

SECTION SEC

SECURITY CONTROL SYSTEM

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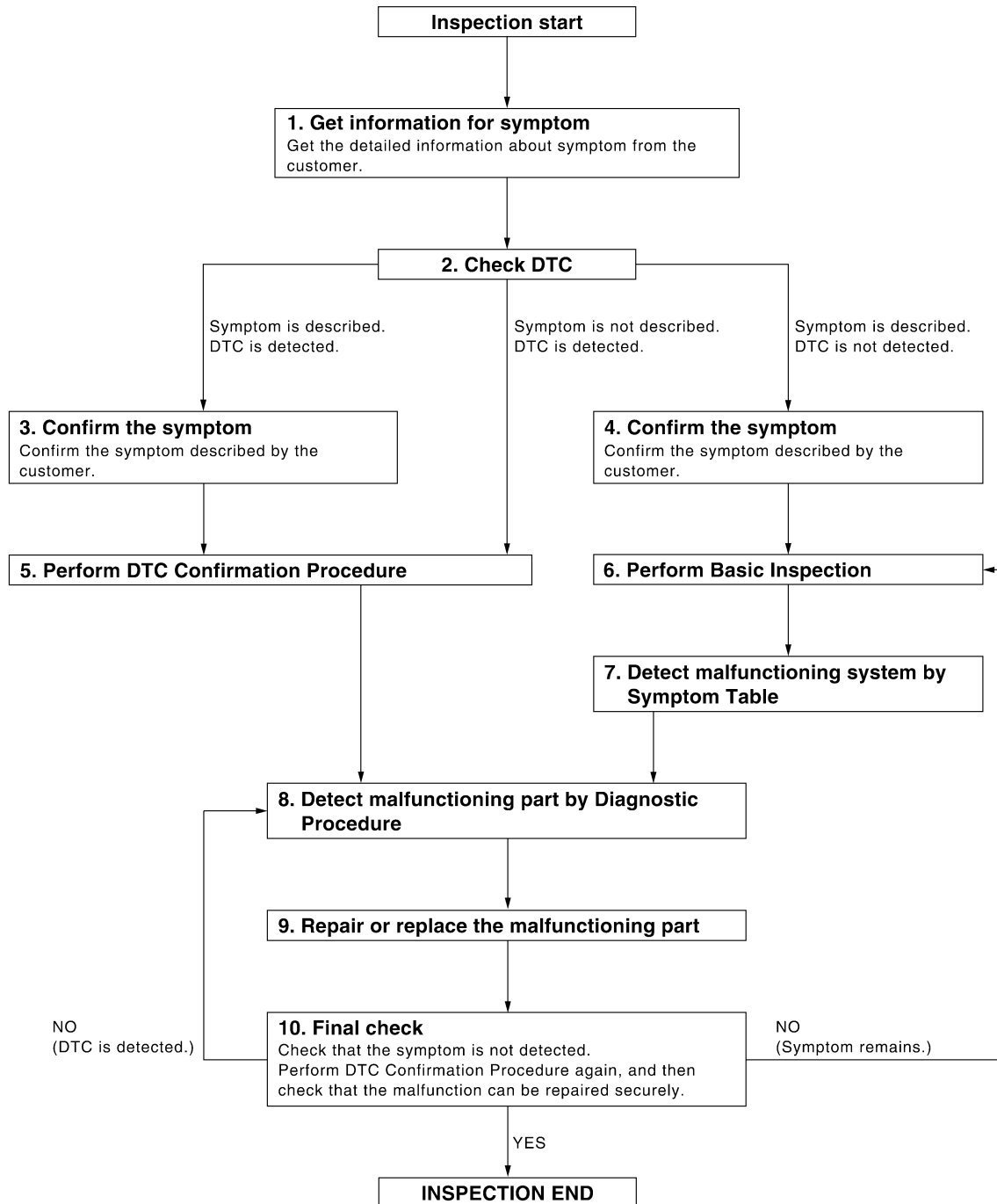
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

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OVERALL SEQUENCE



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DETAILED FLOW

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[WITH INTELLIGENT KEY SYSTEM]

1.GET INFORMATION FOR SYMPTOM

Get the detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurred).

>> GO TO 2.

2.CHECK DTC

1. Check DTC for Intelligent Key unit and BCM.
2. Perform the following procedure if DTC is displayed.
 - Erase DTC.
 - Study the relationship between the cause detected by DTC and the symptom described by the customer.
3. Check related service bulletins for information.

Is any symptom described and any DTC detected?

Symptom is described, DTC is displayed>>GO TO 3.
Symptom is described, DTC is not displayed>>GO TO 4.
Symptom is not described, DTC is displayed>>GO TO 5.

3.CONFIRM THE SYMPTOM

Confirm the symptom described by the customer.
Connect CONSULT-III to the vehicle in "DATA MONITOR" mode and check real-time diagnosis results.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

4.CONFIRM THE SYMPTOM

Confirm the symptom described by the customer.
Connect CONSULT-III to the vehicle in "DATA MONITOR " mode and check real-time diagnosis results.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

5.PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC Confirmation Procedure for the displayed DTC, and then check that DTC is detected again.
If two or more DTCs are detected, refer to [SEC-71, "DTC Inspection Priority Chart"](#) (Intelligent Key unit), [SEC-69, "DTC Inspection Priority Chart"](#) (BCM) and determine trouble diagnosis order.

Is DTC detected?

YES >> GO TO 8.
NO >> Refer to [XX-XX, "*****"](#).

6.PERFORM BASIC INSPECTION

Perform Basic Inspection. Refer to [SEC-77, "Basic Inspection"](#).

>> GO TO 7.

7.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM TABLE

Detect malfunctioning system according to Symptom Table based on the confirmed symptom in step 4.

>> GO TO 8.

8.DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

NOTE:

The Diagnostic Procedure is described based on open circuit inspection. A short circuit inspection is also required for the circuit check in the Diagnostic Procedure.

>> GO TO 9.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[WITH INTELLIGENT KEY SYSTEM]

9. REPAIR OR REPLACE THE MALFUNCTIONING PART

1. Repair or replace the malfunctioning part.
2. Reconnect parts or connectors disconnected during Diagnostic Procedure again after repair and replacement.
3. Check DTC. If DTC is displayed, erase it.

>> GO TO 10.

10. FINAL CHECK

When DTC was detected in step 9, perform DTC Confirmation Procedure or Component Function Check again, and then check that the malfunctions have been fully repaired.

When symptom was described by the customer, refer to the confirmed symptom in step 3 or 4, and check that the symptom is not detected.

Does the symptom reappear?

YES (DTC is detected)>>GO TO 8.

YES (Symptom remains)>>GO TO 6.

NO >> **INSPECTION END**

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[WITH INTELLIGENT KEY SYSTEM]

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:000000001404031

Refer to the CONSULT-III Operation Manual-NATS.

ECM RE-COMMUNICATING FUNCTION

ECM RE-COMMUNICATING FUNCTION : Description

INFOID:000000001404032

Performing following procedure can automatically perform re-communication of ECM and BCM, but only when the ECM has been replaced with a new one (*1).

*1: New one means an ECM which has never been energized on-board.

(In this step, initialization procedure by CONSULT-III is not necessary)

NOTE:

- When registering new Key IDs or replacing the ECM that is not brand new, refer to CONSULT-III Operation Manual.
- If multiple keys are attached to the key holder, separate them before work.
- Distinguish keys with unregistered key ID from those with registered ID.

ECM RE-COMMUNICATING FUNCTION : Special Repair Requirement

INFOID:000000001404033

1.PERFORM ECM RE-COMMUNICATING FUNCTION

1. Install ECM.
2. Using a registered key (*2), turn ignition switch to "ON".
*2: To perform this step, use the key that has been used before performing ECM replacement.
3. Maintain ignition switch in "ON" position for at least 5 seconds.
4. Turn ignition switch to "OFF".
5. Start engine.

Can engine be started?

YES >> Procedure is completed.

NO >> Initialize control unit. Refer to CONSULT-III Operation Manual NATS.

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INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

< FUNCTION DIAGNOSIS >

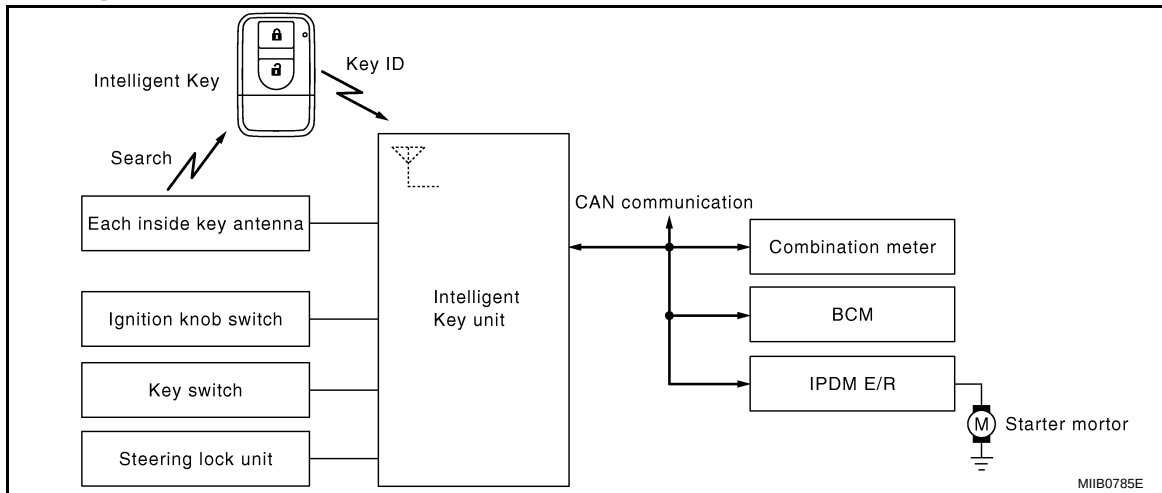
[WITH INTELLIGENT KEY SYSTEM]

FUNCTION DIAGNOSIS

INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

System Diagram

INFOID:000000001404034



System Description

INFOID:000000001404035

INPUT/OUTPUT SIGNAL CHART

Intelligent Key Unit

Switch/Input signal	Input signal to Intelligent Key unit	Intelligent Key unit function	Actuator/Output signal
Key switch	Mechanical key (insert/remove)	Engine start function	- KEY warning lamp/buzzer - Steering lock unit - Starter relay request (to IPDM E/R) - Inside key antenna (Instrument center, console, rear seat) - Key interlock solenoid
Ignition knob switch	Ignition knob (push/release)		
Steering lock unit	Steering lock (lock/unlock)		
Inside key antenna (Instrument center, console, rear seat)	Intelligent key (inside antenna detection area or not.)		

IPDM E/R

Switch/Input signal	Input signal to IPDM E/R	IPDM E/R function	Actuator/Output signal
Park/neutral position switch (only for A/T models)	P,N range	Engine start function	- Starter relay - Starter motor

BCM

Switch/Input signal	Input signal to BCM	BCM function	Actuator/Output signal
Key switch	Mechanical key (insert/remove)	Engine start function	Inside key antenna (Instrument center, console, rear seat)

SYSTEM DESCRIPTION

- The engine start function of Intelligent Key system is a system that makes it possible to start and stop the engine without using the key. It verifies the electronic ID using two-way communications when pressing the ignition knob switch while carrying the Intelligent Key, which operates based on the results of electronic ID verification for Intelligent Key using two-way communications between the Intelligent Key and the vehicle.

NOTE:

The driver should carry the Intelligent Key at all times.

INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

< FUNCTION DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

- Intelligent Key has 2 IDs (for Intelligent Key and for NATS). It can perform the door lock/unlock operation and the engine start operation when the registered Intelligent Key is carried.
- When the Intelligent Key battery is discharged, it can be used as emergency back-up by inserting the mechanical key set in the Intelligent Key to the ignition key cylinder. At that time, perform the NATS ID verification. If it is used when the Intelligent Key is carried, perform the Intelligent Key ID verification.
- If the ID is successfully verified, and when the ignition knob switch is pressed, steering lock will be released and initiating the engine will be possible.
- The door lock/unlock operation can be performed when the Intelligent Key battery is discharged, by operating the driver door key cylinder using the mechanical key set in the Intelligent Key.
- Up to 4 Intelligent Keys can be registered (including the standard Intelligent Key) on request from the owner.

NOTE:

- Refer to XX-XX, "*****" for any functions other than engine start function of Intelligent Key system.

PRECAUTIONS FOR INTELLIGENT KEY SYSTEM

- **In the Intelligent Key system, the transponder [the chip for NATS ID verification] is integrated into the Intelligent Key. (For non-Intelligent Key systems, it is integrated into the mechanical key.) Therefore, the mechanical key cannot perform the ID verification, and thus it cannot start the engine. Instead, the NATS ID verification can be performed by inserting the mechanical key into the key cylinder, and then it can start the engine.**

OPERATION WHEN INTELLIGENT KEY IS CARRIED

1. When the ignition knob switch and brake switch are ON, and Intelligent Key unit is transmitting the request signal to the Intelligent Key.
2. The Intelligent Key receives the request signal and transmits the Intelligent Key ID signal to the Intelligent Key unit.
3. The Intelligent Key unit receives the Intelligent Key ID signal and verifies it with the registered ID.
4. Intelligent Key unit transmits the steering lock unlock signal to steering lock unit and turn on the key warning lamp (green) if the verification results are OK. (The detail of key warning lamp operation, refer to XX-XX, "*****")
5. Release of the steering lock.
6. BCM transmits the starter request signal via CAN communication to IPDM E/R and turns the starter relay in IPDM E/R ON if BCM judges that the engine start condition is satisfied.
7. IPDM E/R turns the starter control relay ON when receiving the starter request signal.
8. When shift position is in P or N position, battery power is supplied through the starter relay and operate the starter motor and to start the cranking.

CAUTION:

If a malfunction is detected in the Intelligent Key system, the "KEY" warning lamp in the combination meter illuminates. At that time, the engine cannot be started.

OPERATION RANGE

Engine can be started when Intelligent Key is inside the vehicle. However, sometimes engine might not start when Intelligent Key is on instrument panel or in glove box.

OPERATION WHEN MECHANICAL KEY IS USED

When the Intelligent Key battery is discharged, performs the NATS ID verification between the integrated transponder and BCM by inserting the mechanical key into the key cylinder, and then the engine can be started. For details relating to starting the engine using mechanical key, refer to SEC-12, "System Description".

STEERING LOCK OPERATION

Steering is locked by steering lock unit when ignition switch is in the OFF position (the ignition knob is released) and key switch is OFF (key is removed from ignition key cylinder).

KEY INTERLOCK OPERATION (ONLY FOR M/T MODELS)

In case of a M/T vehicle is in motion and ignition is turned into LOCK position, steering lock unit causes a risk by activating the steering lock actuator. The key interlock operation is designed to override the steering lock system and prevent the situation mentioned above from occurring.

LOCK condition

When the following conditions are fulfilled, key interlock solenoid will be locked. (Steering lock inactive)

- 1 second passes after ignition switch is in ON position and engine revolution speed goes above 500 rpm.

UNLOCK condition

INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

< FUNCTION DIAGNOSIS >

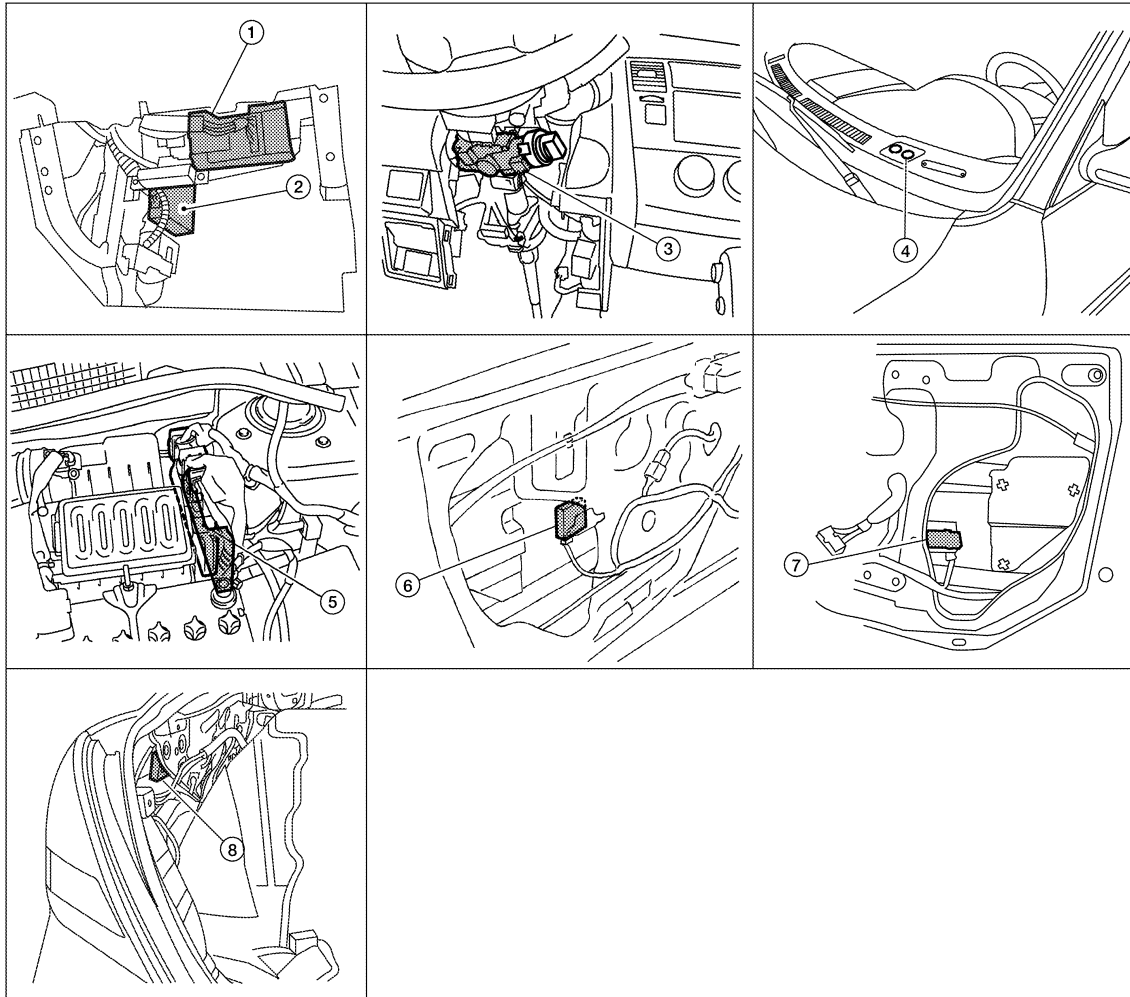
[WITH INTELLIGENT KEY SYSTEM]

When any of the following condition are fulfilled key interlock solenoid will be unlocked. (Steering lock active)

- When vehicle speed is below 4km/h (2mph) and the ignition switch is turned from ON to OFF.
- When vehicle speed is over 4km/h (2mph) but less than 10km/h (6mph) in LOCK condition, and 3 second passes after the ignition switch is turned from ON to OFF.

Component Parts Location

INFOID:000000001404036



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| 1. BCM M18, M19, M20
(view with glove box removed) | 2. Intelligent Key Unit M52 | 3. Steering lock solenoid M6
(bottom view of steering column) |
| 4. Security indicator lamp M31 | 5. ECM E16 | 6. Intelligent key warning buzzer (driver side) D6
(LHD: view with front door finisher removed) |
| 7. Intelligent key warning buzzer (driver side) D6
(RHD: view with front door finisher removed) | 8. Intelligent Key warning buzzer (trunk) B82 (sedan)
(view with trunk finisher LH removed) | |

Component Description

INFOID:000000001404037

Component	Reference
Intelligent Key unit	SEC-34
BCM	XX-XX, "*****"

INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

< FUNCTION DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

Component	Reference
ECM	HR16 (WITH EURO-OBD): <u>XX-XX, "*****"</u>
	HR16 (WITHOUT EURO-OBD): <u>XX-XX, "*****"</u>
	MR18 (WITH EURO-OBD): <u>XX-XX, "*****"</u>
	MR18 (WITHOUT EURO-OBD): <u>XX-XX, "*****"</u>
	K9K: <u>XX-XX, "*****"</u>
Steering lock unit	<u>SEC-23</u>
Ignition knob switch, key switch and key lock solenoid	<u>XX-XX, "*****"</u>
Inside key antenna	<u>XX-XX, "*****"</u>
Security indicator	<u>SEC-49</u>

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NATS (NISSAN ANTI-THEFT SYSTEM)

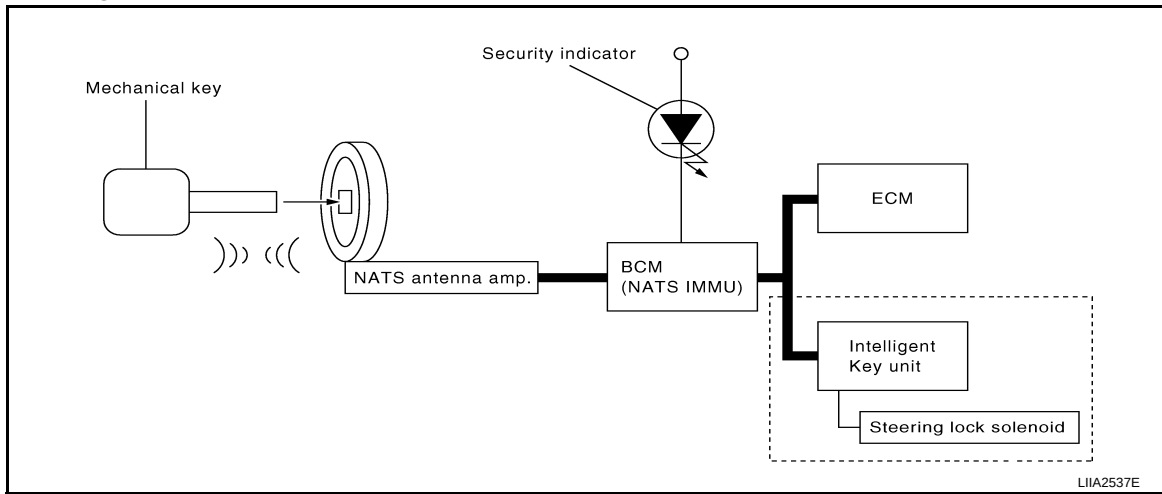
< FUNCTION DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

NATS (NISSAN ANTI-THEFT SYSTEM)

System Diagram

INFOID:000000001404038



System Description

INFOID:000000001404039

INPUT/OUTPUT SIGNAL CHART

Intelligent Key Unit

Switch/Input signal	Input signal to BCM	BCM function	Actuator/Output signal
Ignition knob switch	Ignition knob (push/release)	NATS	Steering lock unit
Key switch	Mechanical key (Insert/remove)		
Steering lock unit	Steering (lock/unlock)		
ECM	Engine status signal		

BCM

Switch/Input signal	Input signal to BCM	BCM function	Actuator/Output signal
NATS antenna amp.	Key ID	NATS	- Security indicator lamp - Starter request
ECM	Engine status signal		

SYSTEM DESCRIPTION

NATS (Nissan Anti-Theft System) has the following immobilizer functions:

- Engine immobilizer shows high anti-theft performance to prevent engine from starting by other than the owner.
- Only a key with key ID registered in BCM and ECM can start engine, and shows high anti-theft performance to prevent key from being copied or stolen.
- Security indicator always flashes with mechanical key removed condition (key switch: OFF) and ignition knob released condition on LOCK position (ignition knob switch: OFF).
- Therefore, NATS warns outsiders that the vehicle is equipped with the anti-theft system. Refer to [XX-XX](#).
- If system detects malfunction, security indicator illuminates when ignition switch is turned to ON position.
- If the owner requires, ignition key ID or mechanical key ID can be registered for up to 4 keys.
- During trouble diagnosis or when the following parts have been replaced, and if mechanical key is added, registration* is required.

*1: All keys kept by the owner of the vehicle should be registered with mechanical key.

- ECM
- BCM

NATS (NISSAN ANTI-THEFT SYSTEM)

< FUNCTION DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

- Mechanical key
- ABS actuator control unit
- EPS control unit
- IPDM E/R
- NATS trouble diagnosis, system initialization and additional registration of other mechanical key IDs must be carried out using CONSULT-III hardware and SECURITY CARD.
When NATS initialization has been completed, the ID of the inserted mechanical key or mechanical key IDs can be carried out.
- Possible symptom of NATS malfunction is "Engine cannot start". In C11, the engine can be started with the Intelligent Key system and NATS. Identify the possible causes according to "Work Flow", Refer to [SEC-4, "Work Flow"](#).
- If ECM other than Genuine NISSAN is installed, the engine cannot be started. For ECM replacement procedure, refer to [SEC-7, "ECM RE-COMMUNICATING FUNCTION : Description"](#).

PRECAUTIONS FOR KEY REGISTRATION

- The key registration is a procedure that erases the current NATS ID once, and then re-registers a new ID. Therefore the registered Intelligent Key is necessary for this procedure. Before starting the registration operation collect all registered Intelligent Keys from the customer.
- The NATS ID registration is the procedure that registers the ID stored into the transponder (integrated in mechanical key) to BCM.
The Intelligent Key ID registration is the procedure that registers the ID to Intelligent Key unit.
- When performing the Intelligent Key system registration only, the engine cannot be started by inserting the key into the key cylinder. When performing the NATS registration only, the engine cannot be started by using the mechanical key.

SECURITY INDICATOR

- Always flashes with ignition knob released (ignition knob switch: OFF) condition on ignition knob LOCK position.
- Always flashes with ignition knob released (ignition knob switch: OFF) condition on mechanical key removed position.
- Turns ON steady when the NATS is activated.

MAINTENANCE INFORMATION

CAUTION:

It is necessary to perform NATS ID registration when replacing any of the following part.
If it's not (or fail to do so), the electrical system may not operate properly.

- BCM
- ECM
- Intelligent Key unit
- Intelligent Key
- IPDM E/R
- NATS antenna amp.

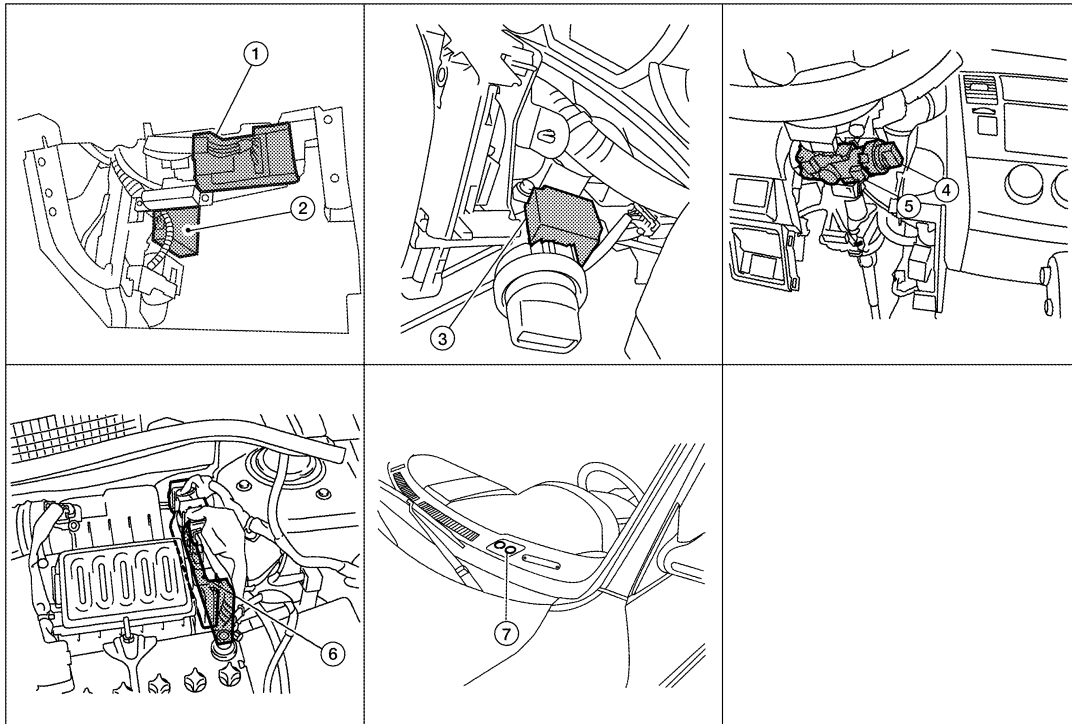
NATS (NISSAN ANTI-THEFT SYSTEM)

< FUNCTION DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

Component Parts Location

INFOID:000000001404040



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- | | | |
|---|--|--------------------------|
| 1. BCM M18, M20
(view with glove box removed) | 2. Intelligent Key Unit M52 | 3. NATS antenna amp. M21 |
| 4. Key switch and ignition knob switch
(A/T) M32 | 5. Steering lock solenoid M6
(bottom view of steering column) | 6. ECM E16 |
| 7. Security indicator lamp
M34 | | |

Component Description

INFOID:000000001404041

Component	Reference
BCM	<u>XX-XX, "*****"</u>
Steering lock unit	<u>SEC-23</u>
Key switch	<u>XX-XX, "*****"</u>
Ignition knob switch	<u>XX-XX, "*****"</u>
NATS antenna amp.	<u>SEC-26</u>
Security indicator	<u>SEC-49</u>
IPDM E/R	<u>XX-XX, "*****"</u>

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM)

INFOID:000000001404046

APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
WORK SUPPORT	Changes the setting for each system function.
SELF-DIAG RESULTS	Displays the diagnosis results judged by BCM. Refer to <u>XX-XX, "*****"</u> .
CAN DIAG SUPPORT MNTR	Monitors the reception status of CAN communication viewed from BCM.
DATA MONITOR	The BCM input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from BCM.
ECU IDENTIFICATION	The BCM part number is displayed.
CONFIGURATION	- Enables to read and save the vehicle specification. - Enables to write the vehicle specification when replacing BCM.

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

It can perform the diagnosis modes except the following for all sub system selection items.

System	Sub system selection item	Diagnosis mode		
		WORK SUPPORT	DATA MONITOR	ACTIVE TEST
—	BCM	×		
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp timer	INT LAMP	×	×	×
Remote keyless entry system	MULTI REMOTE ENT	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER		×	×
Air conditioner	AIR CONDITONER		×	
Intelligent Key system	INTELLIGENT KEY		×	
Combination switch	COMB SW		×	
Immobilizer	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Trunk open	TRUNK		×	
Vehicle security system	THEFT ALM	×	×	×
Signal buffer system	SIGNAL BUFFER		×	×
PTC heater system	PTC HEATER		×	×

IMMU

IMMU : CONSULT-III Function (BCM - IMMU)

INFOID:000000001404047

APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with BCM.

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

Diagnosis mode	Function Description
DATA MONITOR	The BCM input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from Intelligent Key unit.

DATA MONITOR

Monitor item	Content
IGN ON SW	Indicates [ON/OFF] condition of ignition switch in ON position.
KEY ON SW	Indicates [ON/OFF] condition of key switch.
PUSH SW	Indicates [ON/OFF] condition of ignition knob switch.

ACTIVE TEST

Test item	Description
THEFT IND	This test is able to check security indicator operation [ON/OFF].

THEFT ALM

THEFT ALM : CONSULT-III Function (BCM - THEFT ALM)

INFOID:000000001404048

APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
WORK SUPPORT	Changes the setting for each system function.
DATA MONITOR	The BCM input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from BCM.

DATA MONITOR

Monitor Item	Condition
IGN ON SW	Indicates [ON/OFF] condition of ignition switch in ON position.
ACC ON SW	Indicates [ON/OFF] condition of ignition switch in ACC position.
PUSH SW	Indicates [ON/OFF] condition of ignition knob switch.
KEY ON SW	Indicates [ON/OFF] condition of key switch.
I-KEY LOCK	Indicates [ON/OFF] condition of lock signal from Intelligent Key.
I-KEY UNLOCK	Indicates [ON/OFF] condition of unlock signal from Intelligent Key.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch (driver side).
DOOR SW-AS	Indicates [ON/OFF] condition of front door switch (passenger side).
DOOR SW-RR	Indicates [ON/OFF] condition of rear door switch RH.
DOOR SW-RL	Indicates [ON/OFF] condition of rear door switch LH.
BACK DOOR SW	Indicates [ON/OFF] condition of back door switch.
CDL LOCK SW	Indicates [ON/OFF] condition of door lock and unlock switch.
CDL UNLOCK SW	Indicates [ON/OFF] condition of door lock and unlock switch.

ACTIVE TEST

Test item	Description
THEFT IND	This test is able to check security indicator operation [ON/OFF].
FLASHER	This test is able to check flasher operation [LH/RH/OFF].

WORK SUPPORT

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

Test item	Description
SECURITY ALARM SET	Vehicle security function mode can be changed in this mode. • ON: Vehicle security function is ON. • OFF: Vehicle security function is OFF.
THEFT ALM TRG	The switch which triggered vehicle security system is recorded. This mode can be able to confirm and erase the record of vehicle security system.

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DIAGNOSIS SYSTEM (INTELLIGENT KEY UNIT)

< FUNCTION DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

DIAGNOSIS SYSTEM (INTELLIGENT KEY UNIT)

CONSULT-III Function (INTELLIGENT KEY)

INFOID:000000001404049

APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with Intelligent Key unit.

Diagnosis mode	Function Description
WORK SUPPORT	Changes the setting for each system function.
SELF-DIAG RESULTS	Displays the diagnosis results judged by Intelligent Key unit.
CAN DIAG SUPPORT MNTR	Monitors the reception status of CAN communication viewed from Intelligent Key unit.
DATA MONITOR	The Intelligent Key unit input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from Intelligent Key unit.
ECU IDENTIFICATION	The Intelligent Key unit part number is displayed.

WORK SUPPORT

Support item	Description	Selection item	Condition
CONFIRM KEY FOB ID	It can check whether Intelligent Key ID code is registered or not.	—	—
TAKE OUT FROM WINDOW WARN	Take away warning chime (from window) mode can be changed.	ON	Active
		OFF	Inactive
LOW BATT OF KEY FOB WARN	Intelligent Key low battery warning mode can be changed.	ON	Active
		OFF	Inactive
KEYLESS FUNCTION	Door lock function with Intelligent Key can be changed.	ON	Active
		OFF	Inactive
ANSWER BACK FUNCTION	Buzzer reminder operation can be changed.	ON	Active
		OFF	Inactive
SELECTIVE UNLOCK FUNCTION	Anti-hijack mode can be changed.	ON	Active
		OFF	Inactive
HAZARD ANSWER BACK	Hazard reminder operation mode can be changed.	Refer to <u>XX-XX, "*****"</u> .	
ANSWER BACK WITH I-KEY LOCK	Buzzer reminder operation (lock operation) mode by each door request switch can be changed.	BUZZER	Active
		OFF	Inactive
ANSWER BACK WITH I-KEY UNLOCK	Buzzer reminder operation (unlock operation) mode by each door request switch can be changed.	BUZZER	Active
		OFF	Inactive
AUTO RELOCK TIMER	Auto door lock operation mode can be changed.	OFF	Inactive
		2 min	Active
ENGINE START BY I-KEY	Engine start function (by Intelligent Key) mode can be changed.	ON	Active
		OFF	Inactive
LOCK/UNLOCK BY I-KEY	Door lock function by door request switch can be changed.	ON	Active
		OFF	Inactive

SELF-DIAG RESULT

Refer to [SEC-71, "DTC Index"](#).

DATA MONITOR

DIAGNOSIS SYSTEM (INTELLIGENT KEY UNIT)

< FUNCTION DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

Monitor Item	Condition
PUSH SW	Indicates [ON (pressed)/OFF (released)] condition of ignition knob switch.
KEY SW	Indicates [ON (inserted)/OFF (removed)] condition of key switch.
DR REQ SW	Indicates [ON (pressed)/OFF (released)] condition of door request switch (driver side).
AS REQ SW	Indicates [ON (pressed)/OFF (released)] condition of door request switch (passenger side).
BD/TR REQ SW	Indicates [ON (pressed)/OFF (released)] condition of door request switch (back door).
IGN SW	Indicates [ON (ON or START position)/OFF (other than ON and START position)] condition of ignition switch ON position.
ACC SW	Indicates [ON/OFF] condition of ignition switch ACC position.
STOP LAMP SW	Indicates [ON/OFF] condition of stop lamp switch.
DOOR LOCK SIG	Indicates [ON/OFF] condition of LOCK signal from Intelligent Key.
DOOR UNLOCK SIG	Indicates [ON/OFF] condition of UNLOCK signal from Intelligent Key.
DOOR SW DR	Indicates [OPEN/CLOSE] condition of front door switch (driver side) from BCM via CAN communication.
DOOR SW AS	Indicates [OPEN/CLOSE] condition of front door switch (passenger side) from BCM via CAN communication.
DOOR SW RR	Indicates [OPEN/CLOSE] condition of rear door switch (RH) from BCM via CAN communication.
DOOR SW RL	Indicates [OPEN/CLOSE] condition of rear door switch (LH) from BCM via CAN communication.
DOOR BK SW	Indicates [OPEN/CLOSE] condition of back door switch from BCM via CAN communication.
VEHICLE SPEED	Displays the vehicle speed signal received from combination meter by numerical value [km/h].

ACTIVE TEST

Test item	Description
DOOR LOCK/UNLOCK	This test is able to check door lock/unlock operation. - ALL UNLK: All door lock actuators are unlocked. - DR UNLK: Door lock actuator (driver side) is unlocked. - AS UNLK: Door lock actuator (passenger side) is unlocked. - BK UNLK: This item is indicated, but inactive. - LOCK: All door lock actuator is locked.
ANTENNA	This test is able to check Intelligent Key antenna operation. When the following condition are met, hazard warning lamps flash. - ROOM ANT1: Inside key antenna (console) detects Intelligent Key, when "ROOM ANT1" is selected. - ROOM ANT2: Inside key antenna (instrument center/rear seat) detects Intelligent Key, when "ROOM ANT2" is selected. - DRIVER ANT: Outside key antenna (driver side) detects Intelligent Key, when "DRIVER ANT" is selected. - ASSIST ANT: Outside key antenna (passenger side) detects Intelligent Key, when "ASSIST ANT" is selected. - BK DOOR ANT: Outside key antenna (rear bumper) detects Intelligent Key, when "BK DOOR ANT" is selected.
OUTSIDE BUZZER	This test is able to check Intelligent Key warning buzzer operation. - ON - OFF
INSIDE BUZZER	This test is able to check warning chime in combination meter operation. - TAKE OUT: Take away warning chime sounds. - KNOB: Ignition knob switch warning chime sounds. - KEY: Key warning chime sounds. - OFF

DIAGNOSIS SYSTEM (INTELLIGENT KEY UNIT)

< FUNCTION DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

Test item	Description
INDICATOR	This test is able to check warning lamp operation. • BLUE ON: Key warning lamp (green) illuminates. • RED ON: Key warning lamp (red) illuminates. • KNOB ON: Lock warning lamp illuminates. • BLUE IND: Key warning lamp (green) flashes. • RED IND: Key warning lamp (red) flashes. • KNOB IND: Lock warning lamp flashes. • OFF
KEY LOCK SOLENOID ^{*1}	This test is able to check key interlock operation. • LOCK: Key interlock is active. • UNLOCK: Key interlock is inactive.

^{*1}: The item is only for M/T model.

COMPONENT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000001404050

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

CAN Communication Signal Chart, refer to XX-XX, "*****".

DTC Logic

INFOID:0000000001404051

DTC DETECTION LOGIC

DTC	CONSULT-III display description	DTC Detection Condition	Possible cause
U1000	CAN COMM CIRCUIT	When Intelligent Key unit cannot communicate CAN communication signal continuously for 2 seconds or more.	In CAN communication system, any item (or items) of the following listed below is malfunctioning. • Transmission • Receiving (BCM) • Receiving (ECM) • Receiving (METER/M&A)

Diagnosis Procedure

INFOID:0000000001404052

1.PERFORM SELF DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check "Self Diagnostic Result".

Is "CAN COMM CIRCUIT" displayed?

- YES >> Refer to XX-XX, "*****".
- NO >> Refer to XX-XX, "*****".

SEC

U1010 CONTROL UNIT (CAN)

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000001404053

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

CAN Communication Signal Chart, refer to XX-XX, "*****".

DTC Logic

INFOID:0000000001404054

DTC DETECTION LOGIC

DTC	CONSULT-III display description	DTC Detection Condition	Possible cause
U1010	CONTROL UNIT (CAN)	When detecting error during the initial diagnosis of CAN controller of Intelligent Key unit.	Intelligent Key unit

Diagnosis Procedure

INFOID:0000000001404055

1.REPLACE INTELLIGENT KEY UNIT

When DTC [U1010] is detected, replace Intelligent Key unit.

>> Replace Intelligent Key unit.

Special Repair Requirement

INFOID:0000000001404056

1.REQUIRED WORK WHEN REPLACING INTELLIGENT KEY UNIT

Initialize control unit. Refer to CONSULT-III Operation Manual.

>> Work end.

B2013 ID DISCORD I-KEY-STRG

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

B2013 ID DISCORD I-KEY-STRG

Description

INFOID:000000001404057

Intelligent Key unit performs the ID verification with the steering lock unit and releases the steering lock if both Intelligent Key unit and steering lock unit ID are same. Intelligent Key unit starts the communication with the steering lock unit when Intelligent Key is carried into the vehicle and the ignition knob switch is pressed.

DTC Logic

INFOID:000000001404058

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2013	STRG COMM 1	The ID verification results between Intelligent Key unit and steering control unit are NG. The registration is necessary.	Steering lock unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Press the ignition knob switch
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

YES >> Refer to XX-XX, "*****".
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:000000001532028

1.CHECK STEERING LOCK SOLENOID POWER SUPPLY

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

Terminals		Voltage (V) (Approx.)
(+)	(-)	
Steering lock solenoid	Terminal	
M6	1	Ground
		Battery voltage

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace steering lock solenoid power supply circuit.

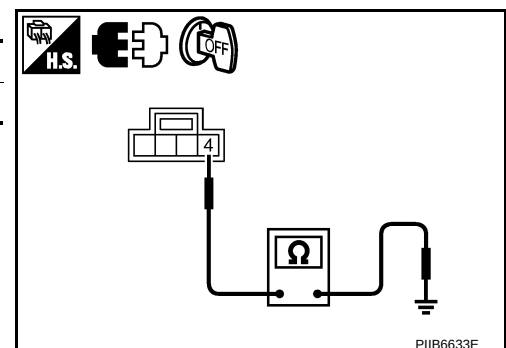
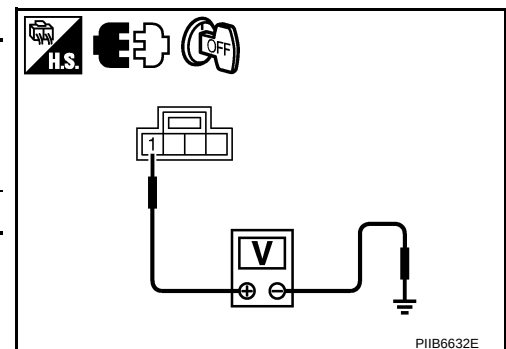
2.CHECK STEERING LOCK SOLENOID GROUND CIRCUIT

Check continuity between steering lock solenoid and ground.

Steering lock solenoid connector	Terminal	Ground	Continuity
M6	4		Yes

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 6.



3. CHECK INTELLIGENT KEY UNIT OUTPUT SIGNAL

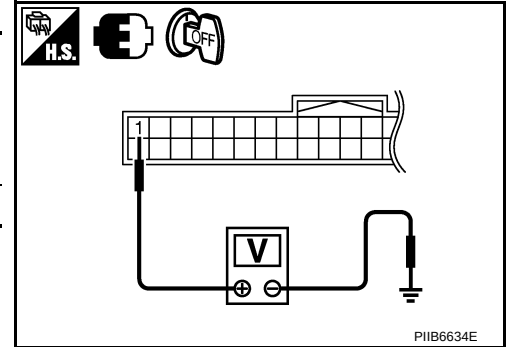
1. Connect steering lock solenoid connector.
2. Check voltage between Intelligent Key unit and ground.

Terminals		Voltage (V) (Approx.)
(+)	(-)	
Intelligent Key unit connector	Terminal	
M52	1	Ground
		5

Is the inspection result normal?

YES >> GO TO 4.

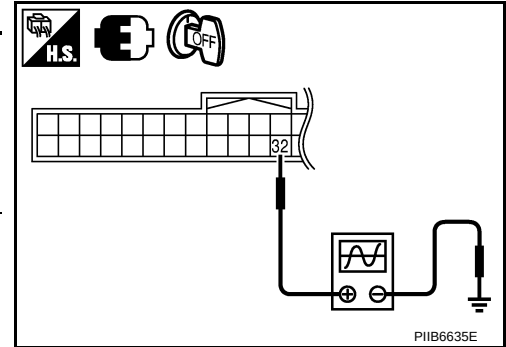
NO >> Replace Intelligent Key unit. Refer to [SEC-79, "Removal and Installation"](#).



4. CHECK STEERING LOCK COMMUNICATION SIGNAL

Check signal between Intelligent Key unit and ground with oscilloscope.

Terminals		Condition of key switch	Voltage (V) (Approx.)
(+)	(-)		
Intelligent Key unit connector	Terminal		
M52	32	Ignition switch is pressed, when Intelli- gent Key is into the vehi- cle.	SI/A1911J
		Other than above	5



Is the inspection result normal?

YES >> GO TO 5.

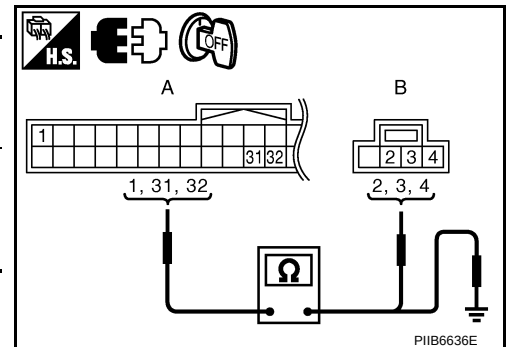
NO >> Replace Intelligent Key unit. Refer to [SEC-79, "Removal and Installation"](#).

5. CHECK STEERING LOCK SOLENOID COMMUNICATION CIRCUIT

1. Disconnect Intelligent Key unit and steering lock solenoid connectors.
2. Check continuity between Intelligent Key unit and steering lock solenoid.

A		B		Continuity
Intelligent Key unit connector	Terminal	Steering lock sole- noid connector	Terminal	
M52	1	M6	2	Yes
	31		4	
	32		3	

3. Check continuity between steering lock solenoid and ground.



B2013 ID DISCORD I-KEY-STRG

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

A		Ground	Continuity
Intelligent Key unit connector	Terminal		
M52	1		No
	31		
	32		

Is the inspection result normal?

YES >> Replace steering lock solenoid.

NO >> Repair or replace harness between steering lock solenoid and Intelligent Key unit.

6. CHECK STEERING LOCK SOLENOID GROUND CIRCUIT

1. Disconnect Intelligent Key unit connector.
2. Check continuity between Intelligent Key unit and steering lock solenoid.

A		B		Continuity
Intelligent Key unit connector	Terminal	Steering lock solenoid connector	Terminal	
M52	31	M6	4	Yes

3. Check continuity between steering lock solenoid connector and ground.

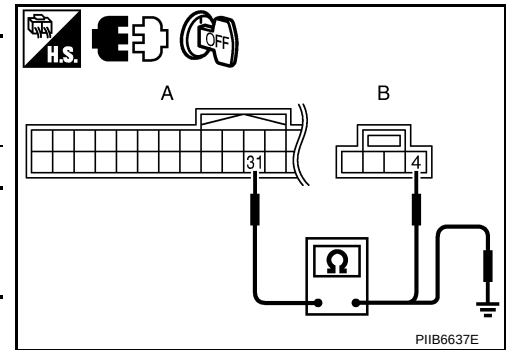
A		Ground	Continuity
Intelligent Key unit connector	Terminal		
M52	31		No

Is the inspection result normal?

YES >> Check the following.

- Intelligent Key unit ground circuit.
- Intelligent Key unit.

NO >> Repair or replace harness between steering lock solenoid and Intelligent Key unit.



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B2190, P1614 NATS ANTENNA AMP.

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

B2190, P1614 NATS ANTENNA AMP.

Description

INFOID:000000001404060

Performs ID verification through BCM and NATS antenna amplifier when ignition knob switch is pressed. Prohibits the release of steering lock or start of engine when an unregistered ID of mechanical key is used.

DTC Logic

INFOID:000000001404061

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2190	NATS ANTENNA AMP	- Inactive communication between NATS antenna amp. and BCM. - Mechanical key is malfunctioning.	- Harness or connectors (The NATS antenna amp. circuit is open or shorted) - Mechanical key - NATS antenna amp. - BCM
P1614			

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Insert mechanical key into the key cylinder.
2. Press the ignition knob switch.
3. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

YES >> Refer to XX-XX, "*****".

NO >> INSPECTION END.

Diagnosis Procedure

INFOID:000000001532029

1.CHECK NATS ANTENNA AMP. INSTALLATION

Check NATS antenna amp. installation. Refer to XX-XX, "*****".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Reinstall NATS antenna amp. correctly.

2.CHECK NVIS (NATS) IGNITION KEY ID CHIP

Start engine with another registered NATS ignition key.

Does the engine start?

YES >>

- Ignition key ID chip is malfunctioning.
- Replace the ignition key.
- Perform initialization with CONSULT-III.

For initialization, refer to "CONSULT-III Operation Manual".

NO >> GO TO 3.

3.CHECK POWER SUPPLY FOR NATS ANTENNA AMP.

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

B2190, P1614 NATS ANTENNA AMP.

< COMPONENT DIAGNOSIS >

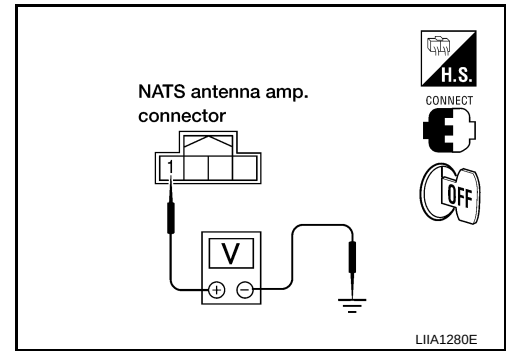
[WITH INTELLIGENT KEY SYSTEM]

1 - Ground

: Battery voltage

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Repair or replace fuse or harness.



4.CHECK NATS ANTENNA AMP. GROUND LINE CIRCUIT

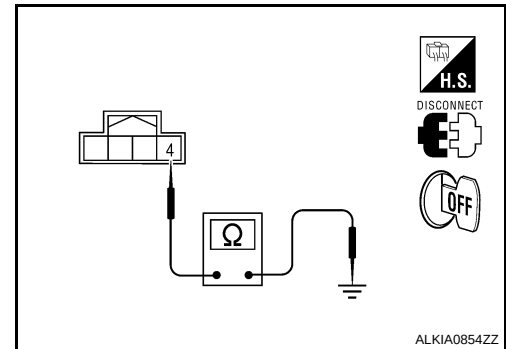
1. Turn ignition switch OFF.
2. Disconnect NATS antenna amp. connector.
3. Check continuity between NATS antenna amp. connector M21 terminal 4 and ground.

4 - Ground

: Continuity should exist.

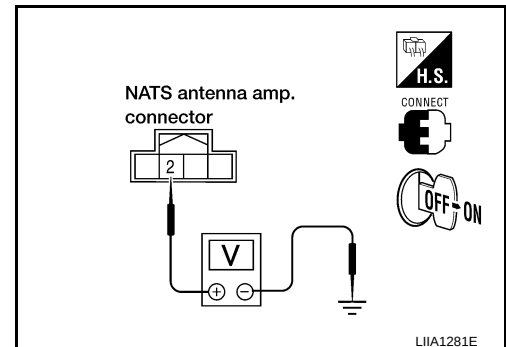
Is the inspection result normal?

- YES >> GO TO 5.
NO >> Repair or replace harness.



5.CHECK NATS ANTENNA AMP. SIGNAL LINE- 1

1. Connect NATS antenna amp. connector.
2. Turn ignition switch ON.
3. Check voltage between NATS antenna amp. connector M21 terminal 2 and ground with analog tester.



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

Is the inspection result normal?

- YES >> GO TO 6.
NO >> • Repair or replace harness.

NOTE:

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

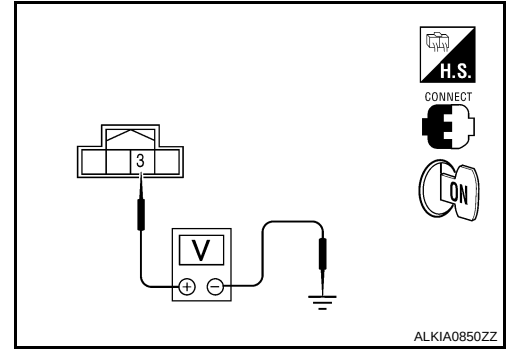
B2190, P1614 NATS ANTENNA AMP.

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

6. CHECK NATS ANTENNA AMP. SIGNAL LINE- 2

Check voltage between NATS antenna amp. connector M21 terminal 3 and ground with analog tester.



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

Is the inspection result normal?

YES >> NATS antenna amp. is malfunctioning.

NO >> • Repair or replace harness.

NOTE:

If harness is OK, replace BCM, refer to [BCS-57, "Removal and Installation of BCM"](#). Perform initialization with CONSULT-III. For initialization, refer to "CONSULT-III Operation Manual".

B2191, P1615 DIFFERENCE OF KEY

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

B2191, P1615 DIFFERENCE OF KEY

Description

INFOID:000000001404063

Performs ID verification through BCM when ignition knob switch is pressed.

Prohibits the release of steering lock or start of engine when an unregistered ID of mechanical key is used.

DTC Logic

INFOID:000000001404064

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2191 P1615	DIFFERENCE OF KEY	The ID verification results between BCM and mechanical key are NG. The registration is necessary.	Mechanical key

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Insert mechanical key into the key cylinder.
2. Press the ignition knob switch.
3. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-29, "Diagnosis Procedure"](#).
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:000000001404065

1.PERFORM INITIALIZATION

Perform initialization with CONSULT-III. Re-register all mechanical keys.

For initialization and registration of mechanical key. Refer to CONSULT-III Operation Manual.

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

- YES >> Mechanical key was unregistered.
NO >> BCM is malfunctioning.
 - Replace BCM. Refer to [XX-XX, "*****"](#).
 - Perform initialization again

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B2192, P1611 ID DISCORD, IMMU-ECM**Description**

INFOID:000000001404066

BCM performs the ID verification with ECM that allows the engine to start. BCM starts the communication with ECM if ignition switch is turned ON and starts the engine if the ID is OK. ECM prevents the engine from starting if the ID is not registered.

DTC Logic

INFOID:000000001404067

DTC DETECTION LOGIC**NOTE:**

- If DTC B2192 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [SEC-21, "DTC Logic"](#).
- If DTC B2192 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [SEC-22, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2192 P1611	ID DISCORD BCM-ECM	The ID verification results between BCM and ECM are NG. The registration is necessary.	• BCM • ECM

DTC CONFIRMATION PROCEDURE**1.PERFORM DTC CONFIRMATION PROCEDURE**

1. Turn ignition switch ON.
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-30, "Diagnosis Procedure"](#).
 NO >> INSPECTION END.

Diagnosis Procedure

INFOID:000000001404068

1.PERFORM INITIALIZATION

Perform initialization with CONSULT-III. Re-register all mechanical keys.

For initialization and registration of mechanical key. Refer to CONSULT-III Operation Manual.

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

- YES >> ID was unregistered.
 NO >> GO TO 2.

2.PEPLACE BCM

1. Replace BCM. Refer to [XX-XX, "*****"](#).
2. Perform initialization with CONSULT-III. Re-register all mechanical keys.
 For initialization and registration of mechanical key. Refer to CONSULT-III Operation Manual .

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

- YES >> BCM is malfunctioning.
 NO >> GO TO 3.

3.PEPLACE ECM

1. Replace ECM. Refer to the following page.
 - HR16DE (WITH EUR-OBID): [XX-XX, "*****"](#)
 - HR16DE (WITHOUT EUR-OBID): [XX-XX, "*****"](#)
 - MR18DE (WITH EURO-OBID): [XX-XX, "*****"](#)
 - MR18DE (WITHOUT EURO-OBID): [XX-XX, "*****"](#)
 - K9K: [XX-XX, "*****"](#)
2. Perform initialization with CONSULT-III. Re-register all mechanical keys.
 For initialization and registration of mechanical key. Refer to CONSULT-III Operation Manual.

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

B2192, P1611 ID DISCORD, IMMU-ECM

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

YES >> ECM is malfunctioning.

NO >> GO TO 4.

4.CHECK INTERMITTENT INCIDENT

Refer to [GI-55. "Intermittent Incident"](#).

>> INSPECTION END

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B2193, P1612 CHAIN OF ECM-IMMU

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

B2193, P1612 CHAIN OF ECM-IMMU

Description

INFOID:000000001404069

BCM performs the ID verification with ECM that allows the engine to start. BCM starts the communication with ECM if ignition switch is turned ON and starts the engine if the ID is OK. ECM prevents the engine from starting if the ID is not registered.

DTC Logic

INFOID:000000001404070

DTC DETECTION LOGIC

NOTE:

- If DTC B2193 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [SEC-21, "DTC Logic"](#).
- If DTC B2193 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [SEC-22, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2193	CHAIN OF BCM-ECM	Inactive communication between ECM and BCM	• Harness or connectors (The CAN communication line is open or short) • BCM • ECM
P1612			

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-32, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000001404071

1.REPLACE BCM

1. Replace BCM. Refer to [XX-XX, "*****"](#).
2. Perform initialization with CONSULT-III.
For initialization, refer to CONSULT-III Operation Manual.

Does the engine start?

- YES >> BCM was malfunctioning.
NO >> ECM is malfunctioning.
 - Replace ECM.
 - Perform ECM re-communicating function.

B2194 ID DISCORD IMMU-I-KEY

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

B2194 ID DISCORD IMMU-I-KEY

Description

INFOID:000000001404072

BCM performs the ID verification with Intelligent Key unit that allows the engine to start. BCM starts the communication with Intelligent Key unit if ignition switch is turned ON and starts the engine if the ID is OK. BCM prevents the engine from starting if the ID is not registered.

DTC Logic

INFOID:000000001404073

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2194	DISCORD BCM-I-KEY	The ID verification results between BCM and Intelligent Key unit are NG. The registration is necessary.	• BCM • Intelligent Key unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-33, "Diagnosis Procedure"](#).
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:000000001404074

1.PERFORM INITIALIZATION

1. Perform initialization with CONSULT-III. Re-register all mechanical keys.
For initialization and registration of mechanical key. Refer to CONSULT-III Operation Manual.
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> GO TO 2.
NO >> ID was unregistered.

2.REPLACE BCM

1. Turn ignition switch OFF.
2. Replace BCM. Refer to [XX-XX, "*****"](#).
3. Perform initialization with CONSULT-III. Re-register all mechanical keys.
For initialization and registration of mechanical key. Refer to CONSULT-III Operation Manual.

Can the system be initialized and can the engine be started?

- YES >> BCM is malfunctioning.
NO >> GO TO 3.

3.CHECK INTERMITTENT INCIDENT

Refer to @@@.

>> INSPECTION END

B2552 INTELLIGENT KEY

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

B2552 INTELLIGENT KEY

Description

INFOID:000000001404081

Intelligent key unit performs engine start operation and steering lock control by crosschecking ID with the Intelligent key.

DTC Logic

INFOID:000000001404082

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2552	INTELLIGENT KEY UNIT	Malfunction is detected inside Intelligent key unit.	Intelligent Key unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-34, "Diagnosis Procedure"](#).
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:000000001404083

1.REPLACE INTELLIGENT KEY UNIT

1. Replace Intelligent Key unit.
2. Perform initialization with CONSULT-III. Re-register all mechanical keys. Refer to CONSULT-III Operation Manual.
3. Start the engine.

Does the engine start?

- YES >> INSPECTION END
NO >> Perform "DTC confirmation procedure". Refer to [SEC-34, "DTC Logic"](#).

Special Repair Requirement

INFOID:000000001404084

1.REQUIRED WORK WHEN REPLACING INTELLIGENT KEY UNIT

Initialize control unit. Refer to CONSULT-III operation manual.

>> Work end.

B2590 ID DISCORD BCM-I-KEY

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

B2590 ID DISCORD BCM-I-KEY

Description

INFOID:000000001404085

Intelligent Key unit performs the ID verification with BCM that allows the engine to start. BCM starts the engine if the ID is OK and prevents the engine from starting if the ID is not registered.

DTC Logic

INFOID:000000001404086

DTC DETECTION LOGIC

NOTE:

- If DTC B2590 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [SEC-21, "DTC Logic"](#).
- If DTC B2590 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [SEC-22, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2590	ID DISCORD BCM-I-KEY	The ID verification results between BCM and Intelligent Key unit are NG. The registration is necessary.	• BCM • Intelligent Key unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-35, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000001404087

1.PERFORM INITIALIZATION

Perform initialization with CONSULT-III. Re-register all mechanical keys.
For initialization and registration of mechanical key. Refer to CONSULT-III Operation Manual.

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

- YES >> ID was unregistered.
NO >> BCM is malfunctioning.
 - Replace BCM. Refer to [BCS-57, "Removal and Installation of BCM"](#).
 - Perform initialization again

P1610 LOCK MODE

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

P1610 LOCK MODE

Description

INFOID:000000001404088

When the starting operation is carried more than five times consecutively under the following conditions, NATS will shift to the mode which prevents the engine from being started.

- Unregistered mechanical key is used.
- BCM or ECM's malfunctioning.

DTC Logic

INFOID:000000001404089

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1610	LOCK MODE	When the starting operation is carried out five or more times consecutively under the following conditions. • Unregistered mechanical key • BCM or ECM's malfunctioning.	—

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-36, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000001404090

1.CHECK ENGINE START FUNCTION

1. Perform the check for DTC except DTC P1610.
2. Use CONSULT-III to erase DTC after fixing.
3. Check that engine can start with registered mechanical key.

Does the engine start?

- YES >> INSPECTION END
NO >> GO TO 2.

2.CHECK INTERMITTENT INCIDENT

Refer to @@@.

>> INSPECTION END

POWER SUPPLY AND GROUND CIRCUIT

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

POWER SUPPLY AND GROUND CIRCUIT

INTELLIGENT KEY UNIT

INTELLIGENT KEY UNIT : Diagnosis Procedure

INFOID:000000001532053

1.CHECK FUSES

Check that the following fuses are not blown.

Terminal No.	Signal name	Fuse No.
11	Battery power supply	31 (10A)
10	Ignition power supply (ACC/ON)	6 (10A)
6	Ignition power supply (ON/START)	2 (10A)

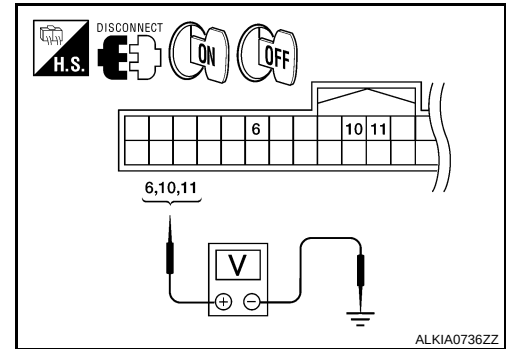
Are the fuses blown?

YES >> Replace the blown fuse after repairing the affected circuit if a fuse is blown.

NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect Intelligent Key unit connector.
3. Check voltage between Intelligent Key unit harness connector M52 terminals 6, 10, 11 and ground.



Terminal		Ignition switch position		
(+)	(-)	OFF	ACC	ON
Intelligent Key unit		Ground	Battery voltage	Battery voltage
Connector	Terminal			
M52	11			
	10			
	6			
		Battery voltage	Battery voltage	Battery voltage
		0V	Battery voltage	Battery voltage
		0V	Battery voltage	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

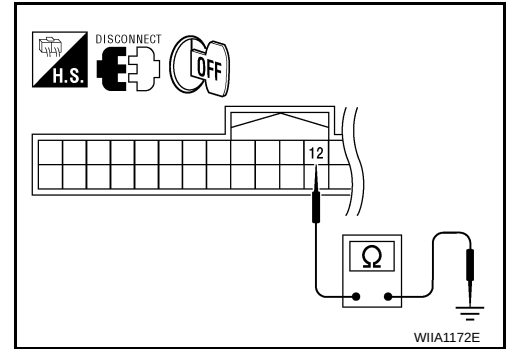
3.CHECK GROUND CIRCUIT

POWER SUPPLY AND GROUND CIRCUIT

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

Check continuity between Intelligent Key unit harness connector and ground.



Intelligent Key unit		Ground	Continuity
Connector	Terminal		
M52	12		Yes

Is the inspection result normal?

YES >> Intelligent Key unit power supply and ground circuit are OK.

NO >> Repair harness or connector.

BCM

BCM : Diagnosis Procedure

INFOID:0000000001532054

Refer to [BCS-30, "Diagnosis Procedure"](#).

KEY SWITCH

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

KEY SWITCH

Description

INFOID:0000000001532049

Key switch detects that mechanical key is inserted into the key cylinder, and then transmits the signal to Intelligent Key unit.

Component Function Check

INFOID:0000000001532050

1.CHECK KEY SWITCH INPUT SIGNAL

Check key switch ("KEY SW") in "Data Monitor" mode with CONSULT-III. Refer to [DLK-50, "DOOR LOCK : CONSULT-III Function \(BCM - DOOR LOCK\)"](#).

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

Is the inspection result normal?

YES >> Key switch is OK.

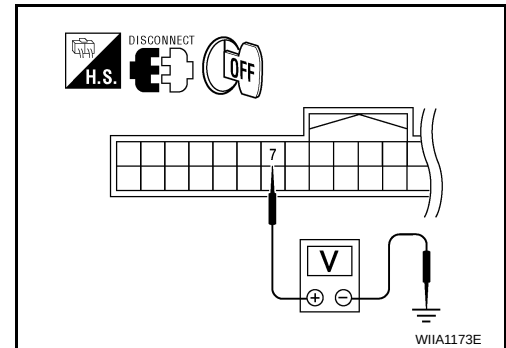
NO >> Refer to [SEC-39, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:0000000001532051

1.CHECK KEY SWITCH INPUT SIGNAL

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



Terminals		Condition	Voltage (V) (Approx.)
(+)	(-)		
Intelligent Key unit connector	Terminal		
M52	7	Insert mechanical key into key cylinder	Battery voltage
		Remove mechanical key from key cylinder	0

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 2.

2.CHECK KEY SWITCH POWER SUPPLY CIRCUIT

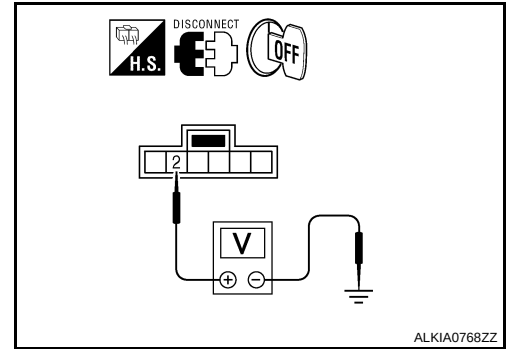
1. Remove mechanical key from key cylinder.
2. Disconnect key switch and ignition knob switch connector.

KEY SWITCH

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

- Check voltage between key switch and ignition knob switch connector and ground.



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Terminals		Voltage (V) (Approx.)
(+)	(-)	
key switch and ignition knob switch connector	Terminal	
M32	2	Battery voltage

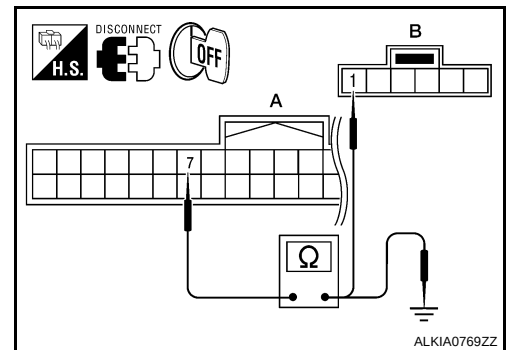
Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

3.CHECK KEY SWITCH SIGNAL CIRCUIT

- Check continuity between Intelligent Key unit harness connector (A) M52 terminal 7 and key switch and ignition knob switch connector (B) M32 terminal 1.



ALKIA0769ZZ

Intelligent Key unit connector	Terminal	key switch and ignition knob switch connector	Terminal	Continuity
M52	7	M32	1	Yes

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

Intelligent Key unit harness connector	Terminal	Ground	Continuity
M52	7	Ground	No

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness.

4.CHECK KEY SWITCH

Check key switch function.

Refer to [SEC-41. "Component Inspection"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace key switch and ignition knob switch.

5.CHECK INTERMITTENT INCIDENT

KEY SWITCH

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

Refer to [GI-55. "Intermittent Incident"](#).

>> INSPECTION END

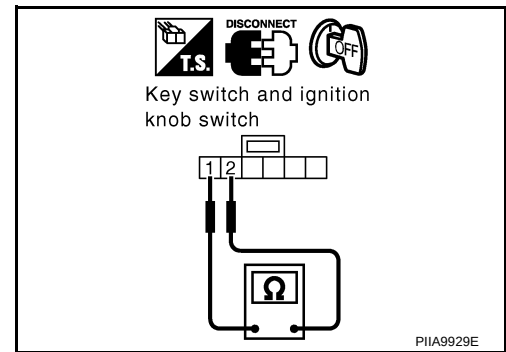
Component Inspection

INFOID:000000001532052

COMPONENT INSPECTION

1.CHECK KEY SWITCH

Check continuity between key switch and ignition knob switch terminals.



Terminals		Condition	Continuity
key switch and ignition knob switch			
1	2	Insert mechanical key into key cylinder	Yes
		Remove mechanical key from key cylinder	No

Is the inspection result normal?

YES >> Key switch is OK.

NO >> Replace key cylinder assembly.

SEC

IGNITION KNOB SWITCH

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

IGNITION KNOB SWITCH

Description

INFOID:000000001532055

Ignition knob switch detects that ignition knob is pressed, and then transmits the signal to Intelligent Key unit.

Component Function Check

INFOID:000000001532056

1.CHECK IGNITION KNOB SWITCH INPUT SIGNAL

Check ignition knob switch ("PUSH SW") in "Data Monitor" mode with CONSULT-III. Refer to [DLK-50, "DOOR LOCK : CONSULT-III Function \(BCM - DOOR LOCK\)"](#).

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

Is the inspection result normal?

YES >> Ignition knob switch is OK.

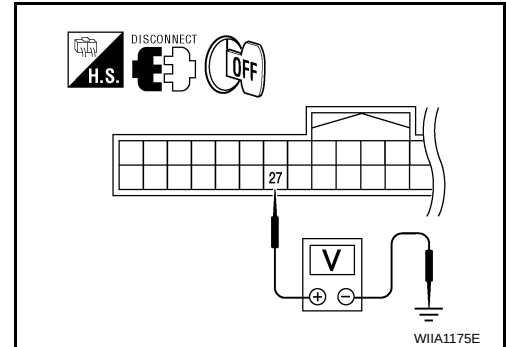
NO >> Refer to [XX-XX, "*****"](#).

Diagnosis Procedure

INFOID:000000001532057

1.CHECK IGNITION KNOB SWITCH INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect Intelligent Key unit and BCM connectors.
3. Check voltage between Intelligent Key unit harness connector and ground.



Terminals			Condition	Voltage (V) (Approx.)
(+) (Intelligent Key unit connector)		(-) (Terminal)		
M52	27	Ground	Ignition knob switch is pressed	Battery voltage
			Ignition knob switch is released	0

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 2.

2.CHECK IGNITION KNOB SWITCH POWER SUPPLY CIRCUIT

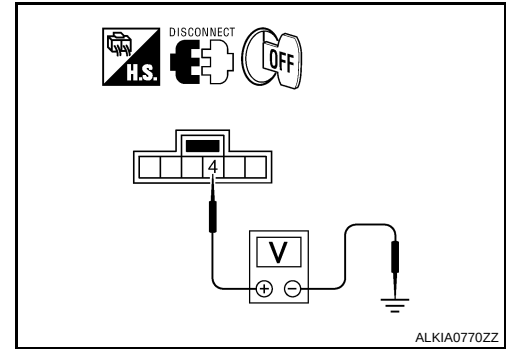
1. Disconnect key switch and ignition knob switch connector.

IGNITION KNOB SWITCH

[WITH INTELLIGENT KEY SYSTEM]

< COMPONENT DIAGNOSIS >

- Check voltage between key switch and ignition knob switch harness connector and ground.



Terminals		Voltage (V) (Approx.)
(+)	(-)	
key switch and ignition knob switch connector	Terminal	
M52	4	Battery voltage

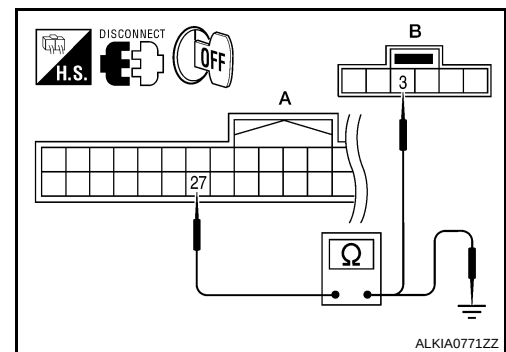
Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

3.CHECK IGNITION KNOB SWITCH SIGNAL CIRCUIT

- Check continuity between Intelligent Key unit harness connector (A) M52 terminal 27 and key switch and ignition knob switch connector (B) M32 terminal 3.



Intelligent Key unit connector	Terminal	key switch and ignition knob switch connector	Terminal	Continuity
M52	27	M32	3	Yes

- Check continuity between Intelligent Key unit connector (A) M52 terminal 27 and ground.

Intelligent Key unit connector	Terminal	Ground	Continuity
M52	27		No

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness.

4.CHECK IGNITION KNOB SWITCH

Check ignition knob switch function.

Refer to XX-XX, "*****".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace key switch and ignition knob switch.

5.CHECK INTERMITTENT INCIDENT

Refer to @@@.

IGNITION KNOB SWITCH

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

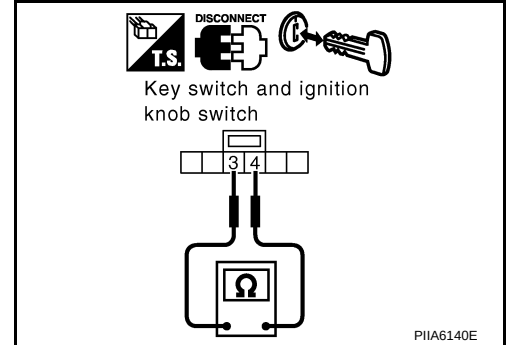
>> INSPECTION END

Component Inspection

INFOID:0000000001532058

1.CHECK IGNITION KNOB SWITCH

1. Turn ignition switch OFF.
2. Check continuity between key switch and ignition knob switch terminals under the following conditions.



key switch and ignition knob switch		Condition	Continuity
Terminals			
3	4	Ignition knob switch is pressed	Yes
		Ignition knob switch is released	No

Is the inspection result normal?

YES >> INSPECTION END.

NO >> Replace key switch and ignition knob switch.

STOP LAMP SWITCH (A/T)

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

STOP LAMP SWITCH (A/T)

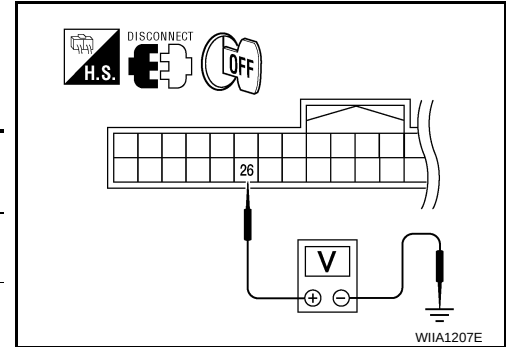
Diagnosis Procedure

INFOID:000000001532059

1.CHECK STOP LAMP SWITCH INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect Intelligent Key unit connector.
3. Check voltage between Intelligent Key unit harness connector M52 terminal 26 and ground.

Connector	Terminals		Condition	Voltage (V) (Approx.)
	(+)	(-)		
M52	26	Ground	Brake pedal depressed	Battery voltage
			Brake pedal released	0



Is the inspection result normal?

- YES >> Stop lamp switch is OK.
NO >> GO TO 2.

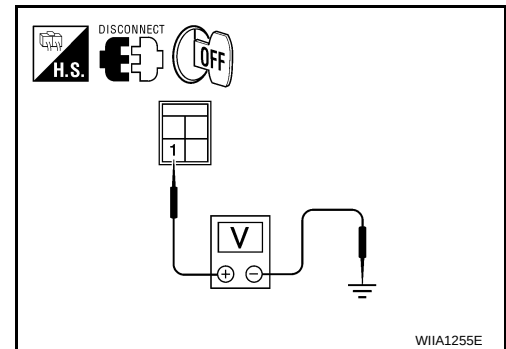
2.CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

1. Disconnect stop lamp switch connector.
2. Check voltage between stop lamp switch harness connector E13 terminal 1 and ground.

1 - Ground : Battery voltage

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair or replace harness between stop lamp switch power supply circuit and fuse.



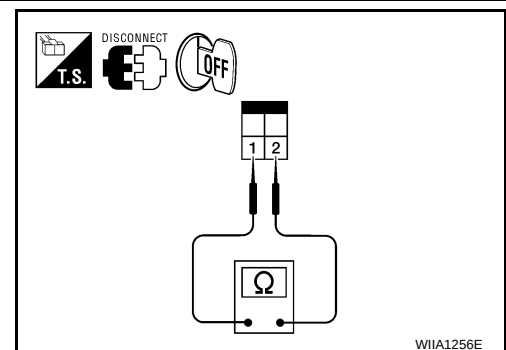
3.CHECK STOP LAMP SWITCH OPERATION

Check continuity between stop lamp switch terminals 1 and 2.

Component	Terminals		Condition	Continuity
Stop lamp switch	1	2	Brake pedal depressed	Yes
			Brake pedal released	No

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Replace stop lamp switch.



4.CHECK STOP LAMP SWITCH CIRCUIT

STOP LAMP SWITCH (A/T)

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

1. Check continuity between Intelligent Key unit harness connector (A) M52 terminal 26 and stop lamp switch harness connector (B) E13 terminal 2.

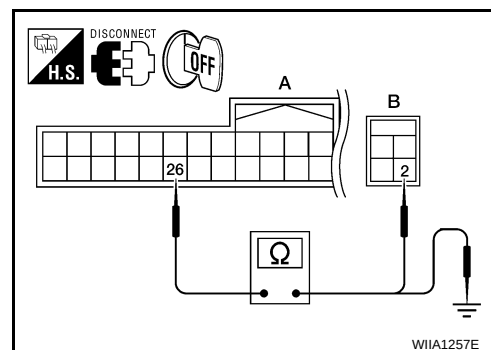
26 - 2 : Continuity should exist.

2. Check continuity between Intelligent Key unit harness connector M52 terminal 26 and ground.

26 - Ground : Continuity should not exist.

Is the inspection result normal?

- YES >> Check condition of harness and connector.
NO >> Repair or replace harness.



STOP LAMP SWITCH (M/T)

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

STOP LAMP SWITCH (M/T)

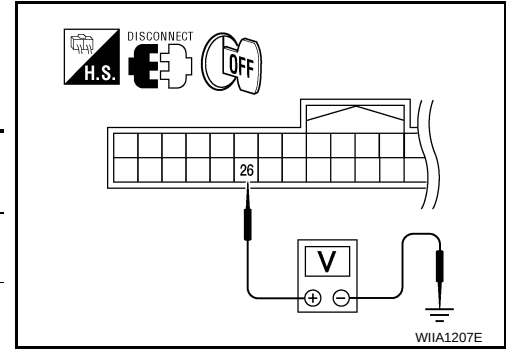
Diagnosis Procedure

INFOID:000000001532060

1.CHECK STOP LAMP SWITCH INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect Intelligent Key unit connector.
3. Check voltage between Intelligent Key unit harness connector M52 terminal 26 and ground.

Connector	Terminals		Condition	Voltage (V) (Approx.)
	(+)	(-)		
M52	26	Ground	Brake pedal depressed	Battery voltage
			Brake pedal released	0



Is the inspection result normal?

- YES >> Stop lamp switch is OK.
NO >> GO TO 2.

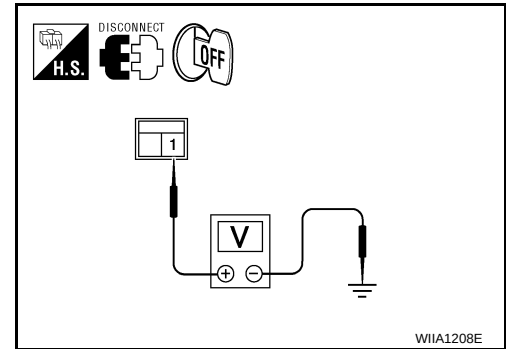
2.CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

1. Disconnect stop lamp switch connector.
2. Check voltage between stop lamp switch harness connector M203 terminal 1 and ground.

1 - Ground : Battery voltage

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair or replace harness between stop lamp switch power supply circuit and fuse.



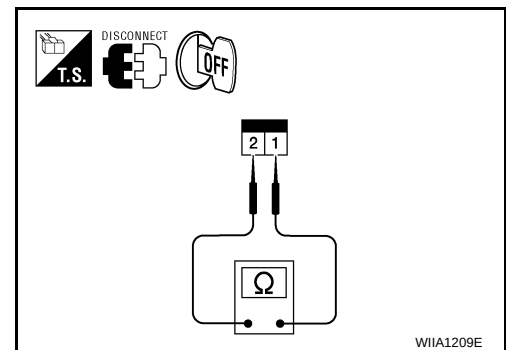
3.CHECK STOP LAMP SWITCH OPERATION

Check continuity between stop lamp switch terminals 1 and 2.

Component	Terminals		Condition	Continuity
Stop lamp switch	1	2	Brake pedal depressed	Yes
			Brake pedal released	No

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Replace stop lamp switch.



4.CHECK STOP LAMP SWITCH CIRCUIT

STOP LAMP SWITCH (M/T)

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

1. Check continuity between Intelligent Key unit harness connector (A) M52 terminal 26 and stop lamp switch harness connector (B) M203 terminal 2.

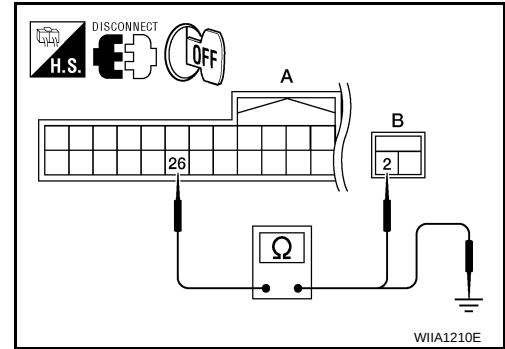
26 - 2 : Continuity should exist.

2. Check continuity between Intelligent Key unit harness connector M52 terminal 26 and ground.

26 - Ground : Continuity should not exist.

Is the inspection result normal?

- YES >> Check condition of harness and connector.
NO >> Repair or replace harness.



VEHICLE SECURITY INDICATOR

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

VEHICLE SECURITY INDICATOR

Description

INFOID:000000001404115

- Vehicle security indicator is located on top left side of the instrument panel near the autolight sensor.
- NATS (Nissan Anti-Theft System) and vehicle security system conditions are indicated by blink or illumination of vehicle security indicator.

Component Function Check

INFOID:000000001404116

1.CHECK FUNCTION

1. Perform "THEFT IND" in the "Active Test" mode with CONSULT-III.
2. Check vehicle security indicator operation.

Test item		Description	
THEFT IND	ON	Vehicle security indicator	ON
	OFF		OFF

Is the inspection result normal?

YES >> INSPECTION END.

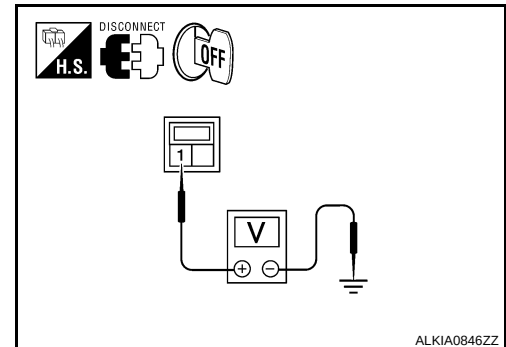
NO >> Refer to [SEC-49, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000001404117

1.CHECK SECURITY INDICATOR LAMP POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect security indicator lamp connector.
3. Check voltage between security indicator lamp harness connector and ground.



Terminals		Voltage (V) (Approx.)
(+)	(-)	
Security indicator lamp connector	Terminal	
M31	1	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness.

2.CHECK SECURITY INDICATOR LAMP SIGNAL CIRCUIT

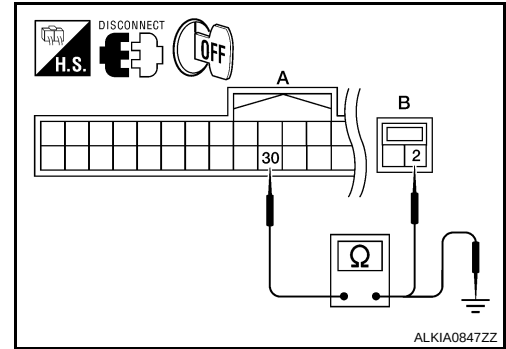
1. Disconnect Intelligent Key unit connector.

VEHICLE SECURITY INDICATOR

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

- Check continuity between Intelligent Key unit harness connector (A) M52 terminal 30 and security indicator lamp connector (B) M31 terminal 2.



Intelligent Key unit connector	Terminal	Security indicator lamp connector	Terminal	Continuity
M52	30	M31	2	Yes

- Check continuity between Intelligent Key unit connector (A) M52 terminal 30 and ground.

Intelligent Key unit connector	Terminal	Ground	Continuity
M52	30	Ground	No

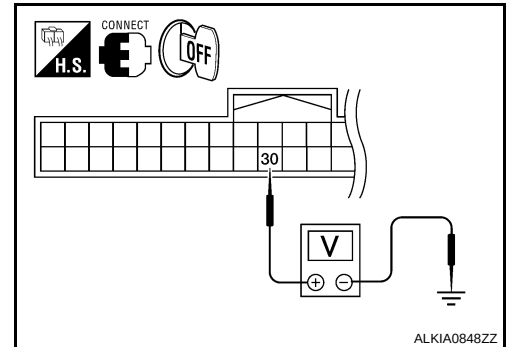
Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

3.CHECK INTELLIGENT KEY UNIT FUNCTION

- Connect Intelligent Key unit and security indicator lamp connectors.
- Turn ignition ON.
- Perform "THEFT IND" in the "Active Test" mode with CONSULT-III.
- Check voltage between Intelligent Key unit harness connector and ground.



Terminals			Voltage (V) (Approx.)
(+)		(-)	
Intelligent Key unit connector	Terminal		
M52	30	Ground	Activation ON: 0v
			Activation OFF: Battery voltage

Is the inspection result normal?

YES >> Replace security indicator lamp. Refer to XX-XX, "*****".

NO >> GO TO 4.

4.CHECK INTERMITTENT INCIDENT

Refer to XX-XX, "*****".

>> INSPECTION END

SECURITY SYSTEM PRE-WIRING

< COMPONENT DIAGNOSIS >

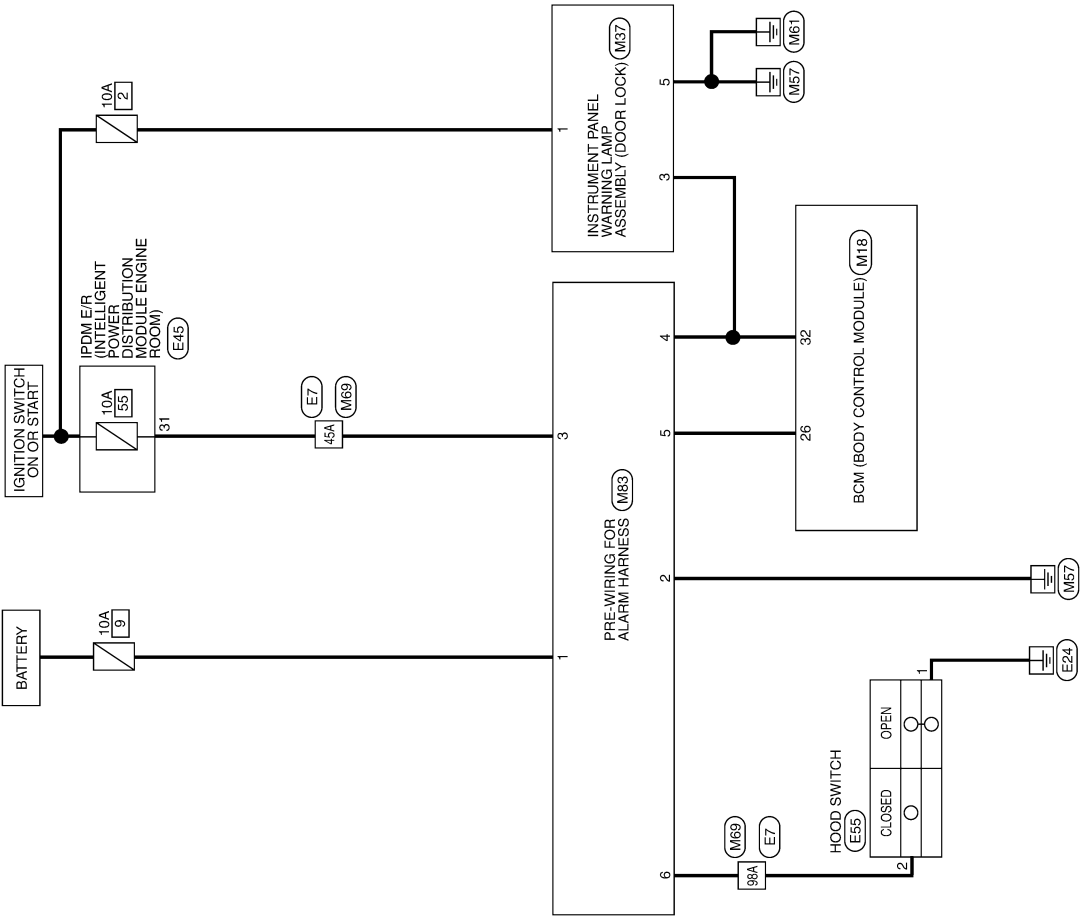
[WITH INTELLIGENT KEY SYSTEM]

SECURITY SYSTEM PRE-WIRING

Wiring Diagram - SECURITY SYSTEM PRE-WIRING -

INFOID:000000001532179

SECURITY SYSTEM PRE-WIRING



ALKWA0086GE

SECURITY SYSTEM PRE-WIRING

< COMPONENT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

**NO
DATA**

ALKIA1251GB

NO
DATA

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SEC

ALKIA1252GB

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

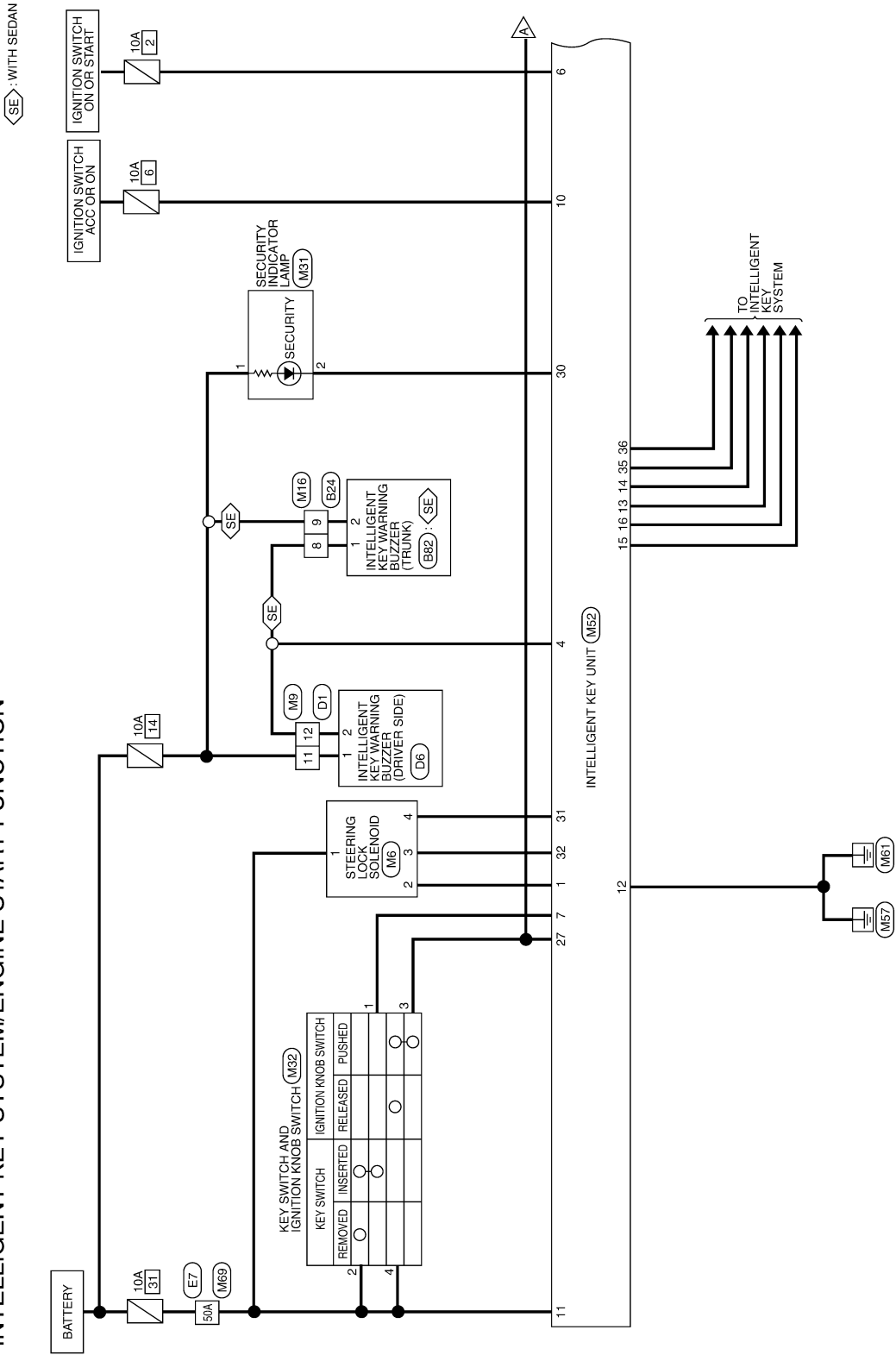
INFOID:000000001404121

Refer to [BCS-35, "Reference Value"](#).

Wiring Diagram - INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION -

INFOID:0000000001404122

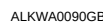
INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION



ALKWA0089GE

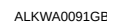
[WITH INTELLIGENT KEY SYSTEM]

[WITH INTELLIGENT KEY SYSTEM]



[WITH INTELLIGENT KEY SYSTEM]

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**NO
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ALKIA1261GB

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ALKIA1262GB

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ALKIA1265GB

BCM (BODY CONTROL MODULE)

[WITH INTELLIGENT KEY SYSTEM]

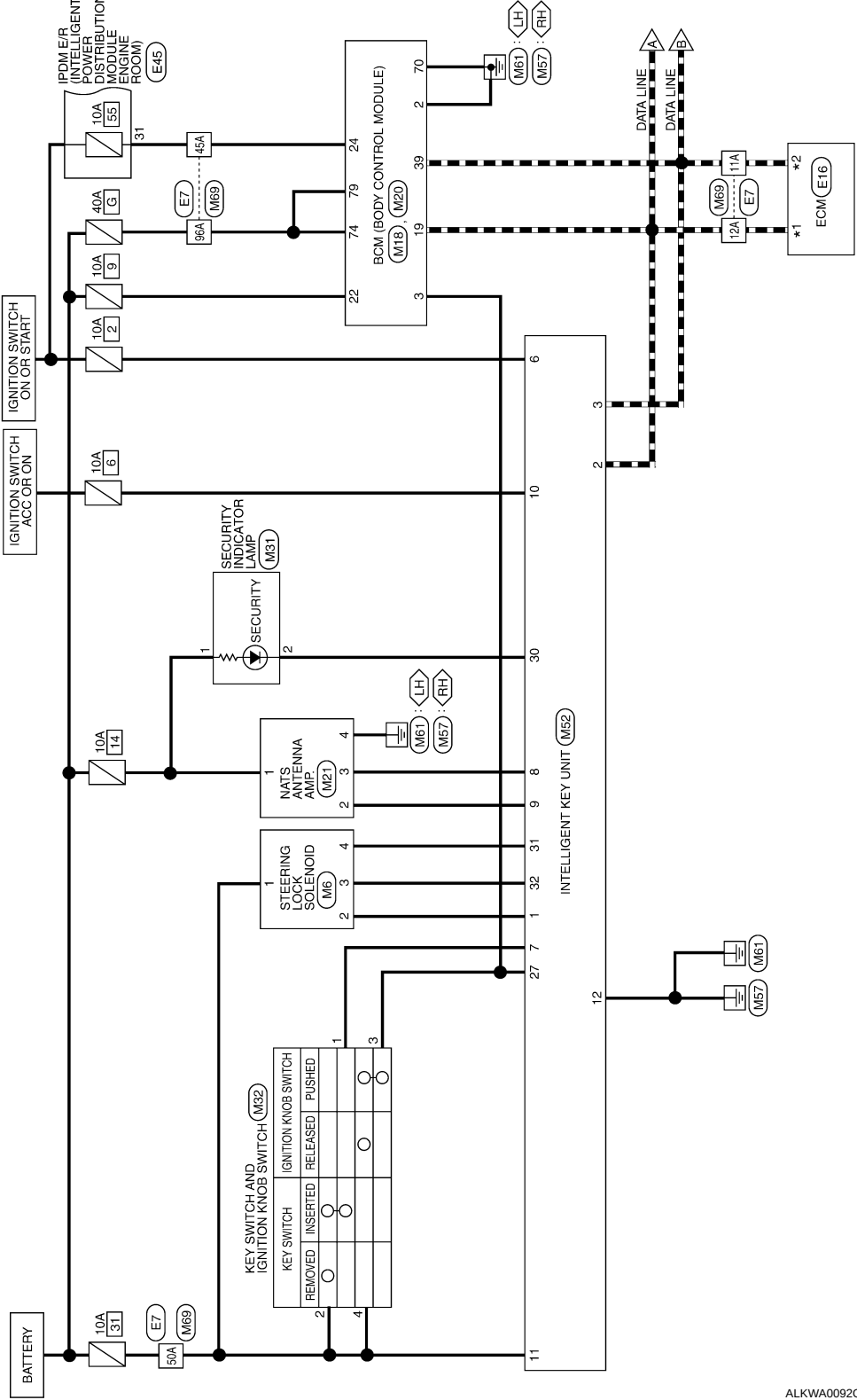
< ECU DIAGNOSIS >

Wiring Diagram - NATS -

INFOID:000000001404124

NATS (WITH INTELLIGENT KEY SYSTEM)

- <D> : WITH DIESEL
<DW> : WITHOUT DIESEL
<LH> : LHD MODELS
<RH> : RHD MODELS
- *1 : 100
*2 : 84
*3 : 99
*4 : 83
- : DATA LINE

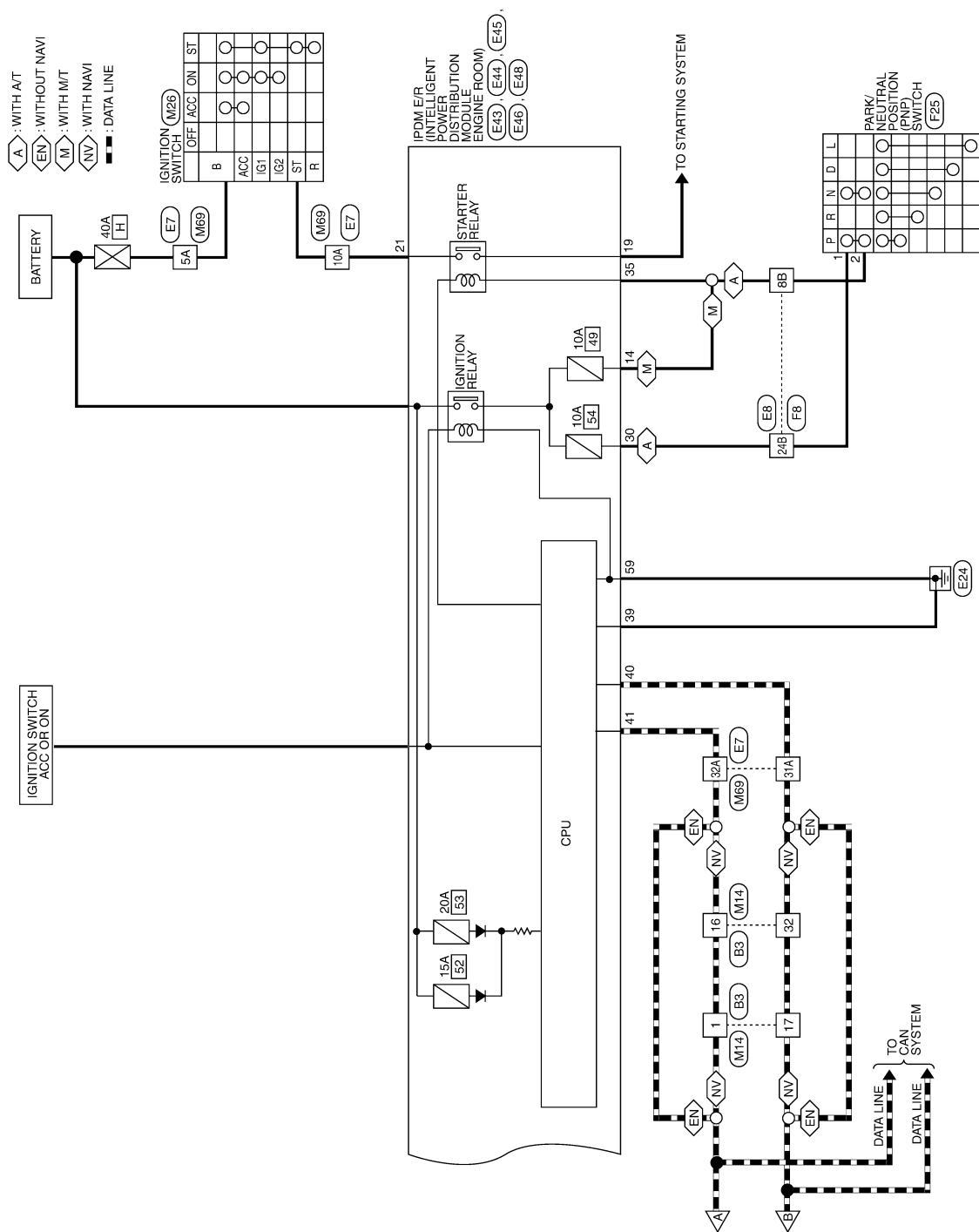


ALKWA0092GE

BCM (BODY CONTROL MODULE)

[WITH INTELLIGENT KEY SYSTEM]

< ECU DIAGNOSIS >



ALKWA0093GE

NO
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ALKIA1257GB

**NO
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ALKIA1258GB

NO
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ALKIA1259GB

**NO
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ALKIA1260GB

INFOID:000000001404125

Fail Safe

Fail-safe index

BCM performs fail-safe control when any DTC listed below is detected.

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

Display contents of CONSULT	Fail-safe	Cancellation
B2190: NATS ANTENNA AMP	- Inhibits engine cranking - Inhibits steering lock unlocking (Intelligent Key unit) - Fuel cut (ECM)	Erase DTC
B2191: DIFFERENCE OF KEY	- Inhibits engine cranking - Inhibits steering lock unlocking (Intelligent Key unit) - Fuel cut (ECM)	Erase DTC
B2192: ID DISCORD BCM-ECM	Fuel cut (ECM)	Erase DTC
B2193: CHAIN OF BCM-ECM	Fuel cut (ECM)	Erase DTC
B2194: DISCORD BCM-I-KEY	- Inhibits engine cranking - Inhibits steering lock unlocking (Intelligent Key unit) - Fuel cut (ECM)	Erase DTC

REAR WIPER CONTROL

BCM detects a rear wiper stopping position according to a rear wiper auto stop signal.

When a rear wiper auto stop signal is in the condition listed below, BCM stops power supply to rear wiper after rear wiper is activated for five seconds.

Ignition switch	Rear wiper switch	Auto stop signal
ON	OFF	Rear wiper stop position signal cannot be input 5 seconds.
	ON	The signal does not change for 5 seconds.

NOTE:

The above operation is repeated when operating the rear wiper switch one minute after the stop of the rear wiper caused by Fail-safe.

TURN SIGNAL LAMP CONTROL

BCM detects the turn signal lamp circuit status from the terminal voltage.

BCM increases the turn signal lamp blinking speed if the bulb or harness open is detected with the turn signal lamp operating.

NOTE:

The blinking speed is normal while activating the hazard warning lamp.

LIGHT & RAIN SENSOR MALFUNCTION DETECTION FUNCTION

BCM controls the following items when LIGHT & RAIN sensor has a malfunction.

Auto Light Control

Headlamp is turned ON.

Front Wiper Control

The condition just before the activation of Fail-safe is maintained until the front wiper switch is turned OFF.

DTC Inspection Priority Chart

INFOID:000000001404126

Priority	DTC
1	- U1000: CAN COMM CIRCUIT - U1010: CONTROL UNIT (CAN)
2	- B2190: NATS ANTENNA AMP - B2191: DIFFERNCE OF KEY - B2192: ID DISCORD BCM-ECM - B2193: CHAIN OF BCM-ECM - B2194: DISCORD BCM-I-KEY

DTC Index

INFOID:000000001404127

NOTE:

Details of time display

- CRNT: Displays when there is a malfunction now or after returning to the normal condition until turning ignition switch OFF → ON again.

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

- PAST: Displays when there is a malfunction that is detected in the past and stored.
- 1 - 39: Displayed if any previous malfunction is present when current condition is normal. It increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. The counter remains at 39 even if the number of cycles exceeds it. It is counted from 1 again when turning ignition switch OFF → ON after returning to the normal condition if the malfunction is detected again.

CONSULT display	TIME		Fail-safe	Refer to
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	0	1 - 39	—	<u>XX-XX, "*****"</u>
U1010: CONTROL UNIT (CAN)	0	1 - 39	—	<u>XX-XX, "*****"</u>
B2190: NATS ANTENNA AMP	CRNT	PAST	×	<u>SEC-26</u>
B2191: DIFFERENCE OF KEY	CRNT	PAST	×	<u>SEC-29</u>
B2192: ID DISCORD BCM-ECM	CRNT	PAST	×	<u>SEC-30</u>
B2193: CHAIN OF BCM-ECM	CRNT	PAST	×	<u>SEC-32</u>
B2194: DISCORD BCM-I-KEY	CRNT	PAST	×	<u>SEC-33</u>

INTELLIGENT KEY UNIT

< ECU DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

INTELLIGENT KEY UNIT

Reference Value

INFOID:000000001404128

For LHD vehicles, refer to [DLK-381. "Reference Value"](#).

For RHD vehicles, refer to [DLK-151. "Reference Value"](#).

Fail Safe

INFOID:000000001404132

Display contents of CONSULT-III	Fail-safe	Cancellation
B2013: STRG COMM 1	Inhibits steering lock unlocking	Erase DTC
B2552: INTELLIGENT KEY	- Inhibits steering lock unlocking - Inhibits engine cranking (BCM) - Fuel cut (ECM)	Erase DTC
B2590: NATS MALFUNCTION	- Inhibits steering lock unlocking - Inhibits engine cranking (BCM) - Fuel cut (ECM)	Erase DTC

DTC Inspection Priority Chart

INFOID:000000001404133

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	DTC
1	- U1000: CAN COMM CIRCUIT - U1010: CONTROL UNIT (CAN) - B2552: INTELLIGENT KEY
2	- B2013: STRG COMM 1 - B2590: NATS MALFUNCTION

DTC Index

INFOID:000000001404134

NOTE:

Details of time display

- CRNT: Displays when there is a malfunction now or after returning to the normal condition until turning ignition switch OFF → ON again.
- 1 - 39: Displayed if any previous malfunction is present when current condition is normal. It increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. The counter remains at 39 even if the number of cycles exceeds it. It is counted from 1 again when turning ignition switch OFF → ON after returning to the normal condition if the malfunction is detected again.

CONSULT display	Detection condition	Fail-safe	Diagnosis
No DTC is detected. further testing may be required.	—	—	—
U1000: CAN COMM CIRCUIT	Intelligent Key unit cannot receive CAN communication signal continuously for 2 seconds or more.	—	Check CAN communication system. Refer to SEC-21
U1010: CONTROL UNIT (CAN)	Intelligent Key unit detects internal CAN communication circuit malfunction.	—	Replace Intelligent Key unit.
B2013: STRG COMM 1	The ID verification result between Intelligent key unit and steering lock unit are NG. Or Intelligent Key unit cannot communicate with steering lock unit.	×	Perform steering lock unit ID registration with CONSULT-III

INTELLIGENT KEY UNIT

< ECU DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

CONSULT display	Detection condition	Fail-safe	Diagnosis
B2552: INTELLIGENT KEY	Intelligent Key unit internal malfunction.	×	Replace Intelligent Key unit.
B2590: NATS MALFUNCTION	The ID verification result between Intelligent key unit and BCM are NG. Or Intelligent Key unit cannot communicate with BCM.	×	Check NATS Refer to SEC-35

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< ECU DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

Reference Value

INFOID:0000000001404135

Refer to IPDM E/R.

Fail Safe

INFOID:0000000001404139

CAN communication control

When CAN communication with ECM and BCM is impossible, IPDM E/R performs fail-safe control. After CAN communication recovers normally, it also returns to normal control.

If no CAN communication is available with ECM

Control part	Fail-safe in operation
Cooling fan	- The cooling fan relay-2*1 or the cooling fan relay-3*2 turns ON when the ignition switch is turned ON - Turns off the fan motor low relay when the ignition switch is turned OFF
A/C compressor	A/C relay OFF

*1: HR engine models

*2: MR engine and K9K engine models

If no CAN communication is available with BCM

Control part	Fail-safe in operation
Headlamp	- The headlamp low relay turns ON when the ignition switch is turned ON - The headlamp low relay turns OFF when the ignition switch is turned OFF - Headlamp high relay OFF
- Parking lamps - License plate lamps - Tail lamps - Illuminations	- The tail lamp relay turns ON when the ignition switch is turned ON - The tail lamp relay turns OFF when the ignition switch is turned OFF
Front wiper	- The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed. - The front wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT mode and the front wiper motor is operating.
Front fog lamps	Front fog lamp relay OFF
Starter motor	Inhibit relay OFF
Rear window defogger	Rear window defogger relay OFF
Headlamp washer	Headlamp washer relay OFF
PTC heater	PTC heater relay OFF

Ignition relay malfunction detection function

- IPDM E/R monitors the voltage at the contact circuit and excitation coil circuit of the ignition relay inside it.
- IPDM E/R judges the ignition relay error if the voltage differs between the contact circuit and the excitation coil circuit.
- If the ignition relay cannot turn OFF due to contact seizure, it activates the tail lamp relay for 10 minutes to alert the user to the ignition relay malfunction when the ignition switch is turned OFF.

DTC	Ignition switch	Ignition relay	Tail lamp relay
—	ON	ON	—
—	OFF	OFF	—
B2098: IGN RLY ON	OFF	ON	ON (10 minutes)
B2099: IGN RLY OFF	ON	OFF	—

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< ECU DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

NOTE:

The tail lamp relay is turned OFF when the ignition switch is turned ON.

Front wiper control

IPDM E/R detects the front wiper stop position with the front wiper auto stop signal.

When the front wiper auto stop signal is in the conditions listed below, IPDM E/R repeats a front wiper 10 seconds operation and 20 seconds stop five times.

Ignition switch	Front wiper switch	Front wiper auto stop signal
ON	OFF	The front wiper auto stop signal (stop position) cannot be input for 10 seconds.
	ON	The front wiper auto stop signal does not change for 10 seconds.

NOTE:

This operation status can be confirmed on the IPDM E/R “Data Monitor” that displays “BLOCK” for the item “WIP PROT” while the wiper is stopped.

DTC Index

INFOID:0000000001404140

CONSULT display	Fail-safe	Timing ^{NOTE}		Reference page
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	×	CRNT	PAST	<u>XX-XX, *****1</u>
B2098: IGN RELAY ON	×	CRNT	PAST	<u>XX-XX, *****1</u>
B2099: IGN RELAY OFF	—	CRNT	PAST	<u>XX-XX, *****1</u>
B2100: EEPROM	—	CRNT	PAST	<u>XX-XX, *****1</u>

NOTE:

The details of time display are as follows.

- CRNT: The malfunctions that are detected now.
- PAST: The number is indicated when it is normal at present and a malfunction was detected in the past.

INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION SYMPTOMS

< SYMPTOM DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

SYMPTOM DIAGNOSIS

INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION SYMPTOMS

Symptom Table

INFOID:000000001404141

NOTE:

- Before performing the diagnosis in the following table, check "XX-XX, "*****"".
- Check that vehicle is under the condition shown in "Conditions of vehicle" before starting diagnosis, and check each symptom.
- If the following symptoms are detected, check systems shown in the "Diagnosis/service procedure" column in this order.

CONDITIONS OF VEHICLE (OPERATING CONDITIONS)

- Engine start function is ON when setting on CONSULT-III.
- Mechanical key is not inserted in key cylinder.
- One or more of Intelligent Keys with registered Intelligent Key ID is in the vehicle.

Symptom	Diagnosis/service procedure	Reference page
Ignition switch does not turn on with Intelligent Key. [KEY warning lamp (green) illuminates.]	1. Check steering lock unit.	SEC-23
	2. Replace Intelligent Key unit.	<u>XX-XX,</u> *****
Ignition switch does not turn on with Intelligent Key. [KEY warning lamp does not illuminate.]	1. Check Intelligent Key unit power supply and ground circuit.	<u>XX-XX,</u> *****
	2. Check ignition knob switch.	<u>XX-XX,</u> *****
	3. Check key switch.	<u>XX-XX,</u> *****
	4. Replace Intelligent Key unit.	<u>XX-XX,</u> *****
Ignition switch does not turn on with Intelligent Key. [KEY warning lamp (red) illuminates.]	1. Check inside key antenna.	<u>XX-XX,</u> *****
	2. Replace Intelligent Key unit.	<u>XX-XX,</u> *****
Ignition switch does not turn on with mechanical key	Check key switch.	<u>XX-XX,</u> *****
Engine cannot start	1. Check key switch.	<u>XX-XX,</u> *****
	2. Check stop lamp switch (A/T).	<u>XX-XX,</u> *****
	3. Check stop lamp switch (M/T).	<u>XX-XX,</u> *****

SEC

NATS (NISSAN ANTI-THEFT SYSTEM) SYMPTOMS

< SYMPTOM DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

NATS (NISSAN ANTI-THEFT SYSTEM) SYMPTOMS

Symptom Table

INFOID:000000001404143

NOTE:

- Before performing the diagnosis in the following table, check "[SEC-4. "Work Flow"](#)".
- Check that vehicle is under the condition shown in "Conditions of vehicle" before starting diagnosis, and check each symptom.
- If the following symptoms are detected, check systems shown in the "Diagnosis/service procedure" column in this order.

CONDITIONS OF VEHICLE (OPERATING CONDITIONS)

- Mechanical key is not inserted into key cylinder.
- Ignition knob switch is not depressed.

Symptom	Diagnosis/service procedure	Reference page
Engine cannot start.	1. Check stop lamp switch	XX-XX, *****1
	2. Check Intermittent Incident	XX-XX, *****1
Security indicator does not turn ON or flash.	1. Check vehicle security indicator	SEC-49
	2. Check Intermittent Incident	XX-XX, *****1

ON-VEHICLE MAINTENANCE

PRE-INSPECTION FOR DIAGNOSTIC

Basic Inspection

INFOID:000000001404144

The engine start function, door lock function, and NATS in the Intelligent Key system are closely related to each other regarding control. Narrow down the functional area in question by performing basic inspection to identify which function is malfunctioning. The vehicle security function can operate only when the door lock is operating normally. Therefore, it is easy to identify any factor unique to the vehicle security system by performing the vehicle security operation check after basic inspection.

1.CHECK DOOR LOCK OPERATION

Check the door lock for normal operation with the Intelligent Key and door request switch. Successful door lock operation with the Intelligent Key and request switch indicates that the remote keyless entry receiver and inside key antenna required for engine start are functioning normally. Identify the malfunctioning point by referring to the DLK section if the door cannot be unlocked.

Can the door be locked with the Intelligent Key and door request switch?

YES >> GO TO 2.

NO >> Refer to XX-XX. "*****".

2.CHECK IGNITION KNOB SWITCH OPERATION-1

With all registered Intelligent Keys, check if ignition knob can rotate when carrying Intelligent Key inside the vehicle.

Does ignition knob rotate?

YES >> GO TO 3.

NO >> Refer to SEC-76. "Symptom Table".

3.CHECK IGNITION KNOB SWITCH OPERATION-2

Insert registered mechanical key into key cylinder, and check if ignition knob can rotate. Check for all registered mechanical keys.

Does ignition knob rotate?

YES >> GO TO 4.

NO (Does not rotate with some of mechanical keys)>>Perform mechanical key registration.

NO (Does not rotate with all mechanical keys)>>Refer to SEC-76. "Symptom Table".

4.CHECK VEHICLE SECURITY SYSTEM

Check the vehicle security system for normal operation.

The vehicle security function can operate only when the door lock function is operating normally.

Therefore, it is easy to identify any factor unique to the vehicle security by performing the vehicle security operation check after this basic inspection.

>> Go to SEC-77. "Vehicle Security Operation Check".

Vehicle Security Operation Check

INFOID:000000001404145

1.INSPECTION START

Turn ignition switch "OFF" and pull out mechanical key from key cylinder.

NOTE:

Before starting operation check, open front windows.

>> GO TO 2.

2.CHECK SECURITY INDICATOR LAMP

1. Lock doors using Intelligent Key.

2. Check that security indicator lamp illuminates for 30 seconds.

Security indicator lamp should illuminate.

OK >> GO TO 3.

PRE-INSPECTION FOR DIAGNOSTIC

< ON-VEHICLE MAINTENANCE >

[WITH INTELLIGENT KEY SYSTEM]

NG >> Perform diagnosis and repair. Refer to XX-XX, "*****".

3. CHECK ALARM FUNCTION

1. After 30 seconds, security indicator lamp will start to blink.
2. Open any door or hood before unlocking with Intelligent Key or open back door without Intelligent Key.

Does alarm function properly.

OK >> GO TO 4.

NG >> Check the following.

- The vehicle security system does not phase in alarm mode. Refer to XX-XX, "*****".
- Alarm does not operate. Refer to XX-XX, "*****".

4. CHECK ALARM CANCEL OPERATION

Unlock any door or open back door using Intelligent Key.

Alarm (horn and headlamp) should stop.

OK >> INSPECTION END.

NG >> Check door lock function. Refer to XX-XX, "*****".

ON-VEHICLE REPAIR

INTELLIGENT KEY UNIT

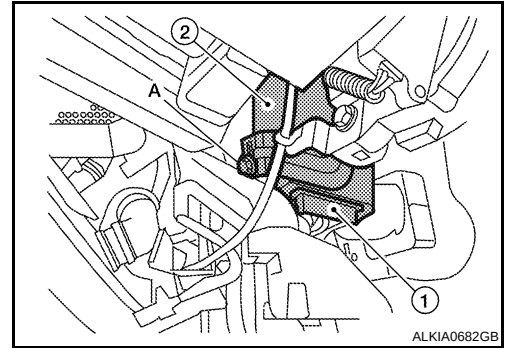
Removal and Installation

INFOID:000000001350478

INTELLIGENT KEY UNIT RH DRIVE

Removal

1. Remove the lower driver instrument cover. Refer to [IP-10. "Component Parts"](#).
2. Remove the screw (A), disconnect the electrical connector (1), and remove the intelligent key unit and bracket(2).



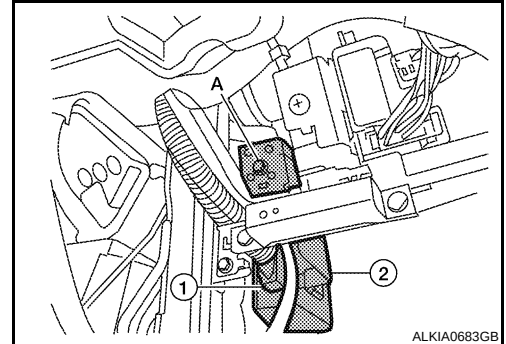
Installation

Installation is in the reverse order of removal.

INTELLIGENT KEY UNIT LH DRIVE

Removal

1. Remove the glove box assembly. Refer to [IP-10. "Component Parts"](#).
2. Remove the screw (A), disconnect the electrical connector (1), and remove the intelligent key unit and bracket(2).



Installation

Installation is in the reverse order of removal.

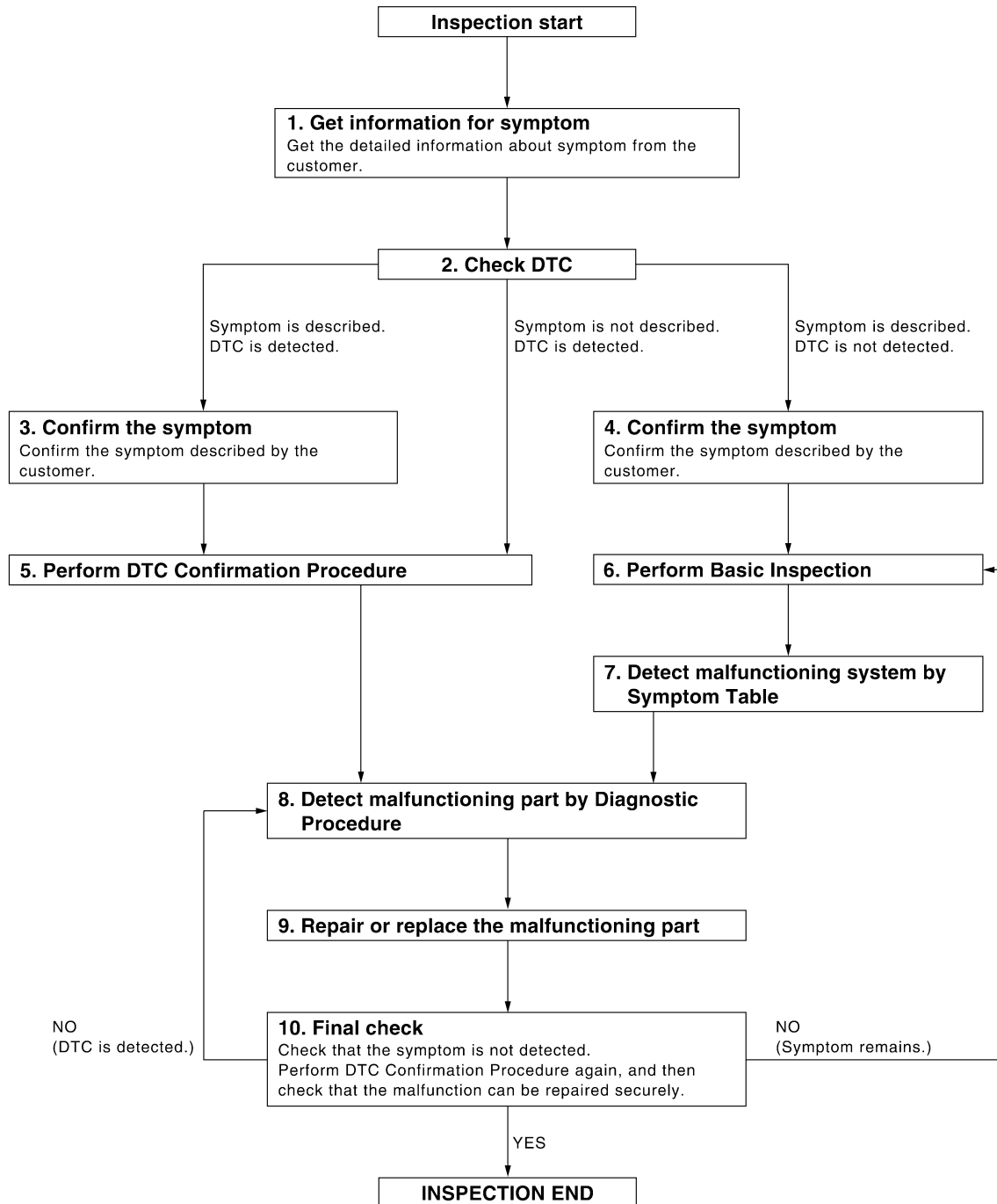
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000001404152

OVERALL SEQUENCE



ALKIA0246GB

DETAILED FLOW

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[WITHOUT INTELLIGENT KEY SYSTEM]

1.GET INFORMATION FOR SYMPTOM

Get the detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurred).

>> GO TO 2.

2.CHECK DTC

1. Check DTC for BCM.
2. Perform the following procedure if DTC is displayed.
 - Erase DTC.
 - Study the relationship between the cause detected by DTC and the symptom described by the customer.
3. Check related service bulletins for information.

Is any symptom described and any DTC detected?

Symptom is described, DTC is displayed>>GO TO 3.
Symptom is described, DTC is not displayed>>GO TO 4.
Symptom is not described, DTC is displayed>>GO TO 5.

3.CONFIRM THE SYMPTOM

Confirm the symptom described by the customer.
Connect CONSULT-III to the vehicle in "DATA MONITOR" mode and check real time diagnosis results.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

4.CONFIRM THE SYMPTOM

Confirm the symptom described by the customer.
Connect CONSULT-III to the vehicle in "DATA MONITOR " mode and check real time diagnosis results.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

5.PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC Confirmation Procedure for the displayed DTC, and then check that DTC is detected again.
If two or more DTCs are detected, refer to [SEC-113, "DTC Inspection Priority Chart"](#) and determine trouble diagnosis order.

Is DTC detected?

YES >> GO TO 8.
NO >> Refer to [XX-XX, "*****"](#).

6.PERFORM BASIC INSPECTION

Perform Basic Inspection, refer to [SEC-118, "Basic Inspection"](#).

Inspection End>>GO TO 7.

7.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM TABLE

Detect malfunctioning system according to Symptom Table based on the confirmed symptom in step 4.

>> GO TO 8.

8.DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

NOTE:

The Diagnostic Procedure described based on open circuit inspection. A short circuit inspection is also required for the circuit check in the Diagnostic Procedure.

>> GO TO 9.

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[WITHOUT INTELLIGENT KEY SYSTEM]

9. REPAIR OR REPLACE THE MALFUNCTIONING PART

1. Repair or replace the malfunctioning part.
2. Reconnect parts or connectors disconnected during Diagnostic Procedure again after repair and replacement.
3. Check DTC. If DTC is displayed, erase it.

>> GO TO 10.

10. FINAL CHECK

When DTC was detected in step 2, perform DTC Confirmation Procedure or Component Function Check again, and then check that the malfunction have been repaired securely.

When symptom was described from the customer, refer to confirmed symptom in step 3 or 4, and check that the symptom is not detected.

Does the symptom reappear?

YES (DTC is detected)>>GO TO 8.

YES (Symptom remains)>>GO TO 6.

NO >> **INSPECTION END**

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[WITHOUT INTELLIGENT KEY SYSTEM]

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:000000001404154

Refer to the CONSULT-III Operation Manual-NATS.

ECM RE-COMMUNICATING FUNCTION

ECM RE-COMMUNICATING FUNCTION : Description

INFOID:000000001404155

Performing following procedure can automatically perform re-communication of ECM and BCM, but only when the ECM has been replaced with a new one (*1).

*1: New one means an ECM which has never been energized on-board.

(In this step, initialization procedure by CONSULT-III is not necessary)

NOTE:

- When registering new Key IDs or replacing the ECM that is not brand new, refer to CONSULT-III Operation Manual.
- If multiple keys are attached to the key holder, separate them before work.
- Distinguish keys with unregistered key ID from those with registered ID.

ECM RE-COMMUNICATING FUNCTION : Special Repair Requirement

INFOID:000000001404156

1.PERFORM ECM RE-COMMUNICATING FUNCTION

1. Install ECM.
2. Using a registered key (*2), turn ignition switch to "ON".
*2: To perform this step, use the key that has been used before performing ECM replacement.
3. Maintain ignition switch in "ON" position for at least 5 seconds.
4. Turn ignition switch to "OFF".
5. Start engine.

Can engine be started?

YES >> Procedure is completed.

NO >> Initialize control unit. Refer to CONSULT-III Operation Manual NATS.

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SEC

NATS (NISSAN ANTI-THEFT SYSTEM)

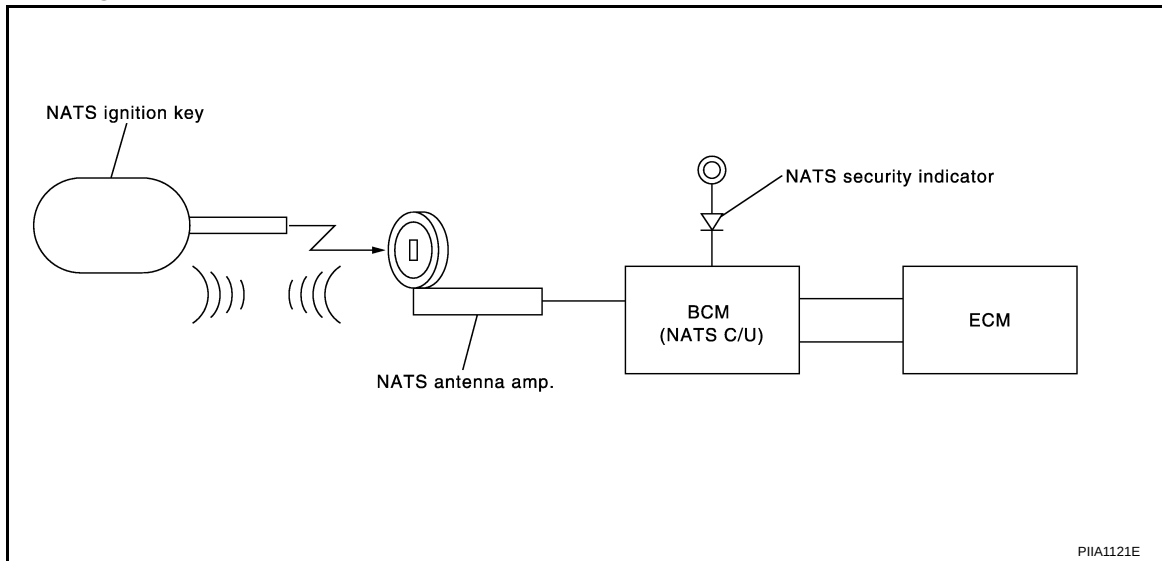
< FUNCTION DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

FUNCTION DIAGNOSIS

NATS (NISSAN ANTI-THEFT SYSTEM)

System Diagram



System Description

INFOID:000000001404158

INPUT/OUTPUT SIGNAL CHART

BCM

Switch/Input signal	Input signal to BCM	BCM function	Actuator/Output signal
NATS antenna amp.	Key ID	NATS	- Security indicator lamp - Starter request
ECM	Engine status signal		

SYSTEM DESCRIPTION

NATS (Nissan Anti-Theft System) has the following immobilizer functions:

- Engine immobilizer shows high anti-theft performance to prevent engine start by other than the owner.
- Only a key with key ID registered in BCM and ECM can start engine, and shows high anti-theft performance to prevent key from being copied or stolen.
- Security indicator always flashes with mechanical key removed condition (key switch: OFF).
- Therefore, NATS warns outsiders that the vehicle is equipped with the anti-theft system. Refer to XX-XX.
- If system detects malfunction, security indicator illuminate when ignition switch is turned to ON position.
- If the owner requires, ignition key ID can be registered for up to 5 keys.
- During trouble diagnosis or when the following parts have been replaced, and if ignition key is added, registration* is required.

*1: All keys kept by the owner of the vehicle should be registered with ignition key.

- ECM
 - BCM
 - Ignition key
 - ABS actuator control unit
 - EPS control unit
 - IPDM E/R
 - Combination meter
 - NATS trouble diagnosis, system initialization and additional registration of other Ignition key IDs must be carried out using CONSULT-III hardware and SECURITY CARD.
- When NATS initialization has been completed, the ID of the inserted ignition key or ignition key IDs can be carried out.

NATS (NISSAN ANTI-THEFT SYSTEM)

< FUNCTION DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

- Possible symptom of NATS malfunction is "Engine cannot start" In J10, the engine can be started with the NATS. Identify the possible causes according to "Work Flow". Refer to [SEC-80, "Work Flow"](#).
- If ECM other than Genuine NISSAN is installed, the engine cannot be started. For ECM replacement procedure, refer to [SEC-83, "ECM RE-COMMUNICATING FUNCTION : Description"](#).

PRECAUTIONS FOR KEY REGISTRATION

- The key registration is a procedure that erases the current NATS ID once, and then re-registers a new ID. Therefore the registered ignition key is necessary for this procedure. Before starting the registration operation collect all registered ignition keys from the customer
- The NATS ID registration is the procedure that registers the ID stored into the transponder (integrated in ignition key) to BCM.

SECURITY INDICATOR

- Security indicator blinks when the ignition switch is in "OFF" or "ACC" position.
- When NATS detects trouble, the security indicator lamp lights up while ignition key is in the "ON" position.

MAINTENANCE INFORMATION

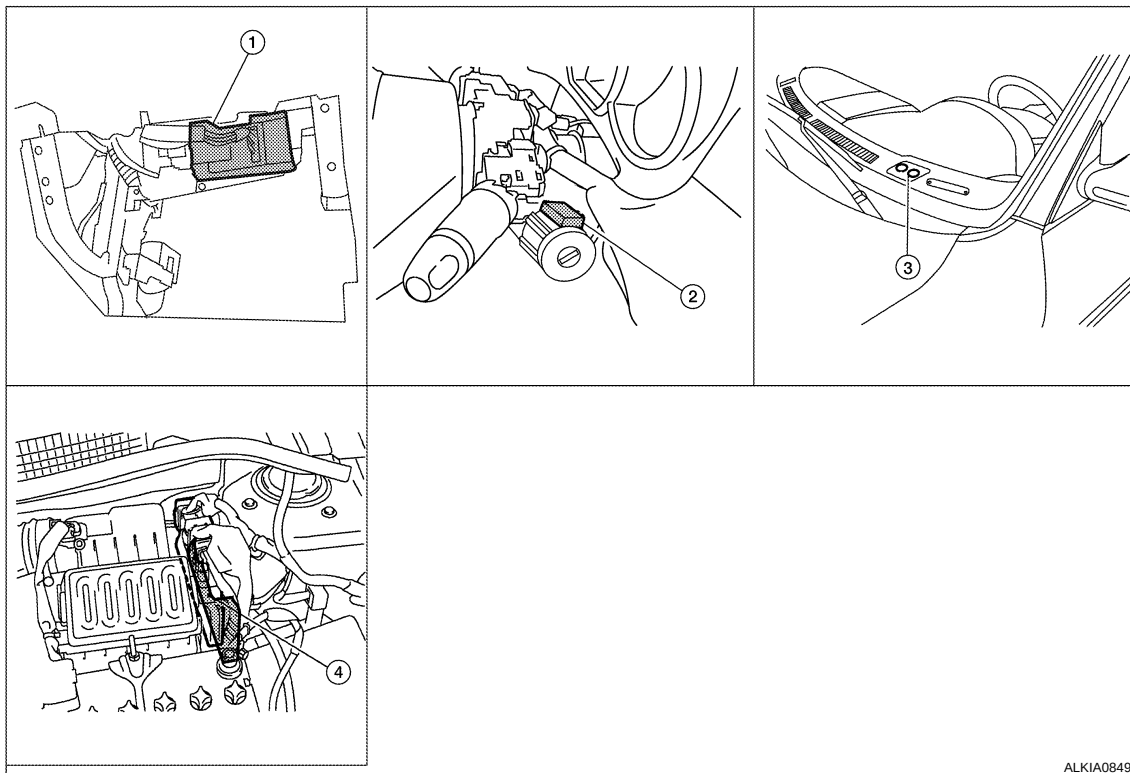
CAUTION:

If necessary to perform NATS ID registration when replacing any of the following part.
If it's not (or fail to do so), the electrical system may not operate properly.

- BCM
- ECM
- IPDM E/R
- Ignition key
- NATS antenna amp.

Component Parts Location

INFOID:000000001404159



1. BCM M18, M20
(view with glove box removed)
4. ECM E16

2. NATS antenna amp. M21

3. Security indicator lamp M31

ALKIA0849ZZ

NATS (NISSAN ANTI-THEFT SYSTEM)

< FUNCTION DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

Component Description

INFOID:000000001404160

Component	Reference
BCM	<u>XX-XX, "*****"</u>
Key switch	<u>XX-XX, "*****"</u>
NATS antenna amp.	<u>XX-XX, "*****"</u>
Security indicator	<u>XX-XX, "*****"</u>
IPDM E/R	<u>XX-XX, "*****"</u>

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM)

INFOID:0000000001404165

APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
WORK SUPPORT	Changes the setting for each system function.
SELF-DIAG RESULTS	Displays the diagnosis results judged by BCM. Refer to <u>XX-XX, "*****"</u> .
CAN DIAG SUPPORT MNTR	Monitors the reception status of CAN communication viewed from BCM.
DATA MONITOR	The BCM input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from BCM.
ECU IDENTIFICATION	The BCM part number is displayed.
CONFIGURATION	- Enables to read and save the vehicle specification. - Enables to write the vehicle specification when replacing BCM.

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

It can perform the diagnosis modes except the following for all sub system selection items.

System	Sub system selection item	Diagnosis mode		
		WORK SUPPORT	DATA MONITOR	ACTIVE TEST
—	BCM	×		
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp timer	INT LAMP	×	×	×
Remote keyless entry system	MULTI REMOTE ENT	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER		×	×
Air conditioner	AIR CONDITONER		×	
Combination switch	COMB SW		×	
Immobilizer	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Trunk open	TRUNK		×	
Vehicle security system	THEFT ALM	×	×	×
Signal buffer system	SIGNAL BUFFER		×	×
PTC heater system	PTC HEATER		×	×

IMMU

IMMU : CONSULT-III Function (BCM - IMMU)

INFOID:0000000001404166

APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with BCM.

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

Diagnosis mode	Function Description
DATA MONITOR	The BCM input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from Intelligent Key unit.

DATA MONITOR

Monitor item	Content
IGN ON SW	Indicates [ON/OFF] condition of ignition switch in ON position.
KEY ON SW	Indicates [ON/OFF] condition of key switch.

ACTIVE TEST

Test item	Description
THEFT IND	This test is able to check security indicator operation [ON/OFF].

THEFT ALM

THEFT ALM : CONSULT-III Function (BCM - THEFT ALM)

INFOID:000000001404167

APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
WORK SUPPORT	Changes the setting for each system function.
DATA MONITOR	The BCM input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from BCM.

DATA MONITOR

Monitor Item	Condition
IGN ON SW	Indicates [ON/OFF] condition of ignition switch in ON position.
ACC ON SW	Indicates [ON/OFF] condition of ignition switch in ACC position.
KEY ON SW	Indicates [ON/OFF] condition of key switch.
KEYLESS LOCK	Indicates [ON/OFF] condition of lock signal from key fob.
KEYLESS UNLOCK	Indicates [ON/OFF] condition of unlock signal from key fob.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch (driver side).
DOOR SW-AS	Indicates [ON/OFF] condition of front door switch (passenger side).
DOOR SW-RR	Indicates [ON/OFF] condition of rear door switch RH.
DOOR SW-RL	Indicates [ON/OFF] condition of rear door switch LH.
BACK DOOR SW	Indicates [ON/OFF] condition of back door switch.
CDL LOCK SW	Indicates [ON/OFF] condition of door lock and unlock switch.
CDL UNLOCK SW	Indicates [ON/OFF] condition of door lock and unlock switch.

ACTIVE TEST

Test item	Description
THEFT IND	This test is able to check security indicator operation [ON/OFF].
FLASHER	This test is able to check flasher operation [LH/RH/OFF].

WORK SUPPORT

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

Test item	Description
SECURITY ALARM SET	Vehicle security function mode can be changed in this mode. • ON: Vehicle security function is ON. • OFF: Vehicle security function is OFF.
THEFT ALM TRG	The switch which triggered vehicle security system is recorded. This mode can be able to confirm and erase the record of vehicle security system.

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COMPONENT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000001404168

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

CAN Communication Signal Chart. Refer to XX-XX, "*****".

DTC Logic

INFOID:0000000001404169

DTC DETECTION LOGIC

DTC	CONSULT-III display description	DTC Detection Condition	Possible cause
U1000	CAN COMM CIRCUIT	When BCM cannot communicate CAN communication signal continuously for 2 seconds or more.	Any item (or items) of the following listed below is malfunctioning in CAN communication system. • Transmission • Receiving (ECM) • Receiving (METER/M&A) • Receiving (TCM)

Diagnosis Procedure

INFOID:0000000001404170

1.PERFORM SELF DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check "Self Diagnostic Result" of BCM.

Is "CAN COMM CIRCUIT" displayed?

- YES >> Refer to XX-XX, "*****".
- NO >> Refer to XX-XX, "*****".

U1010 CONTROL UNIT (CAN)

< COMPONENT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

U1010 CONTROL UNIT (CAN)

DTC Logic

INFOID:0000000001404171

DTC DETECTION LOGIC

DTC	CONSULT-III display description	DTC Detection Condition	Possible cause
U1010	CONTROL UNIT (CAN)	When detecting error during the initial diagnosis of CAN controller of BCM.	BCM

Diagnosis Procedure

INFOID:0000000001404172

1.REPLACE BCM

When "DTC:U1010" is detected, replace BCM.

>> Replace BCM. Refer to XX-XX, "*****".

Special Repair Requirement

INFOID:0000000001404173

1.ADDITIONAL SERVICE WHEN REPLACING BCM

>> Refer to XX-XX, "*****".

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B2190, P1614 NATS ANTENNA AMP.

< COMPONENT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

B2190, P1614 NATS ANTENNA AMP.

Description

INFOID:000000001532070

Performs ID verification through BCM and NATS antenna amplifier when ignition knob switch is pressed.
Prohibits the start of engine when an unregistered ID of mechanical key is used.

DTC Logic

INFOID:000000001532071

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2190	NATS ANTENNA AMP	- Inactive communication between NATS antenna amp. and BCM. - Mechanical key is malfunctioning.	- Harness or connectors (The NATS antenna amp. circuit is open or shorted) - Mechanical key - NATS antenna amp. - BCM
P1614			

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Insert ignition key into the key cylinder.
2. Turn ignition switch ON.
3. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

YES >> Refer to XX-XX, "*****".

NO >> INSPECTION END.

Diagnosis Procedure

INFOID:000000001532072

1.CHECK NATS ANTENNA AMP. INSTALLATION

Check NATS antenna amp. installation. Refer to XX-XX, "*****".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Reinstall NATS antenna amp. correctly.

2.CHECK NATS IGNITION KEY ID CHIP

Start engine with another registered NATS ignition key.

Does the engine start?

YES >>

- Ignition key ID chip is malfunctioning.
- Replace the ignition key.
- Perform initialization with CONSULT-III.

For initialization, refer to "CONSULT-III Operation Manual".

NO >> GO TO 3.

3.CHECK POWER SUPPLY FOR NATS ANTENNA AMP.

1. Turn ignition switch ON.
2. Check voltage between NATS antenna amp. connector M21 terminal 3 and ground.

B2190, P1614 NATS ANTENNA AMP.

< COMPONENT DIAGNOSIS >

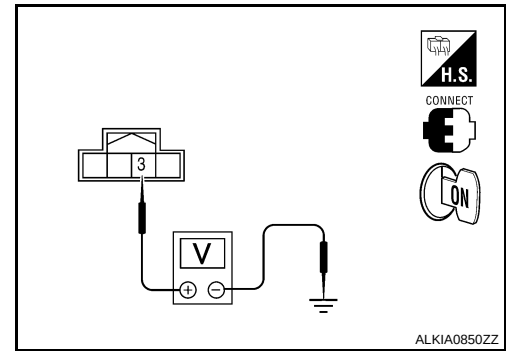
[WITHOUT INTELLIGENT KEY SYSTEM]

3 - Ground

: Battery voltage

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Repair or replace fuse or harness.



4. CHECK NATS ANTENNA AMP. GROUND LINE CIRCUIT

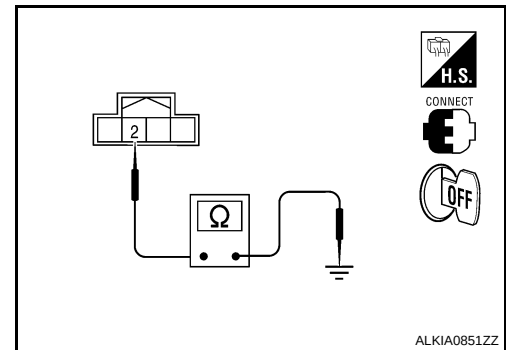
1. Turn ignition switch OFF.
2. Check continuity between NATS antenna amp. connector M21 terminal 2 and ground.

2 - Ground

: Continuity should exist

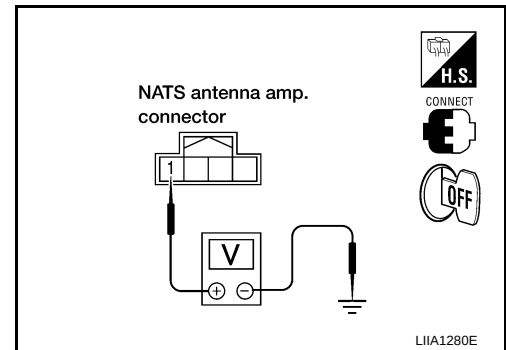
Is the inspection result normal?

- YES >> GO TO 5.
NO >> Repair or replace harness.



5. CHECK NATS ANTENNA AMP. SIGNAL LINE

1. Turn ignition switch ON.
2. Using analog tester, check voltage between NATS antenna amp. connector M21 terminal 1 and ground.



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

Is the inspection result normal?

- YES >> NATS antenna amp. is malfunctioning.
NO >> • Repair or replace harness.

NOTE:

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

B2191, P1615 DIFFERENCE OF KEY

< COMPONENT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

B2191, P1615 DIFFERENCE OF KEY

Description

INFOID:000000001404177

Performs ID verification through BCM when ignition switch is ON position.
Prohibits the release of steering lock or start of engine when an unregistered key is used.

DTC Logic

INFOID:000000001404178

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2191 P1615	DIFFERENCE OF KEY	The ID verification results between BCM and ignition key are NG. The registration is necessary.	Ignition key

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Insert ignition key into the key cylinder.
2. Press the ignition knob switch.
3. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

YES >> Refer to [SEC-94, "Diagnosis Procedure"](#).
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:000000001404179

1.PERFORM INITIALIZATION

Perform initialization with CONSULT-III. Re-register all ignition keys.
For initialization and registration of ignition key. Refer to CONSULT-III Operation Manual.

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

YES >> Ignition key was unregistered.
NO >> BCM is malfunctioning.

- Replace BCM. Refer to [XX-XX, "*****"](#).
- Perform initialization again

B2192, P1611 ID DISCORD, IMMU-ECM

< COMPONENT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

B2192, P1611 ID DISCORD, IMMU-ECM

Description

INFOID:000000001404180

BCM performs the ID verification with ECM that allows the engine to start. BCM starts the communication with ECM if ignition switch is turned ON starts the engine if the ID is OK. ECM prevents the engine from starting if the ID is not registered.

DTC Logic

INFOID:000000001404181

DTC DETECTION LOGIC

NOTE:

- If DTC B2192 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [SEC-90, "DTC Logic"](#).
- If DTC B2192 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [SEC-91, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2192 P1611	ID DISCORD BCM-ECM	The ID verification results between BCM and ECM are NG. The registration is necessary.	• BCM • ECM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-95, "Diagnosis Procedure"](#).
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:000000001404182

1.PERFORM INITIALIZATION

Perform initialization with CONSULT-III. Re-register all ignition keys.
For initialization and registration of ignition key. Refer to CONSULT-III Operation Manual.

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

- YES >> ID was unregistered.
NO >> GO TO 2.

2.PEPLACE BCM

1. Replace BCM. Refer to [XX-XX, "*****"](#).
2. Perform initialization with CONSULT-III. Re-register all ignition keys.
For initialization and registration of ignition key. Refer to "CONSULT-III Operation Manual.

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

- YES >> BCM is malfunctioning.
NO >> GO TO 3.

3.PEPLACE ECM

1. Replace ECM.
2. Perform initialization with CONSULT-III. Re-register all ignition keys.
For initialization and registration of ignition key. Refer to "CONSULT-III Operation Manual.

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

- YES >> ECM is malfunctioning.
NO >> GO TO 4.

4.CHECK INTERMITTENT INCIDENT

Refer to @@@.

B2192, P1611 ID DISCORD, IMMU-ECM

< COMPONENT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

>> INSPECTION END

B2193, P1612 CHAIN OF ECM-IMMU

< COMPONENT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

B2193, P1612 CHAIN OF ECM-IMMU

Description

INFOID:000000001404183

BCM performs the ID verification with ECM that allows the engine to start. BCM starts the communication with ECM if ignition switch is turned ON and starts the engine if the ID is OK. ECM prevents the engine from starting if the ID is not registered.

DTC Logic

INFOID:000000001404184

DTC DETECTION LOGIC

NOTE:

- If DTC B2193 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to XX-XX, "*****".
- If DTC B2193 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to XX-XX, "*****".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2193	CHAIN OF BCM-ECM	Inactive communication between ECM and BCM	• Harness or connectors (The CAN communication line is open or short) • BCM • ECM
P1612			

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to SEC-97, "Diagnosis Procedure".
- NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000001404185

1.REPLACE BCM

1. Replace BCM. Refer to XX-XX, "*****".
2. Perform initialization with CONSULT-III.
For initialization, refer to CONSULT-III Operation Manual.

Does the engine start?

- YES >> BCM was malfunctioning.
- NO >> ECM is malfunctioning.
- Replace ECM.
 - Perform ECM re-communicating function.

B2196 DONGLE NG**Description**

INFOID:000000001404189

BCM performs the ID verification with the slave control units (ECM, ABS actuator, EPS column assy, IPDM E/R, combination meter).

If either slave control unit is replaced by used part, perform initialization with CONSULT-III. But if the control unit is replaced by new part, the system does not need initialization.

DTC Logic

INFOID:000000001404190

DTC DETECTION LOGIC**NOTE:**

- If DTC B2196 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [SEC-90, "DTC Logic"](#).
- If DTC B2196 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [SEC-91, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2196	DONGLE NG	The ID verification results between BCM and each slave control unit are NG.	• ECM • ABS actuator assy • EPS column assy • Combination meter • IPDM E/R

DTC CONFIRMATION PROCEDURE**1.PERFORM DTC CONFIRMATION PROCEDURE**

1. Turn ignition switch ON.
2. Check "Self Diagnostic Result" with CONSULT-III.

Is the DTC detected?

- YES >> Refer to [SEC-98, "Diagnosis Procedure"](#).
 NO >> INSPECTION END.

Diagnosis Procedure

INFOID:000000001404191

1.PERFORM INITIALIZATION

1. Perform initialization with CONSULT-III. Re-register all ignition keys. Refer to "[SEC-87, "COMMON ITEM : CONSULT-III Function \(BCM - COMMON ITEM\)"](#)".
2. Start the engine.

Dose the engine start?

- YES >> INSPECTION END
 NO >> Perform "Self Diagnostic Result" for each control unit.

P1610 LOCK MODE

< COMPONENT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

P1610 LOCK MODE

Description

INFOID:0000000001404192

When the starting operation is carried more than five times consecutively under the following conditions, NATS will shift to the mode which prevents the engine from being started.

- Unregistered mechanical key is used.
- BCM or ECM's malfunctioning.

DTC Logic

INFOID:0000000001404193

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1610	LOCK MODE	When the starting operation is carried out five or more times consecutively under the following conditions. • Unregistered mechanical key • BCM or ECM's malfunctioning.	—

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-99, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000001404194

1.CHECK ENGINE START FUNCTION

1. Perform the check for DTC except DTC P1610.
2. Use CONSULT-III to erase DTC after fixing.
3. Check that engine can start with registered mechanical key.

Does the engine start?

- YES >> INSPECTION END
NO >> GO TO 2.

2.CHECK INTERMITTENT INCIDENT

Refer to @@@.

>> INSPECTION END

POWER SUPPLY AND GROUND CIRCUIT

< COMPONENT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

POWER SUPPLY AND GROUND CIRCUIT

BCM

BCM : Diagnosis Procedure

INFOID:000000001404197

1.CHECK FUSES AND FUSIBLE LINK

Check that the following fuses and fusible link are not blown.

Terminal No.	Signal name	Fuses and fusible link No.
22	Battery power supply	9 (10A)
74, 79		G (40A)
24	Ignition power supply	55 (10A)

Are the fuses or fusible link blown?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit if a fuse or fusible link is blown.

NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connectors.
3. Check voltage between BCM harness connector and ground.

Terminals		(-)	Ignition switch position		
(+) BCM			OFF	ACC	ON
Connector	Terminal				
M18	24	Ground	Approx. 0 V	Approx. 0 V	Battery voltage
	22		Battery voltage	Battery voltage	Battery voltage
M20	74, 79				

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M18	2		Yes
M20	70		

Does continuity exist?

YES >> INSPECTION END

NO >> Repair harness or connector.

VEHICLE SECURITY INDICATOR

< COMPONENT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

VEHICLE SECURITY INDICATOR

Description

INFOID:000000001532075

- Vehicle security indicator is located on top left side of the instrument panel near the autolight sensor.
- NATS (Nissan Anti-Theft System) and vehicle security system conditions are indicated by blink or illumination of vehicle security indicator.

Component Function Check

INFOID:000000001532076

1.CHECK FUNCTION

1. Perform "THEFT IND" in the "Active Test" mode with CONSULT-III.
2. Check vehicle security indicator operation.

Test item		Description	
THEFT IND	ON	Vehicle security indicator	ON
	OFF		OFF

Is the inspection result normal?

YES >> INSPECTION END.

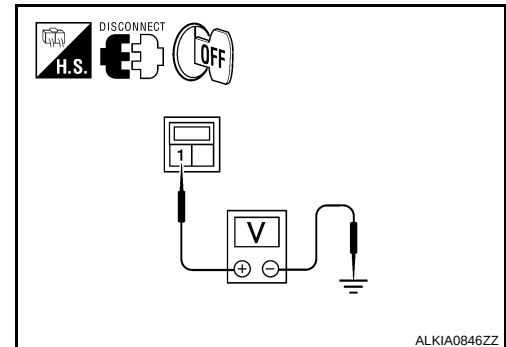
NO >> Refer to [SEC-101, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000001532077

1.CHECK SECURITY INDICATOR LAMP POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect security indicator lamp connector.
3. Check voltage between security indicator lamp harness connector and ground.



Terminals		Voltage (V) (Approx.)
(+)	(-)	
security indicator lamp connector	Terminal	
M31	1	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness.

2.CHECK SECURITY INDICATOR LAMP SIGNAL CIRCUIT

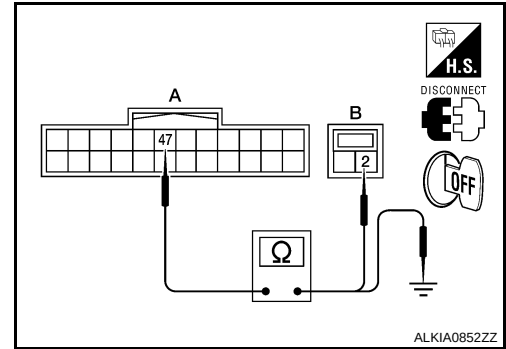
1. Disconnect BCM connector.

VEHICLE SECURITY INDICATOR

< COMPONENT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

- Check continuity between BCM harness connector (A) M19 terminal 47 and security indicator lamp connector (B) M31 terminal 2.



BCM connector	Terminal	security indicator lamp connector	Terminal	Continuity
M19	47	M31	2	Yes

- Check continuity between BCM connector (A) M19 terminal 47 and ground.

BCM connector	Terminal	Ground	Continuity
M19	47	Ground	No

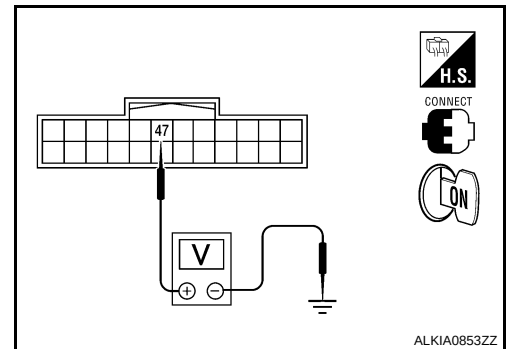
Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

3.CHECK BCM FUNCTION

- Connect BCM and security indicator lamp connectors.
- Turn ignition ON.
- Perform "THEFT IND" in the "Active Test" mode with CONSULT-III.
- Check voltage between BCM harness connector and ground.



Terminals			Voltage (V) (Approx.)
(+)		(-)	
BCM connector	Terminal		
M19	47	Ground	Activation ON: 0v Activation OFF: Battery voltage

Is the inspection result normal?

YES >> Replace security indicator lamp. Refer to XX-XX, "*****".

NO >> GO TO 4.

4.CHECK INTERMITTENT INCIDENT

Refer to XX-XX, "*****".

>> INSPECTION END

SECURITY SYSTEM PRE-WIRING

< COMPONENT DIAGNOSIS >

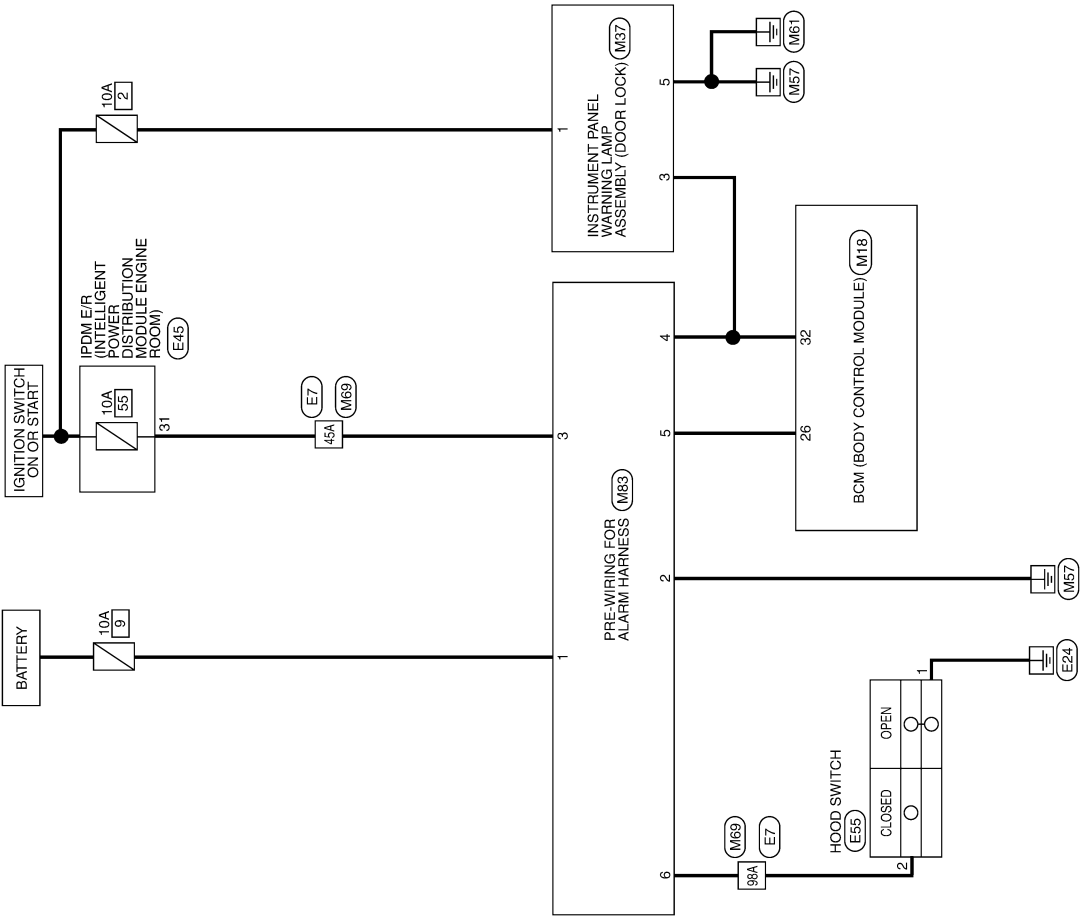
[WITHOUT INTELLIGENT KEY SYSTEM]

SECURITY SYSTEM PRE-WIRING

Wiring Diagram - SECURITY SYSTEM PRE-WIRING -

INFOID:000000001532180

SECURITY SYSTEM PRE-WIRING



ALKWA0086GE

SECURITY SYSTEM PRE-WIRING

< COMPONENT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

**NO
DATA**

ALKIA1251GB

SECURITY SYSTEM PRE-WIRING

< COMPONENT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

NO
DATA

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- B
- C
- D
- E
- F
- G
- H
- I
- J
- SEC
- L
- M
- N
- O
- P

ALKIA1252GB

BCM (BODY CONTROL MODULE)

[WITHOUT INTELLIGENT KEY SYSTEM]

< ECU DIAGNOSIS >

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

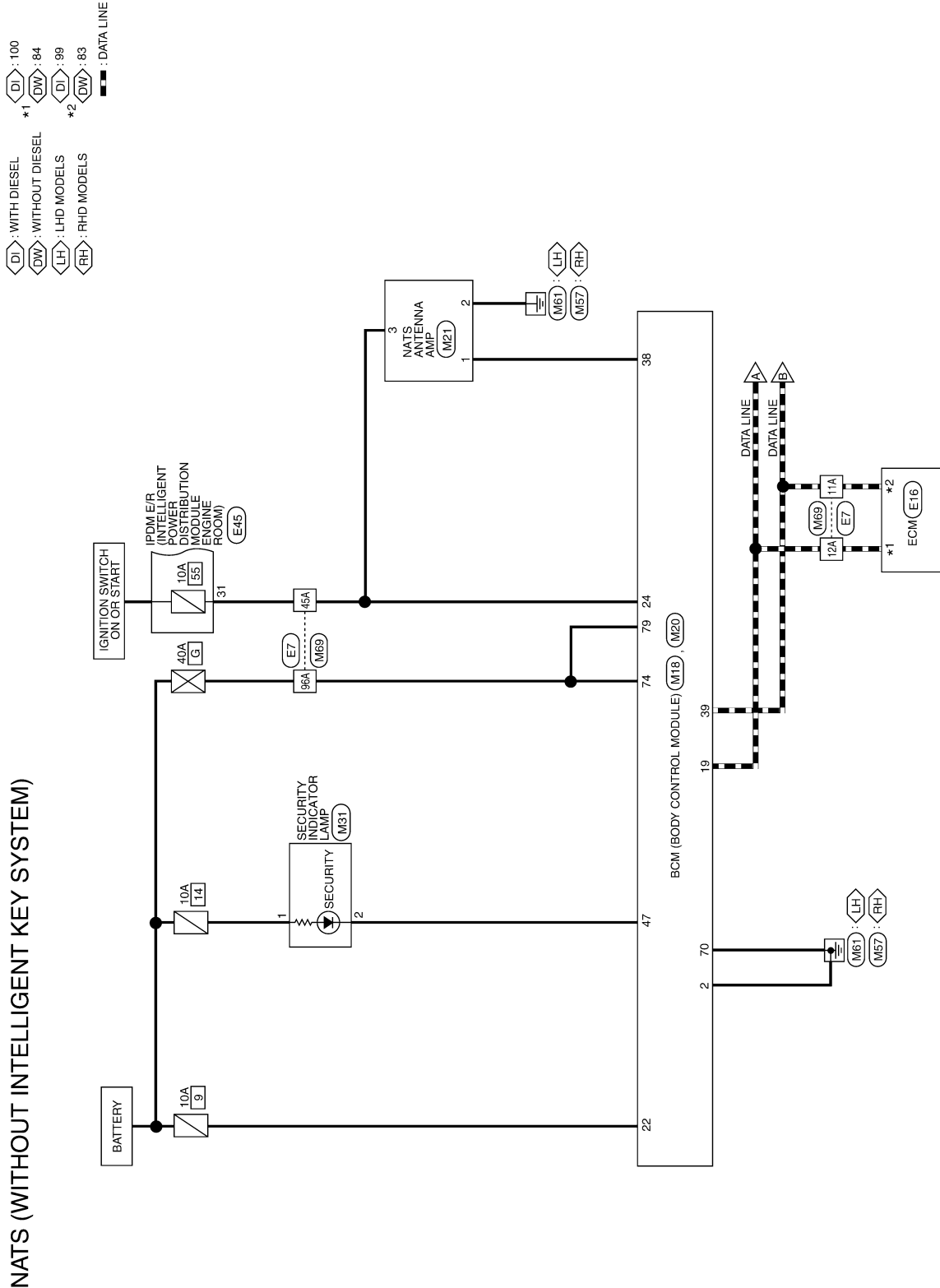
Reference Value

INFOID:000000001404220

Refer to [BCS-35, "Reference Value"](#).

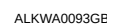
Wiring Diagram - NATS -

INFOID:000000001404222



[WITHOUT INTELLIGENT KEY SYSTEM]

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SECTION
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**NO
DATA**

ALKIA1253GB

NO
DATA

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ALKIA1254GB

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

**NO
DATA**

ALKIA1255GB

NO
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Fail Safe

Fail-safe index
BCM performs fail-safe control when any DTC listed below is detected.

ALKIA1256GB

INFOID:000000001404223

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

Display contents of CONSULT	Fail-safe	Cancellation
B2190: NATS ANTENNA AMP	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2191: DIFFERENCE OF KEY	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2192: ID DISCORD BCM-ECM	Fuel cut (ECM)	Erase DTC
B2193: CHAIN OF BCM-ECM	Fuel cut (ECM)	Erase DTC
B2194: DISCORD BCM-I-KEY	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2195: ANTI SCANNING	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2196: DONGLE NG	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC

REAR WIPER CONTROL

BCM detects a rear wiper stopping position according to a rear wiper auto stop signal.

When a rear wiper auto stop signal is in the condition listed below, BCM stops power supply to rear wiper after rear wiper is activated for five seconds.

Ignition switch	Rear wiper switch	Auto stop signal
ON	OFF	Rear wiper stop position signal cannot be input 5 seconds.
	ON	The signal does not change for 5 seconds.

NOTE:

The above operation is repeated when operating the rear wiper switch one minute after the stop of the rear wiper caused by Fail-safe.

TURN SIGNAL LAMP CONTROL

BCM detects the turn signal lamp circuit status from the terminal voltage.

BCM increases the turn signal lamp blinking speed if the bulb or harness open is detected with the turn signal lamp operating.

NOTE:

The blinking speed is normal while activating the hazard warning lamp.

LIGHT & RAIN SENSOR MALFUNCTION DETECTION FUNCTION

BCM controls the following items when LIGHT & RAIN sensor has a malfunction.

Auto Light Control

Headlamp is turned ON.

Front Wiper Control

The condition just before the activation of Fail-safe is maintained until the front wiper switch is turned OFF.

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

DTC Inspection Priority Chart

INFOID:000000001404224

Priority	DTC
1	- U1000: CAN COMM CIRCUIT - U1010: CONTROL UNIT (CAN)
2	- B2190: NATS ANTENNA AMP - B2191: DIFFERNCE OF KEY - B2192: ID DISCORD BCM-ECM - B2193: CHAIN OF BCM-ECM - B2194: DISCORD BCM-I-KEY - B2195: ANTI SCANNING - B2196: DONGLE NG

DTC Index

INFOID:000000001404225

NOTE:

Details of time display

- CRNT: Displays when there is a malfunction now or after returning to the normal condition until turning ignition switch OFF → ON again.
- PAST: Displays when there is a malfunction that is detected in the past and stored.
- 1 - 39: Displayed if any previous malfunction is present when current condition is normal. It increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. The counter remains at 39 even if the number of cycles exceeds it. It is counted from 1 again when turning ignition switch OFF → ON after returning to the normal condition if the malfunction is detected again.

CONSULT display	TIME		Fail-safe	Refer to
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	0	1 - 39	—	<u>XX-XX, *****</u>
U1010: CONTROL UNIT (CAN)	0	1 - 39	—	<u>XX-XX, *****</u>
B2190: NATS ANTENNA AMP	CRNT	PAST	×	<u>XX-XX, *****</u>
B2191: DIFFERENCE OF KEY	CRNT	PAST	×	<u>SEC-94</u>
B2192: ID DISCORD BCM-ECM	CRNT	PAST	×	<u>SEC-95</u>
B2193: CHAIN OF BCM-ECM	CRNT	PAST	×	<u>SEC-97</u>
B2194: DISCORD BCM-I-KEY	CRNT	PAST	×	<u>XX-XX, *****</u>
B2195: ANTI SCANNING	CRNT	PAST	×	<u>XX-XX, *****</u>
B2196: DONGLE NG	CRNT	PAST	×	<u>SEC-98</u>

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< ECU DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

Reference Value

INFOID:000000001404226

Refer to IPDM E/R.

Fail Safe

INFOID:000000001404229

CAN communication control

When CAN communication with ECM and BCM is impossible, IPDM E/R performs fail-safe control. After CAN communication recovers normally, it also returns to normal control.

If no CAN communication is available with ECM

Control part	Fail-safe in operation
Cooling fan	- The cooling fan relay-2*¹ or the cooling fan relay-3*² turns ON when the ignition switch is turned ON - Turns off the fan motor low relay when the ignition switch is turned OFF
A/C compressor	A/C relay OFF

*1: HR engine models

*2: MR engine and K9K engine models

If no CAN communication is available with BCM

Control part	Fail-safe in operation
Headlamp	- The headlamp low relay turns ON when the ignition switch is turned ON - The headlamp low relay turns OFF when the ignition switch is turned OFF - Headlamp high relay OFF
- Parking lamps - License plate lamps - Tail lamps - Illuminations	- The tail lamp relay turns ON when the ignition switch is turned ON - The tail lamp relay turns OFF when the ignition switch is turned OFF
Front wiper	- The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed. - The front wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT mode and the front wiper motor is operating.
Front fog lamps	Front fog lamp relay OFF
Starter motor	Inhibit relay OFF
Rear window defogger	Rear window defogger relay OFF
Headlamp washer	Headlamp washer relay OFF
PTC heater	PTC heater relay OFF

Ignition relay malfunction detection function

- IPDM E/R monitors the voltage at the contact circuit and excitation coil circuit of the ignition relay inside it.
- IPDM E/R judges the ignition relay error if the voltage differs between the contact circuit and the excitation coil circuit.
- If the ignition relay cannot turn OFF due to contact seizure, it activates the tail lamp relay for 10 minutes to alert the user to the ignition relay malfunction when the ignition switch is turned OFF.

DTC	Ignition switch	Ignition relay	Tail lamp relay
—	ON	ON	—
—	OFF	OFF	—
B2098: IGN RLY ON	OFF	ON	ON (10 minutes)
B2099: IGN RLY OFF	ON	OFF	—

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< ECU DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

NOTE:

The tail lamp relay is turned OFF when the ignition switch is turned ON.

Front wiper control

IPDM E/R detects the front wiper stop position with the front wiper auto stop signal.

When the front wiper auto stop signal is in the conditions listed below, IPDM E/R repeats a front wiper 10 seconds operation and 20 seconds stop five times.

Ignition switch	Front wiper switch	Front wiper auto stop signal
ON	OFF	The front wiper auto stop signal (stop position) cannot be input for 10 seconds.
	ON	The front wiper auto stop signal does not change for 10 seconds.

NOTE:

This operation status can be confirmed on the IPDM E/R “Data Monitor” that displays “BLOCK” for the item “WIP PROT” while the wiper is stopped.

DTC Index

INFOID:000000001404230

CONSULT display	Fail-safe	Timing ^{NOTE}		Reference page
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	×	CRNT	PAST	<u>XX-XX, ¹¹*****11</u>
B2098: IGN RELAY ON	×	CRNT	PAST	<u>XX-XX, ¹¹*****11</u>
B2099: IGN RELAY OFF	—	CRNT	PAST	<u>XX-XX, ¹¹*****11</u>
B2100: EEPROM	—	CRNT	PAST	<u>XX-XX, ¹¹*****11</u>

NOTE:

The details of time display are as follows.

- CRNT: The malfunctions that are detected now.
- PAST: The number is indicated when it is normal at present and a malfunction was detected in the past.

VEHICLE SECURITY SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

SYMPTOM DIAGNOSIS

VEHICLE SECURITY SYSTEM SYMPTOMS

Symptom Table

INFOID:000000001404231

Procedure			Diagnostic procedure	Refer to page
Symptom				
1	Vehicle security system cannot be set by	Door switch	Check door switch	<u>XX-XX, 11*****11</u>
		Hood switch	Check hood switch	<u>XX-XX, 11*****11</u>
		Back door switch	Check back door switch	<u>XX-XX, 11*****11</u>
		Keyfob	Check keyfob.	<u>XX-XX, 11*****11</u>
		—	Check Intermittent Incident	<u>XX-XX, 11*****11</u>
	Security indicator does not turn ON.		Check vehicle security indicator	<u>XX-XX, 11*****11</u>
			Check Intermittent Incident	<u>XX-XX, 11*****11</u>
2	* Vehicle security system does not sound alarm when	Any door is opened.	Check door switch	<u>XX-XX, 11*****11</u>
			Check Intermittent Incident	<u>XX-XX, 11*****11</u>
3	Vehicle security alarm does not activate.	Horn alarm	Check horn switch	—
			Check Intermittent Incident	<u>XX-XX, 11*****11</u>
		Siren control unit alarm	Check siren control unit power supply and ground circuit	<u>XX-XX, 11*****11</u>
			Check siren power supply and ground circuit	<u>XX-XX, 11*****11</u>
			Check siren control unit	<u>XX-XX, 11*****11</u>
			Check Intermittent Incident	<u>XX-XX, 11*****11</u>
4	Vehicle security system cannot be canceled by	Keyfob	Check multi remote control system.	<u>XX-XX, 11*****11</u>
			Check Intermittent Incident	<u>XX-XX, 11*****11</u>

*: Check the system is in the armed phase.

NATS (NISSAN ANTI-THEFT SYSTEM) SYMPTOMS

< SYMPTOM DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

NATS (NISSAN ANTI-THEFT SYSTEM) SYMPTOMS

Symptom Table

INFOID:000000001404232

NOTE:

- Before performing the diagnosis in the following table, check "[SEC-80. "Work Flow"](#)".
- Check that vehicle is under the condition shown in "Conditions of vehicle" before starting diagnosis, and check each symptom.
- If the following symptoms are detected, check systems shown in the "Diagnosis/service procedure" column in this order.

CONDITIONS OF VEHICLE (OPERATING CONDITIONS)

- Ignition key is not inserted into key cylinder.

Symptom	Diagnosis/service procedure	Reference page
Security indicator does not turn ON or flash	1. Check vehicle security indicator	XX-XX, "*****"
	2. Check Intermittent Incident	XX-XX, "*****"

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ON-VEHICLE MAINTENANCE

PRE-INSPECTION FOR DIAGNOSTIC

Basic Inspection

INFOID:000000001404233

1. INSPECTION START

Turn ignition switch "OFF" and pull out ignition key from key cylinder.

NOTE:

Before starting operation check, open front windows.

>> GO TO 2.

2. CHECK SECURITY INDICATOR LAMP

1. Lock doors using keyfob.
2. Check that security indicator lamp illuminates for 30 seconds.

Security indicator lamp should illuminate.

OK >> GO TO 3.

NG >> Perform diagnosis and repair. Refer to [SEC-116, "Symptom Table"](#).

3. CHECK ALARM FUNCTION

1. After 30 seconds, security indicator lamp will start to blink.
2. Open any door or hood before unlocking with keyfob or open back door without keyfob.

Do alarm function properly.

OK >> GO TO 4.

NG >> Check the following.

- The vehicle security system does not phase in alarm mode. Refer to [SEC-116, "Symptom Table"](#).
- Alarm do not operate. Refer to [SEC-116, "Symptom Table"](#).

4. CHECK ALARM CANCEL OPERATION

Unlock any door or open back door using keyfob.

Alarm (horn and siren) should stop.

OK >> INSPECTION END.

NG >> Check door lock function. Refer to [XX-XX, "*****"](#).