# SECTION WW
# WIPER & WASHER

## CONTENTS

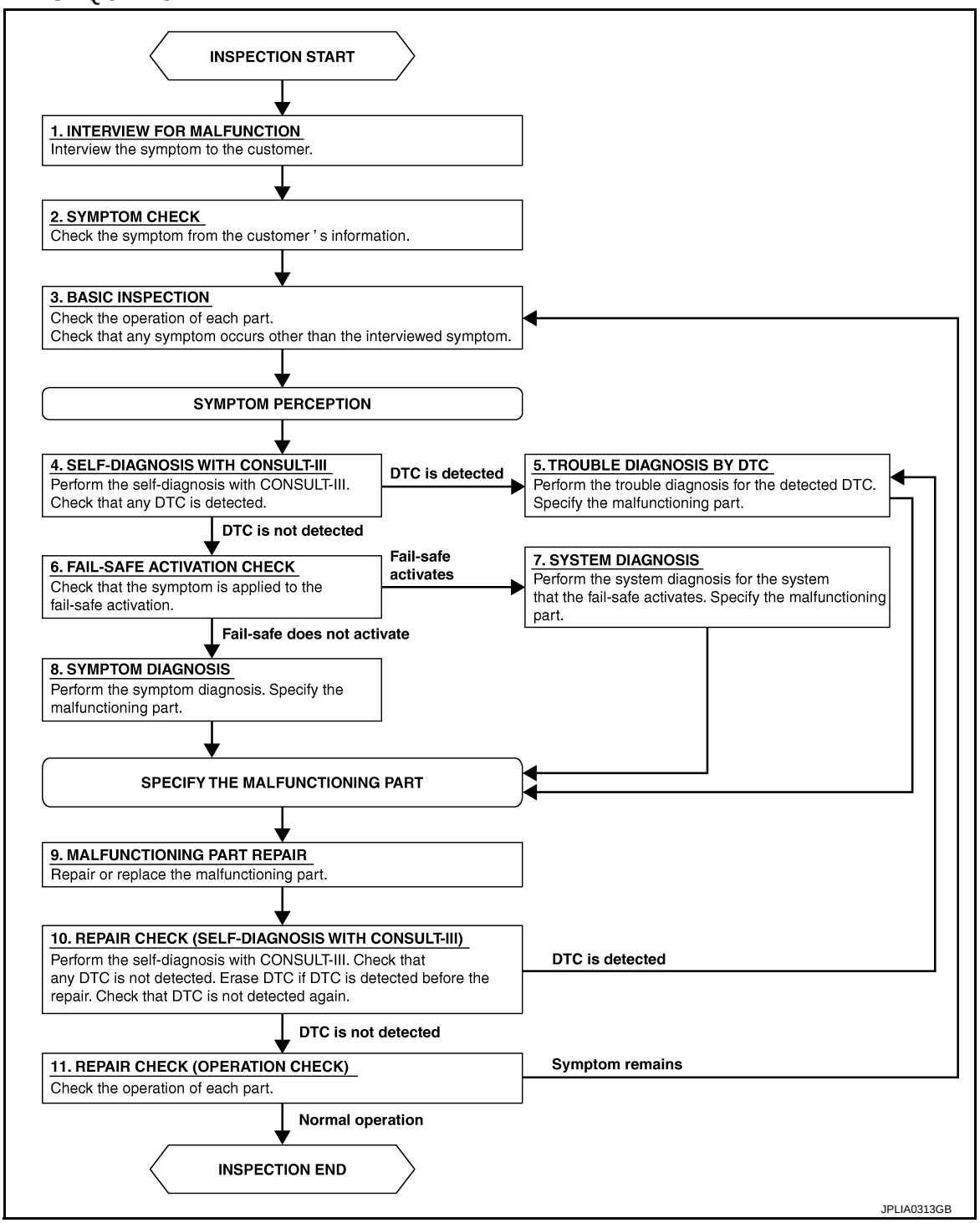
# BASIC INSPECTION

## DIAGNOSIS AND REPAIR WORKFLOW

### Work Flow

INFOID:0000000004965866

#### OVERALL SEQUENCE




#### DETAILED FLOW

### 1.INTERVIEW FOR MALFUNCTION

Interview the symptom to the customer.

>> GO TO 2.

## 2.SYMPTOM CHECK

Check the symptom from the customer's information.

>> GO TO 3.

## 3.BASIC INSPECTION

Check the operation of each part. Check that any symptom occurs other than the interviewed symptom.

>> GO TO 4.

## 4.SELF-DIAGNOSIS WITH CONSULT-III

Perform the self-diagnosis with CONSULT-III. Check that any DTC is detected.

Is any DTC detected?

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

## 5.TROUBLE DIAGNOSIS BY DTC

Perform the trouble diagnosis for the detected DTC. Specify the malfunctioning part.

>> GO TO 9.

## 6.FAIL-SAFE ACTIVATION CHECK

Check that the symptom is applied to the fail-safe activation.

Does the fail-safe activate?

YES >> GO TO 7.
NO >> GO TO 8.

## 7.SYSTEM DIAGNOSIS

Perform the system diagnosis for the system that the fail-safe activates. Specify the malfunctioning part.

>> GO TO 9.

## 8.SYMPTOM DIAGNOSIS

Perform the symptom diagnosis. Specify the malfunctioning part.

>> GO TO 9.

## 9.MALFUNCTION PART REPAIR

Repair or replace the malfunctioning part.

>> GO TO 10.

## 10.REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT-III)

Perform the self-diagnosis with CONSULT-III. Check that any DTC is not detected. Erase DTC if DTC is detected before the repair. Check that DTC is not detected again.

Is any DTC detected?

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

## 11.REPAIR CHECK (OPERATION CHECK)

Check the operation of each part.

Does it operate normally?

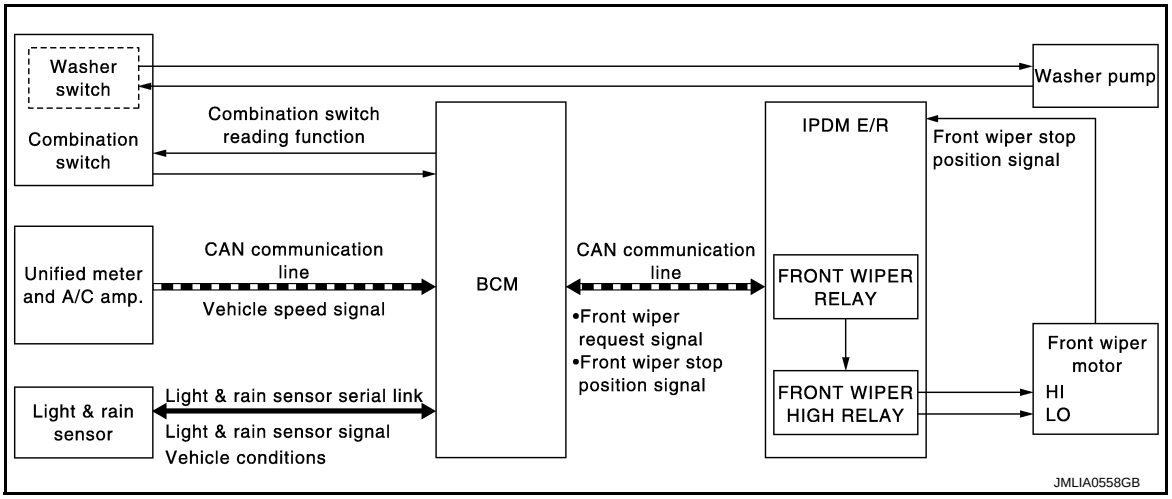
YES >> INSPECTION END
NO >> GO TO 3.

# SYSTEM DESCRIPTION

## FRONT WIPER AND WASHER SYSTEM

### System Diagram

INFOID:0000000005370218




### System Description

INFOID:0000000004965868

#### OUTLINE

The front wiper is controlled by each function of BCM and IPDM E/R.

Control by BCM
- Combination switch reading function
- Front wiper control function

Control by IPDM E/R
- Front wiper control function
- Relay control function

#### FRONT WIPER BASIC OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the front wiper request signal to IPDM E/R with CAN communication depending on each operating condition of the front wiper.
- IPDM E/R turns ON/OFF the integrated front wiper relay and the front wiper high relay according to the front wiper request signal. IPDM E/R provides the power supply to operate the front wiper HI/LO operation.

#### FRONT WIPER LO OPERATION

- BCM transmits the front wiper request signal (LO) to IPDM E/R with CAN communication according to the front wiper LO operating condition.

Front wiper LO operating condition
- Ignition switch ON
- Front wiper switch LO or front wiper switch MIST (while pressing)
- IPDM E/R turns ON the integrated front wiper relay according to the front wiper request signal (LO).

#### FRONT WIPER HI OPERATION

- BCM transmits the front wiper request signal (HI) to IPDM E/R with CAN communication according to the front wiper HI operating condition.

Front wiper HI operating condition
- Ignition switch ON
- Front wiper switch HI
- IPDM E/R turns ON the integrated front wiper relay and the front wiper high relay according to the front wiper request signal (HI).

#### FRONT WIPER AUTO OPERATION

Rain Sensing

Rain level and sensor conditions are detected by light & rain sensor.

- BCM transmits the vehicle conditions (vehicle speed, front wiper condition, light & rain sensor sensitivity setting, etc.) to the light & rain sensor via the light & rain sensor serial link.
- Light & rain sensor judges a wiping speed for front wiper by rain condition and the vehicle conditions. And it transmits the wiping speed request signal to the BCM via the light & rain sensor serial link.

Auto Wiping Operation

- BCM receives the wiping speed request signal from the light & rain sensor via the light & rain sensor serial link.
- BCM controls front wiper operation according to the wiping speed request signals. And it transmits the front wiper request signals (LO or HI) to the IPDM E/R via CAN communication line.

Front wiper AUTO operating condition

- Ignition switch ON
- Front wiper switch AUTO

**NOTE:**

When the front wiper switch is turned to AUTO position, front wiper operates once regardless of a rainy condition.

Light & rain Sensor Sensitivity Setting

BCM determines light & rain sensor sensitivity according to a wiper volume.

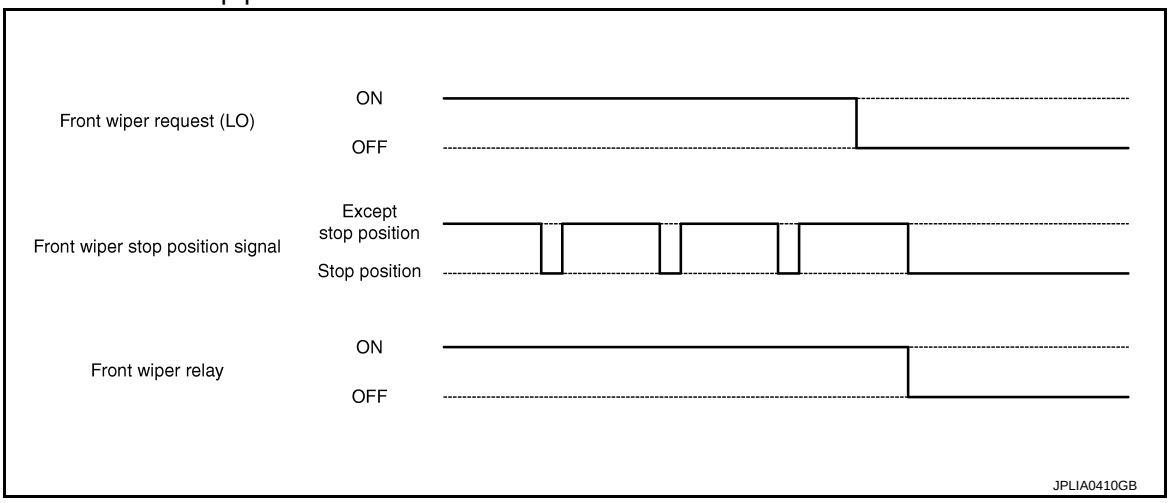
| Wiper volume dial position | Sensitivity |
|---|---|
| 1 | High sensitivity |
| 2 | |
| 3 | Medium – high sensitivity |
| 4 | |
| 5 | Low – medium sensitivity |
| 6 | |
| 7 | Low sensitivity |

**NOTE:**

When the wiper volume is turned up at 1 level with front wiper AUTO operating condition, front wiper operates once.

## FRONT WIPER AUTO STOP OPERATION

- BCM stops transmitting the front wiper request signal when the front wiper switch is turned OFF.
- IPDM E/R detects the front wiper stop position signal from the front wiper motor and detects the front wiper motor position (stop position/except stop position).
- When the front wiper request signal is stopped, IPDM E/R turns ON the front wiper relay until the front wiper motor returns to the stop position.




**NOTE:**

- BCM stops the transmitting of the front wiper request signal when the ignition switch OFF.
- IPDM E/R turns the front wiper relay OFF when the ignition switch OFF.

## FRONT WIPER OPERATION LINKED WITH WASHER

- BCM transmits the front wiper request signal (LO) to IPDM E/R with CAN communication according to the washer linked operating condition of the front wiper.
- BCM transmits the front wiper request signal (LO) so that the front wiper operates approximately 2 times when the front washer switch OFF is detected.

Washer linked operating condition of front wiper

- Ignition switch ON
- Front washer switch ON (0.4 second or more)

- IPDM E/R turns ON the integrated front wiper relay according to the front wiper request signal (LO).
- The washer pump is grounded through the combination switch when the front washer switch ON.

## FRONT WIPER DROP WIPE OPERATION

- BCM controls the front wiper to operate once according to the conditions of front wiper drop wipe operation.

Front wiper drop wipe operating condition

- Ignition switch ON
- Front wiper switch OFF
- Front washer switch OFF

- BCM transmits the front wiper request signal (LO) to IPDM E/R with CAN communication so that the front wiper operate once three seconds after front wiper operation linked with washer.
- IPDM E/R turns ON the integrated front wiper relay according to the front wiper request signal (LO).

## FAIL-SAFE FUNCTION

Front Wiper control

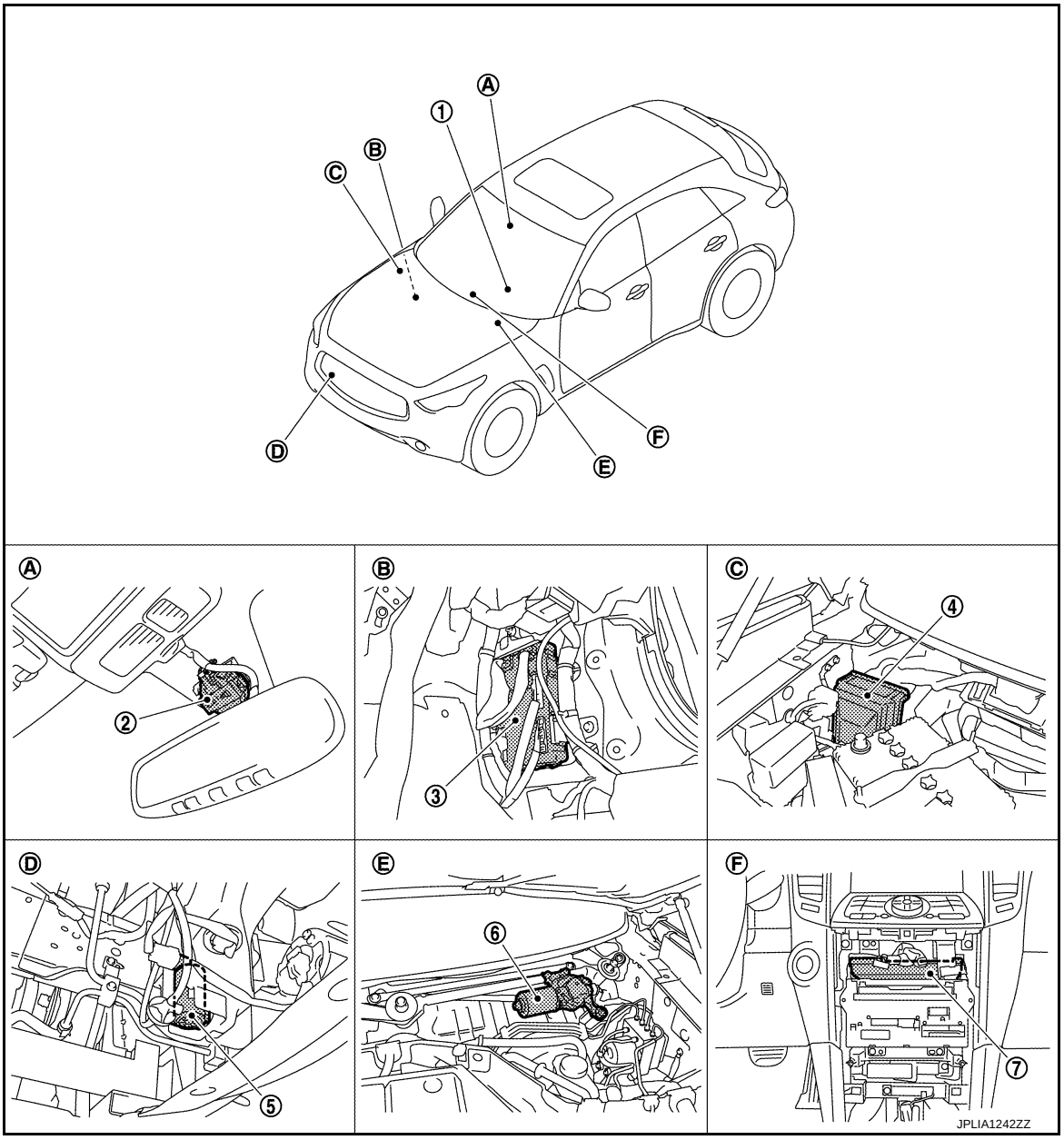
IPDM E/R performs the fail-safe function when the front wiper auto stop circuit is malfunctioning. Refer to PCS-35, "Fail-safe".

Light & rain Sensor Malfunction

- BCM judges the light & rain sensor serial link error by the light & rain sensor serial link condition and detects the light & rain sensor malfunction by light & rain sensor malfunction signal.
- When BCM detects the light & rain sensor serial link error or the light & rain sensor malfunction while front wiper AUTO operation, BCM operates a fail-safe control.
  **NOTE:**
  If light & rain sensor malfunction is detected when ignition switch is turned OFF ⇒ ON and front wiper switch is AUTO position, BCM operates front wiper LO.

## Component Parts Location

INFOID:0000000004965869




1. Combination switch
2. Light & rain sensor
3. BCM
4. IPDM E/R
5. Washer pump
6. Front wiper motor
7. Unified meter and A/C amp.
- A. Wind shield upper
- B. Dash side lower (passenger side)
- C. Engine room (right side)
- D. Radiator core support (RH)
- E. Cowl top, left side of engine room
- F. Behind cluster lid C

## Component Description

INFOID:0000000005370219

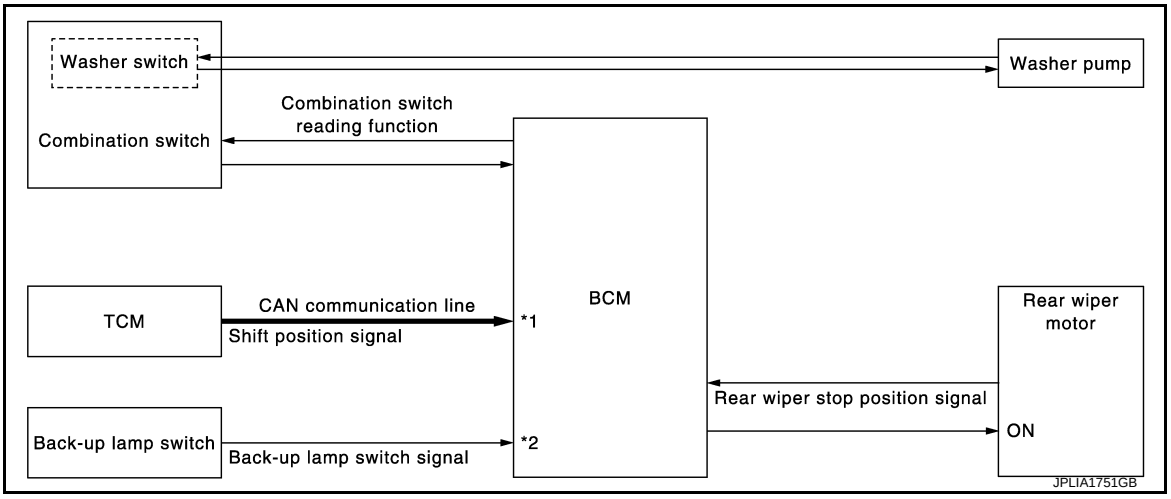
| Part | Description |
|---|---|
| BCM | • Judges the each switch status by the combination switch reading function.<br>• Requests (with CAN communication) the front wiper relay and the front wiper high relay ON to IPDM E/R. |
| IPDM E/R | • Controls the integrated relay according to the request (with CAN communication) from BCM.<br>• Performs the auto stop control of the front wiper. |

| Part | Description |
|---|---|
| Front wiper motor | • IPDM E/R controls front wiper operation.<br>• Front wiper auto stop signal is transmitted to IPDM E/R. |
| Washer pump | • Washer fluid is sprayed according to washer switch states.<br>• Switching between front washer and rear washer is performed according to the voltage polarity change to washer pump. |
| Combination switch (Wiper & washer switch) | Refer to BCS-13, "System Description". |
| Unified meter and A/C amp. | Transmits the vehicle speed signal to BCM with CAN communication. |
| Light & rain sensor | Detects water droplets on the windshield with infrared rays, and transmits the light & rain sensor signal to BCM through the light and light & rain sensor serial link. |

# REAR WIPER AND WASHER SYSTEM

## System Diagram

INFOID:0000000006055143




*1 : AT models

*2 : MT models

## System Description

INFOID:0000000004965872

### OUTLINE

The rear wiper is controlled by each function of BCM.

Control by BCM
- Combination switch reading function
- Rear wiper control function

### REAR WIPER BASIC OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM controls the rear wiper to start or stop.

### REAR WIPER ON OPERATION

- BCM supplies power to the rear wiper motor according to the rear wiper ON operating condition.

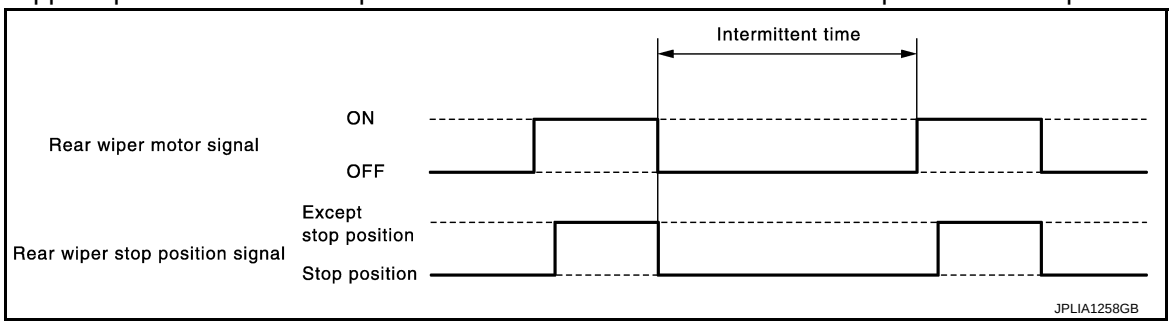
Rear wiper ON operating condition
- Ignition switch ON
- Rear wiper switch ON

### REAR WIPER INT OPERATION

- BCM supplies power to the rear wiper motor according to the INT operating condition.

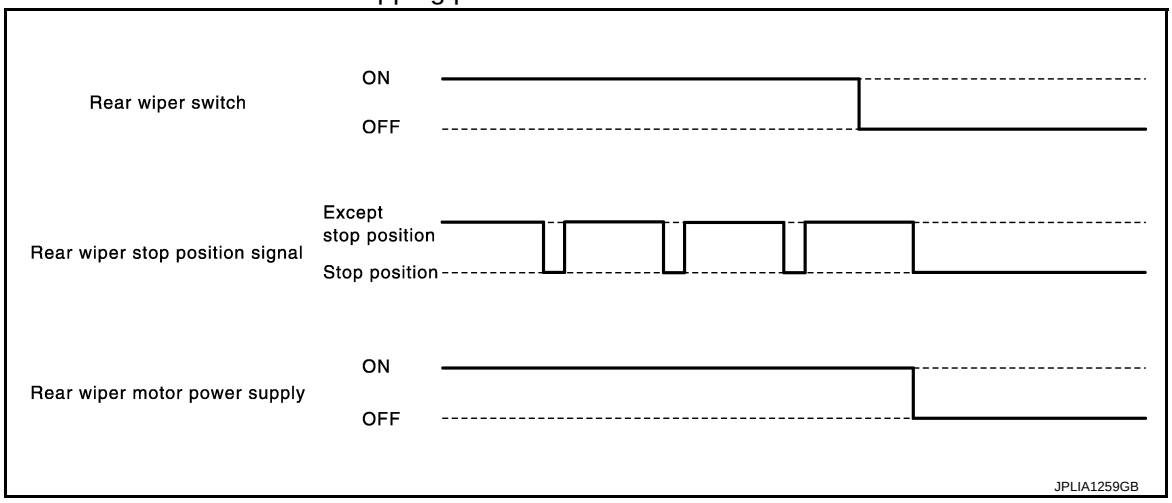
Rear wiper INT operating condition
- Ignition switch ON
- Rear wiper switch INT
- BCM controls the rear wiper to operate once.
- BCM detects the rear wiper motor stopping position.

- BCM supplies power to the rear wiper motor after an intermittent from the stop of the rear wiper motor.




## REAR WIPER AUTO STOP OPERATION

- BCM stops supplying power to the rear wiper motor when the rear wiper switch is turned OFF.
- BCM reads a rear wiper stop position signal from the rear wiper motor to detect a rear wiper motor position.
- When the rear wiper motor is at other than the stopping position, BCM continues to supply power to the rear wiper motor until it returns to the stopping position.




**NOTE:**
BCM stops supplying power to the rear wiper motor when the ignition switch is turned OFF.

## REAR WIPER OPERATION LINKED WITH WASHER

- BCM supplies power to the rear wiper motor according to the washer linked operating condition of rear wiper. When the rear washer switch is turned OFF, BCM controls rear wiper to operate approximately 3 times.

Washer linked operating condition of rear wiper
- Ignition switch ON
- Rear washer switch ON (0.4 second or more)
- The washer pump is grounded through the combination switch with the rear washer switch ON.

## REAR WIPER OPERATION LINKED WITH REVERSE

- BCM controls rear wiper to operate once according to the conditions of rear wiper operation linked with reverse.

Condition of rear wiper operation linked with reverse
- Ignition switch ON
- Front wiper switch: LO, HI or INT
- Rear wiper switch OFF
- Selector lever “R” (AT models)
- Shift lever “R” (MT models)
- TCM transmits the shift position signal to BCM through the CAN communication line when the selector lever is shifted to the “R”. (AT models)
- Back-up lamp switch transmits the back-up lamp switch signal to BCM when the shift lever is shifted to the “R”. (MT models)
- BCM supplies power to the rear wiper motor when receiving the shift position signal (AT models) or back-up lamp signal (MT models).

## REAR WIPER DROP WIPE OPERATION

- BCM controls the rear wiper to operate once according to the rear wiper drop wipe operating condition.

Rear wiper drop wipe operating condition
- Ignition switch ON
- Rear wiper switch OFF
- Rear washer switch OFF

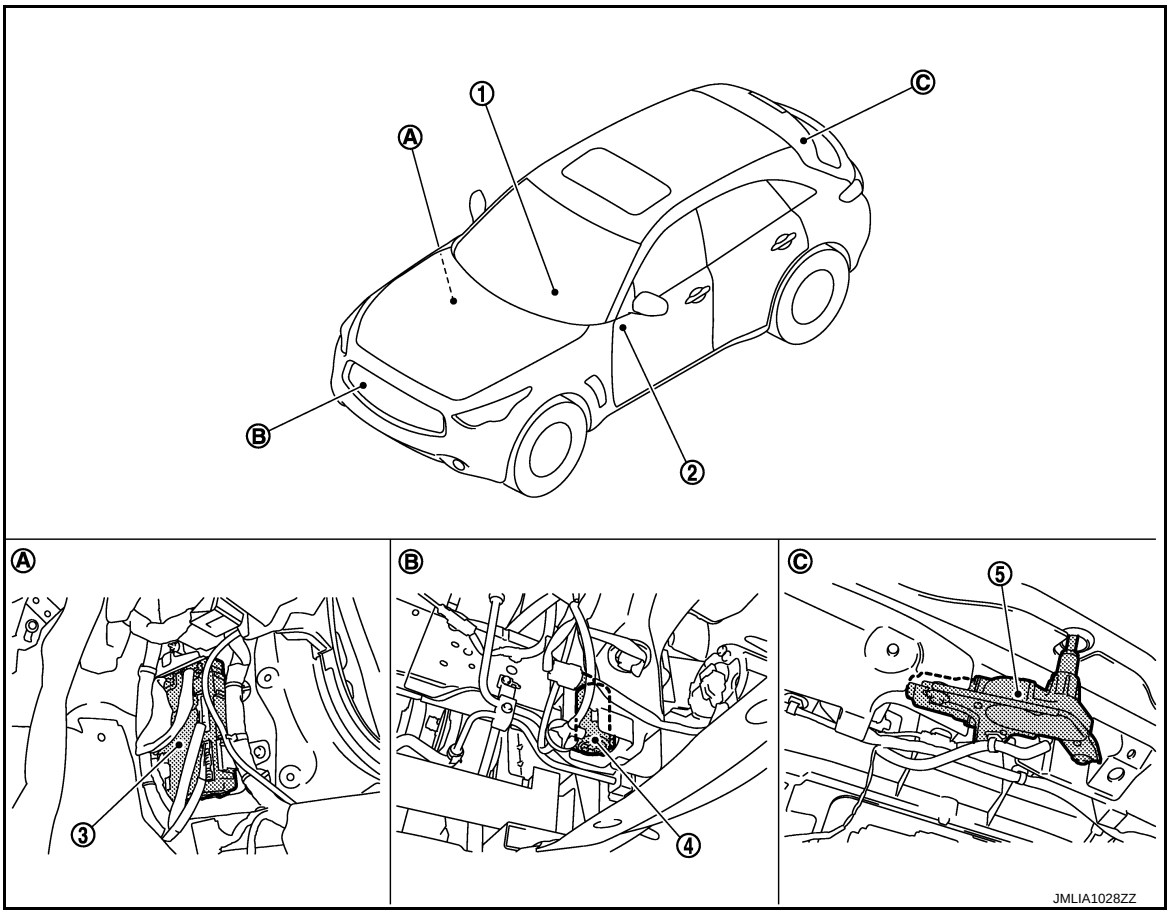
- BCM controls the rear wiper so that it operates once approximately three seconds after the washer interlocking operation of the rear wiper.

## REAR WIPER FAIL–SAFE OPERATION

BCM performs the fail-safe function when the rear wiper auto stop circuit is malfunctioning. Refer to BCS-84, "Fail-safe".

# Component Parts Location

INFOID:0000000004965873




1. Combination switch
2. • TCM (AT models) Refer to TM-44, "A/T CONTROL SYSTEM : Component Parts Location".
   • Back-up lamp switch (MT models) Refer to TM-12, "Component Parts Location".
3. BCM
4. Washer pump
5. Rear wiper motor

A. Dash side lower (passenger side)
B. Radiator core support (RH)
C. Back door finisher inner inside

## Component Description

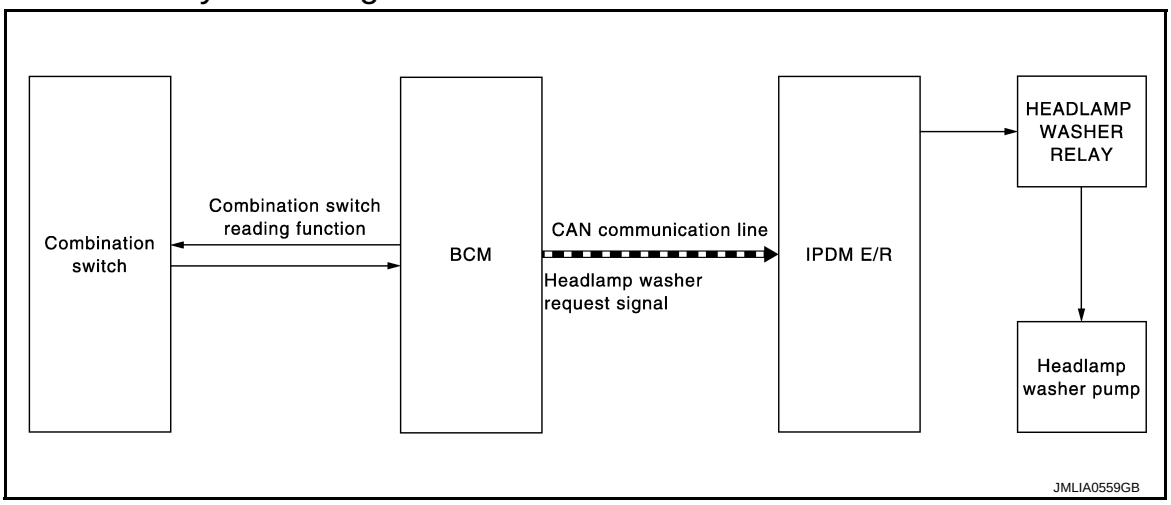
INFOID:0000000005370221

| Part | Description |
|---|---|
| BCM | • Judges each switch status by the combination switch reading function.<br>• Supplies power to the rear wiper motor.<br>• Performs the auto stop control of the rear wiper. |
| TCM<br>(AT models) | Transmits the shift position signal to BCM with CAN communication. |
| Back-up lamp switch<br>(MT models) | Transmits the back-up lamp switch signal to BCM. |
| Rear wiper motor | • BCM controls rear wiper operation.<br>• Rear wiper auto stop signal is transmitted to BCM. |
| Washer pump | • Washer fluid is sprayed according to washer switch states.<br>• Switching between front washer and rear washer is performed according to the voltage polarity change to washer pump. |
| Combination switch<br>(Wiper & washer switch) | Refer to BCS-13, "System Description". |

# HEADLAMP WASHER SYSTEM
## FOR EUROPE

### FOR EUROPE : System Diagram

INFOID:0000000005370222




### FOR EUROPE : System Description

INFOID:0000000004965876

#### OUTLINE

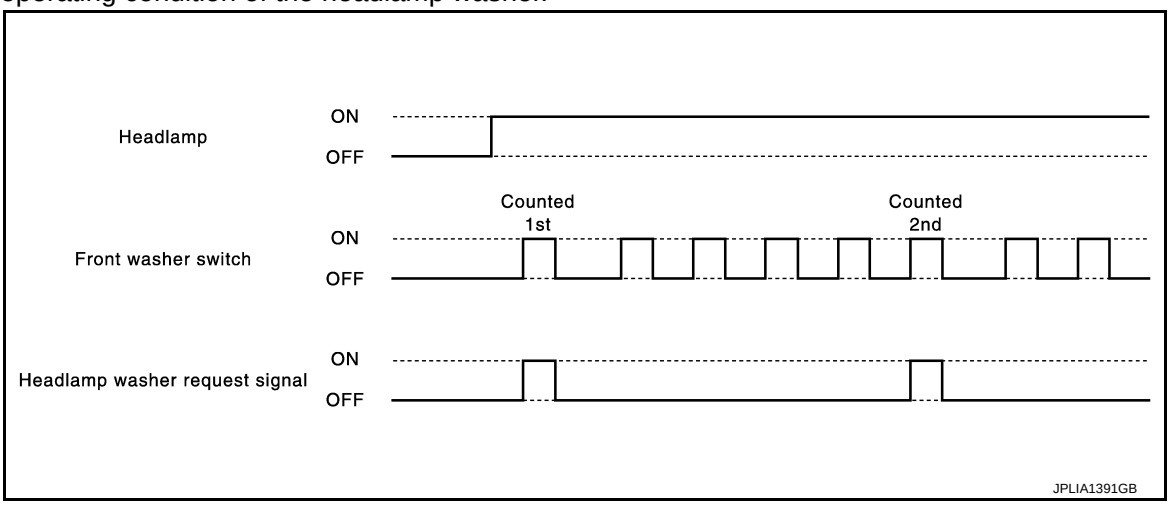
Headlamp washer is controlled by each function of BCM and IPDM E/R.

Control by BCM
- Combination switch reading function
- Headlamp washer control function

Control by IPDM E/R
- Headlamp washer relay control function

#### HEADLAMP WASHER BASIC OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the headlamp washer request signal to IPDM E/R with CAN communication depending on each operating condition of the headlamp washer.




Operation is front washer switch (The first time)
- Ignition switch ON
- Headlamps ON
- Front washer switch ON at first time

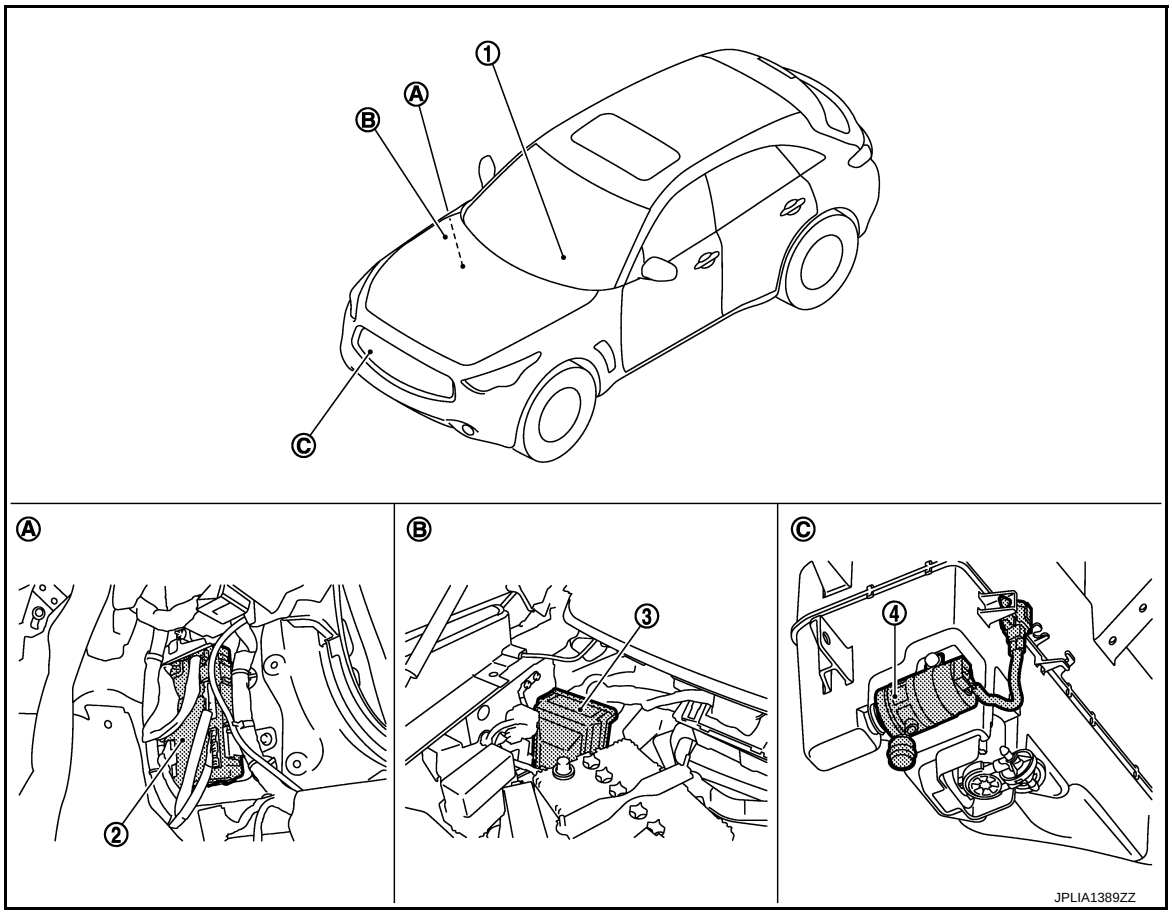
Operation is front washer switch (From the second time)
- Ignition switch ON

- Headlamps ON
- Front washer switch ON at fifth time after the first time

• IPDM E/R turns ON/OFF the headlamp washer relay by receiving the headlamp washer request signal, and controls the headlamp washer.

## FOR EUROPE : Component Parts Location

INFOID:0000000004965877




1. Combination switch
2. BCM
3. IPDM E/R
4. Headlamp washer pump
A. Dash side lower (Passenger side)
B. Engine room (right side)
C. Radiator core support (RH)

## FOR EUROPE : Component Description

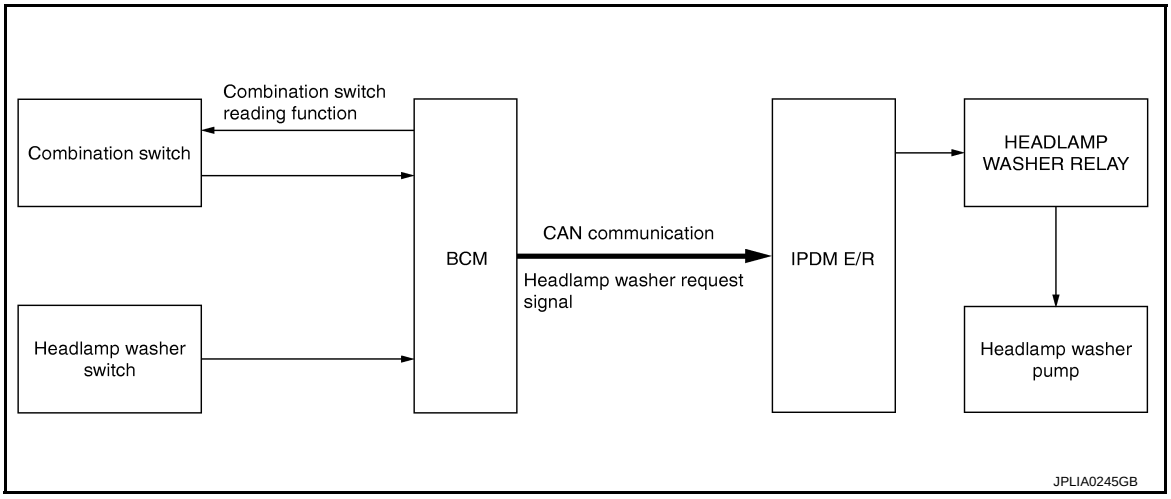
INFOID:0000000004965878

| Part | Description |
|---|---|
| BCM | • Judges the each switch status by the combination switch reading function.<br>• Requests (with CAN communication) the headlamp washer relay ON to IPDM E/R. |
| IPDM E/R | Controls the integrated relay according to the request (with CAN communication) from BCM. |
| Combination switch (Wiper & washer switch) | Refer to BCS-13, "System Description". |

## FOR RUSSIA

## FOR RUSSIA : System Diagram

INFOID:0000000006054683




## FOR RUSSIA : System Description

INFOID:0000000006054684

### OUTLINE

- Headlamp washer system has following two operations.
- Normal operation by the headlamp washer switch
- Operation linked with front washer
- Headlamp washer is controlled by each function of BCM and IPDM E/R.

Control by BCM
- Combination switch reading function
- Headlamp washer control function

Control by IPDM E/R
- Headlamp washer relay control function

### HEADLAMP WASHER OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the headlamp washer request signal to IPDM E/R with CAN communication depending on each operating condition of the headlamp washer.

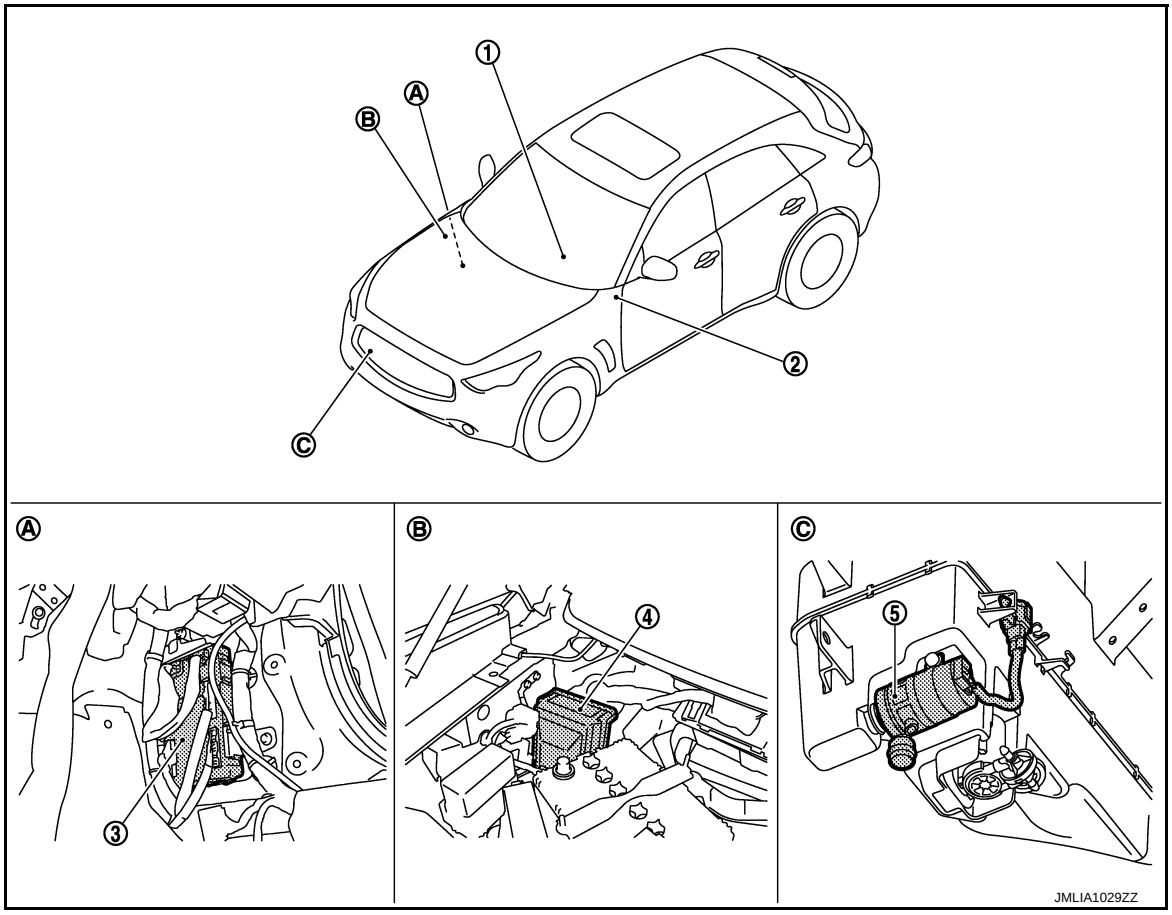
Operation is headlamp washer switch
- Ignition switch ON
- Headlamps ON
- Headlamp washer switch ON

Operation is front washer switch (The first time)
- Ignition switch ON
- Headlamps ON
- Front washer switch ON at first time

Operation is front washer switch (From the second time)
- Ignition switch ON
- Headlamps ON
- Front washer switch ON at fifth time after the first time
- IPDM E/R turns ON/OFF the headlamp washer relay by receiving the headlamp washer request signal, and controls the headlamp washer.

## FOR RUSSIA : Component Parts Location

INFOID:0000000006054698




1. Combination switch
2. Headlamp washer switch
3. BCM
4. IPDM E/R
5. Headlamp washer pump
A. Dash side lower (Passenger side)
B. Engine room (right side)
C. Radiator core support (RH)

## FOR RUSSIA : Component Description

INFOID:0000000006055130

| Part | Description |
|---|---|
| BCM | • Judges the each switch status by the combination switch reading function.<br>• Requests (with CAN communication) the headlamp washer relay ON to IPDM E/R. |
| IPDM E/R | Controls the integrated relay according to the request (with CAN communication) from BCM. |
| Combination switch<br>(Wiper & washer switch) | Refer to BCS-13, "System Description". |
| Headlamp washer switch | Headlamp washer switch inputs the signals to BCM when pressing the switch. |

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

INFOID:0000000005406782

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

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

#### SYSTEM APPLICATION
BCM can perform the following functions for each system.

**NOTE:**

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

×: Applicable item

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

**NOTE:**

*: This item is displayed, but is not used.

#### FREEZE FRAME DATA (FFD)
The BCM records the following vehicle condition at the time a particular DTC is detected, and displays on CONSULT-III.

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

# WIPER

## WIPER : CONSULT-III Function (BCM - WIPER)

INFOID:0000000006055150

### DATA MONITOR

| Monitor Item [Unit] | Description |
|---|---|
| PUSH SW [Off/On] | The switch status input from push-button ignition switch. |
| VEHICLE SPEED 1 [km/h] | The value of the vehicle speed signal received from unified meter and A/C amp. with CAN communication. |

| Monitor Item [Unit] | Description |
|---|---|
| FR WIPER HI [Off/On] | Each switch status that BCM judges from the combination switch reading function. |
| FR WIPER LOW [Off/On] | |
| FR WASHER SW [Off/On] | |
| FR WIPER INT [Off/On] | |
| FR WIPER STOP [Off/On] | Front wiper motor (stop position) status received from IPDM E/R with CAN communication. |
| INT VOLUME [1 – 7] | Each switch status that BCM judges from the combination switch reading function. |
| RR WIPER ON [Off/On] | Each switch status that BCM judges from the combination switch reading function. |
| RR WIPER INT [Off/On] | |
| RR WASHER SW [Off/On] | |
| RR WIPER STOP [Off/On] | Rear wiper motor (stop position) status input from the rear wiper motor. |
| REVERSE SW CAN [Off/On] | Reverse switch status received from TCM with CAN communication. |
| H/L WASH SW* [Off/On] | The switch status input from headlamp washer switch. |

*: For models with headlamp washer switch

## ACTIVE TEST

| Test item | Operation | Description |
|---|---|---|
| FR WIPER | Hi | Transmits the front wiper request signal (HI) to IPDM E/R with CAN communication to operate the front wiper HI operation. |
| | Lo | Transmits the front wiper request signal (LO) to IPDM E/R with CAN communication to operate the front wiper LO operation. |
| | INT | Transmits the front wiper request signal (INT) to IPDM E/R with CAN communication to operate the front wiper INT operation. |
| | Off | Stops transmitting the front wiper request signal to stop the front wiper operation. |
| RR WIPER | On | Outputs the voltage to operate the rear wiper motor. |
| | Off | Stops the voltage to stop. |
| HEADLAMP WASHER | On | Transmits the headlamp washer request signal to IPDM E/R with CAN communication to operate the headlamp washer operation. |

# DIAGNOSIS SYSTEM (IPDM E/R)

## Diagnosis Description

INFOID:0000000005406793

### AUTO ACTIVE TEST

Description

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

- Oil pressure warning lamp
- Front wiper (LO, HI)
- Parking lamps
- License plate lamps
- Tail lamps
- Front fog lamps
- Headlamps (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan (cooling fan control module)

Operation Procedure

1. Close the hood and lift the wiper arms from the windshield. (Prevent windshield damage due to wiper operation)
   **NOTE:**
   When auto active test is performed with hood opened, sprinkle water on windshield beforehand.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON, and within 20 seconds, press the front door switch (driver side) 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.
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 mode has to be cancelled halfway through test, turn the ignition switch OFF.

**CAUTION:**

- **If auto active test mode cannot be actuated, check door switch system. Refer to DLK-75, "Component Function Check".**
- **Do not start the engine.**

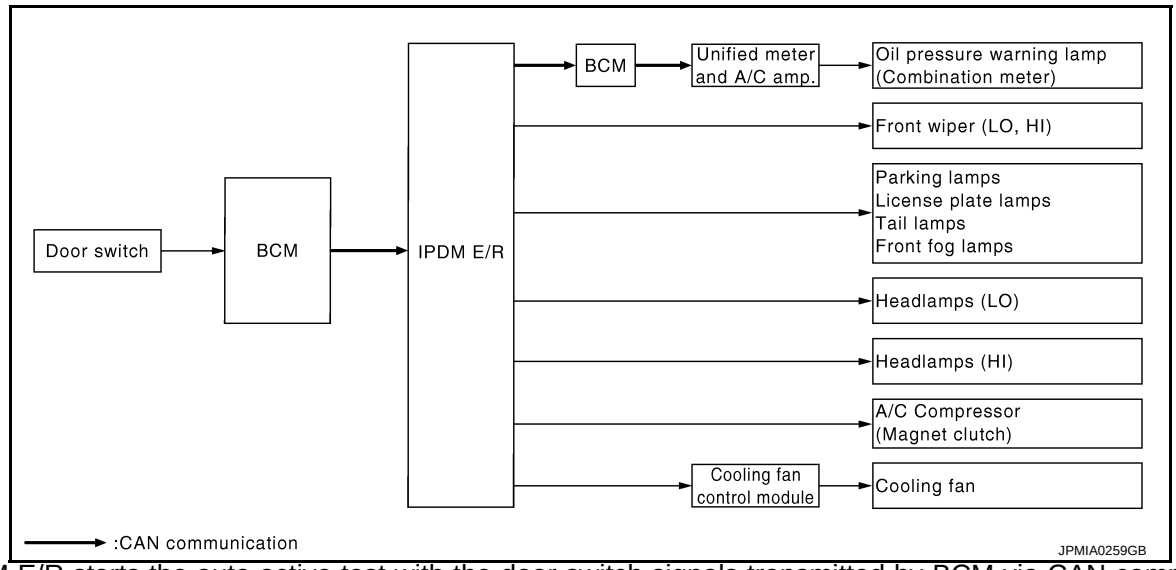
Inspection in Auto Active Test Mode

When auto active test mode is actuated, the following 5 steps are repeated 3 times.

| Operation sequence | Inspection location | Operation |
|---|---|---|
| A | Oil pressure warning lamp | Blinks continuously during operation of auto active test |
| 1 | Front wiper | LO for 5 seconds → HI for 5 seconds |
| 2 | • Parking lamps<br>• License plate lamps<br>• Tail lamps<br>• Front fog lamps | 10 seconds |
| 3 | Headlamps | • LO 10 seconds<br>• HI ON ⇔ OFF 5 times |
| 4 | A/C compressor (magnet clutch) | ON ⇔ OFF 5 times |
| 5* | Cooling fan | MID for 5 seconds → HI for 5 seconds |

*: Outputs duty ratio of 50% for 5 seconds → duty ratio of 100% for 5 seconds on the cooling fan control module.

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 mode

| Symptom | Inspection contents | | Possible cause |
|---|---|---|---|
| Any of the following components do not operate<br>• Parking lamps<br>• License plate lamps<br>• Tail lamps<br>• Front fog lamps<br>• Headlamp (HI, LO)<br>• Front wiper | Perform auto active test.<br>Does the applicable system operate? | YES | BCM signal input circuit |
| | | NO | • Lamp or motor<br>• Lamp or motor ground circuit<br>• Harness or connector between IPDM E/R and applicable system<br>• IPDM E/R |
| A/C compressor does not operate | Perform auto active test.<br>Does the magnet clutch operate? | YES | • Unified meter and A/C amp. signal input circuit<br>• CAN communication signal between unified meter and A/C amp. and ECM<br>• CAN communication signal between ECM and IPDM E/R |
| | | NO | • Magnet clutch<br>• Harness or connector between IPDM E/R and magnet clutch<br>• IPDM E/R |
| Oil pressure warning lamp does not operate | Perform auto active test.<br>Does the oil pressure warning lamp blink? | YES | • Harness or connector between IPDM E/R and oil pressure switch<br>• Oil pressure switch<br>• IPDM E/R |
| | | NO | • CAN communication signal between IPDM E/R and BCM<br>• CAN communication signal between BCM and unified meter and A/C amp.<br>• Combination meter |

| Symptom | Inspection contents | | Possible cause |
|---|---|---|---|
| Cooling fan does not operate | Perform auto active test.<br>Does the cooling fan operate? | YES | • ECM signal input circuit<br>• CAN communication signal between ECM and IPDM E/R |
| | | NO | • Cooling fan<br>• Harness or connector between cooling fan and cooling fan control module<br>• Cooling fan control module<br>• Harness or connector between IPDM E/R and cooling fan control module<br>• Cooling fan relay<br>• Harness or connector between IPDM E/R and cooling fan relay<br>• IPDM E/R |

## CONSULT-III Function (IPDM E/R)

INFOID:0000000005406794

### APPLICATION ITEM

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

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

### SELF DIAGNOSTIC RESULT

Refer to WW-112, "DTC Index".

### DATA MONITOR

Monitor item

| Monitor Item [Unit] | MAIN SIGNALS | Description |
|---|---|---|
| RAD FAN REQ [%] | × | Displays the value of the cooling fan speed 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 stop position 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. |

| Monitor Item [Unit] | MAIN SIGNALS | Description |
|---|---|---|
| IGN RLY1 -REQ [Off/On] | | Displays the status of the ignition switch ON signal received from BCM via CAN communication. |
| IGN RLY [Off/On] | × | Displays the status of the ignition relay judged by IPDM E/R. |
| PUSH SW [Off/On] | | Displays the status of the push-button ignition switch judged by IPDM E/R. |
| INTER/NP SW [Off/On] | | Displays the status of the clutch interlock switch (M/T models) or shift position (A/T models) 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 /INHI/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] | | Displays the status of the steering lock relay request received from BCM via CAN communication. |
| S/L STATE [LOCK/UNLOCK/UNKWN] | | Displays the status of the steering lock judged by IPDM E/R. |
| DTRL REQ [Off/On] | | Displays the status of the daytime running light request signal received from BCM via CAN communication.<br>**NOTE:**<br>This item is monitored only the vehicle with daytime running light system. |
| 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 judged by IPDM E/R. |
| HL WASHER REQ [Off/On] | | Displays the status of the headlamp washer request signal received from BCM via CAN communication. |
| THFT HRN REQ [Off/On] | | Displays the status of the theft warning horn request signal received from BCM via CAN communication. |
| HORN CHIRP [Off/On] | | **NOTE:**<br>The item is indicated, but not monitored. |
| CRNRNG LMP REQ [Off/On] | | **NOTE:**<br>The item is indicated, but not monitored. |

## ACTIVE TEST

### Test item

| Test item | Operation | Description |
|---|---|---|
| CORNERING LAMP | Off | **NOTE:**<br>The item is indicated, but cannot be tested. |
| | LH | |
| | RH | |
| HORN | On | Operates horn relay for 20 ms. |
| FRONT WIPER | Off | OFF |
| | Lo | Operates the front wiper relay. |
| | Hi | Operates the front wiper relay and front wiper high relay. |

| Test item | Operation | Description |
|---|---|---|
| MOTOR FAN | 1 | OFF |
| | 2 | Outputs 50% pulse duty signal (PWM signal) to the cooling fan control module. |
| | 3 | Outputs 80% pulse duty signal (PWM signal) to the cooling fan control module. |
| | 4 | Outputs 100% pulse duty signal (PWM signal) to the cooling fan control module. |
| HEAD LAMP WASHER | On | Operates the headlamp washer relay for 1 second. |
| EXTERNAL LAMPS | Off | OFF |
| | TAIL | Operates the tail lamp relay and the daytime running light relay.<br>**NOTE:**<br>Daytime running light relay is with daytime running light system only. |
| | Lo | Operates the headlamp low relay. |
| | Hi | Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals. |
| | Fog | Operates the front fog lamp relay. |

# DTC/CIRCUIT DIAGNOSIS

## WIPER AND WASHER FUSE

### Diagnosis Procedure

INFOID:0000000004965884

### 1.CHECK FUSES AND FUSIBLE LINK

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

| Unit | Location | No. | Capacity |
|---|---|---|---|
| Front wiper motor | IPDM E/R | 60 | 30 A |
| Washer pump | IPDM E/R | 47 | 10 A |
| Headlamp Washer pump | Fuse and fusible link block | I | 40 A |

Is the fuse or fusible link fusing?

YES >> Replace the fuse block or fusible link with a new one after repairing the applicable circuit.
NO >> The fuse is normal.

# FRONT WIPER MOTOR LO CIRCUIT

## Component Function Check

INFOID:0000000005370214

### 1.CHECK FRONT WIPER LO OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Start IPDM E/R auto active test. Refer to WW-22, "Diagnosis Description".
2. Check that the front wiper operates at the LO operation.

CONSULT-III ACTIVE TEST
1. Select “FRONT WIPER” of IPDM E/R active test item.
2. With operating the test item, check front wiper operation.

**Lo : Front wiper (LO) operation**
**Off : Stop the front wiper.**

Is front wiper (LO) operation normally?

YES >> Front wiper motor LO circuit is normal.
NO >> Refer to WW-28, "Diagnosis Procedure".

## Diagnosis Procedure

INFOID:0000000005370215

### 1.CHECK FRONT WIPER MOTOR (LO) OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Turn the ignition switch OFF.
2. Disconnect front wiper motor connector.
3. Turn the ignition switch ON.
4. Select “FRONT WIPER” of IPDM E/R active test item.
5. With operating the test item, check voltage between front wiper motor harness connector and ground.

| Terminals | | | Test item | Voltage (Approx.) |
|---|---|---|---|---|
| (+) | | (–) | | |
| Front wiper motor | | Ground | FRONT WIPER | |
| Connector | Terminal | | | |
| E42 | 1 | | Lo | Battery voltage |
| | | | Off | 0 V |

Is the measurement value normal?

YES >> Replace front wiper motor.
NO >> GO TO 2.

### 2.CHECK FRONT WIPER MOTOR (LO) OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and front wiper motor harness connector.

| IPDM E/R | | Front wiper motor | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| E5 | 4 | E42 | 1 | Existed |

Does continuity exist?

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

### 3.CHECK FRONT WIPER MOTOR (LO) SHORT CIRCUIT

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

| IPDM E/R | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| E5 | 4 | | Not existed |

Does continuity exist?

YES >> Repair or replace harness.
NO >> Replace IPDM E/R.

# FRONT WIPER MOTOR HI CIRCUIT

## Component Function Check

INFOID:0000000005370216

### 1.CHECK FRONT WIPER HI OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Start IPDM E/R auto active test. Refer to WW-22, "Diagnosis Description".
2. Check that the front wiper operates at the HI operation.

CONSULT-III ACTIVE TEST
1. Select “FRONT WIPER” of IPDM E/R active test item.
2. With operating the test item, check front wiper operation.

**Hi : Front wiper (HI) operation**
**Off : Stop the front wiper.**

Is front wiper (HI) operation normally?

YES >> Front wiper motor HI circuit is normal.
NO >> Refer to WW-30, "Diagnosis Procedure".

## Diagnosis Procedure

INFOID:0000000005370217

### 1.CHECK FRONT WIPER MOTOR (HI) OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Turn the ignition switch OFF.
2. Disconnect front wiper motor connector.
3. Turn the ignition switch ON.
4. Select “FRONT WIPER” of IPDM E/R active test item.
5. With operating the test item, check voltage between front wiper motor harness connector and ground.

| Terminals | | | Test item | Voltage (Approx.) |
|---|---|---|---|---|
| (+) | | (–) | | |
| Front wiper motor | | Ground | FRONT WIPER | |
| Connector | Terminal | | | |
| E42 | 4 | | Hi | Battery voltage |
| | | | Off | 0 V |

Is the measurement value normal?

YES >> Replace front wiper motor.
NO >> GO TO 2.

### 2.CHECK FRONT WIPER MOTOR (HI) OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and front wiper motor harness connector.

| IPDM E/R | | Front wiper motor | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| E5 | 5 | E42 | 4 | Existed |

Does continuity exist?

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

### 3.CHECK FRONT WIPER MOTOR (HI) SHORT CIRCUIT

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

| IPDM E/R | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| E5 | 5 | | Not existed |

Does continuity exist?

YES >> Repair or replace harness.
NO >> Replace IPDM E/R.

# FRONT WIPER AUTO STOP SIGNAL CIRCUIT

## Component Function Check

INFOID:0000000005370223

### 1.CHECK FRONT WIPER (AUTO STOP) SIGNAL

CONSULT-III DATA MONITOR
1. Select “WIP AUTO STOP” of IPDM E/R data monitor item.
2. Operate the front wiper.
3. With the front wiper operation, check the monitor status.

| Monitor item | Condition | | Monitor status |
|---|---|---|---|
| WIP AUTO STOP | Front wiper motor | Stop position | STOP P |
| | | Except stop position | ACT P |

Is the status of item normal?

YES >> Auto stop signal circuit is normal.
NO >> Refer to WW-32, "Diagnosis Procedure".

## Diagnosis Procedure

INFOID:0000000005370224

### 1.CHECK FRONT WIPER MOTOR (AUTO STOP) OUTPUT VOLTAGE

1. Turn the ignition switch OFF.
2. Disconnect front wiper motor connector.
3. Turn the ignition switch ON.
4. Check voltage between front wiper motor harness connector and ground.

| Terminals | | | Voltage (Approx.) |
|---|---|---|---|
| (+) | | (–) | |
| Front wiper motor | | Ground | |
| Connector | Terminal | | |
| E42 | 5 | | Battery voltage |

Is the measurement value normal?

YES >> Replace front wiper motor.
NO >> GO TO 2.

### 2.CHECK FRONT WIPER MOTOR (AUTO STOP) CIRCUIT CONTINUITY

1. Turn the ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and front wiper motor harness connector.

| IPDM E/R | | Front wiper motor | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| E5 | 16 | E42 | 5 | Existed |

Does continuity exist?

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

### 3.CHECK FRONT WIPER MOTOR (AUTO STOP) SHORT CIRCUIT

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

| IPDM E/R | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| E5 | 16 | | Not existed |

Does continuity exist?

YES >> Repair or replace harness.
NO >> Replace IPDM E/R.

# FRONT WIPER MOTOR GROUND CIRCUIT

## Diagnosis Procedure

INFOID:0000000005370225

### 1.CHECK FRONT WIPER MOTOR (GND) OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect front wiper motor connector.
3. Check continuity between front wiper motor harness connector and ground.

| Front wiper motor | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| E42 | 2 | | Existed |

Does continuity exist?

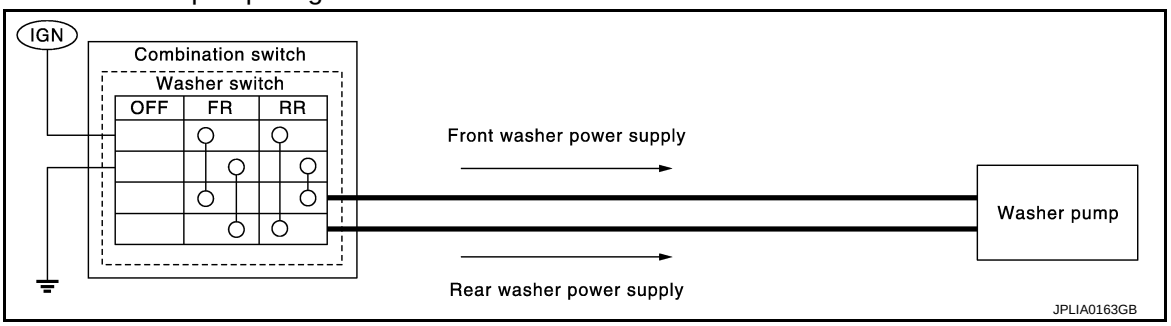
YES >> Front wiper motor ground circuit is normal.
NO >> Repair or replace harness.

# WASHER SWITCH

## Description

INFOID:0000000004965894

- Washer switch is integrated with combination switch.
- Combination switch switches polarity between front washer operating and rear washer operating to supply power to the washer pump on ground.



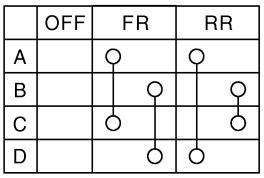

## Component Inspection

INFOID:0000000004965895

### 1.CHECK WIPER SWITCH

1. Turn the ignition switch OFF.
2. Disconnect combination switch connector.
3. Check continuity between the combination switch terminals.

A : Terminal 4
B : Terminal 6
C : Terminal 3
D : Terminal 1




| Combination switch | | Condition | Continuity |
|---|---|---|---|
| Terminal | | | |
| 1 | 6 | Front washer switch ON | Existed |
| 3 | 4 | | |
| 1 | 4 | Rear washer switch ON | |
| 3 | 6 | | |

Does continuity exist?

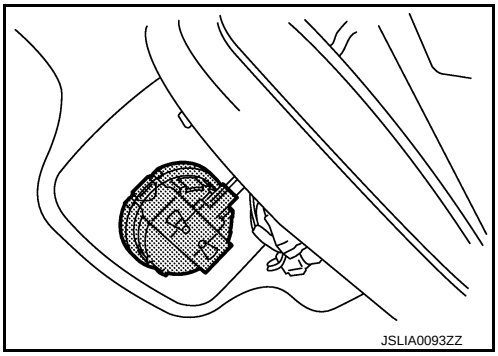
YES >> Wiper and washer switch is normal.
NO >> Replace combination switch (Wiper and washer switch).

# LIGHT & RAIN SENSOR

## Description

INFOID:0000000005370226

Light & rain sensor judges a wiping speed for front wiper by rain condition and the vehicle conditions. And it transmits the wiping speed request signal to the BCM via the light & rain sensor serial link.




## Component Function Check

INFOID:0000000005370227

### 1.CHECK FRONT WIPER AUTO OPERATION

1. Clean light & rain sensor detection area of windshield fully.
2. When the front wiper switch is turned to AUTO position, front wiper operates once regardless of a rainy condition.

Is front wiper (AUTO) operation normally?

YES >> Light & rain sensor circuit is normal.
NO >> Refer to WW-36, "Diagnosis Procedure".

## Diagnosis Procedure

INFOID:0000000005370228

### 1.CHECK LIGHT & RAIN SENSOR FUSE

1. Turn the ignition switch OFF.
2. Check that the light & rain sensor 10A fuse (#6) is not fusing.

Is the fuse fusing?

YES >> Replace the fuse after repairing the applicable circuit.
NO >> GO TO 2.

### 2.CHECK LIGHT & RAIN SENSOR POWER SUPPLY

1. Disconnect light & rain sensor connector.
2. Check voltage between light & rain sensor harness connector and ground.

| Terminal | | | Voltage (Approx.) |
|---|---|---|---|
| (+) | | (–) | |
| Light & rain sensor connector | Terminal | | |
| R9 | 1 | Ground | Battery voltage |

Is the measurement value normal?

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

### 3.CHECK LIGHT & RAIN SENSOR GROUND CIRCUIT

Check continuity between light & rain sensor harness connector and ground.

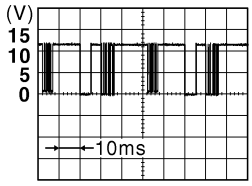
| Light & rain sensor | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| R9 | 3 | | Existed |

Does continuity exist?

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

## 4. CHECK LIGHT & RAIN SENSOR SIGNAL

1. Connect light & rain sensor connector.
2. Turn the ignition switch ON.
3. Check signal between BCM harness connector and the ground with oscilloscope.

| Terminal | | | Condition | Signal (Reference value) |
|---|---|---|---|---|
| (+) | | (–) | | |
| BCM connector | Terminal | | | |
| M123 | 112 | Ground | Ignition switch ON |  JPMIA0156GB Approx. 8.7V |

Is the measurement value normal?

YES >> Replace light & rain sensor. Refer to WW-141, "Exploded View".
NO >> GO TO 5.

## 5. CHECK LIGHT & RAIN SENSOR SIGNAL CIRCUIT FOR OPEN

1. Disconnect BCM connector and light & rain sensor connector.
2. Check continuity between BCM harness connector and light & rain sensor harness connector.

| BCM | | Light & rain sensor | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| M123 | 112 | R9 | 2 | Existed |

Does continuity exist?

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

## 6. CHECK LIGHT & RAIN SENSOR SIGNAL CIRCUIT FOR SHORT

Check continuity between BCM harness connector and ground.

| BCM | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M123 | 112 | | Not existed |

Does continuity exist?

YES >> Repair or replace harness.
NO >> Replace BCM. Refer to BCS-94, "Exploded View".

# REAR WIPER MOTOR CIRCUIT

## Component Function Check

INFOID:0000000005370231

### 1.CHECK REAR WIPER ON OPERATION

CONSULT-III ACTIVE TEST
1. Select “RR WIPER” of BCM active test item.
2. With operating the test item, check rear wiper operation.

**On : Rear wiper ON operation**
**Off : Stop the rear wiper.**

Is rear wiper operation normally?

YES >> Rear wiper motor circuit is normal.
NO >> Refer to WW-38, "Diagnosis Procedure".

## Diagnosis Procedure

INFOID:0000000005370232

### 1.CHECK REAR WIPER MOTOR OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Turn the ignition switch OFF.
2. Disconnect rear wiper motor connector.
3. Turn the ignition switch ON.
4. Select “RR WIPER” of BCM active test item.
5. With operating the test item, check voltage between rear wiper motor harness connector and ground.

| Terminals | | | Test item | Voltage (Approx.) |
|---|---|---|---|---|
| (+) | | (–) | | |
| Rear wiper motor | | Ground | REAR WIPER | |
| Connector | Terminal | | | |
| D115 | 2 | | On | Battery voltage |
| | | | Off | 0 V |

Is the measurement value normal?

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

### 2.CHECK REAR WIPER MOTOR OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect BCM connector.
3. Check continuity between BCM harness connector and rear wiper motor harness connector.

| BCM | | Rear wiper motor | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| M120 | 26 | D115 | 2 | Existed |

Does continuity exist?

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

### 3.CHECK REAR WIPER MOTOR SHORT CIRCUIT

Check continuity between BCM harness connector and ground.

| BCM | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M120 | 26 | | Not existed |

Does continuity exist?

YES >> Repair or replace harness.
NO >> Replace BCM. Refer to BCS-94, "Exploded View".

## 4. CHECK REAR WIPER MOTOR GROUND OPEN CIRCUIT

Check continuity between rear wiper motor harness connector and ground.

| Rear wiper motor | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| D115 | 4 | | Existed |

Does continuity exist?

YES >> Replace rear wiper motor.
NO >> Repair or replace harness.

# REAR WIPER AUTO STOP SIGNAL CIRCUIT

## Component Function Check

INFOID:0000000005370233

### 1.CHECK REAR WIPER (AUTO STOP) OPERATION

CONSULT-III DATA MONITOR
1. Select “WIPER” of BCM data monitor item.
2. Operate the rear wiper.
3. Check that “RR WIPER STOP” changes to “On” and “Off” linked with the wiper operation.

| Monitor item | Condition | | Monitor status |
|---|---|---|---|
| RR WIPER STOP | Rear wiper motor | Stop position | On |
| | | Except stop position | Off |

Is the status of item normal?

YES >> Rear wiper auto stop signal circuit is normal.
NO >> Refer to WW-40, "Diagnosis Procedure".

## Diagnosis Procedure

INFOID:0000000005370234

### 1.CHECK REAR WIPER MOTOR (AUTO STOP) OUTPUT VOLTAGE

1. Turn the ignition switch OFF.
2. Disconnect rear wiper motor connector.
3. Turn the ignition switch ON.
4. Check voltage between rear wiper motor harness connector and ground.

| Terminals | | | Voltage (Approx.) |
|---|---|---|---|
| (+) | | (–) | |
| Rear wiper motor | | Ground | |
| Connector | Terminal | | |
| D115 | 3 | | Battery voltage |

Is the measurement value normal?

YES >> Replace rear wiper motor.
NO >> GO TO 2.

### 2.CHECK REAR WIPER MOTOR (AUTO STOP) OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect BCM connector.
3. Check continuity between BCM harness connector and rear wiper motor harness connector.

| BCM | | Rear wiper motor | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| M121 | 65 | D115 | 3 | Existed |

Does continuity exist?

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

### 3.CHECK REAR WIPER MOTOR (AUTO STOP) SHORT CIRCUIT

Check continuity between BCM harness connector and ground.

| BCM | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M121 | 65 | | Not existed |

Does continuity exist?

YES >> Repair or replace harness.
NO >> Replace BCM. Refer to BCS-94, "Exploded View".

# HEADLAMP WASHER RELAY

## Component Inspection

INFOID:0000000004965903

### 1.CHECK HEADLAMP WASHER RELAY

1. Turn the ignition switch OFF.
2. Disconnect headlamp washer relay.
3. Apply battery voltage to headlamp washer relay between terminals 1 and 2.
4. Check continuity of headlamp washer relay.

| Headlamp washer relay | | Condition | Continuity |
|---|---|---|---|
| Terminal | | Voltage | |
| 3 | 5 | Apply | Existed |
| | | Not Apply | Not existed |

Does continuity exist?

YES >> Headlamp washer relay is normal.
NO >> Replace headlamp washer relay.

# HEADLAMP WASHER SWITCH

## Description

INFOID:0000000006054687

Headlamp washer switch inputs the signals to BCM when pressing the switch.

## Component Function Check

INFOID:0000000006054688

### 1.CHECK HEADLAMP SWITCH SIGNAL BY CONSULT-III

CONSULT-III DATA MONITOR
1. Turn the ignition switch ON.
2. Select “H/L WASH SW” of BCM data monitor item.
3. With operating the headlamp washer switch, check the monitor status.

| Monitor item | Condition | | Monitor status |
|---|---|---|---|
| H/L WASH SW | Headlamp washer switch | While pressing | On |
| | | While not pressing | Off |

Is the item status normal?

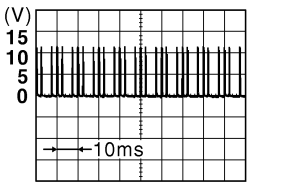
YES >> Headlamp washer switch circuit is normal.
NO >> Refer to WW-43, "Diagnosis Procedure".

## Diagnosis Procedure

INFOID:0000000006054689

### 1.CHECK HEADLAMP WASHER SWITCH SIGNAL INPUT

With operating the headlamp washer switch, check the voltage between the BCM harness connector and the ground.

| Terminals | | | Condition | Voltage (Approx.) |
|---|---|---|---|---|
| (+) | | (–) | | |
| BCM | | | Headlamp Washer switch | |
| Connector | Terminal | | | |
| M123 | 127 | Ground | While pressing | 0 V |
| | | | While not pressing |  |



JPMIA0154GB

Is the measurement value normal?

YES >> Replace BCM. Refer to BCS-94, "Removal and Installation".
NO >> GO TO 2.

### 2.CHECK HEADLAMP WASHER SWITCH SIGNAL OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the headlamp washer switch connector and BCM connector.
3. Check continuity between the headlamp washer switch harness connector and the BCM harness connector.

| Headlamp washer switch | | BCM | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| M214 | 1 | M123 | 127 | Existed |

Does continuity exist?

YES >> GO TO 3.
NO >> Repair the harness or connector.

## 3.CHECK HEADLAMP WASHER SWITCH SIGNAL SHORT CIRCUIT

Check continuity between the headlamp washer switch harness connector and the ground.

| Headlamp washer switch | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M214 | 1 | | Not existed |

Does continuity exist?

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

## 4.CHECK HEADLAMP WASHER SWITCH GROUND OPEN CIRCUIT

Check continuity between the headlamp washer switch harness connector and the ground.

| Headlamp washer switch | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M214 | 2 | | Existed |

Does continuity exist?

YES >> Replace headlamp washer switch.
NO >> Repair the harness or connector.

# HEADLAMP WASHER CIRCUIT

## Component Function Check

INFOID:0000000005370235

### 1.CHECK HEADLAMP WASHER OPERATION

CONSULT-III ACTIVE TEST
1. Select “HEADLAMP WASHER” of IPDM E/R active test item.
2. With operating the test item, check headlamp washer operation.

**On : Headlamp washer ON operation**
**Off : Stop the headlamp washer.**

Is the headlamp washer operation normally?

YES >> Headlamp washer circuit is normal.
NO >> Refer to WW-45, "Diagnosis Procedure".

## Diagnosis Procedure

INFOID:0000000005370236

### 1.CHECK HEADLAMP WASHER FUSIBLE LINK

1. Turn the ignition switch OFF.
2. Check that the headlamp washer 40A fusible link (# I) is not fusing.

Is the fusible link fusing?

YES >> Replace the fusible link after repairing the applicable circuit.
NO >> GO TO 2.

### 2.CHECK HEADLAMP WASHER RELAY POWER SUPPLY

1. Remove headlamp washer relay.
2. Check voltage between headlamp washer harness relay connector and ground.

| Terminals | | | Voltage (Approx.) |
|---|---|---|---|
| (+) | | (–) | |
| Headlamp washer relay | | Ground | |
| Connector | Terminal | | |
| E51 | 1 | | Battery voltage |
| | 3 | | |

Is the measurement value normal?

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

### 3.CHECK HEADLAMP WASHER RELAY

Check headlamp washer relay. Refer to WW-42, "Component Inspection".

Is the headlamp washer relay normal?

YES >> GO TO 4.
NO >> Replace headlamp washer relay.

### 4.CHECK HEADLAMP WASHER RELAY CONTROL SIGNAL OUTPUT

CONSULT-III ACTIVE TEST
1. Install headlamp washer relay.
2. Turn the ignition switch ON.
3. Select “HEADLAMP WASHER” of IPDM E/R active test item.
4. With operating the test item, check voltage between IPDM E/R harness connector and ground.

| Terminals | | | Test item | Voltage (Approx.) |
|---|---|---|---|---|
| (+) | | (–) | | |
| IPDM E/R | | Ground | HEADLAMP WASHER | |
| Connector | Terminal | | | |
| E5 | 17 | | ON | 0 V |
| | | | OFF | Battery voltage |

Is the measurement value normal?

YES >> GO TO 7.
Fixed at 0 V >> GO TO 5.
Fixed at Battery voltage >> Replace IPDM E/R.

## 5.CHECK HEADLAMP WASHER RELAY CONTROL SIGNAL OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Remove headlamp washer relay.
3. Disconnect IPDM E/R harness connector.
4. Check continuity between IPDM E/R harness connector and headlamp washer relay harness connector.

| IPDM E/R | | Headlamp washer relay | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| E5 | 17 | E51 | 2 | Existed |

Does continuity exist?

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

## 6.CHECK HEADLAMP WASHER RELAY CONTROL SIGNAL SHORT CIRCUIT

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

| IPDM E/R | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| E5 | 17 | | Not existed |

Does continuity exist?

YES >> Repair or replace harness.
NO >> Replace IPDM E/R.

## 7.CHECK HEADLAMP WASHER PUMP OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect headlamp washer pump connector.
3. Remove headlamp washer relay.
4. Check continuity between headlamp washer relay harness connector and headlamp washer pump harness connector.

| Headlamp washer relay | | Headlamp washer pump | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| E51 | 5 | E33 | 1 | Existed |

Does continuity exist?

YES >> GO TO 8.
NO >> Repair or replace harness.

## 8.CHECK HEADLAMP WASHER PUMP (GROUND) OPEN CIRCUIT

Check continuity between headlamp washer pump harness connector and ground.

| Headlamp washer pump | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| E33 | 2 | | Existed |

Does continuity exist?

YES >> Replace headlamp washer pump.
NO >> Repair or replace or harness.

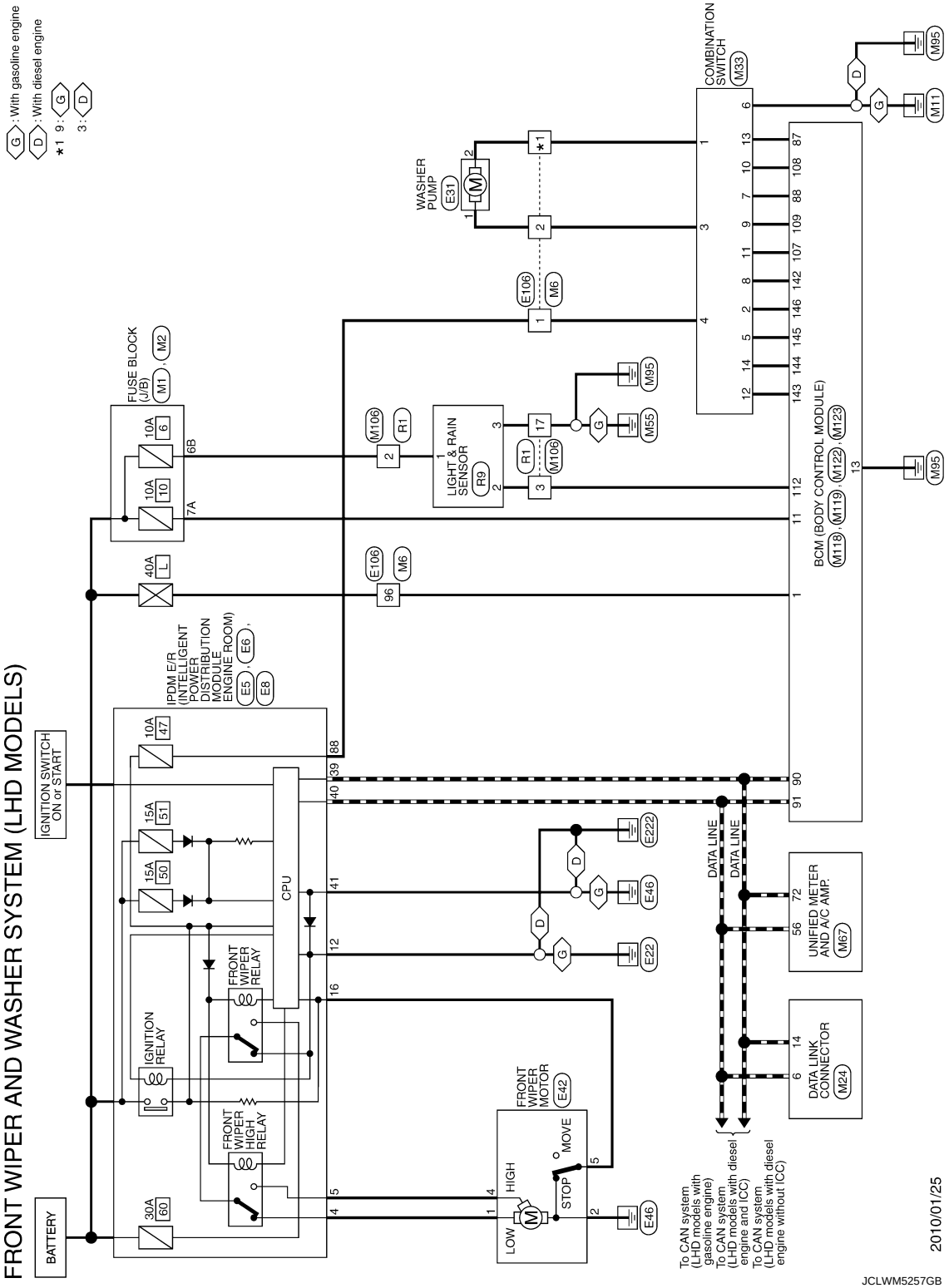
# FRONT WIPER AND WASHER SYSTEM

## LHD

### LHD : Wiring Diagram

INFOID:0000000006069125

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

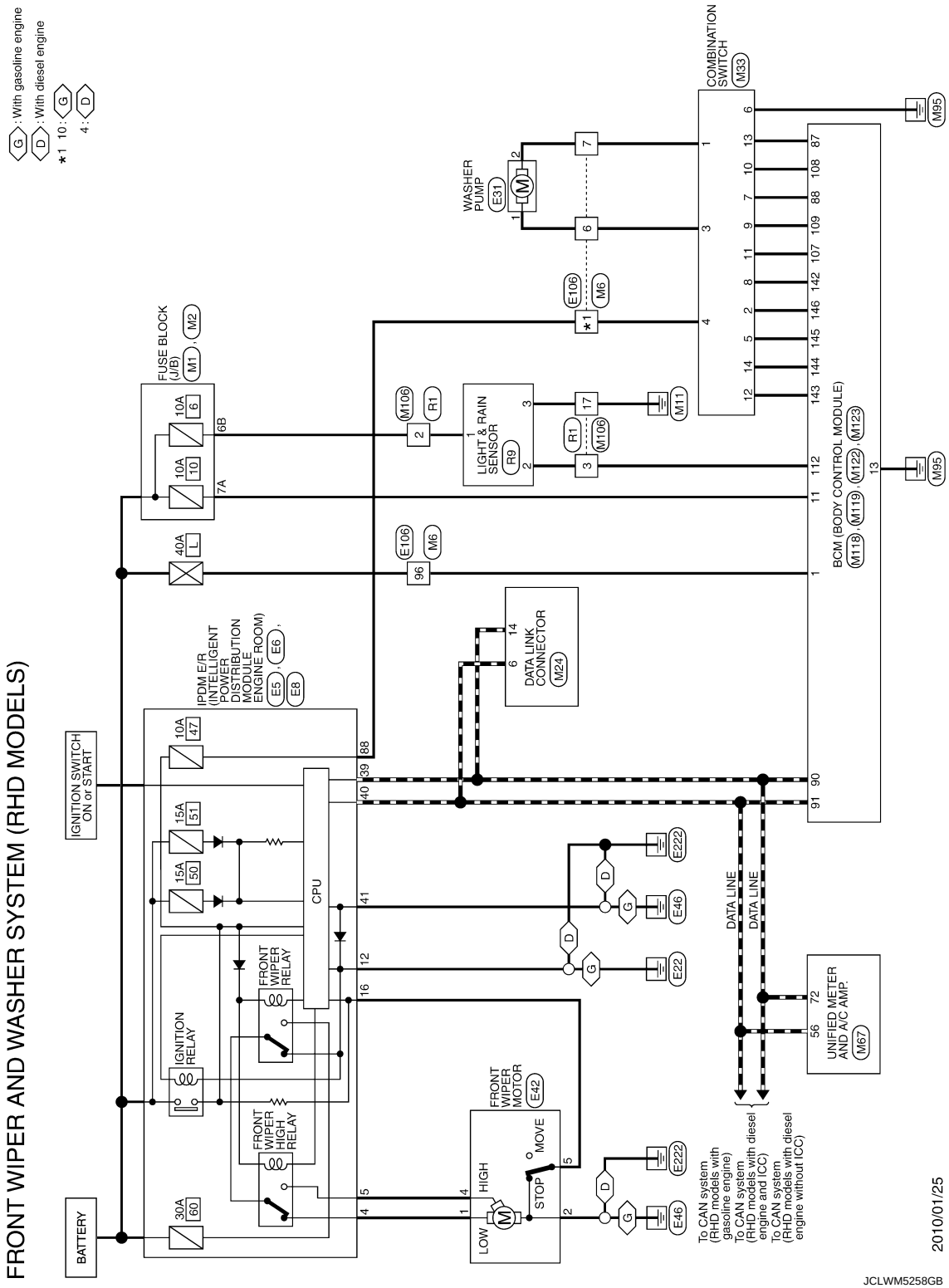



## RHD

## RHD : Wiring Diagram

INFOID:0000000006069126

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

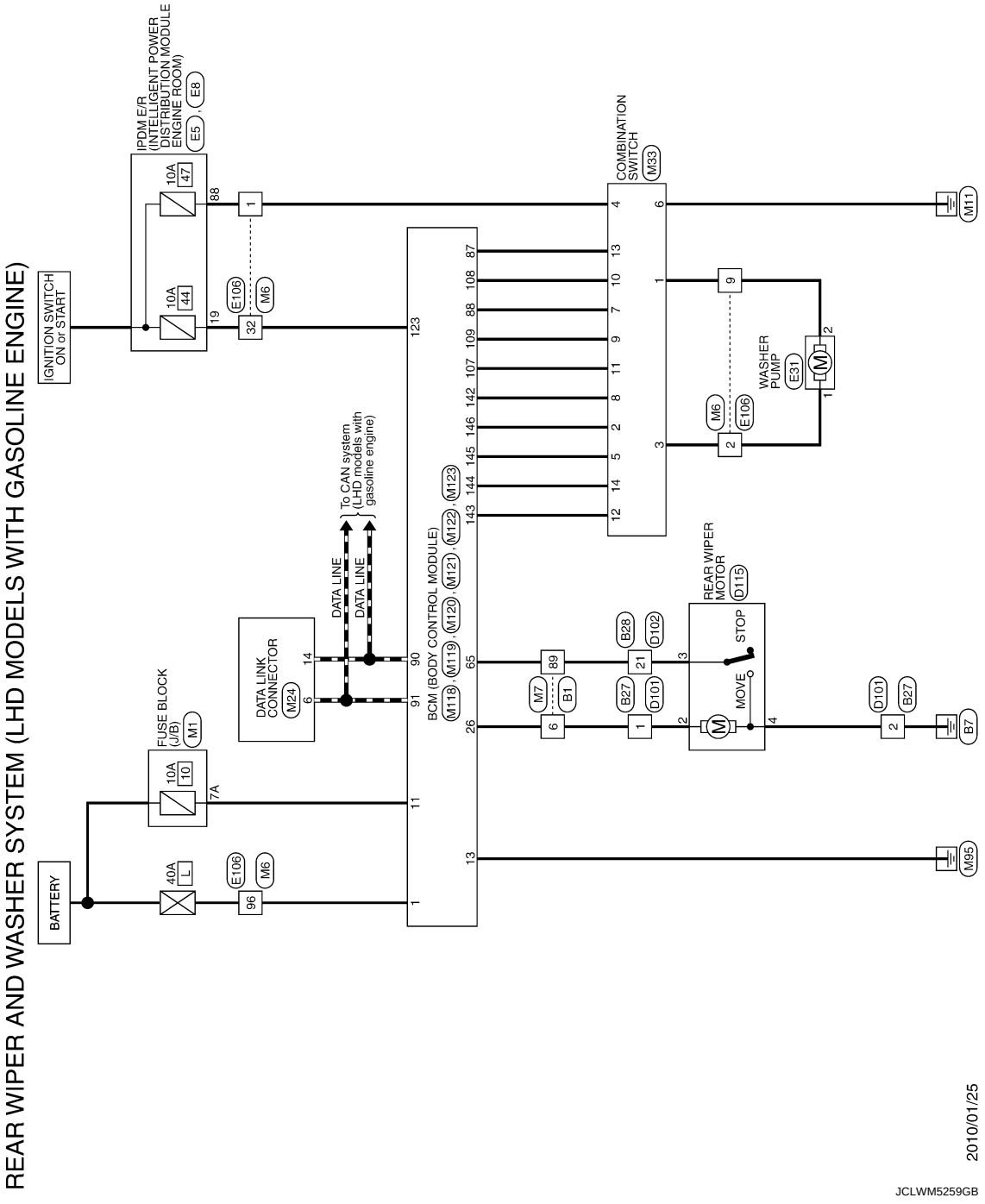


# REAR WIPER AND WASHER SYSTEM
## LHD

### LHD : Wiring Diagram -WITH GASOLINE ENGINE-

INFOID:0000000006069165

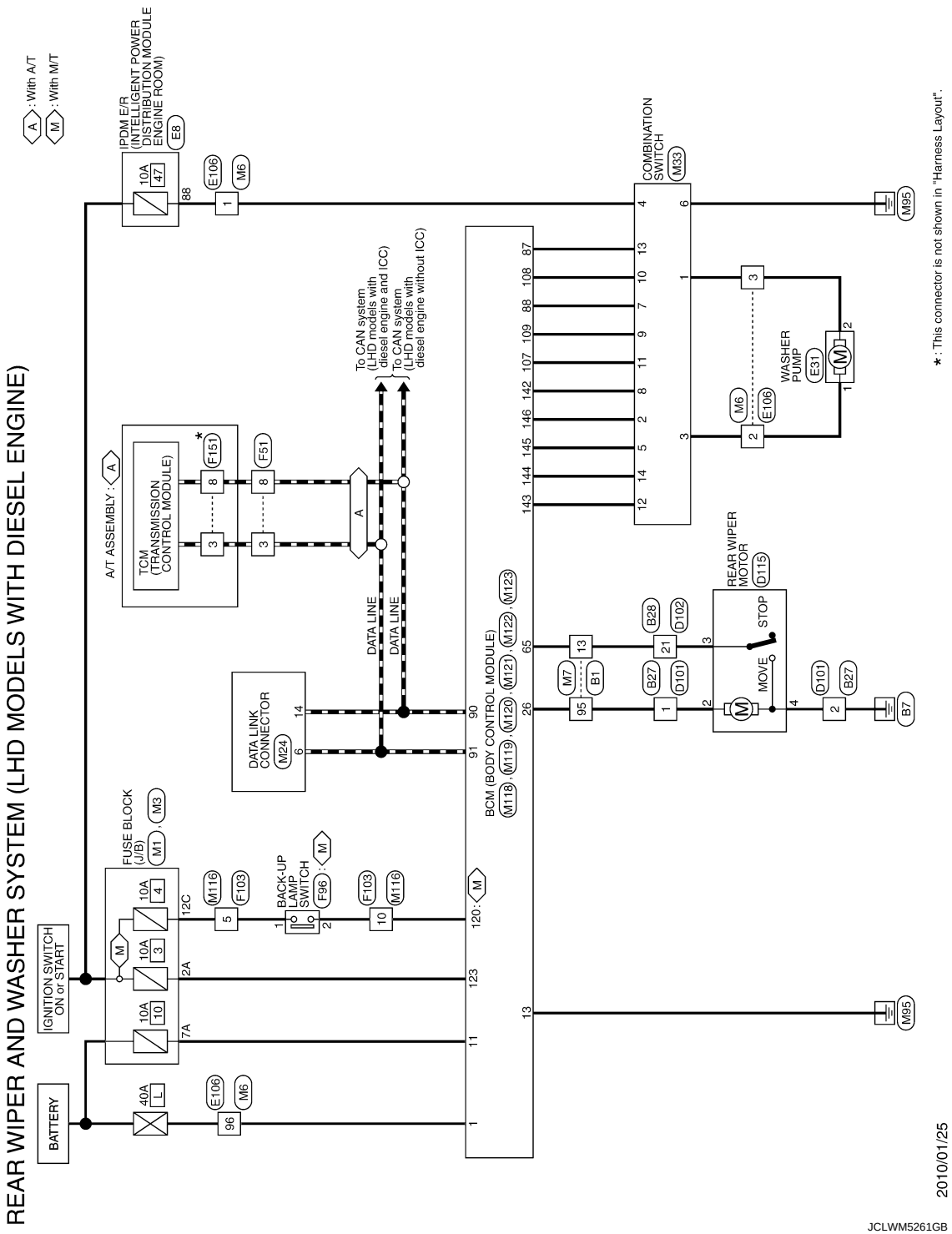
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation: if not described in wiring diagram), refer to GI-12, "Connector Information".



## LHD : Wiring Diagram -WITH DIESEL ENGINE-

INFOID:0000000006069166

For connector terminal arrangements, harness layouts, and alphabets in a ⟨⟩ (option abbreviation: if not described in wiring diagram), refer to GI-12, "Connector Information".

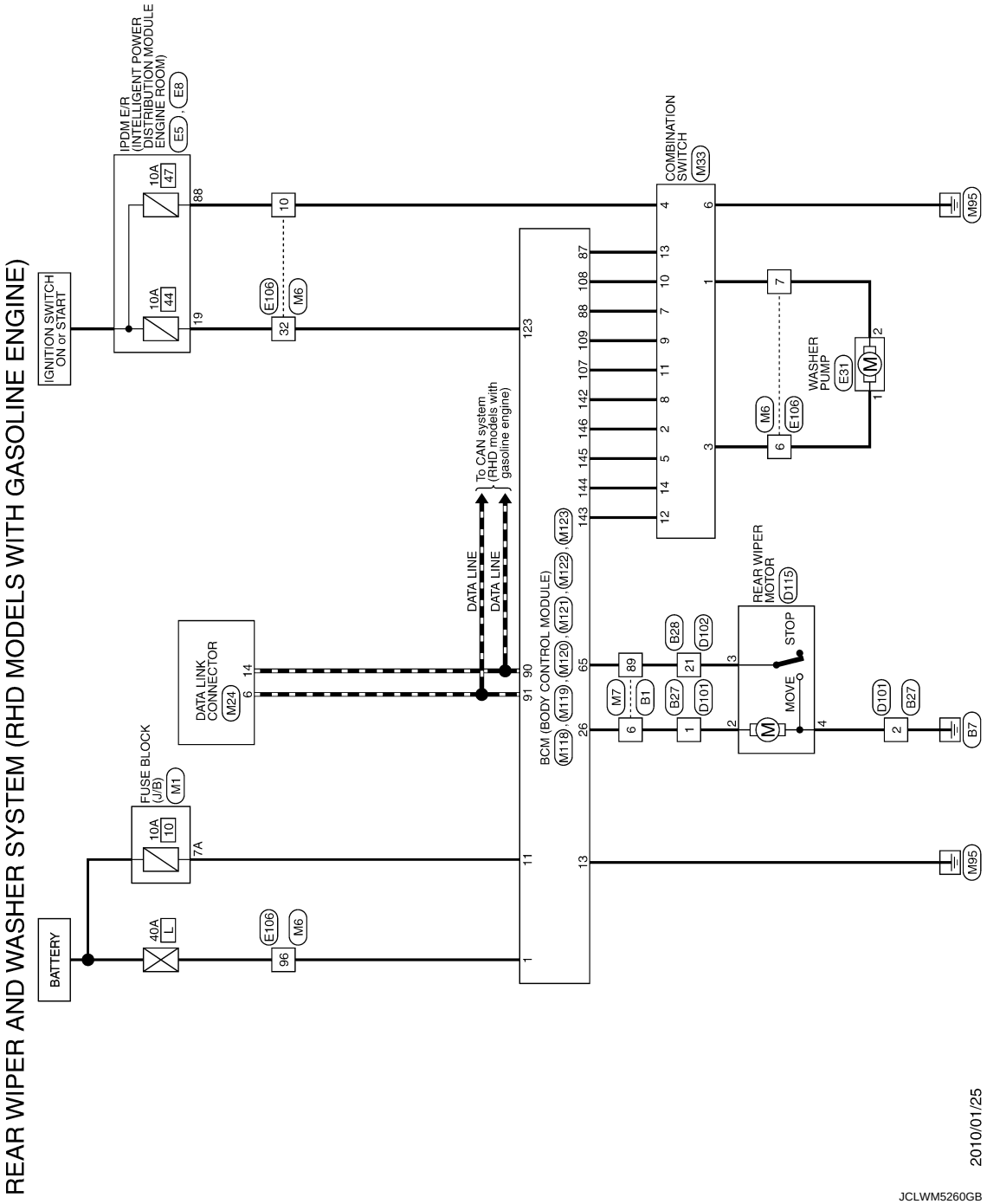



RHD

## RHD : Wiring Diagram -WITH GASOLINE ENGINE-

INFOID:0000000006069132

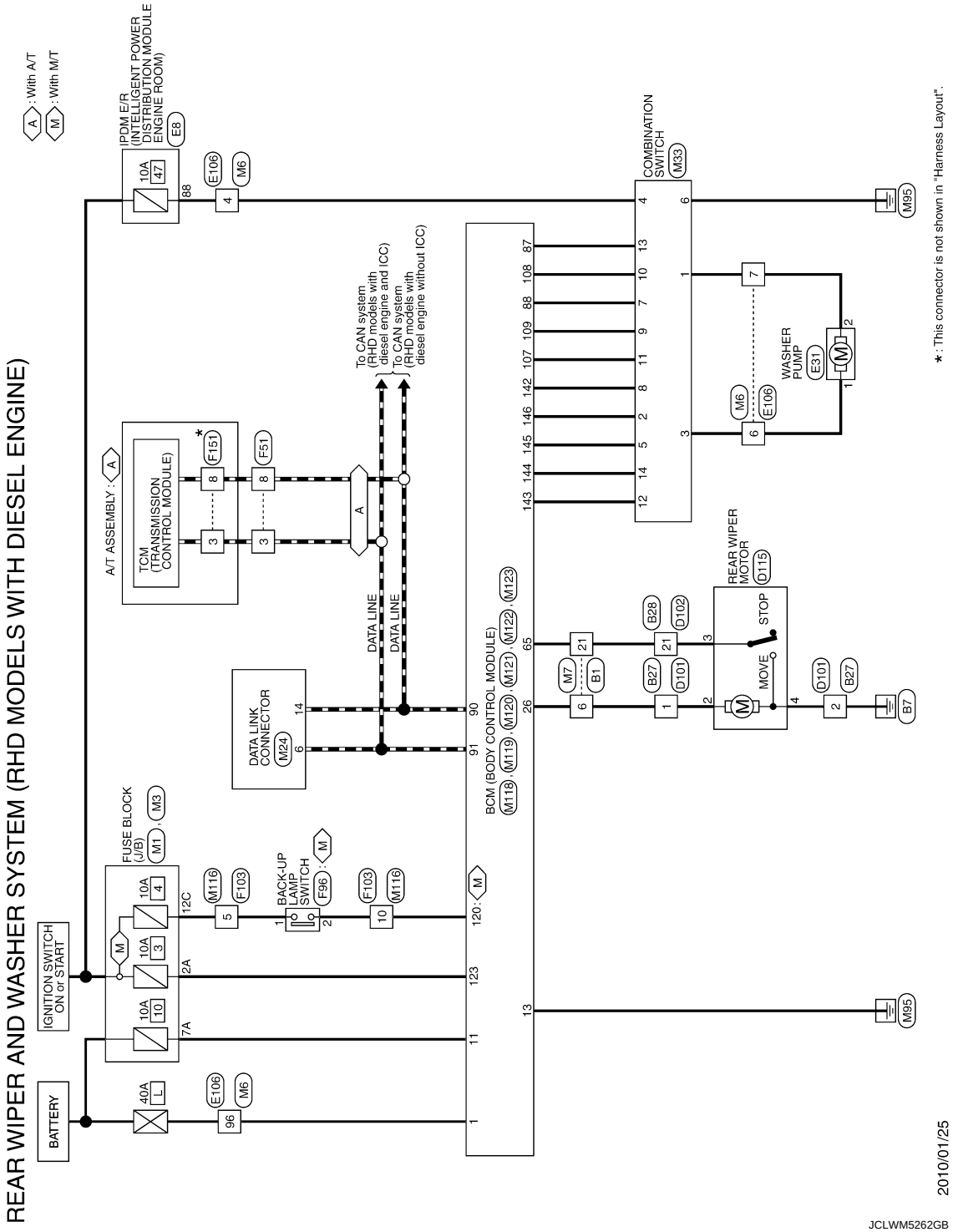
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation: if not described in wiring diagram), refer to GI-12, "Connector Information".



## RHD : Wiring Diagram -WITH DIESEL ENGINE-

INFOID:0000000006069133

For connector terminal arrangements, harness layouts, and alphabets in a ⟨⟩ (option abbreviation: if not described in wiring diagram), refer to GI-12, "Connector Information".



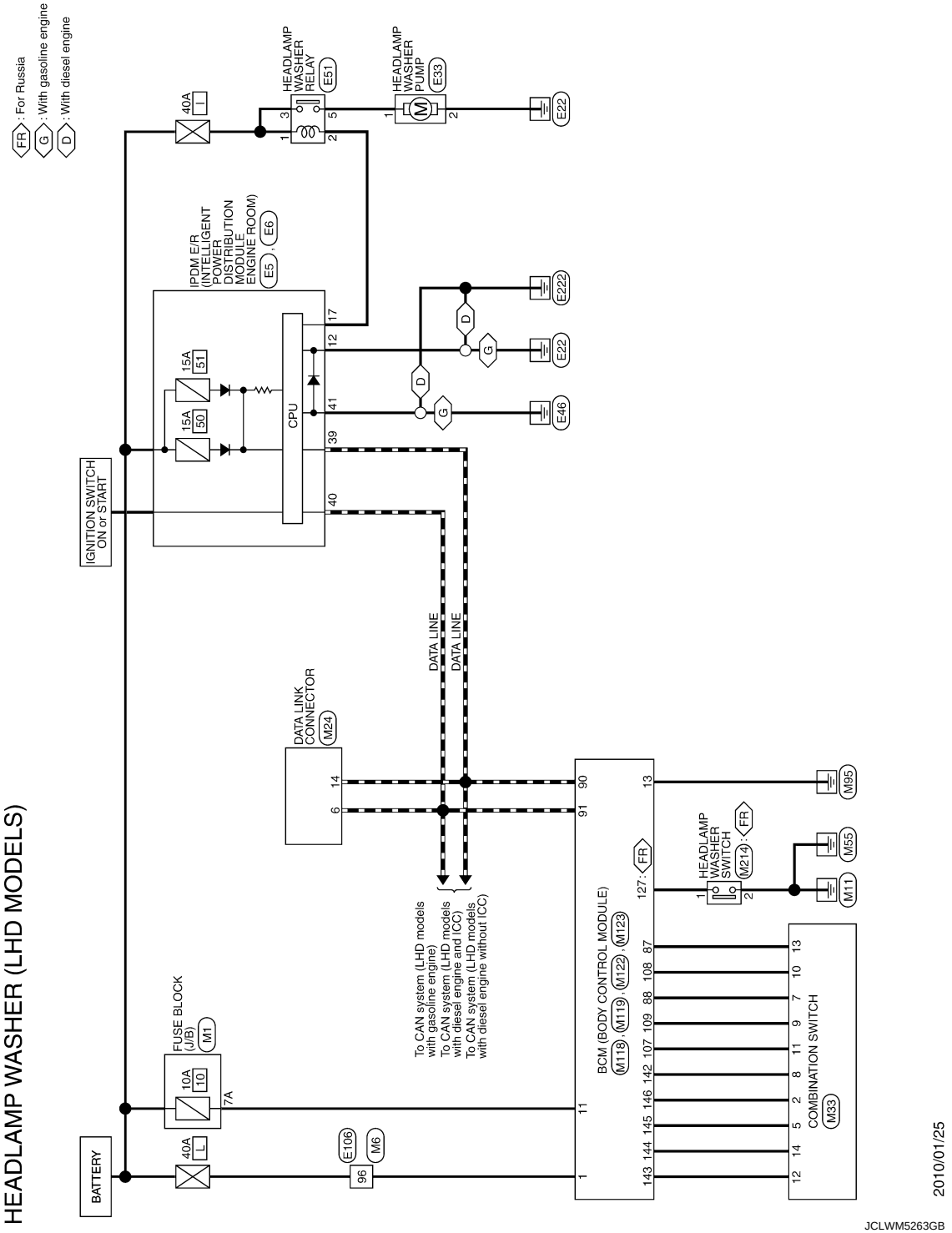
# HEADLAMP WASHER SYSTEM

## LHD

### LHD : Wiring Diagram

INFOID:0000000006069130

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

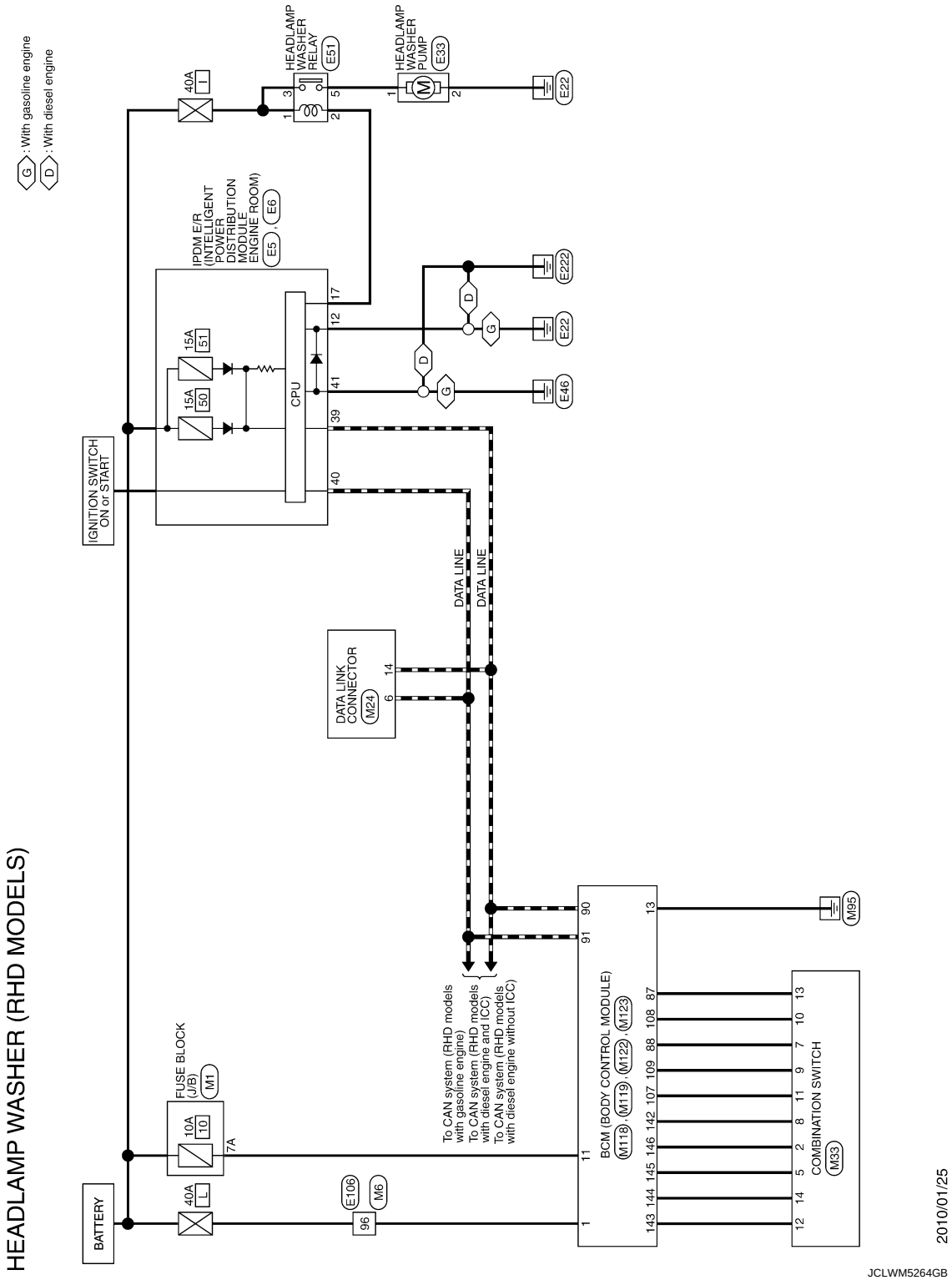



## RHD

## RHD : Wiring Diagram

INFOID:0000000006069131

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



# ECU DIAGNOSIS INFORMATION

## BCM (BODY CONTROL MODULE)

### Reference Value

INFOID:0000000005406788

#### VALUES ON THE DIAGNOSIS TOOL

CONSULT-III MONITOR ITEM

| Monitor Item | Condition | Value/Status |
|---|---|---|
| FR WIPER HI | Other than front wiper switch HI | Off |
| | Front wiper switch HI | On |
| FR WIPER LOW | Other than front wiper switch LO | Off |
| | Front wiper switch LO | On |
| FR WASHER SW | Front washer switch OFF | Off |
| | Front washer switch ON | On |
| FR WIPER INT | Other than front wiper switch AUTO | Off |
| | Front wiper switch AUTO | On |
| FR WIPER STOP | Front wiper is not in STOP position | Off |
| | Front wiper is in STOP position | On |
| INT VOLUME | Wiper volume dial is in a dial position 1 - 7 | Wiper volume dial position |
| RR WIPER ON | Other than rear wiper switch ON | Off |
| | Rear wiper switch ON | On |
| RR WIPER INT | Other than rear wiper switch INT | Off |
| | Rear wiper switch INT | On |
| RR WASHER SW | Rear washer switch OFF | Off |
| | Rear washer switch ON | On |
| RR WIPER STOP | Rear wiper is in STOP position | Off |
| | Rear wiper is not in STOP position | On |
| TURN SIGNAL R | Other than turn signal switch RH | Off |
| | Turn signal switch RH | On |
| TURN SIGNAL L | Other than turn signal switch LH | Off |
| | Turn signal switch LH | On |
| TAIL LAMP SW | Other than lighting switch 1ST and 2ND | Off |
| | Lighting switch 1ST or 2ND | On |
| HI BEAM SW | Other than lighting switch HI | Off |
| | Lighting switch HI | On |
| HEAD LAMP SW 1 | Other than lighting switch 2ND | Off |
| | Lighting switch 2ND | On |
| HEAD LAMP SW 2 | Other than lighting switch 2ND | Off |
| | Lighting switch 2ND | On |
| PASSING SW | Other than lighting switch PASS | Off |
| | Lighting switch PASS | On |
| AUTO LIGHT SW | Other than lighting switch AUTO | Off |
| | Lighting switch AUTO | On |
| FR FOG SW | Front fog lamp switch OFF | Off |
| | Front fog lamp switch ON | On |

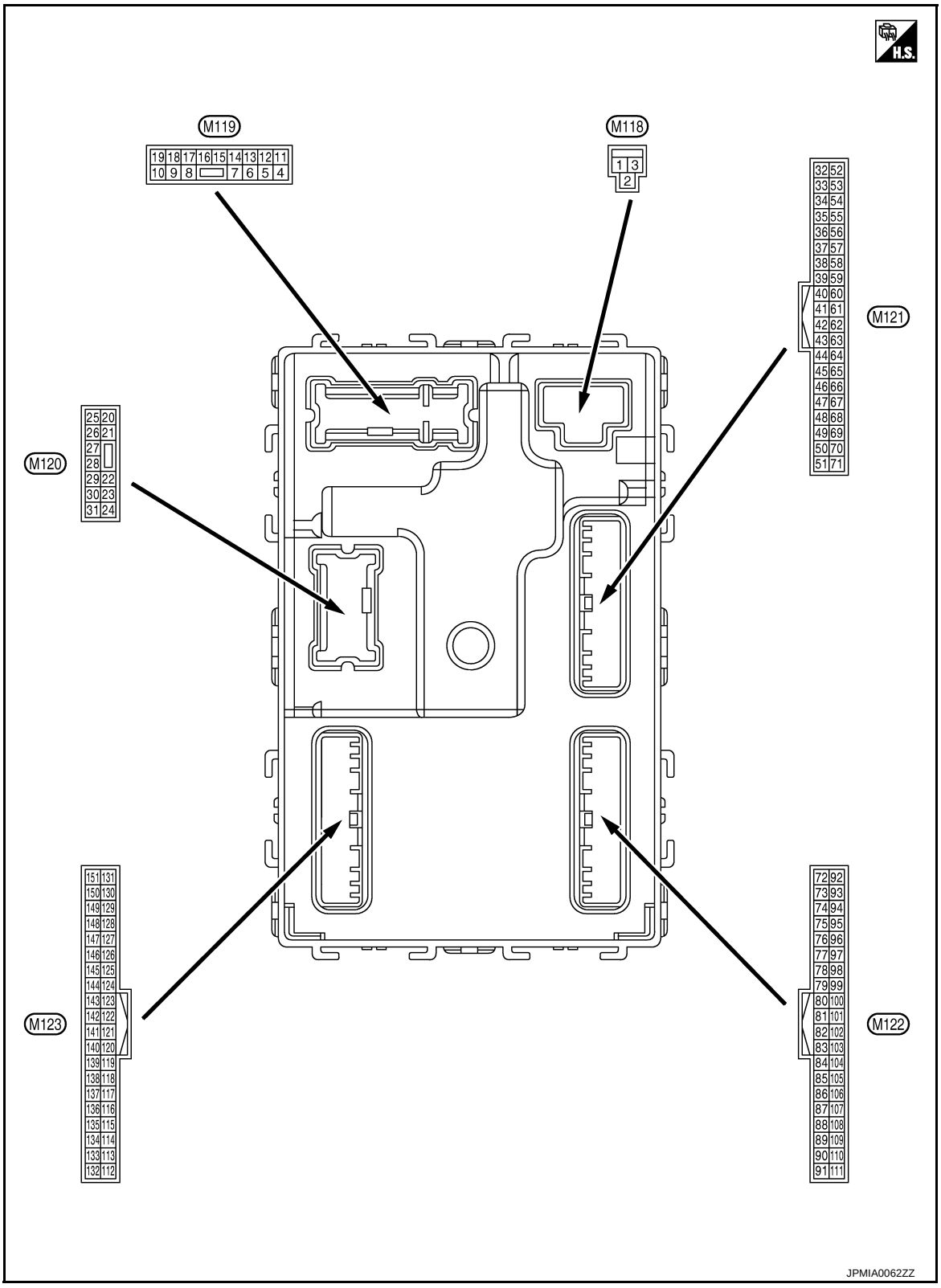
| Monitor Item | Condition | Value/Status |
|---|---|---|
| RR FOG SW | Rear fog lamp switch OFF | Off |
| | Rear fog lamp switch ON | On |
| DOOR SW-DR | Driver door closed | Off |
| | Driver door opened | On |
| DOOR SW-AS | Passenger door closed | Off |
| | Passenger door opened | On |
| DOOR SW-RR | Rear RH door closed | Off |
| | Rear RH door opened | On |
| DOOR SW-RL | Rear LH door closed | Off |
| | Rear LH door opened | On |
| DOOR SW-BK | Back door closed | Off |
| | Back door opened | On |
| CDL LOCK SW | Other than power door lock switch LOCK | Off |
| | Power door lock switch LOCK | On |
| CDL UNLOCK SW | Other than power door lock switch UNLOCK | Off |
| | Power door lock switch UNLOCK | On |
| KEY CYL LK-SW | **NOTE:**<br>The item is indicated, but not monitored. | Off |
| KEY CYL UN-SW | **NOTE:**<br>The item is indicated, but not monitored. | Off |
| KEY CYL SW-TR | **NOTE:**<br>The item is indicated, but not monitored. | Off |
| HAZARD SW | Hazard switch is OFF | Off |
| | Hazard switch is ON | On |
| REAR DEF SW | **NOTE:**<br>The item is indicated, but not monitored. | Off |
| H/L WASH SW<br>**NOTE:**<br>For models without headlamp washer switch, this item is not monitored. | Headlamp washer switch is not pressed | Off |
| | Headlamp washer switch is pressed | On |
| TR CANCEL SW | **NOTE:**<br>The item is indicated, but not monitored. | Off |
| TR/BD OPEN SW | Back door opener switch OFF | Off |
| | While the back door opener switch is turned ON | On |
| TRNK/HAT MNTR | **NOTE:**<br>The item is indicated, but not monitored. | Off |
| SEN CANCEL SW | Sensor cancel switch is not pressed | Off |
| | Sensor cancel switch is pressed | On |
| RKE-LOCK | LOCK button of the Intelligent Key is not pressed | Off |
| | LOCK button of the Intelligent Key is pressed | On |
| RKE-UNLOCK | UNLOCK button of the Intelligent Key is not pressed | Off |
| | UNLOCK button of the Intelligent Key is pressed | On |
| RKE-TR/BD | **NOTE:**<br>The item is indicated, but not monitored. | Off |
| RKE-PANIC | **NOTE:**<br>The item is indicated, but not monitored. | Off |

| Monitor Item | Condition | Value/Status |
|---|---|---|
| RKE-P/W OPEN | UNLOCK button of the Intelligent Key is not pressed | Off |
| | UNLOCK button of the Intelligent Key is pressed and held | On |
| RKE-MODE CHG | LOCK/UNLOCK button of the Intelligent Key is not pressed and held simultaneously | Off |
| | LOCK/UNLOCK button of the Intelligent Key is pressed and held simultaneously | On |
| OPTICAL SENSOR<br>**NOTE:**<br>For models without optical sensor, this item is not monitored. | Bright outside of the vehicle | Close to 5 V |
| | Dark outside of the vehicle | Close to 0 V |
| REQ SW -DR | Driver door request switch is not pressed | Off |
| | Driver door request switch is pressed | On |
| REQ SW -AS | Passenger door request switch is not pressed | Off |
| | Passenger door request switch is pressed | On |
| REQ SW -RR | **NOTE:**<br>The item is indicated, but not monitored. | Off |
| REQ SW -RL | **NOTE:**<br>The item is indicated, but not monitored. | Off |
| REQ SW -BD/TR | Back door opener request switch is not pressed | Off |
| | Back door opener request switch is pressed | On |
| PUSH SW | Push-button ignition switch (push switch) is not pressed | Off |
| | Push-button ignition switch (push switch) is pressed | On |
| IGN RLY2 -F/B | Ignition switch in OFF or ACC position | Off |
| | Ignition switch in ON position | On |
| ACC RLY -F/B | **NOTE:**<br>The item is indicated, but not monitored. | Off |
| CLUCH SW | The clutch pedal is not depressed | Off |
| | The clutch pedal is depressed | On |
| BRAKE SW 1 | Brake pedal is depressed when No. 7 fuse is blown | Off |
| | Brake pedal is not depressed when No. 7 fuse is blown, or No. 7 fuse is normal | On |
| BRAKE SW 2 | Brake pedal is not depressed | Off |
| | Brake pedal is depressed | On |
| DETE/CANCL SW | Selector lever in P position | Off |
| | Selector lever in any position other than P | On |
| SFT PN/N SW | • Selector lever in any position other than P and N (A/T models)<br>• Control lever in any position other than neutral (M/T models) | Off |
| | • Selector lever in P or N position (A/T models)<br>• Control lever in neutral position (M/T models) | On |
| S/L -LOCK | Steering is unlocked | Off |
| | Steering is locked | On |
| S/L -UNLOCK | Steering is locked | Off |
| | Steering is unlocked | On |
| S/L RELAY-F/B | Ignition switch in OFF or ACC position | Off |
| | Ignition switch in ON position | On |
| UNLK SEN -DR | Driver door is unlocked | Off |
| | Driver door is locked | On |
| PUSH SW -IPDM | Push-button ignition switch (push-switch) is not pressed | Off |
| | Push-button ignition switch (push-switch) is pressed | On |

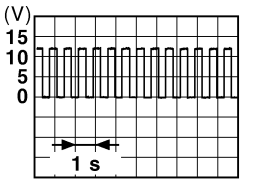
| Monitor Item | Condition | Value/Status |
|---|---|---|
| IGN RLY1 -F/B | Ignition switch in OFF or ACC position | Off |
| | Ignition switch in ON position | On |
| DETE SW -IPDM | Selector lever in any position other than P | Off |
| | Selector lever in P position | On |
| SFT PN -IPDM | Selector lever in any position other than P and N | Off |
| | Selector lever in P or N position | On |
| SFT P -MET | Selector lever in any position other than P | Off |
| | Selector lever in P position | On |
| SFT N -MET | Selector lever in any position other than N | Off |
| | Selector lever in N position | On |
| ENGINE STATE | Engine stopped | Stop |
| | While the engine stalls | Stall |
| | At engine cranking | Crank |
| | Engine running | Run |
| S/L LOCK-IPDM | Steering is unlocked | Off |
| | Steering is locked | On |
| S/L UNLK-IPDM | Steering is locked | Off |
| | Steering is unlocked | On |
| S/L RELAY-REQ | Steering lock system is not the LOCK condition and the changing condition from LOCK to UNLOCK | Off |
| | Steering lock system is the LOCK condition or the changing condition from LOCK to UNLOCK | On |
| VEH SPEED 1 | While driving | Equivalent to speed-ometer reading |
| VEH SPEED 2 | While driving | Equivalent to speed-ometer reading |
| DOOR STAT-DR | Driver door is locked | LOCK |
| | Wait with selective UNLOCK operation (5 seconds) | READY |
| | Driver door is unlocked | UNLOCK |
| DOOR STAT-AS | Passenger door is locked | LOCK |
| | Wait with selective UNLOCK operation (5 seconds) | READY |
| | Passenger door is unlocked | UNLOCK |
| ID OK FLAG | Steering is locked | Reset |
| | Steering is unlocked | Set |
| PRMT ENG STRT | The engine start is prohibited | Reset |
| | The engine start is permitted | Set |
| PRMT RKE STRT | **NOTE:**<br>The item is indicated, but not monitored. | Reset |
| KEY SW -SLOT | The Intelligent Key is not inserted into key slot | Off |
| | The Intelligent Key is inserted into key slot | On |
| RKE OPE COUN1 | During the operation of the Intelligent Key | Operation frequency of the Intelligent Key |
| RKE OPE COUN2 | **NOTE:**<br>The item is indicated, but not monitored. | — |
| REVERSE SW<br>**NOTE:**<br>For A/T models, this item is not monitored. | Control lever in any position other than reverse position | Off |
| | Control lever in reverse position | On |

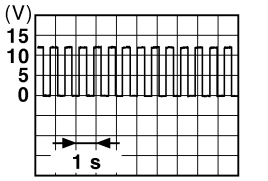
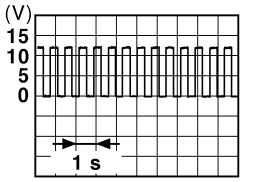
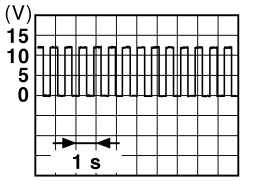
| Monitor Item | Condition | Value/Status |
|---|---|---|
| CONFRM ID ALL | The key ID that the key slot receives is not recognized by any key ID registered to BCM. | Yet |
| | The key ID that the key slot receives accords with any key ID registered to BCM. | Done |
| CONFIRM ID4 | The key ID that the key slot receives is not recognized by the fourth key ID registered to BCM. | Yet |
| | The key ID that the key slot receives is recognized by the fourth key ID registered to BCM. | Done |
| CONFIRM ID3 | The key ID that the key slot receives is not recognized by the third key ID registered to BCM. | Yet |
| | The key ID that the key slot receives is recognized by the third key ID registered to BCM. | Done |
| CONFIRM ID2 | The key ID that the key slot receives is not recognized by the second key ID registered to BCM. | Yet |
| | The key ID that the key slot receives is recognized by the second key ID registered to BCM. | Done |
| CONFIRM ID1 | The key ID that the key slot receives is not recognized by the first key ID registered to BCM. | Yet |
| | The key ID that the key slot receives is recognized by the first key ID registered to BCM. | Done |
| TP 4 | The ID of fourth Intelligent Key is not registered to BCM | Yet |
| | The ID of fourth Intelligent Key is registered to BCM | Done |
| TP 3 | The ID of third Intelligent Key is not registered to BCM | Yet |
| | The ID of third Intelligent Key is registered to BCM | Done |
| TP 2 | The ID of second Intelligent Key is not registered to BCM | Yet |
| | The ID of second Intelligent Key is registered to BCM | Done |
| TP 1 | The ID of first Intelligent Key is not registered to BCM | Yet |
| | The ID of first Intelligent Key is registered to BCM | Done |

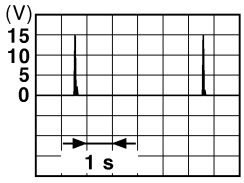
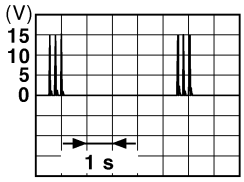
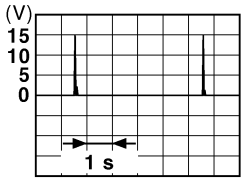
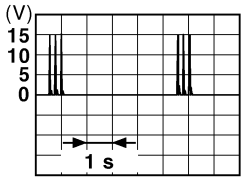
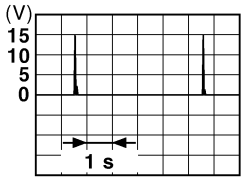
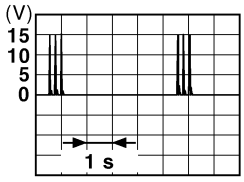
TERMINAL LAYOUT

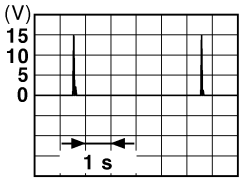
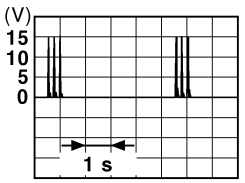
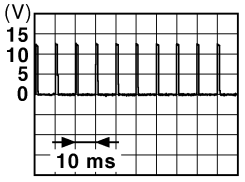
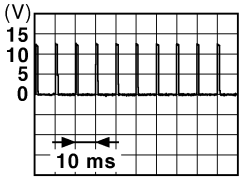


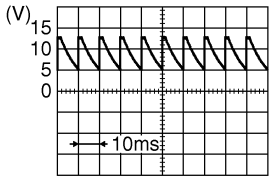
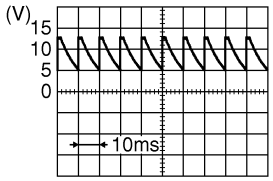
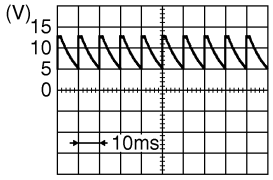
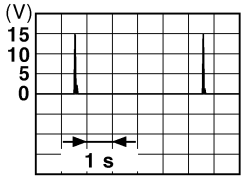
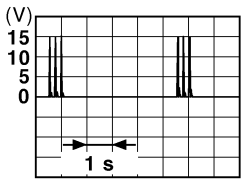

PHYSICAL VALUES

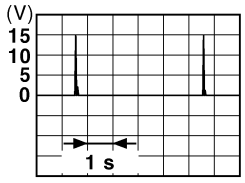
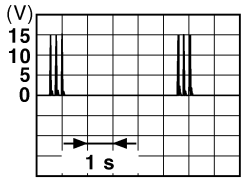
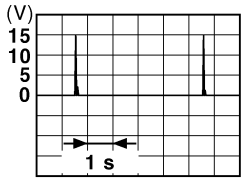
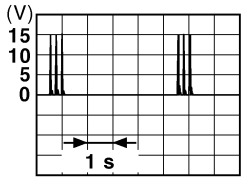
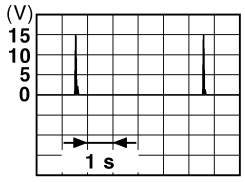
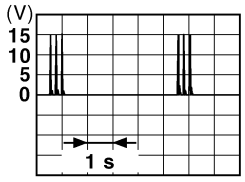
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| | | Signal name | Input/ Output | | | |
| + | – | | | | | |
| 1 (W) | Ground | Battery power supply | Input | Ignition switch OFF | | Battery voltage |
| 3 (O)*2 (Y)*3 | Ground | P/W power supply (RAP) | Output | Ignition switch ON | | 12 V |
| 4 (P) | Ground | Interior room lamp power supply (Battery saver signal) | Output | Interior room lamp battery saver is activated. (Cuts the interior room lamp power supply) | | 0 V |
| | | | | Interior room lamp battery saver is not activated. (Outputs the interior room lamp power supply) | | 12 V |
| 5*1 (G) | Ground | Super lock | Output | Super lock actuator | Actuator is activated | 12 V |
| | | | | | Actuator is not activated | 0 V |
| 7 (Y) | Ground | Step lamp | Output | Step lamp | ON | 0 V |
| | | | | | OFF | 12 V |
| 8 (V) | Ground | All doors, fuel lid LOCK | Output | All doors, fuel lid | LOCK (Actuator is activated) | 12 V |
| | | | | | Other than LOCK (Actuator is not activated) | 0 V |
| 9 (G) | Ground | Driver door, fuel lid UNLOCK | Output | Driver door, fuel lid | UNLOCK (Actuator is activated) | 12 V |
| | | | | | Other than UNLOCK (Actuator is not activated) | 0 V |
| 10 (BR) | Ground | Passenger door, rear RH door and rear LH door UNLOCK | Output | Passenger door, rear RH door and rear LH door | UNLOCK (Actuator is activated) | 12 V |
| | | | | | Other than UNLOCK (Actuator is not activated) | 0 V |
| 11 (R) | Ground | Battery power supply | Input | Ignition switch OFF | | Battery voltage |
| 13 (B) | Ground | Ground | — | Ignition switch ON | | 0 V |
| 15 (Y) | Ground | ACC indicator lamp | Output | Ignition switch | OFF (LOCK indicator is not illuminated) | Battery voltage |
| | | | | | ACC or ON | 0 V |
| 17 (W) | Ground | Turn signal RH (Front and side) | Output | Ignition switch ON | Turn signal switch OFF | 0 V |
| | | | | | Turn signal switch RH |   PKID0926E 6.5 V |

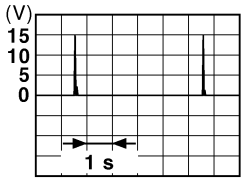
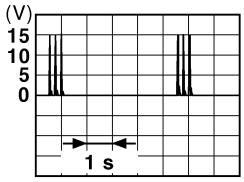
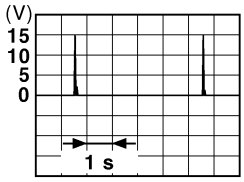
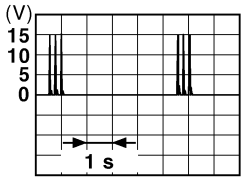
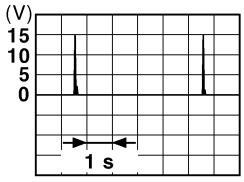
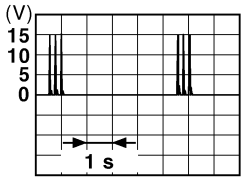
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 18 (O) | Ground | Turn signal LH (Front and side) | Output | Ignition switch ON | Turn signal switch OFF | 0 V |
| | | | | | Turn signal switch LH |  PKID0926E 6.5 V |
| 19 (R)*4 (SB)*5 | Ground | Room lamp timer | Output | Other than under condition | | 5.0 V |
| | | | | • Interior room lamp timer is activated. (Door is unlocked. etc...)<br>• Welcome light function is activated. | | 0 V |
| 20 (V) | Ground | Turn signal RH (Rear) | Output | Ignition switch ON | Turn signal switch OFF | 0 V |
| | | | | | Turn signal switch RH |  PKID0926E 6.5 V |
| 24 (R) | Ground | Rear fog lamp | Output | Rear fog lamp | OFF | 0 V |
| | | | | | ON | 12 V |
| 25 (G)*6 (BR)*7 | Ground | Turn signal LH (Rear) | Output | Ignition switch ON | Turn signal switch OFF | 0 V |
| | | | | | Turn signal switch LH |  PKID0926E 6.5 V |
| 26 (P)*2 (G)*3 | Ground | Rear wiper | Output | Rear wiper | OFF (Stopped) | 0 V |
| | | | | | ON (Operated) | 12 V |

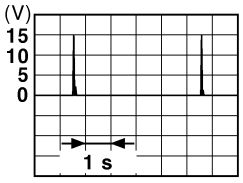
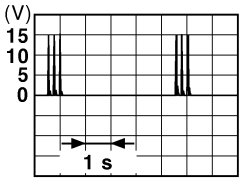
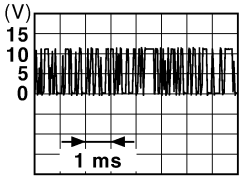
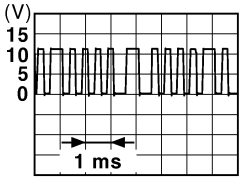
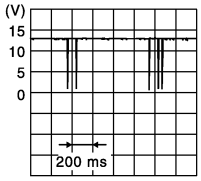
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 34 (SB) | Ground | Luggage room antenna (–) | Output | Ignition switch OFF | When Intelligent Key is in the passenger compartment |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the passenger compartment |  JMKIA0063GB |
| 35 (V) | Ground | Luggage room antenna (+) | Output | Ignition switch OFF | When Intelligent Key is in the passenger compartment |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the passenger compartment |  JMKIA0063GB |
| 38 (B) | Ground | Back door antenna (–) | Output | When the back door opener request switch is operated with ignition switch OFF | When Intelligent Key is in the antenna detection area |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the antenna detection area |  JMKIA0063GB |

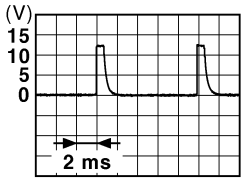
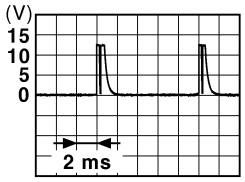
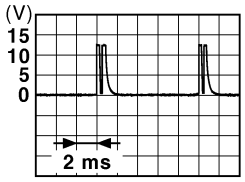
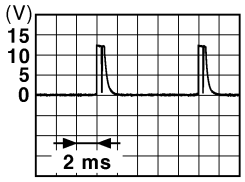
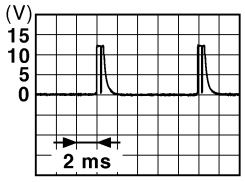
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 39 (W) | Ground | Back door antenna (+) | Output | When the back door opener request switch is operated with ignition switch OFF | When Intelligent Key is in the antenna detection area |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the antenna detection area |  JMKIA0063GB |
| 47 (Y) | Ground | Ignition relay (IPDM E/R) control | Output | Ignition switch | OFF or ACC | 12 V |
| | | | | | ON | 0 V |
| 48 (W) | Ground | Back door opener switch operation | Output | Back door opener switch | Not pressed | 12 V |
| | | | | | Pressed | 0 V |
| 52 (LG) | Ground | Starter relay control | Output | Ignition switch ON (A/T models) | When selector lever is in P or N position | 12 V |
| | | | | | When selector lever is not in P or N position | 0 V |
| | | | | Ignition switch ON (M/T models) | | Battery voltage |
| 61 (W) | Ground | Back door opener request switch | Input | Back door opener request switch | ON (Pressed) | 0 V |
| | | | | | OFF (Not pressed) |  JPMIA0016GB<br>1.0 V |
| 64 (V)*4 (L)*5 | Ground | Intelligent Key warning buzzer | Output | Intelligent Key warning buzzer | Sounding | 0 V |
| | | | | | Not sounding | 12 V |
| 65 (O) | Ground | Rear wiper stop position | Input | Rear wiper | In stop position |  JPMIA0016GB<br>1.0 V |
| | | | | | Not in stop position | 0 V |
| 66 (LG) | Ground | Back door switch | Input | Back door switch | OFF (Door close) | 12 V |
| | | | | | ON (Door open) | 0 V |

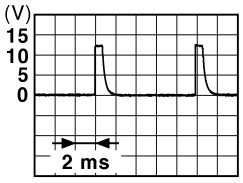
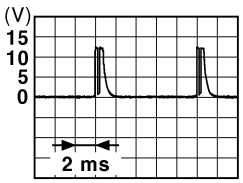
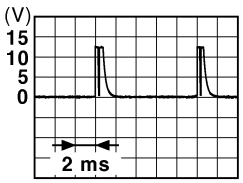
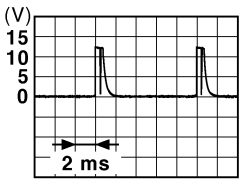
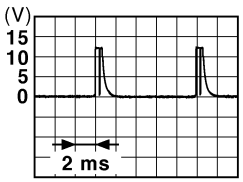
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 67 (P) | Ground | Back door opener switch | Input | Back door opener switch | Pressed | 0 V |
| | | | | | Not pressed |  JPMIA0594GB 8.5 - 9.0 V |
| 68 (BR)*6 (W)*7 | Ground | Rear RH door switch | Input | Rear RH door switch | OFF (Door close) |  JPMIA0594GB 8.5 - 9.0 V |
| | | | | | ON (Door open) | 0 V |
| 69 (R) | Ground | Rear LH door switch | Input | Rear LH door switch | OFF (Door close) |  JPMIA0594GB 8.5 - 9.0 V |
| | | | | | ON (Door open) | 0 V |
| 72 (R) | Ground | Room antenna 2 (–) (Center console) | Output | Ignition switch OFF | When Intelligent Key is in the passenger compartment |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the passenger compartment |  JMKIA0063GB |

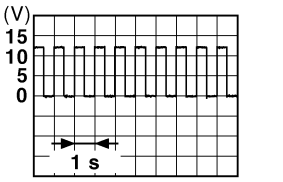
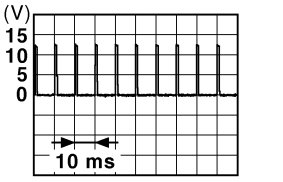
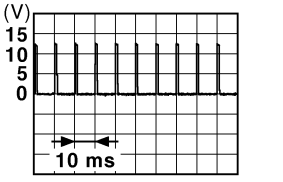
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 73 (G) | Ground | Room antenna 2 (+) (Center console) | Output | Ignition switch OFF | When Intelligent Key is in the passenger compartment |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the passenger compartment |  JMKIA0063GB |
| 74 (SB) | Ground | Passenger door antenna (–) | Output | When the passenger door request switch is operated with ignition switch OFF | When Intelligent Key is in the antenna detection area |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the antenna detection area |  JMKIA0063GB |
| 75 (BR) | Ground | Passenger door antenna (+) | Output | When the passenger door request switch is operated with ignition switch OFF | When Intelligent Key is in the antenna detection area |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the antenna detection area |  JMKIA0063GB |

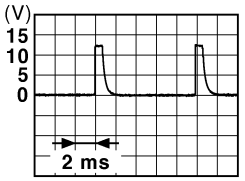
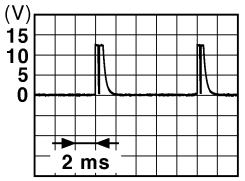
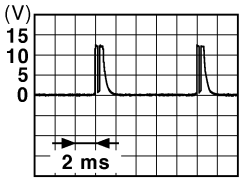
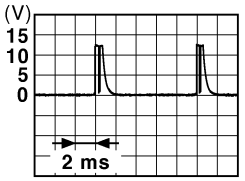
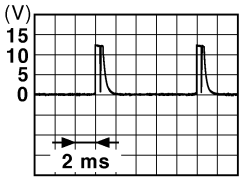
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 76 (V) | Ground | Driver door antenna (–) | Output | When the driver door request switch is operated with ignition switch OFF | When Intelligent Key is in the antenna detection area |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the antenna detection area |  JMKIA0063GB |
| 77 (LG) | Ground | Driver door antenna (+) | Output | When the driver door request switch is operated with ignition switch OFF | When Intelligent Key is in the antenna detection area |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the antenna detection area |  JMKIA0063GB |
| 78 (Y) | Ground | Room antenna 1 (–) (Instrument panel) | Output | Ignition switch OFF | When Intelligent Key is in the passenger compartment |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the passenger compartment |  JMKIA0063GB |

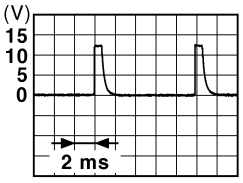
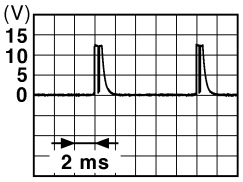
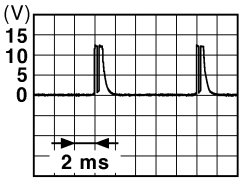
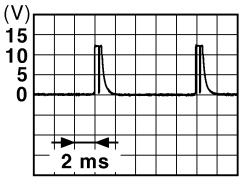
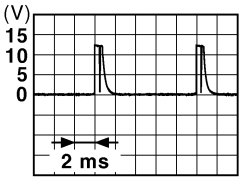
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 79 (BR) | Ground | Room antenna 1 (+) (Instrument panel) | Output | Ignition switch OFF | When Intelligent Key is in the passenger compartment |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the passenger compartment |  JMKIA0063GB |
| 80 (GR) | Ground | NATS antenna amp. | Input/ Output | During waiting | Ignition switch is pressed while inserting the Intelligent Key into the key slot. | Just after pressing ignition switch. Pointer of tester should move. |
| 81 (W) | Ground | NATS antenna amp. | Input/ Output | During waiting | Ignition switch is pressed while inserting the Intelligent Key into the key slot. | Just after pressing ignition switch. Pointer of tester should move. |
| 82 (P)*2 (R)*3 | Ground | Ignition relay [Fuse block (J/B)] control | Output | Ignition switch | OFF or ACC | 0 V |
| | | | | | ON | 12 V |
| 83 (GR)*2 (Y)*3 | Ground | Remote keyless entry receiver communication | Input/ Output | During waiting | |  JMKIA0064GB |
| | | | | When operating either button on the Intelligent Key | |  JMKIA0065GB |
| 85 (G) | Ground | Alarm link | Input/ Output | Vehicle security system | Disarmed phase | 12 V |
| | | | | | Pre-armed phase or armed phase |  NNKIA0175ZZ |

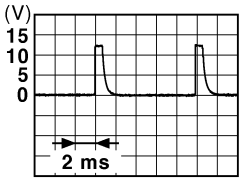
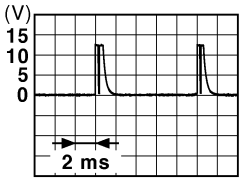
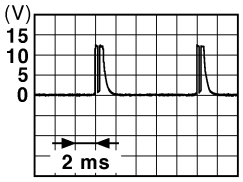
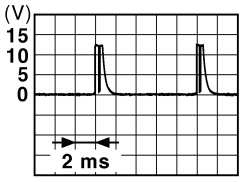
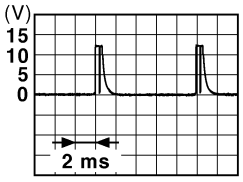
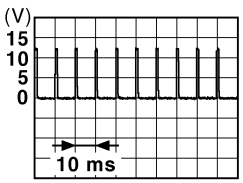
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 86*1 (O) | Ground | Dongle link | Input/ Output | During waiting | Ignition switch is pressed while inserting the Intelligent Key into the key slot. | Just after pressing ignition switch. Pointer of tester should move. |
| 87 (BR)*6 (W)*7 | Ground | Combination switch INPUT 5 | Input | Combination switch | All switches OFF (Wiper volume dial 4) |  JPMIA0041GB 1.4 V |
| | | | | | Front fog lamp switch ON (Wiper volume dial 4) |  JPMIA0037GB 1.3 V |
| | | | | | Rear fog lamp switch ON (Wiper volume dial 4) |  JPMIA0142GB 1.2 V |
| | | | | | Rear wiper switch ON (Wiper volume dial 4) |  JPMIA0039GB 1.3 V |
| | | | | | Any of the conditions below with all switches OFF<br>• Wiper volume dial 1<br>• Wiper volume dial 2<br>• Wiper volume dial 6<br>• Wiper volume dial 7 |  JPMIA0040GB 1.3 V |

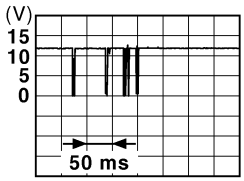
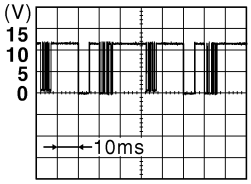
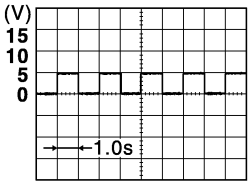
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 88 (V) | Ground | Combination switch INPUT 3 | Input | Combination switch | All switches OFF (Wiper volume dial 4) |  JPMIA0041GB 1.4 V |
| | | | | | Lighting switch HI (Wiper volume dial 4) |  JPMIA0036GB 1.3 V |
| | | | | | Lighting switch 2ND (Wiper volume dial 4) |  JPMIA0037GB 1.3 V |
| | | | | | Rear washer switch ON (Wiper volume dial 4) |  JPMIA0039GB 1.3 V |
| | | | | | Any of the conditions below with all switches OFF<br>• Wiper volume dial 1<br>• Wiper volume dial 2<br>• Wiper volume dial 3 |  JPMIA0040GB 1.3 V |
| 89 (SB)*2 (L)*4 (BR)*7 | Ground | Push-button ignition switch (Push switch) | Input | Push-button ignition switch (push switch) | Pressed | 0 V |
| | | | | | Not pressed | 12 V |
| 90 (P) | Ground | CAN-L | Input/ Output | — | | — |
| 91 (L) | Ground | CAN-H | Input/ Output | — | | — |

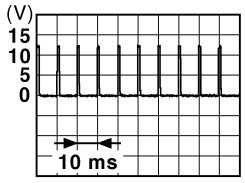
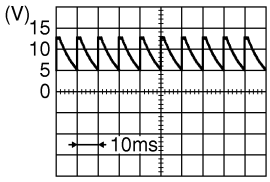
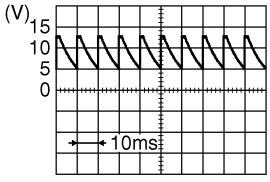
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 92 (LG) | Ground | Key slot illumination | Output | Key slot illumination | OFF | 12 V |
| | | | | | Blinking |  JPMIA0015GB 6.5 V |
| | | | | | ON | 0 V |
| 93 (V) | Ground | ON indicator lamp | Output | Ignition switch | OFF (LOCK indicator is not illuminated) | Battery voltage |
| | | | | | ON or ACC | 0 V |
| 95 (O) | Ground | ACC relay control | Output | Ignition switch | OFF | 0 V |
| | | | | | ACC or ON | 12 V |
| 96 (GR) | Ground | A/T shift selector (Detention switch) power supply | Output | — | | 12 V |
| 97 (L) | Ground | Steering lock condition No. 1 | Input | Steering lock | LOCK status | 0 V |
| | | | | | UNLOCK status | 12 V |
| 98 (P) | Ground | Steering lock condition No. 2 | Input | Steering lock | LOCK status | 12 V |
| | | | | | UNLOCK status | 0 V |
| 99 (GR)*8 (R)*9 | Ground | Selector lever P position switch | Input | Selector lever | P position | 0 V |
| | | | | | Any position other than P | 12 V |
| 100 (G)*6 (P)*7 | Ground | Passenger door request switch | Input | Passenger door request switch | ON (Pressed) | 0 V |
| | | | | | OFF (Not pressed) |  JPMIA0016GB 1.0 V |
| 101 (SB) | Ground | Driver door request switch | Input | Driver door request switch | ON (Pressed) | 0 V |
| | | | | | OFF (Not pressed) |  JPMIA0016GB 1.0 V |
| 102 (O) | Ground | Blower fan motor relay control | Output | Ignition switch | OFF or ACC | 0 V |
| | | | | | ON | 12 V |
| 103 (BR)*2 (LG)*3 | Ground | Remote keyless entry receiver power supply | Output | Ignition switch OFF | | 12 V |

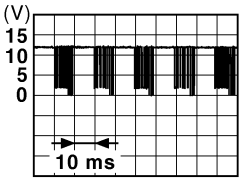
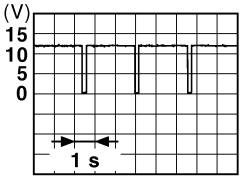
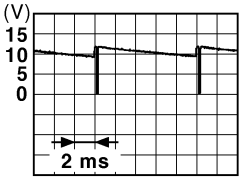
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 105 (R) | Ground | Door lock status indicator lamp | Output | Door lock status indicator lamp | OFF | 12 V |
| | | | | | ON | 0 V |
| 106 (W) | Ground | Steering lock unit power supply | Output | Ignition switch | OFF or ACC | 12 V |
| | | | | | ON | 0 V |
| 107 (LG) | Ground | Combination switch INPUT 1 | Input | Combination switch (Wiper volume dial 4) | All switches OFF |  JPMIA0041GB 1.4 V |
| | | | | | Turn signal switch LH |  JPMIA0037GB 1.3 V |
| | | | | | Turn signal switch RH |  JPMIA0036GB 1.3 V |
| | | | | | Front wiper switch LO |  JPMIA0038GB 1.3 V |
| | | | | | Front washer switch ON |  JPMIA0039GB 1.3 V |

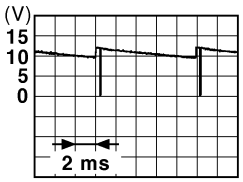
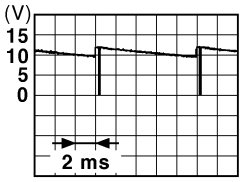
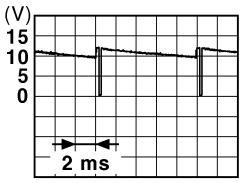
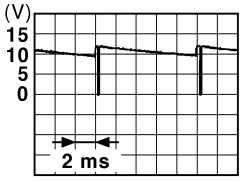
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 108 (R) | Ground | Combination switch INPUT 4 | Input | Combination switch | All switches OFF (Wiper volume dial 4) |  JPMIA0041GB 1.4 V |
| | | | | | Lighting switch AUTO (Wiper volume dial 4) |  JPMIA0038GB 1.3 V |
| | | | | | Lighting switch 1ST (Wiper volume dial 4) |  JPMIA0036GB 1.3 V |
| | | | | | Rear wiper switch INT (Wiper volume dial 4) |  JPMIA0040GB 1.3 V |
| | | | | | Any of the conditions below with all switches OFF<br>• Wiper volume dial 1<br>• Wiper volume dial 5<br>• Wiper volume dial 6 |  JPMIA0039GB 1.3 V |

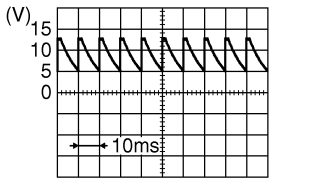
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 109 (GR)*4 (Y)*5 | Ground | Combination switch INPUT 2 | Input | Combination switch (Wiper volume dial 4) | All switches OFF |  JPMIA0041GB 1.4 V |
| | | | | | Lighting switch PASS |  JPMIA0037GB 1.3 V |
| | | | | | Lighting switch 2ND |  JPMIA0036GB 1.3 V |
| | | | | | Front wiper switch AUTO |  JPMIA0038GB 1.3 V |
| | | | | | Front wiper switch HI |  JPMIA0040GB 1.3 V |
| 110 (G) | Ground | Hazard switch | Input | Hazard switch | ON | 0 V |
| | | | | | OFF |  JPMIA0012GB 1.1 V |

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 111 (GR)*2 (Y)*3 | Ground | Steering lock unit communication | Input/ Output | Steering lock | LOCK status | 12 V |
| | | | | | LOCK or UNLOCK |  JMKIA0066GB |
| | | | | | For 15 seconds after UNLOCK | 12 V |
| | | | | | 15 seconds or later after UNLOCK | 0 V |
| 112 (R)*10 (GR)*11 | Ground | Light and rain sensor serial link | Input/ Output | Ignition switch ON | |  JPMIA0156GB<br>8.7 V |
| 113*12 (P) | Ground | Optical sensor | Input | Ignition switch ON | When bright outside of the vehicle | Close to 5 V |
| | | | | | When dark outside of the vehicle | Close to 0 V |
| 114*13 (GR) | Ground | Clutch interlock switch | Input | Clutch interlock switch | OFF (Clutch pedal is not depressed) | 0 V |
| | | | | | ON (Clutch pedal is depressed) | Battery voltage |
| 115 (O) | Ground | Air bag signal | Input | Ignition switch | OFF | 0 V |
| | | | | | ACC | 5.0 V |
| | | | | | ON |  JPMIA1034GB<br>2.5 V |
| 116 (BR)*2 (LG)*4 (SB)*7 | Ground | Stop lamp switch 1 | Input | — | | Battery voltage |

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 117 (Y) | Ground | Sensor cancel switch | Input | Sensor cancel switch | OFF (Not pressed) |  JPMIA0012GB 11.8 V |
| | | | | | ON (Pressed) | 0 V |
| 118 (SB)*4 (P)*5 | Ground | Stop lamp switch 2 (Without ICC) | Input | Stop lamp switch | OFF (Brake pedal is not depressed) | 0 V |
| | | | | | ON (Brake pedal is depressed) | Battery voltage |
| | | Stop lamp switch 2 (With ICC) | | Stop lamp switch OFF (Brake pedal is not depressed) and ICC brake hold relay OFF | | 0 V |
| | | | | Stop lamp switch ON (Brake pedal is depressed) or ICC brake hold relay ON | | Battery voltage |
| 119 (SB)*6 (L)*7 | Ground | Front door lock assembly driver side (Unlock sensor) | Input | Driver door | LOCK status (Unlock sensor switch OFF) |  JPMIA0594GB 8.5 - 9.0 V |
| | | | | | UNLOCK status (Unlock switch sensor ON) | 0 V |
| 120*13 (O) | Ground | Back-up lamp switch | Input | Ignition switch ON | Control lever in reverse position | Battery voltage |
| | | | | | Control lever in any position other than reverse | 0 V |
| 121 (BR)*2 (R)*4 (LG)*7 | Ground | Key slot switch | Input | When the Intelligent Key is inserted into key slot | | 12 V |
| | | | | When the Intelligent Key is not inserted into key slot | | 0 V |
| 123 (W) | Ground | IGN feedback | Input | Ignition switch | OFF or ACC | 0 V |
| | | | | | ON | Battery voltage |
| 124 (LG) | Ground | Passenger door switch | Input | Passenger door switch | OFF (Door close) |  JPMIA0594GB 8.5 - 9.0 V |
| | | | | | ON (Door open) | 0 V |

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 132 (BR) | Ground | Power window switch communication | Input/ Output | Ignition switch ON | |  JPMIA0013GB 10.2 V |
| | | | | Ignition switch OFF or ACC | | 12 V |
| 134 (V)*4 (GR)*5 | Ground | LOCK indicator lamp | Output | LOCK indicator lamp | OFF | Battery voltage |
| | | | | | ON | 0 V |
| 137 (B)*2 (BR)*4 (G)*7 | Ground | Receiver and sensor ground | Input | Ignition switch ON | | 0 V |
| 138*12 (Y) | Ground | Sensor power supply | Output | Ignition switch | OFF | 0 V |
| | | | | | ACC or ON | 5 V |
| 140 (BR)*13 (R)*14 (G)*15 (GR)*16 | Ground | Selector lever P/N position (A/T models) | Input | Selector lever | P or N position | 12 V |
| | | | | | Except P and N positions | 0 V |
| | | Park/neutral position switch (M/T models) | | Ignition switch ON | Control lever in neutral position | Battery voltage |
| | | | | | Control lever in any position other than neutral | 0 V |
| 141 (G) | Ground | Security indicator lamp | Output | Security indicator lamp | ON | 0 V |
| | | | | | Blinking |  JPMIA0014GB 11.3 V |
| | | | | | OFF | 12 V |
| 142 (O) | Ground | Combination switch OUTPUT 5 | Output | Combination switch (Wiper volume dial 4) | All switches OFF | 0 V |
| | | | | | Lighting switch 1ST |  JPMIA0031GB 10.7 V |
| | | | | | Lighting switch HI | |
| | | | | | Lighting switch 2ND | |
| | | | | | Turn signal switch RH | |

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 143 (P) | Ground | Combination switch OUTPUT 1 | Output | Combination switch | All switches OFF (Wiper volume dial 4) | 0 V |
| | | | | | Front wiper switch HI (Wiper volume dial 4) |  JPMIA0032GB 10.7 V |
| | | | | | Rear wiper switch INT (Wiper volume dial 4) | |
| | | | | | Any of the conditions below with all switches OFF<br>• Wiper volume dial 1<br>• Wiper volume dial 2<br>• Wiper volume dial 3<br>• Wiper volume dial 6<br>• Wiper volume dial 7 | |
| 144 (G) | Ground | Combination switch OUTPUT 2 | Output | Combination switch | All switches OFF (Wiper volume dial 4) | 0 V |
| | | | | | Front washer switch ON (Wiper volume dial 4) |  JPMIA0033GB 10.7 V |
| | | | | | Rear wiper switch ON (Wiper volume dial 4) | |
| | | | | | Rear washer switch ON (Wiper volume dial 4) | |
| | | | | | Any of the conditions below with all switches OFF<br>• Wiper volume dial 1<br>• Wiper volume dial 5<br>• Wiper volume dial 6 | |
| 145 (L) | Ground | Combination switch OUTPUT 3 | Output | Combination switch (Wiper volume dial 4) | All switches OFF | 0 V |
| | | | | | Front wiper switch AUTO |  JPMIA0034GB 10.7 V |
| | | | | | Front wiper switch LO | |
| | | | | | Lighting switch AUTO | |
| | | | | | Rear fog lamp switch ON | |
| 146 (SB) | Ground | Combination switch OUTPUT 4 | Output | Combination switch (Wiper volume dial 4) | All switches OFF | 0 V |
| | | | | | Front fog lamp switch ON |  JPMIA0035GB 10.7 V |
| | | | | | Lighting switch 2ND | |
| | | | | | Lighting switch PASS | |
| | | | | | Turn signal switch LH | |

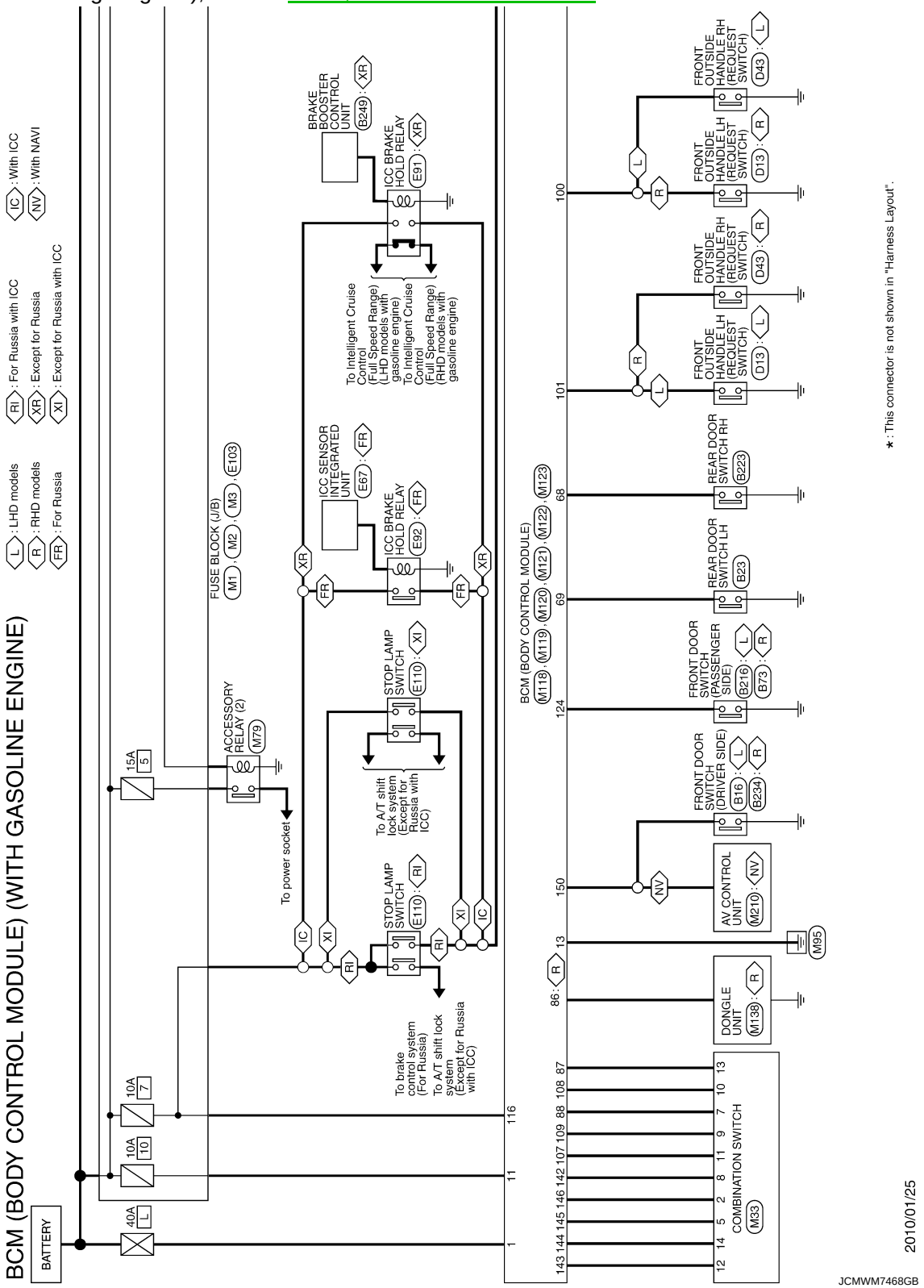
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 150 (GR) | Ground | Driver door switch | Input | Driver door switch | OFF (Door close) |  JPMIA0594GB 8.5 - 9.0 V |
| | | | | | ON (Door open) | 0 V |
| 151 (G) | Ground | Rear window defogger relay control | Output | Rear window defogger | Active | 0 V |
| | | | | | Not activated | Battery voltage |

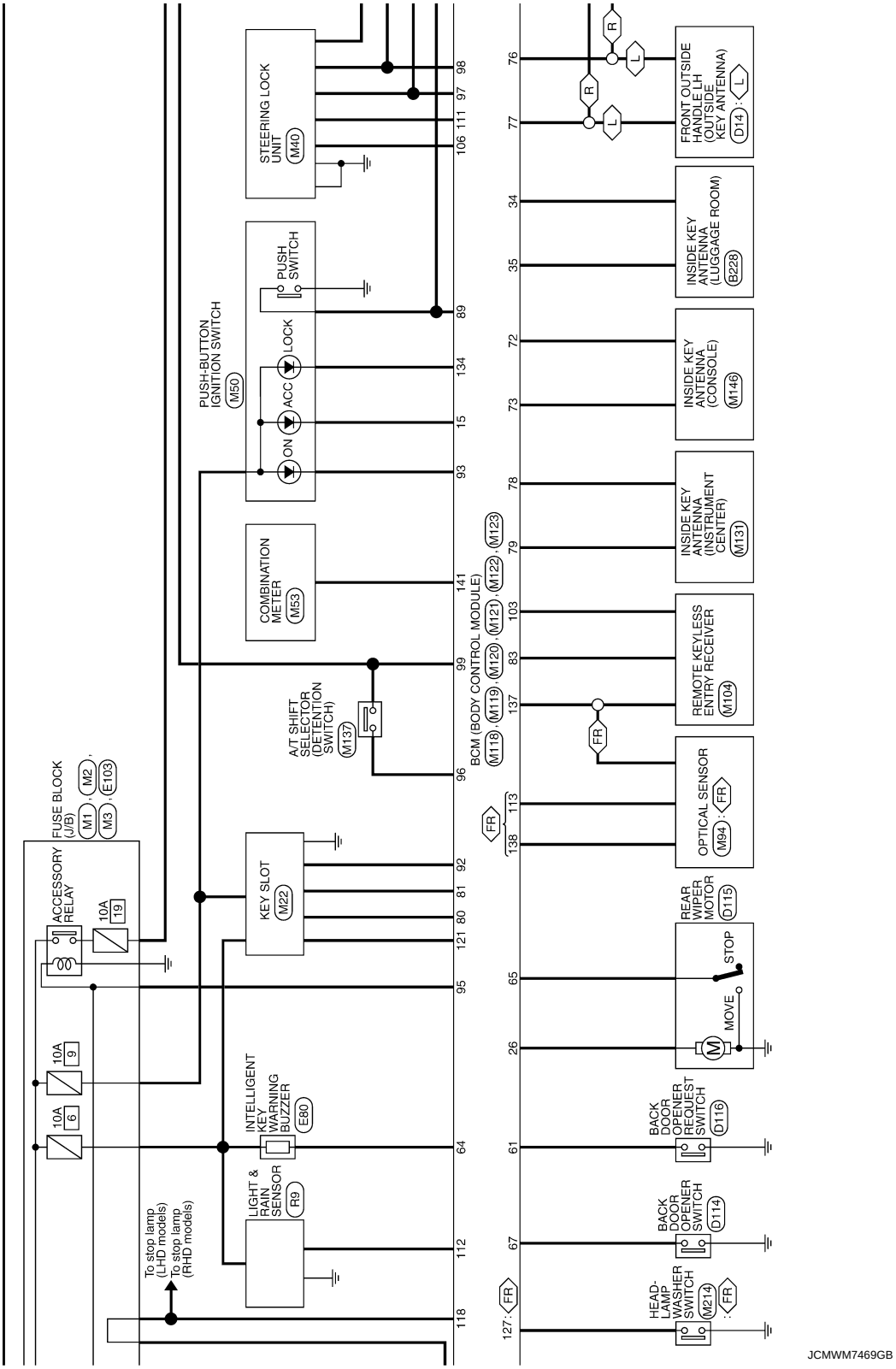
- *1: Only RHD models
- *2: LHD gasoline engine models
- *3: Except LHD gasoline engine models
- *4: LHD diesel engine modelss
- *5: Except LHD diesel engine models
- *6: LHD models
- *7: RHD models
- *8: RHD gasoline engine models
- *9: Except RHD gasoline engine models
- *10: RHD diesel engine modelss
- *11: Except RHD diesel engine models
- *12: For Russia
- *13: M/T models
- *14: LHD A/T gasoline engine models
- *15: LHD A/T diesel engine modelss
- *16: RHD A/T models

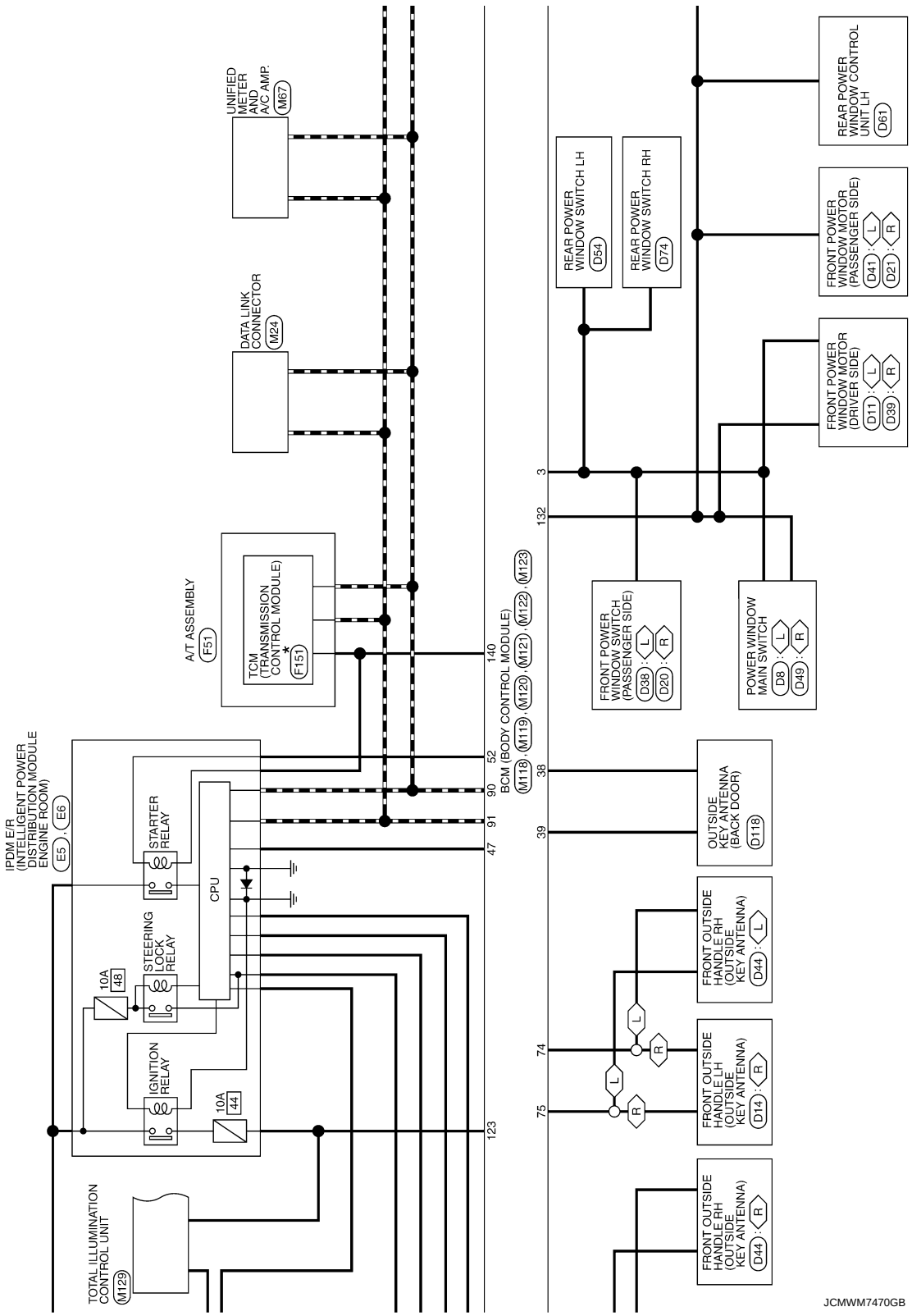
## Wiring Diagram - BCM (Gasoline Engine Models) -

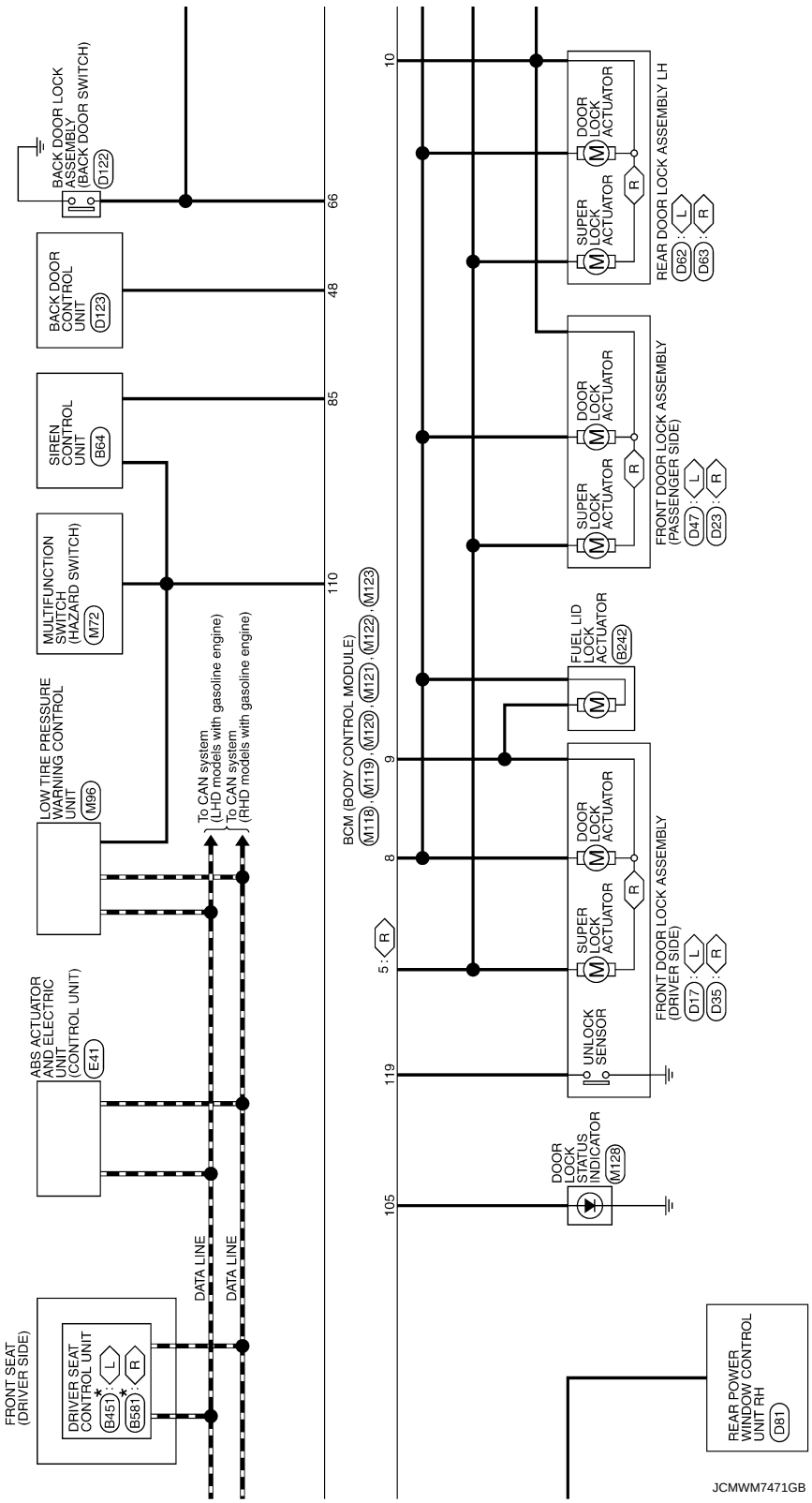
INFOID:0000000005406789

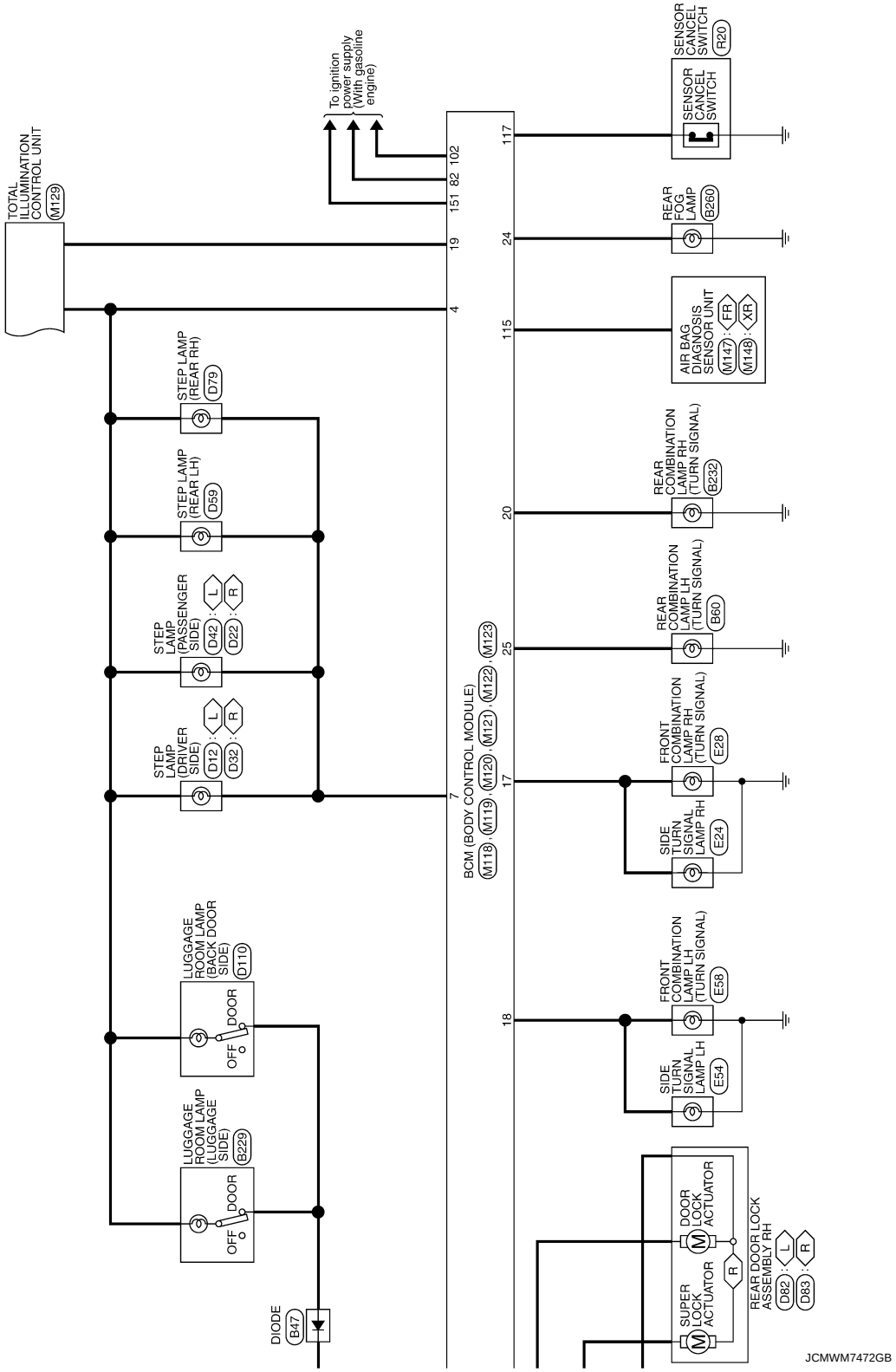
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".




FUSE BLOCK (J/B) (M1), (M2), (M3), (E103)
ACCESSORY RELAY
10A 19
10A 9
10A 6
To stop lamp (LHD models)
To stop lamp (RHD models)
INTELLIGENT KEY WARNING BUZZER (E80)
LIGHT & RAIN SENSOR (R9)
KEY SLOT (M22)
A/T SHIFT SELECTOR (DETENTION SWITCH) (M137)
PUSH-BUTTON IGNITION SWITCH (M50)
ON
ACC
LOCK
PUSH SWITCH
STEERING LOCK UNIT (M40)
COMBINATION METER (M53)
BCM (BODY CONTROL MODULE) (M118), (M119), (M120), (M121), (M122), (M123)
HEAD-LAMP WASHER SWITCH (M214)
BACK DOOR OPENER SWITCH (D114)
BACK DOOR OPENER REQUEST SWITCH (D116)
REAR WIPER MOTOR (D115)
STOP
MOVE
OPTICAL SENSOR (M94)
REMOTE KEYLESS ENTRY RECEIVER (M104)
INSIDE KEY ANTENNA (INSTRUMENT CENTER) (M131)
INSIDE KEY ANTENNA (CONSOLE) (M146)
INSIDE KEY ANTENNA (LUGGAGE ROOM) (B228)
FRONT OUTSIDE HANDLE LH (OUTSIDE KEY ANTENNA) (D14)
FR
R
L
JCMWM7469GB


UNIFIED METER AND A/C AMP. (M67)
DATA LINK CONNECTOR (M24)
A/T ASSEMBLY (F51)
TCM (TRANSMISSION CONTROL MODULE) (F151)
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (E5), (E6)
STARTER RELAY
CPU
STEERING LOCK RELAY
IGNITION RELAY
10A 48
10A 44
TOTAL ILLUMINATION CONTROL UNIT (M129)
BCM (BODY CONTROL MODULE) (M118), (M119), (M120), (M121), (M122), (M123)
140
52
90
91
47
123
3
132
38
39
74
75
REAR POWER WINDOW SWITCH LH (D54)
REAR POWER WINDOW SWITCH RH (D74)
FRONT POWER WINDOW SWITCH (PASSENGER SIDE) (D38), (D20)
POWER WINDOW MAIN SWITCH (D8), (D49)
OUTSIDE KEY ANTENNA (BACK DOOR) (D118)
FRONT OUTSIDE HANDLE RH (OUTSIDE KEY ANTENNA) (D44)
FRONT OUTSIDE HANDLE LH (OUTSIDE KEY ANTENNA) (D14)
FRONT OUTSIDE HANDLE RH (OUTSIDE KEY ANTENNA) (D44)
REAR POWER WINDOW CONTROL UNIT LH (D61)
FRONT POWER WINDOW MOTOR (PASSENGER SIDE) (D41), (D21)
FRONT POWER WINDOW MOTOR (DRIVER SIDE) (D11), (D39)
L
R
JCMWM7470GB

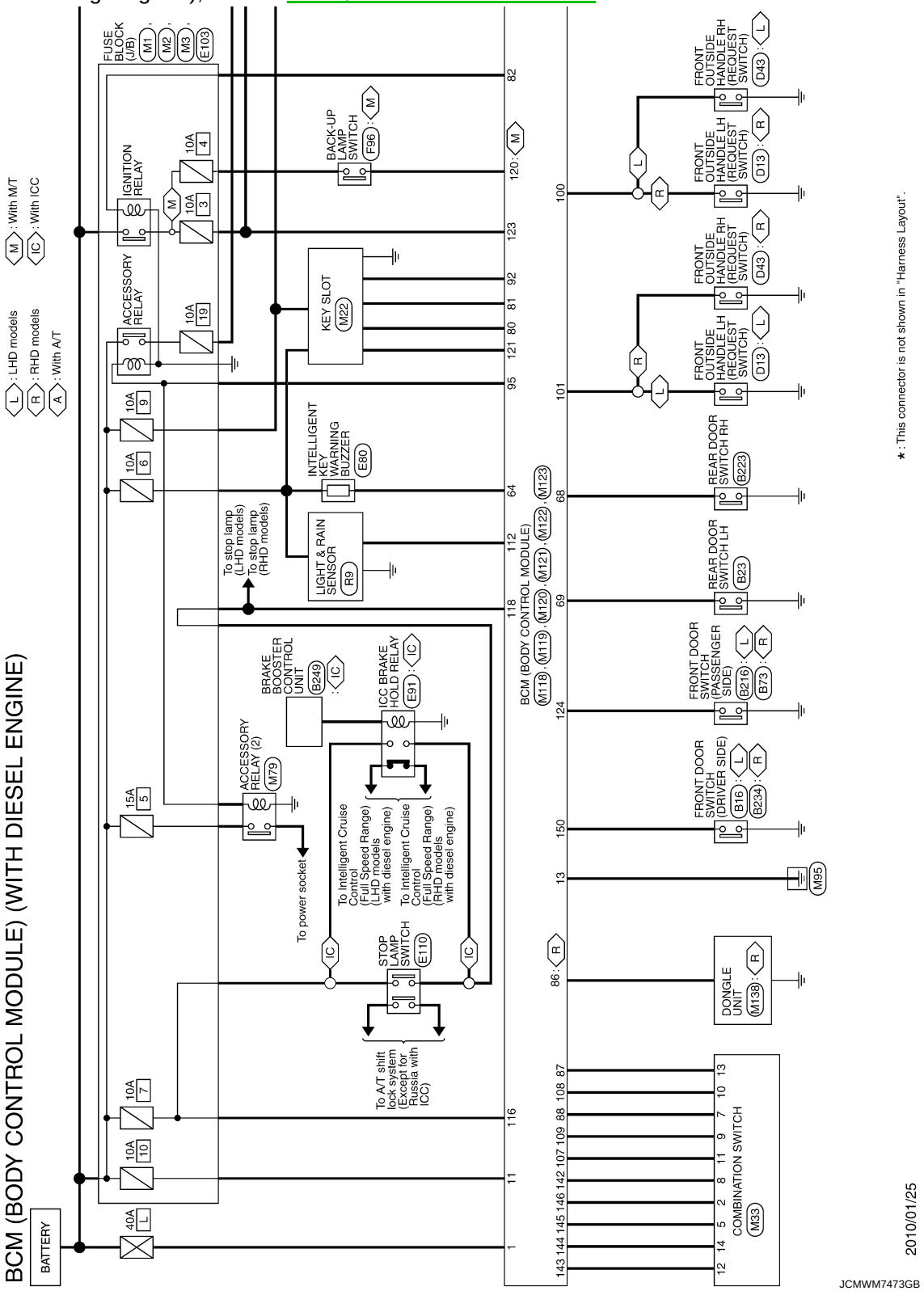

BACK DOOR LOCK ASSEMBLY (BACK DOOR SWITCH) D122
BACK DOOR CONTROL UNIT D123
SIREN CONTROL UNIT B64
MULTIFUNCTION SWITCH (HAZARD SWITCH) M72
LOW TIRE PRESSURE WARNING CONTROL UNIT M96
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) E41
FRONT SEAT (DRIVER SIDE)
DRIVER SEAT CONTROL UNIT B451 L B581 R
DATA LINE
DATA LINE
To CAN system (LHD models with gasoline engine)
To CAN system (RHD models with gasoline engine)
66
48
85
110
BCM (BODY CONTROL MODULE) (M118) (M119) (M120) (M121) (M122) (M123)
10
9
8
5 R
119
105
DOOR LOCK STATUS INDICATOR M128
UNLOCK SENSOR
SUPER LOCK ACTUATOR
DOOR LOCK ACTUATOR
R
FRONT DOOR LOCK ASSEMBLY (DRIVER SIDE) D17 L D35 R
FUEL LID LOCK ACTUATOR B242
FRONT DOOR LOCK ASSEMBLY (PASSENGER SIDE) D47 L D23 R
REAR DOOR LOCK ASSEMBLY LH D62 L D63 R
REAR POWER WINDOW CONTROL UNIT RH D81
JCMWM7471GB

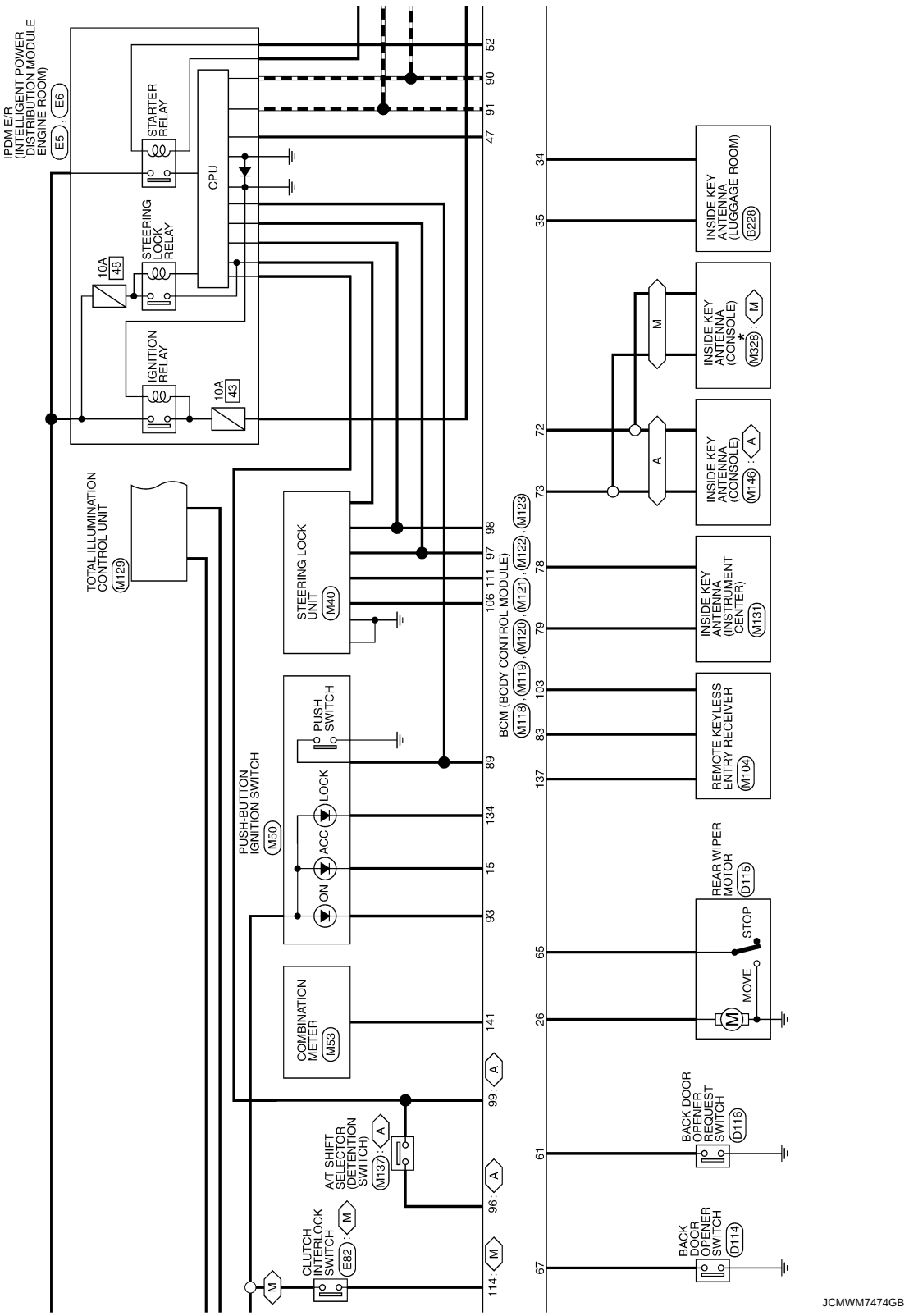

To ignition power supply (With gasoline engine)
TOTAL ILLUMINATION CONTROL UNIT (M129)
BCM (BODY CONTROL MODULE) (M118), (M119), (M120), (M121), (M122), (M123)
SENSOR CANCEL SWITCH (R20)
REAR FOG LAMP (B260)
AIR BAG DIAGNOSIS SENSOR UNIT (M147), (M148)
REAR COMBINATION LAMP RH (TURN SIGNAL) (B232)
REAR COMBINATION LAMP LH (TURN SIGNAL) (B60)
FRONT COMBINATION LAMP RH (TURN SIGNAL) (E28)
SIDE TURN SIGNAL LAMP RH (E24)
FRONT COMBINATION LAMP LH (TURN SIGNAL) (E58)
SIDE TURN SIGNAL LAMP LH (E54)
REAR DOOR LOCK ASSEMBLY RH (D82), (D83)
DOOR LOCK ACTUATOR
SUPER LOCK ACTUATOR
STEP LAMP (REAR RH) (D79)
STEP LAMP (REAR LH) (D59)
STEP LAMP (PASSENGER SIDE) (D42), (D22)
STEP LAMP (DRIVER SIDE) (D12), (D32)
LUGGAGE ROOM LAMP (BACK DOOR SIDE) (D110)
LUGGAGE ROOM LAMP (LUGGAGE SIDE) (B229)
DOOR
OFF
DIODE (B47)
JCMWM7472GB

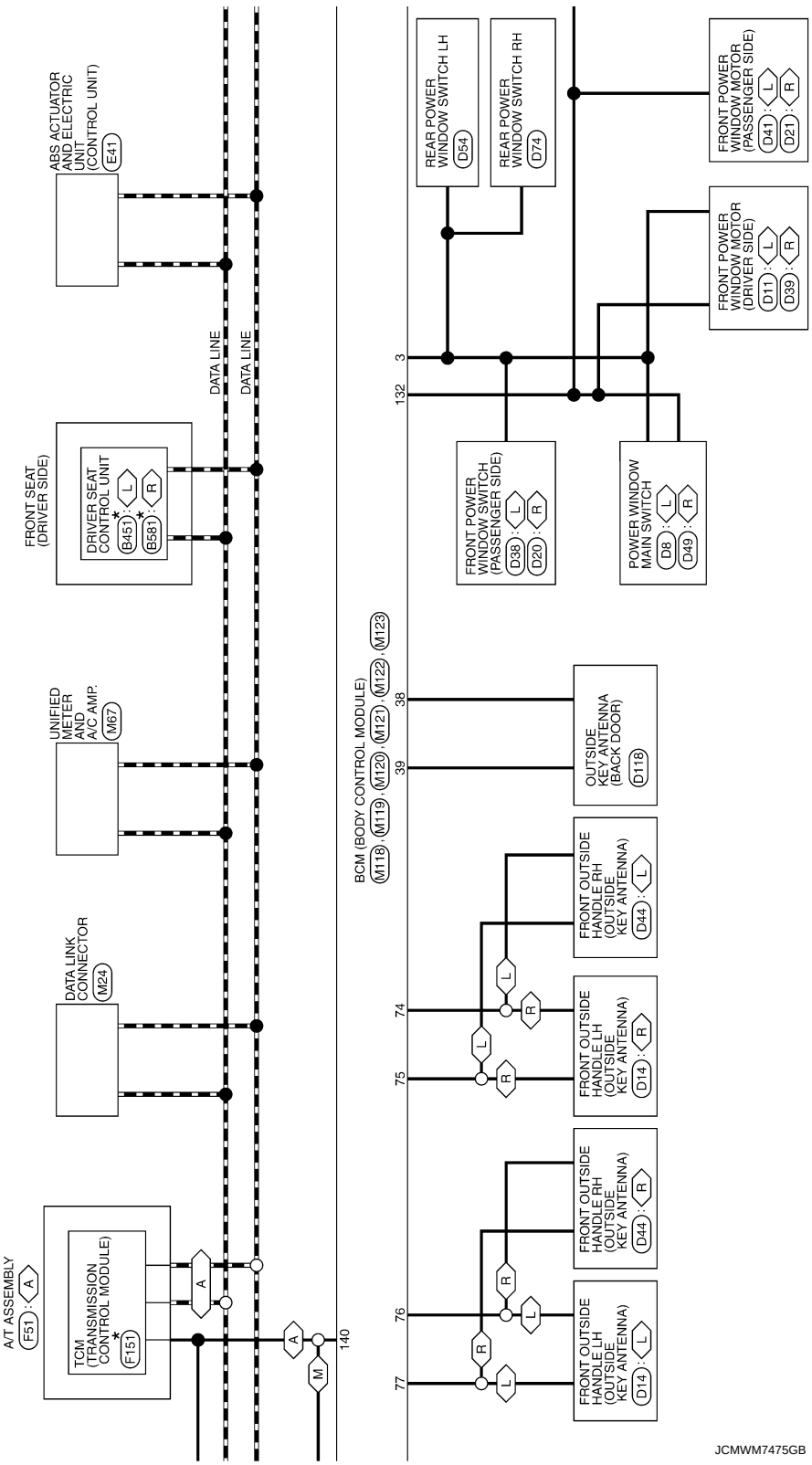
## Wiring Diagram - BCM (Diesel Engine Models) -

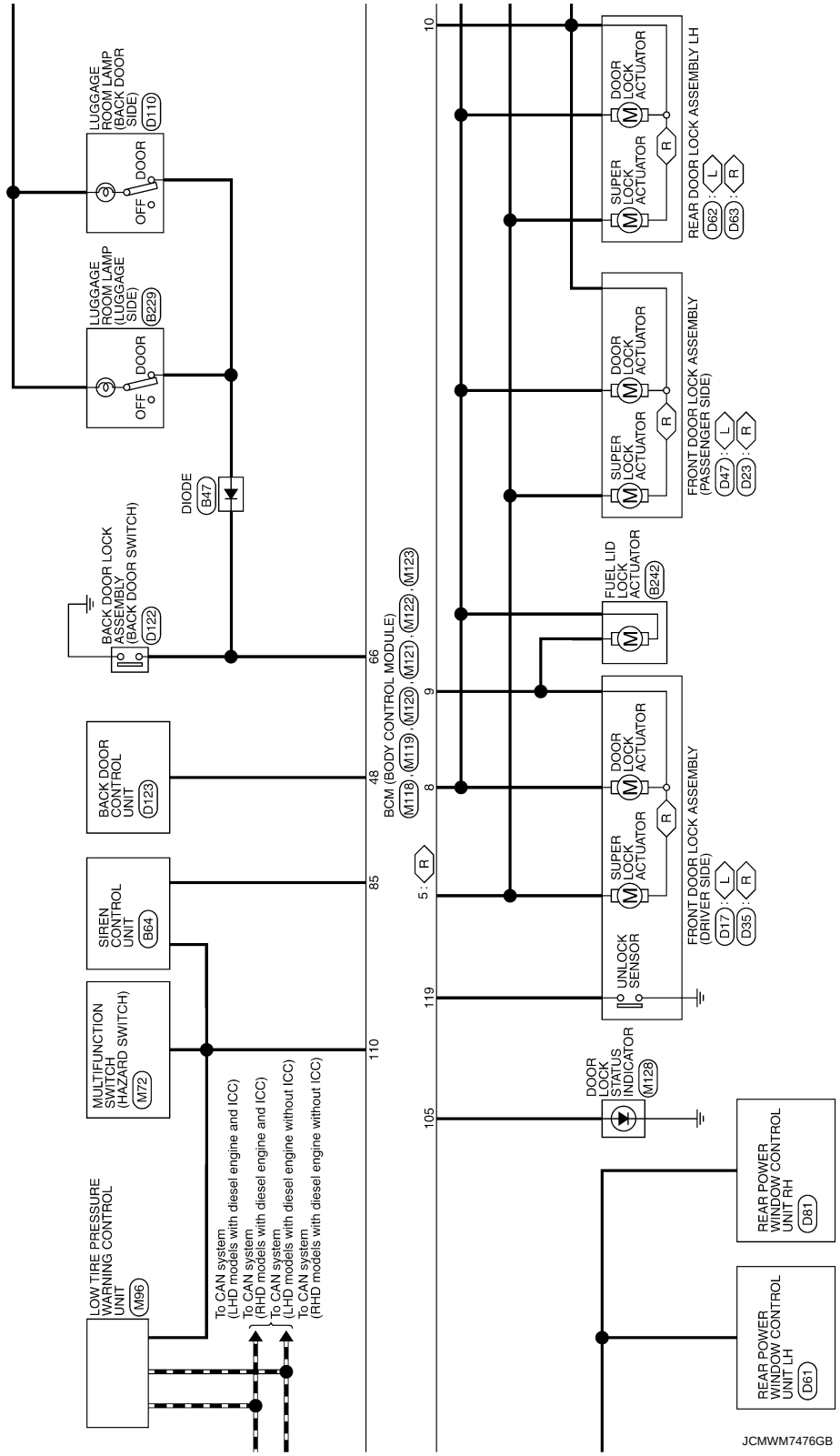
INFOID:0000000006091557

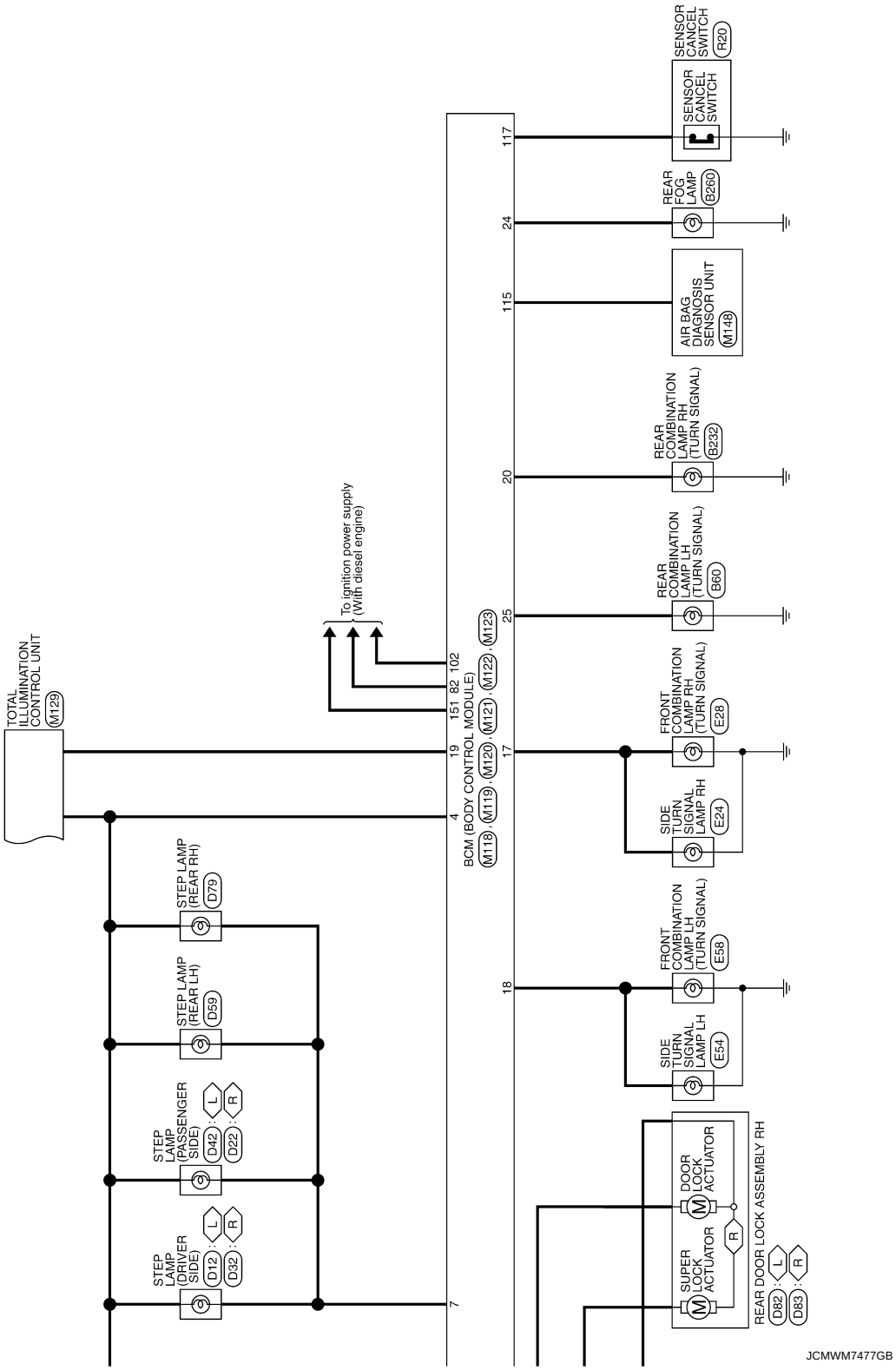
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".




IPDM E/R
(INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5 , E6
STARTER RELAY
CPU
STEERING LOCK RELAY
10A 48
IGNITION RELAY
10A 43
TOTAL ILLUMINATION CONTROL UNIT M129
STEERING LOCK UNIT M40
PUSH-BUTTON IGNITION SWITCH M50
PUSH SWITCH
LOCK
ACC
ON
COMBINATION METER M53
A/T SHIFT SELECTOR (DETENTION SWITCH) M137
CLUTCH INTERLOCK SWITCH E82
BCM (BODY CONTROL MODULE) M118, M119, M120, M121, M122, M123
INSIDE KEY ANTENNA (LUGGAGE ROOM) B228
INSIDE KEY ANTENNA (CONSOLE) M328
INSIDE KEY ANTENNA (CONSOLE) M146
INSIDE KEY ANTENNA (INSTRUMENT CENTER) M131
REMOTE KEYLESS ENTRY RECEIVER M104
REAR WIPER MOTOR D115
STOP
MOVE
BACK DOOR OPENER REQUEST SWITCH D116
BACK DOOR OPENER SWITCH D114
JCMWM7474GB


ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) E41
DATA LINE
DATA LINE
FRONT SEAT (DRIVER SIDE)
DRIVER SEAT CONTROL UNIT
B451 : L
B581 : R
UNIFIED METER AND A/C AMP. M67
DATA LINK CONNECTOR M24
A/T ASSEMBLY
F51 : A
TCM (TRANSMISSION CONTROL MODULE)
F151
A
A
M
140
BCM (BODY CONTROL MODULE)
M118, M119, M120, M121, M122, M123
38
39
74
75
76
77
3
132
OUTSIDE KEY ANTENNA (BACK DOOR)
D118
FRONT OUTSIDE HANDLE RH (OUTSIDE KEY ANTENNA)
D44 : L
FRONT OUTSIDE HANDLE LH (OUTSIDE KEY ANTENNA)
D14 : R
FRONT OUTSIDE HANDLE RH (OUTSIDE KEY ANTENNA)
D44 : R
FRONT OUTSIDE HANDLE LH (OUTSIDE KEY ANTENNA)
D14 : L
REAR POWER WINDOW SWITCH LH
D54
REAR POWER WINDOW SWITCH RH
D74
FRONT POWER WINDOW SWITCH (PASSENGER SIDE)
D38 : L
D20 : R
POWER WINDOW MAIN SWITCH
D8 : L
D49 : R
FRONT POWER WINDOW MOTOR (DRIVER SIDE)
D11 : L
D39 : R
FRONT POWER WINDOW MOTOR (PASSENGER SIDE)
D41 : L
D21 : R
JCMWM7475GB


LUGGAGE ROOM LAMP (BACK DOOR SIDE) D110
LUGGAGE ROOM LAMP (LUGGAGE SIDE) B229
OFF
DOOR
DIODE B47
BACK DOOR LOCK ASSEMBLY (BACK DOOR SWITCH) D122
BACK DOOR CONTROL UNIT D123
SIREN CONTROL UNIT B64
MULTIFUNCTION SWITCH (HAZARD SWITCH) M72
LOW TIRE PRESSURE WARNING CONTROL UNIT M96
To CAN system (LHD models with diesel engine and ICC)
To CAN system (RHD models with diesel engine and ICC)
To CAN system (LHD models with diesel engine without ICC)
To CAN system (RHD models with diesel engine without ICC)
BCM (BODY CONTROL MODULE) (M118) (M119) (M120) (M121) (M122) (M123)
66
48
85
110
10
9
8
5 : R
119
105
DOOR LOCK STATUS INDICATOR (M128)
UNLOCK SENSOR
SUPER LOCK ACTUATOR
DOOR LOCK ACTUATOR
R
FRONT DOOR LOCK ASSEMBLY (DRIVER SIDE) D17 : L D35 : R
FUEL LID LOCK ACTUATOR B242
FRONT DOOR LOCK ASSEMBLY (PASSENGER SIDE) D47 : L D23 : R
REAR DOOR LOCK ASSEMBLY LH D62 : L D63 : R
REAR POWER WINDOW CONTROL UNIT RH D81
REAR POWER WINDOW CONTROL UNIT LH D61
JCMWM7476GB




## Fail-safe

*INFOID:0000000005406790*

FAIL-SAFE CONTROL BY DTC

BCM performs fail-safe control when any DTC are detected.

| Display contents of CONSULT | Fail-safe | Cancellation |
|---|---|---|
| B2013: ID DISCORD BCM-S/L | Inhibit engine cranking | Erase DTC |
| B2014: CHAIN OF S/L-BCM | Inhibit engine cranking | Erase DTC |
| B2190: NATS ANTENNA AMP | Inhibit engine cranking | Erase DTC |
| B2191: DIFFERENCE OF KEY | Inhibit engine cranking | Erase DTC |
| B2192: ID DISCORD BCM-ECM | Inhibit engine cranking | Erase DTC |
| B2193: CHAIN OF BCM-ECM | Inhibit engine cranking | Erase DTC |
| B2195: ANTI SCANNING | Inhibit engine cranking | Ignition switch ON → OFF |
| B2196: DONGLE NG | Inhibit engine cranking | Erase DTC |
| B2557: VEHICLE SPEED | Inhibit steering lock | When normal vehicle speed signals are received from ABS actuator and electric unit (control unit) for 500 ms |
| B2560: STARTER CONT RELAY | Inhibit engine cranking | 500 ms after the following CAN signal communication status becomes consistent<br>• Starter control relay signal<br>• Starter relay status signal |
| B2601: SHIFT POSITION | Inhibit steering lock | 500 ms after the following signal reception status becomes consistent<br>• Selector lever P position switch signal<br>• P range signal (CAN) |
| B2602: SHIFT POSITION | Inhibit steering lock | 5 seconds after the following BCM recognition conditions are fulfilled<br>• Ignition switch is in the ON position<br>• Selector lever P position switch signal: Except P position (12 V)<br>• Vehicle speed: 4 km/h (2.5 MPH) or more |
| B2603: SHIFT POSI STATUS | Inhibit steering lock | 500 ms after the following BCM recognition conditions are fulfilled<br>• Ignition switch is in the ON position<br>• Selector lever P position switch signal: Except P position (12 V)<br>• Selector lever P/N position signal: Except P and N positions (0 V) |
| B2604: PNP/CLUTCH SW | Inhibit steering lock | 500 ms after any of the following BCM recognition conditions are fulfilled<br>• Status 1<br>- Ignition switch is in the ON position<br>- Selector lever P/N position signal: P and N position (12 V)<br>- P range signal or N range signal (CAN): ON<br>• Status 2<br>- Ignition switch is in the ON position<br>- Selector lever P/N position signal: Except P and N positions (0 V)<br>- P range signal and N range signal (CAN): OFF |
| B2605: PNP/CLUTCH SW | Inhibit steering lock | 500 ms after any of the following BCM recognition conditions are fulfilled<br>• Ignition switch is in the ON position<br>- Power position: IGN<br>- Selector lever P/N position signal: Except P and N positions (0 V)<br>- Interlock/PNP switch signal (CAN): OFF<br>• Status 2<br>- Ignition switch is in the ON position<br>- Selector lever P/N position signal: P or N position (12 V)<br>- Interlock/PNP switch signal (CAN): ON |
| B2606: S/L RELAY | Inhibit engine cranking | 500 ms after the following CAN signal communication status becomes consistent<br>• Steering lock relay signal (Request signal)<br>• Steering lock relay signal (Condition signal) |
| B2607: S/L RELAY | Inhibit engine cranking | 500 ms after the following CAN signal communication status becomes consistent<br>• Steering lock relay signal (Request signal)<br>• Steering lock relay signal (Condition signal) |

| Display contents of CONSULT | Fail-safe | Cancellation |
|---|---|---|
| B2608: STARTER RELAY | Inhibit engine cranking | 500 ms after the following signal communication status becomes consistent<br>• Starter motor relay control signal<br>• Starter relay status signal (CAN) |
| B2609: S/L STATUS | • Inhibit engine cranking<br>• Inhibit steering lock | When the following steering lock conditions agree<br>• BCM steering lock control status<br>• Steering lock condition No. 1 signal status<br>• Steering lock condition No. 2 signal status |
| B260A: IGNITION RELAY | Inhibit engine cranking | 500 ms after the following conditions are fulfilled<br>• IGN relay (IPDM E/R) control signal: OFF (12 V)<br>• Ignition ON signal (CAN to IPDM E/R): OFF (Request signal)<br>• Ignition ON signal (CAN from IPDM E/R): OFF (Condition signal) |
| B260F: ENG STATE SIG LOST | Maintains the power supply position attained at the time of DTC detection | When any of the following conditions are fulfilled<br>• Power position changes to ACC<br>• Receives engine status signal (CAN) |
| B2612: S/L STATUS | • Inhibit engine cranking<br>• Inhibit steering lock | When any of the following conditions are fulfilled<br>• Steering lock unit status signal (CAN) is received normally<br>• The BCM steering lock control status matches the steering lock status recognized by the steering lock unit status signal (CAN from IPDM E/R) |
| B2617: BCM | Inhibit engine cranking | 1 second after the starter motor relay control inside BCM becomes normal |
| B2618: BCM | Inhibit engine cranking | 1 second after the ignition relay (IPDM E/R) control inside BCM becomes normal |
| B2619: BCM | Inhibit engine cranking | 1 second after the steering lock unit power supply output control inside BCM becomes normal |
| B261E: VEHICLE TYPE | Inhibit engine cranking | BCM initialization |
| B261F: ASCD CNCL/CLTCH SW | Inhibit steering lock | When any of the following conditions are fulfilled<br>• Power supply position: ON<br>• Receives clutch switch signal (CAN from ECM): OFF |
| B2620: NEUTRAL SW | Inhibit engine cranking (Only when try to start the engine while depressing brake pedal and shifting to the neutral position) | When any of the following BCM recognition conditions are fulfilled<br>• Status 1<br>- Back up lamp switch signal: ON (Battery voltage)<br>- Park/neutral position switch signal: OFF (0 V)<br>• Status 2<br>- Back-up lamp switch signal: OFF (0 V)<br>- Park/neutral position switch signal: ON (Battery voltage)<br>• Status 3<br>- Back-up lamp switch signal: OFF (0 V)<br>- Park/neutral position switch signal: OFF (0 V) |
| B26E8: CLUTCH SW | Inhibit engine cranking | When any of the following BCM recognition conditions are fulfilled<br>• Status 1<br>- ASCD clutch switch signal (CAN from ECM): ON<br>- Clutch interlock switch signal: OFF (0 V)<br>• Status 2<br>- ASCD clutch switch signal (CAN from ECM): OFF<br>- Clutch interlock switch signal: ON (Battery voltage) |
| B26E9: S/L STATUS | • Inhibit engine cranking<br>• Inhibit steering lock | When BCM transmits the LOCK request signal to steering lock unit, and receives LOCK response signal from steering lock unit, the following conditions are fulfilled<br>• Steering condition No. 1 signal: LOCK (0V)<br>• Steering condition No. 2 signal: LOCK (12 V) |

## FAIL-SAFE CONTROL BY LIGHT AND RAIN SENSOR MALFUNCTION

BCM detects the light and rain sensor serial link error and the light and rain sensor malfunction.
BCM controls the following fail-safe when light and rain sensor has a malfunction.

Fail-safe Control
• Auto light control: Headlamp low beam, parking lamp, license plate lamp and tail lamp are turned ON.

- Front wiper control
- Front wiper switch AUTO and sensing rain drop: The condition just before the activation of fail-safe is maintained until the front wiper switch is turned OFF.
- Front wiper switch AUTO and not sensing rain drop: Front wiper is LO operation until the front wiper switch is turned off.

### REAR WIPER MOTOR PROTECTION

BCM detects the rear wiper stopping position according to the rear wiper stop position signal.
When the rear wiper stop position signal does not change for more than 5 seconds while driving the rear wiper, BCM stops power supply to protect the rear wiper motor.

Condition of cancellation
1. More than 1 minute is passed after the rear wiper stop.
2. Turn rear wiper switch OFF.
3. Operate the rear wiper switch or rear washer switch.

## DTC Inspection Priority Chart

INFOID:0000000005406791

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

| Priority | DTC |
|---|---|
| 1 | B2562: LOW VOLTAGE |
| 2 | • U1000: CAN COMM<br>• U1010: CONTROL UNIT(CAN) |
| 3 | • B2190: NATS ANTENNA AMP<br>• B2191: DIFFERENCE OF KEY<br>• B2192: ID DISCORD BCM-ECM<br>• B2193: CHAIN OF BCM-ECM<br>• B2195: ANTI SCANNING<br>• B2196: DONGLE NG |

| Priority | DTC |
|---|---|
| 4 | • B2013: ID DISCORD BCM-S/L<br>• B2014: CHAIN OF S/L-BCM<br>• B2553: IGNITION RELAY<br>• B2555: STOP LAMP<br>• B2556: PUSH-BTN IGN SW<br>• B2557: VEHICLE SPEED<br>• B2560: STARTER CONT RELAY<br>• B2601: SHIFT POSITION<br>• B2602: SHIFT POSITION<br>• B2603: SHIFT POSI STATUS<br>• B2604: PNP/CLUTCH SW<br>• B2605: PNP/CLUTCH SW<br>• B2606: S/L RELAY<br>• B2607: S/L RELAY<br>• B2608: STARTER RELAY<br>• B2609: S/L STATUS<br>• B260A: IGNITION RELAY<br>• B260B: STEERING LOCK UNIT<br>• B260C: STEERING LOCK UNIT<br>• B260D: STEERING LOCK UNIT<br>• B260F: ENG STATE SIG LOST<br>• B2612: S/L STATUS<br>• B2614: BCM<br>• B2615: BCM<br>• B2616: BCM<br>• B2617: BCM<br>• B2618: BCM<br>• B2619: BCM<br>• B261A: PUSH-BTN IGN SW<br>• B261E: VEHICLE TYPE<br>• B261F: ASCD CNCL/CLTCH SW<br>• B2620: NEUTRAL SW<br>• B26E8: CLUTCH SW<br>• B26E9: S/L STATUS<br>• B26EA: KEY REGISTRATION<br>• U0415: VEHICLE SPEED |
| 5 | • B2621: INSIDE ANTENNA<br>• B2622: INSIDE ANTENNA<br>• B2623: INSIDE ANTENNA |
| 6 | B26E7: TPMS CAN COMM |

## DTC Index

INFOID:0000000005406792

**NOTE:**
The details of time display are as follows.
- CRNT: A malfunction is detected now.
- PAST: A malfunction was detected in the past.

IGN counter is displayed on Freeze Frame Data. For details of Freeze Frame Data, refer to WW-19, "COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM)".

| CONSULT display | Fail-safe | Freeze Frame Data<br>•Vehicle Speed<br>•Odo/Trip Meter<br>•Vehicle Condition | Intelligent Key warning lamp ON | Reference page |
|---|---|---|---|---|
| No DTC is detected.<br>Further testing<br>may be required. | — | — | — | — |
| U1000: CAN COMM | — | — | — | BCS-40 |
| U1010: CONTROL UNIT(CAN) | — | — | — | BCS-41 |
| U0415: VEHICLE SPEED | — | — | — | BCS-42 |
| B2013: ID DISCORD BCM-S/L | × | × | — | SEC-56 |

| CONSULT display | Fail-safe | Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle Condition | Intelligent Key warning lamp ON | Reference page |
|---|---|---|---|---|
| B2014: CHAIN OF S/L-BCM | × | × | — | SEC-57 |
| B2190: NATS ANTENNA AMP | × | — | — | SEC-47 |
| B2191: DIFFERENCE OF KEY | × | — | — | SEC-50 |
| B2192: ID DISCORD BCM-ECM | × | — | — | SEC-51 |
| B2193: CHAIN OF BCM-ECM | × | — | — | SEC-52 |
| B2195: ANTI SCANNING | × | — | — | SEC-53 |
| B2196: DONGLE NG | × | — | — | SEC-54 |
| B2553: IGNITION RELAY | — | × | — | PCS-55 |
| B2555: STOP LAMP | — | × | — | SEC-60 |
| B2556: PUSH-BTN IGN SW | — | × | × | SEC-62 |
| B2557: VEHICLE SPEED | × | × | × | SEC-64 |
| B2560: STARTER CONT RELAY | × | × | × | SEC-65 |
| B2562: LOW VOLTAGE | — | × | — | BCS-43 |
| B2601: SHIFT POSITION | × | × | × | SEC-66 |
| B2602: SHIFT POSITION | × | × | × | SEC-69 |
| B2603: SHIFT POSI STATUS | × | × | × | SEC-71 |
| B2604: PNP/CLUTCH SW | × | × | × | SEC-74 |
| B2605: PNP/CLUTCH SW | × | × | × | SEC-76 |
| B2606: S/L RELAY | × | × | × | SEC-78 |
| B2607: S/L RELAY | × | × | × | SEC-79 |
| B2608: STARTER RELAY | × | × | × | SEC-81 |
| B2609: S/L STATUS | × | × | × | SEC-83 |
| B260A: IGNITION RELAY | × | × | × | PCS-57 |
| B260B: STEERING LOCK UNIT | — | × | × | SEC-87 |
| B260C: STEERING LOCK UNIT | — | × | × | SEC-88 |
| B260D: STEERING LOCK UNIT | — | × | × | SEC-89 |
| B260F: ENG STATE SIG LOST | × | × | × | SEC-90 |
| B2612: S/L STATUS | × | × | × | SEC-91 |
| B2614: BCM | — | × | × | PCS-59 |
| B2615: BCM | — | × | × | PCS-61 |
| B2616: BCM | — | × | × | PCS-63 |
| B2617: BCM | × | × | × | SEC-95 |
| B2618: BCM | × | × | × | PCS-65 |
| B2619: BCM | × | × | × | SEC-97 |
| B261A: PUSH-BTN IGN SW | — | × | × | PCS-66 |
| B261E: VEHICLE TYPE | × | × | × (Turn ON for 15 seconds) | SEC-98 |
| B261F: ASCD CNCL/CLTCH SW | × | × | × | SEC-99 |
| B2620: NEUTRAL SW | × | × | × | SEC-101 |
| B2621: INSIDE ANTENNA | — | × | — | DLK-68*1 DLK-326*2 |
| B2622: INSIDE ANTENNA | — | × | — | DLK-70*1 DLK-328*2 |

| CONSULT display | Fail-safe | Freeze Frame Data<br>•Vehicle Speed<br>•Odo/Trip Meter<br>•Vehicle Condition | Intelligent Key warning lamp ON | Reference page |
|---|---|---|---|---|
| B2623: INSIDE ANTENNA | — | × | — | DLK-72*1<br>DLK-330*2 |
| B26E7: TPMS CAN COMM | — | — | — | BCS-44 |
| B26E8: CLUTCH SW | × | × | × | SEC-104 |
| B26E9: S/L STATUS | × | × | × (Turn ON for 15 seconds) | SEC-106 |
| B26EA: KEY REGISTRATION | — | × | × (Turn ON for 15 seconds) | SEC-107 |

- *1: With super lock
- *2: Without super lock

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

## Reference Value

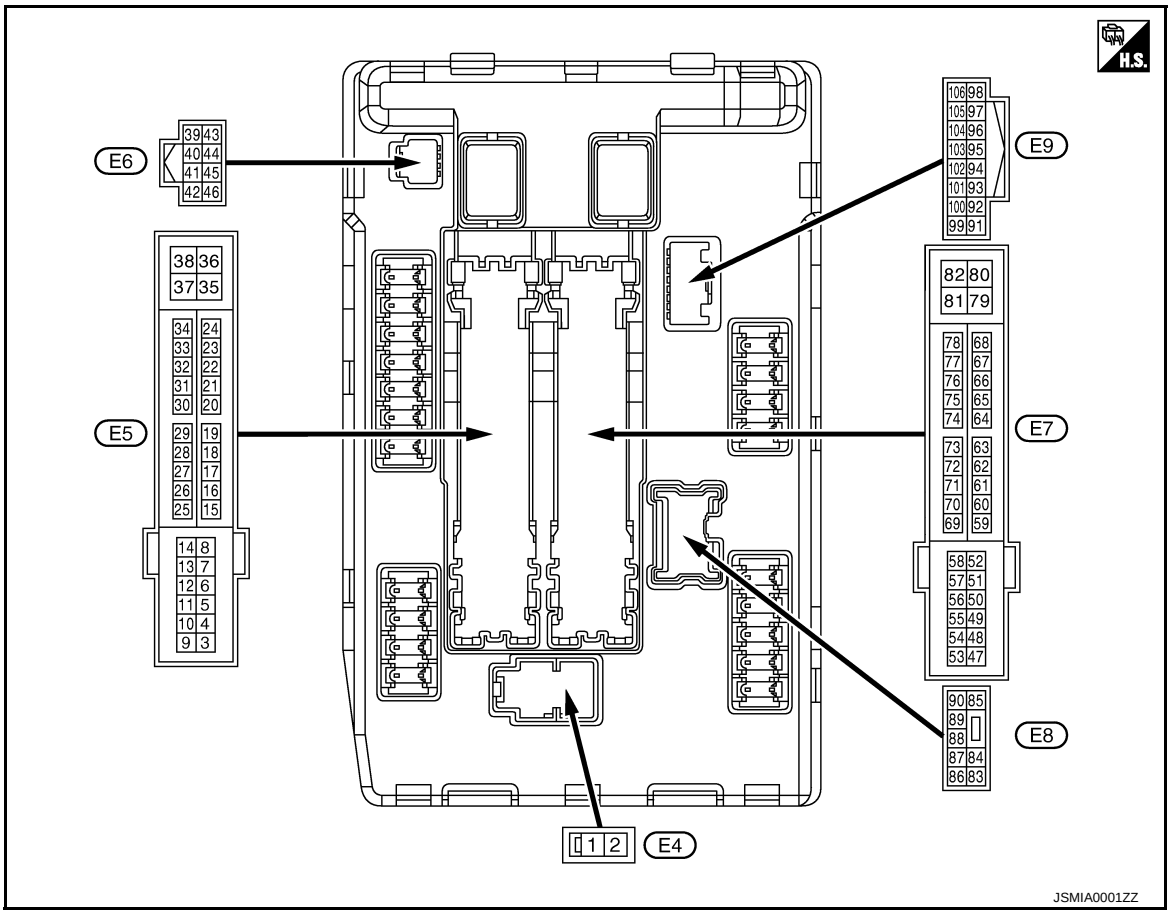
INFOID:0000000005406795

### VALUES ON THE DIAGNOSIS TOOL

| Monitor Item | Condition | | Value/Status |
|---|---|---|---|
| RAD FAN REQ | Engine idle speed | Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc. | 0 – 100 % |
| AC COMP REQ | Engine running | A/C switch OFF | Off |
| | | A/C switch ON (Compressor is operating) | On |
| TAIL&CLR REQ | Lighting switch OFF | | Off |
| | Lighting switch 1ST, 2ND, HI or AUTO (light is illuminated) | | On |
| HL LO REQ | Lighting switch OFF | | Off |
| | Lighting switch 2ND HI or AUTO (light is illuminated) | | On |
| | Daytime running light system is operated | | |
| HL HI REQ | Lighting switch OFF | | Off |
| | Lighting switch HI | | On |
| FR FOG REQ | Lighting switch 2ND or AUTO (light is illuminated) | Front fog lamp switch OFF | Off |
| | | Front fog lamp switch ON | On |
| FR WIP REQ | Ignition switch ON | Front wiper switch OFF | Stop |
| | | Front wiper switch AUTO | 1LOW |
| | | Front wiper switch LO | Low |
| | | Front wiper switch HI | Hi |
| WIP AUTO STOP | Ignition switch ON | Front wiper stop position | STOP P |
| | | Any position other than front wiper stop position | ACT P |
| WIP PROT | Ignition switch ON | Front wiper operates normally | Off |
| | | Front wiper stops at fail-safe operation | BLOCK |
| IGN RLY1 -REQ | Ignition switch OFF or ACC | | Off |
| | Ignition switch ON | | On |
| IGN RLY | Ignition switch OFF or ACC | | Off |
| | Ignition switch ON | | On |
| PUSH SW | Release the push-button ignition switch | | Off |
| | Press the push-button ignition switch | | On |
| INTER/NP SW | Ignition switch ON | Selector lever in any position other than P or N (A/T models) | Off |
| | | Release clutch pedal (M/T models) | |
| | | Selector lever in P or N position (A/T models) | On |
| | | Depress clutch pedal (M/T models) | |
| ST RLY CONT | Ignition switch ON | | Off |
| | At engine cranking | | On |

| Monitor Item | Condition | | Value/Status |
|---|---|---|---|
| IHBT RLY -REQ | Ignition switch ON | | Off |
| | At engine cranking | | On |
| ST/INHI RLY | Ignition switch ON | | Off |
| | At engine cranking | | INHI → ST |
| | The status of starter relay or starter control relay cannot be recognized by the battery voltage malfunction, etc. when the starter relay is ON and the starter control relay is OFF | | UNKWN |
| DETENT SW | Ignition switch ON | • Press the selector button with selector lever in P position<br>• Selector lever in any position other than P | Off |
| | Release the selector button with selector lever in P position<br>**NOTE:**<br>Fixed On for M/T models | | On |
| S/L RLY -REQ | None of the conditions below are present | | Off |
| | • Open the driver door after the ignition switch is turned OFF (for a few seconds)<br>• Press the push-button ignition switch when the steering lock is activated | | On |
| S/L STATE | Steering lock is activated | | LOCK |
| | Steering lock is deactivated | | UNLOCK |
| | [DTC: B210A] is detected | | UNKWN |
| DTRL REQ<br>**NOTE:**<br>This item is monitored only on the vehicle with the daytime running light system. | Daytime running light system is not operated with ignition switch OFF | | Off |
| | Any of the condition below<br>• Daytime running light system is operated<br>• Light switch 1ST, 2ND or AUTO (light is illuminated) | | On |
| OIL P SW | Ignition switch OFF, ACC or engine running | | Open |
| | Ignition switch ON | | Close |
| HOOD SW | Close the hood | | Off |
| | Open the hood | | On |
| HL WASHER REQ | Not operating | | Off |
| | Headlamp washer operating | | On |
| THFT HRN REQ | Not operation | | Off |
| | • Panic alarm is activated<br>• Horn is activated with VEHICLE SECURITY (THEFT WARNING) SYSTEM | | On |
| HORN CHIRP | **NOTE:**<br>The item is indicated, but not monitored. | | Off |
| CRNRNG LMP REQ | **NOTE:**<br>The item is indicated, but not monitored. | | Off |

## TERMINAL LAYOUT



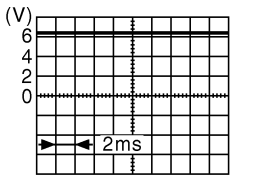
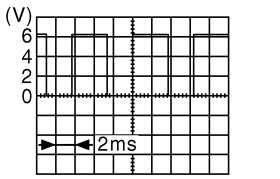
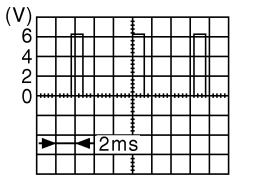

## PHYSICAL VALUES

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| | | Signal name | Input/ Output | | | |
| + | – | | | | | |
| 1 (W) | Ground | Battery power supply | Input | Ignition switch OFF | | Battery voltage |
| 2 (L) | Ground | Battery power supply | Input | Ignition switch OFF | | Battery voltage |
| 4 (V) | Ground | Front wiper LO | Output | Ignition switch ON | Front wiper switch OFF | 0 V |
| | | | | | Front wiper switch LO | Battery voltage |
| 5 (L) | Ground | Front wiper HI | Output | Ignition switch ON | Front wiper switch OFF | 0 V |
| | | | | | Front wiper switch HI | Battery voltage |
| 6*1 (SB) | Ground | Daytime running light relay | Input | Ignition switch OFF | | Battery voltage |
| 7 (R) | Ground | Illuminations*1 | Output | Ignition switch ON | Lighting switch OFF | 0 V |
| | | Tail, license plate lamps & illuminations*2 | | | Lighting switch 1ST | Battery voltage |
| 10 (P)*8 (SB)*11 (O)*13 | Ground | ECM relay power supply | Output | Ignition switch OFF (More than a few seconds after turning ignition switch OFF) | | 0 V |
| | | | | • Ignition switch ON<br>• Ignition switch OFF (For a few seconds after turning ignition switch OFF) | | Battery voltage |

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 11 (BR) | Ground | Steering lock unit power supply | Output | Ignition switch OFF | A few seconds after opening the driver door | Battery voltage |
| | | | | Ignition switch LOCK | Press the push-button ignition switch | Battery voltage |
| | | | | Ignition switch ACC or ON | | 0 V |
| 12 (B)*7 (B/W)*8 | Ground | Ground | — | Ignition switch ON | | 0 V |
| 13 (Y)*7 (GR)*8 | Ground | Fuel pump power supply | Output | Approximately 1 second or more after turning the ignition switch ON | | 0 V |
| | | | | • Approximately 1 second after turning the ignition switch ON<br>• Engine running | | Battery voltage |
| 15 (W) | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V |
| | | | | Ignition switch ON | | Battery voltage |
| 16 (LG) | Ground | Front wiper stop position | Input | Ignition switch ON | Front wiper stop position | 0 V |
| | | | | | Any position other than front wiper stop position | Battery voltage |
| 17 (G) | Ground | Headlamp washer relay control | Output | Ignition switch ON | Headlamp washer deactivated | Battery voltage |
| | | | | | Headlamp washer activated | 0 V |
| 19*7 (W)*3 (V)*4 | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V |
| | | | | Ignition switch ON | | Battery voltage |
| 25 (G) | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V |
| | | | | Ignition switch ON | | Battery voltage |
| 26 (R) | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V |
| | | | | Ignition switch ON | | Battery voltage |
| 27 (Y)*3 (LG)*4 | Ground | Ignition relay monitor | Input | Ignition switch OFF or ACC | | Battery voltage |
| | | | | Ignition switch ON | | 0 V |
| 28 (O) | Ground | Push-button ignition switch | Input | Press the push-button ignition switch | | 0 V |
| | | | | Release the push-button ignition switch | | Battery voltage |
| 30 (GR)*5 (V)*6 | Ground | Starter relay control | Input | A/T models | Selector lever in any position other than P or N | 0 V |
| | | | | | Selector lever P or N | Battery voltage |
| | | | | M/T models | Release the clutch pedal | 0 V |
| | | | | | Depress the clutch pedal | Battery voltage |
| 32 (SB) | Ground | Steering lock unit condition-1 | Input | Steering lock is activated | | 0 V |
| | | | | Steering lock is deactivated | | Battery voltage |
| 33 (P) | Ground | Steering lock unit condition-2 | Input | Steering lock is activated | | Battery voltage |
| | | | | Steering lock is deactivated | | 0 V |
| 36 (G) | Ground | Battery power supply | Input | Ignition switch OFF | | Battery voltage |
| 39 (P) | — | CAN-L | Input/ Output | — | | — |

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 40 (L) | — | CAN-H | Input/ Output | — | | — |
| 41 (B)*7 (B/W)*8 | Ground | Ground | — | Ignition switch ON | | 0 V |
| 42 (Y) | Ground | Cooling fan relay control | Input | Ignition switch OFF or ACC | | 0 V |
| | | | | Ignition switch ON | | 0.7 V |
| 43 (SB)*11 (W)*12 (G)*13 (R)*14 | Ground | A/T shift selector (Detention switch) | Input | Ignition switch ON | • Press the selector button (Selector lever P)<br>• Selector lever in any position other than P | Battery voltage |
| | | | | | Release the selector button (selector lever P) | 0 V |
| 44 (W)*7 (BR)*8 | Ground | Horn relay control | Input | The horn is deactivated | | Battery voltage |
| | | | | The horn is activated | | 0 V |
| 46 (BR)*11 (LG)*12 (R)*13 (SB)*14 | Ground | Starter relay control | Input | Ignition switch ON | Selector lever in any position other than P or N | 0 V |
| | | | | | Selector lever P or N | Battery voltage |
| 48 (L) | Ground | A/C relay power supply | Output | Engine running | A/C switch OFF | 0 V |
| | | | | | A/C switch ON (A/C compressor is operating) | Battery voltage |
| 49 (G)*8 (W)*16 (O)*17 (SB)*22 | Ground | ECM relay power supply | Output | Ignition switch OFF (More than a few seconds after turning ignition switch OFF) | | 0 V |
| | | | | • Ignition switch ON<br>• Ignition switch OFF (For a few seconds after turning ignition switch OFF) | | Battery voltage |
| 51 (SB)*8 (G)*11 (P)*13 | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V |
| | | | | Ignition switch ON | | Battery voltage |
| 52*7 (W)*3 (R)*4 | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V |
| | | | | Ignition switch ON | | Battery voltage |
| 53 (V)*8 (W)*11 (SB)*17 (Y)*18 | Ground | ECM relay power supply | Output | Ignition switch OFF (More than a few seconds after turning ignition switch OFF) | | 0 V |
| | | | | • Ignition switch ON<br>• Ignition switch OFF (For a few seconds after turning ignition switch OFF) | | Battery voltage |
| 54*7 (R) | Ground | Throttle control motor relay power supply | Output | Ignition switch OFF (More than a few seconds after turning ignition switch OFF) | | 0 V |
| | | | | • Ignition switch ON<br>• Ignition switch OFF (For a few seconds after turning ignition switch OFF) | | Battery voltage |

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 55 (BR) | Ground | ECM power supply | Output | Ignition switch OFF | | Battery voltage |
| 56*7 (V)*9 (O)*10 | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V |
| | | | | Ignition switch ON | | Battery voltage |
| 57 (LG)*7 (O)*8 | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V |
| | | | | Ignition switch ON | | Battery voltage |
| 58 (V)*6 (GR)*23 (Y)*24 | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V |
| | | | | Ignition switch ON | | Battery voltage |
| 69 (W)*7 (L)*8 | Ground | ECM relay control | Output | Ignition switch OFF (More than a few seconds after turning ignition switch OFF) | | Battery voltage |
| | | | | • Ignition switch ON<br>• Ignition switch OFF (For a few seconds after turning ignition switch OFF) | | 0 – 1.5 V |
| 70 (O)*7 (B/W)*8 | Ground | Throttle control motor relay control | Output | Ignition switch ON → OFF | | 0 – 1.0 V<br>↓<br>Battery voltage<br>↓<br>0 V |
| | | | | Ignition switch ON | | 0 – 1.0 V |
| 73*8 (P) | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V |
| | | | | Ignition switch ON | | Battery voltage |
| 74*7 (G) | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V |
| | | | | Ignition switch ON | | Battery voltage |
| 75 (Y)*7 (SB)*8 | Ground | Oil pressure switch | Input | Ignition switch ON | Engine stopped | 0 V |
| | | | | | Engine running | Battery voltage |

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| | | Signal name | Input/ Output | | | |
| + | – | | | | | |
| 76 (V)*21 (P)*19 | Ground | Power generation command signal | Output | Ignition switch ON | |  JPMIA0001GB 6.3 V |
| | | | | 40% is set on “ACTIVE TEST”, “ALTERNATOR DUTY” of “ENGINE” | |  JPMIA0002GB 3.8 V |
| | | | | 80% is set on “ACTIVE TEST”, “ALTERNATOR DUTY” of “ENGINE” | |  JPMIA0003GB 1.4 V |
| 77 (GR)*8 (B)*10 (L)*15 (R)*17 | Ground | Fuel pump relay control | Output | • Approximately 1 second after turning the ignition switch ON<br>• Engine running | | 0 – 1.0 V |
| | | | | Approximately 1 second or more after turning the ignition switch ON | | Battery voltage |
| 80 (W) | Ground | Starter motor | Output | At engine cranking | | Battery voltage |
| 83 (R) | Ground | Headlamp LO (RH) | Output | Ignition switch ON | Lighting switch OFF | 0 V |
| | | | | | Lighting switch 2ND | Battery voltage |
| | | | | Daytime running light operated | | |
| 84 (P) | Ground | Headlamp LO (LH) | Output | Ignition switch ON | Lighting switch OFF | 0 V |
| | | | | | Lighting switch 2ND | Battery voltage |
| | | | | Daytime running light operated | | |
| 86 (W) | Ground | Front fog lamp (RH) | Output | Lighting switch 2ND | Front fog lamp switch ON | Battery voltage |
| | | | | | Front fog lamp switch OFF | 0 V |
| 87 (GR) | Ground | Front fog lamp (LH) | Output | Lighting switch 2ND | Front fog lamp switch ON | Battery voltage |
| | | | | | Front fog lamp switch OFF | 0 V |
| 88 (G) | Ground | Washer pump power supply | Output | Ignition switch ON | | Battery voltage |
| 89 (BR) | Ground | Headlamp HI (RH) | Output | Ignition switch ON | • Lighting switch HI<br>• Lighting switch PASS | Battery voltage |
| | | | | | Lighting switch OFF | 0 V |

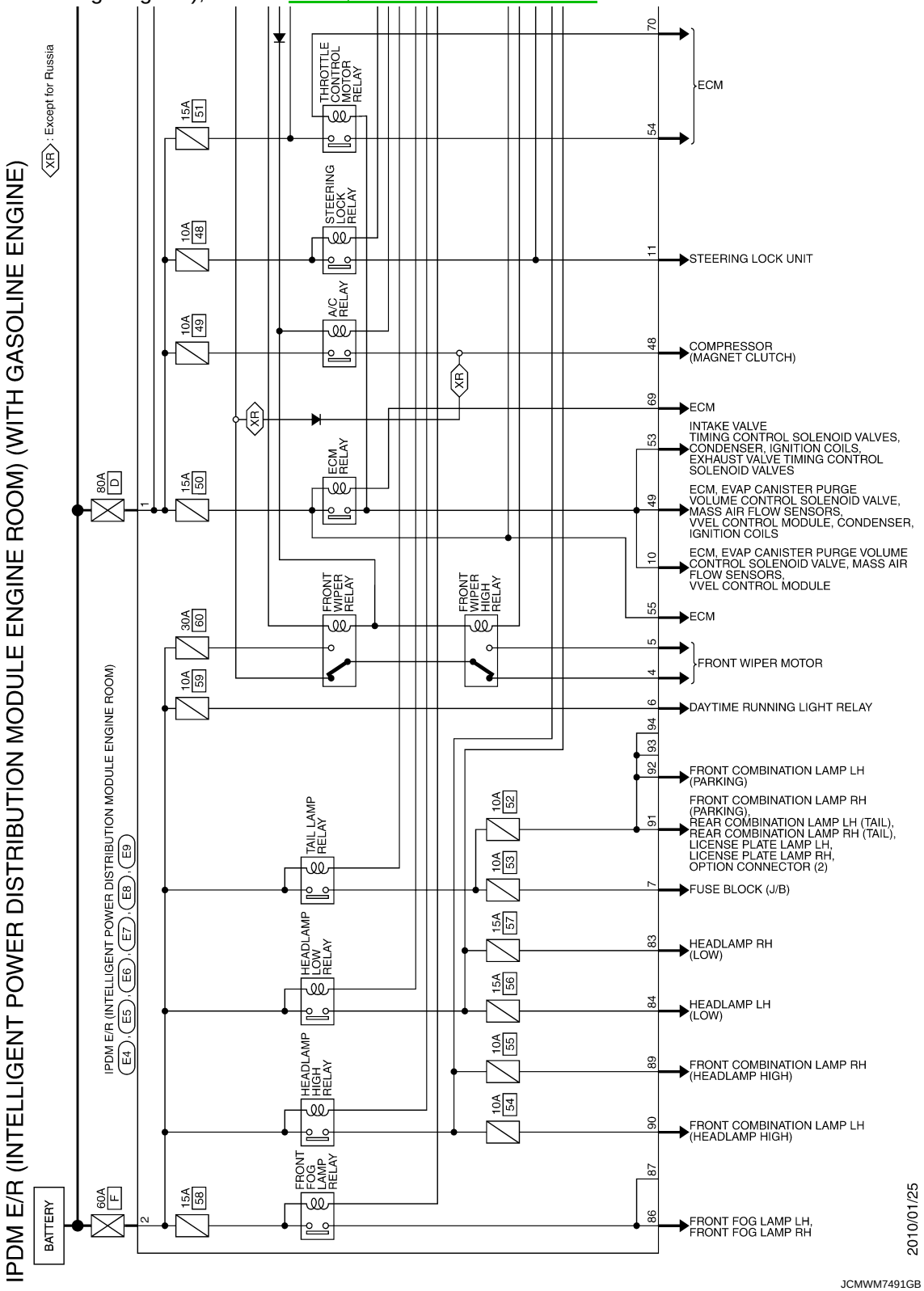
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 90 (Y) | Ground | Headlamp HI (LH) | Output | Ignition switch ON | • Lighting switch HI<br>• Lighting switch PASS | Battery voltage |
| | | | | | Lighting switch OFF | 0 V |
| 91 (P) | Ground | Parking (RH), tail, license plate lamps*1 | Output | Ignition switch ON | Lighting switch 1ST | Battery voltage |
| | | Parking lamp (RH)*2 | | | Lighting switch OFF | 0 V |
| 92 (O) | Ground | Parking lamp (LH) | Output | Ignition switch ON | Lighting switch 1ST | Battery voltage |
| | | | | | Lighting switch OFF | 0 V |
| 97 (G)*12 (V)*20 | Ground | Cooling fan control | Output | Engine idling | | 0 – 5 V |
| 104 (LG) | Ground | Hood switch | Input | Close the hood | | Battery voltage |
| | | | | Open the hood | | 0 V |
| 105*1 (V) | Ground | Daytime running light relay control | Output | • Parking lamp<br>• License plate lamp<br>• Tail lamp | Turned OFF | Battery voltage |
| | | | | | Turned ON | 0 V |

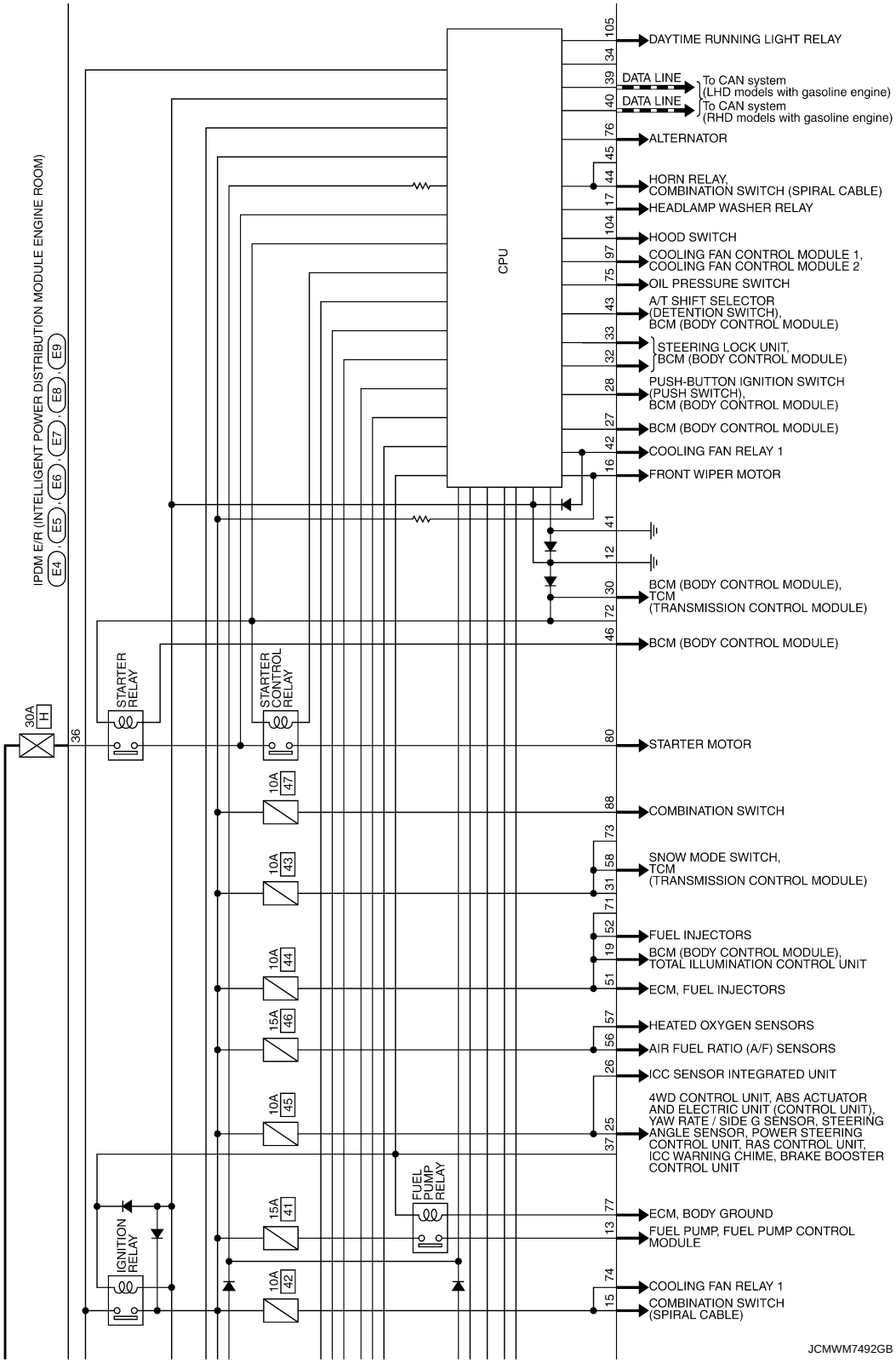
*1: With daytime running light system
*2: Without daytime running light system
*3: LHD models
*4: RHD models
*5: A/T models
*6: M/T models
*7: Gasoline engine models
*8: Diesel engine models
*9: VQ engine models
*10: VK engine models
*11: LHD models with gasoline engine
*12: LHD models with diesel engine
*13: RHD models with gasoline engine
*14: RHD models with diesel engine
*15: LHD models with VQ engine
*16: LHD models with VK engine
*17: RHD models with VQ engine
*18: RHD models with VK engine
*19: Except for LHD models with VQ engine or diesel engine
*20: Except for LHD models with diesel engine
*21: LHD models with VQ engine or diesel engine
*22: LHD models with VQ engine and RHD models with VK engine
*23: RHD models with A/T and gasoline engine
*24: With A/T except RHD models with gasoline engine

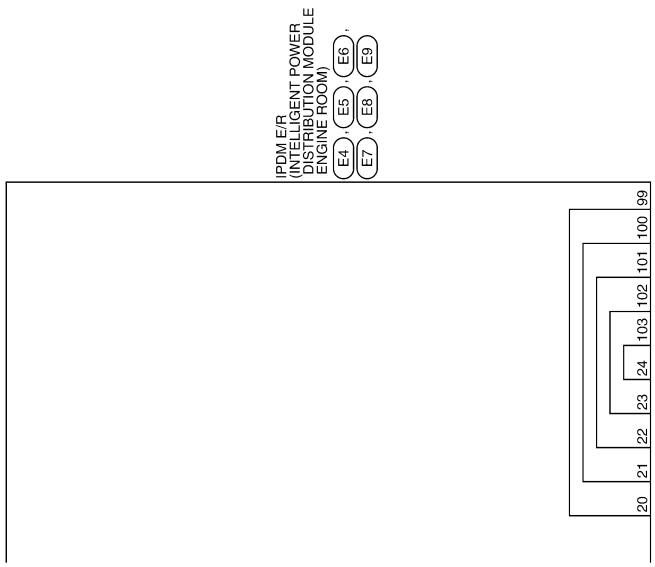
## Wiring Diagram - IPDM E/R (Gasoline Engine) -

INFOID:0000000005406796

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




IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E4, E5, E6, E7, E8, E9
CPU
105 DAYTIME RUNNING LIGHT RELAY
34
39 DATA LINE To CAN system (LHD models with gasoline engine)
40 DATA LINE To CAN system (RHD models with gasoline engine)
76 ALTERNATOR
45
44 HORN RELAY, COMBINATION SWITCH (SPIRAL CABLE)
17 HEADLAMP WASHER RELAY
104 HOOD SWITCH
97 COOLING FAN CONTROL MODULE 1, COOLING FAN CONTROL MODULE 2
75 OIL PRESSURE SWITCH
43 A/T SHIFT SELECTOR (DETENTION SWITCH), BCM (BODY CONTROL MODULE)
33
32 STEERING LOCK UNIT, BCM (BODY CONTROL MODULE)
28 PUSH-BUTTON IGNITION SWITCH (PUSH SWITCH), BCM (BODY CONTROL MODULE)
27 BCM (BODY CONTROL MODULE)
42 COOLING FAN RELAY 1
16 FRONT WIPER MOTOR
41
12
30 BCM (BODY CONTROL MODULE), TCM (TRANSMISSION CONTROL MODULE)
72
46 BCM (BODY CONTROL MODULE)
30A H
36
STARTER RELAY
STARTER CONTROL RELAY
80 STARTER MOTOR
10A 47
88 COMBINATION SWITCH
10A 43
73
58 SNOW MODE SWITCH, TCM (TRANSMISSION CONTROL MODULE)
31
71
52 FUEL INJECTORS
19 BCM (BODY CONTROL MODULE), TOTAL ILLUMINATION CONTROL UNIT
10A 44
51 ECM, FUEL INJECTORS
15A 46
57 HEATED OXYGEN SENSORS
56 AIR FUEL RATIO (A/F) SENSORS
26 ICC SENSOR INTEGRATED UNIT
10A 45
25 4WD CONTROL UNIT, ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT), YAW RATE / SIDE G SENSOR, STEERING ANGLE SENSOR, POWER STEERING CONTROL UNIT, RAS CONTROL UNIT, ICC WARNING CHIME, BRAKE BOOSTER CONTROL UNIT
37
FUEL PUMP RELAY
IGNITION RELAY
15A 41
77 ECM, BODY GROUND
13 FUEL PUMP, FUEL PUMP CONTROL MODULE
10A 42
74 COOLING FAN RELAY 1
15 COMBINATION SWITCH (SPIRAL CABLE)
JCMWM7492GB

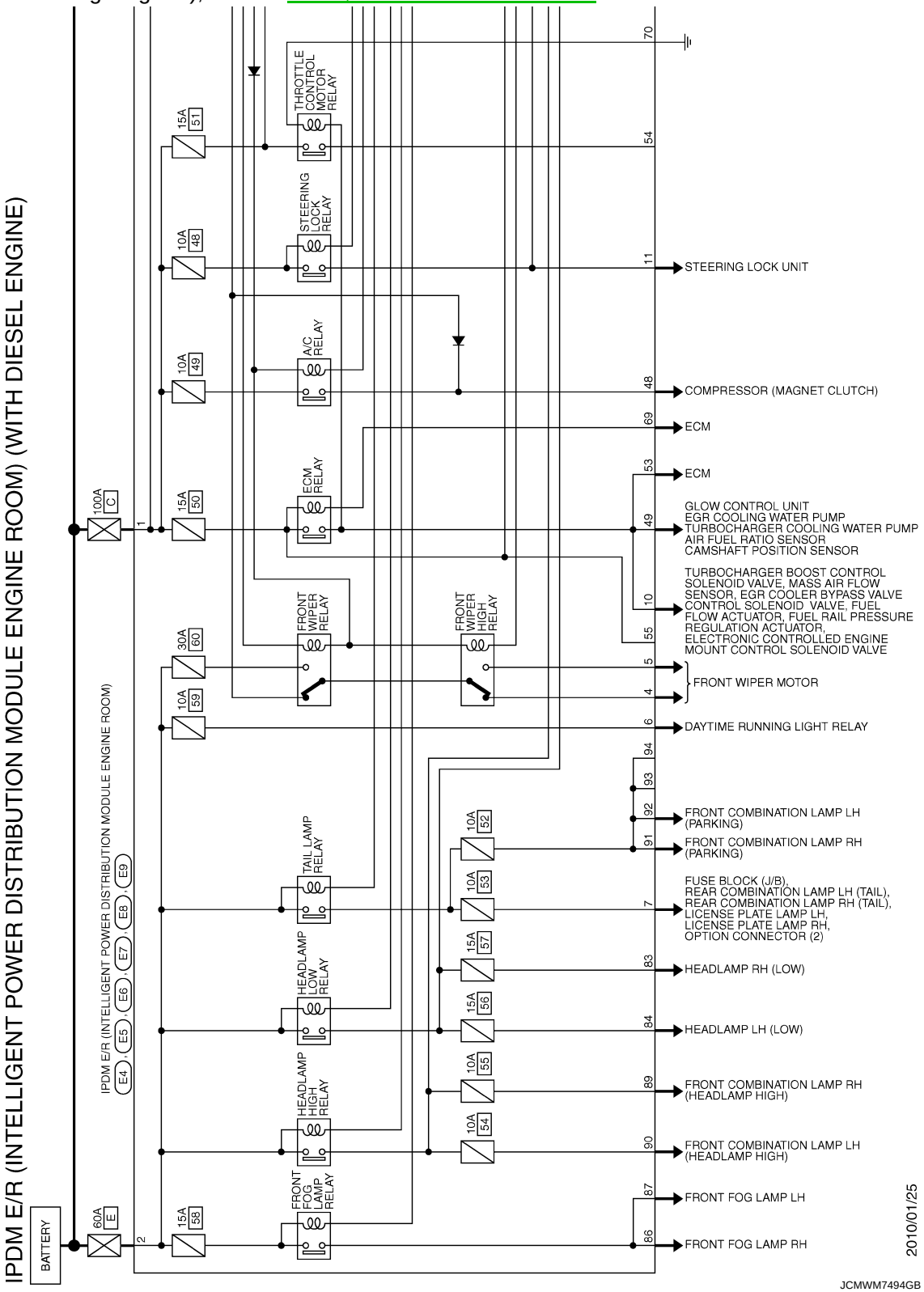


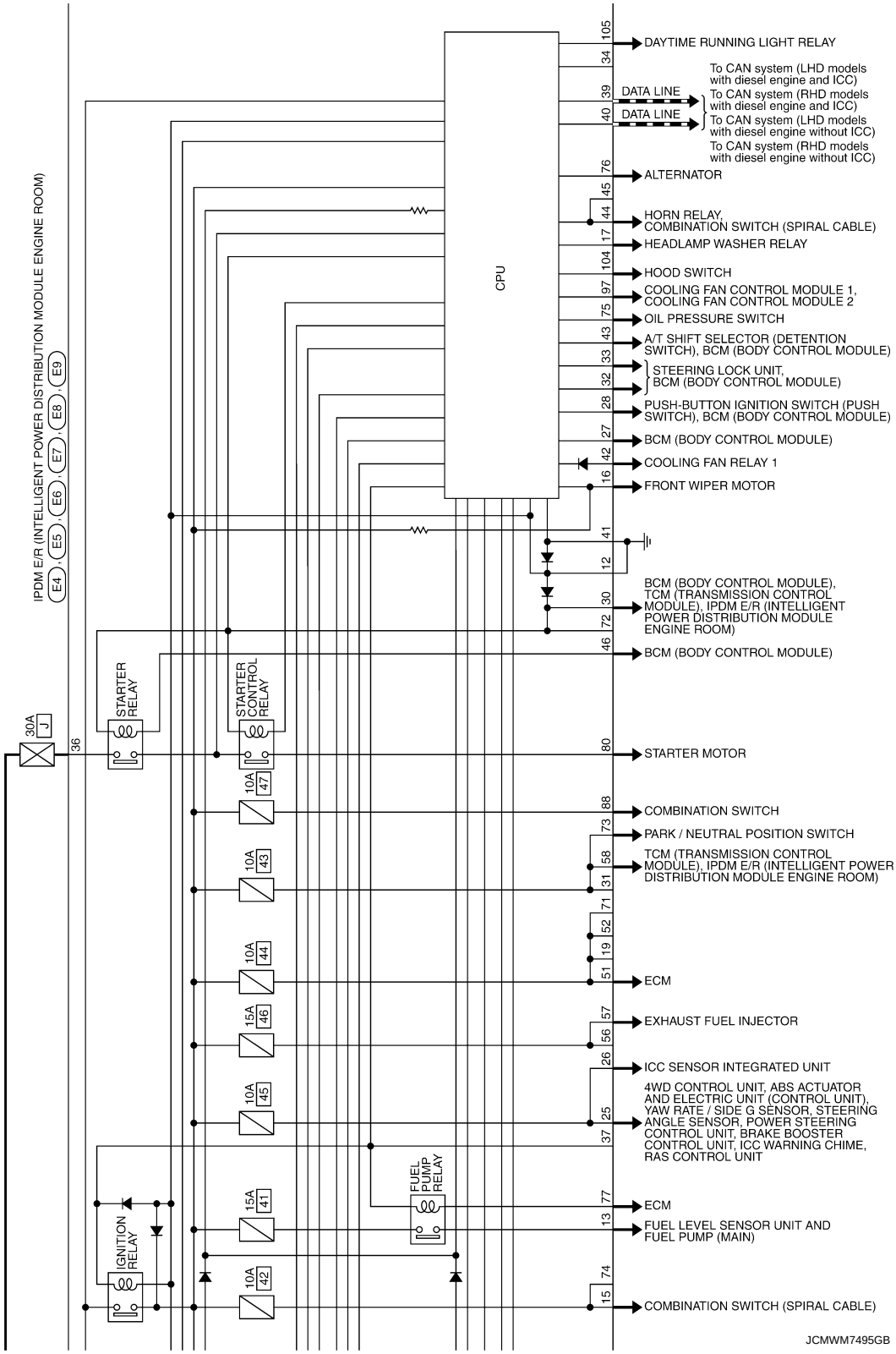

JCMWM7493GB

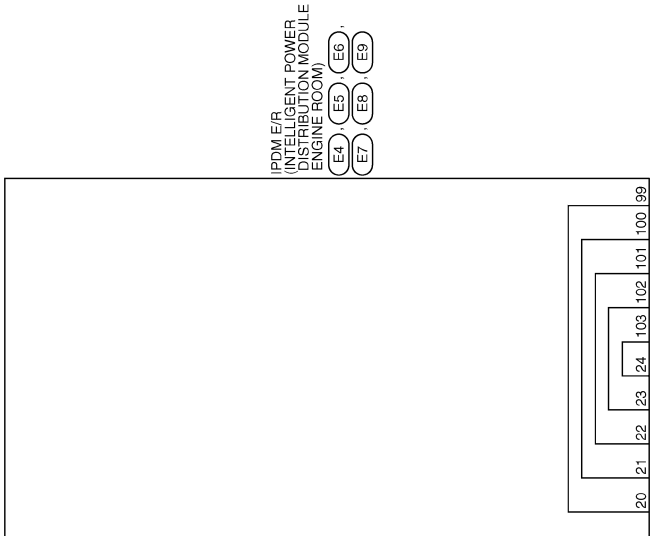
## Wiring Diagram - IPDM E/R (Diesel Engine) -

INFOID:0000000006113702

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




IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E4, E5, E6, E7, E8, E9
CPU
105 DAYTIME RUNNING LIGHT RELAY
34
39 DATA LINE
40 DATA LINE
To CAN system (LHD models with diesel engine and ICC)
To CAN system (RHD models with diesel engine and ICC)
To CAN system (LHD models with diesel engine without ICC)
To CAN system (RHD models with diesel engine without ICC)
76 ALTERNATOR
45
44 HORN RELAY, COMBINATION SWITCH (SPIRAL CABLE)
17 HEADLAMP WASHER RELAY
104 HOOD SWITCH
97 COOLING FAN CONTROL MODULE 1, COOLING FAN CONTROL MODULE 2
75 OIL PRESSURE SWITCH
43 A/T SHIFT SELECTOR (DETENTION SWITCH), BCM (BODY CONTROL MODULE)
33
32 STEERING LOCK UNIT, BCM (BODY CONTROL MODULE)
28 PUSH-BUTTON IGNITION SWITCH (PUSH SWITCH), BCM (BODY CONTROL MODULE)
27 BCM (BODY CONTROL MODULE)
42 COOLING FAN RELAY 1
16 FRONT WIPER MOTOR
41
12
30
72 BCM (BODY CONTROL MODULE), TCM (TRANSMISSION CONTROL MODULE), IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
46 BCM (BODY CONTROL MODULE)
30A J
36
STARTER RELAY
STARTER CONTROL RELAY
80 STARTER MOTOR
10A 47
88 COMBINATION SWITCH
73 PARK / NEUTRAL POSITION SWITCH
10A 43
58
31 TCM (TRANSMISSION CONTROL MODULE), IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
71
52
19
10A 44
51 ECM
15A 46
57
56 EXHAUST FUEL INJECTOR
26 ICC SENSOR INTEGRATED UNIT
10A 45
25
37 4WD CONTROL UNIT, ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT), YAW RATE / SIDE G SENSOR, STEERING ANGLE SENSOR, POWER STEERING CONTROL UNIT, BRAKE BOOSTER CONTROL UNIT, ICC WARNING CHIME, RAS CONTROL UNIT
FUEL PUMP RELAY
15A 41
77 ECM
13 FUEL LEVEL SENSOR UNIT AND FUEL PUMP (MAIN)
IGNITION RELAY
10A 42
74
15 COMBINATION SWITCH (SPIRAL CABLE)
JCMWM7495GB




JCMWM7496GB

## Fail-safe

*INFOID:0000000005406797*

### CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With ECM

| Control part | Fail-safe operation |
|---|---|
| Cooling fan | • Outputs the pulse duty signal (PWM signal) 100% when the ignition switch is turned ON<br>• Outputs the pulse duty signal (PWM signal) 0% when the ignition switch is turned OFF |
| A/C compressor | A/C relay OFF |
| Alternator | Outputs the power generation command signal (PWM signal) 0% |

If No CAN Communication Is Available With BCM

| Control part | Fail-safe operation |
|---|---|
| Headlamp | • Turns ON the headlamp low relay when the ignition switch is turned ON<br>• Turns OFF the headlamp low relay when the ignition switch is turned OFF<br>• Headlamp high relay OFF |
| • Parking lamps<br>• License plate lamps<br>• Illuminations<br>• Tail lamps | • Turns ON the tail lamp relay and the daytime running light relay* when the ignition switch is turned ON<br>• Turns OFF the tail lamp relay and the daytime running light relay* when the ignition switch is turned OFF |
| Front wiper | • The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed.<br>• The wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the AUTO mode and the front wiper motor is operating. |
| Front fog lamps | Front fog lamp relay OFF |
| Horn | Horn OFF |
| Ignition relay | The status just before activation of fail-safe is maintained. |
| Starter motor | Starter control relay OFF |
| Steering lock unit | Steering lock relay OFF |
| Headlamp washer relay | Headlamp washer relay OFF |

*: With daytime running light system

## IGNITION RELAY MALFUNCTION DETECTION FUNCTION

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

| Voltage judgment | | IPDM E/R judgment | Operation |
|---|---|---|---|
| Ignition relay contact side | Ignition relay excitation coil side | | |
| ON | ON | Ignition relay ON normal | — |
| OFF | OFF | Ignition relay OFF normal | — |
| ON | OFF | Ignition relay ON stuck | • Detects DTC “B2098: IGN RELAY ON”<br>• Turns ON the tail lamp relay and the daytime running light relay* for 10 minutes |
| OFF | ON | Ignition relay OFF stuck | Detects DTC “B2099: IGN RELAY OFF” |

*: With daytime running light system

## FRONT WIPER CONTROL

IPDM E/R detects front wiper stop position by a front wiper stop position signal.
When a front wiper stop position signal is in the conditions listed below, IPDM E/R stops power supply to wiper after repeating a front wiper 10 seconds activation and 20 seconds stop five times.

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

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

### STARTER MOTOR PROTECTION FUNCTION

IPDM E/R turns OFF the starter control relay to protect the starter motor when the starter control relay remains active for 90 seconds.

## DTC Index

INFOID:0000000005406798

**NOTE:**
- The details of time display are as follows.
- CRNT: A malfunction is detected now.
- PAST: A malfunction was detected in the past.
- IGN counter is displayed on FFD (Freeze Frame data).
- The number is 0 when is detected now.
- The number increases like 1 → 2 ··· 38 → 39 after returning to the normal condition whenever IGN OFF → ON.
- The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.

×: Applicable

| CONSULT display | Fail-safe | Reference |
|---|---|---|
| No DTC is detected. further testing may be required. | — | — |
| U1000: CAN COMM CIRCUIT | × | PCS-18 |
| B2098: IGN RELAY ON | × | PCS-19 |
| B2099: IGN RELAY OFF | — | PCS-20 |
| B2108: STRG LCK RELAY ON | — | SEC-108 |
| B2109: STRG LCK RELAY OFF | — | SEC-110 |
| B210A: STRG LCK STATE SW | — | SEC-111 |
| B210B: START CONT RLY ON | — | SEC-115 |
| B210C: START CONT RLY OFF | — | SEC-116 |
| B210D: STARTER RELAY ON | — | SEC-117 |
| B210E: STARTER RELAY OFF | — | SEC-118 |
| B210F: INTRLCK/PNP SW ON | — | SEC-120 |
| B2110: INTRLCK/PNP SW OFF | — | SEC-123 |

# SYMPTOM DIAGNOSIS

## WIPER AND WASHER SYSTEM SYMPTOMS FOR EUROPE

### FOR EUROPE : Symptom Table

INFOID:0000000005370237

**CAUTION:**
**Perform the self-diagnosis with CONSULT-III before performing the diagnosis by symptom. Perform the diagnosis by DTC if DTC is detected.**

| Symptom | | Probable malfunction location | Inspection item |
|---|---|---|---|
| Front wiper does not operate. | HI only | • Combination switch<br>• Harness between combination switch and BCM<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | • IPDM E/R<br>• Harness between IPDM E/R and front wiper motor<br>• Front wiper motor | Front wiper motor (HI) circuit<br>Refer to WW-30, "Component Function Check". |
| | | Front wiper request signal<br>• BCM<br>• IPDM E/R | IPDM E/R DATA MONITOR<br>“FR WIP REQ” |
| | LO only | • Combination switch<br>• Harness between combination switch and BCM<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | • IPDM E/R<br>• Harness between IPDM E/R and front wiper motor<br>• Front wiper motor | Front wiper motor (LO) circuit<br>Refer to WW-28, "Component Function Check". |
| | | Front wiper request signal<br>• BCM<br>• IPDM E/R | IPDM E/R DATA MONITOR<br>“FR WIP REQ” |
| | AUTO only | • Combination switch<br>• Harness between combination switch and BCM<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | • Light & rain sensor<br>• Harness between light & rain sensor and BCM<br>• BCM | Light & rain sensor<br>Refer to WW-36, "Component Function Check" |
| | HI, LO and AUTO | SYMPTOM DIAGNOSIS<br>“FRONT WIPER DOES NOT OPERATE”<br>Refer to WW-119, "Diagnosis Procedure". | |

| Symptom | | Probable malfunction location | Inspection item |
|---|---|---|---|
| Front wiper does not stop. | HI only | • Combination switch<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | Front wiper request signal<br>• BCM<br>• IPDM E/R | IPDM E/R DATA MONITOR<br>“FR WIP REQ” |
| | | IPDM E/R | — |
| | LO only | • Combination switch<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | Front wiper request signal<br>• BCM<br>• IPDM E/R | IPDM E/R DATA MONITOR<br>“FR WIP REQ” |
| | | IPDM E/R | — |
| | AUTO only | • Combination switch<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | • Light & rain sensor<br>• Harness between light & rain sensor and BCM<br>• BCM | Light & rain sensor<br>Refer to WW-36, "Component Function Check" |
| Front wiper does not operate normally. | Sensitivity adjustment cannot be performed. | • Combination switch<br>• Harness between combination switch and BCM<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | BCM | — |
| | Wiper is not linked to the washer operation. | • Combination switch<br>• Harness between combination switch and BCM<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | BCM | — |
| | Does not return to stop position [Repeatedly operates for 10 seconds and then stops for 20 seconds. After that, it stops the operation. (Fail-safe)] | • IPDM E/R<br>• Harness between IPDM E/R and front wiper motor<br>• Front wiper motor | Front wiper auto stop signal circuit<br>Refer to WW-32, "Component Function Check". |
| Rear wiper does not operate. | ON only | • Combination switch<br>• Harness between combination switch and BCM<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | INT only | • Combination switch<br>• Harness between combination switch and BCM<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | ON and INT | • Combination switch<br>• Harness between combination switch and BCM<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | • BCM<br>• Harness between rear wiper motor and BCM<br>• Harness between rear wiper motor and ground<br>• Rear wiper motor | Rear wiper motor circuit<br>Refer to WW-38, "Component Function Check". |
| Rear wiper does not stop. | ON only | • Combination switch<br>• BCM | Rear wiper motor circuit<br>Refer to WW-38, "Component Function Check". |
| | INT only | • Combination switch<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |

| Symptom | | Probable malfunction location | Inspection item |
|---|---|---|---|
| Rear wiper does not operate normally. | Wiper is not linked to the washer operation. | • Combination switch<br>• Harness between rear wiper motor and BCM<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | BCM | — |
| | Rear wiper does not return to the stop position [Stops after a five-second operation. (Fail-safe)] | • BCM<br>• Harness between rear wiper motor and BCM<br>• Rear wiper motor | Rear wiper auto stop signal circuit<br>Refer to WW-40, "Component Function Check". |
| | Rear wiper does not operate even when selector lever is shifted to the “R”. (AT models) | Shift position signal (CAN communication)<br>• BCM<br>• TCM | TCM DATA MONITOR<br>“SLCT LVR POSI” |
| | Rear wiper does not operate even when shift lever is shifted to the “R”. (MT models) | Back-up lamp switch signal<br>• BCM<br>• Back-up lamp switch | Back-up lamp switch<br>Refer to TM-14, "Component Inspection". |
| Headlamp washer does not operate. | Headlamp washer does not operate with the front washer when headlamps are turned ON. | • Combination switch<br>• Harness between combination switch and BCM<br>• BCM<br>• Headlamp washer pump | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | • Fusible link<br>• Harness between fusible link and headlamp washer relay<br>• Headlamp washer relay<br>• Harness between headlamp washer relay and IPDM E/R<br>• IPDM E/R<br>• Harness between headlamp washer relay and headlamp washer pump<br>• Harness between headlamp washer pump and ground<br>• Headlamp washer pump | Headlamp washer circuit<br>Refer to WW-45, "Component Function Check". |
| | | BCM | — |

## FOR RUSSIA

## FOR RUSSIA : Symptom Table

INFOID:0000000006054694

**CAUTION:**

**Perform the self-diagnosis with CONSULT-III before performing the diagnosis by symptom. Perform the diagnosis by DTC if DTC is detected.**

| Symptom | | Probable malfunction location | Inspection item |
|---|---|---|---|
| Front wiper does not operate. | HI only | • Combination switch<br>• Harness between combination switch and BCM<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | • IPDM E/R<br>• Harness between IPDM E/R and front wiper motor<br>• Front wiper motor | Front wiper motor (HI) circuit<br>Refer to WW-30, "Component Function Check". |
| | | Front wiper request signal<br>• BCM<br>• IPDM E/R | IPDM E/R DATA MONITOR<br>“FR WIP REQ” |
| | LO and AUTO | • Combination switch<br>• Harness between combination switch and BCM<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | • IPDM E/R<br>• Harness between IPDM E/R and front wiper motor<br>• Front wiper motor | Front wiper motor (LO) circuit<br>Refer to WW-28, "Component Function Check". |
| | | Front wiper request signal<br>• BCM<br>• IPDM E/R | IPDM E/R DATA MONITOR<br>“FR WIP REQ” |
| | AUTO only<br>(Auto operation) | • Combination switch<br>• Harness between combination switch and BCM<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | • Light &rain sensor<br>• Harness between light & rain sensor and BCM<br>• BCM | Light &rain sensor<br>Refer to WW-36, "Component Function Check". |
| | HI, LO and AUTO | SYMPTOM DIAGNOSIS<br>“FRONT WIPER DOES NOT OPERATE”<br>Refer to WW-119, "Diagnosis Procedure". | |
| Front wiper does not stop. | HI only | • Combination switch<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | Front wiper request signal<br>• BCM<br>• IPDM E/R | IPDM E/R DATA MONITOR<br>“FR WIP REQ” |
| | | IPDM E/R | — |
| | LO only | • Combination switch<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | Front wiper request signal<br>• BCM<br>• IPDM E/R | IPDM E/R DATA MONITOR<br>“FR WIP REQ” |
| | | IPDM E/R | — |
| | AUTO only<br>(Auto operation) | • Combination switch<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | • Light &rain sensor<br>• Harness between light & rain sensor and BCM<br>• BCM | Light &rain sensor<br>Refer to WW-36, "Component Function Check". |

| Symptom | | Probable malfunction location | Inspection item |
|---|---|---|---|
| Front wiper does not operate normally. | Sensitivity adjustment cannot be performed. | • Combination switch<br>• Harness between combination switch and BCM<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | BCM | — |
| | Wiper is not linked to the washer operation. | • Combination switch<br>• Harness between combination switch and BCM<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | BCM | — |
| | Does not return to stop position. [Repeatedly operates for 10 seconds and then stops for 20 seconds. After that, it stops the operation. (Fail-safe)] | • IPDM E/R<br>• Harness between IPDM E/R and front wiper motor<br>• Front wiper motor | Front wiper auto stop signal circuit<br>Refer to WW-32, "Component Function Check". |
| Rear wiper does not operate. | ON only | • Combination switch<br>• Harness between combination switch and BCM<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | INT only | • Combination switch<br>• Harness between combination switch and BCM<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | ON and INT | • Combination switch<br>• Harness between combination switch and BCM<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | • BCM<br>• Harness between rear wiper motor and BCM<br>• Harness between rear wiper motor and ground<br>• Rear wiper motor | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| Rear wiper does not stop. | ON only | • Combination switch<br>• BCM | Rear wiper motor circuit<br>Refer to WW-38, "Component Function Check". |
| | INT only | • Combination switch<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| Rear wiper does not operate normally. | Wiper is not linked to the washer operation. | • Combination switch<br>• Harness between rear wiper motor and BCM<br>• BCM | Combination switch<br>Refer to BCS-91, "Symptom Table". |
| | | BCM | — |
| | Rear wiper does not return to the stop position. [Stops after a five-second operation. (Fail-safe)] | • BCM<br>• Harness between rear wiper motor and BCM<br>• Rear wiper motor | Rear wiper auto stop signal circuit<br>Refer to WW-40, "Component Function Check". |
| | Rear wiper does not operate even when selector lever is shifted to the “R”. | Shift position signal (CAN communication)<br>• BCM<br>• TCM | TCM DATA MONITOR<br>“SLCT LVR POSI” |

# NORMAL OPERATING CONDITION

## Description

INFOID:0000000004965919

### FRONT WIPER MOTOR PROTECTION FUNCTION

- IPDM E/R may stop the front wiper to protect the front wiper motor if any obstruction (operation resistance) such as a large amount of snow is detected during the front wiper operation.
- At that time turn OFF the front wiper and remove the foreign object. Then wait for approximately 20 seconds or more and reactivate the front wiper. The wiper will operate normally.

### REAR WIPER MOTOR PROTECTION FUNCTION

- BCM may stop rear wiper to protect the rear wiper motor when the rear wiper is stopped for 5 seconds or more due to a snowfall.
- Rear wiper operates normally one minute after the obstacles are removed with rear wiper OFF.

# FRONT WIPER DOES NOT OPERATE

## Description

INFOID:0000000005370238

The front wiper does not operate under any operating conditions.

## Diagnosis Procedure

INFOID:0000000005370239

### 1.CHECK WIPER RELAY OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Start IPDM E/R auto active test. Refer to PCS-13, "Diagnosis Description".
2. Check that the front wiper operates at the LO/HI operation.

CONSULT-III ACTIVE TEST
1. Select “FRONT WIPER” of IPDM E/R active test item.
2. With operating the test item, check that front wiper LO/HI operation and OFF.

**Lo : Front wiper LO operation**
**Hi : Front wiper HI operation**
**Off : Stop the front wiper.**

Does the front wiper operate?

YES >> GO TO 5.
NO >> GO TO 2.

### 2.CHECK FRONT WIPER MOTOR FUSE

1. Turn the ignition switch OFF.
2. Check that the front wiper motor 30A (#60) fuse is not fusing.

Is the fuse fusing?

YES >> Replace the fuse after repairing the applicable circuit.
NO >> GO TO 3.

### 3.CHECK FRONT WIPER MOTOR (GND) OPEN CIRCUIT

Check front wiper motor (GND) open circuit. Refer to WW-34, "Diagnosis Procedure".

Does continuity exist?

YES >> GO TO 4.
NO >> Repair the harnesses or connectors.

### 4.CHECK FRONT WIPER MOTOR OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Disconnect front wiper motor connector.
2. Turn the ignition switch ON.
3. Select “FRONT WIPER” of IPDM E/R active test item.
4. With operating the test item, check voltage between IPDM E/R harness connector and ground.

| Terminals | | | Test item | Voltage (Approx.) |
|---|---|---|---|---|
| (+) | | (–) | | |
| IPDM E/R | | Ground | FRONT WIPER | |
| Connector | Terminal | | | |
| E5 | 4 | | Lo | Battery voltage |
| | | | Off | 0 V |
| | 5 | | Hi | Battery voltage |
| | | | Off | 0 V |

Is the measurement normal?

YES >> Replace front wiper motor.
NO >> Replace IPDM E/R.

## 5. CHECK FRONT WIPER REQUEST SIGNAL INPUT

CONSULT-III DATA MONITOR
1. Select “FR WIP REQ” of IPDM E/R data monitor item.
2. Switch the front wiper switch to HI and LO.
3. With operating the front wiper switch, check the monitor status.

| Monitor item | Condition | | Monitor status |
|---|---|---|---|
| FR WIPER REQ | Front wiper switch HI | ON | Hi |
| | | OFF | Stop |
| | Front wiper switch LO | ON | Low |
| | | OFF | Stop |

Is the status of item normal?

YES >> Replace IPDM E/R.
NO >> GO TO 6.

## 6. CHECK COMBINATION SWITCH

Perform the inspection of the combination switch. Refer to BCS-91, "Symptom Table".

Is combination switch normal?

YES >> Replace BCM. Refer to BCS-94, "Exploded View".
NO >> Repair or replace the applicable parts.

# HEADLAMP WASHER DOES NOT OPERATE FOR RUSSIA

## FOR RUSSIA : Description

INFOID:0000000006062123

Headlamp washer does not operate with headlamp washer switch nor is linked to front washer operation.

## FOR RUSSIA : Diagnosis Procedure

INFOID:0000000006062124

### 1.CHECK HEADLAMP WASHER CIRCUIT

Check headlamp washer circuit. Refer to WW-45, "Component Function Check".

Is headlamp washer circuit normal?

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

### 2.CHECK HEADLAMP WASHER SWITCH

Check headlamp washer switch. Refer to WW-43, "Component Function Check".

Is headlamp washer circuit normal?

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

### 3.CHECK HEADLAMP WASHER REQUEST SIGNAL INPUT

CONSULT-III DATA MONITOR

1. Turn the lighting switch to 2ND.
2. Select “HL WASHER REQ” of IPDM E/R data monitor item.
3. With operating the headlamp washer switch, check the status of “HL WASHER REQ”.

| Monitor item | Condition | | Monitor status |
|---|---|---|---|
| HL WASHER REQ | Headlamp washer switch | While pressing | On |
| | | While not pressing | Off |

Is the status of item normal?

YES >> Replace IPDM E/R.
NO >> Replace BCM. Refer to BCS-94, "Removal and Installation".

# PRECAUTION

## PRECAUTIONS
## FOR RUSSIA

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

INFOID:0000000006133910

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

**WARNING:**

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

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

**WARNING:**

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

### FOR RUSSIA : Precaution Necessary for Steering Wheel Rotation after Battery Disconnect

INFOID:0000000006133911

**NOTE:**

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

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

#### OPERATION PROCEDURE

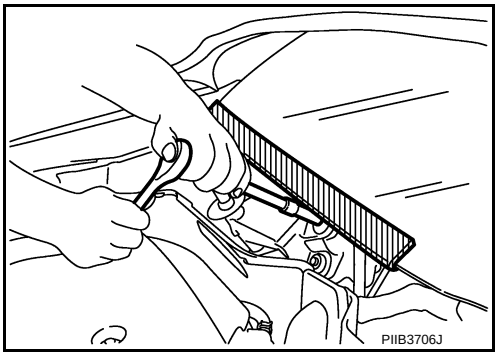
1. Connect both battery cables.
   **NOTE:**
   Supply power using jumper cables if battery is discharged.
2. Turn the push-button ignition switch to ACC position.
   (At this time, the steering lock will be released.)
3. Disconnect both battery cables. The steering lock will remain released with both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

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

## FOR RUSSIA : Precaution for Procedure without Cowl Top Cover

INFOID:0000000006133916

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




## EXCEPT FOR RUSSIA

## EXCEPT FOR RUSSIA : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000006134181

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

**WARNING:**

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

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

**WARNING:**

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

## EXCEPT FOR RUSSIA : Precaution Necessary for Steering Wheel Rotation after Battery Disconnect

INFOID:0000000006133914

**NOTE:**

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

For vehicle with steering lock unit, if the battery is disconnected or discharged, the steering wheel will lock and cannot be turned.

If turning the steering wheel is required with the battery disconnected or discharged, follow the operation procedure below before starting the repair operation.

OPERATION PROCEDURE

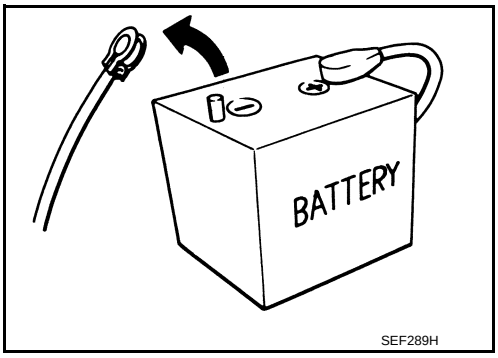
1. Connect both battery cables.
   **NOTE:**
   Supply power using jumper cables if battery is discharged.
2. Turn the push-button ignition switch to ACC position.
   (At this time, the steering lock will be released.)
3. Disconnect both battery cables. The steering lock will remain released with both battery cables disconnected and the steering wheel can be turned.
4. Perform the necessary repair operation.
5. When the repair work is completed, re-connect both battery cables. With the brake pedal released, turn the push-button ignition switch from ACC position to ON position, then to LOCK position. (The steering wheel will lock when the push-button ignition switch is turned to LOCK position.)
6. Perform self-diagnosis check of all control units using CONSULT-III.

## EXCEPT FOR RUSSIA : Precaution for Battery Service (for V9X Models)

INFOID:0000000006133915

When disconnect the battery cable, pay attention to the following.

- Always use a 12 volt battery as power source.
- Do not attempt to disconnect battery cables while engine is running.
- **Before disconnecting battery cables, turn ignition switch OFF and wait at least 4 minutes.**
- **After high-load driving, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery cable.**
  **NOTE:**
  Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF.

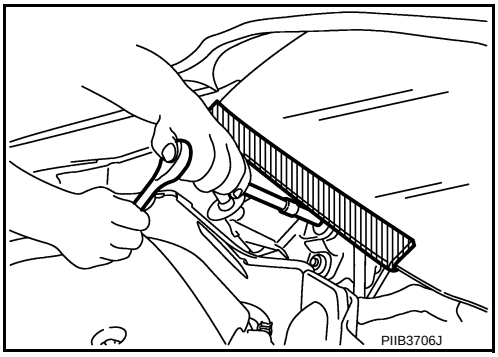


SEF289H

## EXCEPT FOR RUSSIA : Precaution for Procedure without Cowl Top Cover

INFOID:0000000006133917

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

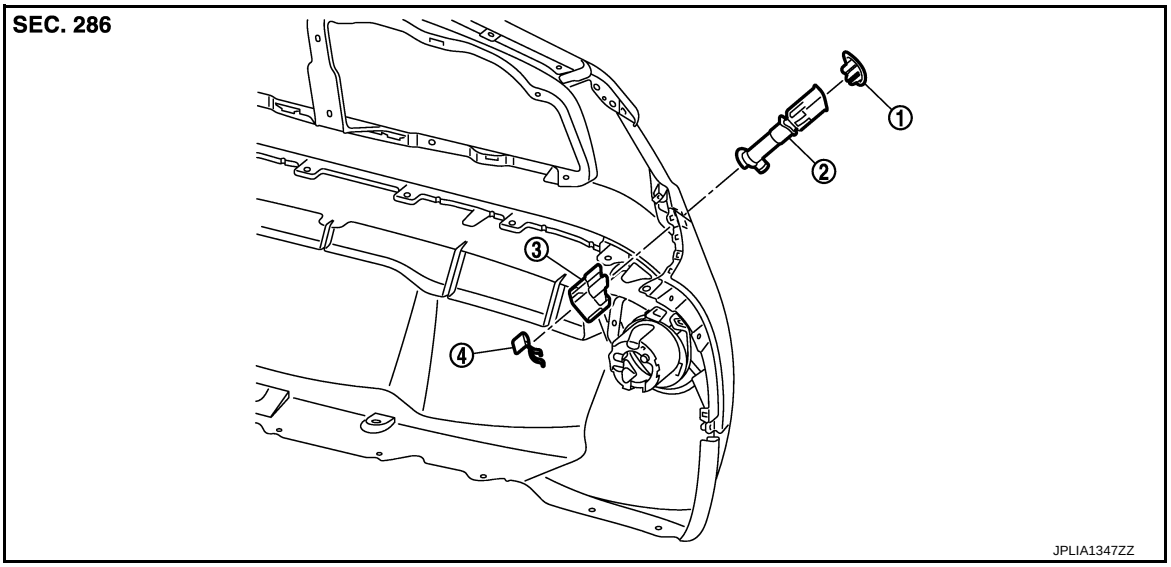

PIIB3706J

# REMOVAL AND INSTALLATION

## HEADLAMP WASHER NOZZLE AND TUBE

### Exploded View

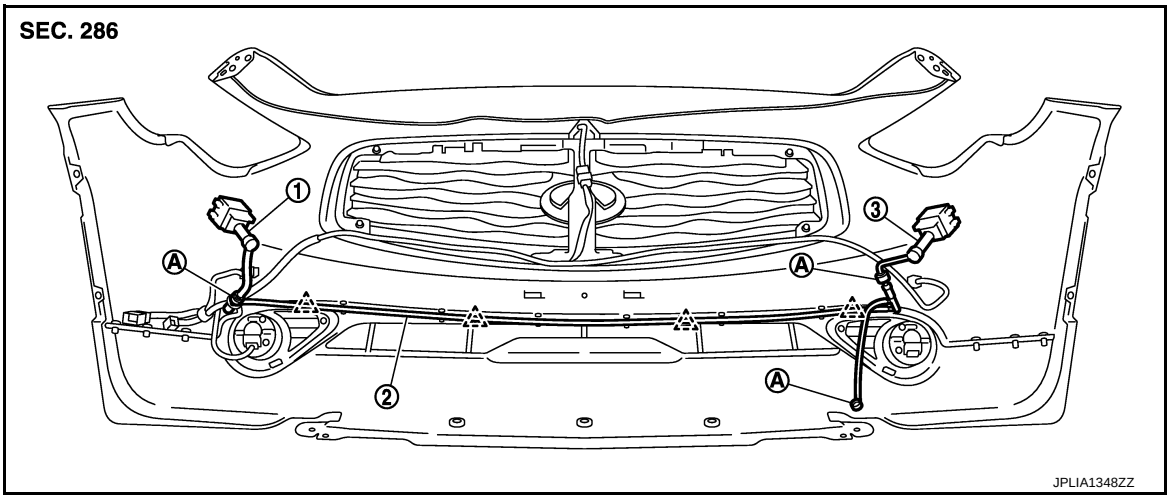
INFOID:0000000004965926




1. Headlamp washer nozzle cover
2. Headlamp washer nozzle assembly
3. Headlamp washer nozzle bracket
4. Headlamp washer nozzle retainer

### Hydraulic Layout

INFOID:0000000004965927




1. Headlamp washer nozzle assembly (LH)
2. Headlamp washer tube
3. Headlamp washer nozzle assembly (RH)

A. Headlamp washer tube joint

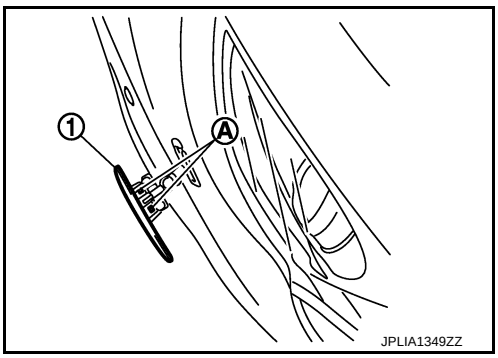
△ : Clip

### Removal and Installation

INFOID:0000000004965928

REMOVAL

1. Pull out the headlamp washer nozzle from the bumper, disengage pawl (A), and remove the headlamp washer nozzle cover (1).
2. Remove the front bumper fascia. Refer to EXT-15, "Exploded View".
3. Disconnect the headlamp washer tube joint.
4. Remove the headlamp washer nozzle retainer.
5. Remove the headlamp washer nozzle bracket.
6. Remove the headlamp washer nozzle from the front bumper fascia.




## INSTALLATION

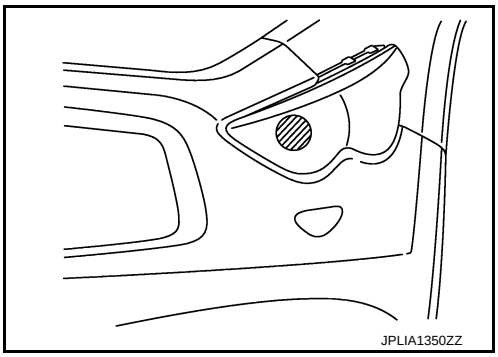
Install in the reverse order of removal.

# Inspection

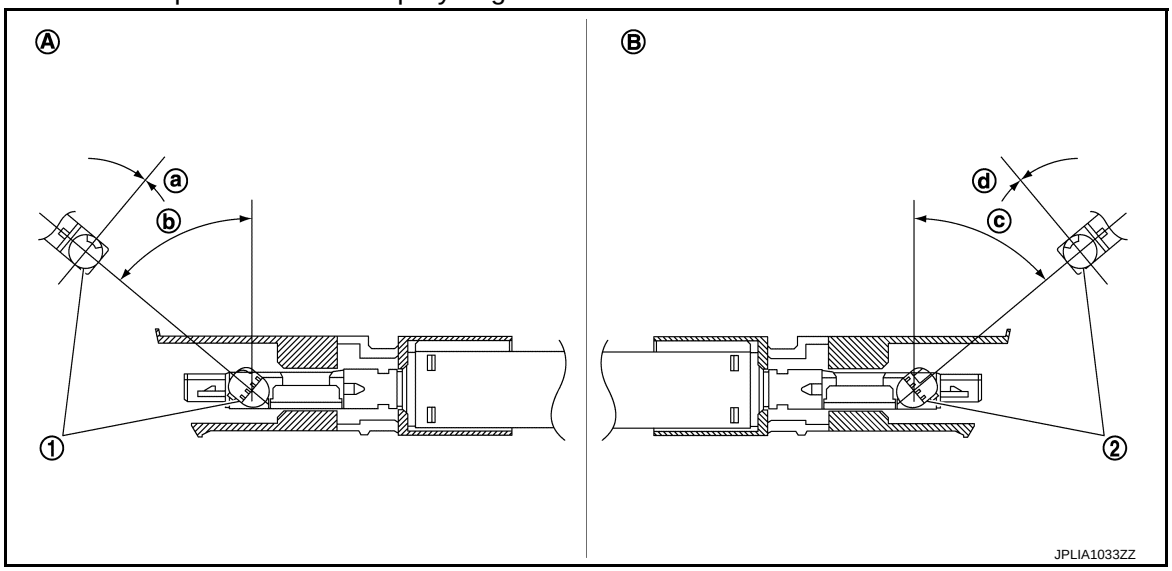
INFOID:0000000004965929

## HEADLAMP WASHER NOZZLE SPRAY POSITION INSPECTION

- Check that the headlamp washer injection is certainly on the headlamp illuminating area.




- Check the headlamp washer tube and headlamp washer nozzle leakages.
- Check the headlamp washer nozzle spray angle.




1. Headlamp washer nozzle (outside) 2. Headlamp washer nozzle (inside)

Outside (A)

a : 0° ± 3°

b : 60° ± 3°

Inside (B)

c : 60° ± 3°

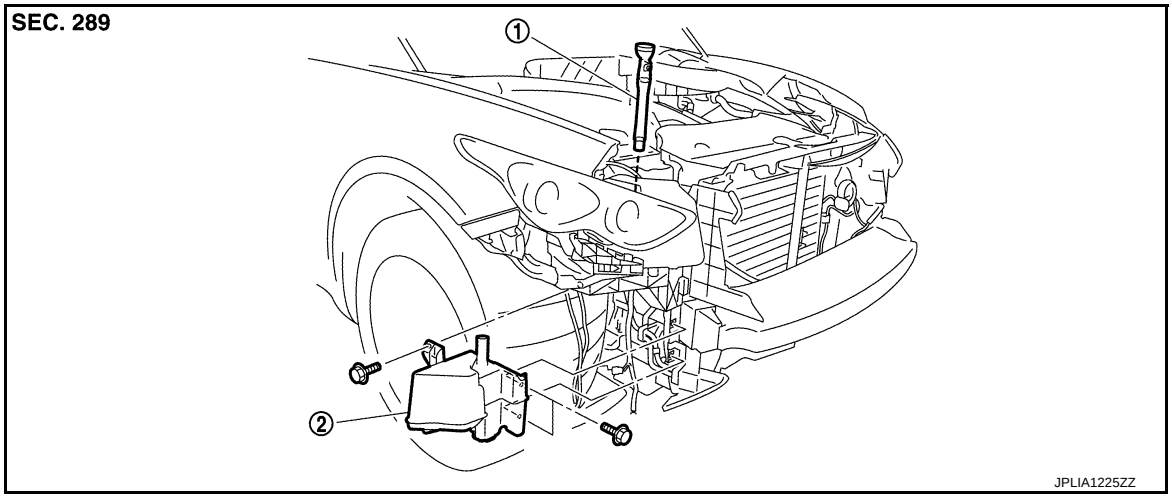
d : 5° ± 3°

**NOTE:**
This drawing shows the parts of the headlamp washer nozzle (LH). The headlamp washer nozzle (RH) is symmetrical of this drawing.

# WASHER TANK

## Exploded View

INFOID:0000000004965930



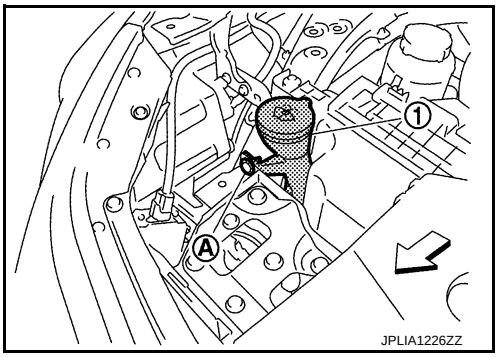

1. Washer tank inlet
2. Washer tank

## Removal and Installation

INFOID:0000000004965931

### REMOVAL

1. Remove the engine room cover RH (for VK50VE engine). Refer to EM-174, "Exploded View".
2. Remove the clip (A).




⇦ : Vehicle front

3. Pull out the washer tank inlet (1) from the washer tank.
4. Remove the front bumper fascia. Refer to EXT-15, "Exploded View".
5. Disconnect the washer pump connector.
6. Disconnect the headlamp washer pump connector.
7. Disconnect the washer level switch connector.
8. Disconnect the front washer tube and rear washer tube.
9. Disconnect the headlamp washer tube joint.
10. Remove the washer tank mounting bolts.
11. Remove the washer tank from the vehicle.

### INSTALLATION

Install in the reverse order of removal.

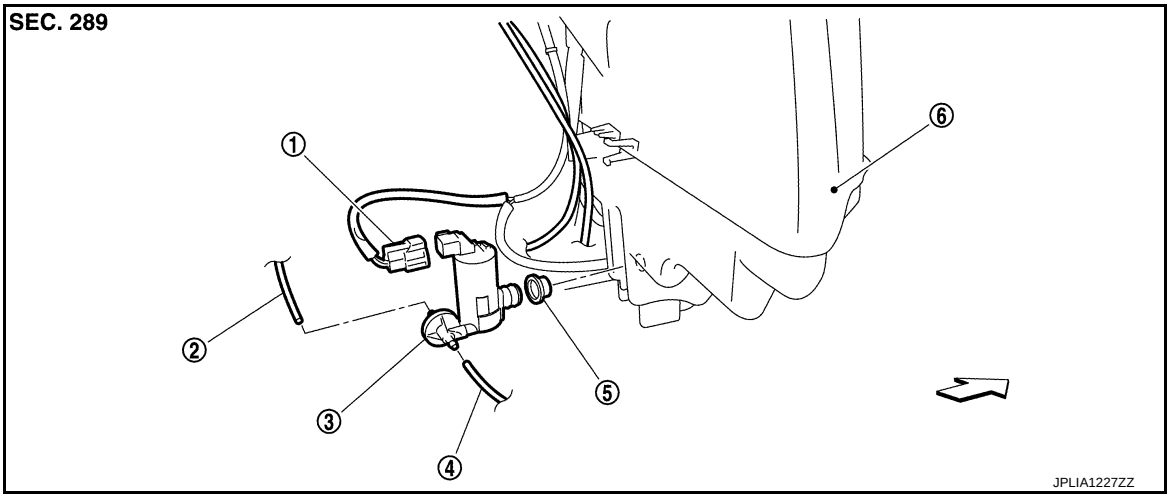
**CAUTION:**

**Add water up to the top of the washer tank inlet after installing. Check that there is no leakage.**

# WASHER PUMP

## Exploded View

INFOID:0000000004965932




1. Washer pump connector
2. Rear washer tube
3. Washer pump
4. Front washer tube
5. Packing
6. Washer tank

⇦ : Vehicle front

## Removal and Installation

INFOID:0000000004965933

### REMOVAL

1. Remove the fender protector RH (front). Refer to EXT-28, "FENDER PROTECTOR : Exploded View".
2. Disconnect the washer pump connector.
3. Disconnect the front washer tube and rear washer tube.
4. Remove the washer pump from the washer tank.
5. Remove the packing from the washer tank.

### INSTALLATION

Install in the reverse order of removal.

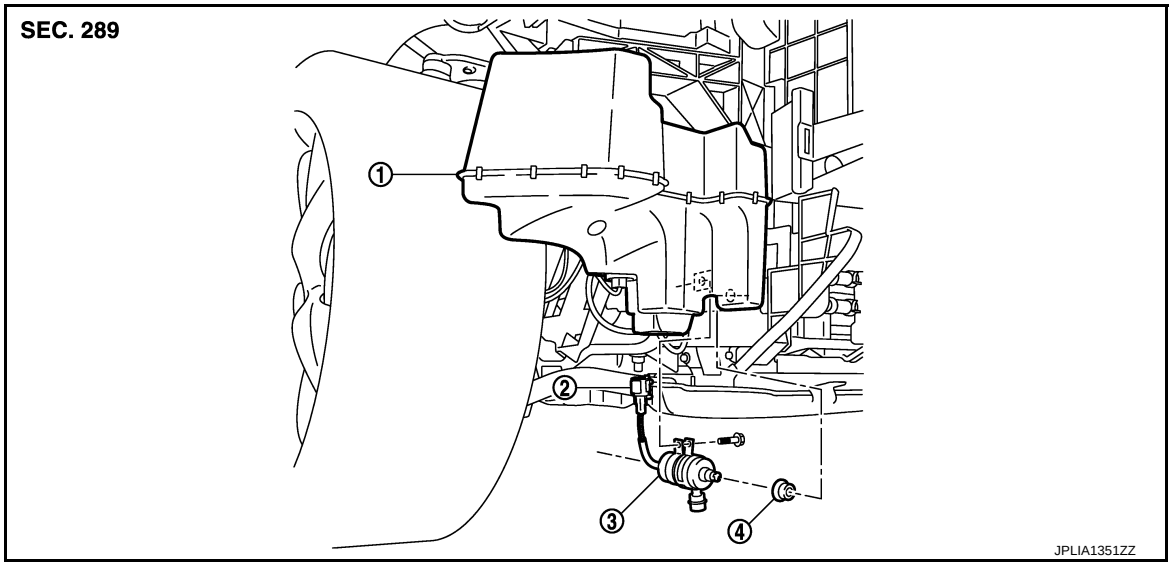
**CAUTION:**

**Never twist the packing when installing the washer pump.**

# HEADLAMP WASHER PUMP

## Exploded View

INFOID:0000000004965934




1. Washer tank
2. Headlamp washer pump connector
3. Headlamp washer pump
4. Packing

## Removal and Installation

INFOID:0000000004965935

### REMOVAL

1. Remove the fender protector RH (front). Refer to EXT-28, "FENDER PROTECTOR : Exploded View".
2. Disconnect the headlamp washer pump connector.
3. Disconnect the headlamp washer tube joint.
4. Remove the headlamp washer pump from the washer tank.
5. Remove the packing from the washer tank.

### INSTALLATION

Install in the reverse order of removal.

**CAUTION:**

**Never twist the packing when installing the washer pump.**

# WASHER LEVEL SWITCH

## Removal and Installation

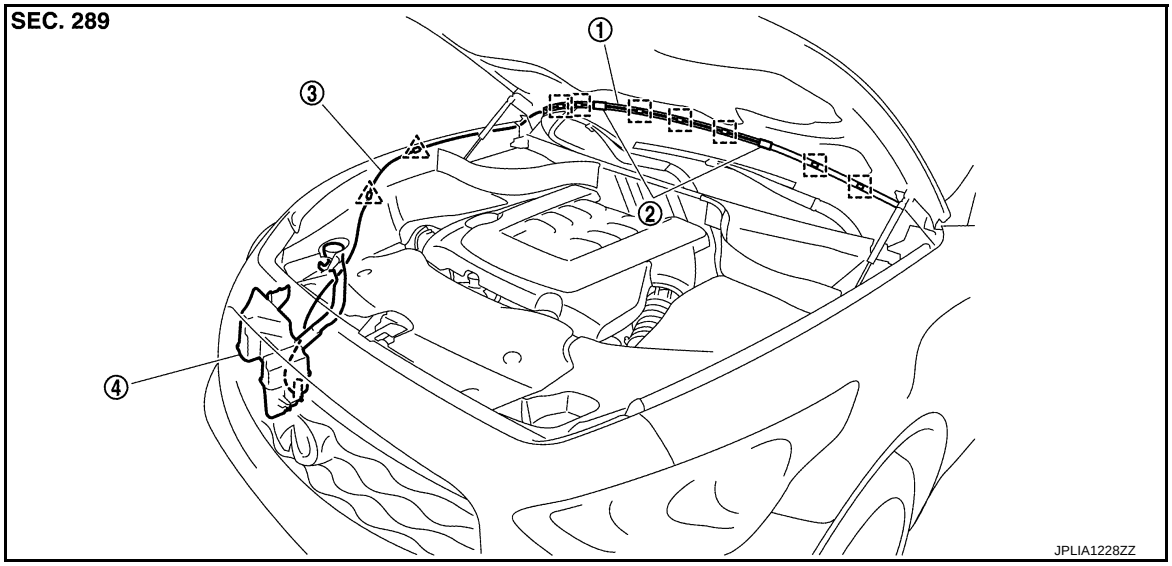
INFOID:0000000004965936

The washer level switch must be replaced together with the washer tank as an assembly. Refer to WW-128, "Removal and Installation".

# FRONT WASHER NOZZLE AND TUBE

## Hydraulic Layout

INFOID:0000000004965937




1. Front washer tube
2. Front washer nozzle
3. Front washer tube
4. Washer tank

△ : Clip A

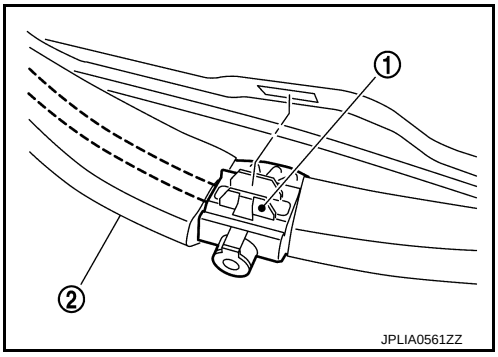
⬚ : Clip B

## Removal and Installation

INFOID:0000000005405081

### REMOVAL

1. Open the hood.
2. Use the stop point of washer nozzle (1) as the support point and rotate nozzle to remove it from body, while pushing nozzle spray point side along the hood.
3. Disconnect the washer tube (2) from the washer nozzle.




### INSTALLATION

1. Connect the washer tube into the washer nozzle.
2. Install the washer nozzle to the hood.
3. Adjust the washer nozzle spray position. Refer to WW-132, "Inspection and Adjustment".
   **CAUTION:**
   **The spray positions differ. Check that left and right nozzles are installed correctly.**

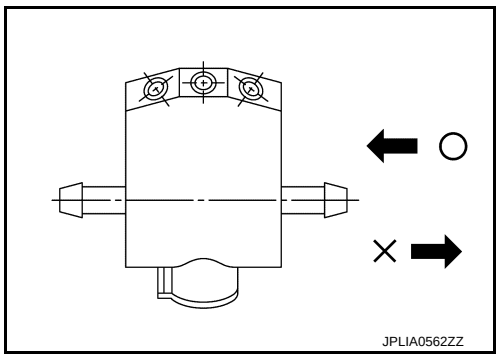
## Inspection and Adjustment

INFOID:0000000005405082

### INSPECTION

Washer Nozzle Inspection

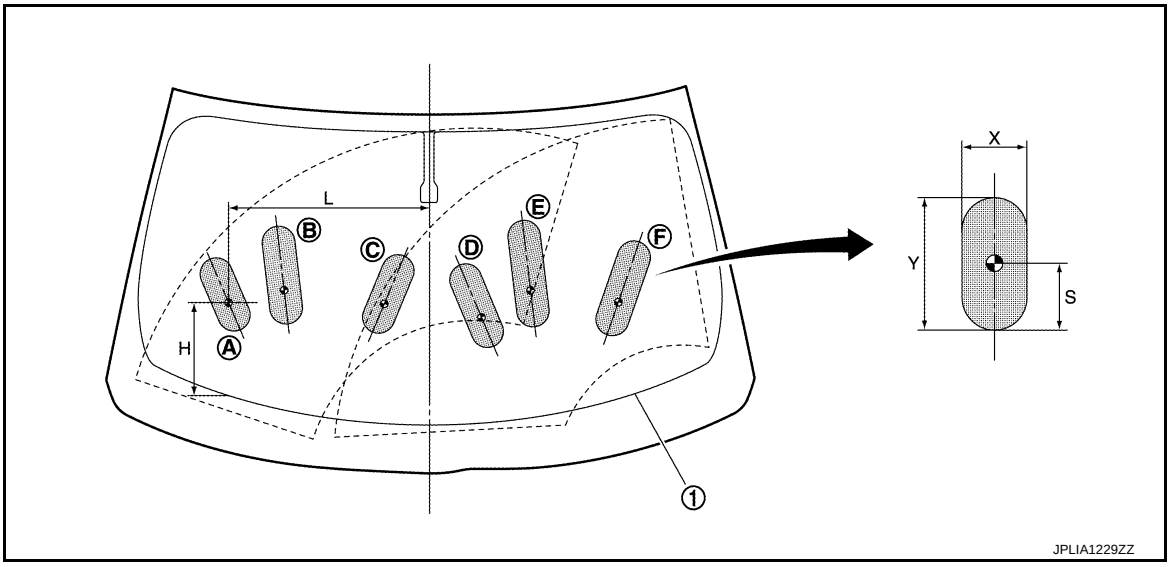
Check that air can pass through the hose by blowing forward (toward the nozzle), and check that air cannot pass through by sucking.




## ADJUSTMENT

Washer Nozzle Spray Position Adjustment

Adjust spray positions to match the positions shown in the figure.




1. Black printed frame line

: Spray area

: Target spray position

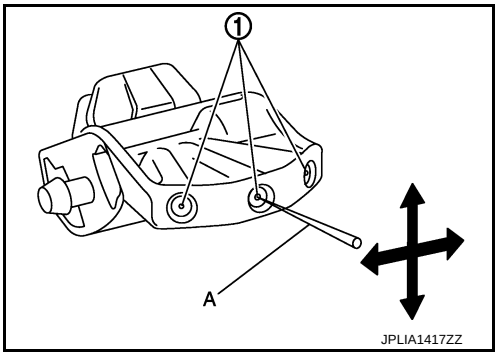
Unit: mm (in)

| Spray position | H | L | X | Y | S |
|---|---|---|---|---|---|
| A | 204 (8.03) | 486 (19.13) | 80 (3.15) | 226 (8.90) | 79 (3.11) |
| B | 274 (10.79) | 358 (14.09) | 80 (3.15) | 319 (12.56) | 99 (3.90) |
| C | 274 (10.79) | 124 (4.88) | 80 (3.15) | 332 (13.07) | 96 (3.78) |
| D | 269 (10.59) | 126 (4.96) | 80 (3.15) | 304 (11.97) | 93 (3.66) |
| E | 298 (11.73) | 253 (9.96) | 80 (3.15) | 332 (13.07) | 94 (3.70) |
| F | 239 (9.41) | 466 (18.35) | 80 (3.15) | 295 (11.61) | 91 (3.58) |

Insert a needle or similar object (A) into the spray opening (1) and move up/down and left/right to adjust the spray position.

**NOTE:**

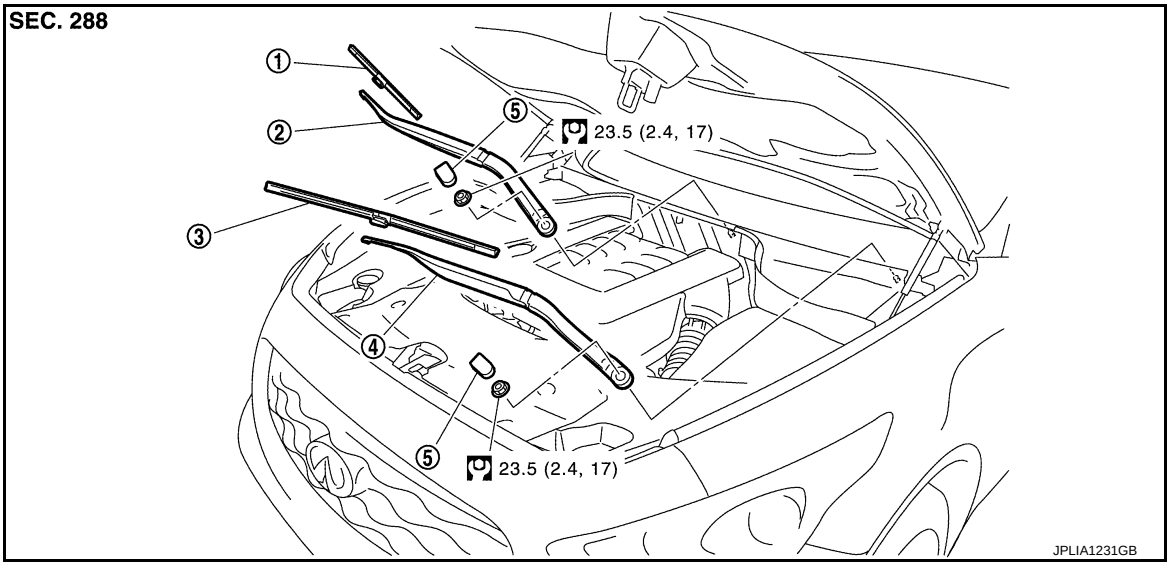
If wax or dust gets into the nozzle, remove wax or dust with a needle or small pin.



# FRONT WIPER ARM

## Exploded View

INFOID:0000000004965940




1. Front wiper blade (RH)
2. Front wiper arm (RH)
3. Front wiper blade (LH)
4. Front wiper arm (LH)
5. Front wiper arm cap

Refer to GI-4, "Components" for symbols in the figure.

## Removal and Installation

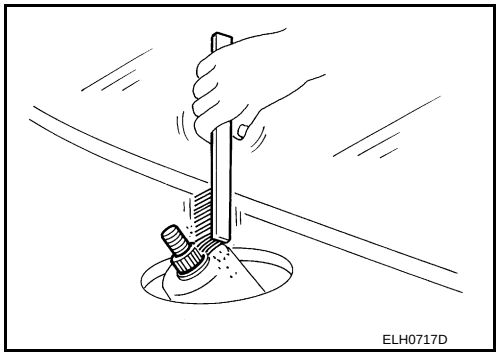
INFOID:0000000004965941

### REMOVAL

1. Operate the front wiper to move it to the auto stop position.
2. Open the hood.
3. Remove the front wiper arm caps.
4. Remove the front wiper arm mounting nuts.
5. Raise front wiper arm, and remove front wiper arm from the vehicle.

### INSTALLATION

1. Clean wiper arm mount as shown in the figure to prevent nuts from being loosened.
2. Operate the front wiper motor to move the front wiper to the auto stop position.
3. Adjust the front wiper blade position. Refer to WW-135, "Adjustment".
4. Install the front wiper arm by tightening the mounting nuts.
5. Inject the washer fluid.
6. Operate the front wiper to move it to the auto stop position.
7. Check that the front wiper blades stop at the specified position.
8. Install the front wiper arm caps.




## Adjustment

INFOID:0000000004965942

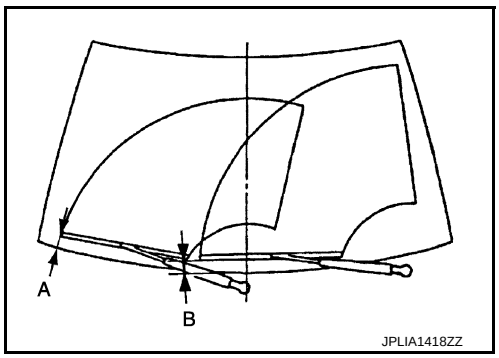
### WIPER BLADE POSITION ADJUSTMENT

Clearance between the end of cowl top cover and the top of wiper blade center

Standard clearance

**Passenger side (A) : 72.2 ± 7.5 mm (2.843 ± 0.295 in)**

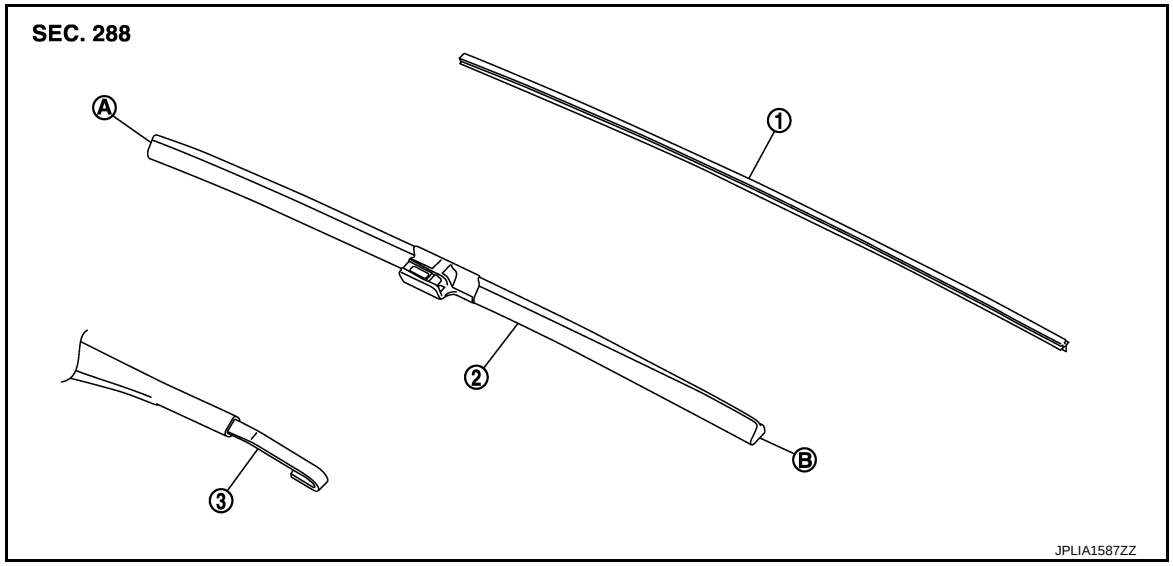
**Driver side (B) : 60.6 ± 7.5 mm (2.386 ± 0.295 in)**



# WIPER BLADE

## Exploded View

INFOID:0000000005405075




1. Wiper refill
2. Wiper blade
3. Wiper arm
A. Wiper blade end
B. Wiper blade tip

## Removal and Installation

INFOID:0000000005405076

REMOVAL

Remove the wiper blade from the wiper arm.

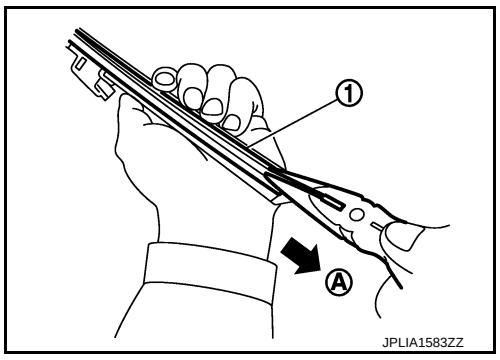
INSTALLATION

Install the front wiper blade to the wiper arm.

## Replacement

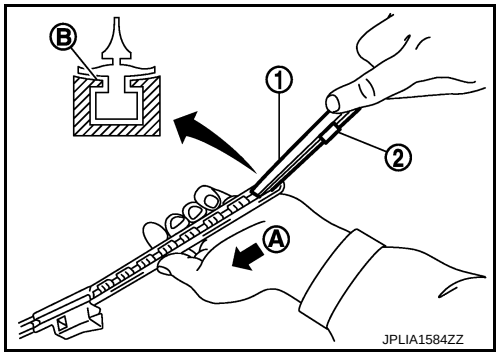
INFOID:0000000005405077

1. Hold the rip of old wiper refill (1) at the rear end of the wiper blade with long-nose pliers, and pull out the wiper refill to the direction (A).

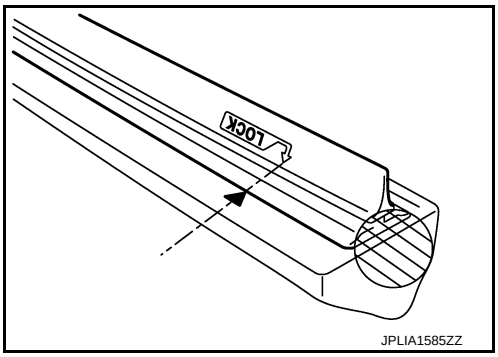



2. Insert the tip of new wiper refill (1) into the rear end of wiper blade. Slide the wiper refill to the direction (A) while pressing the wiper refill onto the wiper blade rear end.
**NOTE:**
- Insert the wiper refill to be held securely by tab (B) of wiper blade.
- After the wiper refill is fully inserted, remove the holder* (2).

*: Attached to service parts.



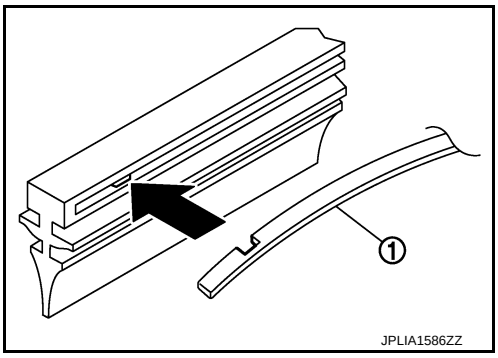
3. Inert the wiper refill until the stopper at the rear end of wiper refill fits in the tab. Check that “LOCK” mark on wiper refill is aligned with “▼” mark on wiper blade.
4. Untwist the twisted wiper refill (▨) at the rear end of wiper blade, if any.
5. Check the following items after replacing wiper refill.
   - Wiper refill is not twisted at all.
   - Wiper refill thoroughly fits in the tab on wiper blade.
   - Wiper refill is inserted from the proper direction.




**NOTE:**

When the vertebra is detached.

- Insert the vertebra (1) into the wiper blade to the same bending direction.
- If a vertebra has a notch, fit it to a protrusion inside the wiper refill.

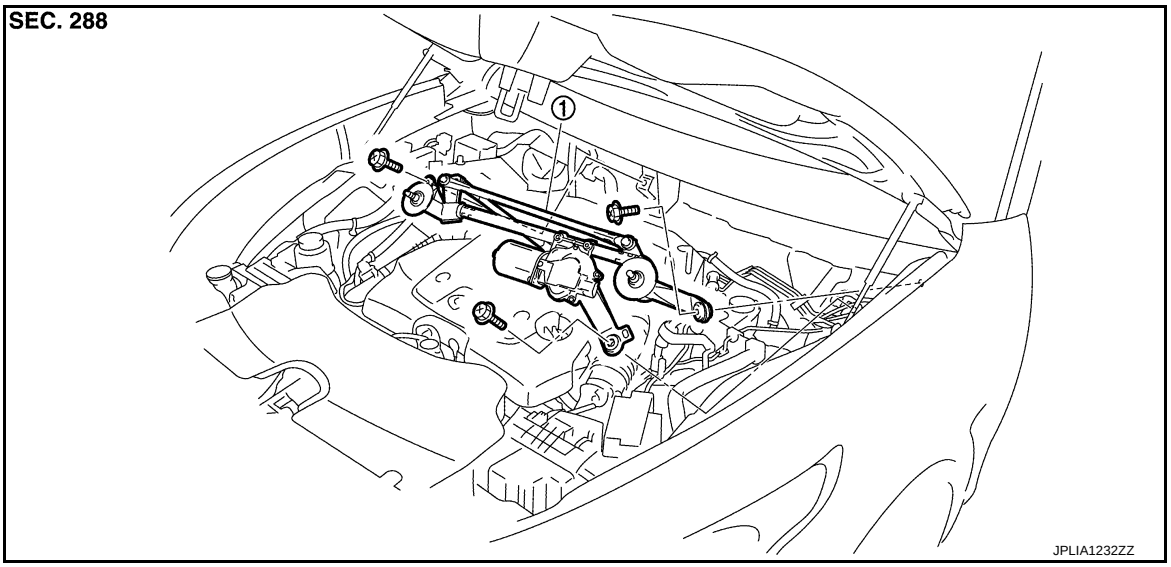


# FRONT WIPER DRIVE ASSEMBLY

## Exploded View

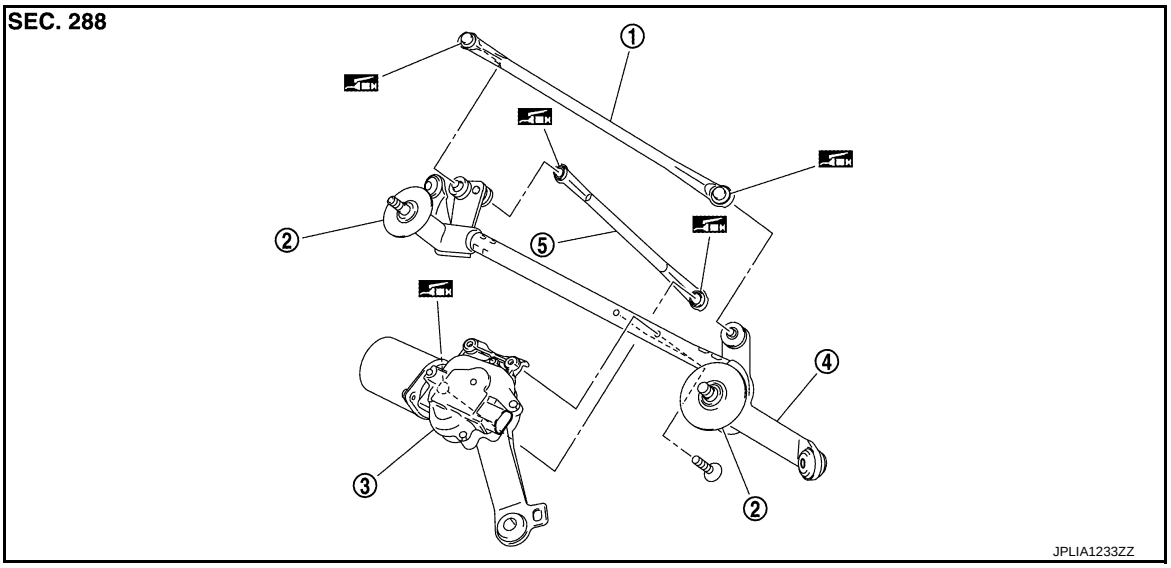
INFOID:0000000004965944

### REMOVAL




1. Front wiper drive assembly

### DISASSEMBLY




1. Front wiper linkage 1
2. Shaft seal
3. Front wiper motor
4. Front wiper frame
5. Front wiper linkage 2

: Multi–purpose grease or an equivalent.

## Removal and Installation

INFOID:0000000004965945

### REMOVAL

1. Remove the front wiper arm. Refer to WW-135, "Exploded View".
2. Remove the cowl top cover. Refer to EXT-25, "Exploded View".
3. Remove the bolts from the front wiper drive assembly.

4. Disconnect the front wiper motor connector.
5. Remove the front wiper drive assembly from the vehicle.

### INSTALLATION

1. Install the front wiper drive assembly to the vehicle.
2. Connect the front wiper motor connector.
3. Operate the front wiper to move it to the auto stop position.
4. Install the cowl top cover. Refer to EXT-25, "Exploded View".
5. Install the front wiper arms. Refer to WW-135, "Exploded View".

## Disassembly and Assembly

INFOID:0000000004965946

### DISASSEMBLY

1. Remove the front wiper linkage 1 and 2 from the front wiper drive assembly.
   **CAUTION:**
   **Never bend the linkage or damage the plastic part of the ball joint when removing the wiper linkage.**
2. Remove the front wiper motor mounting screws, and then remove the front wiper motor from the front wiper frame.

### ASSEMBLY

1. Connect the front wiper motor connector.
2. Operate the front wiper to move it to the auto stop position.
3. Disconnect the front wiper motor connector.
4. Install the front wiper motor to the front wiper frame.
5. Install the front wiper linkage 2 to the front wiper motor and the front wiper frame.
6. Install the front wiper linkage 1 to the front wiper frame.
   **CAUTION:**
   - **Never drop front wiper motor or cause it to come into contact with other parts.**
   - **Be careful for the grease condition at the front wiper motor and front wiper linkage joint (retainer). Apply Multi–purpose grease or an equivalent if necessary.**

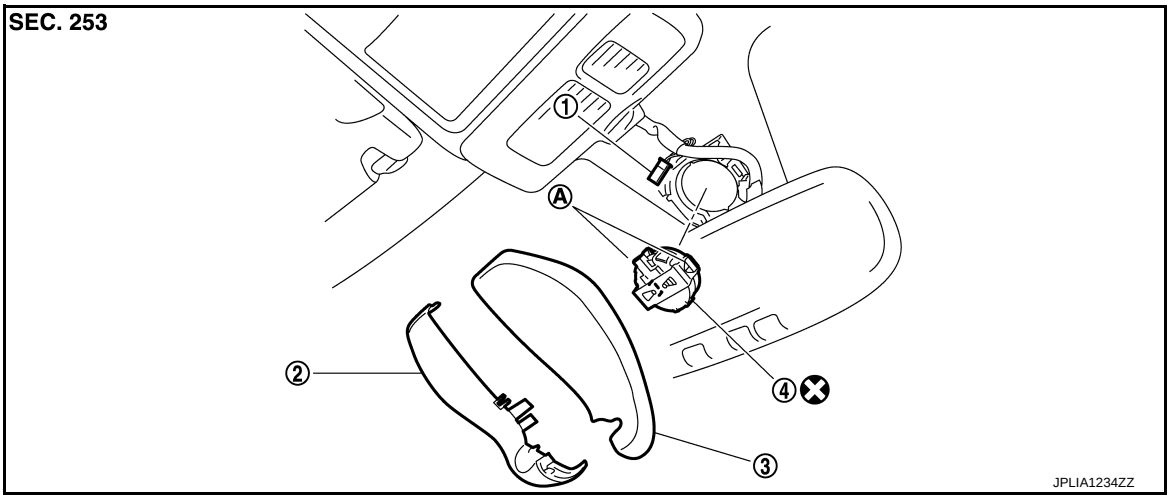
# LIGHT & RAIN SENSOR

## Exploded View

INFOID:0000000004965947

**CAUTION:**
**When the light & rain sensor is removed from windshield, the light & rain sensor cannot be re-used.**

REMOVAL




1. Light & rain sensor connector
2. Inside mirror cover (LH)
3. Inside mirror cover (RH)
4. Light & rain sensor
A. Metal spring clip

Refer to GI-4, "Components" for symbols in the figure.

## Removal and Installation

INFOID:0000000004965948

REMOVAL

1. Remove the inside mirror cover (LH and RH).
2. Disengage the both sides of metal spring clips, and remove the light & rain sensor from the windshield.
3. Disconnect the light & rain sensor connector.

INSTALLATION

Install in the reverse order of removal.

**CAUTION:**
- **Surface of windshield should be cleaned.**
- **Never touch gel/adhesive of new part.**
- **Lock the metal spring clips and install the light & rain sensor securely.**

# WIPER AND WASHER SWITCH

## Exploded View

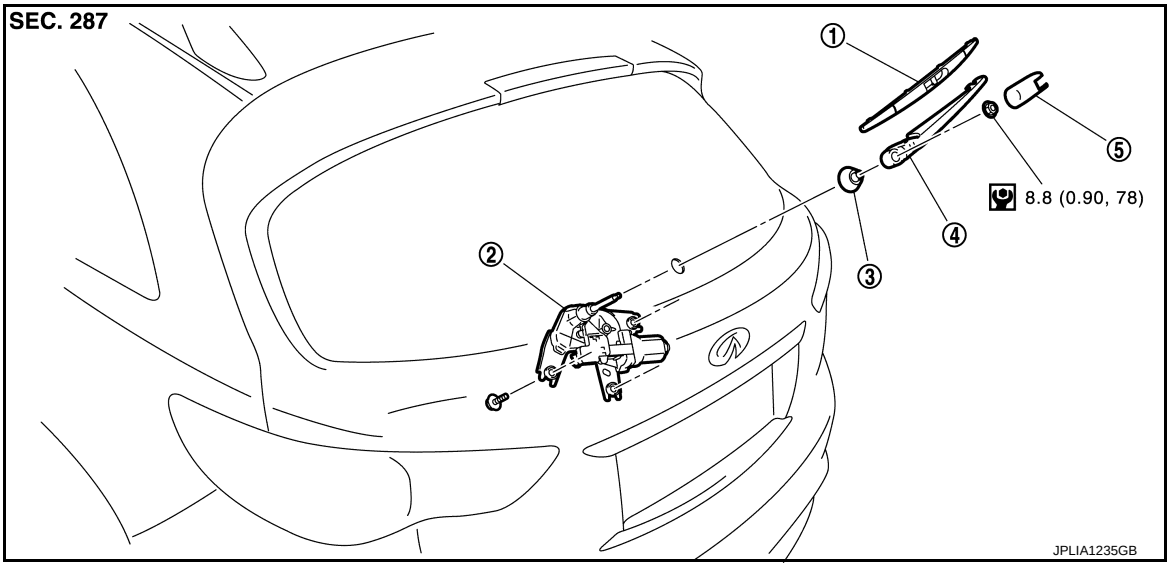
INFOID:0000000004965949

Refer to BCS-95, "Exploded View".

# REAR WIPER ARM

## Exploded View

INFOID:0000000004965950




1. Rear wiper blade
2. Rear wiper motor
3. Pivot seal
4. Rear wiper arm
5. Rear wiper arm cover

Refer to GI-4, "Components" for symbols in the figure.

## Removal and Installation

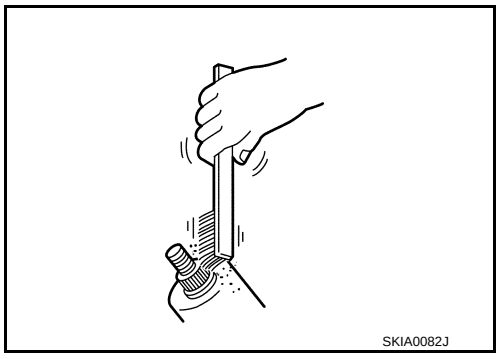
INFOID:0000000004965951

### REMOVAL

1. Operate the rear wiper to the auto stop position.
2. Remove the rear wiper arm cover.
3. Remove the rear wiper arm mounting nut.
4. Remove wiper arm from the vehicle.

### INSTALLATION

1. Clean wiper arm mount as shown in the figure to prevent nut from being loosened.
2. Operate the rear wiper motor to the auto stop position.
3. Adjust the rear wiper blade position. Refer to WW-143, "Adjustment".
4. Install the rear wiper arm by tightening the mounting nut.
5. Inject the washer fluid.
6. Operate the rear wiper to the auto stop position.
7. Check that the rear wiper blades stop at the specified position.
8. Install the rear wiper arm cover.




## Adjustment

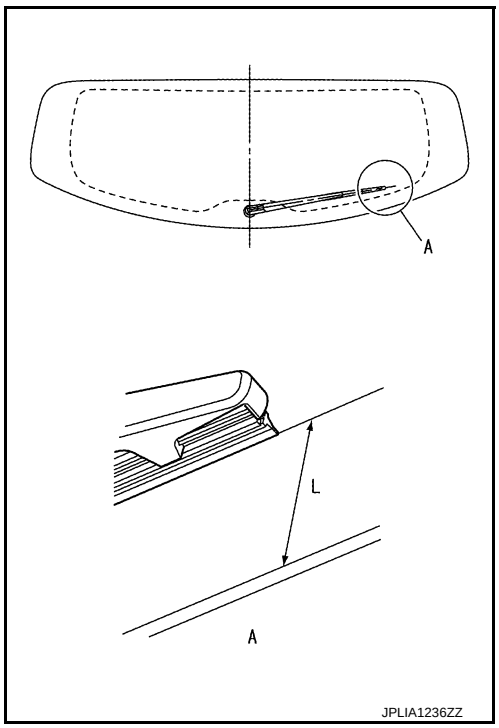
INFOID:0000000004965952

### REAR WIPER BLADE POSITION ADJUSTMENT

Clearance between the end of back door glass and the top of wiper blade center.

Standard clearance

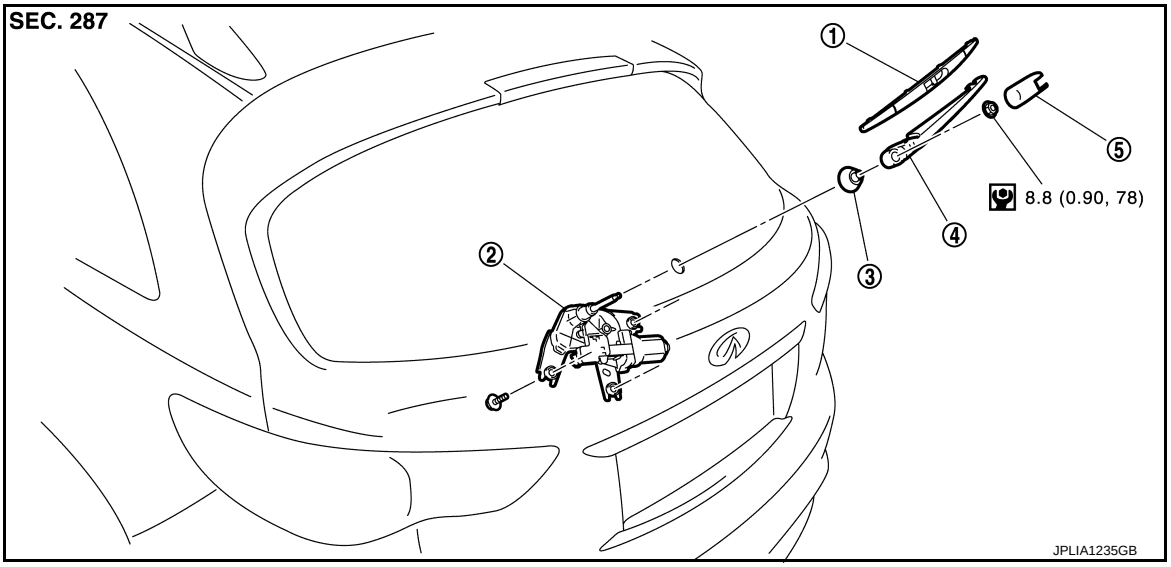
**L : 51.5 ± 7.5 mm (2.028 ± 0.295 in)**



# REAR WIPER MOTOR

## Exploded View

INFOID:0000000004965953




1. Rear wiper blade
2. Rear wiper motor
3. Pivot seal
4. Rear wiper arm
5. Rear wiper arm cover

Refer to GI-4, "Components" for symbols in the figure.

## Removal and Installation

INFOID:0000000004965954

### REMOVAL

1. Remove the rear wiper arm. Refer to WW-143, "Removal and Installation".
2. Remove the back door finisher inner. Refer to INT-42, "Exploded View".
3. Disconnect the rear wiper motor connector.
4. Remove the rear wiper motor mounting bolts.
5. Remove the rear wiper motor from the vehicle.
6. Remove the pivot seal.

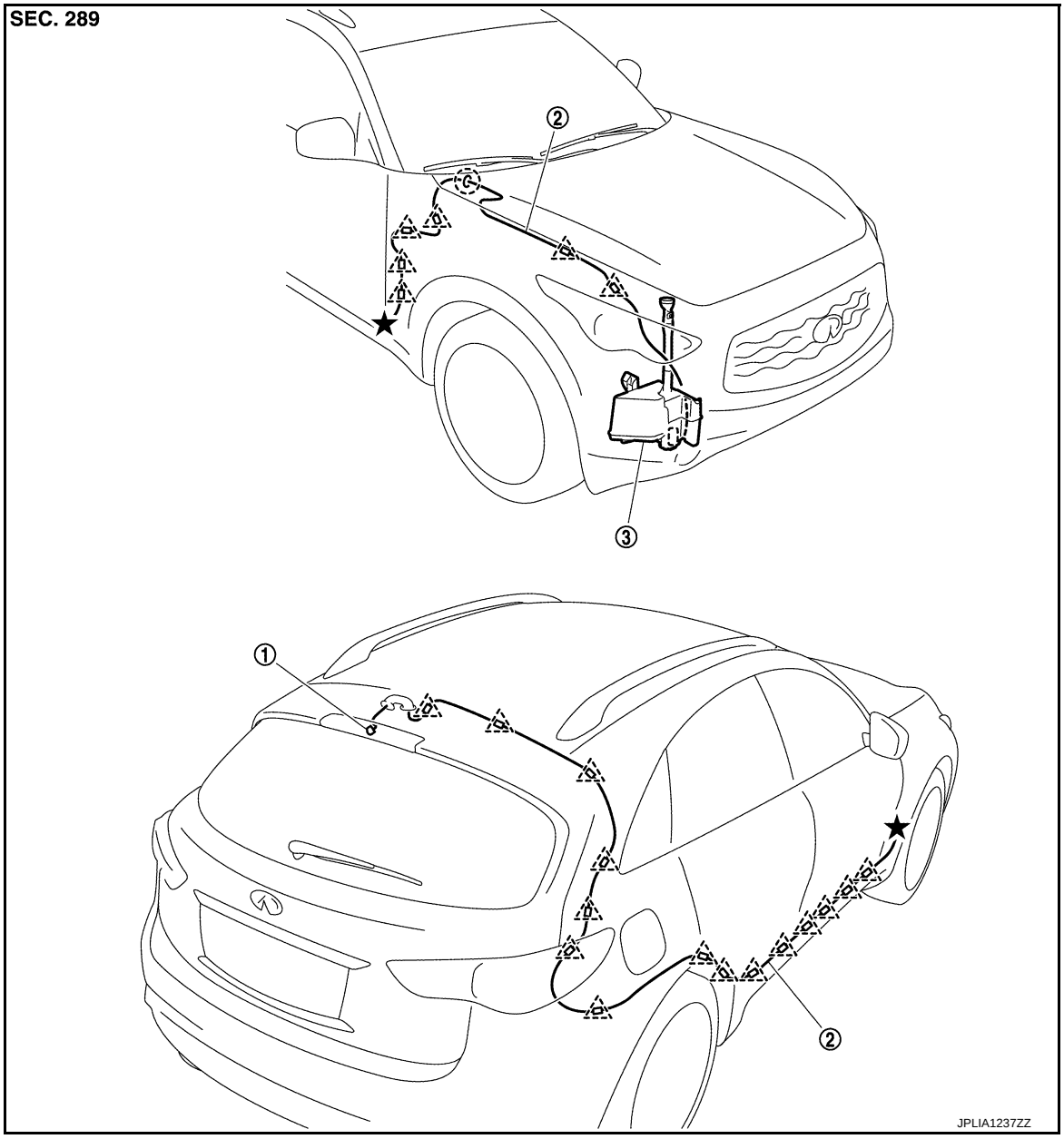
### INSTALLATION

1. Install the pivot seal.
2. Install the rear wiper motor to the vehicle.
3. Connect the rear wiper motor connector.
4. Operate the rear wiper to the auto stop position.
5. Install the back door finisher inner. Refer to INT-42, "Exploded View".
6. Install the rear wiper arm. Refer to WW-143, "Removal and Installation".

# REAR WASHER NOZZLE AND TUBE

## Hydraulic Layout

INFOID:0000000004965955




1. Rear washer nozzle
2. Rear washer tube
3. Washer tank

: Clip

: Grommet

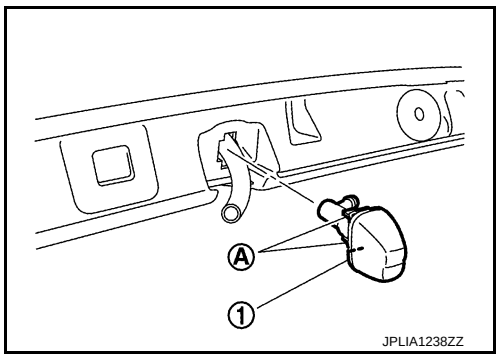
## Removal and Installation

INFOID:0000000004965956

### REMOVAL

1. Remove the high-mounted stop lamp. Refer to EXL-236, "Exploded View".

2. Push pawl (A), and remove the rear washer nozzle (1) from the back door.
3. Disconnect the rear washer tube from the rear washer nozzle.




## INSTALLATION

Install in the reverse order of removal.

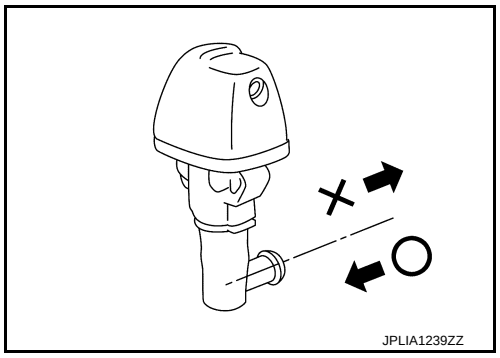
# Inspection and Adjustment

INFOID:0000000004965957

## INSPECTION

Washer Nozzle Inspection

Check that air can pass through the hose by blowing forward (toward the nozzle), and check that air cannot pass through by sucking.




## ADJUSTMENT

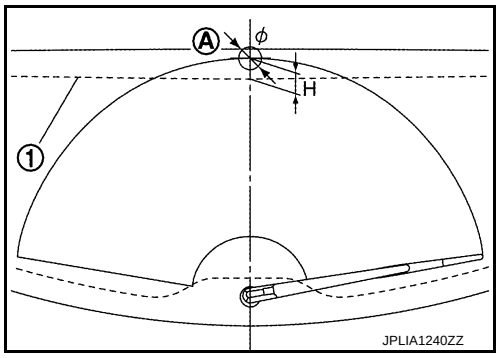
Washer Nozzle Spray Position adjustment

Adjust spray positions to match the positions shown in the figure.

1 : Black printed frame line

Unit: mm (in)

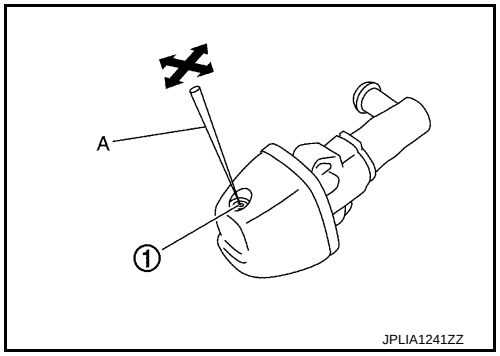
| Spray position | H : Height | ϕ : Spray position area |
|---|---|---|
| A | 23.1 (0.91) | 30 (1.18) |




Insert a needle or similar object (A) into the spray opening (1) and move up/down and left/right to adjust the spray position.

**NOTE:**

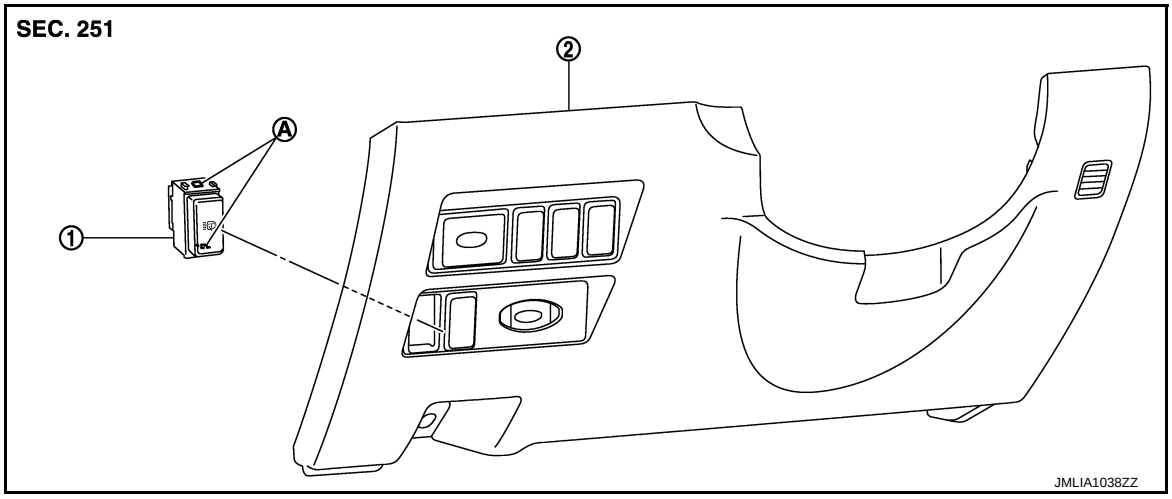
If wax or dust gets into the nozzle, remove wax or dust with a needle or small pin.



# HEADLAMP WASHER SWITCH

## Exploded View

INFOID:0000000006055128




1. Headlamp washer switch
2. Instrument lower panel LH

A: Pawl

## Removal and Installation

INFOID:0000000006055129

### REMOVAL

1. Remove instrument lower panel LH.
   - A/T MODELS: Refer to IP-15, "A/T MODELS : Removal and Installation".
   - M/T MODELS: Refer to IP-27, "M/T MODELS : Removal and Installation".
2. Disengage the pawls, and then remove the headlamp washer switch from the instrument driver lower panel.

### INSTALLATION

Install in the reverse order of removal.