# 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:0000000012430321

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 SR and SB section of this Service Manual.

**WARNING:**

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

**WARNING:**

- **When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT 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 three minutes before performing any service.**

### Precaution for Work

INFOID:0000000012430322

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:

- Water soluble dirt:

- Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
- Then rub with a soft, dry cloth.

- Oily dirt:

- Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
- Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
- Then rub with a soft, dry cloth.

- Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

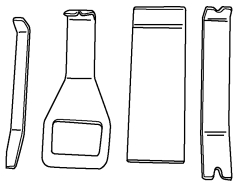
# PREPARATION

## PREPARATION

### Special Service Tool

INFOID:0000000012430323

The actual shape of the tools may differ from those illustrated here.

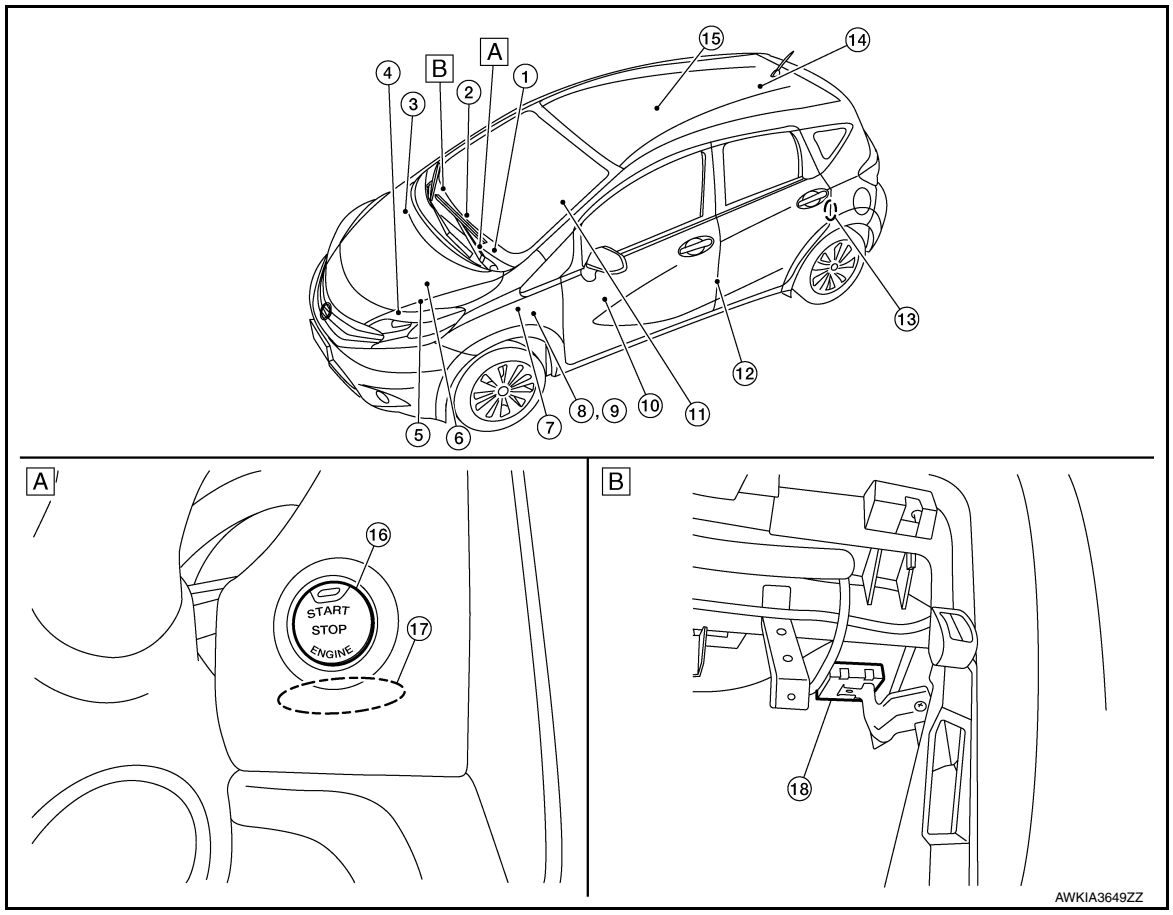
| Tool number<br>(TechMate No.)<br>Tool name | Description |
|---|---|
| —<br>(J-46534)<br>Trim Tool Set<br>  <br>AWJIA0483ZZ | Removing trim components |

# SYSTEM DESCRIPTION

## COMPONENT PARTS

### Component Parts Location

INFOID:0000000012430324




A. View right of steering column B. View with glove box cover removed

| No. | Component | Function |
|---|---|---|
| 1. | Combination meter | Combination meter transmits the vehicle speed signal to BCM via CAN communication.<br>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.<br>Security indicator lamp is located on combination meter.<br>Security indicator lamp blinks when ignition switch is in any position other than ON to warn that NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS [NVIS (NATS)] is on board.<br>Refer to MWI-9, "METER SYSTEM : Combination Meter". |
| 2. | Inside key antenna (instrument center) | Inside key antenna (instrument center) detects whether Intelligent Key is inside the vehicle or not, and then transmits the signal to the BCM.<br>Refer to SEC-10, "Inside Key Antenna". |

| No. | Component | Function |
|---|---|---|
| 3. | ABS actuator and electric unit (control unit) | ABS actuator and electric unit (control unit) transmits the vehicle speed signal to BCM via CAN communication.<br>BCM also receives the vehicle speed signal from the combination meter via CAN communication. BCM compares both signals to detect the vehicle speed.<br>Refer to BRC-8, "ABS Actuator and Electric Unit (Control Unit)" for detailed installation location. |
| 4. | Intelligent Key warning buzzer | Intelligent Key warning buzzer warns the user, who is outside the vehicle, of operation confirmation according to Intelligent Key operation and door request switch operation, or of an inappropriate operation. |
| 5. | Transmission range switch | Transmission range switch detects the CVT shift selector lever position. |
| 6. | IPDM E/R | Starter control relay is integrated in IPDM E/R and used for the engine starting function.<br>Starter relay is controlled by BCM, and starter control relay is controlled by IPDM E/R while communicating with BCM. IPDM E/R sends the starter control relay and starter relay status signal to BCM. |
| 7. | BCM | BCM controls INTELLIGENT KEY SYSTEM (ENGINE START FUNCTION), NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS [NVIS (NATS)] and VEHICLE SECURITY SYSTEM.<br>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, ignition switch operation is available.<br>Then, when the ignition switch is turned ON, BCM performs ID verification between BCM and ECM. If the ID verification result is OK, ECM can start engine.<br>Refer to BCS-6, "BODY CONTROL SYSTEM : Component Parts Location" for detailed installation location. |
| 8. | Clutch interlock switch | Clutch interlock switch detects that clutch pedal is depressed, and then transmits ON/OFF signal to the BCM. |
| 9. | Stop lamp switch | Stop lamp switch detects that brake pedal is depressed, and then transmits ON/OFF signal to the BCM. |
| 10. | Main power window and door lock/unlock switch | Door lock and unlock switch is integrated into the main power window and door lock/unlock switch.<br>Door lock and unlock switch transmits door lock/unlock operation signal to BCM.<br>Refer to PWC-7, "Main Power Window And Door Lock/Unlock Switch". |
| 11. | CVT shift selector (park position switch) | Park position switch is integrated into the CVT shift selector and detects that the selector lever is in the P (park) position, then transmits ON/OFF signal to the BCM and IPDM E/R. |

| No. | Component | Function |
|---|---|---|
| 12. | Front door switch LH | Door switch detects door open/close condition and then transmits ON/OFF signal to BCM. |
| 13. | Rear door switch LH | Door switch detects door open/close condition and then transmits ON/OFF signal to BCM. |
| 14. | Inside key antenna (trunk room) | Inside key antenna (trunk room) detects whether Intelligent Key is inside the vehicle or not, and then transmits the signal to the BCM. Refer to SEC-10, "Inside Key Antenna". |
| 15. | Inside key antenna (console) | Inside key antenna (console) detects whether Intelligent Key is inside the vehicle or not, and then transmits the signal to the BCM. Refer to SEC-10, "Inside Key Antenna". |
| 16. | Push-button ignition switch | Push-button ignition switch has push switch inside which detects that push-button ignition switch is pressed, and then transmits ON/OFF signal to BCM. BCM changes the ignition switch position with the operation of push-button ignition switch. BCM maintains the ignition switch position status while push-button ignition switch is not operated. |
| 17. | NATS antenna amp. | ID verification is performed between the BCM and the transponder integrated into the Intelligent Key via the NATS antenna amp. |
| 18. | Remote keyless entry receiver | Remote keyless entry receiver receives button operation signal and key ID signal of Intelligent Key, and them transmits them to the BCM. Refer to SEC-10, "Remote Keyless Entry Receiver". |

## CVT Shift Selector (Park Position Switch)

INFOID:0000000012430325

Park position switch detects that CVT shift selector is in the P (Park) 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 (Park) position signal from CVT shift selector (park position switch)
- P/N position signal from TCM
- P (Park) 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 (Park) position signal from CVT shift selector (park position switch)
- P/N position signal from TCM
- P/N position signal from BCM (CAN)

## BCM

INFOID:0000000012430326

BCM controls INTELLIGENT KEY SYSTEM (ENGINE START FUNCTION), NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS (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.

## ECM

INFOID:0000000012430327

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 invalid, the engine can not start.

## IPDM E/R

INFOID:0000000012430328

IPDM E/R has the starter relay and starter control relay inside. 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:0000000012430329

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 operation of starting engine is available.

## Combination Meter

INFOID:0000000012430330

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:0000000012430331

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

## Outside Key Antenna

INFOID:0000000012430332

Outside key antenna detects whether Intelligent Key is outside the vehicle and transmits the signal to BCM.
Three outside key antennas are installed in the front outside handle LH, front outside handle RH and rear bumper.

## Inside Key Antenna

INFOID:0000000012430333

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 trunk room.

## Remote Keyless Entry Receiver

INFOID:0000000012430334

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

## Intelligent Key

INFOID:0000000012430335

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 perform, remote start, door lock/unlock operation, remote liftgate, panic alarm and push-button ignition switch operation.

## Push-button Ignition Switch

INFOID:0000000012430336

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.

## Security Indicator Lamp

INFOID:0000000012430337

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 (NATS) is on board.

## Starter Relay

INFOID:0000000012430338

Engine starting system functions by controlling both starter relay and starter control relay.
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.

## Stop Lamp Switch

INFOID:0000000012430339

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

## Transmission Range Switch

INFOID:0000000012430340

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 (Park) position signal from CVT shift selector (park position switch)
- P/N position signal from TCM
- P (Park) 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 (Park) position signal from CVT shift selector (park position switch)
- P/N position signal from TCM
- P/N position signal from BCM (CAN)

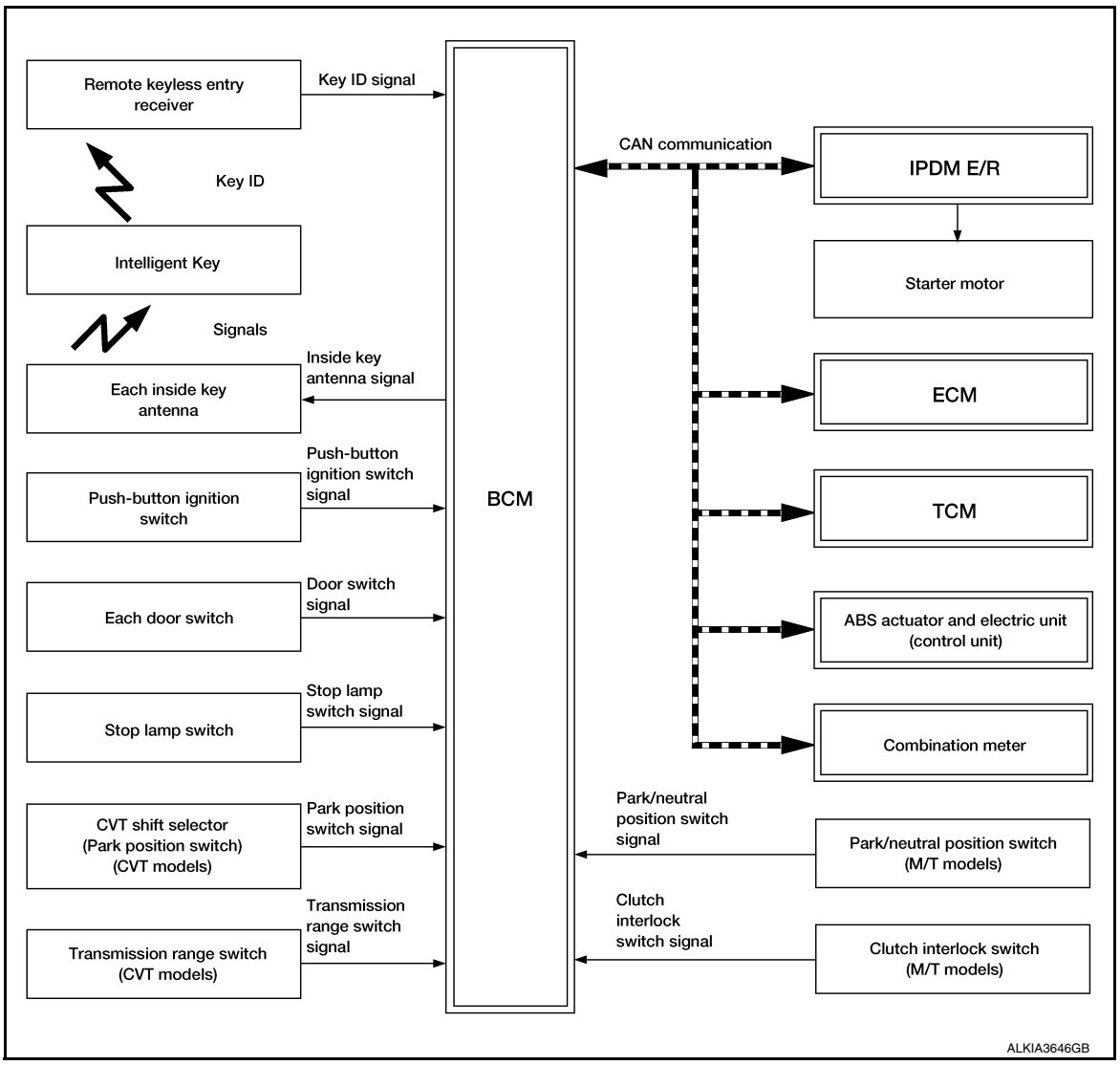
# SYSTEM

## INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

## INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION : System Description

INFOID:0000000012430341

### SYSTEM DIAGRAM




### 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 NATS ID). It can perform the door lock/unlock operation and the push-button ignition switch operation when the registered Intelligent Key is carried.
- If the ID is successfully verified, when push-button ignition switch is pressed the engine can be started.
- For initialization and registration of Intelligent Keys, refer to CONSULT Immobilizer mode and follow the on-screen instructions.
- Up to 4 Intelligent Keys can be registered (Including the standard Intelligent Key) upon request from the customer.
  **NOTE:**

Refer to SEC-15, "NISSAN ANTI-THEFT SYSTEM : System Description" for any functions other than engine start function of Intelligent Key system.

## PRECAUTIONS FOR INTELLIGENT KEY SYSTEM

**The transponder (the chip for 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, NATS ID verification can be performed when Intelligent Key backside is contacted to push-button ignition switch while brake pedal is depressed. 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 turns ACC relay ON and transmits the ignition power supply ON signal to IPDM E/R.
5. IPDM E/R turns the ignition relay ON and starts the ignition power supply.
6. IPDM E/R turns the starter control relay ON for engine starting in advance.
7. BCM detects the selector lever position and brake pedal operation condition.
8. BCM transmits the starter request signal to IPDM E/R and turns the starter relay ON if BCM judges that the engine start condition* is satisfied.
9. 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 on the combination meter illuminates. At that time, the engine cannot be started.**
10. 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 “IGNITION SWITCH 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, NATS ID verification between transponder in Intelligent Key and BCM is performed when Intelligent Key backside is contacted to push-button ignition switch while brake pedal is depressed. If the verification result is OK, engine can be started.

## IGNITION SWITCH POSITION CHANGE TABLE BY PUSH-BUTTON IGNITION SWITCH OPERATION

The ignition switch position can be changed by the following operations:
**NOTE:**
- When an Intelligent Key is within the detection area of inside key antenna or 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:
- Brake pedal operation condition
- Selector lever position
- Vehicle speed

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

| Power supply position | Condition | | Push-button ignition switch operation frequency |
|---|---|---|---|
| | Selector lever | Brake pedal operation condition | |
| OFF → ACC | — | Not depressed | 1 |
| OFF → ACC → ON | — | Not depressed | 2 |
| OFF → ACC → ON → OFF | — | Not depressed | 3 |
| OFF → START<br>ACC → START<br>ON → START | P or N position | Depressed | 1 |
| Engine is running → OFF | — | — | 1 |

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

| Power supply position | Condition | | Push-button ignition switch operation frequency |
|---|---|---|---|
| | Selector lever | Brake pedal operation condition | |
| Engine is running → ACC | — | — | Emergency stop operation |
| Engine stall return operation while driving | N position | Not depressed | 1 |

Emergency stop operation

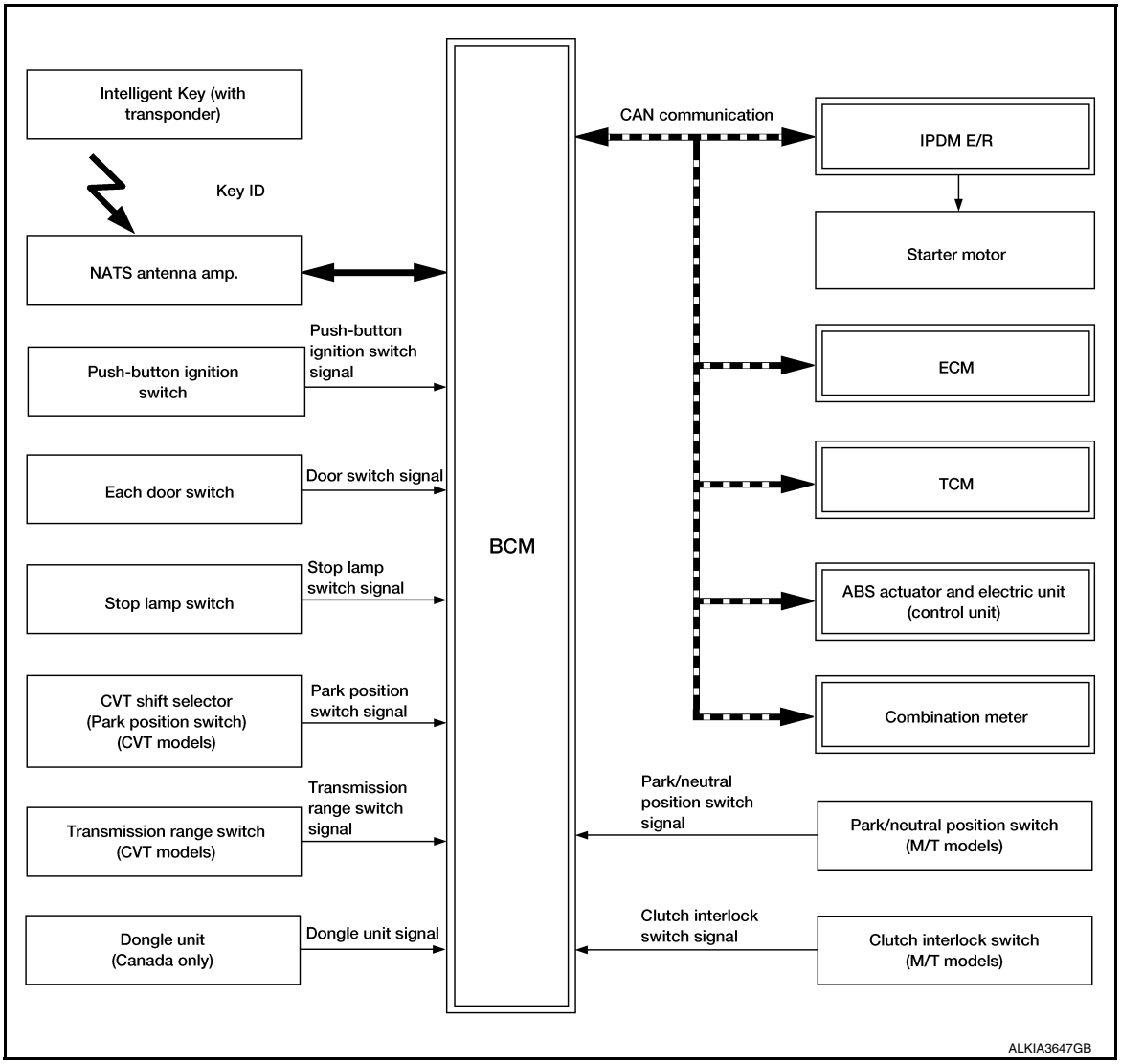
- Press and hold the push-button ignition switch for 2 seconds or more.
- Press the push-button ignition switch 3 times or more within 1.5 seconds.

## NISSAN ANTI-THEFT SYSTEM

# NISSAN ANTI-THEFT SYSTEM : System Description

INFOID:0000000012430342

## SYSTEM DIAGRAM




## SYSTEM DESCRIPTION

- The Nissan Anti-Theft System (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 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 while brake pedal is depressed. If the verification result is OK, the engine start operation can be performed by the push-button ignition switch operation.
- Locate the security indicator lamp and always blinks it when the ignition switch is in any position except ON to warn that the vehicle is equipped with Nissan Anti-Theft System (NATS).
- Up to 4 Intelligent Keys can be registered (including the standard ignition key) upon request from the owner.
- When replacing ECM, BCM or Intelligent Key, the specified procedure (Initialization and registration) using CONSULT is required.
- For initialization and registration of Intelligent Keys, refer to CONSULT Immobilizer mode and follow the on-screen instructions.
- Possible symptom of NATS malfunction is “Engine can not start”. This symptom also occurs because of other than NATS malfunction, so start the trouble diagnosis according to SEC-46, "Work Flow".
- If ECM other than genuine part is installed, the engine cannot be started.
  For ECM replacement procedure, refer to EC-477, "Removal and Installation".

## PRECAUTIONS FOR KEY REGISTRATION

- The ID registration is a procedure that erases the current NATS ID once, and then registers 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 IDs (NATS ID and Intelligent Key ID).

## SECURITY INDICATOR LAMP

- Security indicator lamp warns that the vehicle is equipped with NATS.
- Security indicator lamp always blinks when the ignition switch is in 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 the 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 NATS ID verification between BCM and Intelligent Key (transponder built-in) via NATS antenna amp.
3. When NATS ID verification result is OK, buzzer in combination meter sounds and BCM transmits the result to ECM.
4. BCM turns ACC relay ON and transmits ignition power supply ON signal to IPDM E/R.
5. IPDM E/R turns the ignition relay ON and starts the ignition power supply.
6. IPDM E/R turns the starter control relay ON for engine starting in advance.
7. BCM detects that the selector lever position and brake pedal operation condition.
8. BCM transmits starter request signal to IPDM E/R and turns the starter relay ON if BCM judges that the engine start condition* is satisfied.
9. Power supply is supplied through the starter relay and the starter control relay to operate the starter motor.
10. 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 “IGNITION SWITCH POSITION CHANGE TABLE BY PUSH-BUTTON IGNITION SWITCH OPERATION” below.

## IGNITION SWITCH POSITION CHANGE TABLE BY PUSH-BUTTON IGNITION SWITCH OPERATION

The ignition switch position can be changed by the following operations.

**NOTE:**

- When an Intelligent Key is within the detection area of inside key antenna or 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:

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

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

| Power supply position | Condition | | Push-button ignition switch operation frequency |
|---|---|---|---|
| | Selector lever | Brake pedal operation condition | |
| OFF → ACC | — | Not depressed | 1 |
| OFF → ACC → ON | — | Not depressed | 2 |
| OFF → ACC → ON → OFF | — | Not depressed | 3 |
| OFF → START<br>ACC → START<br>ON → START | P or N position | Depressed | 1 |
| Engine is running → OFF | — | — | 1 |

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

| Power supply position | Condition | | Push-button ignition switch operation frequency |
|---|---|---|---|
| | Selector lever | Brake pedal operation condition | |
| Engine is running → ACC | — | — | Emergency stop operation |
| Engine stall return operation while driving | N position | Not depressed | 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.

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

INFOID:0000000012542530

#### APPLICATION ITEM
CONSULT performs the following functions via CAN communication with BCM.

| Direct Diagnostic Mode | Description |
|---|---|
| ECU Identification | The BCM part number is displayed. |
| Self Diagnostic Result | The BCM self diagnostic results are displayed. |
| Data Monitor | The BCM input/output data is displayed in real time. |
| Active Test | The BCM activates outputs to test components. |
| Work support | The settings for BCM functions can be changed. |
| Configuration | • The vehicle specification can be read and saved.<br>• The vehicle specification can be written when replacing BCM. |
| CAN DIAG SUPPORT MNTR | The result of transmit/receive diagnosis of CAN communication is displayed. |

#### SYSTEM APPLICATION
BCM can perform the following functions.

| System | Sub System | Direct Diagnostic Mode | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | ECU Identification | Self Diagnostic Result | Data Monitor | Active Test | Work support | Configuration | CAN DIAG SUPPORT MNTR |
| 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 | | | × | × | × | | |
| Air conditioner | AIR CONDITIONER | | | × | | | | |
| Intelligent Key system | INTELLIGENT KEY | | × | × | × | × | | |
| Combination switch | COMB SW | | | × | | | | |
| BCM | BCM | × | × | | | × | × | × |
| Immobilizer | IMMU | | × | × | × | × | | |
| Interior room lamp battery saver | BATTERY SAVER | | | × | × | × | | |
| Vehicle security system | THEFT ALM | | | × | × | | | |
| RAP system | RETAINED PWR | | | × | | | | |
| Signal buffer system | SIGNAL BUFFER | | | × | | | | |
| TPMS | AIR PRESSURE MONITOR | | × | × | × | × | | |
| Panic alarm system | PANIC ALARM | | | | × | | | |

# INTELLIGENT KEY

## INTELLIGENT KEY : CONSULT Function (BCM - INTELLIGENT KEY)

INFOID:0000000012542526

### SELF DIAGNOSTIC RESULT

Refer to BCS-50, "DTC Index".

### DATA MONITOR

| Monitor Item [Unit] | Main | Description |
|---|---|---|
| REQ SW -DR [On/Off] | × | Indicates condition of door request switch LH. |
| REQ SW -AS [On/Off] | × | Indicates condition of door request switch RH. |
| REQ SW -BD/TR [On/Off] | × | Indicates condition of back door request switch. |
| PUSH SW [On/Off] | | Indicates condition of push-button ignition switch. |
| CLUCH SW [On/Off] | × | Indicates condition of clutch interlock switch. |
| BRAKE SW 1 [On/Off] | × | Indicates condition of brake switch. |
| BRAKE SW 2 [On/Off] | | Indicates condition of brake switch. |
| DETE/CANCL SW [On/Off] | × | Indicates condition of P (park) position. |
| SFT PN/N SW [On/Off] | × | Indicates condition of P (park) or N (neutral) position. |
| UNLK SEN -DR [On/Off] | × | Indicates condition of door unlock sensor. |
| PUSH SW -IPDM [On/Off] | | Indicates condition of push-button ignition switch received from IPDM E/R on CAN communication line. |
| IGN RLY1 -F/B [On/Off] | | Indicates condition of ignition relay 1 received from IPDM E/R on CAN communication line. |
| DETE SW -IPDM [On/Off] | | Indicates condition of detent switch received from TCM on CAN communication line. |
| SFT PN -IPDM [On/Off] | | Indicates condition of P (park) or N (neutral) position from TCM on CAN communication line. |
| SFT P -MET [On/Off] | | Indicates condition of P (park) position from TCM on CAN communication line. |
| SFT N -MET [On/Off] | | Indicates condition of N (neutral) position from IPDM E/R on CAN communication line. |
| ENGINE STATE [Stop/Start/Crank/Run] | × | Indicates condition of engine state from ECM on CAN communication line. |
| VEH SPEED 1 [mph/km/h] | × | Indicates condition of vehicle speed signal received from ABS on CAN communication line. |
| VEH SPEED 2 [mph/km/h] | × | Indicates condition of vehicle speed signal received from combination meter on CAN communication line. |
| DOOR STAT -DR [LOCK/READY/UNLK] | × | Indicates condition of driver side door status. |
| DOOR STAT -AS [LOCK/READY/UNLK] | × | Indicates condition of passenger side door status. |
| ID OK FLAG [Set/Reset] | | Indicates condition of Intelligent Key ID. |
| PRMT ENG STRT [Set/Reset] | | Indicates condition of engine start possibility. |
| RKE OPE COUN1 [0-19] | × | When remote keyless entry receiver receives the signal transmitted while operating on Intelligent Key, the numerical value start changing. |
| RKE OPE COUN2 [0-19] | × | When remote keyless entry receiver receives the signal transmitted while operating on Intelligent Key, the numerical value start changing. |
| RKE-LOCK [On/Off] | | Indicates condition of lock signal from Intelligent Key. |
| RKE-UNLOCK [On/Off] | | Indicates condition of unlock signal from Intelligent Key. |
| RKE-PANIC [On/Off] | | Indicates condition of panic signal from Intelligent Key. |
| RKE-MODE CHG [On/Off] | | Indicates condition of mode change signal from Intelligent Key. |

### ACTIVE TEST

| Test Item | Description |
|---|---|
| INSIDE BUZZER | This test is able to check combination meter warning chime operation [Take Out/Knob/Key/Off]. |
| LCD | This test is able to check combination meter display information [Off/LK WN/OUTKEY/NO KY/BATT/INSRT/SFT P/ROTAT/ID NG/B&P I/B&P N]. |
| BATTERY SAVER | This test is able to check battery saver operation [On/Off]. |
| ENGINE SW ILLUMI | This test is able to check push-button ignition switch START indicator operation [On/Off]. |
| PUSH SWITCH INDICATOR | This test is able to check push-button ignition switch indicator operation [On/Off]. |
| INT LAMP | This test is able to check interior room lamp operation [On/Off]. |
| INDICATOR | This test is able to check combination meter warning lamp operation [KEY ON/KEY IND/Off]. |
| FLASHER | This test is able to check hazard lamp operation [LH/RH/Off]. |
| OUTSIDE BUZZER | This test is able to check Intelligent Key warning buzzer operation [On/Off]. |
| HORN | This test is able to check horn operation [On]. |
| P RANGE | This test is able to check CVT shift selector illumination operation [On/Off]. |

## WORK SUPPORT

| Support Item | Setting | | Description |
|---|---|---|---|
| LOCK/UNLOCK BY I-KEY | On* | | Door lock/unlock function from Intelligent Key ON. |
| | Off | | Door lock/unlock function from Intelligent Key OFF. |
| ANTI KEY LOCK IN FUNCTI | On* | | Anti lock out setting ON. |
| | Off | | Anti lock out setting OFF. |
| ANS BACK I-KEY UNLOCK | Off | | No buzzer reminder when doors are unlocked with request switch. |
| | On* | | Buzzer reminder when doors are unlocked with request switch. |
| ANS BACK I-KEY LOCK | Horn Chirp | | Horn chirp reminder when doors are locked with request switch. |
| | Buzzer* | | Buzzer reminder when doors are locked with request switch. |
| | Off | | No reminder when doors are locked with request switch. |
| HORN WITH KEYLESS LOCK | Off | | Horn chirp reminder when doors are locked with Intelligent Key. |
| | On* | | No horn chirp reminder when doors are locked with Intelligent Key. |
| HAZARD ANSWER BACK | Lock/Unlock* | | Hazard warning lamp activation when doors are locked/unlocked with Intelligent Key or request switch. |
| | Unlock Only | | Hazard warning lamp activation when doors are unlocked with Intelligent Key or request switch. |
| | Lock Only | | Hazard warning lamp activation when doors are locked with Intelligent Key or request switch. |
| | Off | | No hazard warning lamp activation when doors are locked/unlocked with Intelligent Key or request switch. |
| INSIDE ANT DIAGNOSIS | — | | This function allows inside key antenna self-diagnosis. |
| CONFIRM KEY FOB ID | — | | Intelligent Key ID code can be checked. |
| SHORT CRANKING OUTPUT | Start | 70 msec | Starter motor operation duration time setting. |
| | | 100 msec | |
| | | 200 msec | |
| | End | | — |
| PANIC ALARM SET | MODE 3 | 1.5 sec | Intelligent Key panic alarm button setting. |
| | MODE 2 | OFF | |
| | MODE 1* | 0.5 sec | |
| LO- BATT OF KEY FOB WARN | On* | | Intelligent Key low battery warning ON. |
| | Off | | Intelligent Key low battery warning OFF. |

| Support Item | Setting | | Description |
|---|---|---|---|
| AUTO LOCK SET | MODE7 | 5 min | Auto door lock time setting. |
| | MODE6 | 4 min | |
| | MODE5 | 3 min | |
| | MODE4 | 2 min | |
| | MODE3* | 1 min | |
| | MODE2 | 30 sec | |
| | MODE1 | Off | |

*: Initial Setting

## THEFT ALM

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

INFOID:0000000012542528

#### DATA MONITOR

| Monitored Item | Description |
|---|---|
| REQ SW -DR [On/Off] | Indicates condition of door request switch LH. |
| REQ SW -AS [On/Off] | Indicates condition of door request switch RH. |
| REQ SW -BD/TR [On/Off] | Indicates condition of back door request switch. |
| PUSH SW [On/Off] | Indicates condition of push-button ignition switch. |
| UNLK SEN -DR [On/Off] | Indicates condition of door unlock sensor. |
| DOOR SW-DR [On/Off] | Indicates condition of front door switch LH. |
| DOOR SW-AS [On/Off] | Indicates condition of front door switch RH. |
| DOOR SW-RR [On/Off] | Indicates condition of rear door switch RH. |
| DOOR SW-RL [On/Off] | Indicates condition of rear door switch LH. |
| DOOR SW-BK [On/Off] | Indicates condition of back door switch. |
| CDL LOCK SW [On/Off] | Indicates condition of lock signal from door lock and unlock switch. |
| CDL UNLOCK SW [On/Off] | Indicates condition of unlock signal from door lock and unlock switch. |
| KEY CYL LK-SW [On/Off] | Indicates condition of lock signal from door key cylinder switch. |
| KEY CYL UN-SW [On/Off] | Indicates condition of unlock signal from door key cylinder switch. |
| RKE-LOCK [On/Off] | Indicates condition of lock signal from Intelligent Key. |
| RKE-UNLOCK [On/Off] | Indicates condition of unlock signal from Intelligent Key. |

#### ACTIVE TEST

| Test Item | Description |
|---|---|
| VEHICLE SECURITY HORN | This test is able to check vehicle security horn operation [On]. |
| FLASHER | This test is able to check turn signal lamp operation [LH/RH/Off]. |
| THEFT IND | This test is able to check security indicator lamp operation [On/Off]. |
| HEAD LAMP(HI) | This test is able to check vehicle security lamp operation [On]. |

## IMMU

### IMMU : CONSULT Function (BCM - IMMU)

INFOID:0000000012542527

#### SELF DIAGNOSTIC RESULT

Refer to BCS-50, "DTC Index".

#### DATA MONITOR

| Monitor Item [Unit] | Description |
|---|---|
| CONFRM ID ALL [Yet/DONE] | Switches to DONE when an Intelligent Key is registered. |
| CONFIRM ID4 [Yet/DONE] | |
| CONFIRM ID3 [Yet/DONE] | |
| CONFIRM ID2 [Yet/DONE] | |
| CONFIRM ID1 [Yet/DONE] | |
| TP 4 [Yet/DONE] | DONE indicates the number of Intelligent Key ID which has been registered. |
| TP 3 [Yet/DONE] | |
| TP 2 [Yet/DONE] | |
| TP 1 [Yet/DONE] | |
| PUSH SW [On/Off] | Indicates condition of push-button ignition switch. |

## ACTIVE TEST

| Test Item | Description |
|---|---|
| THEFT IND | This test is able to check security indicator operation [On/Off]. |

## WORK SUPPORT

| Support Item | Setting | Description |
|---|---|---|
| CONFIRM DONGLE ID | — | Dongle ID code can be read. |

# ECU DIAGNOSIS INFORMATION

## ECM, IPDM E/R, BCM

### List of ECU Reference

INFOID:0000000012430347

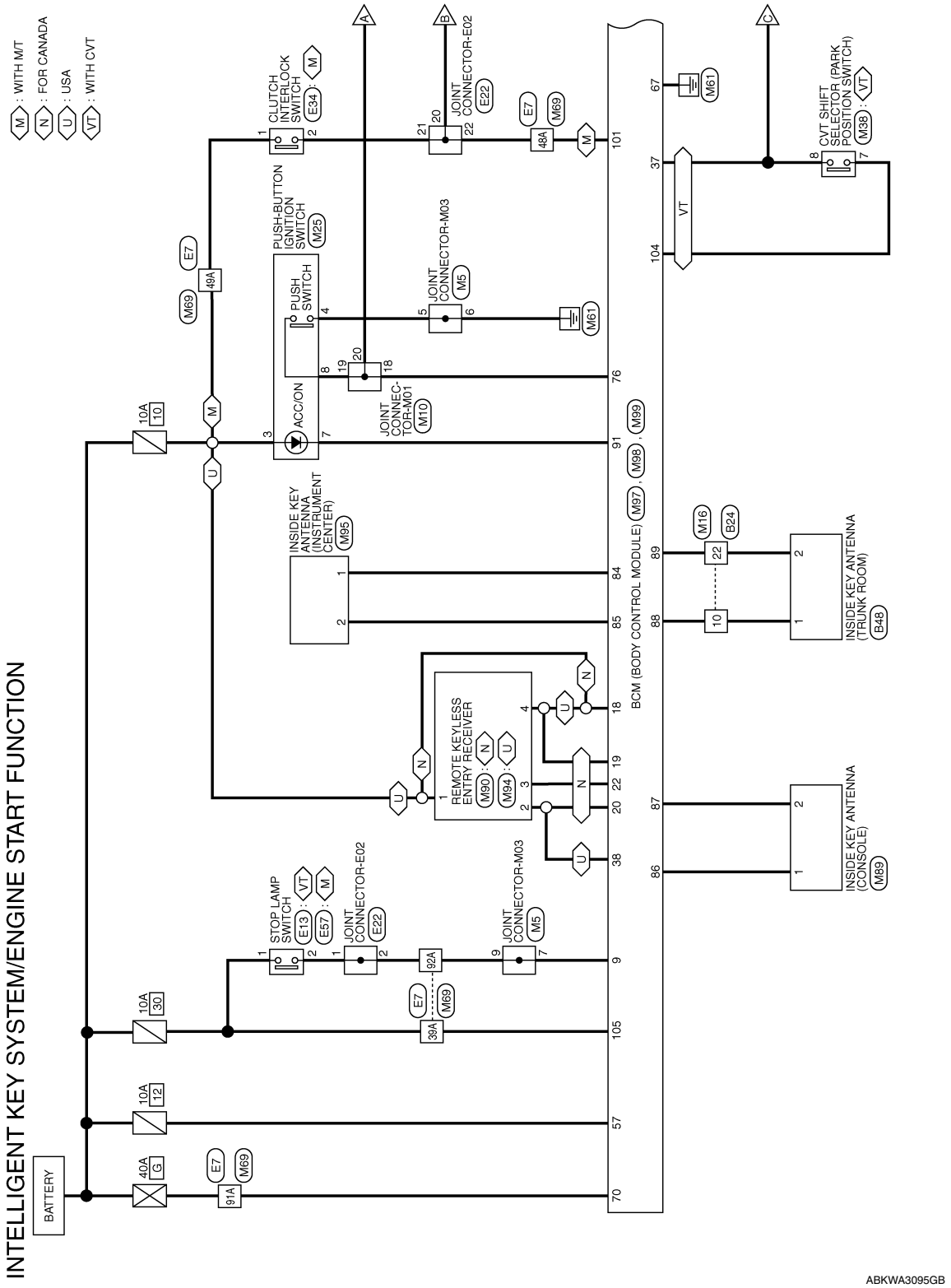
| ECU | Reference |
|---|---|
| ECM | EC-71, "Reference Value" |
| | EC-83, "Fail Safe" |
| | EC-85, "DTC Inspection Priority Chart" |
| | EC-87, "DTC Index" |
| BCM | BCS-30, "Reference Value" |
| | BCS-48, "Fail-safe" |
| | BCS-49, "DTC Inspection Priority Chart" |
| | BCS-50, "DTC Index" |
| IPDM E/R | PCS-13, "Reference Value" |
| | PCS-19, "Fail-safe" |
| | PCS-20, "DTC Index" |

# WIRING DIAGRAM

## INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

### Wiring Diagram

INFOID:0000000012430348

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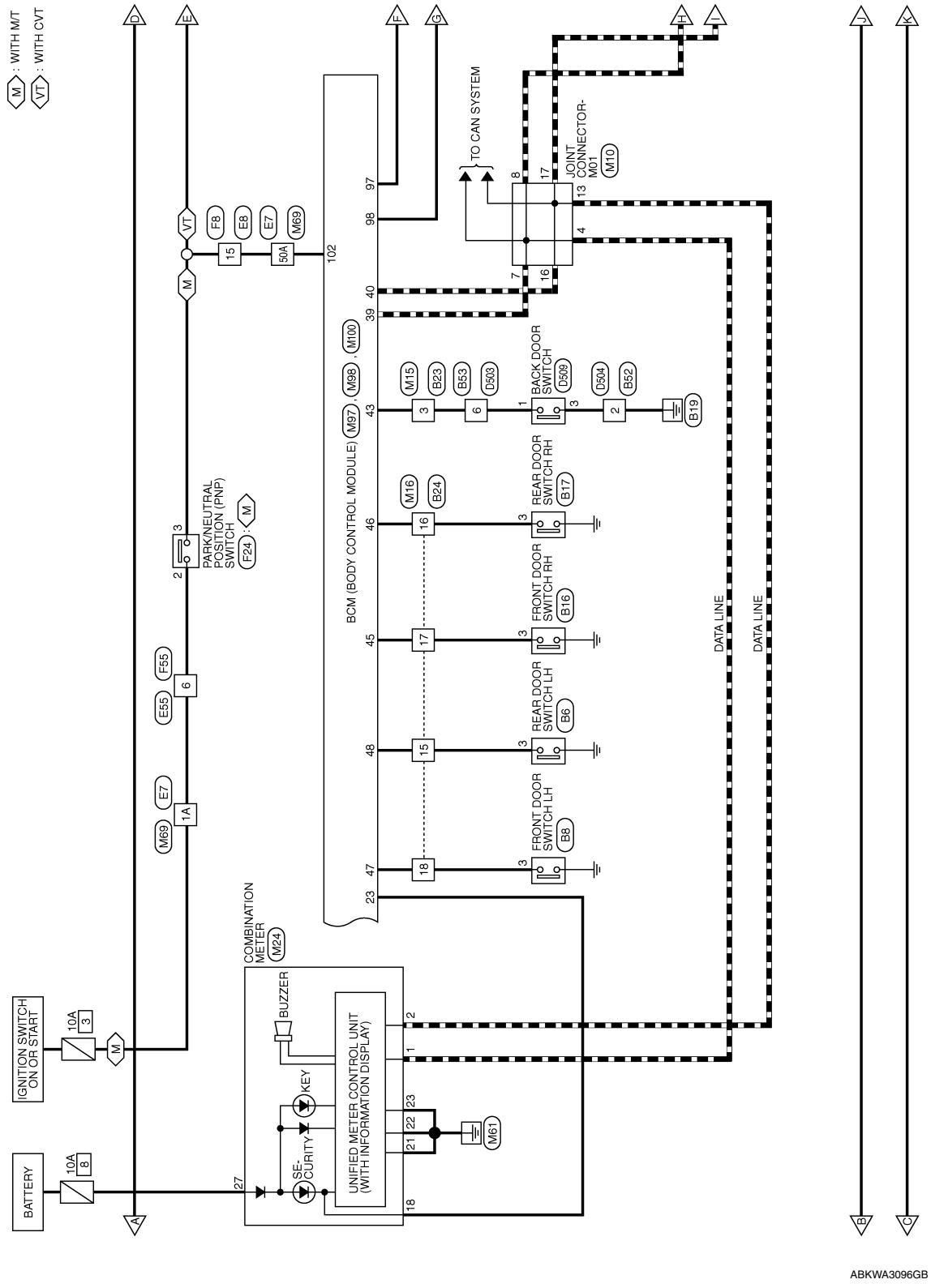
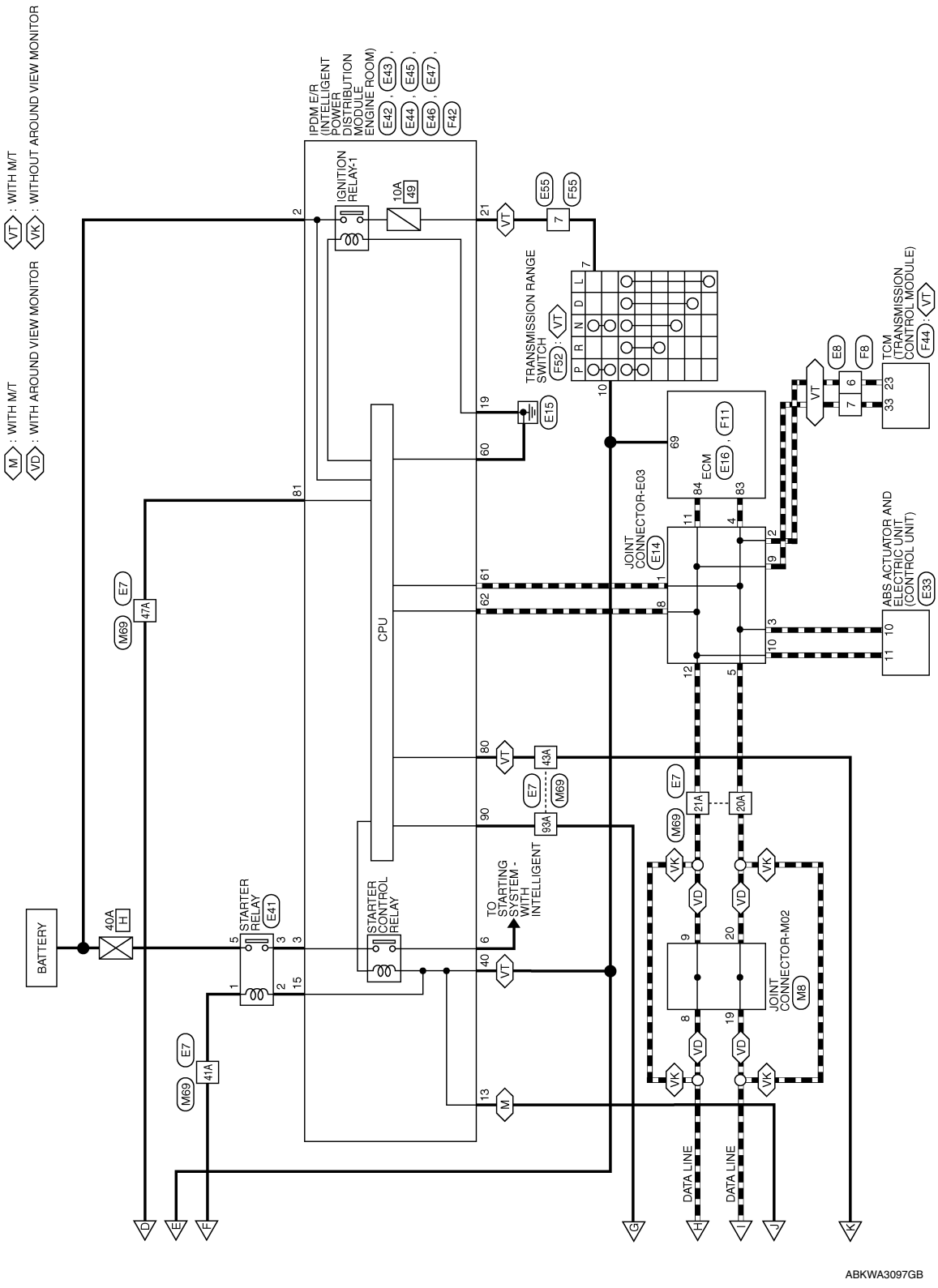

M : WITH M/T
VT : WITH CVT
TO CAN SYSTEM
JOINT CONNECTOR-M01
BCM (BODY CONTROL MODULE)
BACK DOOR SWITCH
REAR DOOR SWITCH RH
FRONT DOOR SWITCH RH
REAR DOOR SWITCH LH
FRONT DOOR SWITCH LH
PARK/NEUTRAL POSITION (PNP) SWITCH
DATA LINE
DATA LINE
COMBINATION METER
BUZZER
KEY
SECURITY
UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY)
IGNITION SWITCH ON OR START
BATTERY
10A
10A
ABKWA3096GB


VT : WITH M/T
VK : WITHOUT AROUND VIEW MONITOR
M : WITH M/T
VD : WITH AROUND VIEW MONITOR
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E42, E43, E44, E45, E46, E47, F42
IGNITION RELAY-1
10A 49
E55
F55
TRANSMISSION RANGE SWITCH
F52
P R N D L
TCM (TRANSMISSION CONTROL MODULE)
F44
E8
F8
ECM
E16, F11
E15
CPU
JOINT CONNECTOR-E03
E14
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
E33
E7
M69
47A
43A
93A
21A
20A
BATTERY
40A H
STARTER RELAY
E41
STARTER CONTROL RELAY
TO STARTING SYSTEM - WITH INTELLIGENT
41A
JOINT CONNECTOR-M02
M8
DATA LINE
DATA LINE
D
E
F
G
H
I
J
K
ABKWA3097GB

## INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION CONNECTORS

| Connector No. | M5 |
|---|---|
| Connector Name | JOINT CONNECTOR-M03 |
| Connector Color | WHITE |

H.S.

| 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|
| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 5 | B | – |
| 6 | B | – |
| 7 | LG | – |
| 9 | R | – |

| Connector No. | M8 |
|---|---|
| Connector Name | JOINT CONNECTOR-M02 |
| Connector Color | GREEN |

H.S.

| 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|
| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 8 | L | – |
| 9 | L | – |
| 19 | P | – |
| 20 | P | – |

| Connector No. | M10 |
|---|---|
| Connector Name | JOINT CONNECTOR-M01 |
| Connector Color | BLUE |

H.S.

| 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|
| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 4 | L | – |
| 7 | L | – |
| 8 | L | – |
| 13 | P | – |
| 16 | P | – |
| 17 | P | – |
| 18 | L | – |
| 19 | R | – |
| 20 | W | – |

| Connector No. | M12 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|
| 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 6 | B | – |
| 7 | W | – |

| Connector No. | M15 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|
| 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 3 | P | – |

| Connector No. | M16 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 10 | V | – |
| 15 | W | – |
| 16 | BR | – |
| 17 | BG | – |
| 18 | SB | – |
| 22 | LG | – |

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| Connector No. | M24 |
|---|---|
| Connector Name | COMBINATION METER (WITH TYPE B) |
| Connector Color | WHITE |

H.S.

| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | L | CAN-H |
| 2 | P | CAN-L |
| 18 | GR | SECURITY IND |
| 21 | B | GND (ILL) |
| 22 | B | GND (POWER) |
| 23 | B | GND (CIRCUIT) |
| 27 | R/W | BAT |

| Connector No. | M25 |
|---|---|
| Connector Name | PUSH-BUTTON IGNITION SWITCH |
| Connector Color | WHITE |

H.S.

| 4 | | 3 |
|---|---|---|
| 5 | 6 | 7 | 8 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 3 | G | – |
| 4 | B | – |
| 7 | V | – |
| 8 | R | – |

| Connector No. | M38 |
|---|---|
| Connector Name | CVT SHIFT SELECTOR |
| Connector Color | WHITE |

H.S.

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| 5 | 6 | 7 | 8 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 7 | V | – |
| 8 | R | – |

| Connector No. | M69 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | 5A | 4A | 3A | 2A | 1A |
| | | | | | | | | | | | | | | | 10A | 9A | 8A | 7A | 6A |
| 21A | 20A | 19A | 18A | 17A | 16A | 15A | 14A | 13A | 12A | 11A | | | | | | | | | |
| | | 30A | 29A | 28A | 27A | 26A | 25A | 24A | 23A | 22A | | | | | | | | | |
| 41A | 40A | 39A | 38A | 37A | 36A | 35A | 34A | 33A | 32A | 31A | | | | | | | | | |
| | | 50A | 49A | 48A | 47A | 46A | 45A | 44A | 43A | 42A | | | | | | | | | |
| 61A | 60A | 59A | 58A | 57A | 56A | 55A | 54A | 53A | 52A | 51A | | | | | | | | | |
| | | 70A | 69A | 68A | 67A | 66A | 65A | 64A | 63A | 62A | | | | | | | | | |
| 81A | 80A | 79A | 78A | 77A | 76A | 75A | 74A | 73A | 72A | 71A | | | | | | | | | |
| | | 90A | 89A | 88A | 87A | 86A | 85A | 84A | 83A | 82A | | | | | | | | | |
| | | | | | | | | | | | | | | | 95A | 94A | 93A | 92A | 91A |
| | | | | | | | | | | | | | | | 100A | 99A | 98A | 97A | 96A |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1A | GR | – |
| 20A | P | – |
| 21A | L | – |
| 39A | SB | – |
| 41A | R | – |
| 43A | BR | – |
| 47A | W | – |
| 48A | V | – |
| 49A | G | – |
| 50A | BR | – |
| 91A | G | – |
| 92A | R | – |
| 93A | BG | – (WITH INTELLIGENT KEY SYSTEM) |

| Connector No. | M89 |
|---|---|
| Connector Name | INSIDE KEY ANTENNA (CONSOLE) |
| Connector Color | BLUE |

H.S.

| 1 | 2 |
|---|---|

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | G | – |
| 2 | R | – |

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| Connector No. | M90 |
|---|---|
| Connector Name | REMOTE KEYLESS ENTRY RECEIVER (WITH INTELLIGENT KEY SYSTEM WITHOUT TIRE PRESSURE MONITORING SYSTEM) |
| Connector Color | BLACK |

H.S.

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | V | – |
| 2 | G | – |
| 3 | W | – |
| 4 | LG | – |

| Connector No. | M94 |
|---|---|
| Connector Name | REMOTE KEYLESS ENTRY RECEIVER (WITH INTELLIGENT KEY SYSTEM WITH TIRE PRESSURE MONITORING SYSTEM) |
| Connector Color | WHITE |

H.S.

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | LG | – |
| 2 | G | – |
| 4 | V | – |

| Connector No. | M95 |
|---|---|
| Connector Name | INSIDE KEY ANTENNA (INSTRUMENT CENTER) |
| Connector Color | BLUE |

H.S.

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | P | – |
| 2 | L | – |

| Connector No. | M97 |
|---|---|
| Connector Name | BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY SYSTEM) |
| Connector Color | BLACK |

H.S.

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 22 | W | KEYLESS TUNER RSSI |
| 23 | GR | SECURITY INDICATOR OUTPUT |
| 37 | R | SHIFT P POSITION, PARKING POSITION SW |
| 38 | G | INTELLIGENT TUNER |
| 39 | L | CAN-H |
| 40 | P | CAN-L |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 9 | LG | BRAKE SW 1 |
| 18 | V | KEYLESS TUNER |
| 19 | LG | KEYLESS TUNER POWER SUPPLY |
| 20 | G | KEYLESS TUNER SIGNAL |

ABKIA7100GB

| Connector No. | M98 |
|---|---|
| Connector Name | BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY SYSTEM) |
| Connector Color | WHITE |

H.S.

| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 | 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 76 | L | ENGINE START SW |
| 84 | P | ROOM ANTENNA 1 + |
| 85 | L | ROOM ANTENNA 1 - |
| 86 | G | ROOM ANTENNA 2 + |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 87 | R | ROOM ANTENNA 2 - |
| 88 | V | ROOM ANTENNA 3 + |
| 89 | LG | ROOM ANTENNA 3 - |
| 91 | V | POWER POSITION LED (LOCK POSITION LED) |
| 97 | R | STARTER RELAY OUTPUT |
| 98 | BG | IGN RELAY OUTPUT1 (USM) |
| 101 | V | CLUTCH SW |
| 102 | BR | SHIFT N, P |
| 104 | V | AT DEVICE OUTPUT |
| 105 | SB | BRAKE SW2 |

| Connector No. | M99 |
|---|---|
| Connector Name | BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY SYSTEM) |
| Connector Color | WHITE |

H.S.

| 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 |
|---|---|---|---|---|---|---|---|---|
| 65 | 66 | 67 | 68 | 69 | 70 | | | |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 57 | Y | BATTERY (FUSE) |
| 67 | B | GND |
| 70 | G | BATTERY (F/L) |

| Connector No. | E7 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| 1A | 2A | 3A | 4A | 5A |
|---|---|---|---|---|
| 6A | 7A | 8A | 9A | 10A |

| 11A | 12A | 13A | 14A | 15A | 16A | 17A | 18A | 19A | 20A | 21A |
|---|---|---|---|---|---|---|---|---|---|---|
| | 22A | 23A | 24A | 25A | 26A | 27A | 28A | 29A | 30A | |

| 31A | 32A | 33A | 34A | 35A | 36A | 37A | 38A | 39A | 40A | 41A |
|---|---|---|---|---|---|---|---|---|---|---|
| | 42A | 43A | 44A | 45A | 46A | 47A | 48A | 49A | 50A | |

| 51A | 52A | 53A | 54A | 55A | 56A | 57A | 58A | 59A | 60A | 61A |
|---|---|---|---|---|---|---|---|---|---|---|
| | 62A | 63A | 64A | 65A | 66A | 67A | 68A | 69A | 70A | |

| 71A | 72A | 73A | 74A | 75A | 76A | 77A | 78A | 79A | 80A | 81A |
|---|---|---|---|---|---|---|---|---|---|---|
| | 82A | 83A | 84A | 85A | 86A | 87A | 88A | 89A | 90A | |

| 91A | 92A | 93A | 94A | 95A |
|---|---|---|---|---|
| | 96A | 97A | 98A | 99A | 100A |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1A | GR | – |
| 20A | P | – |
| 21A | L | – |
| 39A | SB | – |
| 41A | G | – |
| 43A | R | – |
| 47A | SB | – |
| 48A | LG | – |
| 49A | Y | – |
| 50A | V | – |
| 91A | Y | – |
| 92A | LG | – |
| 93A | L | – |

| Connector No. | M100 |
|---|---|
| Connector Name | BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY SYSTEM) |
| Connector Color | BLACK |

H.S.

| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 |
|---|---|---|---|---|---|---|---|---|
| 50 | 51 | 52 | 53 | 54 | 55 | | | |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 43 | P | DOOR SW BACK |
| 45 | BG | DOOR SW (AS) |
| 46 | BR | DOOR SW (RR) |
| 47 | SB | DOOR SW (DR) |
| 48 | W | DOOR SW (RL) |

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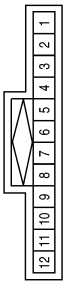
| Connector No. | E14 |
|---|---|
| Connector Name | JOINT CONNECTOR-E03 |
| Connector Color | BLUE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | P | – |
| 2 | P | – |
| 3 | P | – |
| 4 | P | – |
| 5 | P | – |
| 8 | L | – |
| 9 | L | – |
| 10 | L | – |
| 11 | L | – |
| 12 | L | – |

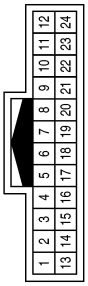
| Connector No. | E13 |
|---|---|
| Connector Name | STOP LAMP SWITCH (WITH CVT) |
| Connector Color | WHITE |

H.S.


| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | SB | – |
| 2 | LG | – |

| Connector No. | E8 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

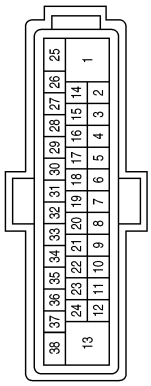
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 6 | P | – |
| 7 | L | – |
| 15 | V | – |

| Connector No. | E33 |
|---|---|
| Connector Name | ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) |
| Connector Color | BLACK |

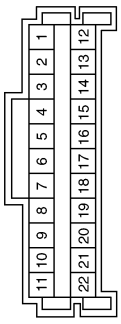
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 10 | P | CAN-L |
| 11 | L | CAN-H |

| Connector No. | E22 |
|---|---|
| Connector Name | JOINT CONNECTOR-E02 |
| Connector Color | WHITE |

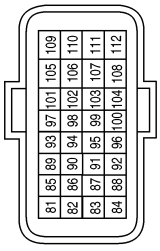
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | LG | – |
| 2 | LG | – |
| 20 | R | – |
| 21 | V | – |
| 22 | LG | – |

| Connector No. | E16 |
|---|---|
| Connector Name | ECM |
| Connector Color | BLACK |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 83 | P | CAN-L |
| 84 | L | CAN-H |

AAKIA2271GB

| Connector No. | E34 |
|---|---|
| Connector Name | CLUTCH INTERLOCK SWITCH |
| Connector Color | BROWN |

H.S.



| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | Y | – (WITH INTELLIGENT KEY SYSTEM) |
| 2 | V | – (WITH INTELLIGENT KEY SYSTEM) |

| Connector No. | E41 |
|---|---|
| Connector Name | STARTER RELAY |
| Connector Color | BLUE |

H.S.



| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | G | – |
| 2 | LG | – |
| 3 | SB | – |
| 5 | L | – |

| Connector No. | E42 |
|---|---|
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | BLACK |

H.S.



| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 2 | Y | F/L MAIN (+B2) |

| Connector No. | E43 |
|---|---|
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | BLACK |

H.S.



| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 3 | SB | F/L IGNSW (WITH INTELLIGENT KEY SYSTEM) |
| 6 | R | STARTER MOTOR |

| Connector No. | E44 |
|---|---|
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | BROWN |

H.S.



| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 13 | R | CLUTCH I/L SW (WITH INTELLIGENT KEY SYSTEM) |
| 15 | LG | ST RLY COIL |

| Connector No. | E45 |
|---|---|
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | BROWN |

H.S.



| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 19 | B | P-GND |
| 21 | R | AT ECU (WITH CVT) |

ABKIA7102GB

| Connector No. | E55 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | GRAY |

H.S.

| 1 | 2 | 3 | | 4 | 5 |
|---|---|---|---|---|---|
| 6 | 7 | 8 | 9 | 10 | 11 | 12 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 6 | GR | – |
| 7 | R | – |

| Connector No. | E47 |
|---|---|
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | WHITE |

H.S.

| 84 | 83 | 82 | 81 | 80 | 79 | 78 | 77 |
|---|---|---|---|---|---|---|---|
| 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 80 | R | DETENT SW |
| 81 | SB | PUSH START SW |
| 90 | L | IGN SIGNAL |

| Connector No. | E46 |
|---|---|
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | WHITE |

H.S.

| 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 60 | B | S GND |
| 61 | P | CAN-L |
| 62 | L | CAN-H |

| Connector No. | F11 |
|---|---|
| Connector Name | ECM |
| Connector Color | BROWN |

H.S.

| 33 | 37 | 41 | 45 | 49 | 53 | 57 | 61 | 65 | 69 | 73 | 77 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 34 | 38 | 42 | 46 | 50 | 54 | 58 | 62 | 66 | 70 | 74 | 78 |
| 35 | 39 | 43 | 47 | 51 | 55 | 59 | 63 | 67 | 71 | 75 | 79 |
| 36 | 40 | 44 | 48 | 52 | 56 | 60 | 64 | 68 | 72 | 76 | 80 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 69 | BR | PARK/NEUTRAL POSITION SWITCH |

| Connector No. | F8 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 6 | P/L | – |
| 7 | L/G | – |
| 15 | BR | – |

| Connector No. | E57 |
|---|---|
| Connector Name | STOP LAMP SWITCH (WITH M/T) |
| Connector Color | BLACK |

H.S.

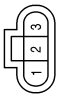
| 2 | 1 |
|---|---|

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | SB | – |
| 2 | LG | – |

AAKIA2273GB

| Connector No. | F24 |
|---|---|
| Connector Name | PARK/NEUTRAL POSITION (PNP) SWITCH |
| Connector Color | GREEN |

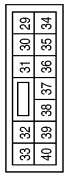
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 2 | R | – |
| 3 | BR | – |

| Connector No. | F42 |
|---|---|
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | WHITE |

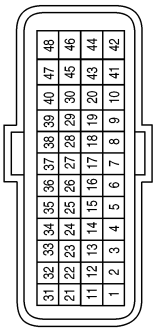
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 40 | BR | NPSW |

| Connector No. | F44 |
|---|---|
| Connector Name | TCM (TRANSMISSION CONTROL MODULE) |
| Connector Color | BLACK |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 23 | P/L | CAN-L |
| 33 | L/G | CAN-H |

| Connector No. | F52 |
|---|---|
| Connector Name | TRANSMISSION RANGE SWITCH |
| Connector Color | BLACK |

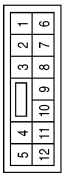
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 7 | R | – |
| 10 | BR | – |

| Connector No. | F55 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | GRAY |

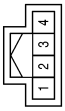
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 6 | R | – |
| 7 | R | – |

| Connector No. | B6 |
|---|---|
| Connector Name | REAR DOOR SWITCH LH |
| Connector Color | WHITE |

H.S.

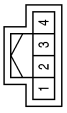



| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 3 | V | – |

AAKIA2274GB

| Connector No. | B8 |
|---|---|
| Connector Name | FRONT DOOR SWITCH LH |
| Connector Color | WHITE |

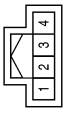
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 3 | LG | – |

| Connector No. | B16 |
|---|---|
| Connector Name | FRONT DOOR SWITCH RH |
| Connector Color | WHITE |

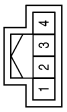
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 3 | L | – |

| Connector No. | B17 |
|---|---|
| Connector Name | REAR DOOR SWITCH RH |
| Connector Color | WHITE |

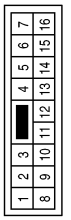
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 3 | R | – |

| Connector No. | B23 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

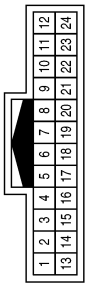
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 3 | P | – |

| Connector No. | B24 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 10 | V | – |
| 15 | V | – |
| 16 | R | – |
| 17 | L | – |
| 18 | LG | – |
| 22 | LG | – |

| Connector No. | B48 |
|---|---|
| Connector Name | INSIDE KEY ANTENNA (TRUNK ROOM) |
| Connector Color | BLUE |

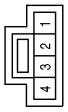
H.S.


| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | V | – |
| 2 | LG | – |

AAKIA2275GB

| Connector No. | B52 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

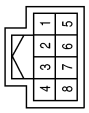
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 2 | B | – |

| Connector No. | B53 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

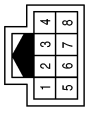
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 6 | P | – |

| Connector No. | D503 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 6 | P | – |

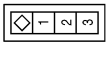
| Connector No. | D504 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.


| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 2 | B | – |

| Connector No. | D509 |
|---|---|
| Connector Name | BACK DOOR SWITCH |
| Connector Color | WHITE |

H.S.



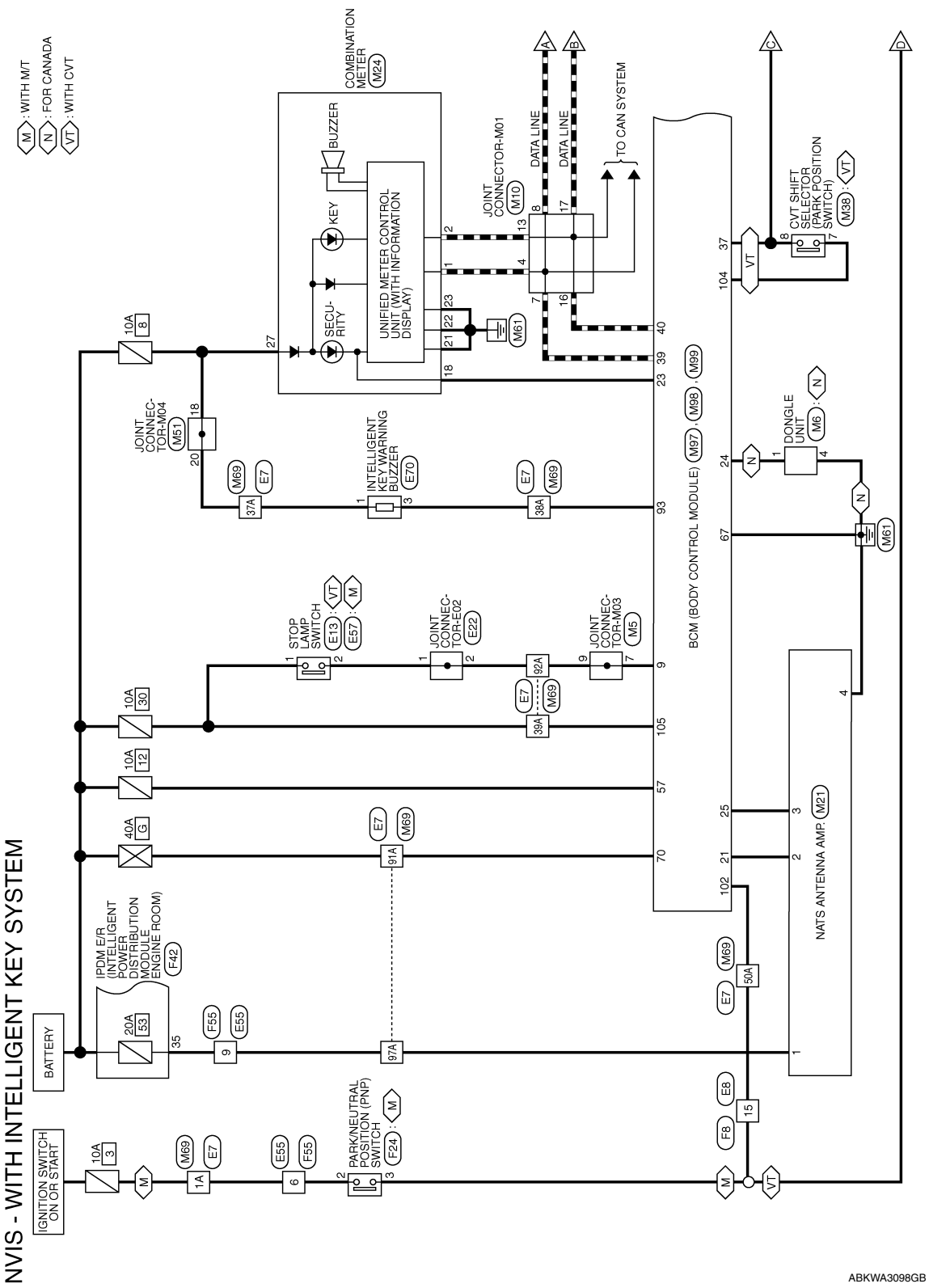

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | P | – |
| 3 | B | – |

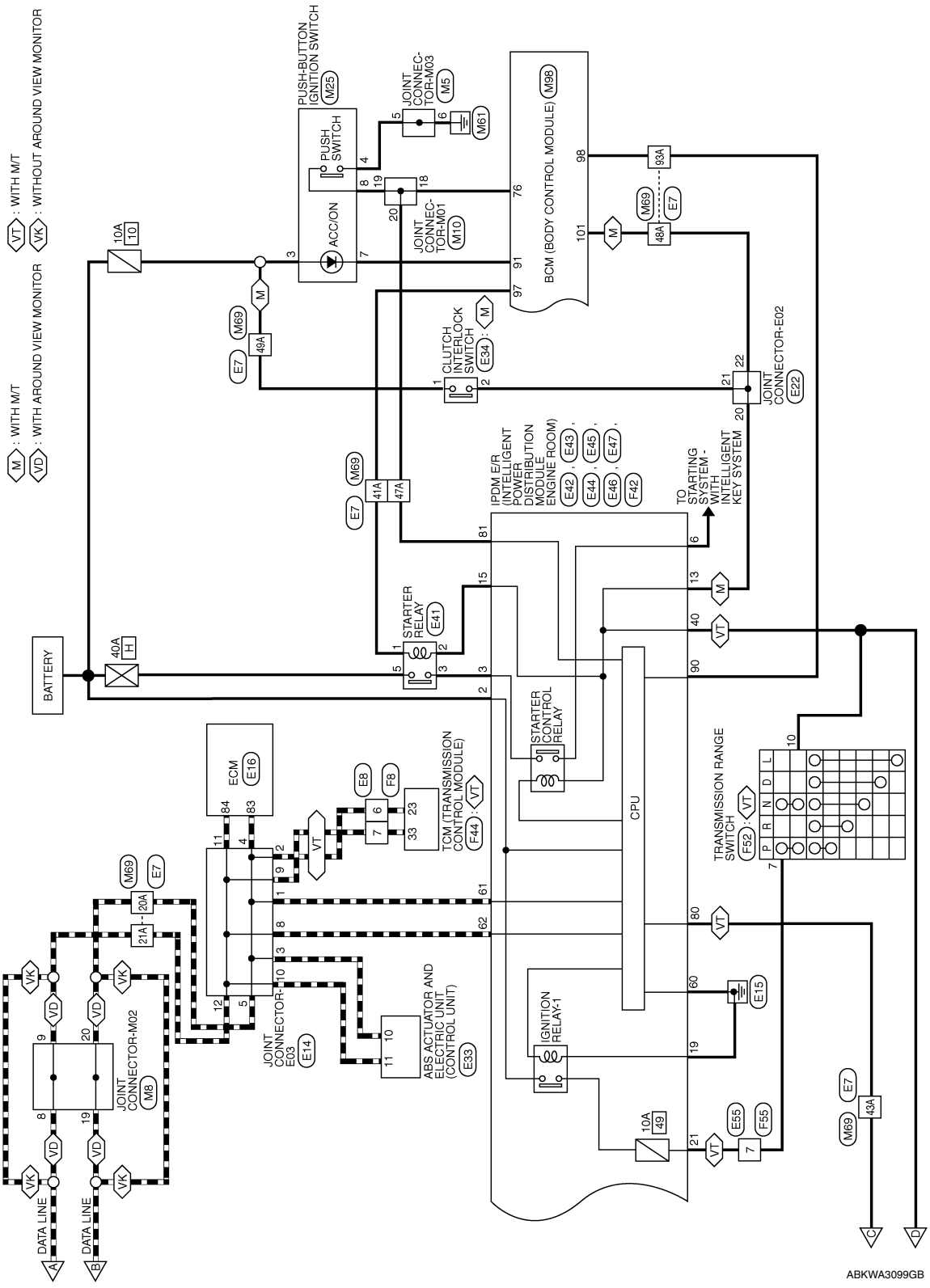
AAKIA2276GB

# NVIS - WITH INTELLIGENT KEY SYSTEM

## Wiring Diagram

INFOID:0000000012430349




VT : WITH M/T
VK : WITHOUT AROUND VIEW MONITOR
M : WITH M/T
VD : WITH AROUND VIEW MONITOR
PUSH-BUTTON IGNITION SWITCH M25
PUSH SWITCH
ACC/ON
JOINT CONNEC-TOR-M03 M5
JOINT CONNEC-TOR-M01 M10
M61
BCM (BODY CONTROL MODULE) M98
10A 10
CLUTCH INTERLOCK SWITCH E34
JOINT CONNECTOR-E02 E22
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E42, E43, E44, E45, E46, E47, F42
TO STARTING SYSTEM - WITH INTELLIGENT KEY SYSTEM
STARTER RELAY E41
BATTERY
40A H
STARTER CONTROL RELAY
ECM E16
TCM (TRANSMISSION CONTROL MODULE) F44
E8
F8
CPU
TRANSMISSION RANGE SWITCH F52
P R N D L
IGNITION RELAY-1
10A 49
E15
E55
F55
JOINT CONNECTOR-M02 M8
JOINT CONNECTOR-E03 E14
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) E33
DATA LINE
A
B
C
D
ABKWA3099GB

NVIS CONNECTORS - WITH INTELLIGENT KEY SYSTEM

| Connector No. | M5 |
|---|---|
| Connector Name | JOINT CONNECTOR-M03 |
| Connector Color | WHITE |

H.S.

| 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|
| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 5 | B | – |
| 6 | B | – |
| 7 | LG | – |
| 9 | R | – |

| Connector No. | M6 |
|---|---|
| Connector Name | DONGLE UNIT |
| Connector Color | WHITE |

H.S.

| 1 | 2 | 3 | 4 |
|---|---|---|---|

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | SB | – |
| 4 | B | – |

| Connector No. | M8 |
|---|---|
| Connector Name | JOINT CONNECTOR-M02 |
| Connector Color | GREEN |

H.S.

| 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|
| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 8 | L | – |
| 9 | L | – |
| 19 | P | – |
| 20 | P | – |

| Connector No. | M10 |
|---|---|
| Connector Name | JOINT CONNECTOR-M01 |
| Connector Color | BLUE |

H.S.

| 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|
| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 4 | L | – |
| 7 | L | – |
| 8 | L | – |
| 13 | P | – |
| 16 | P | – |
| 17 | P | – |
| 18 | L | – |
| 19 | R | – |
| 20 | W | – |

| Connector No. | M21 |
|---|---|
| Connector Name | NATS ANTENNA AMP. |
| Connector Color | WHITE |

H.S.

| 1 | 2 | 3 | 4 |
|---|---|---|---|

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | BR | – |
| 2 | P | – |
| 3 | LG | – (WITH INTELLIGENT KEY SYSTEM) |
| 4 | B | – (WITH INTELLIGENT KEY SYSTEM) |

| Connector No. | M24 |
|---|---|
| Connector Name | COMBINATION METER (WITH TYPE B) |
| Connector Color | WHITE |

H.S.

| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | L | CAN-H |
| 2 | P | CAN-L |
| 18 | GR | SECURITY IND |
| 21 | B | GND (ILL) |
| 22 | B | GND (POWER) |
| 23 | B | GND (CIRCUIT) |
| 27 | R/W | BAT |

ABKIA7103GB

| Connector No. | M25 |
|---|---|
| Connector Name | PUSH-BUTTON IGNITION SWITCH |
| Connector Color | WHITE |

H.S.

| 4 | | 3 |
|---|---|---|
| 5 | 6 | 7 | 8 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 3 | G | – |
| 4 | B | – |
| 7 | V | – |
| 8 | R | – |

| Connector No. | M38 |
|---|---|
| Connector Name | CVT SHIFT SELECTOR |
| Connector Color | WHITE |

H.S.

| 1 | 2 | 3 | 4 |
|---|---|---|---|
| 5 | 6 | 7 | 8 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 7 | V | – |
| 8 | R | – |

| Connector No. | M51 |
|---|---|
| Connector Name | JOINT CONNECTOR-M04 |
| Connector Color | BLUE |

H.S.

| 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | |
|---|---|---|---|---|---|---|---|---|---|
| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 18 | LG | – |
| 20 | V | – |

| Connector No. | M97 |
|---|---|
| Connector Name | BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY SYSTEM) |
| Connector Color | BLACK |

H.S.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 9 | LG | BRAKE SW 1 |
| 21 | P | IMMOBILIZER ONE WAY COMMUNICATION (CLOCK) |
| 23 | GR | SECURITY INDICATOR OUTPUT |
| 24 | SB | DONGLE LINK (SERIAL) |
| 25 | LG | IMMOBILIZER TWO WAY COMMUNICATION |
| 37 | R | SHIFT P POSITION, PARKING POSTION SW |
| 39 | L | CAN-H |
| 40 | P | CAN-L |

| Connector No. | M69 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| 5A | 4A | 3A | 2A | 1A |
|---|---|---|---|---|
| 10A | 9A | 8A | 7A | 6A |

| 21A | 20A | 19A | 18A | 17A | 16A | 15A | 14A | 13A | 12A | 11A |
|---|---|---|---|---|---|---|---|---|---|---|
| 30A | 29A | 28A | 27A | 26A | 25A | 24A | 23A | 22A | | |

| 41A | 40A | 39A | 38A | 37A | 36A | 35A | 34A | 33A | 32A | 31A |
|---|---|---|---|---|---|---|---|---|---|---|
| 50A | 49A | 48A | 47A | 46A | 45A | 44A | 43A | 42A | | |

| 61A | 60A | 59A | 58A | 57A | 56A | 55A | 54A | 53A | 52A | 51A |
|---|---|---|---|---|---|---|---|---|---|---|
| 70A | 69A | 68A | 67A | 66A | 65A | 64A | 63A | 62A | | |

| 81A | 80A | 79A | 78A | 77A | 76A | 75A | 74A | 73A | 72A | 71A |
|---|---|---|---|---|---|---|---|---|---|---|
| 90A | 89A | 88A | 87A | 86A | 85A | 84A | 83A | 82A | | |

| 95A | 94A | 93A | 92A | 91A |
|---|---|---|---|---|
| 100A | 99A | 98A | 97A | 96A |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1A | GR | – |
| 20A | P | – |
| 21A | L | – |
| 37A | V | – |
| 38A | R | – |
| 39A | SB | – |
| 41A | R | – |
| 43A | BR | – |
| 47A | W | – |
| 48A | V | – |
| 49A | G | – |
| 50A | BR | – |
| 91A | G | – |
| 92A | R | – |
| 93A | BG | – (WITH INTELLIGENT KEY SYSTEM) |
| 97A | BR | – |

ABKIA7104GB

| Connector No. | M98 |
|---|---|
| Connector Name | BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY SYSTEM) |
| Connector Color | WHITE |

H.S.

| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 | 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 76 | L | ENGINE START SW |
| 91 | V | POWER POSITION LED (LOCK POSITION) |
| 93 | R | SMART KEYLESS BUZZER OUTPUT |
| 98 | BG | STARTER RELAY OUTPUT |
| 101 | V | CLUTCH SW |
| 102 | BR | SHIFT N, P |
| 104 | V | AT DEVICE OUTPUT |
| 105 | SB | BRAKE SW2 |

| Connector No. | M99 |
|---|---|
| Connector Name | BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY SYSTEM) |
| Connector Color | WHITE |

H.S.

| 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 |
|---|---|---|---|---|---|---|---|---|
| 65 | 66 | 67 | 68 | 69 | 70 | | | |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 57 | Y | BATTERY (FUSE) |
| 67 | B | GND |
| 70 | G | BATTERY (F/L) |

| Connector No. | E7 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| 1A | 2A | 3A | 4A | 5A |
|---|---|---|---|---|
| 6A | 7A | 8A | 9A | 10A |

| 11A | 12A | 13A | 14A | 15A | 16A | 17A | 18A | 19A | 20A | 21A |
|---|---|---|---|---|---|---|---|---|---|---|
| | 22A | 23A | 24A | 25A | 26A | 27A | 28A | 29A | 30A | |

| 31A | 32A | 33A | 34A | 35A | 36A | 37A | 38A | 39A | 40A | 41A |
|---|---|---|---|---|---|---|---|---|---|---|
| | 42A | 43A | 44A | 45A | 46A | 47A | 48A | 49A | 50A | |

| 51A | 52A | 53A | 54A | 55A | 56A | 57A | 58A | 59A | 60A | 61A |
|---|---|---|---|---|---|---|---|---|---|---|
| | 62A | 63A | 64A | 65A | 66A | 67A | 68A | 69A | 70A | |

| 71A | 72A | 73A | 74A | 75A | 76A | 77A | 78A | 79A | 80A | 81A |
|---|---|---|---|---|---|---|---|---|---|---|
| | 82A | 83A | 84A | 85A | 86A | 87A | 88A | 89A | 90A | |

| 91A | 92A | 93A | 94A | 95A |
|---|---|---|---|---|
| | 96A | 97A | 98A | 99A | 100A |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1A | GR | – |
| 20A | P | – |
| 21A | L | – |
| 37A | W | – |
| 38A | R | – |
| 39A | SB | – |
| 41A | G | – |
| 43A | R | – |
| 47A | SB | – |
| 48A | LG | – |
| 49A | Y | – |
| 50A | V | – |
| 91A | Y | – |
| 92A | LG | – |
| 93A | L | – |
| 97A | G/B | – |

| Connector No. | E8 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 6 | P | – |
| 7 | L | – |
| 15 | V | – |

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| Connector No. | E16 |
|---|---|
| Connector Name | ECM |
| Connector Color | BLACK |

H.S.

| 81 | 85 | 89 | 93 | 97 | 101 | 105 | 109 |
|---|---|---|---|---|---|---|---|
| 82 | 86 | 90 | 94 | 98 | 102 | 106 | 110 |
| 83 | 87 | 91 | 95 | 99 | 103 | 107 | 111 |
| 84 | 88 | 92 | 96 | 100 | 104 | 108 | 112 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 83 | P | CAN-L |
| 84 | L | CAN-H |

| Connector No. | E14 |
|---|---|
| Connector Name | JOINT CONNECTOR-E03 |
| Connector Color | BLUE |

H.S.

| 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | P | – |
| 2 | P | – |
| 3 | P | – |
| 4 | P | – |
| 5 | P | – |
| 8 | L | – |
| 9 | L | – |
| 10 | L | – |
| 11 | L | – |
| 12 | L | – |

| Connector No. | E34 |
|---|---|
| Connector Name | CLUTCH INTERLOCK SWITCH |
| Connector Color | BROWN |

H.S.

| 2 |
|---|
| 1 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | Y | – (WITH INTELLIGENT KEY SYSTEM) |
| 2 | V | – (WITH INTELLIGENT KEY SYSTEM) |

| Connector No. | E33 |
|---|---|
| Connector Name | ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) |
| Connector Color | BLACK |

H.S.

| 38 | 37 | 36 | 35 | 34 | 33 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | | | | | | | | | | | | | 1 |
| | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | | |
| | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | | |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 10 | P | CAN-L |
| 11 | L | CAN-H |

| Connector No. | E13 |
|---|---|
| Connector Name | STOP LAMP SWITCH (WITH CVT) |
| Connector Color | WHITE |

H.S.

| 3 | 4 |
|---|---|
| 1 | 2 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | SB | – |
| 2 | LG | – |

| Connector No. | E22 |
|---|---|
| Connector Name | JOINT CONNECTOR-E02 |
| Connector Color | WHITE |

H.S.

| 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | LG | – |
| 2 | LG | – |
| 20 | R | – |
| 21 | V | – |
| 22 | LG | – |

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| Connector No. | E41 |
|---|---|
| Connector Name | STARTER RELAY |
| Connector Color | BLUE |

H.S.


| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | G | – |
| 2 | LG | – |
| 3 | SB | – |
| 5 | L | – |

| Connector No. | E42 |
|---|---|
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | BLACK |

H.S.


| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 2 | Y | F/L MAIN (+B2) |

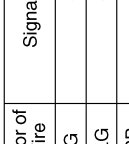
| Connector No. | E43 |
|---|---|
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | BLACK |

H.S.


| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 3 | SB | F/L IGNSW (WITH INTELLIGENT KEY SYSTEM) |
| 6 | R | STARTER MOTOR |

| Connector No. | E44 |
|---|---|
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | BROWN |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 13 | R | CLUTCH I/L SW (WITH INTELLIGENT KEY SYSTEM) |
| 15 | LG | ST RLY COIL |

| Connector No. | E45 |
|---|---|
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | BROWN |

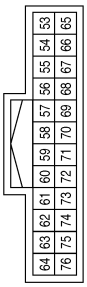
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 19 | B | P-GND |
| 21 | R | AT ECU (WITH CVT) |

| Connector No. | E46 |
|---|---|
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 60 | B | S GND |
| 61 | P | CAN-L |
| 62 | L | CAN-H |

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| Connector No. | E47 |
|---|---|
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | WHITE |

H.S.

| 84 | 83 | 82 | 81 | 80 | 79 | 78 | 77 |
|---|---|---|---|---|---|---|---|
| 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 80 | R | DETENT SW |
| 81 | SB | PUSH START SW |
| 90 | L | IGN SIGNAL |

| Connector No. | E55 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | GRAY |

H.S.

| 1 | 2 | 3 | | 4 | 5 |
|---|---|---|---|---|---|
| 6 | 7 | 8 | 9 | 10 | 11 | 12 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 6 | GR | – |
| 7 | R | – |
| 9 | G/B | – |

| Connector No. | E57 |
|---|---|
| Connector Name | STOP LAMP SWITCH (WITH M/T) |
| Connector Color | BLACK |

H.S.

| 2 | 1 |
|---|---|

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | SB | – |
| 2 | LG | – |

| Connector No. | E70 |
|---|---|
| Connector Name | INTELLIGENT KEY WARNING BUZZER |
| Connector Color | BROWN |

H.S.

| 1 | 2 | 3 |
|---|---|---|

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | W | – |
| 3 | R | – |

| Connector No. | F8 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 6 | P/L | – |
| 7 | L/G | – |
| 15 | BR | – |

| Connector No. | F24 |
|---|---|
| Connector Name | PARK/NEUTRAL POSTION (PNP) SWITCH |
| Connector Color | GREEN |

H.S.

| 1 | 2 | 3 |
|---|---|---|

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 2 | R | – |
| 3 | BR | – |

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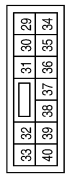
| Connector No. | F42 |
|---|---|
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | WHITE |

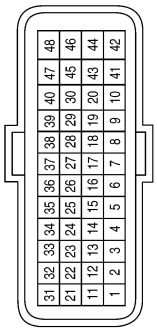
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 35 | BR | ECM BAT |
| 40 | BR | NPSW |

| Connector No. | F44 |
|---|---|
| Connector Name | TCM (TRANSMISSION CONTROL MODULE) |
| Connector Color | BLACK |

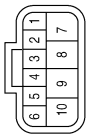
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 23 | P/L | CAN-L |
| 33 | L/G | CAN-H |

| Connector No. | F52 |
|---|---|
| Connector Name | TRANSMISSION RANGE SWITCH |
| Connector Color | BLACK |

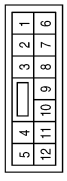
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 7 | R | – |
| 10 | BR | – |

| Connector No. | F55 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | GRAY |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 6 | R | – |
| 7 | R | – |
| 9 | BR | – |

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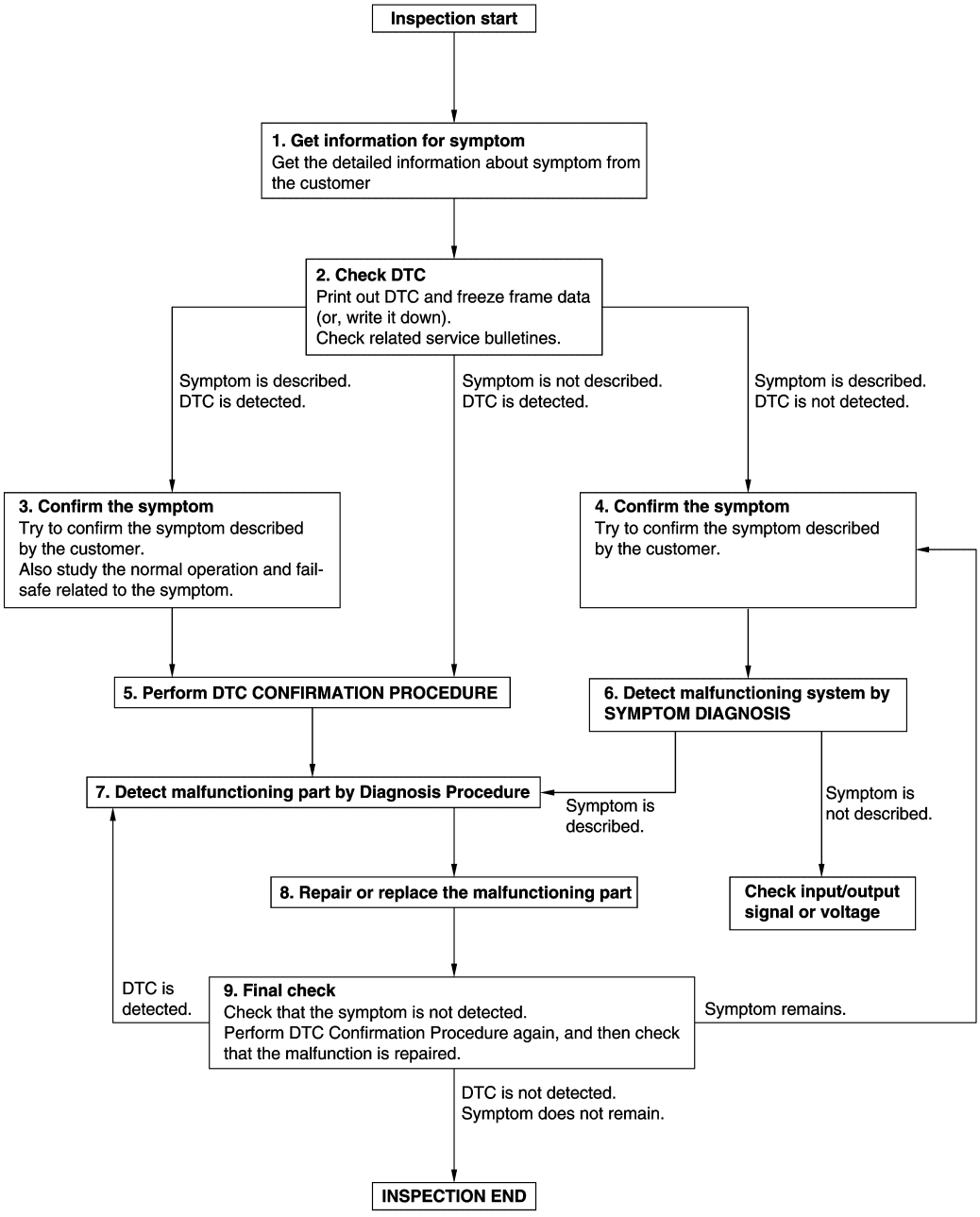
# BASIC INSPECTION

## DIAGNOSIS AND REPAIR WORK FLOW

### Work Flow

INFOID:0000000012430350

#### OVERALL SEQUENCE

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#### DETAILED FLOW

## 1.GET INFORMATION FOR SYMPTOM

1. Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurs).
2. Check operation condition of the function that is malfunctioning.

>> GO TO 2.

## 2.CHECK DTC

1. Check DTC.
2. Perform the following procedure if DTC is detected.

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

Try to confirm the symptom described by the customer.
Also study the normal operation and fail-safe related to the symptom.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

## 4.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.
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 to the vehicle, and check self diagnostic results in real time.
If two or more DTCs are detected, refer to BCS-49, "DTC Inspection Priority Chart" and determine trouble diagnosis order.

**NOTE:**

- Freeze frame data is useful if the DTC is not detected.
- Perform Component Function Check if DTC CONFIRMATION PROCEDURE is not included on Service Manual. This simplified check procedure is an effective alternative though DTC cannot be detected during this check.
  If the result of Component Function Check is NG, it is the same as the detection of DTC by DTC CONFIRMATION PROCEDURE.

Is DTC detected?

YES >> GO TO 7.
NO >> Check according 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.

Is the symptom described?

YES >> GO TO 7.
NO >> Monitor input data from related sensors or check voltage of related module terminals using CONSULT.

## 7.DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

Inspect according to Diagnosis Procedure of the system.

Is malfunctioning part detected?

YES >> GO TO 8.
NO >> Check according to GI-42, "Intermittent Incident".

## 8. REPAIR OR REPLACE THE MALFUNCTIONING PART

1. Repair or replace the malfunctioning part.
2. Reconnect parts or connectors disconnected during Diagnosis 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.

Is DTC detected and does symptom remain?

YES-1 >> DTC is detected: GO TO 7.
YES-2 >> Symptom remains: GO TO 4.
NO >> Before returning the vehicle to the customer, always erase DTC.

# ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

## ECM

### ECM : Description

INFOID:0000000012430351

When replacing ECM, this procedure must be performed.

### ECM : Work Procedure

INFOID:0000000012430352

**1.** PERFORM INITIALIZATION OF NATS SYSTEM AND REGISTRATION OF ALL NATS IGNITION KEY IDS

Perform BCM initialization. (NATS)

>> GO TO 2.

**2.** PERFORM ACCELERATOR PEDAL RELEASED POSITION LEARNING

Refer to EC-128, "Work Procedure".

>> GO TO 3.

**3.** PERFORM THROTTLE VALVE CLOSED POSITION LEARNING

Refer to EC-129, "Work Procedure".

>> GO TO 4.

**4.** PERFORM IDLE AIR VOLUME LEARNING

Refer to EC-130, "Work Procedure".

>> END

## BCM

### BCM : Description

INFOID:0000000012542548

BEFORE REPLACEMENT

When replacing BCM, save or print current vehicle specification with CONSULT 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, always perform “WRITE CONFIGURATION” with CONSULT. Or not doing so, BCM control function does not operate normally.**

- **Complete the procedure of “WRITE CONFIGURATION” in order.**
- **Configuration is different for each vehicle model. Confirm configuration of each vehicle model.**
- **If you set incorrect “WRITE CONFIGURATION”, incidents might occur.**

**NOTE:**

When replacing BCM, perform the system initialization (NATS) (if equipped).

### BCM : Work Procedure

INFOID:0000000012542549

**1.** SAVING VEHICLE SPECIFICATION

CONSULT Configuration

Perform “READ CONFIGURATION” to save or print current vehicle specification. Refer to BCS-59, "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-74, "Removal and Installation".

>> GO TO 3.

## 3.WRITING VEHICLE SPECIFICATION

CONSULT Configuration
Perform “WRITE CONFIGURATION - Config file” or “WRITE CONFIGURATION - Manual selection” to write vehicle specification. Refer to BCS-59, "Work Procedure".

>> GO TO 4.

## 4.REGISTER INTELLIGENT KEYS

For initialization and registration of Intelligent Keys, refer to CONSULT immobilizer mode and follow the on-screen instructions.

>> WORK END

# DTC/CIRCUIT DIAGNOSIS

## P1610 LOCK MODE

### Description

INFOID:0000000012430355

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:0000000012430356

#### DTC DETECTION LOGIC

**NOTE:**
If DTC P1610 is displayed with other DTC (for BCM or ENGINE), first perform the trouble diagnosis for other DTC.

| 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” of “ENGINE” using CONSULT.

Is DTC detected?

YES >> Go to SEC-51, "Diagnosis Procedure".
NO >> Inspection End.

### Diagnosis Procedure

INFOID:0000000012430357

**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. Depress brake pedal and contact the registered Intelligent Key backside to push-button ignition switch, then 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:0000000012430358

### 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 invalid. | • BCM<br>• ECM |

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

YES >> Go to SEC-52, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430359

#### 1.PERFORM INITIALIZATION

Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.

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

YES >> Inspection End.
NO >> GO TO 2.

#### 2.CHECK SELF DIAGNOSTIC RESULT

1. Select “Self Diagnostic Result” of “ENGINE” using CONSULT.
2. Erase DTC.
3. Perform DTC CONFIRMATION PROCEDURE for DTC P1611. Refer to SEC-52, "DTC Logic".

Is DTC detected?

YES >> GO TO 3.
NO >> Inspection End.

#### 3.REPLACE BCM

1. Replace BCM. Refer to BCS-74, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.

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

1. Replace ECM.
   Refer to EC-477, "Removal and Installation".
2. Perform “ADDITIONAL SERVICE WHEN REPLACING ECM”.
   Refer to EC-125, "Work Procedure".

>> Inspection End.

# P1612 CHAIN OF ECM-IMMU

## DTC Logic

INFOID:0000000012430360

### 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-63, "DTC Logic".
- If DTC P1612 is displayed with DTC U1010 (for BCM), first perform the trouble diagnosis for DTC U1010. Refer to BCS-64, "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.)<br>• BCM<br>• ECM |

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

YES >> Go to SEC-53, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430361

#### 1.REPLACE BCM

1. Replace BCM. Refer to BCS-74, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.

Does the engine start?

YES >> Inspection End.
NO >> GO TO 2.

#### 2.REPLACE ECM

1. Replace ECM.
   Refer to EC-477, "Removal and Installation".
2. Perform “ADDITIONAL SERVICE WHEN REPLACING ECM”.
   Refer to EC-125, "Work Procedure".

>> Inspection End.

# B2192 ID DISCORD, IMMU-ECM

## DTC Logic

INFOID:0000000012430362

### 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<br>• ECM |

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

YES >> Go to SEC-54, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430363

#### 1.PERFORM INITIALIZATION

Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.

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

YES >> Inspection End.
NO >> GO TO 2.

#### 2.CHECK SELF-DIAGNOSIS RESULT

1. Select “Self Diagnostic Result” of “BCM” using CONSULT.
2. Erase DTC.
3. Perform DTC CONFIRMATION PROCEDURE for DTC B2192. Refer to SEC-54, "DTC Logic".

Is DTC detected?

YES >> GO TO 3.
NO >> Inspection End.

#### 3.REPLACE BCM

1. Replace BCM. Refer to BCS-74, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.

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

1. Replace ECM.
   Refer to EC-477, "Removal and Installation".
2. Perform “ADDITIONAL SERVICE WHEN REPLACING ECM”.
   Refer to EC-125, "Work Procedure".

>> Inspection End.

# B2193 CHAIN OF ECM-IMMU

## DTC Logic

INFOID:0000000012430364

### DTC DETECTION LOGIC

**NOTE:**

- If DTC B2193 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-63, "DTC Logic".
- If DTC B2193 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-64, "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.)<br>• BCM<br>• ECM |

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

YES >> Go to SEC-55, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430365

#### 1.REPLACE BCM

1. Replace BCM. Refer to BCS-74, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.

Does the engine start?

YES >> Inspection End.
NO >> GO TO 2.

#### 2.REPLACE ECM

1. Replace ECM.
   Refer to EC-477, "Removal and Installation".
2. Perform “ADDITIONAL SERVICE WHEN REPLACING ECM”.
   Refer to EC-125, "Work Procedure".

>> Inspection End.

# B2195 ANTI-SCANNING

## DTC Logic

INFOID:0000000012430366

### 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” of “BCM” using CONSULT.

Is DTC detected?

YES >> Refer to SEC-56, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430367

#### 1.CHECK SELF DIAGNOSTIC RESULT 1

1. Select “Self Diagnostic Result” of “BCM” using CONSULT.
2. Erase DTC.
3. Perform DTC CONFIRMATION PROCEDURE for DTC B2195. Refer to SEC-56, "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.
3. Erase DTC.
4. Perform DTC CONFIRMATION PROCEDURE for DTC B2195. Refer to SEC-56, "DTC Logic".

Is DTC detected?

YES >> GO TO 4.
NO >> Inspection End.

#### 4.REPLACE BCM

1. Replace BCM. Refer to BCS-74, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.

>> Inspection End.

# B2196 DONGLE UNIT

## Description

INFOID:0000000012430368

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

## DTC Logic

INFOID:0000000012430369

### 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 invalid. | • Harness or connectors (Dongle unit circuit is open or shorted.)<br>• 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 Diagnostic Result” of “BCM” using CONSULT.

Is the DTC detected?

YES >> Refer to SEC-57, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430370

Regarding Wiring Diagram information, refer to SEC-37, "Wiring Diagram".

#### 1.PERFORM INITIALIZATION

1. Perform initialization of BCM and registration of all mechanical keys using CONSULT.
   For initialization and registration procedures, refer to CONSULT Immobilizer mode and follow the on-screen instructions.
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 | |
| M97 | 24 | M6 | 1 | Yes |

4. Check continuity between BCM harness connector and ground.

| BCM | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M97 | 24 | | No |

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 | | |
| M6 | 4 | | Yes |

Is the inspection result normal?

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

# B2198 NATS ANTENNA AMP.

## DTC Logic

INFOID:0000000012430371

### 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 is detected when BCM enters in the low power consumption mode. (BCM sleep condition) | • Harness or connectors (NATS antenna amp. circuit is open or shorted.)<br>• NATS antenna amp.<br>• BCM |

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Make the conditions that BCM enters in the low power consumption mode (BCM sleep condition). Refer to BCS-13, "POWER CONSUMPTION CONTROL SYSTEM : System Description".
2. Turn ignition switch ON.
3. Check DTC in “Self Diagnostic Result” of “BCM” using CONSULT.

Is DTC detected?

YES >> Go to SEC-59, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430372

Regarding Wiring Diagram information, refer to SEC-37, "Wiring Diagram".

#### 1.CHECK FUSE

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

| Signal name | Fuse No. |
|---|---|
| Battery power supply | 53 (20 A) |

Is the inspection result normal?

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

#### 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 | | |
| M21 | 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 | |
| F42 | 35 | M21 | 1 | Yes |

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-30, "Removal and Installation".
NO >> Repair or replace harness.

## 4. CHECK NATS ANTENNA AMP. GROUND CIRCUIT

Check continuity between NATS antenna amp. harness connector and ground.

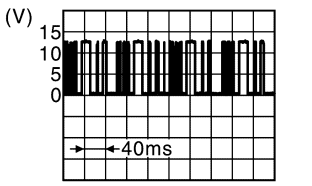
| NATS antenna amp. | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M21 | 4 | | Yes |

Is the inspection result normal?

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

## 5. CHECK NATS ANTENNA AMP. COMMUNICATION SIGNAL 1

Check voltage signal between NATS antenna amp. harness connector and ground using an oscilloscope.

| (+) | | (–) | Condition | | Voltage (V) (Approx.) |
|---|---|---|---|---|---|
| NATS antenna amp. | | | | | |
| Connector | Terminal | | | | |
| M21 | 2 | Ground | Intelligent Key: Intelligent Key battery is removed. | Brake pedal: Depressed<br>**NOTE:**<br>Waveform varies each time when brake pedal is depressed. |  JMKIA6232JP |
| | | | | Brake pedal: Not depressed | Battery voltage |

Is the inspection result normal?

YES >> GO TO 7.
NO >> GO TO 6.

## 6. CHECK NATS ANTENNA AMP. OUTPUT SIGNAL CIRCUIT 1

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

| NATS antenna amp. | | BCM | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| M21 | 2 | M97 | 21 | Yes |

3. Check continuity between NATS antenna amp. harness connector and ground.

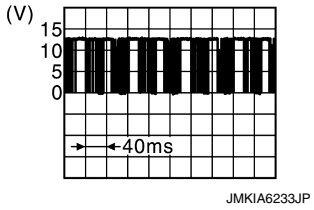
| NATS antenna amp. | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M21 | 2 | | No |

Is the inspection result normal?

YES >> GO TO 9.
NO >> Repair or replace harness.

## 7. CHECK NATS ANTENNA AMP. COMMUNICATION SIGNAL 2

Check voltage signal between NATS antenna amp. harness connector and ground using an oscilloscope.

| (+) NATS antenna amp. Connector | (+) NATS antenna amp. Terminal | (–) | Condition | | Voltage (V) (Approx.) |
|---|---|---|---|---|---|
| M21 | 3 | Ground | Intelligent Key: Intelligent Key battery is removed. | Brake pedal: Depressed<br>**NOTE:**<br>Waveform varies each time when brake pedal is depressed. |  JMKIA6233JP |
| | | | | Brake pedal: Not depressed | Battery voltage |

Is the inspection result normal?

YES >> Replace NATS antenna amp. Refer to SEC-114, "Removal and Installation".
NO >> GO TO 8.

## 8.CHECK NATS ANTENNA AMP. OUTPUT SIGNAL CIRCUIT 2

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

| NATS antenna amp. | | BCM | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| M21 | 3 | M97 | 25 | Yes |

3. Check continuity between NATS antenna amp. harness connector and ground.

| NATS antenna amp. | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M21 | 3 | | No |

Is the inspection result normal?

YES >> GO TO 9.
NO >> Repair or replace harness.

## 9.REPLACE BCM

1. Replace BCM. Refer to BCS-74, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.

>> Inspection End

# B2555 STOP LAMP

## DTC Logic

INFOID:0000000012430373

### DTC DETECTION LOGIC

| DTC No. | Trouble diagnosis name | DTC detecting condition | Possible cause |
|---|---|---|---|
| B2555 | STOP LAMP CIRCUIT | 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.)<br>• Stop lamp switch<br>• Fuse<br>• BCM |

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

YES >> Go to SEC-62, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430374

Regarding Wiring Diagram information, refer to SEC-37, "Wiring Diagram".

#### 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 | | |
| M98 | 105 | Ground | Battery voltage |

Is the inspection normal?

YES >> GO TO 2.
NO-1 >> Check 10 A fuse [No. 30, 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 | | |
| E13 (CVT) | 1 | Ground | Battery voltage |
| E57 (MT) | | | |

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 | | | | |
| M97 | 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-74, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.

>> 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 | |
| E13 (CVT) | 2 | M97 | 9 | Yes |
| E57 (MT) | | | | |

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

| Stop lamp switch | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| E13 (CVT) | 2 | | No |
| E57 (MT) | | | |

Is the inspection result normal?

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

## 6.CHECK STOP LAMP SWITCH

Refer to SEC-63, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace stop lamp switch. Refer to BR-20, "Exploded View".

## 7.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> Inspection End.

# Component Inspection

INFOID:0000000012430375

## 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 Terminal | | Condition | | Continuity |
|---|---|---|---|---|
| 1 | 2 | Brake pedal | Not depressed | No |
| | | | Depressed | Yes |

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace stop lamp switch. Refer to BR-20, "Exploded View".

# B2556 PUSH-BUTTON IGNITION SWITCH

## DTC Logic

INFOID:0000000012430376

### DTC DETECTION LOGIC

| DTC No. | Trouble diagnosis name | DTC detecting condition | Possible cause |
|---|---|---|---|
| B2556 | ENG START 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.)<br>• Push-button ignition switch<br>• 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” of “BCM” using CONSULT.

Is DTC detected?

YES >> Go to SEC-65, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430377

Regarding Wiring Diagram information, refer to SEC-37, "Wiring Diagram".

#### 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 | | |
| M25 | 8 | Ground | Battery voltage |

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 | |
| M25 | 8 | M98 | 76 | Yes |

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

| Push-button ignition switch | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M25 | 8 | | No |

Is the inspection result normal?

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

## 3.REPLACE BCM

1. Replace BCM. Refer to BCS-74, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.

>> 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 | | |
| M25 | 4 | | Yes |

Is the inspection result normal?

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

## 5.CHECK PUSH-BUTTON IGNITION SWITCH

Refer to SEC-66, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 6.
NO >> Replace push-button ignition switch. Refer to SEC-115, "Removal and Installation".

## 6.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> Inspection End.

# Component Inspection

INFOID:0000000012430378

## 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 | | | | |
| 4 | 8 | Push-button ignition switch | Pressed | Yes |
| | | | Not pressed | No |

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace push-button ignition switch. Refer to SEC-115, "Removal and Installation".

# B2557 VEHICLE SPEED

## DTC Logic

INFOID:0000000012430379

### DTC DETECTION LOGIC

**NOTE:**

- If DTC B2557 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-63, "DTC Logic".
- If DTC B2557 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-64, "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:<br>• 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.<br>• 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.)<br>• Combination meter<br>• 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” of “BCM” using CONSULT.

Is DTC detected?

YES >> Go to SEC-67, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430380

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

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

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to BRC-43, "DTC Index".
NO >> GO TO 2.

#### 2.CHECK DTC OF COMBINATION METER

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

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to MWI-24, "DTC Index".
NO >> GO TO 3.

#### 3.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> Inspection End.

# B2601 SHIFT POSITION

## DTC Logic

INFOID:0000000012430381

### DTC DETECTION LOGIC

**NOTE:**

- If DTC B2601 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-63, "DTC Logic".
- If DTC B2601 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-64, "DTC Logic".

| DTC No. | Trouble diagnosis name | DTC detecting condition | Possible cause |
|---|---|---|---|
| B2601 | SHIFT P SIGNAL | When there is a difference between P range signal from CVT shift selector (park position switch) and P position signal from IPDM E/R (CAN). | • Harness or connectors (CAN communication line is open or shorted.)<br>• Harness or connectors [CVT shift selector (park position switch) circuit is open or shorted.]<br>• IPDM E/R<br>• 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 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” of “BCM” using CONSULT.

Is DTC detected?

YES >> Go to SEC-68, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430382

Regarding Wiring Diagram information, refer to SEC-37, "Wiring Diagram".

#### 1.CHECK CVT SHIFT SELECTOR CIRCUIT (BCM)

1. Turn ignition switch OFF.
2. Disconnect CVT shift selector (park position switch) connector.
3. Disconnect BCM connector.
4. Check continuity between CVT shift selector (park position switch) harness connector and BCM harness connector.

| CVT shift selector (park position switch) | | BCM | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| M38 | 8 | M97 | 37 | Yes |

5. Check continuity between CVT shift selector (park position switch) harness connector and ground.

| CVT shift selector (park position switch) | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M38 | 8 | | No |

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace harness.

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

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

| CVT shift selector (park position switch) | | IPDM E/R | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| M38 | 8 | E47 | 80 | Yes |

Is the inspection result normal?

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

## 3.REPLACE BCM

1. Replace BCM. Refer to BCS-74, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.
3. Perform DTC CONFIRMATION PROCEDURE for DTC B2601. Refer to SEC-68, "DTC Logic".

Is DTC B2601 detected again?

YES >> Replace IPDM E/R. Refer to PCS-30, "Removal and Installation".
NO >> Inspection End.

# B2602 SHIFT POSITION

## DTC Logic

INFOID:0000000012430383

### DTC DETECTION LOGIC

**NOTE:**

- If DTC B2602 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-63, "DTC Logic".
- If DTC B2602 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-64, "DTC Logic".

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

### 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” of “BCM” using CONSULT.

Is DTC detected?

YES >> Go to SEC-70, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430384

Regarding Wiring Diagram information, refer to SEC-37, "Wiring Diagram".

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

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

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to BRC-43, "DTC Index".
NO >> GO TO 2.

#### 2.CHECK DTC OF COMBINATION METER

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

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to MWI-24, "DTC Index".
NO >> GO TO 3.

#### 3.CHECK CVT SHIFT SELECTOR POWER SUPPLY

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

| (+) | | (–) | Voltage (V) (Approx.) |
|---|---|---|---|
| CVT shift selector (park position switch) | | | |
| Connector | Terminal | | |
| M38 | 7 | Ground | Battery voltage |

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 (park position switch) harness connector and BCM harness connector.

| CVT shift selector (park position switch) | | BCM | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| M38 | 7 | M98 | 104 | Yes |

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

| CVT shift selector (park position switch) | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M38 | 7 | | No |

Is the inspection result normal?

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

## 5. REPLACE BCM

1. Replace BCM. Refer to PCS-30, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.

>> Inspection End.

## 6. CHECK CVT SHIFT SELECTOR CIRCUIT

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

| CVT shift selector (park position switch) | | BCM | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| M38 | 8 | M97 | 37 | Yes |

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

| CVT shift selector (park position switch) | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M38 | 8 | | No |

Is the inspection result normal?

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

## 7. CHECK CVT SHIFT SELECTOR (PARK POSITION SWITCH)

Refer to SEC-72, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 8.
NO >> Replace CVT shift selector. Refer to TM-231, "Removal and Installation".

## 8.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> Inspection End.

## Component Inspection

INFOID:0000000012430385

## 1.CHECK CVT SHIFT SELECTOR (PARK POSITION SWITCH)

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

| CVT shift selector (park position switch) Terminal | | Condition | | Continuity |
|---|---|---|---|---|
| 7 | 8 | Selector lever: P position | Selector button: Released | No |
| | | | Selector button: Pressed | Yes |
| | | Selector lever: Other than P position | | |

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace CVT shift selector. Refer to TM-231, "Removal and Installation".

# B2603 SHIFT POSITION

## DTC Logic

INFOID:0000000012430386

### DTC DETECTION LOGIC

**NOTE:**

- If DTC B2603 is displayed with DTC B2601, first perform the trouble diagnosis for DTC B2601. Refer to SEC-68, "DTC Logic".

| DTC No. | Trouble diagnosis name | DTC detecting condition | Possible causes |
|---|---|---|---|
| B2603 | SHIFT POSITION | BCM detects the following status when ignition switch is in the ON position:<br>• Transmission range switch signal: approx. 0 V.<br>• CVT shift selector (park position switch) signal: approx. 0 V. | • Harness or connector [CVT shift selector (park position switch) circuit is open or shorted.]<br>• Harness or connectors (Transmission range switch circuit is open or shorted.)<br>• CVT shift selector (park position switch)<br>• Transmission range switch<br>• 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” of “BCM” using CONSULT.

Is DTC detected?

YES >> Go to SEC-73, "Diagnosis Procedure".
NO >> GO TO 2.

#### 2.PERFORM DTC CONFIRMATION PROCEDURE 2

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

Is DTC detected?

YES >> Go to SEC-73, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430387

Regarding Wiring Diagram information, refer to SEC-37, "Wiring Diagram".

#### 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 8.

#### 2.CHECK FUSE

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

| Signal name | Fuse No. |
|---|---|
| Ignition power supply | 49 (10 A) |

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace the blown fuse after repairing the cause of blowing.

## 3.CHECK TRANSMISSION RANGE SWITCH POWER SUPPLY

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

| (+) | | (–) | Voltage (V) (Approx.) |
|---|---|---|---|
| Transmission range switch | | | |
| Connector | Terminal | | |
| F52 | 7 | Ground | Battery voltage |

Is the inspection result normal?

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

## 4.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 | |
| F52 | 7 | E45 | 21 | Yes |

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-30, "Removal and Installation".
NO >> Repair or replace harness.

## 5.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 | | | | |
| M98 | 102 | Ground | Selector lever | P or N position | Battery voltage |
| | | | | Other than above | 0 |

Is the inspection result normal?

YES >> GO TO 13.
NO >> GO TO 6.

## 6.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 | |
| F52 | 10 | M98 | 102 | Yes |

Is the inspection result normal?

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

## 7. CHECK TRANSMISSION RANGE SWITCH

Refer to SEC-76, "Component Inspection (Transmission Range Switch)".

Is the inspection result normal?

YES >> GO TO 12.
NO >> Replace transmission range switch.

## 8. CHECK CVT SHIFT SELECTOR POWER SUPPLY

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

| (+) | | (–) | Voltage (V) (Approx.) |
|---|---|---|---|
| CVT shift selector (park position switch) | | | |
| Connector | Terminal | | |
| M38 | 7 | Ground | Battery voltage |

Is the inspection result normal?

YES >> GO TO 10.
NO >> GO TO 9.

## 9. CHECK CVT SHIFT SELECTOR POWER SUPPLY CIRCUIT

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

| CVT shift selector (park position switch) | | BCM | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| M38 | 7 | M98 | 104 | Yes |

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

| CVT shift selector (park position switch) | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M38 | 7 | | No |

Is the inspection result normal?

YES >> GO TO 12.
NO >> Repair or replace harness.

## 10. CHECK CVT SHIFT SELECTOR CIRCUIT

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

| CVT shift selector (park position switch) | | BCM | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| M38 | 8 | M97 | 37 | Yes |

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

| CVT shift selector (park position switch) | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M38 | 8 | | No |

Is the inspection result normal?

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

## 11. CHECK CVT SHIFT SELECTOR (PARK POSITION SWITCH)

Refer to SEC-76, "Component Inspection [CVT Shift Selector (Park Position Switch)]".

Is the inspection result normal?

YES >> GO TO 13.
NO >> Replace CVT shift selector. Refer to TM-231, "Removal and Installation".

## 12. CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> Inspection End.

## 13. REPLACE BCM

1. Replace BCM. Refer to BCS-74, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.

>> Inspection End.

# Component Inspection (Transmission Range Switch)

INFOID:0000000012430388

## 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 | | | |
| 7 | 10 | P or N position | Yes |
| | | Other than above | No |

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace transmission range switch.

# Component Inspection [CVT Shift Selector (Park Position Switch)]

INFOID:0000000012430389

## 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 (park position switch) terminals.

| CVT shift selector (detention switch) | | Condition | | Continuity |
|---|---|---|---|---|
| Terminal | | | | |
| 7 | 8 | Selector lever: P position | Selector button: Released | No |
| | | | Selector button: Pressed | Yes |
| | | Selector lever: Other than P position | | |

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace CVT shift selector. Refer to TM-231, "Removal and Installation".

# B2604 SHIFT POSITION

## DTC Logic

INFOID:0000000012430390

### DTC DETECTION LOGIC

**NOTE:**

- If DTC B2604 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-63, "DTC Logic".
- If DTC B2604 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-64, "DTC Logic".

| DTC No. | Trouble diagnosis name | DTC detecting condition | Possible cause |
|---|---|---|---|
| B2604 | SHIFT PN DIAG CAN | The following states are detected for 5 seconds while ignition switch is ON:<br>• P/N position signal is sent from transmission range switch but shift position signal input (CAN) from TCM is other than P and N.<br>• 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 (The CAN communication line is open or shorted.)<br>• Harness or connectors (Transmission range switch circuit is open or shorted.)<br>• TCM<br>• 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” of “BCM” using CONSULT.

Is DTC detected?

YES >> Go to SEC-77, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430391

Regarding Wiring Diagram information, refer to SEC-37, "Wiring Diagram".

#### 1.CHECK DTC OF TCM

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

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to TM-110, "DTC Index".
NO >> GO TO 2.

#### 2.CHECK FUSE

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

| Signal name | Fuse No. |
|---|---|
| Ignition power supply | 49 (10 A) |

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace the blown fuse after repairing the cause of blowing.

#### 3.CHECK TRANSMISSION RANGE SWITCH POWER SUPPLY

1. Disconnect transmission range switch connector.
2. Turn ignition switch ON.

3. Check voltage between transmission range switch harness connector and ground.

| (+) | | (–) | Voltage (V) (Approx.) |
|---|---|---|---|
| Transmission range switch | | | |
| Connector | Terminal | | |
| F52 | 7 | Ground | Battery voltage |

Is the inspection result normal?

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

## 4. 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 | |
| F52 | 7 | E45 | 21 | Yes |

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-30, "Removal and Installation".
NO >> Repair or replace harness.

## 5. CHECK BCM INPUT SIGNAL

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

| (+) | | (–) | Condition | | Voltage (V) (Approx.) |
|---|---|---|---|---|---|
| BCM | | | | | |
| Connector | Terminal | | | | |
| M98 | 102 | Ground | Selector lever | P or N position | Battery voltage |
| | | | | Other than above | 0 |

Is the inspection result normal?

YES >> GO TO 9.
NO >> GO TO 6.

## 6. 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 | |
| F52 | 10 | M98 | 102 | Yes |

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

| Transmission range switch | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| F52 | 10 | | No |

Is the inspection result normal?

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

## 7.CHECK TRANSMISSION RANGE SWITCH

Refer to SEC-79, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 8.
NO >> Replace transmission range switch.

## 8.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> Inspection End.

## 9.REPLACE BCM

1. Replace BCM. Refer to BCS-74, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.

>> Inspection End.

# Component Inspection

INFOID:0000000012430392

## 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 | | | |
| 7 | 10 | P or N position | Yes |
| | | Other than above | No |

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace transmission range switch.

# B2605 SHIFT POSITION

## DTC Logic

INFOID:0000000012430393

### DTC DETECTION LOGIC

**NOTE:**

- If DTC B2605 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-63, "DTC Logic".
- If DTC B2605 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-64, "DTC Logic".

| DTC No. | Trouble diagnosis name | DTC detecting condition | Possible cause |
|---|---|---|---|
| B2605 | SHIFT PN DIAG IPDM | When ignition switch is ON, P/N position signal input from transmission range switch and P/N position signal (CAN) input from IPDM E/R do not match. | • Harness or connectors (The CAN communication line is open or shorted.)<br>• Harness or connectors (Transmission range switch circuit is open or shorted.)<br>• Transmission range switch<br>• IPDM E/R<br>• 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” of “BCM” using CONSULT.

Is DTC detected?

YES >> Go to SEC-80, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430394

Regarding Wiring Diagram information, refer to SEC-37, "Wiring Diagram".

#### 1.CHECK IPDM E/R INPUT 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 | | | | |
| F42 | 40 | 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 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 | |
| F42 | 40 | F52 | 10 | Yes |

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

| IPDM E/R | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| F42 | 40 | | No |

Is the inspection result normal?

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

## 3.CHECK BCM INPUT SIGNAL

1. Check voltage between BCM harness connector and ground.

| (+) | | (–) | Condition | | Voltage (V) (Approx.) |
|---|---|---|---|---|---|
| BCM | | | | | |
| Connector | Terminal | | | | |
| M98 | 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 BCM connector.
3. Disconnect transmission range switch connector.
4. Check continuity between BCM harness connector and transmission range switch harness connector.

| BCM | | Transmission range switch | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| M98 | 102 | F52 | 10 | Yes |

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

| BCM | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M98 | 102 | | No |

Is the inspection result normal?

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

## 5.REPLACE BCM

1. Replace BCM. Refer to BCS-74, "Removal and Installation".
2. Perform initialization of BCM using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.
3. Perform DTC CONFIRMATION PROCEDURE for B2605. Refer to SEC-80, "DTC Logic".

Is DTC B2605 detected again?

YES >> Replace IPDM E/R. Refer to PCS-30, "Removal and Installation".
NO >> Inspection End.

# B2608 STARTER RELAY

## DTC Logic

INFOID:0000000012430395

### DTC DETECTION LOGIC

**NOTE:**

- If DTC B2608 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-63, "DTC Logic".
- If DTC B2608 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-64, "DTC Logic".
- If DTC B2608 is displayed with other DTC (BCM), first perform the trouble diagnosis for other DTC detected.

| 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 (The CAN communication line is open or shorted.)<br>• Harness or connectors (Starter relay circuit is open or shorted.)<br>• IPDM E/R<br>• Starter relay |

### 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” of “BCM” using CONSULT.

Is DTC detected?

YES >> Go to SEC-82, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430396

Regarding Wiring Diagram information, refer to SEC-37, "Wiring Diagram".

#### 1.CHECK DTC OF IPDM E/R

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

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to PCS-20, "DTC Index".
NO >> GO TO 2.

#### 2.CHECK STARTER RELAY POWER SUPPLY CIRCUIT

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

| (+) | | (–) | Condition | | Voltage (V) (Approx.) |
|---|---|---|---|---|---|
| BCM | | | | | |
| Connector | Terminal | | | | |
| M98 | 97 | Ground | CVT selector lever | N or P position | Battery voltage |
| | | | | Other than above | 0 |

Is the inspection result normal?

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

## 3.CHECK STARTER RELAY CIRCUIT

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

| Starter relay | | BCM | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| E41 | 1 | M98 | 97 | Yes |

5. Check continuity between starter relay harness connector and ground.

| Starter relay | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| E41 | 1 | | No |

Is the inspection result normal?

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

## 4.CHECK STARTER RELAY

Refer to SEC-83, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace starter relay.

## 5.REPLACE BCM

1. Replace BCM. Refer to BCS-74, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.
3. Perform DTC CONFIRMATION PROCEDURE for B2605. Refer to SEC-80, "DTC Logic".

Is DTC B2605 detected again?

YES >> Replace IPDM E/R. Refer to PCS-30, "Removal and Installation".
NO >> Inspection End.

# Component Inspection

INFOID:0000000012430397

## 1.CHECK STARTER RELAY

1. Turn ignition switch OFF.
2. Disconnect starter relay.
3. Check continuity between starter relay terminals.

| Starter relay | | Condition | Continuity |
|---|---|---|---|
| Terminal | | | |
| 3 | 5 | 12 V direct current supply between terminals 1 and 2 | Yes |
| | | No current supply | No |

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace starter relay.

# B260F ENGINE STATUS

## Description

INFOID:0000000012430398

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

## DTC Logic

INFOID:0000000012430399

### DTC DETECTION LOGIC

**NOTE:**

- If DTC B260F is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-63, "DTC Logic".
- If DTC B260F is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-64, "DTC Logic".

| DTC No. | Trouble diagnosis name | DTC detecting condition | Possible cause |
|---|---|---|---|
| B260F | ECM CAN COMM | BCM has not yet received the engine status signal from ECM when ignition switch is in the ON position. | • Harness or connectors (The CAN communication line is open or shorted.)<br>• 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” of “BCM” using CONSULT.

Is DTC detected?

YES >> Go to SEC-84, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430400

#### 1.INSPECTION START

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” of “BCM” using CONSULT.
3. Touch ERASE.
4. Perform DTC CONFIRMATION PROCEDURE for DTC B260F. Refer to SEC-84, "DTC Logic".

Is DTC detected?

YES >> GO TO 2.
NO >> Inspection End.

#### 2.REPLACE ECM

1. Replace ECM.
   Refer to EC-477, "Removal and Installation".
2. Perform “ADDITIONAL SERVICE WHEN REPLACING ECM”.
   Refer to EC-125, "Work Procedure".

>> Inspection End.

# B261F ASCD CLUTCH SWITCH

## DTC Logic

INFOID:0000000012430401

### DTC DETECTION LOGIC

**NOTE:**

- If DTC B261F is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-63, "DTC Logic".
- If DTC B261F is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-64, "DTC Logic".

| DTC No. | CONSULT screen items (Trouble diagnosis content) | DTC detecting condition | Possible cause |
|---|---|---|---|
| B261F | ASCD CNCL/CLTCH SW (ASCD clutch interlock switch) | BCM detects the following status for 10 seconds 3 times:<br>• Clutch interlock switch input: 0 V.<br>• Vehicle speed: 40 km/h (24.8 MPH) or more. | • Harness or connectors. (CAN communication line is open or shorted.)<br>• Harness or connectors. (Clutch interlock switch circuit is open or shorted)<br>• Clutch interlock switch<br>• Combination meter<br>• 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” of “BCM” using CONSULT.

Is DTC detected?

YES >> Go to SEC-85, "Diagnosis Procedure".
NO >> Inspection End

## Diagnosis Procedure

INFOID:0000000012430402

Regarding Wiring Diagram information, refer to SEC-37, "Wiring Diagram".

#### 1.CHECK DTC OF COMBINATION METER

Check DTC in “Self Diagnostic Result” of “METER/M&A” using CONSULT.
Refer to MWI-24, "DTC Index".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning parts.

#### 2.CHECK FUSE

1. Turn power switch OFF.
2. Check that the following fuse in the fuse block (J/B) is not blown.

| Signal name | Fuse No. |
|---|---|
| Ignition power supply | 10 (10 A) |

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace the blown fuse after repairing the cause of blowing.

## 3.CHECK CLUTCH INTERLOCK SWITCH POWER SUPPLY

1. Disconnect clutch interlock switch connector.
2. Turn ignition switch ON.
3. Check voltage between clutch interlock switch harness connector and ground.

| (+) | | (–) | Voltage (V) (Approx.) |
|---|---|---|---|
| Clutch interlock switch | | | |
| Connector | Terminal | | |
| E34 | 1 | Ground | Battery voltage |

Is the inspection result normal?

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

## 4.CHECK CLUTCH INTERLOCK SWITCH SIGNAL

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

| (+) | | (–) | Condition | | Voltage |
|---|---|---|---|---|---|
| BCM | | | | | |
| Connector | Terminal | | | | |
| M98 | 101 | Ground | Clutch pedal | Released | 0 V |
| | | | | Depressed | Battery voltage |

Is the inspection result normal?

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

## 5.REPLACE BCM

1. Replace BCM. Refer to BCS-74, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.

>> Inspection End.

## 6.CHECK CLUTCH INTERLOCK SWITCH CIRCUIT

1. Turn ignition switch OFF.
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 | |
| E34 | 2 | M98 | 101 | Yes |

Is the inspection result normal?

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

## 7.CHECK CLUTCH INTERLOCK SWITCH

Refer to SEC-87, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 8.
NO >> Replace clutch interlock switch. Refer to CL-11, "Exploded View".

## 8.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> Inspection End.

## Component Inspection

INFOID:0000000012430403

### 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 | | | | |
| 1 | 2 | Clutch pedal | Not depressed | No |
| | | | Depressed | Yes |

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace clutch interlock switch. Refer to CL-11, "Exploded View".

# B2620 PARK/NEUTRAL POSITION SWITCH

## DTC Logic

INFOID:0000000012430404

**NOTE:**
- If DTC B2620 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-63, "DTC Logic".
- If DTC B2620 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-64, "DTC Logic".

### DTC DETECTION LOGIC

| DTC No. | CONSULT screen items (Trouble diagnosis content) | DTC detecting condition | Possible cause |
|---|---|---|---|
| B2620 | NEUTRAL SW (Neutral switch) | BCM detects the following status for 10 seconds 3 times:<br>• Park/neutral position switch input: Battery voltage<br>• Vehicle speed: 40 km/h (24.8 MPH) or more. | • Harness or connector (CAN communication line is open or shorted.)<br>• Harness or connector (Park/neutral position switch circuit is open or shorted.)<br>• Park/neutral position switch<br>• Combination meter<br>• 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” of “BCM” using CONSULT.

Is DTC detected?

YES >> Go to SEC-88, "Diagnosis Procedure".
NO >> Inspection End

## Diagnosis Procedure

INFOID:0000000012430405

Regarding Wiring Diagram information, refer to SEC-37, "Wiring Diagram".

#### 1.CHECK DTC OF COMBINATION METER

Check DTC in “Self Diagnostic Result” of “METER/M&A” using CONSULT.
Refer to MWI-24, "DTC Index".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning parts.

#### 2.CHECK FUSE

1. Turn power switch OFF.
2. Check that the following fuse in the fuse block (J/B) is not blown.

| Signal name | Fuse No. |
|---|---|
| Ignition power supply | 3 (10 A) |

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace the blown fuse after repairing the cause of blowing.

## 3. 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 | | |
| F24 | 2 | Ground | Battery voltage |

Is the inspection result normal?

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

## 4. CHECK PARK/NEUTRAL POSITION SWITCH INPUT 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 |
|---|---|---|---|---|---|
| BCM | | | | | |
| Connector | Terminal | | | | |
| M98 | 102 | Ground | Shift lever | Neutral position | Battery voltage |
| | | | | Except neutral position | 0 V |

Is the inspection result normal?

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

## 5. REPLACE BCM

1. Replace BCM. Refer to BCS-74, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.

>> Inspection End.

## 6. CHECK PARK/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 | |
| F24 | 3 | M98 | 102 | Yes |

Is the inspection result normal?

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

## 7. CHECK PARK/NEUTRAL POSITION SWITCH

Refer to SEC-90, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 8.
NO >> Replace park/neutral position switch. Refer to TM-19, "Removal and Installation".

## 8.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> Inspection End.

## Component Inspection

INFOID:0000000012430406

## 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.

| Park/neutral position switch | | Condition | | Continuity |
|---|---|---|---|---|
| Terminal | | | | |
| 2 | 3 | Shift lever | Neutral position | Yes |
| | | | Except neutral position | No |

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace park/neutral position switch. Refer to TM-19, "Removal and Installation".

# B26E8 CLUTCH INTERLOCK SWITCH

## DTC Logic

INFOID:0000000012430407

### DTC DETECTION LOGIC

| DTC No. | CONSULT screen items (Trouble diagnosis content) | DTC detecting condition | Possible cause |
|---|---|---|---|
| B26E8 | CLUTCH SW (Clutch switch) | BCM detects the following conditions for 2 seconds or more:<br>• Clutch pedal position switch: ON (Clutch pedal is released.)<br>• Clutch interlock switch: ON (Clutch pedal is depressed.) | • Harness or connector (Clutch interlock switch circuit is open or shorted.)<br>• Harness or connector (Clutch pedal position switch circuit is open or shorted.)<br>• Clutch interlock switch<br>• Clutch pedal position switch<br>• BCM |

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE 1

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

Is DTC detected?

YES >> Go to SEC-91, "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” of “BCM” using CONSULT.

Is DTC detected?

YES >> Go to SEC-91, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430408

Regarding Wiring Diagram information, refer to SEC-37, "Wiring Diagram".

#### 1.CHECK DTC OF COMBINATION METER

Check DTC in “Self Diagnostic Result” of “METER/M&A” using CONSULT.
Refer to MWI-24, "DTC Index".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning parts.

#### 2.CHECK FUSE

1. Turn power switch OFF.
2. Check that the following fuse in the fuse block (J/B) is not blown.

| Signal name | Fuse No. |
|---|---|
| Ignition power supply | 10 (10 A) |

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace the blown fuse after repairing the cause of blowing.

## 3.CHECK CLUTCH INTERLOCK SWITCH POWER SUPPLY

1. Disconnect clutch interlock switch connector.
2. Turn ignition switch ON.
3. Check voltage between clutch interlock switch harness connector and ground.

| (+) | | (–) | Voltage (V) (Approx.) |
|---|---|---|---|
| Clutch interlock switch | | | |
| Connector | Terminal | | |
| E34 | 1 | Ground | Battery voltage |

Is the inspection result normal?

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

## 4.CHECK CLUTCH INTERLOCK SWITCH SIGNAL

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

| (+) | | (–) | Condition | | Voltage |
|---|---|---|---|---|---|
| BCM | | | | | |
| Connector | Terminal | | | | |
| M98 | 101 | Ground | Clutch pedal | Released | 0 V |
| | | | | Depressed | Battery voltage |

Is the inspection result normal?

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

## 5.REPLACE BCM

1. Replace BCM. Refer to BCS-74, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.

>> Inspection End.

## 6.CHECK CLUTCH INTERLOCK SWITCH CIRCUIT

1. Turn ignition switch OFF.
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 | |
| E34 | 2 | M98 | 101 | Yes |

Is the inspection result normal?

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

## 7.CHECK CLUTCH INTERLOCK SWITCH

Refer to SEC-93, "Component Inspection (Clutch Interlock Switch)".

Is the inspection result normal?

YES >> GO TO 8.
NO >> Replace clutch interlock switch. Refer to CL-11, "Exploded View".

## 8.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> Inspection End.

## Component Inspection (Clutch Interlock Switch)

INFOID:0000000012430409

### 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 | | | | |
| 1 | 2 | Clutch pedal | Depressed | Yes |
| | | | Not depressed | No |

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace clutch interlock switch. Refer to CL-11, "Exploded View".

# B26F3 STARTER CONTROL RELAY

## DTC Logic

INFOID:0000000012430410

### DTC DETECTION LOGIC

**NOTE:**

- If DTC B26F3 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-63, "DTC Logic".
- If DTC B26F3 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-64, "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 (The CAN communication line is open or shorted.)<br>• 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: Not depressed
2. Wait 2 seconds after engine started.
3. Check DTC in “Self Diagnostic Result” of “BCM” using CONSULT.

Is DTC detected?

YES >> Go to SEC-94, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430411

#### 1.CHECK DTC OF IPDM E/R

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

Is DTC detected?

YES >> Perform the diagnosis procedure related to the detected DTC. Refer to PCS-20, "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:0000000012430412

### DTC DETECTION LOGIC

**NOTE:**

- If DTC B26F4 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-63, "DTC Logic".
- If DTC B26F4 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-64, "DTC Logic".

| DTC No. | Trouble diagnosis name | DTC detecting condition | Possible cause |
|---|---|---|---|
| B26F4 | START CONT RLY 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 (CAN). | • Harness or connectors (The CAN communication line is open or shorted.)<br>• 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: Not depressed
2. Check DTC in “Self Diagnostic Result” of “BCM” using CONSULT.

Is DTC detected?

YES >> Go to SEC-95, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430413

#### 1.CHECK DTC OF IPDM E/R

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

Is DTC detected?

YES >> Perform the diagnosis procedure related to the detected DTC. Refer to PCS-20, "DTC Index".
NO >> GO TO 2.

#### 2.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> Inspection End.

# B26F7 BCM

## DTC Logic

INFOID:0000000012430414

### 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” of “BCM” using CONSULT.

Is DTC detected?

YES >> Go to SEC-96, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430415

#### 1.INSPECTION START

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” of “BCM” using CONSULT.
3. Touch “ERASE”.
4. Perform DTC CONFIRMATION PROCEDURE for DTC B26F7. Refer to SEC-96, "DTC Logic".

Is DTC B26F7 detected again?

YES >> GO TO 2.
NO >> Inspection End.

#### 2.REPLACE BCM

1. Replace BCM. Refer to BCS-74, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.

>> Inspection End.

# B26FB CLUTCH SWITCH

## DTC Logic

INFOID:0000000012430416

### DTC DETECTION LOGIC

**NOTE:**

- If DTC B26FB is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-63, "DTC Logic".
- If DTC B26FB is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-64, "DTC Logic".

| DTC No. | CONSULT screen items (Trouble diagnosis content) | DTC detecting condition | Possible cause |
|---|---|---|---|
| B26FB | CLUTCH SWITCH (Clutch switch) | 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.)<br>• ECM |

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

YES >> Go to SEC-97, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430417

#### 1.INSPECTION START

1. Turn ignition switch ON.
2. Select “Self Diagnostic Result” of “BCM” using CONSULT.
3. Touch “ERASE”.
4. Perform DTC CONFIRMATION PROCEDURE for DTC B26FB. Refer to SEC-97, "DTC Logic".

Is DTC detected?

YES >> GO TO 2.
NO >> Inspection End.

#### 2.REPLACE ECM

Replace ECM. Refer to EC-477, "Removal and Installation"

>> Inspection End.

# B26FC KEY REGISTRATION

## DTC Logic

INFOID:0000000012430418

### 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<br>• Intelligent Key<br>• BCM |

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.
2. Check DTC in “Self Diagnostic Result” of “BCM” using CONSULT.

Is DTC detected?

YES >> Go to SEC-98, "Diagnosis Procedure"
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430419

#### 1.REPLACE INTELLIGENT KEY

1. Prepare Intelligent Key that matches the vehicle.
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.
3. Check DTC in “Self Diagnostic Result” of “BCM” using CONSULT.

Is DTC detected?

YES >> GO TO 2.
NO >> Inspection End.

#### 2.REPLACE BCM

1. Replace BCM. Refer to BCS-74, "Removal and Installation".
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. Refer to the CONSULT Immobilizer mode and follow the on-screen instructions.

>> Inspection End.

# B210B STARTER CONTROL RELAY

## DTC Logic

INFOID:0000000012430420

### DTC DETECTION LOGIC

**NOTE:**
If DTC B210B is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-63, "DTC Logic".

| CONSULT Display | DTC Detection Condition | Possible Cause |
|---|---|---|
| START CONT RLY ON [B210B] | When comparing the following items, IPDM E/R detects that starter control relay is stuck in the ON position for 1 second or more:<br>• Starter control relay signal (CAN) from BCM.<br>• Starter relay status signal (CAN) from BCM.<br>• Starter control relay and starter relay status signal. (IPDM E/R input)<br>• Starter control relay control signal. (IPDM E/R output)<br>• Transmission range switch signal input. | IPDM E/R |

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait 1 second or more.
3. Turn ignition switch ON.
4. Perform “Self Diagnostic Result” of “IPDM E/R” using CONSULT.

Is DTC B210B displayed?

YES >> Refer to SEC-99, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430421

#### 1. PERFORM SELF DIAGNOSTIC RESULT

Perform “Self Diagnostic Result” of “IPDM E/R” using CONSULT.

Is display history of DTC B210B CRNT?

YES >> Replace IPDM E/R. Refer to PCS-30, "Removal and Installation".
NO >> Refer to GI-42, "Intermittent Incident".

# B210C STARTER CONTROL RELAY

## DTC Logic

INFOID:0000000012430422

### DTC DETECTION LOGIC

**NOTE:**

- If DTC B210C is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-63, "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.

| CONSULT Display | DTC Detection Condition | Possible Cause |
|---|---|---|
| STR CONT RLY OFF CIRC [B210C] | When comparing the following items, IPDM E/R detects that starter control relay is stuck in the OFF position for 1 second or more:<br>• Starter control relay signal (CAN) from BCM.<br>• Starter relay status signal (CAN) from BCM.<br>• Starter control relay and starter relay status signal. (IPDM E/R input)<br>• Starter control relay control signal. (IPDM E/R output) | • IPDM E/R<br>• BCM<br>• Battery |

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait 1 second or more.
3. Turn ignition switch ON.
4. Perform “Self Diagnostic Result” of “IPDM E/R” using CONSULT.

Is DTC B210C displayed?

YES >> Refer to SEC-100, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430423

Regarding Wiring Diagram information, refer to SEC-37, "Wiring Diagram".

#### 1. PERFORM SELF DIAGNOSTIC RESULT

Perform “Self Diagnostic Result” of “IPDM E/R” using CONSULT.

Is display history of DTC B210C CRNT?

YES >> GO TO 2.
NO >> Refer to GI-42, "Intermittent Incident".

#### 2.CHECK STARTER CONTROL RELAY CONTROL CIRCUITS VOLTAGE

Check voltage between IPDM E/R connectors and ground.

| IPDM E/R | | Ground | Voltage (Approx.) |
|---|---|---|---|
| Connector | Terminal | | |
| E44 (WITH M/T) | 13 | — | Battery voltage |
| F42 (WITH CVT) | 40 | | |

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-30, "Removal and Installation".
NO (WITH M/T)>>GO TO 3.
NO (WITH CVT)>>GO TO 4.

## 3. CHECK STARTER CONTROL RELAY CONTROL CIRCUIT CONTINUITY

1. Disconnect IPDM E/R connector E44 and clutch interlock switch connector E34.
2. Check continuity between IPDM E/R connector E44 and clutch interlock switch connector E34.

| IPDM E/R | | Clutch interlock switch | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| E44 | 13 | E34 | 2 | Yes |

3. Disconnect BCM connector M98.
4. Check continuity between IPDM E/R connector E44 and ground.

| IPDM E/R | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| E44 | 13 | — | No |

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-74, "Removal and Installation".
NO >> Repair or replace harness or connectors.

## 4. CHECK STARTER CONTROL RELAY CONTROL CIRCUIT CONTINUITY

1. Disconnect IPDM E/R connector F42 and transmission range switch connector F52.
2. Check continuity between IPDM E/R connector F42 and transmission range switch connector F52.

| IPDM E/R | | Transmission range switch | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| F42 | 40 | F52 | 10 | Yes |

3. Disconnect BCM connector M98.
4. Check continuity between IPDM E/R connector F42 and ground.

| IPDM E/R | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| F42 | 40 | — | No |

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-74, "Removal and Installation".
NO >> Repair or replace harness or connectors.

# B210D STARTER RELAY

## DTC Logic

INFOID:0000000012430424

### DTC DETECTION LOGIC

**NOTE:**
If DTC B210D is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-63, "DTC Logic".

| CONSULT Display | DTC Detection Condition | Possible Cause |
|---|---|---|
| STARTER RLY ON CIRC [B210D] | When comparing the following items, IPDM E/R detects that starter control relay is stuck in the ON position for 5 second or more:<br>• Starter control relay signal (CAN) from BCM.<br>• Starter relay status signal (CAN) from BCM.<br>• Starter control relay and starter relay status signal. (IPDM E/R input)<br>• Starter control relay control signal. (IPDM E/R output) | • Harness or connectors (starter motor relay control circuit open or short.)<br>• IPDM E/R<br>• BCM |

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait 1 second or more.
3. Turn ignition switch ON.
4. Perform “Self Diagnostic Result” of “IPDM E/R” using CONSULT.

Is DTC B210D displayed?

YES >> Refer to SEC-102, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430425

Regarding Wiring Diagram information, refer to SEC-37, "Wiring Diagram".

#### 1. PERFORM SELF DIAGNOSTIC RESULT

Perform “Self Diagnostic Result” of “IPDM E/R” using CONSULT.

Is display history of DTC B210D CRNT?

YES >> GO TO 2.
NO >> Refer to GI-42, "Intermittent Incident".

#### 2.CHECK STARTER CONTROL RELAY CONTROL CIRCUITS VOLTAGE

Check voltage between IPDM E/R connectors and ground.

| IPDM E/R | | Ground | Voltage (Approx.) |
|---|---|---|---|
| Connector | Terminal | | |
| E44 | 13 | — | Battery voltage |
| F42 | 40 | | |

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-30, "Removal and Installation".
NO (WITH M/T)>>GO TO 3.
NO (WITH CVT)>>GO TO 4.

#### 3.CHECK STARTER CONTROL RELAY CONTROL CIRCUIT CONTINUITY

1. Disconnect IPDM E/R connectors E44, BCM connector M98, clutch interlock switch connector E34.

2. Check continuity between IPDM E/R connector E44 and ground.

| IPDM E/R | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| E44 | 13 | — | No |

Is the inspection result normal?

YES >> Refer to SEC-82, "Diagnosis Procedure".
NO >> Repair or replace harness or connectors.

## 4. CHECK STARTER CONTROL RELAY CONTROL CIRCUIT CONTINUITY

1. Disconnect IPDM E/R connectors F42, BCM connector M98, transmission range switch connector F52.
2. Check continuity between IPDM E/R connector F42 and ground.

| IPDM E/R | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| F42 | 40 | — | No |

Is the inspection result normal?

YES >> Refer to SEC-82, "Diagnosis Procedure".
NO >> Repair or replace harness or connectors.

# B210E STARTER RELAY

## DTC Logic

INFOID:0000000012430426

### DTC DETECTION LOGIC

**NOTE:**

- If DTC B210E is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-63, "DTC Logic".
- If DTC B210E is displayed with DTC B2605, first perform the trouble diagnosis for DTC B2605. Refer to SEC-80, "DTC Logic".
- When IPDM E/R power supply voltage is low (Approx. 7 - 8 V for about 1 second), the DTC B210F may be detected.

| CONSULT Display | DTC Detection Condition | Possible Cause |
|---|---|---|
| STARTER RELAY OFF [B210E] | When comparing the following items, IPDM E/R detects that starter control relay is stuck in the OFF position for 5 second or more:<br>• Starter control relay signal (CAN) from BCM.<br>• Starter relay status signal (CAN) from BCM.<br>• Starter control relay and starter relay status signal. (IPDM E/R input)<br>• Starter control relay control signal. (IPDM E/R output) | • IPDM E/R<br>• BCM<br>• Battery |

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait 1 second or more.
3. Turn ignition switch ON.
4. Perform “Self Diagnostic Result” of “IPDM E/R” using CONSULT.

Is DTC B210E displayed?

YES >> Refer to SEC-104, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430427

Regarding Wiring Diagram information, refer to SEC-37, "Wiring Diagram".

#### 1. PERFORM SELF DIAGNOSTIC RESULT

Perform "Self Diagnostic Result" of "IPDM E/R" using CONSULT.

Is display history of DTC B210E CRNT?

YES >> GO TO 2.
NO >> Refer to GI-42, "Intermittent Incident".

#### 2.CHECK STARTER CONTROL RELAY CONTROL CIRCUITS VOLTAGE

Check voltage between IPDM E/R connectors and ground.

| IPDM E/R | | Ground | Voltage (Approx.) |
|---|---|---|---|
| Connector | Terminal | | |
| E44 | 13 | — | Battery voltage |
| F42 | 40 | | |

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-30, "Removal and Installation".
NO (WITH M/T)>>GO TO 3.

NO (WITH CVT)>>GO TO 4.

## 3. CHECK STARTER CONTROL RELAY CONTROL CIRCUIT CONTINUITY

1. Disconnect IPDM E/R connector E44 and clutch interlock switch connector E34.
2. Check continuity between IPDM E/R connector E44 and clutch interlock switch connector E34.

| IPDM E/R | | Clutch interlock switch | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| E44 | 13 | E34 | 2 | Yes |

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-74, "Removal and Installation".
NO >> Repair or replace harness or connectors.

## 4. CHECK STARTER CONTROL RELAY CONTROL CIRCUIT CONTINUITY

1. Disconnect IPDM E/R connector F42 and transmission range switch connector F52.
2. Check continuity between IPDM E/R connector F42 and transmission range switch connector F52.

| IPDM E/R | | Transmission range switch | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| F42 | 40 | F52 | 10 | Yes |

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-74, "Removal and Installation".
NO >> Repair or replace harness or connectors.

# B210F SHIFT POSITION/CLUTCH INTERLOCK SWITCH

## DTC Logic

INFOID:0000000012430428

### DTC DETECTION LOGIC

**NOTE:**
If DTC B210F is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-63, "DTC Logic".

| DTC No. | Trouble diagnosis name | DTC detecting condition | Possible cause |
|---|---|---|---|
| B210F | INTRLCK/PNP SW ON | IPDM E/R detects a difference between the following signals:<br>• P/N position signal from transmission range switch and P/N position signal (CAN) from BCM . | • Harness or connectors (The CAN communication line is open or shorted.)<br>• Harness or connectors (Transmission range switch circuit is open or shorted.)<br>• Transmission range switch<br>• IPDM E/R<br>• 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 the position other than P and N, and wait 1 second or more.
5. Check DTC in “Self Diagnostic Result” of “IPDM E/R” using CONSULT.

Is DTC detected?

YES >> Go to SEC-106, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430429

Regarding Wiring Diagram information, refer to SEC-37, "Wiring Diagram".

#### 1.CHECK DTC OF BCM

Check DTC in “Self Diagnostic Result” of “BCM” using CONSULT.

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to BCS-50, "DTC Index".
NO >> GO TO 2.

#### 2.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 | |
| F42 | 40 | F52 | 10 | Yes |

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

| (+) | | (–) | Continuity |
|---|---|---|---|
| IPDM E/R | | | |
| Connector | Terminal | | |
| F42 | 40 | Ground | No |

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-30, "Removal and Installation".
NO >> Repair or replace harness.

# B2110 SHIFT POSITION/CLUTCH INTERLOCK SWITCH

## DTC Logic

INFOID:0000000012430430

### DTC DETECTION LOGIC

**NOTE:**
If DTC B2110 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-63, "DTC Logic".

| DTC No. | Trouble diagnosis name | DTC detecting condition | Possible cause |
|---|---|---|---|
| B210F | INTRLCK/PNP SW OFF | IPDM E/R detects a difference between the following signals:<br>• P/N position signal from transmission range switch and P/N position signal (CAN) from BCM. | • Harness or connectors (The CAN communication line is open or shorted.)<br>• Harness or connectors (Transmission range switch circuit is open or shorted.)<br>• Transmission range switch<br>• IPDM E/R<br>• 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 the position other than P and N, and wait 1 second or more.
5. Check DTC in “Self Diagnostic Result” of “IPDM E/R” using CONSULT.

Is DTC detected?

YES >> Go to SEC-108, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430431

Regarding Wiring Diagram information, refer to SEC-37, "Wiring Diagram".

#### 1.CHECK DTC OF BCM

Check DTC in “Self Diagnostic Result” of “BCM” using CONSULT.

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to BCS-50, "DTC Index".
NO >> GO TO 2.

#### 2.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 | |
| F42 | 40 | F52 | 10 | Yes |

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

| (+) | | (–) | Continuity |
|---|---|---|---|
| IPDM E/R | | | |
| Connector | Terminal | | |
| F42 | 40 | Ground | No |

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-30, "Removal and Installation".
NO >> Repair or replace harness.

# VEHICLE SECURITY INDICATOR

## Description

INFOID:0000000012542522

- Vehicle security indicator is built in combination meter.
- NATS (Nissan Anti-Theft System) condition is indicated by blink or illumination of vehicle security indicator.

## Component Function Check

INFOID:0000000012542523

### 1.CHECK FUNCTION

1. Perform “Active Test” of “THEFT IND” in the “IMMU” using CONSULT.
2. Check vehicle security indicator operation.

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

Is the inspection result normal?

YES >> Inspection End.
NO >> Refer to SEC-110, "Diagnosis Procedure".

## Diagnosis Procedure

INFOID:0000000012542524

Regarding Wiring Diagram information, refer to SEC-37, "Wiring Diagram".

### 1.SECURITY INDICATOR LAMP ACTIVE TEST

With CONSULT
Check “THEFT IND”” in “Active Test” of “IMMU”.

Without CONSULT
1. Disconnect BCM.
2. Check voltage between BCM harness connector M97 terminal 23 and ground.

| Connector | Terminals | | Condition | Voltage (V) (Approx.) |
|---|---|---|---|---|
| | (+) | (-) | | |
| M97 | 23 | Ground | ON | 0 |
| | | | OFF | Battery voltage |

Is the inspection result normal?

YES >> Security indicator lamp is OK.
NO >> GO TO 2.

### 2.SECURITY INDICATOR LAMP CHECK

Check security indicator lamp condition.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace combination meter. Refer to MWI-115, "Removal and Installation".

### 3.CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and security indicator lamp connector.
3. Check continuity between BCM connector M97 terminal 23 and combination meter connector M24 terminal 18.

| BCM | | Combination meter | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| M97 | 23 | M24 | 18 | Yes |

4. Check continuity between BCM connector M97 terminal 23 and ground.

| BCM | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M97 | 23 | | No |

Is the inspection result normal?

YES >> Check the following:
- 10A fuse No. 8, located in fuse block (J/B)
- Harness for open or short between security indicator lamp and fuse.

NO >> Repair or replace harness.

# SYMPTOM DIAGNOSIS

## ENGINE DOES NOT START WHEN INTELLIGENT KEY IS INSIDE OF VEHICLE

### Description

INFOID:0000000012430432

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” setting in “Work support” in “INTELLIGENT KEY” of “BCM” is ON.
- One or more of Intelligent Keys with registered Intelligent Key ID is in the vehicle.

### Diagnosis Procedure

INFOID:0000000012430433

#### 1.PERFORM WORK SUPPORT

Perform “INSIDE ANT DIAGNOSIS” in “Work Support” of “INTELLIGENT KEY” of “BCM” using CONSULT.
Refer to BCS-22, "INTELLIGENT KEY : CONSULT Function (BCM - INTELLIGENT KEY)".

>> GO TO 2.

#### 2.PERFORM SELF-DIAGNOSIS RESULT

Select “Self Diagnostic Result” mode of “BCM”, and check whether or not DTC of inside key antenna is detected.

Is DTC detected?

YES >> Perform the trouble diagnosis for detected DTC. Refer to BCS-50, "DTC Index".
NO >> GO TO 3.

#### 3.CHECK PUSH-BUTTON IGNITION SWITCH

Check push-button ignition switch.
Refer to SEC-66, "Component Inspection".

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.

# SECURITY INDICATOR LAMP DOES NOT TURN ON OR BLINK

## Description

INFOID:0000000012430434

Security indicator lamp does not blink when power supply position is other than the ON position.

**NOTE:**

- Before performing the diagnosis, perform “Work Flow”. Refer to SEC-46, "Work Flow".
- Check that vehicle is under the condition shown in “Conditions of vehicle” before starting diagnosis, and check each symptom.

### Conditions of Vehicle (Operating Conditions)

Power supply position is other than the ON position.

## Diagnosis Procedure

INFOID:0000000012430435

### 1.CHECK SECURITY INDICATOR LAMP

Check security indicator lamp.

Refer to SEC-110, "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.

# REMOVAL AND INSTALLATION

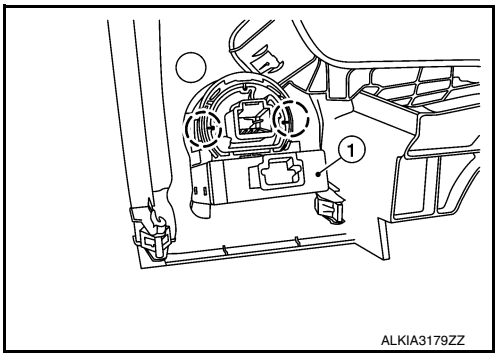
## NATS ANTENNA AMP.

### Removal and Installation

INFOID:0000000012430436

REMOVAL

1. Remove cluster lid A. Refer to IP-21, "Removal and Installation".
2. Release pawls and remove NATS antenna amp. (1).
   ◌: Pawl




INSTALLATION

Installation is in the reverse order of removal.

**NOTE:**

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

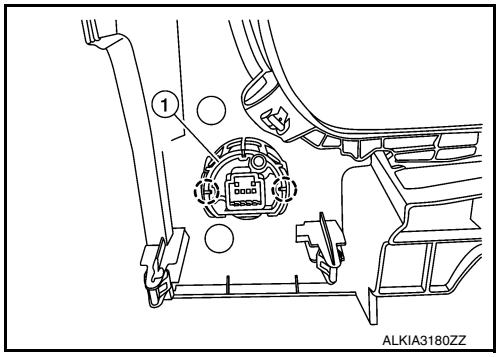
# PUSH-BUTTON IGNITION SWITCH

## Removal and Installation

INFOID:0000000012430437

### REMOVAL

1. Remove NATS antenna amp. Refer to SEC-114, "Removal and Installation".
2. Release pawls and remove the push-button ignition switch (1).
   : Pawl




### INSTALLATION

Installation is in the reverse order of removal.

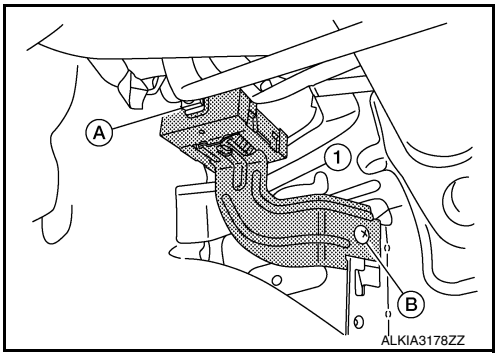
# REMOTE KEYLESS ENTRY RECEIVER

## Removal and Installation

INFOID:0000000012430438

### REMOVAL

1. Remove the glove box. Refer to IP-25, "Removal and Installation".
2. Disconnect the harness connector (A) from remote keyless entry receiver (1).
3. Remove screw (B) and remove remote keyless entry receiver.




### INSTALLATION

Installation is in the reverse order of removal.

# PRECAUTION

## PRECAUTIONS

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

INFOID:0000000012430439

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 SR and SB section of this Service Manual.

**WARNING:**

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

**WARNING:**

- **When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT 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 three minutes before performing any service.**

### Precaution for Work

INFOID:0000000012430440

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:

- Water soluble dirt:

- Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
- Then rub with a soft, dry cloth.

- Oily dirt:

- Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
- Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
- Then rub with a soft, dry cloth.

- Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

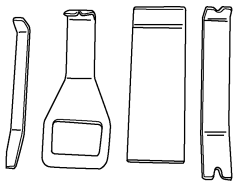
# PREPARATION

## PREPARATION

### Special Service Tool

INFOID:0000000012430441

The actual shape of the tools may differ from those illustrated here.

| Tool number<br>(TechMate No.)<br>Tool name | Description |
|---|---|
| —<br>(J-46534)<br>Trim Tool Set<br>  <br>AWJIA0483ZZ | Removing trim components |

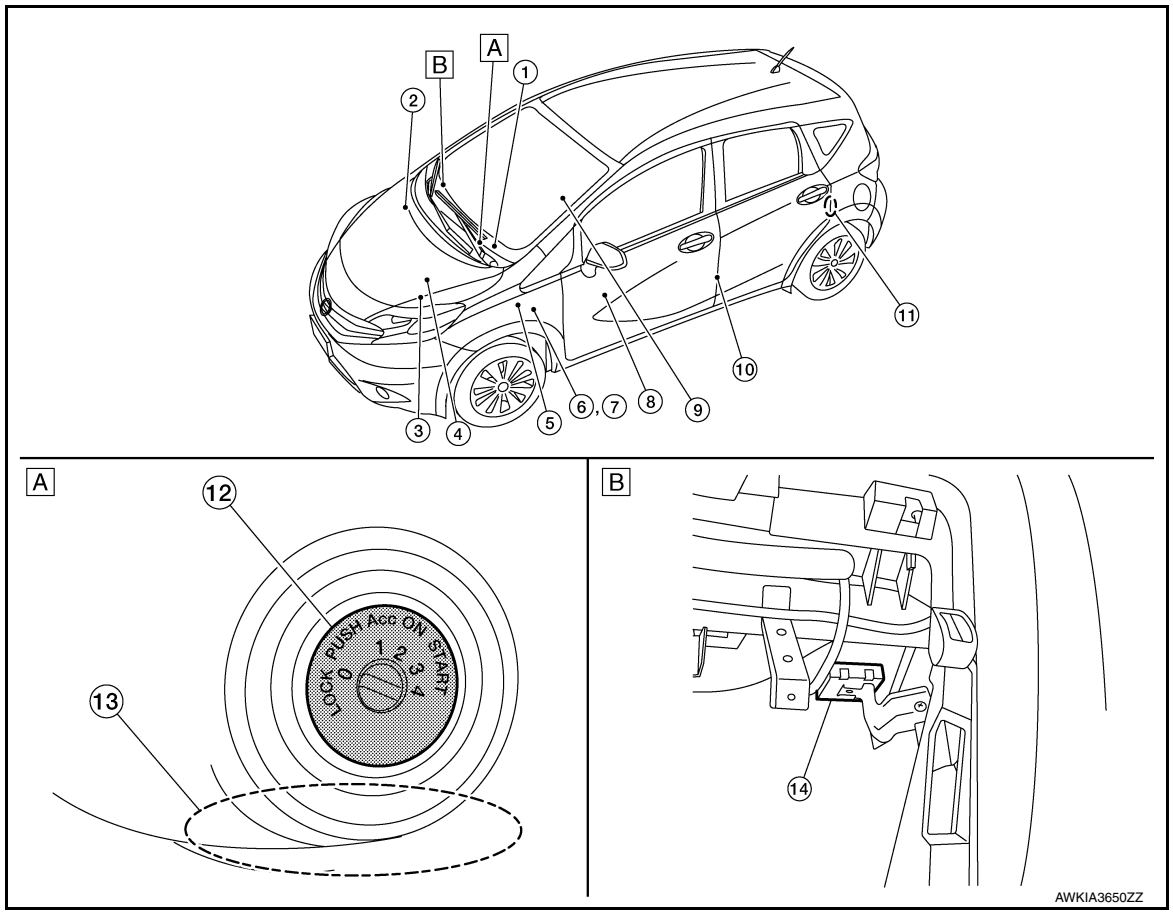
# SYSTEM DESCRIPTION

## COMPONENT PARTS

### NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS

### NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : Component Parts Location

INFOID:0000000012430442




A. View from right side of steering column B. View with glove box door removed

| No. | Component | Function |
|---|---|---|
| 1. | Combination meter | Combination meter transmits the vehicle speed signal to BCM via CAN communication.<br>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.<br>Security indicator lamp is located on combination meter.<br>Security indicator lamp blinks when ignition switch is in any position other than ON to warn that NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS [NVIS (NATS)] is on board.<br>Refer to MWI-8, "METER SYSTEM : Component Parts Location". |
| 2. | ABS actuator and electric unit (control unit) | ABS actuator and electric unit (control unit) transmits the vehicle speed signal to BCM via CAN communication.<br>BCM also receives the vehicle speed signal from the combination meter via CAN communication. BCM compares both signals to detect the vehicle speed.<br>Refer to BRC-7, "Component Parts Location" for detailed installation location. |
| 3. | Transmission range switch | Transmission range switch detects the CVT shift selector lever position. |
| 4. | IPDM E/R | Starter control relay is used for the engine starting function. Starter control relay is controlled by IPDM E/R while communicating with BCM. IPDM E/R sends the starter control relay statu signal to BCM. |
| 5. | BCM | BCM controls NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS [NVIS (NATS)] and VEHICLE SECURITY SYSTEM.<br>When the ignition switch is turned ON, BCM performs ID verification between BCM and ECM. If the ID verification result is OK, ECM can start engine.<br>Refer to BCS-77, "BODY CONTROL SYSTEM : Component Parts Location" for detailed installation location. |
| 6. | Clutch interlock switch | Clutch interlock switch detects that clutch pedal is depressed, and then transmits ON/OFF signal to the BCM. |
| 7. | Stop lamp switch | Stop lamp switch detects that brake pedal is depressed, and then transmits ON/OFF signal to the BCM. |
| 8. | Main power window and door lock/unlock switch | Door lock and unlock switch is integrated into the main power window and door lock/unlock switch.<br>Door lock and unlock switch transmits door lock/unlock operation signal to BCM.<br>Refer to PWC-6, "Component Parts Location". |
| 9. | CVT shift selector (park position switch) | Park position switch is integrated into the CVT shift selector and detects that the selector lever is in the P (park) position, then transmits ON/OFF signal to the BCM and IPDM E/R. |

| No. | Component | Function |
|---|---|---|
| 10. | Front door switch LH | Door switch detects door open/close condition and then transmits ON/OFF signal to BCM. |
| 11. | Rear door switch LH | Door switch detects door open/close condition and then transmits ON/OFF signal to BCM. |
| 12. | Ignition switch | Input ignition switch ON/OFF condition to BCM. |
| 13. | NATS antenna amp. | ID verification is performed between the BCM and the transponder integrated into the key via the NATS antenna amp. |
| 14. | Remote keyless entry receiver | Remote keyless entry receiver receives button operation signal and key ID signal then transmits them to the BCM. |

## NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : CVT Shift Selector (Park Position Switch)

INFOID:0000000012430443

Park position switch detects that CVT shift selector is in the P (Park) 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 (Park) position signal from CVT shift selector (park position switch)
- P/N position signal from TCM
- P (Park) 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 (Park) position signal from CVT shift selector (park position switch)
- P/N position signal from TCM
- P/N position signal from BCM (CAN)

## NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : BCM

INFOID:0000000012430444

BCM controls ENGINE START FUNCTION, NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS (NATS) and VEHICLE SECURITY SYSTEM.
BCM performs the ID verification between BCM and key. If the ID verification result is OK, 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.

## NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : ECM

INFOID:0000000012430445

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 invalid, the engine can not start.

## NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : IPDM E/R

INFOID:0000000012430446

IPDM E/R has the starter control relay inside. Starter control relay is used for the engine starting function. IPDM E/R controls this relay while communicating with BCM.

## NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : Combination Meter

INFOID:0000000012430447

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.

## NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : Door Switch

INFOID:0000000012430448

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

## NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : Remote Keyless Entry Receiver

INFOID:0000000012430449

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

## NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : Security Indicator Lamp

INFOID:0000000012430450

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 (NATS) is on board.

## NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : Starter Relay

INFOID:0000000012430451

Engine starting system functions by controlling starter control relay.
Starter control relay is controlled by IPDM E/R on request from BCM.
IPDM E/R transmits starter control relay statu signal to BCM via CAN communication.

## NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : Stop Lamp Switch

INFOID:0000000012430452

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

## NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : Transmission Range Switch

INFOID:0000000012430453

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 (Park) position signal from CVT shift selector (park position switch)
- P/N position signal from TCM
- P (Park) position signal from IPDM E/R (CAN)
- P/N position signal from IPDM E/R (CAN)
- P/N position signal from TCM (CAN)

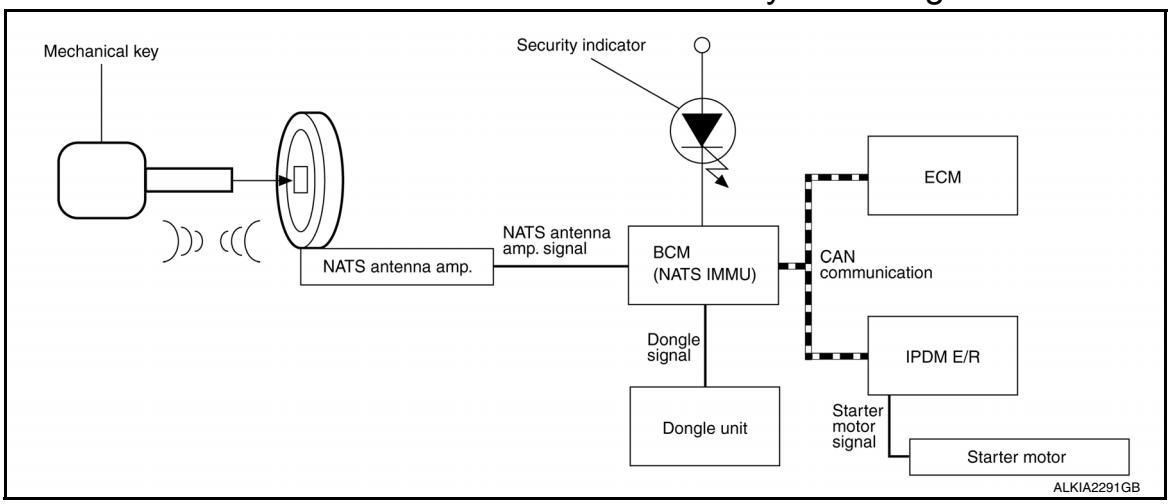
IPDM E/R confirms the CVT shift selector position with the following 3 signals:
- P (Park) position signal from CVT shift selector (park position switch)
- P/N position signal from TCM
- P/N position signal from BCM (CAN)

# SYSTEM

## NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS

### NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : System Diagram

INFOID:0000000012430454




### NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : System Description

INFOID:0000000012430455

#### INPUT/OUTPUT SIGNAL CHART

BCM

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

#### SYSTEM DESCRIPTION

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

- Engine immobilizer shows high anti-theft performance to prevent engine from starting by anyone other than the owner.
- Only a key with key ID registered in BCM and ECM can start engine, and shows high anti-theft performance to prevent key from being copied or stolen.
- Security indicator always flashes with mechanical key removed condition (key switch: OFF)
- Therefore, NATS warns outsiders that the vehicle is equipped with the anti-theft system.
- If system detects malfunction, security indicator illuminates when ignition switch is turned to ON position.
- If the owner requires, ignition key ID or mechanical key ID can be registered for up to 5 keys.
- During trouble diagnosis or when the following parts have been replaced, and if ignition key is added, registration[*1] is required:

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

- ECM
- BCM
- Ignition key
- Remote keyless entry receiver

- NATS trouble diagnosis, system initialization and additional registration of other mechanical key IDs must be carried out using CONSULT.
- When NATS initialization has been completed, the ID of the inserted mechanical key or mechanical key IDs can be carried out.
- Possible symptom of NATS malfunction is “Engine cannot start”. Identify the possible causes according to “Work Flow”, Refer to SEC-139, "Work Flow".
- If ECM other than Genuine NISSAN is installed, the engine cannot be started. For ECM replacement procedure, refer to EC-477, "Removal and Installation".

#### PRECAUTIONS FOR KEY REGISTRATION

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

## SECURITY INDICATOR

- Always flashes with ignition key in the OFF position.

## MAINTENANCE INFORMATION

**CAUTION:**

**It is necessary to perform NATS ID registration when replacing any of the following parts:**
**If ID registration is mot performed the electrical system may not operate properly.**

- **BCM**
- **ECM**
- **IPDM E/R**
- **Ignition key**
- **NATS antenna amp.**
- **Dongle unit**
- **Combination meter**

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

INFOID:0000000012542531

#### APPLICATION ITEM
CONSULT performs the following functions via CAN communication with BCM.

| Direct Diagnostic Mode | Description |
|---|---|
| ECU Identification | The BCM part number is displayed. |
| Self Diagnostic Result | The BCM self diagnostic results are displayed. |
| Data Monitor | The BCM input/output data is displayed in real time. |
| Active Test | The BCM activates outputs to test components. |
| Work support | The settings for BCM functions can be changed. |
| Configuration | • The vehicle specification can be read and saved.<br>• The vehicle specification can be written when replacing BCM. |
| CAN DIAG SUPPORT MNTR | The result of transmit/receive diagnosis of CAN communication is displayed. |

#### SYSTEM APPLICATION
BCM can perform the following functions.

| System | Sub System | Direct Diagnostic Mode | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | ECU Identification | Self Diagnostic Result | Data Monitor | Active Test | Work support | Configuration | CAN DIAG SUPPORT MNTR |
| Door lock | DOOR LOCK | | | × | × | × | | |
| Rear window defogger | REAR DEFOGGER | | | × | × | | | |
| Warning chime | BUZZER | | | × | × | | | |
| Interior room lamp timer | INT LAMP | | | × | × | × | | |
| Remote keyless entry system | MULTI REMOTE ENT | | | × | × | × | | |
| Exterior lamp | HEAD LAMP | | | × | × | × | | |
| Wiper and washer | WIPER | | | × | × | × | | |
| Turn signal and hazard warning lamps | FLASHER | | | × | × | | | |
| Air conditioner | AIR CONDITIONER | | | × | | | | |
| Combination switch | COMB SW | | | × | | | | |
| BCM | BCM | × | × | | | × | × | × |
| Immobilizer | IMMU | | × | | × | × | | |
| Interior room lamp battery saver | BATTERY SAVER | | | × | × | × | | |
| Vehicle security system | THEFT ALM | | | × | | × | | |
| RAP system | RETAINED PWR | | | × | | × | | |
| Signal buffer system | SIGNAL BUFFER | | | × | | | | |
| TPMS | AIR PRESSURE MONITOR | | × | × | × | × | | |
| Panic alarm system | PANIC ALARM | | | | × | | | |

# IMMU

## IMMU : CONSULT Function (BCM - IMMU)

INFOID:0000000012542532

### SELF DIAGNOSTIC RESULT

Refer to BCS-115, "DTC Index".

### ACTIVE TEST

| Test Item | Description |
|---|---|
| THEFT IND | This test is able to check security indicator operation [On/Off]. |

### WORK SUPPORT

| Support Item | Setting | Description |
|---|---|---|
| CONFIRM DONGLE ID | — | Dongle ID code can be read. |

# DIAGNOSIS SYSTEM (IPDM E/R)

## Diagnosis Description

INFOID:0000000012542533

### AUTO ACTIVE TEST

Description

In auto active test, the IPDM E/R sends a drive signal to the following systems to check their operation:

- Front wiper (LO, HI)
- Parking lamp
- Side marker lamp
- License plate lamp
- Tail lamp
- Front fog lamp
- Headlamp (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan

Operation Procedure

**NOTE:**

Never perform auto active test in the following conditions:

- Passenger door is open
- CONSULT is connected

1. Close the hood and lift the wiper arms from the windshield. (Prevent windshield damage due to wiper operation)
   **NOTE:**
   When auto active test is performed with hood opened, sprinkle water on windshield beforehand.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON, and within 20 seconds, press the driver door switch 10 times. Then turn the ignition switch OFF.
4. Turn the ignition switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.
5. After a series of the following operations is repeated 3 times, auto active test is completed.

**NOTE:**

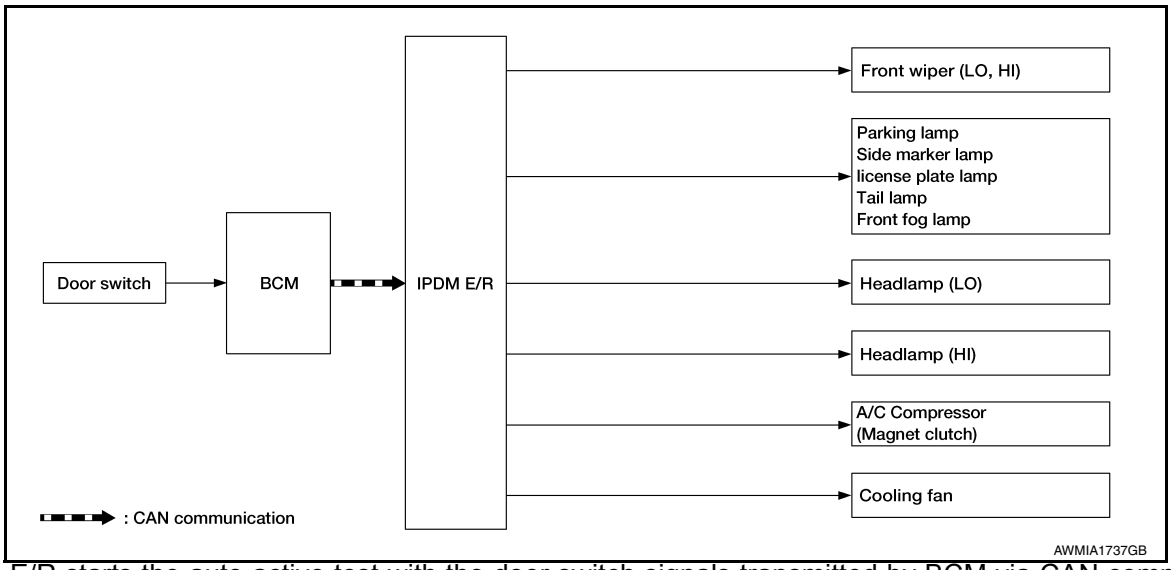
- When auto active test has to be cancelled halfway through test, turn the ignition switch OFF.
- When auto active test is not activated, door switch may be the cause. Check door switch. Refer to DLK-98, "Component Function Check" (with Intelligent Key system) or DLK-232, "Component Function Check" (without Intelligent Key system).

Inspection in Auto Active Test

When auto active test is actuated, the following operation sequence is repeated 3 times.

| Operation sequence | Inspection location | Operation |
|---|---|---|
| 1 | Front wiper | LO for 5 seconds → HI for 5 seconds |
| 2 | • Parking lamp<br>• Side marker lamp<br>• License plate lamp<br>• Tail lamp<br>• Front fog lamp (if equipped) | 10 seconds |
| 3 | Headlamp | LO for 10 seconds →HI ON ⇔ OFF 5 times |
| 4 | A/C compressor (magnet clutch) | ON ⇔ OFF 5 times |
| 5 | Cooling fan | LO for 5 seconds → MID for 3 seconds → HI for 2 seconds |

Concept of Auto Active Test




- IPDM E/R starts the auto active test with the door switch signals transmitted by BCM via CAN communication. Therefore, the CAN communication line between IPDM E/R and BCM is considered normal if the auto active test starts successfully.
- The auto active test facilitates troubleshooting if any systems controlled by IPDM E/R cannot be operated.

Diagnosis Chart in Auto Active Test

| Symptom | Inspection contents | | Possible cause |
|---|---|---|---|
| Any of the following components do not operate:<br>• Parking lamp<br>• Side marker lamp<br>• License plate lamp<br>• Tail lamp<br>• Front fog lamp<br>• Headlamp (HI, LO)<br>• Front wiper (HI, LO) | Perform auto active test.<br>Does the applicable system operate? | YES | BCM signal input circuit |
| | | NO | • Lamp or motor<br>• Lamp or motor ground circuit<br>• Harness or connector between IPDM E/R and applicable system<br>• IPDM E/R |
| A/C compressor does not operate | Perform auto active test.<br>Does the magnet clutch operate? | YES | • BCM signal input circuit<br>• CAN communication signal between BCM and ECM<br>• CAN communication signal between ECM and IPDM E/R |
| | | NO | • Magnet clutch<br>• Harness or connector between IPDM E/R and magnet clutch<br>• IPDM E/R |
| Cooling fan does not operate | Perform auto active test.<br>Does the cooling fan operate? | YES | • ECM signal input circuit<br>• CAN communication signal between ECM and IPDM E/R |
| | | NO | • Cooling fan motor<br>• Harness or connector between IPDM E/R and cooling fan motor<br>• IPDM E/R |

## CONSULT Function (IPDM E/R)

INFOID:0000000012542534

### APPLICATION ITEM

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

| Direct Diagnostic Mode | Description |
|---|---|
| ECU Identification | The IPDM E/R part number is displayed. |
| Self Diagnostic Result | The IPDM E/R self diagnostic results are displayed. |

| Direct Diagnostic Mode | Description |
|---|---|
| Data Monitor | The IPDM E/R input/output data is displayed in real time. |
| Active Test | The IPDM E/R activates outputs to test components. |
| CAN Diag Support Mntr | The result of transmit/receive diagnosis of CAN communication is displayed. |

## ECU IDENTIFICATION

The IPDM E/R part number is displayed.

## SELF DIAGNOSTIC RESULT

Refer to PCS-20, "DTC Index".

## DATA MONITOR

| Monitor Item [Unit] | Main Signals | Description |
|---|---|---|
| MOTOR FAN REQ [1/2/3/4] | × | Indicates cooling fan speed signal received from ECM on CAN communication line |
| AC COMP REQ [On/Off] | × | Indicates A/C compressor request signal received from ECM on CAN communication line |
| TAIL&CLR REQ [On/Off] | × | Indicates position light request signal received from BCM on CAN communication line |
| HL LO REQ [On/Off] | × | Indicates low beam request signal received from BCM on CAN communication line |
| HL HI REQ [On/Off] | × | Indicates high beam request signal received from BCM on CAN communication line |
| FR FOG REQ [On/Off] | × | Indicates front fog light request signal received from BCM on CAN communication line |
| FR WIP REQ [Stop/1LOW/Low/Hi] | × | Indicates front wiper request signal received from BCM on CAN communication line |
| WIP AUTO STOP [STOP P/ACT P] | × | Indicates condition of front wiper auto stop signal |
| WIP PROT [Off/BLOCK] | × | Indicates condition of front wiper fail-safe operation |
| IGN RLY1 -REQ [On/Off] | | Indicates ignition switch ON signal received from BCM on CAN communication line |
| IGN RLY [On/Off] | × | Indicates condition of ignition relay |
| PUSH SW [On/Off] | | Indicates condition of push-button ignition switch |
| INTER/NP SW [On/Off] | | Indicates condition of CVT shift position |
| ST RLY CONT [On/Off] | | Indicates starter relay status signal received from BCM on CAN communication line |
| IHBT RLY -REQ [On/Off] | | Indicates starter control relay signal received from BCM on CAN communication line |
| ST/INHI RLY [Off/ ST /INHI] | | Indicates condition of starter relay and starter control relay |
| DETENT SW [On/Off] | | Indicates condition of CVT shift selector (park position switch) |
| DTRL REQ [Off] | | Indicates daytime running light request signal received from BCM on CAN communication line |
| THFT HRN REQ [On/Off] | | Indicates theft warning horn request signal received from BCM on CAN communication line |
| HORN CHIRP [On/Off] | | Indicates horn reminder signal received from BCM on CAN communication line |

## ACTIVE TEST

| Test item | Description |
|---|---|
| HORN | This test is able to check horn operation [On]. |
| FRONT WIPER | This test is able to check wiper motor operation [Hi/Lo/Off]. |

| Test item | Description |
|---|---|
| MOTOR FAN | This test is able to check cooling fan operation [4/3/2/1]. |
| EXTERNAL LAMPS | This test is able to check external lamp operation [Fog/Hi/Lo/TAIL/Off]. |

CAN DIAG SUPPORT MNTR

Refer to LAN-13, "CAN Diagnostic Support Monitor".

# ECU DIAGNOSIS INFORMATION

## ECM, IPDM E/R, BCM

### List of ECU Reference

INFOID:0000000012430460

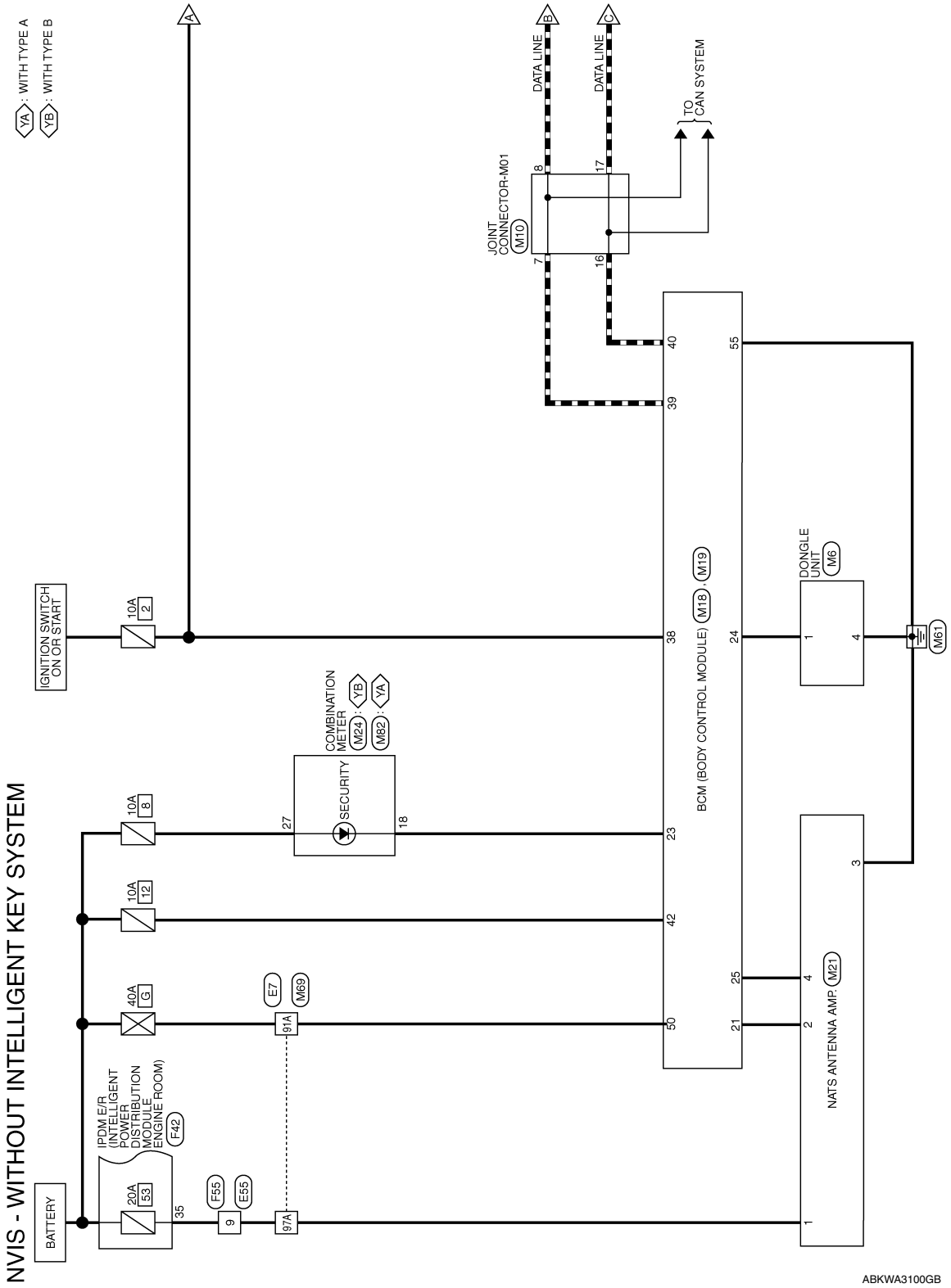
| ECU | Reference |
|---|---|
| ECM | EC-71, "Reference Value" |
| | EC-99, "Wiring Diagram" |
| | EC-83, "Fail Safe" |
| | EC-85, "DTC Inspection Priority Chart" |
| | EC-87, "DTC Index" |
| IPDM E/R | PCS-13, "Reference Value" |
| | PCS-21, "Wiring Diagram" |
| | PCS-19, "Fail-safe" |
| | PCS-20, "DTC Index" |
| BCM | BCS-101, "Reference Value" |
| | BCS-117, "Wiring Diagram" |
| | BCS-115, "Fail-safe" |
| | BCS-115, "DTC Inspection Priority Chart" |
| | BCS-115, "DTC Index" |

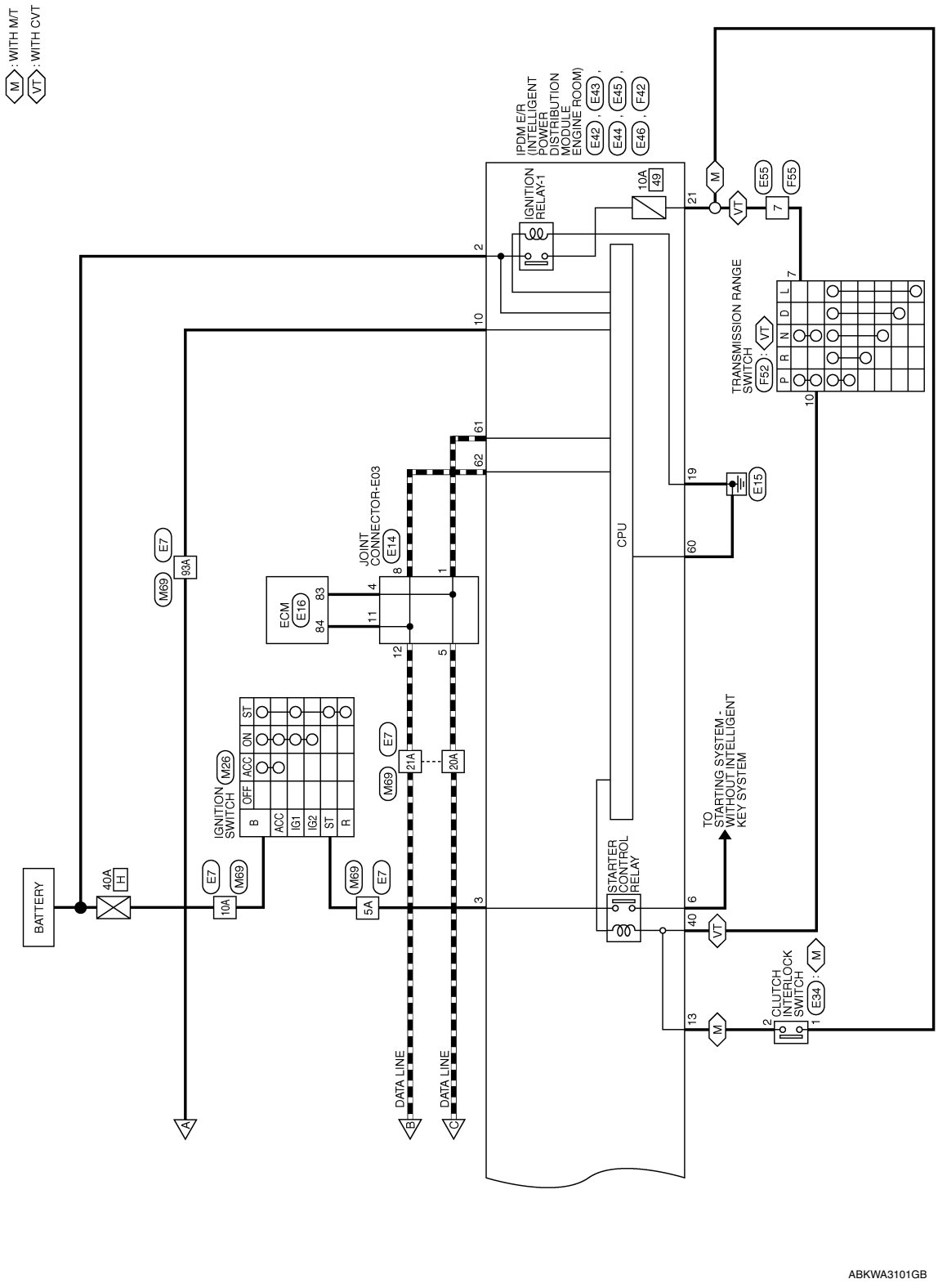
# WIRING DIAGRAM

## NVIS (NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

### Wiring Diagram

INFOID:0000000012430461



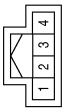



ABKWA3101GB

## NVIS CONNECTORS - WITHOUT INTELLIGENT KEY SYSTEM

| Connector No. | M6 |
|---|---|
| Connector Name | DONGLE UNIT |
| Connector Color | WHITE |

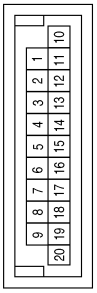
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | SB | – |
| 4 | B | – |

| Connector No. | M10 |
|---|---|
| Connector Name | JOINT CONNECTOR-M01 |
| Connector Color | BLUE |

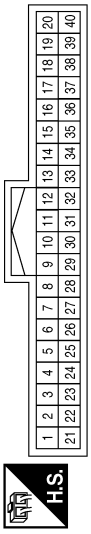
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 7 | L | – |
| 8 | L | – |
| 16 | P | – |
| 17 | P | – |

| Connector No. | M18 |
|---|---|
| Connector Name | BCM (BODY CONTROL MODULE) (WITHOUT INTELLIGENT KEY SYSTEM) |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 21 | P | IMMOBILIZER ONE WAY COMMUNICATION (CLOCK) |
| 23 | GR | SECURITY INDICATOR OUTPUT |
| 24 | SB | AUDIO/DONGLE LINK (SERIAL) |
| 25 | LG | IMMOBILIZER TWO WAY COMMUNICATION |
| 38 | O | IGN SW |
| 39 | L | CAN-H |
| 40 | P | CAN-L |

| Connector No. | M19 |
|---|---|
| Connector Name | BCM (BODY CONTROL MODULE) (WITHOUT INTELLIGENT KEY SYSTEM) |
| Connector Color | WHITE |

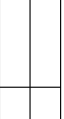
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 42 | Y | BATTERY (FUSE) |
| 50 | G | BATTERY (F/L) |
| 55 | B | GND |

| Connector No. | M21 |
|---|---|
| Connector Name | NATS ANTENNA AMP. |
| Connector Color | WHITE |

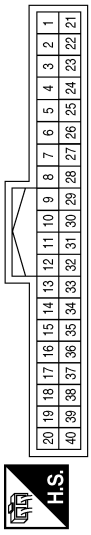
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | BR | – |
| 2 | P | – |
| 3 | B | – (WITHOUT INTELLIGENT KEY SYSTEM) |
| 4 | LG | – (WITHOUT INTELLIGENT KEY SYSTEM) |

| Connector No. | M24 |
|---|---|
| Connector Name | COMBINATION METER (WITH TYPE B) |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 18 | GR | SECURITY IND |
| 27 | R/W | BAT |

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| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 5A | W | – |
| 10A | P | – |
| 20A | P | – |
| 21A | L | – |
| 91A | G | – |
| 93A | O | – (WITHOUT INTELLIGENT KEY SYSTEM) |
| 97A | BR | – |

| Connector No. | M69 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | 5A |
| | | | | | | | | | | | | 4A | 3A | 2A | 1A |
| | | | | | | | | | | | | 9A | 8A | 7A | 6A |
| | | | | | | | | | | | | 10A | | | |
| 21A | 20A | 19A | 18A | 17A | 16A | 15A | 14A | 13A | 12A | 11A | | | | | |
| | 30A | 29A | 28A | 27A | 26A | 25A | 24A | 23A | 22A | | | | | | |
| 41A | 40A | 39A | 38A | 37A | 36A | 35A | 34A | 33A | 32A | 31A | | | | | |
| | 50A | 49A | 48A | 47A | 46A | 45A | 44A | 43A | 42A | | | | | | |
| 61A | 60A | 59A | 58A | 57A | 56A | 55A | 54A | 53A | 52A | 51A | | | | | |
| | 70A | 69A | 68A | 67A | 66A | 65A | 64A | 63A | 62A | | | | | | |
| 81A | 80A | 79A | 78A | 77A | 76A | 75A | 74A | 73A | 72A | 71A | | | | | |
| | 90A | 89A | 88A | 87A | 86A | 85A | 84A | 83A | 82A | | | | | | |
| | | | | | | | | | | | | 95A | 94A | 93A | 92A | 91A |
| | | | | | | | | | | | | 100A | 99A | 98A | 97A | 96A |

| Connector No. | M26 |
|---|---|
| Connector Name | IGNITION SWITCH |
| Connector Color | WHITE |

H.S.

| | | | |
|---|---|---|---|
| B | ST | IG1 | |
| R | ACC | IG2 | |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| B | P | – |
| ST | W | – |

| Connector No. | M82 |
|---|---|
| Connector Name | COMBINATION METER (WITH TYPE A) |
| Connector Color | WHITE |

H.S.

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | |
| 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | | | |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 18 | GR | SECURITY |
| 27 | R/W | BAT |

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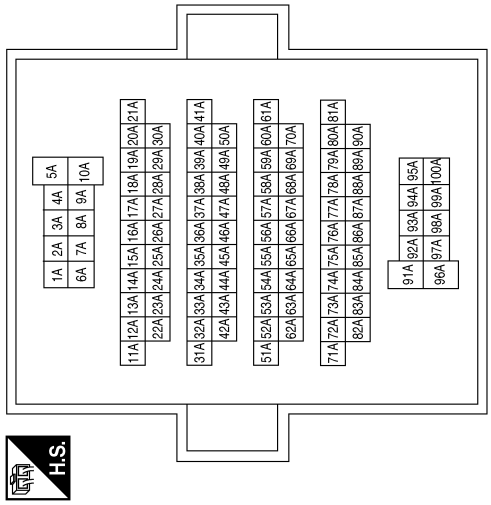
| Connector No. | E7 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

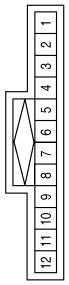
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 5A | W | – |
| 10A | L | – |
| 20A | P | – |
| 21A | L | – |
| 91A | Y | – |
| 93A | L | – |
| 97A | G/B | – |

| Connector No. | E14 |
|---|---|
| Connector Name | JOINT CONNECTOR-E03 |
| Connector Color | BLUE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | P | – |
| 4 | P | – |
| 5 | P | – |
| 8 | L | – |
| 11 | L | – |
| 12 | L | – |

| Connector No. | E42 |
|---|---|
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | BLACK |

H.S.


| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 2 | Y | F/L MAIN (+B2) |

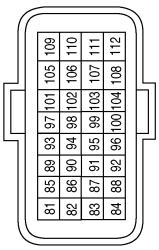
| Connector No. | E34 |
|---|---|
| Connector Name | CLUTCH INTERLOCK SWITCH |
| Connector Color | BROWN |

H.S.


| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | G | – (WITHOUT INTELLIGENT KEY SYSTEM) |
| 2 | LG | – (WITHOUT INTELLIGENT KEY SYSTEM) |

| Connector No. | E16 |
|---|---|
| Connector Name | ECM |
| Connector Color | BLACK |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 83 | P | CAN-L |
| 84 | L | CAN-H |

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| Connector No. | E43 |
|---|---|
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | BLACK |

H.S.

| 5 | 4 | 3 |
|---|---|---|
| 8 | 7 | 6 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 3 | W | F/L IGNSW (WITHOUT INTELLIGENT KEY SYSTEM) |
| 6 | R | STARTER MOTOR |

| Connector No. | E44 |
|---|---|
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | BROWN |

H.S.

| 11 | | 10 | 9 |
|---|---|---|---|
| 16 | 15 | 14 | 13 | 12 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 10 | L | IGNSW |
| 13 | LG | CLUTCH-I/L-SW (WITHOUT INTELLIGENT KEY SYSTEM) |

| Connector No. | E45 |
|---|---|
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | BROWN |

H.S.

| 21 | 20 | | 19 | 18 | 17 |
|---|---|---|---|---|---|
| 28 | 27 | 26 | 25 | 24 | 23 | 22 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 19 | B | P-GND |
| 21 | R | AT ECU (WITH CVT) |
| 21 | G | CLUTCH I/L SW (WITH M/T) |

| Connector No. | E46 |
|---|---|
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | WHITE |

H.S.

| 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 60 | B | S GND |
| 61 | P | CAN-L |
| 62 | L | CAN-H |

| Connector No. | E55 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | GRAY |

H.S.

| 1 | 2 | 3 | | 4 | 5 |
|---|---|---|---|---|---|
| 6 | 7 | 8 | 9 | 10 | 11 | 12 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 7 | R | – |
| 9 | G/B | – |

| Connector No. | F42 |
|---|---|
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | WHITE |

H.S.

| 33 | 32 | | 31 | 30 | 29 |
|---|---|---|---|---|---|
| 40 | 39 | 38 | 37 | 36 | 35 | 34 |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 35 | BR | ECM BAT |
| 40 | BR | NPSW |

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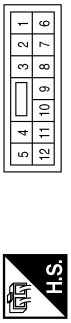
| Connector No. | F55 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | GRAY |




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 7 | R | – |
| 9 | BR | – |

| Connector No. | F52 |
|---|---|
| Connector Name | TRANSMISSION RANGE SWITCH |
| Connector Color | BLACK |


| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 7 | R | – |
| 10 | BR | – |

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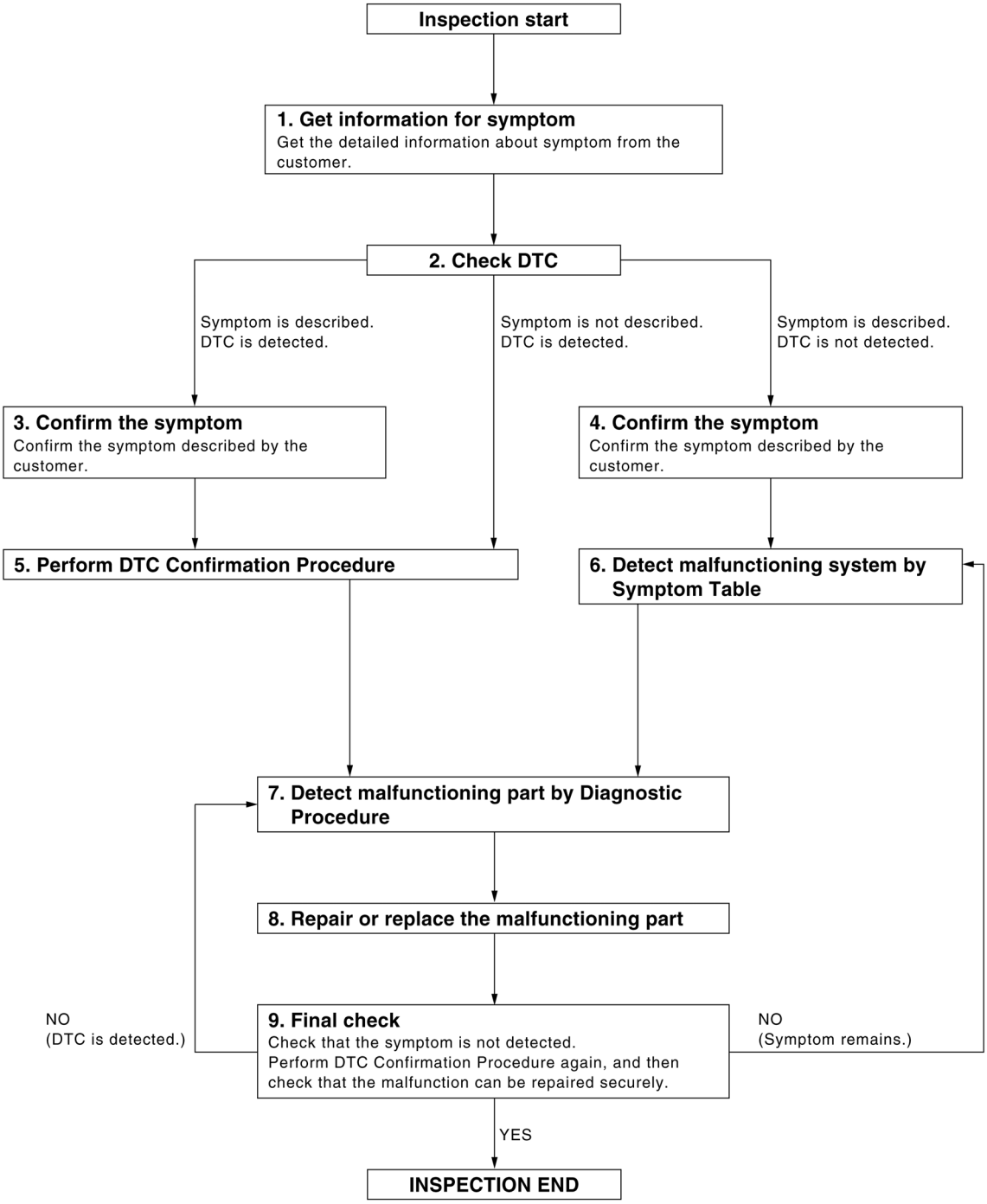
# BASIC INSPECTION

## DIAGNOSIS AND REPAIR WORKFLOW

### Work Flow

INFOID:0000000012430462

#### OVERALL SEQUENCE

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DETAILED FLOW

## 1.GET INFORMATION FOR SYMPTOM

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

>> GO TO 2.

## 2.CHECK DTC

1. Check DTC for BCM.
2. Perform the following procedure if DTC is displayed.

- Erase DTC.
- Study the relationship between the cause detected by DTC and the symptom described by the customer.

3. Check related service bulletins for information.

Is any symptom described and any DTC detected?

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

## 3.CONFIRM THE SYMPTOM

Confirm the symptom described by the customer.
Connect CONSULT to the vehicle in “Data Monitor” and check real-time diagnosis results.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

## 4.CONFIRM THE SYMPTOM

Confirm the symptom described by the customer.
Connect CONSULT to the vehicle in “Data Monitor” and check real-time diagnosis results.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

## 5.PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC Confirmation Procedure for the displayed DTC, and then check that DTC is detected again.
If two or more DTCs are detected, refer to BCS-115, "DTC Inspection Priority Chart" (BCM) 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 TABLE

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

>> 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 circuit inspection. A short circuit inspection is also required for the circuit check in the Diagnostic Procedure.

>> 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 8, perform DTC Confirmation Procedure or Component Function Check again, and then check that the malfunctions have been fully repaired.
When symptom was described by the customer, refer to the confirmed symptom in step 3 or 4, and check that the symptom is not detected.

Does the symptom reappear?

YES (DTC is detected)>>GO TO 7.
YES (Symptom remains)>>GO TO 6.
NO >> Inspection End.

# INSPECTION AND ADJUSTMENT
# ECM RE-COMMUNICATING FUNCTION

## ECM RE-COMMUNICATING FUNCTION : Description

INFOID:0000000012430463

Performing following procedure can automatically perform re-communication of ECM and BCM, but only when the ECM has been replaced with a new one (*1).
*1: New one means an ECM which has never been energized on-board.
(In this step, initialization procedure by CONSULT is not necessary)
**NOTE:**
- **When registering new Key IDs or replacing the ECM that is not brand new, refer to CONSULT Immobilizer mode and follow the on-screen instructions.**
- **If multiple keys are attached to the key holder, separate them before work.**
- **Distinguish keys with unregistered key ID from those with registered ID.**

## ECM RE-COMMUNICATING FUNCTION : Special Repair Requirement

INFOID:0000000012430464

### 1.PERFORM ECM RE-COMMUNICATING FUNCTION

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

Can engine be started?

YES >> Procedure is completed.
NO >> Initialize control unit. Refer to CONSULT Immobilizer mode and follow the on-screen instructions.

# DTC/CIRCUIT DIAGNOSIS

## P1610 LOCK MODE

### Description

INFOID:0000000012430465

When the starting operation is carried more than five times consecutively under the following conditions, NATS will shift to the mode which prevents the engine from being started.
- Unregistered mechanical key is used.
- BCM or ECM's malfunctioning.

### DTC Logic

INFOID:0000000012430466

#### DTC DETECTION LOGIC

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

#### DTC CONFIRMATION PROCEDURE

**1.** PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check “Self Diagnostic Result” using CONSULT.

Is DTC detected?

YES >> Refer to SEC-143, "Diagnosis Procedure".
NO >> Inspection End.

### Diagnosis Procedure

INFOID:0000000012430467

**1.** CHECK ENGINE START FUNCTION

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

Does the engine start?

YES >> Inspection End.
NO >> GO TO 2.

**2.** CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> Inspection End.

# B2190, P1614 NATS ANTENNA AMP.

## Description

INFOID:0000000012430468

Performs ID verification through BCM and NATS antenna amplifier when ignition key is inserted and ignition switch turned ON.
Prohibits the start of engine when an unregistered ID of ignition key is used.

## DTC Logic

INFOID:0000000012430469

### DTC DETECTION LOGIC

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

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Insert ignition key into the key cylinder.
2. Turn ignition switch ON.
3. Check “Self Diagnostic Result” using CONSULT.

Is DTC detected?

YES >> Refer to SEC-144, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430470

Regarding Wiring Diagram information, refer to SEC-132, "Wiring Diagram".

#### 1.CHECK NATS ANTENNA AMP. INSTALLATION

Check NATS antenna amp. installation. Refer to SEC-159, "Removal and Installation".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Reinstall NATS antenna amp. correctly.

#### 2.CHECK NVIS (NATS) IGNITION KEY ID CHIP

Start engine with another registered NATS ignition key.

Does the engine start?

YES >> • Ignition key ID chip is malfunctioning.
• Replace the ignition key.
• Perform initialization with CONSULT.
For initialization, refer to CONSULT Immobilizer mode and follow the on-screen instructions.
NO >> GO TO 3.

#### 3.CHECK POWER SUPPLY FOR NATS ANTENNA AMP.

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

| NATS antenna amp. | | Ground | Voltage (Approx.) |
|---|---|---|---|
| Connector | Terminal | | |
| M21 | 1 | | Battery voltage |

Is the inspection result normal?

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

## 4. CHECK NATS ANTENNA AMP. GROUND LINE CIRCUIT

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

| NATS antenna amp. | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M21 | 3 | | Yes |

Is the inspection result normal?

YES >> GO TO 5.
NO >> • Repair or replace harness.
**NOTE:**
If harness is OK, replace BCM BCS-137, "Removal and Installation". Perform initialization with CONSULT. For initialization, refer to CONSULT Immobilizer mode and follow the on-screen instructions.

## 5. CHECK NATS ANTENNA AMP. SIGNAL LINE- 1

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

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

Is the inspection result normal?

YES >> GO TO 6.
NO >> • Repair or replace harness.
**NOTE:**
If harness is OK, replace BCM BCS-137, "Removal and Installation". Perform initialization with CONSULT. For initialization, refer to CONSULT Immobilizer mode and follow the on-screen instructions.

## 6. CHECK NATS ANTENNA AMP. SIGNAL LINE- 2

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

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

Is the inspection result normal?

YES >> NATS antenna amp. is malfunctioning. Replace NATS antenna amp. Refer to SEC-159, "Removal and Installation".

NO >> • Repair or replace harness.
**NOTE:**
If harness is OK, replace BCM, refer to BCS-137, "Removal and Installation". Perform initialization with CONSULT. For initialization, refer to CONSULT Immobilizer mode and follow the on-screen instructions.

# B2191, P1615 DIFFERENCE OF KEY

## Description

INFOID:0000000012430471

Performs ID verification through BCM when mechanical key is inserted in the ignition key cylinder.
Prohibits the release of steering lock or start of engine when an unregistered ID of mechanical key is used.

## DTC Logic

INFOID:0000000012430472

### DTC DETECTION LOGIC

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

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Insert mechanical key into the key cylinder.
2. Check “Self Diagnostic Result” using CONSULT.

Is DTC detected?

YES >> Refer to SEC-147, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430473

#### 1.PERFORM INITIALIZATION

Perform initialization with CONSULT. Re-register all mechanical keys.
For initialization and registration of mechanical key. Refer to CONSULT Immobilizer mode and follow the on-screen instructions.

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

YES >> Mechanical key was unregistered.
NO >> BCM is malfunctioning.
- Replace BCM. Refer to BCS-137, "Removal and Installation".
- Perform initialization again.

# B2192, P1611 ID DISCORD, IMMU-ECM

## Description

INFOID:0000000012430474

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

## DTC Logic

INFOID:0000000012430475

### DTC DETECTION LOGIC

**NOTE:**

- If DTC B2192 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-127, "DTC Logic".
- If DTC B2192 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-128, "DTC Logic".

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

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check “Self Diagnostic Result” using CONSULT.

Is DTC detected?

YES >> Refer to SEC-148, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430476

#### 1.PERFORM INITIALIZATION

Perform initialization with CONSULT. Re-register all mechanical keys.
For initialization and registration of mechanical key, refer to CONSULT Immobilizer mode and follow the on-screen instructions.

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

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

#### 2.REPLACE BCM

1. Replace BCM. Refer to BCS-137, "Removal and Installation".
2. Perform initialization with CONSULT. Re-register all mechanical keys.
   For initialization and registration of mechanical key, refer to CONSULT Immobilizer mode and follow the on-screen instructions.

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

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

#### 3.REPLACE ECM

1. Replace ECM. Refer to EC-477, "Removal and Installation".
2. Perform initialization with CONSULT. Re-register all mechanical keys.
   For initialization and registration of mechanical key, refer to CONSULT Immobilizer mode and follow the on-screen instructions.

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

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

## 4.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

>> Inspection End.

# B2193, P1612 CHAIN OF ECM-IMMU

## Description

INFOID:0000000012430477

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

## DTC Logic

INFOID:0000000012430478

### DTC DETECTION LOGIC

**NOTE:**

- If DTC B2193 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-127, "DTC Logic".
- If DTC B2193 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-128, "DTC Logic".

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

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check “Self Diagnostic Result” using CONSULT.

Is DTC detected?

YES >> Refer to SEC-150, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430479

#### 1.REPLACE BCM

1. Replace BCM. Refer to BCS-137, "Removal and Installation".
2. Perform initialization with CONSULT.
   For initialization, refer to CONSULT Immobilizer mode and follow the on-screen instructions.

Does the engine start?

YES >> Inspection End.
NO >> ECM is malfunctioning.
- Replace ECM.
- Perform ECM re-communicating function.

# B2195 ANTI-SCANNING

## DTC Logic

INFOID:0000000012430480

### DTC DETECTION LOGIC

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

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

YES >> Refer to SEC-151, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430481

#### 1.CHECK SELF DIAGNOSTIC RESULT 1

1. Select “Self Diagnostic Result” of “BCM” using CONSULT.
2. Erase DTC.
3. Perform DTC Confirmation Procedure for DTC P2195. Refer to SEC-151, "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 customer’s approval to remove unspecified accessory part related to engine start, and then remove it.
2. Select “Self Diagnostic Result” of “BCM” using CONSULT.
3. Erase DTC.
4. Perform DTC CONFIRMATION PROCEDURE for DTC B2195. Refer to SEC-151, "DTC Logic".

Is DTC detected?

YES >> GO TO 4.
NO >> Inspection End.

#### 4.REPLACE BCM

1. Replace BCM. Refer to BCS-137, "Removal and Installation".
2. Perform initialization of BCM and registration of all ignition keys using CONSULT.
   For initialization and registration procedures, refer to CONSULT Immobilizer mode and follow the on-screen instructions.

>> Inspection End.

# B2196 DONGLE UNIT

## Description

INFOID:0000000012430482

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

## DTC Logic

INFOID:0000000012430483

### 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.)<br>• 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 Diagnostic Result” of “BCM” using CONSULT.

Is the DTC detected?

YES >> Refer to SEC-152, "Diagnosis Procedure".
NO >> Inspection End.

## Diagnosis Procedure

INFOID:0000000012430484

Regarding Wiring Diagram information, refer to SEC-132, "Wiring Diagram".

#### 1.PERFORM INITIALIZATION

1. Perform initialization of BCM and registration of all mechanical keys using CONSULT.
   For initialization and registration procedures, refer to CONSULT Immobilizer mode and follow the on-screen instructions
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 | |
| M18 | 24 | M6 | 1 | Yes |

4. Check continuity between BCM harness connector and ground.

| BCM | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M18 | 24 | | No |

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 | | |
| M6 | 4 | | Yes |

Is the inspection result normal?

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

# POWER SUPPLY AND GROUND CIRCUIT
## BCM
## BCM : Diagnosis Procedure

INFOID:0000000012542538

Regarding Wiring Diagram information, refer to BCS-117, "Wiring Diagram".

### 1.CHECK FUSES AND FUSIBLE LINK

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

| Terminal No. | Signal name | Fuses and fusible link No. |
|---|---|---|
| 37 | Battery power supply | 8 (10A) |
| 42 | | 12 (10A) |
| 50 | | G (40A) |
| 11 | Ignition switch ACC or ON | 18 (10A) |
| 38 | Ignition switch ON or START | 2 (10A) |

Is the fuse blown?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit.
NO >> GO TO 2.

### 2.CHECK POWER SUPPLY CIRCUIT

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

| BCM | | Ground | Ignition switch position | | |
|---|---|---|---|---|---|
| Connector | Terminal | | OFF | ACC | ON |
| M18 | 11 | — | 0 V | Battery voltage | Battery voltage |
| | 37 | | Battery voltage | | |
| | 38 | | 0 V | 0 V | |
| M19 | 42 | | Battery voltage | Battery voltage | |
| | 50 | | | | |

Is the inspection result normal?

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

### 3.CHECK GROUND CIRCUIT

Check continuity between BCM connector and ground.

| BCM | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M19 | 55 | — | Yes |

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair harness or connector.

# VEHICLE SECURITY INDICATOR

## Description

INFOID:0000000012430486

- Vehicle security indicator is built in combination meter.
- NATS (Nissan Anti-Theft System) condition is indicated by blink or illumination of vehicle security indicator.

## Component Function Check

INFOID:0000000012430487

### 1.CHECK FUNCTION

1. Perform “Active Test” of “THEFT IND” in the “IMMU” using CONSULT.
2. Check vehicle security indicator operation.

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

Is the inspection result normal?

YES >> Inspection End.
NO >> Refer to SEC-155, "Diagnosis Procedure (Type B)" or SEC-156, "Diagnosis Procedure (Type A)".

## Diagnosis Procedure (Type B)

INFOID:0000000012430488

Regarding Wiring Diagram information, refer to SEC-132, "Wiring Diagram".

### 1.SECURITY INDICATOR LAMP ACTIVE TEST

With CONSULT
Check “THEFT IND”” in “Active Test” of “IMMU”.

Without CONSULT
1. Disconnect BCM.
2. Check voltage between BCM harness connector M18 terminal 23 and ground.

| Connector | Terminals | | Condition | Voltage (V) (Approx.) |
|---|---|---|---|---|
| | (+) | (-) | | |
| M18 | 23 | Ground | ON | 0 |
| | | | OFF | Battery voltage |

Is the inspection result normal?

YES >> Security indicator lamp is OK.
NO >> GO TO 2.

### 2.SECURITY INDICATOR LAMP CHECK

Check security indicator lamp condition.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace combination meter. Refer to MWI-115, "Removal and Installation".

### 3.CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and security indicator lamp connector.
3. Check continuity between BCM connector M18 terminal 23 and combination meter connector M24 terminal 18.

| BCM | | Combination meter | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| M18 | 23 | M24 | 18 | Yes |

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

| BCM | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M18 | 23 | | No |

Is the inspection result normal?

YES >> Check the following:
- 10A fuse No. 8, located in fuse block (J/B)
- Harness for open or short between security indicator lamp and fuse.

NO >> Repair or replace harness.

## Diagnosis Procedure (Type A)

INFOID:0000000012430489

Regarding Wiring Diagram information, refer to SEC-132, "Wiring Diagram".

### 1.SECURITY INDICATOR LAMP ACTIVE TEST

With CONSULT
Check “THEFT IND”” in “Active Test” of “IMMU”.

Without CONSULT
1. Disconnect BCM.
2. Check voltage between BCM harness connector M18 terminal 23 and ground.

| Connector | Terminals | | Condition | Voltage (V) (Approx.) |
|---|---|---|---|---|
| | (+) | (-) | | |
| M18 | 23 | Ground | ON | 0 |
| | | | OFF | Battery voltage |

Is the inspection result normal?

YES >> Security indicator lamp is OK.
NO >> GO TO 2.

### 2.SECURITY INDICATOR LAMP CHECK

Check security indicator lamp condition.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace combination meter. Refer to MWI-54, "Removal and Installation".

### 3.CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and security indicator lamp connector.
3. Check continuity between BCM connector M18 terminal 23 and combination meter connector M82 terminal 18.

| BCM | | Combination meter | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| M18 | 23 | M82 | 18 | Yes |

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

| BCM | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M18 | 23 | | No |

Is the inspection result normal?

YES >> Check the following:
- 10A fuse No. 8, located in fuse block (J/B)
- Harness for open or short between security indicator lamp and fuse.

NO >> Repair or replace harness.

# SYMPTOM DIAGNOSIS

## NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS SYMPTOMS

### Symptom Table

INFOID:0000000012430490

**NOTE:**
- Before performing the diagnosis in the following table, check “SEC-139, "Work Flow"”.
- Check that vehicle is under the condition shown in “Conditions of vehicle” before starting diagnosis, and check each symptom.
- If the following symptoms are detected, check systems shown in the “Diagnosis/service procedure” column in this order.

CONDITIONS OF VEHICLE (OPERATING CONDITIONS)
- Mechanical key is not inserted into key cylinder.
- Ignition knob switch is not depressed.

| Symptom | Diagnosis/service procedure | Reference page |
|---|---|---|
| Security indicator does not turn ON or flash. | 1. Check vehicle security indicator | SEC-155 |
| | 2. Check Intermittent Incident | GI-42 |

# REMOVAL AND INSTALLATION

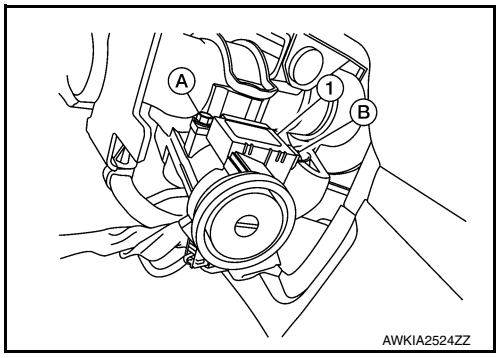
## NATS ANTENNA AMP.

### Removal and Installation

INFOID:0000000012430491

REMOVAL

1. Remove combination switch. Refer to BCS-75, "Removal and Installation".
2. Remove the NATS antenna amp bolt (A).
3. Disconnect the harness connector (B) from the NATS antenna amp. (1) and remove.




INSTALLATION

Installation is in the reverse order of removal.

**NOTE:**

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

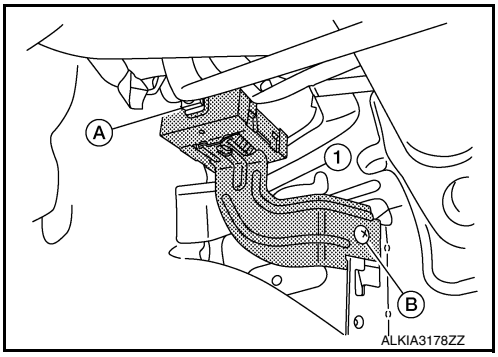
# REMOTE KEYLESS ENTRY RECEIVER

## Removal and Installation

INFOID:0000000012430492

### REMOVAL

1. Remove the glove box. Refer to IP-25, "Removal and Installation".
2. Disconnect the harness connector (A) from remote keyless entry receiver (1).
3. Remove screw (B) and remove remote keyless entry receiver.




### INSTALLATION

Installation is in the reverse order of removal.