SECTION SEC
SECURITY CONTROL SYSTEM

CONTENTS

WITH INTELLIGENT KEY SYSTEM

PRECAUTION

PRECAUTIONS

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

INFOID:0000000006628414

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted.
Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see “SRS AIR BAG”.**
- **Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

Precaution Necessary for Steering Wheel Rotation after Battery Disconnect

INFOID:0000000006628415

NOTE:

- Before removing and installing any control units, first turn the ignition switch to the LOCK position, then disconnect both battery cables.
- After finishing work, confirm that all control unit connectors are connected properly, then re-connect both battery cables.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If a DTC is detected, perform trouble diagnosis according to self-diagnosis results.

For vehicle with steering lock unit, if the battery is disconnected or discharged, the steering wheel will lock and cannot be turned.
If turning the steering wheel is required with the battery disconnected or discharged, follow the operation procedure below before starting the repair operation.

OPERATION PROCEDURE

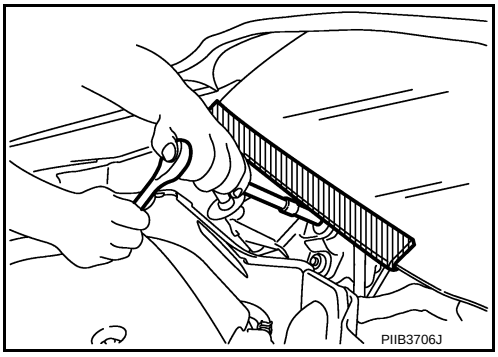
1. Connect both battery cables.
   NOTE:
   Supply power using jumper cables if battery is discharged.
2. Turn the ignition switch to ACC position.
   (At this time, the steering lock will be released.)
3. Disconnect both battery cables. The steering lock will remain released with both battery cables disconnected and the steering wheel can be turned.
4. Perform the necessary repair operation.

5. When the repair work is completed, re-connect both battery cables. With the brake pedal released, turn the ignition switch from ACC position to ON position, then to LOCK position. (The steering wheel will lock when the ignition switch is turned to LOCK position.)
6. Perform self-diagnosis check of all control units using CONSULT-III.

Precaution for Procedure without Cowl Top Cover

INFOID:0000000006628416

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc.



SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

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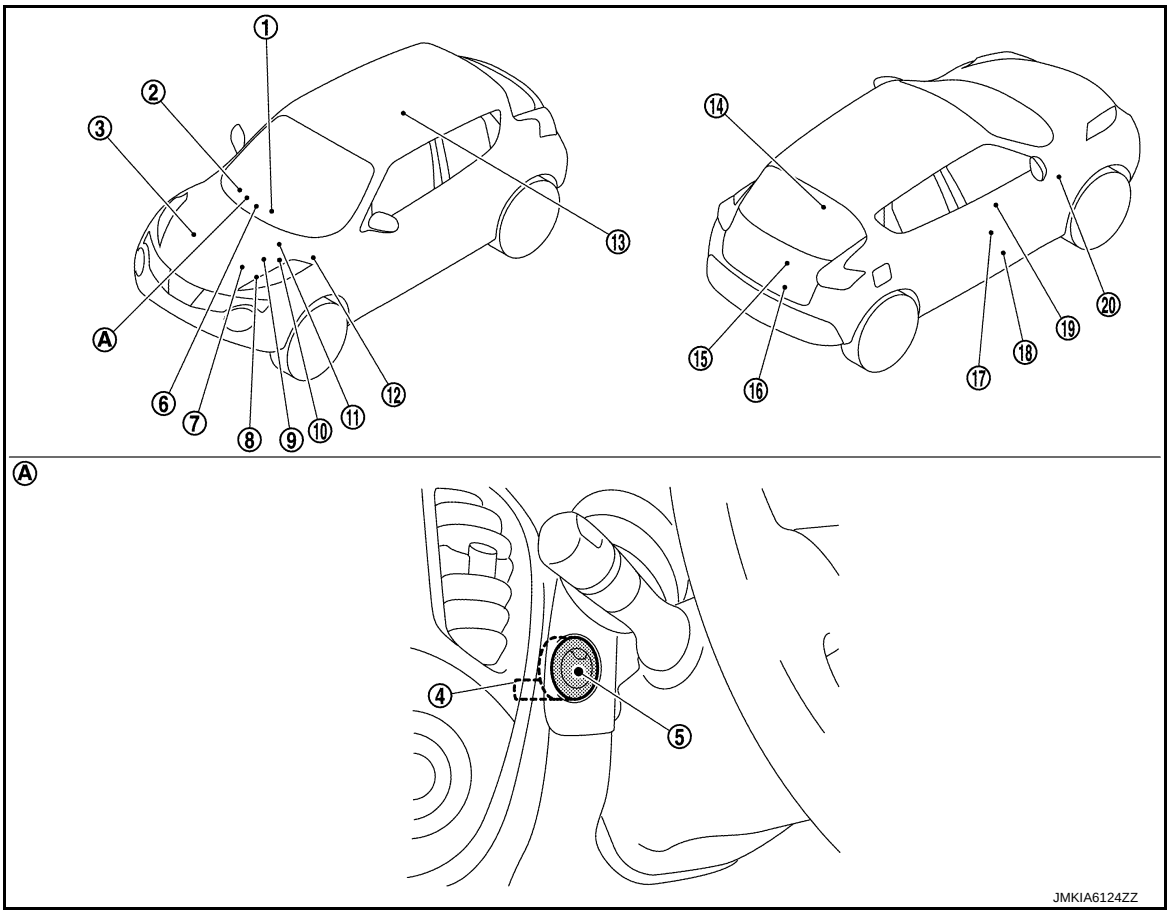


1. Remote keyless entry receiver
   Refer to DLK-21, "Component Parts Location" (With super lock) or DLK-198, "Component Parts Location" (Without super lock).
2. Combination meter
   Refer to MWI-4, "METER SYSTEM : Component Parts Location".
3. Stop lamp switch
   Refer to BRC-9, "Component Parts Location" (Without ESP) or BRC-97, "Component Parts Location" (With ESP).
4. NATS antenna amp.
5. Push-button ignition switch
6. Inside key antenna (instrument center)
   Refer to DLK-21, "Component Parts Location" (With super lock) or DLK-198, "Component Parts Location" (Without super lock).
7. Transmission range switch
   Refer to TM-131, "CVT CONTROL SYSTEM : Component Parts Location" (CVT: RE0F10B) or TM-314, "CVT CONTROL SYSTEM : Component Parts Location" (CVT: RE0F11A).
8. ECM
   Refer to EC-25, "ENGINE CONTROL SYSTEM : Component Parts Location" (MR16DDT), EC-455, "ENGINE CONTROL SYSTEM : Component Parts Location" (HR16DE) or EC-813, "Component Parts Location" (K9K).
9. IPDM E/R
   Refer to PCS-5, "Component Parts Location".

10. TCM
Refer to TM-131, "CVT CONTROL SYSTEM : Component Parts Location" (CVT: RE0F10B) or TM-314, "CVT CONTROL SYSTEM : Component Parts Location" (CVT: RE0F11A).
11. ABS actuator and electric unit (control unit)
Refer to BRC-9, "Component Parts Location" (Without ESP) or BRC-97, "Component Parts Location" (With ESP).
12. BCM
Refer to BCS-6, "BODY CONTROL SYSTEM : Component Parts Location".
13. Inside key antenna (console)
Refer to DLK-21, "Component Parts Location" (With super lock) or DLK-198, "Component Parts Location" (Without super lock).
14. Inside key antenna (luggage room)
Refer to DLK-21, "Component Parts Location" (With super lock) or DLK-198, "Component Parts Location" (Without super lock).
15. Back door request switch
16. Back door opener assembly
17. Front door lock assembly
18. Front door switch (driver side)
19. Front door request switch (driver side)
20. Clutch interlock switch

A. Behind push-button ignition switch

Component Description

INFOID:0000000006628418

Component	Reference
BCM	SEC-10
CVT shift selector (detention switch)	SEC-11
ECM	SEC-11
IPDM E/R	SEC-11
NATS antenna amp.	SEC-11
TCM	SEC-11
Clutch interlock switch	SEC-11
Clutch pedal position switch	SEC-11
Combination meter	SEC-12
Door switch	SEC-12
Hood switch	SEC-12
Inside key antenna	SEC-12
Intelligent Key	SEC-12
Park/neutral position switch	SEC-12
Push-button ignition switch	SEC-12
Remote keyless entry receiver	SEC-12
Security indicator lamp	SEC-12
Starter control relay	SEC-12
Starter relay	SEC-12
Steering lock relay	SEC-12
Steering lock unit	SEC-13
Stop lamp switch	SEC-13
Transmission range switch	SEC-13
Vehicle information display	SEC-13

BCM

INFOID:0000000006628420

BCM controls INTELLIGENT KEY SYSTEM (ENGINE START FUNCTION), NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS [NVIS (NATS)], and VEHICLE SECURITY SYSTEM.

BCM performs the ID verification between BCM and Intelligent Key when the Intelligent Key is carried into the detection area of inside key antenna, and push-button ignition switch is pressed. If the ID verification result is OK, push-button ignition switch operation is available.
Then, when the power supply position is turned ON, BCM performs ID verification between BCM and ECM. If the ID verification result is OK, ECM can start engine.

CVT Shift Selector (Detention Switch)

INFOID:0000000006628419

Detention switch detects that CVT shift selector is in the P position, and then transmits the signal to BCM and IPDM E/R.
BCM confirms the CVT shift selector position with the following 5 signals.
- P position signal from CVT shift selector (detention switch)
- P/N position signal from transmission range switch
- P position signal from IPDM E/R (CAN)
- P/N position signal from IPDM E/R (CAN)
- P/N position signal from TCM (CAN)

IPDM E/R confirms the CVT shift selector position with the following 3 signals.
- P position signal from CVT shift selector (detention switch)
- P/N position signal from transmission range switch
- P/N position signal from BCM (CAN)

ECM

INFOID:0000000006628421

ECM controls the engine.
When power supply position is turned ON, BCM starts communication with ECM and performs the ID verification between BCM and ECM.
If the verification result is OK, the engine can start. If the verification result is NG, the engine can not start.

IPDM E/R

INFOID:0000000006628422

IPDM E/R has steering lock relay, starter relay and starter control relay inside. Steering lock relay is used for the steering lock/unlock function. Starter relay and starter control relay are used for the engine starting function. IPDM E/R controls these relays while communicating with BCM.

NATS Antenna Amp.

INFOID:0000000006628423

The ID verification is performed between BCM and transponder in Intelligent Key via NATS antenna amp. when Intelligent Key backside is contacted to push-button ignition switch in case that Intelligent Key battery is discharged. If the ID verification result is OK, the release of steering lock and the operation of starting engine is available.

TCM

INFOID:0000000006628424

TCM transmits the shift position signal (P/N position) to BCM and IPDM E/R via CAN communication.
BCM confirms the CVT shift selector position with the following 5 signals.
- P position signal from CVT shift selector (detention switch)
- P/N position signal from transmission range switch
- P position signal from IPDM E/R (CAN)
- P/N position signal from IPDM E/R (CAN)
- P/N position signal from TCM (CAN)

IPDM E/R confirms the CVT shift selector position with the following 3 signals.
- P position signal from CVT shift selector (detention switch)
- P/N position signal from transmission range switch
- P/N position signal from BCM (CAN)

Clutch Interlock Switch

INFOID:0000000006648678

Clutch interlock switch detects that clutch pedal is depressed, then provides power source to starter control relay and starter relay, and transmits ON/OFF signal to BCM.

Clutch Pedal Position Switch

INFOID:0000000006648679

Clutch pedal position switch detects that clutch pedal is depressed, and then transmits ON/OFF signal to ECM. ECM transmits the clutch pedal position switch signal to BCM via CAN communication.

Combination Meter

INFOID:0000000006628425

Combination meter transmits the vehicle speed signal to BCM via CAN communication.
BCM also receives the vehicle speed signal from ABS actuator and electric unit (control unit) via CAN communication. BCM compares both signals to detect the vehicle speed.

Door Switch

INFOID:0000000006628426

Door switch detects door open/close condition and then transmits ON/OFF signal to BCM.

Hood Switch

INFOID:0000000006628427

Hood switch detects that hood is open, and then transmits the signal to IPDM E/R. IPDM E/R transmits hood switch signal to BCM via CAN communication.

Inside Key Antenna

INFOID:0000000006628428

Inside key antenna detects whether Intelligent Key is inside the vehicle, and transmits the signal to BCM.
Three inside key antennas are installed in the instrument center, console and luggage room.

Intelligent Key

INFOID:0000000006628429

Each Intelligent key has an individual electronic ID, and transmits the ID signal by request from BCM.
Carrying the Intelligent Key whose ID is registered in BCM, the driver can performs door lock/unlock operation and push-button ignition switch operation.

Park/Neutral Position (PNP) Switch

INFOID:0000000006648680

Park/neutral position (PNP) switch detects that shift lever is in the neutral position, and then transmits ON/OFF signal to BCM.

Push-button Ignition Switch

INFOID:0000000006628431

Push-button ignition switch detects that push-button is pressed, and then transmits the signal to BCM. BCM changes the power supply position with the operation of push-button ignition switch. BCM maintains the power supply position status while push-button is not operated.

Remote Keyless Entry Receiver

INFOID:0000000006628432

Remote keyless entry receiver receives each button operation signal and electronic key ID signal from Intelligent Key, and then transmits the signal to BCM.

Security Indicator Lamp

INFOID:0000000006628433

Security indicator lamp is located on combination meter.
Security indicator lamp blinks when power supply position is any position other than ON to warn that NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS [NVIS (NATS)] is on board.

Starter Control Relay

INFOID:0000000006628436

Engine starting system functions by controlling both starter relay and starter control relay.
Both relays are integrated in IPDM E/R. Starter relay is controlled by BCM, and starter control relay is controlled by IPDM E/R on request from BCM.
IPDM E/R transmits starter relay and starter control relay status signal to BCM via CAN communication.

Starter Relay

INFOID:0000000006628437

Engine starting system functions by controlling both starter relay and starter control relay.
Both relays are integrated in IPDM E/R. Starter relay is controlled by BCM, and starter control relay is controlled by IPDM E/R on request from BCM.
IPDM E/R transmits starter relay and starter control relay status signal to BCM via CAN communication.

Steering Lock Relay

INFOID:0000000006628438

Steering lock relay is integrated in IPDM E/R, and supplies power source to steering lock unit.

When IPDM E/R receives the steering lock relay ON request signal from BCM, IPDM E/R turns ON steering lock relay and then transmits the steering lock relay condition signal to BCM.

Steering Lock Unit

INFOID:0000000006628439

Steering lock unit performs steering lock/unlock operation on request from BCM, and power source is supplied from steering lock relay integrated in IPDM E/R.
When push-button ignition switch is pressed while the Intelligent Key is inside the vehicle, BCM performs the ID verification with steering lock unit. Steering lock unit releases the steering lock based on the result of the ID verification.
Steering lock unit has 2 switches (steering lock status switch and steering unlock status switch) inside. BCM judges the steering lock/unlock condition by comparing these switch signals and steering lock unit status signal transmitted from IPDM E/R via CAN communication.

Stop Lamp Switch

INFOID:0000000006628440

Stop lamp switch detects that brake pedal is depressed, and then transmits the signal to BCM.

Transmission Range Switch

INFOID:0000000006628441

Transmission range switch is integrated in CVT assembly, and detects the CVT shift selector position.
TCM receives the transmission range switch signal and then transmits the P/N position signal to BCM and IPDM E/R.
BCM confirms the CVT shift selector position with the following 5 signals.
- P position signal from CVT shift selector (detention switch)
- P/N position signal from transmission range switch
- P position signal from IPDM E/R (CAN)
- P/N position signal from IPDM E/R (CAN)
- P/N position signal from TCM (CAN)

IPDM E/R confirms the CVT shift selector position with the following 3 signals.
- P position signal from CVT shift selector (detention switch)
- P/N position signal from transmission range switch
- P/N position signal from BCM (CAN)

Vehicle Information Display

INFOID:0000000006628442

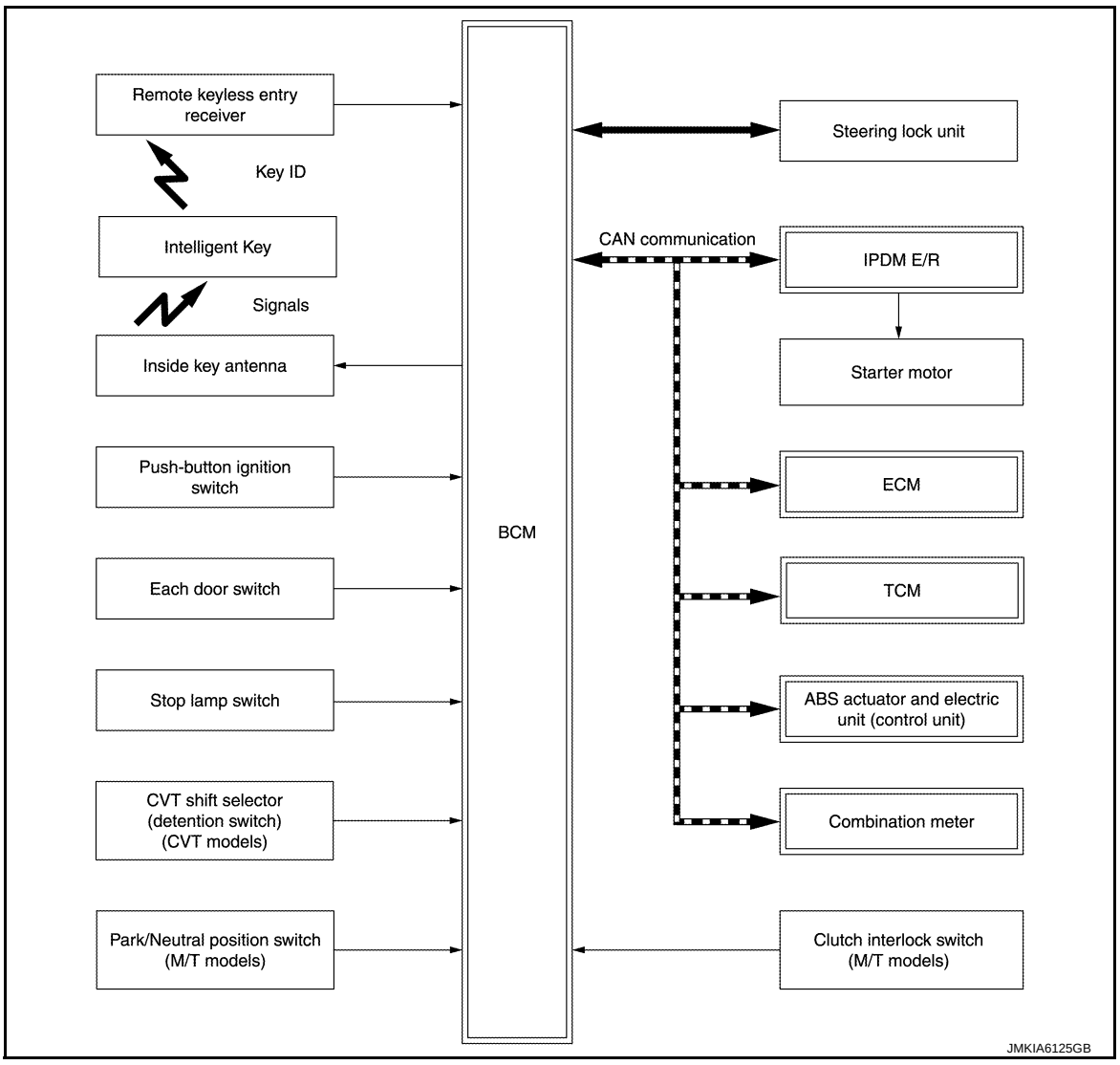
Vehicle information display is integrated in combination meter.
Various information and warnings regarding to the Intelligent Key System are displayed.

SYSTEM

INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION : System Diagram

INFOID:0000000006628444



INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION : System Description

INFOID:0000000006628445

SYSTEM DESCRIPTION

- The engine start function of Intelligent Key system makes it possible to start and stop the engine without using the key, based on the electronic ID verification. The electronic ID verification is performed between BCM and Intelligent Key when the push-button ignition switch is pressed while the Intelligent Key is within the detection area of inside key antenna.
  NOTE:
  The driver should carry the Intelligent Key at all times.
- Intelligent Key has 2 IDs [Intelligent Key ID and NVIS (NATS) ID]. It can perform the door lock/unlock operation and the push-button ignition switch operation when the registered Intelligent Key is carried.
- When Intelligent Key battery is discharged, engine can be started by operating push-button ignition switch after contacting Intelligent Key backside to push-button ignition switch. At that time, the NVIS (NATS) ID verification is performed.
- If the ID is successfully verified, when push-button ignition switch is pressed, steering lock is released and the engine can be started.

- Up to 4 Intelligent Keys can be registered (Including the standard Intelligent Key) upon request from the customer.
  NOTE:
  Refer to DLK-27, "INTELLIGENT KEY SYSTEM : System Description" (With super lock) or DLK-204, "INTELLIGENT KEY SYSTEM : System Description" (Without super lock) for any functions other than engine start function of Intelligent Key system.

PRECAUTIONS FOR INTELLIGENT KEY SYSTEM

The transponder [the chip for NVIS (NATS) ID verification] is integrated into the Intelligent Key. (For the conventional models, it is integrated into the mechanical key.) Therefore, ID verification cannot be performed by mechanical key only.
In that case, the NVIS (NATS) ID verification can be performed when Intelligent Key backside is contacted to push-button ignition switch. If verification result is OK, engine can be started.

OPERATION WHEN INTELLIGENT KEY IS CARRIED

1. When the push-button ignition switch is pressed, the BCM activates the inside key antenna and transmits the request signal to the Intelligent Key.
2. The Intelligent Key receives the request signal and transmits the Intelligent Key ID signal to the BCM.
3. BCM receives the Intelligent Key ID signal via remote keyless entry receiver and verifies it with the registered ID.
4. BCM transmits the unlock signal to steering lock unit and IPDM E/R if the verification results are OK.
5. IPDM E/R turns the steering lock relay ON and supplies power supply to the steering lock unit.
6. The steering lock releases.
7. BCM transmits the power supply stop signal to IPDM E/R when detecting that the steering lock is in the unlock condition.
8. IPDM E/R turns the steering lock relay OFF and stops power supply to the steering lock unit.
9. BCM turns ACC relay ON and transmits the ignition power supply ON signal to IPDM E/R.
10. IPDM E/R turns the ignition relay ON and starts the ignition power supply.
11. BCM detects that the selector lever position and brake pedal operating condition (CVT models), or shift lever position and clutch pedal operation condition (M/T models).
12. BCM transmits the starter request signal to IPDM E/R and turns the starter relay in IPDM E/R ON if BCM judges that the engine start condition* is satisfied.
13. IPDM E/R turns the starter control relay ON when receiving the starter request signal.
14. Power supply is supplied through the starter relay and the starter control relay to operate the starter motor.
    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.
15. When BCM receives feedback signal from ECM indicating that the engine is started, the BCM transmits a stop signal to IPDM E/R and stops cranking by turning OFF the starter motor relay. (If engine start is unsuccessful, cranking stops automatically within 5 seconds.)
    CAUTION:
    When the Intelligent Key is carried outside of the vehicle (inside key antenna detection area) while the power supply is in the ACC or ON position, even if the engine start condition* is satisfied, the engine cannot be started.

*: For the engine start condition, refer to “POWER SUPPLY POSITION CHANGE TABLE BY PUSH-BUTTON IGNITION SWITCH OPERATION”.

OPERATION RANGE

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

ENGINE START OPERATION WHEN INTELLIGENT KEY IS CONTACTED TO PUSH-BUTTON IGNITION SWITCH

When Intelligent Key battery is discharged, the NVIS (NATS) ID verification between transponder in Intelligent Key and BCM is performed when Intelligent Key backside is contacted to push-button ignition switch. If the verification result is OK, engine can be started.

STEERING LOCK OPERATION

Steering is locked by steering lock unit when any of the following conditions are met.
- When ignition switch is in the OFF position, selector lever is in the P position, and any of the following conditions are met.
- Closing door
- Opening door
- Door is locked using door request switch
- Door is locked using Intelligent Key
- When BCM power consumption control system is released by meeting any of the following conditions.
- Opening any door
- Operating door lock using door request switch
- Operating door lock using Intelligent Key

POWER SUPPLY POSITION CHANGE TABLE BY PUSH-BUTTON IGNITION SWITCH OPERATION

The power supply position changing operation can be performed with the following operations.

NOTE:
- When an Intelligent Key is within the detection area of inside key antenna and when Intelligent Key backside is contacted to push-button ignition switch, it is equivalent to the operations below.
- When starting the engine, the BCM monitors under the engine start conditions,

CVT models
- Brake pedal operating condition
- Selector lever position
- Vehicle speed

M/T models
- Clutch pedal operating condition
- Brake pedal operating condition
- Shift lever position
- Vehicle speed

Vehicle speed: less than 4 km/h (2.5 MPH)

Power supply position	Engine start/stop condition						Push-button ignition switch operation frequency
	CVT models		M/T models				
			Normal condition		Special condition		
	Selector lever position	Brake pedal operation condition	Shift lever position	Clutch pedal operation condition	Shift lever position	Brake pedal operation condition	
LOCK → ACC	—	Not depressed	—	Not depressed	—	Not depressed	1
LOCK → ACC → ON	—	Not depressed	—	Not depressed	—	Not depressed	2
LOCK → ACC → ON → OFF	—	Not depressed	—	Not depressed	—	Not depressed	3
LOCK → START ACC → START ON → START	P or N position	Depressed	—	Depressed	Neutral	Depressed	1
Engine is running → OFF	—	—	—	—	—	—	1

Vehicle speed: 4 km/h (2.5 MPH) or more

Power supply position	Engine start/stop condition						Push-button ignition switch operation frequency
	CVT models		M/T models				
	Selector lever position	Brake pedal operation condition	Normal condition		Special condition		
			Shift lever position	Clutch pedal operation condition	Shift lever position	Brake pedal operation condition	
Engine is running → ACC	—	—	—	—	—	—	Emergency stop operation
Engine stall return operation while driving	N position	Not depressed	—	Depressed	Neutral	—	1

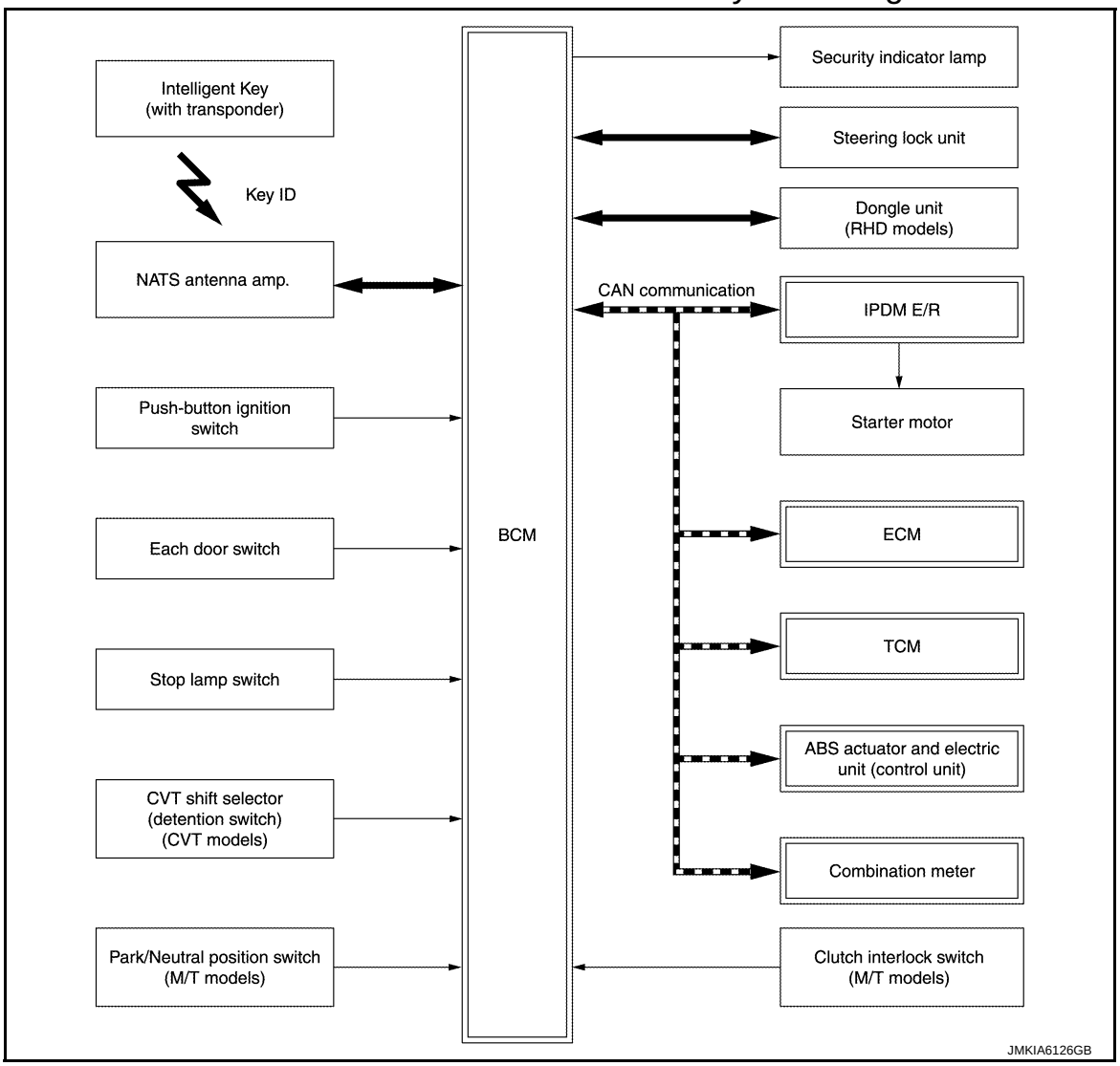
Emergency stop operation

- Press and hold the push-button ignition switch for 2 seconds or more.
- Press the push-button ignition switch 3 times or more within 1.5 seconds.

NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS

NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : System Diagram

INFOID:0000000006628446



NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : System Description

INFOID:0000000006628447

SYSTEM DESCRIPTION

- The NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS [NVIS (NATS)] prevents the engine from being started by Intelligent Key whose ID is not registered to the vehicle (BCM). It has higher protection against auto theft involving the duplication of mechanical keys.
- The ignition key integrated in the Intelligent Key cannot start the engine. When the Intelligent Key battery is discharged, the NVIS (NATS) ID verification is performed between the transponder integrated with Intelligent Key and BCM via NATS antenna amp. when the Intelligent Key backside is contacted to push-button ignition switch. If the verification results are OK, the engine start operation can be performed by the push-button ignition switch operation.
- The security indicator lamp on combination meter always blinks when the power supply position is any position other than ON which warns that the NVIS (NATS) is on board the model.
- Up to 4 Intelligent Keys can be registered (including the standard ignition key) upon request from the owner.
- Specified registration is required when replacing ECM, BCM or Intelligent Key. For the registration procedures, refer to CONSULT-III Operation Manual IVIS-NVIS/NATS.
- Possible symptom of NVIS (NATS) malfunction is “Engine cannot start”. The engine can not be started because of other than NVIS (NATS) malfunction, so start the trouble diagnosis according to SEC-47, "Work Flow".
- If ECM other than genuine part is installed, the engine cannot be started. For ECM replacement procedure, refer to EC-133, "Work Procedure" (MR16DDT), EC-541, "Work Procedure" (HR16DE) or EC-879, "Work Procedure" (K9K).

PRECAUTIONS FOR KEY REGISTRATION

- The ID registration is a procedure that erases the current NVIS (NATS) ID once, and then reregisters a new ID. Therefore before starting the registration operation, collect all registered Intelligent Keys from the customer.
- When registering the Intelligent Key, perform only one procedure to simultaneously register both ID [NVIS (NATS) ID and Intelligent Key ID].

SECURITY INDICATOR LAMP

- Warns that the vehicle is equipped with NVIS (NATS).
- Security indicator lamp always blinks when the power supply position is any position other than ON.

NOTE:
Because security indicator lamp is highly efficient, the battery is barely affected.

ENGINE START OPERATION WHEN INTELLIGENT KEY IS CONTACTED TO PUSH-BUTTON IGNITION SWITCH

1. When brake pedal is depressed while selector lever is in the P position, BCM activates NATS antenna amp. that is located behind push-button ignition switch.
2. When Intelligent Key (transponder built-in) backside is contacted to push-button ignition switch, BCM starts NVIS (NATS) ID verification between BCM and Intelligent Key (transponder built-in) via NATS antenna amp.
3. When the NVIS (NATS) ID verification result is OK, buzzer in combination meter sounds and BCM transmits the result to ECM.
4. When push-button ignition switch is pressed, BCM transmits steering unlock signal to steering lock unit and IPDM E/R.
5. IPDM E/R turns steering lock relay ON and supplies power supply to the steering lock unit.
6. The steering lock is released.
7. BCM transmits the power supply stop signal to IPDM E/R when detecting that the steering lock is in the unlock position.
8. IPDM E/R turns steering lock relay OFF and stops power supply to the steering lock unit.
9. BCM turns ACC relay ON and transmits ignition power supply ON signal to IPDM E/R.
10. IPDM E/R turns the ignition relay ON and starts the ignition power supply.
11. BCM detects that the selector lever position and brake pedal operating condition (CVT models), or shift lever position and clutch pedal operation condition (M/T models).
12. BCM transmits starter request signal to IPDM E/R and turns the starter relay in IPDM E/R ON if BCM judges that the engine start condition* is satisfied.
13. IPDM E/R turns the starter control relay ON when receiving the starter request signal.
14. Power supply is supplied through the starter relay and the starter control relay to operate the starter motor.

15. When BCM receives feedback signal from ECM indicating that the engine is started, BCM transmits a stop signal to IPDM E/R and stops cranking by turning off the starter motor relay. (If engine start is unsuccessful, cranking stops automatically within 5 seconds.)

*: For the engine start condition, refer to “POWER SUPPLY POSITION CHANGE TABLE BY PUSH-BUTTON IGNITION SWITCH OPERATION” below.

POWER SUPPLY POSITION CHANGE TABLE BY PUSH-BUTTON IGNITION SWITCH OPERATION

The power supply position changing operation can be performed with the following operations.

NOTE:

- When an Intelligent Key is within the detection area of inside key antenna and when Intelligent Key backside is contacted to push-button ignition switch, it is equivalent to the operations below.
- When starting the engine, the BCM monitors under the engine start conditions,

CVT models

- Brake pedal operating condition
- Selector lever position
- Vehicle speed

M/T models

- Clutch pedal operating condition
- Brake pedal operating condition
- Shift lever position
- Vehicle speed

Vehicle speed: less than 4 km/h (2.5 MPH)

Power supply position	Engine start/stop condition						Push-button ignition switch operation frequency
	CVT models		M/T models				
			Normal condition		Special condition		
	Selector lever position	Brake pedal operation condition	Shift lever position	Clutch pedal operation condition	Shift lever position	Brake pedal operation condition	
LOCK → ACC	—	Not depressed	—	Not depressed	—	Not depressed	1
LOCK → ACC → ON	—	Not depressed	—	Not depressed	—	Not depressed	2
LOCK → ACC → ON → OFF	—	Not depressed	—	Not depressed	—	Not depressed	3
LOCK → START ACC → START ON → START	P or N position	Depressed	—	Depressed	Neutral	Depressed	1
Engine is running → OFF	—	—	—	—	—	—	1

Vehicle speed: 4 km/h (2.5 MPH) or more

Power supply position	Engine start/stop condition						Push-button ignition switch operation frequency
	CVT models		M/T models				
			Normal condition		Special condition		
	Selector lever position	Brake pedal operation condition	Shift lever position	Clutch pedal operation condition	Shift lever position	Brake pedal operation condition	
Engine is running → ACC	—	—	—	—	—	—	Emergency stop operation
Engine stall return operation while driving	N position	Not depressed	—	Depressed	Neutral	—	1

Emergency stop operation

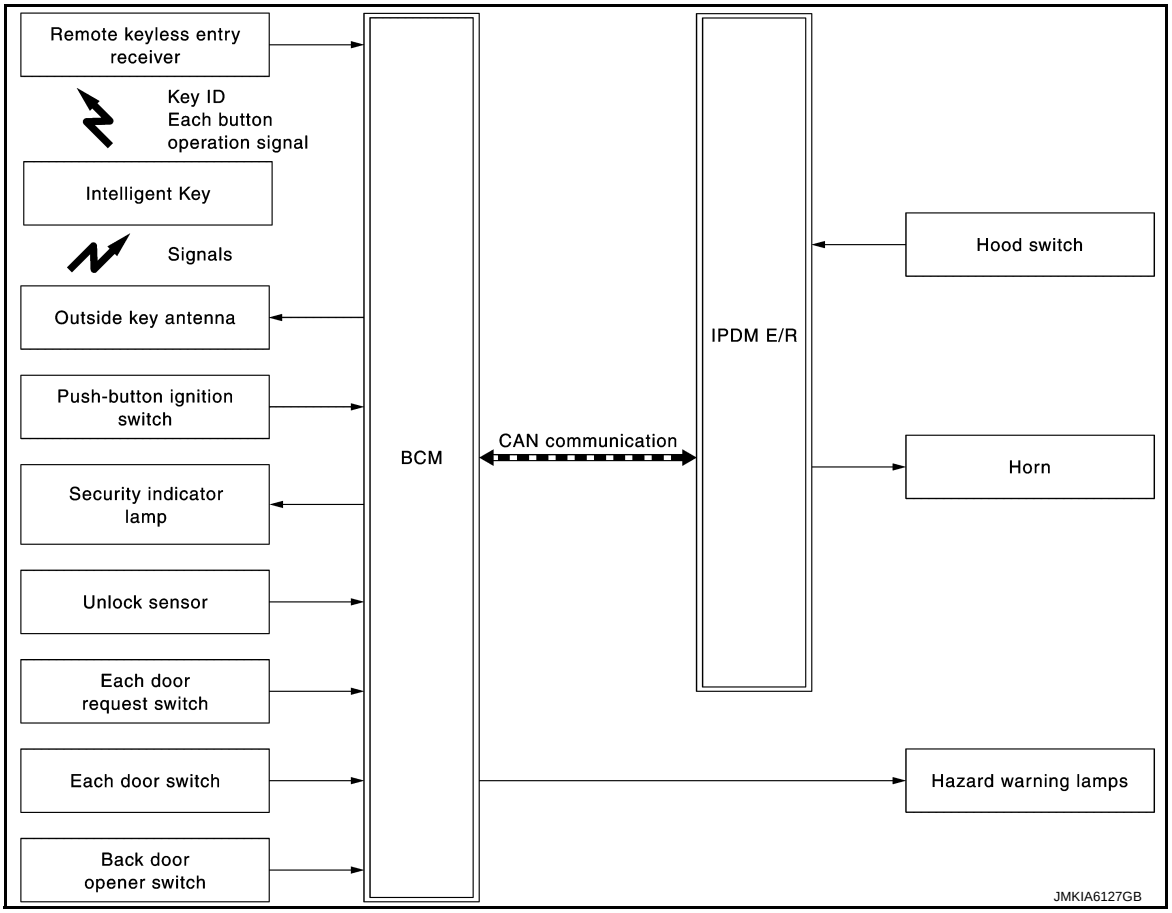
- Press and hold the push-button ignition switch for 2 seconds or more.

• Press the push-button ignition switch 3 times or more within 1.5 seconds.

VEHICLE SECURITY SYSTEM

VEHICLE SECURITY SYSTEM : System Diagram

INFOID:0000000006628450



VEHICLE SECURITY SYSTEM : System Description

INFOID:0000000006628451

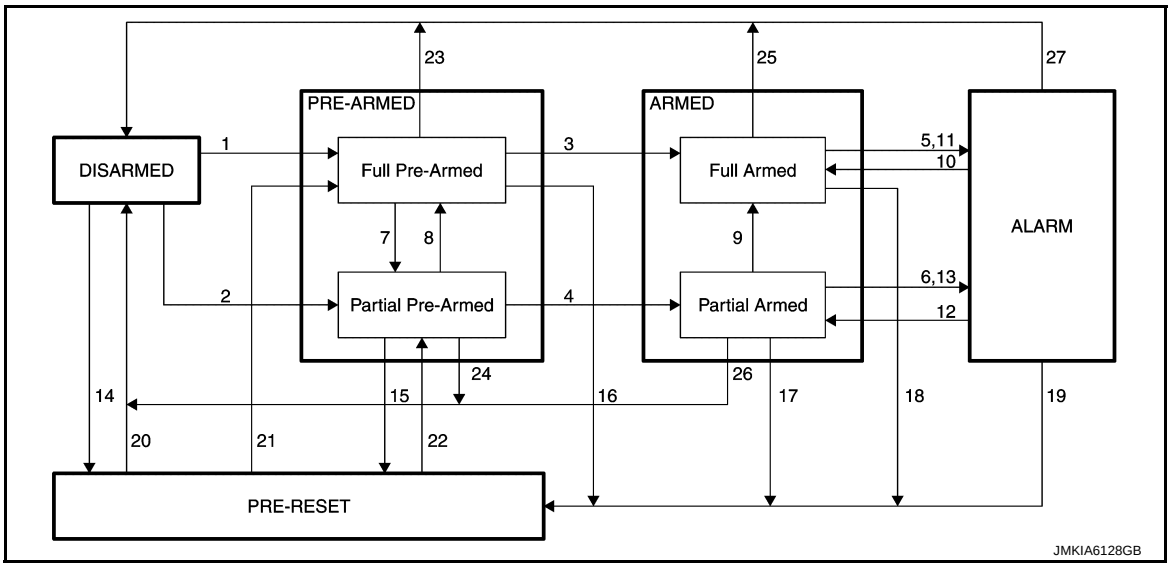
- The vehicle security system has two alarm functions (theft warning alarm and panic alarm), and reduces the possibility of a theft or mischief by activating horns and hazard warning lamps intermittently.
- The panic alarm does not start when the theft warning alarm is activating, and the panic alarm stops when the theft warning alarm is activated.
  The priority of the functions are as per the following.

Priority	Function
1	Theft warning alarm
2	Panic alarm

THEFT WARNING ALARM

- The theft warning alarm function activates horns and hazard warning lamps intermittently when BCM detects that any door or hood is opened by unauthorized means, while the system is in the ARMED state.
- Security indicator lamp on combination meter always blinks when power supply position is any position other than ON. Security indicator lamp blinking warns that the vehicle is equipped with a vehicle security system.

Operation Flow



No.	System state	Switching condition		
1	DISARMED to Full Pre-Armed	When all conditions of A and one condition of B are satisfied.	A	B
			• Power supply position: OFF/LOCK • All doors: Closed • Hood: Closed	All doors are locked by: • LOCK button of Intelligent Key • Door request switch • Auto door lock function • Driver side key cylinder operation
2	DISARMED to Partial Pre-Armed	When all conditions of A and one condition of B is satisfied.	A	B
			• Power supply position: OFF/LOCK • One or more doors: Open • Hood: Closed	All closed doors are locked by: • LOCK button of Intelligent Key • Door request switch • Auto door lock function • Driver side key cylinder operation
3	Full Pre-Armed to Full Armed	When all of the following conditions are satisfied for 20 seconds.	• Power supply position: Not changed • Door condition: Not changed • Hood: Closed	
4	Partial Pre-Armed to Partial Armed			
5	Full Armed to ALARM	When condition A or condition B is satisfied.	A	B
			Any door is opened under the following condition. • Intelligent Key function: Not used	Hood: Open
6	Partial Armed to ALARM	When condition A or condition B is satisfied.	A	B
			Any closed door is opened under the following condition. • Intelligent Key function: Not used	Hood: Open
7	Full Pre-Armed to Partial Pre-Armed	When the following condition is satisfied.	Any door: Open	
8	Partial Pre-Armed to Full Pre-Armed	When the following condition is satisfied.	All open doors: Closed	
9	Partial Armed to Full Armed	When 20 seconds are past after the following condition is satisfied.	All open doors: Closed	

<table>
<tr><th>No.</th><th>System state</th><th colspan="3">Switching condition</th></tr>
<tr><td rowspan="2">10</td><td rowspan="2">ALARM to Full Armed (REALARM function)</td><td rowspan="2">When all conditions of A are NOT satisfied and all conditions of B are satisfied, after the ALARM operation is finished.</td><td>A</td><td>B</td></tr>
<tr><td>• Power supply position: ACC/ON/ CRANKING/RUN
• UNLOCK button of Intelligent Key: ON
• Door request switch: ON
• Back door opener switch: ON</td><td>• All doors: Closed
• Hood: Closed</td></tr>
<tr><td>11</td><td>Full Armed to ALARM (REALARM function)</td><td>When one of the following conditions is satisfied within 5 seconds after entering into Full Armed phase from ALARM phase.</td><td colspan="2">• Any door: Open
• Hood: Open</td></tr>
<tr><td rowspan="2">12</td><td rowspan="2">ALARM to Partial Armed (REALARM function)</td><td rowspan="2">When all conditions of A are NOT satisfied and condition B is satisfied, after the ALARM operation is finished.</td><td>A</td><td>B</td></tr>
<tr><td>• Power supply position: ACC/ON/ CRANKING/RUN
• UNLOCK button of Intelligent Key: ON
• Door request switch: ON
• Back door opener switch: ON</td><td>Any door or hood: Open
(Except doors that are open when entering into Partial Armed phase from Partial Pre-Armed phase.)</td></tr>
<tr><td>13</td><td>Partial Armed to ALARM (REALARM function)</td><td>When one of the following conditions is satisfied within 5 seconds after entering into Partial Armed phase from ALARM phase.</td><td colspan="2">• Any door: Open
• Hood: Open</td></tr>
<tr><td rowspan="2">14</td><td rowspan="2">DISARMED to PRE-RESET</td><td rowspan="2">When all conditions of A and one condition of B are satisfied.</td><td>A</td><td>B</td></tr>
<tr><td>• Power supply position: OFF/LOCK
• All door: Closed
• Hood: Open</td><td>All doors are locked by:
• LOCK button of Intelligent Key
• Door request switch
• Auto door lock function
• Driver side key cylinder operation</td></tr>
<tr><td>15</td><td>Partial Pre-Armed to PRE-RESET</td><td rowspan="2">When the following condition is satisfied.</td><td colspan="2" rowspan="2">Hood: Open</td></tr>
<tr><td>16</td><td>Full Pre-Armed to PRE-RESET</td></tr>
<tr><td>17</td><td>Partial Armed to PRE-RESET</td><td rowspan="3">No conditions.</td><td colspan="2" rowspan="3"></td></tr>
<tr><td>18</td><td>Full Armed to PRE-RESET</td></tr>
<tr><td>19</td><td>ALARM to PRE-RESET</td></tr>
<tr><td>20</td><td>PRE-RESET to DISARMED</td><td>When one of the following conditions is satisfied.</td><td colspan="2">• Power supply position: ACC/ON/CRANKING/RUN
• UNLOCK button of Intelligent Key: ON
• Door request switch: ON</td></tr>
<tr><td>21</td><td>PRE-RESET to Full Pre-Armed</td><td>When all of the following conditions are satisfied.</td><td colspan="2">• Power supply position: OFF/LOCK
• All doors: Closed
• Hood: Closed</td></tr>
<tr><td>22</td><td>PRE-RESET to Partial Pre-Armed</td><td>When all of the following conditions are satisfied.</td><td colspan="2">• Power supply position: OFF/LOCK
• Any door: Open
• Hood: Closed</td></tr>
<tr><td>23</td><td>Full Pre-Armed to DISARMED</td><td rowspan="2">When one of the following conditions is satisfied.</td><td colspan="2" rowspan="2">• Power supply position: ACC/ON/CRANKING/RUN
• UNLOCK button of Intelligent Key: ON
• Door request switch: ON
• Back door opener switch: ON
• Key reminder function: ON</td></tr>
<tr><td>24</td><td>Partial Pre-Armed to DISARMED</td></tr>
</table>

No.	System state	Switching condition	
25	Full Armed to DISARMED	When one of the following conditions is satisfied.	• Power supply position: ACC/ON/CRANKING/RUN • UNLOCK button of Intelligent Key: ON • Door request switch: ON • Back door opener switch: ON
26	Partial Armed to DISARMED		
27	ALARM to DISARMED		

NOTE:

- To lock/unlock all doors by operating remote controller button of Intelligent Key or door request switch, Intelligent Key must be within the detection area of outside key antenna. For details, refer to DLK-28, "DOOR LOCK FUNCTION : System Description" (Models with super lock) or DLK-205, "DOOR LOCK FUNCTION : System Description" (Models without super lock).
- To open back door by operating back door opener switch, Intelligent Key must be within the detection area of outside key antenna. For details, refer to DLK-32, "BACK DOOR OPEN FUNCTION : System Description" (Models with super lock) or DLK-208, "BACK DOOR OPEN FUNCTION : System Description" (Models without super lock).

DISARMED Phase

The vehicle security system is not set in the DISARMED phase. Security indicator lamp blinks every 2.4 seconds. When the vehicle security system is reset, each phase switches to the DISARMED phase directly.

PRE-ARMED Phase

The PRE-ARMED phase is the transient state between the DISARMED phase and the ARMED phase. This phase is maintained for 20 seconds, so that the owner can reset the setting due to a mis-operation. This phase switches to the ARMED phase when vehicle conditions are not changed for 20 seconds.
There are two type of phase (Full Pre-Armed and Partial Pre-Armed).

- Full Pre-Armed phase
  Vehicle security system enters into this phase when all doors are closed. Security indicator lamp blinks at 8 Hz while being in this phase. If any door is opened during this phase, the system status changes to Partial Pre-Armed phase.
  To reset this phase, refer to the switching condition of No. 23 in the table above.
- Partial Pre-Armed phase
  Vehicle security system enters into this phase when one or more doors are open. Security indicator lamp blinks at 2.5 Hz while being in this phase. If all doors are closed during this phase, the system status changes to Full Pre-Armed phase.
  To reset this phase, refer to the switching condition of No. 24 in the table above.

ARMED Phase

The vehicle security system is set, and BCM monitors all necessary inputs. If any door or hood is opened by unauthorized means, vehicle security system switches to the ALARM phase. Security indicator lamp blinks every 2.4 seconds.
There are two type of phase (Full Armed and Partial Armed).

- Full Armed phase
  Vehicle security system enters into this phase from Full Pre-Armed phase.
  To reset this phase, refer to the switching condition of No. 25 in the table above.
- Partial Armed phase
  Vehicle security system enters into this phase from Partial Pre-Armed phase. If all doors are closed during this phase, the system status changes to Full Armed phase.
  To reset this phase, refer to the switching condition of No. 26 in the table above.

ALARM Phase

BCM transmits “Theft Warning Horn Request” signal intermittently to IPDM E/R via CAN communication and blinks hazard warning lamps. In this phase, horns and hazard warning lamps are activated intermittently for approximately 27.5 seconds to warn that the vehicle is accessed by unauthorized means.
Horns are sounding at 2.5 Hz, and hazard warning lamps blinks at 1.42 Hz.
To cancel the ALARM operation, refer to the switching condition of No. 27 in the table above.

NOTE:

If a battery terminal is disconnected during the ALARM phase, theft warning alarm stops. But when the battery terminal is reconnected, theft warning alarm is activated again.

REALARM Phase

When ALARM phase is maintained for 27.5 seconds without any cancel operation, the system status returns to the ARMED phase. At this time, if BCM still detects unauthorized access to the vehicle, the system is switched to the ALARM phase again. This REALARM operation is carried out a maximum of 8 times.

PRE-RESET Phase

The PRE-RESET phase is the transient state between each phase and DISARMED phase. If only the condition of hood is not satisfied, the system switches to the PRE-RESET phase. Then, when any condition is changed, the system switches to the DISARMED phase or PRE-ARMED phase.

PANIC ALARM

Panic alarm function is not applied to this model.

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

INFOID:0000000006683121

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 Diagnostic Result	Displays the diagnosis results judged by BCM.
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM. Refer to CONSULT-III operation manual.
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	• Read and save the vehicle specification. • 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.

×: Applicable item

System	Sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp timer	INT LAMP	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER	×	×	×
• Automatic A/C • Manual A/C	AIR CONDITONER		×	×*2
• Intelligent Key system • Engine start system	INTELLIGENT KEY	×	×	×
Combination switch	COMB SW		×	
Body control system	BCM	×		
NVIS - NATS	IMMU	×	×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door open	TRUNK		×	
Theft warning alarm	THEFT ALM	×	×	×
—	RETAINED PWR*1		×	
Signal buffer system	SIGNAL BUFFER		×	×

NOTE:

- *1: This item is displayed, but not used.
- *2: For models with automatic A/C, this diagnosis mode is not used.

FREEZE FRAME DATA (FFD)

The BCM records the following vehicle condition at the time a particular DTC is detected, and displays on CONSULT-III.

CONSULT screen item	Indication/Unit	Description	
Vehicle Speed	km/h	Vehicle speed of the moment a particular DTC is detected	
Odo/Trip Meter	km	Total mileage (Odometer value) of the moment a particular DTC is detected	
Vehicle Condition	SLEEP>LOCK	Power position status of the moment a particular DTC is detected	While turning BCM status from low power consumption mode to normal mode (Power supply position is “LOCK”)
	SLEEP>OFF		While turning BCM status from low power consumption mode to normal mode (Power supply position is “OFF”.)
	LOCK>ACC		While turning power supply position from “LOCK” to “ACC”
	ACC>ON		While turning power supply position from “ACC” to “IGN”
	RUN>ACC		While turning power supply position from “RUN” to “ACC” (Vehicle is stopping and selector lever is except P position.)
	CRANK>RUN		While turning power supply position from “CRANKING” to “RUN” (From cranking up the engine to run it)
	RUN>URGENT		While turning power supply position from “RUN“ to “ACC” (Emergency stop operation)
	ACC>OFF		While turning power supply position from “ACC” to “OFF”
	OFF>LOCK		While turning power supply position from “OFF” to “LOCK”
	OFF>ACC		While turning power supply position from “OFF” to “ACC”
	ON>CRANK		While turning power supply position from “IGN” to “CRANKING”
	OFF>SLEEP		While turning BCM status from normal mode (Power supply position is “OFF”.) to low power consumption mode
	LOCK>SLEEP		While turning BCM status from normal mode (Power supply position is “LOCK”.) to low power consumption mode
	LOCK		Power supply position is “LOCK” (Ignition switch OFF with steering is locked.)
	OFF		Power supply position is “OFF” (Ignition switch OFF with steering is unlocked.)
	ACC		Power supply position is “ACC” (Ignition switch ACC)
	ON		Power supply position is “IGN” (Ignition switch ON with engine stopped)
	ENGINE RUN		Power supply position is “RUN” (Ignition switch ON with engine running)
	CRANKING		Power supply position is “CRANKING” (At engine cranking)
IGN Counter	0 - 39	The number of times that ignition switch is turned ON after DTC is detected • The number is 0 when a malfunction is detected now. • The number increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. • The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.	

INTELLIGENT KEY

INTELLIGENT KEY : CONSULT-III Function (BCM - INTELLIGENT KEY) (With Super Lock)

INFOID:0000000006683123

WORK SUPPORT

Monitor item	Description
INSIDE ANT DIAGNOSIS	This function allows inside key antenna self-diagnosis
LOCK/UNLOCK BY I-KEY	Door lock/unlock function by door request switch mode can be changed to operation in this mode • On: Operate • Off: Non-operation
ENGINE START BY I-KEY	Engine start function mode can be changed to operation with this mode • On: Operate • Off: Non-operation
TRUNK/GLASS HATCH OPEN	**NOTE:** This item is displayed, but cannot be monitored
PANIC ALARM SET	**NOTE:** This item is displayed, but cannot be monitored
TRUNK OPEN DELAY	**NOTE:** This item is displayed, but cannot be monitored
LO- BATT OF KEY FOB WARN	Intelligent Key low battery warning mode can be changed to operation with this mode • On: Operate • Off: Non-operation
ANTI KEY LOCK IN FUNCTI	Key reminder function mode can be changed to operation with this mode • On: Operate • Off: Non-operation
HAZARD ANSWER BACK	Hazard reminder function mode by door request switch and Intelligent Key button can be selected from the following with this mode • Lock Only: Door lock operation only • Unlock Only: Door unlock operation only • Lock/Unlock: Lock and unlock operation • Off: Non-operation
ANS BACK I-KEY LOCK	Buzzer reminder function (lock operation) mode by door request switch can be selected from the following with this mode • Horn Chirp: Sound horn • Buzzer: Sound Intelligent Key warning buzzer • Off: Non-operation
ANS BACK I-KEY UNLOCK	Buzzer reminder function (unlock operation) mode by door request switch can be changed to operation with this mode • On: Operate • Off: Non-operation
SHORT CRANKING OUTPUT	Starter motor can operate during the times below • 70 msec • 100 msec • 200 msec
CONFIRM KEY FOB ID	It can be checked whether Intelligent Key ID code is registered or not in this mode
AUTO LOCK SET	Auto door lock operation time can be changed in this mode • MODE 1: OFF • MODE 2: 30 sec • MODE 3: 1 minute • MODE 4: 2 minutes • MODE 5: 3 minutes • MODE 6: 4 minutes • MODE 7: 5 minutes
ANSWER BACK FUNCTION	Buzzer reminder function mode by Intelligent Key button can be selected from the following with this mode • On: Operate • Off: Non-operation
TAKE OUT FROM WIN WARN SET	**NOTE:** This item is indicated, but not used
RETRACTABLE MIRROR SET	Auto retractable door mirror function mode can be changed to operation with this mode • On: Operate • Off: Non-operation

SELF-DIAG RESULT

Refer to BCS-67, "DTC Index".

DATA MONITOR

Monitor Item	Condition
REQ SW -DR	Indicates [On/Off] condition of door request switch (driver side)
REQ SW -AS	Indicates [On/Off] condition of door request switch (passenger side)
REQ SW -BD/TR	Indicates [On/Off] condition of back door request switch
PUSH SW	Indicates [On/Off] condition of push-button ignition switch
CLUTCH SW*1	Indicates [On/Off] condition of clutch interlock switch
BRAKE SW 1	Indicates [On/Off]*2 condition of stop lamp switch power supply
BRAKE SW 2	Indicates [On/Off] condition of stop lamp switch
DETE/CANCL SW	Indicates [On/Off] condition of P position
SFT PN/N SW	Indicates [On/Off] condition of P or N position
S/L -LOCK	Indicates [On/Off] condition of steering lock unit (LOCK)
S/L -UNLOCK	Indicates [On/Off] condition of steering lock unit (UNLOCK)
S/L RELAY -F/B	Indicates [On/Off] condition of steering lock relay
UNLK SEN -DR	Indicates [On/Off] condition of driver door UNLOCK status
PUSH SW -IPDM	Indicates [On/Off] condition of push-button ignition switch
IGN RLY1 -F/B	Indicates [On/Off] condition of ignition relay 1
DETE SW -IPDM	Indicates [On/Off] condition of P position
SFT PN -IPDM	Indicates [On/Off] condition of P or N position
SFT P -MET	Indicates [On/Off] condition of P position
SFT N -MET	Indicates [On/Off] condition of N position
ENGINE STATE	Indicates [Stop/Stall/Crank/Run] condition of engine states
S/L LOCK-IPDM	Indicates [On/Off] condition of steering lock unit (LOCK)
S/L UNLK-IPDM	Indicates [On/Off] condition of steering lock unit (UNLOCK)
S/L RELAY-REQ	Indicates [On/Off] condition of steering lock relay
VEH SPEED 1	Display the vehicle speed signal received from combination meter by numerical value [Km/h]
VEH SPEED 2	Display the vehicle speed signal received from ABS or VDC or TCM by numerical value [Km/h]
DOOR STAT-DR	Indicates [LOCK/READY/UNLK] condition of driver side door status
DOOR STAT-AS	Indicates [LOCK/READY/UNLK] condition of passenger side door status
ID OK FLAG	Indicates [Set/Reset] condition of key ID
PRMT ENG STRT	Indicates [Set/Reset] condition of engine start possibility
PRMT RKE STRT	**NOTE:** This item is displayed, but cannot be monitored
TRNK/HAT MNTR	**NOTE:** This item is displayed, but cannot be monitored
RKE-LOCK	Indicates [On/Off] condition of LOCK signal from Intelligent Key
RKE-UNLOCK	Indicates [On/Off] condition of UNLOCK signal from Intelligent Key
RKE-TR/BD	**NOTE:** This item is displayed, but cannot be monitored
RKE-PANIC	**NOTE:** This item is displayed, but cannot be monitored
RKE-MODE CHG	Indicates [On/Off] condition of MODE CHANGE signal from Intelligent Key

Monitor Item	Condition
RKE OPE COUN1	When remote keyless entry receiver receives the signal transmitted while operating on Intelligent Key, the numerical value start changing
RKE OPE COUN2	**NOTE:** This item is displayed, but cannot be monitored

*1: It is displayed but does not operate on CVT models.

*2: OFF is displayed when brake pedal is depressed while brake switch power supply is OFF.

ACTIVE TEST

Test item	Description
OUTSIDE BUZZER	This test is able to check Intelligent Key warning buzzer operation • On: Operate • Off: Non-operation
INSIDE BUZZER	This test is able to check warning chime in combination meter operation • Take Out: Take away warning chime sounds when CONSULT-III screen is touched • Key: Key warning chime sounds when CONSULT-III screen is touched • Knob: OFF position warning chime sounds when CONSULT-III screen is touched • Off: Non-operation
INDICATOR	This test is able to check warning lamp operation • KEY ON: “KEY” Warning lamp illuminates when CONSULT-III screen is touched • KEY IND: “KEY” Warning lamp blinks when CONSULT-III screen is touched • Off: Non-operation
INT LAMP	This test is able to check interior room lamp operation • On: Operate • Off: Non-operation
LCD	This test is able to check meter display information • BP N: Engine start operation indicator lamp indicate when CONSULT-III screen is touched • BP I: Engine start operation indicator lamp indicate when CONSULT-III screen is touched • ID NG: This item is displayed, but cannot be monitored • ROTAT: This item is displayed, but cannot be monitored • SFT P: Shift P warning lamp indicate when CONSULT-III screen is touched • INSRT: This item is displayed, but cannot be monitored • BATT: Key warning lamp indicator when CONSULT-III screen is touched • NO KY: Key warning lamp indicator when CONSULT-III screen is touched • OUTKEY: Engine start operation indicator lamp indicate when CONSULT-III screen is touched • LK WN: Engine start operation indicator lamp indicate when CONSULT-III screen is touched
FLASHER	This test is able to check security hazard lamp operation The hazard lamps are activated after “LH/RH/Off” on CONSULT-III screen is touched
P RANGE	This test is able to check CVT shift selector power supply • On: Operate • Off: Non-operation
ENGINE SW ILLUMI	This test is able to check push-ignition switch illumination operation Push-ignition switch illumination illuminates when “ON” on CONSULT-III screen is touched
PUSH SWITCH INDICATOR	This test is able to check LOCK indicator in push-ignition switch operation LOCK indicator in push-ignition switch illuminates when “ON” on CONSULT-III screen is touched
BATTERY SAVER	This test is able to check interior room lamp operation. The interior room lamp will be activated after “ON” on CONSULT-III screen is touched.
TRUNK/BACK DOOR	This test is able to check back door opener actuator open operation. This actuator opens when “Open” on CONSULT-III screen is touched.
RETRACTABLE MIRROR	This test is able to check auto retractable door mirror operation • On: Operate • Off: Non-operation

INTELLIGENT KEY : CONSULT-III Function (BCM - INTELLIGENT KEY) (Without Su-

per Lock)

INFOID:0000000006683124

WORK SUPPORT

Monitor item	Description
INSIDE ANT DIAGNOSIS	This function allows inside key antenna self-diagnosis
LOCK/UNLOCK BY I-KEY	Door lock/unlock function by door request switch mode can be changed to operation in this mode • On: Operate • Off: Non-operation
ENGINE START BY I-KEY	Engine start function mode can be changed to operation with this mode • On: Operate • Off: Non-operation
TRUNK/GLASS HATCH OPEN	**NOTE:** This item is displayed, but cannot be monitored
PANIC ALARM SET	**NOTE:** This item is displayed, but cannot be monitored
TRUNK OPEN DELAY	**NOTE:** This item is displayed, but cannot be monitored
LO- BATT OF KEY FOB WARN	Intelligent Key low battery warning mode can be changed to operation with this mode • On: Operate • Off: Non-operation
ANTI KEY LOCK IN FUNCTI	Key reminder function mode can be changed to operation with this mode • On: Operate • Off: Non-operation
HAZARD ANSWER BACK	Hazard reminder function mode by door request switch and Intelligent Key button can be selected from the following with this mode • Lock Only: Door lock operation only • Unlock Only: Door unlock operation only • Lock/Unlock: Lock and unlock operation • Off: Non-operation
ANS BACK I-KEY LOCK	Buzzer reminder function (lock operation) mode by door request switch can be selected from the following with this mode • Horn Chirp: Sound horn • Buzzer: Sound Intelligent Key warning buzzer • Off: Non-operation
ANS BACK I-KEY UNLOCK	Buzzer reminder function (unlock operation) mode by door request switch can be changed to operation with this mode • On: Operate • Off: Non-operation
SHORT CRANKING OUTPUT	Starter motor can operate during the times below • 70 msec • 100 msec • 200 msec
CONFIRM KEY FOB ID	It can be checked whether Intelligent Key ID code is registered or not in this mode
AUTO LOCK SET	Auto door lock operation time can be changed in this mode • MODE 1: OFF • MODE 2: 30 sec • MODE 3: 1 minute • MODE 4: 2 minutes • MODE 5: 3 minutes • MODE 6: 4 minutes • MODE 7: 5 minutes
ANSWER BACK FUNCTION	Buzzer reminder function mode by Intelligent Key button can be selected from the following with this mode • On: Operate • Off: Non-operation

Monitor item	Description
TAKE OUT FROM WIN WARN SET	**NOTE:** This item is indicated, but not used
RETRACTABLE MIRROR SET	Auto retractable door mirror function mode can be changed to operation with this mode • On: Operate • Off: Non-operation

SELF-DIAG RESULT

Refer to BCS-67, "DTC Index".

DATA MONITOR

Monitor Item	Condition
REQ SW -DR	Indicates [On/Off] condition of door request switch (driver side)
REQ SW -AS	Indicates [On/Off] condition of door request switch (passenger side)
REQ SW -BD/TR	Indicates [On/Off] condition of back door request switch
PUSH SW	Indicates [On/Off] condition of push-button ignition switch
CLUTCH SW*1	Indicates [On/Off] condition of clutch interlock switch
BRAKE SW 1	Indicates [On/Off]*2 condition of stop lamp switch power supply
BRAKE SW 2	Indicates [On/Off] condition of stop lamp switch
DETE/CANCL SW	Indicates [On/Off] condition of P position
SFT PN/N SW	Indicates [On/Off] condition of P or N position
S/L -LOCK	Indicates [On/Off] condition of steering lock unit (LOCK)
S/L -UNLOCK	Indicates [On/Off] condition of steering lock unit (UNLOCK)
S/L RELAY -F/B	Indicates [On/Off] condition of steering lock relay
UNLK SEN -DR	Indicates [On/Off] condition of driver door UNLOCK status
PUSH SW -IPDM	Indicates [On/Off] condition of push-button ignition switch
IGN RLY1 -F/B	Indicates [On/Off] condition of ignition relay 1
DETE SW -IPDM	Indicates [On/Off] condition of P position
SFT PN -IPDM	Indicates [On/Off] condition of P or N position
SFT P -MET	Indicates [On/Off] condition of P position
SFT N -MET	Indicates [On/Off] condition of N position
ENGINE STATE	Indicates [Stop/Stall/Crank/Run] condition of engine states
S/L LOCK-IPDM	Indicates [On/Off] condition of steering lock unit (LOCK)
S/L UNLK-IPDM	Indicates [On/Off] condition of steering lock unit (UNLOCK)
S/L RELAY-REQ	Indicates [On/Off] condition of steering lock relay
VEH SPEED 1	Display the vehicle speed signal received from combination meter by numerical value [Km/h]
VEH SPEED 2	Display the vehicle speed signal received from ABS or VDC or TCM by numerical value [Km/h]
DOOR STAT-DR	Indicates [LOCK/READY/UNLK] condition of driver side door status
DOOR STAT-AS	Indicates [LOCK/READY/UNLK] condition of passenger side door status
ID OK FLAG	Indicates [Set/Reset] condition of key ID
PRMT ENG STRT	Indicates [Set/Reset] condition of engine start possibility
PRMT RKE STRT	**NOTE:** This item is displayed, but cannot be monitored
TRNK/HAT MNTR	**NOTE:** This item is displayed, but cannot be monitored
RKE-LOCK	Indicates [On/Off] condition of LOCK signal from Intelligent Key
RKE-UNLOCK	Indicates [On/Off] condition of UNLOCK signal from Intelligent Key

Monitor Item	Condition
RKE-TR/BD	**NOTE:** This item is displayed, but cannot be monitored
RKE-PANIC	**NOTE:** This item is displayed, but cannot be monitored
RKE-MODE CHG	Indicates [On/Off] condition of MODE CHANGE signal from Intelligent Key
RKE OPE COUN1	When remote keyless entry receiver receives the signal transmitted while operating on Intelligent Key, the numerical value start changing
RKE OPE COUN2	**NOTE:** This item is displayed, but cannot be monitored

*1: It is displayed but does not operate on CVT models.

*2: OFF is displayed when brake pedal is depressed while brake switch power supply is OFF.

ACTIVE TEST

Test item	Description
OUTSIDE BUZZER	This test is able to check Intelligent Key warning buzzer operation • On: Operate • Off: Non-operation
INSIDE BUZZER	This test is able to check warning chime in combination meter operation • Take Out: Take away warning chime sounds when CONSULT-III screen is touched • Key: Key warning chime sounds when CONSULT-III screen is touched • Knob: OFF position warning chime sounds when CONSULT-III screen is touched • Off: Non-operation
INDICATOR	This test is able to check warning lamp operation • KEY ON: “KEY” Warning lamp illuminates when CONSULT-III screen is touched • KEY IND: “KEY” Warning lamp blinks when CONSULT-III screen is touched • Off: Non-operation
INT LAMP	This test is able to check interior room lamp operation • On: Operate • Off: Non-operation
LCD	This test is able to check meter display information • BP N: Engine start operation indicator lamp indicate when CONSULT-III screen is touched • BP I: Engine start operation indicator lamp indicate when CONSULT-III screen is touched • ID NG: This item is displayed, but cannot be monitored • ROTAT: This item is displayed, but cannot be monitored • SFT P: Shift P warning lamp indicate when CONSULT-III screen is touched • INSRT: This item is displayed, but cannot be monitored • BATT: Key warning lamp indicator when CONSULT-III screen is touched • NO KY: Key warning lamp indicator when CONSULT-III screen is touched • OUTKEY: Engine start operation indicator lamp indicate when CONSULT-III screen is touched • LK WN: Engine start operation indicator lamp indicate when CONSULT-III screen is touched
FLASHER	This test is able to check security hazard lamp operation The hazard lamps are activated after “LH/RH/Off” on CONSULT-III screen is touched
P RANGE	This test is able to check CVT shift selector power supply • On: Operate • Off: Non-operation
ENGINE SW ILLUMI	This test is able to check push-ignition switch illumination operation Push-ignition switch illumination illuminates when “ON” on CONSULT-III screen is touched
PUSH SWITCH INDICATOR	This test is able to check LOCK indicator in push-ignition switch operation LOCK indicator in push-ignition switch illuminates when “ON” on CONSULT-III screen is touched
BATTERY SAVER	This test is able to check interior room lamp operation. The interior room lamp will be activated after “ON” on CONSULT-III screen is touched.

Test item	Description
TRUNK/BACK DOOR	This test is able to check back door opener actuator open operation. This actuator opens when “Open” on CONSULT-III screen is touched.
RETRACTABLE MIRROR	This test is able to check auto retractable door mirror operation • On: Operate • Off: Non-operation

THEFT ALM

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

INFOID:0000000006628455

WORK SUPPORT

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

DATA MONITOR

Monitored Item	Description
REQ SW -DR	Indicates [ON/OFF] condition of door request switch (driver side).
REQ SW -AS	Indicates [ON/OFF] condition of door request switch (passenger side).
REQ SW -RR	**NOTE:** This is displayed even when it is not equipped.
REQ SW -RL	**NOTE:** This is displayed even when it is not equipped.
REQ SW -BD/TR	Indicates [ON/OFF] condition of back door request switch.
PUSH SW	Indicates [ON/OFF] condition of push-button ignition switch
UNLK SEN -DR	Indicates [ON/OFF] condition of driver door UNLOCK status.
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.
DOOR SW-BK	Indicates [ON/OFF] condition of back door switch.
CDL LOCK SW	Indicates [ON/OFF] condition of lock signal from door lock/unlock switch LH and RH.
CDL UNLOCK SW	Indicates [ON/OFF] condition of unlock signal from door lock/unlock switch LH and RH.
KEY CYL LK-SW	**NOTE:** This is displayed even when it is not equipped.
KEY CYL UN-SW	**NOTE:** This is displayed even when it is not equipped.
TR/BD OPEN SW	Indicates [ON/OFF] condition of back door opener switch.
TRNK/HAT MNTR	**NOTE:** This is displayed even when it is not equipped.
RKE-LOCK	Indicates [ON/OFF] condition of LOCK signal from Intelligent Key.
RKE-UNLOCK	Indicates [ON/OFF] condition of UNLOCK signal from Intelligent Key.
RKE-TR/BD	**NOTE:** This is displayed even when it is not equipped.

ACTIVE TEST

Test Item	Description
THEFT IND	This test is able to check security indicator lamp operation. Security indicator lamp is turned on when “ON” on CONSULT-III screen is touched.
VEHICLE SECURITY HORN	This test is able to check horns operation. Horns are activated for 0.5 seconds after “ON” on CONSULT-III screen is touched.
HEADLAMP(HI)	This test is able to check headlamp operation. Headlamps are activated for 0.5 seconds after “ON” on CONSULT-III screen is touched.
FLASHER	This test is able to check hazard warning lamp operation. Hazard warning lamps are activated after “ON” on CONSULT-III screen is touched.

IMMU

IMMU : CONSULT-III Function (BCM - IMMU)

INFOID:0000000006628456

WORK SUPPORT

Service item	Description
CONFIRM DONGLE ID	It is possible to check that dongle unit is applied to the vehicle.

DATA MONITOR

Monitor item	Content
CONFRM ID ALL	Indicates [YET] at all time. Switches to [DONE] when a registered Intelligent Key backside is contacted to push-button ignition switch.
CONFIRM ID4	
CONFIRM ID3	
CONFIRM ID2	
CONFIRM ID1	
NOT REGISTERED	Indicates [ID OK] when key ID that is registered is received or is not yet received. Indicates [ID NG] when key ID that is not registered is received.
TP 4	Indicates the number of IDs that are registered.
TP 3	
TP 2	
TP 1	
PUSH SW	Indicates [ON/OFF] condition of push-button ignition switch.

ACTIVE TEST

Test item	Description
THEFT IND	This test is able to check security indicator lamp operation. Security indicator lamp is turned on when “ON” on CONSULT-III screen touched.

DIAGNOSIS SYSTEM (IPDM E/R)

CONSULT-III Function (IPDM E/R)

INFOID:0000000006683122

APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with IPDM E/R.

Diagnosis mode	Description
Ecu Identification	Allows confirmation of IPDM E/R part number.
Self Diagnostic Result	Displays the diagnosis results judged by IPDM E/R.
Data Monitor	Displays the real-time input/output data from IPDM E/R input/output data.
Active Test	IPDM E/R can provide a drive signal to electronic components to check their operations.
CAN Diag Support Monitor	The results of transmit/receive diagnosis of CAN communication can be read.

SELF DIAGNOSTIC RESULT

Refer to PCS-25, "DTC Index".

DATA MONITOR

Monitor item

Monitor Item [Unit]	MAIN SIGNALS	Description
RAD FAN REQ [%]	×	Displays the value of the cooling fan speed request signal received from ECM via CAN communication. **NOTE:** This item is displayed only for vehicle with MR16DDT engine.
MOTOR FAN REQ [1/2/3/4]	×	Displays the value of the cooling fan speed request signal received from ECM via CAN communication. **NOTE:** This item is displayed only for vehicle without MR16DDT engine.
AC COMP REQ [Off/On]	×	Displays the status of the A/C compressor request signal received from ECM via CAN communication.
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication.
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper auto stop signal judged by IPDM E/R.
WIP PROT [Off/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
IGN RLY1 -REQ [Off/On]		Displays the status of the ignition switch ON signal received from BCM via CAN communication.
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.
PUSH SW [Off/On]		Displays the status of the push-button ignition switch judged by IPDM E/R.
INTER/NP SW [Off/On]		Displays the status of the ignition power supply (M/T models) or shift position (CVT models) judged by IPDM E/R.

Monitor Item [Unit]	MAIN SIGNALS	Description
ST RLY CONT [Off/On]		Displays the status of the starter relay status signal received from BCM via CAN communication.
IHBT RLY -REQ [Off/On]		Displays the status of the starter control relay signal received from BCM via CAN communication.
ST/INHI RLY [Off/ ST ON/INHI ON/UNKWN]		Displays the status of the starter relay and starter control relay judged by IPDM E/R.
DETENT SW [Off/On]		Displays the status of the CVT shift selector (detention switch) judged by IPDM E/R.
S/L RLY -REQ [Off/On]		Displays the status of the steering lock relay signal received from BCM via CAN communication.
S/L STATE [LOCK/UNLK/UNKWN]		Displays the status of the steering lock judged by IPDM E/R.
DTRL REQ [Off/On]		Displays the status of the daytime running light request signal received from BCM via CAN communication.
OIL P SW [Open/Close]		Displays the status of the oil pressure switch judged by IPDM E/R. **NOTE:** This item is monitored only K9K engine models.
HOOD SW [Off/On]		Displays the status of the hood switch judged by IPDM E/R.
HL WASHER REQ [Off/On]		Displays the status of the headlamp washer request signal received from BCM via CAN communication.
THFT HRN REQ [Off/On]		Displays the status of the theft warning horn request signal received from BCM via CAN communication.
HORN CHIRP [Off/On]		**NOTE:** The item is indicated, but not monitored.

ACTIVE TEST

Test item

Test item		Operation	Description
HORN		On	Operates horn relay for 20 ms.
REAR DEFOGGER		Off	OFF
		On	Operates the rear window defogger relay.
FRONT WIPER		Off	OFF
		Lo	Operates the front wiper relay.
		Hi	Operates the front wiper relay and front wiper high relay.
MOTOR FAN	For MR16DDT engine	1	OFF
		2	Transmits 50% pulse duty signal (PWM signal) to the cooling fan control module.
		3	Transmits 75% pulse duty signal (PWM signal) to the cooling fan control module.
		4	Transmits 100% pulse duty signal (PWM signal) to the cooling fan control module.
	Except for MR16DDT engine	1	OFF
		2	Operates the cooling fan relay (LO operation).
		3	Operates the cooling fan relay (HI operation).
		4	
HEAD LAMP WASHER		On	Operates the headlamp washer relay for 1 second.

Test item	Operation	Description
EXTERNAL LAMPS	Off	OFF
	TAIL	Operates the tail lamp relay.
	Lo	Operates the headlamp low relay.
	Hi	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.
	Fog	Operates the front fog lamp relay.

ECU DIAGNOSIS INFORMATION

ECM, IPDM E/R, BCM

List of ECU Reference

INFOID:0000000006628459

ECU		Reference
ECM	Reference Value	EC-90, "Reference Value" (MR16DDT) EC-508, "Reference Value" (HR16DE) EC-846, "Reference Value" (K9K)
	Fail-safe	EC-104, "Fail Safe" (MR16DDT) EC-519, "Fail Safe" (HR16DE)
	DTC Inspection Priority Chart	EC-106, "DTC Inspection Priority Chart" (MR16DDT) EC-521, "DTC Inspection Priority Chart" (HR16DE)
	DTC Index	EC-108, "DTC Index" (MR16DDT) EC-522, "DTC Index" (HR16DE) EC-855, "DTC Index" (K9K)
IPDM E/R	Reference Value	PCS-17, "Reference Value"
	Fail-safe	PCS-24, "Fail-Safe"
	DTC Index	PCS-25, "DTC Index"
BCM	Reference Value	BCS-41, "Reference Value"
	Fail-safe	BCS-64, "Fail-safe"
	DTC Inspection Priority Chart	BCS-66, "DTC Inspection Priority Chart"
	DTC Index	BCS-67, "DTC Index"

WIRING DIAGRAM

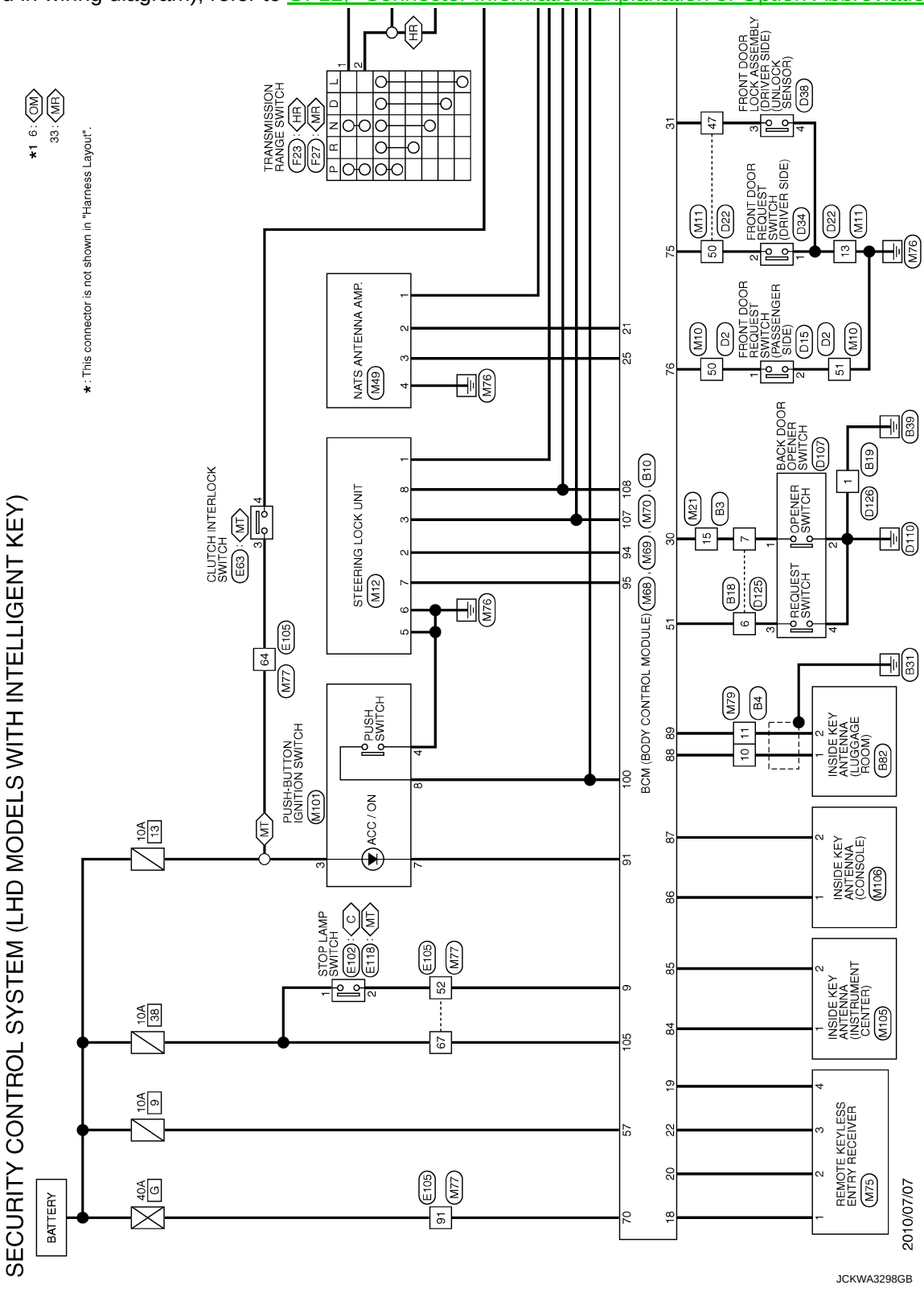
SECURITY CONTROL SYSTEM

LHD

LHD : Wiring Diagram

INFOID:0000000006628461

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information/Explanation of Option Abbreviation".



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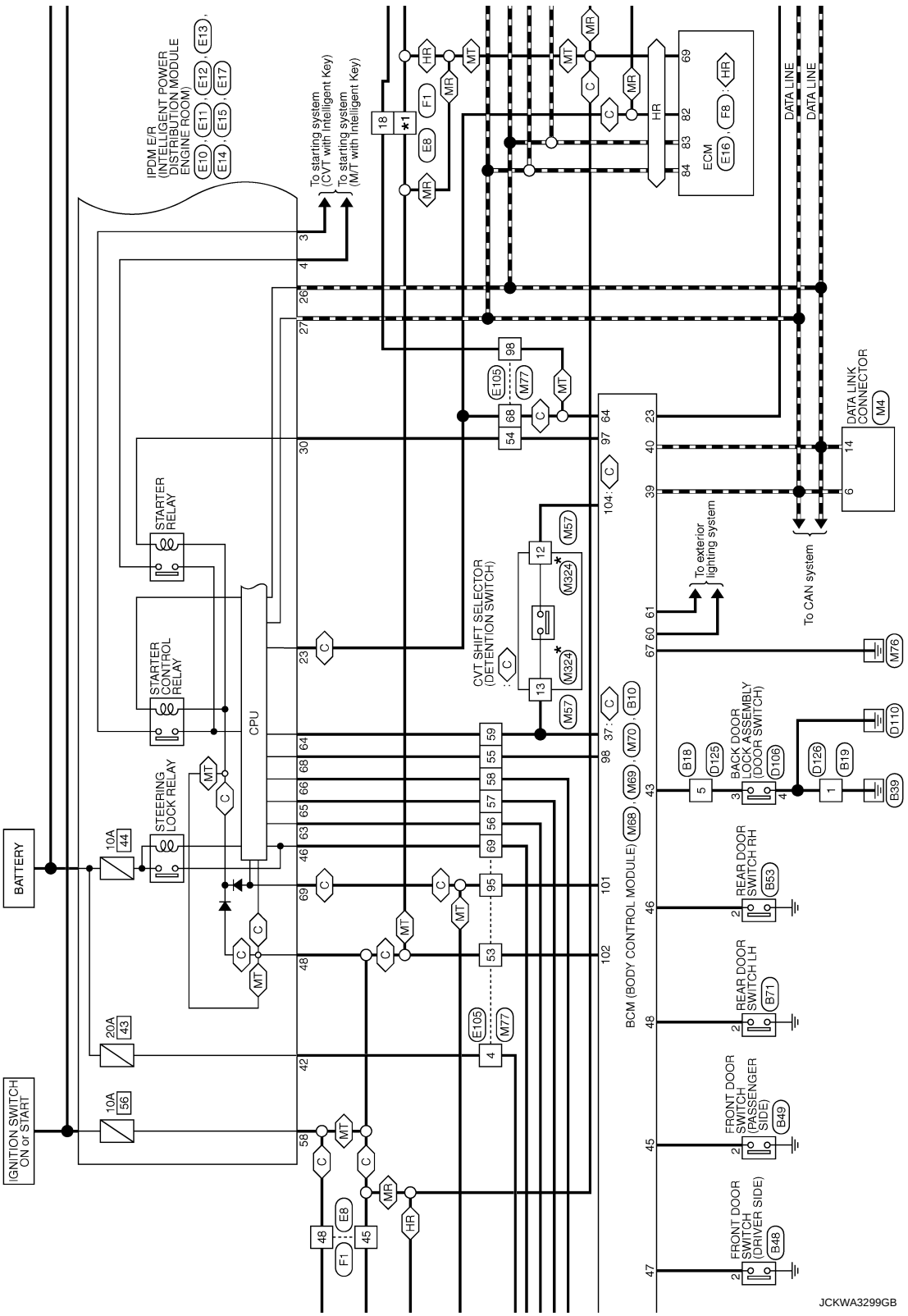
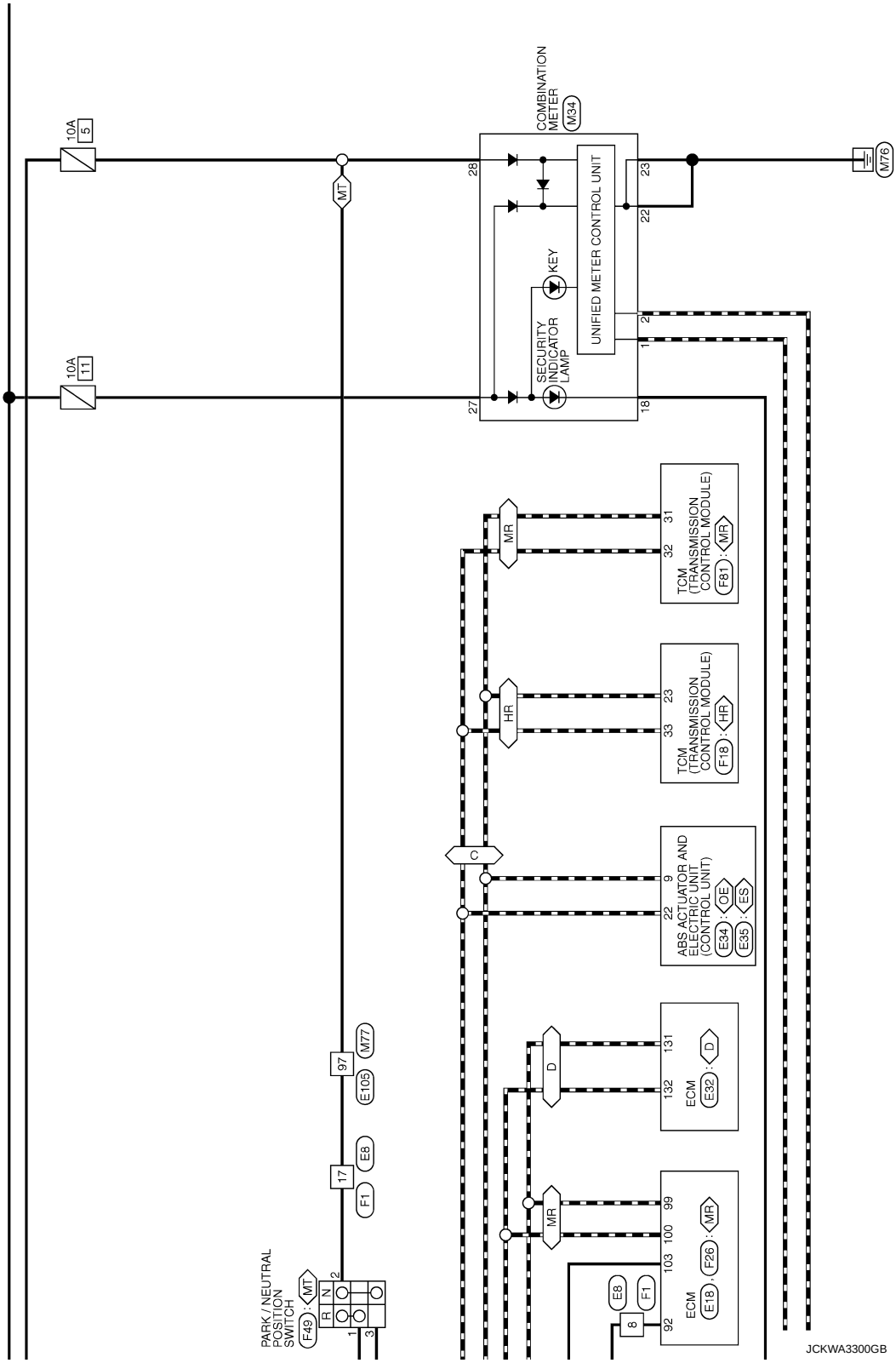
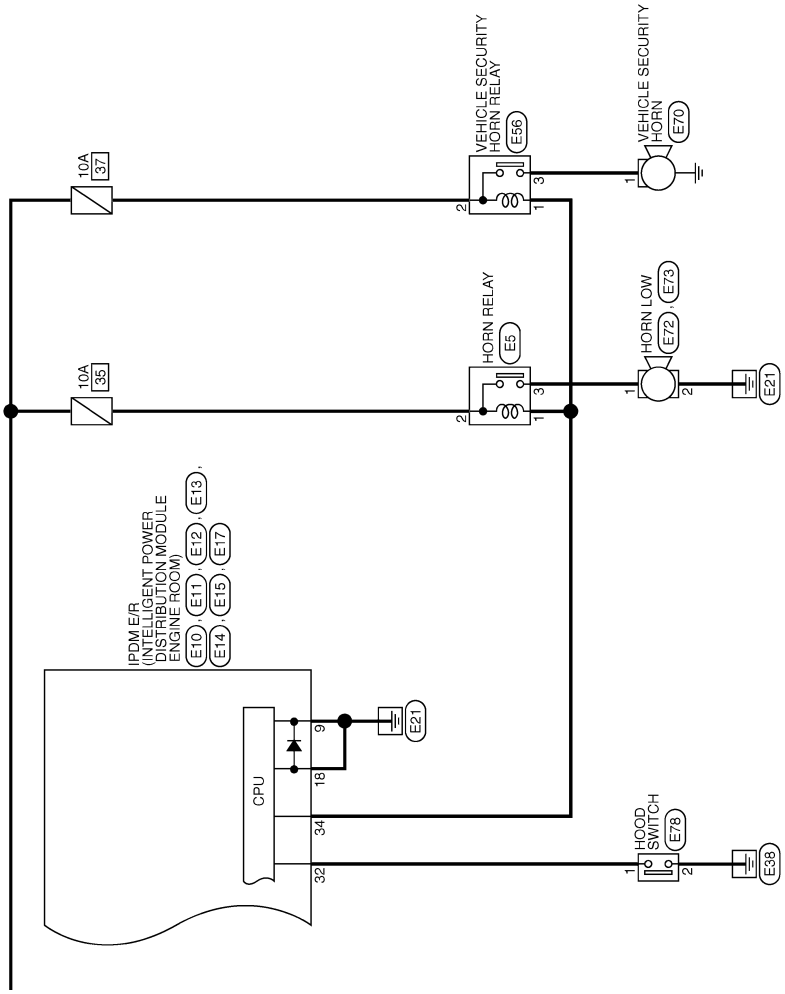

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10, E11, E12, E13, E14, E15, E17
To starting system (CVT with Intelligent Key)
To starting system (M/T with Intelligent Key)
ECM
E16
F8
DATA LINE
DATA LINK CONNECTOR
M4
STARTER RELAY
STARTER CONTROL RELAY
STEERING LOCK RELAY
CPU
CVT SHIFT SELECTOR (DETENTION SWITCH)
To exterior lighting system
To CAN system
BATTERY
IGNITION SWITCH ON or START
10A 44
20A 43
10A 56
BCM (BODY CONTROL MODULE) M68, M69, M70, B10
BACK DOOR LOCK ASSEMBLY (DOOR SWITCH)
REAR DOOR SWITCH RH B53
REAR DOOR SWITCH LH B71
FRONT DOOR SWITCH (PASSENGER SIDE) B49
FRONT DOOR SWITCH (DRIVER SIDE) B48
JCKWA3299GB


10A 5
10A 11
MT
COMBINATION METER M34
28
27
23
22
2
1
18
UNIFIED METER CONTROL UNIT
KEY
SECURITY INDICATOR LAMP
M76
MR
31
32
TCM (TRANSMISSION CONTROL MODULE)
F81 : MR
HR
23
33
TCM (TRANSMISSION CONTROL MODULE)
F18 : HR
C
9
22
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
E34 : OE
E35 : ES
D
131
132
ECM
E32 : D
MR
99
100
103
92
ECM
E18
F26 : MR
E8
F1
8
97
M77
E105
17
E8
F1
PARK / NEUTRAL POSITION SWITCH
F43 : MT
R
N
2
1
3
JCKWA3300GB

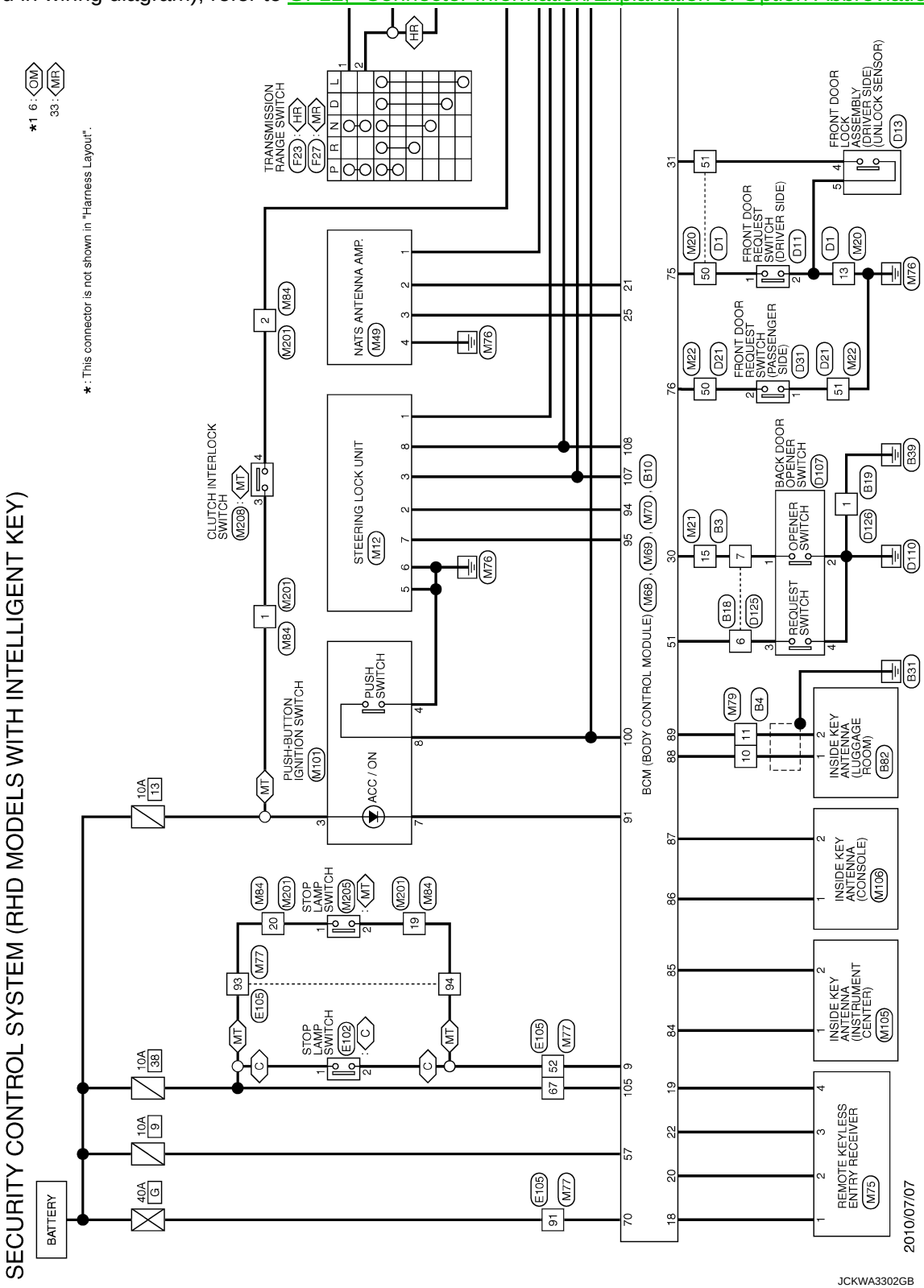

10A
37
10A
35
VEHICLE SECURITY
HORN RELAY
E56
HORN RELAY
E5
VEHICLE SECURITY
HORN
E70
HORN LOW
E73
E72
E21
IPDM E/R
(INTELLIGENT POWER
DISTRIBUTION MODULE
ENGINE ROOM)
E10
E11
E12
E13
E14
E15
E17
CPU
9
18
34
32
HOOD
SWITCH
E78
E38
JCKWA3301GB

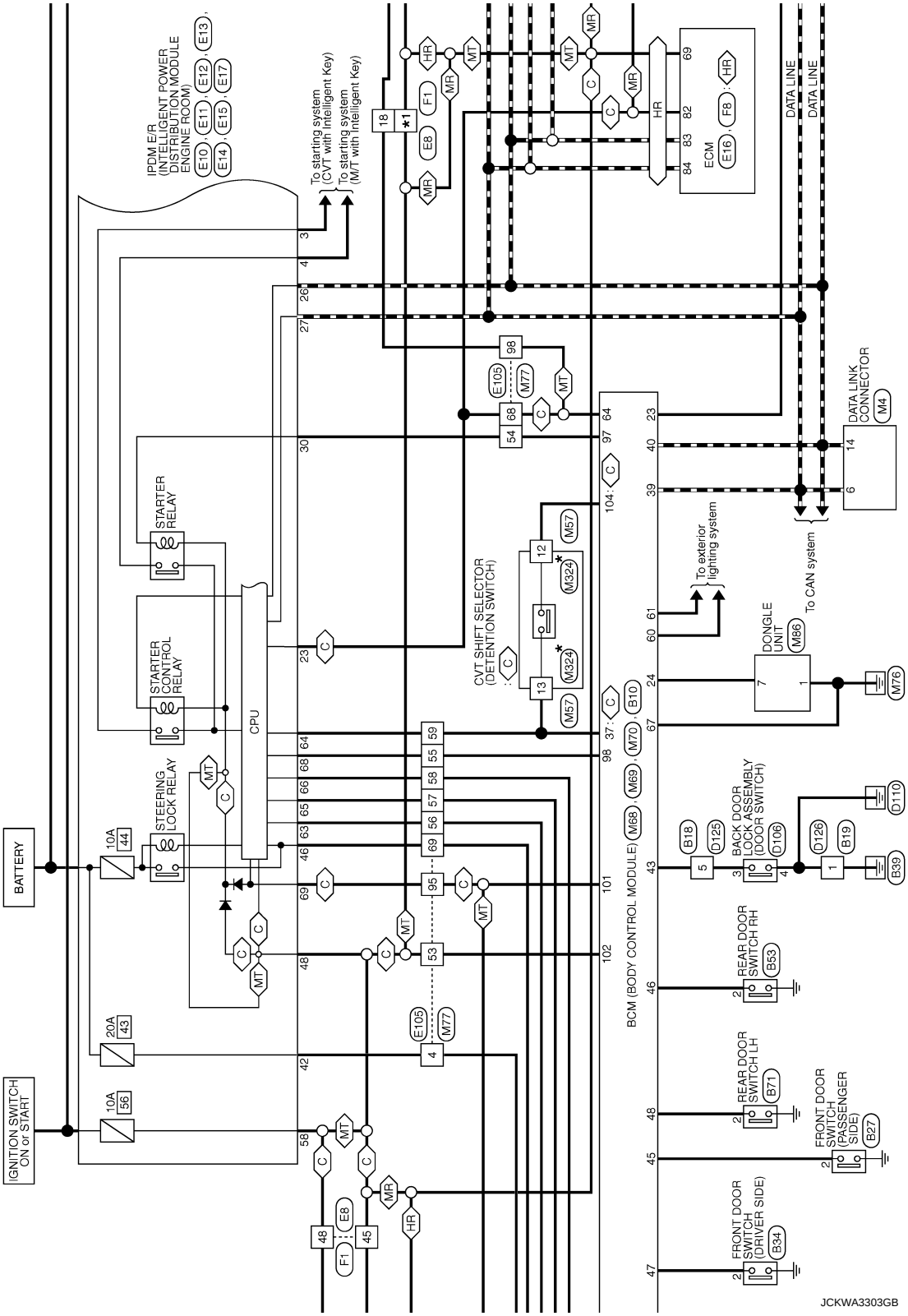
RHD

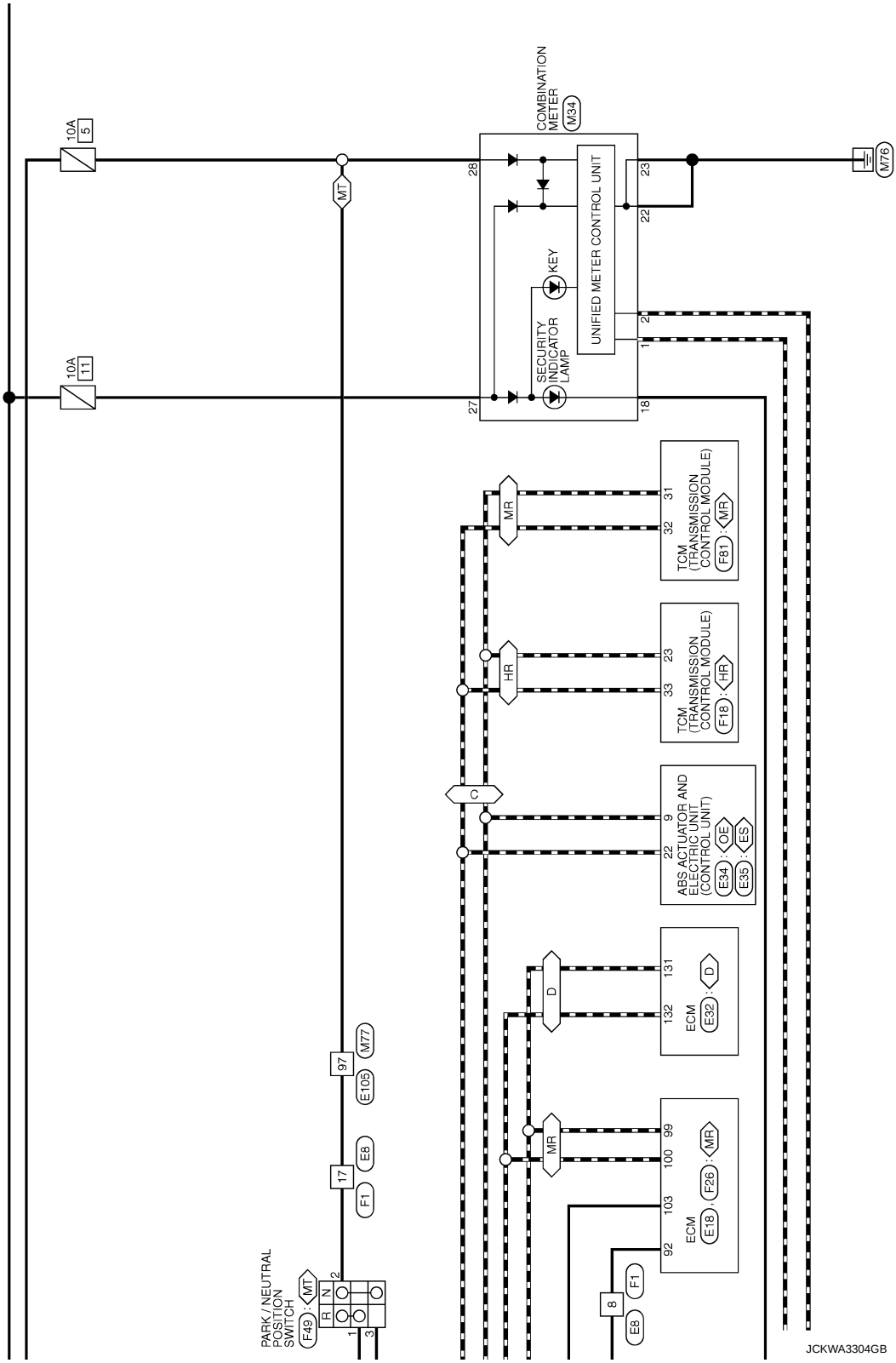
RHD : Wiring Diagram

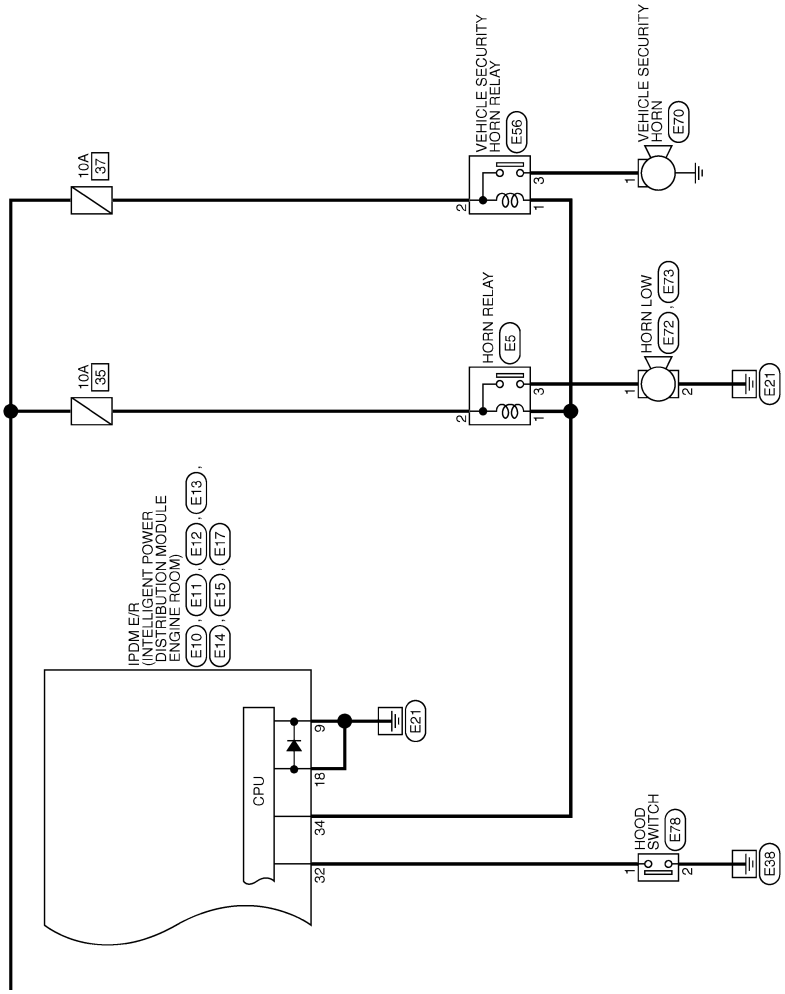
INFOID:0000000006707012

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information/Explanation of Option Abbreviation".




IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10, E11, E12, E13, E14, E15, E17
To starting system (CVT with Intelligent Key)
To starting system (M/T with Intelligent Key)
ECM
E16, F8
DATA LINE
DATA LINK CONNECTOR
M4
STARTER RELAY
STARTER CONTROL RELAY
CPU
STEERING LOCK RELAY
CVT SHIFT SELECTOR (DETENTION SWITCH)
DONGLE UNIT
M86
To exterior lighting system
To CAN system
BATTERY
IGNITION SWITCH ON or START
10A 44
20A 43
10A 56
BCM (BODY CONTROL MODULE) M68, M69, M70, B10
BACK DOOR LOCK ASSEMBLY (DOOR SWITCH)
B18, D125, D106
D126, B19
D110
B39
REAR DOOR SWITCH RH
B53
REAR DOOR SWITCH LH
B71
FRONT DOOR SWITCH (PASSENGER SIDE)
B27
FRONT DOOR SWITCH (DRIVER SIDE)
B34
M76
JCKWA3303GB


10A 5
10A 11
MT
COMBINATION METER M34
UNIFIED METER CONTROL UNIT
KEY
SECURITY INDICATOR LAMP
28
27
23
22
2
1
18
M76
MR
HR
C
D
TCM (TRANSMISSION CONTROL MODULE) F81 : MR
TCM (TRANSMISSION CONTROL MODULE) F18 : HR
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) E34 : OE E35 : ES
ECM E32 : D
ECM E18 F26 : MR
31
32
23
33
9
22
131
132
99
100
103
92
97 M77
E105
17
E8
F1
8
E8
F1
PARK / NEUTRAL POSITION SWITCH F43 : MT
R
N
2
1
3
JCKWA3304GB


10A 37
10A 35
VEHICLE SECURITY HORN RELAY E56
HORN RELAY E5
VEHICLE SECURITY HORN E70
HORN LOW E73, E72
E21
HOOD SWITCH E78
E38
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E10, E11, E12, E13, E14, E15, E17
CPU
9
18
34
32
JCKWA3305GB

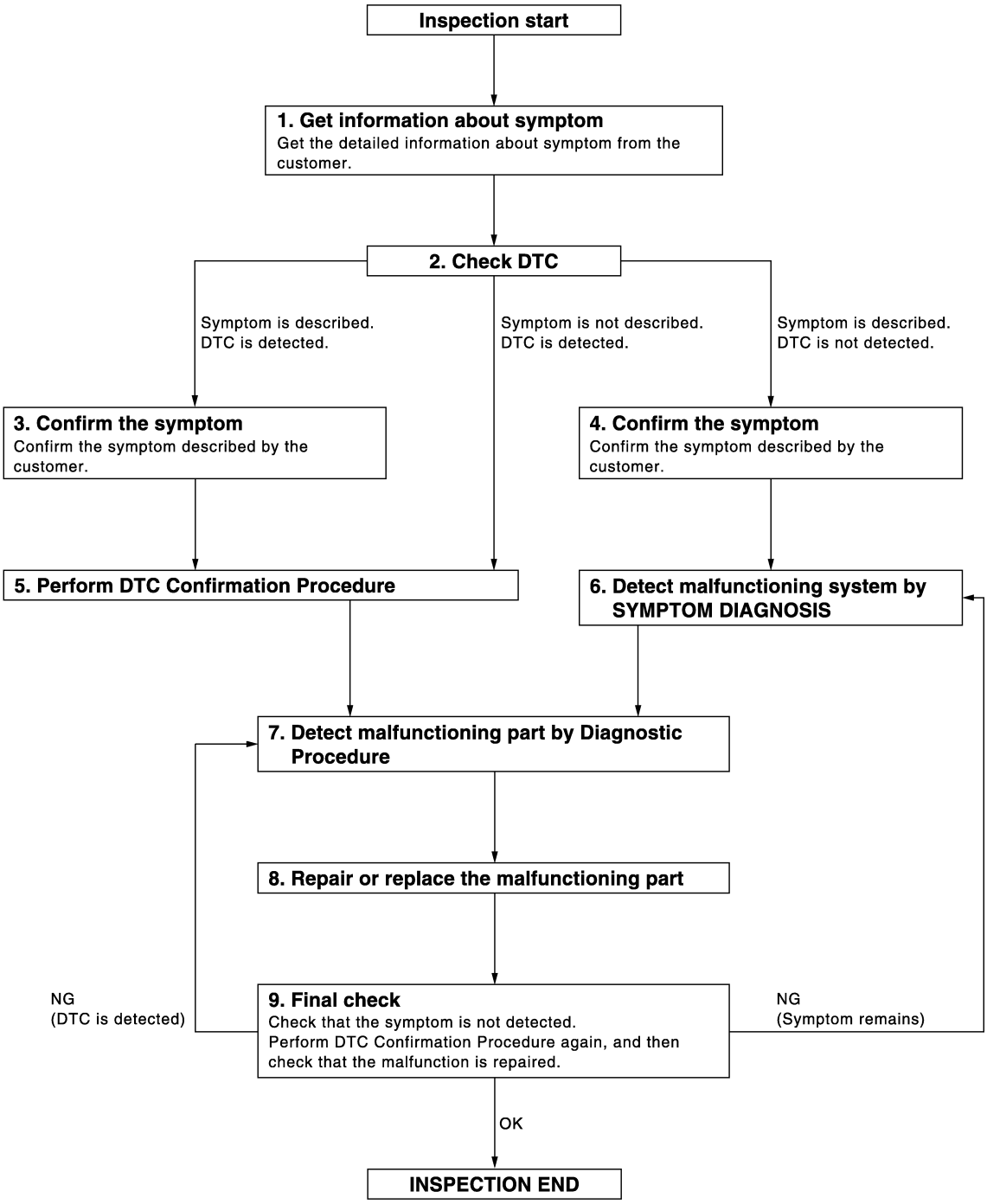
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000006628462

OVERALL SEQUENCE



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DETAILED FLOW

1.GET INFORMATION ABOUT SYMPTOM

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

>> GO TO 2.

2.CHECK DTC

1. Check DTC of “ENGINE”, “BCM” and “IPDM E/R” using CONSULT-III.
2. Perform the following procedure if DTC is detected.

- Record DTC and freeze frame data (Print them out using CONSULT-III.)
- 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.

Are any symptoms described and any DTC detected?

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

3.CONFIRM THE SYMPTOM

Confirm the symptom described by the customer.
Connect CONSULT-III to the vehicle, and check self diagnostic results in real time.
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, and check self diagnostic results in real time.
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 detected DTC, and then check that DTC is detected again.
At this time, always connect CONSULT-III to the vehicle, and check self diagnostic results in real time.
If two or more DTCs are detected, refer to BCS-66, "DTC Inspection Priority Chart" (BCM) or PCS-25, "DTC Index" (IPDM E/R), and determine trouble diagnosis order.

Is DTC detected?

YES >> GO TO 7.
NO >> Refer to GI-42, "Intermittent Incident".

6.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM DIAGNOSIS

Detect malfunctioning system according to SYMPTOM DIAGNOSIS based on the confirmed symptom in step 4, and determine the trouble diagnosis order based on possible causes and symptom.

>> GO TO 7.

7.DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.
NOTE:
The Diagnostic Procedure is described based on open and short circuit inspection.

Is malfunctioning part detected?

YES >> GO TO 8.
NO >> Check voltage of related BCM terminals or IPDM E/R terminals using CONSULT-III.

8.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 detected, erase it.

>> GO TO 9.

9.FINAL CHECK

When DTC is detected in step 2, perform DTC CONFIRMATION PROCEDURE again, and then check that the malfunction is repaired securely.
When symptom is described by 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 7.
YES (Symptom remains)>>GO TO 6.
NO >> INSPECTION END

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ECM

ECM : Description

INFOID:0000000006628463

Performing the following procedure can automatically activate recommunication of ECM and BCM, but only when the ECM is replaced with a new one*.
*: New one means a virgin ECM that 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 NATS-IVIS/NVIS.**
- **If multiple keys are attached to the key holder, separate them before beginning work.**
- **Distinguish keys with unregistered key IDs from those with registered IDs.**

ECM : Work Procedure

INFOID:0000000006628464

1.PERFORM ECM RECOMMUNICATING FUNCTION

1. Install ECM.
2. Contact backside of registered Intelligent key* to push-button ignition switch, then turn power supply position to ON.
   *: To perform this step, use the key that is used before performing ECM replacement.
3. Maintain power supply position in the ON position for at least 5 seconds.
4. Turn power supply position to OFF.
5. Check that the engine starts.

>> GO TO 2.

2.PERFORM ADDITIONAL SERVICE WHEN REPLACING ECM

Perform the following procedure.
- MR16DDT: EC-133, "Work Procedure"
- HR16DE: EC-541, "Work Procedure"
- K9K: EC-879, "Work Procedure"

>> END

BCM

BCM : Description

INFOID:0000000006685496

BEFORE REPLACEMENT
When replacing BCM, save or print current vehicle specification with CONSULT-III configuration before replacement.
NOTE:
If “READ CONFIGURATION” can not be used, use the “WRITE CONFIGURATION - Manual selection” after replacing BCM.

AFTER REPLACEMENT
CAUTION:
- **When replacing BCM, you must perform “WRITE CONFIGURATION” with CONSULT-III.**
- **Complete the procedure of “WRITE CONFIGURATION” in order.**
- **If you set incorrect “WRITE CONFIGURATION”, incidents might occur.**
- **Configuration is different for each vehicle model. Confirm configuration of each vehicle model.**
- **When replacing BCM, perform the system initialization (NATS).**

BCM : Special Repair Requirement

INFOID:0000000006685497

1.SAVING VEHICLE SPECIFICATION

CONSULT-III Configuration

Perform “READ CONFIGURATION” to save or print current vehicle specification. Refer to BCS-80, "CONFIGURATION (BCM) : Description".

NOTE:
If “READ CONFIGURATION” can not be used, use the “WRITE CONFIGURATION - Manual selection” after replacing BCM.

>> GO TO 2.

2. REPLACE BCM

Replace BCM. Refer to BCS-93, "Removal and Installation".

>> GO TO 3.

3. WRITING VEHICLE SPECIFICATION

CONSULT-III Configuration
Perform “WRITE CONFIGURATION - Config file” or “WRITE CONFIGURATION - Manual selection” to write vehicle specification. Refer to BCS-81, "CONFIGURATION (BCM) : Special Repair Requirement".

>> GO TO 4.

4. INITIALIZE BCM (NATS)

Perform BCM initialization. (NATS)

>> WORK END

DTC/CIRCUIT DIAGNOSIS

P1610 LOCK MODE

Description

INFOID:0000000006628467

ECM forcibly switches to the mode that inhibits engine start, when engine start operation is performed 5 times or more while communication between ECM and BCM is not normal.

DTC Logic

INFOID:0000000006628468

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1610	LOCK MODE	When ECM detects a communication malfunction between ECM and BCM 5 times or more.	—

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check DTC in “Self Diagnostic Result” mode of “ENGINE” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-52, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628469

1.CHECK ENGINE START FUNCTION

1. Check that DTC except for DTC P1610 is not detected.
   If detected, erase the DTC after fixing.
2. Turn ignition switch OFF.
3. Contact the registered Intelligent Key backside to push-button ignition switch and wait 5 seconds.
4. Turn ignition switch ON.
5. Turn ignition switch OFF and wait 5 seconds.
6. Repeat steps 3 and 5 twice (a total of 3 times).
7. Check that engine can start.

>> INSPECTION END

P1611 ID DISCORD, IMMU-ECM

DTC Logic

INFOID:0000000006628470

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check DTC in “Self Diagnostic Result” mode of “ENGINE” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-53, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628471

1.PERFORM INITIALIZATION

Perform initialization of BCM and reregistration of all Intelligent Keys using CONSULT-III.
For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

Can the system be initialized and can the engine be started with reregistered Intelligent Key?

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

2.CHECK SELF DIAGNOSTIC RESULT

1. Select “Self Diagnostic Result” mode of “ENGINE” using CONSULT-III.
2. Erase DTC.
3. Perform DTC CONFIRMATION PROCEDURE for DTC P1611. Refer to SEC-53, "DTC Logic".

Is DTC detected?

YES >> GO TO 3.
NO >> INSPECTION END

3.REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

Can the system be initialized and can the engine be started with registered Intelligent Key?

YES >> INSPECTION END
NO >> GO TO 4.

4.REPLACE ECM

Replace ECM.
Refer to EC-447, "Removal and Installation" (MR16DDT), or EC-805, "Removal and Installation" (HR16DE).

>> INSPECTION END

P1612 CHAIN OF ECM-IMMU

DTC Logic

INFOID:0000000006628472

DTC DETECTION LOGIC

NOTE:

- If DTC P1612 is displayed with DTC U1000 (for BCM), first perform the trouble diagnosis for DTC U1000. Refer to BCS-83, "DTC Logic".
- If DTC P1612 is displayed with DTC U1010 (for BCM), first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check DTC in “Self Diagnostic Result” mode of “ENGINE” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-54, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628473

1.REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

Can the system be initialized and can the engine be started with registered Intelligent Key?

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

2.REPLACE ECM

Replace ECM.
Refer to EC-447, "Removal and Installation" (MR16DDT), or EC-805, "Removal and Installation" (HR16DE).

>> INSPECTION END

P1614 CHAIN OF IMMU-KEY

DTC Logic

INFOID:0000000006628474

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1614	CHAIN OF IMMU-KEY	Inactive communication between NATS antenna amp. and BCM	• Harness or connectors (NATS antenna amp. circuit is open or shorted.) • NATS antenna amp. • IPDM E/R

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE 1

1. Contact Intelligent Key backside to push-button ignition switch.
2. Check DTC in “Self Diagnostic Result” mode of “ENGINE” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-55, "Diagnosis Procedure".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE 2

1. Press the push-button ignition switch.
2. Check DTC in “Self Diagnostic Result” mode of “ENGINE” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-55, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628475

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse in IPDM E/R is not blown.

Signal name	Fuse No.
Battery power supply	43

Is the fuse fusing?

YES >> Replace the blown fuse after repairing the cause of blowing.
NO >> GO TO 2.

2.CHECK NATS ANTENNA AMP. POWER SUPPLY

1. Disconnect NATS antenna amp. connector.
2. Check voltage between NATS antenna amp. harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
NATS antenna amp.			
Connector	Terminal		
M49	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 3.

3.CHECK NATS ANTENNA AMP. POWER SUPPLY CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and NATS antenna amp. connector.

IPDM E/R		NATS antenna amp.		Continuity
Connector	Terminal	Connector	Terminal	
E14	42	M49	1	Existed

3. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E14	42		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
NO >> Repair or replace harness.

4. CHECK NATS ANTENNA AMP. OUTPUT SIGNAL 1

1. Connect NATS antenna amp. connector.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
BCM			
Connector	Terminal		
M68	21	Ground	12

Is the inspection result normal?

YES >> GO TO 6.
NO >> GO TO 5.

5. CHECK NATS ANTENNA AMP. OUTPUT SIGNAL CIRCUIT 1

1. Disconnect NATS antenna amp. connector.
2. Check continuity between BCM harness connector and NATS antenna amp. connector.

BCM		NATS antenna amp.		Continuity
Connector	Terminal	Connector	Terminal	
M68	21	M49	2	Existed

3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M68	21		Not existed

Is the inspection result normal?

YES >> Replace NATS antenna amp. Refer to SEC-167, "Removal and Installation".
NO >> Repair or replace harness.

6. CHECK NATS ANTENNA AMP. COMMUNICATION SIGNAL 1

1. Connect BCM connector.
2. Check voltage between BCM harness connector and ground using analog tester.

(+)		(–)	Condition	Voltage (V) (Approx.)
BCM				
Connector	Terminal			
M68	21	Ground	Contact Intelligent Key backside to push-button ignition switch, then turn ignition switch ON.	Just after pressing push-button ignition switch, pointer of analog tester should move.

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace NATS antenna amp. Refer to SEC-167, "Removal and Installation".

7. CHECK NATS ANTENNA AMP. OUTPUT SIGNAL 2

1. Disconnect BCM connector.
2. Check voltage between BCM harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
BCM			
Connector	Terminal		
M68	25	Ground	12

Is the inspection result normal?

YES >> GO TO 9.
NO >> GO TO 8.

8. CHECK NATS ANTENNA AMP. OUTPUT SIGNAL CIRCUIT 2

1. Disconnect NATS antenna amp. connector.
2. Check continuity between BCM harness connector and NATS antenna amp. connector.

BCM		NATS antenna amp.		Continuity
Connector	Terminal	Connector	Terminal	
M68	25	M49	3	Existed

3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M68	25		Not existed

Is the inspection result normal?

YES >> Replace NATS antenna amp. Refer to SEC-167, "Removal and Installation".
NO >> Repair or replace harness.

9. CHECK NATS ANTENNA AMP. COMMUNICATION SIGNAL 2

1. Connect BCM connector.
2. Check voltage between BCM harness connector and ground using analog tester.

(+)		(–)	Condition	Voltage (V) (Approx.)
BCM				
Connector	Terminal			
M68	25	Ground	Contact Intelligent Key backside to push-button ignition switch, then turn ignition switch ON.	Just after pressing push-button ignition switch, pointer of analog tester should move.

Is the inspection result normal?

YES >> GO TO 10.
NO >> Replace NATS antenna amp. Refer to SEC-167, "Removal and Installation".

10. CHECK NATS ANTENNA AMP. GROUND CIRCUIT

1. Disconnect NATS antenna amp. connector.
2. Check continuity between NATS antenna amp. harness connector and ground.

NATS antenna amp.		Ground	Continuity
Connector	Terminal		
M49	4		Existed

Is the inspection result normal?

YES >> GO TO 11.
NO >> Repair or replace harness.

11. CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

P1616 ECM

DTC Logic

INFOID:0000000006696669

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1616	NATS MALFUNCTION	ECM ROM is malfunctioning.	ECM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION

1. Turn ignition switch ON amd wait 2 seconds or more.
2. Check DTC in “Self Diagnostic Result” mode of “ENGINE” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-199, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006696670

1.INSPECTION START

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “ENGINE” using CONSULT-III.
3. Touch “ERASE”.
4. Perform DTC CONFIRMATION PROCEDURE for DTC P1616. Refer to SEC-199, "DTC Logic".

Is DTC P1616 displayed again?

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

2.REPLACE ECM

Replace ECM.

>> INSPECTION END

B2192 ID DISCORD, IMMU-ECM

DTC Logic

INFOID:0000000006628476

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-60, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628477

1.PERFORM INITIALIZATION

Perform initialization of BCM and reregistration of all Intelligent Keys using CONSULT-III.
For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

Can the system be initialized and can the engine be started with reregistered Intelligent Key?

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

2.CHECK SELF DIAGNOSTIC RESULT

1. Select “Self Diagnostic Result” mode of “BCM” using CONSULT-III.
2. Erase DTC.
3. Perform DTC CONFIRMATION PROCEDURE for DTC B2192. Refer to SEC-60, "DTC Logic".

Is DTC detected?

YES >> GO TO 3.
NO >> INSPECTION END

3.REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and reregistration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

Can the system be initialized and can the engine be started with registered Intelligent Key?

YES >> INSPECTION END
NO >> GO TO 4.

4.REPLACE ECM

Replace ECM.
Refer to EC-447, "Removal and Installation" (MR16DDT), or EC-805, "Removal and Installation" (HR16DE).

>> INSPECTION END

B2193 CHAIN OF ECM-IMMU

DTC Logic

INFOID:0000000006628478

DTC DETECTION LOGIC

NOTE:

- If DTC B2193 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-83, "DTC Logic".
- If DTC B2193 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-61, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628479

1.REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

Can the system be initialized and can the engine be started with registered Intelligent Key?

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

2.REPLACE ECM

Replace ECM.
Refer to EC-447, "Removal and Installation" (MR16DDT), or EC-805, "Removal and Installation" (HR16DE).

>> INSPECTION END

B2195 ANTI-SCANNING

DTC Logic

INFOID:0000000006628480

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2195	ANTI-SCANNING	ID verification between BCM and ECM that is out of the specified specification is detected.	ID verification request out of the specified specification

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-62, "Diagnosis Procedure".
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:0000000006628481

1.CHECK SELF DIAGNOSTIC RESULT 1

1. Select “Self Diagnostic Result” mode of “BCM” using CONSULT-III.
2. Erase DTC.
3. Perform DTC CONFIRMATION PROCEDURE for DTC B2195. Refer to SEC-62, "DTC Logic".

Is DTC detected?

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

2.CHECK EQUIPMENT OF THE VEHICLE

Check that unspecified accessory part related to engine start is not installed.

Is unspecified accessory part related to engine start installed?

YES >> GO TO 3.
NO >> GO TO 4.

3.CHECK SELF DIAGNOSTIC RESULT 2

1. Obtain the customers approval to remove unspecified accessory part related to engine start, and then remove it.
2. Select “Self Diagnostic Result” of “BCM” using CONSULT-III.
3. Erase DTC.
4. Perform DTC CONFIRMATION PROCEDURE for DTC B2195. Refer to SEC-62, "DTC Logic".

Is DTC detected?

YES >> GO TO 4.
NO >> INSPECTION END

4.REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

B2196 DONGLE UNIT

Description

INFOID:0000000006708843

BCM performs ID verification between BCM and dongle unit.
When verification result is OK, BCM permits cranking.

DTC Logic

INFOID:0000000006708844

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2196	DONGLE NG	The ID verification results between BCM and dongle unit is NG.	• Harness or connectors (Dongle unit circuit is open or shorted.) • Dongle unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Turn ignition switch OFF.
3. Turn ignition switch ON.
4. Check DTC in “Self-diagnosis result” mode of “BCM” using CONSULT-III.

Is the DTC detected?

YES >> Refer to SEC-63, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006708845

1.PERFORM INITIALIZATION

1. Perform initialization of BCM and reregistration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.
2. Start the engine.

Dose the engine start?

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

2.CHECK DONGLE UNIT CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and dongle unit connector.
3. Check continuity between BCM harness connector and dongle unit harness connector.

BCM		Dongle unit		Continuity
Connector	Terminal	Connector	Terminal	
M68	24	M86	7	Existed

4. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M68	24		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.CHECK DONGLE UNIT GROUND CIRCUIT

Check continuity between dongle unit harness connector and ground.

Dongle unit		Ground	Continuity
Connector	Terminal		
M86	1		Existed

Is the inspection result normal?

YES >> Replace dongle unit.
NO >> Repair or replace harness.

B2198 NATS ANTENNA AMP.

DTC Logic

INFOID:0000000006628482

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2198	NATS ANTENNA AMP.	Inactive communication between NATS antenna amp. and BCM	• Harness or connectors (NATS antenna amp. circuit is open or shorted.) • NATS antenna amp. • IPDM E/R

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE 1

1. Contact Intelligent Key backside to push-button ignition switch.
2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-65, "Diagnosis Procedure".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE 2

1. Press the push-button ignition switch.
2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-65, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628483

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse in IPDM E/R is not blown.

Signal name	Fuse No.
Battery power supply	43

Is the fuse fusing?

YES >> Replace the blown fuse after repairing the cause of blowing.
NO >> GO TO 2.

2.CHECK NATS ANTENNA AMP. POWER SUPPLY

1. Disconnect NATS antenna amp. connector.
2. Check voltage between NATS antenna amp. harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
NATS antenna amp.			
Connector	Terminal		
M49	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 3.

3.CHECK NATS ANTENNA AMP. POWER SUPPLY CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and NATS antenna amp. connector.

IPDM E/R		NATS antenna amp.		Continuity
Connector	Terminal	Connector	Terminal	
E14	42	M49	1	Existed

3. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E14	42		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
NO >> Repair or replace harness.

4. CHECK NATS ANTENNA AMP. OUTPUT SIGNAL 1

1. Connect NATS antenna amp. connector.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
BCM			
Connector	Terminal		
M68	21	Ground	12

Is the inspection result normal?

YES >> GO TO 6.
NO >> GO TO 5.

5. CHECK NATS ANTENNA AMP. OUTPUT SIGNAL CIRCUIT 1

1. Disconnect NATS antenna amp. connector.
2. Check continuity between BCM harness connector and NATS antenna amp. connector.

BCM		NATS antenna amp.		Continuity
Connector	Terminal	Connector	Terminal	
M68	21	M49	2	Existed

3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M68	21		Not existed

Is the inspection result normal?

YES >> Replace NATS antenna amp. Refer to SEC-167, "Removal and Installation".
NO >> Repair or replace harness.

6. CHECK NATS ANTENNA AMP. COMMUNICATION SIGNAL 1

1. Connect BCM connector.
2. Check voltage between BCM harness connector and ground using analog tester.

(+)		(–)	Condition	Voltage (V) (Approx.)
BCM				
Connector	Terminal			
M68	21	Ground	Contact Intelligent Key backside to push-button ignition switch, then turn ignition switch ON.	Just after pressing push-button ignition switch, pointer of analog tester should move.

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace NATS antenna amp. Refer to SEC-167, "Removal and Installation".

7. CHECK NATS ANTENNA AMP. OUTPUT SIGNAL 2

1. Disconnect BCM connector.
2. Check voltage between BCM harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
BCM			
Connector	Terminal		
M68	25	Ground	12

Is the inspection result normal?

YES >> GO TO 9.
NO >> GO TO 8.

8. CHECK NATS ANTENNA AMP. OUTPUT SIGNAL CIRCUIT 2

1. Disconnect NATS antenna amp. connector.
2. Check continuity between BCM harness connector and NATS antenna amp. connector.

BCM		NATS antenna amp.		Continuity
Connector	Terminal	Connector	Terminal	
M68	25	M49	3	Existed

3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M68	25		Not existed

Is the inspection result normal?

YES >> Replace NATS antenna amp. Refer to SEC-167, "Removal and Installation".
NO >> Repair or replace harness.

9. CHECK NATS ANTENNA AMP. COMMUNICATION SIGNAL 2

1. Connect BCM connector.
2. Check voltage between BCM harness connector and ground using analog tester.

(+)		(–)	Condition	Voltage (V) (Approx.)
BCM				
Connector	Terminal			
M68	25	Ground	Contact Intelligent Key backside to push-button ignition switch, then turn ignition switch ON.	Just after pressing push-button ignition switch, pointer of analog tester should move.

Is the inspection result normal?

YES >> GO TO 10.
NO >> Replace NATS antenna amp. Refer to SEC-167, "Removal and Installation".

10. CHECK NATS ANTENNA AMP. GROUND CIRCUIT

1. Disconnect NATS antenna amp. connector.
2. Check continuity between NATS antenna amp. harness connector and ground.

NATS antenna amp.		Ground	Continuity
Connector	Terminal		
M49	4		Existed

Is the inspection result normal?

YES >> GO TO 11.
NO >> Repair or replace harness.

11. CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

B2013 STEERING LOCK UNIT

DTC Logic

INFOID:0000000006628484

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2013	ID DISCORD BCM-S/L	The ID verification results between BCM and steering lock unit are NG.	Steering lock unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Lock the steering.
NOTE:

To lock the steering	1. Set the selector lever in the P position. 2. Turn the power supply position to the OFF position. 3. Press any door switch.
To unlock the steering	1. Set the selector lever in the P position. 2. Press the push-button ignition switch with brake pedal not depressed.

3. Press the push-button ignition switch.
4. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-69, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628485

1.PERFORM INITIALIZATION

Perform initialization of BCM and reregistration of all Intelligent Keys using CONSULT-III.
For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

Does steering lock operate?

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

2.REPLACE STEERING LOCK UNIT

1. Replace steering lock unit.
2. Perform the service procedure for steering lock unit replacement. Refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

B2014 CHAIN OF STRG-IMMU

DTC Logic

INFOID:0000000006628486

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2014	CHAIN OF S/L-BCM	Inactive communication between steering lock unit and BCM	• Harness or connectors (Steering lock unit circuit is open or shorted.) • Steering lock unit • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Lock steering.
NOTE:

To lock the steering	1. Set the selector lever in the P position. 2. Turn the power supply position to the OFF position. 3. Press any door switch.
To unlock the steering	1. Set the selector lever in the P position. 2. Press the push-button ignition switch with brake pedal not depressed.

3. Press the push-button ignition switch.
4. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-70, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628487

1.CHECK STEERING LOCK UNIT POWER SUPPLY

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

(+)		(–)	Condition		Voltage (V) (Approx.)
Steering lock unit					
Connector	Terminal				
M12	7	Ground	Ignition switch	OFF or ACC	12
				ON	0

Is the inspection result normal?

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

2.CHECK STEERING LOCK UNIT POWER SUPPLY CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between steering lock unit harness connector and BCM harness connector.

Steering lock unit		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M12	7	M70	95	Existed

3. Check continuity between steering lock unit harness connector and ground.

Steering lock unit		Ground	Continuity
Connector	Terminal		
M12	7		Not existed

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair or replace harness.

3. CHECK STEERING LOCK UNIT GROUND CIRCUIT

Check continuity between steering lock unit and ground.

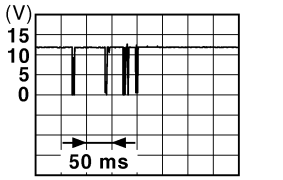
Steering lock unit		Ground	Continuity
Connector	Terminal		
M12	5		Existed
	6		

Is the inspection result normal?

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

4. CHECK STEERING LOCK UNIT COMMUNICATION SIGNAL

1. Connect steering lock unit connector and BCM connector.
2. Read voltage signal between steering lock unit harness connector and ground.

(+) Steering lock unit		(–)	Condition		Voltage (V) (Approx.)
Connector	Terminal				
M12	2	Ground	Steering lock unit	Lock status	12
				Lock or unlock	
				For 15 seconds after unlock	12
				15 seconds or later after unlock.	0

JMKIA0066GB

NOTE:

To lock the steering	1. Set the selector lever in the P position. 2. Turn the power supply position to the OFF position. 3. Press any door switch.
To unlock the steering	1. Set the selector lever in the P position. 2. Press the push-button ignition switch with brake pedal not depressed.

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 6.

5. REPLACE STEERING LOCK UNIT

1. Replace steering lock unit.
2. Perform the service procedure for steering lock unit replacement. Refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

6.CHECK STEERING LOCK UNIT COMMUNICATION CIRCUIT

1. Disconnect steering lock unit and BCM connector.
2. Check continuity between steering lock unit harness connector and BCM harness connector.

Steering lock unit		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M12	2	M70	94	Existed

3. Check continuity between steering lock unit harness connector and ground.

Steering lock unit		Ground	Continuity
Connector	Terminal		
M12	2		Not existed

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair or replace harness.

7.REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

B2555 STOP LAMP

DTC Logic

INFOID:0000000006628488

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2555	STOP LAMP	BCM makes a comparison between the upper voltage and lower voltage of stop lamp switch. It judges from their values to detect the malfunctioning circuit.	• Harness or connectors (Stop lamp switch circuit is open or shorted.) • Stop lamp switch • Fuse • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Depress the brake pedal and wait 1 second or more.
2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-73, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628489

1.CHECK STOP LAMP SWITCH INPUT SIGNAL 1

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

(+)		(–)	Voltage (V) (Approx.)
BCM			
Connector	Terminal		
M70	105	Ground	Battery voltage

Is the inspection normal?

YES >> GO TO 2.
NO-1 >> Check 10 A fuse [No. 38, located in the fuse block (J/B)].
NO-2 >> Check harness for open or short between BCM and fuse.

2.CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

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

(+)		(–)	Voltage (V) (Approx.)
Stop lamp switch			
Connector	Terminal		
E102 (CVT models) E118 (LHD models with M/T) M205 (RHD models with M/T)	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness for open or short between stop lamp switch and fuse.

3.CHECK STOP LAMP SWITCH INPUT SIGNAL 2

1. Connect stop lamp switch connector.
2. Check voltage between BCM harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
BCM					
Connector	Terminal				
M68	9	Ground	Brake pedal	Depressed	Battery voltage
				Not depressed	0

Is the inspecting result normal?

YES >> GO TO 4.
NO >> GO TO 5.

4.REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

5.CHECK STOP LAMP SWITCH CIRCUIT

1. Disconnect stop lamp switch connector.
2. Check continuity between stop lamp switch harness connector and BCM harness connector.

Stop lamp switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
E102 (CVT models) E118 (LHD models with M/T) M205 (RHD models with M/T)	2	M68	9	Existed

3. Check continuity between stop lamp switch harness connector and ground.

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E102 (CVT models) E118 (LHD models with M/T) M205 (RHD models with M/T)	2		Not existed

Is the inspection result normal?

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

6.CHECK STOP LAMP SWITCH

Refer to SEC-74, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace stop lamp switch. Refer to BR-21, "Removal and Installation" (LHD) or BR-89, "Removal and Installation" (RHD).

7.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

Component Inspection

INFOID:0000000006628490

1.CHECK STOP LAMP SWITCH

1. Turn ignition switch OFF.
2. Disconnect stop lamp switch connector.
3. Check continuity between stop lamp switch terminals.

Stop lamp switch		Condition		Continuity
Terminal				
1	2	Brake pedal	Not depressed	Not existed
			Depressed	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace stop lamp switch. Refer to BR-21, "Removal and Installation" (LHD) or BR-89, "Removal and Installation" (RHD).

B2556 PUSH-BUTTON IGNITION SWITCH

DTC Logic

INFOID:0000000006628491

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2556	PUSH-BTN IGN SW	BCM detects the push-button ignition switch stuck at ON for 100 seconds or more.	• Harness or connectors (Push-button ignition switch circuit is shorted.) • Push-button ignition switch • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Press push-button ignition switch under the following condition.
- Brake pedal: Not depressed
2. Release push-button ignition switch and wait 100 seconds or more.
3. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-76, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628492

1.CHECK PUSH-BUTTON IGNITION SWITCH INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect push-button ignition switch connector.
3. Check voltage between push-button ignition switch harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
Push-button ignition switch			
Connector	Terminal		
M101	8	Ground	12

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 2.

2.CHECK PUSH-BUTTON IGNITION SWITCH CIRCUIT

1. Disconnect BCM connector and IPDM E/R connector.
2. Check continuity between push-button ignition switch harness connector and BCM harness connector.

Push-button ignition switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M101	8	M70	100	Existed

3. Check continuity between push-button ignition switch harness connector and ground.

Push-button ignition switch		Ground	Continuity
Connector	Terminal		
M101	8		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

4.CHECK PUSH-BUTTON IGNITION SWITCH GROUND CIRCUIT

Check continuity between push-button ignition switch harness connector and ground.

Push-button ignition switch		Ground	Continuity
Connector	Terminal		
M101	4		Existed

Is the inspection result normal?

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

5.CHECK PUSH-BUTTON IGNITION SWITCH

Refer to SEC-77, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 6.
NO >> Replace push-button ignition switch. Refer to SEC-168, "Removal and Installation".

6.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

Component Inspection

INFOID:0000000006628493

1.CHECK PUSH-BUTTON IGNITION SWITCH

1. Turn ignition switch OFF.
2. Disconnect push-button ignition switch connector.
3. Check continuity between push-button ignition switch terminals.

Push-button ignition switch		Condition		Continuity
Terminal				
8	4	Push-button ignition switch	Pressed	Existed
			Not pressed	Not existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace push-button ignition switch. Refer to SEC-168, "Removal and Installation".

B2557 VEHICLE SPEED

DTC Logic

INFOID:0000000006628494

DTC DETECTION LOGIC

NOTE:

- If DTC B2557 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-83, "DTC Logic".
- If DTC B2557 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible causes
B2557	VEHICLE SPEED	BCM detects one of the following conditions for 10 seconds continuously. • Vehicle speed signal from combination meter is 10 km/h (6.2 MPH) or more, and vehicle speed signal from ABS actuator and electric unit (control unit) is 4 km/h (2.5 MPH) or less. • Vehicle speed signal from combination meter is 4 km/h (2.5 MPH) or less, and vehicle speed signal from ABS actuator and electric unit (control unit) is 10 km/h (6.2 MPH) or more.	• Harness or connectors (The CAN communication line is open or shorted.) • Combination meter • ABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and wait 10 seconds or more.
2. Drive the vehicle at a vehicle speed of 10 km/h (6.2 MPH) or more for 10 seconds or more.
3. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-78, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628495

1.CHECK DTC OF “ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)”

Check DTC in “Self Diagnostic Result” mode of “ABS” using CONSULT-III.

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to BRC-31, "DTC Index" (Without ESP) or BRC-142, "DTC Index" (With ESP).
NO >> GO TO 2.

2.CHECK DTC OF “COMBINATION METER”

Check DTC in “Self Diagnostic Result” mode of “METER/M&A” using CONSULT-III.

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to MWI-36, "DTC Index".
NO >> GO TO 3.

3.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

B2601 SHIFT POSITION

DTC Logic

INFOID:0000000006628496

DTC DETECTION LOGIC

NOTE:

- If DTC B2601 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-83, "DTC Logic".
- If DTC B2601 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2601	SHIFT POSITION	When there is a difference between P range signal from CVT shift selector (detention switch) and P position signal from IPDM E/R (CAN).	• Harness or connectors (CAN communication line is open or shorted.) • Harness or connectors [CVT shift selector (detention switch) circuit is open or shorted.] • BCM • IPDM E/R

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Shift the selector lever to the P position.
2. Turn ignition switch ON and wait 2 seconds or more.
3. Shift the selector lever to any position other than P, and wait 2 seconds or more.
4. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-79, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628497

1.CHECK CVT SHIFT SELECTOR POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect CVT shift selector (detention switch) connector.
3. Check voltage between CVT shift selector (detention switch) harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
CVT shift selector (detention switch)			
Connector	Terminal		
M57	12	Ground	12

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 2.

2.CHECK CVT SHIFT SELECTOR POWER SUPPLY CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between CVT shift selector (detention switch) harness connector and BCM harness connector.

CVT shift selector (detention switch)		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M57	12	M70	104	Existed

3. Check continuity between CVT shift selector (detention switch) harness connector and ground.

CVT shift selector (detention switch)		Ground	Continuity
Connector	Terminal		
M57	12		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3. REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

4. CHECK CVT SHIFT SELECTOR CIRCUIT (IPDM E/R)

1. Disconnect IPDM E/R connector.
2. Check continuity between CVT shift selector (detention switch) harness connector and IPDM E/R harness connector.

CVT shift selector (detention switch)		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
M57	13	E17	64	Existed

Is the inspection result normal?

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

5. CHECK CVT SHIFT SELECTOR CIRCUIT (BCM)

1. Disconnect BCM connector.
2. Check continuity between CVT shift selector (detention switch) harness connector and BCM harness connector.

CVT shift selector (detention switch)		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M57	13	M68	37	Existed

3. Check continuity between CVT shift selector (detention switch) harness connector and ground.

CVT shift selector (detention switch)		Ground	Continuity
Connector	Terminal		
M57	13		Not existed

Is the inspection result normal?

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

6. REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.
3. Perform DTC CONFIRMATION PROCEDURE for DTC B2601. Refer to SEC-79, "DTC Logic".

Is DTC B2601 detected again?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
NO >> INSPECTION END

B2602 SHIFT POSITION

DTC Logic

INFOID:0000000006628499

DTC DETECTION LOGIC

NOTE:

- If DTC B2602 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-83, "DTC Logic".
- If DTC B2602 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2602	SHIFT POSITION	BCM detects the following status for 10 seconds. • Selector lever is in the P position • Vehicle speed is 4 km/h (2.5 MPH) or more • Ignition switch is in the ON position	• Harness or connectors (CAN communication line is open or shorted.) • Harness or connectors [CVT shift selector (detention switch) circuit is open or shorted.] • CVT shift selector (detention switch) • Combination meter • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine.
2. Drive vehicle at a speed of 4 km/h (2.5 MPH) or more for 10 seconds or more.
3. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-81, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628500

1.CHECK DTC OF “ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)”

Check DTC in “Self Diagnostic Result” mode of “ABS” using CONSULT-III.

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to BRC-31, "DTC Index" (Without ESP) or BRC-142, "DTC Index" (With ESP).
NO >> GO TO 2.

2.CHECK DTC OF COMBINATION METER

Check DTC in “Self Diagnostic Result” mode of “METER/M&A” using CONSULT-III.

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to MWI-36, "DTC Index".
NO >> GO TO 3.

3.CHECK CVT SHIFT SELECTOR POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect CVT shift selector (detention switch) connector.
3. Check voltage between CVT shift selector (detention switch) harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
CVT shift selector (detention switch)			
Connector	Terminal		
M57	12	Ground	12

Is the inspection result normal?

YES >> GO TO 6.
NO >> GO TO 4.

4. CHECK CVT SHIFT SELECTOR POWER SUPPLY CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between CVT shift selector (detention switch) harness connector and BCM harness connector.

CVT shift selector (detention switch)		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M57	12	M70	104	Existed

3. Check continuity between CVT shift selector (detention switch) harness connector and ground.

CVT shift selector (detention switch)		Ground	Continuity
Connector	Terminal		
M57	12		Not existed

Is the inspection result normal?

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

5. REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

6. CHECK CVT SHIFT SELECTOR CIRCUIT

1. Disconnect BCM connector and IPDM E/R connector.
2. Check continuity between CVT shift selector (detention switch) harness connector and BCM harness connector.

CVT shift selector (detention switch)		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M57	13	M68	37	Existed

3. Check continuity between CVT shift selector (detention switch) harness connector and ground.

CVT shift selector (detention switch)		Ground	Continuity
Connector	Terminal		
M57	13		Not existed

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair or replace harness.

7. CHECK CVT SHIFT SELECTOR (DETENTION SWITCH)

Refer to SEC-83, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 8.
NO >> Replace CVT shift selector. Refer to TM-270, "Removal and Installation" (CVT: RE0F10B) or TM-481, "Removal and Installation" (CVT: RE0F11A).

8. CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

Component Inspection

INFOID:0000000006628501

1. CHECK CVT SHIFT SELECTOR (DETENTION SWITCH)

1. Turn ignition switch OFF.
2. Disconnect CVT shift selector connector.
3. Check continuity between CVT shift selector (detention switch) terminals.

CVT shift selector (detention switch) Terminal		Condition		Continuity
12	13	Selector lever: P position	Selector button: Released	Not existed
			Selector button: Pressed	Existed
		Selector lever: Except P position		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace CVT shift selector. Refer to TM-270, "Removal and Installation" (CVT: RE0F10B) or TM-481, "Removal and Installation" (CVT: RE0F11A).

B2603 SHIFT POSITION

DTC Logic

INFOID:0000000006628502

DTC DETECTION LOGIC

NOTE:

- If DTC B2603 is displayed with DTC B2601, first perform the trouble diagnosis for DTC B2601. Refer to SEC-79, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible causes
B2603	SHIFT POSI STATUS	BCM detects the following status when ignition switch is in the ON position. • Transmission range switch signal: approx. 0 V • CVT shift selector (detention switch) signal: approx. 0 V	• Harness or connector [CVT shift selector (detention switch) circuit is open or shorted.] • Harness or connectors (Transmission range switch circuit is open or shorted.) • CVT shift selector (detention switch) • Transmission range switch • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE 1

1. Shift the selector lever to the P position.
2. Turn ignition switch ON and wait 1 second or more.
3. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-84, "Diagnosis Procedure".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE 2

1. Shift the selector lever to any position other than P, and wait 1 second or more.
2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-84, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628503

1.INSPECTION START

Perform inspection in accordance with procedure that confirms DTC.

Which procedure confirms DTC?

DTC confirmation procedure 1>>GO TO 2.
DTC confirmation procedure 2>>GO TO 7.

2.CHECK TRANSMISSION RANGE SWITCH POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect transmission range switch connector.
3. Turn ignition switch ON.
4. Check voltage between transmission range switch harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
Transmission range switch			
Connector	Terminal		
F23 (HR16DE) F27 (MR16DDT)	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.
NO-2 >> GO TO 3.

3. CHECK TRANSMISSION RANGE SWITCH POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between transmission range switch harness connector and IPDM E/R harness connector.

Transmission range switch		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F23 (HR16DE) F27 (MR16DDT)	1	E15	58	Existed

4. Check continuity between transmission range switch harness connector and ground.

Transmission range switch		Ground	Continuity
Connector	Terminal		
F23 (HR16DE) F27 (MR16DDT)	1		Not existed

Is the inspection result normal?

YES >> Check 10 A fuse (No. 56, located in IPDM E/R).
NO >> Repair or replace harness.

4. CHECK BCM INPUT SIGNAL

1. Turn ignition switch OFF.
2. Connect transmission range switch harness connector.
3. Turn ignition switch ON.
4. Check voltage between BCM harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
BCM					
Connector	Terminal				
M70	102	Ground	Selector lever	P or N position	Battery voltage
				Other than above	0

Is the inspection result normal?

YES >> GO TO 11.
NO >> GO TO 5.

5. CHECK BCM INPUT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect transmission range switch connector.
3. Check continuity between transmission range switch harness connector and BCM harness connector.

Transmission range switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
F23 (HR16DE) F27 (MR16DDT)	2	M70	102	Existed

4. Check continuity between transmission range switch harness connector and ground.

Transmission range switch		Ground	Continuity
Connector	Terminal		
F23 (HR16DE) F27 (MR16DDT)	2		Not existed

Is the inspection result normal?

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

6. CHECK TRANSMISSION RANGE SWITCH

Refer to SEC-87, "Component Inspection (Transmission Range Switch)".

Is the inspection result normal?

YES >> GO TO 12.
NO >> Replace transmission range switch. Refer to TM-278, "Removal and Installation" (CVT: RE0F10B) or TM-508, "Removal and Installation" (CVT: RE0F11A).

7. CHECK CVT SHIFT SELECTOR POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect CVT shift selector (detention switch) connector.
3. Check voltage between CVT shift selector (detention switch) harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
CVT shift selector (detention switch)			
Connector	Terminal		
M57	12	Ground	12

Is the inspection result normal?

YES >> GO TO 9.
NO >> GO TO 8.

8. CHECK CVT SHIFT SELECTOR POWER SUPPLY CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between CVT shift selector (detention switch) harness connector and BCM harness connector.

CVT shift selector (detention switch)		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M57	12	M70	104	Existed

3. Check continuity between CVT shift selector (detention switch) harness connector and ground.

CVT shift selector (detention switch)		Ground	Continuity
Connector	Terminal		
M57	12		Not existed

Is the inspection result normal?

YES >> GO TO 11.
NO >> Repair or replace harness.

9. CHECK CVT SHIFT SELECTOR CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between CVT shift selector (detention switch) harness connector and BCM harness connector.

CVT shift selector (detention switch)		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M57	13	M68	37	Existed

3. Check continuity between CVT shift selector (detention switch) harness connector and ground.

CVT shift selector (detention switch)		Ground	Continuity
Connector	Terminal		
M57	13		Not existed

Is the inspection result normal?

YES >> GO TO 10.
NO >> Repair or replace harness.

10. CHECK CVT SHIFT SELECTOR (DETENTION SWITCH)

Refer to SEC-87, "Component Inspection [CVT Shift Selector (Detention Switch)]".

Is the inspection result normal?

YES >> GO TO 12.
NO >> Replace CVT shift selector. Refer to TM-270, "Removal and Installation" (CVT: RE0F10B) or TM-481, "Removal and Installation" (CVT: RE0F11A).

11. REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

12. CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

Component Inspection (Transmission Range Switch)

INFOID:0000000006705583

1. CHECK TRANSMISSION RANGE SWITCH

1. Turn ignition switch OFF.
2. Disconnect transmission range switch connector.
3. Check continuity between transmission range switch terminals.

Transmission range switch		Condition	Continuity
Terminal			
1	2	P or N position	Existed
		Other than above	Not existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace transmission range switch. Refer to TM-278, "Removal and Installation" (CVT: RE0F10B) or TM-508, "Removal and Installation" (CVT: RE0F11A).

Component Inspection [CVT Shift Selector (Detention Switch)]

INFOID:0000000006628498

1. CHECK CVT SHIFT SELECTOR (DETENTION SWITCH)

1. Turn ignition switch OFF.
2. Disconnect CVT shift selector connector.
3. Check continuity between CVT shift selector (detention switch) terminals.

CVT shift selector (detention switch)		Condition		Continuity
Terminal				
12	13	Selector lever: P position	Selector button: Released	Not existed
			Selector button: Pressed	Existed
		Selector lever: Except P position		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace CVT shift selector. Refer to TM-270, "Removal and Installation" (CVT: RE0F10B) or TM-481, "Removal and Installation" (CVT: RE0F11A).

B2604 SHIFT POSITION

DTC Logic

INFOID:0000000006628505

DTC DETECTION LOGIC

NOTE:

- If DTC B2604 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-83, "DTC Logic".
- If DTC B2604 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2604	PNP/CLUTCH SW	The following states are detected for 5 seconds while ignition switch is ON. • P/N position signal is sent from transmission range switch but shift position signal input (CAN) from TCM is other than P and N • P/N position signal is not sent from transmission range switch but shift position signal input (CAN) from TCM is P or N	• Harness or connectors (CAN communication line is open or shorted.) • Harness or connectors (Transmission range switch circuit is open or shorted.) • Transmission range switch • TCM • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Shift the selector lever to the P position.
2. Turn ignition switch ON and wait 5 seconds or more.
3. Shift the selector lever to the N position and wait 5 seconds or more.
4. Shift the selector lever to any position other than P and N, and wait 5 seconds or more.
5. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-88, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628506

1.CHECK DTC OF TCM

Check DTC in “Self Diagnostic Result” mode of “TCM” using CONSULT-III.

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to TM-171, "DTC Index" (CVT: RE0F10B) or TM-366, "DTC Index" (CVT: RE0F11A).
NO >> GO TO 2.

2.CHECK BCM INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between BCM harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
BCM					
Connector	Terminal				
M70	102	Ground	Selector lever	P or N position	Battery voltage
				Other than above	0

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 4.

3.REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

4. CHECK BCM INPUT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect transmission range switch connector.
3. Disconnect BCM connector.
4. Check continuity between transmission range switch harness connector and BCM harness connector.

Transmission range switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
F23 (HR16DE) F27 (MR16DDT)	2	M71	102	Existed

5. Check continuity between CVT assembly harness connector and ground.

CVT assembly		Ground	Continuity
Connector	Terminal		
F23 (HR16DE) F27 (MR16DDT)	2		Not existed

Is the inspection result normal?

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

5. CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

B2605 SHIFT POSITION

DTC Logic

INFOID:0000000006628507

DTC DETECTION LOGIC

NOTE:

- If DTC B2605 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-83, "DTC Logic".
- If DTC B2605 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2605	PNP/CLUTCH SW	When ignition switch is ON, P/N position signal input from transmission range switch and P/N position signal input (CAN) from IPDM E/R do not match.	• Harness or connectors (CAN communication line is open or shorted.) • Harness or connectors (Transmission range switch circuit is open or shorted.) • Transmission range switch • IPDM E/R • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Shift the selector lever to the P position.
2. Turn ignition switch ON and wait 1 second or more.
3. Shift the selector lever to the N position and wait 1 second or more.
4. Shift the selector lever to any position other than P and N, and wait 1 second or more.
5. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-90, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628508

1.CHECK IPDM E/R INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Turn ignition switch ON.
4. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E15	48	Ground	Selector lever	P or N position	Battery voltage
				Other than above	0

Is the inspection result normal?

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

2.CHECK IPDM E/R INPUT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect transmission range switch connector.
3. Check continuity between IPDM E/R harness connector and BCM harness connector.

IPDM E/R		Transmission range switch		Continuity
Connector	Terminal	Connector	Terminal	
E15	48	F23 (HR16DE) F27 (MR16DDT)	2	Existed

4. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E15	48		Not existed

Is the inspection result normal?

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

3. CHECK BCM INPUT SIGNAL

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

(+)		(–)	Condition		Voltage (V) (Approx.)
BCM					
Connector	Terminal				
M70	102	Ground	Selector lever	P or N position	Battery voltage
				Other than above	0

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 4.

4. CHECK BCM INPUT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect transmission range switch connector.
3. Disconnect BCM connector.
4. Check continuity between transmission range switch harness connector and BCM harness connector.

Transmission range switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
F23 (HR16DE) F27 (MR16DDT)	2	M71	102	Existed

5. Check continuity between CVT assembly harness connector and ground.

CVT assembly		Ground	Continuity
Connector	Terminal		
F23 (HR16DE) F27 (MR16DDT)	2		Not existed

Is the inspection result normal?

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

5. REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.
3. Perform DTC CONFIRMATION PROCEDURE for DTC B2605. Refer to SEC-90, "DTC Logic".

Is DTC B2605 detected again?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
NO >> INSPECTION END

6. CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

B2608 STARTER RELAY

DTC Logic

INFOID:0000000006628509

DTC DETECTION LOGIC

NOTE:

- If DTC B2608 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-83, "DTC Logic".
- If DTC B2608 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".
- If DTC B2608 is displayed with DTC B210D (IPDM E/R), first perform the trouble diagnosis for DTC B210D. Refer to SEC-146, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2608	STARTER RELAY	BCM outputs starter relay OFF signal but BCM receives starter relay ON signal from IPDM E/R (CAN).	• Harness or connectors (CAN communication line is open or shorted.) • Harness or connectors (Starter relay circuit is open or shorted.) • IPDM E/R

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Press push-button ignition switch under the following conditions to start engine.
- Selector lever: In the P position
- Brake pedal: Depressed
2. Wait 1 second after engine started.
3. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-93, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628510

1. CHECK DTC OF IPDM E/R

Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to PCS-25, "DTC Index".
NO >> GO TO 2.

2. CHECK STARTER RELAY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Disconnect BCM connector.
4. Check continuity between IPDM E/R harness connector and BCM harness connector.

IPDM E/R		BCM		Continuity
Connector	Terminal	Connector	Terminal	
E13	30	M70	97	Existed

5. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E13	30		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3. REPLACE IPDM E/R

1. Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
2. Perform DTC CONFIRMATION PROCEDURE for DTC B2608. Refer to SEC-93, "DTC Logic".

Is DTC B2608 detected again?

YES >> INSPECTION END
NO >> GO TO 4.

4. REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

B2609 STEERING STATUS

DTC Logic

INFOID:0000000006628511

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2609	S/L STATUS	BCM detects one of the following status. • Combination of steering lock state switch and steering unlock state switch is not normal. • Combination of steering lock state switch and steering unlock state switch is different from steering lock/unlock state that BCM recognizes.	• Harness or connectors (Steering lock unit circuit is open or shorted.) • Steering lock unit • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE 1

1. Press push-button ignition switch under the following conditions and wait 1 second or more.
- Selector lever: In the P position
- Brake pedal: Not depressed
2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-95, "Diagnosis Procedure".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE 2

1. Turn ignition switch ON.
2. Turn ignition switch OFF.
3. Press driver side door switch and wait 1 second or more.
4. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-95, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628512

1.CHECK IPDM E/R INPUT SIGNAL

1. Turn ignition switch OFF.
2. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E17	63	Ground	Steering lock unit	Lock	12
				Unlock	0
	65			Lock	0
				Unlock	12

NOTE:

To lock the steering	1. Set the selector lever in the P position. 2. Turn the power supply position to the OFF position. 3. Press any door switch.
To unlock the steering	1. Set the selector lever in the P position. 2. Press the push-button ignition switch with brake pedal not depressed.

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 2.

2.CHECK IPDM E/R INPUT SIGNAL CIRCUIT

1. Disconnect IPDM E/R connector and steering lock unit connector.
2. Check continuity between IPDM E/R harness connector and steering lock unit harness connector.

IPDM E/R		Steering lock unit		Continuity
Connector	Terminal	Connector	Terminal	
E17	63	M12	8	Existed
	65		3	

3. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E17	63		Not existed
	65		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.REPLACE STEERING LOCK UNIT

1. Replace steering lock unit.
2. Perform the service procedure for steering lock unit replacement. Refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

4.CHECK BCM INPUT SIGNAL

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

(+)		(–)	Condition		Voltage (V) (Approx.)
BCM					
Connector	Terminal				
M70	107	Ground	Steering lock unit	Lock	0
				Unlock	12
	108			Lock	12
				Unlock	0

NOTE:

To lock the steering	1. Set the selector lever in the P position. 2. Turn the power supply position to the OFF position. 3. Press any door switch.
To unlock the steering	1. Set the selector lever in the P position. 2. Press the push-button ignition switch with brake pedal not depressed.

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 6.

5.REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

6. CHECK BCM INPUT SIGNAL CIRCUIT

1. Disconnect BCM connector and steering lock unit connector.
2. Check continuity between BCM harness connector and steering lock unit harness connector.

BCM		Steering lock unit		Continuity
Connector	Terminal	Connector	Terminal	
M70	107	M12	3	Existed
	108		8	

3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M70	107		Not existed
	108		

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair or replace harness.

7. REPLACE STEERING LOCK UNIT

1. Replace steering lock unit.
2. Perform the service procedure for steering lock unit replacement. Refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

B260B STEERING LOCK UNIT

DTC Logic

INFOID:0000000006628513

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B260B	STEERING LOCK UNIT	BCM detects malfunctioning of steering lock unit before steering unlocking.	Steering lock unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Turn ignition switch OFF.
3. Press driver side door switch.
4. Shift selector lever to the P position.
5. Press push-button ignition switch under the following condition.

- Brake pedal: Not depressed

6. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-98, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628514

1.INSPECTION START

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “BCM” using CONSULT-III.
3. Touch “ERASE”.
4. Perform DTC CONFIRMATION PROCEDURE for DTC B260B. Refer to SEC-98, "DTC Logic".

Is DTC detected?

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

2.REPLACE STEERING LOCK UNIT

1. Replace steering lock unit.
2. Perform the service procedure for steering lock unit replacement. Refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

B260C STEERING LOCK UNIT

DTC Logic

INFOID:0000000006628515

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B260C	STEERING LOCK UNIT	BCM detects malfunctioning of steering lock unit before steering locking.	Steering lock unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Shift selector lever to the P position.
2. Press push-button ignition switch under the following condition.

- Brake pedal: Not depressed

3. Turn ignition switch ON.
4. Turn ignition switch OFF.
5. Press driver side door switch.
6. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-99, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628516

1.INSPECTION START

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “BCM” using CONSULT-III.
3. Touch “ERASE”.
4. Perform DTC CONFIRMATION PROCEDURE for DTC B260C. Refer to SEC-99, "DTC Logic".

Is DTC detected?

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

2.REPLACE STEERING LOCK UNIT

1. Replace steering lock unit.
2. Perform the service procedure for steering lock unit replacement. Refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

B260D STEERING LOCK UNIT

DTC Logic

INFOID:0000000006628517

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B260D	STEERING LOCK UNIT	BCM detects malfunctioning of steering lock unit after steering locking.	Steering lock unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Shift selector lever to the P position.
2. Press push-button ignition switch under the following condition.
- Brake pedal: Not depressed
3. Turn ignition switch ON.
4. Turn ignition switch OFF.
5. Press driver side door switch.
6. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-100, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628518

1.INSPECTION START

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “BCM” using CONSULT-III.
3. Touch “ERASE”.
4. Perform DTC Confirmation Procedure for DTC B260D. Refer to SEC-100, "DTC Logic".

Is DTC detected?

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

2.REPLACE STEERING LOCK UNIT

1. Replace steering lock unit.
2. Perform the service procedure for steering lock unit replacement. Refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

B260F ENGINE STATUS

Description

INFOID:0000000006628519

BCM receives the engine status signal from ECM via CAN communication.

DTC Logic

INFOID:0000000006628520

DTC DETECTION LOGIC

NOTE:

- If DTC B260F is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-83, "DTC Logic".
- If DTC B260F is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B260F	ENG STATE SIG LOST	BCM has not yet received the engine status signal from ECM when ignition switch is in the ON position.	• Harness or connectors (CAN communication line is open or shorted.) • ECM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON and wait 2 seconds or more.
2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-101, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628521

1.INSPECTION START

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “BCM” using CONSULT-III.
3. Touch “ERASE”.
4. Perform DTC CONFIRMATION PROCEDURE for DTC B260F. Refer to SEC-101, "DTC Logic".

Is DTC detected?

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

2.REPLACE ECM

Replace ECM.
Refer to EC-447, "Removal and Installation" (MR16DDT), or EC-805, "Removal and Installation" (HR16DE).

>> INSPECTION END

B2612 STEERING STATUS

DTC Logic

INFOID:0000000006628522

DTC DETECTION LOGIC

NOTE:

- If DTC B2612 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-83, "DTC Logic".
- If DTC B2612 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible causes
B2612	S/L STATUS	The following 2 state signals are different. • Steering lock state recognition of BCM • Steering lock state signal from IPDM E/R	• Harness or connectors (CAN communication line is open or shorted.) • Harness or connectors (Steering lock unit circuit is open or shorted.) • Steering lock unit • IPDM E/R • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE 1

1. Press push-button ignition switch under the following conditions and wait 1 second or more.
- Selector lever: In the P position
- Brake pedal: Not depressed
2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-102, "Diagnosis Procedure".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE 2

1. Turn ignition switch ON.
2. Turn ignition switch OFF.
3. Press driver side door switch and wait 1 second or more.
4. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-102, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628523

1.CHECK IPDM E/R INPUT SIGNAL

1. Turn ignition switch OFF.
2. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E17	63	Ground	Steering lock unit	Lock	12
				Unlock	0
	65			Lock	0
				Unlock	12

NOTE:

To lock the steering	1. Set the selector lever in the P position. 2. Turn the power supply position to the OFF position. 3. Press any door switch.
To unlock the steering	1. Set the selector lever in the P position. 2. Press the push-button ignition switch with brake pedal not depressed.

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 2.

2.CHECK IPDM E/R INPUT SIGNAL CIRCUIT

1. Disconnect IPDM E/R connector and steering lock unit connector.
2. Check continuity between IPDM E/R harness connector and steering lock unit harness connector.

IPDM E/R		Steering lock unit		Continuity
Connector	Terminal	Connector	Terminal	
E17	63	M12	8	Existed
	65		3	

3. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E17	63		Not existed
	65		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.REPLACE STEERING LOCK UNIT

1. Replace steering lock unit.
2. Perform the service procedure for steering lock unit replacement. Refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

4.CHECK BCM INPUT SIGNAL

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

(+)		(–)	Condition		Voltage (V) (Approx.)
BCM					
Connector	Terminal				
M70	107	Ground	Steering lock unit	Lock	0
				Unlock	12
	108			Lock	12
				Unlock	0

NOTE:

To lock the steering	1. Set the selector lever in the P position. 2. Turn the power supply position to the OFF position. 3. Press any door switch.
To unlock the steering	1. Set the selector lever in the P position. 2. Press the push-button ignition switch with brake pedal not depressed.

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 6.

5. REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

6. CHECK BCM INPUT SIGNAL CIRCUIT

1. Disconnect BCM connector and steering lock unit connector.
2. Check continuity between BCM harness connector and steering lock unit harness connector.

BCM		Steering lock unit		Continuity
Connector	Terminal	Connector	Terminal	
M70	107	M12	3	Existed
	108		8	

3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M70	107		Not existed
	108		

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair or replace harness.

7. REPLACE STEERING LOCK UNIT

1. Replace steering lock unit.
2. Perform the service procedure for steering lock unit replacement. Refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

B2619 BCM

DTC Logic

INFOID:0000000006628524

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2619	BCM	There is a difference between power supply output to steering lock unit and steering lock unit F/B result.	BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Press push-button ignition switch under the following conditions and wait 1 second or more.
- Selector lever: In the P position
- Brake pedal: Not depressed
2. Check DTC in “Self Diagnostic Result” of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-105, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628525

1.INSPECTION START

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “BCM” using CONSULT-III.
3. Touch “ERASE”.
4. Perform DTC CONFIRMATION PROCEDURE for DTC B2619. Refer to SEC-105, "DTC Logic".

Is DTC detected?

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

2.REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

B261A PUSH-BUTTON IGNITION SWITCH

DTC Logic

INFOID:0000000006706213

DTC DETECTION LOGIC

NOTE:

- If DTC B261A is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-83, "DTC Logic".
- If DTC B261A is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B261A	PUSH-BTN IGN SW	BCM detects the mismatch between the following for 1 second or more • Push-button ignition switch operation condition judged by push switch signal • Push-button ignition switch status signal from IPDM E/R (CAN)	• Harness or connectors (Push-button ignition switch circuit is open or shorted) • IPDM E/R • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Press push-button ignition switch for 1 second under the following condition .
- Selector lever: In the P position
- Brake pedal: Not depressed
2. Release push-button ignition switch and wait 1 second.
3. Check DTC in “Self diagnostic result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-106, "Diagnosis Procedure"
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006706214

1.CHECK PUSH-BUTTON IGNITION SWITCH POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect push-button ignition switch connector.
3. Disconnect IPDM E/R connector.
4. Check voltage between push-button ignition switch harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
Push-button ignition switch			
Connector	Terminal		
M101	8	Ground	12

Is the inspection result normal?

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

2.CHECK PUSH-BUTTON IGNITION SWITCH CIRCUIT 1

1. Check continuity between push-button ignition switch harness connector and IPDM E/R harness connector.

Push-button ignition switch		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
M101	8	E17	66	Existed

2. Check continuity between push-button ignition switch harness connector and ground.

Push-button ignition switch		Ground	Continuity
Connector	Terminal		
M101	8		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
NO >> Repair harness or connector.

3. CHECK PUSH-BUTTON IGNITION SWITCH CIRCUIT 2

1. Disconnect BCM connector.
2. Check continuity between push-button ignition switch harness connector and BCM harness connector.

Push-button ignition switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M101	8	M70	100	Existed

3. Check continuity between push-button ignition switch harness connector and ground.

Push-button ignition switch		Ground	Continuity
Connector	Terminal		
M101	8		Not existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM using CONSULT-III.
   For initialization procedure, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

B261F ASCD CLUTCH SWITCH

DTC Logic

INFOID:0000000006706215

DTC DETECTION LOGIC

NOTE:

- If DTC B261F is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-83, "DTC Logic".
- If DTC B261F is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detection condition	Possible cause
B261F	ASCD CNCL/CLTH SW	BCM detects the following status for 10 seconds 3 times • Clutch pedal position switch input (CAN) from ECM: OFF • Vehicle speed: 40 km/h (24.8 MPH) or more	• Harness or connectors. (CAN communication line is open or shorted.) (Clutch pedal position switch circuit is open or shorted.) • ABS actuator and electric unit (control unit) • Combination meter • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Drive vehicle at a speed of 40 km/h (24.8 MPH) or more for 10 seconds.
3. Decrease the vehicle speed to below 40 km/h (24.8 MPH).
4. Repeat steps 2 and 3 twice (total of 3 times).
5. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-108, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006706216

1.CHECK DTC OF “ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)”

Check DTC in “Self Diagnostic Result” mode of “ABS” using CONSULT-III.

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to BRC-31, "DTC Index" (Without ESP) or BRC-142, "DTC Index" (With ESP).
NO >> GO TO 2.

2.CHECK DTC OF COMBINATION METER

Check DTC in “Self Diagnostic Result” mode of “METER/M&A” using CONSULT-III. Refer to MWI-36, "DTC Index".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning parts.

3.CHECK CLUTCH PEDAL POSITION SWITCH CIERCUIT

Refer to EC-427, "Component Function Check" (MR16DDT), EC-771, "Component Function Check" (HR16DE), or EC-980, "DTC Logic" (K9K).

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the malfunctioning parts.

4.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

B2620 PARK/NEUTRAL POSITION SWITCH

DTC Logic

INFOID:0000000006706218

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detection condition	Possible cause
B2620	NEUTRAL SW	BCM detects the following status for 2 seconds • Neutral position switch input: Battery voltage • Reverse position switch input: Battery voltage	• Harness or connector (Park/neutral position switch circuit is open or shorted) • Park/neutral position switch • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON and wait 2 seconds or more under the following conditions.
2. Set shift lever in the Neutral position and wait for 2 seconds or more.
3. Set shift lever in the Reverse position and wait for 2 seconds or more.
4. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-110, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006706219

1.CHECK PARK/NEUTRAL POSITION SWITCH POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect park/neutral position switch connector.
3. Turn ignition switch ON.
4. Check voltage between park/neutral position switch harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
Park/neutral position switch			
Connector	Terminal		
F49	2	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.
NO-1 >> Check 10 A fuse [No. 5, located in the fuse block (J/B)].
NO-2 >> Check harness for open or short between park/neutral position switch and fuse.

2.CHECK NEUTRAL POSITION SWITCH SIGNAL

1. Turn ignition switch OFF.
2. Connect park/neutral position switch connector.
3. Turn ignition switch ON.
4. Check voltage between BCM harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
BCM					
Connector	Terminal				
M70	102	Ground	Shift lever	Neutral position	Battery voltage
				Except neutral position	0

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 3.

3. CHECK NEUTRAL POSITION SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect park/neutral position switch connector.
3. Disconnect BCM connector.
4. Check continuity between park/neutral position switch harness connector and BCM harness connector.

Park/neutral position switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
F49	3	M70	102	Existed

5. Check continuity between park/neutral position switch harness connector and ground.

Park/neutral position switch		Ground	Continuity
Connector	Terminal		
F49	3		Not existed

Is the inspection result normal?

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

4. CHECK REVERSE POSITION SWITCH SIGNAL

Check voltage between BCM harness connector and ground.

(+) BCM		(–)	Condition		Voltage (V) (Approx.)
Connector	Terminal				
M69	645	Ground	Shift lever	Reverse position	Battery voltage
				Except reverse position	0

Is the inspection result normal?

YES >> GO TO 8.
NO >> GO TO 5.

5. CHECK REVERSE POSITION SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect park/neutral position switch connector.
3. Disconnect BCM connector.
4. Check continuity between park/neutral position switch harness connector and BCM harness connector.

Park/neutral position switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
F49	1	M69	64	Existed

5. Check continuity between park/neutral position switch harness connector and ground.

Park/neutral position switch		Ground	Continuity
Connector	Terminal		
F49	1		Not existed

Is the inspection result normal?

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

6. CHECK PARK/NEUTRAL POSITION SWITCH

Refer to SEC-112, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace park/neutral position switch. Refer to TM-24, "Removal and Installation". (5MT: RS5F92R) or TM-77, "Removal and Installation" (6MT: RS6F94R).

7.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

8.REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and reregistration of all Intelligent Key using CONSULT-III.
   For initialization and reregistration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

Component Inspection

INFOID:0000000006706220

1.CHECK PARK/NEUTRAL POSITION SWITCH

1. Turn ignition switch OFF.
2. Disconnect park/neutral position switch connector.
3. Check continuity between park/neutral position switch terminals under the following conditions.

Park/neutral position switch		Condition		Continuity
Terminal				
2	3	Shift lever	Neutral position	Existed
			Except neutral position	Not existed
2	1	Shift lever	Reverse position	Existed
			Except reverse position	Not existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace park/neutral position switch. Refer to TM-24, "Removal and Installation". (5MT: RS5F92R) or TM-77, "Removal and Installation" (6MT: RS6F94R).

B26E8 CLUTCH INTERLOCK SWITCH

DTC Logic

INFOID:0000000006706221

NOTE:
- If DTC B26E8 is displayed with DTC B210F, first perform the trouble diagnosis for DTC B210F. Refer to BCS-83, "DTC Logic".
- If DTC B26E8 is displayed with DTC B2110, first perform the trouble diagnosis for DTC B2110. Refer to BCS-84, "DTC Logic".

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detection condition	Possible cause
B26E8	CLUTCH SW	BCM detects the following conditions for 2 seconds or more. • Clutch pedal position switch input (CAN) from ECM: ON (Clutch pedal is released) • Clutch interlock switch signal: ON (Clutch pedal is depressed)	• Harness or connector (CAN communication line is open or shorted) (Clutch interlock switch circuit is open or shorted) (Clutch pedal position switch circuit is open or shorted) • Clutch interlock switch • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE 1

1. Turn ignition switch ON and wait 2 seconds or more under the following conditions.
- Shift lever: In the neutral position.
- Clutch pedal: Depressed
2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-113, "Diagnosis Procedure".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE 2

1. Release clutch pedal and wait 2 seconds or more.
2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-113, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006706222

1.INSPECTION START

Perform inspection in accordance with procedure that confirms DTC.

Which procedure confirms DTC?

DTC confirmation procedure 1>>GO TO 2.
DTC confirmation procedure 2>>GO TO 3.

2.CHECK CLUTCH PEDAL POSITION SWITCH CIERCUIT

Refer to EC-427, "Component Function Check" (MR16DDT), EC-771, "Component Function Check" (HR16DE), or EC-980, "DTC Logic" (K9K).

Is the inspection result normal?

YES >> GO TO 8.
NO >> Repair or replace the malfunctioning parts.

3.CHECK CLUTCH INTERLOCK SWITCH POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect clutch interlock switch connector.

3. Check voltage between clutch interlock switch harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
Clutch interlock switch			
Connector	Terminal		
E63 (LHD) M208 (RHD)	3	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.
NO-1 >> Check 10 A fuse [No. 13, located in the fuse block (J/B)]
NO-2 >> Check harness for open or short between clutch interlock switch and fuse.

4. CHECK CLUTCH INTERLOCK SWITCH SIGNAL

1. Connect clutch interlock switch connector.
2. Check voltage between BCM harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
BCM					
Connector	Terminal				
M70	101	Ground	Clutch pedal	Depressed	Battery voltage
				Not depressed	0

Is the inspection result normal?

YES >> GO TO 8.
NO >> GO TO 5.

5. CHECK CLUTCH INTERLOCK SWITCH SIGNAL CIRCUIT

1. Disconnect clutch interlock switch connector.
2. Disconnect BCM connector.
3. Check continuity between clutch interlock switch harness connector and BCM harness connector.

Clutch interlock switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
E63 (LHD) M208 (RHD)	4	M70	101	Existed

4. Check continuity between clutch interlock switch harness connector and ground.

Clutch interlock switch		Ground	Continuity
Connector	Terminal		
E63 (LHD) M208 (RHD)	4		Not existed

Is the inspection result normal?

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

6. CHECK CLUTCH INTERLOCK SWITCH

Refer to SEC-115, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace clutch interlock switch. Refer to CL-16, "LHD : Removal and Installation" (LHD) or CL-18, "RHD : Removal and Installation" (RHD).

7. CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

8. REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and reregistration of all Intelligent Key using CONSULT-III.
   For initialization and reregistration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

Component Inspection

INFOID:0000000006706223

1. CHECK CLUTCH INTERLOCK SWITCH

1. Turn ignition switch OFF.
2. Disconnect clutch interlock switch connector.
3. Check continuity between clutch interlock switch terminals.

.

Clutch interlock switch		Condition		Continuity
Terminal				
3	4	Clutch pedal	Depressed	Existed
			Not depressed	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace clutch interlock switch. Refer to CL-16, "LHD : Removal and Installation" (LHD) or CL-18, "RHD : Removal and Installation" (RHD).

B26E9 STEERING STATUS

DTC Logic

INFOID:0000000006628526

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B26E9	LOCK MALFUNCTION	BCM activates steering lock but steering state that BCM recognizes is unlock.	Steering lock unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Turn ignition switch OFF.
3. Press driver side door switch.
4. Turn ignition switch ON.
5. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-116, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628527

1.INSPECTION START

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “BCM” using CONSULT-III.
3. Touch “ERASE”.
4. Perform DTC CONFIRMATION PROCEDURE for DTC B26E9. Refer to SEC-116, "DTC Logic".

Is DTC detected?

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

2.REPLACE STEERING LOCK UNIT

1. Replace steering lock unit.
2. Perform the service procedure for steering lock unit replacement. Refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

B26EF STEERING LOCK RELAY

DTC Logic

INFOID:0000000006628528

DTC DETECTION LOGIC

NOTE:

- If DTC B26EF is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-83, "DTC Logic".
- If DTC B26EF is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".
- If DTC B26EF is displayed with DTC B2612, first perform the trouble diagnosis for DTC B2612. Refer to SEC-102, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B26EF	STRG LCK RELAY OFF	BCM detects one of the following status • BCM does not receives steering lock relay ON signal (CAN) from IPDM E/R within 2 seconds after BCM requests IPDM E/R to turn steering lock relay ON • BCM detects, by lock/unlock status signals, that power source is not supplied to steering lock unit for 2 seconds after BCM requests IPDM E/R to turn steering lock relay ON	• Harness or connectors (CAN communication line is open or shorted.) • Harness or connector (Steering lock unit circuit is open or shorted.) • Steering lock unit • IPDM E/R

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Press push-button ignition switch under the following conditions, and wait 2 seconds or more.
- Selector lever: In the P position.
- Brake pedal: Not depressed
2. Turn ignition switch OFF.
3. Press driver side door switch to lock steering and wait 2 seconds or more.
4. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-117, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628529

1.CHECK DTC OF IPDM E/R

Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Perform the diagnosis procedure related to the detected DTC. Refer to PCS-25, "DTC Index".
NO >> GO TO 2.

2.CHECK STEERING LOCK UNIT POWER SUPPLY

Check voltage between steering lock unit harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
Steering lock unit					
Connector	Terminal				
M12	1	Ground	Ignition switch OFF	A few seconds after opening the driver door	Battery voltage
			Ignition switch LOCK	Press the push-button ignition switch	Battery voltage
			Ignition switch ACC or ON		0

NOTE:

To lock the steering	1. Set the selector lever in the P position. 2. Turn the power supply position to the OFF position. 3. Press any door switch.
To unlock the steering	1. Set the selector lever in the P position. 2. Press the push-button ignition switch with brake pedal not depressed.

Is the inspection normal?

YES >> GO TO 3.
NO >> GO TO 4.

3. REPLACE STEERING LOCK UNIT

1. Replace steering lock unit.
2. Perform the service procedure for steering lock unit replacement. Refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

4. CHECK STEERING LOCK RELAY CIRCUIT

1. Disconnect IPDM E/R connector and steering lock unit connector.
2. Check continuity between IPDM E/R harness connector and steering lock unit harness connector.

IPDM E/R		Steering lock unit		Continuity
Connector	Terminal	Connector	Terminal	
E14	46	M12	1	Existed

3. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E14	46		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
NO >> Repair or replace harness.

B26F0 STEERING LOCK RELAY

DTC Logic

INFOID:0000000006628530

DTC DETECTION LOGIC

NOTE:

- If DTC B26F0 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-83, "DTC Logic".
- If DTC B26F0 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B26F0	STRG LCK RELAY ON	BCM detects one of the following status • BCM does not receives steering lock relay OFF signal (CAN) from IPDM E/R within 2 seconds after BCM requests IPDM E/R to turn steering lock relay OFF • BCM detects, by the lock/unlock status signals, that power source is supplied to steering lock unit continuously for 2 seconds after BCM requests IPDM E/R to turn steering lock relay OFF	• Harness or connectors (CAN communication line is open or shorted.) • Harness or connector (Steering lock unit circuit is open or shorted.) • Steering lock unit • IPDM E/R

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Press push-button ignition switch under the following conditions, and wait 2 seconds or more.
- Selector lever: In the P position.
- Brake pedal: Not depressed
2. Turn ignition switch OFF.
3. Press driver side door switch and wait 2 seconds or more.
4. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-119, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628531

1.CHECK DTC OF IPDM E/R

Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Perform the diagnosis procedure related to the detected DTC. Refer to PCS-25, "DTC Index".
NO >> GO TO 2.

2.CHECK STEERING LOCK UNIT POWER SUPPLY

Check voltage between steering lock unit harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
Steering lock unit					
Connector	Terminal				
M12	1	Ground	Ignition switch OFF	A few seconds after opening the driver door	Battery voltage
			Ignition switch LOCK	Press the push-button ignition switch	Battery voltage
			Ignition switch ACC or ON		0

NOTE:

To lock the steering	1. Set the selector lever in the P position. 2. Turn the power supply position to the OFF position. 3. Press any door switch.
To unlock the steering	1. Set the selector lever in the P position. 2. Press the push-button ignition switch with brake pedal not depressed.

Is the inspection normal?

YES >> GO TO 3.
NO >> GO TO 4.

3. REPLACE STEERING LOCK UNIT

1. Replace steering lock unit.
2. Perform the service procedure for steering lock unit replacement. Refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

4. CHECK STEERING LOCK RELAY CIRCUIT

1. Disconnect IPDM E/R connector and steering lock unit connector.
2. Check continuity between IPDM E/R harness connector and steering lock unit harness connector.

IPDM E/R		Steering lock unit		Continuity
Connector	Terminal	Connector	Terminal	
E14	46	M12	1	Existed

3. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E14	46		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
NO >> Repair or replace harness.

B26F3 STARTER CONTROL RELAY

DTC Logic

INFOID:0000000006628532

DTC DETECTION LOGIC

NOTE:

- If DTC B26F3 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-83, "DTC Logic".
- If DTC B26F3 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B26F3	START CONT RLY ON	BCM requests IPDM E/R to turn starter control relay OFF, but BCM cannot receive starter control relay OFF state signal from IPDM E/R (CAN).	• Harness or connectors (CAN communication line is open or shorted.) • IPDM E/R

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Press push-button ignition switch under the following conditions to start engine.
- Selector lever: In the P position
- Brake pedal: Depressed
2. Wait 2 seconds after engine started.
3. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-121, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628533

1.CHECK DTC OF IPDM E/R

Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Perform the diagnosis procedure related to the detected DTC. Refer to PCS-25, "DTC Index".
NO >> GO TO 2.

2.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

B26F4 STARTER CONTROL RELAY

DTC Logic

INFOID:0000000006628534

DTC DETECTION LOGIC

NOTE:

- If DTC B26F4 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-83, "DTC Logic".
- If DTC B26F4 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B26F4	START CONT RELAY OFF	BCM requests IPDM E/R to turn starter control relay ON, but BCM cannot receive starter control relay ON state signal from IPDM E/R.	• Harness or connectors (CAN communication line is open or shorted.) • IPDM E/R

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Press push-button ignition switch under the following conditions to start engine, and wait 1 second or more.

- Selector lever: In the P position
- Brake pedal: Depressed

2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-122, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628535

1.CHECK DTC OF IPDM E/R

Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Perform the diagnosis procedure related to the detected DTC. Refer to PCS-25, "DTC Index".
NO >> GO TO 2.

2.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

B26F5 STEERING LOCK STATUS SWITCH

DTC Logic

INFOID:0000000006628536

DTC DETECTION LOGIC

NOTE:

- If DTC B26F5 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-83, "DTC Logic".
- If DTC B26F5 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B26F5	STRG LCK STS SW	When BCM performs steering lock request to IPDM E/R, steering lock state signal from IPDM E/R is already lock state.	• Harness or connectors (CAN communication line is open or shorted.) • Harness or connectors (Steering lock unit circuit is open or shorted.) • Steering lock unit • IPDM E/R • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Shift selector lever to the P position.
2. Turn ignition switch ON.
3. Turn ignition switch OFF.
4. Press driver side door switch.
5. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-123, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628537

1.CHECK IPDM E/R INPUT SIGNAL

1. Turn ignition switch OFF.
2. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E17	63	Ground	Steering lock unit	Lock	12
				Unlock	0
	65			Lock	0
				Unlock	12

NOTE:

To lock the steering	1. Set the selector lever in the P position. 2. Turn the power supply position to the OFF position. 3. Press any door switch.
To unlock the steering	1. Set the selector lever in the P position. 2. Press the push-button ignition switch with brake pedal not depressed.

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 2.

2.CHECK IPDM E/R INPUT SIGNAL CIRCUIT

1. Disconnect IPDM E/R connector and steering lock unit connector.
2. Check continuity between IPDM E/R harness connector and steering lock unit harness connector.

IPDM E/R		Steering lock unit		Continuity
Connector	Terminal	Connector	Terminal	
E17	63	M12	8	Existed
	65		3	

3. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E17	63		Not existed
	65		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.REPLACE STEERING LOCK UNIT

1. Replace steering lock unit.
2. Perform the service procedure for steering lock unit replacement. Refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

4.CHECK BCM INPUT SIGNAL

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

(+)		(–)	Condition		Voltage (V) (Approx.)
BCM					
Connector	Terminal				
M70	107	Ground	Steering lock unit	Lock	0
				Unlock	12
	108			Lock	12
				Unlock	0

NOTE:

To lock the steering	1. Set the selector lever in the P position. 2. Turn the power supply position to the OFF position. 3. Press any door switch.
To unlock the steering	1. Set the selector lever in the P position. 2. Press the push-button ignition switch with brake pedal not depressed.

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 6.

5.REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

6. CHECK BCM INPUT SIGNAL CIRCUIT

1. Disconnect BCM connector and steering lock unit connector.
2. Check continuity between BCM harness connector and steering lock unit harness connector.

BCM		Steering lock unit		Continuity
Connector	Terminal	Connector	Terminal	
M70	107	M12	3	Existed
	108		8	

3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M70	107		Not existed
	108		

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair or replace harness.

7. REPLACE STEERING LOCK UNIT

1. Replace steering lock unit.
2. Perform the service procedure for steering lock unit replacement. Refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

B26F7 BCM

DTC Logic

INFOID:0000000006628538

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B26F7	BCM	Inside key antenna output circuit in BCM is malfunctioning.	BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Press door request switch.
2. Turn ignition switch ON.
3. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-127, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628539

1.INSPECTION START

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “BCM” using CONSULT-III.
3. Touch “ERASE”.
4. Perform DTC CONFIRMATION PROCEDURE for DTC B26F7. Refer to SEC-126, "DTC Logic".

Is DTC detected?

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

2.REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

B26F8 BCM

DTC Logic

INFOID:0000000006628540

DTC DETECTION LOGIC

NOTE:
DTC B26F8 can be detected even though the related circuit is not used in this vehicle.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B26F8	BCM	Starter control replay control signal and feedback circuit signal (inside BCM) does not match.	BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON and wait 1 second.
2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-127, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628541

1.INSPECTION START

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of ”BCM” using CONSULT-III.
3. Touch “ERASE”.
4. Perform DTC CONFIRMATION PROCEDURE for DTC B26F8.
   Refer to SEC-127, "DTC Logic".

Is DTC detected?

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

2.REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

B26F9 CRANKING REQUEST CIRCUIT

DTC Logic

INFOID:0000000006628542

DTC DETECTION LOGIC

NOTE:

- If DTC B26F9 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-83, "DTC Logic".
- If DTC B26F9 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B26F9	CRANK REQ CIR SHORT	BCM detects that the status of the following signals does not match. • Cranking request signal from ECM • Starter control relay control signal from ECM (CAN)	• Harness or connectors (Can communication line is open or shorted.) • Harness or connectors (Cranking request signal circuit is open or shorted.) • ECM • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION

1. Perform DTC CONFIRMATION PROCEDURE for DTC P1650. Refer to EC-366, "DTC Logic" (MR16DDT) or EC-725, "DTC Logic" (HR16DE).
2. Turn ignition switch ON.
3. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-128, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628543

1.CHECK CRANKING REQUEST SIGNAL

1. Turn ignition switch ON.
2. Check voltage between BCM harness connector and ground under the following conditions.

(+) BCM Connector	(+) BCM Terminal	(–)	Condition		Voltage (V) (Approx.)
M69	64	Ground	Ignition switch OFF		3.6
			Ignition switch ON	• Engine: Stopped • Selector lever position: P	0
				• Engine: Stopped • Selector lever position: Other than P	12
				Engine running	12

Is the inspection result normal?

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

2.CHECK CRANKING REQUEST SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Disconnect ECM connector.
4. Check continuity between BCM harness connector and ECM harness connector.

BCM		ECM		Continuity
Connector	Terminal	Connector	Terminal	
M69	64	E16 (HR16DE)	82	Existed
		F26 (MR16DDT)	92	

5. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M69	64		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.
3. Perform DTC CONFIRMATION PROCEDURE for DTC B26F9. Refer to SEC-128, "DTC Logic".

Is DTC detected?

YES >> GO TO 4.
NO >> INSPECTION END

4.REPLACE ECM

Replace ECM.
Refer to EC-447, "Removal and Installation" (MR16DDT) or EC-805, "Removal and Installation" (HR16DE).

>> INSPECTION END

B26FA CRANKING REQUEST CIRCUIT

DTC Logic

INFOID:0000000006628544

DTC DETECTION LOGIC

NOTE:

- If DTC B26FA is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-83, "DTC Logic".
- If DTC B26FA is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B26FA	CRANK REQ CIR OPEN	BCM detects that the status of the following signals does not match. • Cranking request signal from ECM • Starter control relay control signal from ECM (CAN)	• Harness or connectors (Can communication line is open or shorted.) • Harness or connectors (Cranking request signal circuit is open or shorted.) • BCM • ECM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION

1. Perform DTC CONFIRMATION PROCEDURE for DTC P1650. Refer to EC-366, "DTC Logic" (MR16DDT) or EC-725, "DTC Logic" (HR16DE).
2. Turn ignition switch ON.
3. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-130, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628545

1.CHECK CRANKING REQUEST SIGNAL

1. Turn ignition switch ON.
2. Check voltage between BCM harness connector and ground under the following conditions.

(+) BCM Connector	(+) BCM Terminal	(–)	Condition		Voltage (V) (Approx.)
M69	64	Ground	Ignition switch OFF		3.6
			Ignition switch ON	• Engine: Stopped • Selector lever position: P	0
				• Engine: Stopped • Selector lever position: Other than P	12
				Engine running	12

Is the inspection result normal?

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

2.CHECK CRANKING REQUEST SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Disconnect ECM connector.
4. Check continuity between BCM harness connector and ECM harness connector.

BCM		ECM		Continuity
Connector	Terminal	Connector	Terminal	
M69	64	E16 (HR16DE)	82	Existed
		F26 (MR16DDT)	92	

5. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M69	64		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.
3. Perform DTC CONFIRMATION PROCEDURE for DTC B26FA. Refer to SEC-130, "DTC Logic".

Is DTC detected?

YES >> GO TO 4.
NO >> INSPECTION END

4.REPLACE ECM

Replace ECM.
Refer to EC-447, "Removal and Installation" (MR16DDT) or EC-805, "Removal and Installation" (HR16DE).

>> INSPECTION END

B26FB CLUTCH SWITCH

DTC Logic

INFOID:0000000006706225

DTC DETECTION LOGIC

NOTE:

- If DTC B26FB is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-83, "DTC Logic".
- If DTC B26FB is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detection condition	Possible cause
B26FB	CLUTCH SW	BCM receives the abnormal signal of clutch pedal position switch from ECM via CAN communication.	• Harness or connector (CAN communication line is open or shorted) (Clutch pedal position switch circuit is open or shorted.)

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-132, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006706226

1.INSPECTION START

1. Turn ignition switch ON.
2. Select “Self diagnostic result” mode of BCM using CONSULT-III.
3. Touch “ERASE”.
4. Perform DTC Confirmation Procedure.
   See SEC-132, "DTC Logic".

Is DTC detected?

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

2.CHECK CLUTCH PEDAL POSITION SWITCH CIERCUIT

Refer to EC-427, "Component Function Check" (MR16DDT), EC-771, "Component Function Check" (HR16DE), or EC-980, "DTC Logic" (K9K).

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning parts.

3.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

B26FC KEY REGISTRATION

DTC Logic

INFOID:0000000006628546

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B26FC	KEY REGISTRATION	Intelligent Key that does not match the vehicle is registered.	• Improper registration operation • Intelligent Key • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Perform initialization of BCM and reregistration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.
2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-133, "Diagnosis Procedure"
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628547

1.REPLACE INTELLIGENT KEY

1. Prepare Intelligent Key that matches the vehicle.
2. Perform initialization of BCM and registration of Intelligent Key using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.
3. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

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

2.REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

B209F CRANKING REQUEST CIRCUIT

DTC Logic

INFOID:0000000006628548

DTC DETECTION LOGIC

NOTE:
If DTC B209F is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to PCS-30, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B209F	CRANK REQ CIR OPEN	When the following items do not match, a malfunction is detected. • Cranking request signal from ECM • Starter control relay control signal from ECM (CAN)	• Harness or connectors (CAN communication line is open or shorted.) • Harness or connectors (Cranking request signal circuit is open or shorted.) • IPDM E/R • ECM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Perform DTC CONFIRMATION PROCEDURE for DTC P1650. Refer to EC-366, "DTC Logic" (MR16DDT) or EC-725, "DTC Logic" (HR16DE).
2. Turn ignition switch ON.
3. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-134, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628549

1.CHECK CRANKING REQUEST SIGNAL

1. Turn ignition switch ON.
2. Check voltage between IPDM E/R harness connector and ground under the following conditions.

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E13	23	Ground	Ignition switch FF		3.6
			Ignition switch ON	• Engine: Stopped • Selector lever position: P	0
				• Engine: Stopped • Selector lever position: Other than P	12
				Engine running	12

Is the inspection result normal?

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

2.CHECK CRANKING REQUEST SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Disconnect ECM connector.
4. Check continuity between IPDM E/R harness connector and ECM harness connector.

IPDM E/R		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E13	23	E16 (HR16DE)	82	Existed
		F26 (MR16DDT)	92	

5. Check continuity between BCM harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E13	23		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.REPLACE IPDM E/R

1. Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
2. Perform DTC CONFIRMATION PROCEDURE for DTC B209F. Refer to SEC-134, "DTC Logic".

Is DTC detected?

YES >> GO TO 4.
NO >> INSPECTION END

4.REPLACE ECM

Replace ECM.
Refer to EC-447, "Removal and Installation" (MR16DDT) or EC-805, "Removal and Installation" (HR16DE).

>> INSPECTION END

B20A0 CRANKING REQUEST CIRCUIT

DTC Logic

INFOID:0000000006628550

DTC DETECTION LOGIC

NOTE:
If DTC B20A0 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to PCS-30, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B20A0	CRANK REQ CIR SHORT	When the following items do not match, a malfunction is detected. • Cranking request signal from ECM • Starter control relay control signal from ECM (CAN)	• Harness or connectors (CAN communication line is open or shorted.) • Harness or connectors (Cranking request signal circuit is open or shorted.) • IPDM E/R • ECM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Perform DTC CONFIRMATION PROCEDURE for DTC P1650. Refer to EC-366, "DTC Logic" (MR16DDT) or EC-725, "DTC Logic" (HR16DE).
2. Turn ignition switch ON.
3. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-136, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628551

1.CHECK CRANKING REQUEST SIGNAL

1. Turn ignition switch ON.
2. Check voltage between IPDM E/R harness connector and ground under the following conditions.

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E13	23	Ground	Ignition switch FF		3.6
			Ignition switch ON	• Engine: Stopped • Selector lever position: P	0
				• Engine: Stopped • Selector lever position: Other than P	12
				Engine running	12

Is the inspection result normal?

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

2.CHECK CRANKING REQUEST SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Disconnect ECM connector.
4. Check continuity between IPDM E/R harness connector and ECM harness connector.

IPDM E/R		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E13	23	E16 (HR16DE)	82	Existed
		F26 (MR16DDT)	92	

5. Check continuity between BCM harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E13	23		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.REPLACE IPDM E/R

1. Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
2. Perform DTC CONFIRMATION PROCEDURE for DTC B20A0. Refer to SEC-136, "DTC Logic".

Is DTC detected?

YES >> GO TO 4.
NO >> INSPECTION END

4.REPLACE ECM

Replace ECM.
Refer to EC-447, "Removal and Installation" (MR16DDT) or EC-805, "Removal and Installation" (HR16DE).

>> INSPECTION END

B2108 STEERING LOCK RELAY

DTC Logic

INFOID:0000000006628552

DTC DETECTION LOGIC

NOTE:
If DTC B2108 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to PCS-30, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2108	STRG LCK RELAY ON	IPDM E/R detects that steering lock relay is stuck in the ON position for approximately 1 second even if IPDM E/R receives steering lock relay OFF signal from BCM.	• Harness or connectors (CAN communication line is open or shorted.) • IPDM E/R

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Press push-button ignition switch under the following conditions and wait 1 second or more.
- Selector lever: In the P position
- Brake pedal: Not depressed
2. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-138, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628553

1.CHECK STEERING LOCK RELAY

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

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E14	46	Ground	Ignition switch OFF	A few seconds after opening the driver door	Battery voltage
			Ignition switch LOCK	Press the push-button ignition switch	Battery voltage
			Ignition switch ACC or ON		0

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".

2.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

B2109 STEERING LOCK RELAY

DTC Logic

INFOID:0000000006628554

DTC DETECTION LOGIC

NOTE:

- If DTC B2109 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to PCS-30, "DTC Logic".
- When IPDM E/R power supply voltage is low (Approx. 7 - 8 V for about 1 second), the DTC B2109 may be detected.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2109	STRG LCK RELAY OFF	IPDM E/R detects that steering lock relay is stuck in the OFF position for approximately 1 second even if IPDM E/R receives steering lock relay ON/OFF signal from BCM.	• Harness or connector (CAN communication line is open or shorted.) • Harness or connector (Power supply circuit for steering lock relay is open or shorted.) • IPDM E/R • Battery

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Press push-button ignition switch under the following conditions and wait 1 second or more.
- Selector lever: In the P position
- Brake pedal: Not depressed
2. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-139, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628555

1.CHECK POWER SUPPLY CIRCUIT

Check IPDM E/R power supply circuit. Refer to PCS-33, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning part.

2.CHECK FUSE

1. Turn ignition switch OFF.
2. Check 10 A fuse (No. 44, located in IPDM E/R).

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
NO >> Replace the blown fuse after repairing the cause of ffected circuit if a fuse is blown.

B210A STEERING LOCK UNIT

DTC Logic

INFOID:0000000006628556

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B210A	STRG LCK STATE SW	IPDM E/R detects the difference between steering condition switches 1 and 2 signals for 1 second.	• Harness or connectors (Steering lock unit circuit is open or shorted.) • Steering lock unit • IPDM E/R • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE 1

1. Press push-button ignition switch under the following conditions and wait 1 second or more.
- Selector lever: In the P position
- Brake pedal: Not depressed
2. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-140, "Diagnosis Procedure".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE 2

1. Turn ignition switch ON.
2. Turn ignition switch OFF.
3. Press driver side door switch and wait 1 second or more.
4. CCheck DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-140, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628557

1.CHECK IPDM E/R INPUT SIGNAL

1. Turn ignition switch OFF.
2. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E17	63	Ground	Steering lock unit	Lock	12
				Unlock	0
	65			Lock	0
				Unlock	12

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
NO >> GO TO 2.

2.CHECK IPDM E/R INPUT SIGNAL CIRCUIT

1. Disconnect IPDM E/R connector and steering lock unit connector.
2. Check continuity between IPDM E/R harness connector and steering lock unit harness connector.

IPDM E/R		Steering lock unit		Continuity
Connector	Terminal	Connector	Terminal	
E17	63	M12	8	Existed
	65		3	

3. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E17	63		Not existed
	65		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3. REPLACE STEERING LOCK UNIT

1. Replace steering lock unit.
2. Perform the service procedure for steering lock unit replacement. Refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

B210B STARTER CONTROL RELAY

DTC Logic

INFOID:0000000006628558

DTC DETECTION LOGIC

NOTE:
If DTC B210B is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to PCS-30, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B210B	START CONT RLY ON	When comparing the following items, IPDM E/R detects that starter control relay is stuck in the ON position for 5 seconds or more. • Starter control relay signal (CAN) from BCM • Starter relay status signal (CAN) from BCM • Starter control relay and starter relay status signal (IPDM E/R input) • Starter control relay control signal (IPDM E/R output) • P/N position signal input • Ignition power supply No.2 signal from BCM	• Harness or connectors (CAN communication line is open or shorted. (Ignition power supply No.2 circuit is open or shorted.) • IPDM E/R • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Press push-button ignition switch under the following conditions to start engine, and wait 5 seconds or more.
- Selector lever: In the P position
- Brake pedal: Depressed
2. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-142, "Diagnosis Procedure".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE 2

1. Stop engine.
2. Perform DTC CONFIRMATION PROCEDURE for DTC P1650. Refer to EC-366, "DTC Logic" (MR16DDT) or EC-725, "DTC Logic" (HR16DE).
3. Turn ignition switch ON.
4. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-142, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628559

1.INSPECTION START

Perform inspection in accordance with procedure that confirms DTC.

Which procedure confirms DTC?

DTC confirmation procedure 1>>GO TO 2.
DTC confirmation procedure 2>>GO TO 4.

2.CHECK DTC OF BCM

Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to BCS-67, "DTC Index".
NO >> GO TO 3.

3.INSPECTION START

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.
3. Touch “ERASE”.
4. Perform DTC CONFIRMATION PROCEDURE for DTC B210B. Refer to SEC-142, "DTC Logic".

Is DTC detected?

YES >> GO TO 6.
NO >> INSPECTION END

4. CHECK IGNITION POWER SUPLLY NO.2 SIGNAL

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E17	69	Ground	Power supply position	OFF	0
				ON	12

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
NO >> GO TO 5.

5. CHECK BCM INPUT SIGNAL CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between IPDM E/R harness connector and BCM harness connector.

IPDM E/R		BCM		Continuity
Connector	Terminal	Connector	Terminal	
E17	69	M70	101	Existed

3. Check continuity between transmission range switch harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E17	69		Not existed

Is the inspection result normal?

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

6. REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.
3. Perform DTC CONFIRMATION PROCEDURE for DTC B210B. Refer to SEC-142, "DTC Logic".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".

B210C STARTER CONTROL RELAY

DTC Logic

INFOID:0000000006628560

DTC DETECTION LOGIC

NOTE:

- If DTC B210C is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to PCS-30, "DTC Logic".
- When IPDM E/R power supply voltage is low (Approx. 7 - 8 V for about 1 second), the DTC B210C may be detected.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B210C	START CONT RLY OFF	When comparing the following items, IPDM E/R detects that starter control relay is stuck in the OFF position for 5 seconds or more. • Starter control relay signal (CAN) from BCM • Starter relay status signal (CAN) from BCM • Starter control relay and starter relay status signal (IPDM E/R input) • Starter control relay control signal (IPDM E/R output) • P/N position signal input • Ignition power supply No.2 signal from BCM	• Harness or connectors (CAN communication line is open or shorted. (Ignition power supply No.2 circuit is open or shorted.) • IPDM E/R • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Press push-button ignition switch under the following conditions to start engine, and wait 5 seconds or more.

- Selector lever: In the P position
- Brake pedal: Depressed

2. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-144, "Diagnosis Procedure".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE 2

1. Stop engine.
2. Perform DTC CONFIRMATION PROCEDURE for DTC P1650. Refer to EC-366, "DTC Logic" (MR16DDT) or EC-725, "DTC Logic" (HR16DE).
3. Turn ignition switch ON.
4. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-144, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628561

1.INSPECTION START

Perform inspection in accordance with procedure that confirms DTC.

Which procedure confirms DTC?

DTC confirmation procedure 1>>GO TO 2.
DTC confirmation procedure 2>>GO TO 4.

2.CHECK DTC OF BCM

Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to BCS-67, "DTC Index".
NO >> GO TO 3.

3. INSPECTION START

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.
3. Touch “ERASE”.
4. Perform DTC CONFIRMATION PROCEDURE for DTC B210C. Refer to SEC-144, "DTC Logic".

Is DTC detected?

YES >> GO TO 6.
NO >> INSPECTION END

4. CHECK IGNITION POWER SUPLLY NO.2 SIGNAL

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E17	69	Ground	Power supply position	OFF	0
				ON	12

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
NO >> GO TO 5.

5. CHECK BCM INPUT SIGNAL CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between IPDM E/R harness connector and BCM harness connector.

IPDM E/R		BCM		Continuity
Connector	Terminal	Connector	Terminal	
E17	69	M70	101	Existed

3. Check continuity between transmission range switch harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E17	69		Not existed

Is the inspection result normal?

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

6. REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform DTC CONFIRMATION PROCEDURE for DTC B210C. Refer to SEC-144, "DTC Logic".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".

B210D STARTER RELAY

DTC Logic

INFOID:0000000006628562

DTC DETECTION LOGIC

NOTE:
If DTC B210D is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to PCS-30, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B210D	STARTER RELAY ON	When comparing the following items, IPDM E/R detects that starter relay is stuck in the ON position for 5 seconds or more. • Starter control relay signal (CAN) from BCM • Starter relay status signal (CAN) from BCM • Starter control relay and starter relay status signal (IPDM E/R input) • Starter control relay control signal (IPDM E/R output) • P/N position signal input • Ignition power supply No.2 signal from BCM	• Harness or connectors (CAN communication line is open or shorted.) (Ignition power supply No.2 circuit is open or shorted.) • BCM • IPDM E/R

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE 1

1. Press push-button ignition switch under the following conditions to start engine, and wait 5 seconds or more.
- Selector lever: In the P position
- Brake pedal: Depressed
2. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-146, "Diagnosis Procedure".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE 2

1. Stop engine.
2. Perform DTC CONFIRMATION PROCEDURE for DTC P1650. Refer to EC-366, "DTC Logic" (MR16DDT) or EC-725, "DTC Logic" (HR16DE).
3. Turn ignition switch ON.
4. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-144, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628563

1.INSPECTION START

Perform inspection in accordance with procedure that confirms DTC.

Which procedure confirms DTC?

DTC confirmation procedure 1>>GO TO 2.
DTC confirmation procedure 2>>GO TO 3.

2.INSPECTION START

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.
3. Touch “ERASE”.
4. Perform DTC CONFIRMATION PROCEDURE for DTC B210D. Refer to SEC-146, "DTC Logic".

Is DTC detected?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".

NO >> INSPECTION END

3. CHECK IGNITION POWER SUPLLY NO.2 SIGNAL

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E17	69	Ground	Power supply position	OFF	0
				ON	12

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
NO >> GO TO 4.

4. CHECK BCM INPUT SIGNAL CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between IPDM E/R harness connector and BCM harness connector.

IPDM E/R		BCM		Continuity
Connector	Terminal	Connector	Terminal	
E17	69	M70	101	Existed

3. Check continuity between transmission range switch harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E17	69		Not existed

Is the inspection result normal?

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

5. REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform DTC CONFIRMATION PROCEDURE for DTC B210D Refer to SEC-146, "DTC Logic".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".

B210E STARTER RELAY

DTC Logic

INFOID:0000000006628564

DTC DETECTION LOGIC

NOTE:

- If DTC B210E is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to PCS-30, "DTC Logic".
- If DTC B210E is displayed with DTC B2605, first perform the trouble diagnosis for DTC B2605. Refer to SEC-90, "DTC Logic".
- When IPDM E/R power supply voltage is low (Approx. 7 - 8 V for about 1 second), the DTC B210E may be detected.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B210E	STARTER RELAY OFF	When comparing the following items, IPDM E/R detects that starter relay is stuck in the OFF position for 5 seconds or more. • Starter control relay signal (CAN) from BCM • Starter relay status signal (CAN) from BCM • Starter control relay and starter relay status signal (IPDM E/R input) • Starter control relay control signal (IPDM E/R output) • P/N position signal input • Ignition power supply No.2 signal from BCM	• Harness or connector (CAN communication line is open or shorted.) • Harness or connector (Starter relay circuit is open or shorted.) • IPDM E/R • BCM • Battery

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Press push-button ignition switch under the following conditions to start engine, and wait 5 seconds or more.

- Selector lever: In the P position
- Brake pedal: Depressed

2. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-148, "Diagnosis Procedure".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE 2

1. Stop engine.
2. Perform DTC CONFIRMATION PROCEDURE for DTC P1650. Refer to EC-366, "DTC Logic" (MR16DDT) or EC-725, "DTC Logic" (HR16DE).
3. Turn ignition switch ON.
4. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-146, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628565

1.INSPECTION START

Perform inspection in accordance with procedure that confirms DTC.

Which procedure confirms DTC?

DTC confirmation procedure 1>>GO TO 2.
DTC confirmation procedure 2>>GO TO 5.

2.CHECK STARTER RELAY OUTPUT SIGNAL

1. Check voltage between BCM harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
BCM					
Connector	Terminal				
M70	97	Ground	Selector lever (CVT models)	P or N position	Battery voltage
				Other than above	0
			Power supply position (M/T models)	ON	Battery voltage
				OFF	0

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 3.

3. CHECK STARTER RELAY OUTPUT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Disconnect IPDM E/R connector.
4. Check continuity between BCM harness connector and IPDM E/R harness connector.

BCM		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
M70	97	E13	30	Existed

5. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M70	97		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
NO >> Repair or replace harness.

4. CHECK STARTER RELAY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
IPDM E/R			
Connector	Terminal		
E10	4	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 7.
NO >> Check harness for open or short between IPDM E/R and battery. Refer to PCS-27, "Wiring Diagram".

5. CHECK IGNITION POWER SUPLLY NO.2 SIGNAL

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E17	69	Ground	Power supply position	OFF	0
				ON	12

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
NO >> GO TO 6.

6.CHECK BCM INPUT SIGNAL CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between IPDM E/R harness connector and BCM harness connector.

IPDM E/R		BCM		Continuity
Connector	Terminal	Connector	Terminal	
E17	69	M70	101	Existed

3. Check continuity between transmission range switch harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E17	69		Not existed

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair or replace harness.

7.REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform DTC CONFIRMATION PROCEDURE for DTC B210E. Refer to SEC-148, "DTC Logic".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".

B210F SHIFT POSITION/CLUTCH INTERLOCK SWITCH

DTC Logic

INFOID:0000000006628566

DTC DETECTION LOGIC

NOTE:
If DTC B210F is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to PCS-30, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B210F	INTER LOCK/PNP SW ON	There is a difference between P/N position signal from transmission range switch and P/N position signal from BCM (CAN).	• Harness or connectors (CAN communication line is open or shorted.) • Harness or connectors (Transmission range switch circuit is open or shorted.) • Transmission range switch • IPDM E/R • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Shift selector lever to the P position.
2. Turn ignition switch ON and wait 1 second or more.
3. Shift selector lever to the N position and wait 1 second or more.
4. Shift selector lever to any position other than P and N, and wait 1 second or more.
5. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-151, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628567

1.CHECK DTC OF BCM

Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to BCS-67, "DTC Index".
NO >> GO TO 2.

2.CHECK DTC OF TCM

Check DTC in “Self Diagnostic Result” mode of “TCM” using CONSULT-III.

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to TM-171, "DTC Index" (CVT: RE0F10B) or TM-366, "DTC Index" (CVT: RE0F11A).
NO >> GO TO 3.

3.CHECK IPDM E/R SIGNAL CIRCUIT OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Disconnect transmission range switch connector.
4. Check continuity between IPDM E/R harness connector and transmission range switch harness connector.

IPDM E/R		Transmission range switch		Continuity
Connector	Terminal	Connector	Terminal	
E15	48	F23 (HR16DE) F27 (MR16DDT)	2	Existed

5. Check continuity between IPDM E/R harness connector and ground.

(+)		(–)	Continuity
IPDM E/R			
Connector	Terminal		
E15	48	Ground	Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
NO >> Repair or replace harness.

B2110 SHIFT POSITION/CLUTCH INTERLOCK SWITCH

DTC Logic

INFOID:0000000006628568

DTC DETECTION LOGIC

NOTE:
If DTC B2110 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to PCS-30, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2110	INTER LOCK/PNP SW OFF	There is a difference between P/N position signal from transmission range switch and P/N position signal from BCM (CAN).	• Harness or connectors (CAN communication line is open or shorted.) • Harness or connectors (Transmission range switch circuit is open or shorted.) • Transmission range switch • IPDM E/R • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Shift selector lever to the P position.
2. Turn ignition switch ON and wait 1 second or more.
3. Shift selector lever to the N position and wait 1 second or more.
4. Shift selector lever to any position other than P and N, and wait 1 second or more.
5. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-153, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628569

1.CHECK DTC OF BCM

Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to BCS-67, "DTC Index".
NO >> GO TO 2.

2.CHECK DTC OF TCM

Check DTC in “Self Diagnostic Result” mode of “TCM” using CONSULT-III.

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to TM-171, "DTC Index" (CVT: RE0F10B) or TM-366, "DTC Index" (CVT: RE0F11A).
NO >> GO TO 3.

3.CHECK IPDM E/R SIGNAL CIRCUIT OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Disconnect transmission range swiwtch connector.
4. Check continuity between IPDM E/R harness connector and transmission range swiwtch harness connector.

IPDM E/R		Transmission range switch		Continuity
Connector	Terminal	Connector	Terminal	
E15	48	F23 (HR16DE) F27 (MR16DDT)	2	Existed

5. Check continuity between IPDM E/R harness connector and ground.

(+)		(–)	Continuity
IPDM E/R			
Connector	Terminal		
E15	48	Ground	Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
NO >> Repair or replace harness.

HOOD SWITCH

Component Function Check

INFOID:0000000006628571

1.CHECK FUNCTION

1. Select “HOOD SW” in “Data Monitor” mode of “IPDM E/R” using CONSULT-III.
2. Check “HOOD SW” indication under the following condition.

Monitor item	Condition		Indication
HOOD SW	Hood	Open	ON
		Close	OFF

Is the indication normal?

YES >> Hood switch is OK.
NO >> Go to SEC-155, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000006628572

1.CHECK HOOD SWITCH SIGNAL CIRCUIT 1

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

(+)		(–)	Voltage (V) (Approx.)
Hood switch			
Connector	Terminal		
E78	1	Ground	12

Is the inspection result normal?

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

2.CHECK HOOD SWITCH SIGNAL CIRCUIT 2

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and hood switch harness connector.

IPDM E/R		Hood switch		Continuity
Connector	Terminal	Connector	Terminal	
E13	32	E78	1	Existed

3. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E13	32		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
NO >> Repair or replace harness.

3.CHECK HOOD SWITCH GROUND CIRCUIT

Check continuity between hood switch harness connector and ground.

Hood switch		Ground	Continuity
Connector	Terminal		
E78	2		Existed

Is the inspection result normal?

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

4.CHECK HOOD SWITCH

Refer to SEC-156, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace hood switch.

5.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

Component Inspection

INFOID:0000000006698782

1.CHECK HOOD SWITCH

1. Turn ignition switch OFF.
2. Disconnect hood switch connector.
3. Check continuity between hood switch terminals.

Hood switch		Condition		Continuity
Terminal				
1	2	Hood switch	Press	Not existed
			Release	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace hood switch.

HORN FUNCTION

Component Function Check

INFOID:0000000006628576

1.CHECK FUNCTION 1

1. Disconnect vehicle security horn relay.
2. Perform “VEHICLE SECURITY HORN” in “ACTIVE TEST” mode of “THEFT ALM” of “BCM” using CONSULT-III.
3. Check the horn operation.

Test item		Description	
VEHICLE SECURITY HORN	ON	Horn	Sounds (for 0.5 sec)

Is the operation normal?

YES >> GO TO 2.
NO >> Go to SEC-157, "Diagnosis Procedure".

2.CHECK FUNCTION 2

1. Reconnect vehicle security horn relay.
2. Disconnect horn relay.
3. Perform “VEHICLE SECURITY HORN” in “ACTIVE TEST” mode of “THEFT ALM” of “BCM” using CONSULT-III.
4. Check the horn operation.

Test item		Description	
VEHICLE SECURITY HORN	ON	Vehicle security horn	Sounds (for 0.5 sec)

Is the operation normal?

YES >> INSPECTION END
NO >> Go to SEC-157, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000006628577

1.INSPECTION START

Perform inspection in accordance with procedure that confirms malfunction.

Which procedure confirms malfunction?

Component Function Check 1>>GO TO 2.
Component Function Check 2>>GO TO 4.

2.CHECK HORN FUNCTION

Check that horn functions properly using horn switch.

Do horns sound?

YES >> GO TO 3.
NO >> Check horn circuit. Refer to HRN-3, "Wiring Diagram".

3.CHECK HORN CONTROL CIRCUIT

1. Disconnect horn relay.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and horn relay harness connector.

IPDM E/R		Horn relay		Continuity
Connector	Terminal	Connector	Terminal	
E13	34	E5	1	Existed

4. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E13	34		Not existed

Is the inspection result normal?

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

4.CHECK HORN FUNCTION

Check that vehicle security horn functions properly using horn switch.

Do horns sound?

YES >> GO TO 5.
NO >> Check vehicle security horn circuit. Refer to HRN-3, "Wiring Diagram".

5.CHECK VEHICLE SECURITY HORN CONTROL CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and vehicle security horn relay harness connector.

IPDM E/R		Vehicle security horn relay		Continuity
Connector	Terminal	Connector	Terminal	
E13	34	E56	1	Existed

3. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E13	34		Not existed

Is the inspection result normal?

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

6.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

SECURITY INDICATOR LAMP

Component Function Check

INFOID:0000000006628581

1.CHECK FUNCTION

1. Perform “THEFT IND” in “ACTIVE TEST” mode of “IMMU” of “BCM” using CONSULT-III.
2. Check security indicator lamp operation.

Test item		Description	
THEFT IND	ON	Security indicator lamp	Illuminates
	OFF		Does not illuminate

Is the inspection result normal?

YES >> INSPECTION END
NO >> Go to SEC-159, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000006628582

1.CHECK SECURITY INDICATOR LAMP POWER SUPPLY CIRCUIT

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

(+)		(–)	Voltage (V) (Approx.)
Combination meter			
Connector	Terminal		
M34	27	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.
NO-1 >> Check 10 A fuse [No. 11, located in the fuse block (J/B)].
NO-2 >> Check harness for open or short between combination meter and fuse.

2.CHECK SECURITY INDICATOR LAMP SIGNAL

1. Connect combination meter connector.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
BCM			
Connector	Terminal		
M68	23	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 4.

3.REPLACE BCM

1. Replace BCM. Refer to BCS-93, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

4.CHECK SECURITY INDICATOR LAMP CIRCUIT

1. Disconnect combination meter connector.
2. Check continuity between combination meter harness connector and BCM harness connector.

Combination meter		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M34	18	M68	23	Existed

3. Check continuity between combination meter harness connector and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M34	18		Not existed

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-69, "Removal and Installation".
NO >> Repair or replace harness.

SYMPTOM DIAGNOSIS

ENGINE DOES NOT START WHEN INTELLIGENT KEY IS INSIDE OF VEHICLE

Description

INFOID:0000000006628592

Engine does not start when push-button ignition switch is pressed while carrying Intelligent Key.

NOTE:

- Check that vehicle is under the condition shown in “Conditions of vehicle” before starting diagnosis, and check each symptom.
- The engine start function, door lock function, power distribution system, and NATS-IVIS/NVIS in the Intelligent Key system are closely related to each other regarding control. The vehicle security function can operate only when the door lock and power distribution system are operating normally.

Conditions of Vehicle (Operating Conditions)

- “ENGINE START BY I-KEY”: ON
  Check the setting of “ENGINE START BY I-KEY” in “Work Support” mode of “INTELLIGENT KEY” of “BCM” using CONSULT-III.
- One or more of Intelligent Keys with registered Intelligent Key ID are in the vehicle.

Diagnosis Procedure

INFOID:0000000006628593

1.PERFORM WORK SUPPORT

Perform “INSIDE ANT DIAGNOSIS” in “Work Support” mode of “INTELLIGENT KEY” of BCM using CONSULT-III.
Refer to SEC-26, "INTELLIGENT KEY : CONSULT-III Function (BCM - INTELLIGENT KEY) (With Super Lock)" or SEC-29, "INTELLIGENT KEY : CONSULT-III Function (BCM - INTELLIGENT KEY) (Without Super Lock)".

>> GO TO 2.

2.PERFORM SELF-DIAGNOSIS RESULT

Perform Self-Diagnosis Result in “BCM”, and check whether or not DTC of inside key antenna is detected.

Is DTC detected?

YES >> Refer to BCS-67, "DTC Index".
NO >> GO TO 3.

3.CHECK PUSH-BUTTON IGNITION SWITCH

Check push-button ignition switch.
Refer to PCS-108, "Component Function Check".

Is the operation normal?

YES >> GO TO 4.
NO >> Repair or replace malfunctioning parts.

4.CONFIRM THE OPERATION

Confirm the operation again.

Is the inspection normal?

YES >> Check intermittent incident. Refer to GI-42, "Intermittent Incident".
NO >> GO TO 1.

STEERING DOES NOT LOCK

Description

INFOID:0000000006628594

Steering does not lock when door is open while ignition switch is OFF.

NOTE:

Before performing the diagnosis, check “Work Flow”. Refer to SEC-47, "Work Flow".

Diagnosis Procedure

INFOID:0000000006628595

1.CHECK DOOR SWITCH

Check door switch.

Refer to DLK-87, "Component Function Check" (With super lock) or DLK-258, "Component Function Check" (Without super lock).

Is the inspection normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning parts.

2.CHECK DETENTION SWITCH

Check CVT shift selector (detention switch). Refer to SEC-83, "Component Inspection".

Is the inspection normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

3.CONFIRM THE OPERATION

Confirm the operation again.

Is the inspection normal?

YES >> Check intermittent incident. Refer to GI-42, "Intermittent Incident".

NO >> GO TO 1.

SECURITY INDICATOR LAMP DOES NOT TURN ON OR BLINK

Description

INFOID:0000000006628596

Security indicator lamp does not blink when ignition switch is in a position other than ON.

NOTE:

- Before performing the diagnosis, check “Work Flow”. Refer to SEC-47, "Work Flow".
- Check that vehicle is under the condition shown in “CONDITIONS OF VEHICLE (OPERATING CONDITIONS)” before starting diagnosis, and check each symptom.

CONDITIONS OF VEHICLE (OPERATING CONDITIONS)

Power supply position is not the ON position.

Diagnosis Procedure

INFOID:0000000006628597

1.CHECK SECURITY INDICATOR LAMP

Check security indicator lamp.

Refer to SEC-159, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning parts.

2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-42, "Intermittent Incident".

NO >> GO TO 1.

VEHICLE SECURITY SYSTEM CANNOT BE SET

INTELLIGENT KEY

INTELLIGENT KEY : Description

INFOID:0000000006628598

Armed phase is not activated when door is locked using Intelligent Key.

NOTE:

Check that vehicle is under the condition shown in “CONDITIONS OF VEHICLE (OPERATING CONDITIONS)” before starting diagnosis, and check each symptom.

CONDITION OF VEHICLE (OPERATING CONDITIONS)

“SECURITY ALARM SET”: ON

Check the setting of “SECURITY ALARM SET” in “Work Support” mode of “THEFT ALM” of “BCM” using CONSULT-III.

INTELLIGENT KEY : Diagnosis Procedure

INFOID:0000000006628599

1.CHECK INTELLIGENT KEY SYSTEM (REMOTE KEYLESS ENTRY FUNCTION)

Lock/unlock door with Intelligent Key.

Refer to DLK-28, "DOOR LOCK FUNCTION : System Description" (With super lock) or DLK-205, "DOOR LOCK FUNCTION : System Description" (Without super lock).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Check Intelligent Key system (remote keyless entry function). Refer to DLK-113, "Diagnosis Procedure" (With super lock) or DLK-279, "Diagnosis Procedure" (Without super lock).

2.CHECK HOOD SWITCH

Check hood switch.

Refer to SEC-155, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace hood switch.

3.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-42, "Intermittent Incident".

NO >> GO TO 1.

DOOR REQUEST SWITCH

DOOR REQUEST SWITCH : Description

INFOID:0000000006628600

Armed phase is not activated when door is locked using door request switch.

NOTE:

Check that vehicle is under the condition shown in “CONDITIONS OF VEHICLE (OPERATING CONDITIONS)” before starting diagnosis, and check each symptom.

CONDITION OF VEHICLE (OPERATING CONDITIONS)

“SECURITY ALARM SET”: ON

Check the setting of “SECURITY ALARM SET” in “Work Support” mode of “THEFT ALM” of “BCM” using CONSULT-III.

DOOR REQUEST SWITCH : Diagnosis Procedure

INFOID:0000000006628601

1.CHECK INTELLIGENT KEY SYSTEM (DOOR LOCK FUNCTION)

Lock/unlock door with door request switch.

Refer to DLK-28, "DOOR LOCK FUNCTION : System Description" (With super lock) or DLK-205, "DOOR LOCK FUNCTION : System Description" (Without super lock).

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check Intelligent Key system (door lock function). Refer to DLK-106, "ALL DOOR REQUEST SWITCHES : Diagnosis Procedure" (With super lock) or DLK-272, "ALL DOOR REQUEST SWITCHES : Diagnosis Procedure" (Without super lock).

2.CHECK HOOD SWITCH

Check hood switch.
Refer to SEC-155, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace hood switch.

3.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-42, "Intermittent Incident".
NO >> GO TO 1.

UNLOCK SENSOR

UNLOCK SENSOR : Description

INFOID:0000000006691137

Armed phase is not activated when door is locked by door key cylinder operation using mechanical key.

NOTE:
Check that vehicle is under the condition shown in “CONDITIONS OF VEHICLE (OPERATING CONDITIONS)” before starting diagnosis, and check each symptom.

CONDITION OF VEHICLE (OPERATING CONDITIONS)

“SECURITY ALARM SET”: ON
Check the setting of “SECURITY ALARM SET” in “Work Support” mode of “THEFT ALM” of “BCM” using CONSULT-III.

UNLOCK SENSOR : Diagnosis Procedure

INFOID:0000000006691138

1.CHECK DOOR LOCK FUNCTION

Lock/unlock door using meahanical key inserted into door key cylinder.
Refer to DLK-24, "System Description" (With super lock), DLK-201, "System Description" (Without super lock).

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check Intelligent Key system (remote keyless entry function). Refer to DLK-109, "Diagnosis Procedure" (With super lock) or DLK-275, "Diagnosis Procedure" (Without super lock).

2.CHECK HOOD SWITCH

Check hood switch.
Refer to SEC-155, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace hood switch.

3.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-42, "Intermittent Incident".
NO >> GO TO 1.

VEHICLE SECURITY ALARM DOES NOT ACTIVATE

Description

INFOID:0000000006628602

Alarm does not operate when alarm operating condition is satisfied.

NOTE:

Check that vehicle is under the condition shown in “CONDITIONS OF VEHICLE (OPERATING CONDITIONS)” before starting diagnosis, and check each symptom.

CONDITION OF VEHICLE (OPERATING CONDITIONS)

“SECURITY ALARM SET”: ON

Check the setting of “SECURITY ALARM SET” in “Work Support” mode of “THEFT ALM” of “BCM” using CONSULT-III.

Diagnosis Procedure

INFOID:0000000006628603

1.CHECK DOOR SWITCH

Check door switch.

Refer to DLK-87, "Component Function Check" (With super lock) or DLK-258, "Component Function Check" (Without super lock).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the malfunctioning door switch

2.CHECK HOOD SWITCH

Check hood switch.

Refer to SEC-155, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace hood switch.

3.CHECK HAZARD WARNING LAMPS FUNCTION

Check hazard warning lamps function.

Refer to EXL-69, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace the malfunctioning parts.

4.CHECK HORN FUNCTION

Check horn function.

Refer to SEC-157, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace the malfunctioning parts.

5.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-42, "Intermittent Incident".

NO >> GO TO 1.

REMOVAL AND INSTALLATION

NATS ANTENNA AMP.

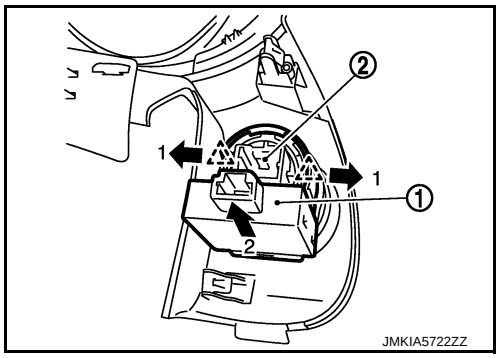
Removal and Installation

INFOID:0000000006628607

REMOVAL

1. Remove the cluster lid A. Refer to IP-13, "Removal and Installation".
2. Remove the NATS antenna amp.
   1. Disengage the NATS antenna amp. (1) fixing pawls using minus driver etc.
   2. Pull NATS antenna amp. to remove it from push-button ignition switch (2).

: Pawl



INSTALLATION

Install in the reverse order of removal.

PUSH-BUTTON IGNITION SWITCH

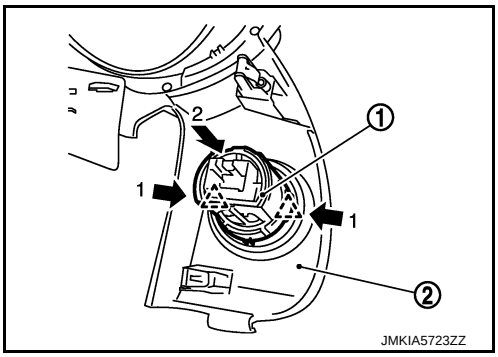
Removal and Installation

INFOID:0000000006628609

REMOVAL

1. Remove the NATS antenna amp. Refer to SEC-167, "Removal and Installation".
2. Remove the push-button ignition switch.
   1. Disengage the push-button ignition switch fixing pawls using minus driver etc.
   2. Press the push-button ignition switch to remove it from cluster lid A (2).

: Pawl



INSTALLATION

Install in the reverse order of removal.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000006627968

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

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see “SRS AIR BAG”.**
- **Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

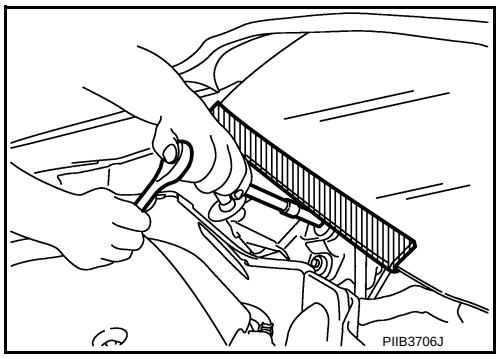
WARNING:

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

Precaution for Procedure without Cowl Top Cover

INFOID:0000000006627969

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc.



Precaution for Battery Service

INFOID:0000000006627970

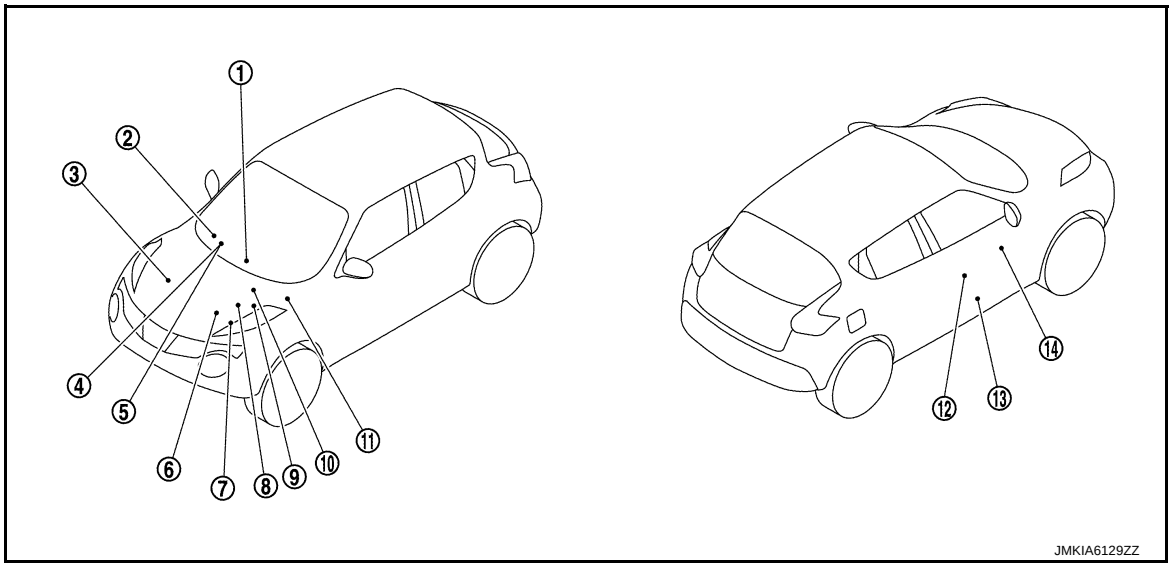
Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000006627971



1. Remote keyless entry receiver
   Refer to DLK-361, "Component Parts Location" (With super lock) or DLK-492, "Component Parts Location" (Without super lock).
2. Combination meter
   Refer to MWI-4, "METER SYSTEM : Component Parts Location".
3. Stop lamp switch
   Refer to BRC-9, "Component Parts Location" (Without ESP) or BRC-97, "Component Parts Location" (With ESP).
4. NATS antenna amp.
   (Behind ignition switch)
5. Ignition switch
6. Transmission range switch
   Refer to TM-131, "CVT CONTROL SYSTEM : Component Parts Location" (CVT: RE0F10A) or TM-314, "CVT CONTROL SYSTEM : Component Parts Location" (RE0F11A).
7. ECM
   Refer to EC-25, "ENGINE CONTROL SYSTEM : Component Parts Location" (MR16DDT), EC-455, "ENGINE CONTROL SYSTEM : Component Parts Location" (HR16DE) or EC-813, "Component Parts Location" (K9K).
8. IPDM E/R
   Refer to PCS-5, "Component Parts Location".
9. TCM
   Refer to TM-131, "CVT CONTROL SYSTEM : Component Parts Location" (CVT: RE0F10A) or TM-314, "CVT CONTROL SYSTEM : Component Parts Location" (RE0F11A).
10. ABS actuator and electric unit (control unit)
    Refer to BRC-9, "Component Parts Location" (Without ESP) or BRC-97, "Component Parts Location" (With ESP).
11. BCM
    Refer to BCS-6, "BODY CONTROL SYSTEM : Component Parts Location".
12. Front door lock assembly
13. Front door switch (driver side)
14. Power window main switch
    (door lock/unlock switch)

Component Description

INFOID:0000000006627972

Component	Reference
BCM	SEC-171
IPDM E/R	SEC-171
Door switch	SEC-171
Hood switch	SEC-171
Ignition key	SEC-171
NATS antenna amp.	SEC-171
Remote keyless entry receiver	SEC-171
Security indicator lamp	SEC-171
Starter control relay	SEC-172
Transmission range switch	SEC-172

BCM

INFOID:0000000006627973

BCM performs the ID verification between BCM and ECM when ignition switch is turned ON.
If the verification result is OK, ECM can start engine. If the verification result is NG, ECM cannot start engine.

IPDM E/R

INFOID:0000000006627974

Starter control relay is integrated in IPDM E/R and used for the engine starting system. Starter control relay is controlled by IPDM E/R while communicating with BCM and ECM. IPDM E/R sends the starter control relay status signal to ECM.

Door Switch

INFOID:0000000006627975

Door switch detects door open/close condition and then transmits ON/OFF signal to BCM.

Hood Switch

INFOID:0000000006627976

Hood switch detects that hood is open, and then transmits the signal to IPDM E/R. IPDM E/R transmits hood switch signal to BCM via CAN communication.

Ignition Key

INFOID:0000000006627977

The ID verification is performed between BCM and ignition key via NATS antenna amp. when ignition switch is turned ON. If an unregistered ID of ignition key is used, the operation of the starting engine is prohibited.

NATS Antenna Amp.

INFOID:0000000006627978

The ID verification is performed between BCM and ignition key via NATS antenna amp. when ignition switch is turned ON. If an unregistered ID of ignition key is used, the operation of the starting engine is prohibited.

Remote Keyless Entry Receiver

INFOID:0000000006627979

Remote keyless entry receiver receives each button operation signal and electronic key ID signal from Keyfob, and then transmits the signal to BCM.

Security Indicator Lamp

INFOID:0000000006627980

Security indicator lamp is located on combination meter.
Security indicator lamp blinks when power supply position is in any position except the ON position to warn that Nissan Anti-Theft System (NATS) is on board.

Starter Control Relay

INFOID:0000000006627981

Starter control relay is integrated in IPDM E/R and used for the engine starting system. Starter control relay is controlled by IPDM E/R while communicating with BCM and ECM. IPDM E/R sends the starter control relay status signal to ECM.

Transmission Range Switch

INFOID:0000000006627982

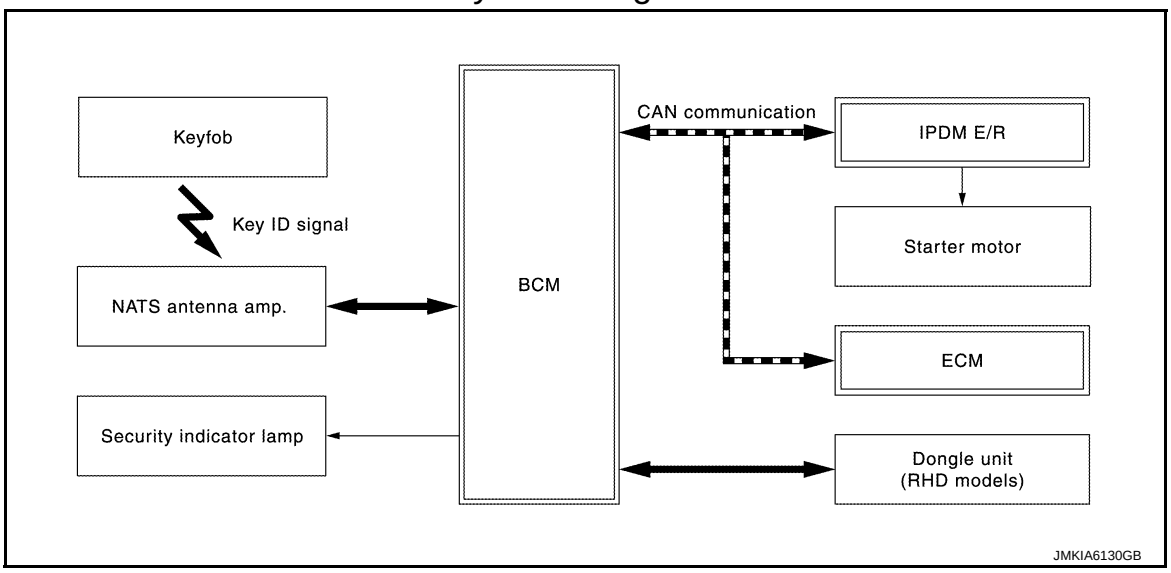
Transmission range switch is integrated in CVT assembly to detect the selector lever position, and then transmits the P/N position signal to IPDM E/R.

SYSTEM

NISSAN ANTI-THEFT SYSTEM

NISSAN ANTI-THEFT SYSTEM : System Diagram

INFOID:0000000006627983



NISSAN ANTI-THEFT SYSTEM : System Description

INFOID:0000000006627984

SYSTEM DESCRIPTION

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

- NATS shows high anti-theft performance to prevent engine from starting by anyone other than the owner who has the registered ignition key.
- The ignition key has NATS ID and only ignition key which has the same ID as the ID registered in BCM and ECM can start engine. This makes high anti-theft performance to prevent the vehicle from being stolen using a copied ignition key.
- Security indicator lamp always blinks when ignition switch is in any position other than the ON position. Therefore, NATS warns outsiders that the vehicle is equipped with the anti-theft system.
- If the system detects a malfunction, security indicator lamp illuminates when ignition switch is turned ON.
- If the owner requires, ignition key ID can be registered for up to 5 keys.
- During trouble diagnosis, when additional ignition key is needed, or when the following components are replaced, the ID registration is required. For the registration procedure, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

- BCM
- Ignition key

- Possible symptom of NATS malfunction is “Engine cannot start”. The engine also can not be started because of other than the NATS malfunction, so start the trouble diagnosis according to SEC-187, "Work Flow".
- If ECM other than Genuine NISSAN parts is installed, the engine cannot be started. For ECM replacement procedure, refer to EC-447, "Removal and Installation" (MR16DDT), or EC-805, "Removal and Installation" (HR16DE).

PRECAUTIONS FOR KEY REGISTRATION

- Refer to CONSULT-III Operation Manual NATS-IVIS/NVIS, for the actual procedure of NATS ID registration.
- The NATS ID registration is the procedure that registers the ID stored into the ignition key (transponder is integrated) to BCM.

SECURITY INDICATOR LAMP

- Security indicator lamp is located on combination meter and warns that the vehicle is equipped with NATS.
- Security indicator lamp always blinks, when the ignition switch is in any position other than the ON position.
- Security indicator lamp turns OFF when the ignition switch is in ON position.

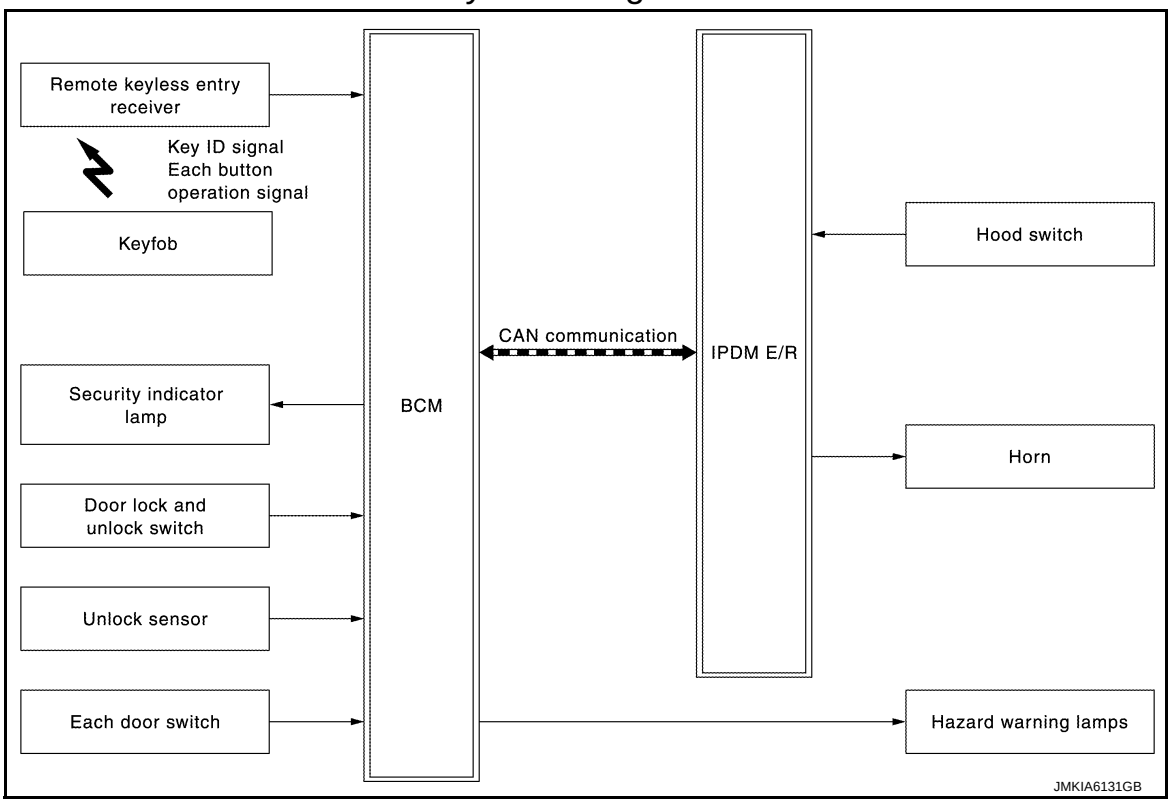
OPERATION WHEN IGNITION KEY IS INSERTED INTO IGNITION KEY CYLINDER

1. When ignition switch is turned ON, BCM activates NATS antenna amp. to start NATS ID verification with the ignition key (transponder is integrated).
2. BCM receives the NATS ID signal from ignition key via NATS antenna amp. and verifies it with the registered ID.
3. When the NATS ID verification result is OK, BCM performs the ID verification between BCM and ECM.
4. When the verification result is OK, BCM sends the verification OK signal to ECM, and then ECM can start the engine.
5. When the ignition switch is turned to the START position, BCM sends the starter request signal to IPDM E/R.

VEHICLE SECURITY SYSTEM

VEHICLE SECURITY SYSTEM : System Diagram

INFOID:0000000006627985



VEHICLE SECURITY SYSTEM : System Description

INFOID:0000000006627986

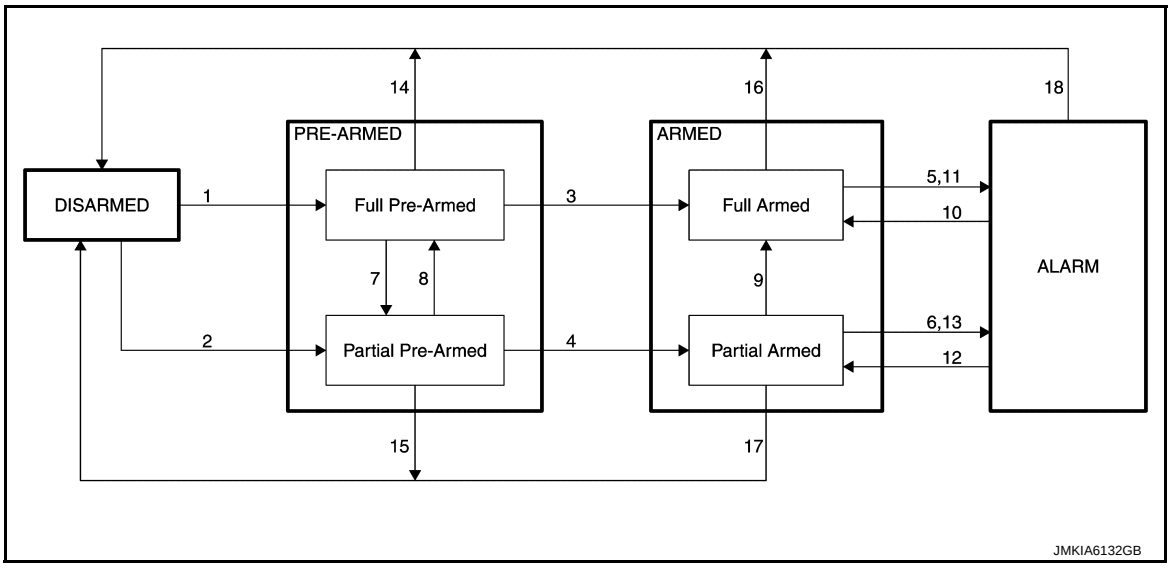
- The vehicle security system has two alarm functions (theft warning alarm and panic alarm), and reduces the possibility of a theft or mischief by activating horns and hazard warning lamps intermittently.
- The panic alarm does not start when the theft warning alarm is activating, and the panic alarm stops when the theft warning alarm is activated.
  The priority of the functions are as per the following.

Priority	Function
1	Theft warning alarm
2	Panic alarm

THEFT WARNING ALARM

- The theft warning alarm function activates horns and hazard warning lamps intermittently when BCM detects that any door or hood is opened by unauthorized means, while the system is in the ARMED state.
- Security indicator lamp on combination meter always blinks when ignition switch is any position other than ON. Security indicator lamp blinking warns that the vehicle is equipped with a vehicle security system.

Operation Flow



No.	System state	Switching condition		
1	DISARMED to Full Pre-Armed	When all conditions of A and one condition of B are satisfied.	A	B
			• Ignition switch: OFF • All doors: Closed • Hood: Closed	All doors are locked by: • LOCK button of Keyfob • Driver side key cylinder operation • Auto door lock function
2	DISARMED to Partial Pre-Armed	When all conditions of A and one condition of B are satisfied.	A	B
			• Ignition switch: OFF • Door or hood: Open	All closed doors are locked by: • LOCK button of Keyfob • Driver side key cylinder operation • Door lock and unlock switch • Auto door lock function
3	Full Pre-Armed to Full Armed	When all of the following conditions are satisfied for 20 seconds.	• Ignition switch: Not changed • Door condition: Not changed • Hood condition: Not changed	
4	Partial Pre-Armed to Partial Armed			
5	Full Armed to ALARM	When one of the following condition is satisfied.	• Hood condition: Closed → Open • Door condition: Closed → Open • Ignition switch: OFF → ON (Without OK result of ID verification)	
6	Partial Armed to ALARM			
7	Full Pre-Armed to Partial Pre-Armed	When the following condition is satisfied.	Any door or hood: Open	
8	Partial Pre-Armed to Full Pre-Armed	When the following condition is satisfied.	All open doors and hood: Closed	
9	Partial Armed to Full Armed	When 20 seconds are past after the following condition is satisfied.	All open doors and hood: Closed	
10	ALARM to Full Armed (REALARM function)	When all conditions of A are NOT satisfied and all conditions of B are satisfied, after the ALARM operation is finished.	A	B
			• ID verification: OK • UNLOCK button of Keyfob: ON	• All doors: Closed • Hood: Closed

No.	System state	Switching condition		
11	Full Armed to ALARM (REALARM function)	When one of the following conditions is satisfied within 5 seconds after entering into Full Armed phase from ALARM phase.	• Any door: Open • Hood: Open	
12	ALARM to Partial Armed (REALARM function)	When all conditions of A are NOT satisfied and condition B are satisfied, after the ALARM operation is finished.	A • ID verification: OK • UNLOCK button of Keyfob: ON	B Any door or hood: Open
13	Partial Armed to ALARM (REALARM function)	When one of the following conditions is satisfied within 5 seconds after entering into Partial Armed phase from ALARM phase.	• Any door or hood: Open (Except doors or hood that are open when entering into the Partial Armed phase from the Partial Pre-Armed phase.)	
14	Full Pre-Armed to DISARMED	When one of the following conditions is satisfied.	• ID verification: OK*1 • UNLOCK button of Keyfob: ON	
15	Partial Pre-Armed to DISARMED	When one of the following conditions is satisfied.	• ID verification: OK*2 • UNLOCK button of Keyfob: ON	
16	Full Armed to DISARMED	When one of the following conditions is satisfied.	• ID verification: OK • UNLOCK button of Keyfob: ON	
17	Partial Armed to DISARMED			
18	ALARM to DISARMED			

- *1: If ignition switch is turned ON without OK result of ID verification, the system status changes to the ALARM phase via the Partial Pre-Armed and Partial Armed phases.
- *2: If ignition switch is turned ON without OK result of ID verification, the system status changes to the ALARM phase via the Partial Armed phases.

NOTE:

- To lock/unlock all doors by operating remote controller button of keyfob, the keyfob must be within the detection area of remote keyless entry receiver. For details, refer to DLK-366, "REMOTE KEYLESS ENTRY FUNCTION : System Description" (Models with super lock), or DLK-497, "System Description" (Models without super lock).

DISARMED Phase

The vehicle security system is not set in the DISARMED phase. Security indicator lamp blinks every 2.4 seconds. When the vehicle security system is reset, each phase switches to the DISARMED phase directly.

PRE-ARMED Phase

The PRE-ARMED phase is the transient state between the DISARMED phase and the ARMED phase. This phase is maintained for 20 seconds, so that the owner can reset the setting due to a mis-operation. This phase switches to the ARMED phase when vehicle conditions are not changed for 20 seconds.
There are two type of phase (Full Pre-Armed and Partial Pre-Armed).

- Full Pre-Armed phase
  Vehicle security system enters into this phase when all doors are closed. Security indicator lamp blinks at 8 Hz while being in this phase. If any door is opened during this phase, the system status changes to Partial Pre-Armed phase.
  To reset this phase, refer to the switching condition of No. 14 in the table above.
- Partial Pre-Armed phase
  Vehicle security system enters into this phase when one or more doors are open. Security indicator lamp does not blink while being in this phase. If all doors are closed during this phase, the system status changes to Full Pre-Armed phase.
  To reset this phase, refer to the switching condition of No. 15 in the table above.

ARMED Phase

The vehicle security system is set, and BCM monitors all necessary inputs. If any door or hood is opened by unauthorized means, vehicle security system switches to the ALARM phase. Security indicator lamp blinks every 2.4 seconds.

There are two type of phase (Full Armed and Partial Armed).

- Full Armed phase
  Vehicle security system enters into this phase from Full Pre-Armed phase.
  To reset this phase, refer to the switching condition of No. 16 in the table above.
- Partial Armed phase
  Vehicle security system enters into this phase from Partial Pre-Armed phase. If all doors are closed during being this phase, the system status changes to Full Armed phase.
  To reset this phase, refer to the switching condition of No. 17 in the table above.

ALARM Phase

BCM transmits “Theft Warning Horn Request” signal intermittently to IPDM E/R via CAN communication, and blinks hazard warning lamps. In this phase, horns and hazard warning lamps are activated intermittently for approximately 27.5 seconds to warn that the vehicle is accessed by unauthorized means.
Horns are sounding at 2.5 Hz, and hazard warning lamps blinks at 1.42 Hz.
To cancel the ALARM operation, refer to the switching condition of No. 18 in the table above.

NOTE:
If a battery terminal is disconnected during the ALARM phase, theft warning alarm stops. But when the battery terminal is reconnected, theft warning alarm is activated again.

REALARM Phase

When ALARM phase is maintained for 27.5 seconds without any cancel operation, the system status returns to the ARMED phase. At this time, if BCM still detects unauthorized access to the vehicle, the system is switched to the ALARM phase again. This REALARM operation is carried out a maximum of 8 times.

PANIC ALARM

Panic alarm is not applied to this models.

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

INFOID:0000000006683314

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 Diagnostic Result	Displays the diagnosis results judged by BCM.
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM. Refer to CONSULT-III operation manual.
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	• Read and save the vehicle specification. • 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.

×: Applicable item

System	Sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp control	INT LAMP	×	×	×
Remote keyless entry system	MULTI REMOTE ENT	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER		×	×
• Automatic A/C • Manual A/C • Manual heater	AIR CONDITONER		×	×*2
Combination switch	COMB SW		×	
Body control system	BCM	×		
NATS	IMMU	×		×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door open	TRUNK		×	
Vehicle security system	THEFT ALM	×	×	×
—	RETAINED PWR*1		×	×
Signal buffer system	SIGNAL BUFFER		×	×
—	PANIC ALARM*1			×

- *1: This item is displayed, but is not used.
- *2: For models with automatic A/C, this mode is not used.

THEFT ALM

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

INFOID:0000000006627988

WORK SUPPORT

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

ACTIVE TEST

Test Item	Description
THEFT IND	This test is able to check security indicator lamp operation. Security indicator lamp will be turned on when “ON” on CONSULT-III screen is touched.
VEHICLE SECURITY HORN	This test is able to check horn operation. Horn will be activated for 0.5 seconds after “ON” on CONSULT-III screen is touched.
HEADLAMP (HI)	This test is able to check headlamp (HI) operation. Headlamps (HI) will be activated for 0.5 seconds after “ON” on CONSULT-III screen is touched.
FLASHER	This test is able to check hazard warning lamp operation. Hazard warning lamps will be activated after “LH” or “RH” on CONSULT-III screen is touched.

IMMU

IMMU : CONSULT-III Function (BCM - IMMU)

INFOID:0000000006627989

WORK SUPPORT

Service item	Description
CONFIRM DONGLE ID	It is possible to check that dongle unit is applied to the vehicle.

ACTIVE TEST

Test item	Description
THEFT IND	This test is able to check security indicator lamp operation. Security indicator lamp will be turned on when “ON” on CONSULT-III screen is touched.

ECU DIAGNOSIS INFORMATION

ECM, BCM

List of ECU Reference

INFOID:0000000006627990

ECU		Reference
ECM	Reference Value	EC-90, "Reference Value" (MR16DDT) EC-508, "Reference Value" (HR16DE) EC-846, "Reference Value" (K9K)
	Fail Safe	EC-104, "Fail Safe" (MR16DDT) EC-519, "Fail Safe" (HR16DE)
	DTC Inspection Priority	EC-106, "DTC Inspection Priority Chart" (MR16DDT) EC-521, "DTC Inspection Priority Chart" (HR16DE)
	DTC Index	EC-108, "DTC Index" (MR16DDT) EC-522, "DTC Index" (HR16DE) EC-855, "DTC Index" (K9K)
BCM	Reference Value	BCS-125, "Reference Value"
	Fail Safe	BCS-140, "Fail-safe"
	DTC Inspection Priority	BCS-140, "DTC Inspection Priority Chart"
	DTC Index	BCS-141, "DTC Index"

WIRING DIAGRAM

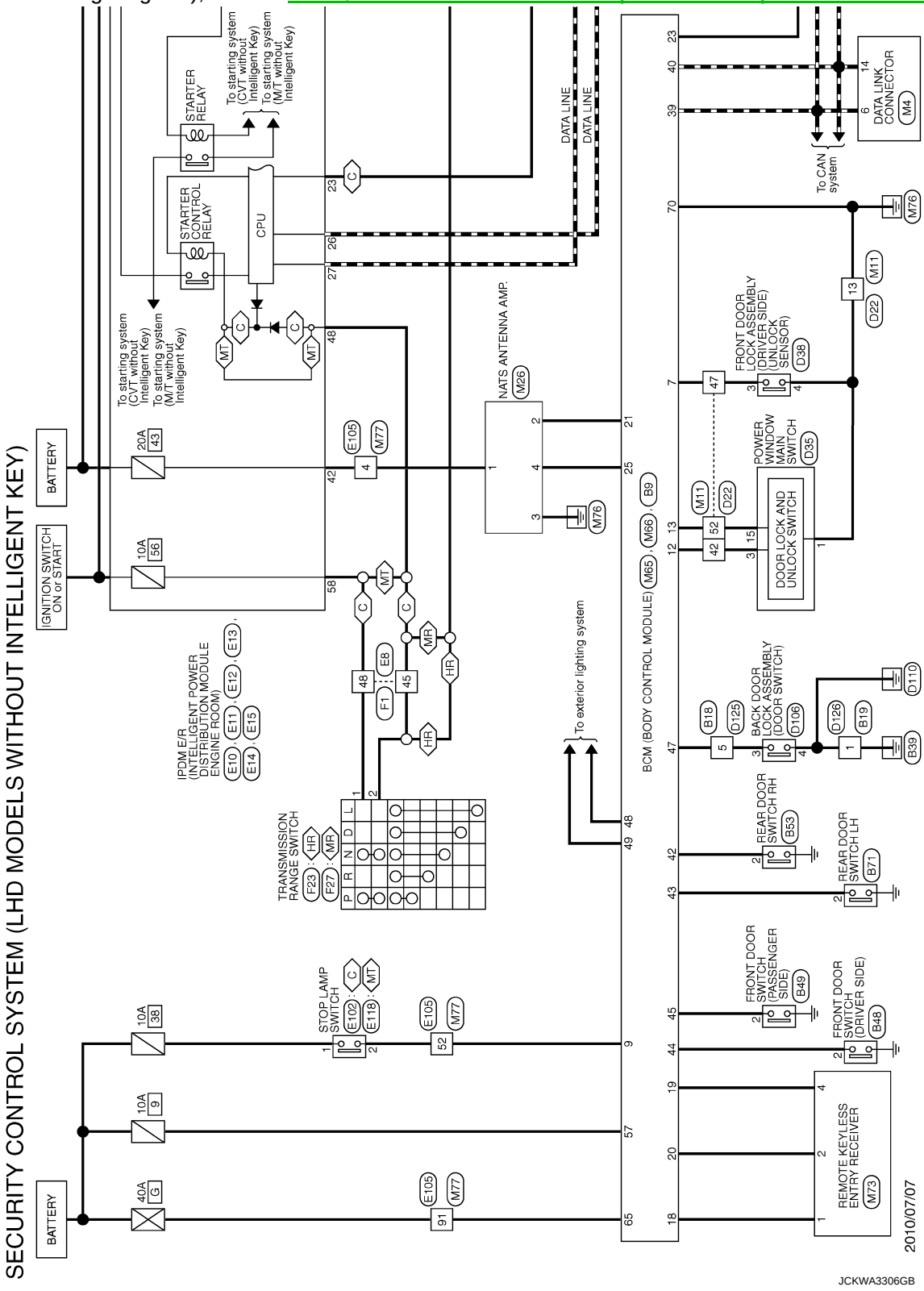
SECURITY CONTROL SYSTEM

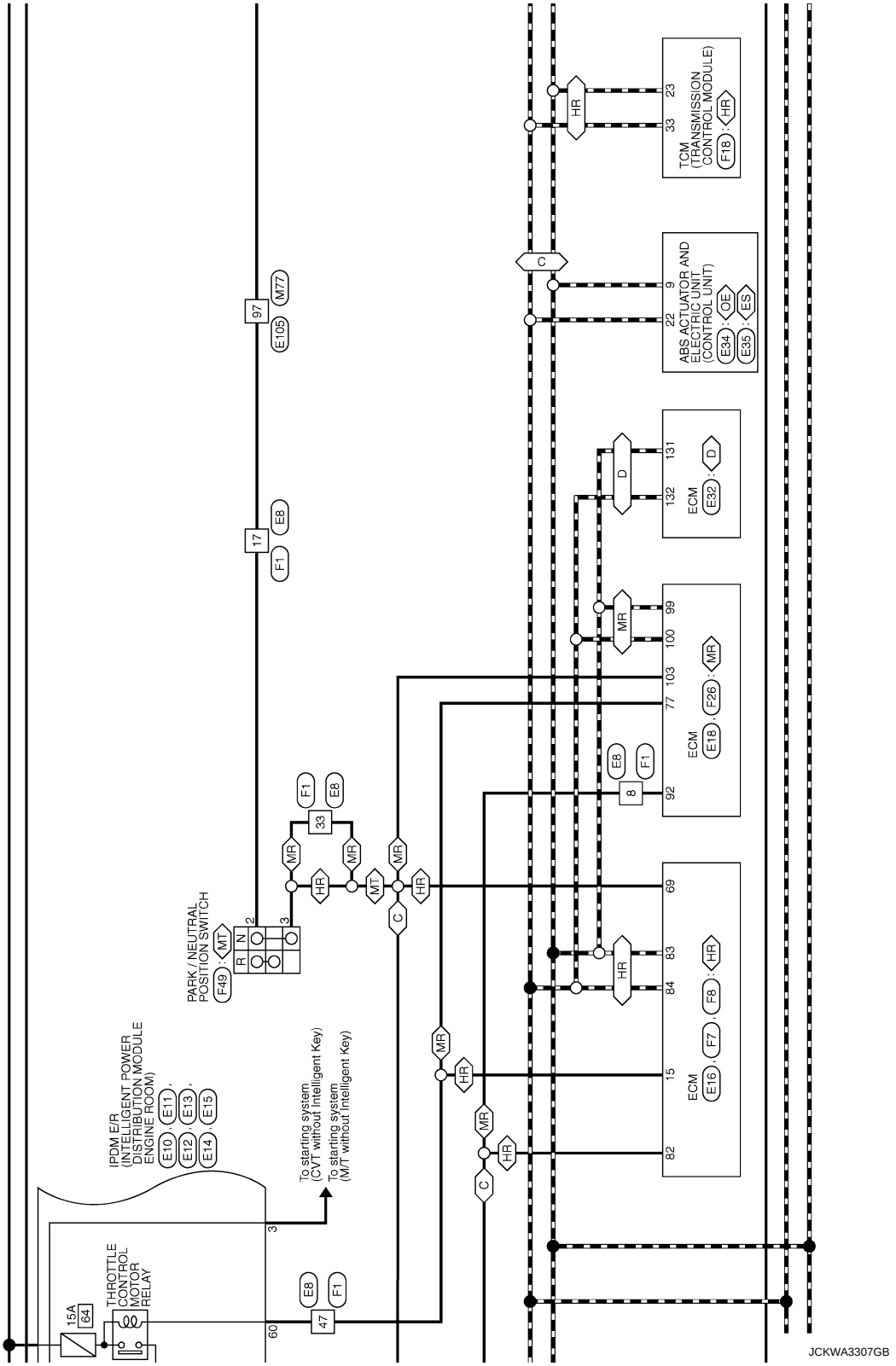
LHD

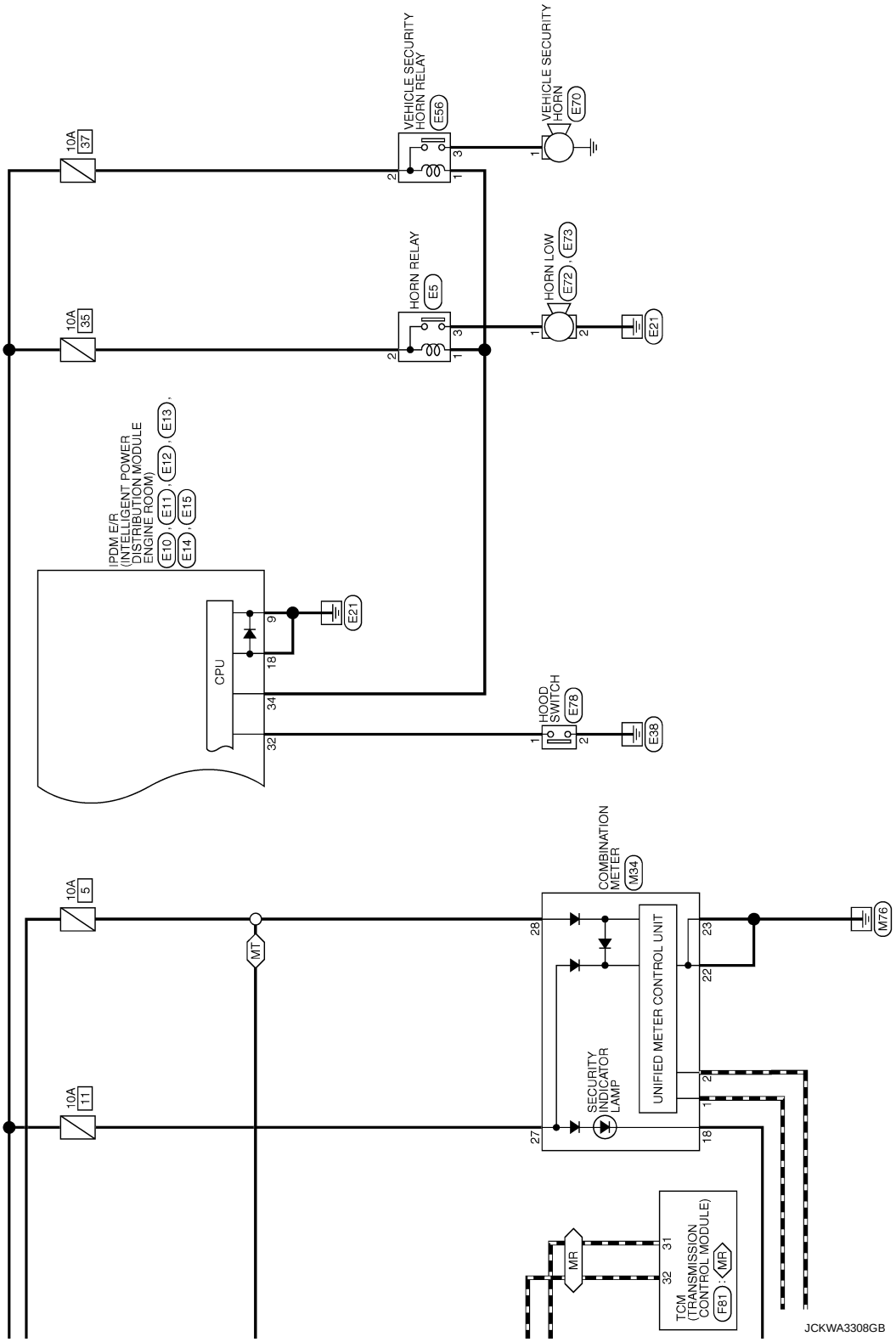
LHD : Wiring Diagram

INFOID:0000000006707013

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information/Explanation of Option Abbreviation".




TCM (TRANSMISSION CONTROL MODULE)
F18 : HR
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
E34 OE
E35 ES
ECM
E32 : D
ECM
E18, F26 : MR
ECM
E16, F7, F8 : HR
PARK / NEUTRAL POSITION SWITCH
F49 : MT
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10, E11, E12, E13, E14, E15
THROTTLE CONTROL MOTOR RELAY
15A 64
To starting system (CVT without Intelligent Key)
To starting system (M/T without Intelligent Key)
JCKWA3307GB

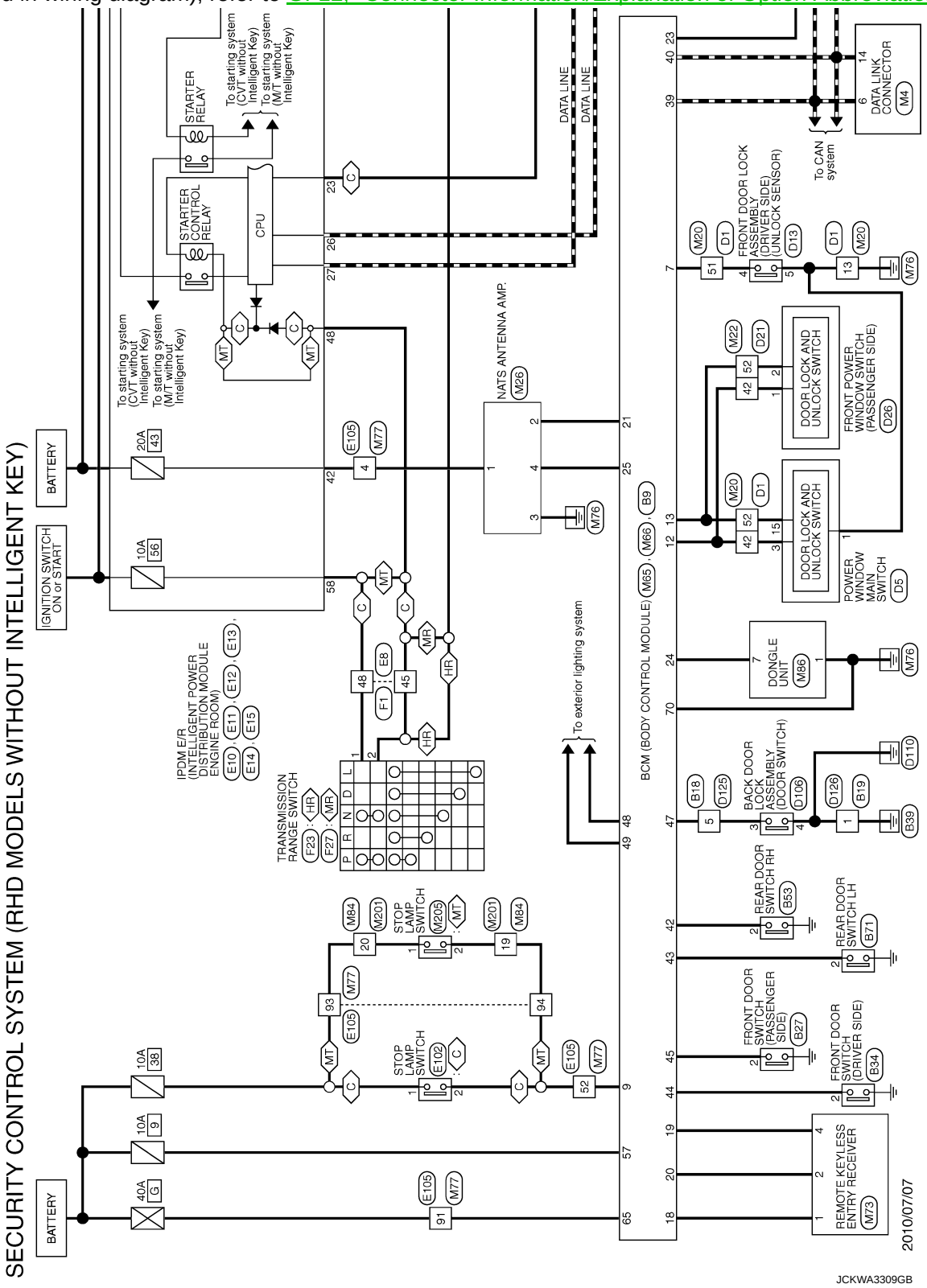

10A 37
10A 35
10A 5
10A 11
VEHICLE SECURITY HORN RELAY E56
VEHICLE SECURITY HORN E70
HORN RELAY E5
HORN LOW E73, E72
E21
E38
E76
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E10, E11, E12, E13, E14, E15
CPU
HOOD SWITCH E78
COMBINATION METER M34
UNIFIED METER CONTROL UNIT
SECURITY INDICATOR LAMP
MT
MR
TCM (TRANSMISSION CONTROL MODULE) F81
JCKWA3308GB

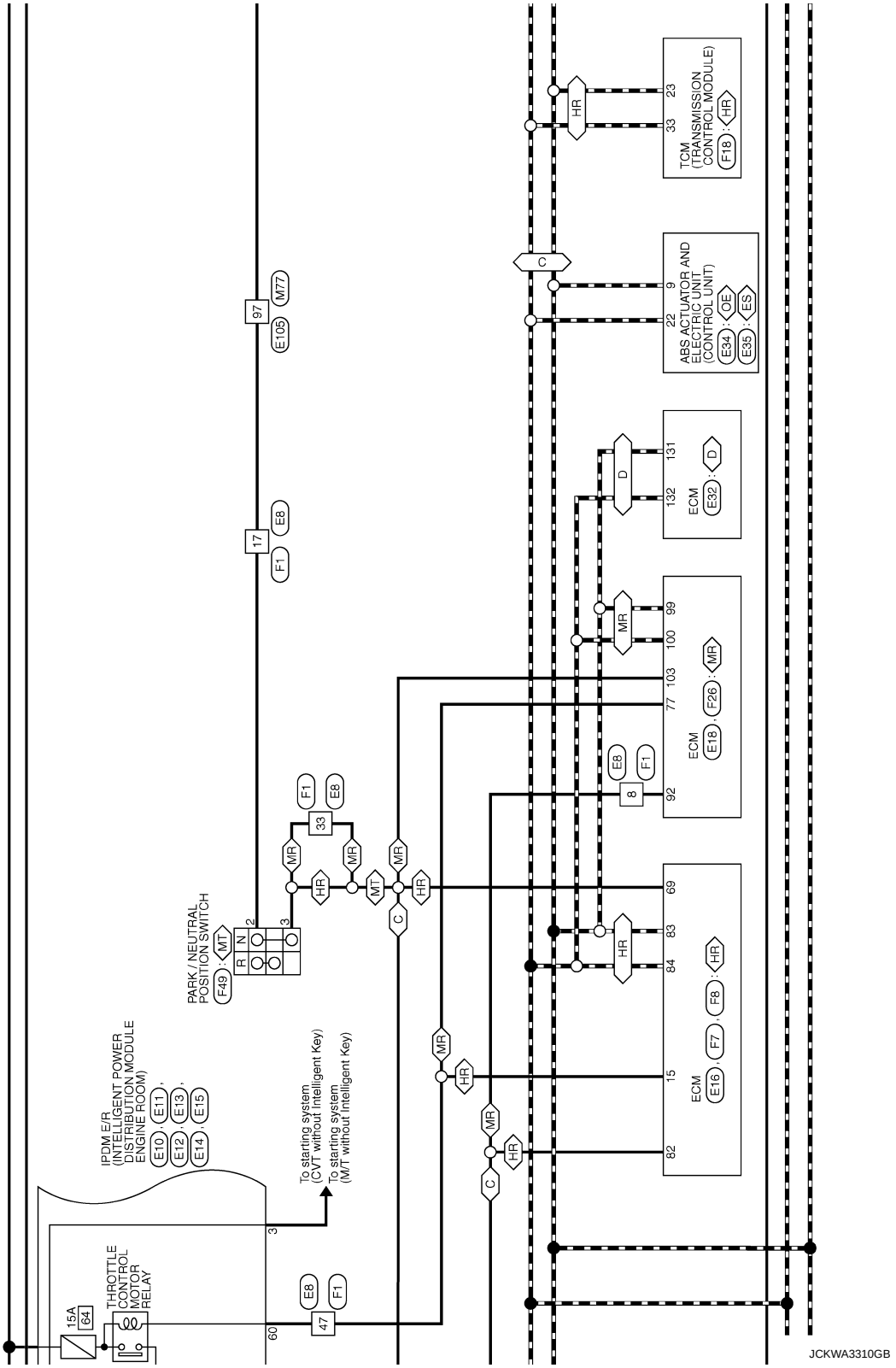
RHD

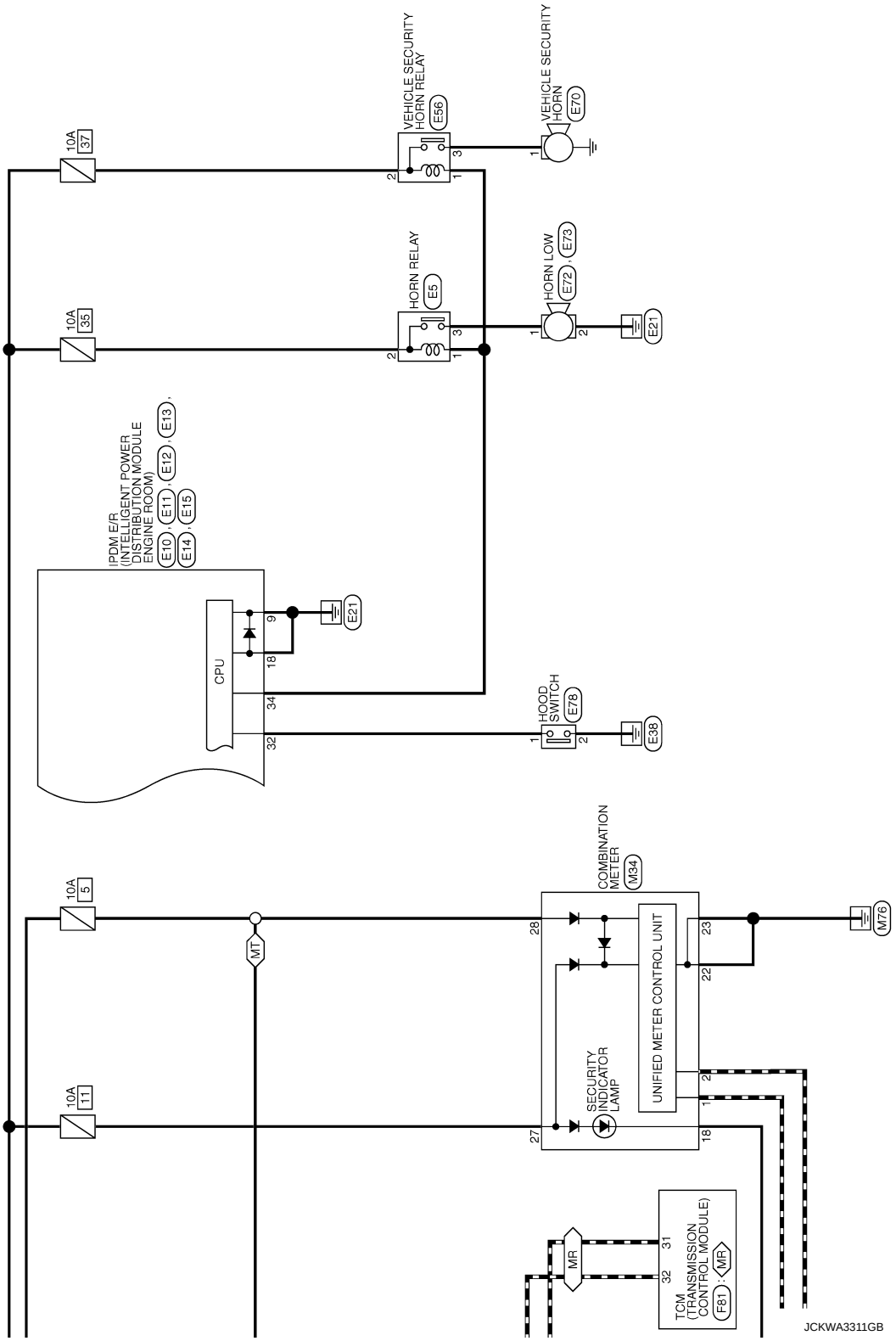
RHD : Wiring Diagram

INFOID:0000000006707014

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information/Explanation of Option Abbreviation".




TCM (TRANSMISSION CONTROL MODULE)
F18 : HR
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
E34 : OE
E35 : ES
ECM
E32 : D
ECM
E18 , F26 : MR
ECM
E16 , F7 , F8 : HR
PARK / NEUTRAL POSITION SWITCH
F49 : MT
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10 , E11 , E12 , E13 , E14 , E15
THROTTLE CONTROL MOTOR RELAY
15A 64
To starting system (CVT without Intelligent Key)
To starting system (M/T without Intelligent Key)
JCKWA3310GB


VEHICLE SECURITY HORN RELAY
E56
VEHICLE SECURITY HORN
E70
10A 37
HORN RELAY
E5
HORN LOW
E73
E72
10A 35
E21
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10, E11, E12, E13, E14, E15
CPU
9
18
34
32
HOOD SWITCH
E78
E38
COMBINATION METER
M34
10A 5
MT
28
23
22
M76
UNIFIED METER CONTROL UNIT
10A 11
SECURITY INDICATOR LAMP
27
2
1
18
MR
31
32
TCM (TRANSMISSION CONTROL MODULE)
F81
JCKWA3311GB

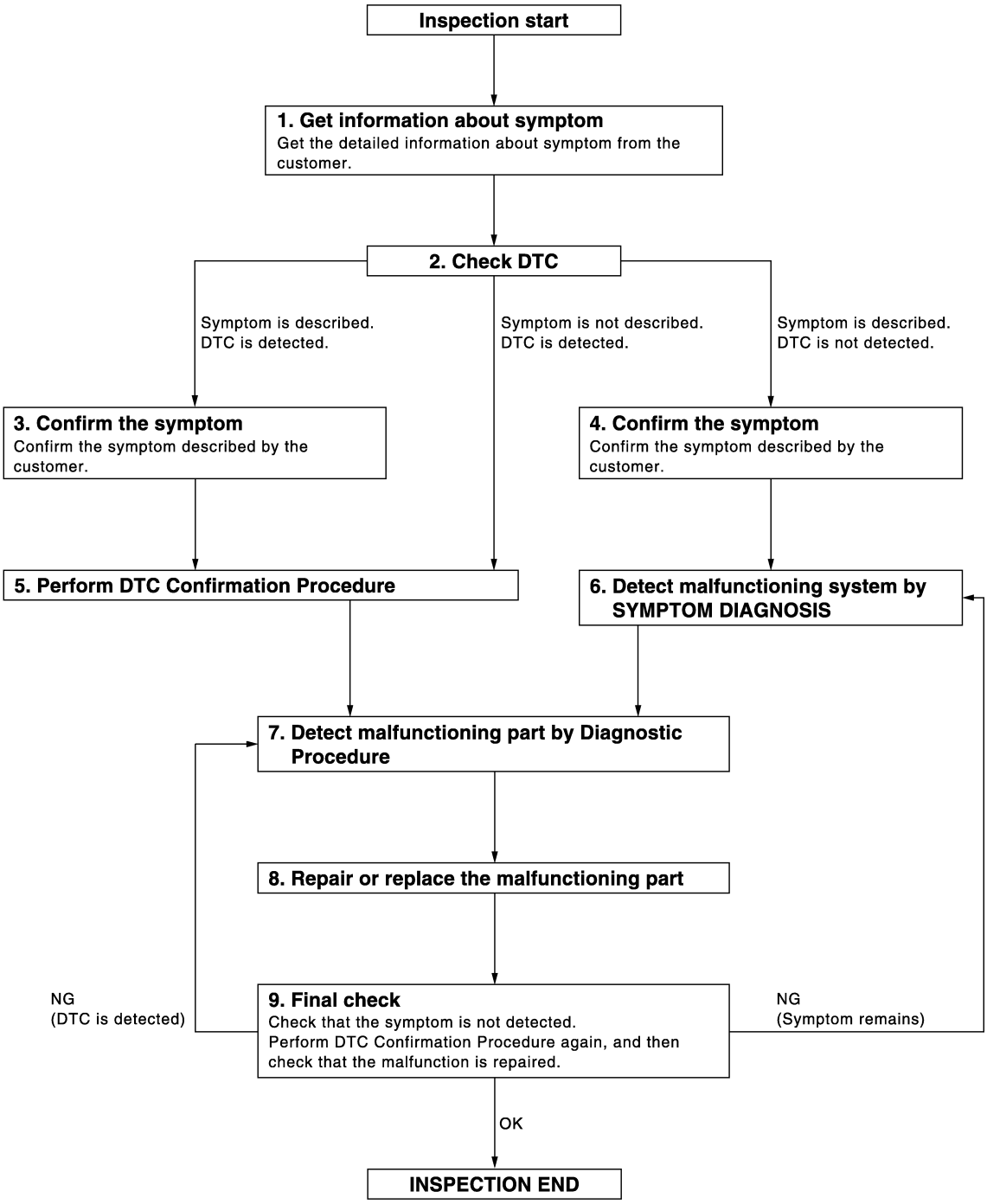
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000006627992

OVERALL SEQUENCE



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DETAILED FLOW

1.GET INFORMATION ABOUT 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 “ENGINE” and “BCM” using CONSULT-III.
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 and check self diagnosis results in real time.
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 and check self diagnosis results in real time.
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 BCS-140, "DTC Inspection Priority Chart" (BCM) and then determine the trouble diagnosis order.

Is DTC detected?

YES >> GO TO 7.
NO >> Refer to GI-42, "Intermittent Incident".

6.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM DIAGNOSIS

Detect malfunctioning system according to SYMPTOM DIAGNOSIS based on the confirmed symptom in step 4, and determine the trouble diagnosis order based on possible causes and symptom.

>> GO TO 7.

7.DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

>> GO TO 8.

8.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 9.

9. FINAL CHECK

When DTC was detected in step 2, perform DTC CONFIRMATION PROCEDURE 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 7.
YES (Symptom remains)>>GO TO 6.
NO >> INSPECTION END

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ECM

ECM : Description

INFOID:0000000006627993

Performing the following procedure can automatically activate recommunication of ECM and BCM, but only when the ECM is replaced with a new one*.
*: New one means a virgin ECM that 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 NATS-IVIS/NVIS.**
- **If multiple keys are attached to the key holder, separate them before beginning work.**
- **Distinguish keys with unregistered key IDs from those with registered IDs.**

ECM : Work Procedure

INFOID:0000000006627994

1.PERFORM ECM RECOMMUNICATING FUNCTION

1. Install ECM.
2. Insert the registered ignition key* into key cylinder, then turn ignition switch ON.
   *: To perform this step, use the key that is used before performing ECM replacement.
3. Maintain ignition switch in the ON position for at least 5 seconds.
4. Turn ignition switch OFF.
5. Start the engine.

>> GO TO 2.

2.PERFORM ADDITIONAL SERVICE WHEN REPLACING ECM

Perform the following procedure.
- MR16DDT: EC-133, "Work Procedure"
- HR16DE: EC-541, "Work Procedure"
- K9K: EC-879, "Work Procedure"

>> END

BCM

BCM : Description

INFOID:0000000006685498

BEFORE REPLACEMENT
When replacing BCM, save or print current vehicle specification with CONSULT-III configuration before replacement.
NOTE:
If “READ CONFIGURATION” can not be used, use the “WRITE CONFIGURATION - Manual selection” after replacing BCM.

AFTER REPLACEMENT
CAUTION:
- **When replacing BCM, you must perform “WRITE CONFIGURATION” with CONSULT-III.**
- **Complete the procedure of “WRITE CONFIGURATION” in order.**
- **If you set incorrect “WRITE CONFIGURATION”, incidents might occur.**
- **Configuration is different for each vehicle model. Confirm configuration of each vehicle model.**
- **When replacing BCM, perform the system initialization (NATS).**

BCM : Work Procedure

INFOID:0000000006685499

1.SAVING VEHICLE SPECIFICATION

CONSULT-III Configuration

Perform “READ CONFIGURATION” to save or print current vehicle specification. Refer to BCS-151, "Description".

NOTE:
If “READ CONFIGURATION” can not be used, use the “WRITE CONFIGURATION - Manual selection” after replacing BCM.

>> GO TO 2.

2. REPLACE BCM

Replace BCM. Refer to BCS-161, "Removal and Installation".

>> GO TO 3.

3. WRITING VEHICLE SPECIFICATION

CONSULT-III Configuration
Perform “WRITE CONFIGURATION - Config file” or “WRITE CONFIGURATION - Manual selection” to write vehicle specification. Refer to BCS-151, "Work Procedure".

>> GO TO 4.

4. INITIALIZE BCM (NATS)

Perform BCM initialization. (NATS)

>> WORK END

DTC/CIRCUIT DIAGNOSIS

P1610 LOCK MODE

Description

INFOID:0000000006627997

ECM forcibly switches to the mode that inhibits engine start, when engine start operation is performed 5 times or more while communication between ECM and BCM is not normal, or when engine start operation is performed 5 times or more using the unregistered ignition key.

DTC Logic

INFOID:0000000006627998

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1610	LOCK MODE	When ECM detects a communication malfunction between ECM and BCM 5 times or more.	—

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check DTC in “Self Diagnostic Result” mode of “ENGINE” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-192, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006627999

1.CHECK ENGINE START FUNCTION

1. Perform the check for DTC except DTC P1610.
2. Use CONSULT-III to erase DTC after fixing.
3. Turn ignition switch OFF.
4. Turn ignition switch ON using the registered ignition key and wait for 5 seconds.
5. Turn the ignition switch OFF and wait 5 seconds.
6. Repeat steps 4 and 5 twice (a total of 3 times).
7. Check that engine can start using the registered ignition key.

>> INSPECTION END

P1611 ID DISCORD, IMMU-ECM

DTC Logic

INFOID:0000000006628000

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check DTC in “Self Diagnostic Result” mode of “ENGINE” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-193, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628001

1.PERFORM INITIALIZATION

Perform initialization of BCM and reregistration of all ignition keys using CONSULT-III.
For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

Can the system be initialized and can the engine be started with reregistered ignition key?

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

2.CHECK SELF DIAGNOSTIC RESULT

1. Select “Self Diagnostic Result” mode of “ENGINE” using CONSULT-III.
2. Erase DTC.
3. Perform DTC CONFIRMATION PROCEDURE for DTC P1611. Refer to SEC-193, "DTC Logic".

Is DTC detected?

YES >> GO TO 3.
NO >> INSPECTION END

3.REPLACE BCM

1. Replace BCM. Refer to BCS-161, "Removal and Installation".
2. Perform initialization of BCM and reregistration of all ignition keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

Can the system be initialized and can the engine be started with reregistered ignition key?

YES >> INSPECTION END
NO >> GO TO 4.

4.REPLACE ECM

Replace ECM.
Refer to EC-447, "Removal and Installation" (MR16DDT), or EC-805, "Removal and Installation" (HR16DE).

>> INSPECTION END

P1612 CHAIN OF ECM-IMMU

DTC Logic

INFOID:0000000006628002

DTC DETECTION LOGIC

NOTE:

- If DTC P1612 is displayed with DTC U1000 (for BCM), first perform the trouble diagnosis for DTC U1000. Refer to BCS-153, "DTC Logic".
- If DTC P1612 is displayed with DTC U1010 (for BCM), first perform the trouble diagnosis for DTC U1010. Refer to BCS-154, "DTC Logic".

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check DTC in “Self Diagnostic Result” mode of “ENGINE” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-194, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628003

1.REPLACE BCM

1. Replace BCM. Refer to BCS-161, "Removal and Installation".
2. Perform initialization of BCM and reregistration of all ignition keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.
3. Start engine.

Does the engine start?

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

2.REPLACE ECM

Replace ECM.
Refer to EC-447, "Removal and Installation" (MR16DDT), or EC-805, "Removal and Installation" (HR16DE).

>> INSPECTION END

P1614 CHAIN OF IMMU-KEY

DTC Logic

INFOID:0000000006628004

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1614	CHAIN OF IMMU-KEY	• Inactive communication between NATS antenna amp. and BCM • Ignition key is malfunctioning	• Harness or connectors (The NATS antenna amp. circuit is open or shorted.) • Ignition key • NATS antenna amp. • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check DTC in “Self Diagnostic Result” mode of “ENGINE” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-195, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628005

1.CHECK FUSE

Check that the following IPDM E/R fuse is not blown.

Signal name	Fuse No.
Battery power supply	43

Is the fuse fusing?

YES >> Replace the blown fuse after repairing the affected circuit if a fuse is blown.
NO >> GO TO 2.

2.CHECK NATS ANTENNA AMP. INSTALLATION

Check NATS antenna amp. Installation. Refer to SEC-233, "Removal and Installation".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Reinstall NATS antenna amp. correctly.

3.CHECK IGNITION KEY

Start engine using another registered ignition key.

Does the engine start?

YES-1 >> Replace ignition key.
YES-2 >> Perform initialization of BCM and registration of all ignition keys using CONSULT-III. For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.
NO >> GO TO 4.

4.CHECK NATS ANTENNA AMP. POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect NATS antenna amp. connector.
3. Check voltage between NATS antenna amp. harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
NATS antenna amp.			
Connector	Terminal		
M26	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 6.
NO >> GO TO 5.

5.CHECK NATS ANTENNA AMP. POWER SUPPLY CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and NATS antenna amp. connector.

IPDM E/R		NATS antenna amp.		Continuity
Connector	Terminal	Connector	Terminal	
F14	42	M26	1	Existed

3. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
F14	42		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-63, "Removal and Installation".
NO >> Repair or replace harness.

6.CHECK NATS ANTENNA AMP. GROUND CIRCUIT

Check continuity between NATS antenna amp. harness connector and ground.

NATS antenna amp.		Ground	Continuity
Connector	Terminal		
M26	3		Existed

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair or replace harness.

7.CHECK NATS ANTENNA AMP. SIGNAL

1. Connect BCM connector and NATS antenna amp. connector.
2. Check voltage between BCM harness connector and ground.

(+)		(–)	Condition	Voltage (V) (Approx.)
BCM				
Connector	Terminal			
M65	21	Ground	Just after inserting ignition key into key cylinder	Pointer of tester should move
			Other than above	0
	25		Just after inserting ignition key into key cylinder	Pointer of tester should move
			Other than above	0

Is the inspection result normal?

YES >> GO TO 9.
NO >> GO TO 8.

8.CHECK NATS ANTENNA AMP. SIGNAL CIRCUIT

1. Disconnect NATS antenna amp. connector.

2. Check continuity between BCM harness connector and NATS antenna amp. harness connector.

BCM		NATS antenna amp.		Continuity
Connector	Terminal	Connector	Terminal	
M65	21	M26	2	Existed
	25		4	

3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M65	21		Not existed
	25		

Is the inspection result normal?

YES >> Replace NATS antenna amp. Refer to SEC-233, "Removal and Installation".
NO >> Repair or replace harness.

9. CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

P1615 DIFFRENCE OF KEY

DTC Logic

INFOID:0000000006628006

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check DTC in “Self Diagnostic Result” mode of “ENGINE” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-198, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628007

1.PERFORM INITIALIZATION

Perform initialization of BCM and reregistration of all ignition keys using CONSULT-III.
For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

Can the system be initialized and can the engine be started with reregistered ignition key?

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

2.REPLACE IGNITION KEY

1. Replace ignition key.
2. Perform initialization of BCM and reregistration of all ignition keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

Can the system be initialized and can the engine be started with reregistered ignition key?

YES >> INSPECTION END
NO >> GO TO 3.

3.REPLACE BCM

1. Replace BCM. Refer to BCS-161, "Removal and Installation".
2. Perform initialization of BCM and reregistration of all ignition keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

P1616 ECM

DTC Logic

INFOID:0000000006696672

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1616	NATS MALFUNCTION	ECM ROM is malfunctioning.	ECM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION

1. Turn ignition switch ON amd wait 2 seconds or more.
2. Check DTC in “Self Diagnostic Result” mode of “ENGINE” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-199, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006696673

1.INSPECTION START

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “ENGINE” using CONSULT-III.
3. Touch “ERASE”.
4. Perform DTC CONFIRMATION PROCEDURE for DTC P1616. Refer to SEC-199, "DTC Logic".

Is DTC P1616 displayed again?

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

2.REPLACE ECM

Replace ECM.

>> INSPECTION END

B2190 NATS ANTENNA AMP.

DTC Logic

INFOID:0000000006628008

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. • Ignition key is malfunctioning.	• Harness or connectors (The NATS antenna amp. circuit is open or shorted.) • Ignition key • NATS antenna amp. • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-200, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628009

1.CHECK FUSE

Check that the following IPDM E/R fuse is not blown.

Signal name	Fuse No.
Battery power supply	43

Is the fuse fusing?

YES >> Replace the blown fuse after repairing the affected circuit if a fuse is blown.
NO >> GO TO 2.

2.CHECK NATS ANTENNA AMP. INSTALLATION

Check NATS antenna amp. Installation. Refer to SEC-233, "Removal and Installation".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Reinstall NATS antenna amp. correctly.

3.CHECK IGNITION KEY

Start engine using another registered ignition key.

Does the engine start?

YES-1 >> Replace ignition key.
YES-2 >> Perform initialization of BCM and reregistration of all ignition keys using CONSULT-III. For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.
NO >> GO TO 4.

4.CHECK NATS ANTENNA AMP. POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect NATS antenna amp. connector.
3. Check voltage between NATS antenna amp. harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
NATS antenna amp.			
Connector	Terminal		
M26	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 6.
NO >> GO TO 5.

5. CHECK NATS ANTENNA AMP. POWER SUPPLY CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and NATS antenna amp. connector.

IPDM E/R		NATS antenna amp.		Continuity
Connector	Terminal	Connector	Terminal	
F14	42	M26	1	Existed

3. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
F14	42		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-63, "Removal and Installation".
NO >> Repair or replace harness.

6. CHECK NATS ANTENNA AMP. GROUND CIRCUIT

Check continuity between NATS antenna amp. harness connector and ground.

NATS antenna amp.		Ground	Continuity
Connector	Terminal		
M26	3		Existed

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair or replace harness.

7. CHECK NATS ANTENNA AMP. SIGNAL

1. Connect BCM connector and NATS antenna amp. connector.
2. Check voltage between BCM harness connector and ground.

(+)		(–)	Condition	Voltage (V) (Approx.)
BCM				
Connector	Terminal			
M65	21	Ground	Just after inserting ignition key into key cylinder	Pointer of tester should move
			Other than above	0
	25		Just after inserting ignition key into key cylinder	Pointer of tester should move
			Other than above	0

Is the inspection result normal?

YES >> GO TO 9.
NO >> GO TO 8.

8. CHECK NATS ANTENNA AMP. SIGNAL CIRCUIT

1. Disconnect NATS antenna amp. connector.

2. Check continuity between BCM harness connector and NATS antenna amp. harness connector.

BCM		NATS antenna amp.		Continuity
Connector	Terminal	Connector	Terminal	
M65	21	M26	2	Existed
	25		4	

3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M65	21		Not existed
	25		

Is the inspection result normal?

YES >> Replace NATS antenna amp. Refer to SEC-233, "Removal and Installation".
NO >> Repair or replace harness.

9. CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

B2191 DIFFERENCE OF KEY

DTC Logic

INFOID:0000000006628010

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-203, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628011

1.PERFORM INITIALIZATION

Perform initialization of BCM and reregistration of all ignition keys using CONSULT-III.
For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

Can the system be initialized and can the engine be started with reregistered ignition key?

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

2.REPLACE IGNITION KEY

1. Replace ignition key.
2. Perform initialization of BCM and reregistration of all ignition keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

Can the system be initialized and can the engine be started with reregistered ignition key?

YES >> INSPECTION END
NO >> GO TO 3.

3.REPLACE BCM

1. Replace BCM. Refer to BCS-161, "Removal and Installation".
2. Perform initialization of BCM and reregistration of all ignition keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

B2192 ID DISCORD, IMMU-ECM

DTC Logic

INFOID:0000000006628012

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-204, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628013

1.PERFORM INITIALIZATION

Perform initialization of BCM and reregistration of all ignition keys using CONSULT-III.
For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

Can the system be initialized and can the engine be started with reregistered ignition key?

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

2.CHECK SELF DIAGNOSTIC RESULT

1. Select “Self Diagnostic Result” mode of “ENGINE” using CONSULT-III.
2. Erase DTC.
3. Perform DTC CONFIRMATION PROCEDURE for DTC B2192. Refer to SEC-204, "DTC Logic".

Is DTC detected?

YES >> GO TO 3.
NO >> INSPECTION END

3.REPLACE BCM

1. Replace BCM. Refer to BCS-161, "Removal and Installation".
2. Perform initialization of BCM and reregistration of all ignition keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

Can the system be initialized and can the engine be started with reregistered ignition key?

YES >> INSPECTION END
NO >> GO TO 4.

4.REPLACE ECM

Replace ECM.
Refer to EC-447, "Removal and Installation" (MR16DDT), or EC-805, "Removal and Installation" (HR16DE).

>> INSPECTION END

B2193 CHAIN OF ECM-IMMU

DTC Logic

INFOID:0000000006628014

DTC DETECTION LOGIC

NOTE:

- If DTC B2193 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-153, "DTC Logic".
- If DTC B2193 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-154, "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 shorted.) • BCM • ECM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-205, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006628015

1.REPLACE BCM

1. Replace BCM. Refer to BCS-161, "Removal and Installation".
2. Perform initialization of BCM and reregistration of all ignition keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

Can the system be initialized and can the engine be started with reregistered ignition key?

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

2.REPLACE ECM

Replace ECM.
Refer to EC-447, "Removal and Installation" (MR16DDT), or EC-805, "Removal and Installation" (HR16DE).

>> INSPECTION END

B2195 ANTI-SCANNING

DTC Logic

INFOID:0000000006628016

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2195	ANTI SCANNING	ID verification between BCM and ECM that is out of the specified specification is detected	ID verification request out of the specified specification

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-206, "Diagnosis Procedure".
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:0000000006628017

1.CHECK SELF DIAGNOSTIC RESULT 1

1. Select “Self Diagnostic Result” of “BCM” using CONSULT-III.
2. Erase DTC.
3. Perform DTC Confirmation Procedure for DTC P2195. Refer to SEC-206, "DTC Logic".

Is DTC detected?

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

2.CHECK EQUIPMENT OF THE VEHICLE

Check that unspecified accessory part related to engine start is not installed.

Is unspecified accessory part related to engine start installed?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-161, "Removal and Installation".

3.CHECK SELF DIAGNOSTIC RESULT 2

1. Obtain the customers approval to remove unspecified accessory part related to engine start, and then remove it.
2. Select “Self Diagnostic Result” of “BCM” using CONSULT-III.
3. Erase DTC.
4. Perform DTC CONFIRMATION PROCEDURE for for DTC B2195. Refer to SEC-206, "DTC Logic".

Is DTC detected?

YES >> GO TO 4.
NO >> INSPECTION END

4.REPLACE BCM

1. Replace BCM. Refer to BCS-161, "Removal and Installation".
2. Perform initialization of BCM and reregistration of all ignition keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.

>> INSPECTION END

B2196 DONGLE UNIT

Description

INFOID:0000000006708859

BCM performs ID verification between BCM and dongle unit.
When verification result is OK, BCM permits cranking.

DTC Logic

INFOID:0000000006708860

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2196	DONGLE NG	The ID verification results between BCM and dongle unit is NG.	• Harness or connectors (Dongle unit circuit is open or shorted.) • Dongle unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Turn ignition switch OFF.
3. Turn ignition switch ON.
4. Check DTC in “Self-diagnosis result” mode of “BCM” using CONSULT-III.

Is the DTC detected?

YES >> Refer to SEC-207, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006708861

1.PERFORM INITIALIZATION

1. Perform initialization of BCM and reregistration of all Intelligent Keys using CONSULT-III.
   For initialization and registration procedures, refer to CONSULT-III Operation Manual NATS-IVIS/NVIS.
2. Start the engine.

Dose the engine start?

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

2.CHECK DONGLE UNIT CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and dongle unit connector.
3. Check continuity between BCM harness connector and dongle unit harness connector.

BCM		Dongle unit		Continuity
Connector	Terminal	Connector	Terminal	
M68	24	M86	7	Existed

4. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M68	24		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.CHECK DONGLE UNIT GROUND CIRCUIT

Check continuity between dongle unit harness connector and ground.

Dongle unit		Ground	Continuity
Connector	Terminal		
M86	1		Existed

Is the inspection result normal?

YES >> Replace dongle unit.
NO >> Repair or replace harness.

B209F CRANKING REQUEST CIRCUIT

DTC Logic

INFOID:0000000006706133

DTC DETECTION LOGIC

NOTE:
If DTC B209F is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to PCS-59, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B209F	CRANK REQ CIR OPEN	When the following items do not match, a malfunction is detected. • Cranking request signal from ECM • Starter control relay control signal from ECM (CAN)	• Harness or connectors (CAN communication line is open or shorted.) • Harness or connectors (Cranking request signal circuit is open or shorted.) • IPDM E/R • ECM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Perform DTC CONFIRMATION PROCEDURE for DTC P1650. Refer to EC-366, "DTC Logic" (MR16DDT) or EC-725, "DTC Logic" (HR16DE).
2. Turn ignition switch ON.
3. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-209, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006706134

1.CHECK CRANKING REQUEST SIGNAL

1. Turn ignition switch ON.
2. Check voltage between IPDM E/R harness connector and ground under the following conditions.

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E13	23	Ground	Ignition switch ON	• Engine: Stopped • Selector lever position: P	0 – 1
				• Engine: Stopped • Selector lever position: Other than P	12 – 16
				Engine running	12 – 16

Is the inspection result normal?

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

2.CHECK CRANKING REQUEST SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Disconnect ECM connector.
4. Check continuity between IPDM E/R harness connector and ECM harness connector.

IPDM E/R		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E13	23	E16 (HR16DE)	82	Existed
		F26 (MR16DDT)	92	

5. Check continuity between BCM harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E13	23		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.REPLACE IPDM E/R

1. Replace IPDM E/R. Refer to PCS-63, "Removal and Installation".
2. Perform DTC CONFIRMATION PROCEDURE for DTC B209F. Refer to SEC-209, "DTC Logic".

Is DTC detected?

YES >> GO TO 4.
NO >> INSPECTION END

4.REPLACE ECM

Replace ECM.
Refer to EC-447, "Removal and Installation" (MR16DDT) or EC-805, "Removal and Installation" (HR16DE).

>> INSPECTION END

B20A0 CRANKING REQUEST CIRCUIT

DTC Logic

INFOID:0000000006706135

DTC DETECTION LOGIC

NOTE:
If DTC B20A0 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to PCS-59, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B20A0	CRANK REQ CIR SHORT	When the following items do not match, a malfunction is detected. • Cranking request signal from ECM • Starter control relay control signal from ECM (CAN)	• Harness or connectors (CAN communication line is open or shorted.) • Harness or connectors (Cranking request signal circuit is open or shorted.) • IPDM E/R • ECM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Perform DTC CONFIRMATION PROCEDURE for DTC P1650. Refer to EC-366, "DTC Logic" (MR16DDT) or EC-725, "DTC Logic" (HR16DE).
2. Turn ignition switch ON.
3. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-211, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006706136

1.CHECK CRANKING REQUEST SIGNAL

1. Turn ignition switch ON.
2. Check voltage between IPDM E/R harness connector and ground under the following conditions.

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E13	23	Ground	Ignition switch ON	• Engine: Stopped • Selector lever position: P	0 – 1
				• Engine: Stopped • Selector lever position: Other than P	12 – 16
				Engine running	12 – 16

Is the inspection result normal?

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

2.CHECK CRANKING REQUEST SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Disconnect ECM connector.
4. Check continuity between IPDM E/R harness connector and ECM harness connector.

IPDM E/R		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E13	23	E16 (HR16DE)	82	Existed
		F26 (MR16DDT)	92	

5. Check continuity between BCM harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E13	23		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.REPLACE IPDM E/R

1. Replace IPDM E/R. Refer to PCS-63, "Removal and Installation".
2. Perform DTC CONFIRMATION PROCEDURE for DTC B20A0. Refer to SEC-211, "DTC Logic".

Is DTC detected?

YES >> GO TO 4.
NO >> INSPECTION END

4.REPLACE ECM

Replace ECM.
Refer to EC-447, "Removal and Installation" (MR16DDT) or EC-805, "Removal and Installation" (HR16DE).

>> INSPECTION END

B210B STARTER CONTROL RELAY

DTC Logic

INFOID:0000000006706137

DTC DETECTION LOGIC

NOTE:
If DTC B210B is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to PCS-30, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B210B	START CONT RLY ON	When comparing the following items, IPDM E/R detects that starter control relay is stuck in the ON position for 5 seconds or more. • Starter control relay control signal (CAN) from BCM • Starter control relay control signal (CAN) from ECM • Starter control relay and starter relay status signal (IPDM E/R input) • Starter control relay control signal (IPDM E/R output) • Ignition switch START signal • Ignition power supply signal • Cranking request signal from ECM	• Harness or connectors (CAN communication line is open or shorted. (Ignition switch START signal circuit is open or shorted.) • IPDM E/R • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Press push-button ignition switch under the following conditions to start engine, and wait 5 seconds or more.
- Selector lever: In the P position
- Brake pedal: Depressed
2. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-213, "Diagnosis Procedure".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE 2

1. Stop engine.
2. Perform DTC CONFIRMATION PROCEDURE for DTC P1650. Refer to EC-366, "DTC Logic" (MR16DDT) or EC-725, "DTC Logic" (HR16DE).
3. Turn ignition switch ON.
4. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-213, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006706138

1.INSPECTION START

Perform inspection in accordance with procedure that confirms DTC.

Which procedure confirms DTC?

DTC confirmation procedure 1>>GO TO 2.
DTC confirmation procedure 2>>GO TO 5.

2.CHECK DTC OF BCM

Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to BCS-67, "DTC Index".
NO >> GO TO 3.

3. CHECK IGNITION SWITCH START SIGNAL

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R harness connector.
3. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E10	6	Ground	Ignition switch	START position	6 – 16
				Except START position	0 – 1

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness. Refer to STR-12, "CVT : Wiring Diagram".

4. PERFORM DTC CONFIRMATION PROCEDURE AGAIN

1. Reconnect IPDM E/R harness connector.
2. Turn ignition switch ON.
3. Select “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.
4. Touch “ERASE”.
5. Perform DTC CONFIRMATION PROCEDURE for DTC B210B. Refer to SEC-213, "DTC Logic".

Is DTC detected?

YES >> Replace IPDM E/R. Refer to PCS-63, "Removal and Installation".
NO >> INSPECTION END

5. PERFORM DTC CONFIRMATION PROCEDURE AGAIN

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.
3. Touch “ERASE”.
4. Perform DTC CONFIRMATION PROCEDURE for DTC B210B. Refer to SEC-213, "DTC Logic".

Is DTC detected?

YES >> Replace IPDM E/R. Refer to PCS-63, "Removal and Installation".
NO >> INSPECTION END

B210C STARTER CONTROL RELAY

DTC Logic

INFOID:0000000006706139

DTC DETECTION LOGIC

NOTE:

- If DTC B210C is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to PCS-30, "DTC Logic".
- When IPDM E/R power supply voltage is low (Approx. 7 - 8 V for about 1 second), the DTC B210C may be detected.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B210C	START CONT RLY OFF	When comparing the following items, IPDM E/R detects that starter control relay is stuck in the OFF position for 5 seconds or more. • Starter control relay control signal (CAN) from BCM • Starter control relay control signal (CAN) from ECM • Starter control relay and starter relay status signal (IPDM E/R input) • Starter control relay control signal (IPDM E/R output) • Ignition switch START signal • Ignition power supply signal • Cranking request signal from ECM	• Harness or connectors (CAN communication line is open or shorted. (Transmission range switch circuit is open or shorted.) (Ignition switch START signal circuit is open or shorted.) (Ignition power supply circuit is open or shorted.) • IPDM E/R • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE 1

1. Press push-button ignition switch under the following conditions to start engine, and wait 5 seconds or more.
- Selector lever: In the P position
- Brake pedal: Depressed
2. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-215, "Diagnosis Procedure".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE 2

1. Stop engine.
2. Perform DTC CONFIRMATION PROCEDURE for DTC P1650. Refer to EC-366, "DTC Logic" (MR16DDT) or EC-725, "DTC Logic" (HR16DE).
3. Turn ignition switch ON.
4. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-215, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006706140

1.INSPECTION START

Perform inspection in accordance with procedure that confirms DTC.

Which procedure confirms DTC?

DTC confirmation procedure 1>>GO TO 2.
DTC confirmation procedure 2>>GO TO 7.

2.CHECK DTC OF BCM

Check DTC in “Self Diagnostic Result” mode of “BCM” using CONSULT-III.

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to BCS-67, "DTC Index".
NO >> GO TO 3.

3. CHECK DTC OF TCM

Check DTC in “Self Diagnostic Result” mode of “TRANSMISSION” using CONSULT-III.

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to TM-171, "DTC Index" (CVT: RE0F10B) or TM-366, "DTC Index" (CVT: RE0F11A).
NO >> GO TO 4.

4. CHECK TRANSMISSION RANGE SWITCH SIGNAL

1. Turn ignition switch ON.
2. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E15	48	Ground	Selector lever	P or N position	9 – 16
				Except above position	0 – 1

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness. Refer to STR-12, "CVT : Wiring Diagram".

5. CHECK IGNITION SWITCH START SIGNAL

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R harness connector.
3. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E10	6	Ground	Ignition switch	START position	6 – 16
				Except START position	0 – 1

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness. Refer to STR-12, "CVT : Wiring Diagram".

6. PERFORM DTC CONFIRMATION PROCEDURE AGAIN

1. Reconnect IPDM E/R harness connector.
2. Turn ignition switch ON.
3. Select “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.
4. Touch “ERASE”.
5. Perform DTC CONFIRMATION PROCEDURE for DTC B210C. Refer to SEC-215, "DTC Logic".

Is DTC detected?

YES >> Replace IPDM E/R. Refer to PCS-63, "Removal and Installation".
NO >> INSPECTION END

7. CHECK IGNITION POWER SUPPLY SIGNAL

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R harness connector.
3. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E17	69	Ground	Ignition switch	ON position	6 – 16
				ACC or OFF position	0 – 1

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-63, "Removal and Installation".
NO >> Repair or replace harness. Refer to STR-12, "CVT : Wiring Diagram".

B210D STARTER RELAY

DTC Logic

INFOID:0000000006706141

DTC DETECTION LOGIC

NOTE:

- If DTC B210D is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to PCS-59, "DTC Logic".
- If DTC B210D is displayed with DTC B209F, first perform the trouble diagnosis for DTC B209F. Refer to SEC-209, "DTC Logic".
- If DTC B210D is displayed with DTC B20A0, first perform the trouble diagnosis for DTC B20A0. Refer to SEC-211, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B210D	STARTER RELAY ON	When comparing the following items, IPDM E/R detects that starter relay is stuck in the ON position for 5 seconds or more. • Starter control relay control signal (CAN) from BCM • Starter control relay control signal (CAN) from ECM • Starter control relay and starter relay status signal (IPDM E/R input) • Starter control relay control signal (IPDM E/R output) • Ignition switch START signal • Ignition power supply signal • Cranking request signal from ECM	• Harness or connectors (CAN communication line is open or shorted. (Starter relay circuit is open or shorted. • IPDM E/R

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Press push-button ignition switch under the following conditions to start engine, and wait 5 seconds or more.

- Selector lever: In the P position
- Brake pedal: Depressed

2. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-218, "Diagnosis Procedure".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE 2

1. Stop engine.
2. Perform DTC CONFIRMATION PROCEDURE for DTC P1650. Refer to EC-366, "DTC Logic" (MR16DDT) or EC-725, "DTC Logic" (HR16DE).
3. Turn ignition switch ON.
4. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-218, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006706142

1.CHECK STARTER RELAY CONTROL SIGNAL

1. Turn ignition switch ON.
2. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E13	30	Ground	Selector lever	P or N position	9 – 16
				Except above position	0 – 1

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 2.

2.CHECK CRANKING REQUEST SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Disconnect ECM connector.
4. Check continuity between IPDM E/R harness connector and ECM harness connector.

IPDM E/R		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E13	30	E16 (HR16DE)	87	Existed
		F26 (MR16DDT)	66	

5. Check continuity between BCM harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E13	30		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.REPLACE ECM

Replace ECM.
Refer to EC-447, "Removal and Installation" (MR16DDT) or EC-805, "Removal and Installation" (HR16DE).

>> INSPECTION END

4.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.
3. Touch “ERASE”.
4. Perform DTC CONFIRMATION PROCEDURE for DTC B210D. Refer to SEC-218, "DTC Logic".

Is DTC detected?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
NO >> INSPECTION END

B210E STARTER RELAY

DTC Logic

INFOID:0000000006706143

DTC DETECTION LOGIC

NOTE:

- If DTC B210E is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to PCS-59, "DTC Logic".
- If DTC B210E is displayed with DTC B209F, first perform the trouble diagnosis for DTC B209F. Refer to SEC-209, "DTC Logic".
- If DTC B210E is displayed with DTC B20A0, first perform the trouble diagnosis for DTC B20A0. Refer to SEC-211, "DTC Logic".
- When IPDM E/R power supply voltage is low (Approx. 7 - 8 V for about 1 second), the DTC B210E may be detected.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B210E	STARTER RELAY OFF	When comparing the following items, IPDM E/R detects that starter relay is stuck in the OFF position for 5 seconds or more. • Starter control relay control signal (CAN) from BCM • Starter control relay control signal (CAN) from ECM • Starter control relay and starter relay status signal (IPDM E/R input) • Starter control relay control signal (IPDM E/R output) • Ignition switch START signal • Ignition power supply signal • Cranking request signal from ECM	• Harness or connector (CAN communication line is open or shorted.) • Harness or connector (Starter relay circuit is open or shorted.) • IPDM E/R • BCM • Battery

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Press push-button ignition switch under the following conditions to start engine, and wait 5 seconds or more.

- Selector lever: In the P position
- Brake pedal: Depressed

2. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Go to SEC-220, "Diagnosis Procedure".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE 2

1. Stop engine.
2. Perform DTC CONFIRMATION PROCEDURE for DTC P1650. Refer to EC-366, "DTC Logic" (MR16DDT) or EC-725, "DTC Logic" (HR16DE).
3. Turn ignition switch ON.
4. Check DTC in “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-220, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000006706144

1.CHECK STARTER RELAY CONTROL SIGNAL

1. Turn ignition switch ON.
2. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E13	30	Ground	Selector lever	P or N position	9 – 16
				Except above position	0 – 1

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 2.

2.CHECK CRANKING REQUEST SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Disconnect ECM connector.
4. Check continuity between IPDM E/R harness connector and ECM harness connector.

IPDM E/R		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E13	30	E16 (HR16DE)	87	Existed
		F26 (MR16DDT)	66	

5. Check continuity between BCM harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E13	30		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness.

3.REPLACE ECM

Replace ECM.
Refer to EC-447, "Removal and Installation" (MR16DDT) or EC-805, "Removal and Installation" (HR16DE).

>> INSPECTION END

4.CHECK STARTER RELAY POWER SUPPLY

1. Turn ignition switch OFF.
2. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
IPDM E/R			
Connector	Terminal		
E10	4	Ground	9 – 16

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness. Refer to STR-12, "CVT : Wiring Diagram".

5.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” mode of “IPDM E/R” using CONSULT-III.
3. Touch “ERASE”.
4. Perform DTC CONFIRMATION PROCEDURE for DTC B210D. Refer to SEC-218, "DTC Logic".

Is DTC detected?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".
NO >> INSPECTION END

HOOD SWITCH

Component Function Check

INFOID:0000000006628018

1.CHECK FUNCTION

1. Select “HOOD SW” in “Data Monitor” mode of “IPDM E/R” using CONSULT-III.
2. Check “HOOD SW” indication under the following condition.

Monitor item	Condition		Indication
HOOD SW	Hood	Open	ON
		Close	OFF

Is the indication normal?

YES >> Hood switch is OK.
NO >> Go to SEC-223, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000006628019

1.CHECK HOOD SWITCH SIGNAL CIRCUIT 1

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

(+)		(–)	Voltage (V) (Approx.)
Hood switch			
Connector	Terminal		
E78	1	Ground	12

Is the inspection result normal?

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

2.CHECK HOOD SWITCH SIGNAL CIRCUIT 2

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and hood switch harness connector.

IPDM E/R		Hood switch		Continuity
Connector	Terminal	Connector	Terminal	
E13	32	E78	1	Existed

3. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E13	32		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-63, "Removal and Installation".
NO >> Repair or replace harness.

3.CHECK HOOD SWITCH GROUND CIRCUIT

Check continuity between hood switch harness connector and ground.

Hood switch		Ground	Continuity
Connector	Terminal		
E78	2		Existed

Is the inspection result normal?

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

4.CHECK HOOD SWITCH

Refer to SEC-224, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace hood switch.

5.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

Component Inspection

INFOID:0000000006628020

1.CHECK HOOD SWITCH

1. Turn ignition switch OFF.
2. Disconnect hood switch connector.
3. Check continuity between hood switch terminals.

Hood switch		Condition		Continuity
Terminal				
1	2	Hood switch	Press	Not existed
			Release	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace hood switch.

HORN FUNCTION

Component Function Check

INFOID:0000000006698776

1.CHECK FUNCTION 1

1. Disconnect vehicle security horn relay.
2. Perform “VEHICLE SECURITY HORN” in “ACTIVE TEST” mode of “THEFT ALM” of “BCM” using CONSULT-III.
3. Check the horn operation.

Test item		Description	
VEHICLE SECURITY HORN	ON	Horn	Sounds (for 0.5 sec)

Is the operation normal?

YES >> GO TO 2.
NO >> Go to SEC-225, "Diagnosis Procedure".

2.CHECK FUNCTION 2

1. Reconnect vehicle security horn relay.
2. Disconnect horn relay.
3. Perform “VEHICLE SECURITY HORN” in “ACTIVE TEST” mode of “THEFT ALM” of “BCM” using CONSULT-III.
4. Check the horn operation.

Test item		Description	
VEHICLE SECURITY HORN	ON	Vehicle security horn	Sounds (for 0.5 sec)

Is the operation normal?

YES >> INSPECTION END
NO >> Go to SEC-225, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000006698777

1.INSPECTION START

Perform inspection in accordance with procedure that confirms malfunction.

Which procedure confirms malfunction?

Component Function Check 1>>GO TO 2.
Component Function Check 2>>GO TO 4.

2.CHECK HORN FUNCTION

Check that horn functions properly using horn switch.

Do horns sound?

YES >> GO TO 3.
NO >> Check horn circuit. Refer to HRN-3, "Wiring Diagram".

3.CHECK HORN CONTROL CIRCUIT

1. Disconnect horn relay.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and horn relay harness connector.

IPDM E/R		Horn relay		Continuity
Connector	Terminal	Connector	Terminal	
E13	34	E5	1	Existed

4. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E13	34		Not existed

Is the inspection result normal?

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

4. CHECK HORN FUNCTION

Check that vehicle security horn functions properly using horn switch.

Do horns sound?

YES >> GO TO 5.
NO >> Check vehicle security horn circuit. Refer to HRN-3, "Wiring Diagram".

5. CHECK VEHICLE SECURITY HORN CONTROL CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and vehicle security horn relay harness connector.

IPDM E/R		Vehicle security horn relay		Continuity
Connector	Terminal	Connector	Terminal	
E13	34	E56	1	Existed

3. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E13	34		Not existed

Is the inspection result normal?

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

6. CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

SECURITY INDICATOR LAMP

Component Function Check

INFOID:0000000006628023

1.CHECK FUNCTION

1. Perform “THEFT IND” in the “ACTIVE TEST” mode of “BCM” using CONSULT-III.
2. Check security indicator lamp operation.

Test item		Description	
THEFT IND	ON	Security indicator lamp	Illuminates
	OFF		Does not illuminate

Is the inspection result normal?

YES >> INSPECTION END
NO >> Go to SEC-227, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000006628024

1.CHECK SECURITY INDICATOR LAMP POWER SUPPLY CIRCUIT

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

(+)		(–)	Voltage (V) (Approx.)
Combination meter			
Connector	Terminal		
M34	27	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.
NO-1 >> Check 10 A fuse [No. 11, located in the fuse block (J/B)].
NO-2 >> Check harness for open or short between combination meter and fuse.

2.CHECK SECURITY INDICATOR LAMP SIGNAL

1. Connect combination meter connector.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
BCM			
Connector	Terminal		
M65	23	Ground	Battery voltage

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-161, "Removal and Installation".
NO >> GO TO 3.

3.CHECK COMBINATION METER CIRCUIT

1. Disconnect combination meter connector.
2. Check continuity between combination meter harness connector and BCM harness connector.

Combination meter		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M34	18	M65	23	Existed

3. Check continuity between combination meter harness connector and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M34	18		Not existed

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-69, "Removal and Installation".
NO >> Repair or replace harness.

SYMPTOM DIAGNOSIS

SECURITY INDICATOR LAMP DOES NOT TURN ON OR BLINK

Description

INFOID:0000000006628025

Security indicator lamp does not blink when ignition switch is in a position other than ON.

NOTE:

- Before performing the diagnosis, check “Work Flow”. Refer to SEC-187, "Work Flow".
- Check that vehicle is under the condition shown in “CONDITIONS OF VEHICLE (OPERATING CONDITIONS)” before starting diagnosis, and check each symptom.

CONDITIONS OF VEHICLE (OPERATING CONDITIONS)

Power supply position is not the ON position.

Diagnosis Procedure

INFOID:0000000006628026

1.CHECK SECURITY INDICATOR LAMP

Check security indicator lamp function.

Refer to SEC-159, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning parts.

2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-42, "Intermittent Incident".

NO >> GO TO 1.

VEHICLE SECURITY SYSTEM CANNOT BE SET

KEY FOB

KEY FOB : Description

INFOID:0000000006628027

Armed phase is not activated when door is locked using keyfob.

NOTE:

Check that vehicle is under the condition shown in “CONDITIONS OF VEHICLE (OPERATING CONDITIONS)” before starting diagnosis, and check each symptom.

CONDITION OF VEHICLE (OPERATING CONDITIONS)

“SECURITY ALARM SET”: ON

Check the setting of “SECURITY ALARM SET” in “Work Support” mode of “THEFT ALM” of “BCM” using CONSULT-III.

KEY FOB : Diagnosis Procedure

INFOID:0000000006628028

1.CHECK REMOTE KEYLESS ENTRY SYSTEM

Lock/unlock door with keyfob.

Refer to DLK-366, "REMOTE KEYLESS ENTRY FUNCTION : System Description" (With super lock) or DLK-497, "System Description" (Without super lock).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Check remote keyless entry system. Refer to DLK-418, "Diagnosis Procedure" (With super lock) or DLK-538, "Diagnosis Procedure" (Without super lock).

2.CHECK HOOD SWITCH

Check hood switch.

Refer to SEC-223, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace hood switch.

3.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-42, "Intermittent Incident".

NO >> GO TO 1.

DOOR LOCK AND UNLOCK SWITCH

DOOR LOCK AND UNLOCK SWITCH : Description

INFOID:0000000006694968

Armed phase is not activated when door is locked using door lock and unlock switch.

NOTE:

Check that vehicle is under the condition shown in “CONDITIONS OF VEHICLE (OPERATING CONDITIONS)” before starting diagnosis, and check each symptom.

CONDITION OF VEHICLE (OPERATING CONDITIONS)

“SECURITY ALARM SET”: ON

Check the setting of “SECURITY ALARM SET” in “Work Support” mode of “THEFT ALM” of “BCM” using CONSULT-III.

DOOR LOCK AND UNLOCK SWITCH : Diagnosis Procedure

INFOID:0000000006694969

1.CHECK POWER DOOR LOCK SYSTEM (DOOR LOCK FUNCTION)

Lock/unlock door with door lock and unlock switch.

Refer to DLK-363, "System Description" (With super lock) or DLK-494, "System Description" (Without super lock).

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check power door lock system (door lock function). Refer to DLK-415, "ALL DOOR : Diagnosis Procedure" (With super lock) or DLK-534, "ALL DOOR : Diagnosis Procedure" (Without super lock).

2.CHECK HOOD SWITCH

Check hood switch.
Refer to SEC-223, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace hood switch.

3.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-42, "Intermittent Incident".
NO >> GO TO 1.

UNLOCK SENSOR

UNLOCK SENSOR : Description

INFOID:0000000006694966

Armed phase is not activated when door is locked by door key cylinder operation using mechanical key.

NOTE:
Check that vehicle is under the condition shown in “CONDITIONS OF VEHICLE (OPERATING CONDITIONS)” before starting diagnosis, and check each symptom.

CONDITION OF VEHICLE (OPERATING CONDITIONS)

“SECURITY ALARM SET”: ON
Check the setting of “SECURITY ALARM SET” in “Work Support” mode of “THEFT ALM” of “BCM” using CONSULT-III.

UNLOCK SENSOR : Diagnosis Procedure

INFOID:0000000006694967

1.CHECK POWER DOOR LOCK SYSTEM (DOOR LOCK FUNCTION)

Lock/unlock door using mechanical key inserted into door key cylinder.
Refer to DLK-363, "System Description" (With super lock) or DLK-494, "System Description" (Without super lock).

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check power door lock system (door lock function). Refer to DLK-414, "Diagnosis Procedure" (With super lock) or DLK-537, "Diagnosis Procedure" (Without super lock).

2.CHECK HOOD SWITCH

Check hood switch.
Refer to SEC-223, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace hood switch.

3.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-42, "Intermittent Incident".
NO >> GO TO 1.

VEHICLE SECURITY ALARM DOES NOT ACTIVATE

Description

INFOID:0000000006628029

Alarm does not operate when alarm operating condition is satisfied.

NOTE:

Check that vehicle is under the condition shown in “CONDITIONS OF VEHICLE (OPERATING CONDITIONS)” before starting diagnosis, and check each symptom.

CONDITION OF VEHICLE (OPERATING CONDITIONS)

“SECURITY ALARM SET”: ON

Check the setting of “SECURITY ALARM SET” in “Work Support” mode of “THEFT ALM” of “BCM” using CONSULT-III.

Diagnosis Procedure

INFOID:0000000006628030

1.CHECK DOOR SWITCH

Check door switch.

Refer to DLK-397, "Component Function Check" (With super lock) or DLK-522, "Component Function Check" (Without super lock).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the malfunctioning door switch

2.CHECK HOOD SWITCH

Check hood switch.

Refer to SEC-223, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace hood switch.

3.CHECK HAZARD WARNING LAMPS

Check hazard warning lamps.

Refer to EXL-69, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning parts.

4.CHECK HORN FUNCTION

Check horn function.

Refer to SEC-225, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace the malfunctioning parts.

5.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-42, "Intermittent Incident".

NO >> GO TO 1.

REMOVAL AND INSTALLATION

NATS ANTENNA AMP.

Removal and Installation

INFOID:0000000006628031

REMOVAL

1. Remove the steering column cover.
   Refer to IP-13, "Removal and Installation".
2. Remove the NATS antenna amp. mounting screw, and then remove NATS antenna amp. from steering lock assembly.

INSTALLATION

Install in the reverse order of removal.