# SECURITY CONTROL SYSTEM

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# < PRECAUTION > PRECAUTION PRECAUTIONS

#### Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT **PRE-TENSIONER**" INFOID:000000010259312

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

### WARNING:

Always observe the following items for preventing accidental activation.

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

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

#### WARNING:

Always observe the following items for preventing accidental activation.

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

## Precaution for Procedure without Cowl Top Cover

INFOID:000000010259313

INFOID:000000011402703

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



# Precautions for Removing Battery Terminal

• When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds. NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

 For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch. NOTE:



# PRECAUTIONS

# If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

[WITH INTELLIGENT KEY SYSTEM]

After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
 NOTE:

The removal of 12V battery may cause a DTC detection error.

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# SYSTEM DESCRIPTION COMPONENT PARTS

**Component Parts Location** 

INFOID:000000010259314



- 1. Inside key antenna (console) Refer to <u>DLK-12, "DOOR LOCK</u> <u>SYSTEM :</u> <u>Component Parts Location"</u>.
- 4. NATS antenna amp.
- ECM Refer to <u>EC-23, "Component Parts</u> <u>Location"</u> (for USA and CANADA), <u>EC-592, "Component Parts Loca-</u> <u>tion"</u> (for MEXICO).
- 10. Hood switch 2

- 2. A/T assembly Refer to <u>TM-11, "A/T CONTROL</u> <u>SYSTEM : Component Parts Loca-</u> <u>tion"</u>.
- Inside key antenna (instrument cen- 6. ter) Refer to <u>DLK-12, "DOOR LOCK</u> <u>SYSTEM :</u> <u>Component Parts Location"</u>.
- 8. Hood switch 1

- 3. Push-button ignition switch
  - IPDM E/R Refer to <u>PCS-4, "Component Parts</u> Location".
- 9. Horn
- ABS actuator and electric unit (control unit) Refer to <u>BRC-9, "Component Parts</u> Location".
- 12. Stop lamp switch Refer to <u>EC-23, "Component Parts</u> Location".



# **COMPONENT PARTS**

## < SYSTEM DESCRIPTION >

- 13. BCM Refer to <u>BCS-4</u>, <u>"BODY CONTROL</u> <u>SYSTEM : Component Parts Loca-</u> <u>tion"</u>.
- 16 Remote keyless entry receiver Refer to <u>DLK-12, "DOOR LOCK</u> <u>SYSTEM :</u> <u>Component Parts Location"</u>.
- A. Behind push-button ignition switch

# Component Description

- 14. Combination meter
   15.

   Refer to <u>MWI-6, "METER SYSTEM :</u>

   Component Parts Location".
  - 17. Inside key antenna (luggage room) Refer to <u>DLK-12, "DOOR LOCK</u> <u>SYSTEM :</u> <u>Component Parts Location"</u>.
- 15. Front door switch (driver side) Refer to <u>DLK-12, "DOOR LOCK</u> <u>SYSTEM :</u> <u>Component Parts Location"</u>.

[WITH INTELLIGENT KEY SYSTEM]

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INFOID:0000000010259315

Component	Reference
A/T shift selector (detention switch)	<u>SEC-7</u>
BCM	<u>SEC-7</u>
ECM	<u>SEC-8</u>
IPDM E/R	<u>SEC-8</u>
NATS antenna amp.	SEC-8
ТСМ	<u>SEC-8</u>
Combination meter	<u>SEC-8</u>
Door switch	SEC-8
Hood switch	SEC-8
Inside key antenna	SEC-8
Intelligent Key	SEC-8
Push-button ignition switch	SEC-9
Remote keyless entry receiver	<u>SEC-9</u>
Security indicator lamp	SEC-9
Starter control relay	SEC-9
Starter relay	<u>SEC-9</u>
Stop lamp switch	<u>SEC-9</u> S
Transmission range switch	<u>SEC-9</u>
Vehicle information display	SEC-9

# A/T Shift Selector (Detention Switch)

Detention switch detects that A/T shift selector is in the P position, and then transmits the signal to BCM and IPDM E/R.

BCM confirms the A/T shift selector position with the following 5 signals.

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

## BCM

BCM controls INTELLIGENT KEY SYSTEM (ENGINE START FUNCTION), INFINITI VEHICLE IMMOBI-LIZER SYSTEM-NATS [IVIS (NATS)], and VEHICLE SECURITY SYSTEM.

# SEC-7

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INFOID:0000000010259316

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# **COMPONENT PARTS**

## [WITH INTELLIGENT KEY 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

ECM controls the engine.

< SYSTEM DESCRIPTION >

When power supply position is turned ON, BCM starts communication with ECM and performs the ID verification between BCM and ECM.

If the verification result is OK, the engine can start. If the verification result is NG, the engine can not start.

# IPDM E/R

IPDM E/R has 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.

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.

# тсм

TCM transmits the shift position signal (P/N position) to BCM and IPDM E/R. And further, TCM transmits the shift position signal (P/N position) to BCM via CAN communication.

- BCM confirms the A/T shift selector position with the following 5 signals.
- P position signal from A/T shift selector (detention switch)
- P/N position signal from TCM
- P position signal from IPDM E/R (CAN)
- P/N position signal from IPDM E/R (CAN)
- P/N position signal from TCM (CAN)

IPDM E/R confirms the A/T shift selector position with the following 3 signals.

- P position signal from A/T shift selector (detention switch)
- P/N position signal from TCM
- P/N position signal from BCM (CAN)

# **Combination Meter**

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**

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

# Hood Switch

Hood switch detects that hood is open, and then transmits the signal to IPDM E/R. IPDM E/R transmits hood switch signal to BCM via CAN communication. For models with remote engine starter function, two hood switches are installed.

# Inside Key Antenna

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

# Intelligent Key

Each Intelligent key has an individual electronic ID, and transmits the ID signal by request from BCM.



INFOID:000000010259323

INFOID:000000010259324

INFOID:000000010259318

INFOID:000000010259319

INFOID:000000010259320

INFOID:000000010259321

INFOID:000000010259325

INFOID:000000010259326

# SEC-8

< SYSTEM DESCRIPTION >

# **COMPONENT PARTS**

# [WITH INTELLIGENT KEY SYSTEM]

Carrying the Intelligent Key whose ID is registered in BCM, the driver can performs door lock/un and push-button ignition switch operation.	lock operation	А
Push-button Ignition Switch	INFOID:0000000010259327	
Push-button ignition switch detects that push-button is pressed, and then transmits the signal changes the power supply position with the operation of push-button ignition switch. BCM mainta supply position status while push-button is not operated.	to BCM. BCM ains the power	В
Remote Keyless Entry Receiver	INFOID:000000010259328	С
Remote keyless entry receiver receives each button operation signal and electronic key ID sign gent Key, and then transmits the signal to BCM.	nal from Intelli-	D
Security Indicator Lamp	INFOID:000000010259329	
Security indicator lamp is located on combination meter. Security indicator lamp blinks when power supply position is any position other than ON to warr VEHICLE IMMOBILIZER SYSTEM-NATS [IVIS (NATS)] is on board.	that INFINITI	E
Starter Control Relay	INFOID:000000010259330	F
Engine starting system functions by controlling both starter relay and starter control relay. Both relays are integrated in IPDM E/R. Starter relay is controlled by BCM, and starter control trolled by IPDM E/R on request from BCM. IPDM E/R transmits starter relay and starter control relay status signal to BCM via CAN commun	l relay is con- nication.	G
Starter Relay	INFOID:000000010259331	Н
Engine starting system functions by controlling both starter relay and starter control relay. Both relays are integrated in IPDM E/R. Starter relay is controlled by BCM, and starter control trolled by IPDM E/R on request from BCM.	l relay is con-	I
Ston Lamp Switch		
Stop Lamp Switch detects that brake nodel is depressed, and then transmits the signal to BCM	INFOID:000000010259332	J
Transmission Range Switch	INFOID:000000010259333	SEC
Transmission range switch is integrated in A/T assembly, and detects the A/T shift selector posit TCM receives the transmission range switch signal and then transmits the P/N position signal IPDM E/R.	tion. al to BCM and	L
<ul> <li>BCM confirms the A/T shift selector position with the following 5 signals.</li> <li>P position signal from A/T shift selector (detention switch)</li> <li>P/N position signal from TCM</li> <li>P position signal from IPDM E/R (CAN)</li> </ul>		M
<ul> <li>P/N position signal from IPDM E/R (CAN)</li> <li>P/N position signal from TCM (CAN)</li> <li>IPDM E/R confirms the A/T shift selector position with the following 3 signals.</li> <li>P position signal from A/T shift selector (detention switch)</li> <li>P/N position signal from TCM</li> </ul>		Ν
P/N position signal from BCM (CAN)		0
venicle information Display	INFOID:000000010259334	
Vehicle information display is integrated in combination meter. Various information and warnings regarding to the Intelligent Key System are displayed.		Р

## < SYSTEM DESCRIPTION > SYSTEM

# INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION : System Diagram





# INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION : System Description

INFOID:000000010259336

## 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 IVIS (NATS) ID]. It can perform the door lock/unlock operation and the push-button ignition switch operation when the registered Intelligent Key is carried.

- SYSTEM [WITH INTELLIGENT KEY SYSTEM] < SYSTEM DESCRIPTION > When Intelligent Key battery is discharged, engine can be started by operating push-button ignition switch after contacting Intelligent Key backside to push-button ignition switch. At that time, the IVIS (NATS) ID veri-А fication is performed. If the ID is successfully verified, when push-button ignition switch is pressed, the engine can be started. Up to 4 Intelligent Keys can be registered (Including the standard Intelligent Key) upon request from the cus-В tomer. NOTE: Refer to DLK-19, "INTELLIGENT KEY 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 IVIS (NATS) ID verification] is integrated into the Intelligent Key. (For the D conventional models, it is integrated into the mechanical key.) Therefore, ID verification cannot be performed by mechanical key only. In that case, the IVIS (NATS) ID verification can be performed when Intelligent Key backside is contacted to push-button ignition switch. If verification result is OK, engine can be started. Е **OPERATION WHEN INTELLIGENT KEY IS CARRIED** 1. When the push-button ignition switch is pressed, the BCM activates the inside key antenna and transmits F 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. BCM turns ACC relay ON and transmits the ignition power supply ON signal to IPDM E/R. 4. 5. IPDM E/R turns the ignition relay ON and starts the ignition power supply. Н 6. BCM detects that the selector lever position and brake pedal operating condition. 7. BCM transmits the starter request signal to IPDM E/R and turns the starter relay in IPDM E/R ON if BCM judges that the engine start condition\* is satisfied. IPDM E/R turns the starter control relay ON when receiving the starter request signal. 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 in 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 SEC stop signal to IPDM E/R and stops cranking by turning OFF the starter motor relay. (If engine start is unsuccessful, cranking stops automatically within 5 seconds.) CAUTION: When the Intelligent Key is carried outside of the vehicle (inside key antenna detection area) while the power supply is in the ACC or ON position, even if the engine start condition\* is satisfied, the engine cannot be started. \*: For the engine start condition, refer to "POWER SUPPLY POSITION CHANGE TABLE BY PUSH-BUTTON M IGNITION SWITCH OPERATION". OPERATION RANGE Engine can be started when Intelligent Key is inside the vehicle. However, sometimes engine may not start Ν when Intelligent Key is on instrument panel or in glove box. ENGINE START OPERATION WHEN INTELLIGENT KEY IS CONTACTED TO PUSH-BUTTON IG-NITION SWITCH When Intelligent Key battery is discharged, the IVIS (NATS) ID verification between transponder in Intelligent Key and BCM is performed when Intelligent Key backside is contacted to push-button ignition switch. If the
  - Р

POWER SUPPLY POSITION CHANGE TABLE BY PUSH-BUTTON IGNITION SWITCH OPERA-TION

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

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

verification result is OK, engine can be started.

# SEC-11

# [WITH INTELLIGENT KEY SYSTEM]

< SYSTEM DESCRIPTION > - Brake pedal operating condition

- Selector lever position
- Selector level position

- Vehicle speed

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

	Engine start/stop condition		Puch button ignition cwitch
Power supply position	Selector lever	Brake pedal operation condition	operation frequency
$LOCK \rightarrow ACC$	_	Not depressed	1
$LOCK\toACC\toON$	_	Not depressed	2
$LOCK \to ACC \to ON \to OFF$	—	Not depressed	3
$\begin{array}{l} LOCK \to START \\ ACC \to START \\ ON \to START \end{array}$	P or N position	Depressed	1
Engine is running $\rightarrow \text{OFF}$	—	—	1

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

	Engine start/stop condition		Push-button ignition switch
Power supply position	Selector lever	Brake pedal operation condition	operation frequency
Engine is running $\rightarrow ACC$	_	—	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.

## REMOTE ENGINE START FUNCTION

Remote engine start function enables engine to be started from vehicle outside by operating REMOTE ENGINE START button of Intelligent Key.

#### Engine Start Procedures

Press LOCK button of Intelligent Key, and then within five seconds, press and hold REMOTE ENGINE START button of Intelligent Key for two seconds or more. Engine starts. Engine does not start while the vehicle is in the following status.

- All doors are UNLOCK or any door is open.
- Hood is open.
- A registered Intelligent Key is in passenger room.
- Shift position is other than P.
- Vehicle security alarm is in operation
- Hazard lamp is in operation.

#### NOTE:

- Engine operation status described in the following 2 types
- Normal engine run mode: Ordinary operation status of engine. Driving is allowed.
- Remote engine run mode: Operation status of engine according to REMOTE ENGINE START button operation of Intelligent Key. Driving is not allowed.
- During remote engine run mode, the following display is indicated on information display in combination meter.

# < SYSTEM DESCRIPTION >

## [WITH INTELLIGENT KEY SYSTEM]

Display	Display ON condition	Display OFF condition
BRAKE	During remote engine run mode	Mode switch to normal engine run mode
PUSH BRAKE AND START BUTTON TO DRIVE		from remote engine run mode
JMKIB1003GB		

 While engine is in operation by Intelligent Key, engine status changes from remote engine run mode to normal engine run mode when push-button ignition switch is operated while brake pedal is depressed. The vehicle becomes available to drive.

#### **Engine Stop Procedures**

Press REMOTE ENGINE START button of Intelligent Key. Engine stops. Engine stops when the vehicle status changes to the following status.

- Ten minutes are passed since engine start.
- Push-button ignition switch is operated.
- · Hood is open.
- Shift position is shifted to a position other than P.
- Vehicle security alarm starts to operate.

#### NOTE:

While engine is in operation by Intelligent Key, engine operation time can be extended for ten minutes. To extend engine operation time, press LOCK button of Intelligent Key, and then within five seconds, press and hold REMOTE ENGINE START button of Intelligent Key for two seconds or more.

#### **Operation Area**

The remote engine start operating range is approximately 60 m (197 ft.) from the vehicle. INFINITI VEHICLE IMMOBILIZER SYSTEM-NATS

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## < SYSTEM DESCRIPTION >

## [WITH INTELLIGENT KEY SYSTEM]



# INFINITI VEHICLE IMMOBILIZER SYSTEM-NATS : System Description

## SYSTEM DESCRIPTION

- The INFINITI VEHICLE IMMOBILIZER SYSTEM-NATS [IVIS (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 IVIS (NATS) ID verification is performed between the transponder integrated with Intelligent Key and BCM via NATS antenna amp. when the Intelligent Key backside is contacted to push-button ignition switch. If the verification results are OK, the engine start operation can be performed by the push-button ignition switch operation.
- Locate the security indicator lamp and apply the anti-theft system equipment sticker that warns that the IVIS (NATS) is on board the model.
- Security indicator lamp always blinks when the power supply position is any position other than ON.
- Up to 4 Intelligent Keys can be registered (including the standard ignition key) upon request from the owner.
  Specified registration is required when replacing ECM, BCM or Intelligent Key.
- Possible symptom of IVIS (NATS) malfunction is "Engine cannot start". The engine can not be started because of other than IVIS (NATS) malfunction, so start the trouble diagnosis according to <u>SEC-50, "Work</u> <u>Flow"</u>.
- If ECM other than genuine part is installed, the engine cannot be started. For ECM replacement procedure, refer to <u>EC-157, "Work Procedure"</u> (for USA and CANADA) or <u>EC-717, "Work Procedure"</u> (for MEXICO).

## SEC-14

## [WITH INTELLIGENT KEY SYSTEM]

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#### < SYSTEM DESCRIPTION > PRECAUTIONS FOR KEY REGISTRATION The ID registration is a procedure that erases the current IVIS (NATS) ID once, and then reregisters a new ID. Therefore before starting the registration operation, collect all registered Intelligent Keys from the customer. When registering the Intelligent Key, perform only one procedure to simultaneously register both ID [IVIS (NATS) ID and Intelligent Key ID]. SECURITY INDICATOR LAMP Warns that the vehicle is equipped with IVIS (NATS). Security indicator lamp always blinks when the power supply position is any position other than ON. NOTE: Because security indicator lamp is highly efficient, the battery is barely affected. ENGINE START OPERATION WHEN INTELLIGENT KEY IS CONTACTED TO PUSH-BUTTON IG-NITION SWITCH When brake pedal is depressed while selector lever is in the P position, BCM activates NATS antenna 1 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 IVIS (NATS) ID verification between BCM and Intelligent Key (transponder built-in) via NATS antenna amp. 3. When the IVIS (NATS) ID verification result is OK, buzzer in combination meter sounds and BCM transmits the result to ECM. 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. BCM detects that the selector lever position is P or N. 6. BCM transmits starter request signal to IPDM E/R and turns the starter relay in IPDM E/R ON if BCM 7. judges that the engine start condition\* is satisfied. IPDM E/R turns the starter control relay ON when receiving the starter request signal. 8. 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 "POWER SUPPLY POSITION CHANGE TABLE BY PUSH-BUTTON IGNITION SWITCH OPERATION" below. POWER SUPPLY POSITION CHANGE TABLE BY PUSH-BUTTON IGNITION SWITCH OPERA-TION The power supply position changing operation can be performed with the following operations. NOTE: When an Intelligent Key is within the detection area of inside key antenna and when Intelligent Key backside is contacted to push-button ignition switch, it is equivalent to the operations below. • When starting the engine, the BCM monitors under the engine start conditions, - Brake pedal operating condition - Selector lever position - Vehicle speed Vehicle speed: less than 4 km/h (2.5 MPH) Engine start/stop condition Push-button ignition switch Power supply position Brake pedal operation operation frequency Selector lever condition

## < SYSTEM DESCRIPTION >

## [WITH INTELLIGENT KEY SYSTEM]

	Engine start/	Push-button ignition switch	
Power supply position	Selector lever	Brake pedal operation condition	operation frequency
$\begin{array}{l} LOCK \rightarrow START \\ ACC \rightarrow START \\ ON \rightarrow START \end{array}$	P or N position	Depressed	1
Engine is running $\rightarrow OFF$	—	—	1

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

	Engine start/	stop condition	Push-button ignition switch
Power supply position	Selector lever	Brake pedal operation condition	operation frequency
Engine is running $\rightarrow ACC$	—	—	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.

# VEHICLE SECURITY SYSTEM

# VEHICLE SECURITY SYSTEM : System Diagram



# VEHICLE SECURITY SYSTEM : System Description

INFOID:000000010259340

INFOID:000000010259339

The vehicle security system has two alarm functions (theft warning alarm and panic alarm), and reduces the
possibility of a theft or mischief by activating horns and headlamps intermittently.

# **SEC-16**

## < SYSTEM DESCRIPTION >

• The panic alarm does not start when the theft warning alarm is activating, and the panic alarm stops when the theft warning alarm is activated.

The priority of the functions are as per the following.

Priority	Function
1	Theft warning alarm
2	Panic alarm

## THEFT WARNING ALARM

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

#### **Operation Flow**



No.	System state		Switching condition	
1	DISARMED to	When all conditions of A and	А	В
	PRE-ARMED	fied.	<ul> <li>Power supply position: OFF/LOCK</li> <li>All doors: Closed</li> <li>Hood: Closed</li> </ul>	All doors are locked by: • Door key cylinder LOCK switch • LOCK button of Intelligent Key • Door request switch
2	PRE-ARMED to ARMED	When all of the following conditions are satisfied for 30 seconds.	<ul><li>Power supply position: OFF/LOCK</li><li>All doors: Locked</li><li>Hood: Closed</li></ul>	
3	ARMED to	When one condition of A and	A	В
	ALARM	one condition of B are satis- fied.	Intelligent Key: Not used	<ul><li>Any door: Open</li><li>Hood: Open</li></ul>
4	DISARMED to	When all conditions of A and	A	B
	PRE-RESET	one condition of B is satis- fied.	<ul> <li>Power supply position: OFF/LOCK</li> <li>All doors: Closed</li> <li>Hood: Open</li> </ul>	All doors are locked by: • Door key cylinder LOCK switch • LOCK button of Intelligent Key • Door request switch
5	PRE-ARMED to PRE-RESET	When one of the following conditions is satisfied.	Hood: Open	
6	ARMED to PRE-RESET	No conditions.		
7	ALARM to PRE-RESET			

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[WITH INTELLIGENT KEY SYSTEM]

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## < SYSTEM DESCRIPTION >

#### [WITH INTELLIGENT KEY SYSTEM]

No.	System state		Switching condition
8	PRE-RESET to DISARMED	When one of the following conditions is satisfied.	<ul> <li>Power supply position: ACC/ON/CRANKING/RUN</li> <li>Door key cylinder UNLOCK switch: ON</li> <li>UNLOCK button of Intelligent Key: ON</li> <li>Door request switch: ON</li> <li>Back door opener switch: ON</li> <li>UNLOCK switch of door lock and unlock switch: ON</li> <li>Any door: Open</li> </ul>
9	PRE-RESET to PRE-ARMED	When all of the following conditions are satisfied.	<ul><li>Power supply position: OFF/LOCK</li><li>All doors: Closed</li><li>Hood: Closed</li></ul>
10	PRE-ARMED to DISARMED	When one of the following condition is satisfied.	<ul> <li>Power supply position: ACC/ON/CRANKING/RUN</li> <li>Door key cylinder UNLOCK switch: ON</li> <li>UNLOCK button of Intelligent Key: ON</li> <li>AUTO BACK DOOR button of Intelligent Key: ON</li> <li>Door request switch: ON</li> <li>Back door opener switch: ON</li> <li>Any door: Open</li> </ul>
11	ARMED to DISARMED	When one of the following condition is satisfied.	<ul> <li>Power supply position: ACC/ON/CRANKING/RUN</li> <li>Door key cylinder UNLOCK switch: ON</li> </ul>
12	ALARM to DISARMED		<ul> <li>ONLOCK button of Intelligent Key: ON</li> <li>AUTO BACK DOOR button of Intelligent Key: ON</li> <li>Door request switch: ON</li> <li>Back door opener switch: ON</li> </ul>
13	RE-ALARM	When one of the following condition is satisfied after the ALARM operation is finished.	<ul><li>Any door: Open</li><li>Hood: Open</li></ul>

#### NOTE:

• BCM ignores the door key cylinder UNLOCK switch signal input for 1 second after the door key cylinder LOCK switch signal input.

- To lock/unlock all doors by operating remote controller button of Intelligent Key or door request switch, Intelligent Key must be within the detection area of outside key antenna. For details, refer to <u>DLK-19</u>, "INTELLIGENT KEY SYSTEM : <u>System Description</u>".
- To open back door by operating back door opener switch, Intelligent Key must be within the detection area of outside key antenna. For details, refer to <u>DLK-19</u>, "INTELLIGENT KEY SYSTEM : System Description".

#### **DISARMED** Phase

The vehicle security system is not set in the DISARMED phase. The vehicle security system stays in this phase while any door is open, because it is assumed that the owner is inside or nearby the vehicle. Security indicator lamp blinks every 2.4 seconds.

When the vehicle security system is reset, each phase switches to the DISARMED phase directly.

#### PRE-ARMED Phase

The PRE-ARMED phase is the transient state between the DISARMED phase and the ARMED phase. This phase is maintained for 30 seconds, so that the owner can reset the setting due to a mis-operation. This phase switches to the ARMED phase when vehicle conditions are not changed for 30 seconds. Security indicator lamp illuminates while being in this phase.

To reset the PRE-ARMED phase, refer to the switching condition of No. 10 in the table above.

#### ARMED Phase

The vehicle security system is set, and BCM monitors all necessary inputs. If any door or hood is opened without using Intelligent Key, vehicle security system switches to the ALARM phase. Security indicator lamp blinks every 2.4 seconds.

To reset the ARMED phase, refer to the switching condition of No. 11 in the table above.

#### ALARM Phase

BCM transmits "Theft Warning Horn Request" signal and "High Beam Request" signal intermittently to IPDM E/R via CAN communication. In this phase, horns and headlamps are activated intermittently for approximately 50 seconds to warn that the vehicle is accessed by unauthorized means. ON/OFF timing of horns and headlamps are synchronized. After 50 seconds, the vehicle security system returns to the ARMED phase. At this time, if BCM still detects unauthorized access to the vehicle, the system is switched to the ALARM phase again. This RE-ALARM operation is carried out a maximum of 2 times.

To cancel the ALARM operation, refer to the switching condition of No. 12 in the table above. **NOTE:** 

# **SEC-18**

#### < SYSTEM DESCRIPTION >

## [WITH INTELLIGENT KEY SYSTEM]

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

#### PRE-RESET Phase

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

#### PANIC ALARM

- The panic alarm function activates horns and headlamps intermittently when the owner presses the PANIC ALARM button of Intelligent Key outside the vehicle while the power supply position is OFF or LOCK.
- When BCM receives panic alarm signal from Intelligent Key, BCM transmits "Theft Warning Horn Request" signal and "High Beam Request" signal intermittently to IPDM E/R via CAN communication. To prevent the activation due to mis-operation of Intelligent Key by owner, the panic alarm function is activated when BCM receives the signal for 0.4 0.6 seconds.
- Panic alarm operation is maintained for 25 seconds.
- Panic alarm operation is cancelled when BCM receives one of the following signals.
- LOCK button of Intelligent Key: ON
- UNLOCK button of Intelligent Key: ON
- PANIC ALARM button of Intelligent Key: Long pressed
- Any door request switch: ON

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# COMMON ITEM

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

INFOID:000000011529597

[WITH INTELLIGENT KEY SYSTEM]

# APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
Work Support	Changes the setting for each system function.
Self Diagnostic Result	Displays the diagnosis results judged by BCM. Refer to BCS-58, "DTC Index".
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM.
Data Monitor	The BCM input/output signals are displayed.
Active Test	The signals used to activate each device are forcibly supplied from BCM.
Ecu Identification	The BCM part number is displayed.
Configuration	<ul><li>Read and save the vehicle specification.</li><li>Write the vehicle specification when replacing BCM.</li></ul>

#### SYSTEM APPLICATION

BCM can perform the following functions for each system. **NOTE:** 

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

		-		×: Applicable item	
Svetom	Sub system selection item	Diagnosis mode			
System	Sub system selection item	Work Support	Data Monitor	Active Test	
Door lock	DOOR LOCK	×	×	×	
Rear window defogger	REAR DEFOGGER		×	×	
Warning chime	BUZZER		×	×	
Interior room lamp timer	INT LAMP	×	×	×	
Exterior lamp	HEAD LAMP	×	×	×	
Wiper and washer	WIPER	×	×	×	
Turn signal and hazard warning lamps	FLASHER	×	×	×	
	AIR CONDITONER*		×	×	
<ul><li>Intelligent Key system</li><li>Engine start system</li></ul>	INTELLIGENT KEY	×	×	×	
Combination switch	COMB SW		×		
Body control system	BCM	×			
IVIS	IMMU	×	×	×	
Interior room lamp battery saver	BATTERY SAVER	×	×	×	
Back door	TRUNK		×		
Vehicle security system	THEFT ALM	×	×	×	
RAP system	RETAINED PWR		×		
Signal buffer system	SIGNAL BUFFER		×	×	
	AIR PRESSURE MONITOR*	×	×	×	

\*: This item is indicated, but not used.

#### FREEZE FRAME DATA (FFD)

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

# < SYSTEM DESCRIPTION >

# **DIAGNOSIS SYSTEM (BCM)**

# [WITH INTELLIGENT KEY SYSTEM]

CONSULT screen item	Indication/Unit		Description	А
Vehicle Speed	km/h	Vehicle speed of the mo	ment a particular DTC is detected	
Odo/Trip Meter	km	Total mileage (Odometer	r value) of the moment a particular DTC is detected	
	SLEEP>LOCK		While turning BCM status from low power consumption mode to normal mode (Power supply position is "LOCK")	В
	SLEEP>OFF	-	While turning BCM status from low power consumption mode to normal mode (Power supply position is "OFF".)	С
	LOCK>ACC		While turning power supply position from "LOCK" to "ACC"	
	ACC>ON		While turning power supply position from "ACC" to "IGN"	D
	RUN>ACC	-	While turning power supply position from "RUN" to "ACC" (Vehicle is stopping and selector lever is except P position.)	D
	CRANK>RUN	-	While turning power supply position from "CRANKING" to "RUN" (From cranking up the engine to run it)	E
	RUN>URGENT	-	While turning power supply position from "RUN" to "ACC" (Emer- gency stop operation)	_
	ACC>OFF		While turning power supply position from "ACC" to "OFF"	F
	OFF>LOCK		While turning power supply position from "OFF" to "LOCK"	
Vehicle Condition	OFF>ACC	Power position status of the moment a particular	While turning power supply position from "OFF" to "ACC"	G
	ON>CRANK	DTC is detected	While turning power supply position from "IGN" to "CRANKING"	
	OFF>SLEEP		While turning BCM status from normal mode (Power supply position is "OFF".) to low power consumption mode	Н
	LOCK>SLEEP	-	While turning BCM status from normal mode (Power supply position is "LOCK".) to low power consumption mode	
	LOCK		Power supply position is "LOCK" (Ignition switch OFF with steer- ing is locked.)	I
	OFF		Power supply position is "OFF" (Ignition switch OFF with steering is unlocked.)	J
	ACC		Power supply position is "ACC" (Ignition switch ACC)	
	ON	-	Power supply position is "IGN" (Ignition switch ON with engine stopped)	SE
	ENGINE RUN	-	Power supply position is "RUN" (Ignition switch ON with engine running)	
	CRANKING		Power supply position is "CRANKING" (At engine cranking)	L
IGN Counter	0 - 39	<ul> <li>The number of times that</li> <li>The number is 0 where</li> <li>The number increases whenever ignition swite</li> <li>The number is fixed to be a superior of the number is fixed to be a superior o</li></ul>	it ignition switch is turned ON after DTC is detected a malfunction is detected now. s like $1 \rightarrow 2 \rightarrow 338 \rightarrow 39$ after returning to the normal condition ich OFF $\rightarrow$ ON. 0.39 until the self-diagnosis results are erased if it is over 39.	Μ

# INTELLIGENT KEY

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

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## WORK SUPPORT

Monitor item	Description	
INSIDE ANT DIAGNOSIS	This function allows inside key antenna self-diagnosis	
LOCK/UNLOCK BY I-KEY	<ul> <li>Door lock/unlock function by door request switch mode can be changed to operation in this mode</li> <li>On: Operate</li> <li>Off: Non-operation</li> </ul>	

Revision: 2014 October

INFOID:000000011529598

## < SYSTEM DESCRIPTION >

# [WITH INTELLIGENT KEY SYSTEM]

Monitor item	Description
ENGINE START BY I-KEY	<ul><li>Engine start function mode can be changed to operation with this mode</li><li>On: Operate</li><li>Off: Non-operation</li></ul>
TRUNK/GLASS HATCH OPEN	Buzzer reminder function mode by back door opener switch can be changed to operation with this mode • On: Operate • Off: Non-operation
PANIC ALARM SET	<ul> <li>Panic alarm button pressing time on Intelligent Key button can be selected from the following with this mode</li> <li>MODE 1: 0.5 sec.</li> <li>MODE 2: Non-operation</li> <li>MODE 3: 1.5 sec.</li> </ul>
TRUNK OPEN DELAY	<ul> <li>Back door open button pressing to Intelligent Key button can be selected as per the following in this mode</li> <li>MODE 1: Press and hold</li> <li>MODE 2: Press twice</li> <li>MODE 3: Press and hold, or press twice</li> </ul>
LO- BATT OF KEY FOB WARN	<ul><li>Intelligent Key low battery warning mode can be changed to operation with this mode</li><li>On: Operate</li><li>Off: Non-operation</li></ul>
ANTI KEY LOCK IN FUNCTI	<ul><li>Key reminder function mode can be changed to operation with this mode</li><li>On: Operate</li><li>Off: Non-operation</li></ul>
HAZARD ANSWER BACK	<ul> <li>Hazard reminder function mode by door request switch and Intelligent Key button can be selected from the following with this mode</li> <li>Lock Only: Door lock operation only</li> <li>Unlock Only: Door unlock operation only</li> <li>Lock/Unlock: Lock and unlock operation</li> <li>Off: Non-operation</li> </ul>
ANS BACK I-KEY LOCK	<ul> <li>Buzzer reminder function (lock operation) mode by door request switch can be selected from the following with this mode</li> <li>Horn Chirp: Sound horn</li> <li>Buzzer: Sound Intelligent Key warning buzzer</li> <li>Off: Non-operation</li> </ul>
ANS BACK I-KEY UNLOCK	<ul> <li>Buzzer reminder function (unlock operation) mode by door request switch can be changed to operation with this mode</li> <li>On: Operate</li> <li>Off: Non-operation</li> </ul>
SHORT CRANKING OUTPUT	Starter motor can operate during the times below • 70 msec • 100 msec • 200 msec
CONFIRM KEY FOB ID	It can be checked whether Intelligent Key ID code is registered or not in this mode
AUTO LOCK SET	Auto door lock operation time can be changed in this mode  MODE 1: OFF MODE 2: 30 sec. MODE 3: 1 minute MODE 4: 2 minutes MODE 5: 3 minutes MODE 6: 4 minutes MODE 6: 4 minutes MODE 7: 5 minutes
HORN WITH KEYLESS LOCK	<ul> <li>Horn reminder function mode by Intelligent Key button can be selected from the following with this mode</li> <li>On: Operate</li> <li>Off: Non-operation</li> </ul>

## < SYSTEM DESCRIPTION >

# [WITH INTELLIGENT KEY SYSTEM]

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Monitor item	Description
PW DOWN SET	<ul> <li>Unlock button pressing time on Intelligent Key button can be selected from the following with this mode</li> <li>MODE 1: 3 sec.</li> <li>MODE 2: Non-operation</li> <li>MODE 3: 5 sec.</li> </ul>
WELCOME LIGHT SELECT	<ul> <li>Welcome light function mode can be selected from the following with this mode</li> <li>Puddle/Outside Handle</li> <li>Room lamp</li> <li>Head &amp; Tail Lamps (this item is displayed, but cannot be used)</li> <li>Heart Beat</li> </ul>
WELCOME LIGHT OP SET	<ul> <li>Welcome light function mode can be changed to operation with this mode</li> <li>On: Operate</li> <li>Off: Non-operation</li> </ul>

#### SELF-DIAG RESULT

Refer to <u>BCS-58, "DTC Index"</u>.

#### DATA MONITOR

#### NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor Item	Condition	
REQ SW -DR	Indicates [On/Off] condition of door request switch (driver side)	
REQ SW -AS	Indicates [On/Off] condition of door request switch (passenger side)	
REQ SW -BD/TR	Indicates [On/Off] condition of back door request switch	
PUSH SW	Indicates [On/Off] condition of push-button ignition switch	
CLUTCH SW	<b>NOTE:</b> This item is displayed, but cannot be monitored	
BRAKE SW 1	Indicates [On/Off]* condition of stop lamp switch power supply	
BRAKE SW 2	Indicates [On/Off] condition of stop lamp switch	
DETE/CANCL SW	Indicates [On/Off] condition of P position	
SFT PN/N SW	Indicates [On/Off] condition of P or N position	
S/L -LOCK	<b>NOTE:</b> This item is displayed, but cannot be monitored	
S/L -UNLOCK	<b>NOTE:</b> This item is displayed, but cannot be monitored	
S/L RELAY -F/B	<b>NOTE:</b> This item is displayed, but cannot be monitored	
UNLK SEN -DR	Indicates [On/Off] condition of driver door UNLOCK status	
PUSH SW -IPDM	Indicates [On/Off] condition of push-button ignition switch	
IGN RLY1 -F/B	Indicates [On/Off] condition of ignition relay 1	
DETE SW -IPDM	Indicates [On/Off] condition of P position	
SFT PN -IPDM	Indicates [On/Off] condition of P or N position	
SFT P -MET	Indicates [On/Off] condition of P position	
SFT N -MET	Indicates [On/Off] condition of N position	
ENGINE STATE	Indicates [Stop/Stall/Crank/Run] condition of engine states	
S/L LOCK-IPDM	<b>NOTE:</b> This item is displayed, but cannot be monitored	
S/L UNLK-IPDM	<b>NOTE:</b> This item is displayed, but cannot be monitored	
S/L RELAY-REQ	<b>NOTE:</b> This item is displayed, but cannot be monitored	

**SEC-23** 

## < SYSTEM DESCRIPTION >

# [WITH INTELLIGENT KEY SYSTEM]

Monitor Item	Condition		
VEH SPEED 1	Display the vehicle speed signal received from combination meter by numerical value [Km/h]		
VEH SPEED 2	Display the vehicle speed signal received from ABS or VDC or TCM by numerical value [Km/h]		
DOOR STAT-DR	Indicates [LOCK/READY/UNLK] condition of unlock sensor		
DOOR STAT-AS	Indicates [LOCK/READY/UNLK] condition of passenger side door status		
ID OK FLAG	Indicates [Set/Reset] condition of key ID		
PRMT ENG STRT	Indicates [Set/Reset] condition of engine start possibility		
PRMT RKE STRT	NOTE: This item is displayed, but cannot be monitored		
TRNK/HAT MNTR	NOTE: This item is displayed, but cannot be monitored		
RKE-LOCK	Indicates [On/Off] condition of LOCK signal from Intelligent Key		
RKE-UNLOCK	Indicates [On/Off] condition of UNLOCK signal from Intelligent Key		
RKE-TR/BD	NOTE: This item is displayed, but cannot be monitored		
RKE-PANIC	Indicates [On/Off] condition of PANIC button of Intelligent Key		
RKE-MODE CHG	Indicates [On/Off] condition of MODE CHANGE signal from Intelligent Key		
RKE OPE COUN1	When remote keyless entry receiver receives the signal transmitted while operating on Integent Key, the numerical value start changing		
RKE OPE COUN2	NOTE: This item is displayed, but cannot be monitored		
SHFTLCK SLNID PWR SPLY	WR SPLY Indicates [On/Off] condition of shift lock solenoid		

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

## ACTIVE TEST

Test item	Description	
BATTERY SAVER	<ul><li>This test is able to check interior room lamp operation</li><li>On: Operate</li><li>Off: Non-operation</li></ul>	
OUTSIDE BUZZER	<ul><li>This test is able to check Intelligent Key warning buzzer operation</li><li>On: Operate</li><li>Off: Non-operation</li></ul>	
INSIDE BUZZER	<ul> <li>This test is able to check warning chime in combination meter operation</li> <li>Take Out: Take away warning chime sounds when CONSULT screen is touched</li> <li>Key: Key warning chime sounds when CONSULT screen is touched</li> <li>Knob: OFF position warning chime sounds when CONSULT screen is touched</li> <li>Off: Non-operation</li> </ul>	
INDICATOR	<ul> <li>This test is able to check warning lamp operation</li> <li>KEY ON: "KEY" Warning lamp illuminates when CONSULT screen is touched</li> <li>KEY IND: "KEY" Warning lamp blinks when CONSULT screen is touched</li> <li>Off: Non-operation</li> </ul>	
INT LAMP	This test is able to check interior room lamp operation <ul> <li>On: Operate</li> <li>Off: Non-operation</li> </ul>	

## < SYSTEM DESCRIPTION >

## [WITH INTELLIGENT KEY SYSTEM]

Test item	Description			
LCD	<ul> <li>This test is able to check meter display information</li> <li>Engine start information displays when "BP N" on CONSULT screen is touched</li> <li>Engine start information displays when "BP I" on CONSULT screen is touched</li> <li>Key ID warning displays when "ID NG" on CONSULT screen is touched</li> <li>ROTAT: This item is displayed, but cannot be monitored</li> <li>P position warning displays when "SFT P" on CONSULT screen is touched</li> <li>INSRT: This item is displayed, but cannot be monitored</li> <li>BATT: This item is displayed, but cannot be monitored</li> <li>Take away through window warning displays when "NO KY" on CONSULT screen is touched</li> <li>Take away warning display when "OUTKEY" on CONSULT screen is touched</li> <li>OFF position warning display when "LK WN" on CONSULT screen is touched</li> </ul>			
FLASHER	This test is able to check security hazard lamp operation The hazard lamps are activated after "LH/RH/Off" on CONSULT screen is touched			
P RANGE This test is able to check A/T shift selector power supply On: Operate Off: Non-operation		E		
ENGINE SW ILLUMI	This test is able to check push-button ignition switch illumination operation Push-ignition switch illumination illuminates when "ON" on CONSULT screen is touched	F		
LOCK INDICATOR	<ul><li>This test is able to check LOCK indicator (push-button ignition switch) operation</li><li>On: Operate</li><li>Off: Non-operation</li></ul>	G		
ACC INDICATOR	<ul><li>This test is able to check ACC indicator (push-button ignition switch) operation</li><li>On: Operate</li><li>Off: Non-operation</li></ul>	Н		
IGNITION ON IND	<ul><li>This test is able to check ON indicator (push-button ignition switch) operation</li><li>On: Operate</li><li>Off: Non-operation</li></ul>	I		
HORN	This test is able to check horn operation <ul> <li>On: Operate</li> <li>Off: Non-operation</li> </ul>	J		
TRUNK/BACK DOOR	K DOOR NOTE: This item is displayed, but cannot be used			

# THEFT ALM

# THEFT ALM : CONSULT Function (BCM - THEFT)

DATA MONITOR **NOTE**:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable M to this vehicle, refer to CONSULT display items.

Monitored Item	Description	
REQ SW -DR	dicates [ON/OFF] condition of door request switch (driver side).	
REQ SW -AS	Indicates [ON/OFF] condition of door request switch (passenger side).	
REQ SW -RR	NOTE: This item is displayed, but cannot be monitored.	0
REQ SW -RL	NOTE: This item is displayed, but cannot be monitored.	– P
REQ SW -BD/TR	Indicates [ON/OFF] condition of back door request switch.	_
PUSH SW	Indicates [ON/OFF] condition of push-button ignition switch	_
UNLK SEN -DR	Indicates [ON/OFF] condition of driver door UNLOCK status.	_
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch (driver side).	_
DOOR SW-AS	Indicates [ON/OFF] condition of front door switch (passenger side).	

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INFOID:000000010259343

## < SYSTEM DESCRIPTION >

## [WITH INTELLIGENT KEY SYSTEM]

Monitored Item	Description	
DOOR SW-RR	Indicates [ON/OFF] condition of rear door switch RH.	
DOOR SW-RL	Indicates [ON/OFF] condition of rear door switch LH.	
DOOR SW-BK	Indicates [ON/OFF] condition of back door switch.	
CDL LOCK SW	Indicates [ON/OFF] condition of lock signal from door lock/unlock switch LH and RH.	
CDL UNLOCK SW	Indicates [ON/OFF] condition of unlock signal from door lock/unlock switch LH and RH.	
KEY CYL LK-SW	Indicates [ON/OFF] condition of lock signal from door key cylinder.	
KEY CYL UN-SW	Indicates [ON/OFF] condition of unlock signal from door key cylinder.	
TR/BD OPEN SW	Indicates [ON/OFF] condition of back door opener switch.	
TRNK/HAT MNTR	NOTE: This item is displayed, but cannot be monitored.	
RKE-LOCK	Indicates [ON/OFF] condition of LOCK signal from Intelligent Key.	
RKE-UNLOCK	Indicates [ON/OFF] condition of UNLOCK signal from Intelligent Key.	
RKE-TR/BD	NOTE: This item is displayed, but cannot be monitored.	

## WORK SUPPORT

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

#### ACTIVE TEST

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

# IMMU

# IMMU : CONSULT Function (BCM - IMMU)

INFOID:000000010259344

## DATA MONITOR

#### NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor item	Content	
CONFRM ID ALL		
CONFIRM ID4	Indicates [YET] at all time.	
CONFIRM ID3	Switches to [DONE] when a registered Intelligent Key backside is contacted to push-button ignition	
CONFIRM ID2	switch.	
CONFIRM ID1		
NOT REGISTERED	Indicates [ID OK] when key ID that is registered is received or is not yet received. Indicates [ID NG] when key ID that is not registered is received.	

## < SYSTEM DESCRIPTION >

# [WITH INTELLIGENT KEY SYSTEM]

Monitor item	Content	_
TP 4		- A
TP 3	Indicates the number of IDs that are registered	
TP 2		В
TP 1		
PUSH SW	Indicates [ON/OFF] condition of push-button ignition switch.	_
		- C

# ACTIVE TEST

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

## WORK SUPPORT

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

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# DIAGNOSIS SYSTEM (IPDM E/R)

# Diagnosis Description

# AUTO ACTIVE TEST

Description

In auto active test, the IPDM E/R sends a drive signal to the following systems to check their operation.

- Oil pressure warning lamp
- Rear window defogger
- Front wiper (LO, HI)
- Parking lamp
- License plate lamp
- Tail lamp
- Side marker lamp
- Front fog lamp
- Headlamp (LO, HI)
- A/C compressor (magnet clutch)

Operation Procedure

# CAUTION:

# Never perform auto active test in the following conditions.

- Engine is running.
- CONSULT is connected.
- 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.
- Turn the ignition switch ON, and within 20 seconds, press the driver door switch 10 times. Then turn the ignition switch OFF.
   CAUTION:

## Close passenger door.

4. Turn the ignition switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.

# CAUTION:

## Engine starts when ignition switch is turned ON while brake pedal is depressed.

- 5. The oil pressure warning lamp starts blinking when the auto active test starts.
- 6. 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 <u>DLK-121.</u> <u>"Component Function Check"</u>.

#### 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	Oil pressure warning lamp	Blinks continuously during operation of auto active test
2	Rear window defogger	10 seconds
3	Front wiper	LO for 5 seconds $\rightarrow$ HI for 5 seconds
4	<ul> <li>Parking lamp</li> <li>License plate lamp</li> <li>Tail lamp</li> <li>Side marker lamp</li> <li>Front fog lamp</li> </ul>	10 seconds

INFOID:000000011529602

# DIAGNOSIS SYSTEM (IPDM E/R)

#### < SYSTEM DESCRIPTION >

# [WITH INTELLIGENT KEY SYSTEM]

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Operation sequence	Inspection location	Operation	А
5	Headlamp	LO for 10 seconds $\rightarrow$ HI ON $\Leftrightarrow$ OFF 5 times	-
6	A/C compressor (magnet clutch)	$ON \Leftrightarrow OFF 5$ times	B

#### 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	1
		YES	BCM signal input circuit	J
Rear window defogger does not operate	Perform auto active test. Does the rear window defog- ger operate?	NO	<ul> <li>Rear window defogger</li> <li>Rear window defogger ground circuit</li> <li>Harness or connector be- tween IPDM E/R and rear window defogger</li> <li>IPDM E/R</li> </ul>	SE
Any of the following components do not operate		YES	BCM signal input circuit	
<ul> <li>Parking lamp</li> <li>License plate lamp</li> <li>Tail lamp</li> <li>Side marker lamp</li> <li>Front fog lamp</li> <li>Headlamp (HI, LO)</li> <li>Front wiper (HI, LO)</li> </ul>	Perform auto active test. Does the applicable system operate?	NO	<ul> <li>Lamp or motor</li> <li>Lamp or motor ground circuit</li> <li>Harness or connector between IPDM E/R and applicable system</li> <li>IPDM E/R</li> </ul>	M
A/C compressor does not operate	Perform auto active test. Does the magnet clutch oper- ate?	YES	<ul> <li>A/C auto amp. signal input circuit</li> <li>CAN communication signal between A/C auto amp. and ECM</li> <li>CAN communication signal between ECM and IPDM E/R</li> <li>Magnet clutch</li> <li>Harness or connector between IPDM E/R and magnet</li> </ul>	P
		-	net clutch • IPDM E/R	

# < SYSTEM DESCRIPTION >

# DIAGNOSIS SYSTEM (IPDM E/R)

## [WITH INTELLIGENT KEY SYSTEM]

Symptom	Symptom Inspection contents		Possible cause
	Perform auto active test	YES	<ul> <li>Harness or connector be- tween IPDM E/R and oil pressure switch</li> <li>Oil pressure switch</li> <li>IPDM E/R</li> </ul>
Oil pressure warning lamp does not operate	Does the oil pressure warning lamp blink?	NO	<ul> <li>CAN communication signal between IPDM E/R and BCM</li> <li>CAN communication signal between BCM and combi- nation meter</li> <li>Combination meter</li> </ul>

# CONSULT Function (IPDM E/R)

INFOID:000000011529603

# APPLICATION ITEM

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

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

## SELF DIAGNOSTIC RESULT

Refer to PCS-22, "DTC Index".

## DATA MONITOR

#### NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor Item [Unit]	MAIN SIG- NALS	Description	
RAD FAN REQ [1/2/3/4]	×	Displays the value of the cooling fan speed request signal received from ECM via CAN communication.	
AC COMP REQ [Off/On]	×	Displays the status of the A/C compressor request signal received from ECM via CAN communication.	
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.	
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.	
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.	
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication.	
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.	
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper auto stop signal judged by IPDM E/R.	
WIP PROT [Off/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.	
IGN RLY1 -REQ [Off/On]		Displays the status of the ignition switch ON signal received from BCM via CAN communication.	

# DIAGNOSIS SYSTEM (IPDM E/R)

# < SYSTEM DESCRIPTION >

# [WITH INTELLIGENT KEY SYSTEM]

Monitor Item [Unit]	MAIN SIG- NALS	SIG- S	
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.	
PUSH SW [Off/On]		Displays the status of the push-button ignition switch judged by IPDM E/R.	
INTER/NP SW [Off/On]		Displays the status of the shift position judged by IPDM E/R.	
ST RLY CONT [Off/On]		Displays the status of the starter relay status signal received from BCM via CAN communication.	
IHBT RLY -REQ [Off/On]		Displays the status of the starter control relay signal received from BCM via CAN communication.	
ST/INHI RLY [Off/ ST ON/INHI ON/UNKWN]		Displays the status of the starter relay and starter control relay judged by IPDM E/R.	
DETENT SW [Off/On]		Displays the status of the A/T shift selector (detention switch) judged by IPDM E/R.	
S/L RLY -REQ [Off/On]		NOTE: F The item is indicated, but not monitored.	
S/L STATE [LOCK/UNLK/UNKWN]		NOTE: The item is indicated, but not monitored.	
DTRL REQ [Off/On]		Displays the status of the day time running light request signal received from BCM via CAN communication	
OIL P SW [Open/Close]		Displays the status of the oil pressure switch judged by IPDM E/R.	
HOOD SW [Off/On]		Displays the status of the hood switch 1 judged by IPDM E/R.	
HL WASHER REQ [Off/On]		Displays the status of the headlamp washer request signal received from BCM via CAN communication.	
THFT HRN REQ [Off/On]		Displays the status of the theft warning horn request signal received from BCM via CAN communication.	
HORN CHIRP [Off/On]		Displays the status of the horn reminder signal received from BCM via CAN com- munication.	
HOOD SW 2 [Off/On]		Displays the status of the hood switch 2 judged by IPDM E/R.	

# ACTIVE TEST

Test item	Operation	Description	
	LH	NOTE:	
	RH	This item is indicated, but cannot be tested.	
HORN	On	Operates horn relay for 20 ms.	
	Off	OFF	
REAR DEFOGGER	On	Operates the rear window defogger relay.	
	Off	OFF	
FRONT WIPER	Lo	Operates the front wiper relay.	
	Hi	Operates the front wiper relay and front wiper high relay.	
	1	OFF	
	2	Transmits 50% pulse duty signal (PWM signal) to the cooling fan control module.	
MOTOR FAN*	3	Transmits 75% pulse duty signal (PWM signal) to the cooling fan control module.	
	4	Transmits 100% pulse duty signal (PWM signal) to the cooling fan control mod- ule.	
HEAD LAMP WASHER	On	Operates the headlamp washer relay for 1 second.	

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# DIAGNOSIS SYSTEM (IPDM E/R)

## < SYSTEM DESCRIPTION >

# [WITH INTELLIGENT KEY SYSTEM]

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

\*: Operates while the engine is running.

# < ECU DIAGNOSIS INFORMATION >

# ECU DIAGNOSIS INFORMATION ECM, IPDM E/R, BCM

# List of ECU Reference

INFOID:000000010259346

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ECU			Reference
V	VK56VD for USA and CANADA	Reference Value	EC-82, "Reference Value"
		Fail-safe	EC-103, "Fail-safe"
		DTC Inspection Priority Chart	EC-106. "DTC Inspection Priority Chart"
ECM		DTC Index	EC-108, "DTC Index"
ECIVI		Reference Value	EC-646, "Reference Value"
		Fail-safe	EC-666, "Fail-safe"
	VK56VD IOI MEXICO	DTC Inspection Priority Chart	EC-669, "DTC Inspection Priority Chart"
		DTC Index	EC-671, "DTC Index"
		Reference Value	PCS-15, "Reference Value"
IPDM E/R		Fail-safe	PCS-21, "Fail-safe"
		DTC Index	PCS-22, "DTC Index"
IBCM		Reference Value	BCS-35, "Reference Value"
		Fail-safe	BCS-56, "Fail-safe"
		DTC Inspection Priority Chart	BCS-57, "DTC Inspection Priority Chart"
		DTC Index	BCS-58, "DTC Index"

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# WIRING DIAGRAM SECURITY CONTROL SYSTEM

Wiring Diagram



#### [WITH INTELLIGENT KEY SYSTEM]



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Revision: 2014 October


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#### [WITH INTELLIGENT KEY SYSTEM]



JRKWD8780GB

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JRKWD8781GB

### [WITH INTELLIGENT KEY SYSTEM]



JRKWD8782GB

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JRKWD8783GB



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#### SECURITY CONTROL SYSTEM [WITH INTELLIGENT KEY SYSTEM]

Revision: 2014 October



JRKWD8785GB

# SECURITY CONTROL SYSTEM





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SECURITY CONTROL SY	STEM
	[WITH INTELLIGENT KEY SYSTEM]



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< BASIC INSPECTION >

# [WITH INTELLIGENT KEY SYSTEM]

# BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000010259348

**OVERALL SEQUENCE** 



### DIAGNOSIS AND REPAIR WORK FLOW

#### < BASIC INSPECTION >

# [WITH INTELLIGENT KEY SYSTEM]

<b>1.</b> GET INFORMATION FOR SYMPTOM	Λ
<ol> <li>Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurs).</li> <li>Check expendition and the function that is malfunctioning.</li> </ol>	~
2. Check operation condition of the function that is malfunctioning.	В
>> GO TO 2.	
2.CHECK DTC	С
1. Check DTC.	
2. Perform the following procedure if DTC is detected.	D
- Erase DTC.	D
<ul><li>Study the relationship between the cause detected by DTC and the symptom described by the customer.</li><li>Check related service bulletins for information.</li></ul>	Е
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.	F
3.CONFIRM THE SYMPTOM	
Try to confirm the symptom described by the customer.	G
Verify relation between the symptom and the condition when the symptom is detected.	
	Н
>> GO TO 5.	
4.CONFIRM THE SYMPTOM	
I ry to confirm the symptom described by the customer. Verify relation between the symptom and the condition when the symptom is detected.	
>> GO TO 6.	J
5. PERFORM DTC CONFIRMATION PROCEDURE	
Perform DTC CONFIRMATION PROCEDURE for the detected DTC, and then check that DTC is detected	SEC
again. At this time, always connect CONSULT to the vehicle, and check self diagnostic results in real time.	
diagnosis order.	L
<ul> <li>NOTE:</li> <li>Freeze frame data is useful if the DTC is not detected</li> </ul>	
Perform Component Function Check if DTC CONFIRMATION PROCEDURE is not included on Service	M
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 CONFIR- MATION PROCEDURE.	Ν
Is DTC detected?	
YES >> GO TO 7.	$\bigcirc$
6. DETECT MALEUNCTIONING SYSTEM BY SYMPTOM DIAGNOSIS	0
Detect malfunctioning system according to SYMPTOM DIAGNOSIS based on the confirmed symptom in step	D
4, and determine the trouble diagnosis order based on possible causes and symptom.	٢
Is the symptom described?	
NO >> Monitor input data from related sensors or check voltage of related module terminals using CON-	
SULT.	

**1.**DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

### DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

Inspect according to Diagnosis Procedure of the system.

Is malfunctioning part detected?

YES >> GO TO 8.

NO >> Check according to <u>GI-43, "Intermittent Incident"</u>.

8. REPAIR OR REPLACE THE MALFUNCTIONING PART

- 1. Repair or replace the malfunctioning part.
- 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 INSPECTION > [WITH INTELLIGENT KEY SYSTEM]

< BASIC INSPECTION > [WITH INTELLIGENT KEY]	SYSTEMJ
ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT ECM	
ECM : Description	ID:000000010259349
Performing the following procedure can automatically activate recommunication of ECM and BCI when the ECM is replaced with a new one*. *: New one means a virgin ECM that has never been energized on-board. (In this step, initialization procedure by CONSULT is not necessary)	VI, but only
NOTE: • If multiple keys are attached to the key holder, separate them before beginning work. • Distinguish keys with unregistered key IDs from those with registered IDs.	
ECM : Work Procedure	ID:000000010259350
1.PERFORM ECM RECOMMUNICATING FUNCTION	
<ol> <li>Install ECM.</li> <li>Contact backside of registered Intelligent Key* to push-button ignition switch, then turn ignitio ON.</li> </ol>	n switch to
<ul> <li>*: To perform this step, use the key that is used before performing ECM replacement.</li> <li>3. Maintain ignition switch in the ON position for at least 5 seconds.</li> <li>4. Turn ignition switch to OFF.</li> <li>5. Check that the engine starts.</li> </ul>	
>> GO TO 2.	
Perform EC-157, "Work Procedure".	
BCM	
BCM : Description	ID:000000010259351
BEFORE REPLACEMENT When replacing BCM, save or print current vehicle specification with CONSULT configuration befor	re replace-
ment. NOTE:	
If "READ CONFIGURATION" can not be used, use the "WRITE CONFIGURATION - Manual sele replacing BCM.	ction" after
AFTER REPLACEMENT	
When replacing BCM, always perform "WRITE CONFIGURATION" with CONSULT. Or not BCM control function does not operate normally. • Complete the procedure of "WRITE CONFIGURATION" in order.	doing so,
<ul> <li>Configuration is different for each vehicle model. Confirm configuration of each vehicle m</li> <li>If you set incorrect "WRITE CONFIGURATION", incidents might occur.</li> <li>NOTE:</li> </ul>	odel.
BCM : Work Procedure	ID-0000000010250252
<b>1.</b> SAVING VEHICLE SPECIFICATION	
CONSULT Configuration	
Perform "READ CONFIGURATION" to save or print current vehicle specification. Refer to BCS-80.	CONFIG-

URATION (BCM) : Description".

NOTE:

#### ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT PECTION > [WITH INTELLIGENT KEY SYSTEM]

#### < BASIC INSPECTION >

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-95, "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 <u>BCS-80, "CONFIGURATION (BCM) : Work Procedure"</u>.

>> GO TO 4.

**4.**INITIALIZE BCM (NATS)

Perform BCM initialization. (NATS)

>> WORK END

# **DTC/CIRCUIT DIAGNOSIS** P1610 LOCK MODE

# Description

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

#### DTC DETECTION LOGIC

_	DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause	
_	P1610	LOCK MODE	When ECM detects a communication malfunction between ECM and BCM 5 times or more.	_	E
DT	C CONFIR	MATION PROCEDUR	E		
1.	PERFORM	DTC CONFIRMATION F	PROCEDURE		F
1. 2.	Turn ignitic Check DT	on switch ON. C in "Self Diagnostic Res	sult" mode of "ENGINE" using CONSULT.		G
<u>ls E</u>	TC detecte	<u>d?</u>			
YE N(	ES >> Go D >> INS	to <u>SEC-55, "Diagnosis</u> SPECTION END	Procedure".		Н
Dia	agnosis P	rocedure		INFOID:000000010259355	5
1.0	CHECK EN	GINE START FUNCTIO	N		I
1.	Check that	DTC except for DTC P1	610 is not detected.		
2.	Turn ignitic	, erase the DIC after fixion switch OFF.	ing.		J
3.	Contact the	e registered Intelligent K	ey backside to push-button ignition switch and wa	ait 5 seconds.	
4. 5.	Turn ignitic	on switch ON. on switch OFF and wait 5	5 seconds.		SF
6.	Repeat ste	ps 3 and 5 twice (a total	of 3 times).		
7.	Check that	engine can start.			
	>> IN\$	SPECTION END			L
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INFOID:000000010259353

INFOID:000000010259354

### P1611 ID DISCORD, IMMU-ECM

#### < DTC/CIRCUIT DIAGNOSIS >

# P1611 ID DISCORD, IMMU-ECM

### DTC Logic

DTC DETECTION LOGIC

#### NOTE:

- If DTC P1611 is displayed with DTC U1000 (for BCM), first perform the trouble diagnosis for DTC U1000. Refer to <u>BCS-83, "DTC Logic"</u>.
- If DTC P1611 is displayed with DTC U1010 (for BCM), first perform the trouble diagnosis for DTC U1010. Refer to <u>BCS-84, "DTC Logic"</u>.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1611	ID DISCORD, IMMU-ECM	The ID verification results between BCM and ECM are NG.	<ul> <li>Harness or connectors (The CAN communication line is open or shorted.)</li> <li>BCM</li> <li>ECM</li> </ul>

#### DTC CONFIRMATION PROCEDURE

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

1. Turn ignition switch ON.

2. Check DTC in "Self Diagnostic Result" mode of "ENGINE" using CONSULT.

#### Is DTC detected?

YES >> Go to SEC-56. "Diagnosis Procedure".

NO >> INSPECTION END

### Diagnosis Procedure

**1.**PERFORM INITIALIZATION

Perform initialization of BCM and reregistration of all Intelligent Keys using CONSULT.

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

YES >> INSPECTION END

NO >> GO TO 2.

2.CHECK SELF DIAGNOSTIC RESULT

1. Select "Self Diagnostic Result" mode of "ENGINE" using CONSULT.

2. Erase DTC.

3. Perform DTC CONFIRMATION PROCEDURE for DTC P1611. Refer to SEC-56, "DTC Logic".

Is DTC detected?

YES >> GO TO 3.

NO >> INSPECTION END

**3.**REPLACE BCM

1. Replace BCM. Refer to <u>BCS-95, "Removal and Installation"</u>.

2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

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

YES >> INSPECTION END

NO >> GO TO 4.

**4.**REPLACE ECM

Replace ECM. Refer to <u>EC-581, "Removal and Installation"</u> (VK56VD for USA and CANADA) or <u>EC-581,</u> "Removal and Installation" (VK56VD for MEXICO).

>> INSPECTION END

INFOID:000000010259356

INFOID:000000010259357

### P1612 CHAIN OF ECM-IMMU

#### < DTC/CIRCUIT DIAGNOSIS >

### P1612 CHAIN OF ECM-IMMU

# DTC Logic

### DTC DETECTION LOGIC

#### NOTE:

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

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause	
P1612	CHAIN OF ECM-IMMU	Inactive communication between ECM and BCM	<ul> <li>Harness or connectors (The CAN communication line is open or shorted.)</li> <li>BCM</li> <li>ECM</li> </ul>	
TC CON	IFIRMATION PROCE	DURE	·	
I.PERFO	RM DTC CONFIRMATIO	ON PROCEDURE		
I. Turn ig	nition switch ON.			
2. Check	DIC in "Self Diagnostic	Result mode of "ENGINE" using	CONSULI.	
YES >:	> Go to <u>SEC-57, "Diagna</u> "	osis Procedure".		
NO >:	> INSPECTION END			
Diagnosi	is Procedure		INFOID:000000010259359	
1.REPLA	CE BCM			
. Replac	ce BCM. Refer to BCS-9	5. "Removal and Installation".		
2. Perfori	m initialization of BCM a	nd registration of all Intelligent Key	's using CONSULI.	
YES >:	> INSPECTION END	an the engine be started with regis	stered intelligent rtey:	6
NO >:	> GO TO 2.			3
.REPLA	CE ECM			
≀eplace E <u>Removal</u> a	CM. Refer to <u>EC-581,</u> and Installation <sup>"</sup> (VK56V	<u>"Removal and Installation"</u> (VK56 D for MEXICO).	VD for USA and CANADA) or <u>EC-581.</u>	
>:	> INSPECTION END			

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INFOID:000000010259358

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### P1614 CHAIN OF IMMU-KEY

#### < DTC/CIRCUIT DIAGNOSIS >

### P1614 CHAIN OF IMMU-KEY

### DTC Logic

INFOID:000000010259360

[WITH INTELLIGENT KEY SYSTEM]

#### DTC DETECTION LOGIC

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

#### DTC CONFIRMATION PROCEDURE

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

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

#### Is DTC detected?

- YES >> Go to <u>SEC-58</u>, "Diagnosis Procedure".
- NO >> GO TO 2.

# 2. PERFORM DTC CONFIRMATION PROCEDURE 2

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

#### Is DTC detected?

- YES >> Go to <u>SEC-58. "Diagnosis Procedure"</u>.
- NO >> INSPECTION END

#### Diagnosis Procedure

### 1.CHECK FUSE

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

Signal name	Fuse No.	
Battery power supply	43	

#### Is the fuse fusing?

YES >> Replace the blown fuse after repairing the cause of blowing.

NO >> GO TO 2.

### 2.CHECK NATS ANTENNA AMP. POWER SUPPLY

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

(+) NATS antenna amp.		(-)	Voltage (V) (Approx.)	
Connector	Terminal			
M26	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.

INFOID:0000000010259361

## P1614 CHAIN OF IMMU-KEY

#### < DTC/CIRCUIT DIAGNOSIS >

	IPDM E/R			NATS ant	enna amp		
Connect	tor	Terminal	Con	nector	Terminal		Continuity
		42	M	26 1		Fxisted	
3. Check cont	inuitv betwee	en IPDM E/R h	arness conr	ector and	around.		Existed
					ground		
Conr	IPDI Dector	M E/R	inal		Ground		Continuity
F	14	42	)	-	0.00.00		Not existed
the inspection	n result norm	al?	-				
YES >> Re NO >> Re	place IPDM E pair or replac	E/R. Refer to <u>P</u> e harness.	<u>CS-34, "Rer</u>	<u>moval and</u>	Installati	on".	
CHECK NAT	'S ANTENNA	A AMP. OUTPL	JT SIGNAL	1			
. Connect NA 2. Disconnect 3. Check volta	ATS antenna BCM conne age between	amp. connecto ctor. BCM harness	or. connector a	nd ground			
	(	+)					
	B	СМ			(—)		voitage (V) (Approx.)
Conr	nector	Term	inal				
M	68	21			Ground		12
. Check cont	inuity betwee	en BCM harnes	ss connector	r and NATS	S antenn enna amp	a amp. co	onnector.
Connect	or	Terminal	Con	nector	Г	Ferminal	Continuity
M68		21	Μ	26		2	Existed
. Check cont	inuity betwee	en BCM harnes	ss connector	r and grour	nd.		
	B	СМ					Continuity
Conr	nector	Term	inal		Ground		Continuity
М	68	21		1			Not existed
<u>s the inspection</u> YES >> Rep NO >> Rep CHECK NAT	n result norm place NATS a pair or replac S ANTENNA	<u>al?</u> antenna amp. I e harness. A AMP. COMM	Refer to <u>SEC</u>	<u>C-137, "Re</u> I SIGNAL 1	moval ai	nd Installa	ation".
. Connect BO	CM connecto age between	r. BCM harness	connector a	nd ground	using ar	nalog test	er
(·	+)	()	ſ	Condition			Voltage (V)
Connector	Terminal			- CHURCH			(Approx.)
M68	21	Ground	Contact Intellig push-button igr ignition switch	ent Key back hition switch, ON.	side to then turn	Just after switch, po move.	pressing push-button ignition inter of analog tester should

Is the inspection result normal?



### P1614 CHAIN OF IMMU-KEY

< DTC/CIRCUIT DIAGNOSIS >

#### YES >> GO TO 7.

NO >> Replace NATS antenna amp. Refer to <u>SEC-137, "Removal and Installation"</u>.

7. CHECK NATS ANTENNA AMP. OUTPUT SIGNAL 2

#### 1. Disconnect BCM connector.

2. Check voltage between BCM harness connector and ground.

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

Is the inspection result normal?

YES >> GO TO 9.

NO >> GO TO 8.

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

1. Disconnect NATS antenna amp. connector.

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

B	СМ	NATS ant	Continuity		
Connector	Terminal	Connector Terminal		Continuity	
M68	25	M26	3	Existed	

3. Check continuity between BCM harness connector and ground.

B	CM		Continuity
Connector	Terminal	Ground	Continuity
M68	25		Not existed

Is the inspection result normal?

YES >> Replace NATS antenna amp. Refer to <u>SEC-137, "Removal and Installation"</u>.

NO >> Repair or replace harness.

9.CHECK NATS ANTENNA AMP. COMMUNICATION SIGNAL 2

1. Connect BCM connector.

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

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

#### Is the inspection result normal?

YES >> GO TO 10.

NO >> Replace NATS antenna amp. Refer to <u>SEC-137, "Removal and Installation"</u>.

### **10.**CHECK NATS ANTENNA AMP. GROUND CIRCUIT

#### 1. Disconnect NATS antenna amp. connector.

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

NATS ant	enna amp.		Continuity	
Connector	Terminal	Ground	Continuity	
M26	4		Existed	

Is the inspection result normal?

	[WITH INTELLIGENT KEY SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >	[WITH INTELLIGENT KEY SYSTEM	
YES >> GO TO 11.		
NO >> Repair or replace harness.		
11.CHECK INTERMITTENT INCIDENT		
Refer to GI-43, "Intermittent Incident".		
>> INSPECTION END		

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#### **B2192 ID DISCORD, IMMU-ECM**

#### < DTC/CIRCUIT DIAGNOSIS >

### B2192 ID DISCORD, IMMU-ECM

### DTC Logic

DTC DETECTION LOGIC

#### NOTE:

- If DTC B2192 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>BCS-83, "DTC Logic"</u>.
- If DTC B2192 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to <u>BCS-84, "DTC Logic"</u>.

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.	<ul> <li>Harness or connectors (The CAN communication line is open or shorted.)</li> <li>BCM</li> <li>ECM</li> </ul>

#### DTC CONFIRMATION PROCEDURE

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

1. Turn ignition switch ON.

2. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

Is DTC detected?

YES >> Go to SEC-62. "Diagnosis Procedure".

NO >> INSPECTION END

### Diagnosis Procedure

**1.**PERFORM INITIALIZATION

Perform initialization of BCM and reregistration of all Intelligent Keys using CONSULT.

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

YES >> INSPECTION END

NO >> GO TO 2.

**2.**CHECK SELF-DIAGNOSIS RESULT

1. Select "Self Diagnostic Result" mode of "BCM" using CONSULT.

2. Erase DTC.

3. Perform DTC CONFIRMATION PROCEDURE for DTC B2192. Refer to SEC-62, "DTC Logic".

Is DTC detected?

YES >> GO TO 3.

NO >> INSPECTION END

**3.**REPLACE BCM

1. Replace BCM. Refer to <u>BCS-95</u>, "Removal and Installation".

2. Perform initialization of BCM and reregistration of all Intelligent Keys using CONSULT.

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

YES >> INSPECTION END

NO >> GO TO 4.

**4.**REPLACE ECM

Replace ECM. Refer to <u>EC-581, "Removal and Installation"</u> (VK56VD for USA and CANADA) or <u>EC-581,</u> "Removal and Installation" (VK56VD for MEXICO).

>> INSPECTION END

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### **B2193 CHAIN OF ECM-IMMU**

#### < DTC/CIRCUIT DIAGNOSIS >

### **B2193 CHAIN OF ECM-IMMU**

### **DTC** Logic

### DTC DETECTION LOGIC

#### NOTE:

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

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2193	CHAIN OF BCM-ECM	Inactive communication between BCM and ECM	<ul> <li>Harness or connectors (The CAN communication line is open or shorted.)</li> <li>BCM</li> <li>ECM</li> </ul>
	IRMATION PROCED	DURE	
<b>1.</b> PERFOR	M DTC CONFIRMATIC	ON PROCEDURE	
1. Turn ign 2. Check D	ition switch ON. DTC in "Self Diagnostic	Result" mode of "BCM" using CON	ISULT.
YES >> NO >>	Go to <u>SEC-63, "Diagno</u> INSPECTION END	osis Procedure".	
Diagnosis	Procedure		INFOID:000000010259365
<b>1</b> .REPLACI	E BCM		
1. Replace 2. Perform	BCM. Refer to <u>BCS-9</u> initialization of BCM a	5. "Removal and Installation". nd registration of all Intelligent Keys	s using CONSULT.
YES >> NO >>	iem de initialized and c INSPECTION END GO TO 2.	an the engine be started with regist	tered Intelligent Key?
2.REPLACE	EECM		
Replace EC "Removal an	M. Refer to <u>EC-581, '</u> ad Installation" (VK56V	Removal and Installation <sup>"</sup> (VK56) D for MEXICO).	/D for USA and CANADA) or <u>EC-581,</u>
>>	INSPECTION END		

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[WITH INTELLIGENT KEY SYSTEM]

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#### < DTC/CIRCUIT DIAGNOSIS >

# **B2195 ANTI-SCANNING**

### DTC Logic

INFOID:000000010259366

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[WITH INTELLIGENT KEY SYSTEM]

#### DTC DETECTION LOGIC

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

#### DTC CONFIRMATION PROCEDURE

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

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

#### Is DTC detected?

YES >> Refer to <u>SEC-64, "Diagnosis Procedure"</u>.

NO >> INSPECTION END.

#### Diagnosis Procedure

### 1.CHECK SELF DIAGNOSTIC RESULT 1

- 1. Select "Self Diagnostic Result" mode of "BCM" using CONSULT.
- 2. Erase DTC.
- Perform DTC CONFIRMATION PROCEDURE for DTC B2195. Refer to <u>SEC-64, "DTC Logic"</u>.

#### 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-64, "DTC Logic".

#### Is DTC detected?

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

#### **4.**REPLACE BCM

- 1. Replace BCM. Refer to BCS-95, "Removal and Installation".
- 2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

>> INSPECTION END

### **B2196 DONGLE UNIT**

### [WITH INTELLIGENT KEY SYSTEM]

< DTC/CIR	CUIT DIAGNOSIS	>		[WITH INTELLI	GENT KEY SYSTEM]	
B2196 D	ONGLE UNIT	•				
Descriptio	on				INFOID:000000010259368	
BCM perfor When verific	ms ID verification be cation result is OK, I	tween BCM 3CM permits	and dongle unit.			
DTC Logi	ic				INFOID:000000010259369	
DTC DETE	CTION LOGIC					
NOTE: If DTC B2 <u>BCS-83, "</u> If DTC B2	2196 is displayed w <u>DTC Logic"</u> . 2196 is displayed w	th DTC U10	000, first perform the ti 010, first perform the ti	rouble diagnosis fo rouble diagnosis fo	or DTC U1000. Refer to	
<u>BCS-84, "</u>	<u>DTC Logic"</u> .					
DTC No.	Trouble diagnosis nar	ne	DTC detecting condition	Po	ossible cause	
B2196	DONGLE NG	The ID ve and dong	erification results between Bo gle unit is NG.	<ul> <li>Harness or connectors (Dongle unit circuit is open or shorted.)</li> <li>Dongle unit</li> </ul>		
1. Turn igr 2. Turn igr 3. Turn igr 4. Check ' is the DTC of YES >> NO >> Diagnosis	hition switch ON. hition switch OFF. Self-diagnosis resul <u>detected?</u> Refer to <u>SEC-65. "I</u> INSPECTION END	t" using COI <u>Diagnosis Pr</u>	NSULT. ocedure".		INFOID-000000010259370	
1.PERFOR	RM INITIALIZATION					
1. Perform 2. Start the <u>Dose the er</u> YES >>	n initialization of BCI e engine. ngine start? INSPECTION END	A and reregi	stration of all Intelligent	Keys using CONS	ULT.	
NO >> 2.CHECK	GO TO 2. DONGLE UNIT CIR	CUIT				
1. Turn igr 2. Disconr 3. Check o	nition switch OFF. nect BCM connector continuity between E	and dongle CM harness	unit connector. s connector and dongle	unit harness conne	ector.	
	BCM		Dongle	unit		
Cor	nnector T	erminal	Connector	Terminal	- Continuity	
1	V68	24	M142	7	Existed	

4. Check continuity between BCM harness connector and ground.

B	СМ		Continuity
Connector	Terminal	Ground	Continuity
M68	24		Not existed

Is the inspection result normal?

YES >> GO TO 3.

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### **B2196 DONGLE UNIT**

#### < DTC/CIRCUIT DIAGNOSIS >

### NO >> Repair or replace harness.

# $\mathbf{3}.$ Check dongle unit ground circuit

Check continuity between dongle unit harness connector and ground.

Dong	le unit		Continuity	
Connector	Terminal	Ground	Continuity	
M142	1		Existed	

Is the inspection result normal?

YES >> Replace dongle unit.

NO >> Repair or replace harness.

### B2198 NATS ANTENNA AMP.

#### < DTC/CIRCUIT DIAGNOSIS >

## B2198 NATS ANTENNA AMP.

### **DTC** Logic

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INFOID:0000000010259371

[WITH INTELLIGENT KEY SYSTEM]

#### 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	<ul> <li>Harness or connectors (NATS antenna amp. circuit is open or shorted.)</li> <li>NATS antenna amp.</li> <li>IPDM E/R</li> </ul>
TC CONFIF	RMATION PROCEDU	RE	
.PERFORM	DTC CONFIRMATION	PROCEDURE 1	
. Contact Ir 2. Check DT s DTC detector	ntelligent Key backside t C in "Self Diagnostic Re ed?	o push-button ignition switch. esult" mode of "BCM" using CONS	SULT.
YES >> G NO >> G 2.PERFORM	o to <u>SEC-67, "Diagnosis</u> O TO 2. I DTC CONFIRMATION	<u>s Procedure"</u> . PROCEDURE 2	
<ol> <li>Press the</li> <li>Check DT</li> <li>S DTC detect</li> </ol>	push-button ignition sw C in "Self Diagnostic Re ed?	itch. esult" mode of "BCM" using CONS	SULT.
YES >> G NO >> IN	o to <u>SEC-67, "Diagnosis</u> ISPECTION END	<u>s Procedure"</u> .	
Diagnosis I	Procedure		INFOID:00000001025937.
<b>1.</b> CHECK FL	JSE		
1 Turn igniti	on switch OFF		

2. Check that the following fuse in IPDM E/R is not blown.

Signal name	Fuse No.	
Battery power supply	43	L

### Is the fuse fusing?

YES >> Replace the blown fuse after repairing the cause of blowing.

NO >> GO TO 2.

# **2.**CHECK NATS ANTENNA AMP. POWER SUPPLY

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

	+)		Veltage (V)	0	
NATS antenna amp.		()	(Approx.)		
Connector Terminal					
M26	1	Ground	Battery voltage	Р	

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.

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### B2198 NATS ANTENNA AMP.

#### < DTC/CIRCUIT DIAGNOSIS >

IPDM E/R		NATS ant	Continuity		
Connector	Terminal	Connector Terminal		Continuity	
E14	42	M26	1	Existed	

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

IPDN	/I E/R		Continuity	
Connector	Connector Terminal		Continuity	
E14	E14 42		Not existed	

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".

NO >> Repair or replace harness.

### **4.**CHECK NATS ANTENNA AMP. OUTPUT SIGNAL 1

1. Connect NATS antenna amp. connector.

2. Disconnect BCM connector.

3. Check voltage between BCM harness connector and ground.

( 	+) CM	(-)	Voltage (V) (Approx.)	
Connector	Connector Terminal			
M68	M68 21		12	

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 5.

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

1. Disconnect NATS antenna amp. connector.

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

B	BCM		NATS antenna amp.		
Connector	Terminal	Connector Terminal		Continuity	
M68	21	M26	2	Existed	

3. Check continuity between BCM harness connector and ground.

B	CM		Continuity
Connector	Connector Terminal		Continuity
M68 21			Not existed

Is the inspection result normal?

YES >> Replace NATS antenna amp. Refer to <u>SEC-137, "Removal and Installation"</u>.

NO >> Repair or replace harness.

#### **6.**CHECK NATS ANTENNA AMP. COMMUNICATION SIGNAL 1

1. Connect BCM connector.

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

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

Is the inspection result normal?



### B2198 NATS ANTENNA AMP.

DTC/CIRCUI	T DIAGNOS	IS >		רוש]	TH INTELL	IGENT KEY SYSTEM
YES >> GO	TO 7.					
NO >> Rep	place NATS a	Intenna amp.	Refer to <u>SE(</u>	<u>C-137, "Removal an</u>	d Installatio	<u>on"</u> .
CHECK NAT	S ANTENNA	AMP. OUTPL	JT SIGNAL	2		
Disconnect Check volta	BCM connecting between	ctor. BCM harness	connector a	ind ground.		
	(·	+)				
	BC	CM		(–) Voltage (Appro.		Voltage (V) (Approx.)
Conr	nector	Term	inal			
M	68	25	5	Ground		12
<u>s the inspection</u> YES >> GO NO >> GO CHECK NAT	n result norma TO 9. TO 8. S ANTENNA	al? AMP. OUTPL	JT SIGNAL	CIRCUIT 2		
Disconnect	NATS anteni inuity betwee	na amp. conne n BCM harnes	ector. ss connecto	r and NATS antenna	a amp. con	nector.
	BCM			NATS antenna amp.		Continuity
Connect	or	Terminal	Coni	nector Te	erminal	
M68		25	N	126	3	Existed
. Check cont	inuity betwee	n BCM harnes	ss connecto	r and ground.		
	BC	CM				Continuity
Conr	nector	Terminal		Ground		Continuity
M	68	25	5			Not existed
YES >> Rep NO >> Rep CHECK NAT	Diace NATS a Dair or replace S ANTENNA CM connector age between	antenna amp. I e harness. A AMP. COMM r. BCM harness	Refer to <u>SEC</u> UNICATION	C-137, "Removal an I SIGNAL 2 Ind ground using an	alog tester.	<u>on"</u> .
	r)					
	., СМ	()		Condition		Voltage (V)
Connector	Terminal					(Approx.)
M68	25	Ground	Contact Intelli push-button ig ignition switch	igent Key backside to gnition switch, then turn n ON.	Just after pr switch, poin move.	essing push-button ignition ter of analog tester should
<u>s the inspection</u> YES >> GO	n result norma TO 10.	al?	Pafar to SE(	C-137 "Pemoval an	d Installati	
		NA AMP. GRO				<u>.</u> .
Disconnect	NATS anteni inuity betwee	na amp. conne en NATS anter	ector. Ina amp. hai	rness connector and	d ground.	
	NATS ant	enna amp.				
Conr	nector	Term	inal	Ground		Continuity
М	26	4				Existed

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> GO TO 11.

NO >> Repair or replace harness.

11. CHECK INTERMITTENT INCIDENT

Refer to GI-43, "Intermittent Incident".

>> INSPECTION END

### **B2555 STOP LAMP**

### < DTC/CIRCUIT DIAGNOSIS >

# B2555 STOP LAMP

DTC Logic

INFOID:000000010259373

[WITH INTELLIGENT KEY SYSTEM]

DTC DETECTION LOGIC	
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·	0	DTC detection	ng condition	Possible cause
B2555	STOP LAMP	BCM makes a compa upper voltage and lov lamp switch. It judges detect the malfunction	rison between the ver voltage of stop from their values to hing circuit.	<ul> <li>Harness or connectors (Stop lamp switch circuit is open or shorted.)</li> <li>Stop lamp switch</li> <li>Fuse</li> <li>BCM</li> </ul>
		JRE		
. Depress t . Check D	the brake pedal and wa FC in "Self Diagnostic R	at 1 second or more Result" mode of "BC	e. M" usina CONSl	JLT.
DTC detect	ted?		<b>J</b>	
YES >> G	o to <u>SEC-71, "Diagnos</u>	<u>is Procedure"</u> .		
NO >> IN	NSPECTION END			
liagnosis	Procedure			INFOID:0000000
.CHECK ST	TOP LAMP SWITCH IN	IPUT SIGNAL 1		
. Turn ignit . Disconne . Check vo	ion switch OFF. ct BCM connector. Itage between BCM ha	rness connector ar	nd ground.	
	(+)			
	BCM		(-)	Voltage (V) (Approx.)
	and a stan	<b>T</b>		
Co	onnector	Ierminal		
	M71	105	Ground	Battery voltage
Cc the inspecti YES >> G NO-1 >> C NO-2 >> C CHECK ST Disconne Check vo	M71 ion normal? GO TO 2. check 10 A fuse [No. 7, check harness for open TOP LAMP SWITCH Po- tot stop lamp switch cor- ltage between stop lam	located in the fuse or short between E OWER SUPPLY CI nector. p switch harness c	Ground block (J/B)]. BCM and fuse. RCUIT	Battery voltage
Cc the inspecti YES >> G NO-1 >> C NO-2 >> C CHECK ST . Disconne . Check vo	M71 ion normal? GO TO 2. Check 10 A fuse [No. 7, Check harness for open FOP LAMP SWITCH Po- tot stop lamp switch cor Itage between stop lam	located in the fuse or short between E OWER SUPPLY CI Innector. Ip switch harness c	Ground block (J/B)]. 3CM and fuse. RCUIT connector and gro	und.
Cc the inspecti YES >> G NO-1 >> C NO-2 >> C CHECK ST Disconne Check vo	M71 ion normal? GO TO 2. check 10 A fuse [No. 7, check harness for open TOP LAMP SWITCH Per oct stop lamp switch cor ltage between stop lam (+) Stop lamp switch	located in the fuse or short between E OWER SUPPLY CI Inector. Ip switch harness c	Ground block (J/B)]. BCM and fuse. RCUIT connector and gro	und.
Cc the inspecti YES >> G NO-1 >> C NO-2 >> C CHECK ST Disconne Disconne	M71 ion normal? GO TO 2. Check 10 A fuse [No. 7, Check harness for open TOP LAMP SWITCH Port of stop lamp switch corr Itage between stop lam (+) Stop lamp switch onnector	Iorminal 105 located in the fuse or short between E OWER SUPPLY CI nector. p switch harness c	Ground block (J/B)]. CM and fuse. RCUIT connector and gro	und. Voltage (V) (Approx.)

Revision: 2014 October

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### B2555 STOP LAMP

#### < DTC/CIRCUIT DIAGNOSIS >

(+) BCM		(-)	Condition		Voltage (V) (Approx.)	
Connector	Terminal				( ) ] ] ] ] ] ]	
Mee	0	Ground	Broko podol	Depressed	Battery voltage	
100	9	Ground	biake pedal	Not depressed	0	

Is the inspecting result normal?

YES >> GO TO 4.

NO >> GO TO 5.

**4.**REPLACE BCM

1. Replace BCM. Refer to <u>BCS-95, "Removal and Installation"</u>.

2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

>> 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	Continuity
E115	2	M68	9	Existed

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

Stop lan	np switch		Continuity
Connector	Terminal	Ground	
E115	2		Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace harness.

**6.**CHECK STOP LAMP SWITCH

Refer to SEC-72, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace stop lamp switch. Refer to <u>BR-22, "Removal and Installation"</u>.

7. CHECK INTERMITTENT INCIDENT

Refer to GI-43, "Intermittent Incident".

>> INSPECTION END

### Component Inspection

### 1.CHECK STOP LAMP SWITCH

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

INFOID:000000010259375
## **B2555 STOP LAMP**

#### < DTC/CIRCUIT DIAGNOSIS >

### [WITH INTELLIGENT KEY SYSTEM]

Stop lan	np switch	0-	Condition	
Terr	minal	- Co		
4	2	Droke nodel	Not depressed N	
1	2	Brake pedal Depressed		Existed
he inspection result	normal?			
ES >> INSPECTI	ON END			
O >> Replace st	top lamp switch. Refe	er to <u>BR-22, "Remova</u>	al and Installation".	

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#### B2556 PUSH-BUTTON IGNITION SWITCH DSIS > [WITH INTELLIGENT KEY SYSTEM]

### < DTC/CIRCUIT DIAGNOSIS >

# B2556 PUSH-BUTTON IGNITION SWITCH

## DTC Logic

INFOID:000000010259376

INFOID:000000010259377

#### DTC DETECTION LOGIC

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

#### DTC CONFIRMATION PROCEDURE

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

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

#### Is DTC detected?

YES >> Go to SEC-74, "Diagnosis Procedure".

NO >> INSPECTION END

#### **Diagnosis** Procedure

## 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.

(*	+)			
Push-button ignition switch		()	(Approx.)	
Connector	Connector Terminal			
M101	4	Ground	12	

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 2.

### 2.check push-button ignition switch circuit

1. Disconnect BCM connector and IPDM E/R connector.

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

Push-button ignition switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M101	4	M71	100	Existed

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

Push-button	ignition switch		Continuity	
Connector Terminal		Ground	Continuity	
M101 4			Not existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

### **B2556 PUSH-BUTTON IGNITION SWITCH**

< DTC/CIRCUIT DIAGNOSIS >

# [WITH INTELLIGENT KEY SYSTEM]

#### 3.REPLACE BCM А 1. Replace BCM. Refer to BCS-95, "Removal and Installation". Perform initialization of BCM and registration of all Intelligent Keys using CONSULT. 2. В >> 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 Continuity D Connector Terminal Ground M101 1 Existed Is the inspection result normal? Е YES >> GO TO 5. NO >> Repair or replace harness. **5.**CHECK PUSH-BUTTON IGNITION SWITCH F Refer to SEC-75, "Component Inspection". Is the inspection result normal? YES >> GO TO 6. NO >> Replace push-button ignition switch. Refer to SEC-138, "Removal and Installation". **6.**CHECK INTERMITTENT INCIDENT Н Refer to GI-43, "Intermittent Incident". >> INSPECTION END Component Inspection INFOID:000000010259378 1. CHECK PUSH-BUTTON IGNITION SWITCH 1. Turn ignition switch OFF. 2. Disconnect push-button ignition switch connector. SEC Check continuity between push-button ignition switch terminals. 3.

Push-button ignition switch Terminal		Condition		Continuity	L
1	4	switch	Not pressed	Not existed	M

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace push-button ignition switch. Refer to SEC-138. "Removal and Installation". Ν

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< DTC/CIRCUIT DIAGNOSIS >

### **B2557 VEHICLE SPEED**

### DTC Logic

INFOID:000000010259379

[WITH INTELLIGENT KEY SYSTEM]

#### DTC DETECTION LOGIC

#### NOTE:

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

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible causes
B2557	VEHICLE SPEED	<ul> <li>BCM detects one of the following conditions for 10 seconds continuously.</li> <li>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.</li> <li>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.</li> </ul>	<ul> <li>Harness or connectors (The CAN communication line is open or shorted.)</li> <li>Combination meter</li> <li>ABS actuator and electric unit (control unit)</li> </ul>

#### DTC CONFIRMATION PROCEDURE

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

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

#### Is DTC detected?

YES >> Go to <u>SEC-76, "Diagnosis Procedure"</u>.

#### NO >> INSPECTION END

#### Diagnosis Procedure

INFOID:000000010259380

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

Check DTC in "Self Diagnostic Result" mode of "ABS" using CONSULT.

Is DTC detected?

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

2.CHECK DTC OF "COMBINATION METER"

Check DTC in "Self Diagnostic Result" mode of "METER/M&A" using CONSULT.

Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to <u>MWI-45, "DTC Index"</u>.

NO >> GO TO 3.

**3.**CHECK INTERMITTENT INCIDENT

Refer to GI-43, "Intermittent Incident".

### **B2601 SHIFT POSITION**

#### < DTC/CIRCUIT DIAGNOSIS >

### **B2601 SHIFT POSITION**

### DTC Logic

DTC DETECTION LOGIC

#### NOTE:

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

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

#### DTC CONFIRMATION PROCEDURE

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

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

#### Is DTC detected?

- YES >> Go to SEC-77, "Diagnosis Procedure".
- NO >> INSPECTION END

#### Diagnosis Procedure

## 1.CHECK A/T SHIFT SELECTOR POWER SUPPLY

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

(+)				-	
A/T shift selector (detention switch)		()	Voltage (V) (Approx.)	М	
Connector	Terminal			111	
M57	13	Ground	12		

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 2.

#### 2.CHECK A/T SHIFT SELECTOR POWER SUPPLY CIRCUIT

1. Disconnect BCM connector.

 Check continuity between A/T shift selector (detention switch) harness connector and BCM harness connector.

A/T shift selector (detention switch)		BCM		Continuity	
Connector	Terminal	Connector Terminal		Continuity	
M57	13	M71	104	Existed	

3. Check continuity between A/T shift selector (detention switch) harness connector and ground.

[WITH INTELLIGENT KEY SYSTEM]

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### **B2601 SHIFT POSITION**

#### < DTC/CIRCUIT DIAGNOSIS >

A/T shift selector (detention switch)			Continuity
Connector Terminal		Ground	Continuity
M57	13		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

## **3.**REPLACE BCM

- 1. Replace BCM. Refer to BCS-95, "Removal and Installation".
- 2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

#### >> INSPECTION END

### **4.**CHECK A/T SHIFT SELECTOR CIRCUIT (BCM)

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

A/T shift selector	A/T shift selector (detention switch)		BCM		
Connector	Terminal	Connector Terminal		Continuity	
M57	14	M68	37	Existed	

3. Check continuity between A/T shift selector (detention switch) harness connector and ground.

A/T shift selector	(detention switch)		Continuity
Connector Terminal		Ground	Continuity
M57	M57 14		Not existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace harness.

**5.**CHECK A/T SHIFT SELECTOR CIRCUIT (IPDM E/R)

Check continuity between A/T shift selector (detention switch) harness connector and IPDM E/R harness connector.

A/T shift selector (detention switch)		IPDM E/R		Continuity	
Connector	Terminal	Connector Terminal		Continuity	
M57	14	E17	64	Existed	

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace harness.

**6.**CHECK A/T SHIFT SELECTOR (DETENTION SWITCH)

Refer to SEC-79, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace A/T shift selector. Refer to <u>TM-184</u>, "Removal and Installation".

7. CHECK INTERMITTENT INCIDENT

Refer to GI-43, "Intermittent Incident".

#### B2601 SHIFT POSITION [WITH INTELLIGENT KEY SYSTEM]

### < DTC/CIRCUIT DIAGNOSIS >

### Component Inspection

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# 1.CHECK A/T SHIFT SELECTOR (DETENTION SWITCH)

- 1. Turn ignition switch OFF.
- 2. Disconnect A/T shift selector connector.

3. Check continuity between A/T shift selector (detention switch) terminals.

A/T shift selector (detention switch) Terminal		Condition		Continuity	С
		Con		Continuity	
12	14	Solootor lovor	P position	Not existed	
13	14	Selector level	Other than above	Existed	D
Is the inspection result	normal?				

YES >> INSPECTION END

NO >> Replace A/T shift selector. Refer to TM-184, "Removal and Installation".

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#### < DTC/CIRCUIT DIAGNOSIS >

## **B2602 SHIFT POSITION**

### DTC Logic

INFOID:000000010259384

[WITH INTELLIGENT KEY SYSTEM]

### DTC DETECTION LOGIC

#### NOTE:

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

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

#### DTC CONFIRMATION PROCEDURE

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

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

#### Is DTC detected?

- YES >> Go to SEC-80, "Diagnosis Procedure".
- NO >> INSPECTION END

### Diagnosis Procedure

INFOID:000000010259385

#### 1. CHECK DTC OF COMBINATION METER

Check DTC in "Self Diagnostic Result" mode of "METER/M&A" using CONSULT.

#### Is DTC detected?

- YES >> Perform the trouble diagnosis related to the detected DTC. Refer to MWI-45, "DTC Index".
- NO >> GO TO 2.

## **2.**CHECK A/T SHIFT SELECTOR POWER SUPPLY

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

(+)				
A/T shift selector	A/T shift selector (detention switch)		(Approx.)	
Connector	Terminal		( 11 )	
M57	13	Ground	12	

#### Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 3.

### 3.CHECK A/T SHIFT SELECTOR POWER SUPPLY CIRCUIT

- 1. Disconnect BCM connector.
- Check continuity between A/T shift selector (detention switch) harness connector and BCM harness connector.

### **SEC-80**

## **B2602 SHIFT POSITION**

#### < DTC/CIRCUIT DIAGNOSIS >

#### [WITH INTELLIGENT KEY SYSTEM]

A/T shift selector (	(detention switch)	В	BCM	
Connector	Terminal	Connector	Terminal	Continuity
M57	13	M71	104	Existed
Check continuity be	tween A/T shift selec	ctor (detention switch	n) harness connect	or and ground.
A/T shift se	lector (detention switch)			Continuity
Connector	Termina	al	Ground	
M57	13			Not existed
IO >> Repair or re REPLACE BCM Replace BCM. Refe Perform initialization >> INSPECTIC .CHECK A/T SHIFT S	eplace harness. For to <u>BCS-95, "Remo</u> n of BCM and registr ON END SELECTOR CIRCUIT	val and Installation". ation of all Intelligent	t Keys using CONS	SULT.
Check continuity be nector.	(detention switch)	ctor (detention switc	h) harness connect	tor and BCM harness co
Connector	Terminal	Connector	Terminal	Continuity
M57	14	M68	37	Existed
Check continuity be	tween A/T shift seled	ctor (detention switch	n) harness connect	or and ground.
A/T shift se	lector (detention switch)			Orationity
Connector	Termina	al	Ground	Continuity
M57	14			Not existed
The inspection result r YES >> GO TO 6. NO >> Repair or re CHECK A/T SHIFT S efer to <u>SEC-81. "Comp</u>	pormar? eplace harness. SELECTOR (DETEN ponent Inspection".	TION SWITCH)		
a the inspection result r         YES       >> GO TO 7.         NO       >> Replace A/         CHECK INTERMITT         efer to GI-43, "Intermit	Tormar? Shift selector. Refer ENT INCIDENT tent Incident".	r to <u>TM-184, "Remov</u>	val and Installation"	
>> INSPECTIC	ON END			
.CHECK A/T SHIFT S		TION SWITCH)		INFOID:0000000102

3. Check continuity between A/T shift selector (detention switch) terminals.

## **SEC-81**

## **B2602 SHIFT POSITION**

#### < DTC/CIRCUIT DIAGNOSIS >

A/T shift selector (detention switch) Terminal		Condition		Continuity
				Continuity
12	12 14 Selector lover		P position	Not existed
15	14	Selector level	Other than above	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace A/T shift selector. Refer to <u>TM-184, "Removal and Installation"</u>.

#### < DTC/CIRCUIT DIAGNOSIS >

## **B2603 SHIFT POSITION**

### **DTC** Logic

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## DTC DETECTION LOGIC

#### NOTE:

• If DTC B2603 is displayed with DTC B2601, first perform the trouble diagnosis for DTC B2601. Refer to <u>SEC-77, "DTC Logic"</u>.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible causes	
B2603	SHIFT POSI STATUS	<ul> <li>BCM detects the following status when ignition switch is in the ON position.</li> <li>P position signal from TCM: approx. 0 V</li> <li>A/T shift selector (detention switch) signal: approx. 0 V</li> </ul>	<ul> <li>Harness or connector [A/T shift selector (detention switch) circuit is open or shorted.]</li> <li>Harness or connectors (TCM circuit is open or shorted.)</li> <li>A/T shift selector (detention switch)</li> <li>A/T assembly (TCM)</li> <li>BCM</li> </ul>	D
	FIRMATION PROCE	DURE		F
	M DTC CONFIRMAT			
			(	G
2. Turn ig 3. Check Is DTC dete	nition switch ON and v DTC in "Self Diagnosti ected?	vait 1 second or more.	JLT.	Н
YES >>	Go to <u>SEC-83, "Diagr</u>	nosis Procedure".		
	GUTUZ.			
		ION PROCEDURE 2	d au manua	
<ol> <li>Snift th</li> <li>Check</li> </ol>	e selector lever to any DTC in "Self Diagnosti	c Result" mode of "BCM" using CONSU	a or more. JLT.	.1
Is DTC dete	ected?	5		0
YES >> NO >>	Go to <u>SEC-83, "Diagr</u> INSPECTION END	nosis Procedure".	S	E(
Diagnosi	s Procedure		INFOID:000000010259388	
1.INSPEC	TION START			L
Perform ins	pection in accordance	with procedure that confirms DTC.		
Which proc	edure confirms DTC?		I	M
DTC confi DTC confi	rmation procedure 1>>	•GO TO 2. •GO TO 6.		
2.снеск	DTC OF TCM			N
Check DTC	in "Self Diagnostic Re	esult" mode of "TCM" using CONSULT.		
Is DTC dete	ected?			
YES >> NO >>	Perform the trouble d GO TO 3.	iagnosis related to the detected DTC. R	efer to <u>TM-81, "DTC Index"</u> .	С
3.снеск	BCM INPUT SIGNAL			P
1. Turn ig 2. Check	nition switch ON. voltage between BCM	harness connector and ground.		

[WITH INTELLIGENT KEY SYSTEM]

### **B2603 SHIFT POSITION**

#### < DTC/CIRCUIT DIAGNOSIS >

(+) BCM		()	Condition		Voltage (V) (Approx.)	
Connector	Terminal					
M71	102 Grou	Cround	Solootor lovor	P or N position	12	
	102	Giouna	Selector level	Other than above	0	

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 5.

**4.**REPLACE BCM

1. Replace BCM. Refer to <u>BCS-95, "Removal and Installation"</u>.

2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

#### >> INSPECTION END

# 5. CHECK BCM INPUT SIGNAL CIRCUIT

1. Turn ignition switch OFF.

2. Disconnect BCM connector.

3. Disconnect A/T assembly connector.

4. Check continuity between A/T assembly harness connector and BCM harness connector.

A/T as	A/T assembly		BCM		
Connector	Terminal	Connector Terminal		Continuity	
F51	9	M71	102	Existed	

5. Check continuity between A/T assembly harness connector and ground.

A/T as	sembly		Continuity
Connector	Connector Terminal		Continuity
F51	9		Not existed

Is the inspection result normal?

YES >> GO TO 11.

NO >> Repair or replace harness.

#### **6.**CHECK A/T SHIFT SELECTOR POWER SUPPLY

1. Turn ignition switch OFF.

2. Disconnect A/T shift selector (detention switch) connector.

3. Check voltage between A/T shift selector (detention switch) harness connector and ground.

A/T shift selector	(+) A/T shift selector (detention switch)		Voltage (V) (Approx.)	
Connector	Connector Terminal			
M57	13	Ground	12	

Is the inspection result normal?

YES >> GO TO 9.

NO >> GO TO 7.

#### **1.**CHECK A/T SHIFT SELECTOR POWER SUPPLY CIRCUIT

1. Disconnect BCM connector.

 Check continuity between A/T shift selector (detention switch) harness connector and BCM harness connector.

## **B2603 SHIFT POSITION**

#### < DTC/CIRCUIT DIAGNOSIS >

#### [WITH INTELLIGENT KEY SYSTEM]

A/T shift selector (dete	T shift selector (detention switch) BCM			
Connector	Terminal	Connector	Terminal	- Continuity
M57	13	M71	104	Existed
Check continuity betwe	en A/T shift select	tor (detention switch)	harness connecto	r and ground.
A/T shift selecto	or (detention switch)			Continuity
Connector	Ierminal		Ground	
M57	13			Not existed
<ul> <li>S &gt;&gt; GO TO 8.</li> <li>D &gt;&gt; Repair or repla</li> <li>REPLACE BCM</li> <li>Replace BCM. Refer to Perform initialization of</li> <li>&gt; INSPECTION I</li> <li>CHECK A/T SHIFT SEL</li> <li>Disconnect BCM connect</li> </ul>	ce harness. BCS-95, "Remov BCM and registra END ECTOR CIRCUIT ector and IPDM E/	ral and Installation". Ition of all Intelligent I	Keys using CONSL	JLT.
Check continuity between nector.	en A/T shift selec	tor (detention switch)	) harness connecto	r and BCM harness con
Connector	Terminal	Connector	Terminal	Continuity
M57	14	M68	37	Existed
A/T shift selector	or (detention switch)			Continuity
CONNECTOR	Termina	I (	Ground	
M57	Termina 14	I	Ground	Not existed
M57 the inspection result norr ES >> GO TO 10. O >> Repair or repla D.CHECK A/T SHIFT SI fer to <u>SEC-85. "Compon</u> the inspection result norr ES >> GO TO 11. O >> Replace A/T sh .CHECK INTERMITTE fer to <u>GI-43, "Intermitten</u>	Termina 14 nal? ce harness. ELECTOR (DETEI ent Inspection". nal? nift selector. Refer NT INCIDENT t Incident".	NTION SWITCH)	Ground	Not existed
M57 the inspection result norr ES >> GO TO 10. O >> Repair or repla D.CHECK A/T SHIFT SI fer to <u>SEC-85. "Compon</u> the inspection result norr ES >> GO TO 11. O >> Replace A/T sh .CHECK INTERMITTE fer to <u>GI-43, "Intermitten</u> >> INSPECTION I pmponent Inspectio	Termina 14 nal? ce harness. ELECTOR (DETE! ent Inspection". nal? hift selector. Refer NT INCIDENT t Incident". END N	NTION SWITCH)	Sround	Not existed
M57 he inspection result norr ES >> GO TO 10. O >> Repair or repla ).CHECK A/T SHIFT SI fer to <u>SEC-85, "Compon</u> he inspection result norr ES >> GO TO 11. O >> Replace A/T sh .CHECK INTERMITTE fer to <u>GI-43, "Intermitten</u> >> INSPECTION I mponent Inspectio CHECK A/T SHIFT SEL	Termina 14 nal? ce harness. ELECTOR (DETEI ent Inspection". nal? hift selector. Refer NT INCIDENT t Incident". END n ECTOR (DETENT	TION SWITCH)	Sround	Not existed

Disconnect A/T shift selector connector.
 Check continuity between A/T shift selector (detention switch) terminals.

### SEC-85

## **B2603 SHIFT POSITION**

#### < DTC/CIRCUIT DIAGNOSIS >

A/T shift selector (detention switch)		Condition		Continuity
Terr	Terminal		Condition	
13	14	Selector lever	P position	Not existed
15			Other than above	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace A/T shift selector. Refer to <u>TM-184, "Removal and Installation"</u>.

### **B2604 SHIFT POSITION**

< DTC/CIRCUIT DIAGNOSIS >

**B2604 SHIFT POSITION** 

### DTC Logic

DTC DETECTION LOGIC

#### NOTE:

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

	DTC No.	Trouble diagnosis name	DTC detec	ting condition	Poss	ible cause	D
_	B2604	PNP/CLUTCH SW	<ul> <li>The following states ar while ignition switch is</li> <li>P/N position signal is position signal input than P and N</li> <li>P/N position signal shift position signal in or N</li> </ul>	e detected for 5 secor ON. s sent from TCM but s (CAN) from TCM is ot is not sent from TCM I nput (CAN) from TCM i	<ul> <li>Harness or co (CAN commu or shorted.)</li> <li>Harness or co (TCM circuit is s P</li> <li>BCM</li> </ul>	onnectors nication line is open onnectors s open or shorted.)	F
от 1.	C CONF	IRMATION PROCED	DURE DN PROCEDURE				G
1. 2. 3. 4.	Shift the Turn igni Shift the Shift the	selector lever to the P tion switch ON and wa selector lever to the N selector lever to any p	position. ait 5 seconds or mor position and wait 5 position other than P	e. seconds or more. and N, and wait (	seconds or more	9.	H
5. Ic T	Check D	TC in "Self Diagnostic	Result" mode of "B	CM" using CONSI	JLT.		
<u>IS L</u> YI N	ES >> ( 0 >>	Go to <u>SEC-87, "Diagno</u> NSPECTION END	osis Procedure".				J
Dia	agnosis	Procedure				INFOID:00000001025939	01
1.	CHECK D	TC OF TCM					SE
Ch	eck DTC i	n "Self Diagnostic Res	ult" mode of "TCM"	using CONSULT.			-
<u>Is [</u> YI N	D <u>TC detec</u> ES >> F O >> (	<u>sted?</u> Perform the trouble dia GO TO 2.	gnosis related to the	e detected DTC. F	Refer to <u>TM-81, "E</u>	) <u>TC Index"</u> .	L
2.	СНЕСК В	CM INPUT SIGNAL					N
1. 2.	Turn igni Check vo	tion switch ON. oltage between BCM h	arness connector a	nd ground.			-
-		(+) BCM	(-)	Cone	dition	Voltage (V) (Approx.)	
_	Connee	ctor Terminal				10	(
	M71	102	Ground	Selector lever	P of in position	12	

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 4.

**3.**REPLACE BCM

1. Replace BCM. Refer to BCS-95, "Removal and Installation".

2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

### **SEC-87**

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#### >> INSPECTION END

# 4. CHECK BCM INPUT SIGNAL CIRCUIT

1. Turn ignition switch OFF.

2. Disconnect A/T assembly connector.

3. Disconnect BCM connector.

4. Check continuity between A/T assembly harness connector and BCM harness connector.

A/T as	A/T assembly		BCM	
Connector	Terminal	Connector	Terminal	Continuity
F51	9	M71	102	Existed

5. Check continuity between A/T assembly harness connector and ground.

A/T as	sembly		Continuity
Connector	Connector Terminal		Continuity
F51 9			Not existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace harness.

5. CHECK INTERMITTENT INCIDENT

Refer to GI-43, "Intermittent Incident".

### **B2605 SHIFT POSITION**

#### < DTC/CIRCUIT DIAGNOSIS >

## **B2605 SHIFT POSITION**

## DTC Logic

## DTC DETECTION LOGIC

#### NOTE:

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

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

## DTC CONFIRMATION PROCEDURE

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

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

### Is DTC detected?

- YES >> Go to SEC-89. "Diagnosis Procedure".
- NO >> INSPECTION END

### Diagnosis Procedure

### 1.CHECK IPDM E/R INPUT SIGNAL

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

-	( IPDI	+) 4 E/R	(_)	Condition		Voltage (V) (Approx.)	M
-	Connector	Terminal	(-)				
	E15	10	Ground	Soloctor lovor	P or N position	12	Ν
	EIS	40	Ground	Selector level	Other than above	0	

#### Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".

NO >> GO TO 2.

## 2.check ipdm e/r input signal circuit

1. Turn ignition switch OFF.

2. Disconnect BCM connector.

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

IPDI	IPDM E/R BCM		BCM	
Connector	Terminal	Connector	Terminal	Continuity
E15	48	M71	102	Existed

[WITH INTELLIGENT KEY SYSTEM]

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## **B2605 SHIFT POSITION**

#### < DTC/CIRCUIT DIAGNOSIS >

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

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

## **3.**REPLACE BCM

1. Replace BCM. Refer to <u>BCS-95, "Removal and Installation"</u>.

2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

### **B2608 STARTER RELAY**

< DTC/CIRCUIT DIAGNOSIS >

**B2608 STARTER RELAY** 

### DTC Logic

DTC DETECTION LOGIC

#### NOTE:

- If DTC B2608 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to BCS-83. "DTC Logic".
- If DTC B2608 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to <u>BCS-84, "DTC Logic"</u>.

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

#### DTC CONFIRMATION PROCEDURE

**1.**PERFORM DTC CONFIRMATION PROCEDURE

- I.
   Press push-button ignition switch under the following conditions to start engine.

   Selector lever: In the P position

   Brake pedal: Depressed

   2.
   Wait 1 second after engine started.

   3.
   Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

   Is DTC detected?
   YES >> Go to SEC-91. "Diagnosis Procedure".

   NO
   >> INSPECTION END

   Diagnosis Procedure
   J
- 1.CHECK DTC OF IPDM E/R

   Check DTC in "Self Diagnostic Result" mode of "IPDM E/R" using CONSULT.

   Is DTC detected?

   YES
   >> Perform the trouble diagnosis related to the detected DTC. Refer to PCS-22, "DTC Index".

   NO
   >> GO TO 2.

   2.CHECK BCM POWER SUPPLY CIRCUIT

   1. Turn ignition switch ON.

Check voltage between BCM harness connector and ground.

_	(+) BCM		()	Condition		Voltage (V)	Ν
_	Connector	Terminal				(Approx.)	
_	N/71	07	Ground	Soloctor lovor	N or P position	12	0
	1017 1	97	Ground	Selector level	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 IPDM E/R connector.
- 3. Disconnect BCM connector.
- 4. Check continuity between IPDM E/R harness connector and BCM harness connector.

## SEC-91

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[WITH INTELLIGENT KEY SYSTEM]

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## **B2608 STARTER RELAY**

#### < DTC/CIRCUIT DIAGNOSIS >

IPDM E/R		B	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
E13	30	M71	97	Existed

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

IPDN	/I E/R		Continuity
Connector Terminal		Ground	Continuity
E13	30		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".

NO >> Repair or replace harness.

4. CHECK INTERMITTENT INCIDENT

Refer to GI-43, "Intermittent Incident".

#### **B260F ENGINE STATUS**

< DTC/CIRCUIT DIAGNOSIS >

## **B260F ENGINE STATUS**

### Description

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

#### DTC Logic

INFOID:000000010259397

INFOID:000000010259398

### DTC DETECTION LOGIC

#### NOTE:

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

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

#### DTC CONFIRMATION PROCEDURE

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

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

#### Is DTC detected?

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

#### Diagnosis Procedure

1.INSPECTION START	J
<ol> <li>Turn ignition switch ON.</li> <li>Select "Self Diagnostic Result" mode of "BCM" using CONSULT.</li> <li>Touch "ERASE".</li> </ol>	SEC
<ul> <li>Perform DTC CONFIRMATION PROCEDURE for DTC B260F. Refer to <u>SEC-93, "DTC Logic"</u>.</li> <li><u>Is DTC detected?</u></li> <li>YES &gt;&gt; GO TO 2.</li> </ul>	L
NO >> INSPECTION END 2.REPLACE ECM	Μ
Replace ECM. Refer to <u>EC-581, "Removal and Installation"</u> (VK56VD for USA and CANADA) or <u>EC-581,</u>	

"Removal and Installation" (VK56VD for MEXICO).

>> INSPECTION END

[WITH INTELLIGENT KEY SYSTEM]

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### **B261B REMOTE ENGINE START**

#### < DTC/CIRCUIT DIAGNOSIS >

### **B261B REMOTE ENGINE START**

### DTC Logic

DTC DETECTION LOGIC

#### NOTE:

- If DTC B261B is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>BCS-83, "DTC Logic"</u>.
- If DTC B261B is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to <u>BCS-84, "DTC Logic"</u>.
- If DTC B261B is displayed with DTC B26F1, first perform the trouble diagnosis for DTC B26F1. Refer to <u>PCS-68. "Diagnosis Procedure"</u>.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B261B	RES ENG RUN STUCK MALFNC	Engine status signal, which is received from ECM via CAN communication 10 seconds after BCM stops engine while remote engine start function is in operation, indicates that engine is in operation status.	<ul> <li>Harness or connectors [Ignition relay (IPDM E/R) control circuit is open or shorted.]</li> <li>Harness or connectors (CAN communication line is open or shorted.)</li> <li>BCM</li> <li>ECM</li> </ul>

#### DTC CONFIRMATION PROCEDURE

**1.**PPERFORM DTC CONFIRMATION PROCEDURE

- 1. Operate REMOTE ENGINE START button of Intelligent Key. Start engine.
- 2. Operate REMOTE ENGINE START button of Intelligent Key. Stop engine.
- 3. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

#### Is DTC detected?

- YES >> Refer to <u>SEC-94, "Diagnosis Procedure"</u>
- NO >> INSPECTION END

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### 1. CHECK DTC OF ECM

**Diagnosis** Procedure

Check DTC in "Self Diagnostic Result" mode of "ECM" using CONSULT.

#### Is DTC detected?

YES >> Perform the diagnosis procedure related to the detected DTC. Refer to <u>EC-108, "DTC Index"</u> (VK56VD for USA and CANADA) or <u>EC-671, "DTC Index"</u> (VK56VD for MEXICO).

NO >> GO TO 2.

2.REPLACE BCM

Replace BCM. Refer to <u>BCS-95, "Removal and Installation"</u>.

>> INSPECTION END

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### **B26F3 STARTER CONTROL RELAY**

#### < DTC/CIRCUIT DIAGNOSIS >

## **B26F3 STARTER CONTROL RELAY**

## DTC Logic

### DTC DETECTION LOGIC

#### NOTE:

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

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### **B26F4 STARTER CONTROL RELAY**

#### < DTC/CIRCUIT DIAGNOSIS >

## **B26F4 STARTER CONTROL RELAY**

### DTC Logic

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[WITH INTELLIGENT KEY SYSTEM]

#### DTC DETECTION LOGIC

#### NOTE:

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

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

#### DTC CONFIRMATION PROCEDURE

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

- 1. Press push-button ignition switch under the following conditions to start engine, and wait 1 second or more.
- Selector lever: In the P position
- Brake pedal: Depressed
- 2. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

#### Is DTC detected?

- YES >> Go to SEC-96. "Diagnosis Procedure".
- NO >> INSPECTION END

#### Diagnosis Procedure

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

Check DTC in "Self Diagnostic Result" mode of "IPDM E/R" using CONSULT.

#### Is DTC detected?

YES >> Perform the diagnosis procedure related to the detected DTC. Refer to <u>PCS-22, "DTC Index"</u>. NO >> GO TO 2.

2. CHECK INTERMITTENT INCIDENT

Refer to GI-43, "Intermittent Incident".

## B26F7 BCM

## < DTC/CIRCUIT DIAGNOSIS >

## B26F7 BCM

## DTC Logic

[WITH INTELLIGENT KEY SYSTEM]

=	Trouble diagnosis name	DTC detecting condition	Possible cause
B26F7	BCM	Inside key antenna output circuit in BCM is malfunctioning.	BCM
DTC CONFI	RMATION PROCEDU	JRE N PROCEDURE	
<ol> <li>Press doo</li> <li>Turn ignit</li> <li>Check D</li> </ol>	or request switch. ion switch ON. IC in "Self Diagnostic R	esult" mode of "BCM" using CONSULT.	
<u>s DTC detect</u> YES >> G NO >> IN	<u>ted?</u> So to <u>SEC-98, "Diagnos</u> NSPECTION END	is Procedure".	
	Procedure ON START		INFOID:0000000010259406
I. Turn ignit 2. Select "S 3. Touch "El 4. Perform [	ion switch ON. elf Diagnostic Result" n RASE". DTC CONFIRMATION I	node of "BCM" using CONSULT. PROCEDURE for DTC B26F7. Refer to <u>SEC-97.</u>	"DTC Logic".
1. Turn ignit 2. Select "S 3. Touch "El 4. Perform I <u>s DTC detect</u> YES >> G NO >> IN	ion switch ON. elf Diagnostic Result" m RASE". DTC CONFIRMATION F ted? 60 TO 2. NSPECTION END	node of "BCM" using CONSULT. PROCEDURE for DTC B26F7. Refer to <u>SEC-97,</u>	<u>"DTC Logic"</u> .

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# < DTC/CIRCUIT DIAGNOSIS >

DTC Logic

### DTC DETECTION LOGIC

#### NOTE:

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

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

### DTC CONFIRMATION PROCEDURE

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

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

#### Is DTC detected?

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

### Diagnosis Procedure

### **1.**INSPECTION START

- 1. Turn ignition switch ON.
- 2. Select "Self Diagnostic Result" mode of "BCM" using CONSULT.
- 3. Touch "ERASE".
- 4. Perform DTC CONFIRMATION PROCEDURE for DTC B26F8. Refer to <u>SEC-98. "DTC Logic"</u>.

#### Is DTC detected?

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

## 2.REPLACE BCM

- 1. Replace BCM. Refer to BCS-95, "Removal and Installation".
- 2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

>> INSPECTION END

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## B26F9 CRANKING REQUEST CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

# **B26F9 CRANKING REQUEST CIRCUIT**

## DTC Logic

### DTC DETECTION LOGIC

#### NOTE:

- DTC B26F9 can be detected even though the related circuit is not used in this vehicle.
- If DTC B26F9 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>BCS-83, "DTC Logic"</u>.
- If DTC B26F9 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84. "DTC Logic".

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

### DTC CONFIRMATION PROCEDURE

## **1.**PERFORM DTC CONFIRMATION

- 1. Start engine and wait 2 seconds or more at idle speed.
- 2. Drive vehicle for 2 seconds or more.
- 3. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

### Is DTC detected?

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

### Diagnosis Procedure

## 1. CHECK CRANKING REQUEST SIGNAL

1. Turn ignition switch ON.

2. Check voltage between BCM harness connector and ground under the following conditions.

(· B0	+) CM	()	Condition		Voltage (V) (Approx.)	L
Connector	Terminal				( + F · - · · ·)	M
				<ul><li>Engine: Stopped</li><li>Selector lever position: P</li></ul>	0	
M70	64	Ground	Ignition switch ON	<ul><li>Engine: Stopped</li><li>Selector lever position: Other than P</li></ul>	12	Ν
				Engine running	12	0

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.check cranking request signal circuit

1. Turn ignition switch OFF.

2. Disconnect BCM connector.

3. Disconnect ECM connector.

4. Check continuity between BCM harness connector and ECM harness connector.

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## **B26F9 CRANKING REQUEST CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

B	СМ	E	СМ	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M70	64	E80	165	Existed

5. Check continuity between BCM harness connector and ground.

B	CM		Continuity	
Connector Terminal		Ground	Continuity	
M70	64		Not existed	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

### **3.**REPLACE BCM

- 1. Replace BCM. Refer to <u>BCS-95, "Removal and Installation"</u>.
- 2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

3. Perform DTC CONFIRMATION PROCEDURE for DTC B26F9. Refer to SEC-99, "DTC Logic".

#### Is DTC detected?

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

#### **4.**REPLACE ECM

Replace ECM. Refer to <u>EC-581, "Removal and Installation"</u> (VK56VD for USA and CANADA) or <u>EC-581,</u> "<u>Removal and Installation</u>" (VK56VD for MEXICO).

## B26FA CRANKING REQUEST CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

# **B26FA CRANKING REQUEST CIRCUIT**

## DTC Logic

## DTC DETECTION LOGIC

#### NOTE:

- DTC B26FA can be detected even though the related circuit is not used in this vehicle.
- If DTC B26FA is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>CBCS-83, "DTC Logic"</u>.
- If DTC B26FA is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".

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

## DTC CONFIRMATION PROCEDURE

## **1.**PERFORM DTC CONFIRMATION

- 1. Start engine and wait 2 seconds or more at idle speed.
- 2. Drive vehicle for 2 seconds or more.
- 3. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

### Is DTC detected?

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

### Diagnosis Procedure

## 1. CHECK CRANKING REQUEST SIGNAL

1. Turn ignition switch ON.

2. Check voltage between BCM harness connector and ground under the following conditions.

(+) BCM		()	Condition		Voltage (V) (Approx.)	L
Connector	Terminal				(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	M
				<ul><li>Engine: Stopped</li><li>Selector lever position: P</li></ul>	0	
M70	64	Ground	Ignition switch ON	<ul> <li>Engine: Stopped</li> <li>Selector lever position: Other than P</li> </ul>	12	Ν
				Engine running	12	0

### Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.check cranking request signal circuit

1. Turn ignition switch OFF.

2. Disconnect BCM connector.

3. Disconnect ECM connector.

4. Check continuity between BCM harness connector and ECM harness connector.

## SEC-101

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## **B26FA CRANKING REQUEST CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

B	СМ	E	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
M70	64	E80	165	Existed

5. Check continuity between BCM harness connector and ground.

B	CM		Continuity
Connector Terminal		Ground	Continuity
M70	64		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

### **3.**REPLACE BCM

- 1. Replace BCM. Refer to <u>BCS-95, "Removal and Installation"</u>.
- 2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

Perform DTC CONFIRMATION PROCEDURE for DTC B26FA. Refer to <u>SEC-101, "DTC Logic"</u>.

#### Is DTC detected?

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

### **4.**REPLACE ECM

Replace ECM. Refer to <u>EC-581, "Removal and Installation"</u> (VK56VD for USA and CANADA) or <u>EC-581,</u> "Removal and Installation" (VK56VD for MEXICO).

## **B26FC KEY REGISTRATION**

#### < DTC/CIRCUIT DIAGNOSIS >

## **B26FC KEY REGISTRATION**

## DTC Logic

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DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B26FC	KEY REGISTRATION	Intelligent Key that does not match the vehicle is registered.	<ul><li>Improper registration operation</li><li>Intelligent Key</li><li>BCM</li></ul>
	IRMATION PROCED	DURE	
<b>1.</b> PERFOR	M DTC CONFIRMATIC	ON PROCEDURE	
1. Perform	initialization of BCM ar	nd reregistration of all Intelligent Keys usi	ng CONSULT.
s DTC detec	ted?	Result mode of BCM using CONSULT	
YES >> (	Go to <u>SEC-103, "Diagn</u>	osis Procedure"	
NO >> I	NSPECTION END		
Diagnosis	Procedure		INFOID:000000010259
1			
I.REPLACE	EINTELLIGENT KEY		
1. Prepare	INTELLIGENT KEY	tches the vehicle.	
1. Prepare 1. Prepare 2. Perform 3. Check D	INTELLIGENT KEY Intelligent Key that ma initialization of BCM ar TC in "Self Diagnostic	tches the vehicle. nd registration of Intelligent Key using CC Result" mode of "BCM" using CONSULT	DNSULT.
1. Prepare 2. Perform 3. Check D Is DTC detect	Intelligent Key that ma initialization of BCM ar TC in "Self Diagnostic ted?	tches the vehicle. Ind registration of Intelligent Key using CC Result" mode of "BCM" using CONSULT	DNSULT.
1. Prepare         2. Perform         3. Check D         Is DTC detect         YES         NO	Intelligent Key that ma initialization of BCM ar TC in "Self Diagnostic ted? GO TO 2. NSPECTION END	tches the vehicle. nd registration of Intelligent Key using CC Result" mode of "BCM" using CONSULT	ONSULT.
1. Prepare         2. Perform         3. Check D         is DTC detect         YES         NO         2.REPLACE	Intelligent Key that ma initialization of BCM ar TC in "Self Diagnostic <u>sted?</u> GO TO 2. NSPECTION END E BCM	tches the vehicle. nd registration of Intelligent Key using CC Result" mode of "BCM" using CONSULT	ONSULT.
1. Prepare         2. Perform         3. Check D         Is DTC detect         YES         NO         2. REPLACE         1. Replace	Intelligent Key that ma initialization of BCM ar TC in "Self Diagnostic <u>sted?</u> GO TO 2. NSPECTION END E BCM	tches the vehicle. nd registration of Intelligent Key using CC Result" mode of "BCM" using CONSULT	ONSULT.
1. Prepare         1. Prepare         2. Perform         3. Check D         1s DTC detect         YES         YES         NO         2. REPLACE         1. Replace         2. Perform	Intelligent Key that ma initialization of BCM ar TC in "Self Diagnostic cted? GO TO 2. NSPECTION END E BCM BCM. Refer to <u>BCS-98</u> initialization of BCM ar	tches the vehicle. nd registration of Intelligent Key using CC Result" mode of "BCM" using CONSULT 5. "Removal and Installation". nd registration of all Intelligent Keys using	ONSULT.
1. Prepare         1. Prepare         2. Perform         3. Check D         Is DTC detect         YES         YES         NO         2. REPLACE         1. Replace         2. Perform         2. Perform         2. Perform	INTELLIGENT KEY Intelligent Key that ma initialization of BCM ar TC in "Self Diagnostic ted? GO TO 2. NSPECTION END BCM. Refer to <u>BCS-98</u> initialization of BCM ar	tches the vehicle. nd registration of Intelligent Key using CC Result" mode of "BCM" using CONSULT <u>5. "Removal and Installation"</u> . nd registration of all Intelligent Keys using	ONSULT.
1. Prepare         2. Perform         3. Check D         Is DTC detect         YES         YES         NO         2. REPLACE         1. Replace         2. Perform         2. Perform	Intelligent Key that ma initialization of BCM ar TC in "Self Diagnostic ted? GO TO 2. NSPECTION END BCM. Refer to <u>BCS-98</u> initialization of BCM ar	tches the vehicle. nd registration of Intelligent Key using CC Result" mode of "BCM" using CONSULT 5. <u>"Removal and Installation"</u> . nd registration of all Intelligent Keys using	ONSULT.
1. Prepare         2. Perform         3. Check D         is DTC detect         YES         YES         NO         2. REPLACE         1. Replace         2. Perform         >> I	Intelligent Key that ma initialization of BCM ar TC in "Self Diagnostic ted? GO TO 2. NSPECTION END BCM. Refer to <u>BCS-95</u> initialization of BCM ar	tches the vehicle. Ind registration of Intelligent Key using CO Result" mode of "BCM" using CONSULT <u>5. "Removal and Installation"</u> . Ind registration of all Intelligent Keys using	ONSULT.
1. Prepare         1. Prepare         2. Perform         3. Check D         Is DTC detect         YES         YES         NO         2. REPLACE         1. Replace         2. Perform         >> I	Intelligent Key that ma initialization of BCM ar TC in "Self Diagnostic cted? GO TO 2. NSPECTION END BCM. Refer to <u>BCS-98</u> initialization of BCM ar NSPECTION END	tches the vehicle. Ind registration of Intelligent Key using CO Result" mode of "BCM" using CONSULT <u>5. "Removal and Installation"</u> . Ind registration of all Intelligent Keys using	ONSULT.

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Revision: 2014 October

[WITH INTELLIGENT KEY SYSTEM]

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< DTC/CIRCUIT DIAGNOSIS >

## **B26FE HOOD SWITCH**

### DTC Logic

DTC DETECTION LOGIC

#### NOTE:

- If DTC B26FE is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>BCS-83, "DTC Logic"</u>.
- If DTC B26FE is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to BCS-84, "DTC Logic".

DTC	CONSULT display description	DTC detecting condition	Possible cause
B26FE	HOOD SW CAN DIAG ERROR	Hood switch signals (Hood switch 1 and Hood switch 2) received from IPDM E/R via CAN communication are different.	<ul> <li>Harness or connector (hood switch circuit is open or shorted)</li> <li>Hood switch 1</li> <li>Hood switch 2</li> </ul>

#### DTC CONFIRMATION PROCEDURE

**1.**PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.

- 2. Open the hood.
- 3. Close the hood.
- 4. Check Self Diagnostic Result mode of BCM using CONSULT.

#### Is DTC detected?

YES >> Refer to <u>SEC-104</u>, "Diagnosis Procedure".

NO >> Hood switch is OK.

### Diagnosis Procedure

## 1. CHECK HOOD SWITCH SIGNAL CIRCUIT

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

Hood switch 1

(+ Hood s	(+) Hood switch 1		Voltage (V) (Approx.)	
Connector	Terminal			
E57	1	Ground	12	
lood switch 2				
(+	-)			
Hood s	Hood switch 2		Voltage (V) (Approx.)	
Connector	Terminal	_	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
E49	1	Ground	12	
- the strength of the second second	10			

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

**2.**CHECK HOOD SWITCH SIGNAL CIRCUIT

1. Disconnect IPDM E/R connector.

2. Check continuity between IPDM E/R harness connector and hood switch harness connector.

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## **B26FE HOOD SWITCH**

#### < DTC/CIRCUIT DIAGNOSIS >

	Hood switch 1				
	Hood s	witch 1		IPDM E/R	Continuity
_	Connector	Terminal	Connector	Terminal	Continuity
_	E57	1	E13	32	Existed
	Hood switch 2				·
	Hood s	witch 2		IPDM E/R	Continuity
	Connector	Terminal	Connector	Terminal	
	E49	1	E17	71	Existed
3.	Check continuity be	etween IPDM E/R ha	arness connecto	r and ground.	
		IPDM E/R			Continuity
	Connector	Termina	al	Ground	
	E13	32		Crodina	Not existed
_	E17				
<u>is ti</u> Ye	The inspection result ES >> Replace IP	<u>normal?</u> DM E/R. Refer to <u>P(</u> oplace barrace	CS-34, "Remova	al and Installation".	
3.u	CHECK HOOD SW/I	epiace namess. TCH GROUND CIR	CUIT		
	ck continuity betwee	en hood switch harr	less connector a	and around	
	H	ood switch 1			
-	Connector	Termina		Ground	
	E57	2			Existed
Hood	l switch 2				
	Н	ood switch 2			Questionity
_	Connector	Termina		Ground	Continuity
	E49	2			Existed
ls ti	ne inspection result	normal?			
YE	S >> GO TO 4.				
N(	) >> Repair or r	eplace harness.			
4.0	CHECK HOOD SWI	ТСН			
Ref	er to <u>SEC-105, "Co</u> i	mponent Inspection			
<u>ls t</u>	ne inspection result	normal?			
	S >> GO TO 5.	od switch Refer to	SEC-139 "Rom	oval and Installation	п
5			<u>020-133, Rem</u>		
<u> </u>					
Ref	er to <u>GI-43, "Intermi</u>	ittent Incident".			
	>> INSPECTIO	ON END			
Co	mponent Inspe	ction			INFOID:000000010259417
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1.	Disconnect hood s	witch connector.			

3. Check continuity between hood switch terminals.

### **B26FE HOOD SWITCH**

#### < DTC/CIRCUIT DIAGNOSIS >

#### [WITH INTELLIGENT KEY SYSTEM]

Hood switch Terminal		Condition		Continuity
1	Z	Release	Existed	

Is the inspection result normal?

YES >> INSPECTION END.

NO >> Replace hood switch. Refer to <u>SEC-139, "Removal and Installation"</u>.

## **B209F CRANKING REQUEST CIRCUIT**

### < DTC/CIRCUIT DIAGNOSIS >

# **B209F CRANKING REQUEST CIRCUIT**

## DTC Logic

## DTC DETECTION LOGIC

### NOTE:

- DTC B209F can be detected even though the related circuit is not used in this vehicle.
- If DTC B209F is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to PCS-28, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B209F	CRANK REQ CIR OPEN	<ul> <li>When the following items do not match, a malfunction is detected.</li> <li>Cranking request signal from ECM</li> <li>Starter control relay control signal from ECM (CAN)</li> </ul>	<ul> <li>Harness or connectors (CAN communication line is open or shorted.)</li> <li>Harness or connectors (Cranking request signal circuit is open or shorted.)</li> <li>IPDM E/R</li> <li>ECM</li> </ul>

## DTC CONFIRMATION PROCEDURE

**1.**PERFORM DTC CONFIRMATION PROCEDURE

1. Start engine and wait 1 second or more at idle speed.

- 2. Drive vehicle for 1 second or more.
- 3. Check DTC in "Self Diagnostic Result" mode of "IPDM E/R" using CONSULT.

### Is DTC detected?

- YES >> Refer to <u>SEC-107, "Diagnosis Procedure"</u>.
- NO >> INSPECTION END

## Diagnosis Procedure

## 1.CHECK CRANKING REQUEST SIGNAL

- 1. Turn ignition switch ON.
- 2. Check voltage between IPDM E/R harness connector and ground under the following conditions.

(+) IPDM E/R		()	Condition		Voltage (V) (Approx.)	L
Connector	Terminal					
				<ul><li>Engine: Stopped</li><li>Selector lever position: P</li></ul>	0	N
E13	23	Ground	Ignition switch ON	<ul> <li>Engine: Stopped</li> <li>Selector lever position: Other than P</li> </ul>	12	Ν
				Engine running	12	1

YES >> GO TO 3. NO >> GO TO 2. 2.CHECK CRANKING REQUEST SIGNAL CIRCUIT

1. Turn ignition switch OFF.

2. Disconnect IPDM E/R connector.

- 3. Disconnect ECM connector.
- 4. Check continuity between IPDM E/R harness connector and ECM harness connector.

## SEC-107

[WITH INTELLIGENT KEY SYSTEM]

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### **B209F CRANKING REQUEST CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

IPDN	M E/R	E	Continuity	
Connector	Terminal	minal Connector		Continuity
E13	23	E80	165	Existed

5. Check continuity between BCM harness connector and ground.

IPDM E/R			Continuity
Connector	Terminal	Ground	Continuity
E13	23		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

**3.**REPLACE IPDM E/R

1. Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".

Perform DTC CONFIRMATION PROCEDURE for DTC B209F. Refer to <u>SEC-107, "DTC Logic"</u>.

Is DTC detected?

YES >> GO TO 4.

NO >> INSPECTION END

**4.**REPLACE ECM

Replace ECM. Refer to <u>EC-581, "Removal and Installation"</u> (VK56VD for USA and CANADA) or <u>EC-581,</u> "Removal and Installation" (VK56VD for MEXICO).
### B20A0 CRANKING REQUEST CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

### B20A0 CRANKING REQUEST CIRCUIT

### DTC Logic

### DTC DETECTION LOGIC

### NOTE:

- DTC B20A0 can be detected although the related circuit is not used in this vehicle.
- If DTC B20A0 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to PCS-28, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause	
B20A0	CRANK REQ CIR SHORT	<ul> <li>When the following items do not match, a malfunction is detected.</li> <li>Cranking request signal from ECM</li> <li>Starter control relay control signal from ECM (CAN)</li> </ul>	<ul> <li>Harness or connectors (CAN communication line is open or shorted.)</li> <li>Harness or connectors (Cranking request signal circuit is open or shorted.)</li> <li>IPDM E/R</li> <li>ECM</li> </ul>	

### DTC CONFIRMATION PROCEDURE

**1.**PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and wait 1 second or more at idle speed.
- 2. Drive vehicle for 1 second or more.
- 3. Check DTC in "Self Diagnostic Result" mode of "IPDM E/R" using CONSULT.

### Is DTC detected?

- YES >> Refer to <u>SEC-109</u>, "Diagnosis Procedure".
- NO >> INSPECTION END

### Diagnosis Procedure

### 1.CHECK CRANKING REQUEST SIGNAL

- 1. Turn ignition switch ON.
- 2. Check voltage between IPDM E/R harness connector and ground under the following conditions.

(+) IPDM E/R		()	Condition		Voltage (V)	L
Connector	Terminal				(, , , , , , , , , , , , , , , , , , ,	
				<ul><li>Engine: Stopped</li><li>Selector lever position: P</li></ul>	0	N
E13	23	Ground	Ignition switch ON	<ul> <li>Engine: Stopped</li> <li>Selector lever position: Other than P</li> </ul>	12	N
				Engine running	12	

YES >> GO TO 3. NO >> GO TO 2. **2.**CHECK CRANKING REQUEST SIGNAL CIRCUIT

1. Turn ignition switch OFF.

2. Disconnect IPDM E/R connector.

- 3. Disconnect ECM connector.
- 4. Check continuity between IPDM E/R harness connector and ECM harness connector.

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### **B20A0 CRANKING REQUEST CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

IPDM E/R		E	Continuity		
Connector	Terminal	Connector Terminal		Continuity	
E13	23	E80	165	Existed	

5. Check continuity between BCM harness connector and ground.

IPDI	M E/R		Continuity
Connector Terminal		Ground	Continuity
E13	23		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

**3.**REPLACE IPDM E/R

1. Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".

2. Perform DTC CONFIRMATION PROCEDURE for DTC B20A0. Refer to SEC-109, "DTC Logic".

Is DTC detected?

YES >> GO TO 4.

NO >> INSPECTION END

**4.**REPLACE ECM

Replace ECM. Refer to <u>EC-581, "Removal and Installation"</u> (VK56VD for USA and CANADA) or <u>EC-581,</u> "Removal and Installation" (VK56VD for MEXICO).

>> INSPECTION END

### **B210B STARTER CONTROL RELAY**

#### < DTC/CIRCUIT DIAGNOSIS >

### **B210B STARTER CONTROL RELAY**

### **DTC** Logic

### DTC DETECTION LOGIC

#### NOTE:

If DTC B210B is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to PCS-28, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B210B	STR CONT RLY ON CIRC	<ul> <li>When comparing the following items, IPDM E/R detects that starter control relay is stuck in the ON position for 1 second or more.</li> <li>Starter control relay signal (CAN) from BCM</li> <li>Starter relay status signal (CAN) from BCM</li> <li>Starter control relay and starter relay status signal (IPDM E/R input)</li> <li>Starter control relay control signal (IPDM E/R output)</li> <li>P/N position signal input</li> </ul>	<ul> <li>Harness or connectors (CAN communication line is open or shorted.</li> <li>IPDM E/R</li> <li>BCM</li> </ul>
TC CONF	IRMATION PROCEI	DURE	
PERFOR	M DTC CONFIRMATIO	ON PROCEDURE	
Turn ign Turn ign Check D	ition switch ON. ition switch OFF and v PTC in "Self Diagnostic	vait for 1 second or more. Result" mode of "IPDM E/R" using CONSULT	
<u>s DTC detec</u> YES >> I NO >> I	<u>cted?</u> Refer to <u>SEC-111, "Dia</u> INSPECTION END	agnosis Procedure".	
Diagnosis	Procedure		INFOID:000000010259423
.CHECK S	ELF DIAGNOSTIC RI	ESULT	
Check DTC (	using CONSULT.		
<u>Vhat is the c</u> "CRNT">> I "PAST" >> (	<u>display history of DTC</u> Replace IPDM E/R. Re GO TO 2.	<u>"B210B"?</u> efer to <u>PCS-34, "Removal and Installation"</u> .	
2.снеск II	NTERMITTENT INCID	ENT	
Refer to <u>GI-4</u>	13. "Intermittent Incide	nt"	
>>	INSPECTION END		

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[WITH INTELLIGENT KEY SYSTEM]

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### **B210C STARTER CONTROL RELAY**

#### < DTC/CIRCUIT DIAGNOSIS >

### **B210C STARTER CONTROL RELAY**

### DTC Logic

DTC DETECTION LOGIC

#### NOTE:

- If DTC B210C is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>PCS-28, "DTC Logic"</u>.
- When IPDM E/R power supply voltage is low (Approx. 7 8 V for about 1 second), the DTC B210C may be detected.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B210C	STR CONT RLY OFF CIRC	<ul> <li>When comparing the following items, IPDM E/R detects that starter control relay is stuck in the OFF position for 1 second or more.</li> <li>Starter control relay signal (CAN) from BCM</li> <li>Starter relay status signal (CAN) from BCM</li> <li>Starter control relay and starter relay status signal (IP-DM E/R input)</li> <li>Starter control relay control signal (IPDM E/R output)</li> <li>P/N position signal input</li> </ul>	<ul> <li>Harness or connectors (CAN communication line is open or shorted.</li> <li>IPDM E/R</li> <li>BCM</li> </ul>

### DTC CONFIRMATION PROCEDURE

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

- 1. Press push-button ignition switch to start engine, and wait 1 second or more.
- 2. Check DTC in "Self Diagnostic Result" mode of "IPDM E/R" using CONSULT.

#### Is DTC detected?

- YES >> Refer to <u>SEC-112</u>, "Diagnosis Procedure".
- NO >> INSPECTION END

### Diagnosis Procedure

### **1.**CHECK SELF DIAGNOSTIC RESULT

Check DTC in "Self Diagnostic Result" mode of "IPDM E/R" using CONSULT. What is the display history of DTC "B210C"?

"CRNT">> GO TO 3.

"PAST" >> GO TO 2.

2. CHECK BATTERY VOLTAGE

Measure the battery voltage.

Which is the measurement result?

More than 12.4 V>>GO TO 5

Less than 12.4 V>>Perform battery inspection. Refer to PG-133, "How to Handle Battery".

**3.**CHECK P/N POSITION SIGNAL CIRCUIT VOLTAGE

- 1. Turn ignition switch ON
- 2. Selector lever is in P position.

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

(+) IPDM E/R		(-)	Voltage (Approx.)	
Connector	Connector Terminal			
E15	48	Ground	Battery voltage	

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".

NO >> GO TO 4.

### SEC-112

[WITH INTELLIGENT KEY SYSTEM]

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### **B210C STARTER CONTROL RELAY**

#### < DTC/CIRCUIT DIAGNOSIS >

### [WITH INTELLIGENT KEY SYSTEM]

<b>4.</b> CHECK P/N POSITION SIGNAL CIRCU	JIT
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1. Turn ignition switch OFF

.

- Disconnect IPDM E/R connector and BCM connector. 2.
- 3. Check continuity between IPDM E/R harness connector and BCM harness connector.

IPDN	/I E/R	BC	CM	Continuit
Connector	Terminal	Connector	Terminal	Continuity
E15	48	M71	102	Existed
the inspection result	normal?			
YES >> Replace BO NO >> Repair or re	CM. Refer to <u>BCS-95</u> eplace harness.	5. "Removal and Instal	lation".	
CHECK INTERMITT	ENT INCIDENT			
heck intermittent incid	lent. Refer to GI-43.	"Intermittent Incident".		
>> INSPECTIO	ON END			

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< DTC/CIRCUIT DIAGNOSIS >

**B210D STARTER RELAY** 

### DTC Logic

DTC DETECTION LOGIC

#### NOTE:

If DTC B210D is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>PCS-</u> 28. "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B210D	STARTER RLY ON CIRC	<ul> <li>When comparing the following items, IPDM E/R detects that starter relay is stuck in the ON position for 1 second or more.</li> <li>Starter control relay signal (CAN) from BCM</li> <li>Starter relay status signal (CAN) from BCM</li> <li>Starter control relay and starter relay status signal (IPDM E/R input)</li> <li>Starter control relay control signal (IPDM E/R output)</li> <li>P/N position signal input</li> </ul>	<ul> <li>Harness or connectors (CAN communication line is open or shorted.</li> <li>IPDM E/R</li> </ul>

### DTC CONFIRMATION PROCEDURE

**1.**PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.

2. Turn ignition switch OFF and wait for 1 second or more.

3. Check DTC in "Self Diagnostic Result" mode of "IPDM E/R" using CONSULT.

#### Is DTC detected?

YES >> Refer to <u>SEC-114</u>, "Diagnosis Procedure".

NO >> INSPECTION END

### Diagnosis Procedure

**1.**CHECK SELF DIAGNOSTIC RESULT

Check DTC in "Self Diagnostic Result" mode of "IPDM E/R" using CONSULT.

What is the display history of DTC "B210D"?

"CRNT">> GO TO 2.

"PAST" >> GO TO 4.

### 2. CHECK STARTER RELAY CONTROL SIGNAL CIRCUIT VOLTAGE

Check the voltage between IPDM E/R harness connector and ground.

( IPDN	(+) IPDM E/R		Condition	Voltage (Approx.)
Connector	Terminal			
E13	30	Ground	Other than at engine cranking	Battery voltage

#### Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".

NO >> GO TO 3.

### **3.**CHECK STARTER RELAY CONTROL SIGNAL CIRCUIT

1. Turn ignition switch OFF

2. Disconnect IPDM E/R connector and BCM connector.

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

IPDI	M E/R		Continuity	
Connector Terminal		Ground	Continuity	
E13	30		Not existed	

INFOID:000000010259426

< DTC/CIRCUIT DIAGNOSIS >		
Is the inspection result normal?		
YES >> Perform the diagnosis procedure for DTC B2608 of BC NO >> Repair or replace harness.	CM. Refer to <u>SEC-91, "DTC Logic"</u> .	А
4.CHECK INTERMITTENT INCIDENT		
Check intermittent incident. Refer to <u>GI-43. "Intermittent Incident"</u> .		В
>> INSPECTION END		С
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### **B210E STARTER RELAY**

#### < DTC/CIRCUIT DIAGNOSIS >

### **B210E STARTER RELAY**

### DTC Logic

DTC DETECTION LOGIC

#### NOTE:

- If DTC B210E is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>PCS-28, "DTC Logic"</u>.
- If DTC B210E is displayed with DTC B2605, first perform the trouble diagnosis for DTC B2605. Refer to <u>SEC-89, "DTC Logic"</u>.
- When IPDM E/R power supply voltage is low (Approx. 7 8 V for about 1 second), the DTC B210E may be detected.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B210E	STARTER RLY OFF CIRC	<ul> <li>When comparing the following items, IPDM E/R detects that starter relay is stuck in the OFF posi- tion for 1 second or more.</li> <li>Starter control relay signal (CAN) from BCM</li> <li>Starter relay status signal (CAN) from BCM</li> <li>Starter control relay and starter relay status signal (IPDM E/R input)</li> <li>Starter control relay control signal (IPDM E/R output)</li> <li>P/N position signal input</li> </ul>	<ul> <li>Harness or connector (CAN communication line is open or shorted.)</li> <li>Harness or connector (Starter relay circuit is open or shorted.)</li> <li>IPDM E/R</li> <li>BCM</li> <li>Battery</li> </ul>

### DTC CONFIRMATION PROCEDURE

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

- 1. Press push-button ignition switch to start engine, and wait 1 seconds or more.
- 2. Check DTC in "Self Diagnostic Result" mode of "IPDM E/R" using CONSULT.

#### Is DTC detected?

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

### Diagnosis Procedure

### 1.CHECK SELF DIAGNOSTIC RESULT

### Check DTC in "Self Diagnostic Result" mode of "IPDM E/R" using CONSULT.

What is the display history of DTC "B210E"?

"CRNT">> GO TO 3.

"PAST" >> GO TO 2.

2. CHECK BATTERY VOLTAGE

Check the battery voltage.

Which is the measurement result?

More than 12.4 V>>GO TO 5.

Less than 12.4 V>>Perform battery inspection. Refer to <u>PG-133, "How to Handle Battery"</u>.

### $\mathbf{3}.$ CHECK STARTER RELAY CONTROL SIGNAL

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

( IPDM	(+) IPDM E/R Connector Terminal		Condition	Voltage (Approx.)
Connector				
E13	30	Ground	Other than at engine cranking	12 V

Is the inspection result normal?

YES >> GO TO 4.

INFOID:000000010259429

### **B210E STARTER RELAY**

#### < DTC/CIRCUIT DIAGNOSIS >

### [WITH INTELLIGENT KEY SYSTEM]

NO >> Replace I	PDM E/R. Refer to PCS	S-34, "Removal and I	nstallation".		
CHECK STARTER	RELAY CONTROL SIG	GNAL CIRCUIT			
<ul> <li>Turn ignition swite</li> <li>Disconnect BCM</li> <li>Check continuity I</li> </ul>	h OFF. connector and IPDM E/ petween BCM harness	R connector. connector and IPDM	E/R harness conne	ctor.	
	BCM	IPDM	E/R	Quationity	-
Connector	Terminal	Connector	Terminal	Continuity	
M71	97	E13	30	Existed	_
/ES >> Replace E NO >> Repair or .CHECK INTERMIT	3CM. Refer to <u>BCS-95,</u> replace harness. TENT INCIDENT	"Removal and Install	<u>ation"</u> .		
>> INSPECT	ION END	ntermittent Incident".			

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#### B210F SHIFT POSITION/CLUTCH INTERLOCK SWITCH [WITH INTELLIGENT KEY SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

### B210F SHIFT POSITION/CLUTCH INTERLOCK SWITCH

### DTC Logic

DTC DETECTION LOGIC

#### NOTE:

If DTC B210F is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>PCS-</u> 28. "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B210F	INTER LOCK/PNP SW ON	There is a difference between P/N position signal from TCM and P/N position signal from BCM (CAN).	<ul> <li>Harness or connectors (CAN communication line is open or shorted.)</li> <li>Harness or connectors (TCM circuit is open or shorted.)</li> <li>A/T assembly (TCM)</li> <li>IPDM E/R</li> <li>BCM</li> </ul>

### DTC CONFIRMATION PROCEDURE

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

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

#### Is DTC detected?

YES >> Go to <u>SEC-118, "Diagnosis Procedure"</u>.

NO >> INSPECTION END

### Diagnosis Procedure

### **1.**CHECK DTC OF BCM

Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

#### Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to <u>BCS-58, "DTC Index"</u>. NO >> GO TO 2.

### 2. CHECK DTC OF TCM

Check DTC in "Self Diagnostic Result" mode of "TCM" using CONSULT.

#### Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to TM-81, "DTC Index".

NO >> GO TO 3.

**3.**CHECK IPDM E/R SIGNAL CIRCUIT OPEN AND SHORT

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

IPDM E/R		A/T assembly		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E15	48	F51	9	Existed

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

INFOID:000000010259431

### **B210F SHIFT POSITION/CLUTCH INTERLOCK SWITCH**

#### < DTC/CIRCUIT DIAGNOSIS >

### [WITH INTELLIGENT KEY SYSTEM]

(+)			
IPDM E/	R	()	Continuity
Connector	Terminal		
E15	48	Ground	Not existed
the inspection result normal?			
ES >> Replace IPDM E/R.	Refer to PCS-34, "R	Removal and Installation".	
O >> Repair or replace h	arness.		

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### B2110 SHIFT POSITION/CLUTCH INTERLOCK SWITCH < DTC/CIRCUIT DIAGNOSIS > [WITH INTELLIGENT KEY SYSTEM]

### B2110 SHIFT POSITION/CLUTCH INTERLOCK SWITCH

### DTC Logic

DTC DETECTION LOGIC

#### NOTE:

If DTC B2110 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>PCS-</u> <u>28, "DTC Logic"</u>.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2110	INTER LOCK/PNP SW OFF	There is a difference between P/N position signal from TCM and P/N position signal from BCM (CAN).	<ul> <li>Harness or connectors (CAN communication line is open or shorted.)</li> <li>Harness or connectors (TCM circuit is open or shorted.)</li> <li>A/T assembly (TCM)</li> <li>IPDM E/R</li> <li>BCM</li> </ul>

### DTC CONFIRMATION PROCEDURE

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

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

#### Is DTC detected?

YES >> Go to <u>SEC-120, "Diagnosis Procedure"</u>.

NO >> INSPECTION END

### Diagnosis Procedure

### **1.**CHECK DTC OF BCM

Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

#### Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to <u>BCS-58, "DTC Index"</u>. NO >> GO TO 2.

### 2. CHECK DTC OF TCM

Check DTC in "Self Diagnostic Result" mode of "TCM" using CONSULT.

### Is DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to <u>TM-81, "DTC Index"</u>.

NO >> GO TO 3.

### **3.**CHECK IPDM E/R SIGNAL CIRCUIT OPEN AND SHORT

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

	IPDM E/R		A/T assembly		Continuity
	Connector	Terminal	Connector	Terminal	Continuity
_	E15	48	F51	9	Existed

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

INFOID:000000010259433

### B2110 SHIFT POSITION/CLUTCH INTERLOCK SWITCH

#### < DTC/CIRCUIT DIAGNOSIS >

### [WITH INTELLIGENT KEY SYSTEM]

(+)				
IPDM E	R Transford	()	Continuity	
Connector	Terminal			_
E15	48	Ground	Not existed	-
the inspection result normal?				
ES >> Replace IPDM E/R	. Refer to <u>PCS-34, "Re</u> arness	moval and Installation".		
	umess.			

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### HEADLAMP FUNCTION

### Component Function Check

INFOID:000000010259434

[WITH INTELLIGENT KEY SYSTEM]

### **1.**CHECK FUNCTION

1. Perform "HEAD LAMP(HI)" in "ACTIVE TEST" mode of "THEFT ALM" of "BCM" using CONSULT.

2. Check headlamps operation.

Test	item	Desc	ription
	ON	Headlamps (Hi)	Light
	OFF		Do not light

Is the inspection result normal?

YES >> INSPECTION END

NO >> Refer to <u>SEC-122, "Diagnosis Procedure"</u>.

### Diagnosis Procedure

INFOID:000000010259435

**1.**CHECK HEADLAMP FUNCTION

Refer to EXL-113, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning parts.

2. CHECK INTERMITTENT INCIDENT

Refer to GI-43, "Intermittent Incident".

>> INSPECTION END

### < DTC/CIRCUIT DIAGNOSIS >

### HOOD SWITCH

**Component Function Check** 

### **1.**CHECK FUNCTION

Select "HOOD SW " and "HOOD SW 2" in "Data Monitor" mode of "IPDM E/R" using CONSULT. 1.

2. Check "HOOD SW" and "HOOD SW 2" indication under the following condition.

•HOOD SW     Hood     Open       •HOOD SW 2     Hood     Close       s the indication normal?     YES     >> Hood switch 1 and 2 is OK.       NO     >> Go to SEC-123, "Diagnosis Procedure".	On Off
HOOD SW 2     Close     Close     S the indication normal?     YES >> Hood switch 1 and 2 is OK.     NO >> Go to SEC-123, "Diagnosis Procedure".	Off
s the indication normal? YES >> Hood switch 1 and 2 is OK. NO >> Go to <u>SEC-123, "Diagnosis Procedure"</u> .	
YES >> Hood switch 1 and 2 is OK. NO >> Go to <u>SEC-123, "Diagnosis Procedure"</u> .	
Jiagnosis Procedure	INFOID:00000
1.CHECK HOOD SWITCH SIGNAL CIRCUIT	
<ol> <li>Turn ignition switch OFF.</li> <li>Disconnect hood switch connector.</li> <li>Check voltage between hood switch harness connector and ground.</li> </ol>	
Hood switch 1	
(+)	Voltage (V)
Hood switch 1 (–)	(Approx.)
Connector Terminal	
E57 1 Ground	12
lood switch 2	
(+)	Voltage (V)
Hood switch 2 (-)	(Approx.)
E40 Cround	10
E49 1 Ground	12
YES $>>$ GO TO 3. NO $>>$ GO TO 2. 2.CHECK HOOD SWITCH SIGNAL CIRCUIT	
<ol> <li>Disconnect IPDM E/R connector.</li> <li>Check continuity between IPDM E/R harness connector and hood switch harness of</li> </ol>	connector.
Hood switch 1	
Hood switch 1 IPDM E/R	Continuity
Connector Terminal Connector Terminal	,
E57 1 E13 32	Existed
Hood switch 2	

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

Terminal

1

Connector

E49

Connector

E17

Terminal

71

Existed

А INFOID:000000010259436

В

### **HOOD SWITCH**

### < DTC/CIRCUIT DIAGNOSIS >

### [WITH INTELLIGENT KEY SYSTEM]

IPDM E/R		Continuity
Connector Terminal	Ground	Continuity
E13 32	Ground	Not existed
E17 71		Not oxisted
s the inspection result normal? YES >> Replace IPDM E/R. Refer to <u>PCS-34</u> NO >> Repair or replace harness. <b>3.</b> CHECK HOOD SWITCH GROUND CIRCUIT	. "Removal and Installation".	
Check continuity between hood switch harness co lood switch 1	onnector and ground.	
Hood switch 1		Continuity
Connector Terminal	Ground	Continuity
E57 2		Existed
lood switch 2		
Hood switch 2		Continuity
Connector Terminal	Ground	
E49 2		Existed
YES >> GO TO 5. NO >> Replace hood switch. Refer to <u>SEC-</u> <b>5.</b> CHECK INTERMITTENT INCIDENT Refer to <u>GI-43. "Intermittent Incident</u> ".	139, "Removal and Installation"	
>> INSPECTION END		
Component Inspection		INFOID:0000000102
1.CHECK HOOD SWITCH		
<ol> <li>Turn ignition switch OFF.</li> <li>Disconnect hood switch connector.</li> <li>Check continuity between hood switch termin</li> </ol>	nals.	
Hood switch	Condition	Continuity
Terminal	Condition	Continuity
1 2 Hoo	d switch Press Release	Not existed Existed
s the inspection result normal?		I

### [WITH INTELLIGENT KEY SYSTEM]

COTC/CIRCUIT DIAG	NOSIS >		[WITH INTELL	.IGENT KEY SYSTEM]
HORN FUNCTION	NC			
Component Func	tion Check			INF0ID:000000010259439
1. CHECK FUNCTION	11			
<ol> <li>Disconnect vehicle</li> <li>Perform "VEHICLE SULT.</li> <li>Check the horn op</li> </ol>	security horn relay. SECURITY HORN" eration.	in "ACTIVE TEST" m	ode of "THEFT AL	M" of "BCM" using CON-
	Test item		Descript	ion
VEHICLE SECURITY I	HORN ON	Horn	S	ounds (for 0.5 sec)
s the operation normal YES >> GO TO 2. NO >> Go to <u>SEC</u> 2.CHECK FUNCTION	<u>?</u> -125, "Diagnosis Pro	cedure".		
<ol> <li>Reconnect vehicle</li> <li>Disconnect horn re</li> <li>Perform "VEHICLE SULT.</li> <li>Check the horn op</li> </ol>	security horn relay. Iay. SECURITY HORN" eration.	in "ACTIVE TEST" m	ode of "THEFT AL	M" of "BCM" using CON-
	Test item		Descript	ion
VEHICLE SECURITY I	HORN ON	Vehicle	security horn S	ounds (for 0.5 sec)
YES >> INSPECTION NOT NOT NOT NOT NOT NOT NOT NOT NOT N	ON END <u>-125, "Diagnosis Pro</u> lure	cedure".		INFOID:000000010259440
Perform inspection in a	ccordance with proce	edure that confirms ma	alfunction.	
Nhich procedure confin Component Function Component Function	ms malfunction? Check 1>>GO TO 2. Check 2>>GO TO 4.			
Check that horns function	ion properly using ho	rn switch.		
YES >> GO TO 3. NO >> Check hori <b>3.</b> CHECK HORN CON	∩ circuit. Refer to <u>HRI</u> NTROL CIRCUIT	N-3, "Wiring Diagram"		
<ol> <li>Disconnect horn re</li> <li>Disconnect IPDM I</li> <li>Check continuity b</li> </ol>	ilay. E/R connector. etween IPDM E/R ha	rness connector and l	norn relay harness	connector.
IPDI	M E/R	Horn	relay	Ocartin it
Connector	Terminal	Connector	Terminal	Continuity
E13	34	E5	1	Existed

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

### HORN FUNCTION

#### < DTC/CIRCUIT DIAGNOSIS >

IPDM E/R			Continuity
Connector	Terminal	Ground	Continuity
E13	34		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation".

NO >> Repair or replace harness.

### **4.**CHECK VEHICLE SECURITY HORN RELAY POWER SUPPLY

1. Disconnect vehicle security horn relay.

2. Check voltage between vehicle security horn relay harness connector and ground.

(+) Vehicle security horn relay		()	Voltage (V)
Connector	Terminal		(Applox.)
E124	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 5.

NO-1 >> Check 10 A fuse [No. 36 located in the fuse block (J/B)].

NO-2 >> Check harness for open or short between vehicle security horn relay and fuse.

**5.**CHECK VEHICLE SECURITY HORN CONTROL CIRCUIT

- 1. Disconnect IPDM E/R connector.
- Check continuity between IPDM E/R harness connector and vehicle security horn relay harness connector.

IPDM E/R		Vehicle security horn relay		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
E13	34	E124	3	Existed	

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

IPDM E/R			Continuity
Connector	Terminal	Ground	Continuity
E13	34		Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace harness.

**Ó.**CHECK VEHICLE SECURITY HORN CIRCUIT

1. Disconnect vehicle security horn connector.

Check continuity between vehicle security horn relay harness connector and vehicle security horn harness connector.

Vehicle security horn relay		Vehicle security horn		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
E124	2	E125	1	Existed	

3. Check continuity between vehicle security horn relay harness connector and ground.

Vehicle security horn relay			Continuity
Connector	Terminal	Ground	Continuity
E124	2		Not existed

Is the inspection result normal?

### HORN FUNCTION

### [WITH INTELLIGENT KEY SYSTEM]

NO >> Repair or replace harness. 7. CHECK VEHICLE SECURITY HORN RELAY А Refer to SEC-127, "Component Inspection". Is the inspection result normal? В YES >> Replace vehicle security horn. NO >> Replace vehicle security horn relay. Component Inspection INFOID:000000010259441 1. CHECK VEHICLE SECURITY HORN RELAY D 1. Turn ignition switch OFF. Disconnect vehicle security horn relay. 2. Check voltage between vehicle security horn relay terminal and ground under the following conditions. 3. Е (+) Voltage (V) Vehicle security horn relay (-) Condition (Approx.) F Terminal 12 12 V direct current supply between terminals 1 and 3 2 Ground No current supply 0 Is the inspection result normal? YES >> INSPECTION END Н NO >> Replace vehicle security horn relay. SEC L Μ Ν

< DTC/CIRCUIT DIAGNOSIS >

### SECURITY INDICATOR LAMP

Component Function Check

### **1.**CHECK FUNCTION

1. Perform "THEFT IND" in "ACTIVE TEST" mode of "IMMU" of "BCM" using CONSULT.

2. Check security indicator lamp operation.

Test item		Description	
THEFT IND	ON	Security indicator lamp	Illuminates
	OFF	Security indicator lamp	Does not illuminate

Is the inspection result normal?

YES >> INSPECTION END

NO >> Go to <u>SEC-128, "Diagnosis Procedure"</u>.

#### Diagnosis Procedure

INFOID:000000010259443

INFOID:000000010259442

### 1.CHECK SECURITY INDICATOR LAMP POWER SUPPLY CIRCUIT

#### 1. Turn ignition switch OFF.

- 2. Disconnect combination meter connector.
- 3. Check voltage between combination meter harness connector and ground.

(+) Combination meter		()	Voltage (V) (Approx.)
Connector	Terminal		(, , , , , , , , , , , , , , , , , , ,
M34	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.

NO-1 >> Check 10 A fuse [No. 11, located in the fuse block (J/B)].

NO-2 >> Check harness for open or short between combination meter and fuse.

### **2.**CHECK SECURITY INDICATOR LAMP SIGNAL

- 1. Connect combination meter connector.
- 2. Disconnect BCM connector.
- 3. Check voltage between BCM harness connector and ground.

(+) BCM		()	Voltage (V) (Approx.)
Connector	Terminal		(
M68	23	Ground	Battery voltage

Is the inspection result normal?

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

**3.**REPLACE BCM

- 1. Replace BCM. Refer to <u>BCS-95, "Removal and Installation"</u>.
- 2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

#### >> INSPECTION END

### 4. CHECK SECURITY INDICATOR LAMP CIRCUIT

1. Disconnect combination meter connector.

2. Check continuity between combination meter harness connector and BCM harness connector.

### **SEC-128**

### SECURITY INDICATOR LAMP

#### < DTC/CIRCUIT DIAGNOSIS >

#### [WITH INTELLIGENT KEY SYSTEM]

Combination meter		BCM		Continuity	A
Connector	Terminal	Connector	Terminal	Continuity	
M34	28	M68	23	Existed	_
Chaole continuity h	aturaan aamhinatian r	matar harnaaa aanna	ator and around		- В

#### 3. Check continuity between combination meter harness connector and ground.

-	Combina	tion meter		Continuity	0
-	Connector	Terminal	Ground	Continuity	C
-	M34	28		Not existed	

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-88, "Removal and Installation".

NO >> Repair or replace harness.

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### ENGINE DOES NOT START WHEN INTELLIGENT KEY IS INSIDE OF VEHICLE < SYMPTOM DIAGNOSIS > [WITH INTELLIGENT KEY SYSTEM]

### SYMPTOM DIAGNOSIS

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

### Description

INFOID:000000010259444

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" in "WORK SUPPORT" is ON when setting on CONSULT.
- Intelligent Key is not inserted in key slot.
- One or more of Intelligent Keys with registered Intelligent Key ID is in the vehicle.

### **Diagnosis Procedure**

INFOID:000000010259445

### **1.**PERFORM WORK SUPPORT

Perform "INSIDE ANT DIAGNOSIS" on Work Support in "INTELLIGENT KEY". Refer to <u>DLK-43, "INTELLIGENT KEY : CONSULT Function (BCM - INTELLIGENT KEY)"</u>.

>> GO TO 2.

2. PERFORM SELF-DIAGNOSIS RESULT

Perform Self-Diagnosis Result in "BCM", and check whether or not DTC of inside key antenna is detected. <u>Is DTC detected?</u>

YES >> Refer to <u>BCS-58, "DTC Index"</u>.

NO >> GO TO 3.

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

Check push-button ignition switch.

Refer to PCS-73, "Component Function Check".

Is the operation normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning parts.

**4.**CONFIRM THE OPERATION

Confirm the operation again.

Is the inspection normal?

YES >> Check intermittent incident. Refer to <u>GI-43, "Intermittent Incident"</u>.

NO >> GO TO 1.

### SECURITY INDICATOR LAMP DOES NOT TURN ON OR BLINK

[WITH INTELLIGENT KEY SYSTEM]

#### < SYMPTOM DIAGNOSIS >

#### SECURITY INDICATOR LAMP DOES NOT TURN ON OR BLINK А Description INFOID:000000010259446 Security indicator lamp does not blink when ignition switch is in a position other than ON В NOTE: Before performing the diagnosis, check "Work Flow". Refer to <u>SEC-50, "Work Flow"</u>. Check that vehicle is under the condition shown in "Conditions of vehicle" before starting diagnosis, and С check each symptom. Conditions of Vehicle (Operating Conditions) D Ignition switch is not in the ON position. **Diagnosis** Procedure INFOID:0000000010259447 Е 1. CHECK SECURITY INDICATOR LAMP Check security indicator lamp. Refer to SEC-128, "Component Function Check". F Is the inspection result normal? YES >> GO TO 2. NO >> Repair or replace the malfunctioning parts. 2.CONFIRM THE OPERATION Confirm the operation again. Н Is the result normal? YES >> Check intermittent incident. Refer to GI-43, "Intermittent Incident". NO >> GO TO 1.

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### VEHICLE SECURITY SYSTEM CANNOT BE SET

< SYMPTOM DIAGNOSIS >

### VEHICLE SECURITY SYSTEM CANNOT BE SET INTELLIGENT KEY

### **INTELLIGENT KEY : Description**

Armed phase is not activated when door is locked using Intelligent Key.

#### NOTE:

Check that vehicle is under the condition shown in "Conditions of vehicle" before starting diagnosis, and check each symptom.

CONDITION OF VEHICLE (OPERATING CONDITION)

Confirm the setting of "SECUTIRY ALARM SET" is ON in "WORK SUPPORT" mode of "THEFT ALM" of "BCM" using CONSULT.

### INTELLIGENT KEY : Diagnosis Procedure

INFOID:000000010259449

INFOID-000000010259448

### 1. CHECK INTELLIGENT KEY SYSTEM (REMOTE KEYLESS ENTRY FUNCTION)

Lock/unlock door with Intelligent Key. Refer to <u>DLK-20, "DOOR LOCK FUNCTION : System Description"</u>.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Check Intelligent Key system (remote keyless entry function). Refer to <u>DLK-179, "Diagnosis Pro-</u> cedure".

2. CHECK HOOD SWITCH

Check hood swiwtch. Refer to <u>SEC-123, "Component Function Check"</u>.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace hood switch.

 $\mathbf{3.}$ CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to <u>GI-43, "Intermittent Incident"</u>.

NO >> GO TO 1.

### DOOR REQUEST SWITCH

DOOR REQUEST SWITCH : Description

Armed phase is not activated when door is locked using door request switch. **NOTE:** 

Check that vehicle is under the condition shown in "Conditions of vehicle" before starting diagnosis, and check each symptom.

CONDITION OF VEHICLE (OPERATING CONDITION)

Confirm the setting of "SECURITY ALARM SET" is ON in "WORK SUPPORT" mode of "THEFT ALM" of "BCM" using CONSULT.

DOOR REQUEST SWITCH : Diagnosis Procedure

INFOID:000000010259451

INFOID:000000010259450

### **1.**CHECK INTELLIGENT KEY SYSTEM (DOOR LOCK FUNCTION)

Lock/unlock door with door request switch. Refer to <u>DLK-20, "DOOR LOCK FUNCTION : System Description"</u>.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Check Intelligent Key system (door lock function). Refer to <u>DLK-176, "ALL DOOR REQUEST</u> <u>SWITCHES : Diagnosis Procedure"</u>.

### SEC-132

[WITH INTELLIGENT KEY SYSTEM]

### **VEHICLE SECURITY SYSTEM CANNOT BE SET**

### [WITH INTELLIGENT KEY SYSTEM]

< SYMPTOM DIAGNOSIS >	[WITH INTELLIGENT KEY SYSTEM]
2. снеск ноод switch	
Check hood swiwtch. Refer to <u>SEC-123, "Component Function Check"</u> .	
<u>Is the inspection result normal?</u>	
NO >> Repair or replace hood switch.	
<b>3.</b> CONFIRM THE OPERATION	
Confirm the operation again.	
<u>Is the result normal?</u> YES >> Check intermittent incident. Refer to <u>GI-43, "Intermitt</u> NO >> GO TO 1	ent Incident".
DOOR KEY CYLINDER	
DOOR KEY CYLINDER : Description	INFOID:000000010259452
Armed phase is not activated when door is locked using mechani	cal key.
Check that vehicle is under the condition shown in "Conditions of each symptom.	vehicle" before starting diagnosis, and check
CONDITION OF VEHICLE (OPERATING CONDITION) Confirm the setting of "SECURITY ALARM SET" is ON in "WO "BCM" using CONSULT.	ORK SUPPORT" mode of "THEFT ALM" of
DOOR KEY CYLINDER : Diagnosis Procedure	INFOID:000000010259453
1.CHECK POWER DOOR LOCK SYSTEM	
Lock/unlock door with mechanical key.	
Is the inspection result normal?	
YES >> GO TO 2.	_
NO >> Check power door lock system. Refer to <u>DLK-175, "E</u>	Diagnosis Procedure".
Confirm the operation again.	
YES >> Check intermittent incident. Refer to GI-43, "Intermitter	ent Incident".
NO >> GO TO 1.	

### VEHICLE SECURITY ALARM DOES NOT ACTIVATE

#### < SYMPTOM DIAGNOSIS >

### VEHICLE SECURITY ALARM DOES NOT ACTIVATE

### Description

INFOID:000000010259454

[WITH INTELLIGENT KEY SYSTEM]

Alarm does not operate when alarm operating condition is satisfied. **NOTE:** 

Check that vehicle is under the condition shown in "Conditions of vehicle" before starting diagnosis, and check each symptom.

#### CONDITIONS OF VEHICLE (OPERATING CONDITIONS)

Confirm the setting of "SECURITY ALARM SET" is ON in "WORK SUPPORT" mode of "THEFT ALM" of "BCM" using CONSULT.

### Diagnosis Procedure

INFOID:000000010259455

### 1.CHECK DOOR SWITCH

Check door switch.

Refer to DLK-121, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the malfunctioning door switch

2. CHECK HOOD SWITCH

Check hood swiwtch.

Refer to SEC-123, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace hood switch.

3.CHECK HORN FUNCTION

Check horn function.

Refer to SEC-125, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace the malfunctioning parts.

**4.**CHECK HEADLAMP FUNCTION

Check headlamp function. Refer to <u>SEC-122, "Component Function Check"</u>.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace the malfunctioning parts.

**5.**CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to <u>GI-43, "Intermittent Incident"</u>.

NO >> GO TO 1.

#### PANIC ALARM FUNCTION DOES NOT OPERATE [WITH INTELLIGENT KEY SYSTEM] < SYMPTOM DIAGNOSIS >

### PANIC ALARM FUNCTION DOES NOT OPERATE

### Description

### NOTE:

Before performing the diagnosis following procedure, check "Work Flow". Refer to <u>SEC-50, "Work Flow".</u>

 Check that vehicle is under the condition shown in "Conditions of vehicle" before starting diagnosis, and check each symptom.

### CONDITIONS OF VEHICLE (OPERATION CONDITIONS)

- Ignition switch is in OFF or LOCK position.
- Intelligent Key is removed from key slot.

### **Diagnosis** Procedure

## 1. CHECK REMOTE KEYLESS ENTRY FUNCTION

Check remote keyless entry function.

Does door lock/unlock with Intelligent Key button? YES >> GO TO 2.

NO >> Go to DLK-179, "Diagnosis Procedure".

2.CHECK VEHICLE SECURITY ALARM OPERATION

Check vehicle security alarm operation.

Does alarm (headlamps and horns) active?

YES >> GO TO 3. NO >> Go to SEC-16, "VEHICLE SECURITY SYSTEM : System Description".

 ${f 3.}$ CHECK "PANIC ALARM SET" SETTING IN "WORK SUPPORT"

Check "PANIC ALARM SET" setting in "WORK SUPPORT". Refer to DLK-43, "INTELLIGENT KEY : CONSULT Function (BCM - INTELLIGENT KEY)".

Is the inspection result normal?

YES >> GO TO 4. >> Set "PANIC ALARM SET" setting in "WORK SUPPORT". NO

**4.**CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-43, "Intermittent Incident".

NO >> GO TO 1.

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INFOID:000000010259456

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#### REMOTE ENGINE START FUNCTION DOES NOT OPERATE [VITH INTELLIGENT KEY SYSTEM]

< SYMPTOM DIAGNOSIS >

### REMOTE ENGINE START FUNCTION DOES NOT OPERATE

### Description

Engine does not start when operating REMOTE ENGNE START button of Intelligent Key. **NOTE:** 

Check that vehicle is under the condition shown in "Conditions of vehicle" before starting diagnosis, and check each symptom.

Conditions of Vehicle (Operating Conditions)

- Shift position is in P position.
- Vehicle security system is not in operation.
- Registered Intelligent Key is not in the vehicle.

### **Diagnosis Procedure**

INFOID:000000010259459

INFOID:000000010259458

### 1. CHECK INTELLIGENT KEY SYSTEM (REMOTE KEYLESS ENTRY FUNCTION)

Lock/unlock door with Intelligent Key.

Refer to DLK-24. "REMOTE KEYLESS ENTRY FUNCTION : System Description".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Check Intelligent Key system (remote keyless entry function). Refer to <u>DLK-179, "Diagnosis Pro-</u> cedure".

2. CHECK DOOR SWITCH

Check door switch.

Refer to DLK-121, "Component Function Check".

Is the inspection result normal?

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

**3.**CHECK HAZARD SWITCH

Check hazard switch. Refer to EXL-139, "Component Function Check".

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair or replace malfunctioning parts.
- **4.**CHECK SHIFT LOCK SYSTEM
- Check shift lock system.

Refer to TM-161, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 5.

- NO >> Repair or replace malfunctioning parts.
- **5.**CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

- YES >> Check intermittent incident. Refer to <u>GI-43, "Intermittent Incident"</u>.
- NO >> GO TO 1.

### REMOVAL AND INSTALLATION NATS ANTENNA AMP.

### Removal and Installation

### REMOVAL

- 1. Remove the push-button ignition switch. Refer to SEC-138. "Removal and Installation".
- 2. Disengage the NATS antenna amp. pawl, and then remove NATS antenna amp.

2 : Pawl



INSTALLATION Install in the reverse order of removal.



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### < REMOVAL AND INSTALLATION >

### PUSH-BUTTON IGNITION SWITCH

### Exploded View

Refer to IP-13, "Exploded View".

### Removal and Installation

### REMOVAL

- 1. Remove the cluster lid A. Refer to IP-14, "Removal and Installation".
- 2. Disengage the push-button ignition switch fixing pawl and then remove push-button ignition switch.

Pawl : Pawl



INSTALLATION Install in the reverse order of removal. INFOID:000000010259461

### < REMOVAL AND INSTALLATION >

### HOOD SWITCH

### Removal and Installation

### REMOVAL

- 1. Disconnect hood switch connector 2.
- 2. Remove the hood switch mounting bolt (A), and then remove hood switch (1).



#### NOTE:

The same procedure is also performed for hood switch 1 and hood switch 2.

#### **INSTALLATION**

Install in the reverse order of removal.

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