

SECTION **WCS**

WARNING CHIME SYSTEM

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

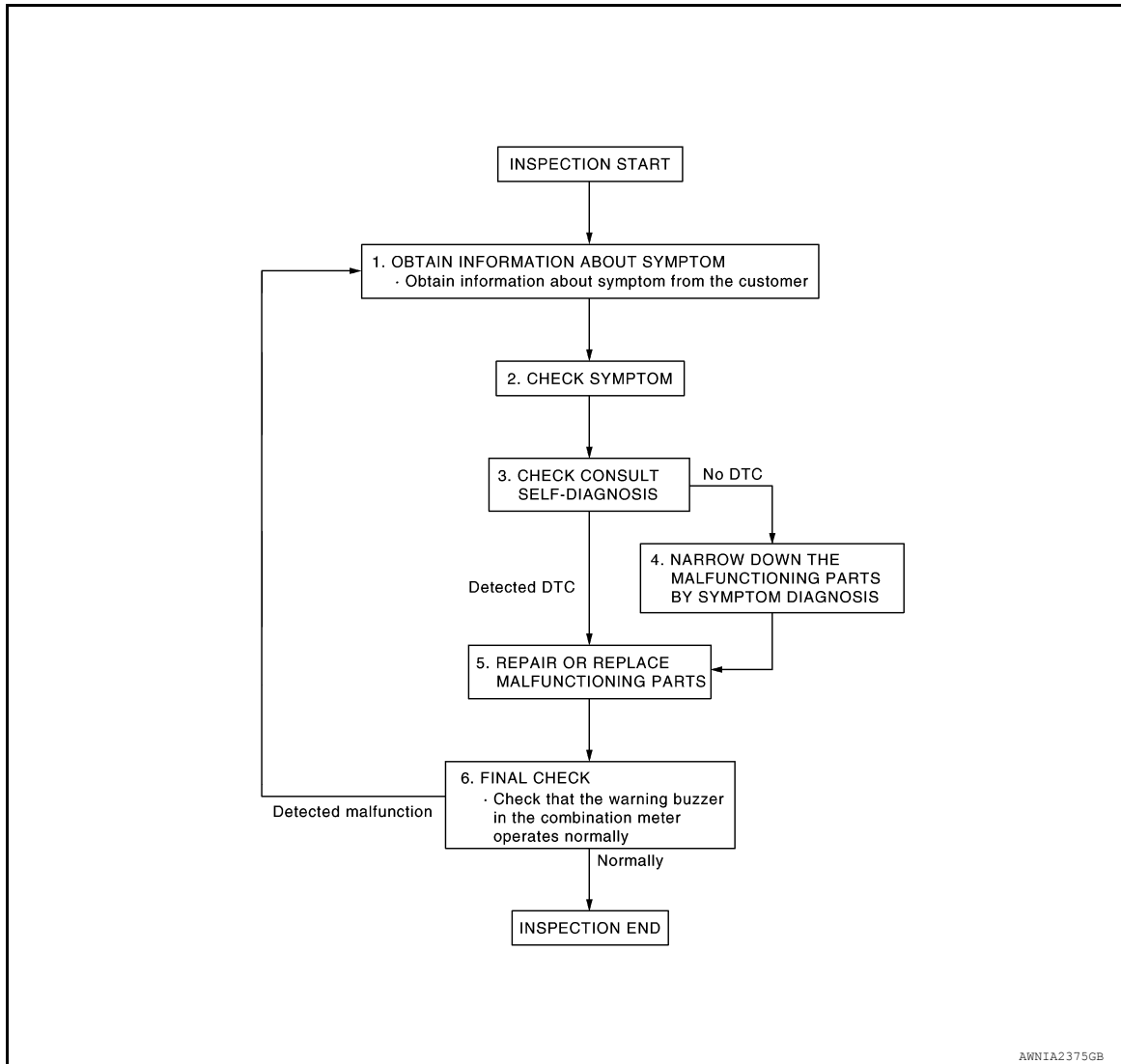
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000011287602

OVERALL SEQUENCE



DETAILED FLOW

1. OBTAIN INFORMATION ABOUT SYMPTOM

Interview the customer to obtain as much information as possible about the conditions and environment under which the malfunction occurred.

>> GO TO 2

2. CHECK SYMPTOM

- Check the symptom based on the information obtained from the customer.
- Check to see if any other malfunctions are present.

>> GO TO 3

3. CHECK CONSULT SELF-DIAGNOSIS RESULTS

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

Connect CONSULT and perform "SELF-DIAGNOSIS". Refer to [MWI-27. "CONSULT Function \(METER/M&A\)"](#).

Are self-diagnosis results normal?

YES >> GO TO 4

NO >> Repair or replace the malfunctioning parts, GO TO 5

4.NARROW DOWN MALFUNCTIONING PARTS THROUGH SYMPTOM DIAGNOSIS

Perform symptom diagnosis and repair or replace the identified malfunctioning parts.

>> GO TO 5

5.REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace malfunctioning parts.

NOTE:

If DTC is displayed, erase DTC after repairing or replacing malfunctioning parts.

>> GO TO 6

6.FINAL CHECK

Check that the warning buzzer in the combination meter operates normally.

Does it operate normally?

YES >> Inspection End.

NO >> GO TO 1

WARNING CHIME SYSTEM

< SYSTEM DESCRIPTION >

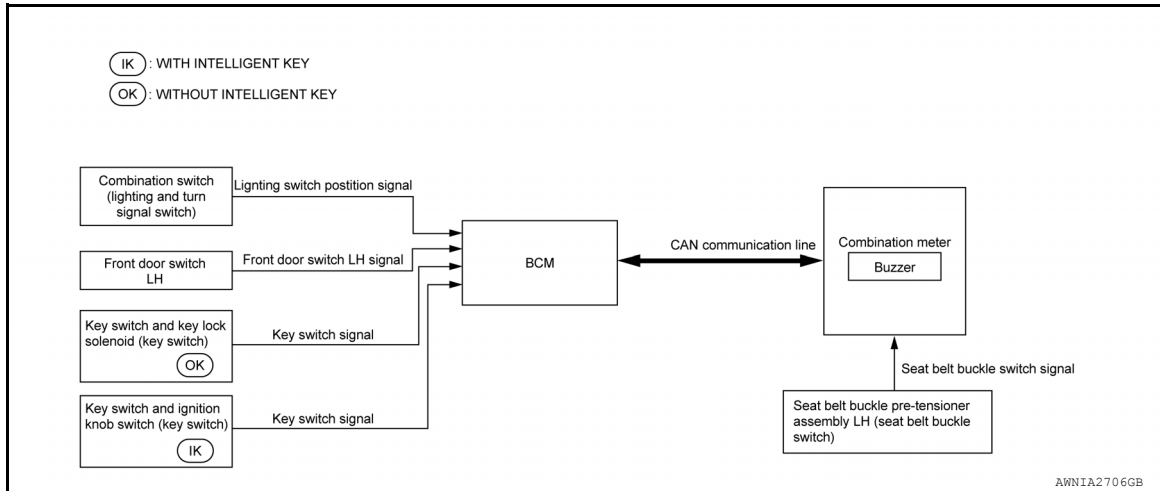
SYSTEM DESCRIPTION

WARNING CHIME SYSTEM

WARNING CHIME SYSTEM

WARNING CHIME SYSTEM : System Diagram

INFOID:000000011287603



WARNING CHIME SYSTEM : System Description

INFOID:000000011287604

COMBINATION METER

- The buzzer for warning chime system is installed in the combination meter.
- The buzzer sounds when the combination meter receives a buzzer output signal from each unit.

BCM

BCM receives signals from various units and transmits a buzzer output signal to the combination meter with CAN communication line if it judges that the warning buzzer should be activated.

BCM warning function list

| Warning functions | Signal name |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Light reminder warning chime | <ul style="list-style-type: none"> • Lighting switch position signal • Front door switch LH signal |
| Seat belt warning chime | Seat belt buckle switch signal |
| Key warning chime | <ul style="list-style-type: none"> • Key switch signal • Front door switch LH signal |

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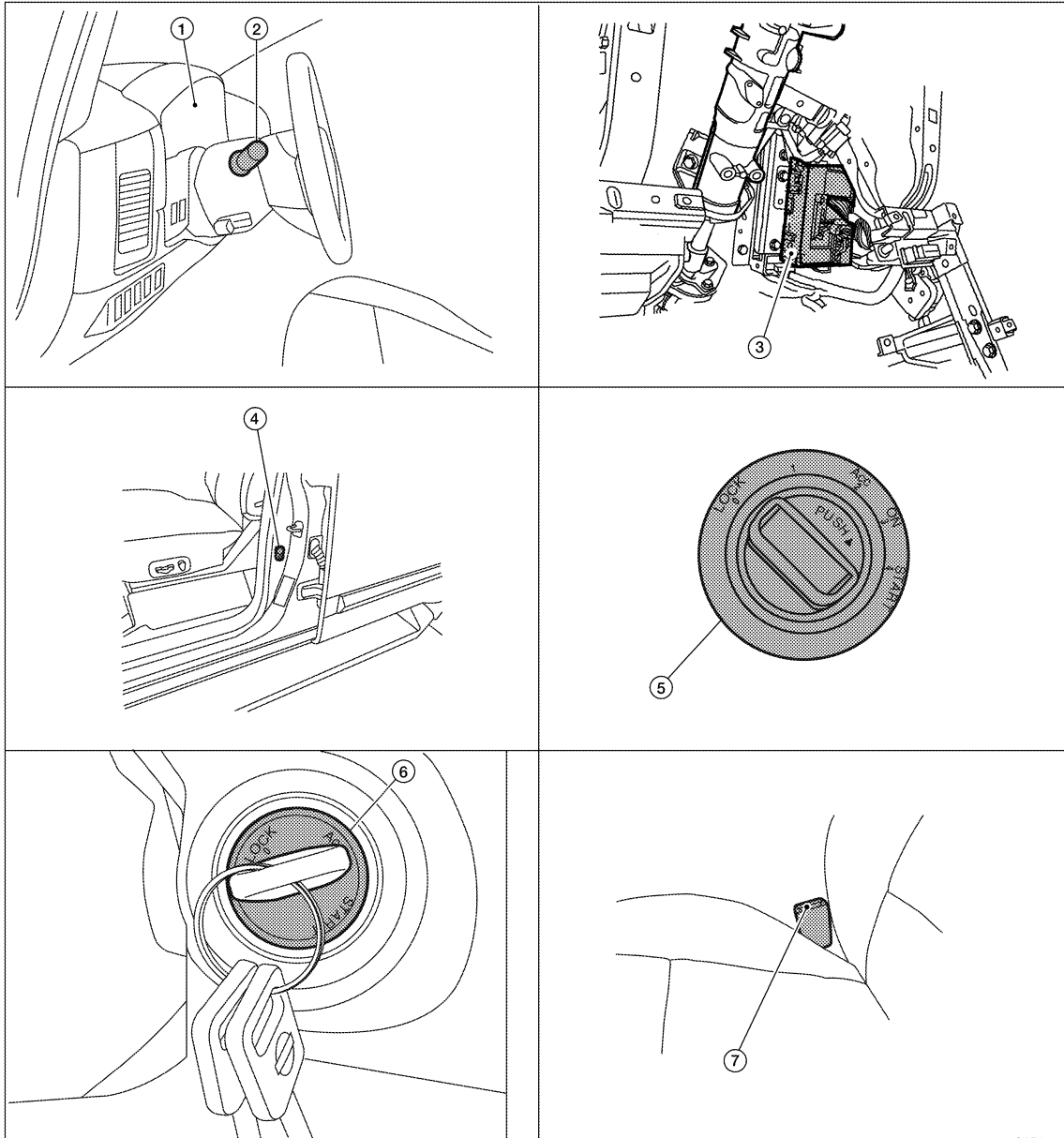
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WARNING CHIME SYSTEM

< SYSTEM DESCRIPTION >

WARNING CHIME SYSTEM : Component Parts Location

INFOID:000000011287605



- | | | |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 1. Combination meter M24 | 2. Combination switch (lighting and turn signal switch) M28 | 3. BCM M18, M19, M20 (view with instrument lower panel LH removed) |
| 4. Front door switch LH B8 | 5. Key switch and ignition knob switch (key switch) M12 (with Intelligent Key) | 6. Key switch and key lock solenoid (key switch) M27 (without Intelligent Key) |
| 7. Seat belt buckle pre-tensioner assembly LH (seat belt buckle switch) B74 | | |

WARNING CHIME SYSTEM : Component Description

INFOID:000000011287606

| Unit | Description |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Combination meter | <ul style="list-style-type: none"> • Receives the seat belt buckle switch signal from the seat belt buckle pre-tensioner assembly LH (seat belt buckle switch) and transmits it to BCM with CAN communication line. • Receives a buzzer output signal from BCM with CAN communication line. |
| BCM | Transmits signals provided by various units to the combination meter with CAN communication line. |

WARNING CHIME SYSTEM

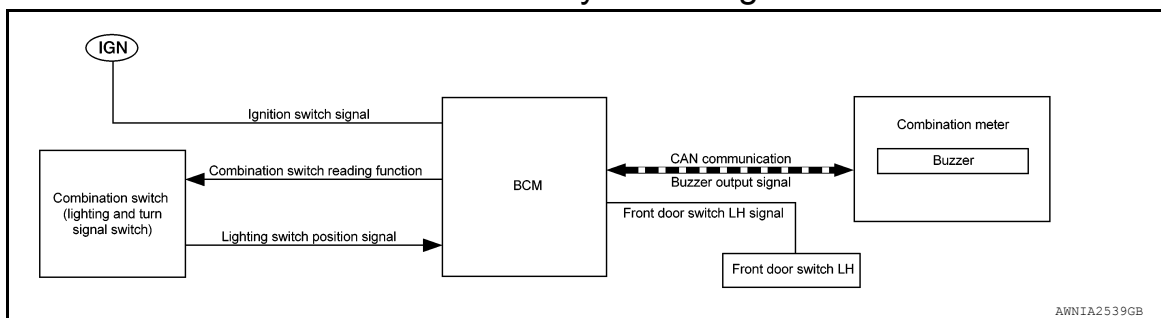
< SYSTEM DESCRIPTION >

| Unit | Description |
|-------------------------------------------------------------------------|----------------------------------------------------------------------|
| Key switch and ignition knob switch (key switch) (with Intelligent Key) | Transmits key switch signal to BCM. |
| Key switch and key lock solenoid (key switch) (without Intelligent Key) | Transmits key switch signal to BCM. |
| Seat belt buckle pre-tensioner assembly LH (seat belt buckle switch) | Transmits a seat belt buckle switch signal to the combination meter. |
| Combination switch (lighting and turn signal switch) | Transmits the lighting switch position signal to BCM. |
| Front door switch LH | Transmits the front door switch LH signal to BCM. |

LIGHT REMINDER WARNING CHIME

LIGHT REMINDER WARNING CHIME : System Diagram

INFOID:000000011287607



LIGHT REMINDER WARNING CHIME : System Description

INFOID:000000011287608

DESCRIPTION

With ignition switch in OFF or ACC position, driver door open, and lighting switch in 1ST or 2ND position, the light warning chime will sound.

- BCM detects ignition switch in OFF or ACC position, front door switch LH ON, and lighting switch in 1ST or 2ND position. And then transmits buzzer output signal (light reminder warning chime) to combination meter with CAN communication line.
- When combination meter receives buzzer output signal (light reminder warning chime), it sounds the buzzer.

WARNING OPERATION CONDITIONS

If all of the following conditions are fulfilled

- Lighting switch is at 1st or 2nd position
- Ignition switch is at OFF or ACC
- Front door switch LH is ON

WARNING CANCEL CONDITIONS

Warning is canceled if any of the following conditions is fulfilled.

- Lighting switch OFF
- Ignition switch ON
- Front door switch LH is OFF

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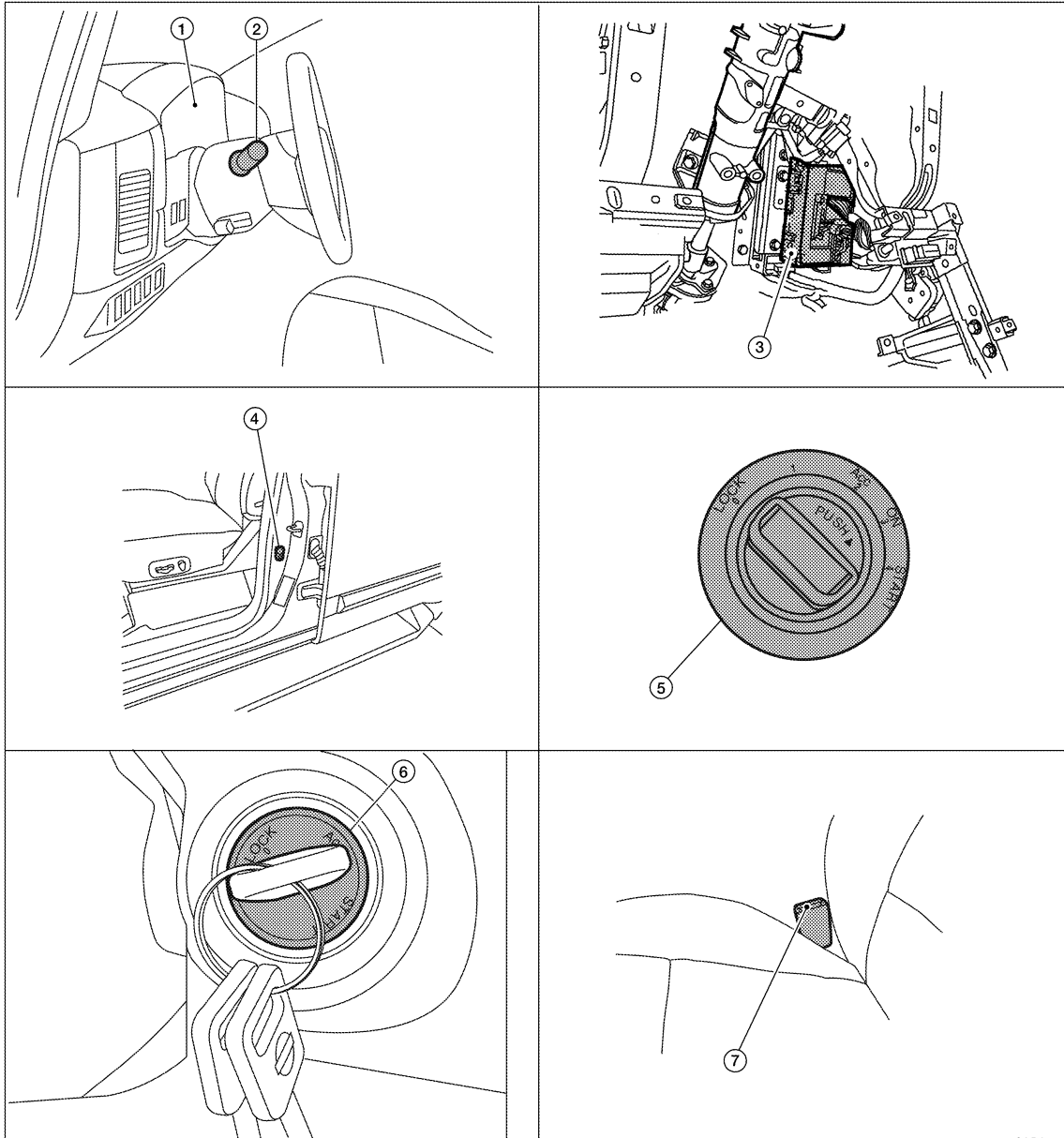
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WARNING CHIME SYSTEM

< SYSTEM DESCRIPTION >

LIGHT REMINDER WARNING CHIME : Component Parts Location

INFOID:000000011287609



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|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 1. Combination meter M24 | 2. Combination switch (lighting and turn signal switch) M28 | 3. BCM M18, M19, M20 (view with instrument lower panel LH removed) |
| 4. Front door switch LH B8 | 5. Key switch and ignition knob switch (key switch) M12 (with Intelligent Key) | 6. Key switch and key lock solenoid (key switch) M27 (without Intelligent Key) |
| 7. Seat belt buckle pre-tensioner assembly LH (seat belt buckle switch) B74 | | |

LIGHT REMINDER WARNING CHIME : Component Description

INFOID:000000011287610

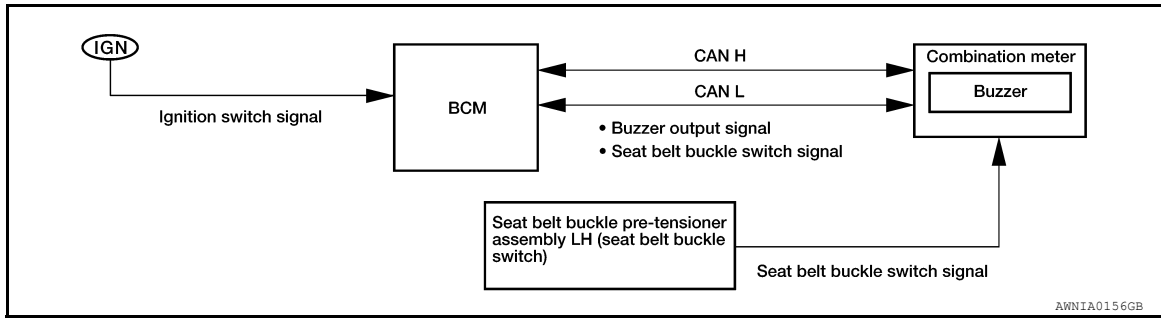
| Unit | Description |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Combination meter | Receives a buzzer output signal from BCM via CAN communication line and sounds the buzzer. |
| BCM | Judges the light warning conditions from the signals provided by various switches and transmits a buzzer output signal to the combination meter via CAN communication line if necessary. |
| Combination switch (lighting and turn signal switch) | Transmits the lighting switch position signal to BCM. |
| Front door switch LH | Transmits the front door switch LH signal to BCM. |

WARNING CHIME SYSTEM

< SYSTEM DESCRIPTION >

SEAT BELT WARNING CHIME

SEAT BELT WARNING CHIME : System Diagram



SEAT BELT WARNING CHIME : System Description

INFOID:000000011287612

DESCRIPTION

With ignition switch turned ON and driver seat belt unfastened, seat belt warning chime will sound for approximately 6 seconds.

- BCM receives seat belt buckle switch signal from combination meter with CAN communication line.
- BCM detects ignition switch turned ON and seat belt buckle pre-tensioner assemble LH (seat belt buckle switch) ON. And then transmits buzzer output signal (seat belt warning chime) to combination meter with CAN communication line.
- When combination meter receives buzzer output signal (seat belt warning chime), it sounds the buzzer.

WARNING OPERATION CONDITIONS

If all of the following conditions are fulfilled

- Ignition switch OFF→ON
- Seat belt buckle pre-tensioner assemble LH (seat belt buckle switch) is ON (driver seat belt not fastened)

WARNING CANCEL CONDITIONS

Cancels the warning if any of the following conditions is fulfilled.

- Ignition switch OFF
- Seat belt buckle pre-tensioner assemble LH (seat belt buckle switch) is OFF (driver seat belt fastened)

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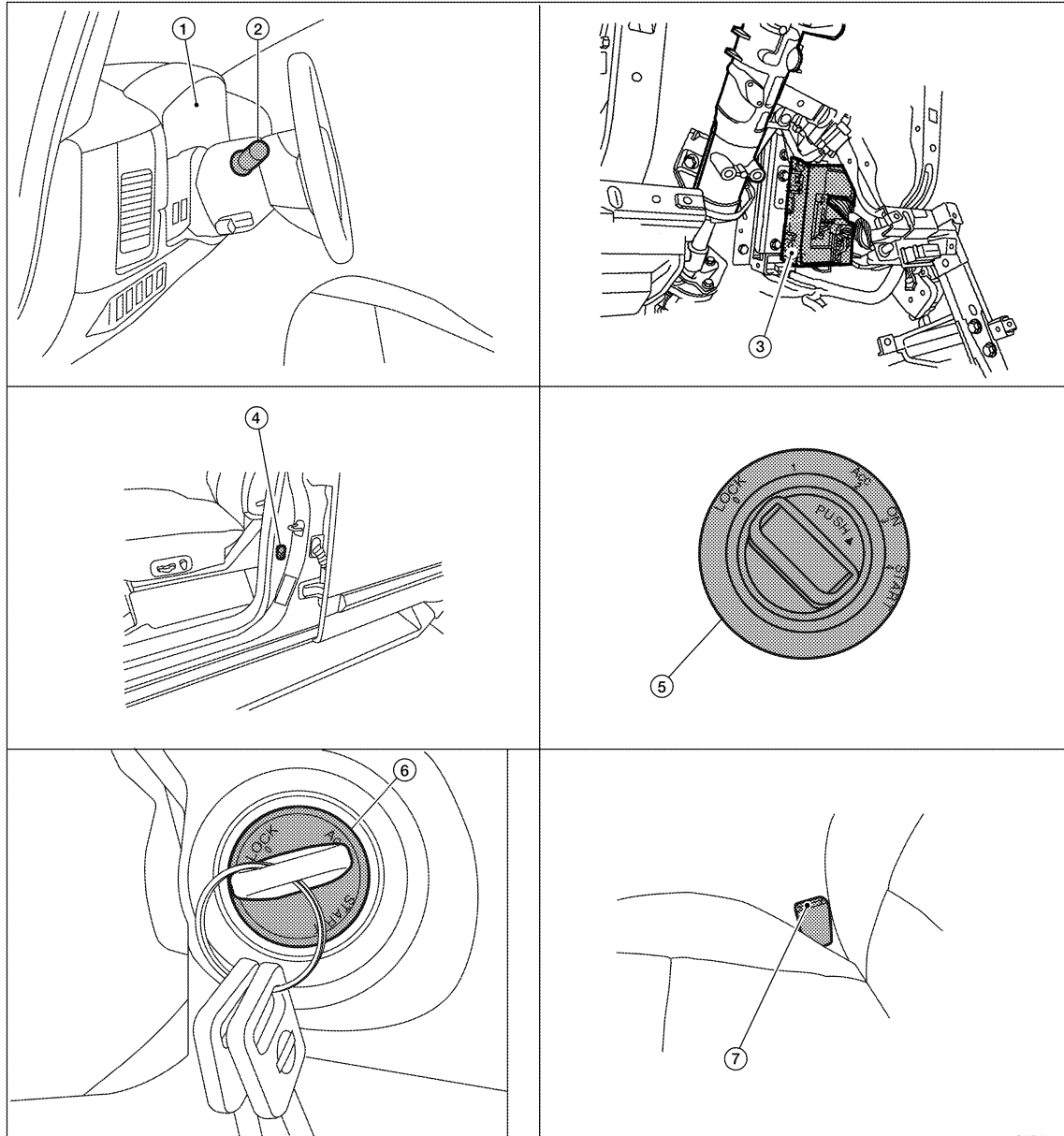
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WARNING CHIME SYSTEM

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SEAT BELT WARNING CHIME : Component Parts Location

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|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 1. Combination meter M24 | 2. Combination switch (lighting and turn signal switch) M28 | 3. BCM M18, M19, M20 (view with instrument lower panel LH removed) |
| 4. Front door switch LH B8 | 5. Key switch and ignition knob switch (key switch) M12 (with Intelligent Key) | 6. Key switch and key lock solenoid (key switch) M27 (without Intelligent Key) |
| 7. Seat belt buckle pre-tensioner assembly LH (seat belt buckle switch) B74 | | |

SEAT BELT WARNING CHIME : Component Description

INFOID:000000011287614

| Unit | Description |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Combination meter | <ul style="list-style-type: none"> Receives the seat belt buckle switch signal from the seat belt buckle pre-tensioner assembly LH (seat belt buckle switch) and transmits it to BCM via CAN communication line. Receives a buzzer output signal from BCM via CAN communication line and sounds the buzzer. |

WARNING CHIME SYSTEM

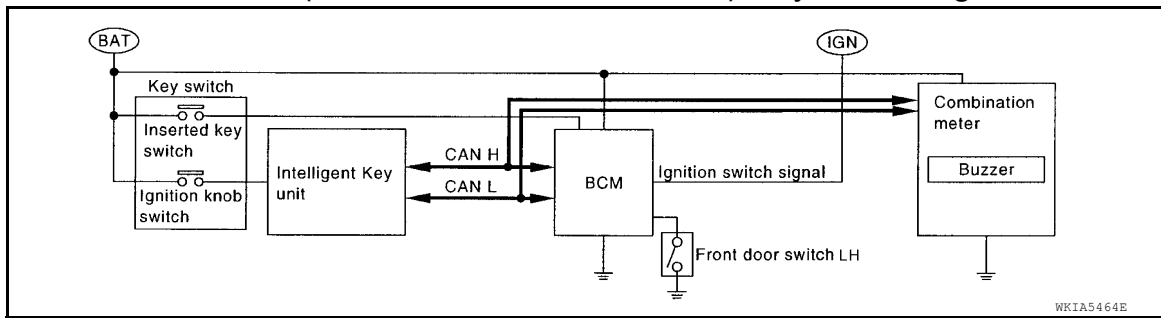
< SYSTEM DESCRIPTION >

| Unit | Description |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BCM | Judges the seat belt warning condition from the seat belt buckle switch signal received from the combination meter and transmits a buzzer output signal to the combination meter via CAN communication line if necessary. |
| Seat belt buckle pre-tensioner assembly LH (seat belt buckle switch) | Transmits seat belt buckle switch signal to combination meter. |

KEY WARNING CHIME (WITH INTELLIGENT KEY)

KEY WARNING CHIME (WITH INTELLIGENT KEY) : System Diagram

INFOID:000000011287615



KEY WARNING CHIME (WITH INTELLIGENT KEY) : System Description

INFOID:000000011287616

WHEN MECHANICAL KEY IS USED

With the key inserted into the key switch, and the ignition switch in the LOCK or ACC position, when driver's door is opened, the warning chime will sound.

- BCM detects key inserted into the ignition switch, and sends key warning signal to combination meter with CAN communication line.
- When combination meter receives key warning signal, it sounds the warning chime.

WHEN INTELLIGENT KEY IS CARRIED WITH THE DRIVER

Refer to [DLK-8. "Work Flow"](#).

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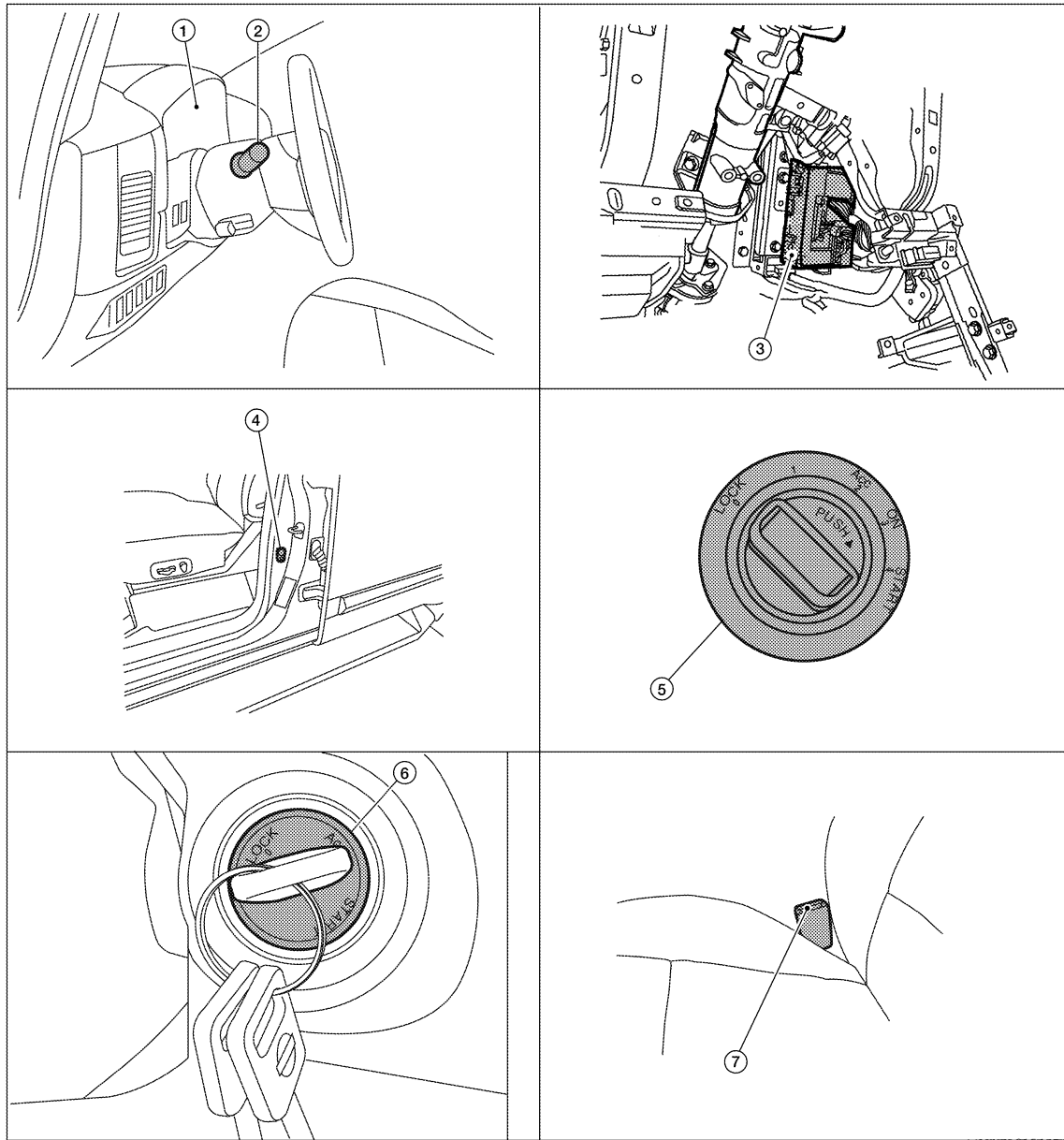
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WARNING CHIME SYSTEM

< SYSTEM DESCRIPTION >

KEY WARNING CHIME (WITH INTELLIGENT KEY) : Component Parts Location

INFOID:000000011287617



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|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 1. Combination meter M24 | 2. Combination switch (lighting and turn signal switch) M28 | 3. BCM M18, M19, M20 (view with instrument lower panel LH removed) |
| 4. Front door switch LH B8 | 5. Key switch and ignition knob switch (key switch) M12 (with Intelligent Key) | 6. Key switch and key lock solenoid (key switch) M27 (without Intelligent Key) |
| 7. Seat belt buckle pre-tensioner assembly LH (seat belt buckle switch) B74 | | |

KEY WARNING CHIME (WITH INTELLIGENT KEY) : Component Description

INFOID:000000011287618

| Unit | Description |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Combination meter | Receives key warning signal from BCM via CAN communication line and sounds the buzzer. |
| BCM | Judges the key warning condition using the door switch signal received from the front door switch LH, and the key switch signal received from the key switch and ignition knob switch (key switch). It then transmits a buzzer output signal to the combination meter via CAN communication line if necessary. |

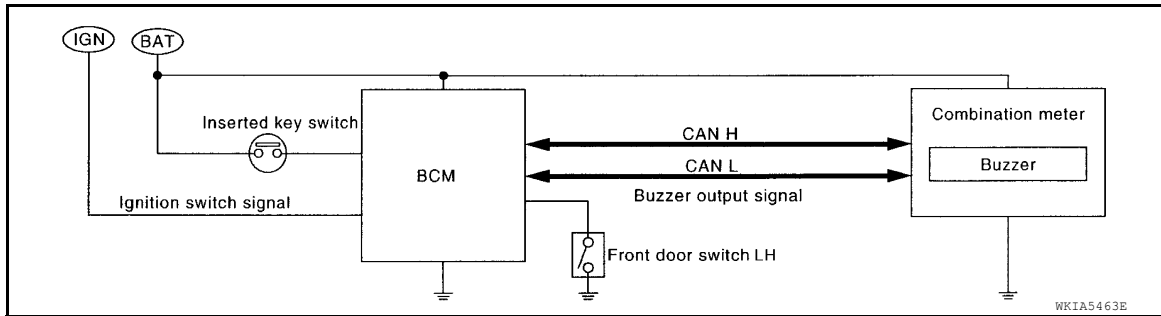
WARNING CHIME SYSTEM

< SYSTEM DESCRIPTION >

| Unit | Description |
|--------------------------------------------------|-----------------------------------------------|
| Front door switch LH | Transmits front door switch LH signal to BCM. |
| Key switch and ignition knob switch (key switch) | Transmits key switch signal to BCM. |

KEY WARNING CHIME (WITHOUT INTELLIGENT KEY)

KEY WARNING CHIME (WITHOUT INTELLIGENT KEY) : System Diagram



KEY WARNING CHIME (WITHOUT INTELLIGENT KEY) : System Description

INFOID:000000011287620

With the key inserted into the key switch, and the ignition switch in the OFF or ACC position, when driver's door is opened, the warning chime will sound.

- BCM detects key inserted into the ignition switch, and sends key warning signal to combination meter with CAN communication line.
- When combination meter receives key warning signal, it sounds warning chime.

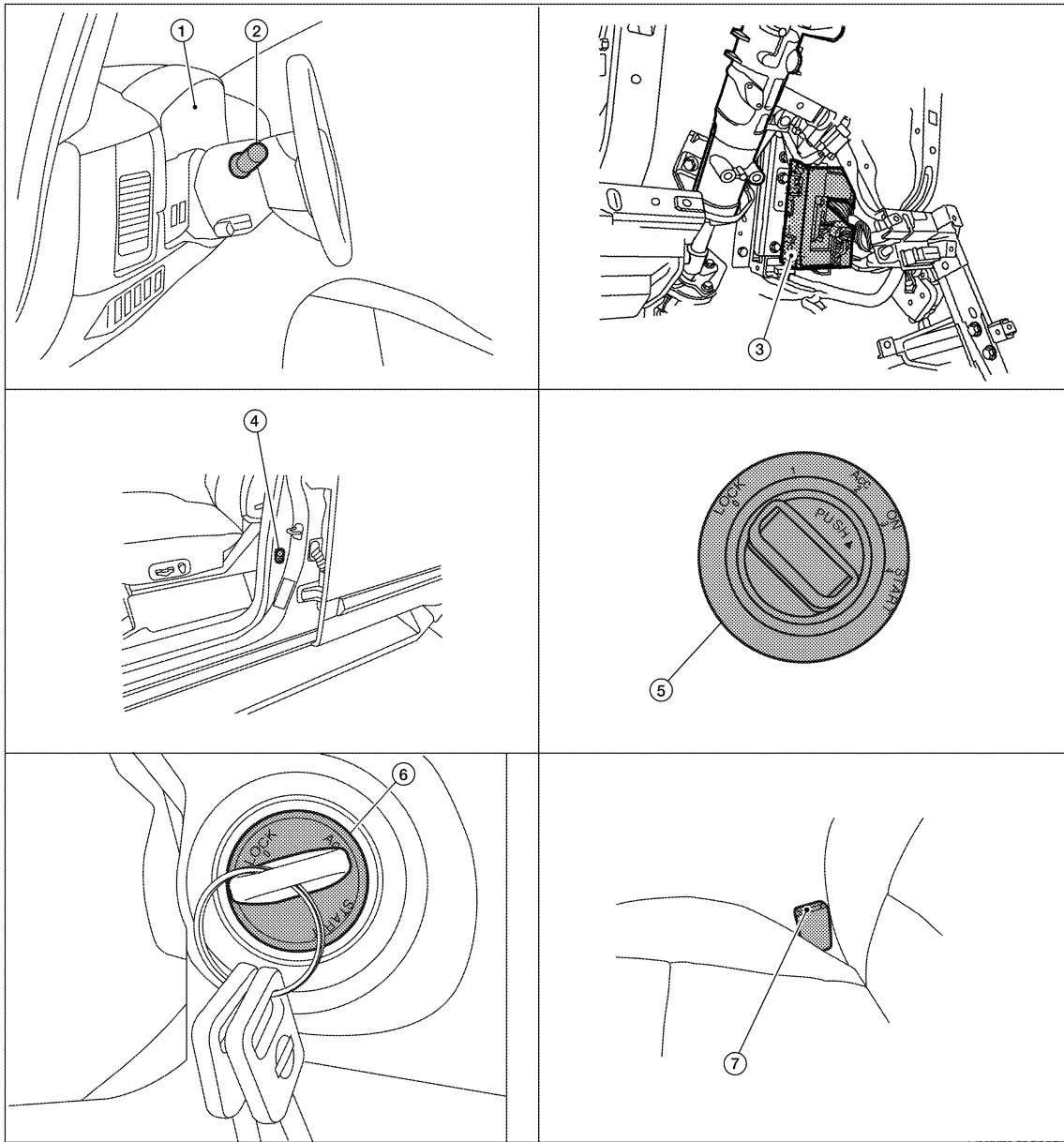
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WARNING CHIME SYSTEM

< SYSTEM DESCRIPTION >

KEY WARNING CHIME (WITHOUT INTELLIGENT KEY) : Component Parts Location

INFOID:000000011287621



AWN1A01542Z

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|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 1. Combination meter M24 | 2. Combination switch (lighting and turn signal switch) M28 | 3. BCM M18, M19, M20 (view with instrument lower panel LH removed) |
| 4. Front door switch LH B8 | 5. Key switch and ignition knob switch (key switch) M12 (with Intelligent Key) | 6. Key switch and key lock solenoid (key switch) M27 (without Intelligent Key) |
| 7. Seat belt buckle pre-tensioner assembly LH (seat belt buckle switch) B74 | | |

KEY WARNING CHIME (WITHOUT INTELLIGENT KEY) : Component Description

INFOID:000000011287622

| Unit | Description |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Combination meter | Receives key warning signal from BCM via CAN communication line and sounds the buzzer. |
| BCM | Judges the key warning condition from the door switch signal received from the front door switch LH, and the key switch signal received from the key switch and key lock solenoid (key switch). It then transmits a buzzer output signal to the combination meter via CAN communication line if necessary. |

WARNING CHIME SYSTEM

< SYSTEM DESCRIPTION >

| Unit | Description | |
|-----------------------------------------------|-----------------------------------------------|---|
| Front door switch LH | Transmits front door switch LH signal to BCM. | A |
| Key switch and key lock solenoid (key switch) | Transmits key switch signal to BCM. | B |

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DIAGNOSIS SYSTEM (METER)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (METER)

Diagnosis Description

INFOID:000000011518193

SELF-DIAGNOSIS MODE

The following items can be checked during Combination Meter Self-Diagnosis Mode.

- Gauge sweep and present gauge values.
- Illuminates all odometer/trip meters and A/T indicator segments.
- Illuminates all micro controlled lamps/LEDs regardless of switch position.
- Displays estimated present battery voltage.
- Displays seat belt buckle pre-tensioner assembly LH (seat belt buckle switch) status.

OPERATION PROCEDURE

NOTE:

- Once entered, combination meter self-diagnosis mode will function with the ignition switch in ON or START. Combination meter self-diagnosis mode will exit upon turning the ignition switch to OFF or ACC.
- If the diagnosis function is activated with trip A displayed, the mileage on trip A is reset to 0000.0. (Trip B operates the same way.)

To initiate combination meter self-diagnosis mode, refer to the following procedure.


1. Turn the ignition switch ON, while pressing the odometer/trip meter switch for 5 - 8 seconds. When the diagnosis function is activated, the odometer/trip meter will display tEst.

NOTE:

Check combination meter power supply and ground circuit when self-diagnosis mode of combination meter does not start. Refer to [MWI-32, "COMBINATION METER : Diagnosis Procedure"](#). Replace combination meter if normal. Refer to [MWI-99, "Removal and Installation"](#).

COMBINATION METER SELF-DIAGNOSIS MODE FUNCTIONS

To interpret combination meter self-diagnosis mode functions, refer to the following table.

| Event | Odometer Display | Description of Test/Data | Notes: |
|-----------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Odometer/trip meter A/B switch held from 5 to 8 seconds (or until released) | tEst | | Initiating self-diagnosis mode |
| Switch released | GAGE | Performs sweep of all gauges, then displays present gauge values. | Gauges sweep within 10 seconds |
| Switch pressed | (All segments illuminated) | Lights all LCD segments. Compare with picture. |  ALNIA02802Z |
| Switch pressed | bulb | Illuminates all micro-controlled lamps/LEDs. | Part may not be configured for all lamps (functions) that turn on during test. This is normal. |
| Switch pressed | r XXXX, FAIL | Return to normal operation of all lamps/LEDs and displays "r XXXX". | If a malfunction exists, "FAIL" will flash. |
| Switch pressed | nrXXXX | Displays Hex ROM rev as stored in NVM. | |
| Switch pressed | EE XX, FAIL | Displays "EE XX". | If a malfunction exists, "FAIL" will flash. |
| Switch pressed | dtXXXX | Hex coding of final manufacturing test date. | |

DIAGNOSIS SYSTEM (METER)

< SYSTEM DESCRIPTION >

| Event | Odometer Display | Description of Test/Data | Notes: |
|---------------------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switch pressed (3 times) | Sc1 XX through Epr XX | Displays 8 bit software configuration value in Hex format | |
| Switch pressed | 1nF XX | Displays 8-bit market info value in Hex format. | \$31 = USA \$2A = Canada \$FF = Other |
| Switch pressed (3 times) | cYL XX through tF | N/A | |
| Switch pressed | ot1 XX | Displays oil pressure tell-tale "" in Hex format. | |
| Switch pressed | ot0 XX | Displays oil pressure tell-tale "" in Hex format. | |
| Switch pressed | XXXXX | "Corrected" speed value in hundredths of MPH. Gauge indication may be slightly higher. This is normal. | Will display "----" if message is not received. Will display "99999" if data received is invalid. |
| Switch pressed | XXXXX | "Corrected" speed value in hundredths of KPH. Gauge indication may be slightly different. This is normal. | Will display "----" if message is not received. Will display "99999" if data received is invalid. |
| Switch pressed | t XXXX | Tachometer value in RPM. Gauge indication may be higher at higher RPM. This is normal. | Will display "----" if message is not received. |
| Switch pressed | F1XXXX | Present fuel level A/D input. This input represents fuel sender input. | 000-009 = Short circuit 010-254 = Normal range 255 = Open circuit |
| Switch pressed | F2XXX | Present FLPS. | 010-254 = Normal range |
| Switch pressed | XXXC | Last temperature gauge input value in degrees C. Temperature gauge indicates present temperature per indication standard. | Will display "---"C if message is not received. Will display "999" if data received is invalid. High = 130 deg C Normal = 70 - 105 deg C Low = less than 50 deg C |
| Switch pressed | BAtXX.X | Estimated present battery voltage. | |
| Switch pressed | rES -X | Seat belt buckle pre-tensioner assembly LH (seat belt buckle switch) status. | 1= Buckled 0 = Unbuckled |
| Switch pressed (33 times) | PA -XX through PA1-XX | N/A | |
| Switch pressed | GAGE | | Return to beginning of self-diagnosis cycle. |

CONSULT Function (METER/M&A)

INFOID:0000000011518194

CONSULT can display each diagnostic item using the diagnostic test modes shown following.

| METER/M&A diagnosis mode | Description |
|--------------------------|----------------------------------------------------------------------------|
| SELF DIAGNOSTIC RESULT | Displays combination meter self-diagnosis results. |
| DATA MONITOR | Displays combination meter input/output data in real time. |
| WORK SUPPORT | Displays diagnosis procedure of each work item. |
| CAN DIAG SUPPORT MNTR | The result of transmit/receive diagnosis of CAN communication can be read. |

DIAGNOSIS SYSTEM (METER)

< SYSTEM DESCRIPTION >

SELF-DIAG RESULTS

Display Item List

Refer to [MWI-44, "DTC Index"](#).

DATA MONITOR

Display Item List

X: Applicable

| Display item [Unit] | MAIN SIGNALS | SELECTION FROM MENU | Description |
|------------------------------|--------------|---------------------|------------------------------------------------------------------------------------------------------------|
| SPEED METER [km/h] or [mph] | X | X | Displays the value of vehicle speed signal. |
| SPEED OUTPUT [km/h] or [mph] | X | X | Displays the value of vehicle speed signal, which is transmitted to each unit with CAN communication. |
| TACHO METER [rpm] | X | X | Displays the value of engine speed signal, which is input from ECM. |
| W TEMP METER [°C] or [°F] | X | X | Displays the value of engine coolant temperature signal, which is input from ECM. |
| FUEL METER [lit.] | X | X | Displays the value, which processes a resistance signal from fuel gauge. |
| DISTANCE [km] or [mile] | X | X | Displays the value, which is calculated by vehicle speed signal, fuel gauge and fuel consumption from ECM. |
| FUEL W/L [ON/OFF] | X | X | Displays [ON/OFF] condition of low-fuel warning lamp. |
| C-ENG W/L [ON/OFF] | | X | Displays [ON/OFF] condition of malfunction indicator lamp. |
| AIR PRES W/L [ON/OFF] | | X | Displays [ON/OFF] condition of tire pressure warning lamp. |
| SEAT BELT W/L [ON/OFF] | | X | Indicates [ON/OFF] condition of seat belt warning lamp. |
| BUZZER [ON/OFF] | X | X | Displays [ON/OFF] condition of buzzer. |
| DOOR W/L [ON/OFF] | | X | Displays [ON/OFF] condition of door warning lamp. |
| TRUNK W/L [ON/OFF] | | X | Displays [ON/OFF] condition of glass hatch warning lamp. |
| HI-BEAM IND [ON/OFF] | | X | Displays [ON/OFF] condition of high beam indicator. |
| TURN IND [ON/OFF] | | X | Displays [ON/OFF] condition of turn indicator. |
| OIL W/L [ON/OFF] | | X | Displays [ON/OFF] condition of oil pressure warning lamp. |
| VDC/TCS IND [ON/OFF] | | X | Displays [ON/OFF] condition of VDC OFF indicator lamp. |
| ABS W/L [ON/OFF] | | X | Displays [ON/OFF] condition of ABS warning lamp. |
| SLIP IND [ON/OFF] | | X | Displays [ON/OFF] condition of SLIP indicator lamp. |
| BRAKE W/L [ON/OFF] | | X | Displays [ON/OFF] condition of brake warning lamp.* |
| KEY G/Y W/L [ON/OFF] | | X | Displays [ON/OFF] condition of key green warning lamp. |
| KEY R W/L [ON/OFF] | | X | Displays [ON/OFF] condition of key red warning lamp. |
| KEY KNOB W/L [ON/OFF] | | X | Displays [ON/OFF] condition of key knob warning lamp. |
| M RANGE SW [ON/OFF] | X | X | Displays [ON/OFF] condition of manual mode range switch. |
| NM RANGE SW [ON/OFF] | X | X | Displays [ON/OFF] condition of except for manual mode range switch. |
| AT SFT UP SW [ON/OFF] | X | X | Displays [ON/OFF] condition of A/T shift-up switch. |
| AT SFT DWN SW [ON/OFF] | X | X | Displays [ON/OFF] condition of A/T shift-down switch. |
| AT-M GEAR [1, 2, 3, 4, 5] | X | X | Indicates [1, 2, 3, 4, 5] condition of A/T manual mode gear position. |
| P RANGE IND [ON/OFF] | X | X | Indicates [ON/OFF] condition of A/T shift P range indicator. |
| R RANGE IND [ON/OFF] | X | X | Indicates [ON/OFF] condition of A/T shift R range indicator. |
| N RANGE IND [ON/OFF] | X | X | Indicates [ON/OFF] condition of A/T shift N range indicator. |
| D RANGE IND [ON/OFF] | X | X | Indicates [ON/OFF] condition of A/T shift D range indicator. |
| 4 RANGE IND [ON/OFF] | X | X | Indicates [ON/OFF] condition of A/T shift 4 range indicator. |
| 3 RANGE IND [ON/OFF] | X | X | Indicates [ON/OFF] condition of A/T shift 3 range indicator. |

DIAGNOSIS SYSTEM (METER)

< SYSTEM DESCRIPTION >

| Display item [Unit] | MAIN SIGNALS | SELECTION FROM MENU | Description |
|-----------------------|--------------|---------------------|---------------------------------------------------------------|
| 2 RANGE IND [ON/OFF] | X | X | Indicates [ON/OFF] condition of A/T shift 2 range indicator. |
| 1 RANGE IND [ON/OFF] | X | X | Indicates [ON/OFF] condition of A/T shift 1 range indicator. |
| AT CHECK W/L [ON/OFF] | | X | Displays [ON/OFF] condition of AT CHECK warning lamp. |
| CRUISE IND [ON/OFF] | | X | Displays [ON/OFF] condition of CRUISE indicator. |
| SET IND [ON/OFF] | | X | Displays [ON/OFF] condition of SET indicator. |
| CRUISE W/L [ON/OFF] | | X | Indicates [ON/OFF] condition of CRUISE warning lamp. |
| 4WD LOCK SW [ON/OFF] | | X | Indicates [ON/OFF] condition of 4WD lock switch. |
| 4WD LOCK IND [ON/OFF] | | X | Indicates [ON/OFF] condition of 4WD lock indicator. |
| 4WD W/L [ON/OFF] | | X | Indicates [ON/OFF] condition of 4WD warning lamp. |
| FUEL CAP W/L [ON/OFF] | | X | Displays [ON/OFF] condition of loose fuel cap indicator. |
| TPMS PRESS L [ON/OFF] | | X | Displays [ON/OFF] condition of check tire pressure indicator. |

NOTE:

Some items are not available due to vehicle specification.

*: The monitor will indicate "OFF" even though the brake warning lamp is on if either of the following conditions exist.

- The parking brake is engaged
- The brake fluid level is low

WORK SUPPORT

| Work support item | Description |
|---------------------------------------|----------------------------------------------------------------------------------|
| Turn signal buzzer diagnosis | A possible malfunction can be narrowed down by following displayed instructions. |
| Fuel meter diagnosis (Analog pointer) | |

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DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

BUZZER

BUZZER : CONSULT Function (BCM - BUZZER)

INFOID:0000000011540614

DATA MONITOR

| Monitor Item [Unit] | Description |
|-----------------------|-----------------------------------------------------|
| DOOR SW-DR [On/Off] | Indicates condition of front door switch LH. |
| IGN ON SW [On/Off] | Indicates condition of ignition switch ON position. |
| KEY ON SW [On/Off] | Indicates condition of key switch. |
| LIGHT SW 1ST [On/Off] | Indicates condition of combination switch. |
| BUCKLE SW [On/Off] | Indicates condition of seat belt buckle switch. |

ACTIVE TEST

| Test Item | Description |
|---------------------|-----------------------------------------------------------------------|
| SEAT BELT WARN TEST | This test is able to check seat belt warning operation [On/Off]. |
| LIGHT WARN ALM | This test is able to check light reminder warning operation [On/Off]. |
| IGN KEY WARN ALM | This test is able to check key warning chime operation [On/Off]. |

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT COMBINATION METER

COMBINATION METER : Diagnosis Procedure

INFOID:000000011518200

Regarding Wiring Diagram information, refer to [MWI-65, "Wiring Diagram"](#).

1. CHECK FUSES

Check for blown combination meter fuses.

| Unit | Power source | Fuse No. |
|-------------------|-----------------------------|----------|
| Combination meter | Battery | 19 |
| | Ignition switch ON or START | 14 |
| | Ignition switch ACC or ON | 4 |

Is the inspection result normal?

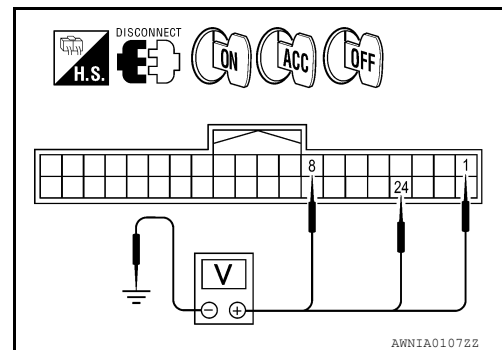
YES >> GO TO 2

NO >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

2. POWER SUPPLY CIRCUIT CHECK

1. Disconnect combination meter connector M24.
2. Check voltage between combination meter harness connector M24 terminals 1, 8, 24 and ground.

| Terminals | | (-) | Ignition switch position | | | |
|-----------|-----------|-----|--------------------------|-----------------|-----------------|-----------------|
| (+) | Connector | | Terminal | OFF | ACC | ON |
| M24 | Ground | 1 | 0V | Battery voltage | Battery voltage | 0V |
| | | 8 | Battery voltage | Battery voltage | Battery voltage | Battery voltage |
| | | 24 | 0V | 0V | Battery voltage | Battery voltage |



Is the inspection result normal?

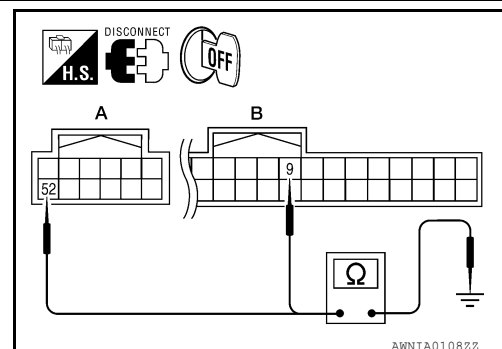
YES >> GO TO 3

NO >> Check harness for open between combination meter and fuse.

3. GROUND CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect combination meter connector M23.
3. Check continuity between combination meter harness connector M23 terminal 52 and ground, and connector M24 terminal 9 and ground.

| Terminals | | (-) | Continuity |
|-----------|-----------|--------|------------|
| (+) | Connector | | |
| A: M23 | 52 | Ground | Yes |
| B: M24 | 9 | | |



Is the inspection result normal?

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POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

- YES >> Inspection End.
 NO >> Repair or replace harness or connector.

BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:000000011518969

Regarding Wiring Diagram information, refer to [BCS-46, "Wiring Diagram"](#).

1. CHECK FUSES AND FUSIBLE LINK

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

| Terminal No. | Signal name | Fuses and fusible link No. |
|--------------|----------------------|----------------------------|
| 57 | Battery power supply | 22 (15A) |
| 70 | | F (50A) |
| 11 | Ignition ACC or ON | 4 (10A) |
| 38 | Ignition ON or START | 59 (10A) |

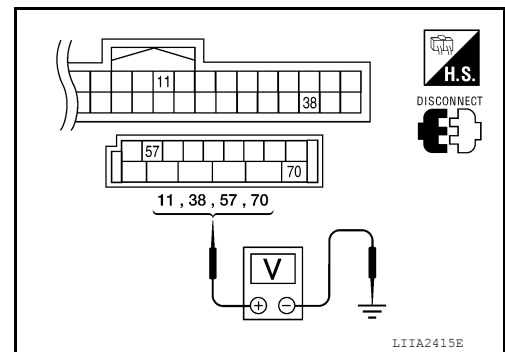
Is the fuse blown?

- YES >> Replace the blown fuse or fusible link after repairing the affected circuit.
 NO >> GO TO 2

2. CHECK POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect BCM.
- Check voltage between BCM harness connector and ground.

| Connector | Terminals | | Power source | Condition | Voltage (V) (Approx.) |
|-----------|-----------|--------|-----------------------|-----------------------------|-----------------------|
| | (+) | (-) | | | |
| M18 | 11 | Ground | ACC power supply | Ignition switch ACC or ON | Battery voltage |
| | 38 | Ground | Ignition power supply | Ignition switch ON or START | Battery voltage |
| M20 | 57 | Ground | Battery power supply | Ignition switch OFF | Battery voltage |
| | 70 | Ground | Battery power supply | Ignition switch OFF | Battery voltage |



Is the measurement value normal?

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

3. CHECK GROUND CIRCUIT

POWER SUPPLY AND GROUND CIRCUIT

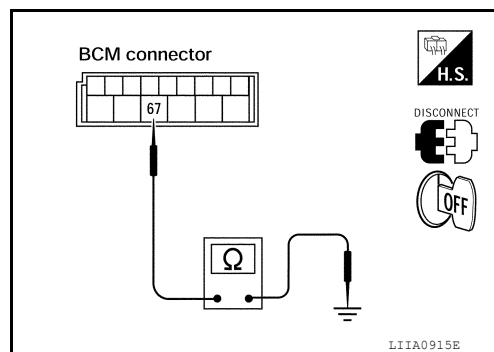
< DTC/CIRCUIT DIAGNOSIS >

Check continuity between BCM harness connector and ground.

| BCM | | Ground | Continuity |
|-----------|----------|--------|------------|
| Connector | Terminal | | |
| M20 | 67 | | Yes |

Does continuity exist?

- YES >> Inspection End.
- NO >> Repair or replace harness.



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METER BUZZER CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

METER BUZZER CIRCUIT

Description

INFOID:000000011287628

- The buzzer for warning chime system is installed in the combination meter.
- The combination meter sounds the alarm buzzer based on the signals transmitted from various units.

Component Function Check

INFOID:000000011287629

1. CHECK OPERATION OF METER BUZZER

1. Select "BUZZER" of "BCM" on CONSULT.
2. Perform "LIGHT WARN ALM" of "ACTIVE TEST".

Does meter buzzer activate?

- YES >> Inspection End.
NO >> Replace combination meter. Refer to [MWI-99. "Removal and Installation"](#).

Diagnosis Procedure

INFOID:000000011287630

1. CHECK POWER SUPPLY OF COMBINATION METER

Check power supply of combination meter. Refer to [MWI-32. "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Inspection End.
NO >> Repair power supply circuit of combination meter.

SEAT BELT BUCKLE SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

SEAT BELT BUCKLE SWITCH SIGNAL CIRCUIT

Description

INFOID:0000000011287631

Transmits a seat belt buckle switch signal to the combination meter.

Component Function Check

INFOID:0000000011287632

1. CHECK COMBINATION METER INPUT SIGNAL

Select "DATA MONITOR" for "METER/M&A" and check the "SEAT BELT W/L" monitor value.

SEAT BELT W/L

When seat belt is fastened : OFF

When seat belt is unfastened : ON

>> Inspection End.

Diagnosis Procedure

INFOID:0000000011287633

Regarding Wiring Diagram information, refer to [WCS-45. "Wiring Diagram"](#).

1. CHECK COMBINATION METER INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between combination meter harness connector M24 terminal 27 and ground.

27 - Ground

When driver seat belt is fastened : Approx. 12V

When driver seat belt is unfastened : Approx. 0V

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-99. "Removal and Installation"](#).
NO >> GO TO 2

2. CHECK SEAT BELT BUCKLE PRE-TENSIONER ASSEMBLY LH (SEAT BELT BUCKLE SWITCH) CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter and seat belt buckle pre-tensioner assembly LH (seat belt buckle switch).
3. Check continuity between combination meter harness connector M24 (B) terminal 27 and seat belt buckle pre-tensioner assembly LH (seat belt buckle switch) harness connector B74 (A) terminal 1.

27 - 1 : Continuity should exist.

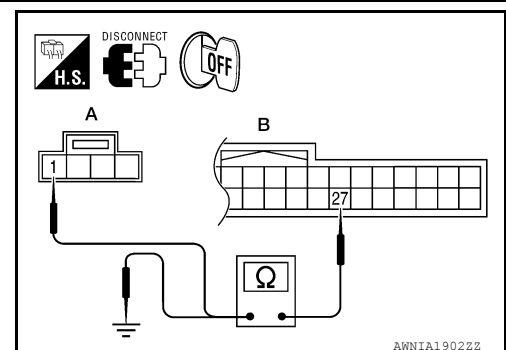
4. Check continuity between combination meter harness connector M24 (B) terminal 27 and ground.

27 - Ground : Continuity should not exist.

Is the inspection result normal?

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

3. CHECK SEAT BELT BUCKLE PRE-TENSIONER ASSEMBLY LH (SEAT BELT BUCKLE SWITCH) GROUND CIRCUIT



SEAT BELT BUCKLE SWITCH SIGNAL CIRCUIT

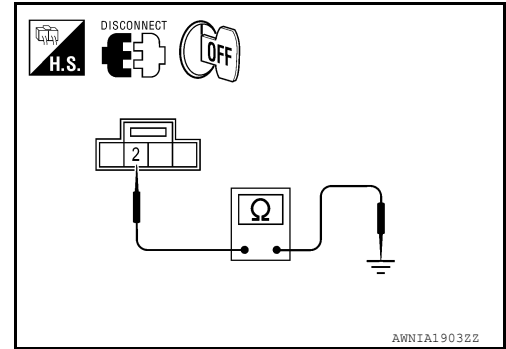
< DTC/CIRCUIT DIAGNOSIS >

Check continuity between seat belt buckle pre-tensioner assembly LH (seat belt buckle switch) harness connector B74 terminal 2 and ground.

2 - Ground : Continuity should exist.

Is the inspection result normal?

- YES >> Inspection End.
NO >> Repair or replace harness.



INFOID:000000011287634

Component Inspection

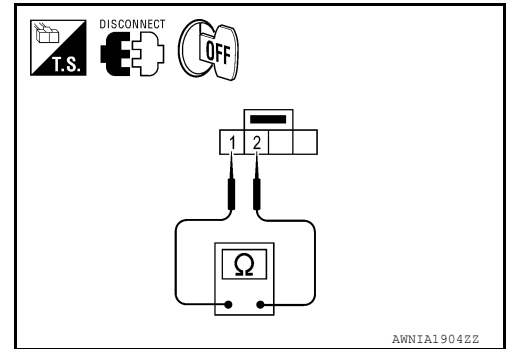
1. CHECK SEAT BELT BUCKLE PRE-TENSIONER ASSEMBLY LH (SEAT BELT BUCKLE SWITCH)

1. Turn ignition switch OFF.
2. Disconnect the seat belt buckle pre-tensioner assembly LH (seat belt buckle switch).
3. Check continuity between the seat belt buckle pre-tensioner assembly LH (seat belt buckle switch) terminals 1 and 2.

1-2

When seat belt is fastened : Continuity should not exist.

When seat belt is unfastened : Continuity should exist.



Is the inspection result normal?

- YES >> Inspection End.
NO >> Replace the seat belt buckle pre-tensioner assembly LH (seat belt buckle switch).

KEY SWITCH SIGNAL CIRCUIT (WITH INTELLIGENT KEY)

< DTC/CIRCUIT DIAGNOSIS >

KEY SWITCH SIGNAL CIRCUIT (WITH INTELLIGENT KEY)

Description

INFOID:0000000011287635

Transmits a key switch signal to the BCM.

Component Function Check

INFOID:0000000011287636

1. CHECK BCM INPUT SIGNAL

Select "DATA MONITOR" for "BCM" and check the "KEY ON SW" monitor value.

KEY ON SW

When key is inserted into key cylinder : ON

When key is removed from key cylinder : OFF

>> Inspection End.

Diagnosis Procedure

INFOID:0000000011287637

Regarding Wiring Diagram information, refer to [WCS-45. "Wiring Diagram"](#).

1. CHECK FUSE

Check if the key switch and ignition knob switch (key switch) 10A fuse (No. 62, located in the fuse and relay box) is blown.

Is the fuse blown?

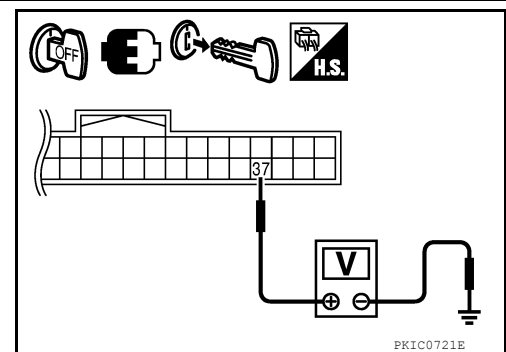
YES >> Be sure to repair the cause of malfunction before installing new fuse.

NO >> GO TO 2

2. CHECK BCM INPUT SIGNAL

Check voltage between BCM harness connector M18 terminal 37 and ground.

| Terminals | | (-) | Condition | Voltage (Approx.) |
|-----------|---------------|-----|-----------|-----------------------------------------------------------|
| (+) | BCM connector | | | |
| | Terminal | | | |
| | M18 | 37 | Ground | Key is inserted Battery voltage Key is removed 0 |



Is the inspection result normal?

YES >> Inspection End.

NO >> GO TO 3

3. CHECK KEY SWITCH AND IGNITION KNOB SWITCH (KEY SWITCH) CIRCUIT

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KEY SWITCH SIGNAL CIRCUIT (WITH INTELLIGENT KEY)

< DTC/CIRCUIT DIAGNOSIS >

1. Disconnect BCM connector M18 and key switch and ignition knob switch (key switch).
2. Check continuity between BCM harness connector M18 (A) terminal 37 and key switch and ignition knob switch (key switch) harness connector M12 (B) terminal 4.

| BCM | | Key switch and ignition knob switch (key switch) | | Continuity |
|-----------|----------|--------------------------------------------------|----------|------------|
| Connector | Terminal | Connector | Terminal | |
| M18 (A) | 37 | M12 (B) | 4 | Yes |

3. Check continuity between BCM harness connector M18 (A) terminal 37 and ground.

| BCM | | Ground | Continuity |
|-----------|----------|--------|------------|
| Connector | Terminal | | |
| M18 (A) | 37 | | No |

Is the inspection result normal?

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

4. CHECK KEY SWITCH AND IGNITION KNOB SWITCH (KEY SWITCH) POWER SUPPLY CIRCUIT

Check voltage between key switch and ignition knob switch (key switch) harness connector M12 terminal 3 and ground.

| Terminals | | | Voltage (Approx.) |
|------------------------------------------------------------|----------|--------|-------------------|
| (+) | | (-) | |
| Key switch and ignition knob switch (key switch) connector | Terminal | | |
| M12 | 3 | Ground | Battery voltage |

Is the inspection result normal?

- YES >> Replace key switch and ignition knob switch (key switch).
 NO >> Repair or replace harness.

Component Inspection

INFOID:000000011287638

1. CHECK KEY SWITCH AND IGNITION KNOB SWITCH (KEY SWITCH)

1. Turn ignition switch OFF.
2. Disconnect key switch and ignition knob switch (key switch).
3. Check continuity between key switch and ignition knob switch (key switch) terminals 3 and 4.

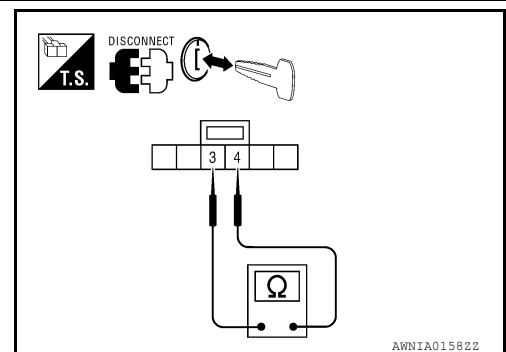
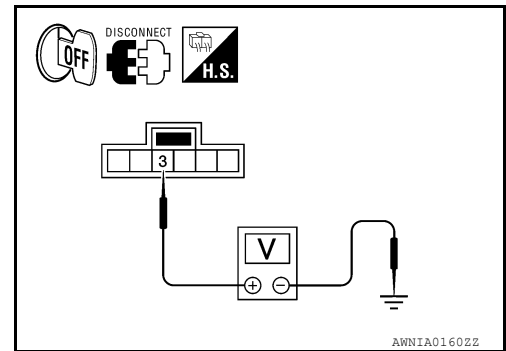
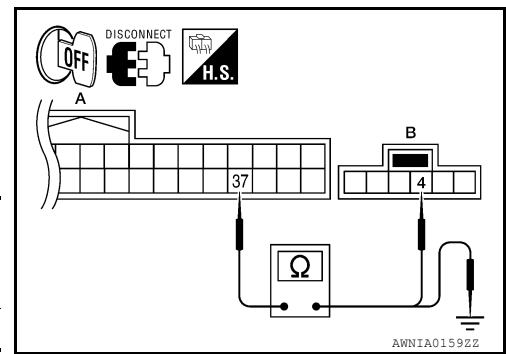
3 - 4

When key is inserted into key cylinder : Continuity should exist.

When key is removed from key cylinder : Continuity should not exist.

Is the inspection result normal?

- YES >> Inspection End.
 NO >> Replace key switch and ignition knob switch (key switch).



KEY SWITCH SIGNAL CIRCUIT (WITHOUT INTELLIGENT KEY)

< DTC/CIRCUIT DIAGNOSIS >

KEY SWITCH SIGNAL CIRCUIT (WITHOUT INTELLIGENT KEY)

Description

INFOID:0000000011287639

Transmits a key switch signal to the BCM.

Component Function Check

INFOID:0000000011287640

1. CHECK BCM INPUT SIGNAL

Select "DATA MONITOR" for "BCM" and check the "KEY ON SW" monitor value.

KEY ON SW

When key is inserted into key cylinder : ON

When key is removed from key cylinder : OFF

>> Inspection End.

Diagnosis Procedure

INFOID:0000000011287641

Regarding Wiring Diagram information, refer to [WCS-45. "Wiring Diagram"](#).

1. CHECK FUSE

Check if the key switch and key lock solenoid (key switch) 10A fuse [No. 3, located in the fuse block (J/B)] is blown.

Is the fuse blown?

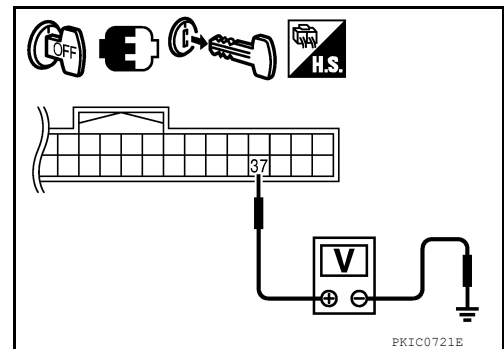
YES >> Be sure to repair the cause of malfunction before installing new fuse.

NO >> GO TO 2

2. CHECK BCM INPUT SIGNAL

Check voltage between BCM harness connector M18 terminal 37 and ground.

| Terminals | | Condition | Voltage (Approx.) |
|---------------|----------|-----------------|-------------------|
| (+) | (-) | | |
| BCM connector | Terminal | | |
| M18 | 37 | Key is inserted | Battery voltage |
| | | Key is removed | 0 |



Is the inspection result normal?

YES >> Inspection End.

NO >> GO TO 3

3. CHECK KEY SWITCH AND KEY LOCK SOLENOID (KEY SWITCH) CIRCUIT

1. Disconnect BCM connector M18 and key switch and key lock solenoid (key switch).
2. Check continuity between BCM harness connector M18 terminal 37 and key switch and key lock solenoid (key switch) harness connector M27 terminal 4.

| BCM | | Key switch and key lock solenoid (key switch) | | Continuity |
|-----------|----------|-----------------------------------------------|----------|------------|
| Connector | Terminal | Connector | Terminal | |
| M18 | 37 | M27 | 4 | Yes |

3. Check continuity between BCM harness connector M18 terminal 37 and ground.

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KEY SWITCH SIGNAL CIRCUIT (WITHOUT INTELLIGENT KEY)

< DTC/CIRCUIT DIAGNOSIS >

| BCM | | Ground | Continuity |
|-----------|----------|--------|------------|
| Connector | Terminal | | |
| M18 | 37 | | No |

Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace harness.

4. CHECK KEY SWITCH AND KEY LOCK SOLENOID (KEY SWITCH) POWER SUPPLY CIRCUIT

Check voltage between key switch and key lock solenoid (key switch) harness connector M27 terminal 3 and ground.

| Terminals | | | Voltage (Approx.) |
|-----------------------------------------------|----------|--------|----------------------|
| (+) | | (-) | |
| Key switch and key lock solenoid (key switch) | Terminal | | |
| M27 | 3 | Ground | Battery voltage |

Is the inspection result normal?

YES >> Replace key switch and key lock solenoid (key switch).

NO >> Repair or replace harness.

Component Inspection

INFOID:000000011287642

1. CHECK KEY SWITCH AND KEY LOCK SOLENOID (KEY SWITCH)

1. Turn ignition switch OFF.
2. Disconnect key switch and key lock solenoid (key switch).
3. Check continuity between key switch and key lock solenoid (key switch) terminals 3 and 4.

3 – 4

When key is inserted into key cylinder : Continuity should exist.

When key is removed from key cylinder : Continuity should not exist.

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace key switch and key lock solenoid (key switch).

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

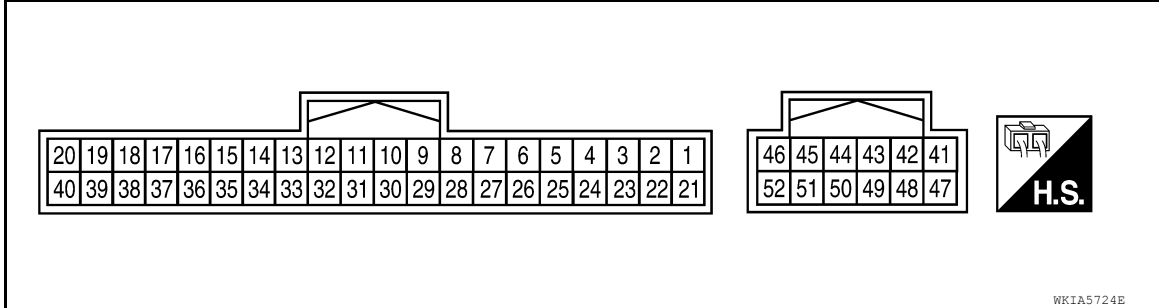
ECU DIAGNOSIS INFORMATION

COMBINATION METER

Reference Value

INFOID:000000011518210

TERMINAL LAYOUT

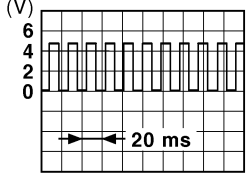


PHYSICAL VALUES

| Terminal | Wire color | Item | Condition | | Reference value (V) (Approx.) |
|----------|------------|----------------------------------------------------------------------|-----------------|--------------------------|----------------------------------------------------------------------|
| | | | Ignition switch | Operation or condition | |
| 1 | O | Ignition switch ACC or ON | — | — | Battery voltage |
| 2 | P | Air bag warning lamp input | ON | Air bag warning lamp ON | 4 |
| | | | | Air bag warning lamp OFF | 0 |
| 3 | BR | CK SUSP warning lamp input | — | CK SUSP warning lamp ON | 0 |
| | | | | CK SUSP warning lamp OFF | Battery voltage |
| 4 | Y/G | AT 1 Range switch | — | — | — |
| 5 | SB | AT 4 Range switch | — | — | — |
| 8 | Y/R | Battery power supply | — | — | Battery voltage |
| 9 | B | Ground | — | — | 0 |
| 11 | L | CAN-H | — | — | — |
| 12 | P | CAN-L | — | — | — |
| 15 | Y/L | Fuel level sensor signal | — | — | Refer to MWI-12. "FUEL GAUGE : System Description" . |
| 16 | B/P | Fuel level sensor ground | ON | — | 0 |
| 18 | P/B | Brake fluid level switch | ON | Brake fluid level low | 0 |
| | | | | Brake fluid level normal | Battery voltage |
| 23 | G | Parking brake switch | ON | Parking brake applied | 0 |
| | | | | Parking brake released | Battery voltage |
| 24 | O/L | Ignition switch ON or START | ON | — | Battery voltage |
| 27 | O/B | Seat belt buckle pre-tensioner assembly LH (seat belt buckle switch) | ON | Unfastened (ON) | 0 |
| | | | | Fastened (OFF) | Battery voltage |
| 28 | G/O | Security indicator input | OFF | Security indicator ON | 0 |
| | | | | Security indicator OFF | Battery voltage |

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

| Terminal | Wire color | Item | Condition | | Reference value (V) (Approx.) |
|----------|------------|------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | Ignition switch | Operation or condition | |
| 29 | W/R | Vehicle speed signal output (8-pulse) | ON | Speedometer operated [When vehicle speed is approx. 40 km/h (25 MPH)] | NOTE: Maximum voltage may be 12V due to specifications (connected units).  <small>PK1C0643E</small> |
| 35 | LG/R | Tow Mode status | — | — | — |
| 36 | Y/V | Tow Mode lamp | — | — | — |
| 37 | W/L | Washer fluid level switch | ON | Washer fluid level low | 0 |
| | | | | Washer fluid level normal | Battery voltage |
| 39 | B/R | Start relay | ON | Selector lever: P or N | Battery voltage |
| | | | | Except above | 0 |
| 40 | GR/R | PNP signal | ON | Selector lever: P or N | 0 |
| | | | | Except above | Battery voltage |
| 41 | P/L | Seat belt buckle pre-tensioner assembly RH (seat belt buckle swi | ON | Unfastened (ON) | 0 |
| | | | | Fastened (OFF) | Battery voltage |
| 45 | BR/W | Generator | ON | Generator voltage low | 0 |
| | | | | Generator voltage normal | Battery voltage |
| 50 | BR | Illumination output | — | — | Refer to INL-9, "System Description" . |
| 52 | B | Ground | — | — | 0 |

Fail Safe

INFOID:000000011518211

The combination meter performs a fail-safe operation for the functions listed below when communication is lost.

| Function | | Specifications |
|----------------------------------|--------------------|------------------------------------------------------|
| Speedometer | | Zero indication. |
| Tachometer | | |
| Fuel gauge | | |
| Engine coolant temperature gauge | | |
| Engine oil pressure gauge | | |
| Voltage gauge | | |
| A/T oil temperature gauge | | |
| Illumination control | Meter illumination | Change to nighttime mode when communication is lost. |
| Segment LCD | Odometer | Freeze current indication. |
| | A/T position | Display turns off. |
| Buzzer | | Buzzer turns off. |

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

| Function | Specifications | | |
|--------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------|---|
| Warning lamp/indicator lamp | ABS warning lamp | Lamp turns on when communication is lost. | A |
| | Brake warning lamp | | B |
| | VDC OFF indicator lamp | | |
| | SLIP indicator lamp | | |
| | A/T CHECK warning lamp | Lamp turns off when communication is lost. | C |
| | Oil pressure/coolant temperature warning lamp | | D |
| | Malfunction indicator lamp | | E |
| | Master warning lamp | | |
| | Air bag warning lamp | | |
| | High beam indicator | | |
| | Turn signal indicator lamp | | |
| | Intelligent Key system warning lamp | Lamp turns off when disconnected. | F |
| | Driver and passenger seat belt warning lamp | | G |
| | Charge warning lamp | | H |
| | Security indicator lamp | | |
| | 4WD indicator lamp | | |
| | ATP indicator lamp | | |
| CK SUSP warning lamp | | | |
| Low tire pressure warning lamp | Lamp will flash every second for 1 minute and then stay on continuously thereafter. | I | |

DTC Index

INFOID:0000000011518212

| CONSULT display | Malfunction | Reference page | |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---|
| CAN COMM CIRC [U1000] | Malfunction is detected in CAN communication. CAUTION: Even when there is no malfunction on CAN communication system, malfunction may be misinterpreted when battery has low voltage (when maintaining 7 - 8 V for about 2 seconds) or 10A fuse [No. 19, located in the fuse block (J/B)] is disconnected. | MWI-30 | K |
| VEHICLE SPEED CIRC [B2205] | Malfunction is detected when an erroneous speed signal is input. CAUTION: Even when there is no malfunction on speed signal system, malfunction may be misinterpreted when battery has low voltage (when maintaining 7 - 8 V for about 2 seconds). | MWI-31 | L |
| | | | M |

NOTE:

“TIME” indicates the following.

- 0: Indicates that a malfunction is detected at present.
- 1-63: Indicates that a malfunction was detected in the past. (Displays number of ignition switch OFF → ON cycles after malfunction is detected. Self-diagnosis result is erased when “63” is exceeded.)

WCS

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:000000011519310

NOTE:

The Signal Tech II Tool (J-50190) can be used to perform the following functions. Refer to the Signal Tech II User Guide for additional information.

- Activate and display TPMS transmitter IDs
- Display tire pressure reported by the TPMS transmitter
- Read TPMS DTCs
- Register TPMS transmitter IDs
- Check Intelligent Key relative signal strength
- Confirm vehicle Intelligent Key antenna signal strength
- Test remote keyless entry keyfob relative signal strength

VALUES ON THE DIAGNOSIS TOOL

| Monitor Item | Condition | Value/Status |
|---------------|--------------------------------------------------|-------------------------------|
| ACC ON SW | Ignition switch OFF or ON | Off |
| | Ignition switch ACC | On |
| AIR COND SW | A/C switch OFF | Off |
| | A/C switch ON | On |
| AIR PRESS FL | Front left tire air pressure value | kPa, kg/cm ² , psi |
| AIR PRESS FR | Front right tire air pressure value | kPa, kg/cm ² , psi |
| AIR PRESS RL | Rear left tire air pressure value | kPa, kg/cm ² , psi |
| AIR PRESS RR | Rear right tire air pressure value | kPa, kg/cm ² , psi |
| AUTO LIGHT SW | Lighting switch OFF | Off |
| | Lighting switch AUTO | On |
| BACK DOOR SW | Back door closed | Off |
| | Back door opened | On |
| BRAKE SW | Brake pedal released | Off |
| | Brake pedal applied | On |
| BUCKLE SW | Seat belt buckle unfastened | Off |
| | Seat belt buckle fastened | On |
| BUZZER | Buzzer in combination meter OFF | Off |
| | Buzzer in combination meter ON | On |
| CARGO LAMP SW | Cargo lamp switch OFF | Off |
| | Cargo lamp switch ON | On |
| CDL LOCK SW | Door lock/unlock switch does not operate | Off |
| | Press door lock/unlock switch to the LOCK side | On |
| CDL UNLOCK SW | Door lock/unlock switch does not operate | Off |
| | Press door lock/unlock switch to the UNLOCK side | On |
| DOOR SW-AS | Front door RH closed | Off |
| | Front door RH opened | On |
| DOOR SW-DR | Front door LH closed | Off |
| | Front door LH opened | On |
| DOOR SW-RL | Rear door LH closed | Off |
| | Rear door LH opened | On |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Monitor Item | Condition | Value/Status | |
|---------------------------|------------------------------------------------------------------------------------------------------------------------|--------------|-----|
| DOOR SW-RR | Rear door RH closed | Off | A |
| | Rear door RH opened | On | |
| FAN ON SIG | Blower motor fan switch OFF | Off | B |
| | Blower motor fan switch ON | On | |
| FR FOG SW | Front fog lamp switch OFF | Off | C |
| | Front fog lamp switch ON | On | |
| FR WASHER SW | Front washer switch OFF | Off | D |
| | Front washer switch ON | On | |
| FR WIPER LOW | Front wiper switch OFF | Off | E |
| | Front wiper switch LO | On | |
| FR WIPER HI | Front wiper switch OFF | Off | F |
| | Front wiper switch HI | On | |
| FR WIPER INT | Front wiper switch OFF | Off | G |
| | Front wiper switch INT | On | |
| FR WIPER STOP | Any position other than front wiper stop position | Off | H |
| | Front wiper stop position | On | |
| HAZARD SW | When hazard switch is not pressed | Off | I |
| | When hazard switch is pressed | On | |
| HEAD LAMP SW1 | Headlamp switch OFF | Off | J |
| | Headlamp switch 1st | On | |
| HEAD LAMP SW2 | Headlamp switch OFF | Off | K |
| | Headlamp switch 1st | On | |
| HI BEAM SW | High beam switch OFF | Off | L |
| | High beam switch HI | On | |
| ID REGST FL1 | ID registration of front left tire incomplete | YET | M |
| | ID registration of front left tire complete | DONE | |
| ID REGST FR1 | ID registration of front right tire incomplete | YET | |
| | ID registration of front right tire complete | DONE | |
| ID REGST RL1 | ID registration of rear left tire incomplete | YET | |
| | ID registration of rear left tire complete | DONE | |
| ID REGST RR1 | ID registration of rear right tire incomplete | YET | |
| | ID registration of rear right tire complete | DONE | |
| IGN ON SW | Ignition switch OFF or ACC | Off | WCS |
| | Ignition switch ON | On | |
| IGN SW CAN | Ignition switch OFF or ACC | Off | |
| | Ignition switch ON | On | |
| INT VOLUME | Wiper intermittent dial is in a dial position 1 - 7 | 1 - 7 | O |
| I-KEY LOCK ¹ | LOCK button of Intelligent Key is not pressed | Off | P |
| | LOCK button of Intelligent Key is pressed | On | |
| I-KEY PANIC ¹ | PANIC button of Intelligent Key is not pressed | Off | |
| | PANIC button of Intelligent Key is pressed | On | |
| I-KEY PW DWN ¹ | UNLOCK button of Intelligent Key is not pressed | Off | |
| | UNLOCK button of Intelligent Key is pressed for greater than 3 seconds and driver's window operating in DOWN direction | On | |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Monitor Item | Condition | Value/Status |
|-----------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------|
| I-KEY UNLOCK ¹ | UNLOCK button of Intelligent Key is not pressed | Off |
| | UNLOCK button of Intelligent Key is pressed | On |
| KEY CYL LK-SW | Door key cylinder LOCK position | On |
| | Door key cylinder other than LOCK position | Off |
| KEY CYL UN-SW | Door key cylinder UNLOCK position | On |
| | Door key cylinder other than UNLOCK position | Off |
| KEY ON SW | Mechanical key is removed from key cylinder | Off |
| | Mechanical key is inserted to key cylinder | On |
| KEYLESS LOCK ² | LOCK button of key fob is not pressed | Off |
| | LOCK button of key fob is pressed | On |
| KEYLESS PANIC ² | PANIC button of key fob is not pressed | Off |
| | PANIC button of key fob is pressed | On |
| KEYLESS UNLOCK ² | UNLOCK button of key fob is not pressed | Off |
| | UNLOCK button of key fob is pressed | On |
| LIGHT SW 1ST | Lighting switch OFF | Off |
| | Lighting switch 1st | On |
| OIL PRESS SW | <ul style="list-style-type: none"> • Ignition switch OFF or ACC • Engine running | Off |
| | Ignition switch ON | On |
| OPTICAL SENSOR | Bright outside of the vehicle | Close to 5V |
| | Dark outside of the vehicle | Close to 0V |
| PASSING SW | Other than lighting switch PASS | Off |
| | Lighting switch PASS | On |
| PUSH SW ¹ | Return to ignition switch to LOCK position | Off |
| | Press ignition switch | On |
| REAR DEF SW | Rear window defogger switch OFF | Off |
| | Rear window defogger switch ON | On |
| RR WASHER SW | Rear washer switch OFF | Off |
| | Rear washer switch ON | On |
| RR WIPER INT | Rear wiper switch OFF | Off |
| | Rear wiper switch INT | On |
| RR WIPER ON | Rear wiper switch OFF | Off |
| | Rear wiper switch ON | On |
| RR WIPER STOP | Rear wiper stop position | Off |
| | Other than rear wiper stop position | On |
| RR WIPER STP2 | Rear wiper stop position | Off |
| | Other than rear wiper stop position | On |
| TURN SIGNAL L | Turn signal switch OFF | Off |
| | Turn signal switch LH | On |
| TURN SIGNAL R | Turn signal switch OFF | Off |
| | Turn signal switch RH | On |
| VEHICLE SPEED | While driving | Equivalent to speedometer reading |
| WARNING LAMP | Low tire pressure warning lamp in combination meter OFF | Off |
| | Low tire pressure warning lamp in combination meter ON | On |

1: With Intelligent Key

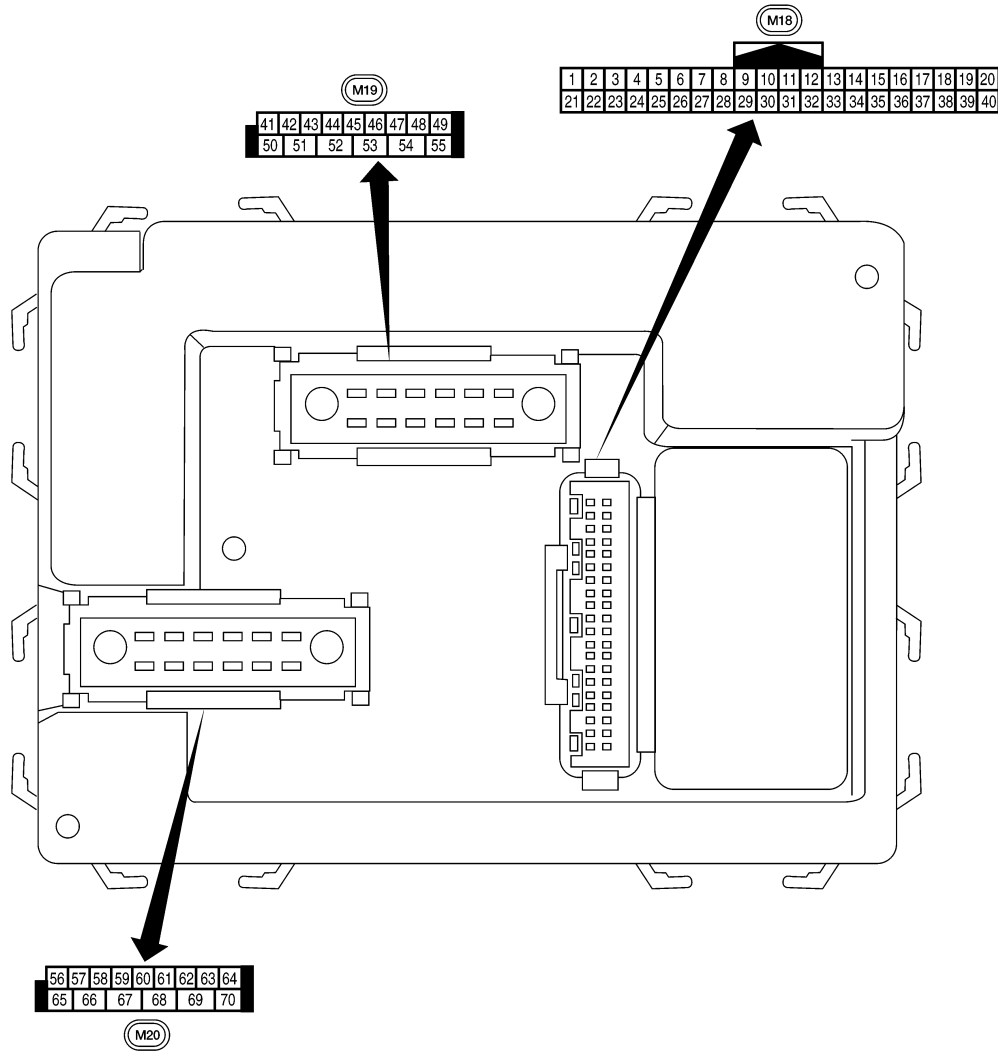
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

2: With remote keyless entry system

Terminal Layout

INFOID:000000011519312



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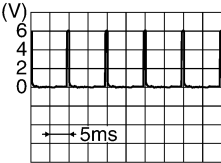
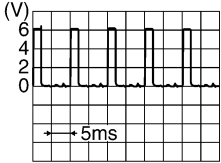
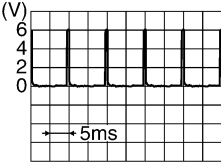
Physical Values

AWMIA154222

INFOID:000000011519359

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Terminal | Wire color | Signal name | Signal input/output | Measuring condition | | Reference value or waveform (Approx.) |
|----------|------------|-----------------------------------------------------------|---------------------|---------------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | Ignition switch | Operation or condition | |
| 1 | BR/W | Ignition keyhole illumination | Output | OFF | Door is locked (SW OFF) | Battery voltage |
| | | | | | Door is unlocked (SW ON) | 0V |
| 2 | SB | Combination switch input 5 | Input | ON | Lighting, turn, wiper OFF Wiper dial position 4 |  <p style="text-align: right; font-size: small;">SKIA5291E</p> |
| 3 | G/Y | Combination switch input 4 | Input | ON | Lighting, turn, wiper OFF Wiper dial position 4 |  <p style="text-align: right; font-size: small;">SKIA5292E</p> |
| 4 | Y | Combination switch input 3 | Input | ON | Lighting, turn, wiper OFF Wiper dial position 4 |  <p style="text-align: right; font-size: small;">SKIA5291E</p> |
| 5 | G/B | Combination switch input 2 | Input | ON | Lighting, turn, wiper OFF Wiper dial position 4 |  <p style="text-align: right; font-size: small;">SKIA5292E</p> |
| 6 | V | Combination switch input 1 | | | | |
| 9 | R/G | Stop lamp switch | Input | OFF | Brake pedal depressed | Battery voltage |
| | | | | | Brake pedal released | 0V |
| 10 | G | Hazard lamp flash | Input | OFF | ON (opening or closing) | 0V |
| | | | | | OFF (other than above) | Battery voltage |
| 11 | O | Ignition switch (ACC or ON) | Input | ACC or ON | Ignition switch ACC or ON | Battery voltage |
| 12 | R/L | Front door switch RH | Input | OFF | ON (open) | 0V |
| | | | | | OFF (closed) | Battery voltage |
| 13 | GR | Rear door switch RH | Input | OFF | ON (open) | 0V |
| | | | | | OFF (closed) | Battery voltage |
| 15 | L/W | Tire pressure warning check connector | Input | OFF | — | 5V |
| 18 | P | Remote keyless entry receiver and optical sensor (ground) | Output | OFF | — | 0V |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Terminal | Wire color | Signal name | Signal input/output | Measuring condition | | Reference value or waveform (Approx.) |
|----------|------------|----------------------------------------------|---------------------|---------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| | | | | Ignition switch | Operation or condition | |
| 19 | V/W | Remote keyless entry receiver (power supply) | Output | OFF | Ignition switch OFF | <p style="text-align: right; font-size: small;">LIIA1893E</p> |
| 20 | G/W | Remote keyless entry receiver (signal) | Input | OFF | Stand-by (keyfob buttons released) | <p style="text-align: right; font-size: small;">LIIA1894E</p> |
| | | | | | When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed) | <p style="text-align: right; font-size: small;">LIIA1895E</p> |
| 21 | G | NATS antenna amp. | Input | OFF → ON | Ignition switch (OFF → ON) | Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage. |
| 22 | G | BUS | — | — | Ignition switch ON or power window timer operates | <p style="text-align: right; font-size: small;">PIIA2344E</p> |
| 23 | G/O | Security indicator lamp | Output | OFF | Goes OFF → illuminates (Every 2.4 seconds) | Battery voltage → 0V |
| 25 | BR | NATS antenna amp. | Input | OFF → ON | Ignition switch (OFF → ON) | Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage. |
| 26 | Y/L | Rear wiper auto stop switch 2 | Input | ON | Rise up position (rear wiper arm on stopper) | 0V |
| | | | | | A Position (full clockwise stop position) | 0V |
| | | | | | Forward sweep (counterclockwise direction) | Fluctuating |
| | | | | | B Position (full counterclockwise stop position) | Battery voltage |
| | | | | | Reverse sweep (clockwise direction) | Fluctuating |
| 27 | W/R | Compressor ON signal | Input | ON | A/C switch OFF | 5V |
| | | | | | A/C switch ON | 0V |

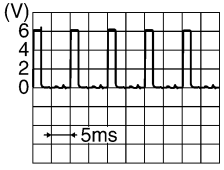
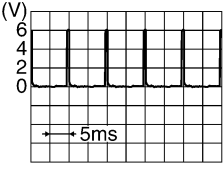
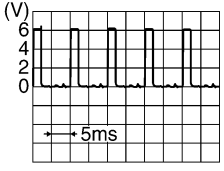
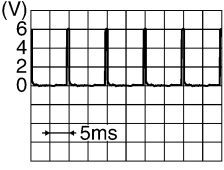
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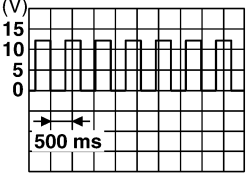
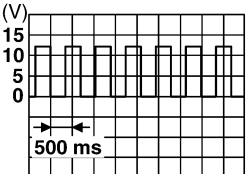
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Terminal | Wire color | Signal name | Signal input/output | Measuring condition | | Reference value or waveform (Approx.) |
|-----------------|------------|-------------------------------------|---------------------|---------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------|
| | | | | Ignition switch | Operation or condition | |
| 28 | L/R | Front blower monitor | Input | ON | Front blower motor OFF | Battery voltage |
| | | | | | Front blower motor ON | 0V |
| 29 | W/B | Hazard switch | Input | OFF | ON | 0V |
| | | | | | OFF | 5V |
| 32 | R/G | Combination switch output 5 | Output | ON | Lighting, turn, wiper OFF Wiper dial position 4 |  SKIA5291E |
| 33 | R/Y | Combination switch output 4 | Output | ON | Lighting, turn, wiper OFF Wiper dial position 4 |  SKIA5292E |
| 34 | L | Combination switch output 3 | Output | ON | Lighting, turn, wiper OFF Wiper dial position 4 |  SKIA5291E |
| 35 | O/B | Combination switch output 2 | Output | ON | Lighting, turn, wiper OFF Wiper dial position 4 |  SKIA5292E |
| 36 | R/W | Combination switch output 1 | | | | |
| 37 ¹ | B/R | Key switch and ignition knob switch | Input | OFF | Intelligent Key inserted | Battery voltage |
| | | | | | Intelligent Key removed | 0V |
| 37 ² | B/R | Key switch and key lock solenoid | Input | OFF | Key inserted | Battery voltage |
| | | | | | Key removed | 0V |
| 38 | W/L | Ignition switch (ON) | Input | ON | — | Battery voltage |
| 39 | L | CAN-H | — | — | — | — |
| 40 | P | CAN-L | — | — | — | — |
| 41 | GR/R | Rear window defogger switch | Input | ON | Rear window defogger switch ON | 0V |
| | | | | | Rear window defogger switch OFF | 5V |
| 42 | GR | Glass hatch ajar switch | Input | ON | Glass hatch open | 0 |
| | | | | | Glass hatch closed | Battery |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Terminal | Wire color | Signal name | Signal input/output | Measuring condition | | Reference value or waveform (Approx.) |
|----------|------------|---------------------------------------------------------------------------------------------------------|---------------------|---------------------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | Ignition switch | Operation or condition | |
| 43 | R/B | Back door switch (without power back door) or back door latch (door ajar switch) (with power back door) | Input | OFF | ON (open) | 0V |
| | | | | | OFF (closed) | Battery voltage |
| 44 | O | Rear wiper auto stop switch 1 | Input | ON | Rise up position (rear wiper arm on stopper) | 0V |
| | | | | | A Position (full clockwise stop position) | Battery voltage |
| | | | | | Forward sweep (counterclockwise direction) | Fluctuating |
| | | | | | B Position (full counterclockwise stop position) | 0V |
| | | | | | Reverse sweep (clockwise direction) | Fluctuating |
| 47 | SB | Front door switch LH | Input | OFF | ON (open) | 0V |
| | | | | | OFF (closed) | Battery voltage |
| 48 | R/Y | Rear door switch LH | Input | OFF | ON (open) | 0V |
| | | | | | OFF (closed) | Battery voltage |
| 49 | R | Cargo lamp | Output | OFF | Any door open (ON) | 0V |
| | | | | | All doors closed (OFF) | Battery voltage |
| 51 | Y/B | Trailer turn signal (right) | Output | ON | Turn right ON |  <p style="text-align: right; font-size: small;">SKIA3009J</p> |
| 52 | G/B | Trailer turn signal (left) | Output | ON | Turn left ON |  <p style="text-align: right; font-size: small;">SKIA3009J</p> |
| 54 | Y | Rear wiper output circuit 2 | Input | ON | Rise up position (rear wiper arm on stopper) | 0V |
| | | | | | A Position (full clockwise stop position) | 0V |
| | | | | | Forward sweep (counterclockwise direction) | 0V |
| | | | | | B Position (full counterclockwise stop position) | Battery voltage |
| | | | | | Reverse sweep (clockwise direction) | Battery voltage |
| 55 | SB | Rear wiper output circuit 1 | Output | ON | OFF | 0 |
| | | | | | ON | Battery voltage |

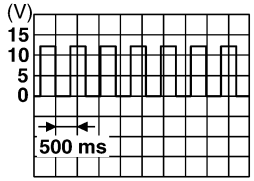
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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Terminal | Wire color | Signal name | Signal input/output | Measuring condition | | Reference value or waveform (Approx.) | |
|----------|------------|--------------------------------------------------------------------------------------------------|---------------------|---------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------|----|
| | | | | Ignition switch | Operation or condition | | |
| 56 | R/G | Battery saver output | Output | OFF | 10 minutes after ignition switch is turned OFF | 0V | |
| | | | | ON | — | Battery voltage | |
| 57 | Y/R | Battery power supply | Input | OFF | — | Battery voltage | |
| 58 | W/R | Optical sensor | Input | ON | When optical sensor is illuminated | 3.1V or more | |
| | | | | | When optical sensor is not illuminated | 0.6V or less | |
| 59 | G | Front door lock assembly LH actuator (unlock) | Output | OFF | OFF (neutral) | 0V | |
| | | | | | ON (unlock) | Battery voltage | |
| 60 | G/B | Turn signal (left) | Output | ON | Turn left ON |  | |
| 61 | G/Y | Turn signal (right) | Output | ON | Turn right ON |  | |
| 62 | R/W | Foot lamp LH and RH | Output | OFF | ON (any door open) | 0V | |
| | | | | | OFF (all doors closed) | Battery voltage | |
| 63 | L | Interior room/map lamp | Output | OFF | Any door switch | ON (open) | 0V |
| | | | | | OFF (closed) | Battery voltage | |
| 65 | V | All door lock actuators (lock) | Output | OFF | OFF (neutral) | 0V | |
| | | | | | ON (lock) | Battery voltage | |
| 66 | G/Y | Front door lock actuator RH, rear door lock actuators LH/RH and back door lock actuator (unlock) | Output | OFF | OFF (neutral) | 0V | |
| | | | | | ON (unlock) | Battery voltage | |
| 67 | B | Ground | Input | ON | — | 0V | |
| 68 | W/L | Power window power supply (RAP) | Output | — | Ignition switch ON | Battery voltage | |
| | | | | | Within 45 seconds after ignition switch OFF | Battery voltage | |
| | | | | | More than 45 seconds after ignition switch OFF | 0V | |
| | | | | | When front door LH or RH is open or power window timer operates | 0V | |
| 69 | W/R | Power window power supply | Output | — | — | Battery voltage | |
| 70 | W/B | Battery power supply | Input | OFF | — | Battery voltage | |

1: With Intelligent Key system

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

2: With remote keyless entry system

Fail Safe

INFOID:000000011519360

Fail-safe index

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

| Display contents of CONSULT | Fail-safe | Cancellation |
|-----------------------------|-------------------------|-------------------------------------------------------------------|
| U1000: CAN COMM CIRCUIT | Inhibit engine cranking | When the BCM re-establishes communication with the other modules. |

DTC Inspection Priority Chart

INFOID:000000011519361

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

| Priority | DTC |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | <ul style="list-style-type: none"> U1000: CAN COMM CIRCUIT |
| 2 | <ul style="list-style-type: none"> B2190: NATS ANTENNA AMP B2191: DIFFERENCE OF KEY B2192: ID DISCORD BCM-ECM B2193: CHAIN OF BCM-ECM B2013: STRG COMM 1 B2552: INTELLIGENT KEY B2590: NATS MALFUNCTION |
| 3 | <ul style="list-style-type: none"> C1729: VHCL SPEED SIG ERR C1735: IGNITION SIGNAL |
| 4 | <ul style="list-style-type: none"> C1708: [NO DATA] FL C1709: [NO DATA] FR C1710: [NO DATA] RR C1711: [NO DATA] RL C1712: [CHECKSUM ERR] FL C1713: [CHECKSUM ERR] FR C1714: [CHECKSUM ERR] RR C1715: [CHECKSUM ERR] RL C1716: [PRESSDATA ERR] FL C1717: [PRESSDATA ERR] FR C1718: [PRESSDATA ERR] RR C1719: [PRESSDATA ERR] RL C1720: [CODE ERR] FL C1721: [CODE ERR] FR C1722: [CODE ERR] RR C1723: [CODE ERR] RL C1724: [BATT VOLT LOW] FL C1725: [BATT VOLT LOW] FR C1726: [BATT VOLT LOW] RR C1727: [BATT VOLT LOW] RL |

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WCS

DTC Index

INFOID:000000011519362

NOTE:

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

O
P

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| CONSULT display | Fail-safe | Intelligent Key warning lamp ON | Tire pressure monitor warning lamp ON | Reference page |
|------------------------------------------------------------|-----------|------------------------------------|---------------------------------------------|-------------------------------------------------------------------------------------|
| No DTC is detected. further testing may be required. | — | — | — | — |
| U1000: CAN COMM CIRCUIT | — | — | — | BCS-29 |
| B2013: STRG COMM 1 | — | — | — | SEC-30 |
| B2190: NATS ANTENNA AMP | — | — | — | SEC-33 (with I- Key), SEC-143 (without I-Key) |
| B2191: DIFFERENCE OF KEY | — | — | — | SEC-36 (with I- Key), SEC-146 (without I-Key) |
| B2192: ID DISCORD BCM-ECM | — | — | — | SEC-37 (with I- Key), SEC-147 (without I-Key) |
| B2193: CHAIN OF BCM-ECM | — | — | — | SEC-39 (with I- Key), SEC-149 (without I-Key) |
| B2552: INTELLIGENT KEY | — | — | — | SEC-41 |
| B2590: NATS MALFUNCTION | — | — | — | SEC-42 |
| C1708: [NO DATA] FL | — | — | — | WT-15 |
| C1709: [NO DATA] FR | — | — | — | WT-17 |
| C1710: [NO DATA] RR | — | — | — | WT-17 |
| C1711: [NO DATA] RL | — | — | — | WT-17 |
| C1712: [CHECKSUM ERR] FL | — | — | — | WT-17 |
| C1713: [CHECKSUM ERR] FR | — | — | — | WT-17 |
| C1714: [CHECKSUM ERR] RR | — | — | — | WT-17 |
| C1715: [CHECKSUM ERR] RL | — | — | — | WT-17 |
| C1716: [PRESSDATA ERR] FL | — | — | — | WT-19 |
| C1717: [PRESSDATA ERR] FR | — | — | — | WT-17 |
| C1718: [PRESSDATA ERR] RR | — | — | — | WT-17 |
| C1719: [PRESSDATA ERR] RL | — | — | — | WT-17 |
| C1720: [CODE ERR] FL | — | — | — | WT-17 |
| C1721: [CODE ERR] FR | — | — | — | WT-17 |
| C1722: [CODE ERR] RR | — | — | — | WT-17 |
| C1723: [CODE ERR] RL | — | — | — | WT-17 |
| C1724: [BATT VOLT LOW] FL | — | — | — | WT-17 |
| C1725: [BATT VOLT LOW] FR | — | — | — | WT-17 |
| C1726: [BATT VOLT LOW] RR | — | — | — | WT-17 |
| C1727: [BATT VOLT LOW] RL | — | — | — | WT-17 |
| C1729: VHCL SPEED SIG ERR | — | — | — | WT-21 |
| C1735: IGN_CIRCUIT_OPEN | — | — | — | WT-22 |

WARNING CHIME SYSTEM

< WIRING DIAGRAM >

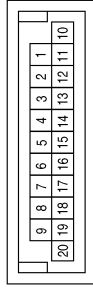
WARNING CHIME SYSTEM CONNECTORS

| | |
|-----------------|------------------|
| Connector No. | M4 |
| Connector Name | FUSE BLOCK (J/B) |
| Connector Color | WHITE |



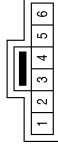
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 5P | O/L | - |
| 13P | P | - |

| | |
|-----------------|---------------------|
| Connector No. | M5 |
| Connector Name | JOINT CONNECTOR-M02 |
| Connector Color | BLUE |



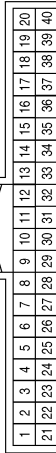
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 6 | P | - |
| 8 | P | - |
| 10 | Y/R | - |
| 15 | Y/R | - |

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|-----------------|-------------------------------------|
| Connector No. | M12 |
| Connector Name | KEY SWITCH AND IGNITION KNOB SWITCH |
| Connector Color | GRAY |



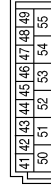
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 3 | Y | - |
| 4 | B/R | - |

| | |
|-----------------|---------------------------|
| Connector No. | M18 |
| Connector Name | BCM (BODY CONTROL MODULE) |
| Connector Color | WHITE |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 2 | SB | INPUT 5 |
| 3 | G/Y | INPUT 4 |
| 4 | Y | INPUT 3 |
| 5 | G/B | INPUT 2 |
| 6 | V | INPUT 1 |
| 11 | O | ACC SW |
| 32 | R/G | OUTPUT 5 |
| 33 | R/Y | OUTPUT 4 |
| 34 | L | OUTPUT 3 |
| 35 | O/B | OUTPUT 2 |
| 36 | R/W | OUTPUT 1 |
| 37 | B/R | KEY SW |
| 38 | W/L | IGN SW |
| 39 | L | CAN-H |
| 40 | P | CAN-L |

| | |
|-----------------|---------------------------|
| Connector No. | M19 |
| Connector Name | BCM (BODY CONTROL MODULE) |
| Connector Color | WHITE |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|--------------|
| 47 | SB | DOOR SW (DR) |

WARNING CHIME SYSTEM

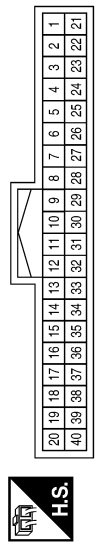
< WIRING DIAGRAM >

| | |
|-----------------|----------------------------------|
| Connector No. | M27 |
| Connector Name | KEY SWITCH AND KEY LOCK SOLENOID |
| Connector Color | WHITE |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 3 | P | - |
| 4 | B/R | - |

| | |
|-----------------|-------------------|
| Connector No. | M24 |
| Connector Name | COMBINATION METER |
| Connector Color | WHITE |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 8 | Y/R | BATTERY |
| 9 | B | GND |
| 11 | L | CAN-H |
| 12 | P | CAN-L |
| 24 | O/L | RUN/START |
| 27 | O/B | SEATBELT |

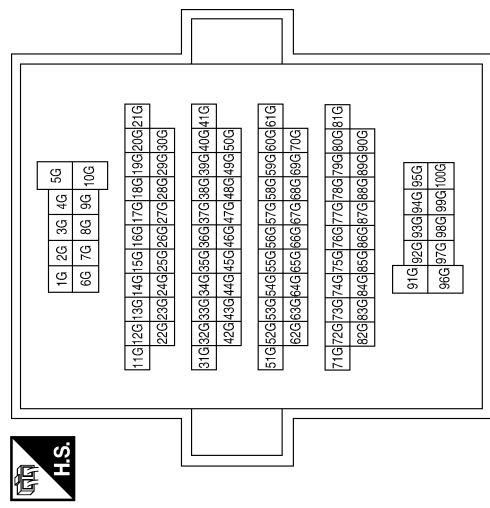
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| Connector No. | M20 |
| Connector Name | BCM (BODY CONTROL MODULE) |
| Connector Color | BLACK |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 67 | B | GND (POWER) |
| 70 | W/B | BAT (F/L) |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 60G | Y | - |
| 96G | W/B | - |
| 99G | W/L | - |

| | |
|-----------------|--------------|
| Connector No. | M31 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |



| | |
|-----------------|--------------------|
| Connector No. | M28 |
| Connector Name | COMBINATION SWITCH |
| Connector Color | WHITE |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1 | R/W | - |
| 2 | O/B | - |
| 3 | L | - |
| 4 | R/Y | - |
| 5 | R/G | - |
| 6 | V | - |
| 7 | G/B | - |
| 8 | SB | - |
| 9 | G/Y | - |
| 10 | Y | - |

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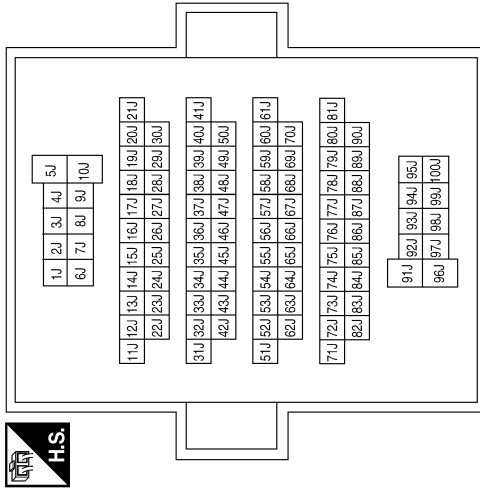
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WARNING CHIME SYSTEM

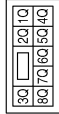
< WIRING DIAGRAM >

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 20J | O/B | - |
| 30J | SB | - |

| Connector No. | M40 |
|-----------------|--------------|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

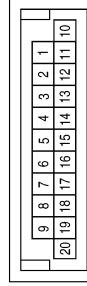


| Connector No. | M39 |
|-----------------|------------------|
| Connector Name | FUSE BLOCK (J/B) |
| Connector Color | WHITE |



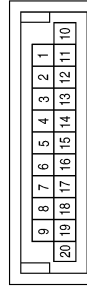
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 4Q | Y/R | - |

| Connector No. | M176 |
|-----------------|---------------------|
| Connector Name | JOINT CONNECTOR-M11 |
| Connector Color | BLUE |



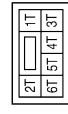
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1 | L | - |
| 4 | L | - |
| 10 | P | - |
| 13 | P | - |

| Connector No. | M175 |
|-----------------|---------------------|
| Connector Name | JOINT CONNECTOR-M10 |
| Connector Color | BLUE |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1 | L | - |
| 6 | L | - |
| 10 | P | - |
| 15 | P | - |

| Connector No. | M60 |
|-----------------|------------------|
| Connector Name | FUSE BLOCK (J/B) |
| Connector Color | WHITE |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 6T | O | - |

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WARNING CHIME SYSTEM

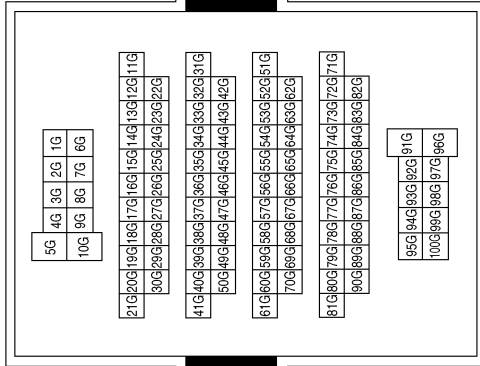
< WIRING DIAGRAM >

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



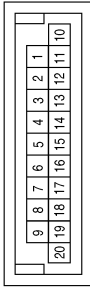
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 2 | SB | - |

| | |
|-----------------|--------------|
| Connector No. | E152 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 60G | Y | - |
| 96G | WB | - |
| 99G | L/W | - |

| | |
|-----------------|---------------------|
| Connector No. | M179 |
| Connector Name | JOINT CONNECTOR-M01 |
| Connector Color | GREEN |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 10 | O | - |
| 12 | O | - |

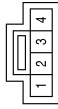
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WARNING CHIME SYSTEM

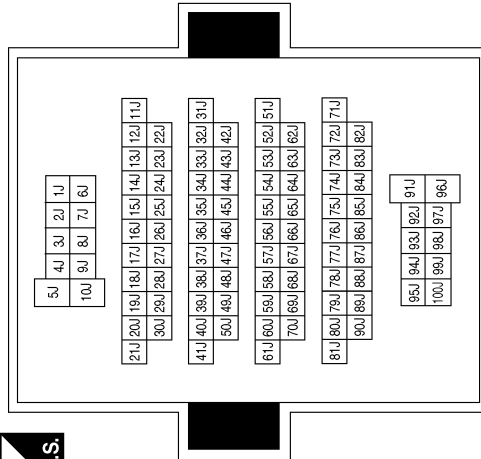
< WIRING DIAGRAM >

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|-----------------|--------------------------------------------------|
| Connector No. | B74 |
| Connector Name | SEAT BELT BUCKLE PRE-TENSIONER ASSEMBLY LH |
| Connector Color | YELLOW |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1 | O/B | - |
| 2 | B | - |

| | |
|-----------------|--------------|
| Connector No. | B69 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 20J | O/B | - |
| 30J | SB | - |

ABNIA6201GB

THE LIGHT REMINDER WARNING DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

THE LIGHT REMINDER WARNING DOES NOT SOUND

Description

INFOID:0000000011287653

Light reminder warning does not sound even though headlamp is illuminated.

Diagnosis Procedure

INFOID:0000000011287654

1. CHECK COMBINATION SWITCH (LIGHTING AND TURN SIGNAL SWITCH) OPERATION

Check that the headlamps operate normally by operating the combination switch (lighting and turn signal switch).

Do they operate normally?

YES >> GO TO 2

NO >> Refer to [EXL-4, "Work Flow"](#).

2. CHECK FRONT DOOR SWITCH LH SIGNAL CIRCUIT

Perform inspection of the front door switch LH signal circuit. Refer to [DLK-74, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair harness or connector.

3. CHECK FRONT DOOR SWITCH LH

Perform a unit inspection for the front door switch LH. Refer to [DLK-74, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> Replace the BCM. Refer to [BCS-54, "Removal and Installation"](#).

NO >> Replace the front door switch LH.

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THE SEAT BELT WARNING CONTINUES SOUNDING, OR DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

THE SEAT BELT WARNING CONTINUES SOUNDING, OR DOES NOT SOUND

Description

INFOID:000000011287655

- Seat belt warning does not sound even though driver seat belt is not fastened.
- Seat belt warning sounds even though driver seat belt is fastened.

Diagnosis Procedure

INFOID:000000011287656

1. CHECK WARNING CHIME OPERATION

1. With key removed from key switch and the front door LH open, turn lighting switch to 1st or 2nd position.
2. Return lighting switch to off position, and insert key into key switch.

Does warning chime sound for both steps?

- YES >> GO TO 2
NO >> Replace combination meter. Refer to [MWI-99. "Removal and Installation"](#).

2. CHECK SEAT BELT WARNING LAMP

1. Turn ignition switch ON.
2. Check the operation of the seat belt warning lamp in the combination meter.

Seat belt fastened : OFF

Seat belt not fastened : ON

Is the inspection result normal?

- YES >> Replace BCM. Refer to [BCS-54. "Removal and Installation"](#).
NO >> GO TO 3

3. CHECK SEAT BELT BUCKLE PRE-TENSIONER ASSEMBLY LH (SEAT BELT BUCKLE SWITCH) CIRCUIT

Perform inspection of the seat belt buckle pre-tensioner assembly LH (seat belt buckle switch) circuit. Refer to [WCS-25. "Diagnosis Procedure"](#).

Is the inspection result normal?

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

4. CHECK SEAT BELT BUCKLE PRE-TENSIONER ASSEMBLY LH (SEAT BELT BUCKLE SWITCH) UNIT

Perform a unit inspection for the seat belt buckle pre-tensioner assembly LH (seat belt buckle switch). Refer to [WCS-26. "Component Inspection"](#).

Is the inspection result normal?

- YES >> Replace the combination meter. Refer to [MWI-99. "Removal and Installation"](#).
NO >> Replace the seat belt buckle pre-tensioner assembly LH (seat belt buckle switch).

THE KEY WARNING DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

THE KEY WARNING DOES NOT SOUND

Description

INFOID:000000011287657

Key warning does not sound even though key is in ignition and front door LH is opened.

Diagnosis Procedure

INFOID:000000011287658

1.CHECK WARNING CHIME OPERATION

With key removed from the ignition and the front door LH open, turn the lighting switch to 1st or 2nd position.

Does warning chime sound?

YES >> GO TO 2

NO >> Replace combination meter. Refer to [MWI-99, "Removal and Installation"](#).

2.CHECK KEY SWITCH CIRCUIT

Perform inspection of the key switch circuit. Refer to [WCS-27, "Diagnosis Procedure"](#) (with Intelligent Key) or [WCS-29, "Diagnosis Procedure"](#) (without Intelligent Key).

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair harness or connector.

3.CHECK KEY SWITCH

Perform a unit inspection for the key switch. Refer to [WCS-28, "Component Inspection"](#) (with Intelligent Key) or [WCS-30, "Component Inspection"](#) (without Intelligent Key).

Is the inspection result normal?

YES >> Replace the BCM. Refer to [BCS-54, "Removal and Installation"](#).

NO >> Replace the key switch and ignition knob switch (key switch) (with Intelligent Key) or key switch and key lock solenoid (key switch) (without Intelligent Key).

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PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000011541228

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 SR and SB section of this Service Manual.

WARNING:

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

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

WARNING:

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

Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:000000011287660

NOTE:

- This Procedure is applied only to models with Intelligent Key system and NATS (NISSAN ANTI-THEFT SYSTEM).
- Remove and install all control units after disconnecting both battery cables with the ignition knob in the "LOCK" position.
- Always use CONSULT to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

For models equipped with the Intelligent Key system and NATS, an electrically controlled steering lock mechanism is adopted on the key cylinder.

For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.

If steering wheel rotation is required when battery power is interrupted, follow the 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. Use the Intelligent Key or mechanical key to turn the ignition switch to the "ACC" position. At this time, the steering lock will be released.
3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.

PRECAUTIONS

< PRECAUTION >

5. When the repair work is completed, return the ignition switch to the "LOCK" position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT.

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