multi-Remote Control Receiver Check"
D :electronic key inspection Refer to BL-80, "Electronic Key Battery Replacement"

CONSULT–II Function

EIS0028L

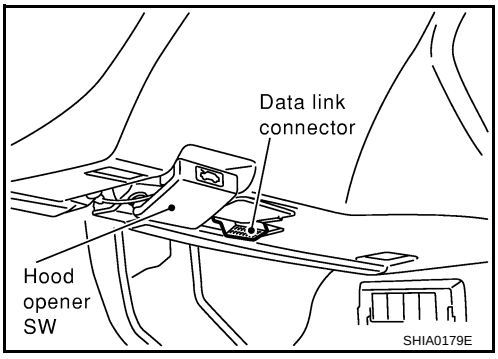
- CONSULT-II executes the following functions by combining data received and command transmitted via the communication line from BCM. IVMS communication inspection, work support (only function setting of seats and steering wheel), self-diagnosis, data monitor, and active test display.

DIAGNOSTIC ITEMS DESCRIPTION

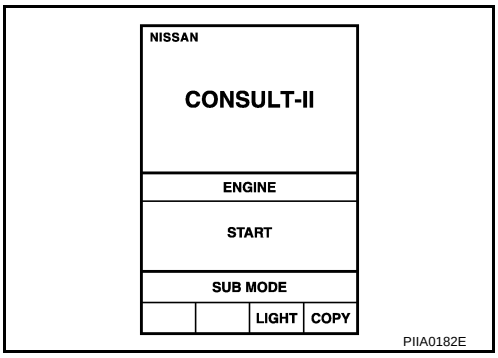
IVMS diagnosis position	Diagnosis mode	Description
IVMS– COMM CHECK	IVMS– COMM DIAGNOSIS	Diagnosis of continuity in the communication line(s), and of the function of the IVMS-communication interface between the body control module and the local control units, accoplished by transmitting a signal from the body control module to the local control units.
	WAKE–UP DIAGNOSIS	Diagnosis of the“ wake-up” function of local control units by having a technician input the switch data into the local control unit that is in the temporary “sleep” condition.
Each system inspection .	Work support	Changes the setting for each function.
	Self-diagnosis results	Carries out self-diagnosis.
	Data monitor	Displays data relative to the body control module (BCM) input signals and various control related data for each system.
	Active test	Turns on/off actuators, relay and according to the commands transmitted by the CONSULT-II unit.
BCM PART NUMBER		Displays BCM part No.

CONSULT-II BASIC OPERATION PROCEDURE

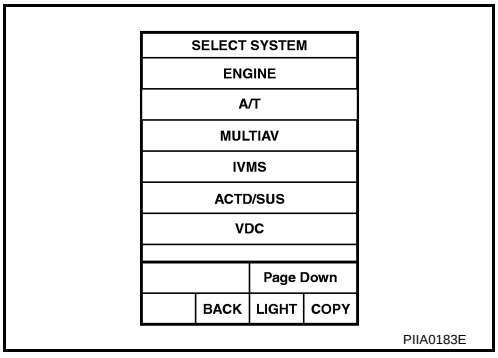
1. With the ignition switch OFF, connect CONSULT–II to the data link connector on vehicle side, and turn the ignition switch ON.



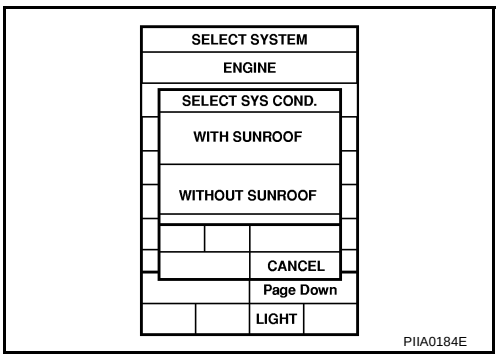
2. Touch "START".



3. Touch "IVMS".



4. Check the model specification, touch either "WITH SUNROOF" or "WITHOUT SUNROOF".
5. Touch "OK". If the selection is wrong, touch "CANCEL".



6. Select the desired part to be diagnosed on the "SELECT TEST ITEM" screen.

IVMS COMMUNICATION INSPECTION

- IVMS contains the IVMS communication diagnosis and wake-up diagnosis.

IVMS Communication Diagnosis

- IVMS communication diagnosis consists of the communication diagnosis, sleep diagnosis, and inactive communication diagnosis between BCM and each local unit (LCU), and display the results on the CONSULT–II screen.

  NOTE:
  Sleep is a power saving function when a vehicle is stationary (all BCM related electrical equipment: OFF, and the timer: OFF).
- The function also stores the communication malfunction records and inactive communication records, and displays the data on the CONSULT–II screen (Error record diagnosis)

Malfunction description	CONSULT–II display item	Description
Communication error	COMM DATA	● Communicating with each LCU is judged sound when the communication is normally completed and the transmitted data and received data are identically the same. In other cases, it is judged malfunctioning. If the communication is inactive, no diagnosis result is displayed.
Inactive communication	NO RESPONSE	● Communicating with each LCU is judged sound when at least one time communication is normally completed within three trials. In other cases, it is judged malfunctioning.
Sleep malfunction	SLEEP	● Check that each LCU enters sleep mode.
Communication error *	PAST COMM DATA	● The records when communication signal malfunctions were continuously detected while the communication was normal are displayed. Or the records when a malfunction is detected during the past sleep mode are displayed.
Inactive communication*	PAST NO RESPONSE	● The records when inactive communications were continuously detected while the communication was normal are displayed.

*: malfunctioning item record

Operation Procedure

1. Touch "IVMS–COMM CHECK" on "SELECT TEST ITEM".
2. Touch "IVMS–COMM DIAGNOSIS" on "SELECT DIAG ITEM" screen.
3. Touch "START" on "IVMS–COMM DIAGNOSIS" screen to start the diagnosis.
4. After the diagnosis is completed, the malfunctioning system is displayed.
5. When the malfunctioning items are displayed, touch "PRINT" to record.
6. Touch "ERASE".
7. Perform the communication inspection again to check that any malfunctioning item is displayed.
8. Check the displayed items.

Wake-Up Diagnosis

- The wake-up diagnosis is carried out when BCM detects the wake-up signal from each local unit (LCU). When the switch shown on the screen is operated as instructed, each local control unit (LCU) outputs the

wake-up signal. If BCM cannot detect a wake-up signal, it is judged malfunctioning. The malfunctioning local control unit (LCU) is displayed on the screen.

NOTE:
If any unspecified switch is operated, "Switch data not match" is displayed as a malfunctioning system.

Operation Procedure

1. Touch "IVMS–COMM CHECK" on "SELECT TEST ITEM" screen.
2. Touch "WAKE–UP DIAGNOSIS" on "SELECT DIAG ITEM" screen.
3. Touch "START" on "WAKE–UP DIAGNOSIS" screen to start the diagnosis.
4. Touch "NEXT" to select the local control unit (LCU) to be diagnosed.
5. Check that any malfunction is displayed. If necessary, touch "PRINT" to record.
6. Preform the inspection to the malfunctioning item.

Malfunction Code Table

Malfunctioning item	Display unit	CONSULT–II IVMS communication diagnosis content	Self-diagnosis trouble code No.	Malfunctioning system and reference
COMM DATA	One LCU is displayed.	POWER WINDOW C/U–DR "COMM DATA"	24	Replace the displayed LCU.
		DOOR MIRROR C/U–RH "COMM DATA"	27	
		DOOR MIRROR C/U–LH "COMM DATA"	37	
		POWER SEAT C/U–DR "COMM DATA"	47	
	Multiple LCUs are displayed	BCM "COMM FAIL1" ,"COMM FAIL2"	Displays in order of 24 →27→37→47 →and cycles from 24.	Communication system A: Refer to BL-64, "COMMUNICATION SYSTEM A" .
NO RESPONSE	One LCU is displayed.	POWER WINDOW C/U–DR "NO RESPONSE"	25	Communication system B: Refer to BL-64, "COMMUNICATION SYSTEM B" .
		DOOR MIRROR C/U–RH "NO RESPONSE"	28	
		DOOR MIRROR C/U–LH "NO RESPONSE"	38	
		POWER SEAT C/U–DR "NO RESPONSE"	48	
	Multiple LCUs are displayed	BCM/HARNESS	Displays in order of 25→28→38→48 and cycles from 25.	Communication system C: Refer to BL-64, "COMMUNICATION SYSTEM C" .
SLEEP malfunction	One LCU is displayed.	POWER WINDOW C/U–DR "SLEEP"	No self-diagnosis function	Replace the displayed LCU.
		DOOR MIRROR C/U–RH "SLEEP"		
		DOOR MIRROR C/U–LH "SLEEP"		
		POWER SEAT C/U–DR "SLEEP"		
	Multiple LCUs are displayed	All the above control units are displayed.	No self-diagnosis function	Communication system A: Refer to BL-64, "COMMUNICATION SYSTEM A" .

NOTE:
- For a specific local control unit (LCU), either "PAST COMM DATA" or "PAST NO RESPONSE" may be displayed instead of the above results. This is caused by the data record, so erase the records.

(The display only shows the incident records, they are not malfunctions caused during the diagnosis. One possible cause is that an reproducible incident occurred.)

- Follow the steps below to erase the memory
  Perform either disconnect BCM battery power supply or erase memory with CONSULT-II.
- With the battery connected, if the local control unit (LCU) connector is disconnected and left for approximately 1 minute, the BCM stores "NO RESPONSE" record.

COMMUNICATION SYSTEM A

1. BCM INSPECTION

Replace the BCM with a known-good one, and perform out the communication diagnosis. Refer to BL-62, "IVMS COMMUNICATION INSPECTION" .

OK or NG?

YES >> Replace BCM.
NO >> GO TO 2.

2. LCU INSPECTION

1. Replace with the BCM.
2. Replace the LCU with a known-good one, and perform the communication diagnosis. Refer to BL-62, "IVMS COMMUNICATION INSPECTION" .

OK or NG?

YES >> Replace LCU.
NO >> Repair or replace harness.

COMMUNICATION SYSTEM B

1. CONNECTOR INSPECTION

Check the terminals (at the control unit and harness) on the malfunctioning LCU for disconnection, bend, and other malfunctions.

OK or NG?

OK >> GO TO 2.
NG >> Repair terminals and connectors.

2. LCU INSPECTION

Replace the malfunctioning LCU with a known-good one, and perform the communication diagnosis. Refer to BL-62, "IVMS COMMUNICATION INSPECTION" .

OK or NG?

OK >> Replace LCU.
NG >> Repair communication harness between the indicated LCU and BCM.

COMMUNICATION SYSTEM C

1. CONNECTOR INSPECTION

Check the terminals (at the control unit and harness) on BCM and LCU for disconnection, bend, and other malfunctions.

OK or NG?

OK >> GO TO 2.
NG >> Repair terminals and connectors.

2. BCM INSPECTION

Replace the BCM with a known-good one, and perform the communication diagnosis. Refer to BL-62, "IVMS COMMUNICATION INSPECTION" .

OK or NG?

OK >> Replace BCM.
NG >> Repair communication harness between the LCU and BCM.

DATA MONITOR

Operation Procedure

1. Select the desired part to be diagnosed on the "SELECT TEST ITEM" screen.

System	CONSULT-II selected diagnosis part.
Remote keyless entry	MULTI-REMOTE CONT SYS
Trunk lid opener	Trunk lid opening

2. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Touch "MAIN SIGNALS" or "SELECTION FROM MENU" on "DATA MONITOR" screen.

ALL SIGNALS	Monitor all items.
SELECTION FROM MENU	Selects and monitors the items.

4. Touch "START".
5. If "SELECTION FROM MENU" is selected, touch the desired monitor item. If "ALL SIGNALS" is selected, the all item required to control is monitored.
6. During monitoring, touching "COPY" can start recording the monitor item status.

Remote Keyless Entry Item.

Monitored item	Description
IGN KEY SW	Indicates [ON/OFF] condition of ignition key switch.
IGN ACC SW	Indicates [ON/OFF] condition of ignition switch in ACC position.
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.
LOCK SIG-DR	Indicates [ON/OFF] condition of driver door unlock signal from door lock sensor.
LOCK SIG-AS	Indicates [ON/OFF] condition of passenger door unlock signal from door lock sensor.
LOCK SIG-RR/LH	Indicates [ON/OFF] condition of rear LH door unlock signal from door lock sensor.
LOCK SIG-RR/RH	Indicates [ON/OFF] condition of rear RH door unlock signal from door lock sensor.
LOCK BUTTON	Indicates [ON/OFF] condition of lock signal from electronic key.
UNLOCK BUTTON	Indicates [ON/OFF] condition of unlock signal from electronic key.
PANIC BTN	Indicates [ON/OFF] condition of panic signal from electronic key.
TRUNK BTN-CON	Indicates [ON/OFF] condition of trunk open signal from electronic key.

Trunk Lid Opener Item

Monitored item	Description
TRUNK OPNR SW	Indicates [ON/OFF] condition of trunk open signal from trunk open switch.

ACTIVE TEST

Operation Procedure

1. Select the desired part to be diagnosed on "SELECT TEST ITEM" screen.

System	CONSULT-II selected diagnosis part.
Remote key less entry	MULTI-REMOTE CONT SYS
Trunk lid opener	Trunk lid opening

2. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Touch the item to be tested, and check the operation.
4. During the operation check, touching "OFF" deactivates the operation.

Remote Keyless Entry Test Item

TEST ITEM	DISCRIPTION
TRUNK OPEN S/V	This test is able to check trunk lid opener actuator operation. The trunk is unlocked when “ON” on CONSULT-II screen is touched.
HAZARD	This test is able to check hazard reminder operation. The hazard lamp turns on when “ON” on CONSULT-II screen is touched.
HORN	This test is able to check panic alarm and horn reminder operations. The alarm activate for 0.5 seconds after “ON” on CONSULT-II screen is touched.

Trunk Lid Opener Test Item

TEST ITEM	DISCRIPTION
TRUNK OPEN S/V	This test is able to check trunk lid opener actuator operation. The trunk is unlocked when “ON” on CONSULT-II screen is touched.

WORK SUPPORT

Operation Procedure

1. Touch "MULTI-REMOTE CONT SYS" on "SELECT TEST ITEM" screen.
2. Touch "WORK SUPPORT" on "SELECT DIAG MODE" screen.
3. Select the desired work item on "SELECT WORK ITEM" screen.

WORK ITEM
REMO CONT ID CONFIR
REMO CONT ID REGIST
REMO CONT ID ERASUR

Work Support Item

WORK ITEM	DISCRIPTION
REMO CONT ID CONFIR	It can be checked whether electronic key ID code is registered or not in this mode.
REMO CONT ID REGIST	electronic key ID code can be registered.
REMO CONT ID ERASUR	electronic key ID code can be erased.

On Board Diagnosis

EIS0028M

ON BOARD DIAGNOSTIC RESULTS INDICATOR LAMP

- Front map lamps and step lamps (all seats) act as the indicators for the on board diagnosis.

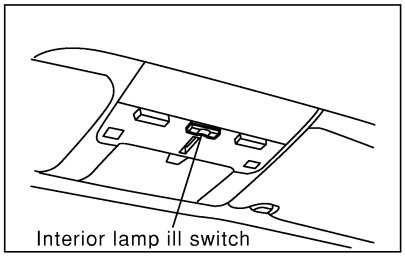
DIAGNOSIS ITEM

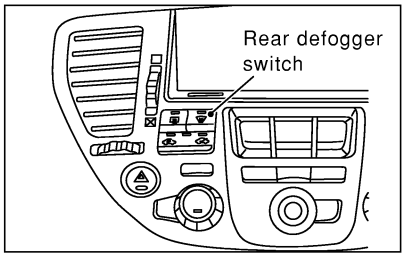
Diagnosis item.	Content
IVMS communication diagnosis	Diagnosing any abnormality or inability of communication between BCM and LCU (DATA LINE A-3).
Switch monitor	Monitoring conditions of switches connected to BCM, LCU and Door control unit.

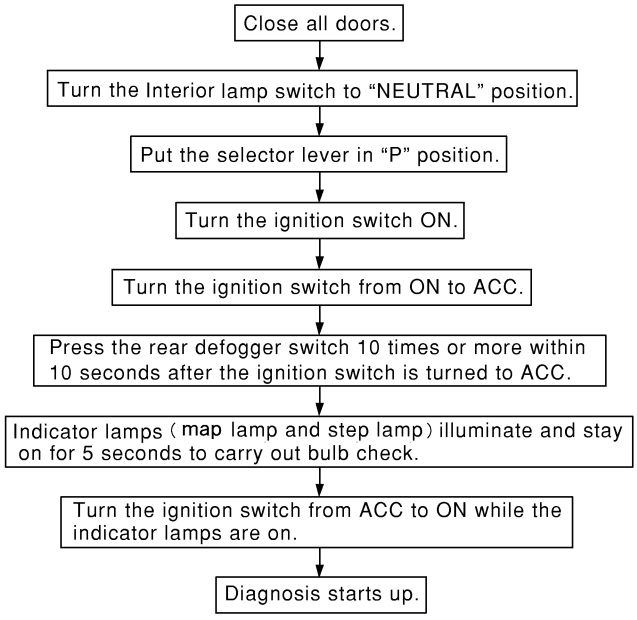
COMMUNICATION DIAGNOSIS

- Check the communication between BCM and local control unit (LCU).

How To Perform Communication Diagnosis



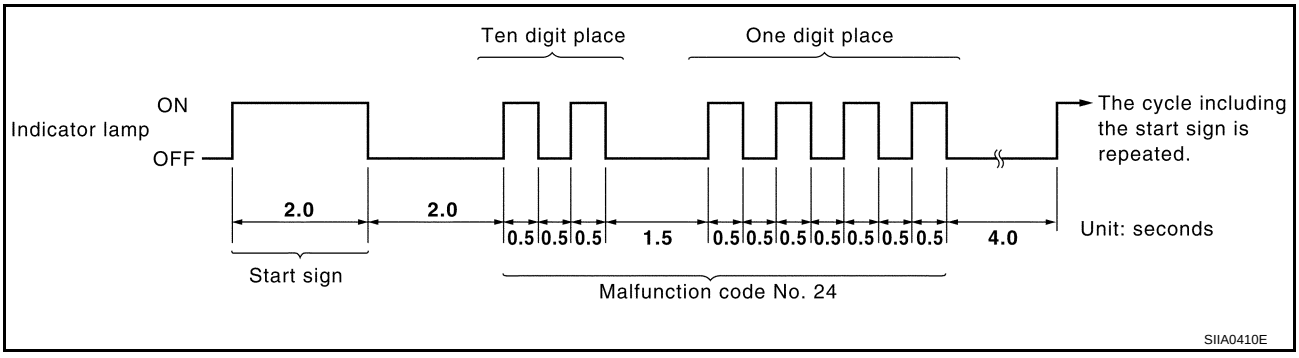




SIIA0409E

Description

In this mode, a malfunction code is indicated by the number of flashes from the front map lamps and step lamps as shown below:



SIIA0410E

After indicator lamp turns on for 2 seconds then off for 2 seconds, it flashes [cycling ON (0.5 sec.)/OFF (0.5 sec.)] to indicate a malfunction code of the first digit. Then, 1 second after indicator lamp turns off, it again flashes [cycling ON (0.5 sec.)/OFF (0.5 sec.)] to indicate a malfunction code of the second digit.
For example, the indicator lamp goes on and off for 0.5 seconds twice and after 1.0 seconds, it goes on and off for 0.5 seconds four times. This indicates malfunction code.

Malfunction Code Table

Malfunction item	Display unit	CONSULT–II IVMS communication diagnosis content	Self-diagnosis trouble code No.	Malfunctioning system and reference
COMM DATA	One LCU is displayed.	POWER WINDOW C/U–DR "COMM DATA"	24	Replace the displayed LCU.
		DOOR MIRROR C/U–RH "COMM DATA"	27	
		DOOR MIRROR C/U–LH "COMM DATA"	37	
		POWER SEAT C/U–DR "COMM DATA"	47	
	Multiple LCUs are displayed	BCM "COMM FAIL1" ,"COMM FAIL2"	Displays in order of 24 →27→37→47 →and cycles from 24.	Communication system A: Refer to BL-68, "COMMUNICATION SYSTEM A" .

Malfunction item	Display unit	CONSULT–II IVMS communication diagnosis content	Self-diagnosis trouble code No.	Malfunctioning system and reference
NO RESPONSE	One LCU is displayed.	POWER WINDOW C/U–DR "NO RESPONSE"	25	Communication system B: Refer to BL-69, "COMMUNICATION SYSTEM B" .
		DOOR MIRROR C/U–RH "NO RESPONSE"	28	
		DOOR MIRROR C/U–LH "NO RESPONSE"	38	
		POWER SEAT C/U–DR "NO RESPONSE"	48	
	Multiple LCUs are displayed	BCM/HARNESS	Displays in order of 25→28→38→48 and cycles from 25.	Communication system C: Refer to BL-69, "COMMUNICATION SYSTEM C" .
SLEEP malfunction	One LCU is displayed.	POWER WINDOW C/U–DR "SLEEP"	No self-diagnosis function	Replace the displayed LCU.
		DOOR MIRROR C/U–RH "SLEEP"		
		DOOR MIRROR C/U–LH "SLEEP"		
		POWER SEAT C/U–DR "SLEEP"		
	Multiple LCUs are displayed	All the above control units are displayed.	No self-diagnosis function	Communication system A: Refer to BL-68, "COMMUNICATION SYSTEM A" .

NOTE:

- For a specific local control unit (LCU), either "PAST COMM DATA" or "PAST NO RESPONSE" may be displayed instead of the above results. This is caused by the data record, so erase the records.
  (The display only shows the incident records, they are not malfunctions caused during the diagnosis. One possible cause is that an reproducible incident occurred.)
- Follow the steps below to erase the memory
  Perform either disconnect BCM battery power supply or erase memory with CONSULT-II.
- With the battery connected, if the local control unit (LCU) connector is disconnected and left for approximately 1 minute, the BCM stores "NO RESPONSE" record.

Cancel Of Communication Diagnosis

If the following conditions are satisfied, the communication diagnosis is cancelled.

- Turn ignition switch OFF.
- Drive the vehicle more than 7 km/h (4 MPH).
- Ten minutes have passed since the diagnosis result indication start without any diagnosis cancel operation.

COMMUNICATION SYSTEM A

1. BCM INSPECTION

Replace the malfunctioning BCM with a known-good one, and perform the communication diagnosis. Refer to BL-66, "COMMUNICATION DIAGNOSIS" .

OK or NG?

OK >> Replace the BCM.
NG >> GO TO 2.

2. LCU INSPECTION

1. Replace with the previously installed BCM.
2. Replace the LCU with a known-good one, and perform the communication diagnosis. Refer toBL-66, "COMMUNICATION DIAGNOSIS" .

OK or NG?

OK >> Replace the LCU.
NG >> Replace the BCM.

COMMUNICATION SYSTEM B

1. CONNECTOR INSPECTION

Check the terminals (at the control unit and harness) on the malfunctioning LCU for disconnection, bend, and other malfunctions.

OK or NG?

OK >> GO TO 2.
NG >> Repair the terminals and connectors.

2. LCU INSPECTION

Replace the LCU with a known-good one, and perform the communication diagnosis. Refer to BL-66, "COMMUNICATION DIAGNOSIS" .

OK or NG?

OK >> Replace the LCU.
NG >> Repair the communication harness between the indicated LCU and BCM.

COMMUNICATION SYSTEM C

1. CONNECTOR INSPECTION

Check the terminals (at the control unit and harness) on BCM and LCU for disconnection, bend and other malfunctions.

OK or NG?

OK >> GO TO 2.
NG >> Repair the terminals and connectors.

2. BCM INSPECTION

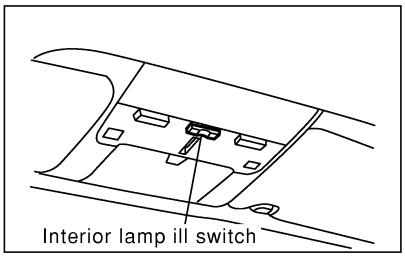
Replace the BCM with a known-good one, and perform the communication diagnosis. Refer to BL-66, "COMMUNICATION DIAGNOSIS" .

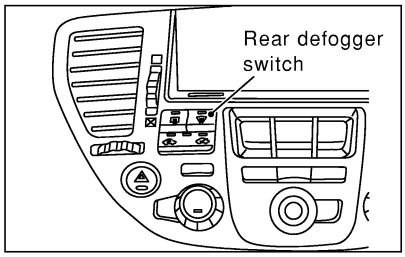
OK or NG?

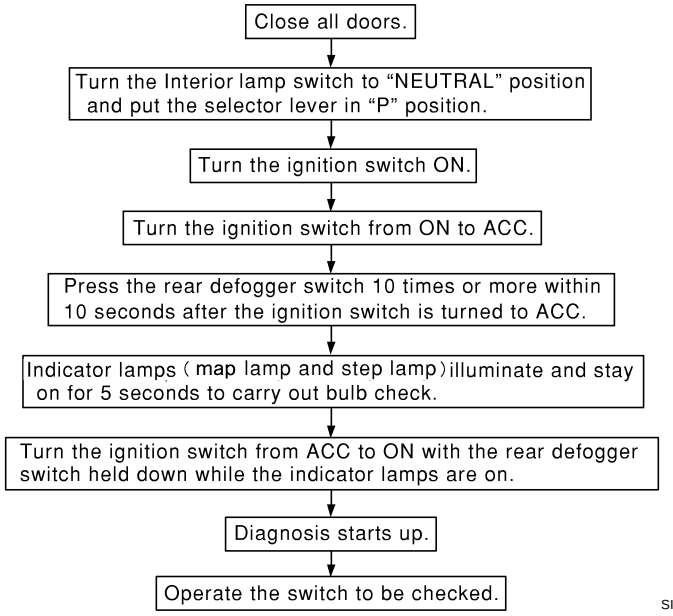
OK >> Replace the BCM
NG >> Repair the communication harness between the LCU and BCM control.

SWITCH MONITOR

How To Perform Switch Monitor



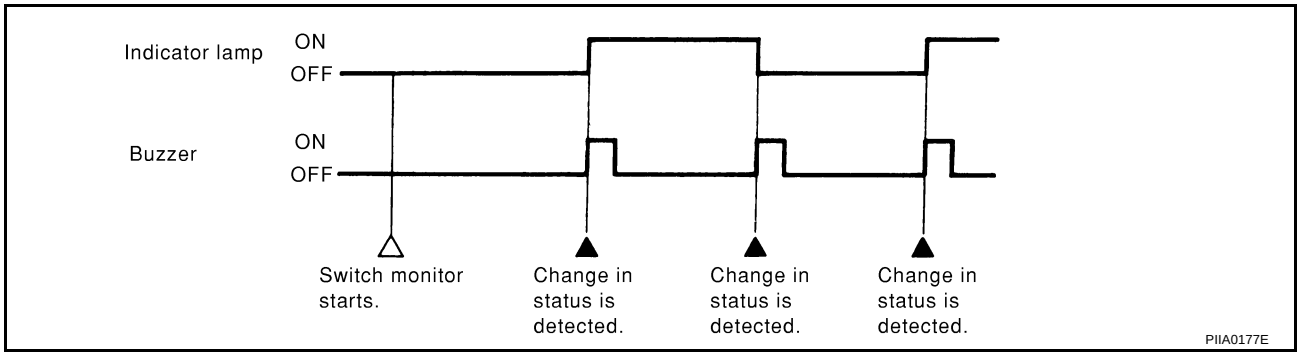




SIIA0411E

Description

In this mode, when BCM detects the input signal from a switch in IVMS as shown below, the detection is indicated by the front map lamp and front step lamps with buzzer.



PIIA0177E

Switch Monitor Item

- The status of the switch (except the ignition switch, interior lamp switch, and map lamp switch) as input to each control unit can be monitored.

Control unit	Item
BCM	All door switch
	Electronic key (lock / unlock switch and trunk switch)
Driver door contro unit (LCU)l	Door lock & unlock switch (LOCK / UNLOCK)
	Driver door unlock sensor
Passenger door control unit.	Passenger door unlock sensor
RH rear door control unit.	Rear RH door unlock sensor
LH rear door control unit.	Rear LH door unlock sensor

Cancel Of Switch Monitor.

- Turn ignition switch OFF.
- Drive the vehicle more than 7 km/h (4 MPH).

Trouble Diagnosis Chart by Symptom

EIS0028N

- Before carrying out the inspection on the following table, perform the preliminary check. Refer to BL-59, "Preliminary Check" .

Symptom	malfunctioning system and reference
All functions of multi-remote control system do not operate.	Electronic key check. Refer to BL-72, "Key Switch Check" .
	Key switch check. Refer to BL-72, "Key Switch Check" .
	Multi remote control receiver check. Refer to BL-78, "Multi-Remote Control Receiver Check" .
	If the above systems are “OK”, replace BCM.
Trunk lid does not open when trunk opener button is continuously pressed.	Trunk lid opener actuator check. Refer to BL-74, "Trunk Lid Opener Actuator Check" .
	Trunk lid cancel switch check. Refer to BL-73, "Trunk Lid Opener Cancel Switch Check" .
	Trunk open signal check. Refer to BL-75, "Check Trunk Open Signal" .
	Electronic key check. Refer to BL-71, "Electronic Key Check" .
	If the above systems are “OK”, replace BCM.
Door lock or unlock does not function. (Power door lock system is “OK”.)	Electronic key check. Refer to BL-71, "Electronic Key Check" .
	If the above system is “OK”, replace BCM.
Hazard and horn reminder does not activate properly when pressing lock or unlock button of electronic key.	Hazard reminder check. Refer to BL-77, "Hazard Indicator Operation Check" .
	Horn reminder check. Refer to BL-76, "Horn Reminder Check" . (First check the horn chirp setting.Refer to WW-27, "HORN" .)
	Electronic key check. Refer to BL-71, "Electronic Key Check" .
	If the above system is normal, replace the IVMS control unit.

Electronic Key Check

EIS0028O

1. ELECTRONIC KEY CHECK

With CONSULT-II

- Check Electronic Key switch “LOCK / UNLOCK BUTTON”, “TRUNK BTN-COM” and “PANIC BTN” in “DATA MONITOR” mode with CONSULT-II.

Without CONSULT-II

- Check electronic key switch in “SWITCH MONITOR” mode.Refer to BL-70, "SWITCH MONITOR" .

OK or NG?

OK >> Electronic key is OK.
NG >> GO TO 2.

2. ELECTRONIC KEY ID CHECK

With CONSULT-II

- Check electronic key “ID Code” in“WORK SUPPORT” mode with CONSULT-II.
  Refer to BL-83, "PROCEDURE 2 (With CONSULT-II)" .

Without CONSULT-II

- Check electronic key “ID Code” in "REMOTE CONTROLLER ID SET UP" mode.
  Refer to BL-82, "PROCEDURE 1 (Without CONSULT-II)" .

OK or NG?

OK >> Electronic key not registered.
NG >>
- Check multi remote control receiver.
  Refer to BL-78, "Multi-Remote Control Receiver Check" .
- Check electronic key.
  Refer to BL-81, "REMOTE CONTROLLER BATTERY CHECK" .

Key Switch Check

EIS0028P

1. CHECK KEY SWITCH

With CONSULT-II

- Check ignition key cylinder switch “IGN KEY SW” in “DATA MONITOR” mode with CONSULT-II.
  When key is inserted in ignition key cylinder:

  IGN KEY SW ON

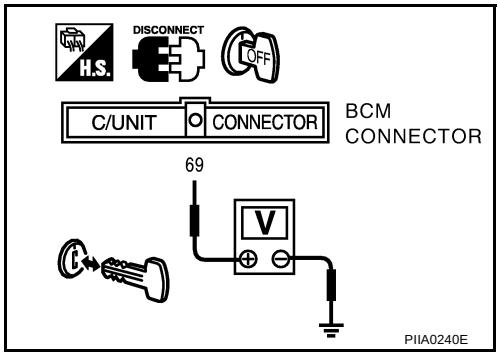
  When key is removed from ignition key cylinder:

  IGN KEY SW OFF

Without CONSULT-II

1. Disconnect BCM connector.
2. Check voltage between harness connector M4 terminals 69 (PU/W) and body ground.

Condition	Voltage
Key is inserted	Battery Voltage
Key is removed	0V



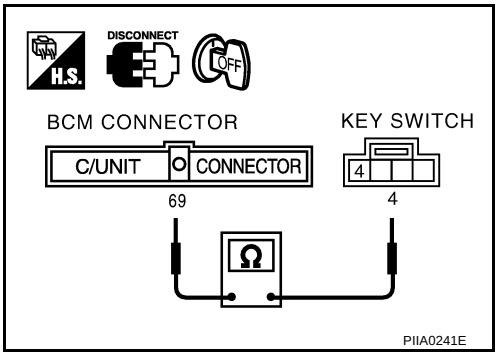
OK or NG?

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

2. CHECK KEY SWITCH CIRCUIT

1. Remove the key from the ignition key cylinder.
2. Disconnect key switch connector.
3. Check continuity BCM harness connector M4 terminal 69(PU/W) and key switch harness connector M64 terminal 4(PU/W).

: Continuity should exist.



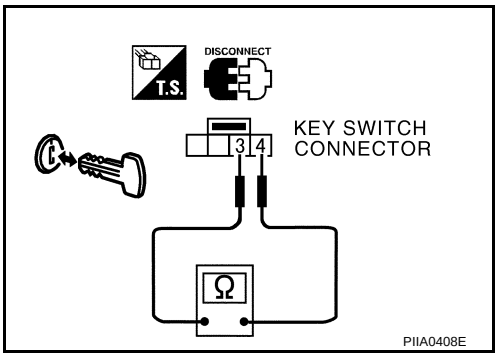
OK or NG?

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

3. CHECK KEY SWITCH

1. Check continuity between key switch terminals 3 and 4.

Condition	continuity
Key is inserted	YES
Key is removed	NO



OK or NG?

OK >> Check harness for open or short between key switch and fuse.
NG >> Replace key switch.

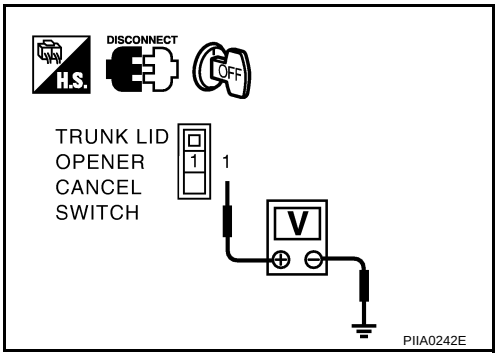
Trunk Lid Opener Cancel Switch Check

EIS0028Q

1. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect trunk lid opener cancel switch connector.
3. Check voltage between opener cancel switch harness connector M117 terminal 1(G) and body ground.

: Battery voltage should exist.



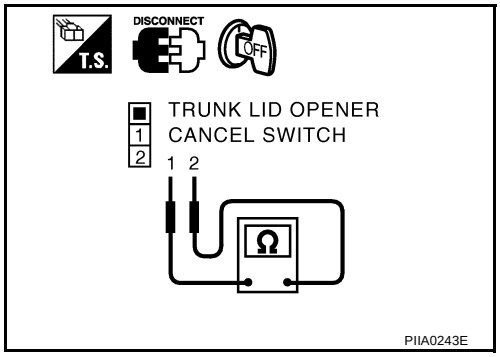
OK or NG?

OK >> GO TO 2.
NG >> Check the following
- Trunk lid opener relay.
- Harness for open or short between trunk lid opener cancel switch and trunk lid opener relay.

2. CANCEL SWITCH INSPECTION

Check continuity between trunk lid opener cancel switch terminals 1 and 2.

Terminal	Condition	Continuity
1 – 2	Switch : ON	Yes
	Switch : OFF	No



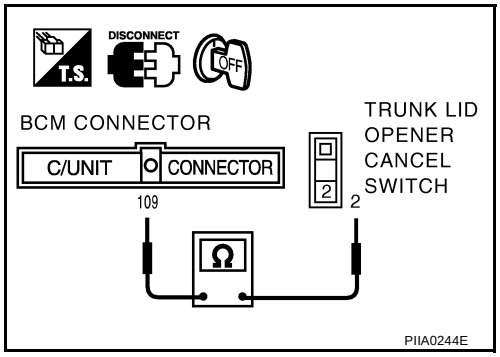
OK or NG?

OK >> GO TO 3.
NG >> Replace trunk lid opener cancel switch.

3. CHECK HARNESS CONTINUITY

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M4 terminal 109(LG) and trunk lid opener cancel switch harness connector M117 terminal 2(LG).

: Continuity should exist.



OK or NG?

OK >> Trunk lid opener cancel switch is OK.
NG >> Repair or replace harness.

Trunk Lid Opener Actuator Check

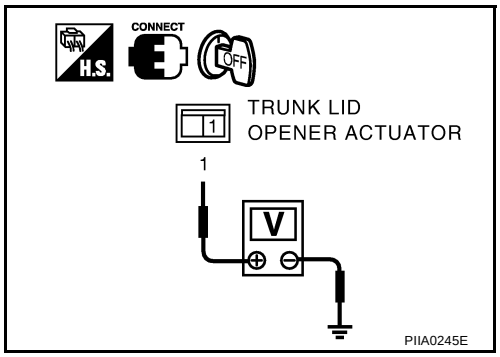
EIS0028R

Before carrying out the following diagnosis, check that the trunk opener cancel switch is turned ON.

1. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect trunk lid opener actuator connector.
3. Check voltage between trunk lid opener actuator harness connector B49 terminal 1(PU) and body ground.

: Battery voltage should exist.



OK or NG?

OK >> GO TO 2.
NG >> Check harness for open and short between trunk lid opener actuator and fuse.

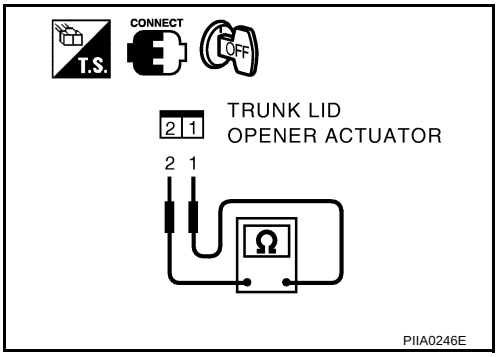
2. CHECK TRUNK LID OPENER ACTUATOR

Check continuity between trunk lid opener actuator terminals 1 and 2.

: Continuity should exist.

OK or NG?

OK >> GO TO 3.
NG >> Replace trunk lid opener actuator.



3. CHECK TRUNK LID OPENER RELAY CIRCUIT

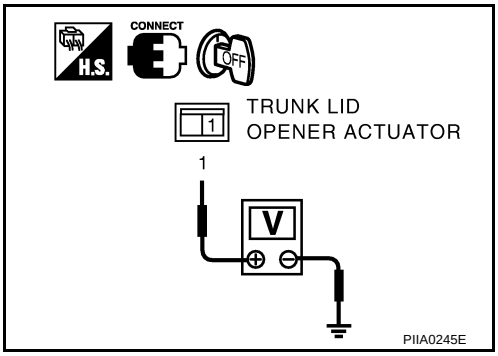
1. Connect trunk lid opener actuator connector.
2. Check voltage between harness connector B49 terminal 1(PU) and body ground.

Terminal	Condition	Voltage
1 (PU) – body ground	Opener switch : ON	0V (0.7 seconds)
	Opener switch : OFF	Battery voltage

OK or NG?

OK >> Trunk lid opener actuator is OK.
NG >> Check the following.

- Harness for open and short between trunk lid opener actuator and trunk lid opener relay.
- Harness between trunk lid opener relay and body ground.
- Replace trunk lid opener relay



Check Trunk Open Signal

EIS0028S

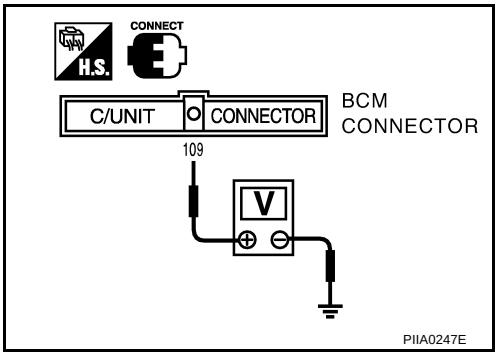
1. CHECK BCM OUTPUT SIGNAL

1. Remove electronic key from ignition key cylinder.
2. Check voltage between BCM harness connector M4 terminal 109(LG) and body ground.

Terminal	Condition	Voltage
109 (LG) – body ground	Electronic key switch : ON	0V (0.7 seconds)
	Electronic key switch : OFF	Battery voltage

OK or NG?

OK >> BCM output signal (Trunk open signal) is OK.
NG >> Replace BCM.



Horn Reminder Check

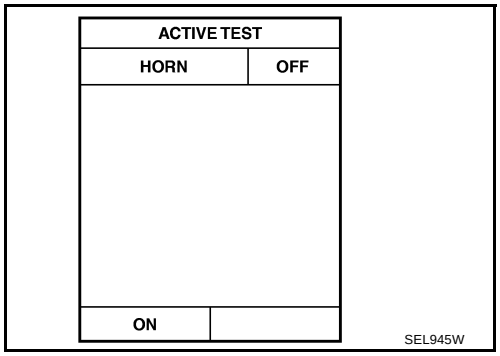
EIS0028T

1. CHECK HORN CHIRP OPERATION

With CONSULT–II

- Check horn chirp “HORN” in "ACTIVE TEST" mode with CONSULT–II.
- Perform operation shown on display.

: Horn should sound.



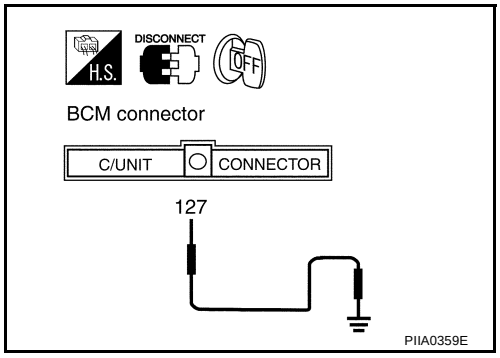
Without CONSULT–II

1. Disconnect BCM connector.
2. Apply ground to BCM connector E204 terminal 127(G/W).

: Horn should sound.

OK or NG?

OK >> Horn alarm is OK.
NG >> GO TO 2.



2. CHECK HORN RELAY

Check horn relay condition.

OK or NG?

OK >> GO TO 3.
NG >> Replace horn relay.

3. CHECK POWER SUPPLY FOR HORN RELAY

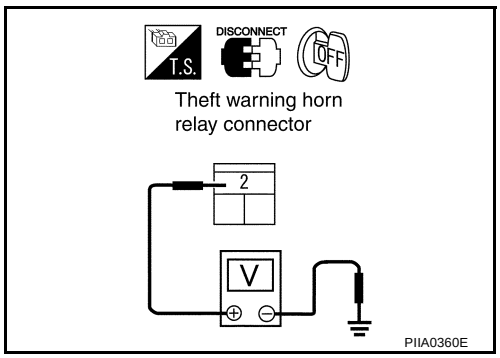
1. Disconnect horn relay connector.
2. Check voltage between horn relay connector E3-5 terminal 2(G/W) and ground.

Battery voltage should exist.

OK or NG?

OK >> GO TO 4.
NG >> Check the following.

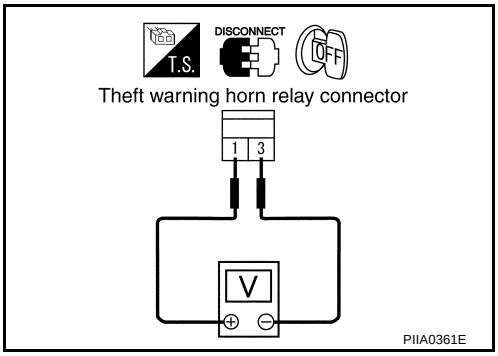
- 15A fuse [No. 56, located in the fuse, fusible link and relay block (J/B)]
- Harness for open or short between horn relay and fuse



4. CHECK HORN RELAY CIRCUIT

1. Disconnect horn relay connector.
2. Check voltage between horn relay connector E3-5 terminals 1(G/W) and 3(G).

Battery voltage should exist.



OK or NG?

OK >> Replace BCM.
NG >> Check harness for open or short between horn relay and BCM.

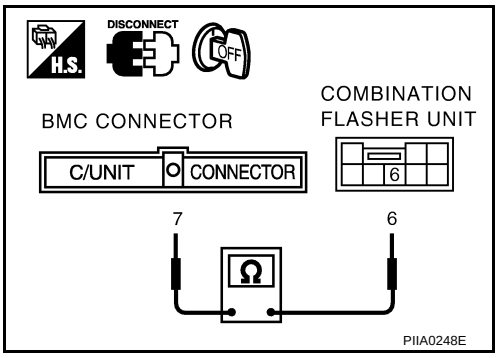
Hazard Indicator Operation Check

EIS0028U

1. CHECK COMBINATION FLASHER UNIT CIRCUIT

1. Remove electronic key from ignition key cylinder.
2. Disconnect BCM and combination flasher unit connector.
3. Check continuity between BCM harness connector M4 terminal 7(W/L) and combination flasher unit harness connector M91 terminal 6(W/L).

: Continuity should exist.

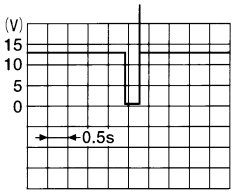
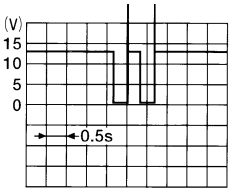


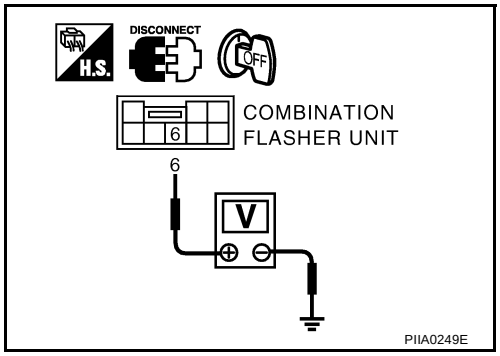
OK or NG?

OK >> GO TO 2.
NG >> Repair or replace harness.

2. CHECK BCM OUTPUT SIGNAL

1. Connect BCM connector.
2. Check voltage between flasher unit harness connector M91 terminal 6(W/L) and body ground.

Terminal	Condition	Voltage
6 (W/L) – body ground	Electronic key : LOCK switch ON	 ELN0504D
	Electronic key : UNLOCK switch ON	 ELN0505D



OK or NG?

OK >> Check flasher unit. Refer toLT-57, "TURN SIGNAL AND HAZARD WARNING LAMPS" .
NG >> Replace BCM.

Multi-Remote Control Receiver Check

EIS0028V

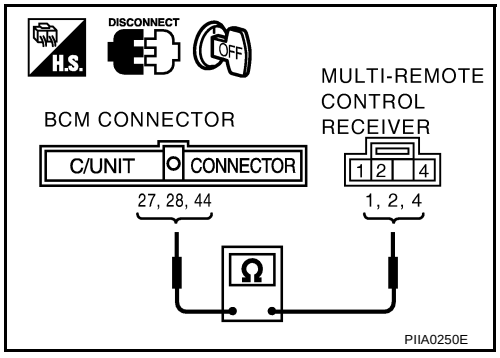
1. CHECK MULTI-REMOTE CONTROL RECEIVER HARNESS

1. Remove electronic key from ignition key cylinder.
2. Disconnect multi-remote control receiver and BCM connector.
3. Check continuity between multi-remote control receiver harness connector B246 terminals 1(Y), 2(BR/W), 4(L) and BCM harness connector M4 terminals 27(BR/W), 28(L), 44(Y).

1(Y) – 44(Y) : Continuity should exist.
2(BR/W) – 27(BR/W) : Continuity should exist.
3(L) – 28(L) : Continuity should exist.

4. Check continuity between multi-remote control receiver harness connector B246 terminals 1(Y), 2(BR/W), 4(L) and body ground.

: Continuity should not exist.



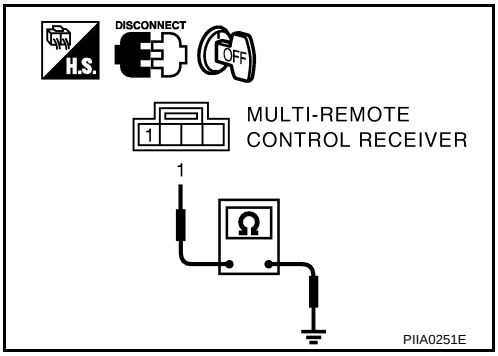
OK or NG?

OK >> GO TO 2.
NG >> Repair or replace harness.

2. CHECK MULTI-REMOTE CONTROL RECEIVER GROUND CIRCUIT

1. Connect BCM control unit connector.
2. Check continuity between multi-remote control receiver harness connector B246 terminal 1(Y) and body ground.

: Continuity should exist.

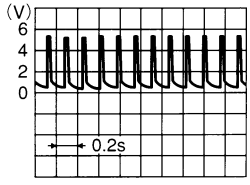
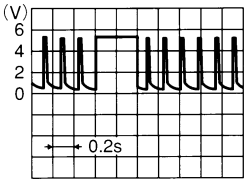


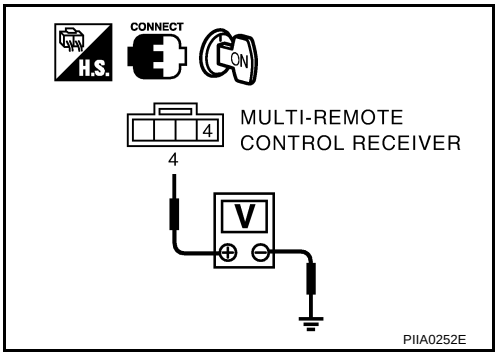
OK or NG?

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

3. CHECK MUITI-REMOTE CONTROL RECEIVER POWER SUPPLY CIRCUIT

1. Connect multi-remote control receiver connector.
2. Check the voltage between multi-remote control receiver harness connector B246 terminal 4(L) and body ground.

Terminal	Condition	Voltage
4 (L) – body ground	stand–by	 OCC3881D
	Press any of the electronic key switches	 OCC3882D

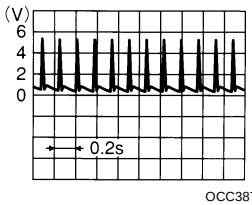
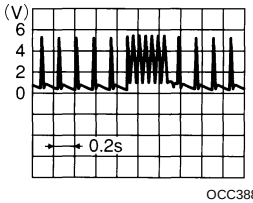


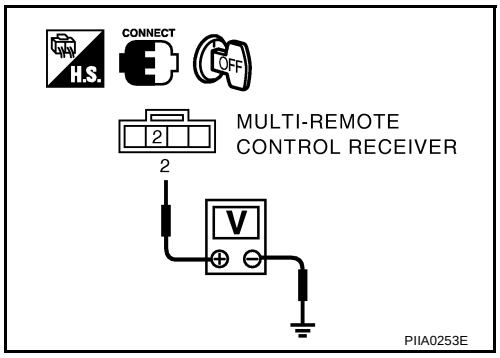
OK or NG?

OK >> GO TO 4.
NG >> Replace BCM.

4. CHECK MULTI-REMOTE CONTROL RECEIVER OUTPUT SIGNAL

Check the voltage between multi-remote control receiver harness connector B246 terminal 2(BR/W) and body ground.

Terminal	Condition	Voltage
2 (BR/W) – body ground	stand–by	 OCC3879D
	Press any of the electronic key switches	 OCC3880D

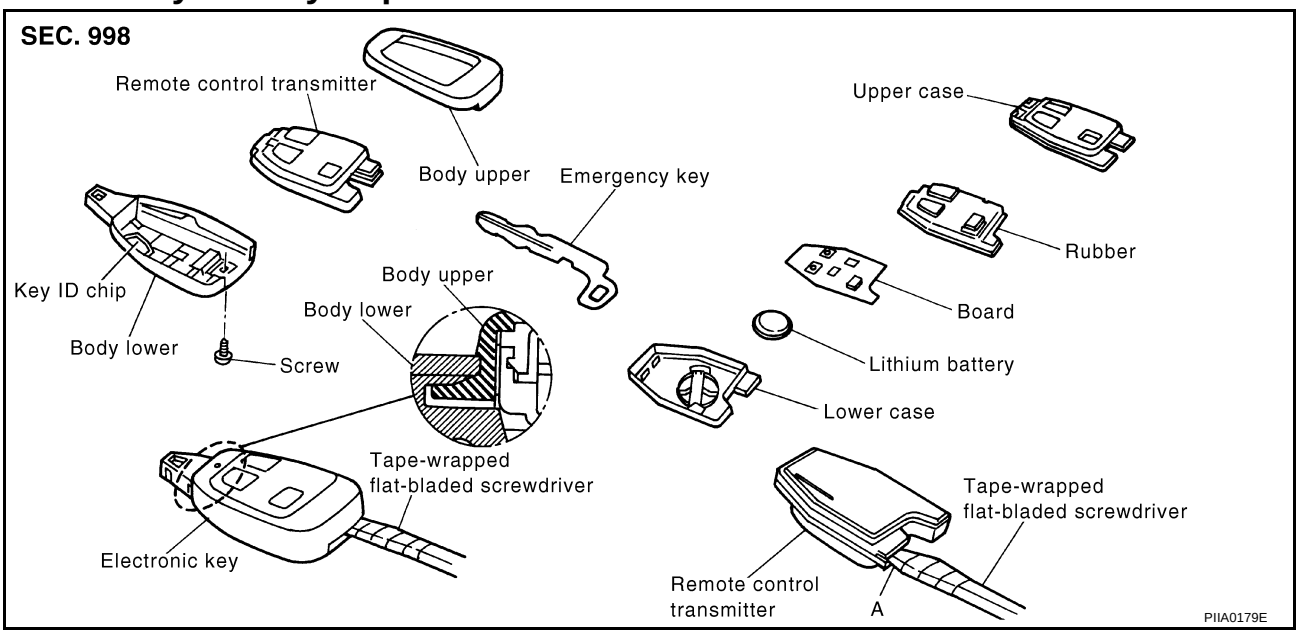


OK or NG?

OK >> Replace BCM.
NG >> Replace multi-remote control receiver.

Electronic Key Battery Replacement

EIS0028W



1. Remove the mounting screw on the back side of the electronic key, and insert a slotted screwdriver wrapped with tape into the emergency key slot. Twist the screwdriver to separate the upper body from the lower body. Then take out the electronic key transmitter.

   CAUTION:
   During disassembly, do not impact the transponder on the lower body.
2. Insert a slotted screwdriver wrapped with tape into the electronic key transmitter (A) and twist the screwdriver to disassemble the transmitter.
3. Replace the battery fixed on the lower body. Be sure to install new battery properly with the positive side facing the lower case.

   CAUTION:
   - **During disassembly, be careful not to touch the board surface. Visually check the board for color change (bluish) and deposit.**

- **When replacing the battery, keep the electrode contact clear of foreign materials such as dust and grease.**

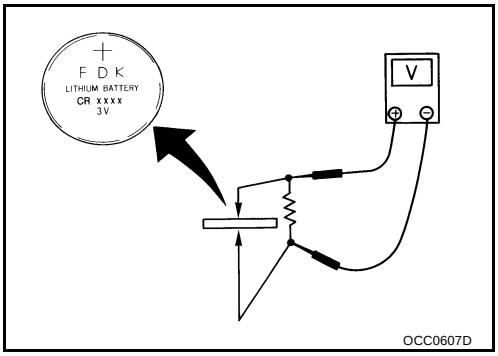
4. After replacing the battery, engage the tab on the side of the body while being careful not to pinch the rubber, and assemble the upper and lower bodies.
5. While being careful of engagement between the upper and lower bodies at the end, assemble the electronic key transmitter, and tighten it with screws.

CAUTION:
After replacing the battery, be sure to check that the door locking operates normally using the electronic key.

REMOTE CONTROLLER BATTERY CHECK

Remove battery and measure voltage across battery positive and negative terminals, “+” and “–”.

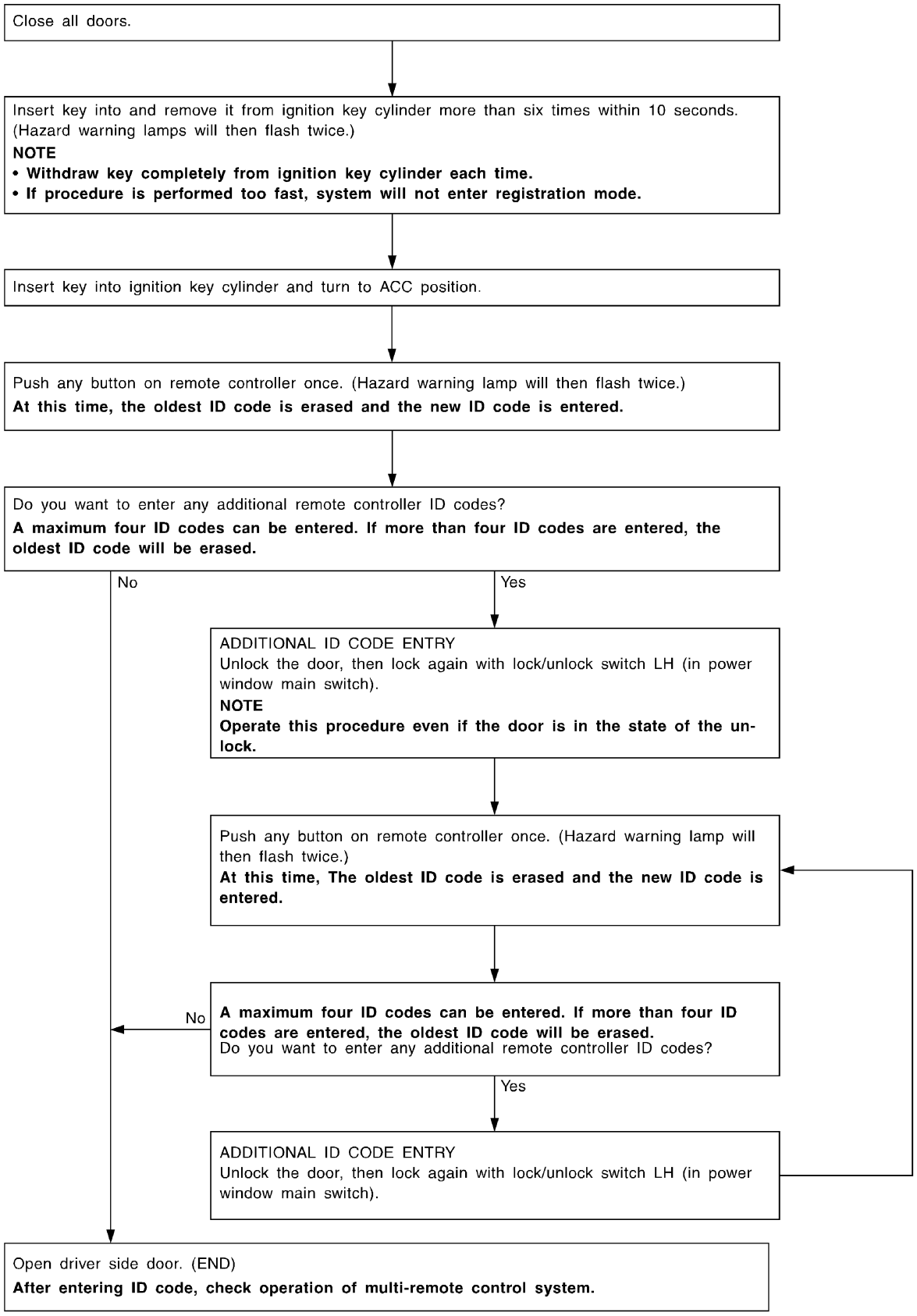
Measuring terminal		Voltage
(+)	(–)	
Battery positive terminal	Battery negative terminal	2.5 – 3.0V



ID Code Entry Procedure

EIS0028X

PROCEDURE 1 (WITHOUT CONSULT-II)



SEL170Y

NOTE:

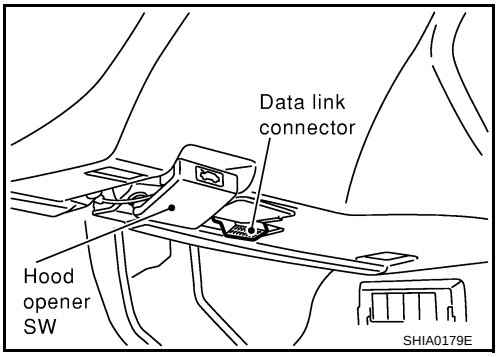
- If a electronic key is lost, the ID code of the lost electronic key must be erased to prevent unauthorized use. A specific ID code can be erased with CONSULT-II. However, when the ID code of a lost electronic key is not known, all controller ID codes should be erased. After all ID codes are erased, the ID codes of all remaining and/or new remote controllers must be re-registered. To erase all ID codes in memory, register one ID code (electronic key) four times. After all ID codes are erased, the ID codes of all remaining and/or new electronic keys must be re-registered.
- When registering an additional electronic key, the existing ID codes in memory may or may not be erased. If four ID codes are stored in memory, when an additional code is registered, only the oldest code is erased. If less than four ID codes are stored in memory, when an additional ID code is registered, the new ID code is added and no ID codes are erased.
- If you need to activate more than two additional new electronic keys, repeat the procedure “Additional ID code entry” for each new electronic key.
- Entry of maximum four ID codes is allowed. When more than four ID codes are entered, the oldest ID code will be erased.
- Even if same ID code that is already in the memory is input, the same ID code can be entered. The code is counted as an additional code.

PROCEDURE 2 (WITH CONSULT-II)

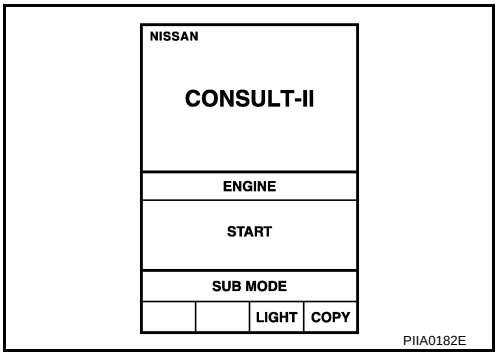
NOTE:

If a electronic key is lost, the ID code of the lost electronic key must be erased to prevent unauthorized use. When the ID code of a lost electronic key is not known, all controller ID codes should be erased. After all ID codes are erased, the ID codes of all remaining and/or new remote controllers must be re-registered.

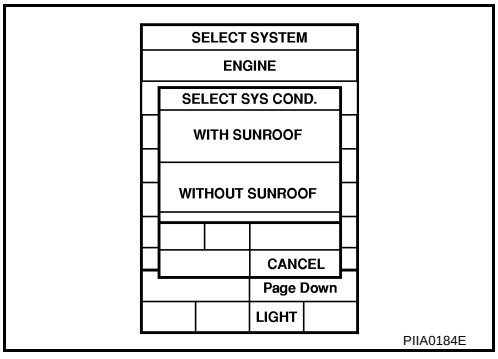
1. Turn ignition switch "OFF".
2. Connect "CONSULT-ll" to the data link connector.



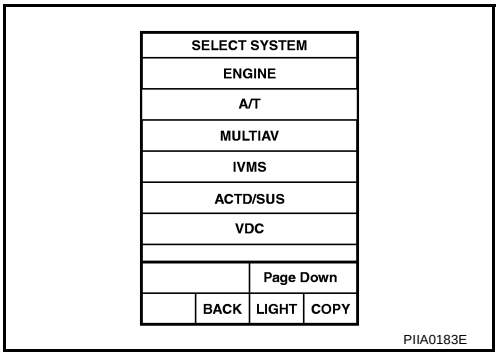
3. Turn ignition switch "ON".
4. Touch "START"



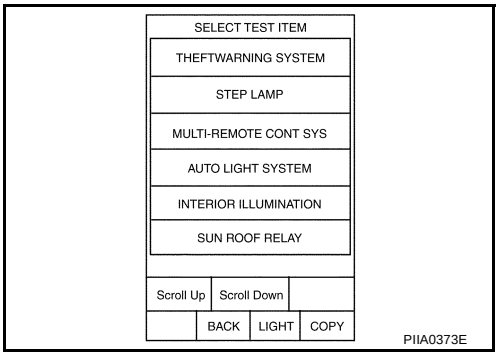
5. Check the model specification, touch either "WITH SUNROOF" or "WITHOUT SUNROOF".
6. Touch "OK". If the selection is wrong, touch "CANCEL".



7. Touch "IVMS"

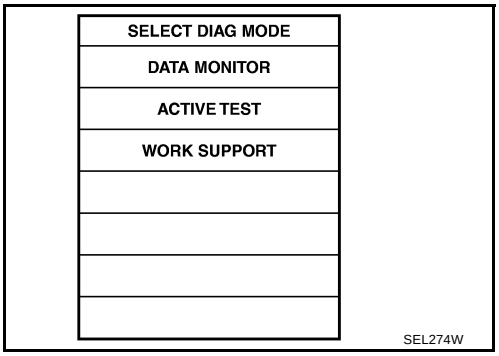


8. Touch "MULTI-REMOTE CONT SYS".



9. Touch "WORK SUPPORT".
10. The item shown on the figure at right can be set up.

- "REMO CONT ID CONFIR"
  Use this mode to confirm if a electronic key ID code is registered or not.
- "REMO CONT ID REGIST" Use this mode to register a electronic key ID code.
  NOTE:
  Register the ID code when electronic key or BCM is replaced, or when additional electronic key is required.
- "REMO CONT ID ERASUR" Use this mode to erase a electronic key ID code.

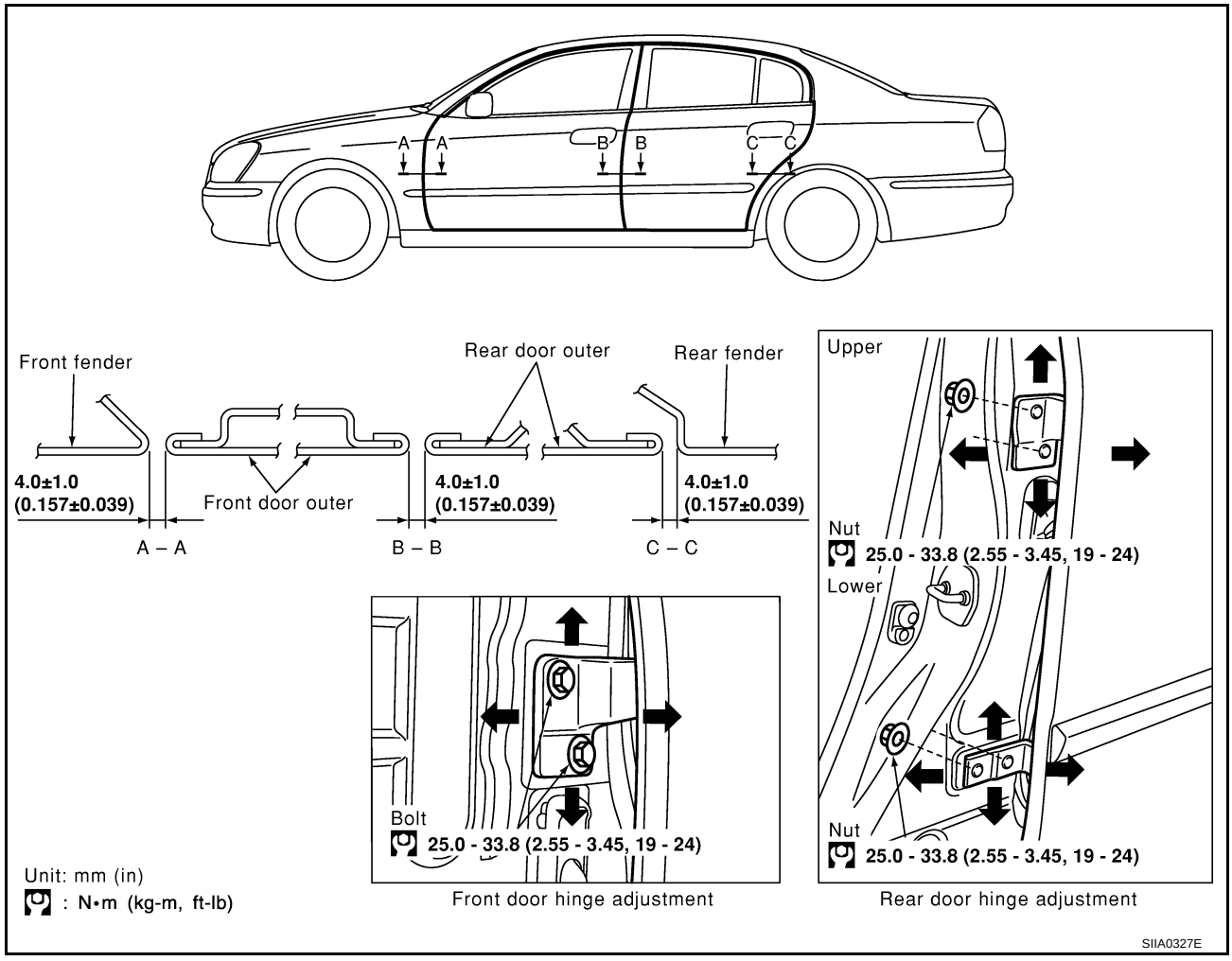


DOOR

PFP:80100

Fitting Adjustment

EIS000HA



FRONT DOOR

Longitudinal Clearance and Surface Height Adjustment at Front End

1. Remove the fender protector. Refer to EI-22, "Removal and Installation" .
2. Accessing from inside the fender, loosen the hinge mounting bolts. Raise the front door at rear end to adjust.

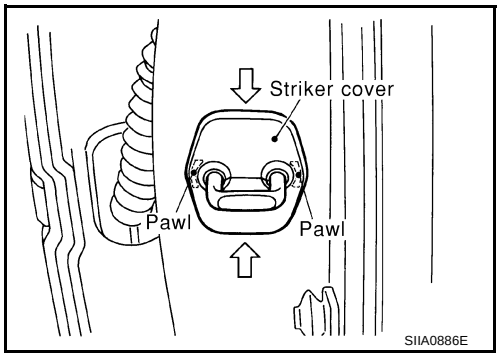
REAR DOOR

Longitudinal Clearance and Surface Height Adjustment at Front End

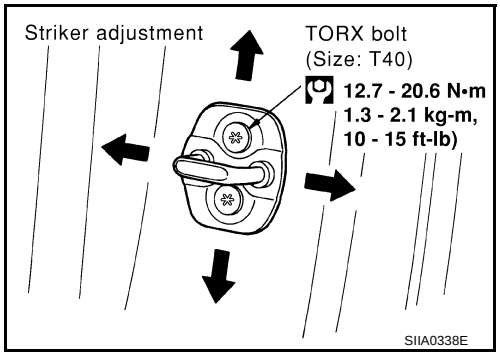
1. Remove the center pillar upper garnish and center pillar lower garnish. Refer to EI-38, "Removal and Installation" .
2. Accessing from inside the vehicle, loosen the mounting nuts. Open the rear door, and raise the rear door at rear end to adjust.

STRIKER ADJUSTMENT

1. Remove the striker cover.



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



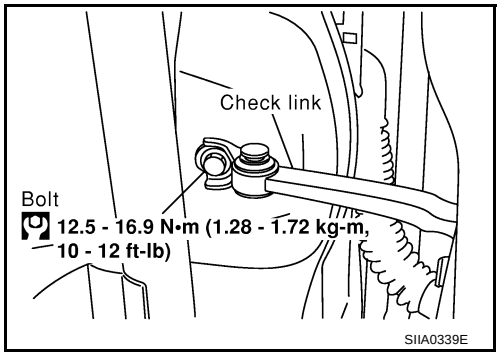
Removal and Installation

EIS000HB

CAUTION:

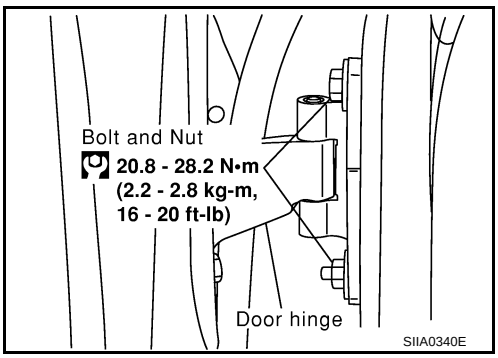
- **When removing and installing the door assembly, support the door with a jack and shop cloth to protect the door and body.**
- **When removing and installing door assembly, be sure to carry out the fitting adjustment.**
- **Check the hinge rotating part for poor lubrication. If necessary, apply "body grease".**

1. Remove the door finisher. Refer to EI-31, "Removal and Installation" .
2. Remove the inner seal. Refer to GW-45, "Removal and Installation" .
3. Remove the door window. Refer to GW-45, "Removal and Installation" .
4. Remove the module assembly. Refer to GW-45, "Removal and Installation" .
5. Remove the door harness.
6. Remove the check link cover.
7. Remove the mounting bolts of the check link on the vehicle.



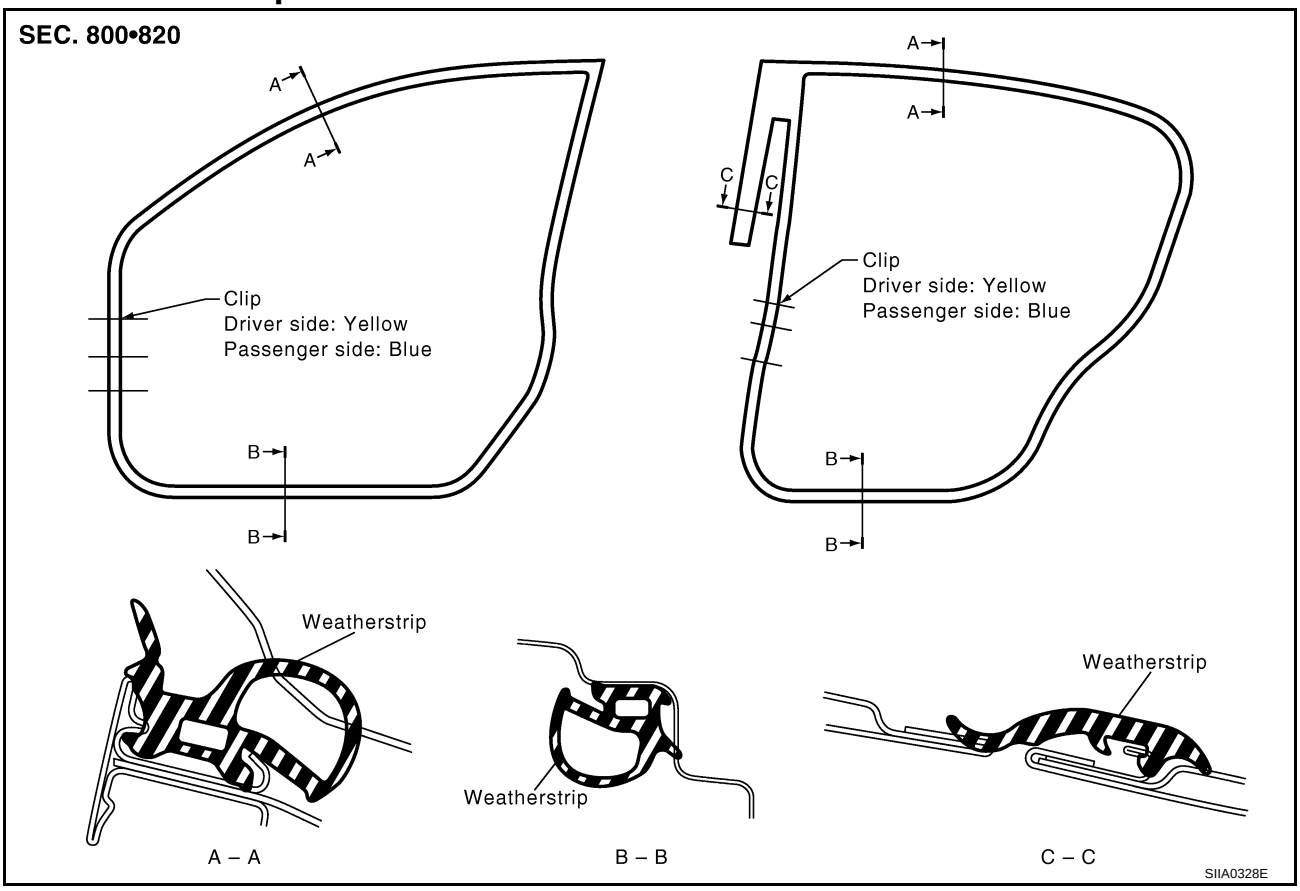
8. Remove the door-side hinge mounting nuts and bolts, and remove the door assembly.

Install in the reverse order of removal.



Door Weathers trip

EIS000HC

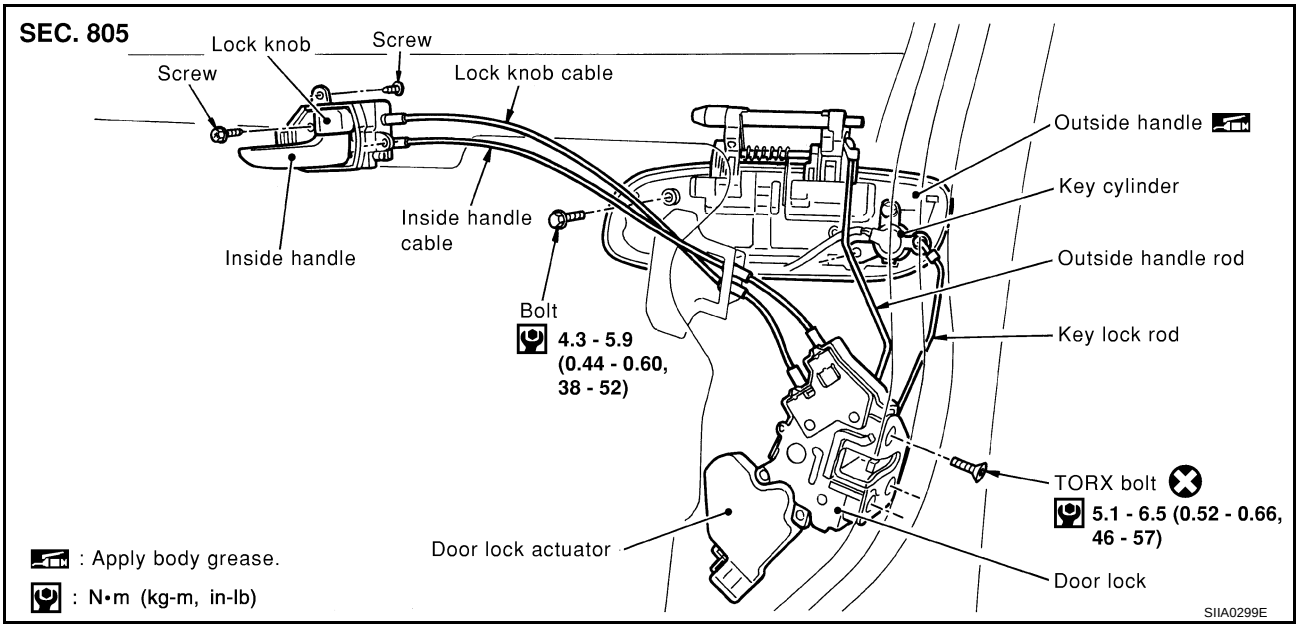


FRONT DOOR LOCK

PFP:80502

Component Structure

EIS000HD



Inspection and Adjustment.

EIS000HE

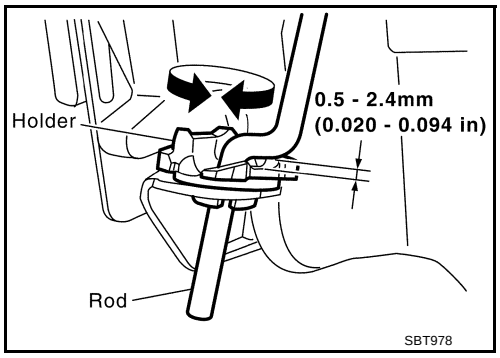
1. Remove the front door finisher. Refer to EI-31, "Removal and Installation" .
2. Remove the front speaker. Refer to AV-28, "Removal and Installation of Door Speaker"
3. Remove the front door window. Refer to GW-45, "Removal and Installation" .
4. Remove the front door module assembly. Refer to GW-45, "Removal and Installation" .

EXTERIOR HANDLE ROD ADJUSTMENT

- Rotate the bushing to adjust so that the clearance between the bushing and rod becomes as shown in the figure.

CAUTION:

Be careful not to make the clearance 0 mm (0 in) or the rod pressed continuously.



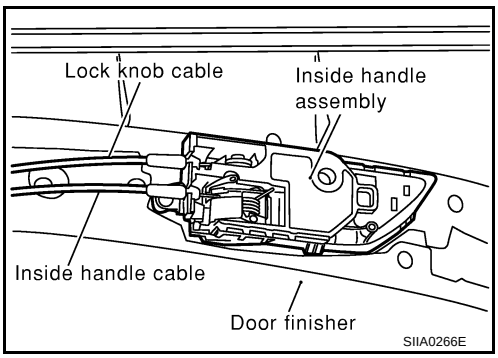
Removal and Installation

EIS000HF

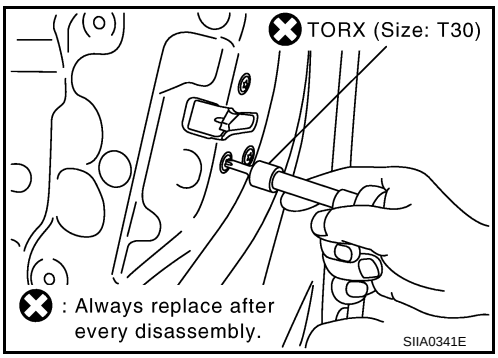
REMOVAL

1. Remove the front door finisher. Refer to EI-31, "Removal and Installation" .
2. Remove the front speaker. Refer to AV-28, "Removal and Installation of Door Speaker" .
3. Remove the front door window. GW-45, "Removal and Installation" .
4. Remove the front door module assembly. GW-45, "Removal and Installation" .

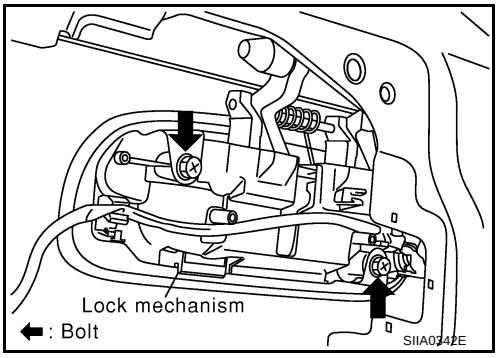
5. Disconnect the inside handle cable and locking knob cable from the back side of the front door finisher.



6. Reach to separate the key cylinder rod and exterior handle rod connection (on the handle).
7. Remove the mounting screws (TORX T30), remove the door lock assembly.
8. Disconnect the door lock actuator connector.



9. Remove the exterior handle mounting bolts, move the exterior handle assembly backward, and then remove it from the panel in front of the exterior handle escutcheon.



INSTALLATION

Install 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

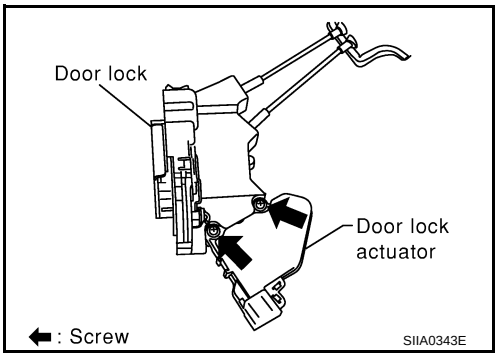
EIS000HG

DISASSEMBLY

CAUTION:

Be sure to remove or install the actuator with the door lock assembly removed.

1. Remove the mounting screws, and remove the actuator from the door lock assembly.
2. Pull the actuator straight downward to separate it from the door lock assembly.



ASSEMBLY

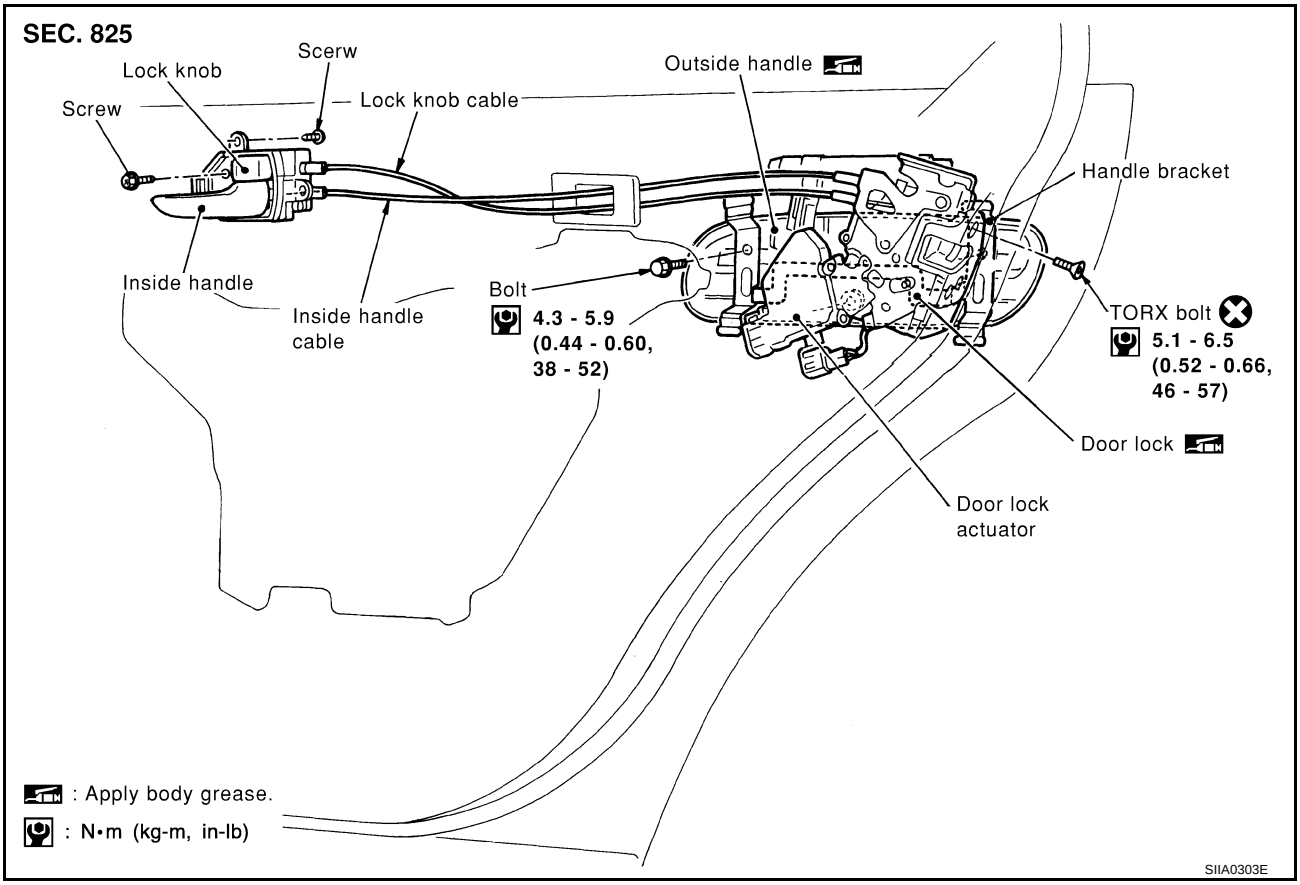
1. Align the actuator pivot with the cutout on the knob lever of the door lock assembly, then assemble the actuator.
2. Move the knob lever and the actuator pivot toward the lock-on direction, and check that it engages securely.

REAR DOOR LOCK

PFP:82502

Components

EIS000HH



Inspection and Adjustment

EIS000HI

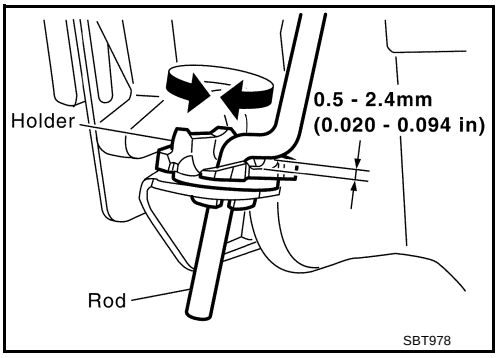
1. Remove the rear door finisher. Refer to EI-31, "Removal and Installation" .
2. Remove the frame assembly. Refer to GW-48, "Removal and Installation" .

EXTERIOR HANDLE ROD ADJUSTMENT

Rotate the bushing to adjust so that the clearance between the bushing and rod becomes as shown in the figure.

CAUTION:

Be careful not to make the clearance 0 mm (0 in) or the rod pressed continuously.

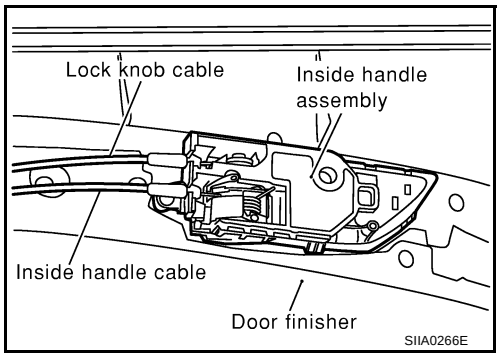


Removal and Installation of Door Lock

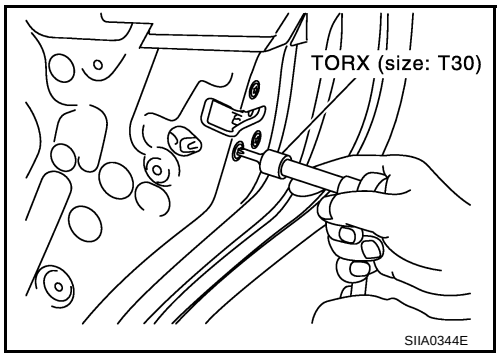
EIS000HJ

REMOVAL

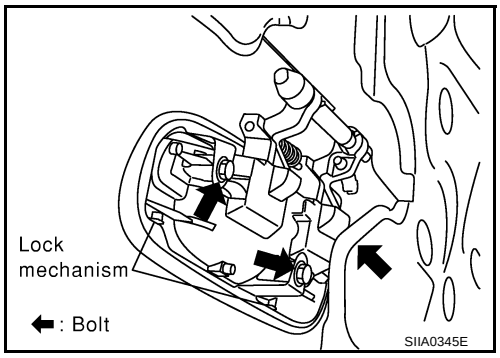
1. Remove the rear door finisher. Refer to EI-31, "Removal and Installation"
2. Remove the frame assembly. Refer to GW-48, "Removal and Installation" .
3. After gaining access to the inside handle on the back side of the rear door finisher, disconnect the inside handle cable and locking knob cable.



4. Remove the mounting screws (TORX T30), remove the door lock assembly.
5. Disconnect the door lock actuator connector.



6. Remove the exterior handle mounting bolts, and move the handle backward to disengage it from the panel in front of the exterior handle escutcheon, then remove the handle.



INSTALLATION

Install 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

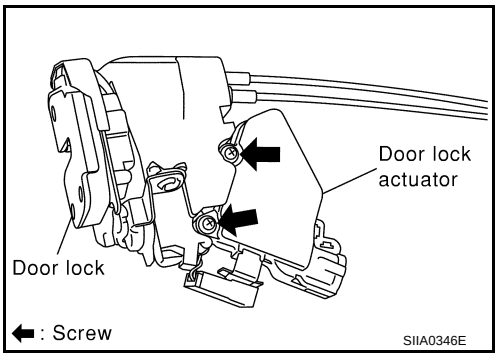
EIS000HL

DISASSEMBLY

CAUTION:

Be sure to remove or install the actuator with the door lock assembly removed.

1. Remove the mounting screws, and remove the actuator from the door lock assembly.
2. Pull the actuator straight downward to separate it from the door lock assembly.



ASSEMBLY

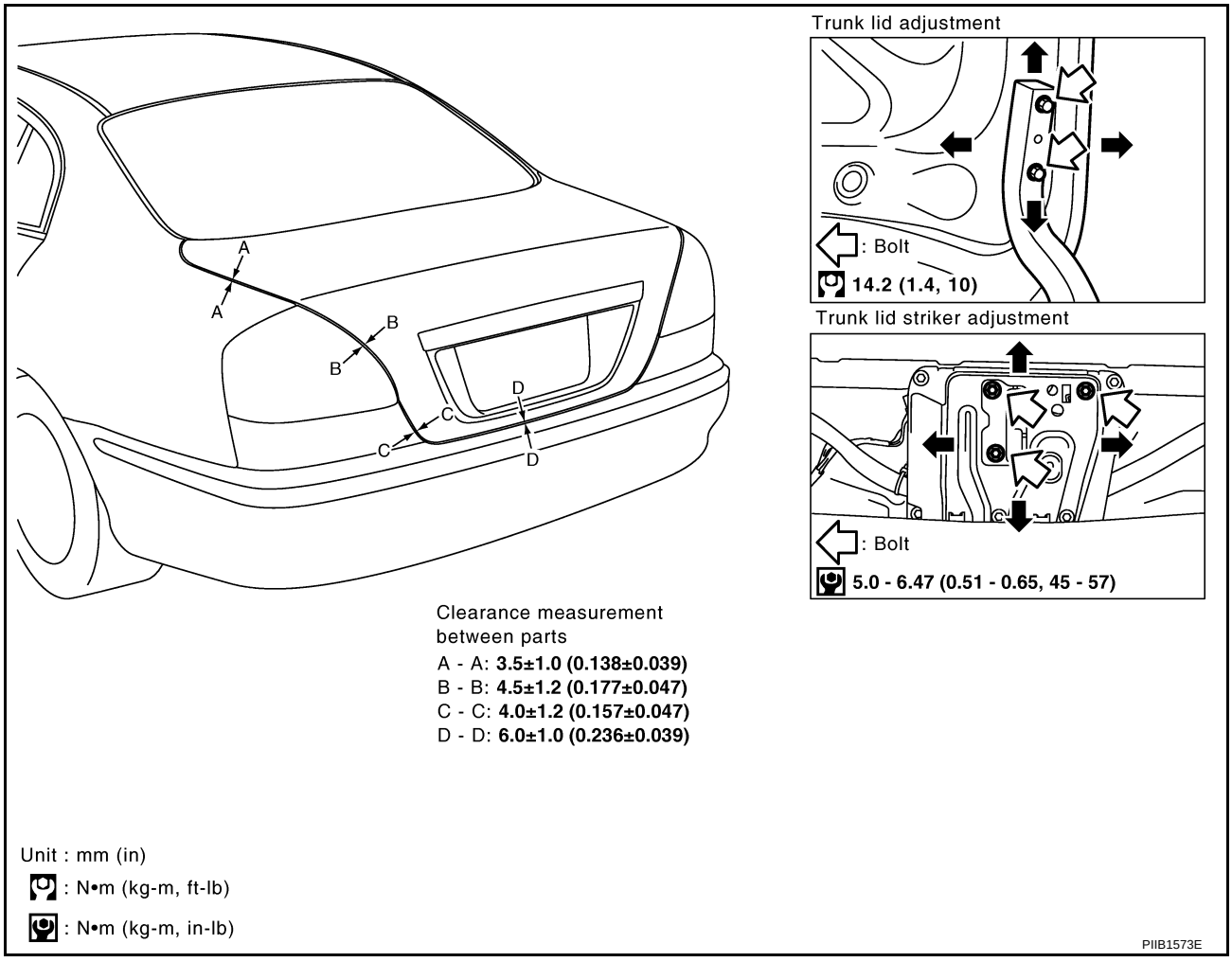
1. Align the actuator pivot with the cutout on the knob lever of the door lock assembly, then assemble the actuator.
2. Move the knob lever and the actuator pivot toward the lock-on direction, and check that it engages securely.

TRUNK LID

PFP:H4300

Fitting Adjustment

EIS000HW



LONGITUDINAL AND LATERAL CLEARANCE ADJUSTMENT

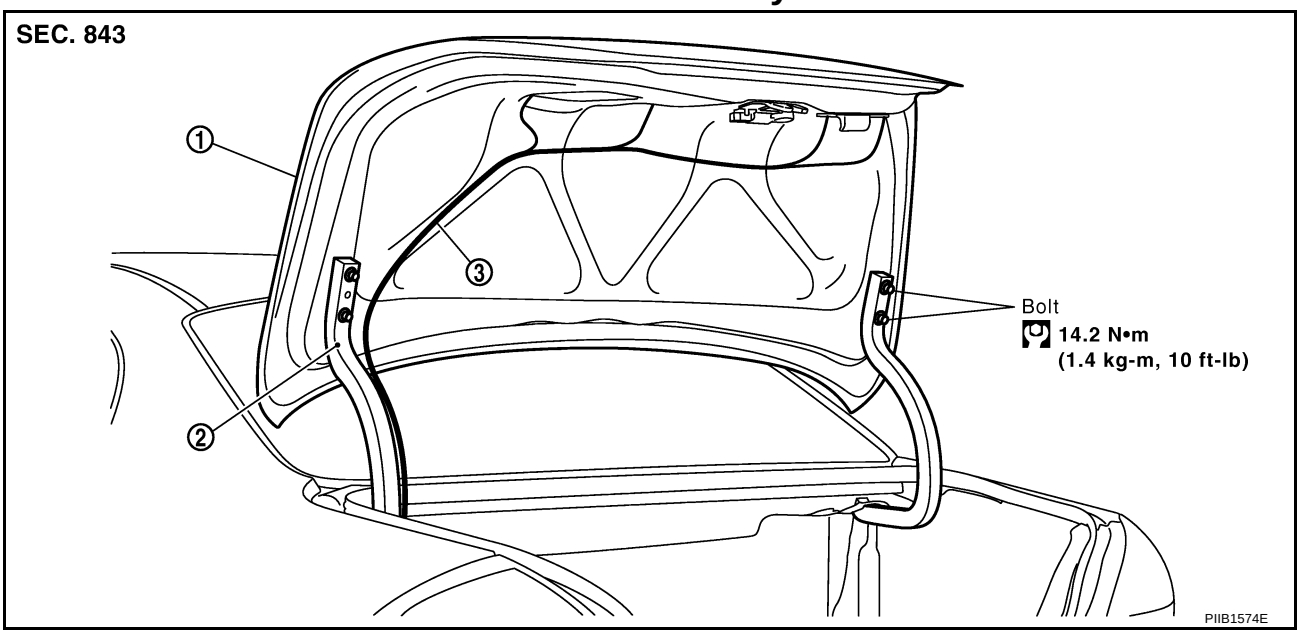
1. With the striker released, loosen the trunk lid hinge mounting bolts to close the trunk lid.
2. Make the lateral clearance and the clearance to the rear window glass equal, and open the trunk lid to tighten the mounting bolts to the specified torque.

SURFACE HEIGHT ADJUSTMENT

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

Removal and Installation of Trunk Lid Assembly

EIS000HX



1. Trunk lid assembly
2. Trunk lid hinge
3. Trunk lid harness

1. Remove the trunk lid finisher. Refer to EI-51, "Removal and Installation" .
2. Disconnect the connectors in the trunk lid, and remove the harness clamps to pull the harness out of the trunk lid.
3. Remove the mounting bolts, and remove the trunk lid assembly.

CAUTION:
After installing, apply touch-up paint (the body color) onto the head of the hinge mounting bolts.

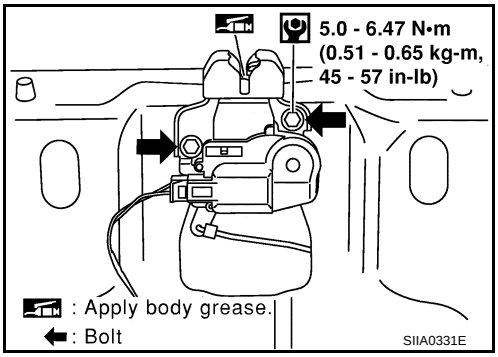
Install in the reverse order of removal.

Removal and Installation of Trunk Lid Lock

EIS000HY

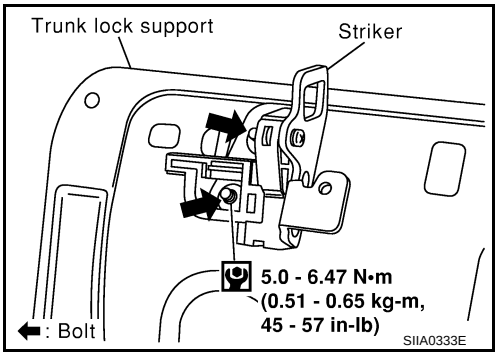
LOCK REMOVAL

1. Remove the trunk lid finisher. Refer to EI-51, "Removal and Installation" .
2. Separate the key cylinder rod.
3. After removing the harness connector, remove the mounting bolts, and remove the trunk lid lock.



STRIKER REMOVAL

1. Remove the trunk rear plate and trunk rear finisher. Refer to EI-51, "Removal and Installation" .
2. Remove the mounting bolts, and remove the trunk lock support from the vehicle.
3. After removing the harness connector, remove the mounting bolts, and remove the striker from the trunk lock support.

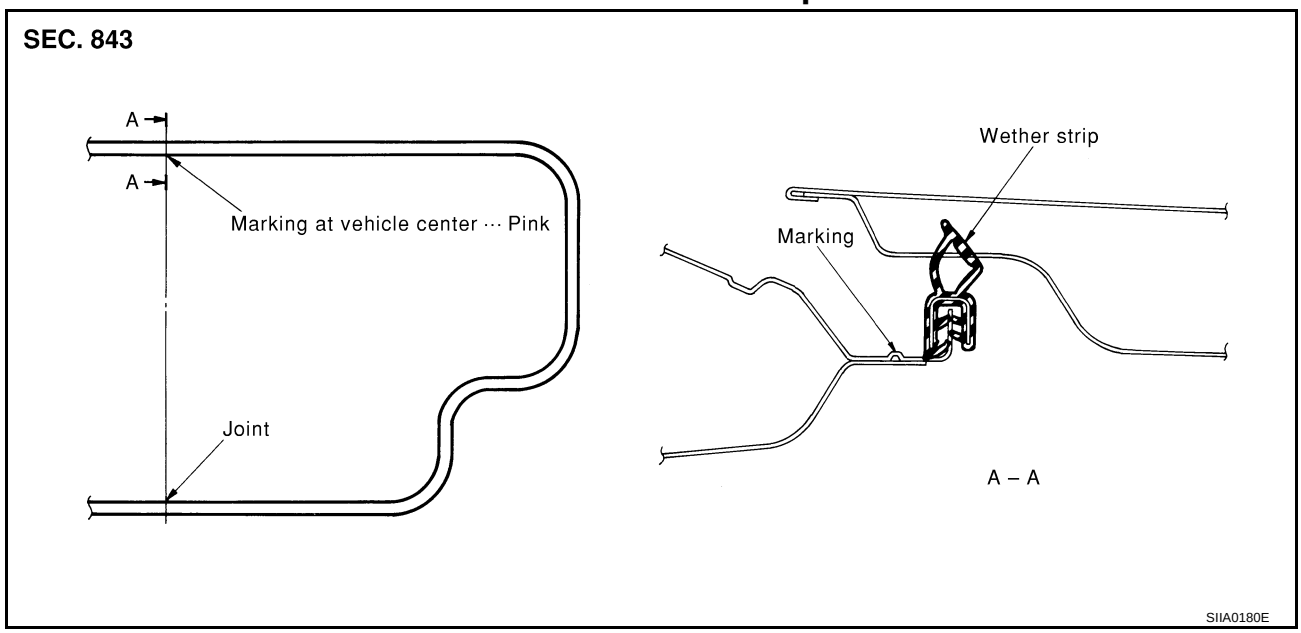


LOCK AND STRIKER INSTALLATION

1. Install in the reverse order of removal.
2. After installing, close the trunk lid lightly. Preform the lock and surface height adjustment. Refer to BL-94, "Fitting Adjustment" .
3. After installing, check the operation.

Removal and Installation of Trunk Lid Weather-strip

EIS000HZ



1. Install the weather-strip from the front with the vehicle center mark aligned to the weather-strip mark.
2. At rear side, align the weather-strip seam to the center of the striker.
3. After installing, pull the weather-strip lightly to check for looseness.

CAUTION:

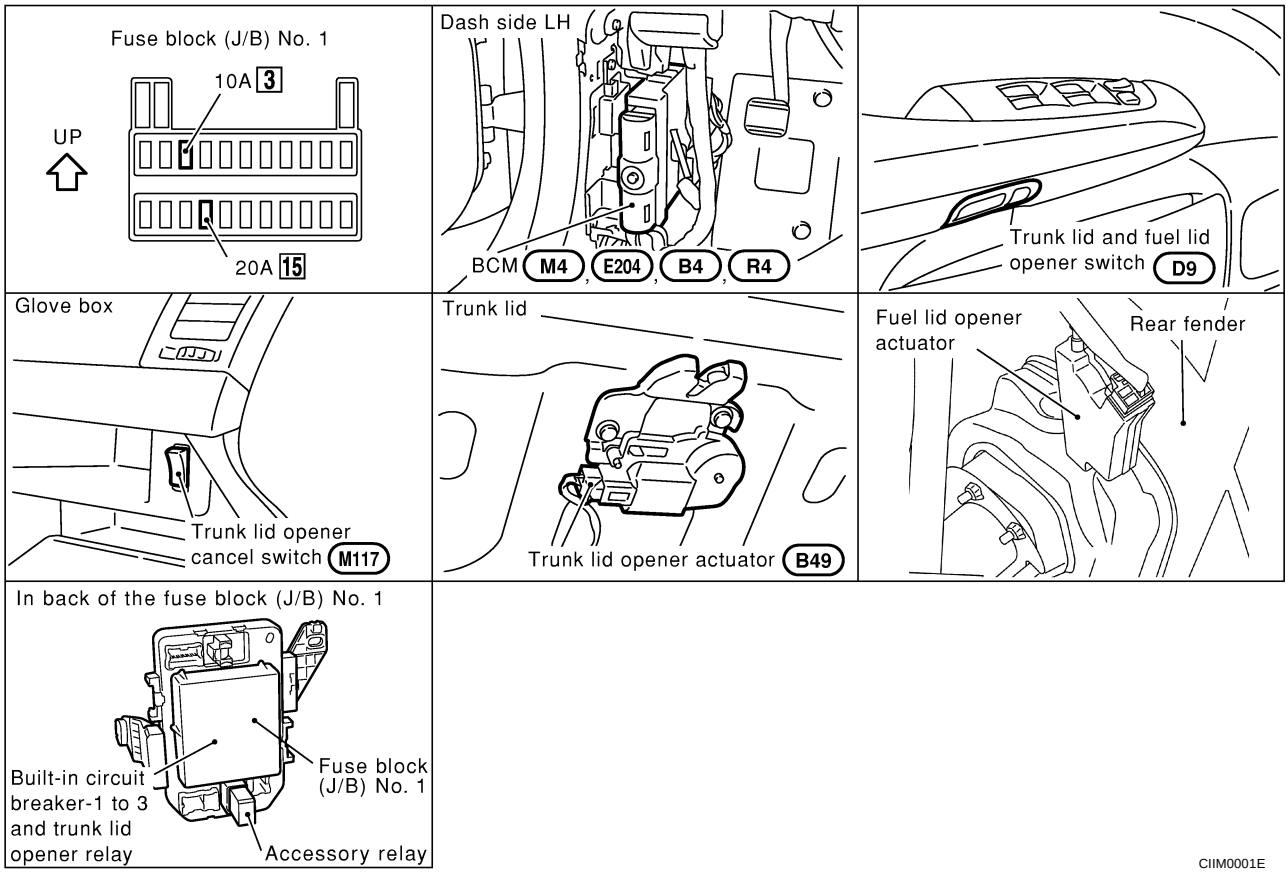
The weather-strip shall be fit tightly onto the corners and trunk lid rear plate.

TRUNK LID AND FUEL FILLER LID OPENER

PFP:84640

Component Part and Harness Connector Location

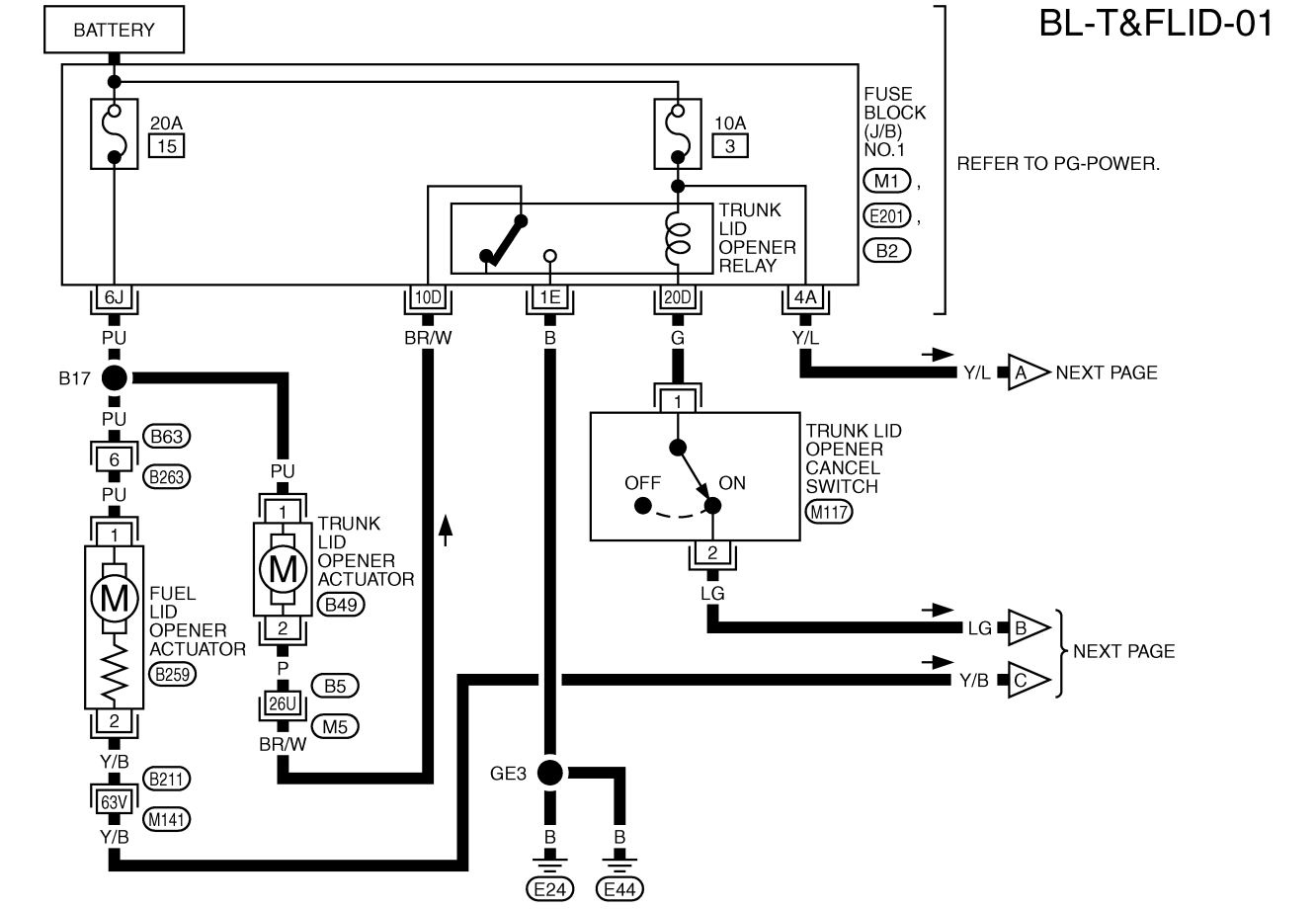
EIS000IV

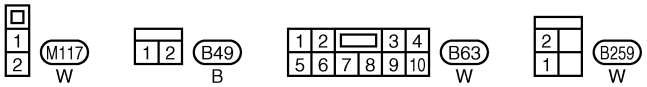


CIIM0001E

Wiring Diagram — T&FLID —

EIS000IW

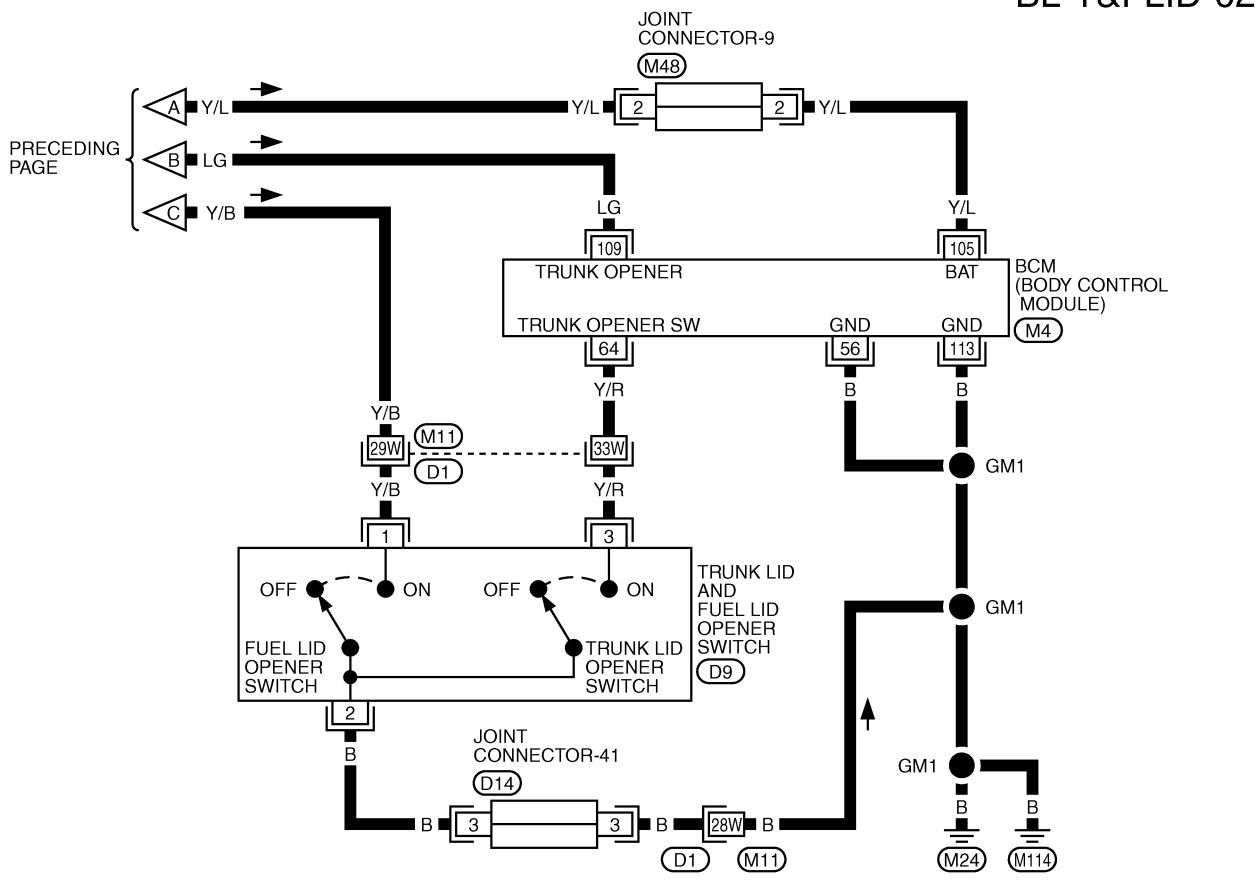




REFER TO THE FOLLOWING.
M5 , B211 -SUPER MULTIPLE JUNCTION (SMJ)
M1 , E201 , B2 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TIWM0001E

BL-T&FLID-02



REFER TO THE FOLLOWING.
D1 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -ELECTRICAL UNITS

TIWM0002E

Terminals and Reference Value for BCM

EIS000IX

TERMINAL	WIRE COLOR	ITEM	CONDITION	VOLTAGE
56	B	Ground	—	0V
64	Y/R	Trunk lid opener switch	Trunk lid opener switch OFF→ON	5V→0V
105	Y/L	BAT power supply	—	Battery voltage
109	LG	Trunk lid opener relay	Trunk lid opener switch OFF→ON	Battery voltage → 0V
113	B	Ground	—	0V

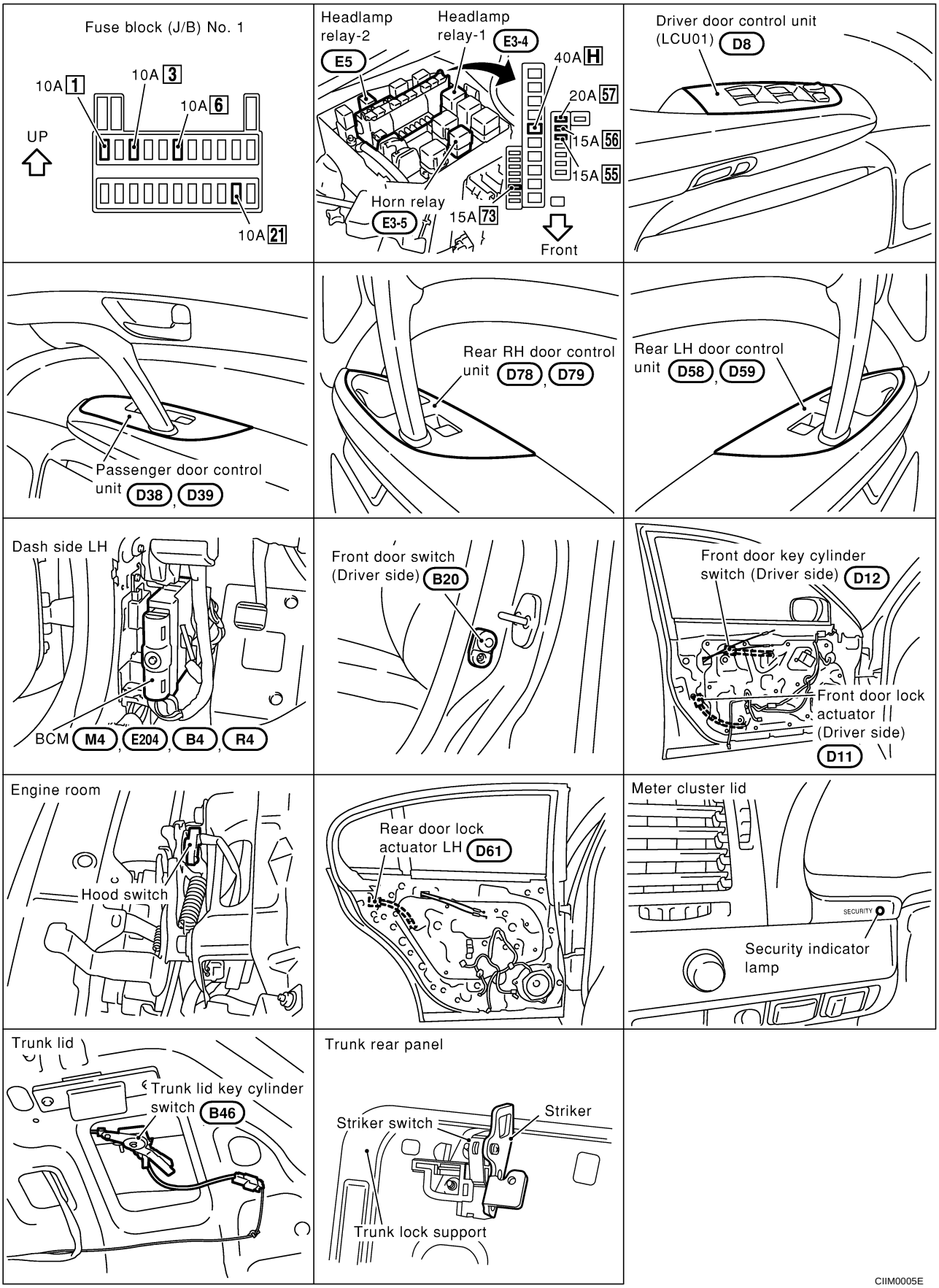
NOTE:
For Trouble diagnosis of trunk lid opener, refer to BL-45, "REMOTE KEYLESS ENTRY SYSTEM" .

VEHICLE SECURITY (THEFT WARNING) SYSTEM

PFP:28491

Component Parts Harness Connector Location

EIS000TX



CIIM0005E

System Description

EIS000TY

DESCRIPTION

Setting the theft warning system

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 when hood, trunk lid and all doors are closed and locked by electronic key. The security indicator lamp illuminates for 30 seconds. Then, the system automatically shifts into the "armed" phase.

Canceling the set theft warning system

When the following 1 or 2 operation is performed, the armed phase is canceled.

1. Unlock the doors with the electronic key.
2. Open the trunk lid with the electronic key. When the trunk lid is closed after opening the trunk lid with the electronic 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 the following operation 1, 2 or 3 is performed, the system sounds the horns and flashes the head-lamps for about 50 seconds.

1. Engine hood or any door is opened before unlocking door with electronic key.
2. Door is unlocked without using electronic key.
3. Trunk lid is opened without using electronic key.

POWER SUPPLY

Power is supplied at all times

- through 10A fuse [No.6, located in the fuse block (J/B) No.1]
- to security indicator lamp terminal 20.

Power is supplied at all times

- through 10A fuse [No.3, located in the fuse block (J/B) No.1]
- to BCM terminal No.105.

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

- through 10A fuse [No.21, located in the fuse block (J/B) No.1]
- to BCM terminal No.60.

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

- through 10A fuse [No.1, located in the fuse block (J/B)No.1]
- to BCM terminal No.68.

BCM is connected to LCU01 as DATA LINE A – 3.

INITIAL CONDITION TO ACTIVATE THE SYSTEM

The operation of the vehicle security system is controlled by the doors, hood and trunk lid.
To activate the vehicle security system, BCM must receive signals indicating the doors, hood and trunk lid are closed and the doors are locked.
When a door is open, BCM terminal No.33, No.37, No.142 or No.143 receives a ground signal from each door switch.
When a driver door is unlocked, driver door LCU terminal No.6 receives a ground signal from terminal No.2 of driver door unlock sensor.
When a passenger, rear LH or RH door is unlocked, passenger, rear LH or RH door control unit terminal No.13 receives a ground signal from terminal No.2 of driver door unlock sensor.
When the hood is open, BCM terminal No.122 receives a ground signal

- from terminal No.1 of the hood switch
- through body grounds No.E42 and No.E62.

When the trunk lid is open, BCM terminal No.146 receives a ground signal

- from terminal No.1 of the trunk room lamp switch
- through body grounds No.B17, No.B57.

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

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

If the emergency key is used to lock doors, LCU01 terminal No.10 receives a ground signal

- from terminal No.3 of the driver door key cylinder switch.
- through body grounds No.M24 and No.M114

If this signal or lock signal from electronic key is received by BCM, the vehicle security system will activate automatically.
Once the vehicle security system has been activated, BCM terminal No.65 supplies ground to terminal No.19 of the security indicator lamp.
The security lamp will illuminate for approximately 30 seconds and then blink.
Now the vehicle security system is in armed phase.

VEHICLE SECURITY SYSTEM ALARM OPERATION

The vehicle security system is triggered by

- opening a door
- opening the trunk lid
- opening the hood
- unlocking door without using the electronic key.

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

- when BCM receives a ground signal at terminal No.33, No.37, No.142, No.143 (door switch), No.146(trunk room lamp switch) or No.122(hood switch)
- when driver door LCU receives a ground signal at terminal No.6(driver door unlock sensor)
- when passenger, rear LH, RH door control unit receives a ground signal at terminal No.13(passenger, rear LH, RH door unlock sensor)

Power is supplied at all times

- to head lamp relay-1 terminal No.2 and
- through 15A fuse (No. 56, located in fuse block (J/B) No.1)
- to horn relay terminal No.2.

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

- from BCM terminal No.5(lamp relay) and No.127(horn relay)
- to head lamp relay terminal No.1 and
- to horn relay terminal No.1.

The head lamps flash and the horn sounds intermittently.
The alarm automatically turns off after 2 or 3 minutes 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 key or electronic key.
When the key is used to unlock a door, LCU01 terminal No.9 receives a ground signal

- from terminal No.1 of the driver door key cylinder switch.

When the emergency key is used to unlock the trunk lid, BCM terminal No.145 receives a ground signal from terminal No.1 of the trunk lid key cylinder switch.
When the BCM receives either one of these signals or unlock signal from electronic key, the vehicle security system is deactivated. (Disarmed phase)

PANIC ALARM OPERATION

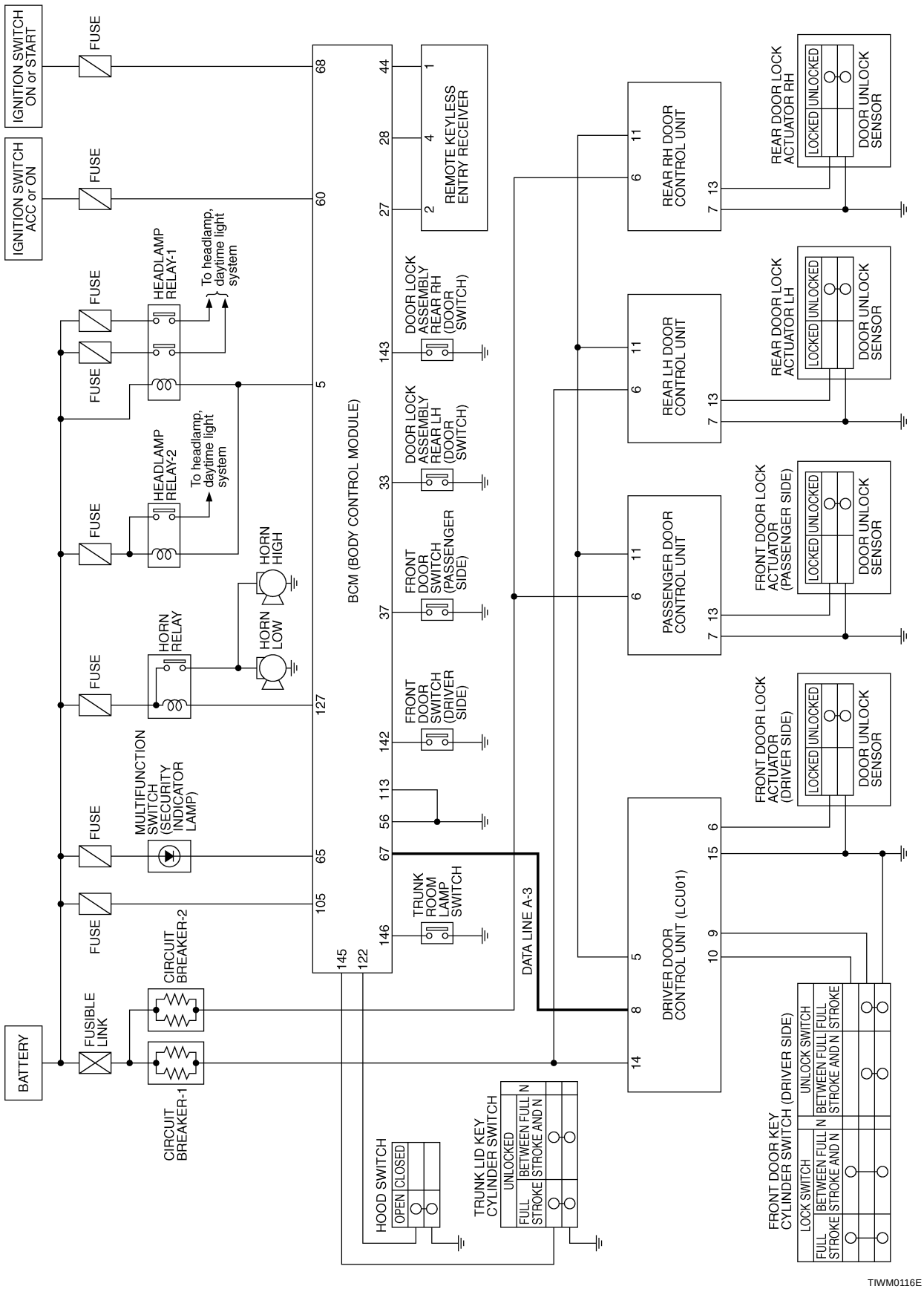
Remote keyless entry system may or may not operate vehicle security system (horn and head lamps) as required.
When the Remote keyless entry system is triggered, ground is supplied intermittently.

- from BCM terminal No.5(lamp relay) and No.127(horn relay)
- to lamp relay terminal No.1 and
- to security horn relay terminal No.1.

The head lamp flashes and the horn sounds intermittently.
The alarm automatically turns off after 30 seconds or when BCM receives any signal from electronic key.

Schematic

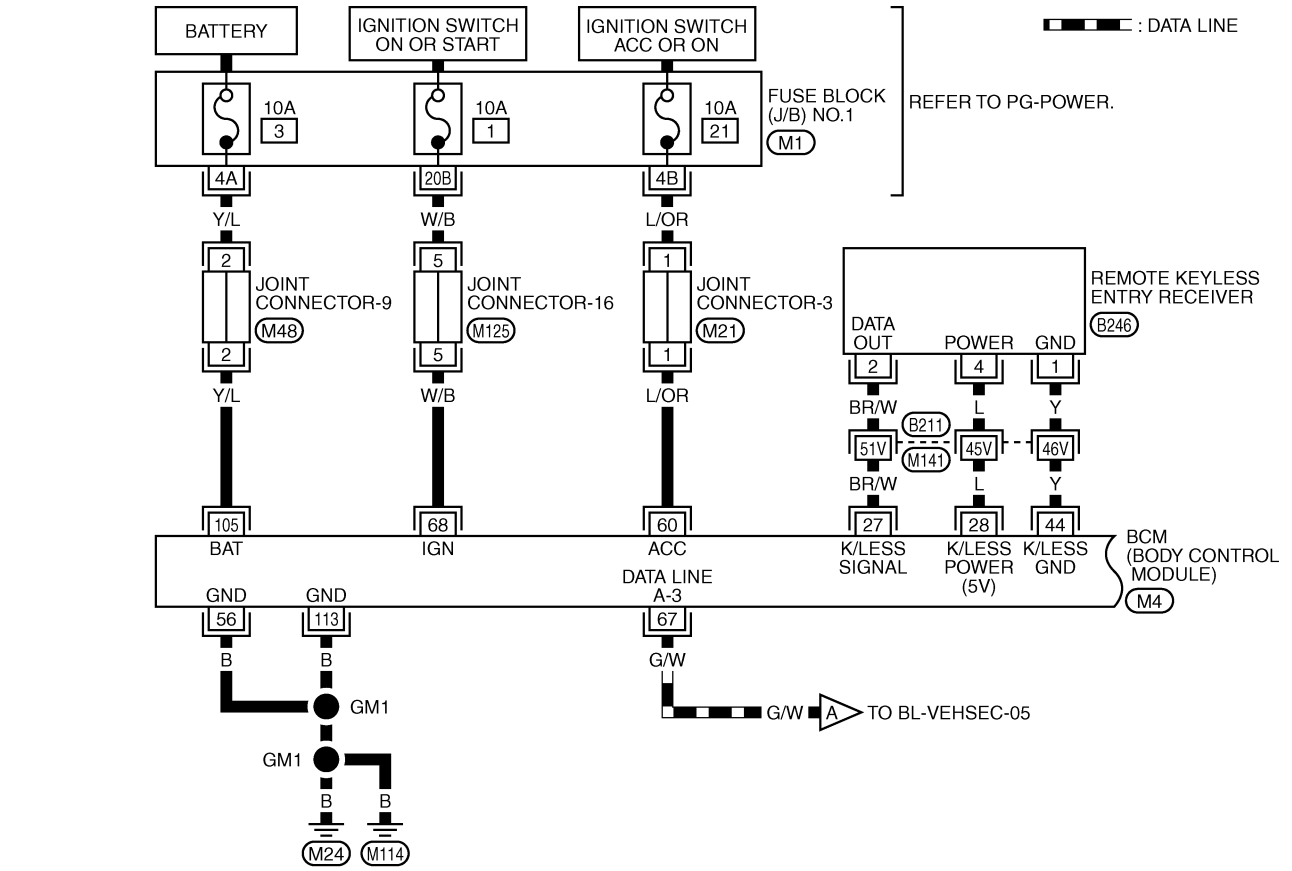
EIS000TZ

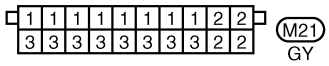


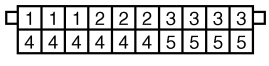
Wiring Diagram — VEHSEC —

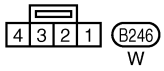
EIS000U0

BL-VEHSEC-01









REFER TO THE FOLLOWING.

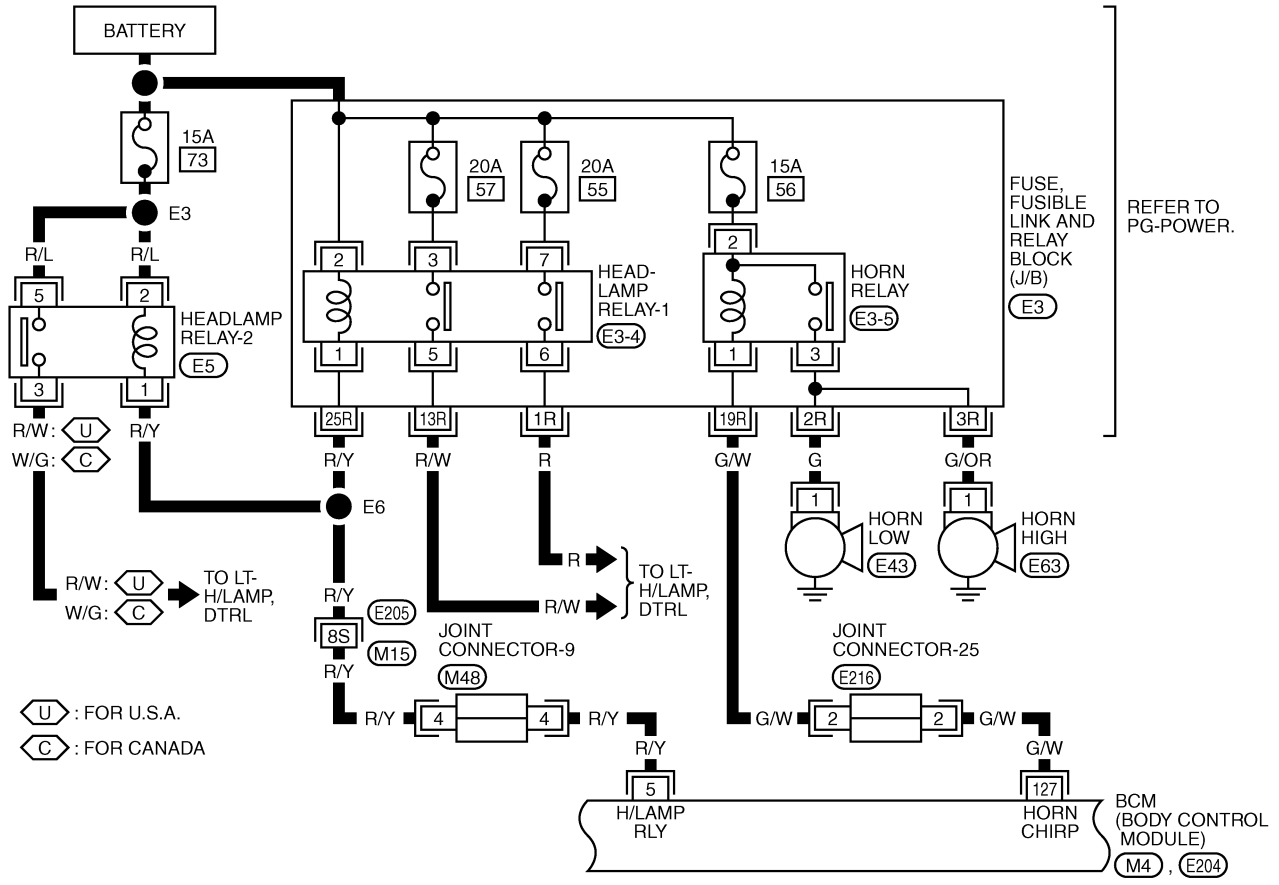
B211 -SUPER MULTIPLE JUNCTION (SMJ)

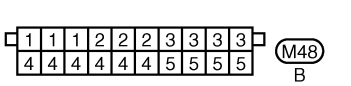
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

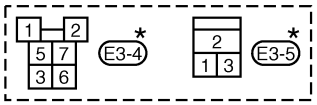
M4 -ELECTRICAL UNITS

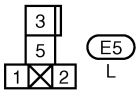
TIWM0117E

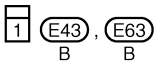
BL-VEHSEC-02

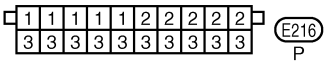












*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.

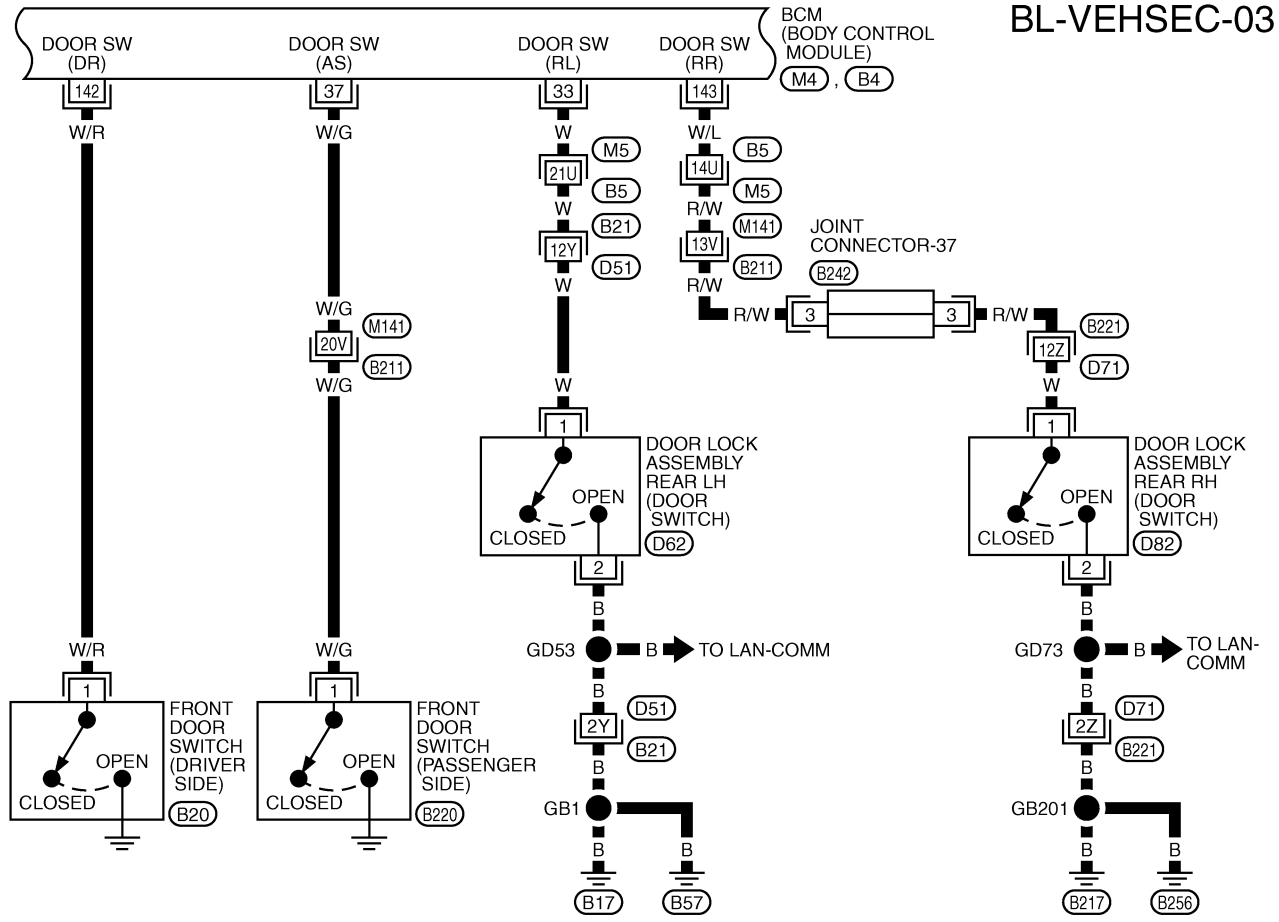
E205 -SUPER MULTIPLE JUNCTION (SMJ)

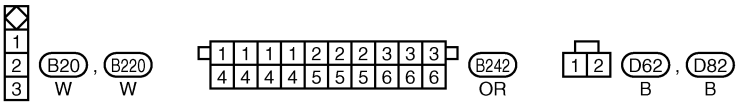
E3 -FUSE, FUSIBLE LINK AND RELAY BLOCK (J/B)

M4 , E204 -ELECTRICAL UNITS

TIWM0025E

BL-VEHSEC-03





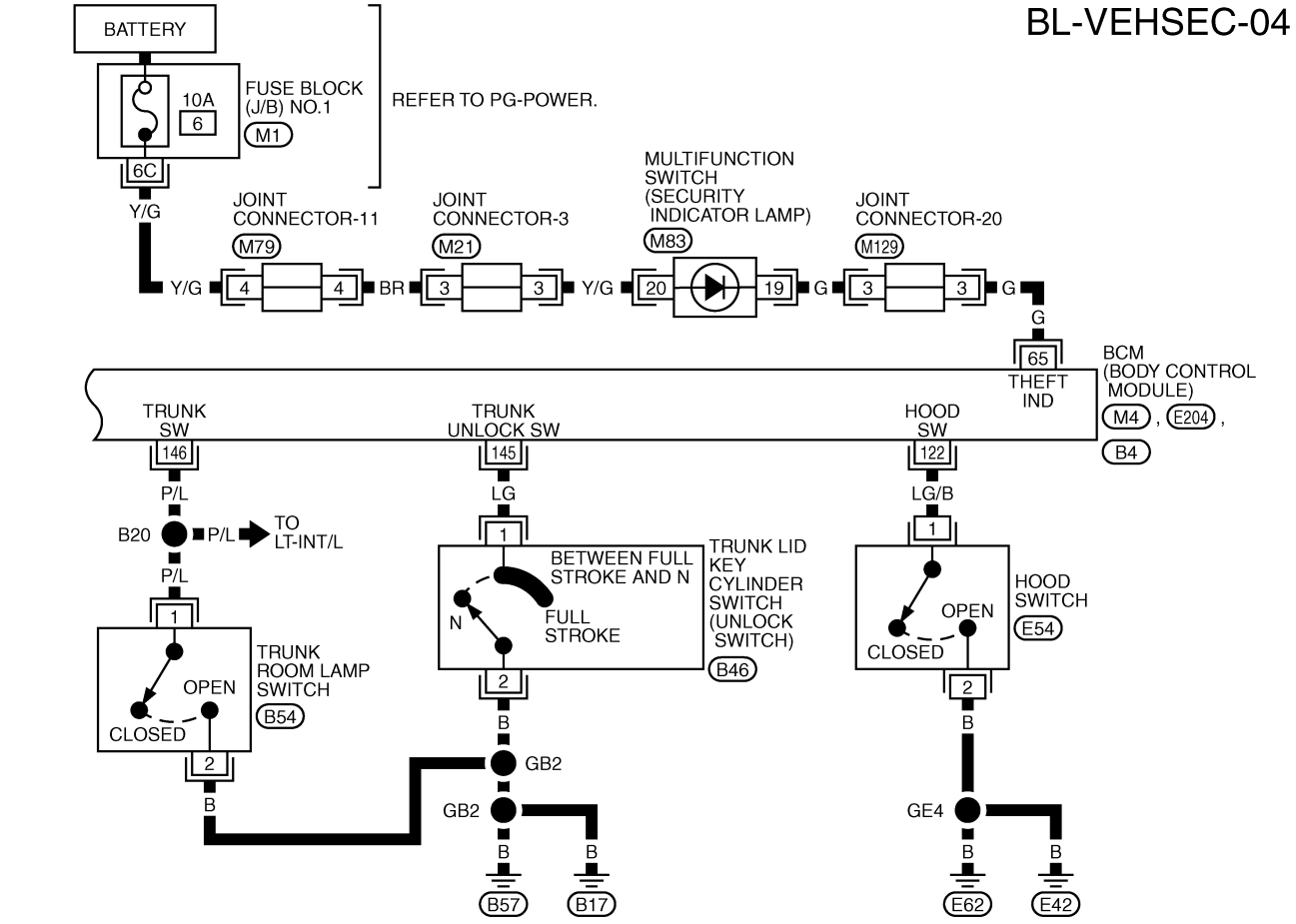
REFER TO THE FOLLOWING.

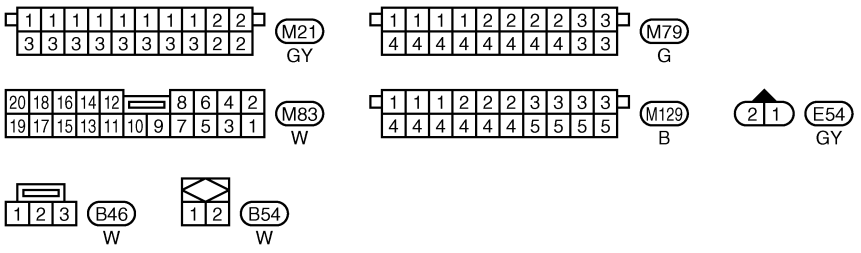
M5 , B21 , B211 , B221 -SUPER MULTIPLE JUNCTION (SMJ)

M4 , B4 -ELECTRICAL UNITS

TIWM0026E

BL-VEHSEC-04



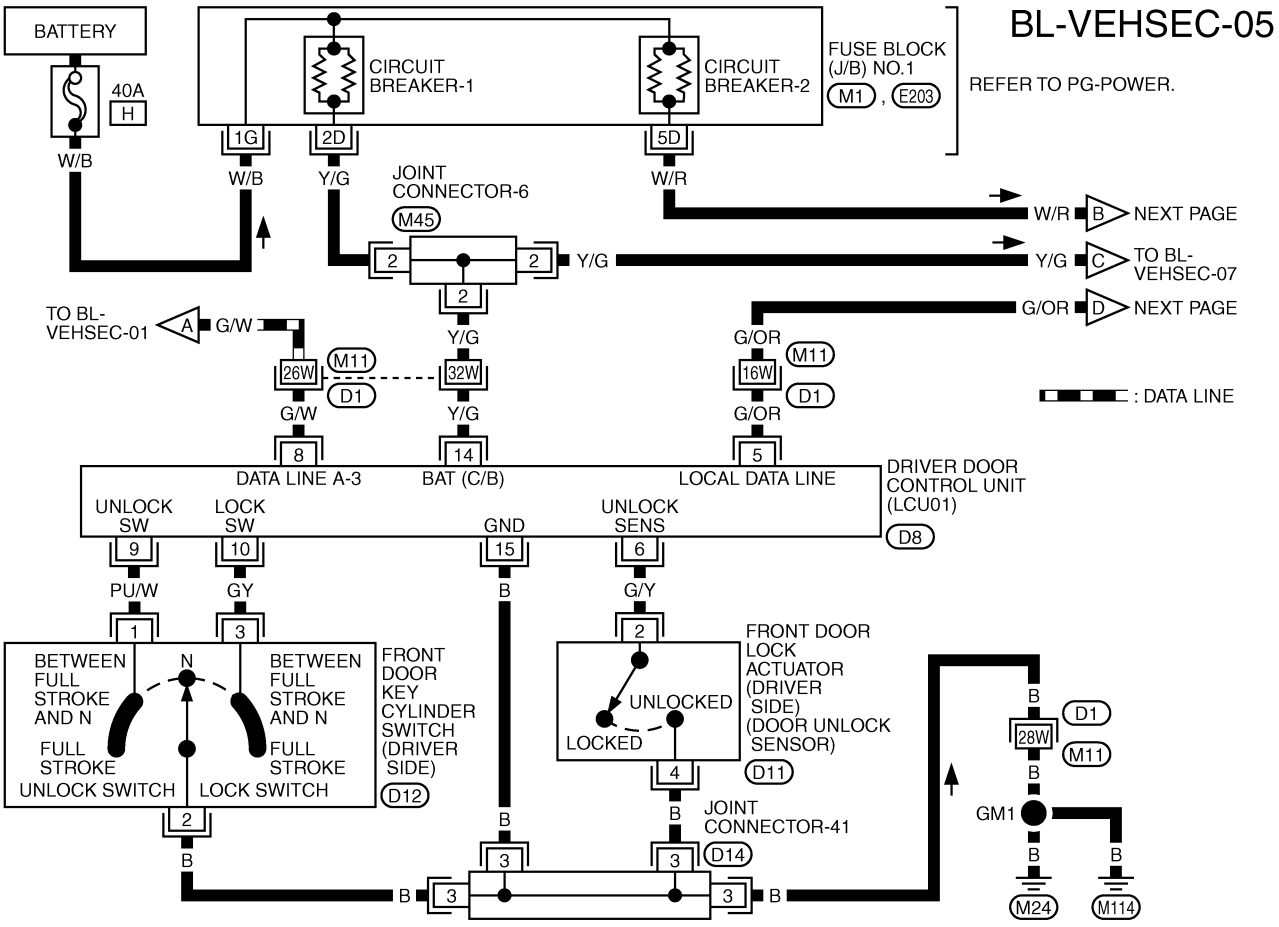


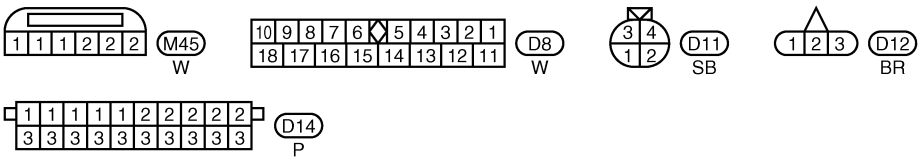
REFER TO THE FOLLOWING.

M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

M4 , E204 , B4 -ELECTRICAL UNITS

TIWM0027E





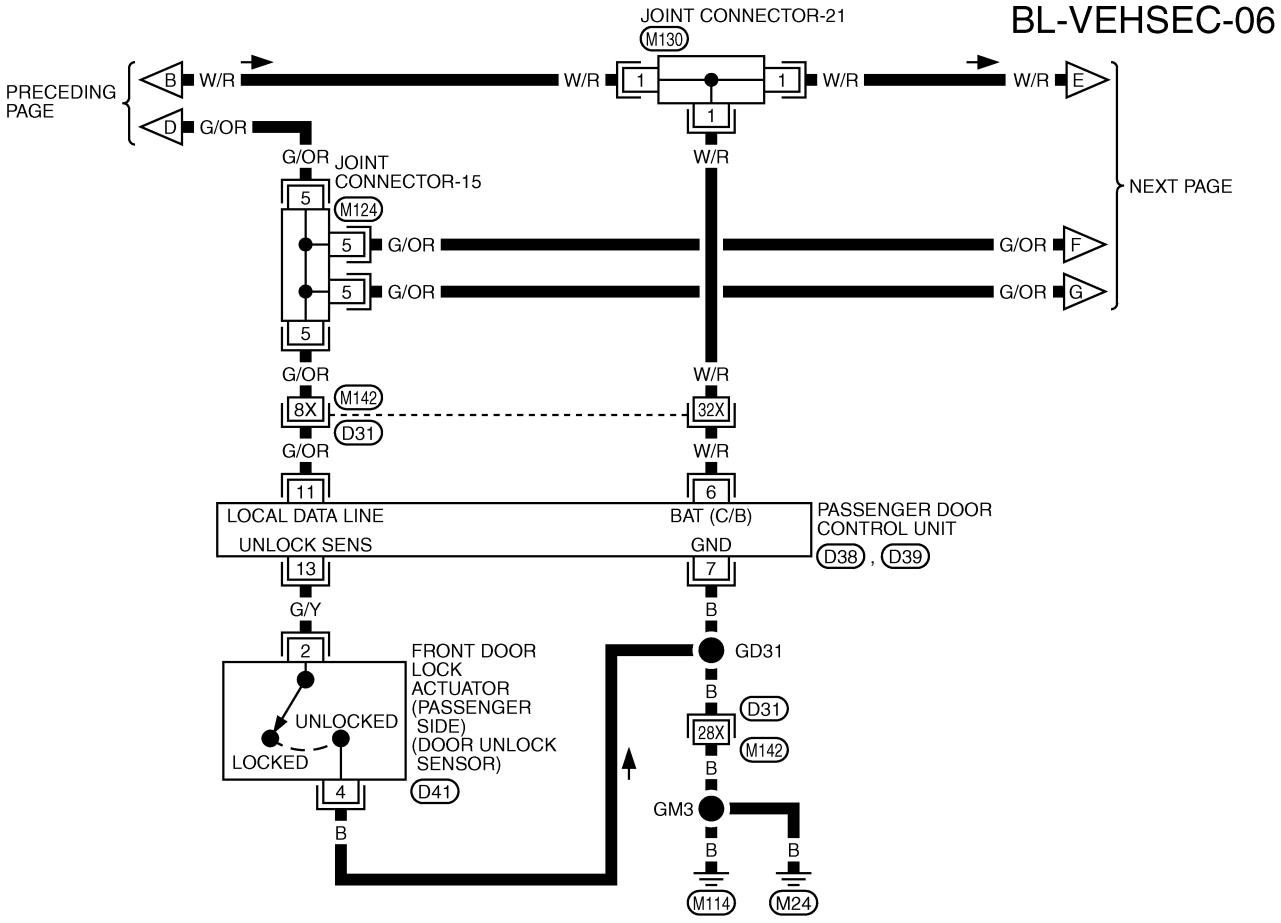
REFER TO THE FOLLOWING.

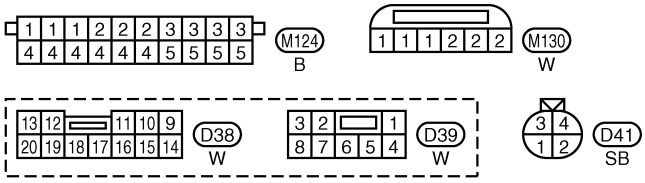
D1 -SUPER MULTIPLE JUNCTION (SMJ)

M1 , E203 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TIWM0028E

BL-VEHSEC-06

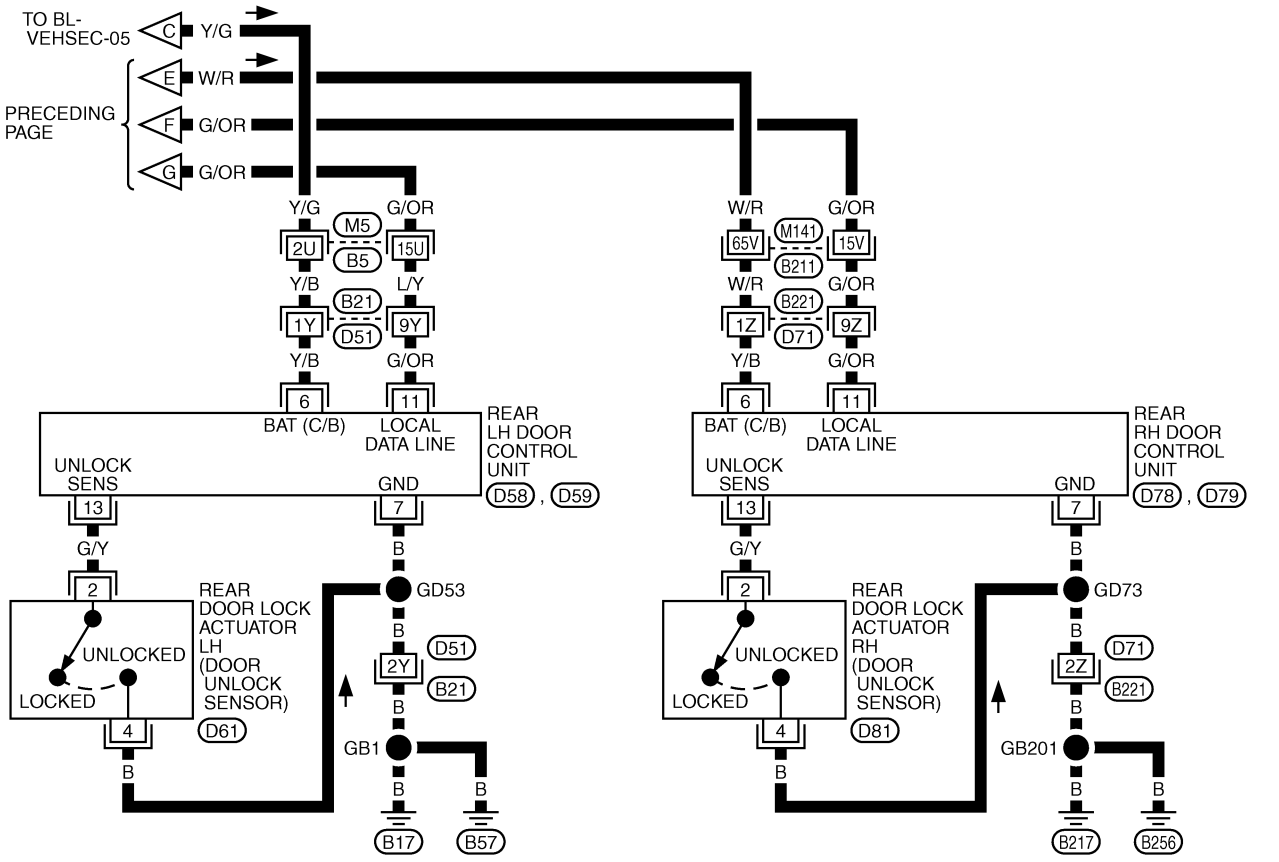


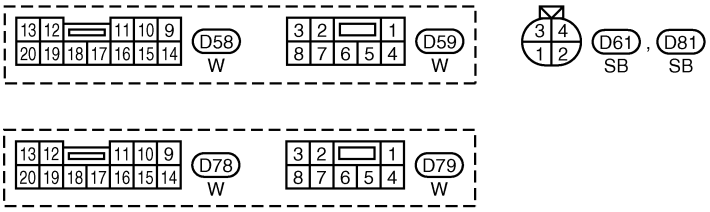


REFER TO THE FOLLOWING.

D31 -SUPER MULTIPLE JUNCTION (SMJ)

TIWM0029E





REFER TO THE FOLLOWING.
M5 , B21 , B211 , B221
-SUPER MULTIPLE JUNCTION (SMJ)

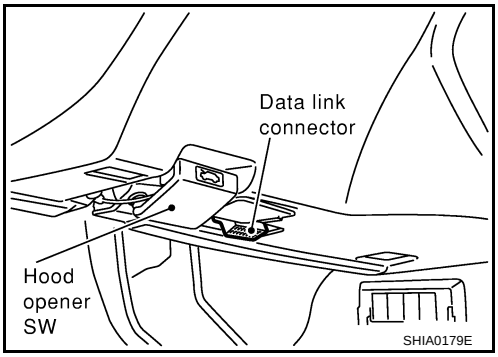
TIWM0030E

CONSULT-II Function

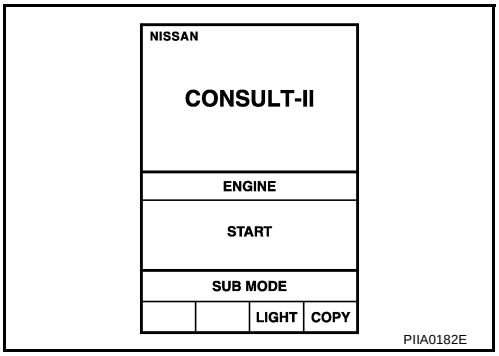
EIS000U1

CONSULT-II INSPECTION PROCEDURE

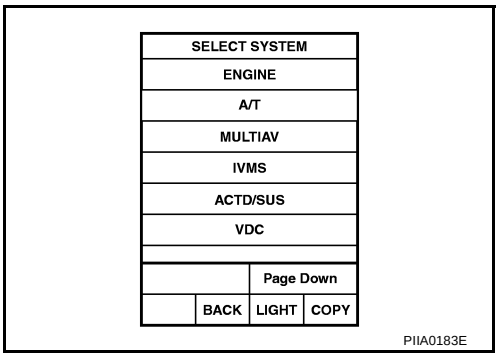
1. With the ignition switch OFF, connect CONSULT–II to the data link connector, and turn the ignition switch ON.



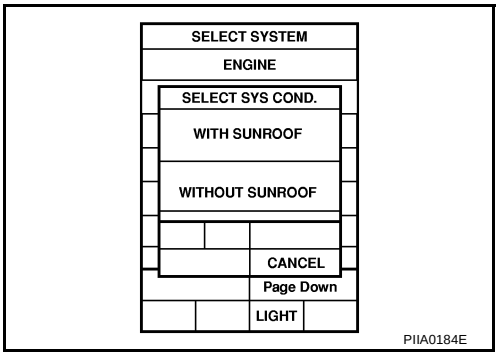
2. Touch "START".



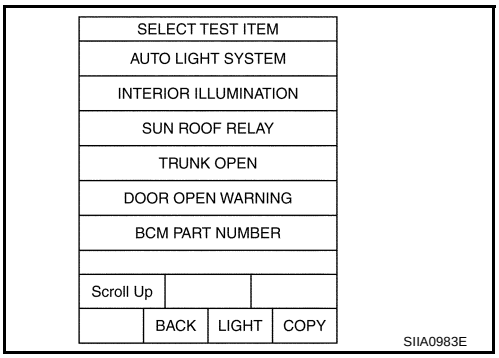
3. Touch "IVMS" on the "SELECT SYSTEM" screen.



4. Check the model specification, touch either "WITH SUNROOF" or "WITH OUT SUNROOF".
5. Touch "OK". If the selection is wrong, touch "CANCEL".



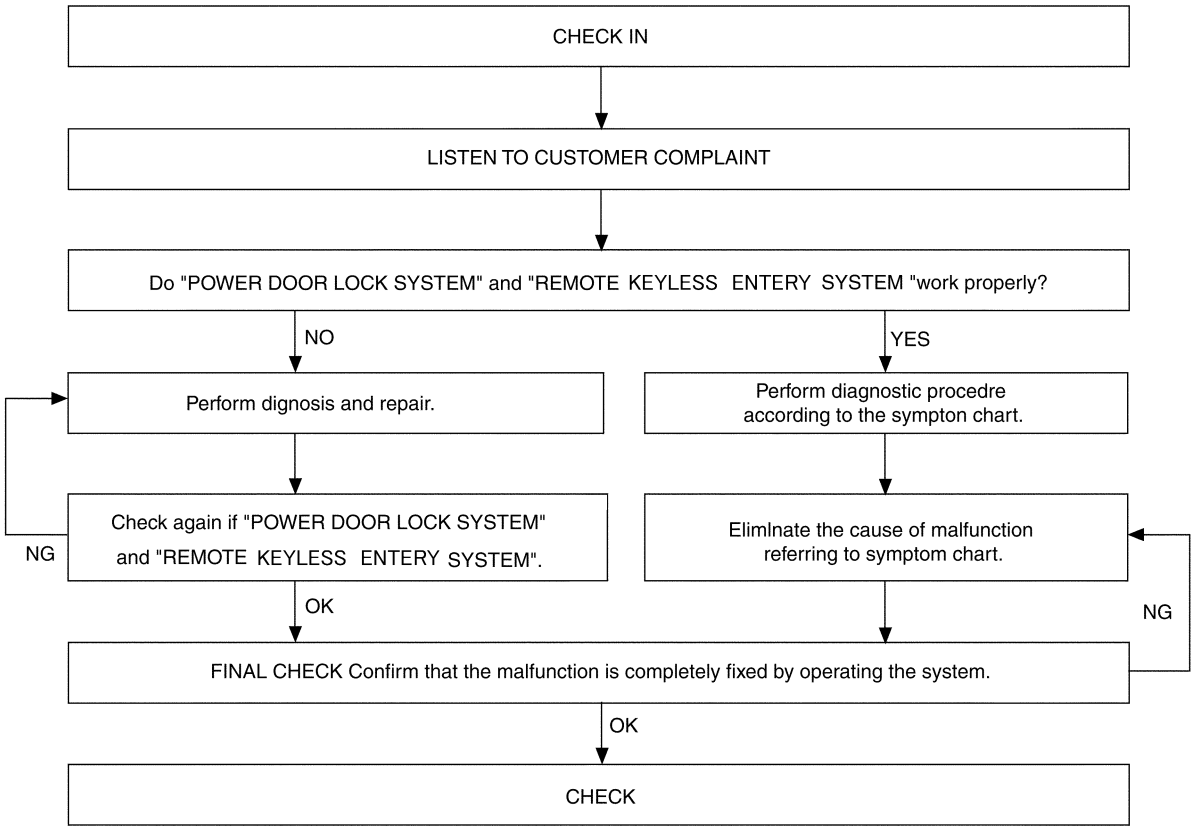
6. Touch "THEFT WARNING SYSTEM" on the "SELECT TEST ITEM" screen.
   - DATA MONITOR and ACTIVE TEST are available for the vehicle security system.



Trouble Diagnoses

EIS000U2

WORK FLOW



SIIA0991E

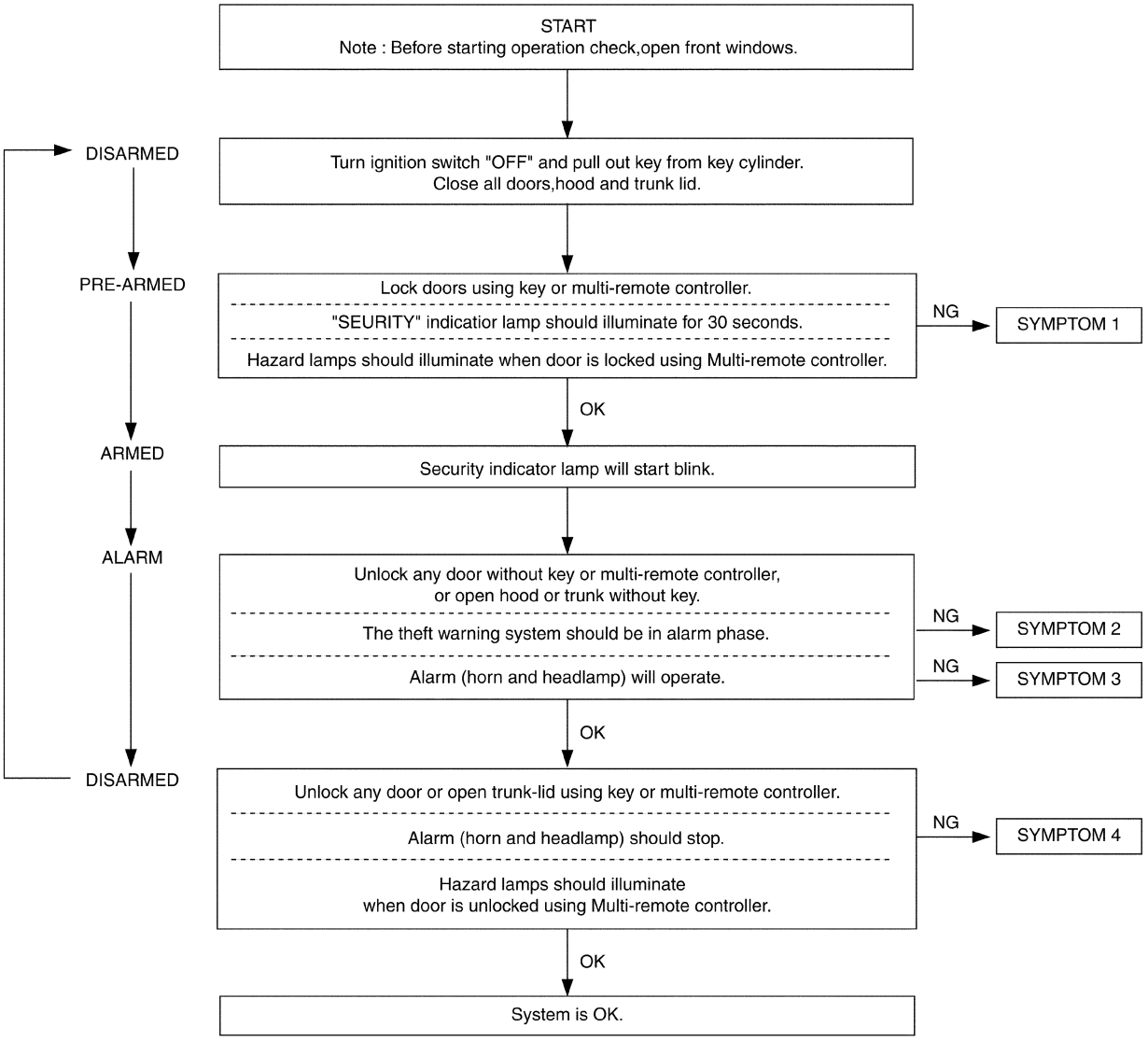
- “POWER DOOR LOCK SYSTEM” Diagnosis refer to BL-17, "POWER DOOR LOCK SYSTEM" .
- “REMOTE CONTROL SYSTEM” Diagnosis refer to BL-45, "REMOTE KEYLESS ENTRY SYSTEM" .

Preliminary Check

EIS00156

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

NOTE:
Before performing PRELIMINARY CHECK, disconnect IVCS unit connectors not to operate INFINITI communicator.



SIIA0992E

After performing preliminary check, go to symptom chart.

Symptom Chart

EIS000U5

PROCEDURE / SYMPTOM			Diagnostic procedure
1	Vehicle security system cannot be set by ····	All items ● Door out side key, ● Electronic key	Diagnostic Procedure 1 (Door, hood and trunk room lamp switch check) Refer to BL-115, "Diagnostic Procedure 1" .
			Diagnostic Procedure 3 (Door unlock sensor check) Refer to BL-119, "Diagnostic Procedure 3" .
			If the above systems are “OK”, replace BCM.
		Door outside key	Diagnostic Procedure 4 (Door key cylinder switch check) Refer to BL-120, "Diagnostic Procedure 4" .
			If the above systems are “OK”, check driver door LCU01.
	Security indicator does not turn “ON”.		Diagnostic Procedure 2 (Security indicator lamp check) Refer to BL-118, "Diagnostic Procedure 2" .
			If the above systems are “OK”, replace BCM.
2	*1 Vehicle security system does not alarm when ····	Any door is opened.	Diagnostic Procedure 1 (Door, hood and trunk room lamp switch check) Refer to BL-115, "Diagnostic Procedure 1" .
			If the above systems are “OK”, replace BCM.
		Any door is unlocked without using electronic key	Diagnostic Procedure 3 (Door unlock sensor check) Refer to BL-119, "Diagnostic Procedure 3" .
			If the above system is “OK”, check door LCU01 or door control unit.
3	Vehicle security alarm does not activate.	Horn alarm	Diagnostic Procedure 6 (Theft warning horn alarm check) Refer to BL-124, "Diagnostic Procedure 6" .
			If the above systems are “OK”, check horn system. Refer to WW-27, "HORN" .
		Head lamp alarm	Diagnostic Procedure 7 (Head lamp alarm check) Refer to BL-126, "Diagnostic Procedure 7" .
			If the above systems are “OK”, replace BCM.
4	Vehicle security system cannot be canceled by ····	Door outside key	Diagnostic Procedure 4 (Door key cylinder switch check) Refer to BL-120, "Diagnostic Procedure 4" .
			If the above systems are “OK”, check driver door LCU01.
		Trunk lid key	Diagnostic Procedure 5 (Trunk lid key cylinder switch check) Refer to BL-123, "Diagnostic Procedure 5" .
			If the above systems are “OK”, replace BCM.

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

Diagnostic Procedure 1

EIS000U6

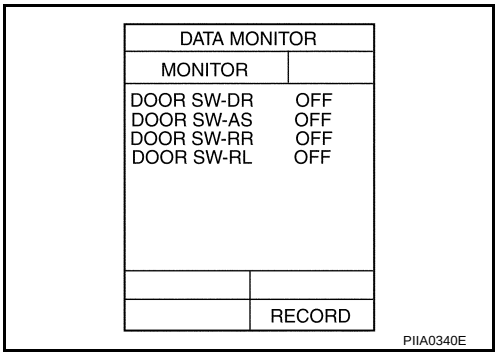
1 – 1 DOOR SWITCH CHECK

1. CHECK DOOR SWITCH INPUT SIGNAL

With CONSULT–II

- Check door switch (“DOOR SW”) in "DATA MONITOR" mode with CONSULT–II.

When door is open : DOOR SW ON
When door is closed : DOOR SW OFF



Without CONSULT–II

- Check all door switches in Switch monitor mode.
  Refer to Remote keyless entry system BL-70, "SWITCH MONITOR" .

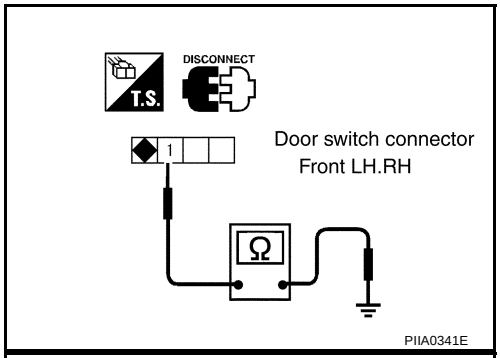
OK or NG?

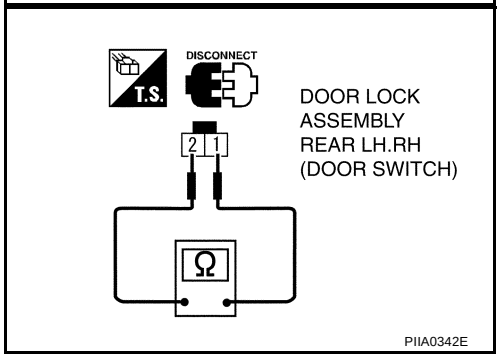
OK >> Door switch is OK.
NG >> GO TO 2.

2. CHECK DOOR SWITCH

1. Disconnect door switch connector.
2. Check continuity between following terminals and body ground.

Door switch connector		Terminals	Condition	Continuity
Front door switch	LH: B20	1(LH:W/R,RH:W/G)– Ground	Pressed	No
	RH: B220		Repressed	Yes
Rear door switch	LH: D62	1 (W)– 2 (B)	Pressed	No
	RH: D82		Repressed	Yes





OK or NG?

OK >> Check the following.
- Door switch ground condition (Front door) or door switch ground circuit (Rear door)
- Harness for open or short between door switch and BCM

NG >> Replace door switch.

1 – 2 HOOD SWITCH CHECK

1. CHECK HOOD SWITCH INPUT SIGNAL

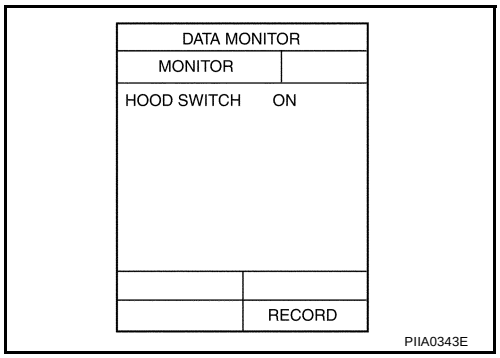
With CONSULT–II

- Check “HOOD SWITCH” in "DATA MONITOR" mode with CONSULT–II.

When hood is open : HOOD SW ON
When hood is closed : HOOD SW OFF

Without CONSULT–II

- Check hood switch in Switch monitor mode.
  Refer to Remote keyless entry system BL-70, "SWITCH MONITOR" .



OK or NG?

OK >> Hood switch is OK.
NG >> GO TO 2.

2. CHECK DOOR SWITCH

Check hood switch and hood fitting condition.

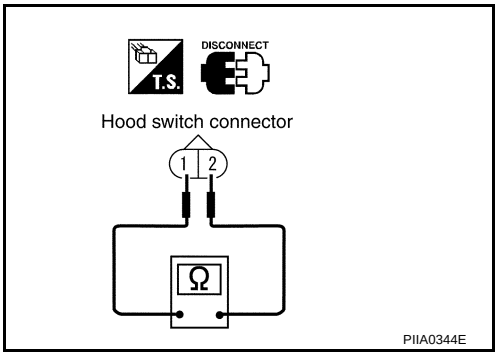
OK or NG?

OK >> GO TO 3.
NG >> Adjust installation of hood switch.

3. CHECK HOOD SWITCH

1. Disconnect hood switch connector.
2. Check continuity between hood switch terminals.

Connector	Terminals	Condition	Continuity
E54	1(LG/B)– 2(B)	Closed	No
		Open	Yes



OK or NG?

OK >> Check the following.
- Hood switch ground circuit
- Harness for open or short between hood switch and BCM

NG >> Replace hood switch.

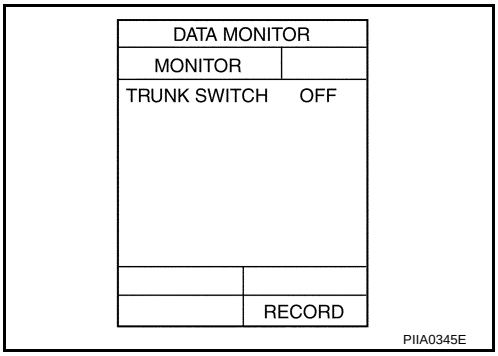
1 – 3 TRUNK ROOM LAMP SWITCH CHECK

1. CHECK TRUNK ROOM LAMP SWITCH INPUT SIGNAL

With CONSULT–II

- Check “TRUNK SWITCH” in "DATA MONITOR" mode with CONSULT–II.

When trunk lid is open : TRUNK SW ON
When trunk lid is closed : TRUNK SW OFF



Without CONSULT–II

- Check trunk room lamp switch in Switch monitor mode. Refer to Remote keyless entry system BL-70, "SWITCH MONITOR" .

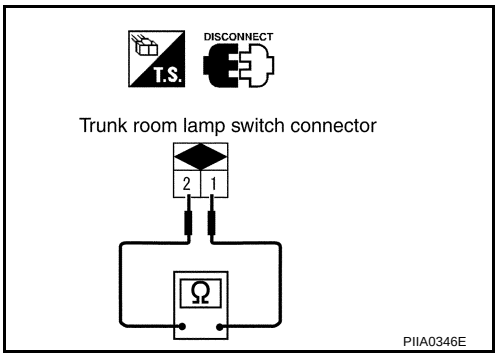
OK or NG?

OK >> Trunk room lamp switch is OK.
NG >> GO TO 2.

2. CHECK TRUNK ROOM LAMP SWITCH

1. Disconnect trunk room lamp switch connector.
2. Check continuity between trunk room lamp switch terminals.

Connector	Terminals	Condition	Continuity
B54	1(P/L)– 2(B)	Closed	No
		Open	Yes



OK or NG?

OK >> Check the following.
- Trunk room lamp switch ground circuit
- Harness for open or short between trunk room lamp switch and BCM

NG >> Replace trunk room lamp switch.

Diagnostic Procedure 2

EIS000UM

SECURITY INDICATOR LAMP CHECK

1. INDICATOR LAMP ACTIVE TEST

With CONSULT–II

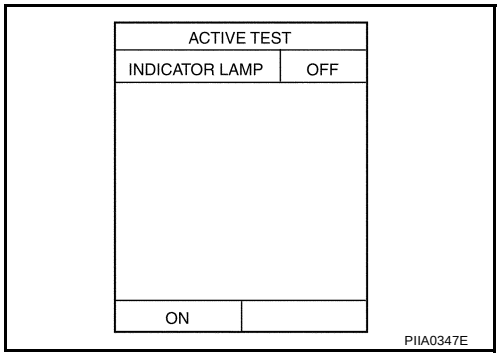
- Check “INDICATOR LAMP” in "ACTIVE TEST" mode with CONSULT–II.

Perform operation shown on display.
Indicator lamp should illuminate.

NOTE:
If CONSULT-II is not available, skip this procedure and go to the next procedure.

OK or NG?

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



2. INDICATOR LAMP CHECK

Check indicator lamp condition.

OK or NG?

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

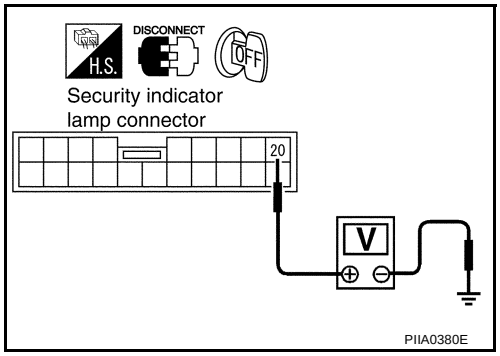
3. CHECK POWER SUPPLY CIRCUIT FOR INDICATOR LAMP

1. Disconnect security indicator lamp connector.
2. Check voltage between indicator lamp connector M83 terminal 20(Y/G) and ground.

: Battery voltage should exist.

OK or NG?

OK >> Check harness for open or short between security indicator lamp and BCM.
NG >> Check the following.
- 10A fuse [No. 6, located in fuse block (J/B) No.1]
- Harness for open or short between security indicator lamp and BCM.



Diagnostic Procedure 3

EIS000UN

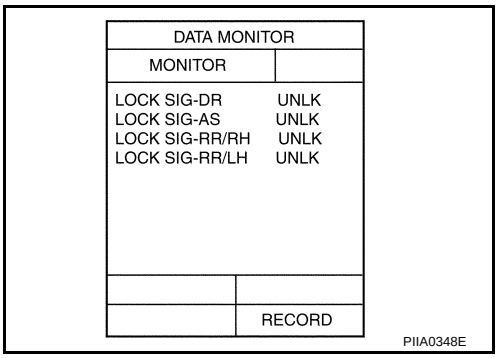
DOOR UNLOCK SENSOR CHECK

1. CHECK DOOR UNLOCK SENSOR INPUT SIGNAL

With CONSULT–II

- Check door unlock sensor (“LOCK SIG”) in "DATA MONITOR" mode with CONSULT–II.

When door is open : LOCK SIG LOCK
When door is closed : LOCK SIG UNLK



Without CONSULT–II

- Check door lock knob operation in Switch monitor mode. Refer to Remote keyless entry system BL-70, "SWITCH MONITOR" .

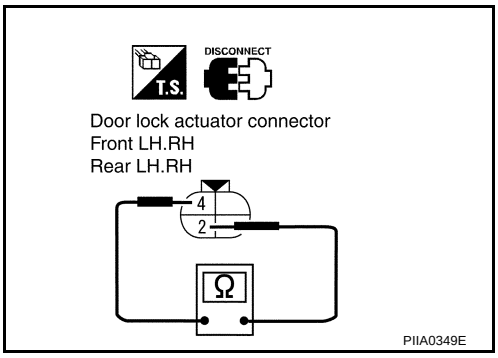
OK or NG?

OK >> Door unlock sensor is OK.
NG >> GO TO 2.

2. CHECK DOOR UNLOCK SENSOR

1. Disconnect door lock actuator connector.
2. Check continuity between door lock actuator (door unlock sensor) terminals 2(G/Y) and 4(B).

Actuator connector		Terminals	Condition	Continuity
Front door	LH: D11	2 (G/Y) – 4 (B)	Locked	No
	RH: D41			
Rear door	LH: D61		Unlocked	Yes
	RH: D81			



OK or NG?

OK >> Check the following.
- Ground circuit for door unlock sensor
- Harness for open or short between door LCU or door control unit and door unlock sensor

NG >> Replace door lock actuator.

Diagnostic Procedure 4

EIS000UO

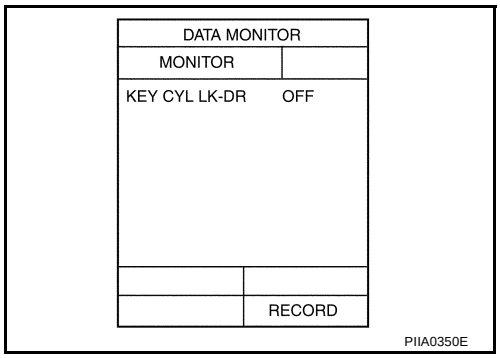
4–1 DOOR KEY CYLINDER LOCK SWITCH CHECK

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

With CONSULT–II

- Check driver door key cylinder switch (“KEY CYL LK”) in "DATA MONITOR" mode with CONSULT–II.

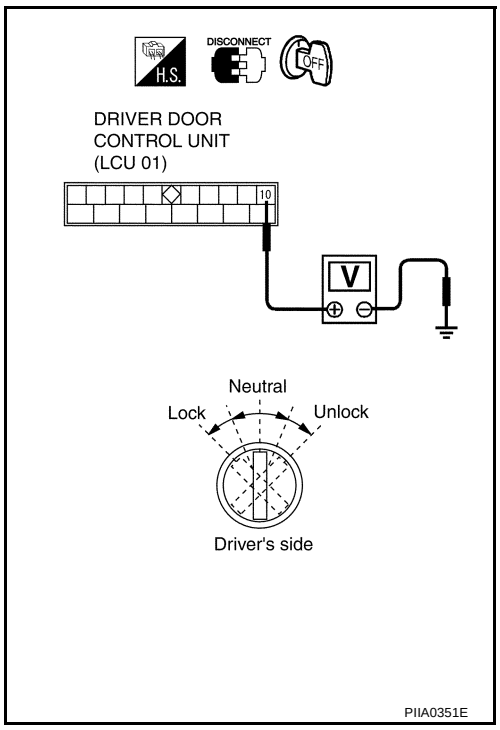
“KEY CYL LK” should be “ON” when key inserted in door key cylinder was turned to lock.



Without CONSULT–II

Check voltage between driver door control unit (LCU) connector D8 terminal 10 (GY) and ground.

Key position	Voltage
Neutral / Unlock	Approx. 5V
Lock	0V



OK or NG?

OK >> Driver door key cylinder switch (lock) is OK.
NG >> GO TO 2.

2. CHECK DOOR KEY CYLINDER SWITCH

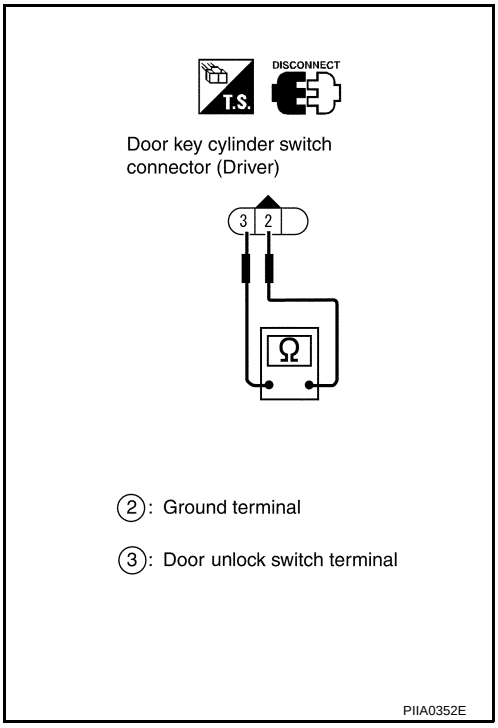
1. Disconnect driver door key cylinder switch connector.
2. Check continuity between driver door key cylinder switch connector D12 terminals 2(B) and 3(G/Y).

Key position	Continuity
Neutral / Unlock	No
Lock	Yes

OK or NG?

OK >> Check the following.
- Driver door key cylinder switch ground circuit
- Harness for open or short between driver door control unit (LCU) and driver door key cylinder switch

NG >> Replace driver door key cylinder switch.



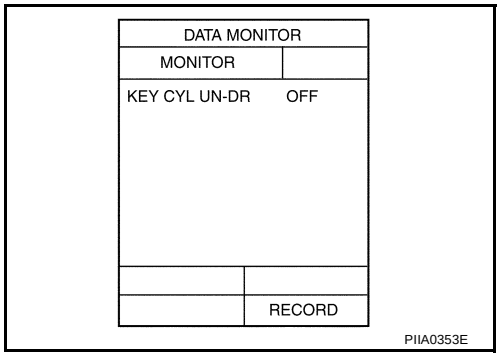
4–2 DOOR KEY CYLINDER UNLOCK SWITCH CHECK

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

With CONSULT–II

- Check driver door key cylinder switch (“KEY CYL UN”) in "DATA MONITOR" mode with CONSULT–II.

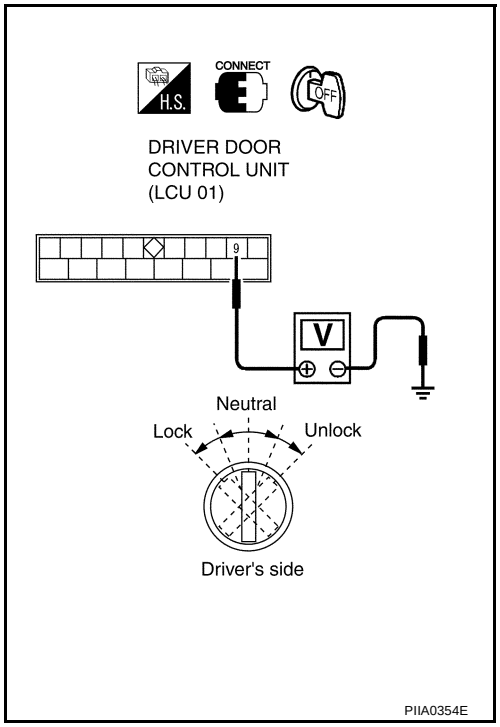
“KEY CYL UN–DR” should be “ON” when key inserted in driver door key cylinder was turned to lock.



Without CONSULT–II

Check voltage between LCU01 connector D8 terminal 9 (PU/W) and ground.

Key position	Voltage
Neutral / Lock	Approx. 5V
Unlock	0V



OK or NG?

OK >> driver door key cylinder switch (unlock) is OK.
NG >> GO TO 2.

2. CHECK DOOR KEY CYLINDER SWITCH

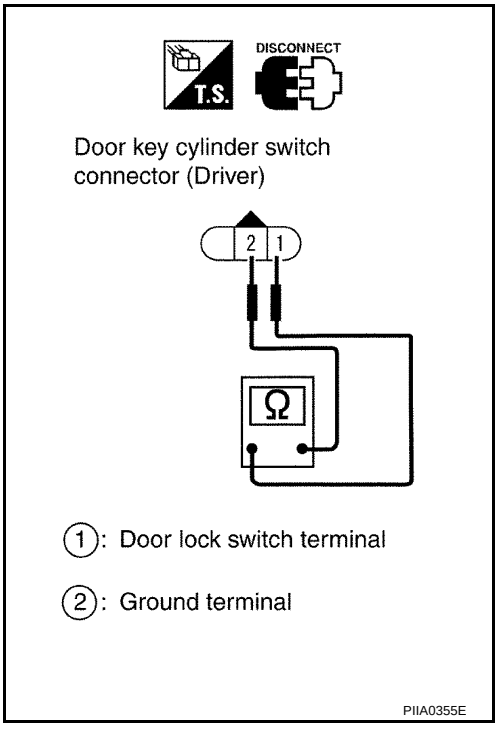
1. Disconnect driver door key cylinder switch connector.
2. Check continuity between driver door key cylinder switch connector D12 terminals 1(PU/W) and 3(GY).

Key position	Continuity
Neutral / Lock	No
Unlock	Yes

OK or NG?

OK >> Check the following.
- Driver door key cylinder switch ground circuit
- Harness for open or short between driver door control unit (LCU) and driver door key cylinder switch

NG >> Replace driver door key cylinder switch.



Diagnostic Procedure 5

EIS000UQ

TRUNK LID KEY UNLOCK SIGNAL CHECK

1. CHECK TRUNK KEY CYLINDER SWITCH INPUT SIGNAL (UNLOCK SIGNAL)

With CONSULT–II

Check trunk key cylinder switch (“TRUNK UNLK SW”) in "DATA MONITOR" mode with CONSULT–II.

- When key in key cylinder is at “NEUTRAL” position,

  TRUNK UNLK SW: OFF

- When key is “UNLOCK” position,

  TRUNK UNLK SW: ON

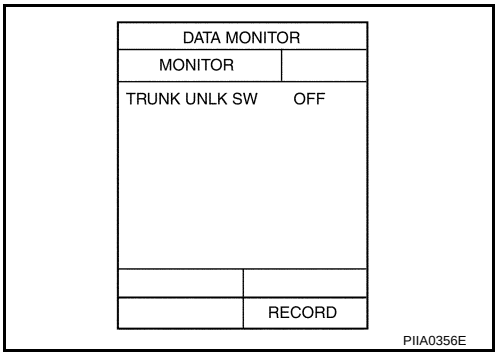
Without CONSULT–II

- Check trunk key cylinder switch in Switch monitor mode.
  Refer to Remote keyless entry system BL-70, "SWITCH MONITOR" .

OK or NG?

OK >> Trunk key cylinder switch is OK.

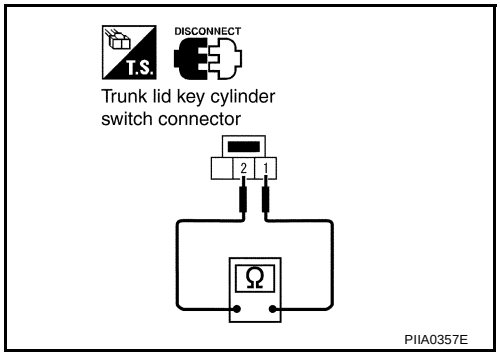
NG >> GO TO 2.



2. CHECK TRUNK KEY CYLINDER SWITCH (UNLOCK SWITCH)

1. Disconnect trunk key cylinder switch connector.
2. Check continuity between trunk key cylinder switch connector B46 terminals 1(LG) and 2(B).

Condition	Continuity
Neutral	No
Unlocked	Yes



OK or NG?

OK >> Check the following.
- Trunk key cylinder switch ground circuit
- Harness for open or short between trunk key cylinder switch and BCM

NG >> Replace trunk key cylinder switch.

Diagnostic Procedure 6

EIS000UR

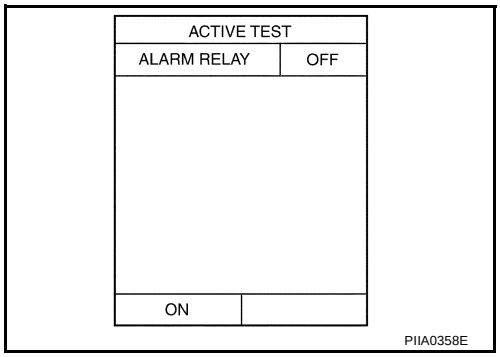
THEFT WARNING HORN ALARM CHECK

1. CHECK VEHICLE SECURITY HORN ALARM OPERATION

With CONSULT–II

- Check horn relay “ALARM RELAY” in "ACTIVE TEST" mode with CONSULT–II.
- Perform operation shown on display.

Theft warning horn alarm should operate.



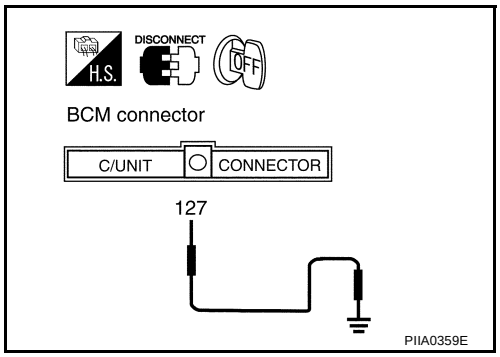
Without CONSULT–II

1. Disconnect BCM connector.
2. Apply ground to BCM connector E204 terminal 127(G/W).

Does horn alarm activate?

OK or NG?

OK >> Horn alarm is OK.
NG >> GO TO 2.



2. CHECK HORN RELAY

Check horn relay condition.

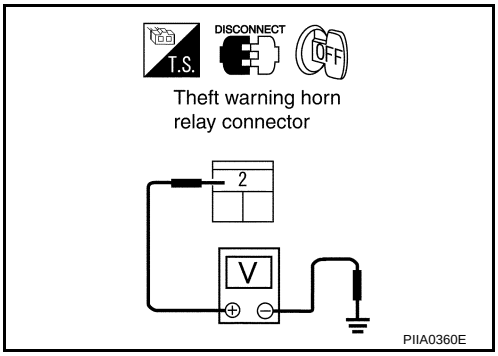
OK or NG?

OK >> GO TO 3.
NG >> Replace horn relay.

3. CHECK POWER SUPPLY FOR HORN RELAY

1. Disconnect horn relay connector.
2. Check voltage between horn relay connector E3-5 terminal 2 and ground.

Battery voltage should exist.



OK or NG?

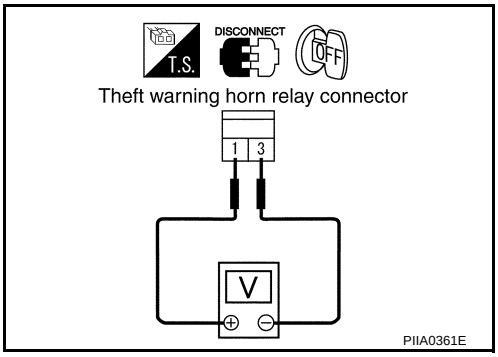
OK >> GO TO 4.
NG >> Check the following.

- 15A fuse [No. 56, located in the fuse, fusible link and relay block (J/B)]
- Harness for open or short between horn relay and fuse

4. CHECK HORN RELAY CIRCUIT

1. Disconnect horn relay connector.
2. Check voltage between horn relay connector E3-5 terminals 1 and 3.

Battery voltage should exist



OK or NG?

OK >> Check harness for open or short between horn relay and BCM.
NG >> Check harness for open or short.

Diagnostic Procedure 7

EIS000US

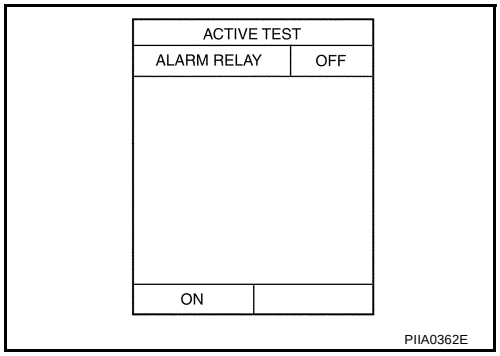
THEFT WARNING HEAD LAMP ALARM CHECK

1. CHECK VEHICLE SECURITY HEAD LAMP ALARM OPERATION

With CONSULT–II

- Check head lamp relay “ALARM RELAY” in "ACTIVE TEST" mode with CONSULT–II.
- Perform operation shown on display.

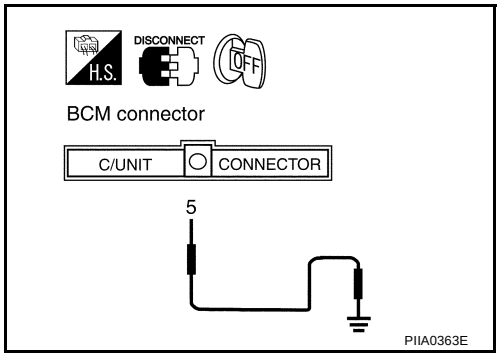
Theft warning head lamp alarm should operate.



Without CONSULT–II

1. Disconnect BCM connector.
2. Apply ground to BCM connector M4 terminal 5(R/Y).

Does head lamp alarm activate?



OK or NG?

OK >> Head lamp alarm is OK.
NG >> GO TO 2.

2. CHECK HEAD LAMP RELAY 1

- Does head lamp come on when turning lighting switch “ON”?

YES or NO?

YES >> GO TO 3.
NO >> Check head lamp system. Refer to LT-5, "HEADLAMP (FOR USA)" .

3. CHECK HEAD LAMP RELAY 2

- Check head lamp relay condition.

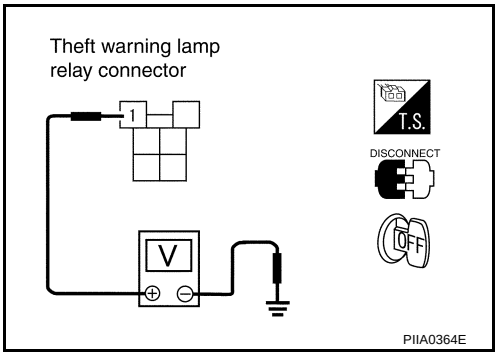
OK or NG?

OK >> GO TO 4.
NG >> Replace horn relay.

4. CHECK POWER SUPPLY FOR HEAD LAMP RELAY

1. Disconnect head lamp relay-1 connector.
2. Check voltage between head lamp relay-1 connector E3-4 terminal 1 and ground.

Battery voltage should exist.



OK or NG?

OK >> GO TO 5.
NG >> Harness for open or short between head lamp relay and battery.

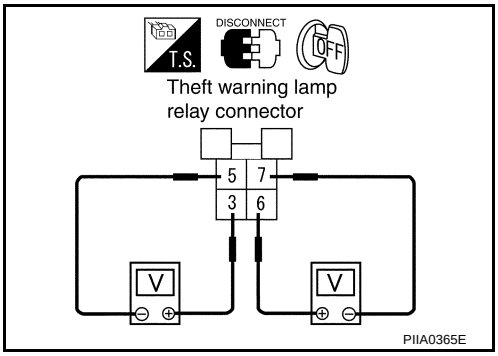
5. CHECK HORN RELAY CIRCUIT

1. Turn lighting switch to 2nd position.
2. Check voltage between head lamp relay-1 connector E3-4 terminals 3 and 5.

Battery voltage should exist

3. Check voltage between head lamp relay-1 connector E3-4 terminals 6 and 7.

Battery voltage should exist



OK or NG?

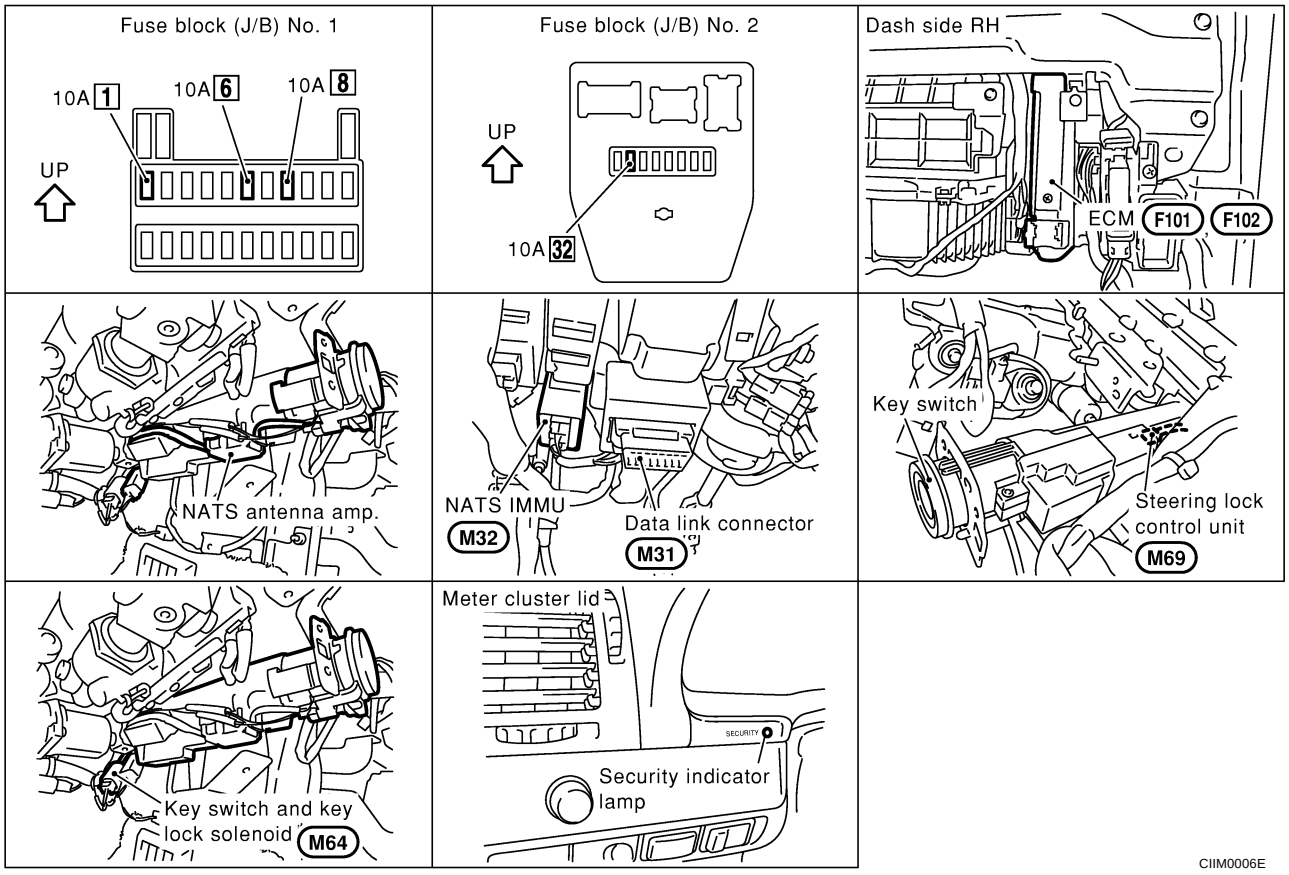
OK >> Check harness for open or short between head lamp relay and BCM.
NG >> Check harness for open or short.

ELECTRONIC KEY SYSTEM

PFP:80561

Component Parts and Harness Connector Location

EIS000O4



System Description

EIS000O3

- Every electronic key (including transponder) has its own key ID No. However, only an electronic key with the key ID registered in the NATS IMMU and ECM can turn ON while inserted in the ignition key cylinder, allowing the engine to start.
- An ignition key (electronic key) with straight contour is adopted to prevent the electronic key from vehicle theft by abuse of duplicated key etc.
- If the batteries for the vehicle and handheld transmitter are discharged, using the emergency key integrated into the electronic key, the driver/passenger doors and trunk lid can be operated for open/close, and the steering wheel lock can be unlocked.

  NOTE:
  The engine cannot be started with an emergency key.
- If any of ECM, NATS IMMU, steering lock control unit (integrated in the key cylinder) or ignition key (electronic key) has been replaced, or if the trouble diagnosis requires additional registration, mandatory re-registration procedure and registration of the electronic key ID code (if an ignition-key is added) are required.

  NOTE:
  All the keys kept by the vehicle owner re-registration of the key ID (electronic key) shall be necessary.
- If the vehicle owner requires, electronic key ID codes can be registered for up to four keys (including the electronic key). In this case, the key IDs shall also be registered.

NOTE:

- The key ID code and remote controller ID code for the key equipped on the vehicle have already been registered at factory.
- When conducting registration of key ID at repair, part replacement, and electronic key addition, even the registered ignition (standard) key shall be registered again. Therefore, collect all the keys from the vehicle owner.

SECURITY INDICATOR

Condition of security indicator	Key	Operation or condition			
		Ignition switch: ON position	Ignition switch: ACC position	Ignition switch: OFF position (electronic key is inserted.)	Ignition switch: OFF position (electronic key is not inserted.)
	Electronic key	Lamp OFF	Lamp OFF	Lamp OFF	Blinking
	Emergency key	ON	ON	ON	Blinking

OUTLINE OF ELECTRONIC KEY OPERATION

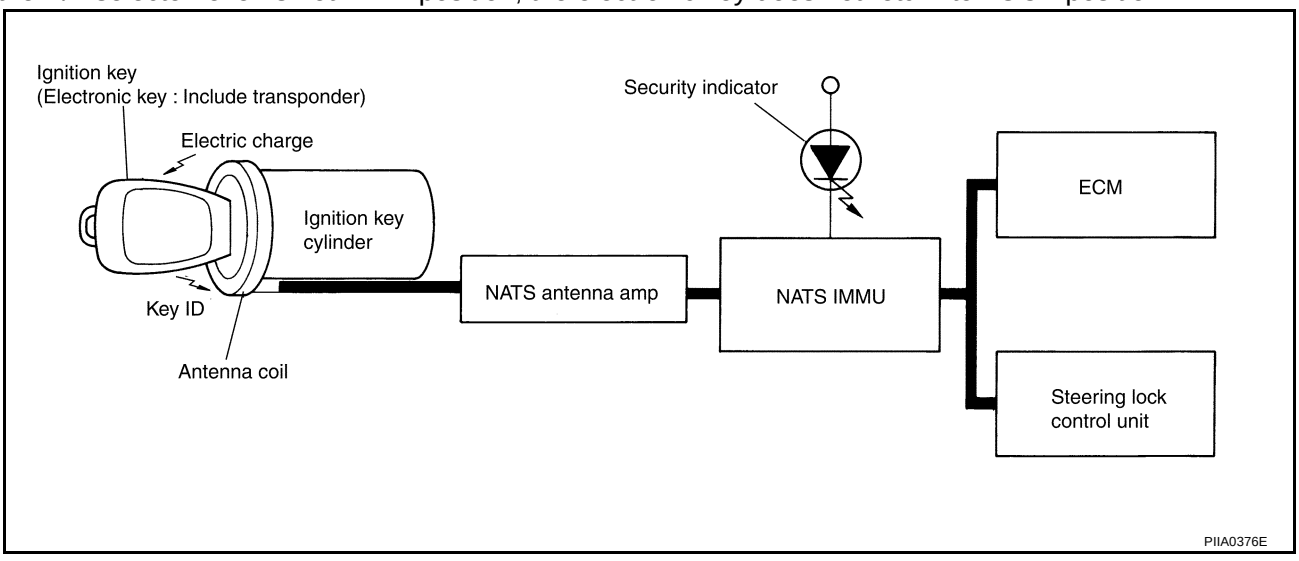
Operation 1 (Insert the key into the ignition key cylinder.)

1. By inserting the ignition key (electronic key: built-in transponder) into the key cylinder, the key detection switch is turned to ON.
2. The power is supplied from the immobilizer control module → immobilizer antenna amp → antenna coil.
3. The current through the antenna coil induces a magnetic field.
4. The coil in the transponder induces electromotive force by mutual induction, which is charged in the capacitor.
5. The transponder uses the charged energy to transmit the built-in key ID signal.
6. The sent key ID signal is received by the antenna coil and transmitted via the immobilizer antenna amp to NATS IMMU.
7. NATS IMMU compares the stored key ID and received one, and only if the matching result is OK, it transmits the key rotation permission signal to the steering lock control unit (integrated in the key cylinder).
8. When the key rotation permission signal is input, the steering lock control unit activates the electronic key solenoid valve in the key cylinder to allow the electronic key to turn.
9. Turn ignition switch ON.
10. Only if the key ID matching result is OK, the ECM allows the engine to start.

Operation 2 (Withdraw the key from the ignition key cylinder.)

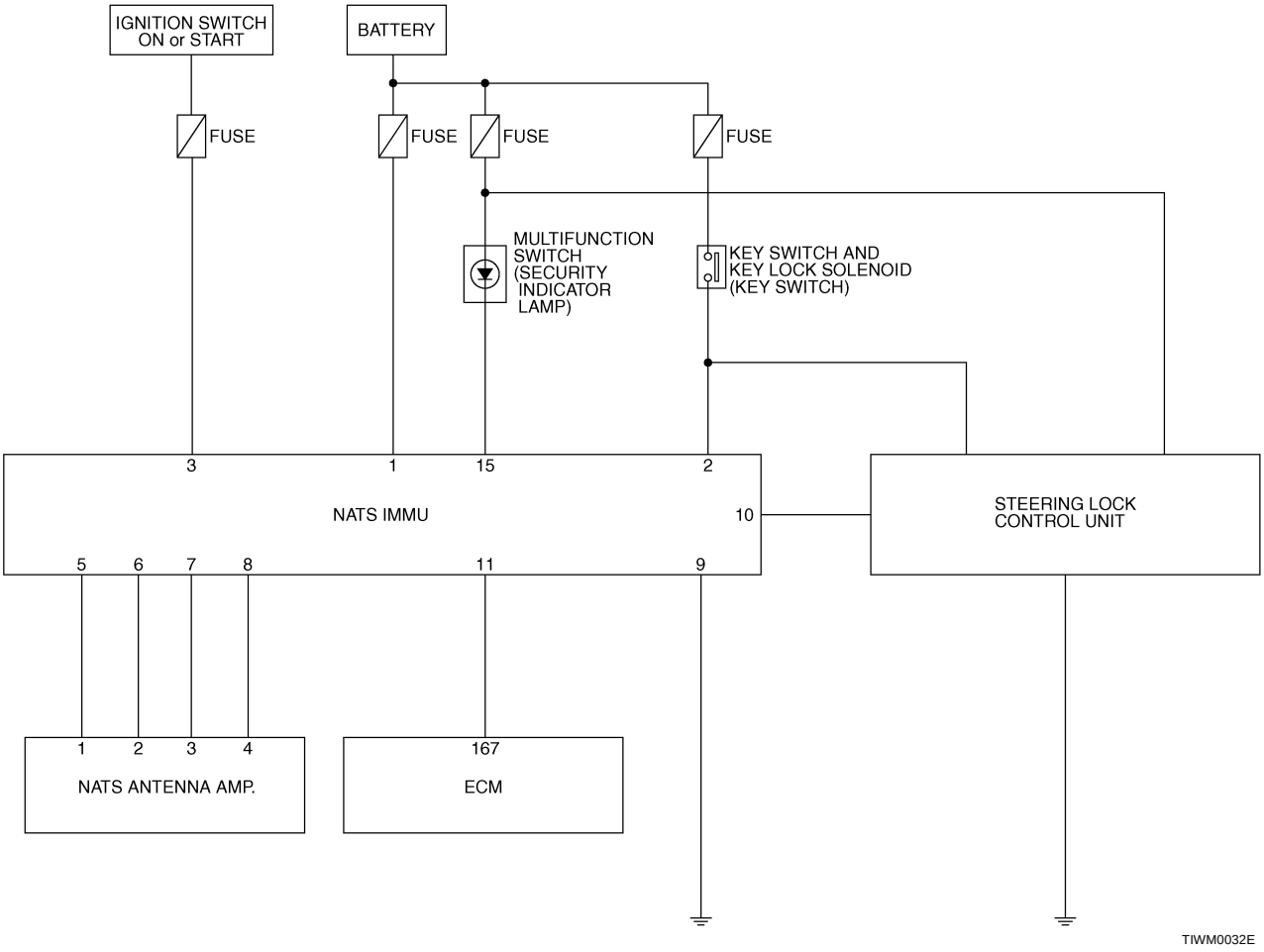
1. Return the electronic key to the LOCK position of the steering system lock.
2. When the key is removed, the electronic key solenoid valve in the key cylinder returns to inhibit the key from turning. In this case, the steering lock control unit processes the key switch ON → OFF signal by itself to inhibit the electronic key from turning.

NOTE:
If the A/T selector lever is not in "P" position, the electronic key does not return to LOCK position.



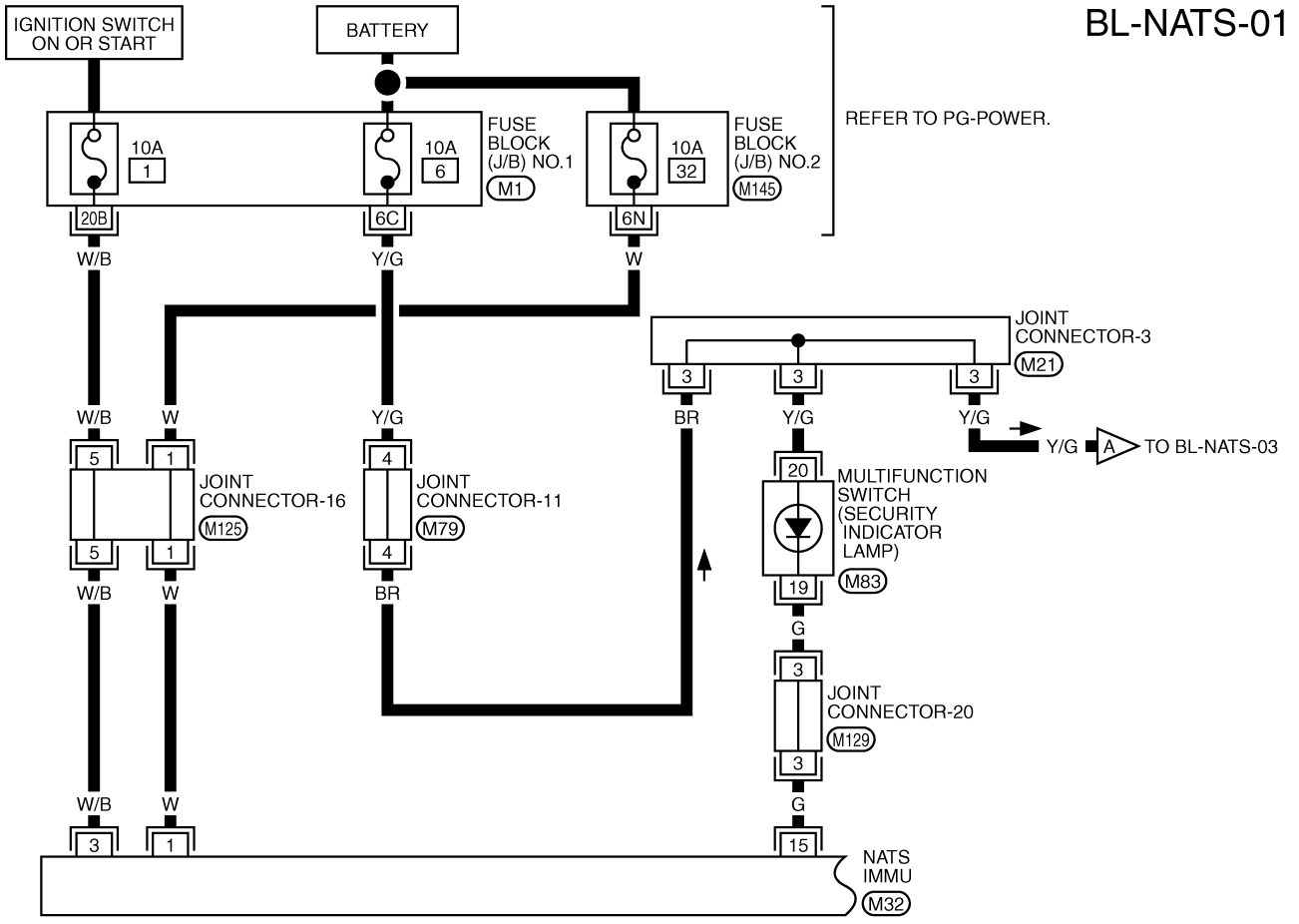
Schematic

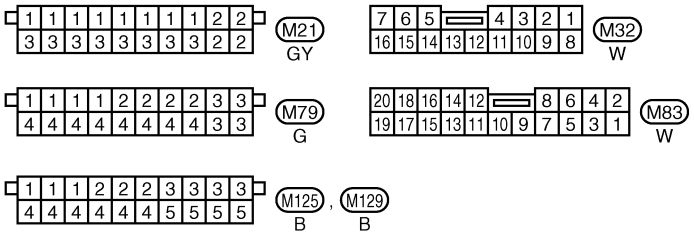
EIS0012R



Wiring Diagram – NATS –

EIS0012S





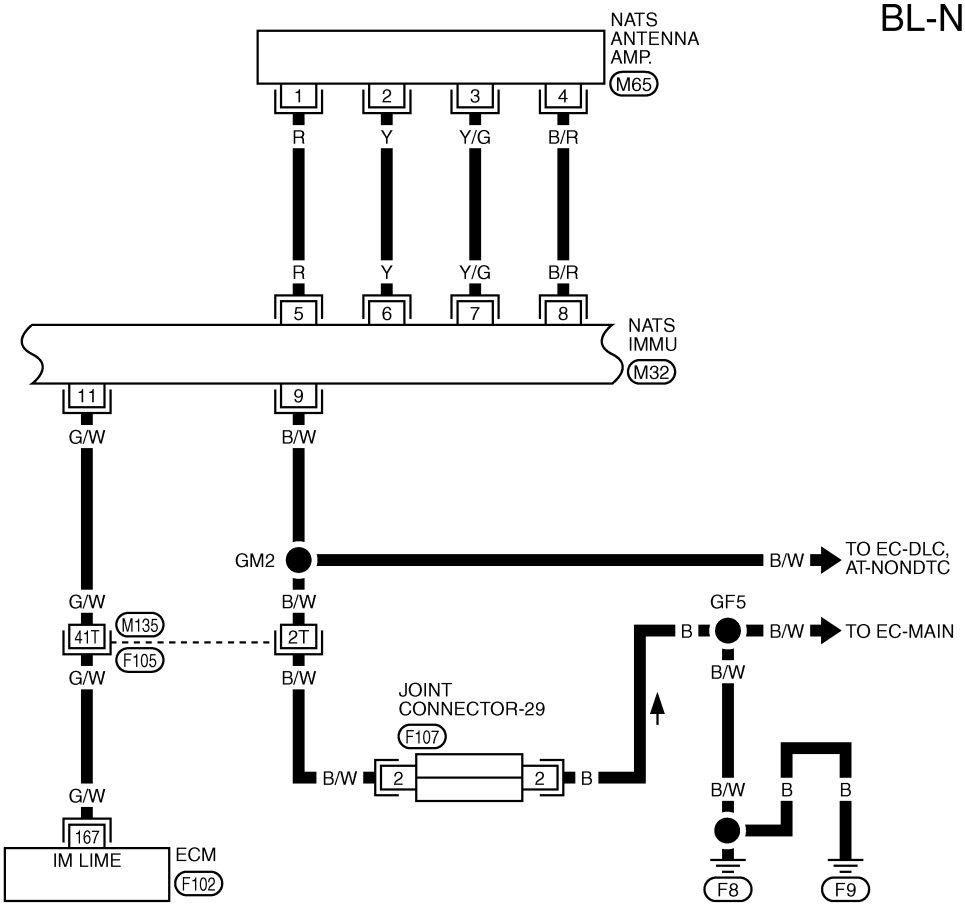
REFER TO THE FOLLOWING.

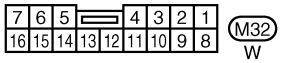
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

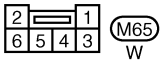
M145 -FUSE BLOCK-JUNCTION BOX (J/B) NO.2

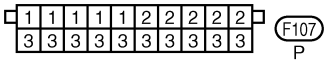
TIWM0033E

BL-NATS-02









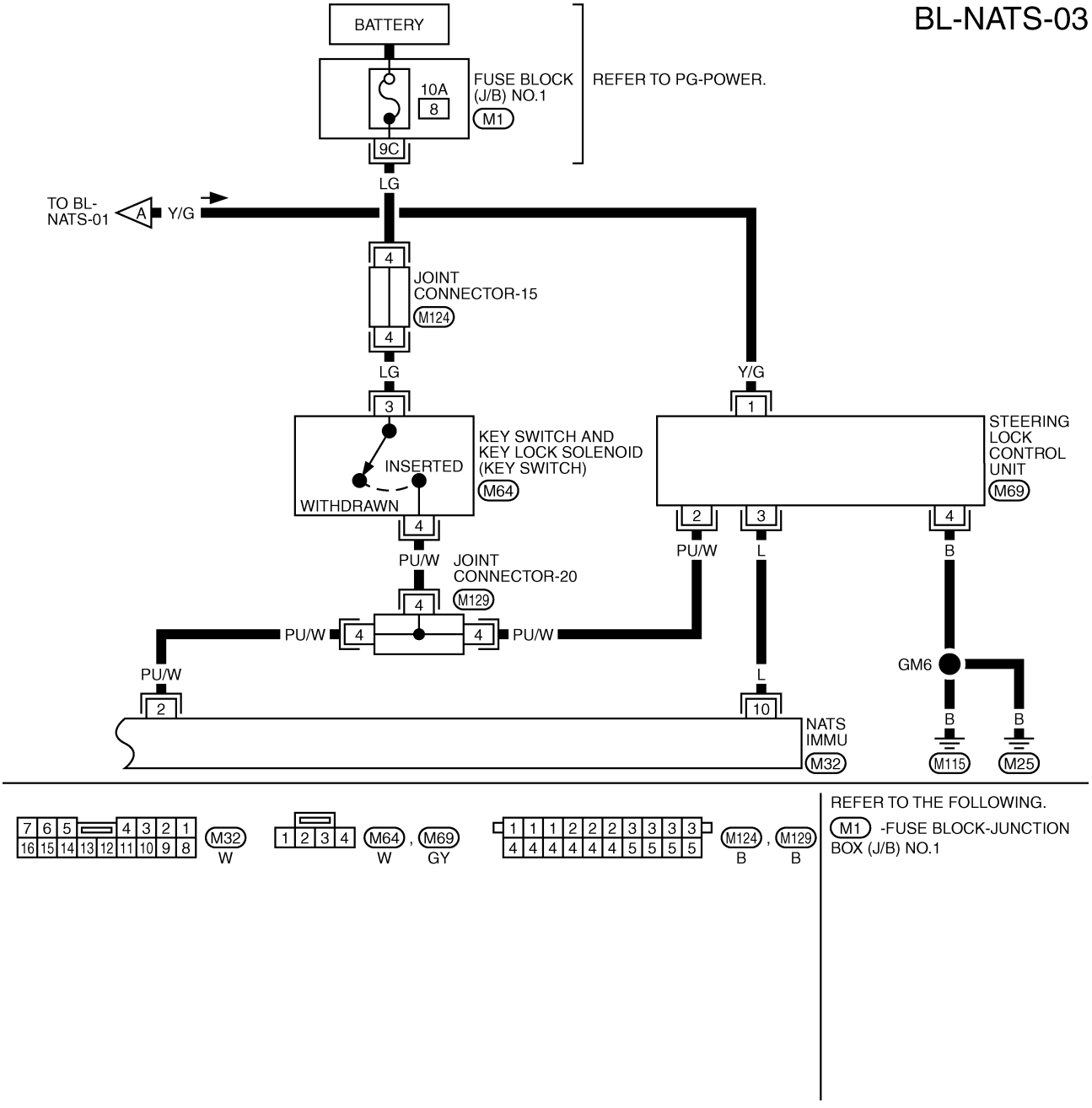
REFER TO THE FOLLOWING.

F105 -SUPER MULTIPLE JUNCTION (SMJ)

F102 -ELECTRICAL UNITS

TIWM0034E

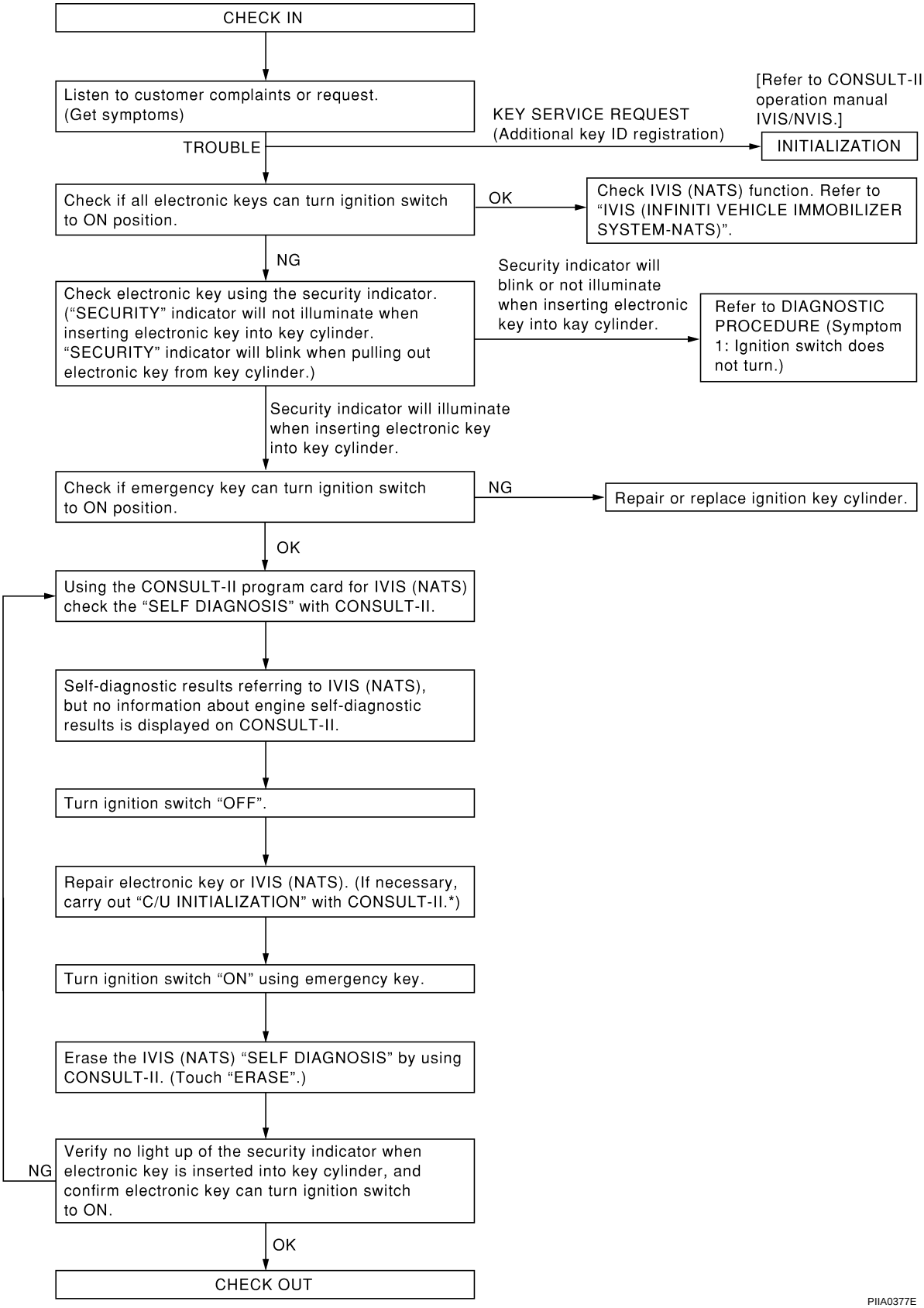
BL-NATS-03



TIWM0035E

Work Flow

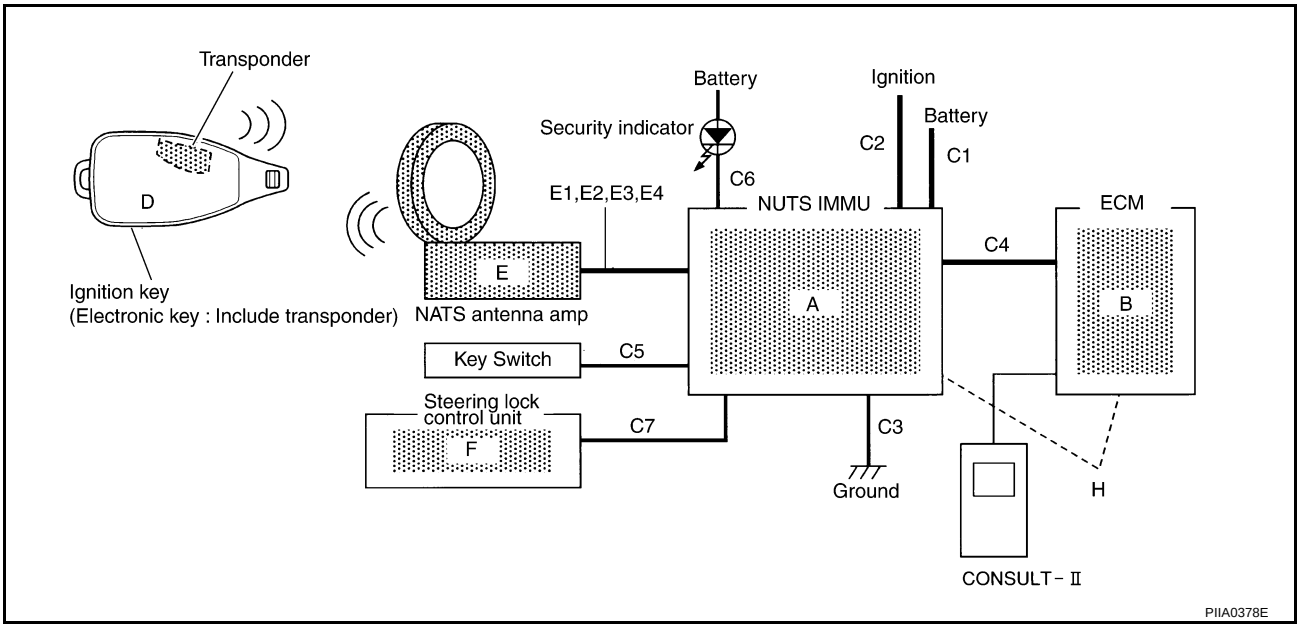
EIS000O7



PIIA0377E

Diagnostic System Diagram

EIS000O8



Symptom Chart

EIS0012T

SYMPTOM 1: ELECTRONIC KEY DOES NOT TURN

- Before performing the following diagnosis, be sure to check that the ignition key cylinder will be turned by the emergency key. If the ignition key cylinder cannot be turned by the emergency key, the ignition key cylinder is malfunctioning.

Symptom	Check without CONSULT-II	CONSULT-II Self-diagnosis results	Possible malfunctioning part or status	Reference part in the trouble diagnostic system diagram
Security indicator remains flashing with Electronic key inserted.	Security indicator ON condition check	—	Key switch	C5
Security indicator illuminates with Electronic key inserted.	Electronic key check (diagnosis procedure 1)	—	Electronic key not registered	D
			Electronic key (Transponder malfunction)	
	Check harness between the antenna amplifier– and NATS IMMU (Diagnosis procedures 2, 3, 4, 5, 6, 7, 8, 9, 10, 11).	CHAIN OFF IMMU-KEY P1612	Antenna amp	E
			NATS IMMU	A
			Electronic key (Transponder malfunction)	D
			Harness system	C1, 2, 3, 5 E1, 2, 3, 4
Security indicator remains OFF with Electronic key inserted.	Check harness between NATS IMMU-and the steering lock control module. (Diagnosis procedures 12, 13, 14, 15)	—	NATS IMMU	A
			Steering lock control unit	F
			Harness system	C7
	Checking with the emergency key	—	Ignition key cylinder	—

SYMPTOM 2: SECURITY INDICATOR DOES NOT FLASH

Symptom	Check without CONSULT-II	CONSULT-II Self-diagnosis results	Possible malfunctioning part or status	Reference part in the trouble diagnostic system diagram
Security indicator does not turn ON.	Check harness of security indicator.	—	Security indicator	—
			Open circuit in the battery power supply line to the security indicator	—
			NATS IMMU	A
			Harness system	C

Symptom 1

EIS0012U

1. CHECK REGISTRATION OF ELECTRONIC KEY

Re-register the electronic key (all electronic keys), and check the symptom.

OK or NG?

OK >> Electronic key ID not registered
NG >> Check the following.

- All the electronic keys unsuccessful: GO TO 2.
- Only specific electronic key unsuccessful: malfunction in the applicable electronic key (including transponder)

2. CHECK ANTENNA AMP INSTALLATION

Check the installation condition of the antenna amplifier.

OK or NG?

OK >> GO TO 3.
NG >> Install the antenna amplifier correctly: Reference part E.

3. CHECK POWER SUPPLY CIRCUIT FOR NATS IMMU

1. Disconnect the NATS IMMU connector.
2. Check voltage between NATS IMMU harness connector M32 terminal 1(W) and body ground.

: Battery voltage should exist.

OK or NG?

OK >> GO TO 4.
NG >> Check the following.

- Check fuse.
- Check harness for open or short between fuse block and NATS IMMU.

4. CHECK GROUND CIRCUIT FOR NATS IMMU

Check continuity between NATS IMMU harness connector M32 terminal 9(B/W) and body ground.

: Continuity should exist.

OK or NG?

OK >> GO TO 5.
NG >> Check harness and connector between body ground and NATS IMMU: Reference part C3.

5. CHECK ELECTRONIC KEY INSERT SIGNAL

Check voltage between NATS IMMU harness connector M32 terminal 2(PU/W) and body ground.

Terminals	Condition	Voltage
2 (PU/W) – body ground	Electronic key removed from ignition key cylinder	0V
	Electronic key inserted	Battery voltage

OK or NG?

OK >> GO TO 6.
NG >> Check the following.

- Key switch (insert) malfunction.
- Check harness for open or short between fuse block and the key switch (insert).
- Check harness for open or short between key switch (insert) and NATS IMMU.

6. CHECK NATS ANTENNA AMP. CIRCUIT 1

Insert electronic key into ignition key cylinder, and immediately check voltage between antenna amp harness connector M65 terminal 1(R) and body ground.

Terminals	Condition	Voltage
1 (R) – body ground	Insert electronic key into ignition key cylinder.	Approx. 5V (for 3 seconds after inserting the key)

OK or NG?

OK >> GO TO 7.
NG >> GO TO 10.

7. CHECK NATS ANTENNA AMP. CIRCUIT 2

- Disconnect antenna amp connector.
- Check continuity between antenna amp harness connector M65 terminal 4(B/R) and body ground.

: Continuity should exist.

OK or NG?

OK >> GO TO 8.
NG >> GO TO 10.

8. CHECK NATS ANTTENA AMP. CIRCUIT 3

- Connect antenna amp connector.
- Insert the electronic key into the ignition key cylinder, and immediately check voltage between antenna amp harness connector M65 terminal 2(Y) and body ground.

Terminals	Condition	Voltage
2 (Y) – body ground	Insert electronic key into ignition key cylinder.	Pointer of tester should move.

OK or NG?

OK >> GO TO 9.
NG >> GO TO 10.

9. CHECK NATS ANTENNA AMP. CIRCUIT 4

Insert the electronic key into the ignition key cylinder, and immediately check voltage between antenna amp harness connector M65 terminal 3(Y/G) and body ground.

Terminals	Condition	Voltage
3 (Y/G) – body ground	Insert electronic key into electronic key cylinder.	Pointer of tester should move.

OK or NG?

OK >> Replace NATS antenna amp: Reference part E.
NG >> GO TO 10.

10. CHECK NATS ANTENNA AMP. CIRCUIT 5

- Turn ignition switch OFF.
- Disconnect NATS IMMU and antenna amp connector.
- Check continuity between NATS IMMU harness connector M32 terminals 5(R), 6(Y), 7(Y/G), 8(B/R) and antenna amp harness connector M65 terminals 1(R), 2(Y), 3(Y/G), 4(B/R).

5(R) - 1(R) : Continuity should exist.
6(Y) - 2(Y) : Continuity should exist.
7(Y/G) - 3(Y/G) : Continuity should exist.
8(B/R) - 4(B/R) : Continuity should exist.

- Check continuity between NATS IMMU harness connector M32 terminals 5(R), 6(Y), 7(Y/G), 8(B/R) and body ground.

5(R) - ground : Continuity should not exist.
6(Y) - ground : Continuity should not exist.
7(Y/G) - ground : Continuity should not exist.
8(B/R) - ground : Continuity should not exist.

OK or NG?

OK >> Replace NATS IMMU: Reference part A.
NG >> Harness malfunction between NATS IMMU and the antenna amplifier: Reference parts E1, 2, 3, 4

11. PERFORM INITIALIZATION WITH CONSULT-II

Perform initialization with CONSULT-II.
For the operation of initialization, refer to “CONSULT-II operation manual IVIS / NVIS”.

OK or NG?

OK >> END.
NG >> GO TO 12.

12. CHECK POWER SUPPLY CIRCUIT FOR STEERING LOCK CONTROL UNIT

- Turn ignition switch OFF.
- Disconnect steering lock control unit connector.
- Check voltage between steering lock control unit connector 1(Y/G) body ground.

: Battery voltage should exist.

OK or NG?

OK >> GO TO 13.
NG >> Check the following.
- Check fuse.
- Check harness for open or short between fuse block and steering lock control unit.

13. CHECK GROUND CIRCUIT FOR STEERING LOCK

Check voltage continuity steering lock control unit harness connector M69 terminal 4(B) and body ground.

: Continuity should exist.

OK or NG?

OK >> GO TO 14.
NG >> Repair or replace harness.

14. CHECK ELECTRONIC KEY INSERT SIGNAL 2

Check voltage between steering lock control unit harness connector M69 terminal 2(PU/W) and body ground.

Terminals	Condition	Voltage
2 (L) – body ground	Electronic key removed from ignition key cylinder	0V
	Electronic key inserted	Battery voltage

OK or NG?

OK >> GO TO 15.
NG >> Check the following.

- Check harness for open or short between fuse block and key switch.
- Check harness for open or short between key switch and steering lock control unit.

15. CHECK STEERING LOCK CONTROL UNIT

Insert the electronic key into the ignition key cylinder, and immediately check voltage between steering control unit harness connector M69 terminal 3(L) and body ground.

Terminals	Condition	Voltage
3 (L) – body ground	Insert electronic key into ignition key cylinder.	Pointer of tester should move.

OK or NG?

OK >> Replace steering lock control unit.
NG >>
- Replace NATS IMMU.
- Check harness for open or short between NATS IMMU and steering lock control unit.

Symptom 2

EIS0012V

1. CHECK SECURITY INDICATOR POWER CIRCUIT

- Turn ignition switch OFF.
- Disconnect the security indicator connector.
- Check voltage between security indicator harness connector M83 terminal 20(Y/G) and body ground.

: Battery voltage should exist.

OK or NG?

OK >> GO TO 2.
NG >> Check harness for open or short between fuse block and security indicator.

2. SECURITY INDICATOR GROUND CIRCUIT

- Disconnect the NATS IMMU connector.
- Check continuity between security indicator harness connector M83 terminal 19(G) and NATS IMMU harness connector M32 terminal 15(G).

: Continuity should exist.

- Check continuity between NATS IMMU harness connector M32 terminal 15(G) and body ground.

: Continuity should not exist.

OK or NG?

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

3. CHECK INDICATOR GROUND SIGNAL

1. Connect NATS IMMU connector.
2. Check continuity between NATS IMMU harness connector M32 terminal 15(G) and body ground.

: Continuity should exist intermittently.

OK or NG?

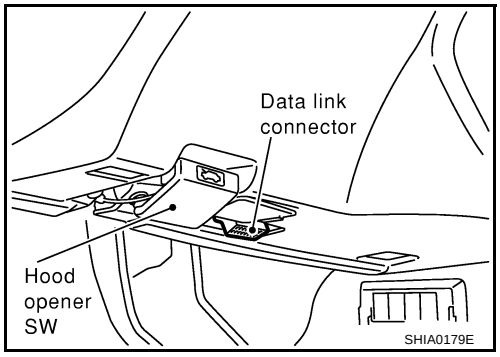
OK >> Replace security indicator.
NG >> Replace NATS IMMU

CONSULT-II Function

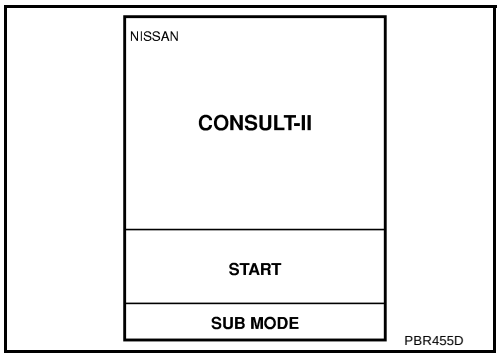
EIS0012W

CONSULT-II CHECK PROCEDURE

1. Turn ignition switch OFF.
2. Connect “CONSULT-II” to Data link connector for CONSULT-II.

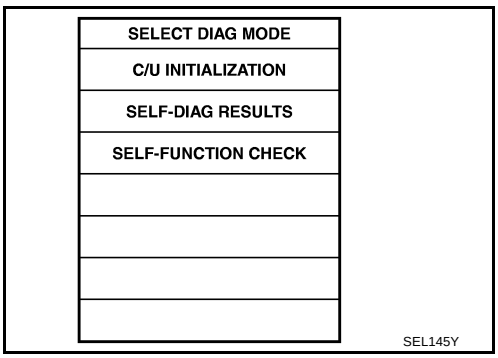


3. Insert IVIS (NATS) program card into CONSULT-II.
   Program card “IVIS (NATS)”
4. Turn ignition switch ON.
5. Touch “START”.



6. Perform each diagnostic test mode according to each service procedure.

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

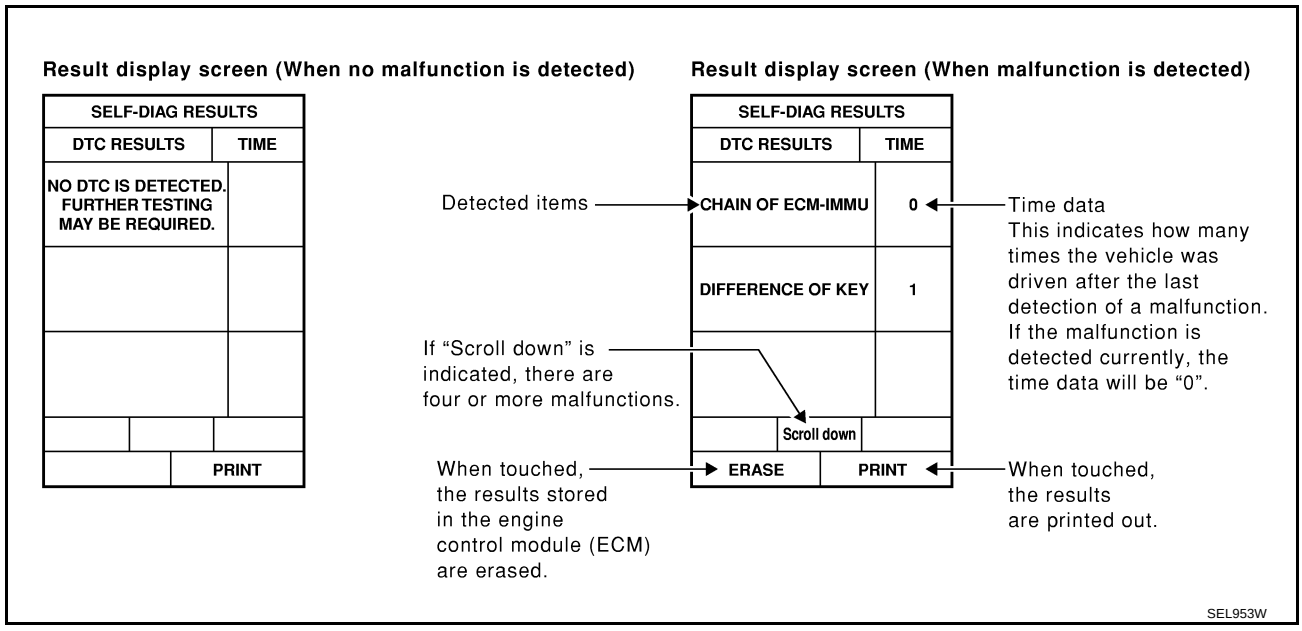


CONSULT-II DIAGNOSTIC TEST MODE FUNCTION

CONSULT- II DIAGNOSTIC TEST MODE	Description
C/U INITIALIZATION	When replacing any of the following three components, C/U initialization is necessary. [IVIS (NATS) electronic key / NATS IMMU/ ECM]
SELF- FUNCTION CHECK	ECM checks its own IVIS (NATS) communication interface by itself.
SELF- DIAGNOSTIC RESULTS	Detected items (screen terms) are as shown in the chart below.

NOTE:
When any initialization is performed, all ID numbers previously registered will be erased and all IVIS (NATS) electronic keys must be registered again. The engine cannot be started with an unregistered key. The system will show “DIFFERENCE OF KEY” or “LOCK MODE” as a self-diagnostic result on the CONSULT-II screen.

HOW TO READ SELF-DIAGNOSTIC RESULTS



SYMPTOM: ELECTRONIC KEY DOES NOT TURN

Symptom	Malfunctioning system is displayed.	Self-diagnosis results	Possible malfunctioning part or status	Reference part in the trouble diagnostic system diagram
● Security indicator ON ● Electronic key does not turn.	CHAIN OF ECM-IMMU P1612	1	Open circuit in battery power supply line to NATS IMMU	C1
			NATS IMMU	A
	ECM	2	NATS IMMU	A
			Open circuit in ground line to NATS IMMU	C3
	CHAIN OF IMMU-KEY P1614	3	Open, short to the power supply, or short to ground in the communication line between the antenna amplifier and NATS IMMU.	E1 - E4
			Open circuit in the power supply line to the antenna amplifier	E3
			Open circuit in the ground line to the antenna amplifier	E4
			Electronic key (including transponder) malfunction	D
			NATS IMMU malfunction	A
			Antenna amp	E

Self-Diagnosis Results 1

EIS0012X

CHAIN OF ECM-IMMU

1. POWER SUPPLY CIRCUIT FOR NATS IMMU

- Turn ignition switch OFF.
- Disconnect NATS IMMU connector.
- Check voltage between NATS IMMU harness connector M32 terminal 1(W) and body ground.

: Battery voltage should exist.

OK or NG?

OK >> GO TO 2.
NG >> Check the following.
- 10A fuse.[No.32 located in fuse block (J/B)]
- harness for open or short between fuse block and NATS IMMU: Reference part C1

2. CHECK IGNITION ON SIGNAL FOR NATS IMMU

- Turn ignition switch ON.
- Check voltage between NATS IMMU harness connector M32 terminal 3(W/B) and body ground.

: Battery voltage should exist.

OK or NG?

OK >> GO TO 3.
NG >> Check the following.
- 10A fuse.[No.1 located in fuse block (J/B)]
- harness for open or short between fuse block and NATS IMMU: Reference part C2

3. CHECK CIRCUIT FOR NATS IMMU

Check continuity between NATS IMMU harness connector M32 terminal 9(B/W) and body ground.

: Continuity should exist.

OK or NG?

OK >> GO TO 4.
NG >> Repair or replace harness. : Reference part C3.

4. CHECK NATS ANTENNA AMP. CIRCUIT 1

- Turn ignition switch OFF.
- Disconnect antenna amp connector.
- Insert electronic key into ignition key cylinder, and immediately check voltage between the antenna amp harness connector M65 terminal 1(R) and body ground.

Terminals	Condition	Voltage
1 (R) – body ground	Insert electronic key into ignition key cylinder.	Approx. 5V (for 3 seconds after inserting the key)

OK or NG?

OK >> GO TO 5.
NG >> GO TO 8.

5. CHECK NATS ANTENNA AMP. CIRCUIT 2

- Connect antenna amp connector.
- Insert the electronic key into the ignition key cylinder, and immediately check voltage between antenna amp harness connector M65 terminal 2(Y) and body ground.

Terminals	Condition	Voltage
2 (Y) – body ground	Insert electronic key into ignition key cylinder.	Pointer of tester should move.

OK or NG?

OK >> GO TO 6.
NG >> GO TO 8.

6. CHECK NATS ANTENNA AMP. CIRCUIT 3

Insert the electronic key into the ignition key cylinder, and immediately check voltage between antenna amp harness connector M65 terminal 3(Y/G) and body ground.

Terminals	Condition	Voltage
3 (Y/G) – body ground	Insert electronic key into ignition key cylinder.	Pointer of tester should move.

OK or NG?

OK >> GO TO 7.
NG >> GO TO 8.

7. CHECK NATS ANTENNA AMP. CIRCUIT 4

- Disconnect antenna amp connector.
- Check continuity between antenna amp harness connector M65 terminal 4(B/R) and body ground.

: Continuity should exist.

OK or NG?

OK >> Replace antenna amp : Reference part E
NG >> GO TO 8.

8. HARNESS CHECK

- Disconnect NATS IMMU connector.
- Check continuity between antenna amp harness connector M65 terminal 1(R), 2(Y), 3(Y/G), 4(B/R) and NATS IMMU harness connector M32 terminal 5(R), 6(Y), 7(Y/G), 8(B/R).
  Reference parts: E1, E2, E3, E4

1 – 5 : Continuity should exist.
2 – 6 : Continuity should exist.
3 – 7 : Continuity should exist.
4 – 8 : Continuity should exist.

OK or NG?

OK >> Replace harness between NATS IMMU and antenna amp. : Reference part E1, E2, E3, E4
NG >> 1. Replace NATS IMMU : Reference part A.
2. Perform initialization with CONSULT-II.
For the operation of initialization, refer to "CONSULT-II operation manual IVIS / NVIS".

Self-Diagnosis Results 2

EIS0012Y

1. CONTINUITY CHECK

Check continuity between NATS IMMU harness connector M32 terminal 9(B/W) and body ground.

: Continuity should exist.

OK or NG?

OK >> 1. Replace NATS IMMU : Reference part A
2. Perform initialization with CONSULT-II.
For the operation of initialization, refer to "CONSULT-II operation manual IVIS / NVIS".
NG >> Check harness for open or short between NATS IMMU and body ground. : Reference part C3

Self-Diagnosis Results 3

EIS0012Z

1. CHECK OF ELECTRONIC KEY (TRANSPONDER)

Using the other registered electronic key, check that the ignition switch can be turned ON.

OK or NG?

OK >> GO TO 2.
NG >> electronic key (transponder) malfunction.

2. CHECK NATS ANTENNA AMP INSTALLATION

Check the installation condition of the antenna amplifier.

OK or NG?

OK >> GO TO 3.
NG >> Install the antenna amp correctly.

3. CHECK NATS ANTENNA AMP. CIRCUIT 1

Insert the electronic key into the ignition key cylinder, and immediately check voltage between antenna amp harness connector M65 terminal 3(Y/G) and body ground.

Terminals	Condition	Voltage
3 (Y/G) – body ground	Insert electronic key into ignition key cylinder.	Pointer of tester should move.

OK or NG?

OK >> GO TO 4.
NG >> GO TO 7.

4. CHECK NATS ANTENNA AMP. CIRCUIT 2

- Turn ignition switch OFF.
- Disconnect antenna amp connector.
- Insert electronic key into ignition key cylinder, and immediately check voltage between the antenna amp harness connector M65 terminal 1(R) and body ground.

Terminals	Condition	Voltage
1 (R) – body ground	Insert electronic key into ignition key cylinder.	Approx. 5V (for 3 seconds after inserting the key)

OK or NG?

OK >> GO TO 5.
NG >> GO TO 7.

5. CHECK NATS ANTENNA AMP. CIRCUIT 3

- Connect antenna amp connector.
- Insert the electronic key into the ignition key cylinder, and immediately check voltage between antenna amp harness connector M65 terminal 2(Y) and body ground.

Terminals	Condition	Voltage
2 (Y) – body ground	Insert electronic key into ignition key cylinder.	Pointer of tester should move.

OK or NG?

OK >> GO TO 6.
NG >> GO TO 7.

6. CHECK NATS ANTENNA AMP. CIRCUIT 4

- Disconnect antenna amp connector.
- Check continuity between antenna amp harness connector M65 terminal 4(B/R) and body ground.

: Continuity should exist.

OK or NG?

OK >> Replace antenna amp : Reference part E
NG >> GO TO 7

7. CHECK NATS ANTENNA AMP. CIRCUIT 5

- Disconnect NATS IMMU connector.
- Check continuity between antenna amp harness connector M65 terminal 1(R), 2(Y), 3(Y/G), 4(B/R) and NATS IMMU harness connector M32 terminal 5(R), 6(Y), 7(Y/G), 8(B/R).
  Reference parts: E1, E2, E3, E4

1 – 5 : Continuity should exist.
2 – 6 : Continuity should exist.
3 – 7 : Continuity should exist.
4 – 8 : Continuity should exist.

OK or NG?

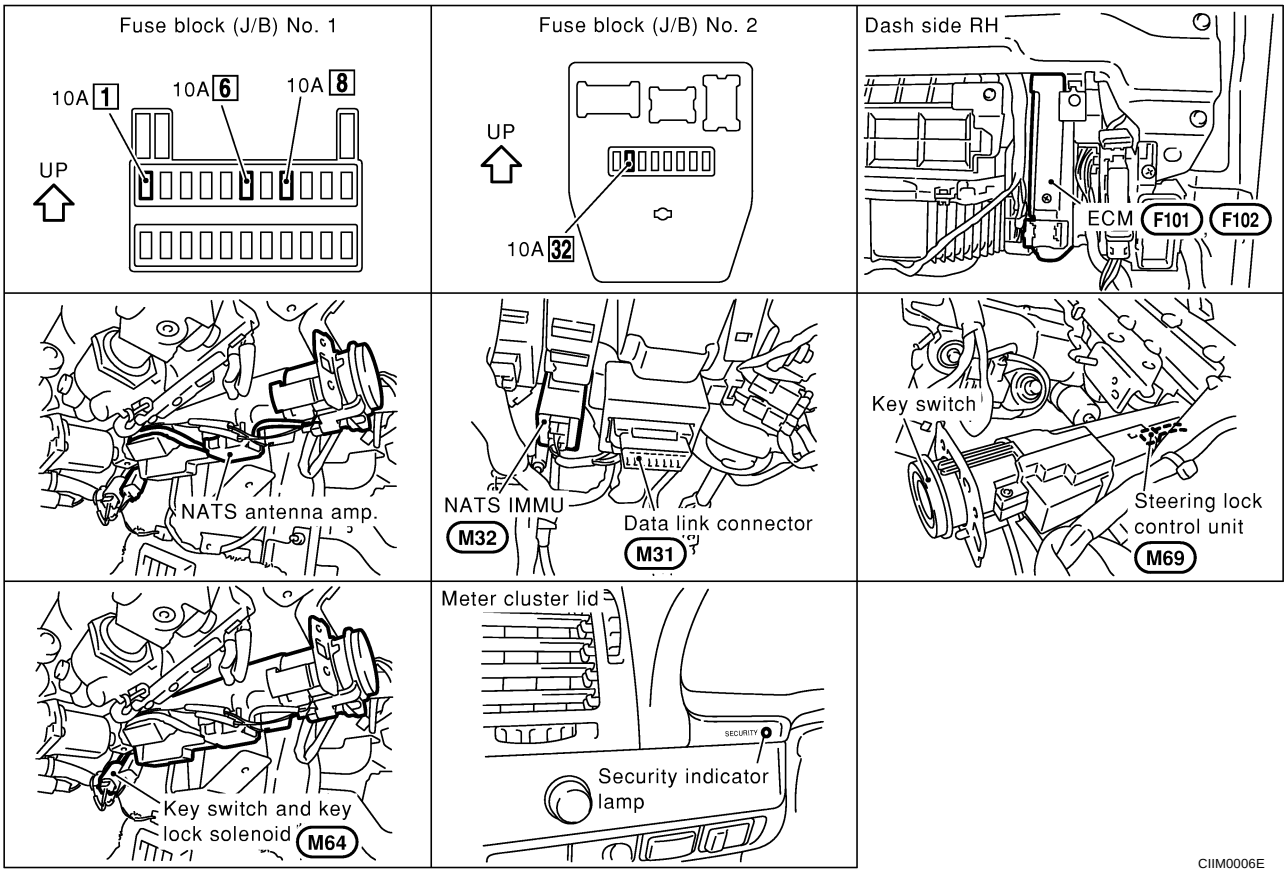
OK >> Replace harness between NATS IMMU and antenna amp. : Reference part E1, E2, E3, E4
NG >> 1. Replace NATS IMMU : Reference part A
2. Perform initialization with CONSULT-II.
For the operation of initialization, refer to "CONSULT-II operation manual IVIS / NVIS".

IVIS (INFINITI VEHICLE IMMOBILIZER SYSTEM-NATS)

PFP:28591

Component Parts and Harness Connector Location

EIS00128



NOTE:
If customer reports a “No start” condition, request ALL ELECTRONIC KEY to be brought to the Dealer is case of a NATS malfunction.

System Description

EIS00129

IVIS (Infinity Vehicle Immobilizer System – NATS) has the following immobilizer functions:

- Since only IVIS (NATS) electronic keys, whose ID nos. have been registered into the ECM and IMMU of IVIS (NATS), allow the engine to run, operation of a stolen vehicle without a IVIS (NATS) registered electronic key is pre-vented by IVIS (NATS).
  That is to say, IVIS (NATS) will immobilize the engine if someone tries to start it without the registered electronic key of IVIS (NATS).
- All of the originally supplied electronic key IDs (except for card key and emergency key) have been IVIS (NATS) registered. If requested by the vehicle owner, a maximum of four key IDs can be registered into the IVIS (NATS) components.
- The security indicator blinks when the ignition switch is in “OFF” or “ACC” position. Therefore, IVIS (NATS) warns outsiders that the vehicle is equipped with the anti-theft system.
- When IVIS (NATS) detects any malfunctions, the security indicator lamp lights up while electronic key is in the “ON” position.
- IVIS (NATS) trouble diagnoses, system initialization and additional registration of other IVIS (NATS) electronic key IDs must be carried out using CONSULT- ll hardware and CONSULT- ll IVIS (NATS) software.
  When IVIS (NATS) initialization has been completed, the ID of the inserted electronic key is automatically IVIS (NATS) registered. Then, if necessary, additional registration of other IVIS (NATS) electronic key IDs can be carried out.
  Regarding the procedures of IVIS (NATS) initialization and IVIS (NATS) electronic key ID registration, refer to CONSULT-II operation manual, IVIS/NVIS.

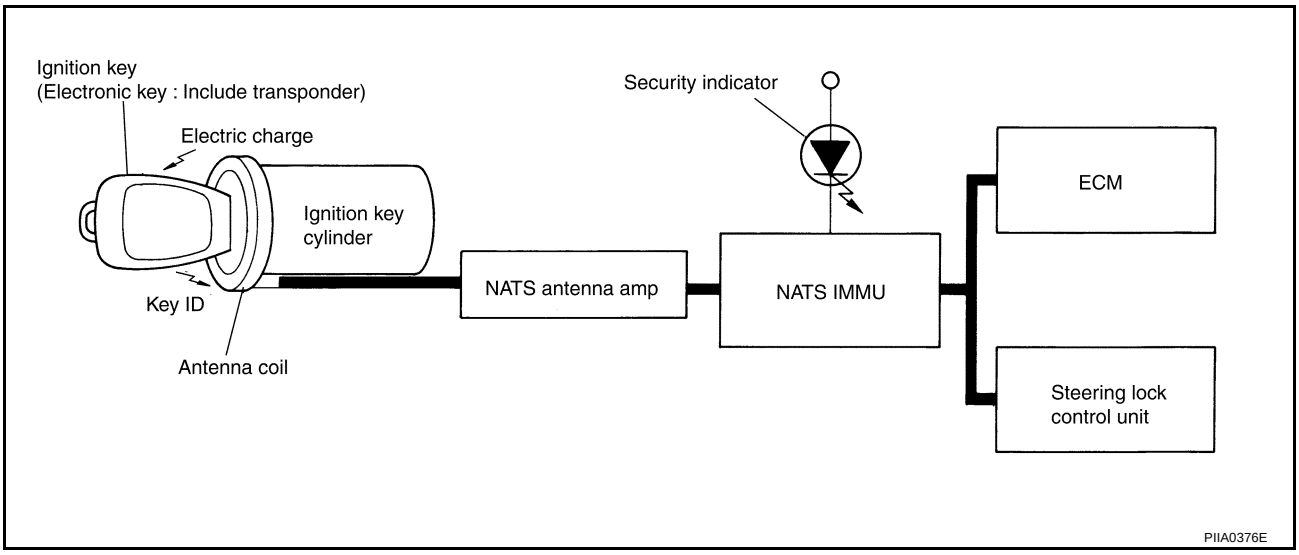
NOTE:
When servicing a malfunction of the IVIS (NATS) indicated by lighting up of Security Indicator Lamp or registering another IVIS (NATS) electronic key ID no., it is necessary to re-register original key identification. Therefore, be sure to receive ALL ELECTRONIC KEYS from vehicle owner.

System Composition

EIS0012A

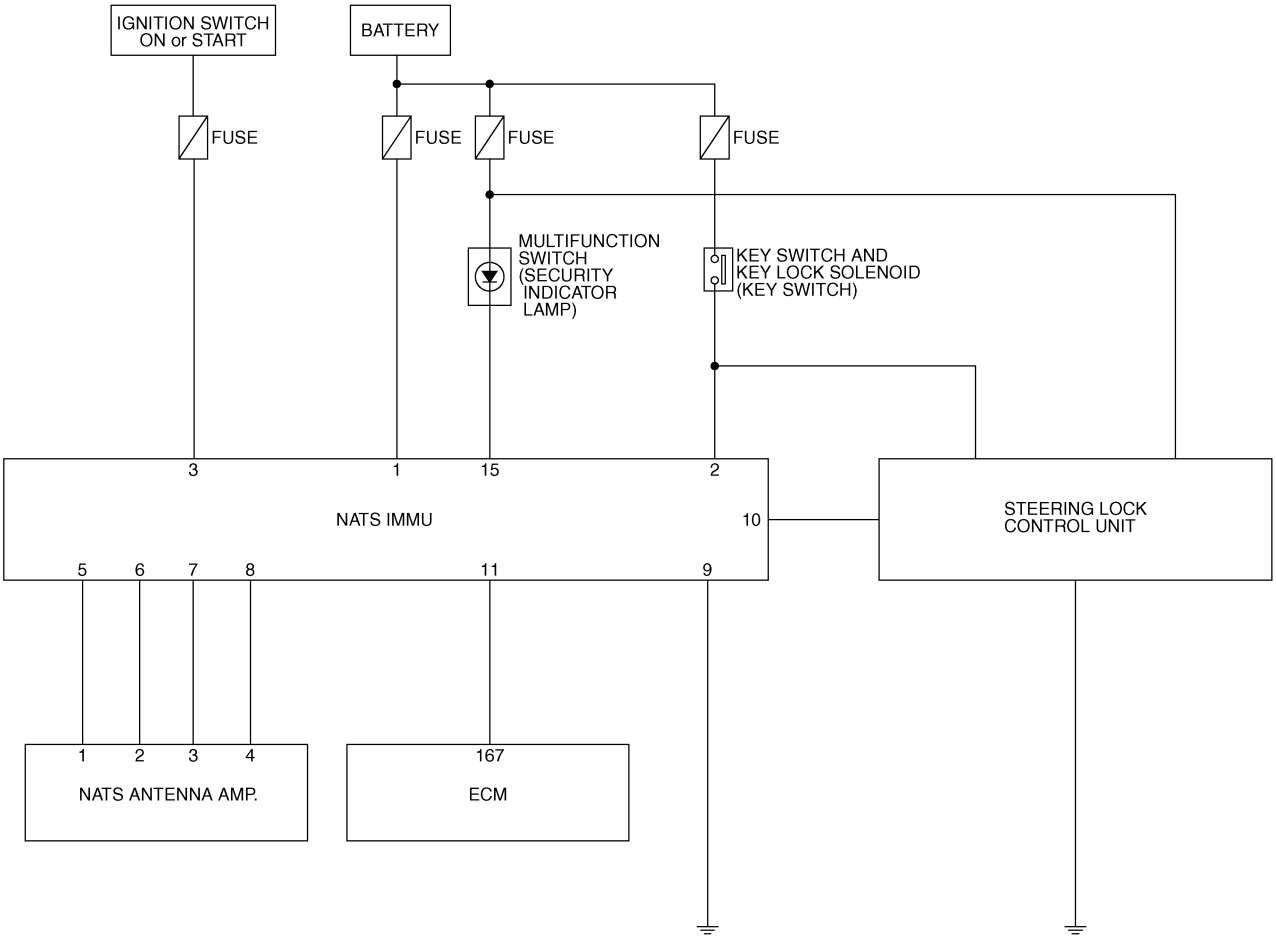
The immobilizer function of the IVIS (NATS) consists of the following:

- IVIS (NATS) electronic key
- IVIS (NATS) antenna amp. Located in the ignition key cylinder
- Steering lock control unit.
- IVIS (NATS) immobilizer control unit (IMMU)
- Engine control module (ECM)
- Security indicator



Schematic

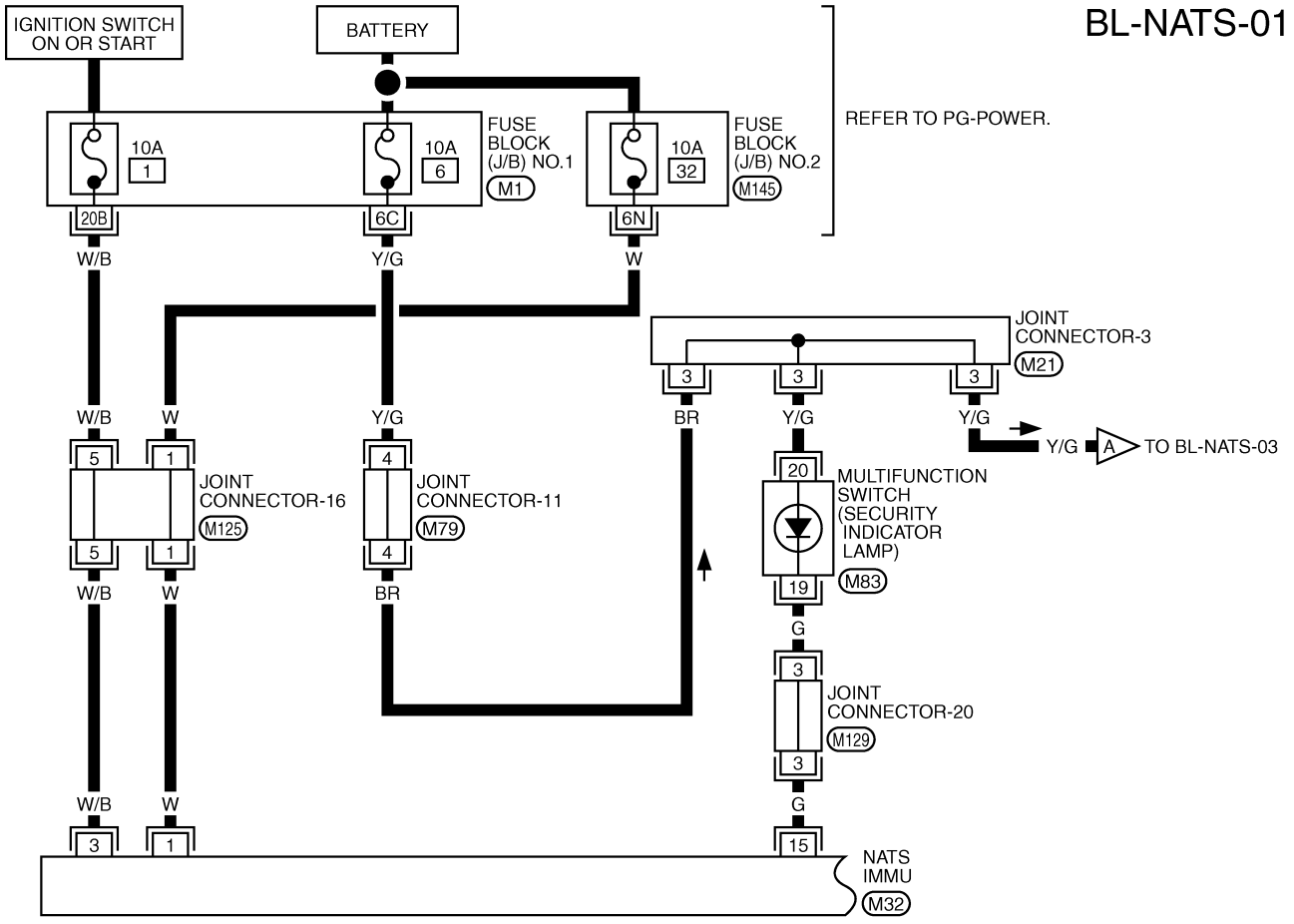
EIS0012B

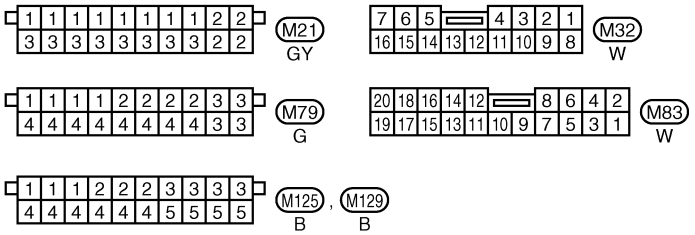


TIWM0032E

Wiring Diagram – NATS –

EIS0012C





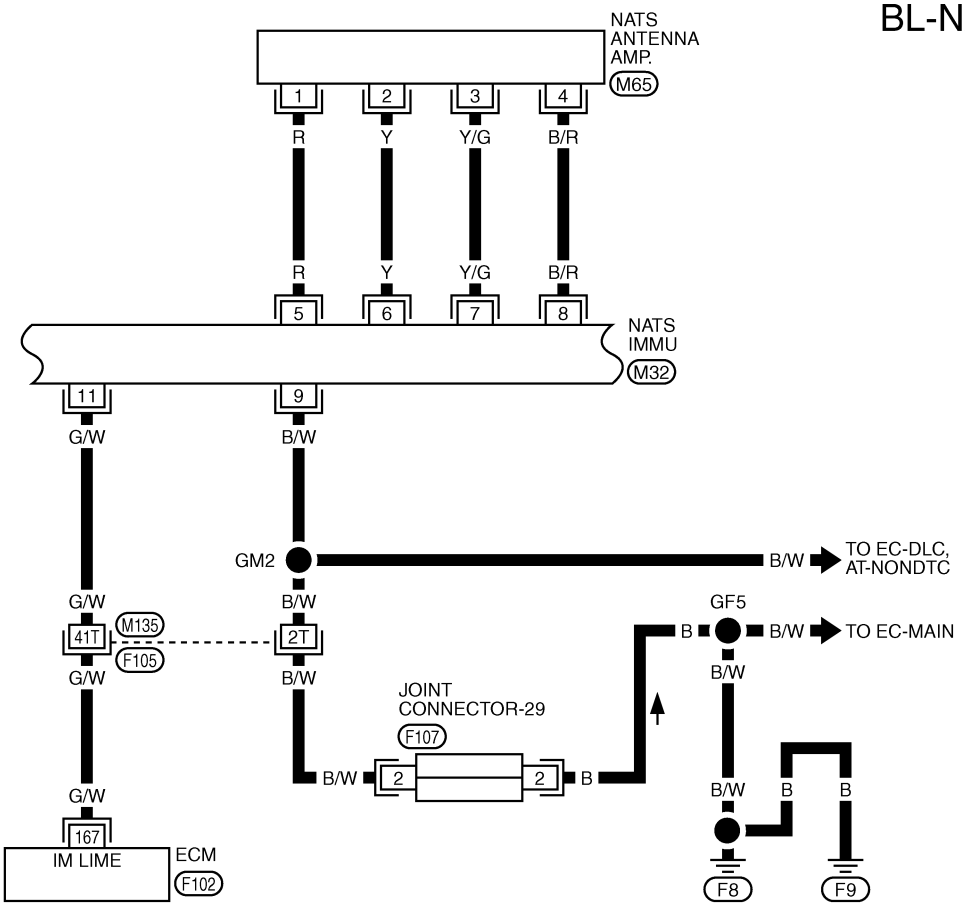
REFER TO THE FOLLOWING.

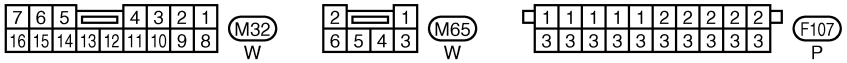
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

M145 -FUSE BLOCK-JUNCTION BOX (J/B) NO.2

TIWM0033E

BL-NATS-02



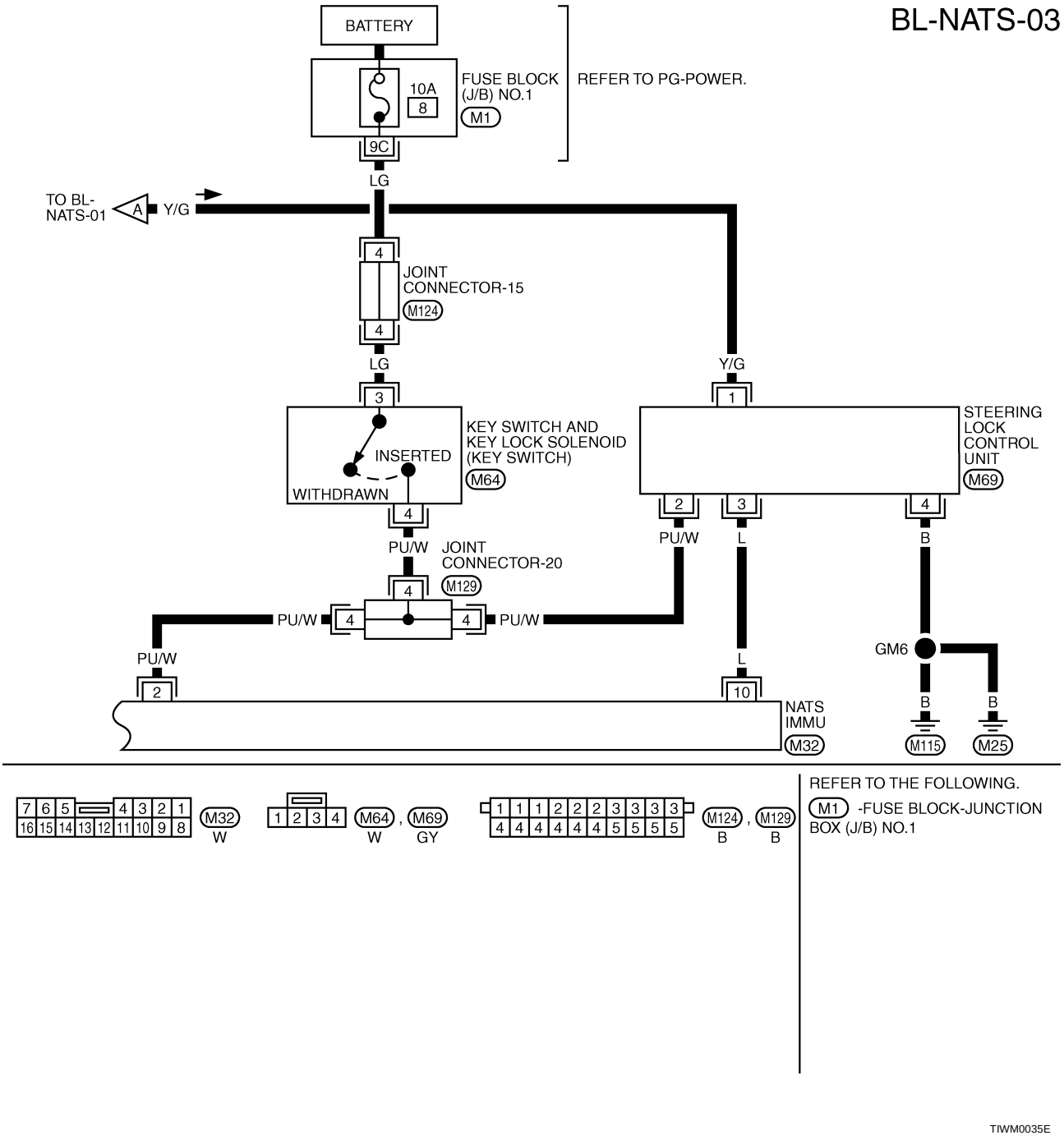


REFER TO THE FOLLOWING.

F105 -SUPER MULTIPLE JUNCTION (SMJ)

F102 -ELECTRICAL UNITS

TIWM0034E


BL-NATS-03
BATTERY
10A
8
FUSE BLOCK
(J/B) NO.1
M1
REFER TO PG-POWER.
9C
LG
TO BL-
NATS-01
A
Y/G
4
JOINT
CONNECTOR-15
M124
4
LG
3
INSERTED
WITHDRAWN
KEY SWITCH AND
KEY LOCK SOLENOID
(KEY SWITCH)
M64
4
PU/W
JOINT
CONNECTOR-20
M129
4
PU/W
4
4
PU/W
PU/W
2
NATS
IMMU
M32
Y/G
1
STEERING
LOCK
CONTROL
UNIT
M69
2
3
4
PU/W
L
B
L
10
GM6
B
B
M115
M25
7 6 5 4 3 2 1
16 15 14 13 12 11 10 9 8
M32
W
1 2 3 4
M64 , M69
W GY
1 1 1 2 2 2 3 3 3 3
4 4 4 4 4 4 5 5 5 5
M124 , M129
B B
REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION
BOX (J/B) NO.1

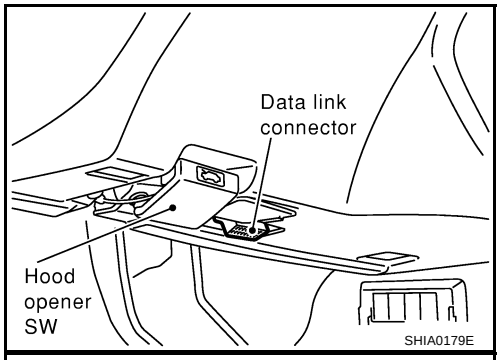
TIWM0035E

CONSULT- II

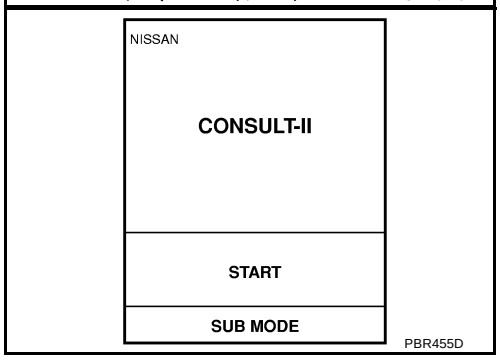
EIS0012D

CONSULT-II INSPECTION PROCEDURE

1. Turn ignition switch OFF.
2. Connect CONSULT-II to data link connector.

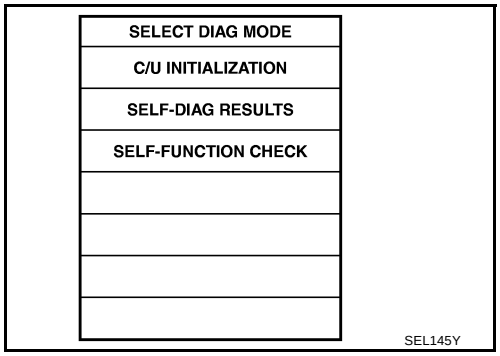


3. Insert IVIS (NATS) program card into CONSULT-II.
   Program card “IVIS (NATS)”
4. Turn ignition switch ON.
5. Touch “START”.



6. Perform each diagnostic test mode according to each service procedure.

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

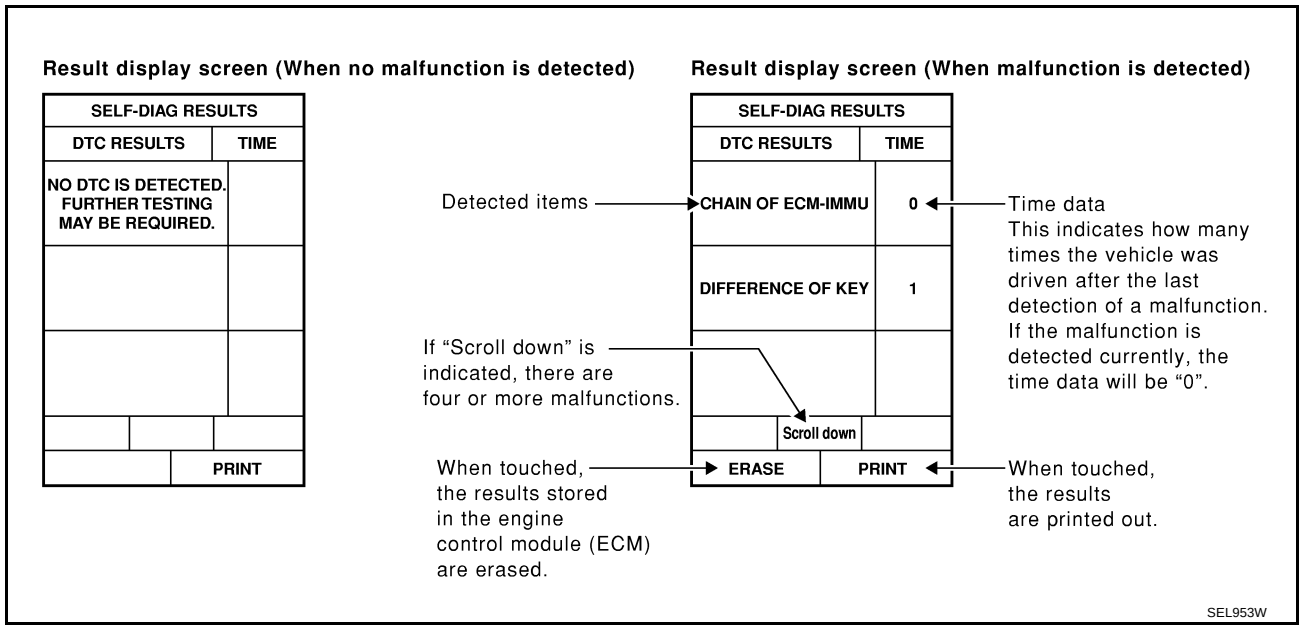


CONSULT-II DIAGNOSTIC TEST MODE FUNCTION

CONSULT- II DIAGNOSTIC TEST MODE	Description
C/U INITIALIZATION	When replacing any of the following three components, C/U initialization is necessary. [IVIS (NATS) electronic key/ IMMU/ ECM]
SELF- FUNCTION CHECK	ECM checks its own IVIS (NATS) communication interface by itself.
SELF- DIAGNOSTIC RESULTS	Detected items are as shown in the chart below.

NOTE:
When any initialization is performed, all ID numbers previously registered will be erased and all IVIS (NATS) electronic keys must be registered again. The engine cannot be started with an unregistered key. The system will show “DIFFERENCE OF KEY” or “LOCK MODE” as a self-diagnostic result on the CONSULT-II screen.

HOW TO READ SELF-DIAGNOSTIC RESULTS

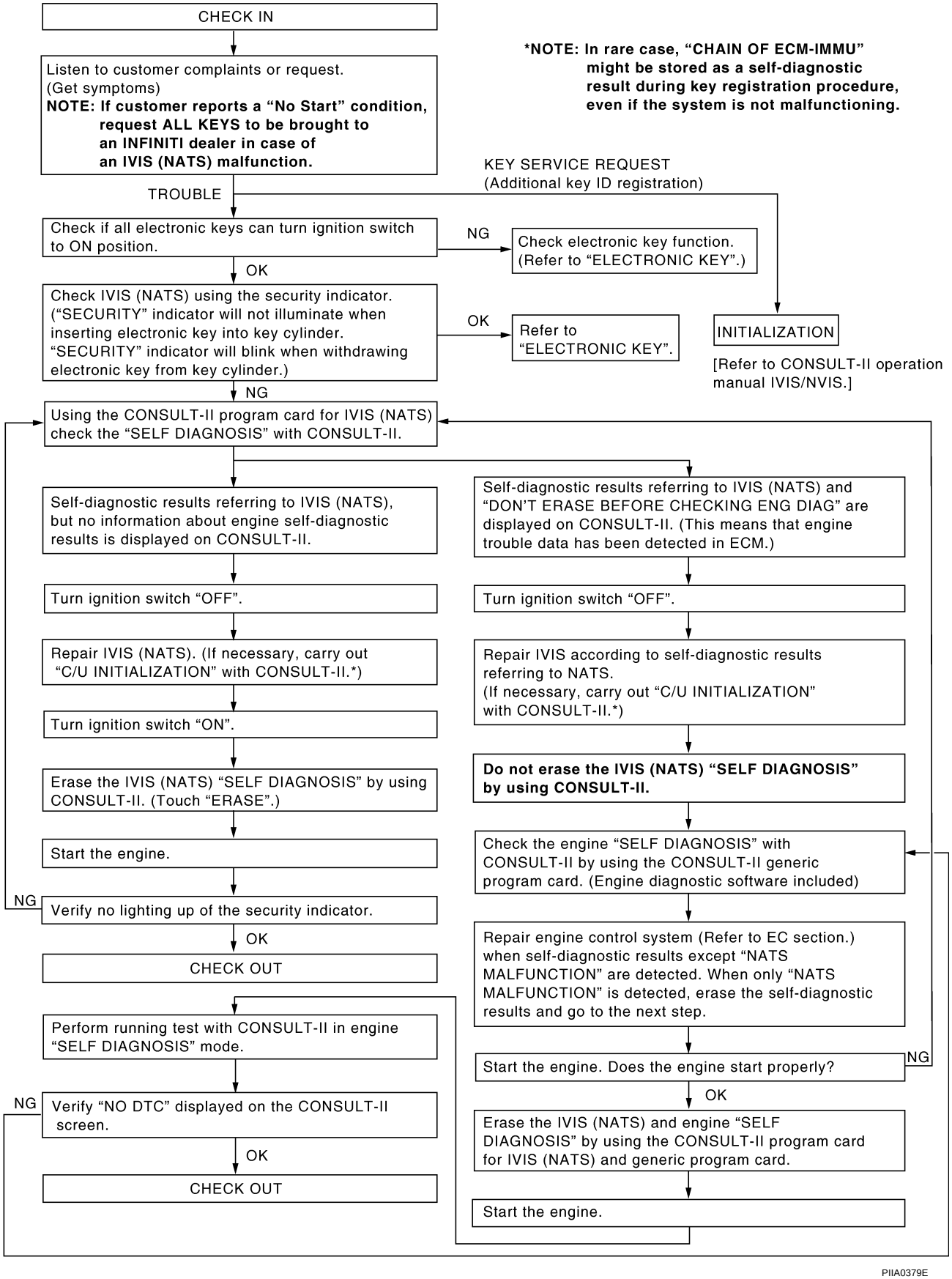


NATS SELF-DIAGNOSTIC RESULT ITEM CHART

Detected items (Screen terms)	P No.Code (Self-diagnostic result of "ENGINE")	Description	Diagnostic procedure
ECM INT CIRC-IMMU	P1613	The malfunction of ECM internal circuit of IMMU communication line is detected.	Refer to BL-156, "Diagnostic Procedure 1" .
CHAIN OF ECM-IMMU	P1612	Communication impossible between ECM and IMMU.	Refer to BL-156, "Diagnostic Procedure 2" .
DIFFERENCE OF KEY	P1615	IMMU can receive the key ID signal but the result of ID verification between key ID and IMMU is NG.	Refer to BL-159, "Diagnostic Procedure 3" .
CHAIN OF IMMU-KEY	P1614	IMMU cannot receive the key ID signal.	Perform initialization with CONSULT-II. For the operation of initialization,. refer to “CONSULT-II operation manual, IVIS/NVIS"
ID DISCORD, IMM-ECM	P1611	The result of ID verification between IMMU and ECM is NG. System initialization is required.	Refer to BL-159, "Diagnostic Procedure 4" .
LOCK MODE	P1610	When the starting operation is carried out 5 or more times consecutively under the following conditions, IVIS(NATS) will shift the mode to one which prevents the engine from being started. ● unregistered electronic key is used ● IMMU or ECM malfunctioning	Refer to BL-160, "Diagnostic Procedure 5" .
DON'T ERASE BEFORE CHECKING ENG DIAG	—	Engine trouble data and IVIS (NATS) trouble data have been detected in ECM.	Refer to BL-154, "Work Flow" .

Work Flow

EIS0012E



PIIA0379E

Symptom Chart 1

EIS0028Z

SYMPTOM	Displayed “SELF-DIAG RESULTS” on CONSULT-II screen.	DIAGNOSTIC PROCEDURE	SYSTEM (Malfunctioning part or mode)	REFERENCE PART NO. OF ILLUSTRATION
● Security indicator lighting up* ● Engine will start.	ECM INT CIRC-IMMU	Refer to BL-156, "Diagnostic Procedure 1" .	ECM	B
● Security indicator lighting up* ● Engine hard to start	CHAIN OF ECM-IMMU	Refer to BL-156, "Diagnostic Procedure 2" .	Open circuit in battery voltage line of IMMU circuit	C1
			Open circuit in ignition line of IMMU circuit	C2
			Open circuit in ground line of IMMU circuit	C3
			Open circuit in communication line between IMMU and ECM	C4
			Short circuit between IMMU and ECM communication line and battery voltage line	C4
			Short circuit between IMMU and ECM communication line and ground line	C4
			ECM	B
			IMMU	A
	DIFFERENCE OF KEY	Refer to BL-159, "Diagnostic Procedure 3" .	Unregistered key	D
			IMMU	A
	CHAIN OF IMMU-KEY	Perform initialization with CONSULT-II. For the operation of initialization,. refer to “CONSULT-II operation manual IVIS/NVIS”.	Malfunction of key ID chip	E5
			IMMU	A
			Antenna amp	E6
	ID DISCORD, IMM-ECM	Refer to BL-159, "Diagnostic Procedure 4"	System initialization has not yet been completed.	F
			ECM	F
	LOCK MODE	Refer to BL-160, "Diagnostic Procedure 5" .	LOCK MODE	D
● MIL staying ON ● Security indicator lighting up*	DON'T ERASE BEFORE CHECKING ENG DIAG	WORK FLOW	Engine trouble data and NATS trouble data have been detected in ECM	—

*: When IVIS (NATS) detects trouble, the security indicator lights up while electronic key is in the “ON” position.

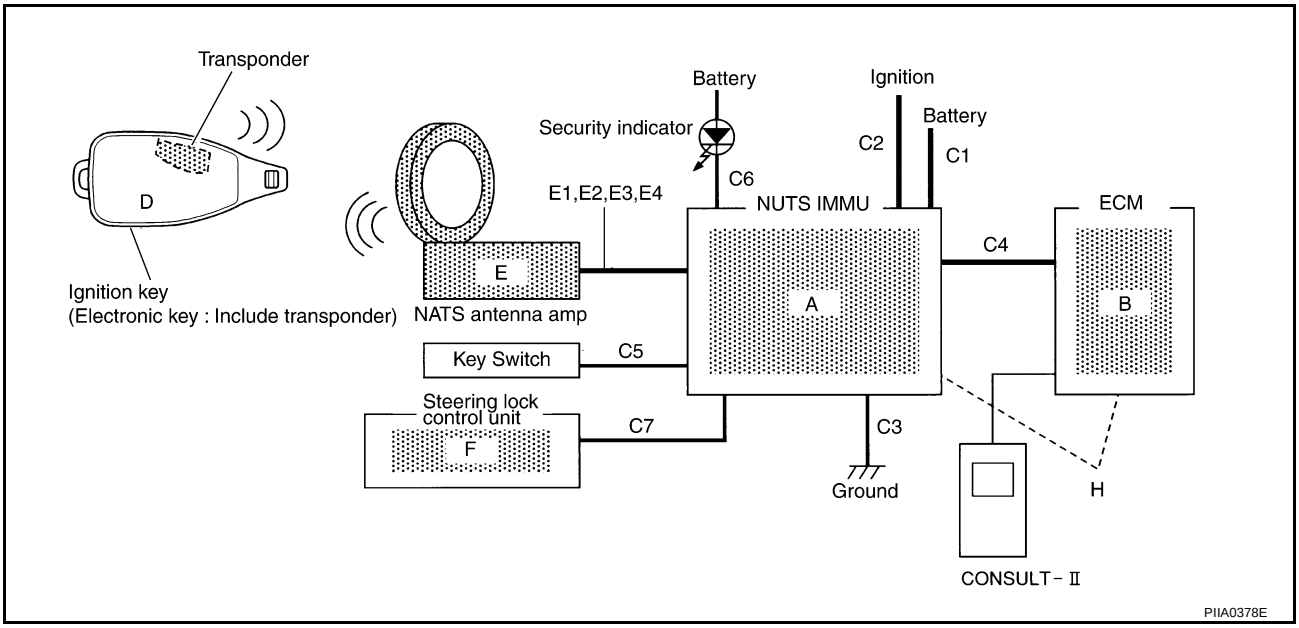
Symptom Chart 2

EIS00159

SYMPTOM	SYSTEM (Malfunctioning part or mode)
Security ind. Does not light up	Security ind.
	Open circuit between Fuse and IVIS (NATS) IMMU
	Continuation of initialization mode
	IVIS (NATS) IMMU

Diagnostic System Diagram

EIS0015A



Diagnostic Procedure 1

EIS00291

Self-diagnostic results: "ECM INT CIRC-IMMU" displayed on CONSULT-II screen

1. SELF-DIAGNOSTIC RESULTS

Ⓟ Confirm SELF-DIAGNOSTIC RESULTS “ECM INT CIRC-IMMU” displayed on CONSULT-II screen.

YES >> 1. Replace ECM.
(Diagnostic system diagram part No. B)
2. Perform initialization with CONSULT-II.
For the operation of initialization, refer to “CONSULT-II operation manual, IVIS/NVIS".

SELF DIAGNOSIS	
DTC RESULTS	TIME
ECM INT CIRC-IMMU	0

SEL314W

Diagnostic Procedure 2

EIS00292

Self-diagnostic results: “CHAIN OF ECM-IMMU” displayed on CONSULT-II screen

1. SELF-DIAGNOSTIC RESULTS

Ⓟ Perform self-diagnosis. Is “CHAIN OF ECM-IMMU” displayed on the screen?

YES >> GO TO 2.
NO >> GO TO

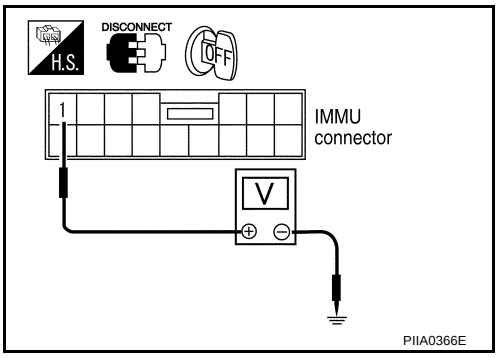
SELF DIAGNOSIS	
DTC RESULTS	TIME
CHAIN OF ECM-IMMU	0

SEL292W

2. POWER SUPPLY CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect NATS IMMU connector M32.
3. Check voltage between NATS IMMU harness connector M32 terminal 1 (W) and body ground.

Battery voltage should exist.



OK or NG?

OK >> GO TO 3.
NG >> Check the following:
- 10A fuse [No.32, located in fuse block (J/B)]
- Harness for open or short between fuse and NATS IMMU connector.

3. POWER SUPPLY CIRCUIT CHECK

1. Turn ignition switch ON.
2. Check voltage between NATS IMMU harness connector M32 terminal 3 (W/B) and body ground.

Battery voltage should exist.

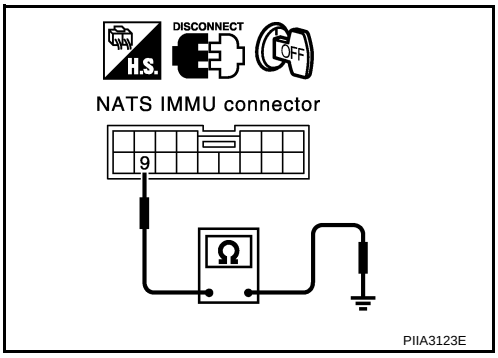
OK or NG?

OK >> GO TO 4.
NG >> Check the following:
- 10A fuse [No. 1, located in fuse block (J/B)]
- Harness for open or short between fuse and NATS IMMU connector.

4. BODY GROUND CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Check continuity between NATS IMMU harness connector M32 terminal 9 (B/W) and body ground.

Continuity should exist.



OK or NG?

OK >> GO TO 5.
NG >> Repair or replace harness between NATS IMMU and body ground.

5. COMMUNICATION LINE CIRCUIT CHECK

1. Disconnect ECM and NATS IMMU connector.
2. Check continuity between NATS IMMU harness connector M32 terminal 11 (G/W) and ECM harness connector F102 terminal 167 (G/W).

Continuity should exist.

OK or NG?

OK >> GO TO 6.
NG >> Repair or replace harness between NATS IMMU and BCM.

6. COMMUNICATION LINE CIRCUIT CHECK

1. Turn the ignition switch OFF.
2. Check continuity between NATS IMMU harness connector M32 terminal 11 (G/W) and body ground.

Continuity should not exist.

OK or NG?

OK >> GO TO 7.
NG >> Communication line is short-circuit with ground line.
- Repair or replace harness.

7. REPLACE NATS IMMU

1. Replace NATS IMMU **Ref. part No. A**
2. Perform initialization with CONSULT-II.
   For initialization, refer to “CONSULT-II Operation Manual NATS-IVIS/NVIS”.

Does the engine start?

Yes >> NATS IMMU is malfunctioning.
No >>
- ECM is malfunctioning.
- Replace ECM. **Ref. part No. B**

Diagnostic Procedure 3

EIS00293

Self-diagnostic results: “DIFFERENCE OF KEY” displayed on CONSULT-II screen

1. SELF-DIAGNOSTIC RESULTS

Confirm SELF-DIAGNOSTIC RESULTS “DIFFERENCE OF KEY” displayed on CONSULT-II screen.

SELF-DIAG RESULTS	
DTC RESULTS	TIME
DIFFERENCE OF KEY	0

SEL956W

- Perform initialization with CONSULT-ll.
  Re-register all IVIS(NATS) electronic key IDs.
  For the operation of initialization, refer to “CONSULT-ll operation manual IVIS/NVIS”.
- Start the engine.

: Does the engine start?

YES or NO?

YES >> END (electronic key ID was unregistered.)
NO >> Replace NATS IMMU.

- Perform initialization with CONSULT-II.
  For the operation of initialization, refer to “CONSULT-II operation manual IVIS/NVIS”.

Diagnostic Procedure 4

EIS00294

Self-diagnostic results: “ID DISCORD, IMMU-ECM” displayed on CONSULT-II screen

1. SELF-DIAGNOSTIC RESULTS

Confirm SELF-DIAGNOSTIC RESULTS “ID DISCORD, IMMU-ECM” displayed on CONSULT-II screen.

- Perform initialization with CONSULT-ll.
  Re-register all IVIS (NATS) electronic key IDs.
  For the operation of initialization, refer to “CONSULT-ll operation manual IVIS/NVIS”.
- Start the engine.

SELF-DIAG RESULTS	
DTC RESULTS	TIME
ID DISCORD, IMM-ECM	0

SEL958W

: Does the engine start?

YES or NO?

YES >> END (electronic key ID was unregistered.)
NO >> Replace ECM.

- Perform initialization with CONSULT-II.
  For the operation of initialization, refer to “CONSULT-II operation manual IVIS/NVIS”.

Diagnostic Procedure 5

EIS00295

Self-diagnostic results: “LOCK MODE” displayed on CONSULT-II screen

1. SELF-DIAGNOSTIC RESULTS

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

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

: Does the engine start?

SELF-DIAG RESULTS	
DTC RESULTS	TIME
LOCK MODE	0

SEL960W

YES or NO?

YES >> System is OK. (Now the system is escaped from “LOCK MODE”)
NO >> GO TO 2.

2. PERFORM INITIALIZATION

Perform initialization with CONSULT-ll.
For the initialization procedure, refer to “CONSULT-ll operation manual IVIS/NVIS”.

: Can the system be initialized?

YES or NO?

YES >> System is OK.
NO >> Go to BL-159, "Diagnostic Procedure 3" .

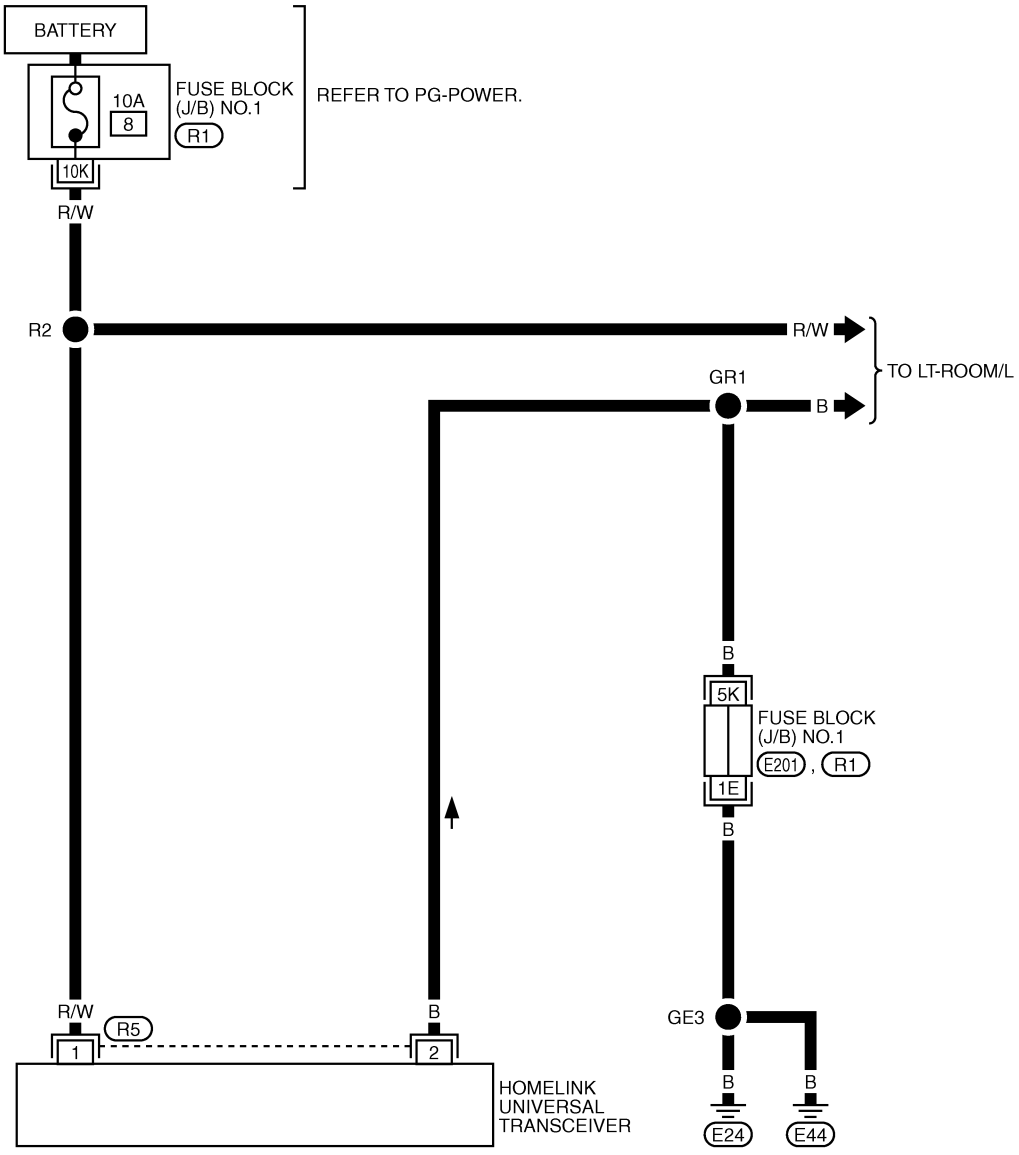
HOMELINK UNIVERSAL TRANSCEIVER

PFP:96401

Wiring Diagram – TRNSCV –

EIS00296

BL-TRNSCV-01



REFER TO THE FOLLOWING.
E201 , R1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TIWM0118E

Trouble Diagnoses

EIS00297

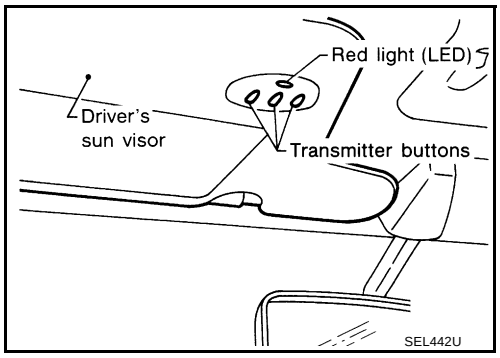
DIAGNOSTIC PROCEDURE

SYMPTOM: Transmitter does not activate receiver.

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 at fault, 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.

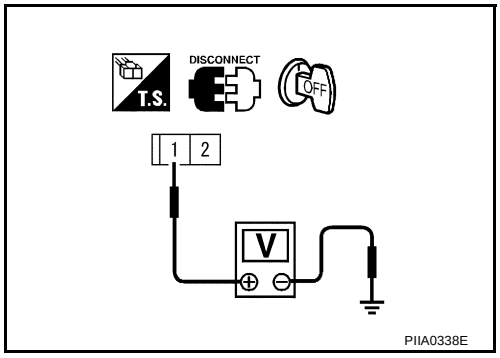
OK or NG?

OK >> Receiver or handheld transmitter malfunction, not vehicle related.
NG >> Replace transmitter with sun visor assembly.

3. POWER SUPPLY CHECK

1. Disconnect transmitter connector.
2. Turn ignition switch “OFF”.
3. Check voltage between transmitter harness connector R5 terminal 1(R/W) and body ground.

: Battery voltage should exist.



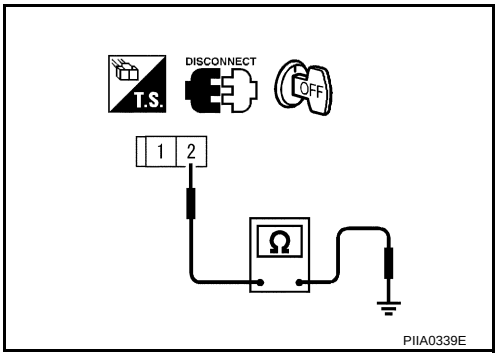
OK or NG?

OK >> GO TO 4.
NG >>
- Check 10A fuse [No. 8 located in the fuse block (J/B) No.1]
- Harness for open or short between fuse and transmitter

4. GROUND CIRCUIT CHECK

Check continuity between transmitter harness connector R5 terminal 2(B) and body ground.

: Continuity should exist.



OK or NG?

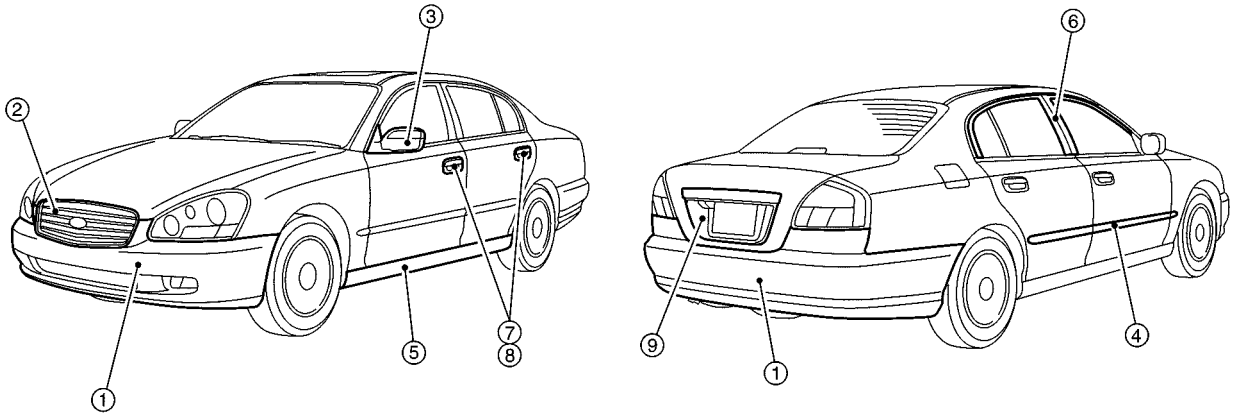
OK >> Replace transmitter with sun visor assembly.
NG >> Repair harness.

BODY REPAIR

PFP:60100

Body Exterior Paint Color

EIS000K2



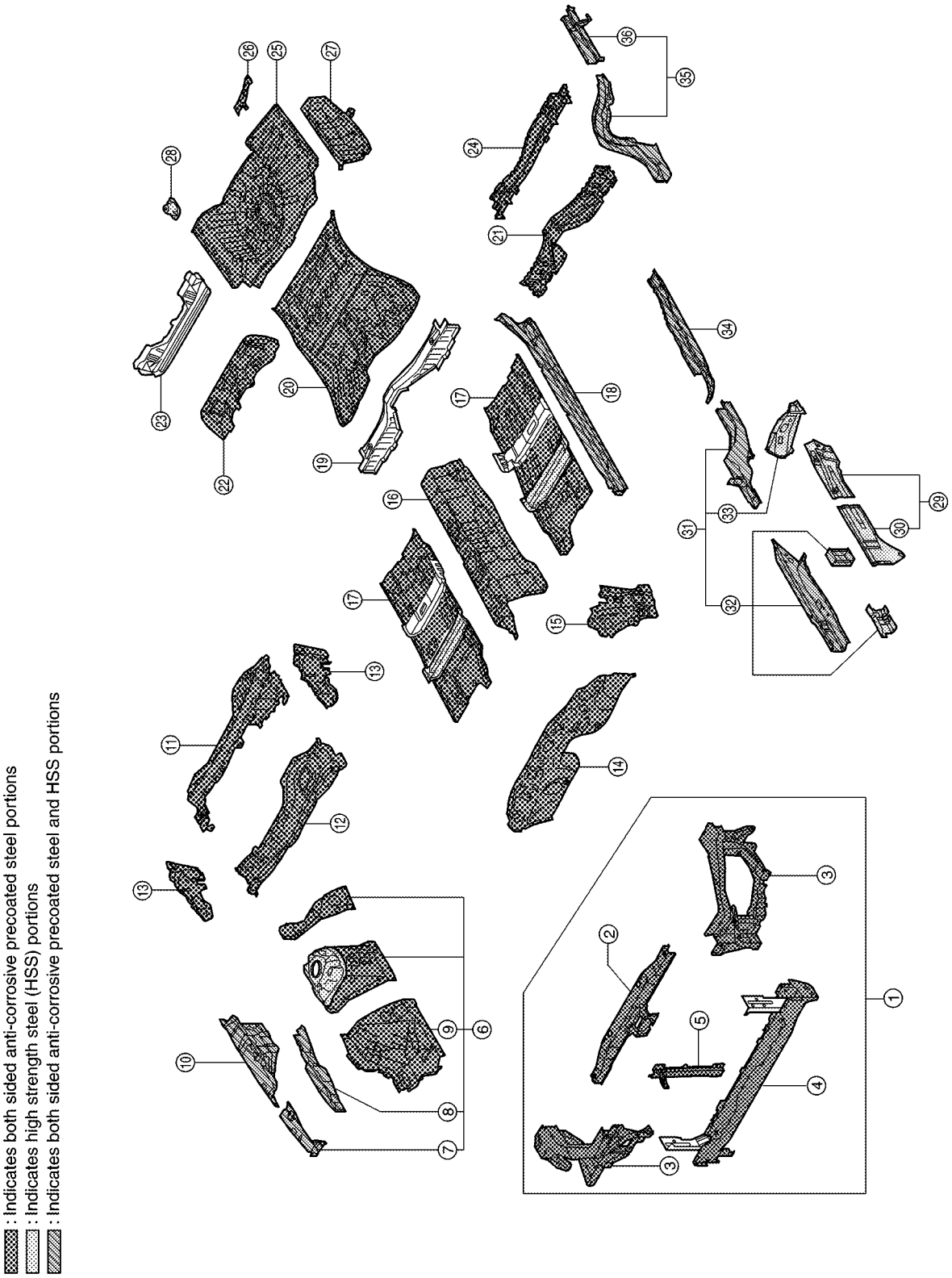
PIIA0090E

Component			Color code	BAX8	BBW5	BDT2	BJW0	BKH3	BKR4	BKX6	BQX1
			Description	Red	Dark Blue	Dark Green	Yellow-ish Green	Black	Green	Silver	White
			Paint type	P	P	P	M	2S	M	TM	3P
			Hard clear coat	X	X	X	X	X	X	X	X
1	Bumper fascia	Body	Body color	BAX8	BBW5	BDT2	BJW0	BKH3	BKR4	BKX6	BQX1
2	Front grille	Body	Black	AG01	AG01	AG01	AG01	AG01	AG01	AG01	AG01
		Molding	Chromium-plate	Cr	Cr	Cr	Cr	Cr	Cr	Cr	Cr
3	Door outside mirror	Case	Body color	BAX8	BBW5	BDT2	BJW0	BKH3	BKR4	BKX6	BQX1
		Base	Body color	BAX8	BBW5	BDT2	BJW0	BKH3	BKR4	BKX6	BQX1
4	Side guard molding		Body color	BAX8	BBW5	BDT2	BJW0	BKH3	BKR4	BKX6	BQX1
5	Center mudguard		Body color	BAX8	BBW5	BDT2	BJW0	BKH3	BKR4	BKX6	BQX1
6	Door sash		Black	701G-1	701G-1	701G-1	701G-1	701G-1	701G-1	701G-1	701G-1
7	Door outside handle escutcheon		Body color	BAX8	BBW5	BDT2	BJW0	BKH3	BKR4	BKX 6	BQX1
8	Door outside handle		Chromium-plate	Cr	Cr	Cr	Cr	Cr	Cr	Cr	Cr
9	Back door finisher	Body	Body color	BAX8	BBW5	BDT2	BJW0	BKH3	BKR4	BKX6	BQX1
		Molding	Chromium-plate	Cr	Cr	Cr	Cr	Cr	Cr	Cr	Cr

2S:2-Coat solid, M:Metallic, P:Pearl, 3P:3-Coat pearl, TM:Micro titanium metallic

Body Component Parts
UNDERBODY COMPONENT PARTS

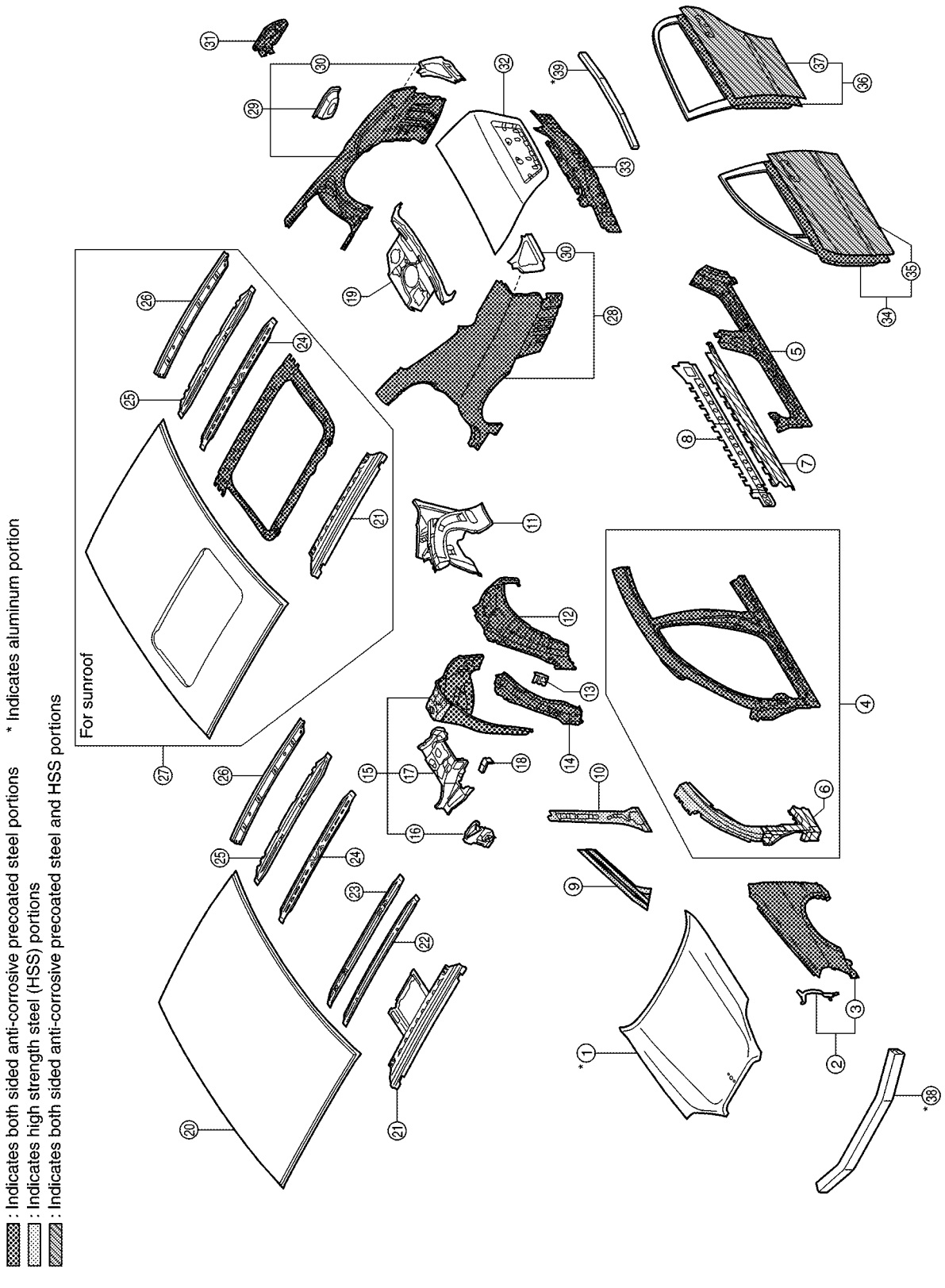
EIS00A5Y



SIIA2424E

1. Radiator core support assembly
2. Upper radiator core support
3. Side radiator core support
4. Lower radiator core support
5. Hood lock stay
6. Hoodledge assembly (RH&LH)
7. Hoodledge reinforcement (RH&LH)
8. Upper hoodledge (RH&LH)
9. Lower front hoodledge (RH&LH)
10. Rear hoodledge reinforcement (RH&LH)
11. Upper dash crossmember assembly
12. Upper dash assembly
13. Side cowl top
14. Lower dash
15. Side dash (RH&LH)
16. Front floor center
17. Front floor
18. Inner sill (RH&LH)
19. Rear seat crossmember assembly
20. Rear floor front
21. Rear seat crossmember
22. Rear floor belt anchor reinforcement
23. Rear seat back support assembly
24. Center rear crossmember
25. Rear floor rear
26. Muffler mounting bracket
27. Rear floor side (RH&LH)
28. Spare tire clamp bracket
29. Front side member closing plate assembly (RH&LH)
30. Front side member front closing plate (RH&LH)
31. Front side member assembly (RH&LH)
32. Front side member (RH&LH)
33. Front side member outrigger assembly (RH&LH)
34. Front side member rear extension (RH&LH)
35. Rear side member assembly (RH&LH)
36. Rear side member extension (RH&LH)

BODY COMPONENT PARTS



SIIA2425E

1. Hood
2. Front fender (RH&LH)
3. Front fender bracket (RH&LH)
4. Side body assembly (RH&LH)
5. Outer sill (RH&LH)
6. Upper front pillar hinge brace assembly (RH&LH)
7. Outer sill reinforcement (RH&LH)
8. Center sill reinforcement (RH&LH)
9. Upper inner front pillar assembly (RH&LH)
10. Inner center pillar (RH&LH)
11. Inner rear pillar (RH&LH)
12. Outer rear wheelhouse (RH&LH)
13. Outer rear wheelhouse brace (RH&LH)
14. Outer rear wheelhouse reinforcement (RH&LH)
15. Inner rear wheelhouse assembly (RH&LH)
16. Seat back support (RH&LH)
17. Side parcel shelf (RH&LH)
18. Rear parcel shelf bracket (RH&LH)
19. Parcel shelf with rear waist
20. Roof
21. Front roof rail
22. Front roof bow
23. Center roof bow No.1
24. Rear roof bow
25. Center roof bow No.2
26. Rear roof rail
27. Roof assembly
28. Rear fender (LH)
29. Rear fender (RH)
30. Rear combination lamp base
31. Fuel filler lid
32. Trunk lid
33. Rear panel assembly
34. Front door assembly (RH&LH)
35. Outer front door panel (RH&LH)
36. Rear door assembly (RH&LH)
37. Outer rear door panel (RH&LH)
38. Front bumper reinforcement
39. Rear bumper reinforcement

Corrosion Protection

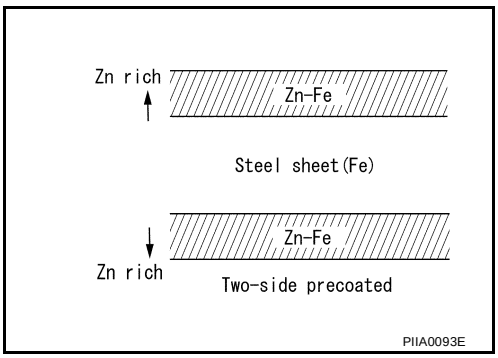
EIS000K4

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 repairability and corrosion resistance, a new type of anti-corrosive percolated 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.

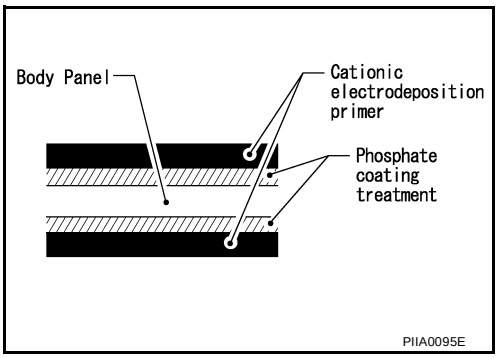


Nissan Genuine Service Parts are fabricated from galvannealed steel. Therefore, it is recommended that GENUINE NISSAN PARTS or equivalent be used for panel replacement to maintain the anti-corrosive performance built into the vehicle at the factory.

PHOSPHATE COATING TREATMENT AND CATIONIC ELECTRODEPOSITION PRIMER

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

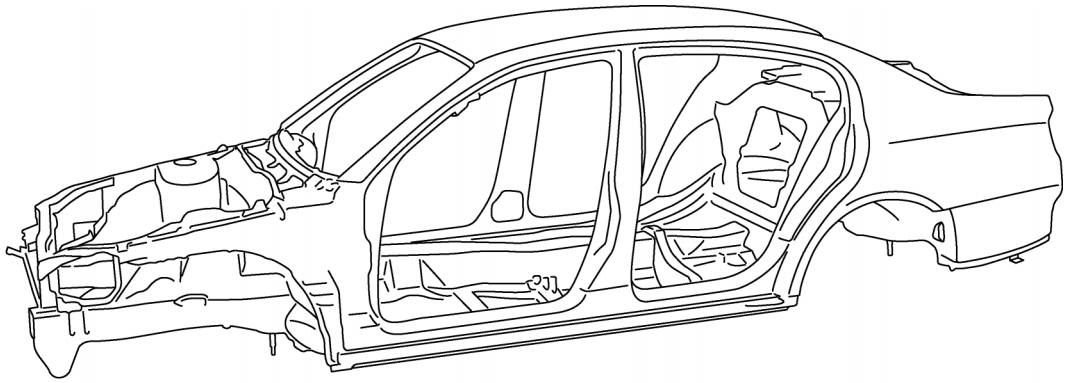
CAUTION:
Confine paint removal during welding operations to an absolute minimum.

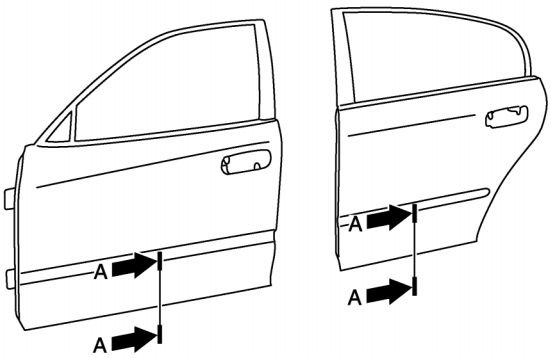


Nissan Genuine Service Parts are also treated in the same manner. Therefore, it is recommended that GENUINE NISSAN PARTS or equivalent be used for panel replacement to maintain anti-corrosive performance built into the vehicle at the factory.

ANTI-CORROSIVE WAX

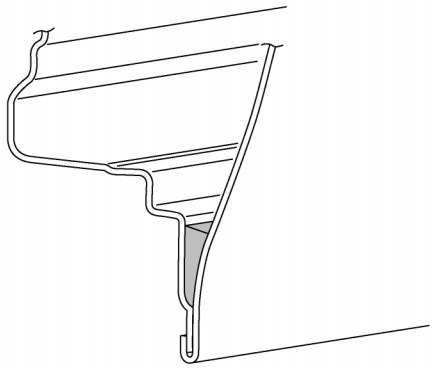
To improve corrosion resistance, anti-corrosive wax is applied inside the body sill and inside other closed sections. Accordingly, when replacing these parts, be sure to apply anti-corrosive wax to the appropriate areas of the new parts. Select an excellent anti-corrosive wax which will penetrate after application and has a long shelf life.





: Indicates anti-corrosive wax coated portions.

Section A-A



PIIA0096E

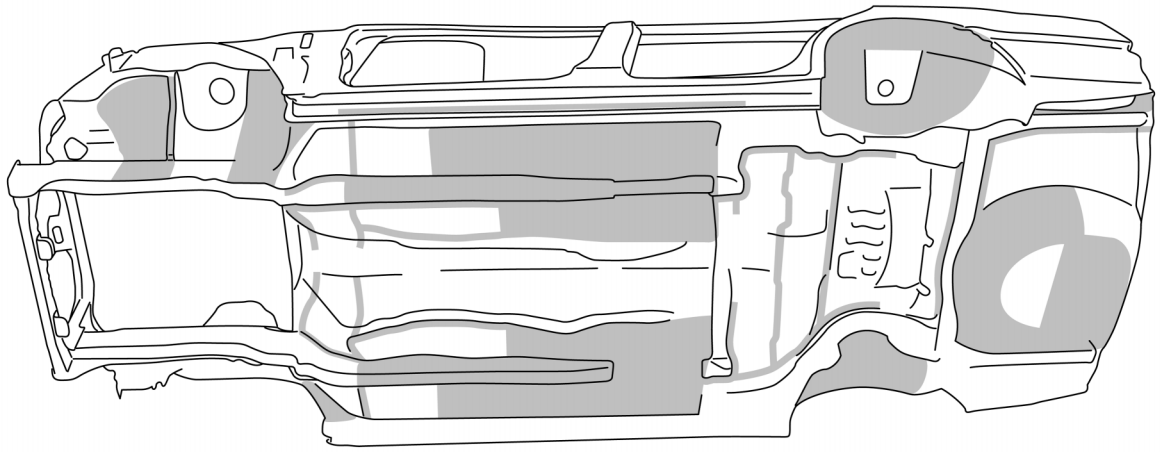
UNDERCOATING

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.
4. Apply bitumen wax after applying undercoating.

: Indicates undercoated portions.



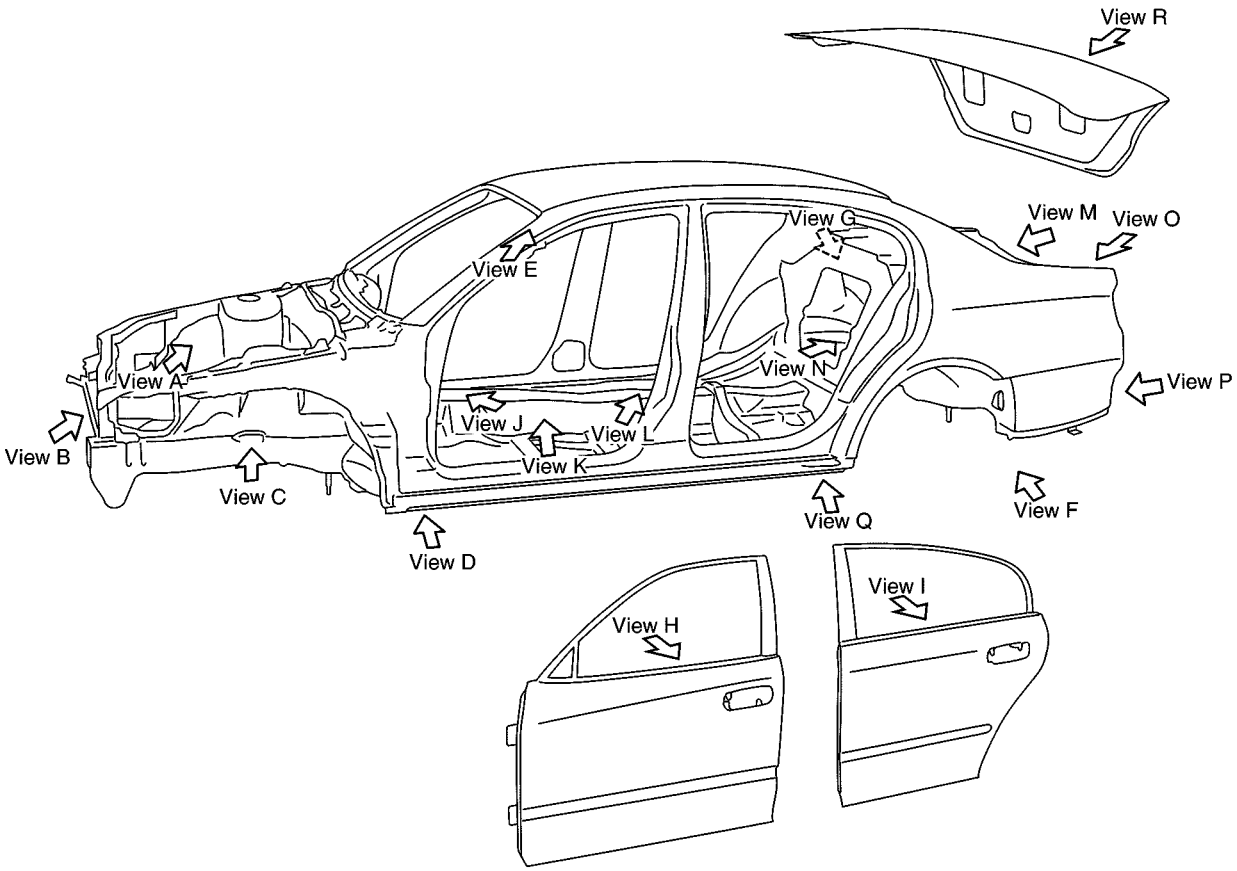
PIIA0097E

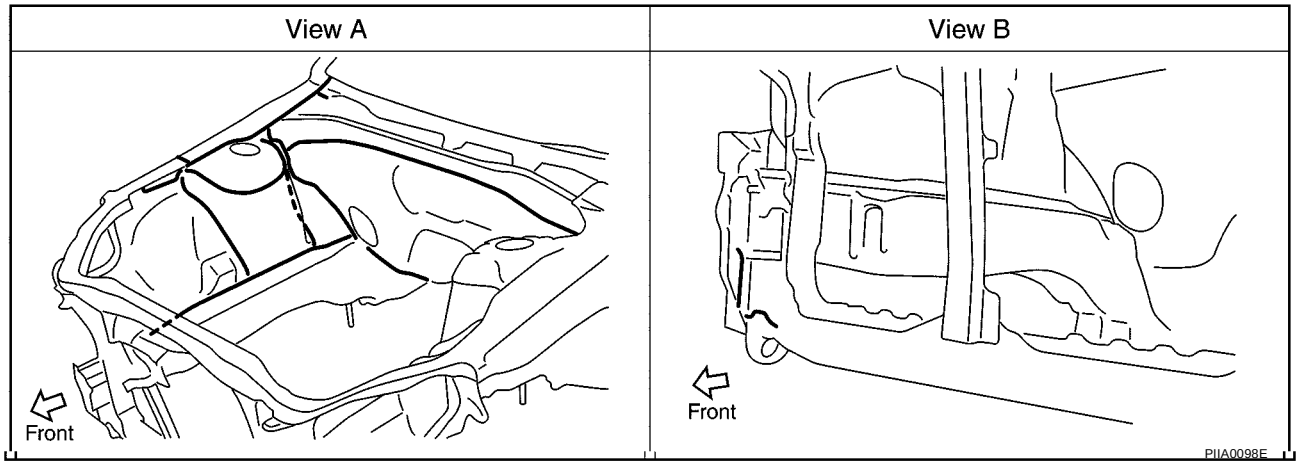
Body Sealing

EIS000K5

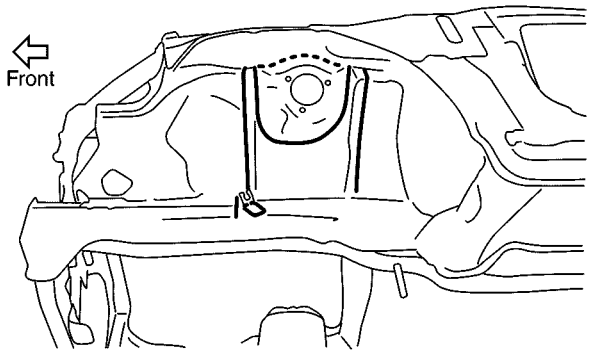
DESCRIPTION

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.

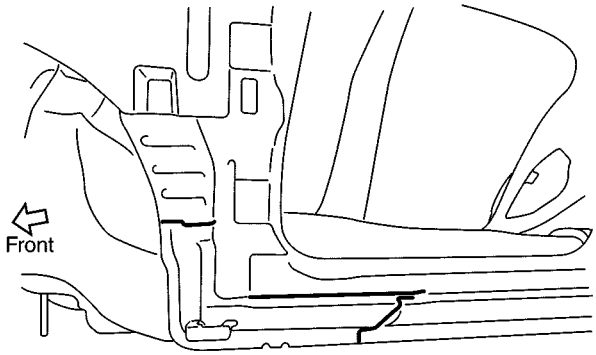




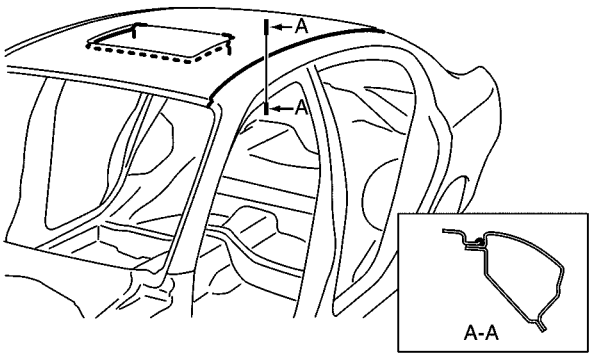
View C



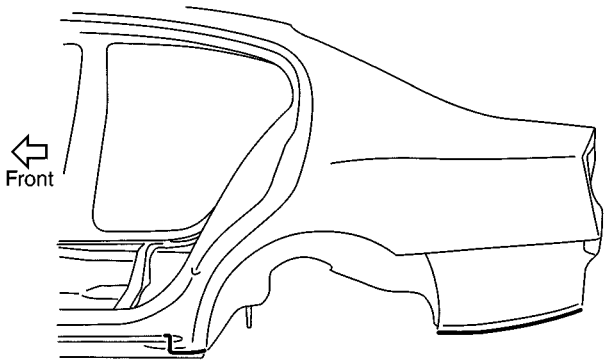
View D



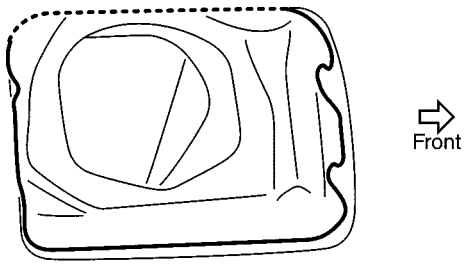
View E



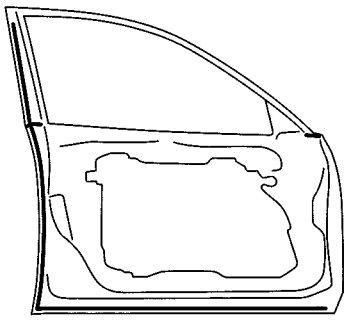
View F



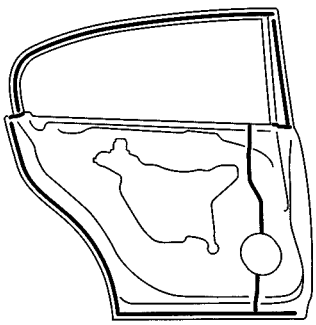
View G



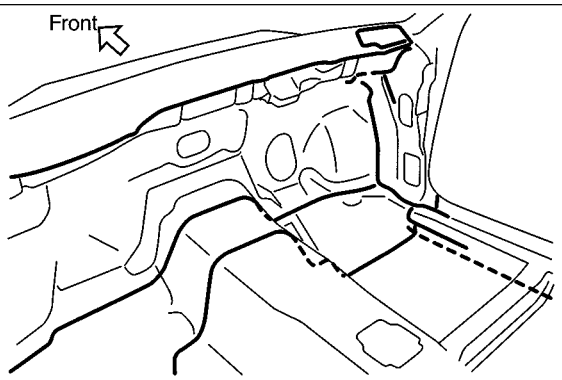
View H



View I

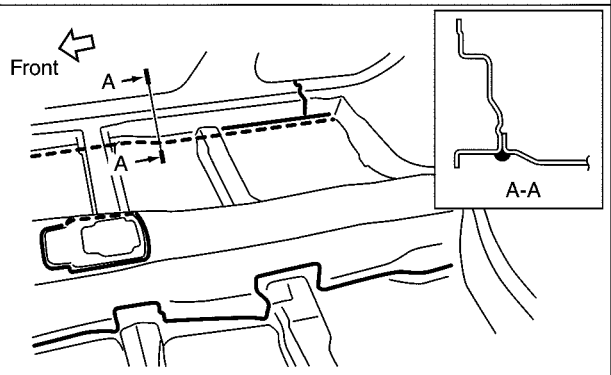


View J

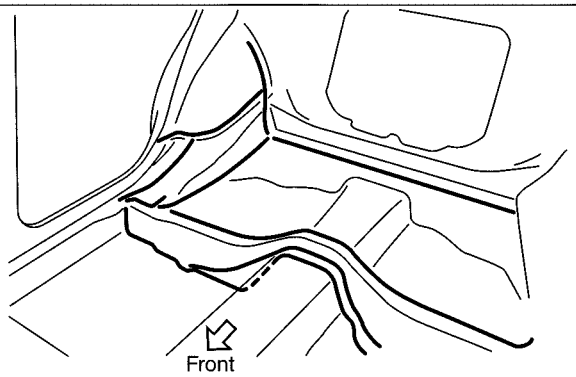


PIIA0099E

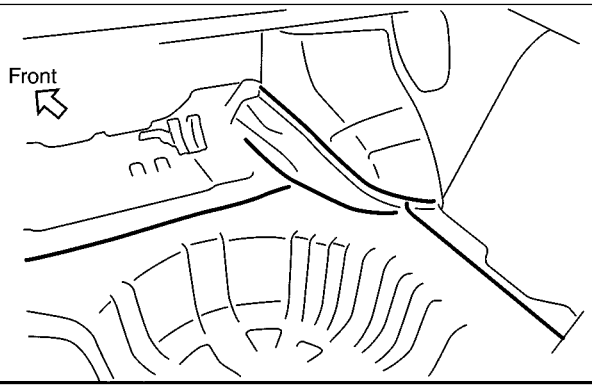
View K



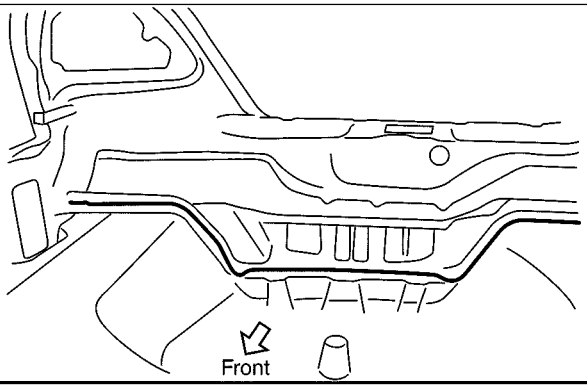
View L



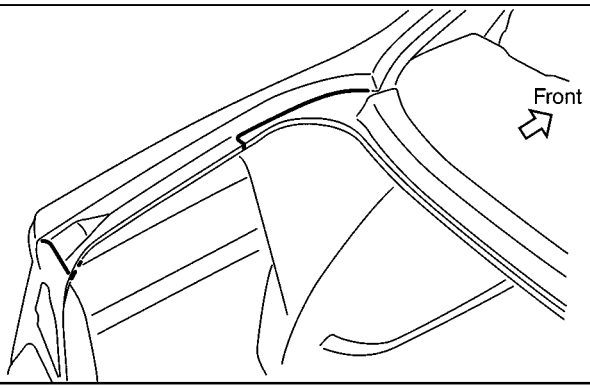
View M



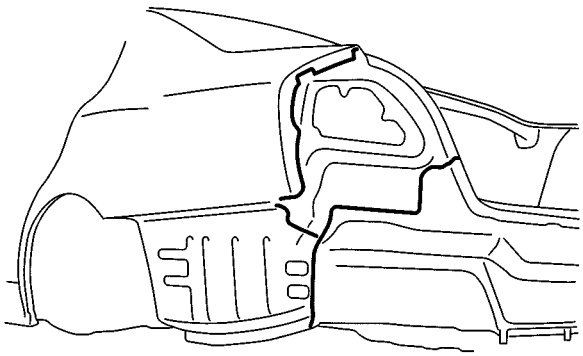
View N



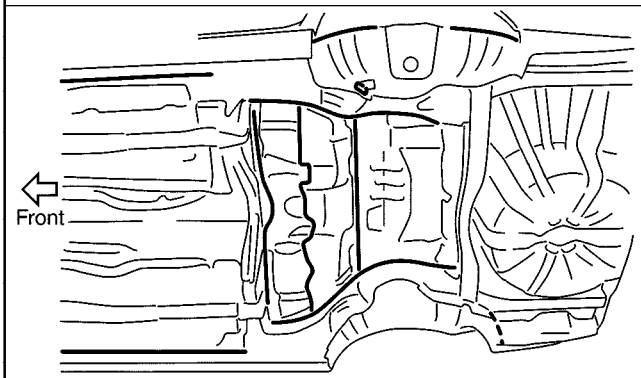
View O



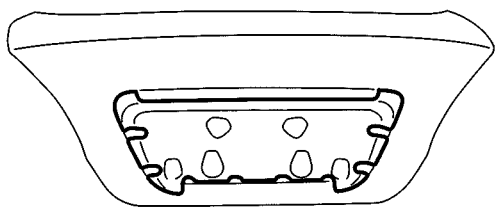
View P



View Q



View R

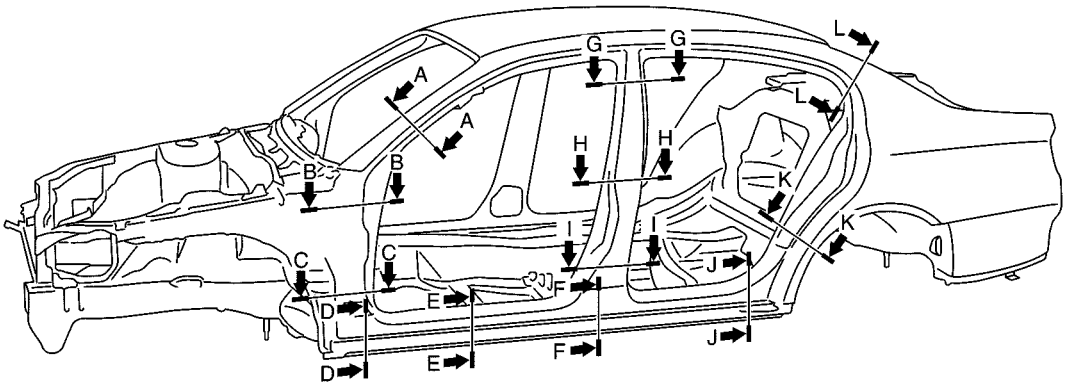


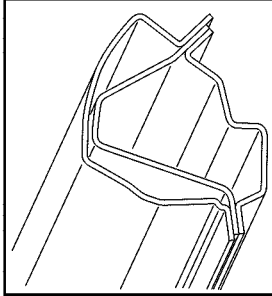
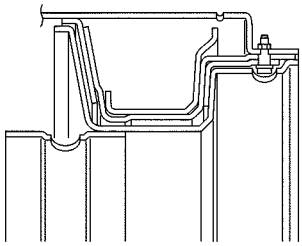
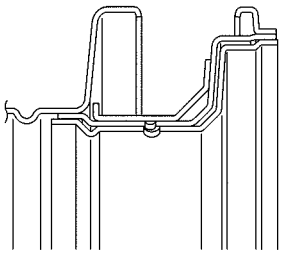
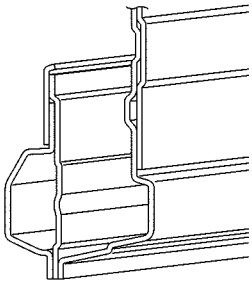
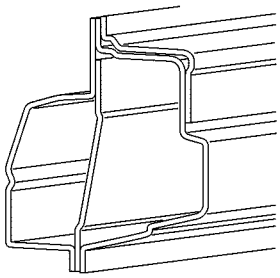
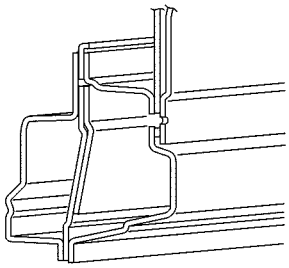
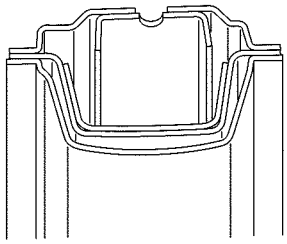
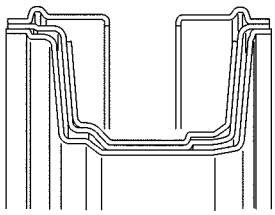
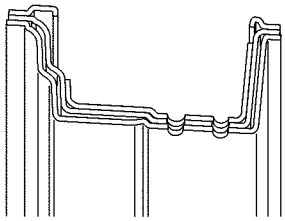
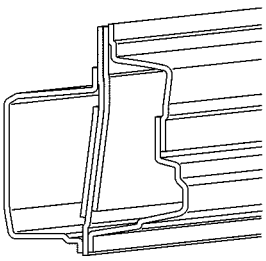
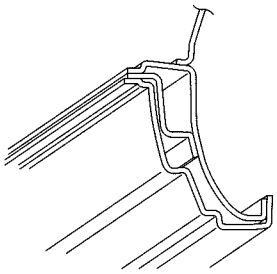
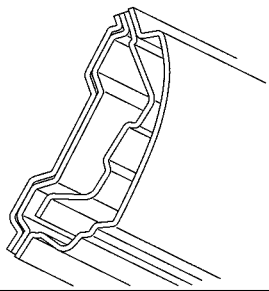
PIIA0100E

Body Construction

BODY CONSTRUCTION

EIS000K6



Section A-A	Section B-B	Section C-C	Section D-D
			
Section E-E	**Section F-F**	**Section G-G**	**Section H-H**
			
Section I-I	**Section J-J**	**Section K-K**	**Section L-L**
			

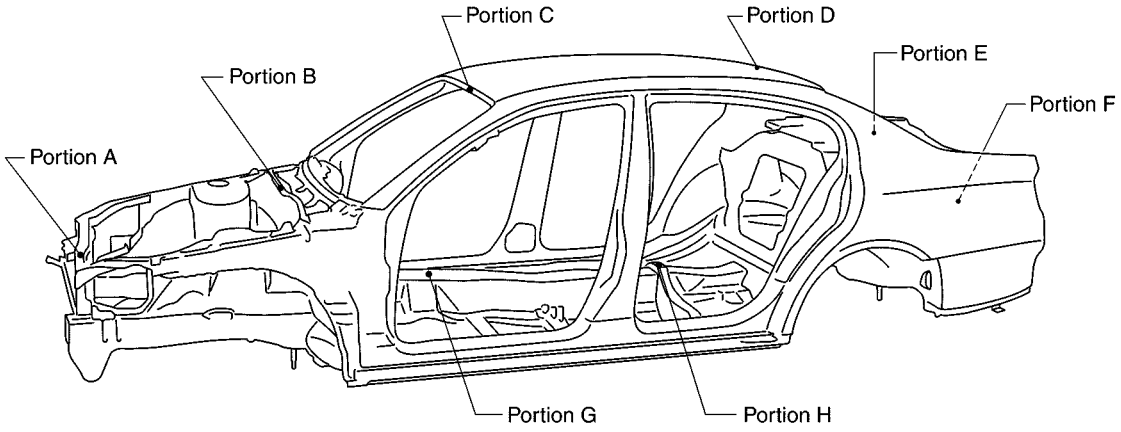
PIIA0101E

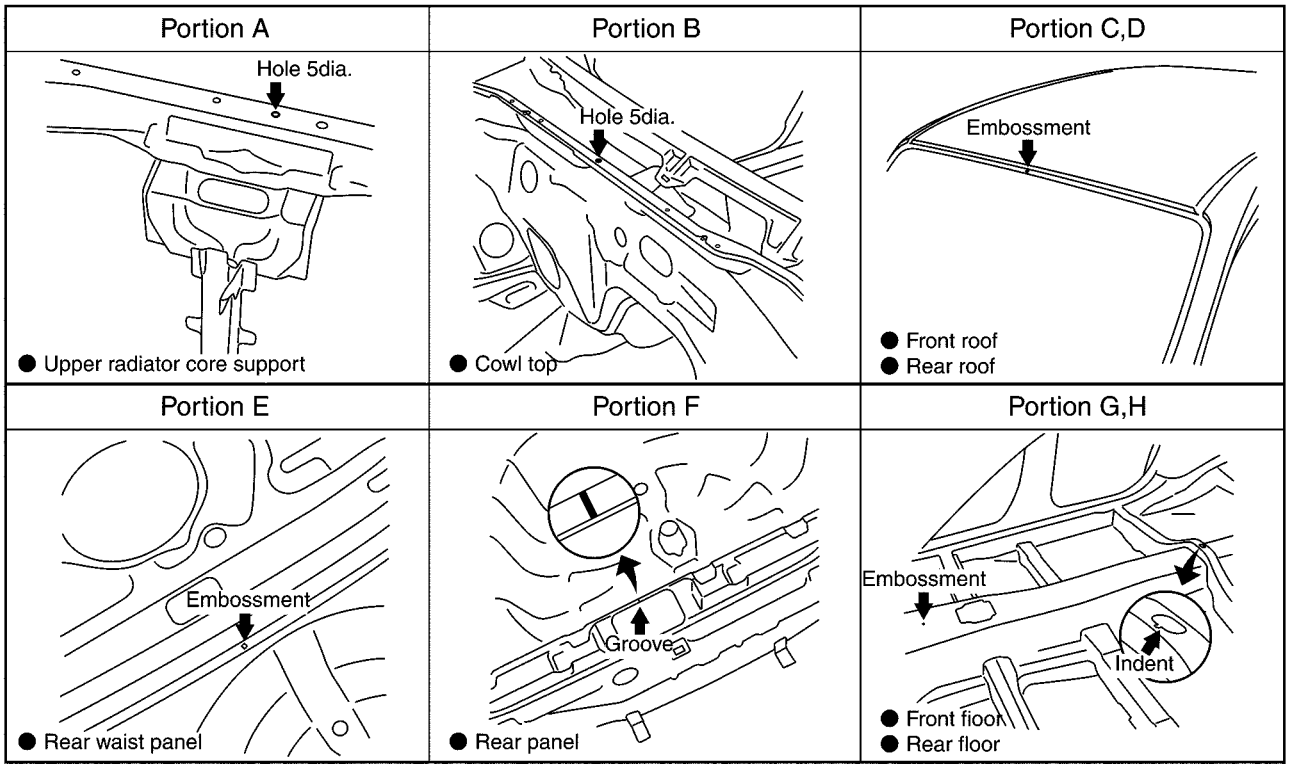
Body Alignment

EIS000K7

BODY CENTER MARKS

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.

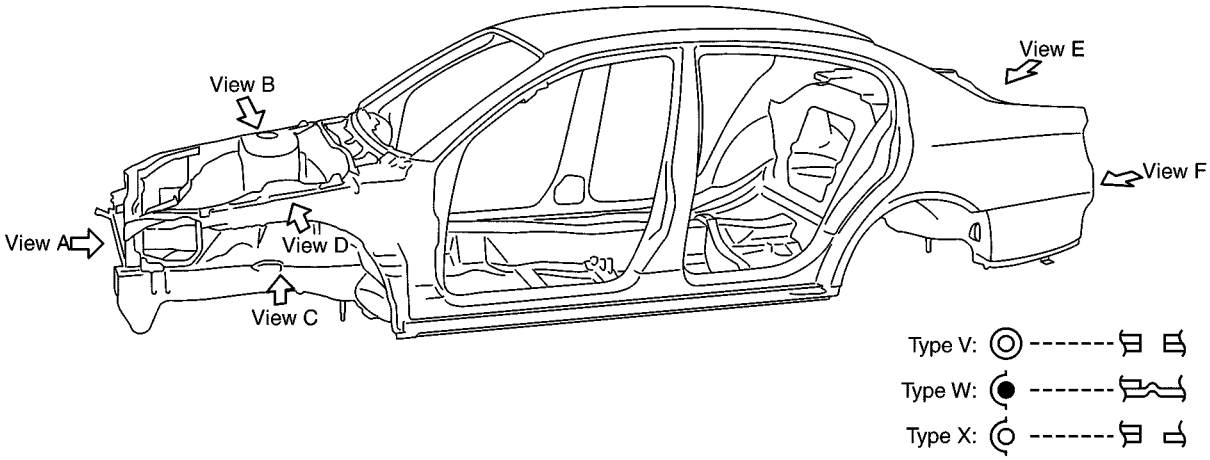


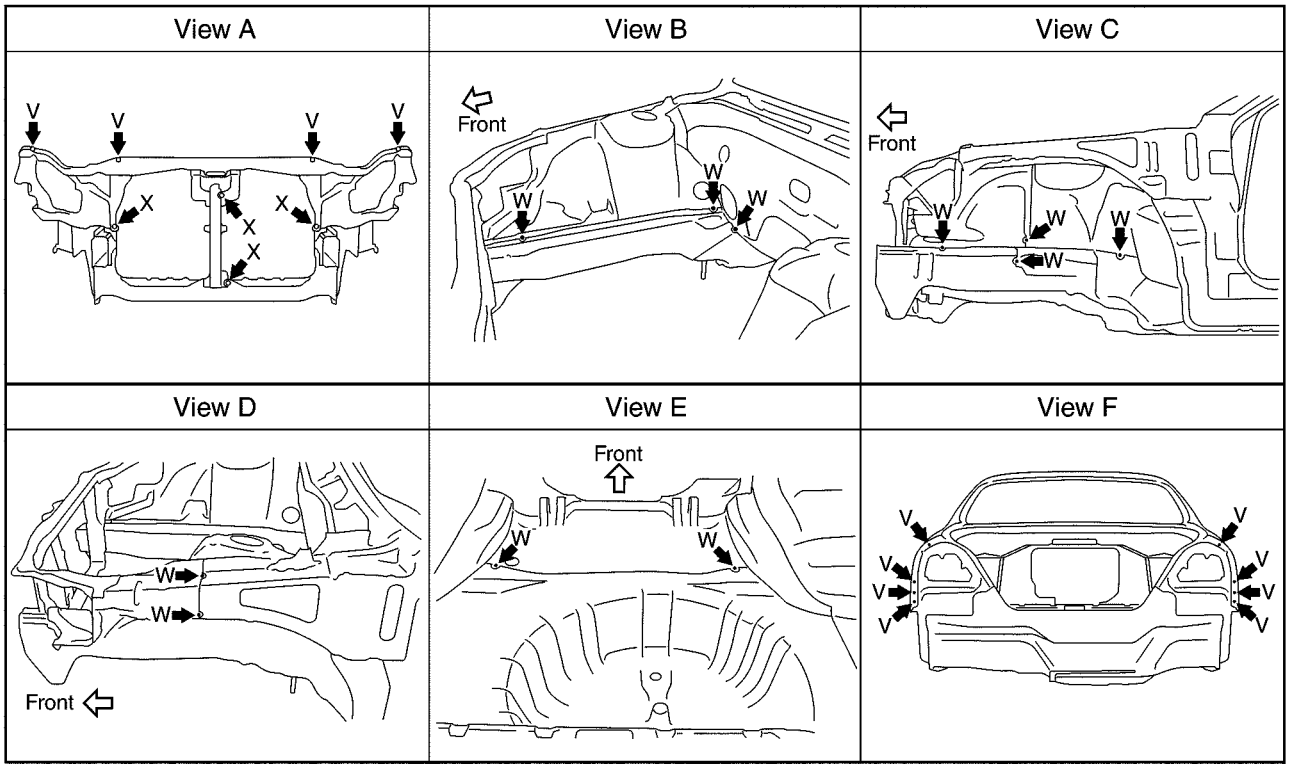


PIIA0102E

PANEL PARTS MATCHING MARKS

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.

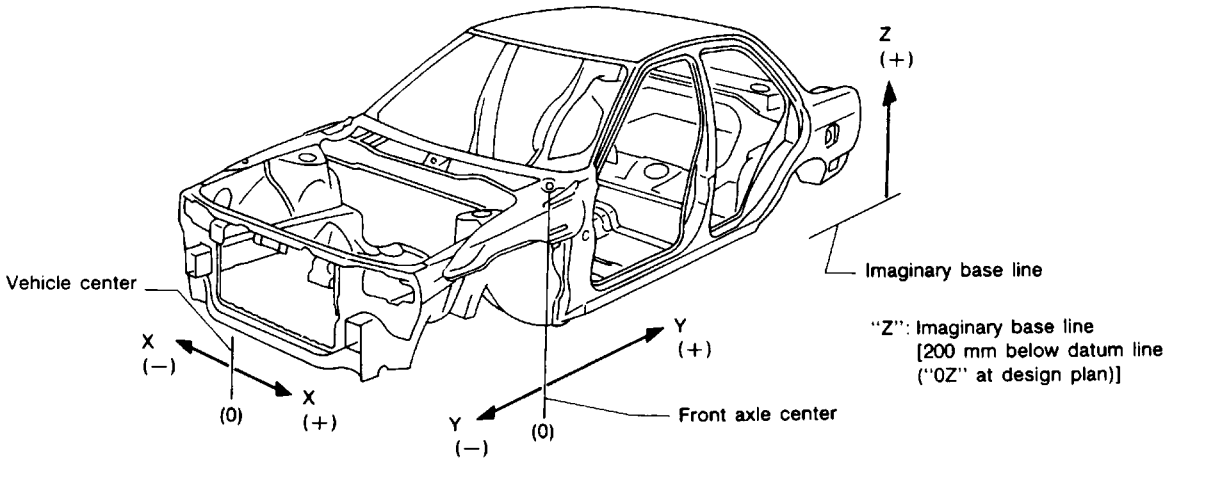




PIIA0103E

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".

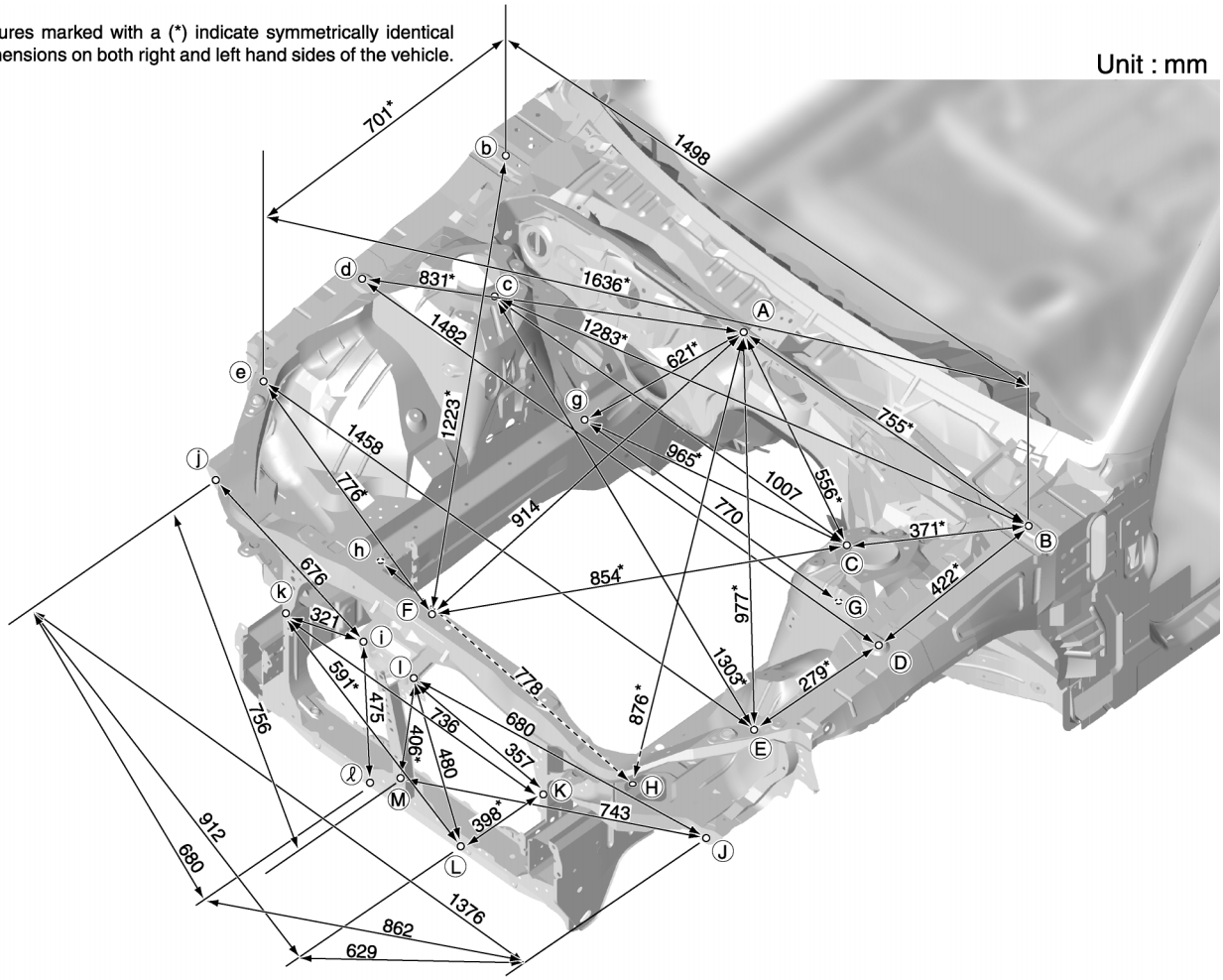


ENGINE COMPARTMENT

Measurement

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

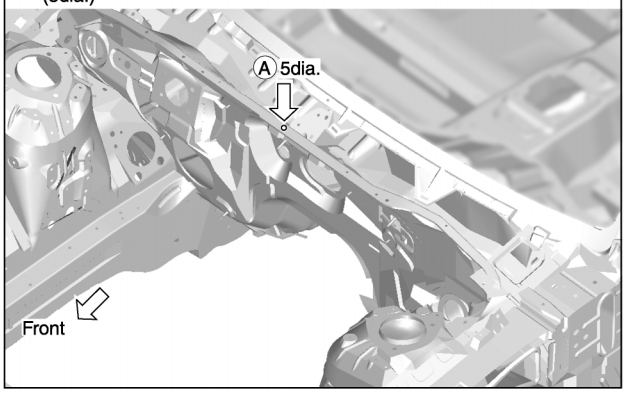
Unit : mm



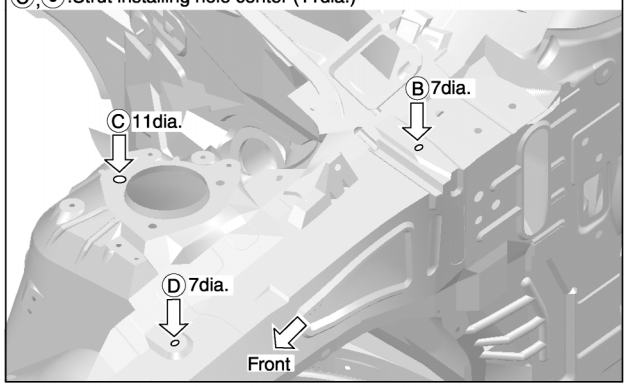
PIIA0105E

Measurement Points

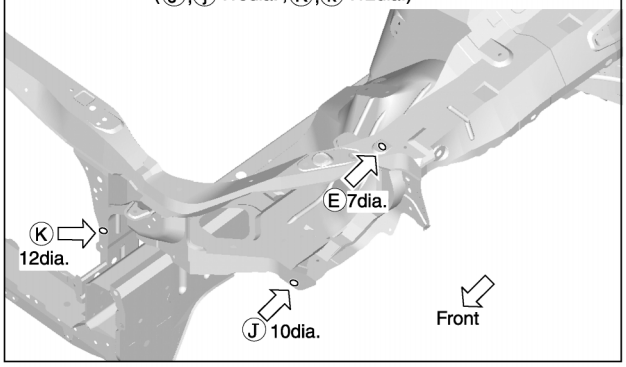
Ⓐ:Cowl top seal rubber installing hole center of center positioning mark (5dia.)



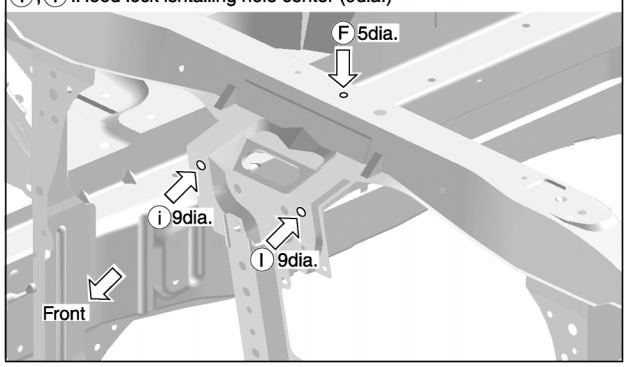
Ⓑ, ⓑ, Ⓓ, ⓓ:Fender installing hole center (7dia.)
Ⓒ, ⓒ:Strut installing hole center (11dia.)



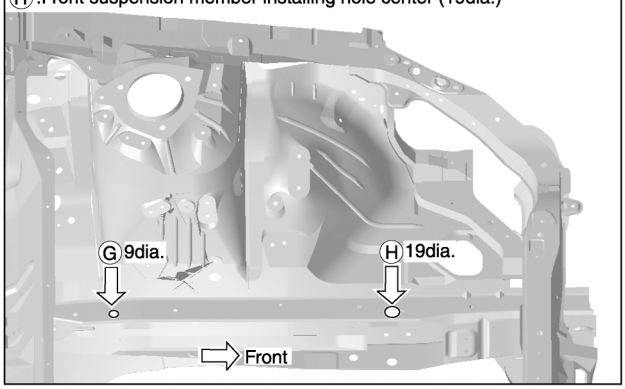
Ⓔ, ⓔ :Fender installing hole center(7dia.)
Ⓙ, ⓙ, Ⓚ, ⓚ :Side radiator core support hole center (Ⓙ, ⓙ :10dia. , Ⓚ, ⓚ :12dia.)



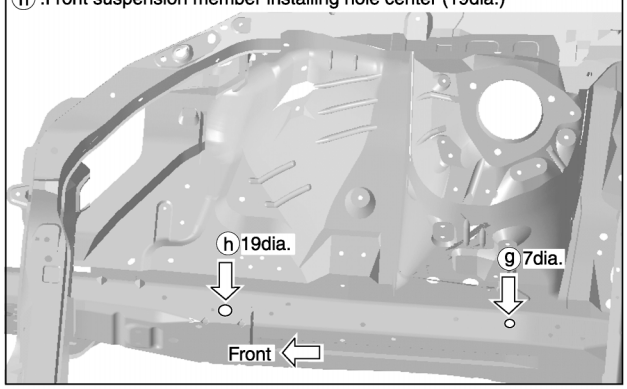
Ⓕ:Upper radiator core support hole center of center positioning mark (5dia.)
Ⓘ, ⓘ:Hood lock isntalling hole center (9dia.)



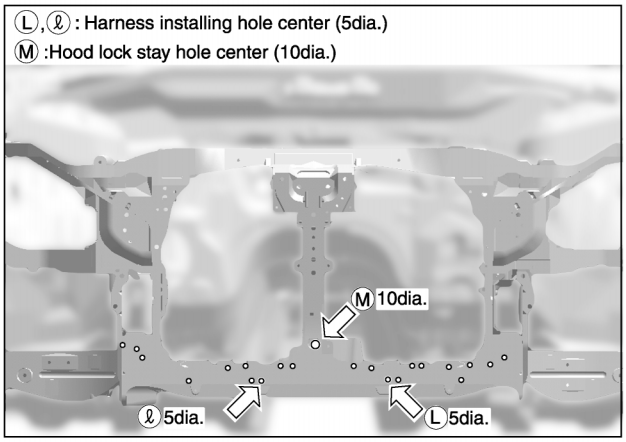
Ⓖ:Front side member LH side hole center (9dia.)
Ⓗ:Front suspension member installing hole center (19dia.)



ⓖ:Front side member RH side hole center (7dia.)
ⓗ:Front suspension member installing hole center (19dia.)



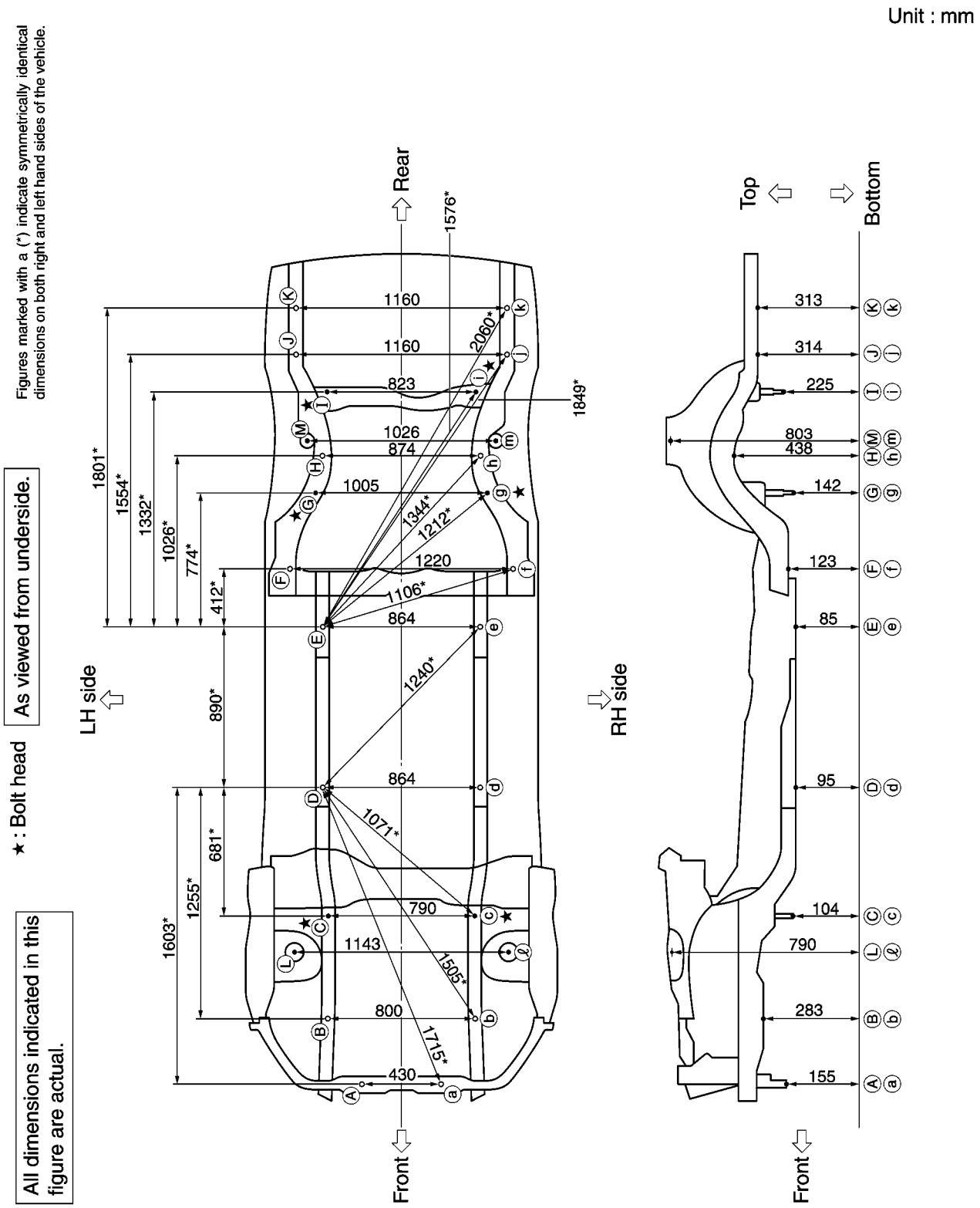
Ⓛ, ⓛ: Harness installing hole center (5dia.)
Ⓜ :Hood lock stay hole center (10dia.)



PIIA0106E

UNDERBODY
Measurement

Unit : mm

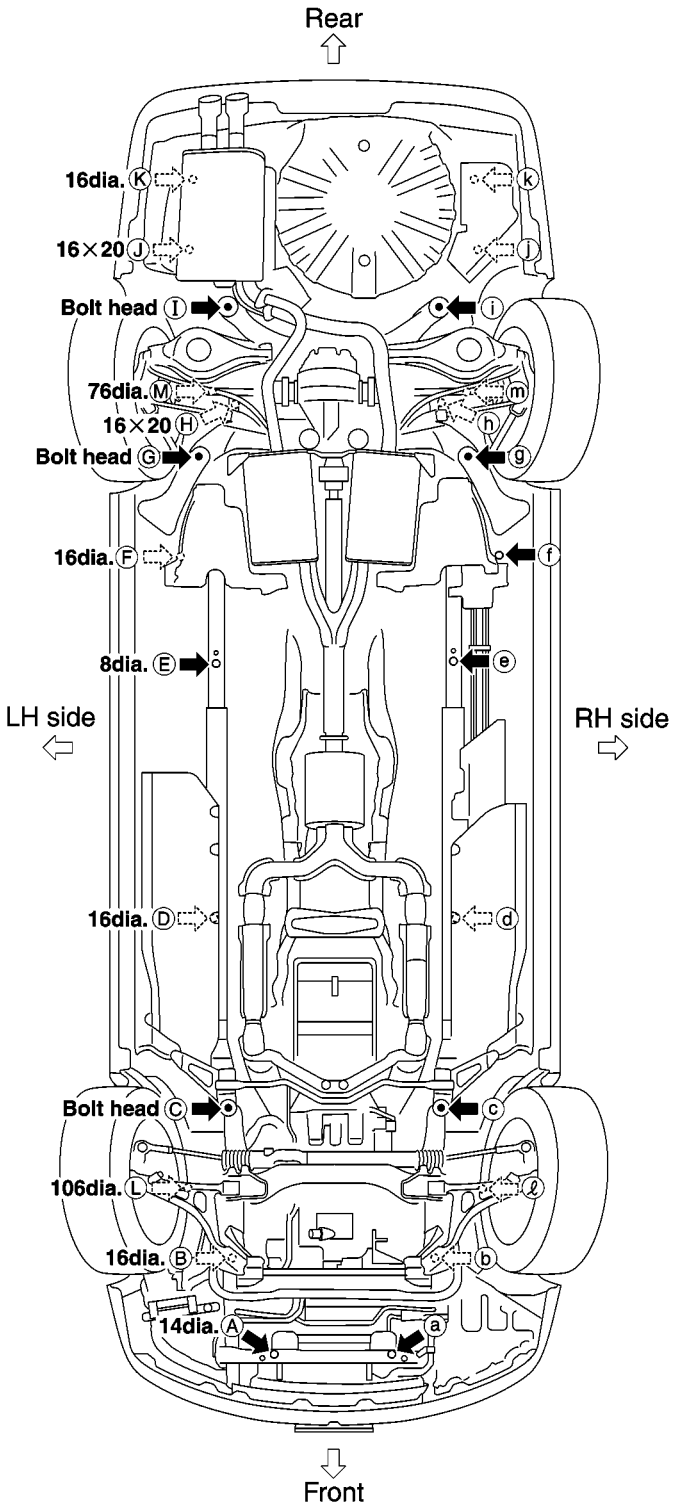


PIIA0107E

Measurement Points

Unit : mm

As viewed from underside.



Coordinates:

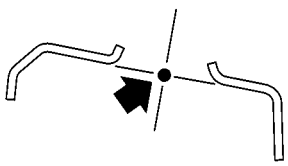
Ⓐ,ⓐ	Ⓘ,ⓘ
X:215	**X:412**
Y:-637	**Y:3164**
Z:155	**Z:225**
Ⓑ,ⓑ	Ⓙ,ⓙ
X:400	**X:580**
Y:-290	**Y:3370**
Z:283	**Z:314**
Ⓒ,ⓒ	Ⓚ,ⓚ
X:395	**X:580**
Y:270	**Y:3620**
Z:104	**Z:313**
Ⓓ,ⓓ	
X:432	
Y:950	
Z:95	
Ⓔ,ⓔ	
X:432	
Y:1840	
Z:85	
Ⓕ,ⓕ	
X:610	
Y:2210	
Z:123	
Ⓖ,ⓖ	
X:503	
Y:2609	
Z:142	
Ⓗ,ⓗ	
X:437	
Y:2803	
Z:438	

Front and rear strut tower centers

Coordinates:

Ⓛ,ⓛ
X:572
Y:72
Z:790

Ⓜ,ⓜ
X:513
Y:2900
Z:803



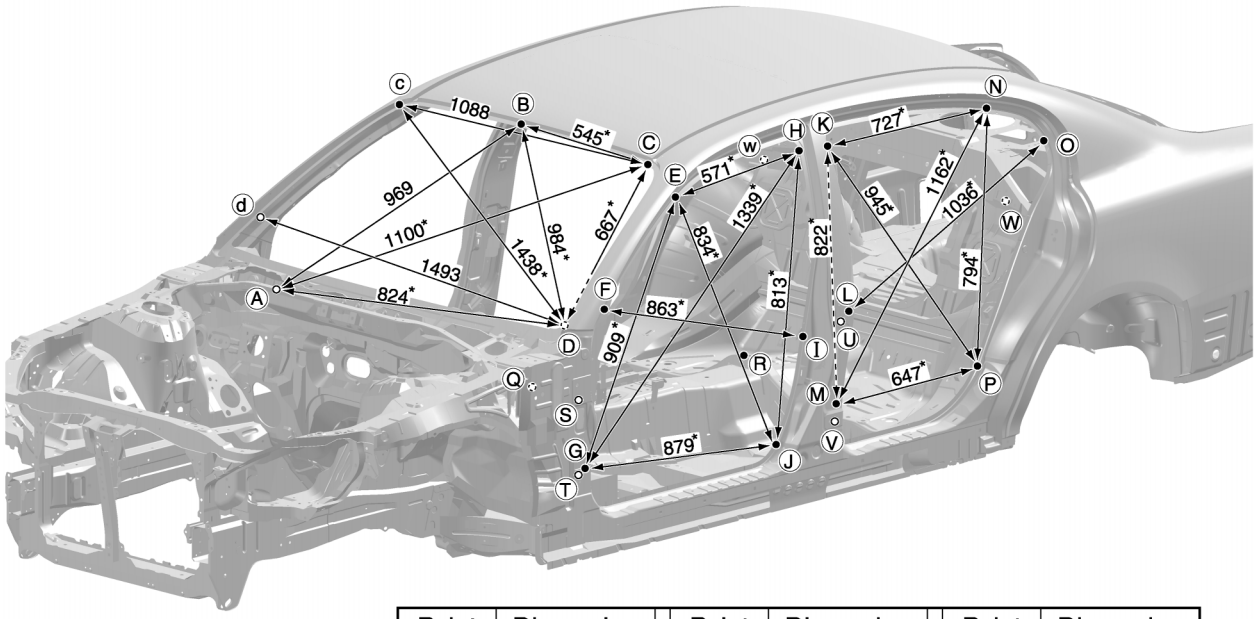
Front: Ⓛ,ⓛ **106dia**
Rear: Ⓜ,ⓜ **76dia**

PIIA0108E

PASSENGER COMPARTMENT
Measurement

Unit : mm

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

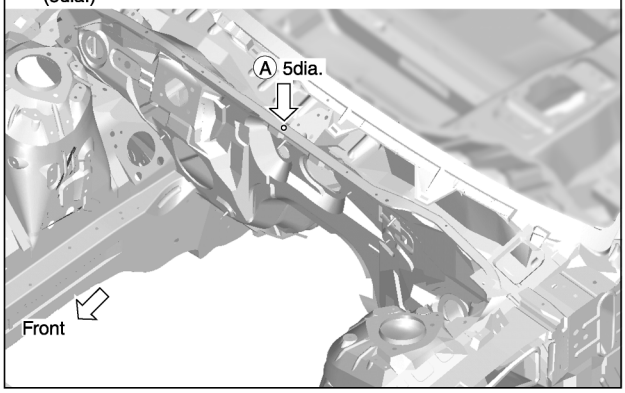


Point	Dimension	Point	Dimension	Point	Dimension
Ⓔ~ⓔ	1,263	Ⓠ~Ⓕ	923*	Ⓖ~ⓙ	1,744*
Ⓕ~ⓕ	1,453	Ⓠ~Ⓖ	795*	Ⓗ~ⓙ	1,588*
Ⓖ~ⓖ	1,507	Ⓠ~Ⓗ	1,316*	Ⓚ~ⓜ	1,594*
Ⓗ~ⓗ	1,235	Ⓠ~Ⓘ	1,077*	Ⓚ~ⓝ	1,440*
Ⓘ~ⓘ	1,493	Ⓠ~Ⓙ	982*	Ⓚ~ⓟ	1,664*
Ⓙ~ⓙ	1,507	Ⓡ~Ⓚ	1,074*	Ⓜ~ⓟ	1,647*
Ⓚ~ⓚ	1,235	Ⓡ~Ⓛ	883*	Ⓝ~ⓟ	1,590*
Ⓛ~ⓛ	1,493	Ⓡ~Ⓜ	847*	Ⓢ~Ⓤ	1,161*
Ⓜ~ⓜ	1,511	Ⓡ~Ⓝ	1,134*	Ⓢ~Ⓥ	1,160*
Ⓝ~ⓝ	1,251	Ⓡ~Ⓞ	1,170*	Ⓣ~Ⓤ	1,197*
Ⓞ~ⓞ	1,356	Ⓡ~Ⓟ	807*	Ⓣ~Ⓥ	1,124*
Ⓟ~ⓟ	1,518	Ⓔ~ⓖ	1,652*	Ⓡ~Ⓦ	1,046*
Ⓦ~ⓦ	967	Ⓔ~ⓗ	1,373*		
Ⓠ~Ⓔ	1,033*	Ⓖ~ⓗ	1,911*		

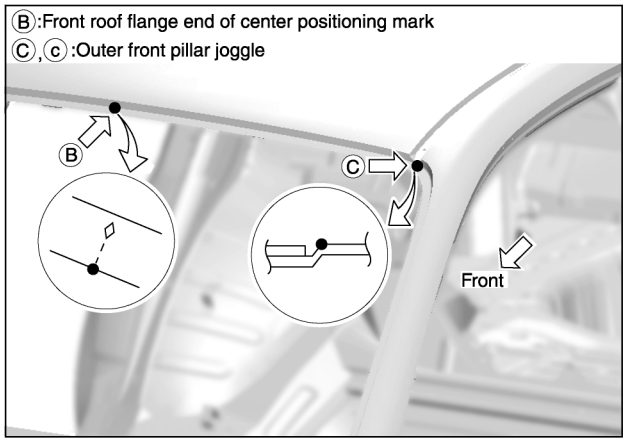
PIIA0109E

Measurement Points

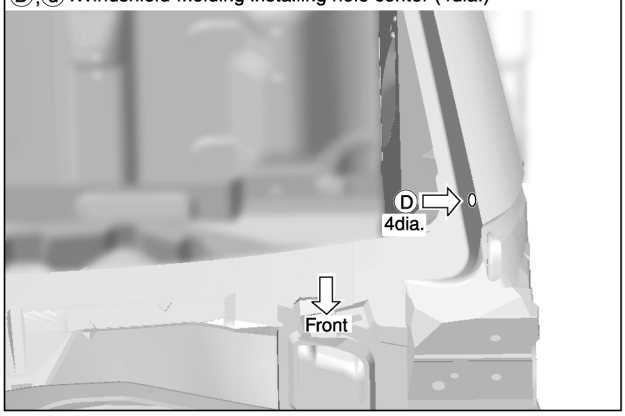
Ⓐ:Cowl top seal rubber installing hole center of center positioning mark (5dia.)



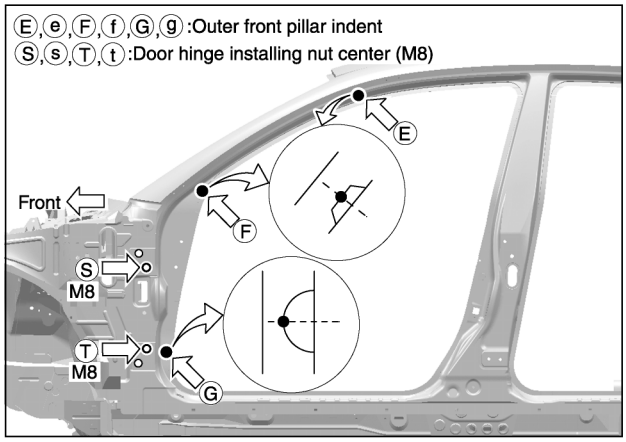
Ⓑ:Front roof flange end of center positioning mark
Ⓒ, ⓒ:Outer front pillar joggle



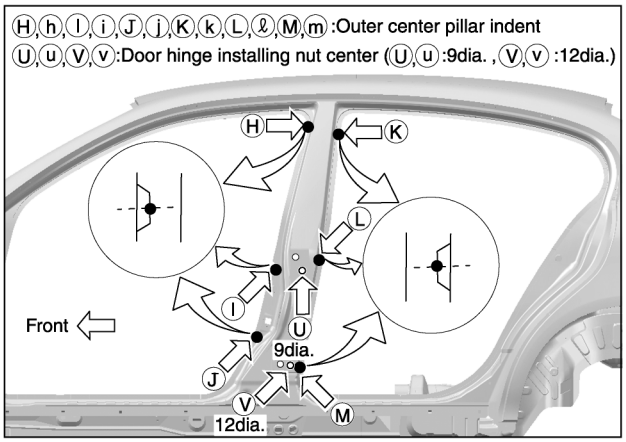
Ⓓ, ⓓ:Windshield-molding installing hole center (4dia.)



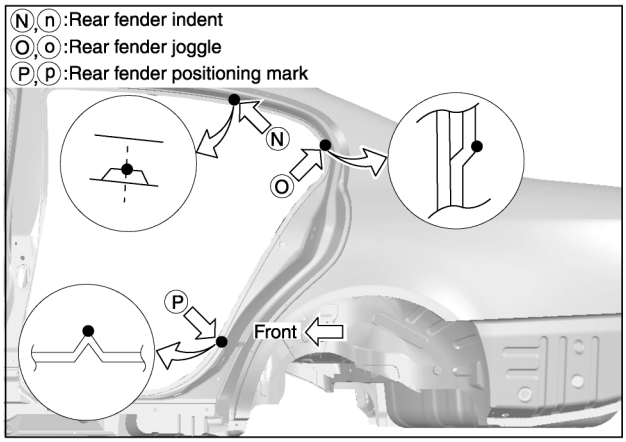
Ⓔ, ⓔ, Ⓕ, ⓕ, Ⓖ, ⓖ:Outer front pillar indent
Ⓢ, ⓢ, Ⓣ, ⓣ:Door hinge installing nut center (M8)



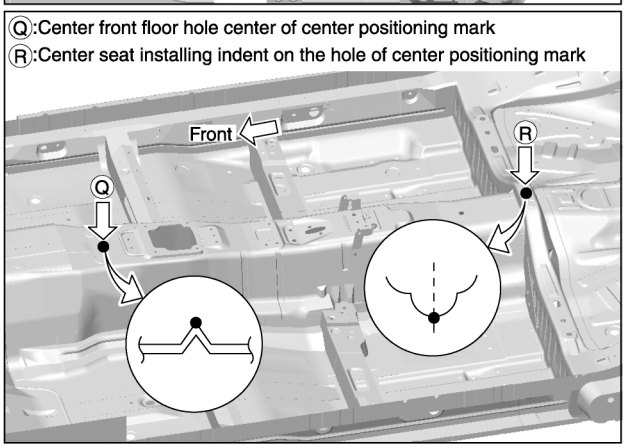
Ⓗ, ⓗ, Ⓘ, ⓘ, Ⓙ, ⓙ, Ⓚ, ⓚ, Ⓛ, ⓛ, Ⓜ, ⓜ:Outer center pillar indent
Ⓤ, ⓤ, Ⓥ, ⓥ:Door hinge installing nut center (Ⓤ, ⓤ:9dia. , Ⓥ, ⓥ:12dia.)



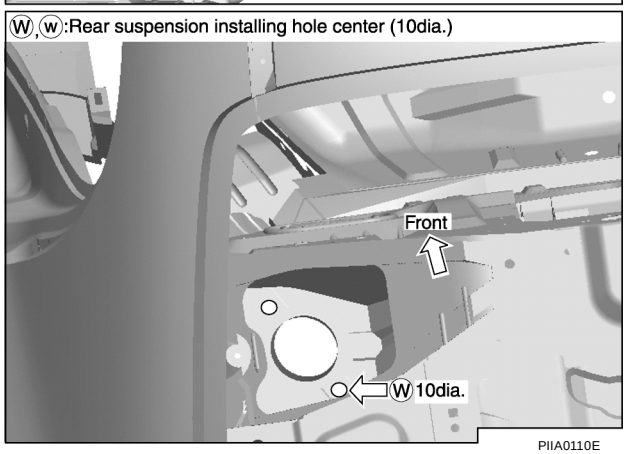
Ⓝ, ⓝ:Rear fender indent
Ⓞ, ⓞ:Rear fender joggle
Ⓟ, ⓟ:Rear fender positioning mark



Ⓠ:Center front floor hole center of center positioning mark
Ⓡ:Center seat installing indent on the hole of center positioning mark



Ⓦ, ⓦ:Rear suspension installing hole center (10dia.)



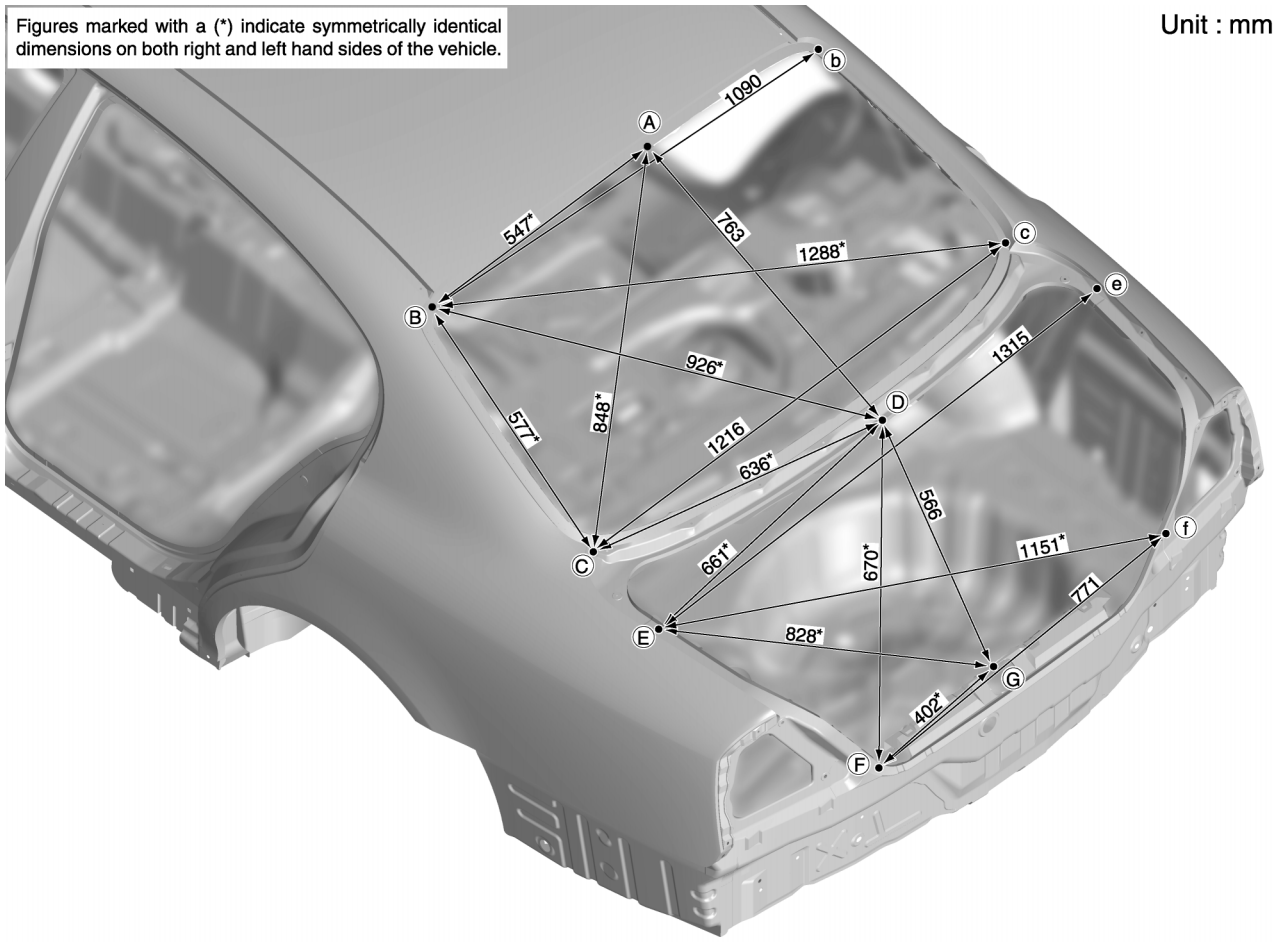
PIIA0110E

REAR BODY

Measurement

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

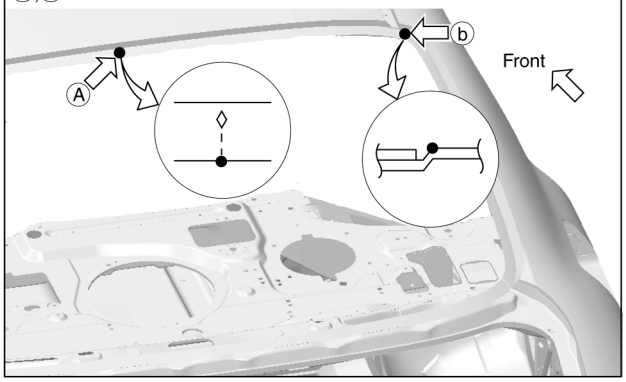
Unit : mm



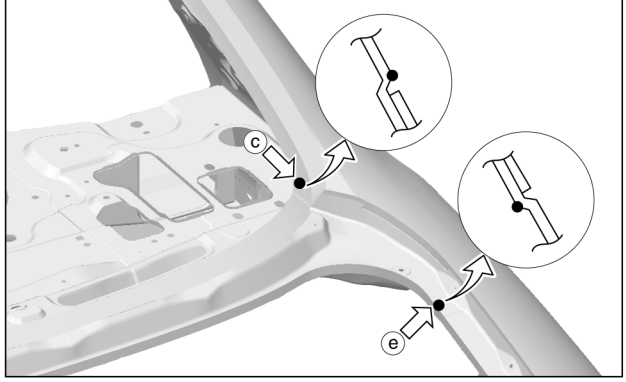
PIIA0111E

Measurement Points

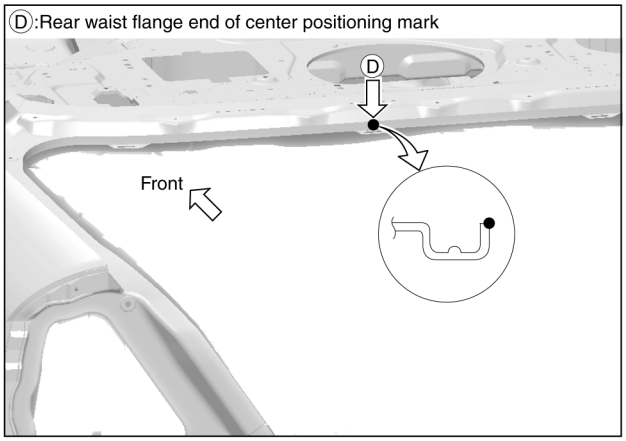
Ⓐ:Rear roof flange end of center positioning mark
Ⓑ,ⓑ:Rear fender joggle



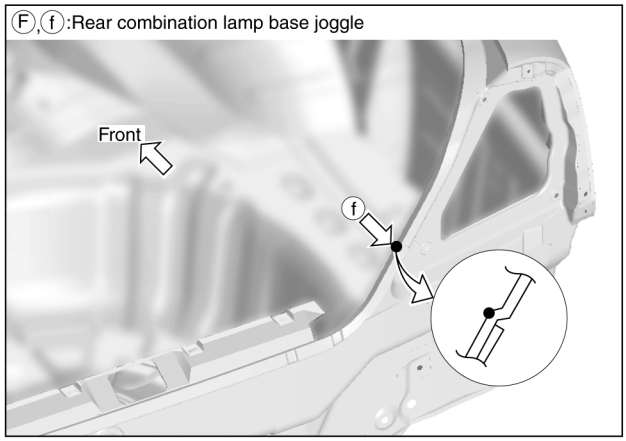
Ⓒ,ⓒ,Ⓔ,ⓔ:Rear fender joggle



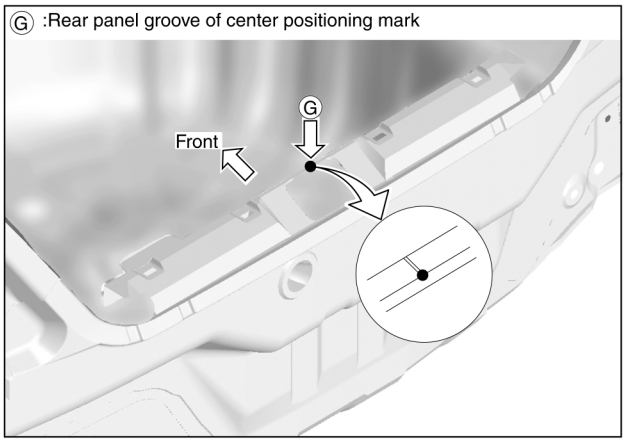
Ⓓ:Rear waist flange end of center positioning mark



Ⓕ,ⓕ:Rear combination lamp base joggle



Ⓖ :Rear panel groove of center positioning mark



PIIA0112E

Handling Precautions for Plastics

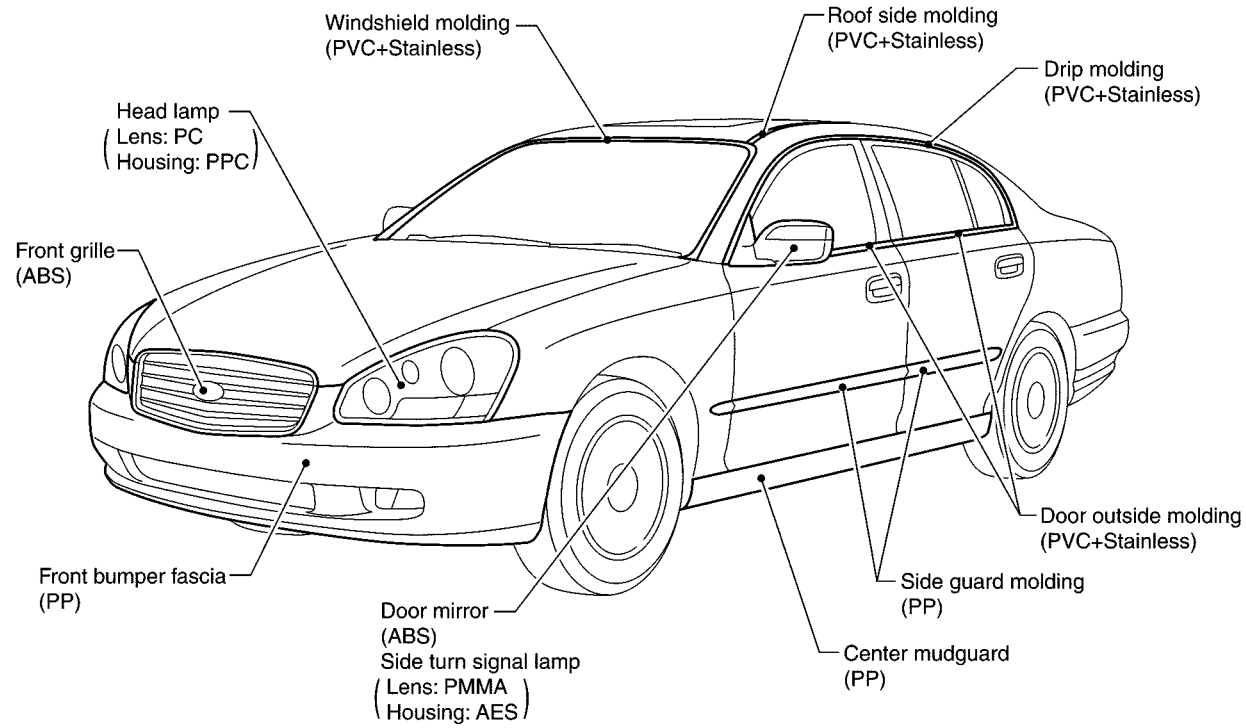
EIS000K8

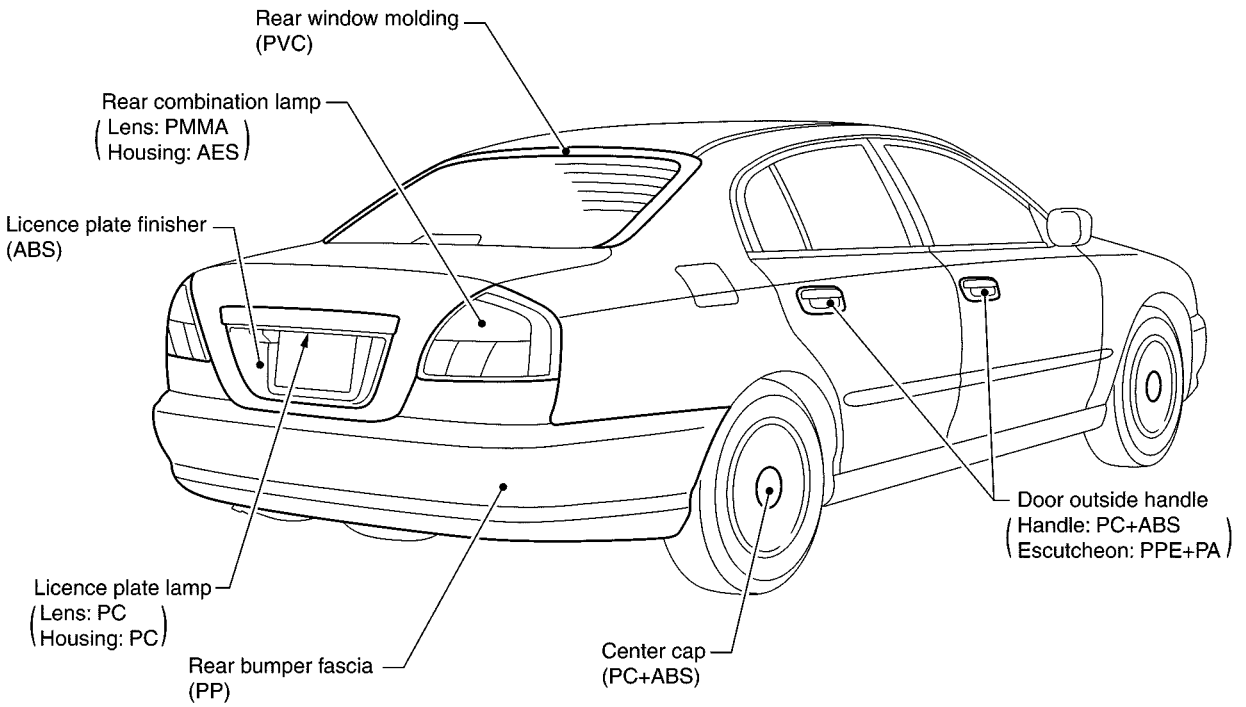
HANDLING PRECAUTIONS FOR PLASTICS

Abbre-viation	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	Lenear 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.	

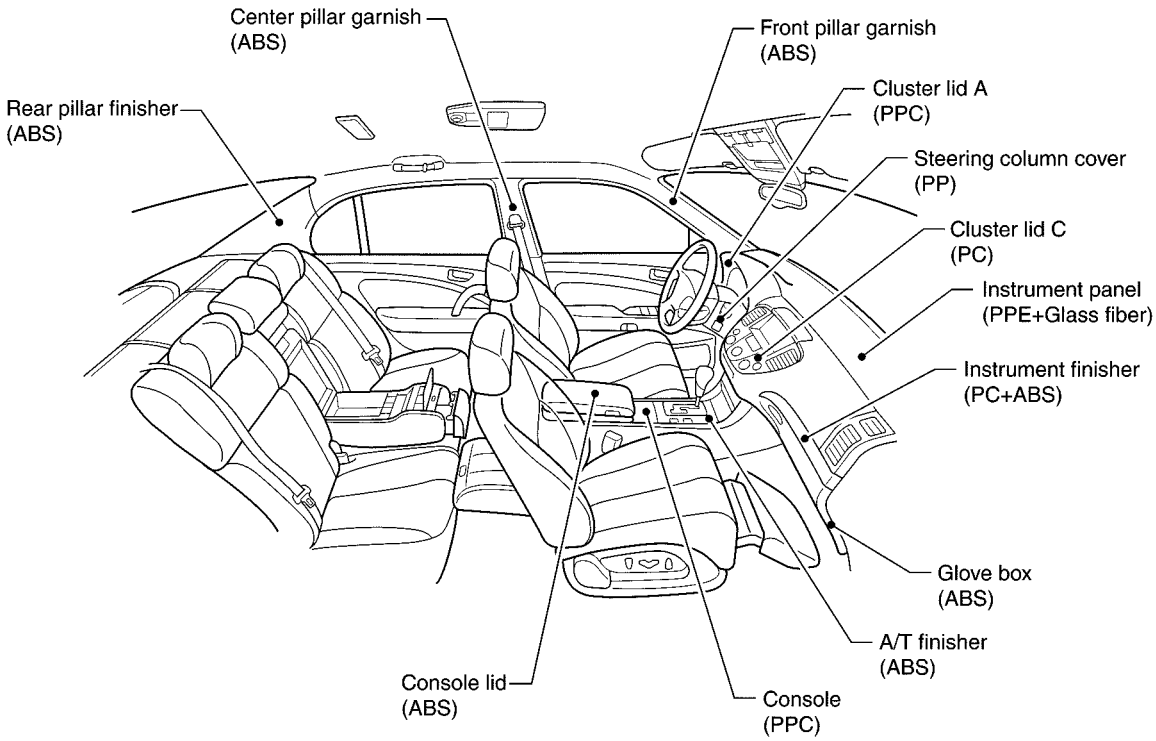
1. When repairing and painting a portion of the body adjacent to plastic parts, consider their characteristics (influence of heat and solvent) and remove them if necessary or take suitable measures to protect them.
2. Plastic parts should be repaired and painted using methods suiting the materials' characteristics.

LOCATION OF PLASTIC PARTS





PIIA0113E


Center pillar garnish
(ABS)
Front pillar garnish
(ABS)
Rear pillar finisher
(ABS)
Cluster lid A
(PPC)
Steering column cover
(PP)
Cluster lid C
(PC)
Instrument panel
(PPE+Glass fiber)
Instrument finisher
(PC+ABS)
Glove box
(ABS)
A/T finisher
(ABS)
Console lid
(ABS)
Console
(PPC)

PIIA0114E

Precautions in Repairing High Strength Steel

EIS000K9

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

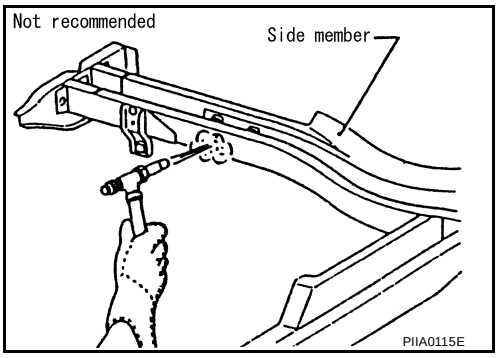
Tensile strength	Nissan/Infinity designation	Major applicable parts
373 N/mm^2 (38kg/mm^2 ,54klb/sq in)	SP130	● Front side member assembly ● Upper hoodledge ● Upper pillar hinge brace assembly ● Rear side member extension ● Other reinforcements
785-981 N/mm^2 (80-100kg/mm^2 114-142klb/sq in)	SP150	● 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.

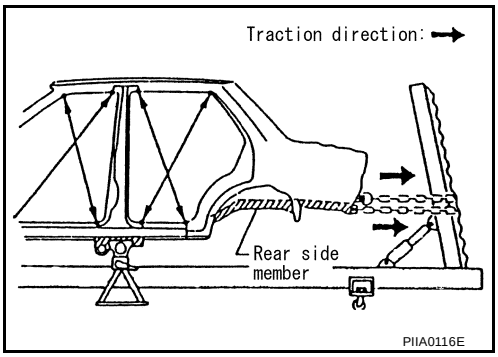
Read the following precautions when repairing HSS:

1. Additional points to consider

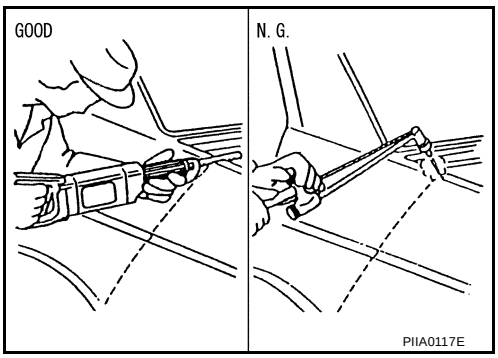
- The repair of reinforcements (such as side members) by heating is not recommended since it may weaken the component. When heating is unavoidable, do not heat HSS parts above 550°C (1,022°F).
  Verify heating temperature with a thermometer.
  (Crayon-type and other similar type thermometer are appropriate.)



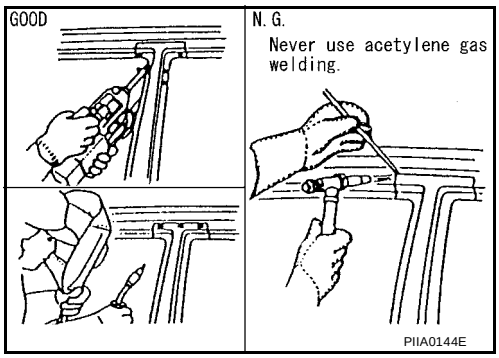
- When straightening body panels, use caution in pulling any HSS panel. Because HSS is very strong, pulling may cause deformation in adjacent portions of the body. In this case, increase the number of measuring points, and carefully pull the HSS panel.



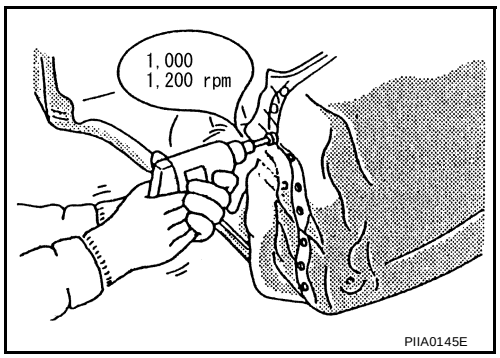
- When cutting HSS panels, avoid gas (torch) cutting if possible. Instead, use a saw to avoid weakening surrounding areas due to heat. If gas (torch) cutting is unavoidable, allow a minimum margin of 50 mm (1.97in).



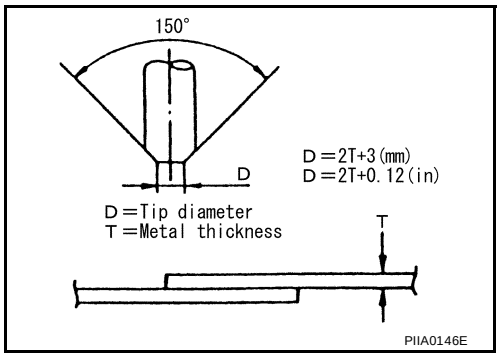
- When welding HSS panels, use spot welding whenever possible in order to minimize weakening surrounding areas due to heat.
  If spot welding is impossible, use M.I.G. welding. Do not use gas (torch) welding because it is inferior in welding strength.



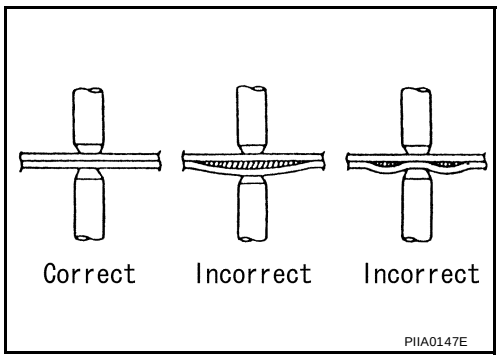
- The spot weld on HSS panels is harder than that of an ordinary steel panel.
  Therefore, when cutting spot welds on a HSS panel, use a low speed high torque drill (1,000 to 1,200 rpm) to increase drill bit durability and facilitate the operation.
- SP150 HSS panels with a tensile strength of 785 to 981 N/mm^2 (80 to 100 kg/mm^2, 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.



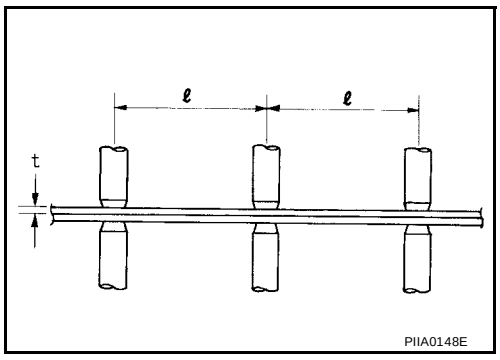
   - The panel surfaces must fit flush to each other, leaving no gaps.



   - Follow the specifications for the proper welding pitch.

Unit:mm

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



Replacement Operations

EIS00A5Z

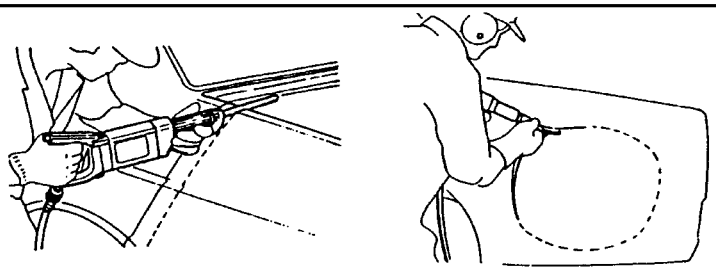
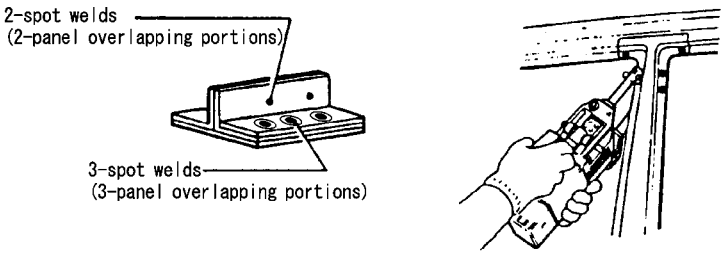
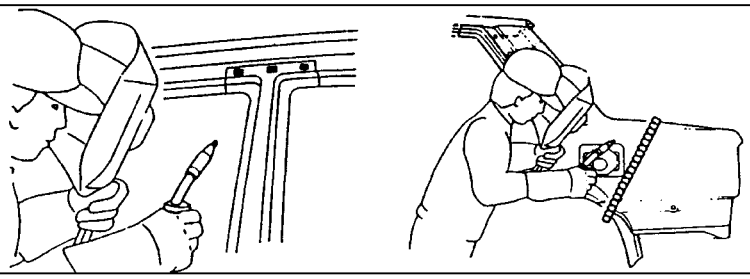
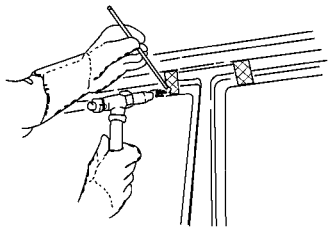
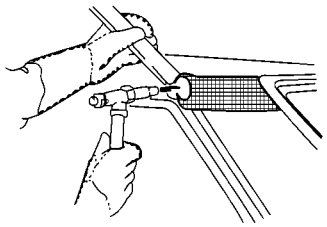
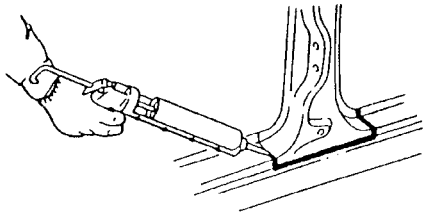
DESCRIPTION

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 warning, that are not including in this manual. Technicians should refer to both manuals to ensure proper repairs.

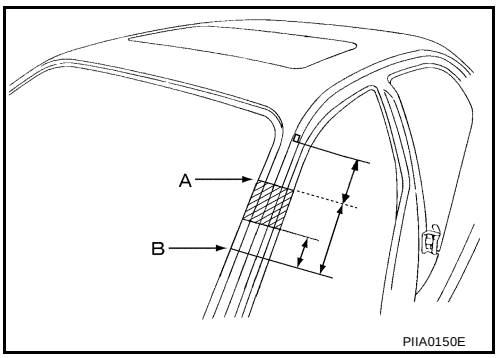
Please note that these information are prepared for worldwide usage, and as such, certain procedures might not apply in some regions or countries.

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

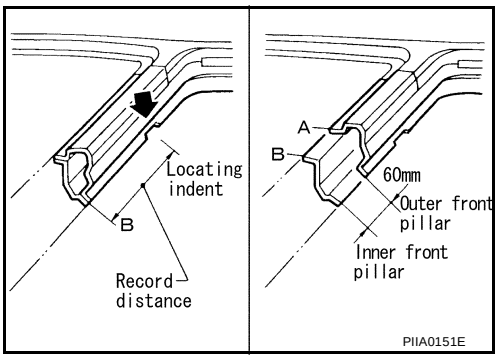
Saw cut or air chisel cut	
Spot weld 2-spot welds	
Spot weld 3-spot welds	
MIG plug weld	
MIG seam weld/ Point weld	
Brazing	
Soldering	
Sealing	

PIIA0149E

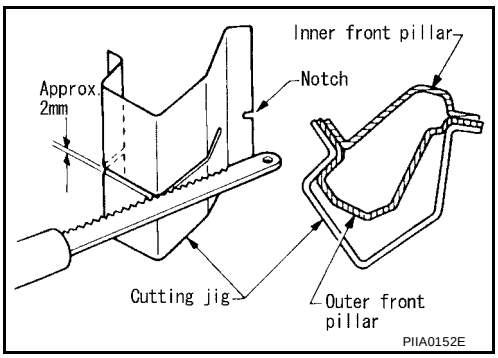
- Front pillar butt joint can be determined anywhere within shaded area as shown in the figure. The best location for the butt joint is at position A due to the construction of the vehicle. Refer to the front pillar section.



- 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.

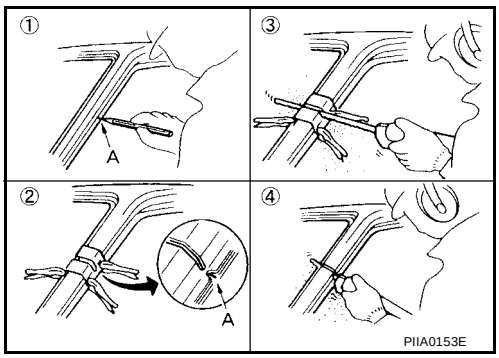


- Prepare a cutting jig to make outer pillar easier to cut. Also, this will permit service part to be accurately cut at joint position.

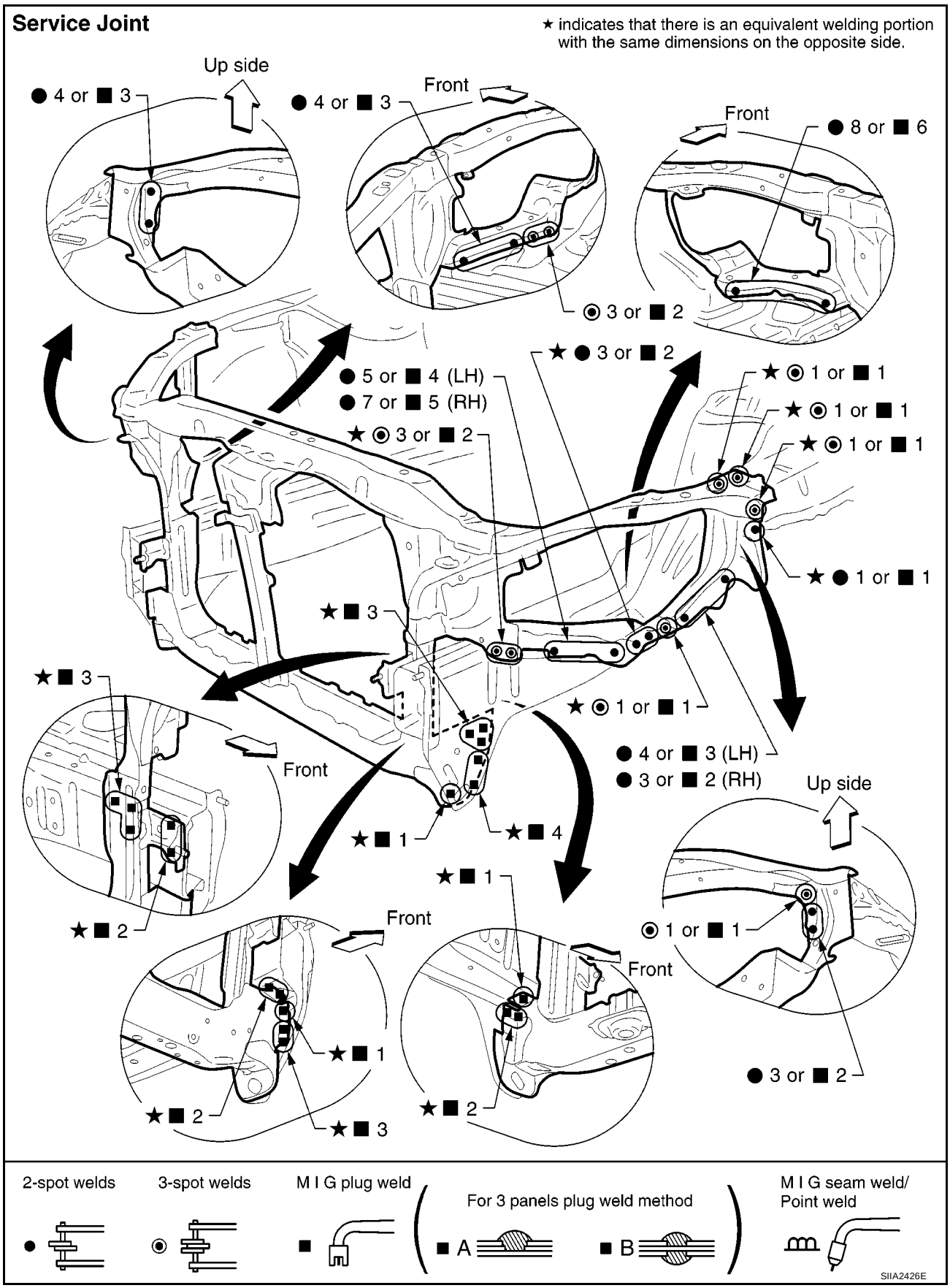


- An example of cutting operation using a cutting jig is as follows.

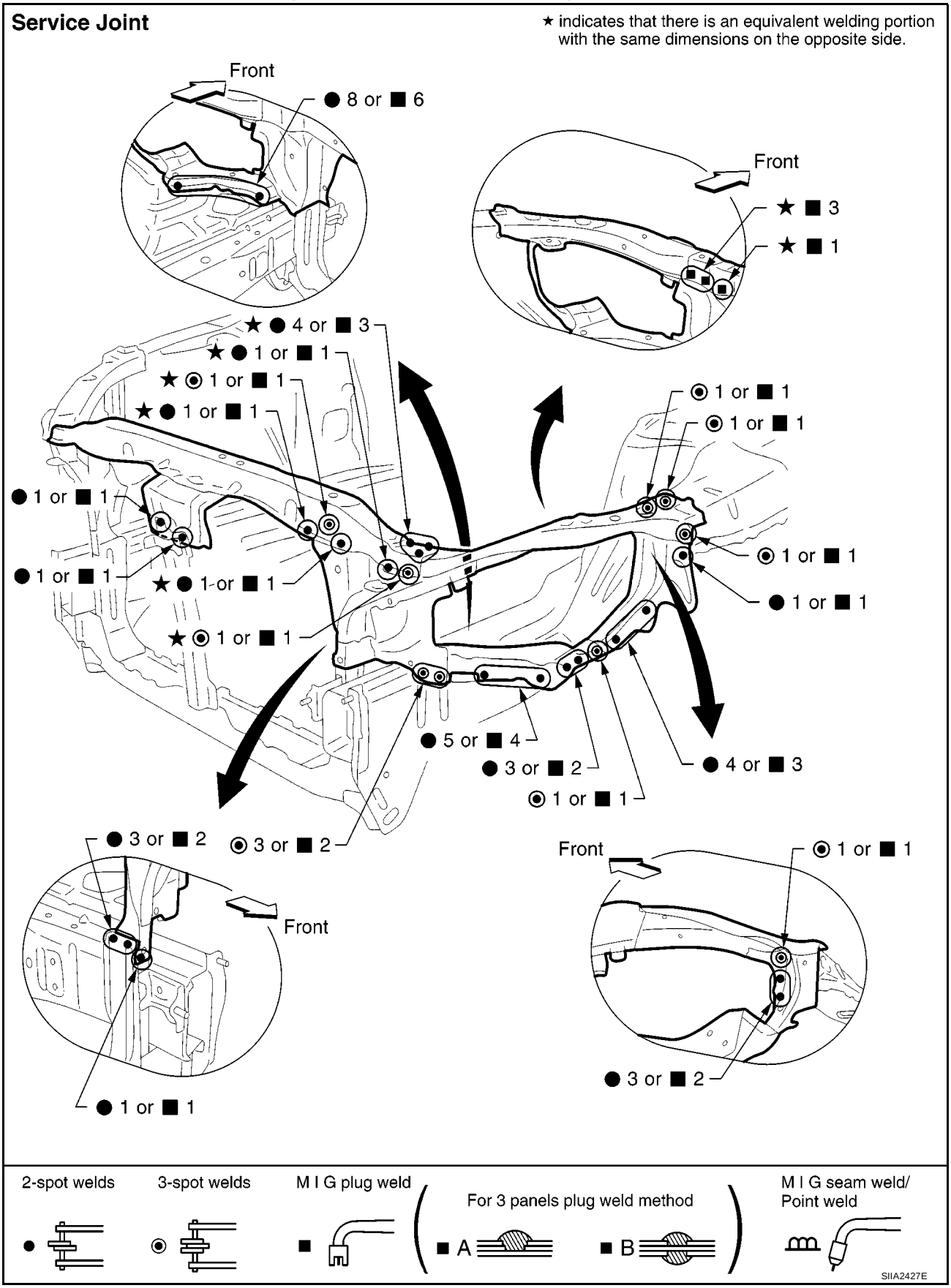
1. Mark cutting lines.
   A: Cut position of outer pillar
   B: Cut position of inner pillar
2. Align cutting line with notch on jig. Clamp jig to pillar.
3. Cut outer pillar along groove of jig. (At position A)
4. Remove jig and cut remaining portions.
5. Cut inner pillar at position B in same manner.



RADIATOR CORE SUPPORT

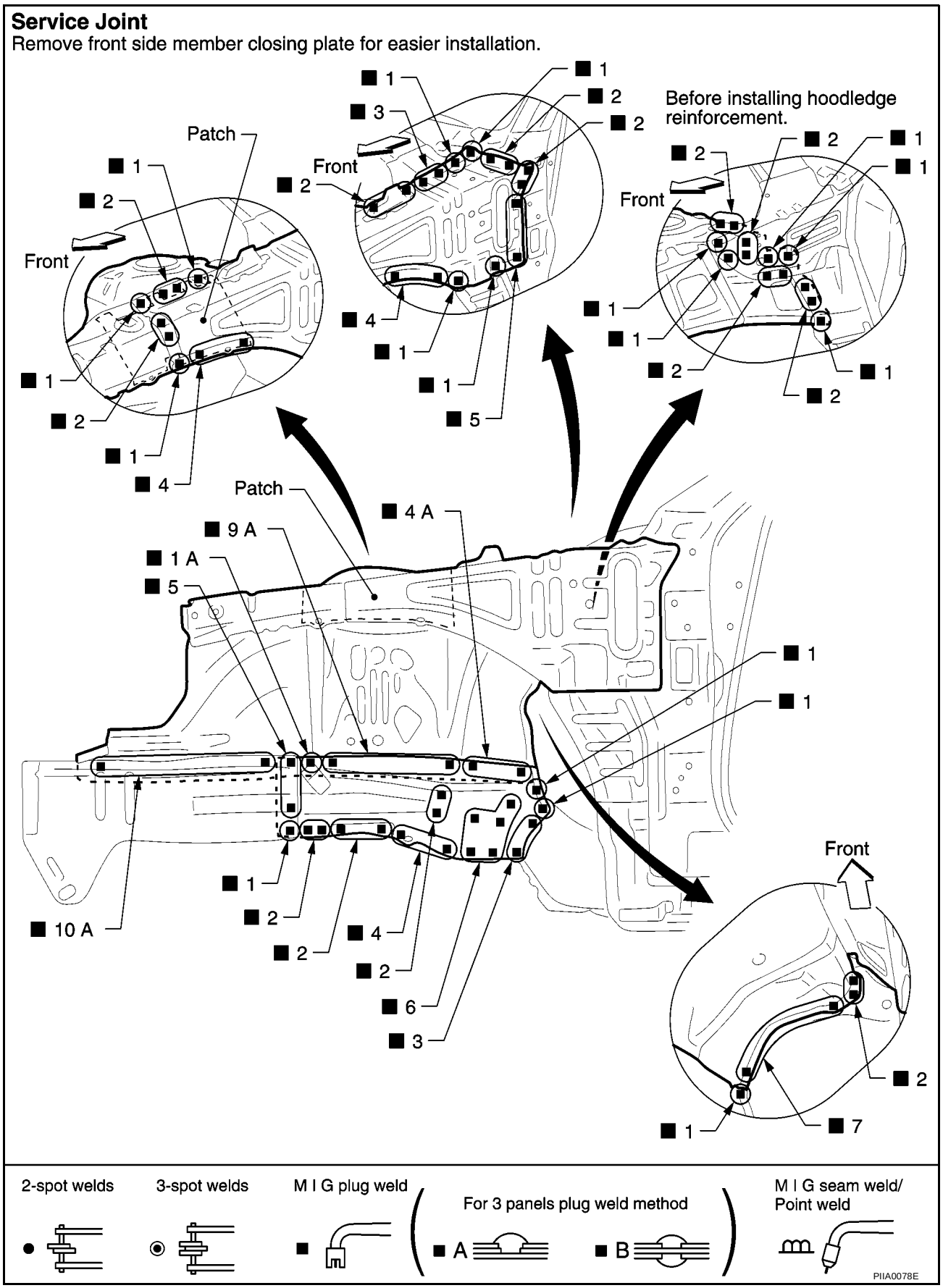


RADIATOR CORE SUPPORT (PARTIAL REPLACEMENT)



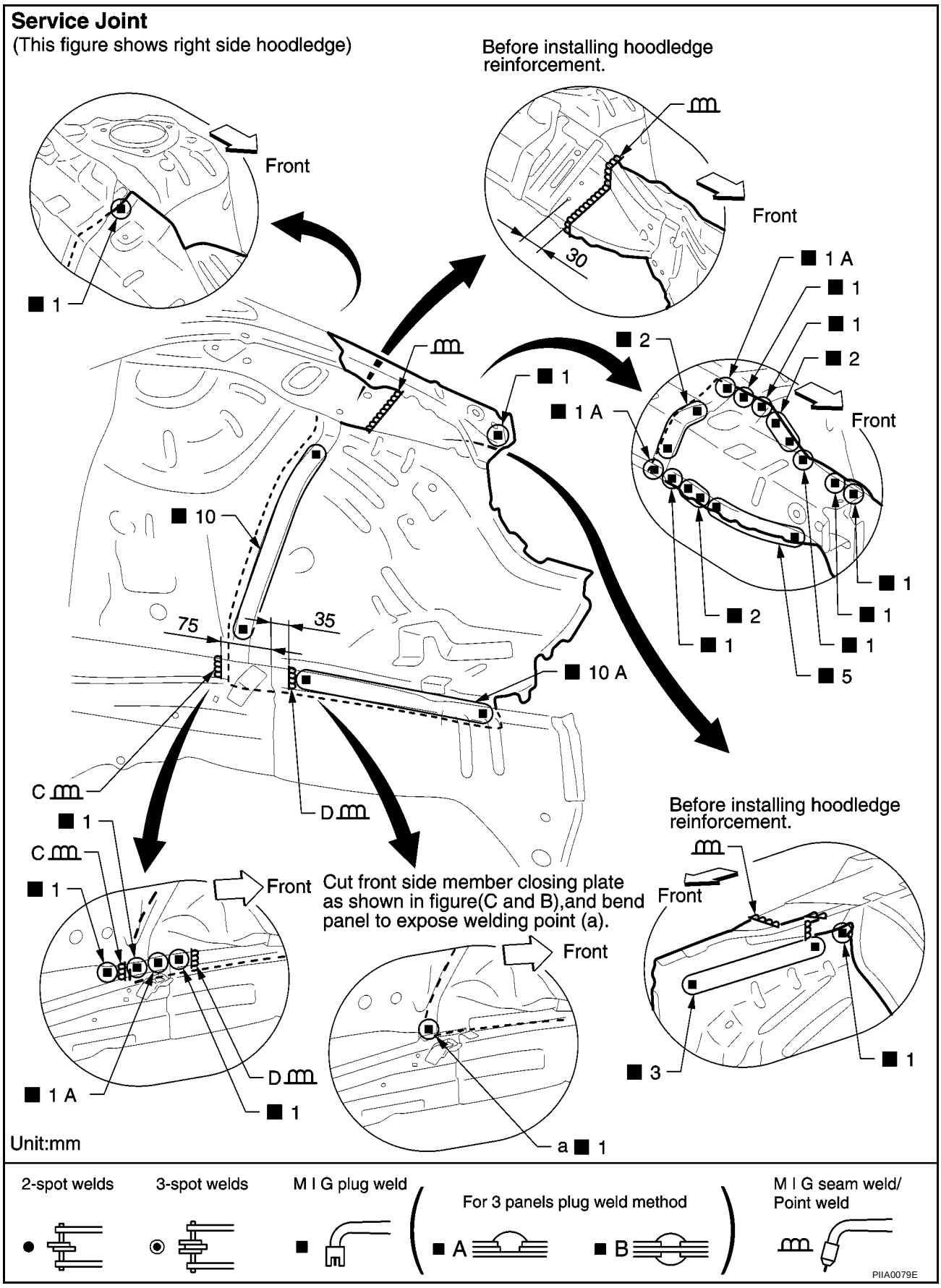
HOODLEDGE

- Work after radiator core support has been removed.



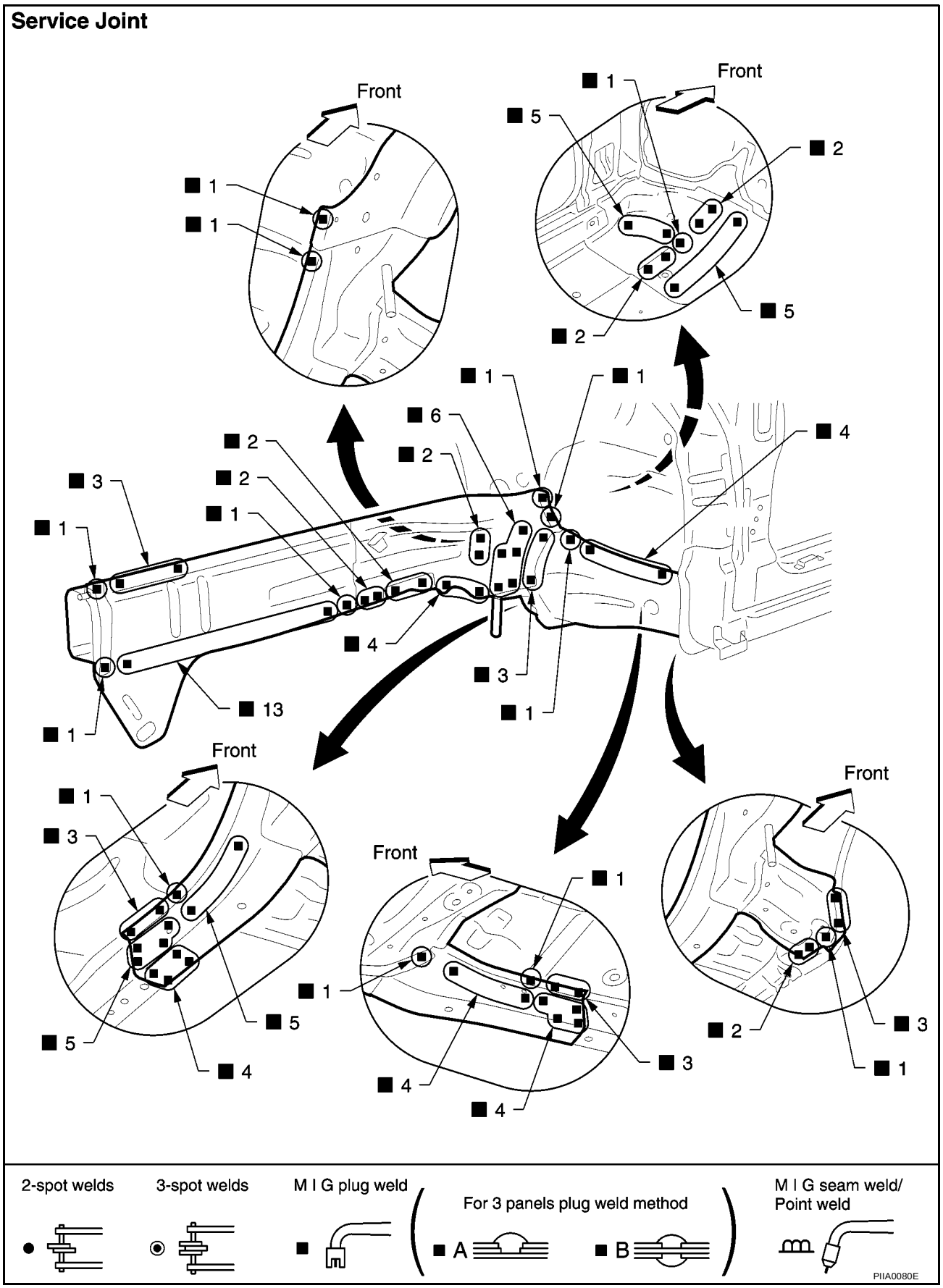
HOODLEDGE (PARTIAL REPLACEMENT)

- Work after radiator core support has been removed.



FRONT SIDE MEMBER

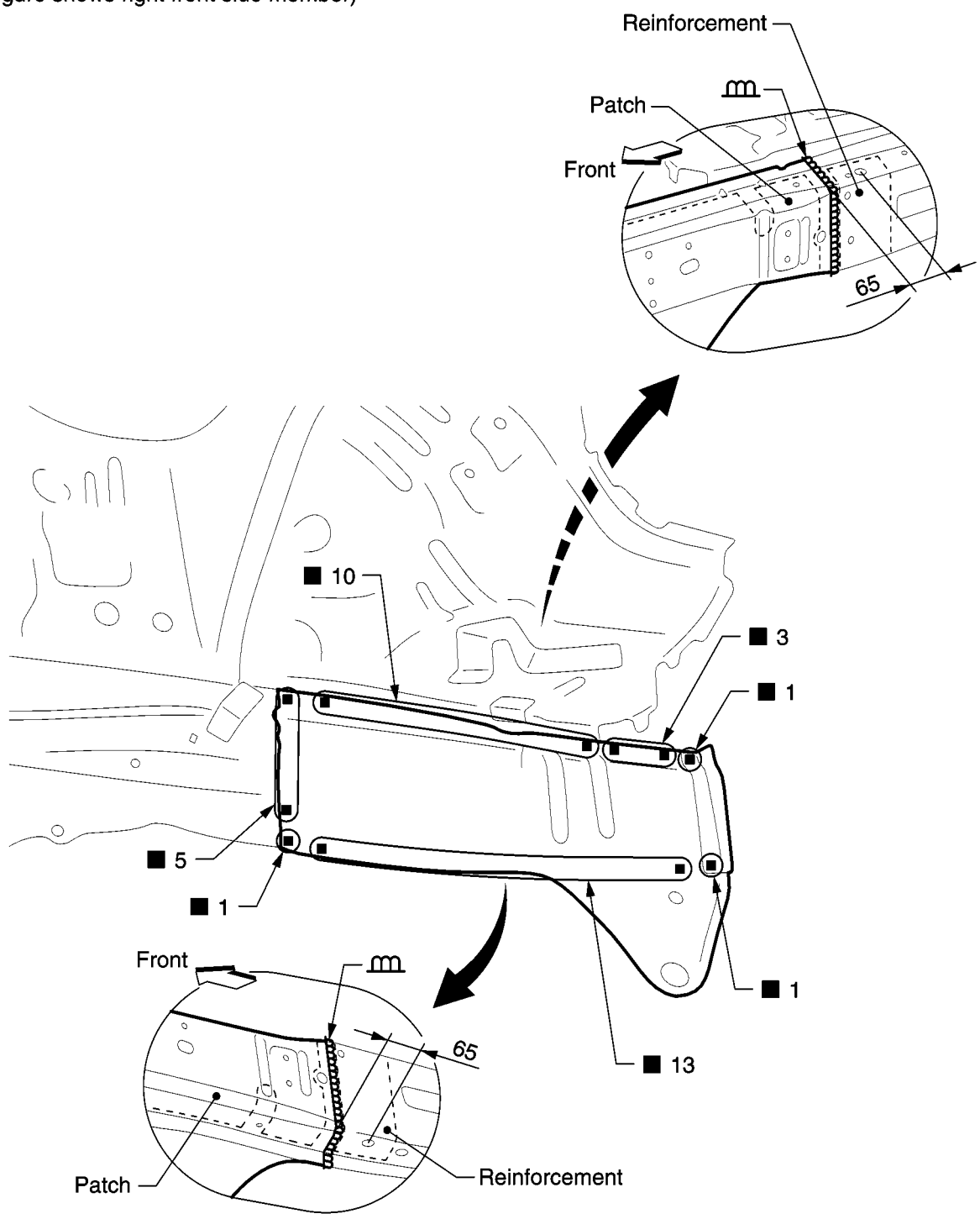
- Work after hoodledge and radiator core support have been removed.



FRONT SIDE MEMBER (PARTIAL REPLACEMENT)

- Work after radiator core support has been removed.

Service Joint
(This figure shows right front side member)



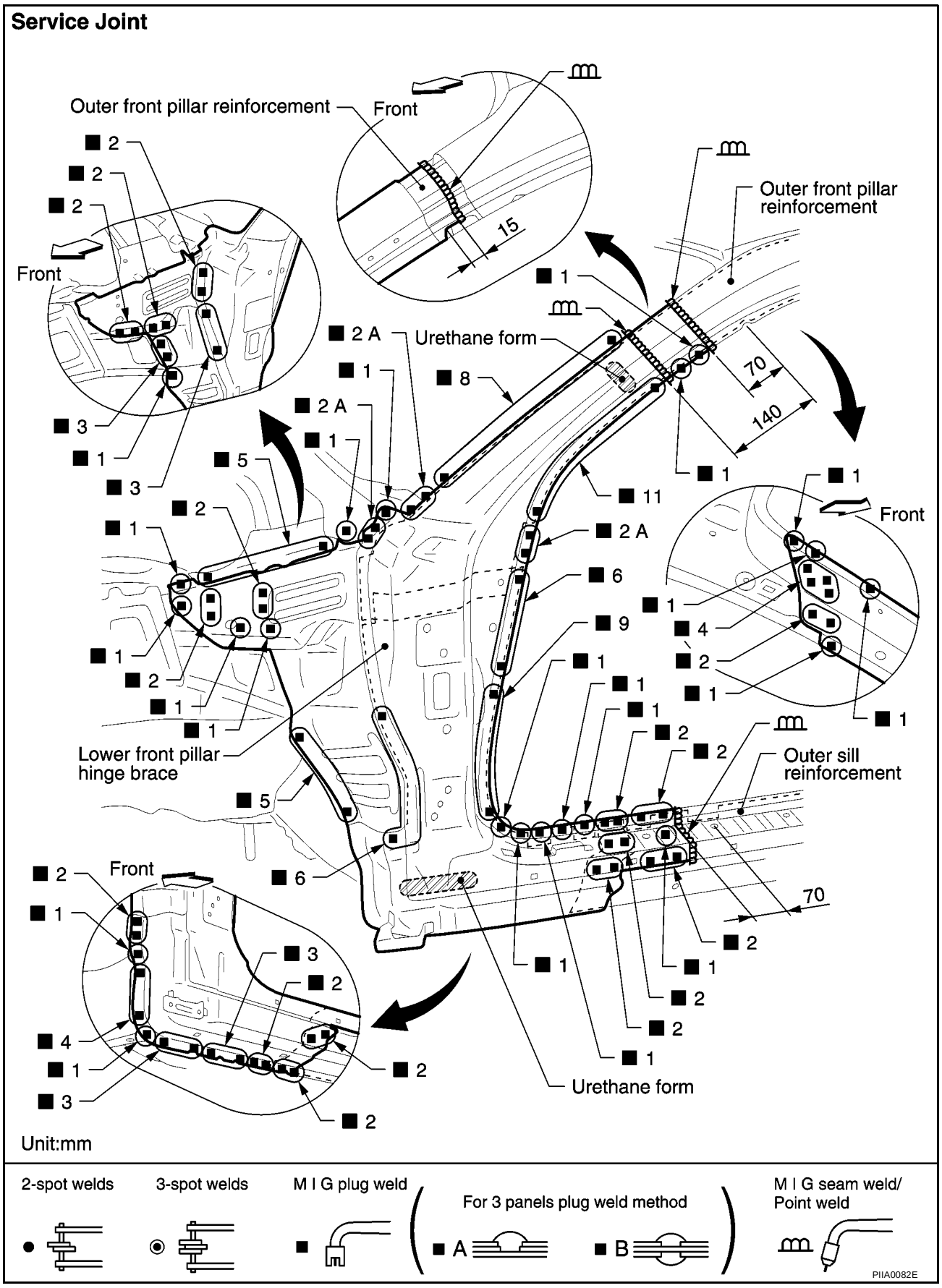
Unit:mm

2-spot welds | 3-spot welds | M I G plug weld | For 3 panels plug weld method (■ A ■ B) | M I G seam weld/ Point weld

PIIA0081E

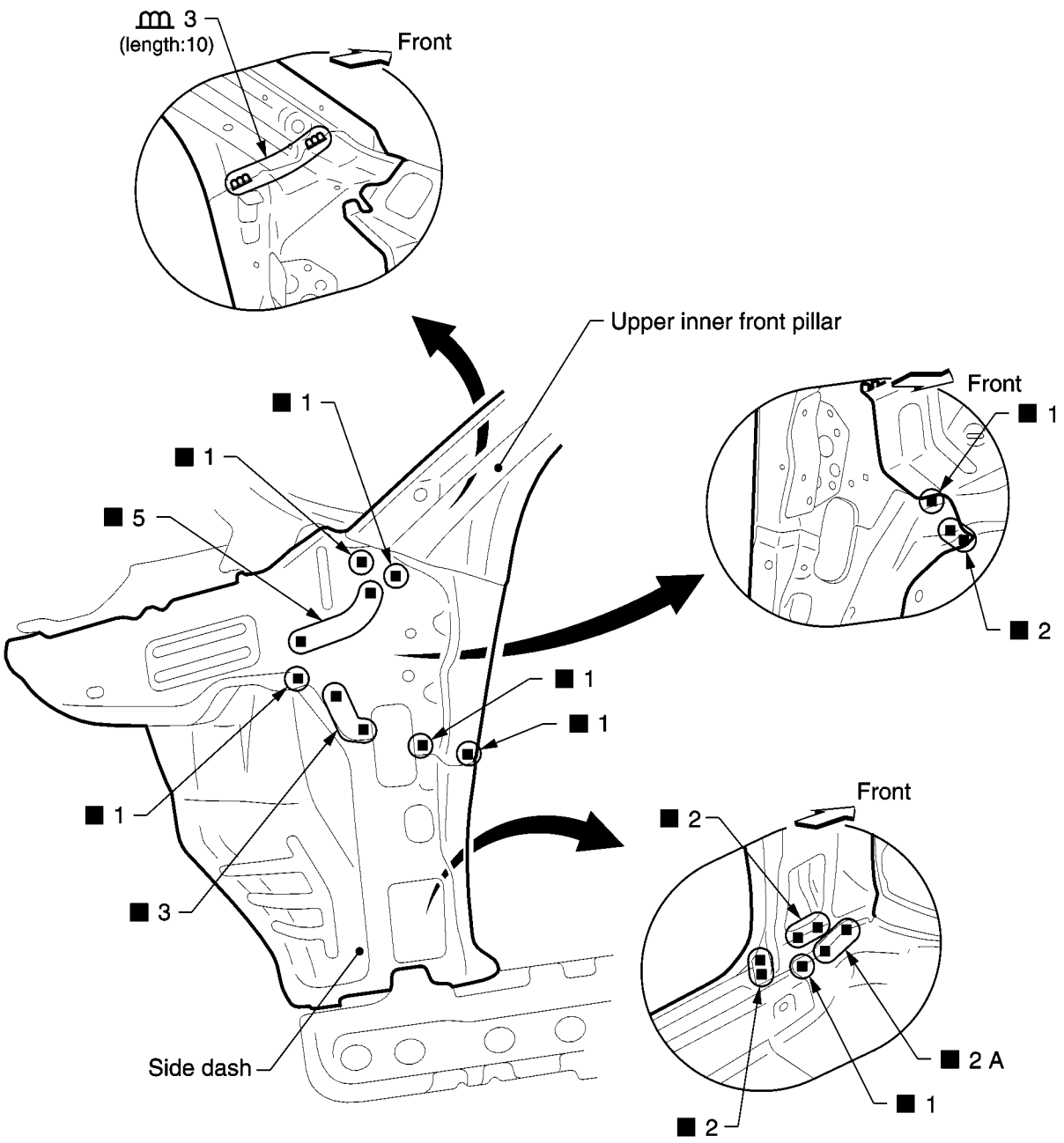
FRONT PILLAR

- Work after rear hoodledge reinforcement has been removed.



Service Joint

Before installing outer front pillar.



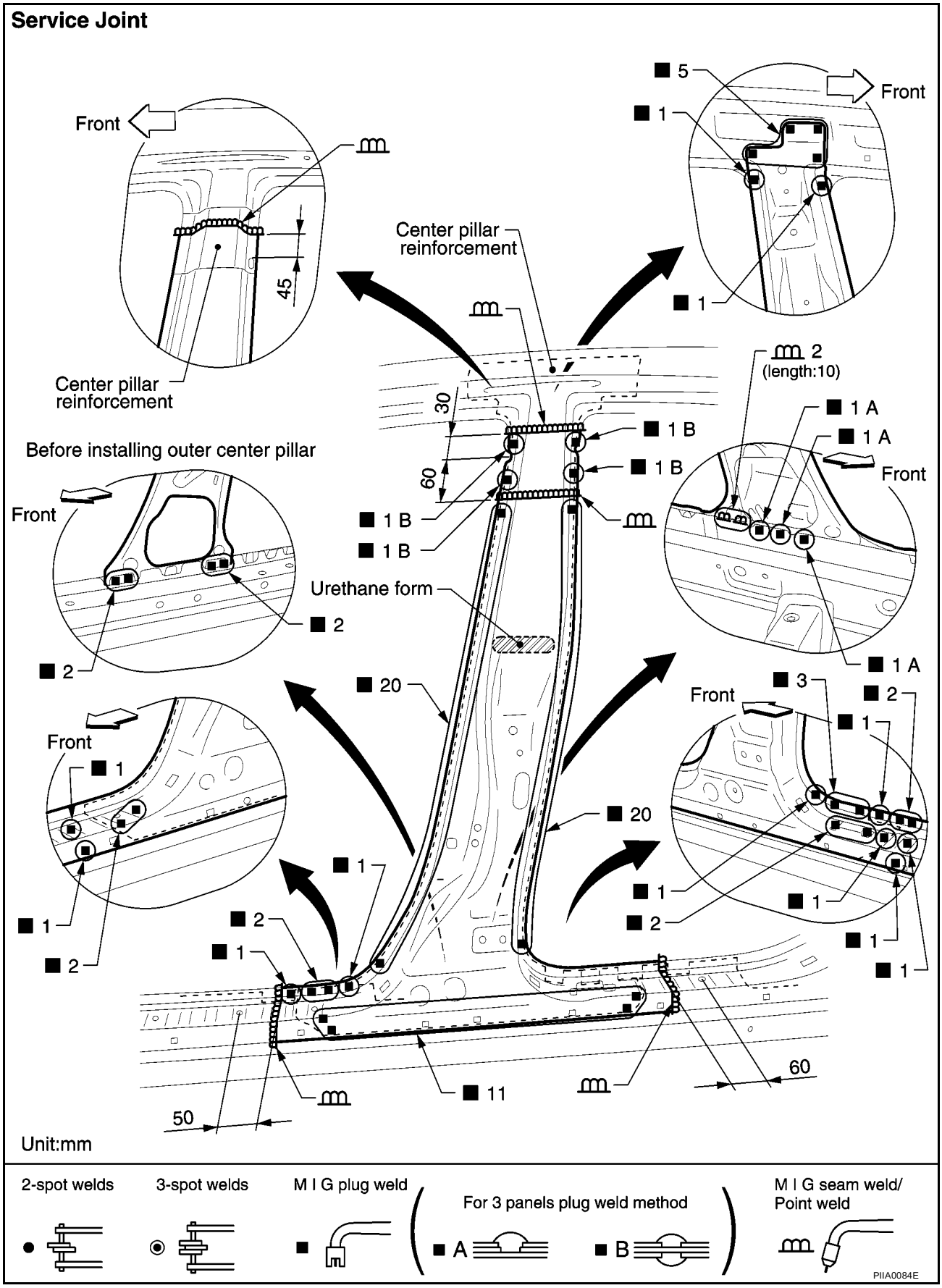
Unit:mm

2-spot welds | 3-spot welds | M I G plug weld | For 3 panels plug weld method (A | B) | M I G seam weld/ Point weld

PIIA0083E

CENTER PILLAR

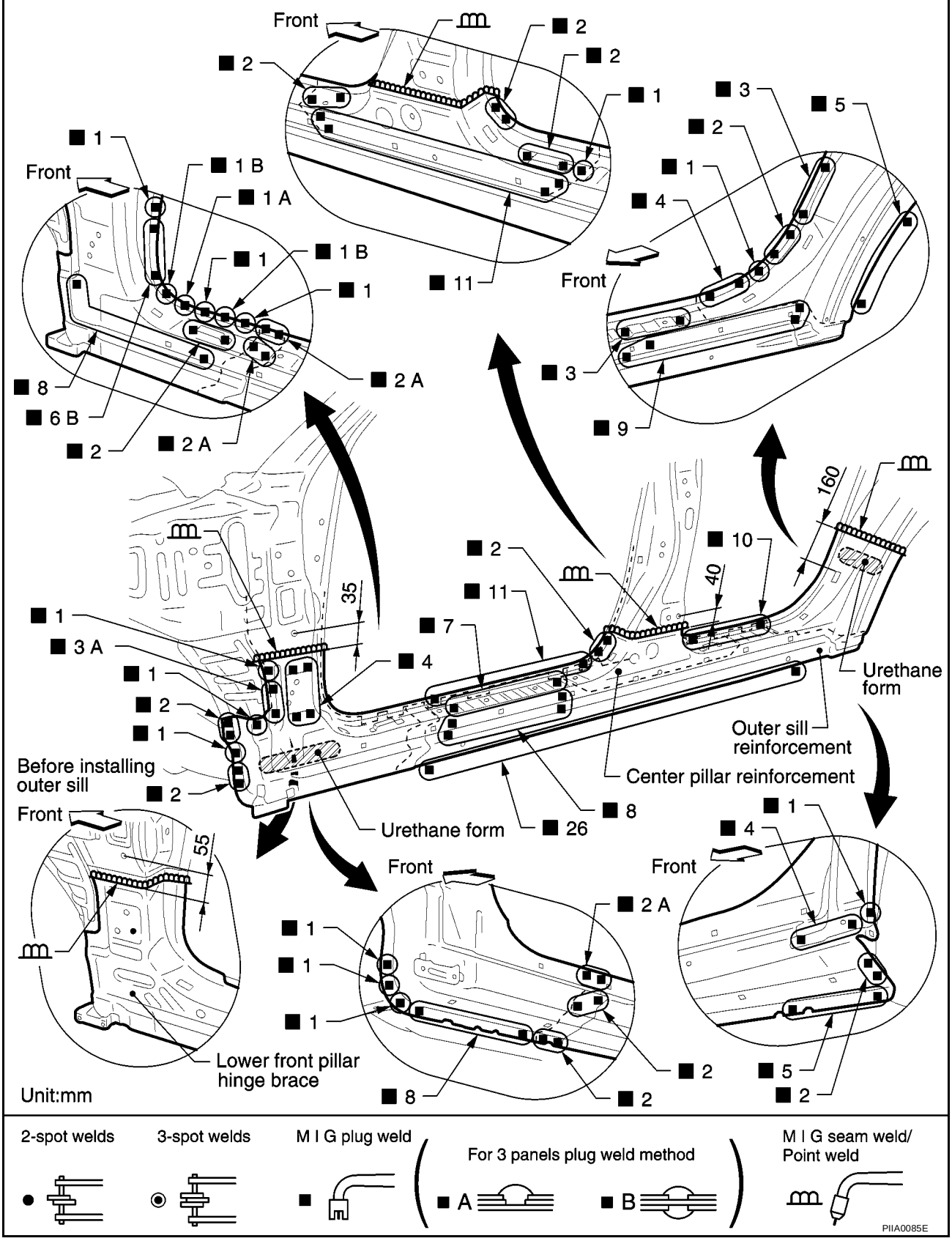
Service Joint



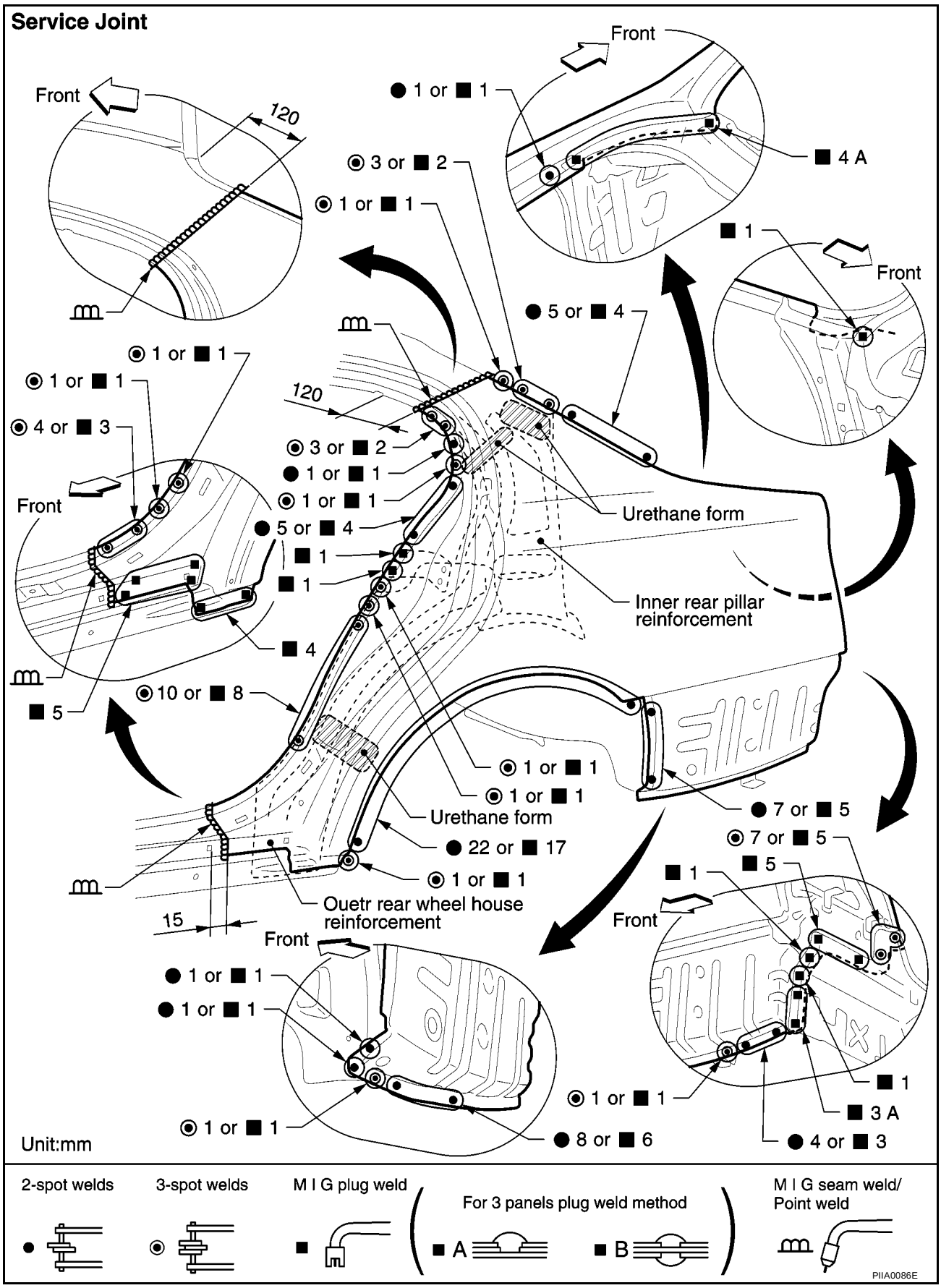
OUTER SILL

Service Joint

Replacement part consists of outer sill,outer sill reinforcement and lower front pillar hinge brace.



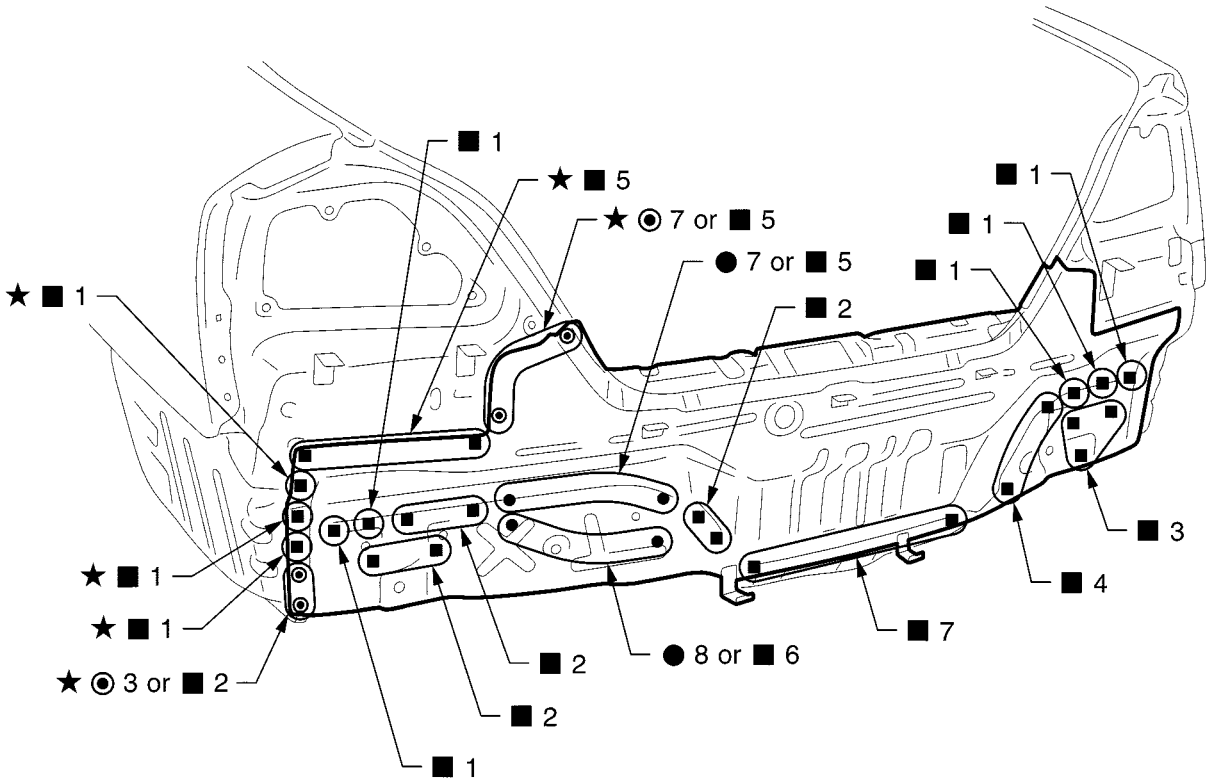
REAR FENDER

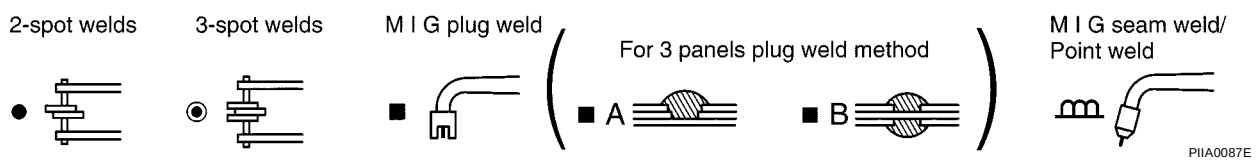

Service Joint
Front
120
● 1 or ■ 1
◎ 3 or ■ 2
◎ 1 or ■ 1
■ 4 A
■ 1
Front
● 5 or ■ 4
◎ 1 or ■ 1
◎ 1 or ■ 1
◎ 4 or ■ 3
120
◎ 3 or ■ 2
● 1 or ■ 1
◎ 1 or ■ 1
● 5 or ■ 4
■ 1
■ 1
■ 4
Front
■ 5
◎ 10 or ■ 8
Urethane form
Inner rear pillar reinforcement
◎ 1 or ■ 1
◎ 1 or ■ 1
Urethane form
● 22 or ■ 17
◎ 1 or ■ 1
Ouetr rear wheel house reinforcement
15
Front
● 1 or ■ 1
● 1 or ■ 1
◎ 1 or ■ 1
● 8 or ■ 6
● 7 or ■ 5
◎ 7 or ■ 5
■ 5
■ 1
Front
◎ 1 or ■ 1
■ 1
■ 3 A
● 4 or ■ 3
Unit:mm
2-spot welds
3-spot welds
M I G plug weld
For 3 panels plug weld method
■ A
■ B
M I G seam weld/ Point weld
PIIA0086E

REAR PANEL

Service Joint

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

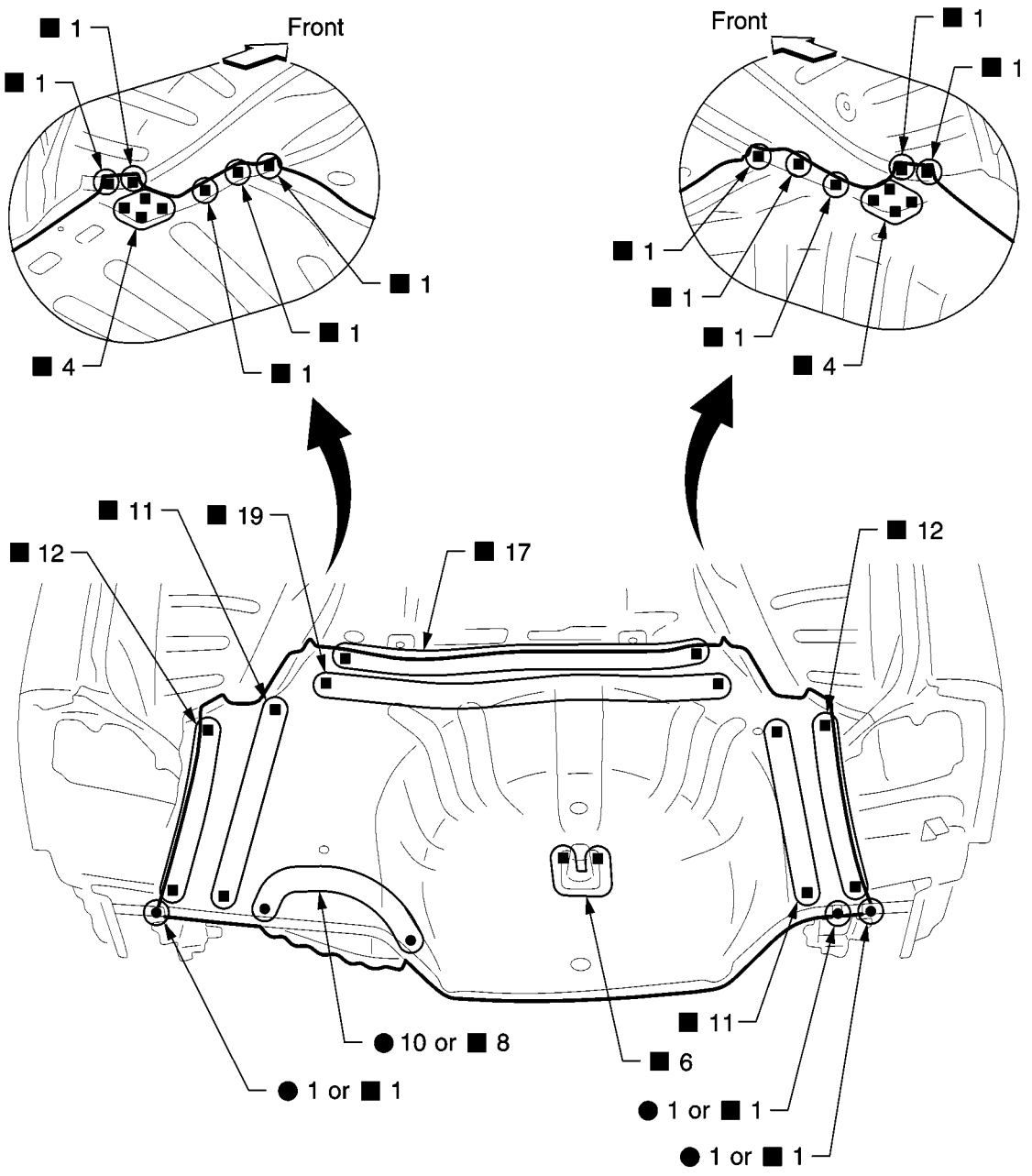


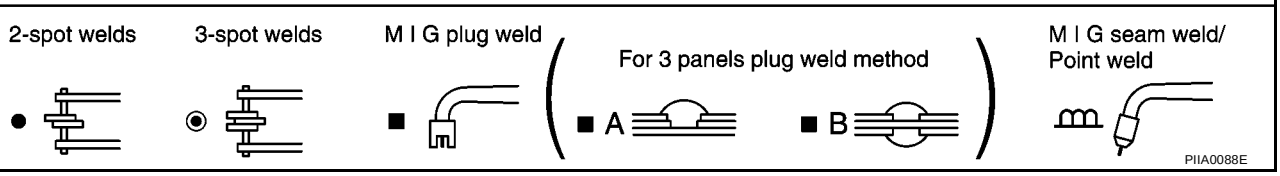


REAR FLOOR REAR

- Work after rear panel has been removed.

Service Joint





REAR SIDE MEMBER EXTENSION

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

Service Joint