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SECTION **WCS**
WARNING CHIME SYSTEM

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APPLICATION NOTICE

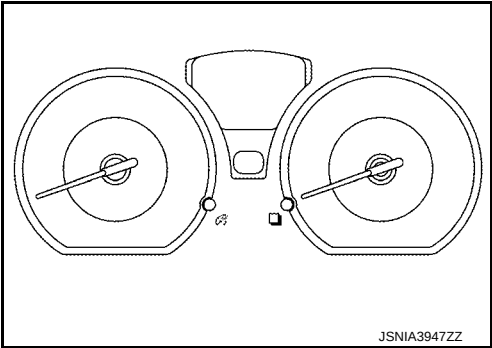
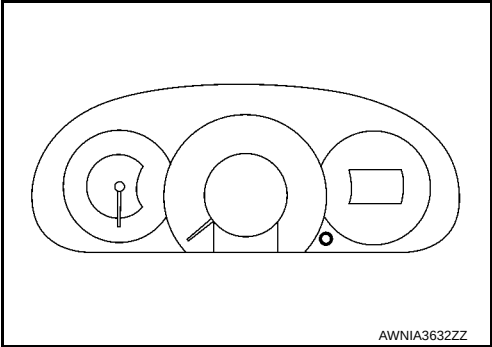
< HOW TO USE THIS MANUAL >

HOW TO USE THIS MANUAL

APPLICATION NOTICE

Information

INFOID:0000000012432665

Service information	Design of combination meter	
TYPE A		 JSNIA3947ZZ
TYPE B		 AWNIA3632ZZ

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PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:0000000012542981

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

WARNING:

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

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

WARNING:

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

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COMPONENT PARTS

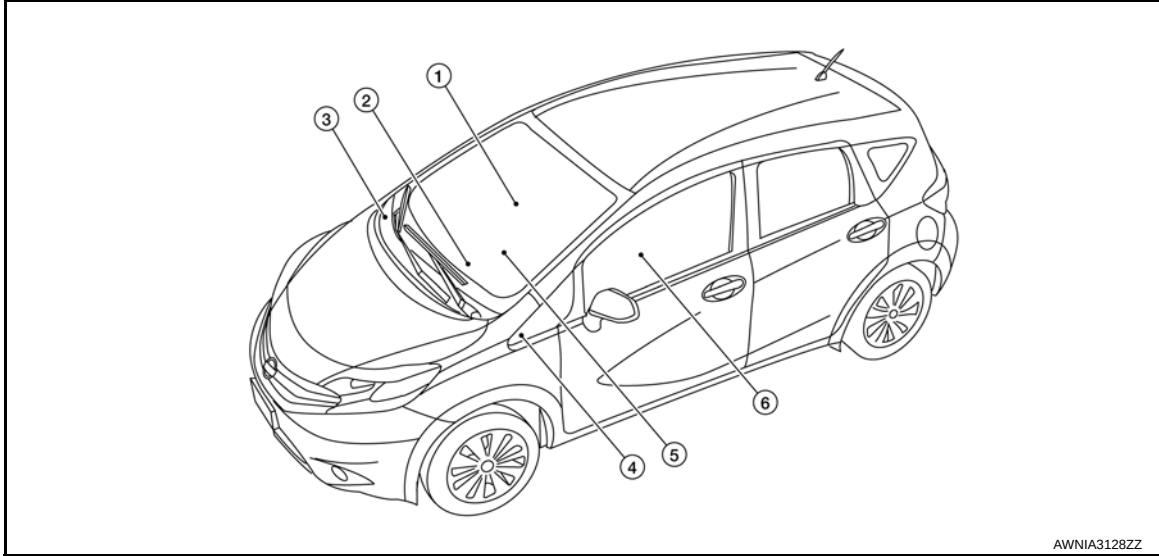
< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000012432667



No.	Component	Function
1.	Parking brake switch	Transmits the parking brake switch signal to the combination meter.
2.	Key switch	Transmits the key switch signal to the BCM. Refer to SEC-119, "NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : Component Parts Location" (without Intelligent Key system) for detailed installation location.
3.	ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the combination meter via CAN communication. Refer to BRC-7, "Component Parts Location" for detailed installation location.
4.	BCM	Based on the signals received from various units and switches, transmits the buzzer output signal to the combination meter via CAN communication. Refer to BCS-6, "BODY CONTROL SYSTEM : Component Parts Location" (with Intelligent Key system) or BCS-77, "BODY CONTROL SYSTEM : Component Parts Location" (without Intelligent Key system) for detailed installation location.
5.	Combination meter	- Receives a buzzer output signal from the BCM with CAN communication line and sounds the buzzer. - Controls the following with the vehicle speed signal received from ABS actuator and electric unit (control unit) via CAN communication and the signals from switches. - Seat belt reminder warning chime - Parking brake release warning chime - Key warning chime
6.	Seat belt buckle switch LH	Transmits a seat belt buckle switch signal LH to the combination meter.

Combination Meter

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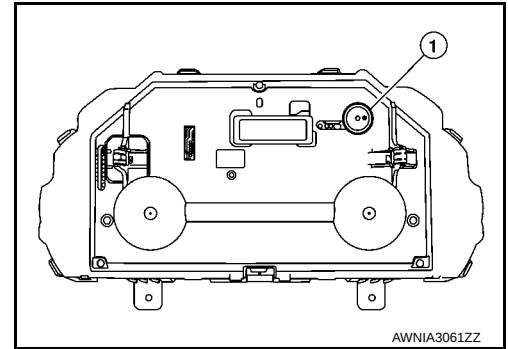
The combination meter has a built-in buzzer (1) and sounds the following warnings, according to signals from each switch and unit:

- Light reminder warning
- Parking brake release warning chime
- Seat belt warning
- Key warning chime (without Intelligent Key system)

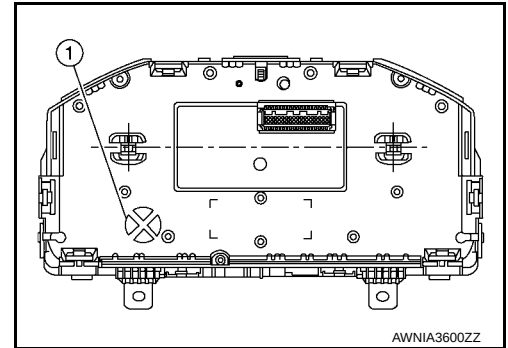
COMPONENT PARTS

< SYSTEM DESCRIPTION >

TYPE A



TYPE B



NOTE:

To identify combination meter type, refer to [WCS-3, "Information"](#).

SYSTEM

< SYSTEM DESCRIPTION >

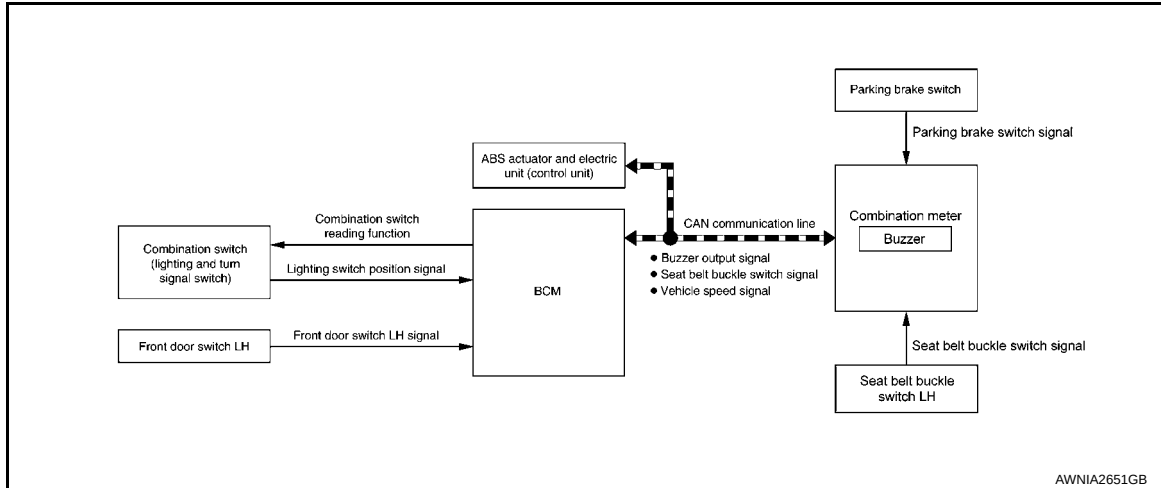
SYSTEM

WARNING CHIME SYSTEM

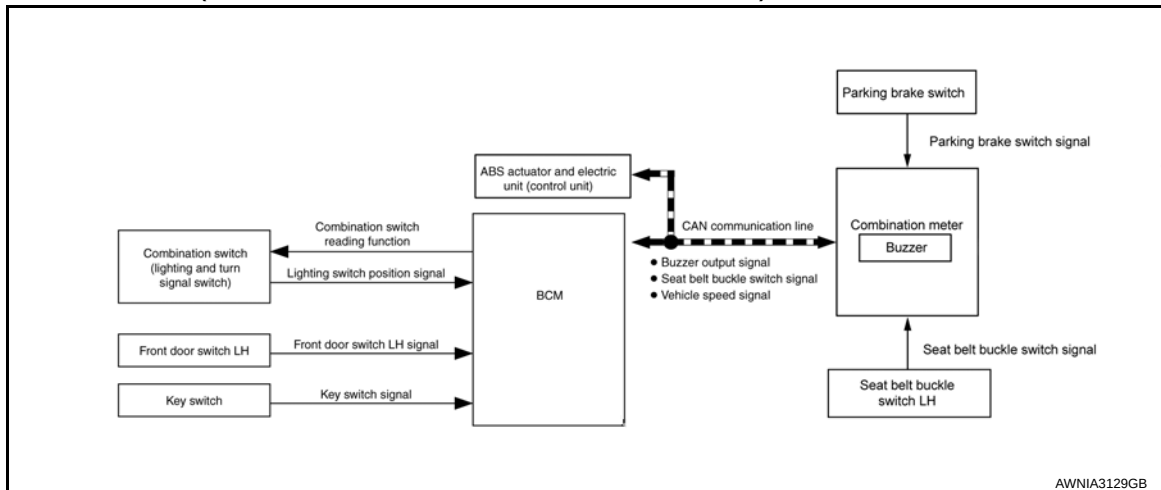
WARNING CHIME SYSTEM : System Description

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SYSTEM DIAGRAM (WITH INTELLIGENT KEY SYSTEM)



SYSTEM DIAGRAM (WITHOUT INTELLIGENT KEY SYSTEM)



COMBINATION METER INPUT/OUTPUT SIGNAL (CAN COMMUNICATION SIGNAL)

Input signal

Signal name	Transmit unit
Vehicle speed signal	ABS actuator and electric unit (control unit)
Buzzer output signal	BCM

Output signal

Signal name	Reception unit
Vehicle speed signal	BCM

BCM INPUT/OUTPUT SIGNAL (CAN COMMUNICATION SIGNAL)

Input signal

SYSTEM

< SYSTEM DESCRIPTION >

Signal name	Transmit unit
Vehicle speed signal	Combination meter

Output signal

Signal name	Reception unit
Buzzer output signal	Combination meter

DESCRIPTION

Combination Meter

The combination meter sounds the alarm buzzer installed in the combination meter when receiving the buzzer output signal transmitted from each unit.

BCM

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

WARNING CHIME FUNCTION LIST

Warning functions	Refer to
Light reminder warning	WCS-8, "LIGHT REMINDER WARNING CHIME : Light Reminder Warning"
Parking brake release warning chime	WCS-9, "PARKING BRAKE RELEASE WARNING CHIME : Parking Brake Release Warning Chime"
Seat belt warning	WCS-10, "SEAT BELT REMINDER WARNING CHIME : Seat belt Warning"
Key warning chime (without Intelligent Key system)	WCS-11, "KEY WARNING CHIME (WITHOUT INTELLIGENT KEY) : Key Warning Chime"

WARNING CHIME SYSTEM : Fail-safe

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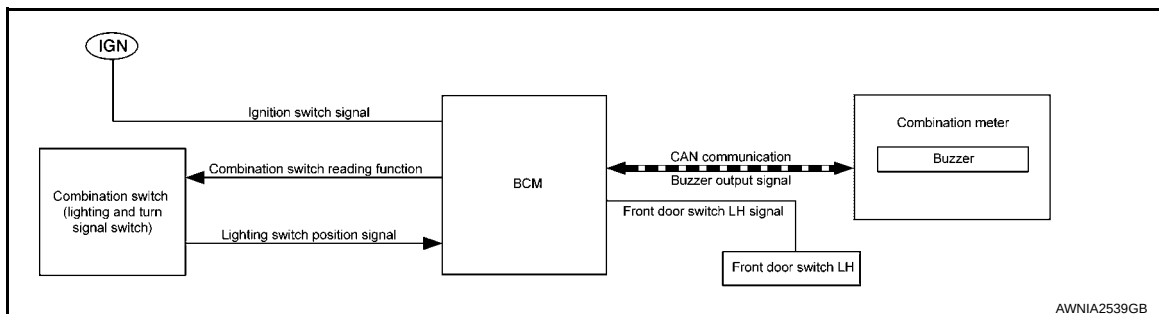
The combination meter activates the fail-safe control if CAN communication with each unit is malfunctioning.

Function	Specifications
Buzzer	The buzzer turns OFF by suspending communication.

LIGHT REMINDER WARNING CHIME

LIGHT REMINDER WARNING CHIME : Light Reminder Warning

INFOID:0000000012432671



WARNING CHIME OPERATION CONDITIONS

If all of the following conditions are fulfilled:

SYSTEM

< SYSTEM DESCRIPTION >

Operation conditions	
Ignition switch	OFF or ACC position
Combination switch (Lighting switch)	1st or 2nd position
Driver side door	Open [front door switch LH ON]

WARNING CHIME CANCEL CONDITIONS

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

Operation conditions	
Ignition switch	ON
Combination switch (Lighting switch)	OFF or AUTO position
Driver side door	Close [front door switch LH OFF]

SIGNAL PATH

1. BCM requires warning chime output to combination meter when it judges light reminder warning chime is necessary from signals below.

Signal name	Signal source
Ignition switch signal	—
Combination switch signal	Combination switch (Lighting switch) → BCM
Driver door switch signal	Front door switch LH → BCM

2. Combination meter sounds integrated buzzer, following the warning chime output requirement (below signal) from BCM.

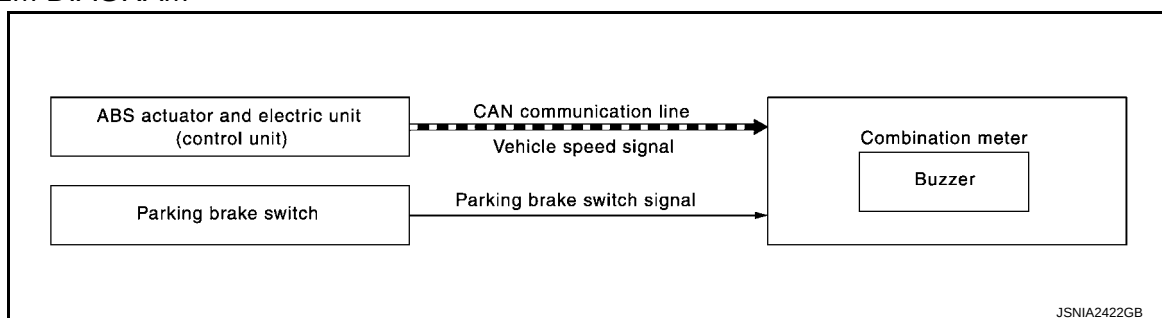
Signal name	Signal source
Buzzer output signal	BCM  → Combination meter

PARKING BRAKE RELEASE WARNING CHIME

PARKING BRAKE RELEASE WARNING CHIME : Parking Brake Release Warning Chime

INFOID:0000000012432672

SYSTEM DIAGRAM



WARNING OPERATION CONDITIONS

If all of the following conditions are fulfilled:

Operation conditions	
Ignition switch	ON

SYSTEM

< SYSTEM DESCRIPTION >

Operation conditions	
Parking brake	During the operation (parking brake switch ON)
Vehicle speed	Approximately 4.3 MPH (7 km/h) or more

WARNING CANCEL CONDITIONS

Warning is canceled if any of the following conditions are fulfilled:

Operation conditions	
Ignition switch	OFF
Parking brake	Release condition (parking brake switch OFF)
Vehicle speed	Approximately 1.9 MPH (3 km/h) or less

SIGNAL PATH

Combination meter sounds integrated buzzer when it judges that parking brake release warning chime is necessary from signals below.

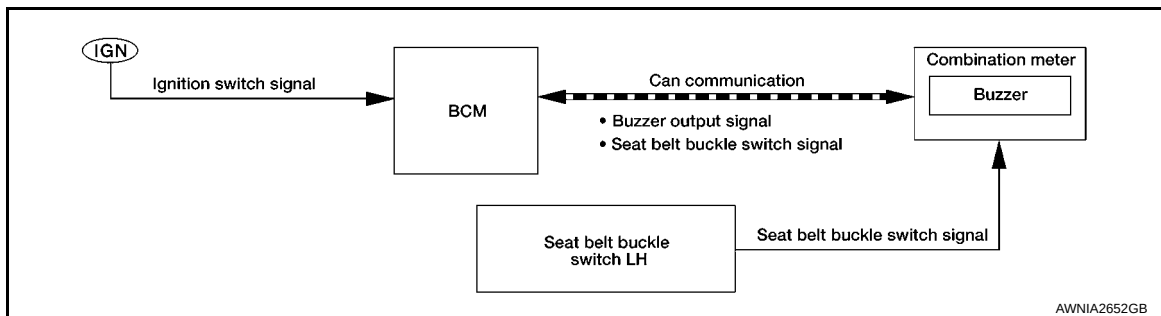
Signal name	Signal source
Ignition switch signal	—
Parking brake switch signal	Parking brake switch → Combination meter
Vehicle speed signal	ABS actuator and electric unit (control unit) → CAN → Combination meter

SEAT BELT REMINDER WARNING CHIME

SEAT BELT REMINDER WARNING CHIME : Seat belt Warning

INFOID:0000000012432673

SYSTEM DIAGRAM



WARNING OPERATION CONDITIONS

If all of the following conditions are fulfilled.

Operation conditions	
Ignition switch	ON
Driver seat belt	Unfastened [seat belt buckle switch LH ON]

WARNING CANCEL CONDITIONS

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

Operation conditions	
Ignition switch	OFF
Driver seat belt	Fastened (seat belt buckle switch LH OFF)
6 seconds after the start of warning sound	

SIGNAL PATH

SYSTEM

< SYSTEM DESCRIPTION >

1. BCM requires warning chime output to combination meter when it judges seat belt warning chime is necessary from signals below.

Signal name	Signal source
Ignition switch signal	—
Seat belt buckle switch signal (LH)	Seat belt buckle switch (LH) → Combination meter → CAN → BCM

2. Combination meter sounds integrated buzzer, following the warning chime output requirement (below signal) from BCM.

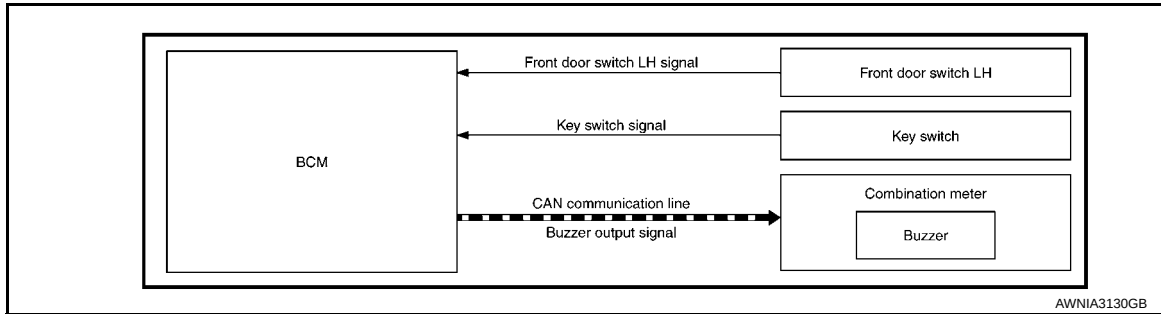
Signal name	Signal source
Buzzer output signal	BCM → CAN → Combination meter

KEY WARNING CHIME (WITHOUT INTELLIGENT KEY)

KEY WARNING CHIME (WITHOUT INTELLIGENT KEY) : Key Warning Chime

INFOID:0000000012432674

SYSTEM DIAGRAM



WARNING CHIME OPERATION CONDITIONS

If all of the following conditions are fulfilled.

Operation conditions	
Ignition switch	OFF or ACC position
Key switch	ON (key is in key cylinder)
Driver side door	Open [front door switch LH ON]

WARNING CHIME CANCEL CONDITIONS

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

Operation conditions	
Ignition switch	ON
Key switch	ON (key is removed from key cylinder)
Driver side door	Close [front door switch LH OFF]

SIGNAL PATH

1. BCM detects key inserted into the ignition switch, and sends key warning signal to combination meter with CAN communication line.

Signal name	Signal source
Ignition switch signal	—

SYSTEM

< SYSTEM DESCRIPTION >

Signal name	Signal source
Key switch signal	Key switch  BCM
Driver door switch signal	Front door switch LH  BCM

2. Combination meter sounds integrated buzzer, when it receives a buzzer output signal from BCM.

Signal name	Signal source
Buzzer output signal	BCM  Combination meter

DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (COMBINATION METER)

TYPE A

TYPE A : On Board Diagnosis Function

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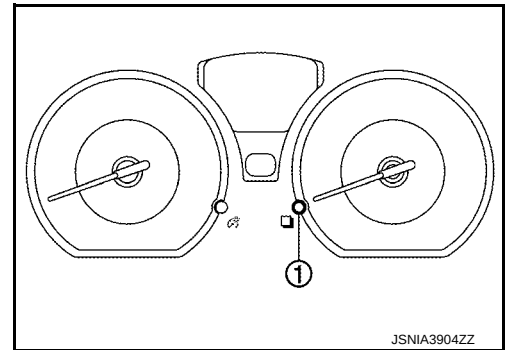
ON BOARD DIAGNOSIS ITEM

Information display, speedometer and tachometer can be checked in self-diagnosis mode.

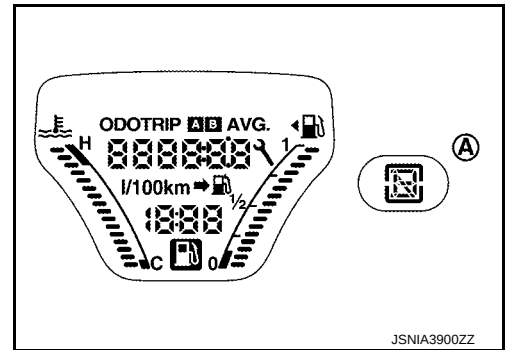
STARTING COMBINATION METER SELF-DIAGNOSIS MODE

METHOD OF STARTING

1. Turn ignition switch ON, and switch the trip meter to "trip A" or "trip B".
2. Turn ignition switch to OFF.
3. While pressing the meter control switch (1), turn the ignition switch ON.
4. Make sure that the trip meter displays "0000.0".
5. Press the meter control switch (1) at least 3 times. (Within 7 seconds after the ignition switch is turned ON).



6. The combination meter is turned to self-diagnosis mode.
 - All segments of the information display and shift position indicator (A) for CVT models are displayed.



NOTE:

- Check combination meter power supply and ground circuit when the self-diagnosis mode of the combination meter does not start. replace combination meter if power supply and ground circuit are normal.
- If any of the segments are not displayed, replace combination meter.

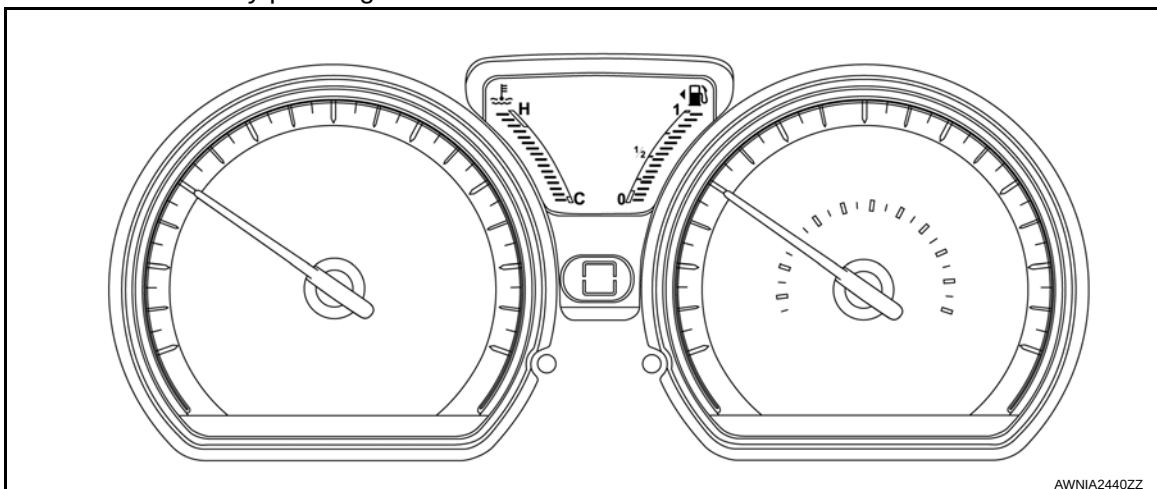
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DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

7. Each meter activates by pressing the meter control switch.



NOTE:

- If any of the meters or gauges is not activated, replace combination meter.
- The figure is reference.

TYPE A : CONSULT Function (METER/M&A)

INFOID:0000000012542983

APPLICATION ITEMS

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

METER/M&A Diagnosis mode	Description
Self Diagnostic Result	The combination meter self-diagnosis results.
Data Monitor	Displays combination meter input/output data in real time.
Work support	Supports combination meter diagnosis.
ECU Identification	The combination meter part number is displayed.
Warning History	Lighting history of the warning lamp and indicator lamp can be checked.

SELF DIAG RESULT

Refer to [MWI-24, "DTC Index"](#).

DATA MONITOR

Display Item List

X: Applicable

Display item [Unit]	MAIN SIGNALS	Description
SPEED METER [mph] or [km/h]	X	Displays the value of vehicle speed signal.
SPEED OUTPUT [mph] or [km/h]	X	Displays the value of vehicle speed signal, which is transmitted to each unit with CAN communication.
ODO OUTPUT [Mi] or [km]		Displays odometer signal value transmitted to other units via CAN communication.
TACHO METER [rpm]	X	Displays the value of engine speed signal, which is input from ECM.
FUEL METER [L]	X	Displays the fuel level.
W TEMP METER [°F] or [°C]	X	Displays the value of engine coolant temperature signal, which is input from ECM.
ABS W/L [ON/OFF]		Displays [ON/OFF] condition of ABS warning indicator
VDC/TCS IND [ON/OFF]		Displays [ON/OFF] condition of VDC OFF indicator lamp.

DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

Display item [Unit]	MAIN SIGNALS	Description
SLIP IND [ON/OFF]		Displays [ON/OFF] condition of SLIP indicator lamp.
BRAKE W/L [ON/OFF]		Displays [ON/OFF] condition of brake warning indicator.
DOOR W/L [ON/OFF]		Displays [ON/OFF] condition of door warning indicator.
HI-BEAM IND [ON/OFF]		Displays [ON/OFF] condition of high beam indicator.
TURN IND [ON/OFF]		Displays [ON/OFF] condition of turn indicator.
LIGHT IND [ON/OFF]		Displays [ON/OFF] condition of light indicator.
OIL W/L [ON/OFF]		Displays [ON/OFF] condition of engine oil pressure warning indicator.
MIL [ON/OFF]		Displays [ON/OFF] condition of malfunction indicator.
CRUISE IND [Off]		Displays [ON/OFF] condition of CRUISE indicator.
O/D OFF IND [ON/OFF]		Displays [ON/OFF] condition of O/D OFF indicator.
FUEL W/L [ON/OFF]		Displays [ON/OFF] condition of low-fuel warning indicator.
AIR PRES W/L [ON/OFF]		Displays [ON/OFF] condition of tire pressure warning lamp.
EPS W/L [ON/OFF]		Displays [ON/OFF] condition of EPS indicator.
CHG SIG [On/Off]		Displays [ON/OFF] condition of charge warning indicator.
PASS BUCKLE SW [ON/OFF]		Status of seat belt buckle switch RH.
FUEL CAP W/L [Off]		Displays [ON/OFF] condition of loose fuel cap warning message.
PKB SW [ON/OFF]		Status of parking brake switch.
BUCKLE SW [ON/OFF]		Status of seat belt buckle switch LH.
BRAKE OIL SW [ON/OFF]		Status of brake fluid level switch.
DISTANCE [M] or [Mi]		Displays distance to empty.
FUEL LOW SIG [ON/OFF]		Displays [ON/OFF] condition of low-fuel warning signal.
BUZZER [ON/OFF]	X	Displays [ON/OFF] condition of buzzer.
TPMS PRESS L [ON/OFF]		Displays [ON/OFF] condition of check tire pressure warning message.

NOTE:

Some items are not available according to vehicle specification.

WORK SUPPORT

DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

Work support item	Description
Fuel meter diagnosis(Analog pointer)	A possible malfunction can be narrowed down by following the displayed instructions.
Warning lamp diagnosis	

WARNING HISTORY

Display item	Description
W/L ON HISTORY	Lighting history of warning lamp and indicator lamp can be checked.

W/L ON HISTORY

- Stores histories when warning/indicator lamp is turned on.
- "W/L ON HISTORY" indicates the "TIME" when the warning/ indicator lamp is turned on.
- The "TIME" above is:
 - 0: The condition that the warning/indicator lamp has been turned on 1 or more times after starting the engine and waiting for 30 seconds.
 - 1 - 39: The number of times the engine was restarted after the 0 condition.
 - NO W/L ON HISTORY: Stores NO (0) turning on history of warning/indicator lamp.

NOTE:

- W/L ON HISTORY is not stored for approximately 30 seconds after the engine starts.
- Brake warning lamp does not store any history when the parking brake is applied or the brake fluid level gets low.

TYPE B

TYPE B : On Board Diagnosis Function

INFOID:0000000012542984

ON BOARD DIAGNOSIS

The following meter functions can be checked during Combination Meter Self-Diagnosis Mode:

- Pointer sweep of speedometer, tachometer and gauges.
- Illumination of all lamps/LEDs that are controlled by the combination meter (regardless of switch status).
- Error code

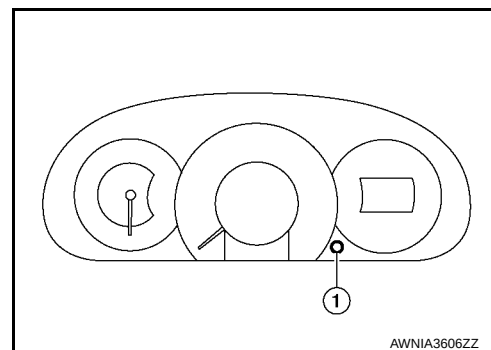
STARTING COMBINATION METER SELF-DIAGNOSIS MODE

NOTE:

- Check combination meter power supply and ground circuits if self-diagnosis mode does not start. Refer to [MWI-98, "COMBINATION METER : Diagnosis Procedure"](#). Replace combination meter if power supply and ground circuits are found to be normal and self-diagnosis mode does not start. Refer to [MWI-115, "Removal and Installation"](#).
- Combination meter self-diagnosis mode will function with the ignition switch in ON. Combination meter self-diagnosis mode will exit upon turning the ignition switch to OFF.

METHOD OF STARTING

1. Turn ignition switch to OFF.
2. While pressing the trip reset switch (1), turn the ignition switch ON.
3. Press the trip reset switch at least 3 times. (Within 7 seconds after the ignition switch is turned ON.)



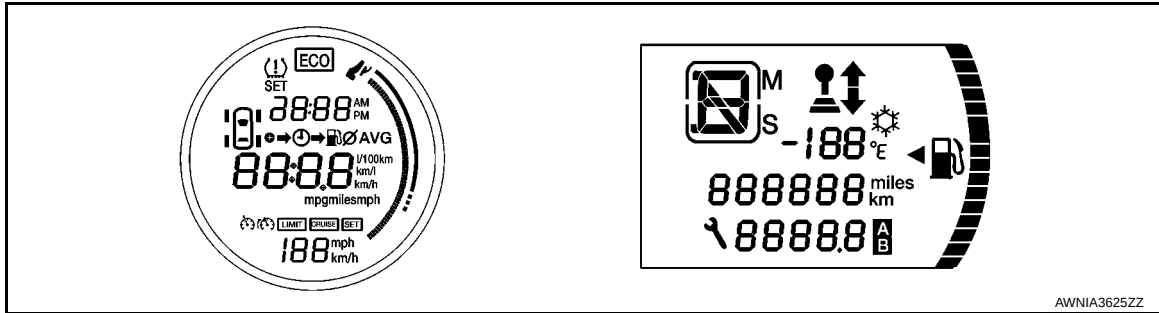
4. All LCD segments turn ON.

NOTE:

DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

If any of the segments are not activated, replace the combination meter.



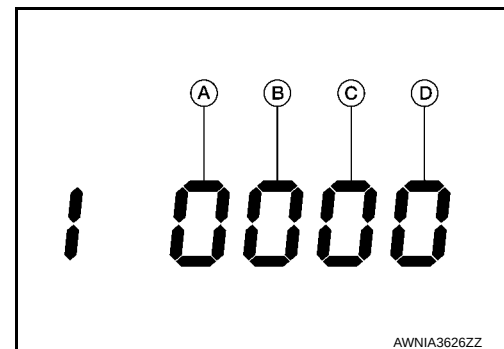
5. The mode switches in the order shown below each time the trip reset switch is pressed.

NOTE:

- If the trip reset switch is not operated for 20 seconds or more, the self-diagnosis mode is automatically cancelled.
- When the trip reset switch is pressed during the indication of Test order "10," test item returns to Test order "2."

Test order	Test item	Description
1	Work instruction code	This item is displayed, but not used.
2	Part number	
3	Software code	
4	EEPROM code	
5	Hardware code	
6	P.C.B code	
7	Circuit check	The pointer of the following items moves from 0 to MAX twice. • Speedometer • Tachometer NOTE: If any one of the pointers does not sweep, replace combination meter.
8	Error code A-D ^{*1}	Displays the error code of the following items: • High water temperature indicator • Fuel gauge • Tachometer • Speedometer
9	Error code E-H ^{*2}	Displays the error code of the following item: • Meter control switch
10	All warning/indicator lamp illuminate. NOTE: • When either one of them does not turn ON, replace combination meter.	

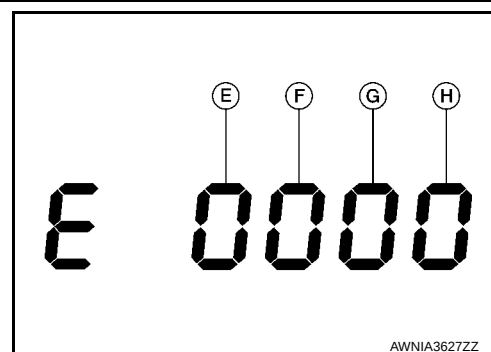
*1: Error code A-D



DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

*2: Error code E-H



Item	Code	Description	Action to take/Reference
Ⓐ High water temperature indicator signal	0	Normal	—
	1	An engine coolant temperature signal cannot be received from ECM.	Perform "Self Diagnostic Result" of "ECM." Refer to EC-87, "DTC Index" .
Ⓑ Fuel gauge	0	Normal	—
	1	Fuel gauge circuit is shorted.	Refer to MWI-101, "Diagnosis Procedure" .
	2	Fuel gauge circuit is open.	
Ⓒ Tachometer	0	Normal	—
	1	An engine speed signal cannot be received from ECM.	Perform "Self Diagnostic Result" of "ECM." Refer to EC-87, "DTC Index" .
Ⓓ Speedometer	0	Normal	—
	1	A vehicle speed signal cannot be received from ABS actuator and electric unit (control unit).	Perform "Self Diagnostic Result" of "ABS." Refer to BRC-43, "DTC Index" .
	2	A vehicle speed signal received from the ABS actuator and electric unit (control unit) is abnormal.	
Ⓔ —	0	Displays "0" constantly.	—
Ⓕ —	0	Displays "0" constantly.	—
Ⓖ —	0	Displays "0" constantly.	—
Ⓗ Trip odometer reset switch	0	Normal	—
	2	When judging that the trip odometer reset switch signal circuit is short-circuited for 5 minutes or more.	Replace combination meter. Refer to MWI-115, "Removal and Installation" .

TYPE B : CONSULT Function (METER/M&A)

INFOID:000000012542985

APPLICATION ITEMS

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

METER/M&A Diagnosis mode	Description
Self Diagnostic Result	The combination meter self-diagnosis results.
Data Monitor	Displays combination meter input/output data in real time.
Work support	Supports combination meter diagnosis.
ECU Identification	The combination meter part number is displayed.
Warning History	Lighting history of the warning lamp and indicator lamp can be checked.

SELF DIAG RESULT

Refer to [MWI-77, "DTC Index"](#).

DATA MONITOR

Display Item List

DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

X: Applicable

Display item [Unit]	MAIN SIGNALS	Description
SPEED METER [mph] or [km/h]	X	Displays the value of vehicle speed signal.
SPEED OUTPUT [mph] or [km/h]	X	Displays the value of vehicle speed signal, which is transmitted to each unit with CAN communication.
ODO OUTPUT [mph] or [km/h]		Displays odometer signal value transmitted to other units via CAN communication.
TACHO METER [rpm]	X	Displays the value of engine speed signal, which is input from ECM.
FUEL METER [L]	X	Displays the fuel level.
W TEMP METER [°C] or [°F]	X	Displays the value of engine coolant temperature signal, which is input from ECM.
ABS W/L [On/Off]		Displays [ON/OFF] condition of ABS warning indicator
VDC/TCS IND [ON/OFF]		Displays [ON/OFF] condition of VDC OFF indicator lamp.
SLIP IND [ON/OFF]		Displays [ON/OFF] condition of SLIP indicator lamp.
BRAKE W/L [On/Off]		Displays [ON/OFF] condition of brake warning indicator.
DOOR W/L [On/Off]		Displays [ON/OFF] condition of door warning indicator.
HI-BEAM IND [On/Off]		Displays [ON/OFF] condition of high beam indicator.
TURN IND [On/Off]		Displays [ON/OFF] condition of turn indicator.
LIGHT IND [On/Off]		Displays [ON/OFF] condition of light indicator.
OIL W/L [On/Off]		Displays [ON/OFF] condition of engine oil pressure warning indicator.
MIL [On/Off]		Displays [ON/OFF] condition of malfunction indicator.
CRUISE IND [Off]		Displays [ON/OFF] condition of CRUISE indicator.
O/D OFF IND [On/Off]		Displays [ON/OFF] condition of O/D OFF indicator.
FUEL W/L [On/Off]		Displays [ON/OFF] condition of low-fuel warning indicator.
PASS BUCKLE SW [On/Off]		Status of seat belt buckle switch RH.
AIR PRES W/L [ON/OFF]		Displays [ON/OFF] condition of tire pressure warning lamp.
KEY G/Y W/L [ON/OFF]		Displays [ON/OFF] condition of key warning lamp.
EPS W/L [On/Off]		Displays [ON/OFF] condition of EPS indicator.
FUEL CAP W/L [Off]		Displays [ON/OFF] condition of loose fuel cap warning message.
PKB SW [On/Off]		Status of parking brake switch.

DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

Display item [Unit]	MAIN SIGNALS	Description
BUCKLE SW [On/Off]		Status of seat belt buckle switch (LH).
BRAKE OIL SW [On/Off]		Status of brake fluid level switch.
CHG SIG [On/Off]		Displays [ON/OFF] condition of charge warning indicator.
DISTANCE [km] or [Mi]		Displays distance to empty.
OUTSIDE TEMP [°F] or [°C]		Displays the ambient temperature, which is input from ambient sensor.
FUEL LOW SIG [ON/OFF]		Displays [ON/OFF] condition of low-fuel warning signal.
BUZZER [On/Off]	X	Displays [ON/OFF] condition of buzzer.
FR FOG IND [On/Off]		Displays [ON/OFF] condition of front fog lamp indicator.
TPMS PRESS L [On/Off]		Displays [ON/OFF] condition of check tire pressure warning message.

NOTE:

Some items are not available according to vehicle specification.

WORK SUPPORT

Work support item	Description
Outside air temperature diagnosis	A possible malfunction can be narrowed down by following the displayed instructions.
Fuel meter diagnosis(Analog pointer)	
Warning lamp diagnosis	

WARNING HISTORY

Display item	Description
W/L ON HISTORY	Lighting history of warning lamp and indicator lamp can be checked.

W/L ON HISTORY

- Stores histories when warning/indicator lamp is turned on.
- “W/L ON HISTORY” indicates the “TIME” when the warning/ indicator lamp is turned on.
- The “TIME” above is:
 - 0: The condition that the warning/indicator lamp has been turned on 1 or more times after starting the engine and waiting for 30 seconds.
 - 1 - 39: The number of times the engine was restarted after the 0 condition.
 - NO W/L ON HISTORY: Stores NO (0) turning on history of warning/indicator lamp.

NOTE:

- W/L ON HISTORY is not stored for approximately 30 seconds after the engine starts.
- Brake warning lamp does not store any history when the parking brake is applied or the brake fluid level gets low.

DIAGNOSIS SYSTEM (BCM) (WITH INTELLIGENT KEY SYSTEM)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM) (WITH INTELLIGENT KEY SYSTEM) COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000012542986

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

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

SYSTEM APPLICATION

BCM can perform the following functions.

System	Sub System	Direct Diagnostic Mode						
		ECU Identification	Self Diagnostic Result	Data Monitor	Active Test	Work support	Configuration	CAN DIAG SUPPORT MNTR
Door lock	DOOR LOCK			x	x	x		
Rear window defogger	REAR DEFOGGER			x	x			
Warning chime	BUZZER			x	x			
Interior room lamp timer	INT LAMP			x	x	x		
Exterior lamp	HEAD LAMP			x	x	x		
Wiper and washer	WIPER			x	x	x		
Turn signal and hazard warning lamps	FLASHER			x	x	x		
Air conditioner	AIR CONDITIONER			x				
Intelligent Key system	INTELLIGENT KEY		x	x	x	x		
Combination switch	COMB SW			x				
BCM	BCM	x	x			x	x	x
Immobilizer	IMMU		x	x	x	x		
Interior room lamp battery saver	BATTERY SAVER			x	x	x		
Vehicle security system	THEFT ALM			x	x			
RAP system	RETAINED PWR			x				
Signal buffer system	SIGNAL BUFFER			x				
TPMS	AIR PRESSURE MONITOR		x	x	x	x		
Panic alarm system	PANIC ALARM				x			

DIAGNOSIS SYSTEM (BCM) (WITH INTELLIGENT KEY SYSTEM)

< SYSTEM DESCRIPTION >

BUZZER

BUZZER : CONSULT Function (BCM - BUZZER)

INFOID:0000000012542987

DATA MONITOR

Monitor Item [Unit]	Description
PUSH SW [On/Off]	Indicates condition of push-button ignition switch.
UNLK SEN -DR [On/Off]	Indicates condition of door unlock sensor.
VEH SPEED 1 [km/h]	Indicates vehicle speed signal received from ABS on CAN communication line.
TAIL LAMP SW [On/Off]	Indicates condition of combination switch.
FR FOG SW [On/Off]	Indicates condition of front fog lamp switch.
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.
CDL LOCK SW [On/Off]	Indicates condition of lock signal from door lock and unlock switch.

ACTIVE TEST

Test Item	Description
ID REGIST WARNING	This test is able to check TPMS transmitter ID regist warning chime operation [On/Off].
SEAT BELT WARN TEST	This test is able to check seat belt warning chime operation [On/Off].
LIGHT WARN ALM	This test is able to check light warning chime operation [On/Off].

DIAGNOSIS SYSTEM (BCM) (WITHOUT INTELLIGENT KEY SYSTEM)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM) (WITHOUT INTELLIGENT KEY SYSTEM) COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000012542988

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

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

SYSTEM APPLICATION

BCM can perform the following functions.

System	Sub System	Direct Diagnostic Mode						
		ECU Identification	Self Diagnostic Result	Data Monitor	Active Test	Work support	Configuration	CAN DIAG SUPPORT MNTR
Door lock	DOOR LOCK			x	x	x		
Rear window defogger	REAR DEFOGGER			x	x			
Warning chime	BUZZER			x	x			
Interior room lamp timer	INT LAMP			x	x	x		
Remote keyless entry system	MULTI REMOTE ENT			x	x	x		
Exterior lamp	HEAD LAMP			x	x	x		
Wiper and washer	WIPER			x	x	x		
Turn signal and hazard warning lamps	FLASHER			x	x			
Air conditioner	AIR CONDITIONER			x				
Combination switch	COMB SW			x				
BCM	BCM	x	x			x	x	x
Immobilizer	IMMU		x		x	x		
Interior room lamp battery saver	BATTERY SAVER			x	x	x		
Vehicle security system	THEFT ALM			x		x		
RAP system	RETAINED PWR			x		x		
Signal buffer system	SIGNAL BUFFER			x				
TPMS	AIR PRESSURE MONITOR		x	x	x	x		
Panic alarm system	PANIC ALARM				x			

DIAGNOSIS SYSTEM (BCM) (WITHOUT INTELLIGENT KEY SYSTEM)

< SYSTEM DESCRIPTION >

BUZZER

BUZZER : CONSULT Function (BCM - BUZZER)

INFOID:0000000012542989

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.
KEY ON SW [On/Off]	Indicates condition of key switch.
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.
REVERSE SW CAN [On/Off]	Indicates reverse switch signal received from TCM on CAN communication line.
TAIL LAMP SW [On/Off]	Indicates condition of combination switch.
FR FOG SW [On/Off]	Indicates condition of front fog lamp switch.
VEHICLE SPEED [km/h/mph]	Indicates vehicle speed signal received from combination meter on CAN communication line.

ACTIVE TEST

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

BCM, COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION

BCM, COMBINATION METER

List of ECU Reference

INFOID:0000000012432683

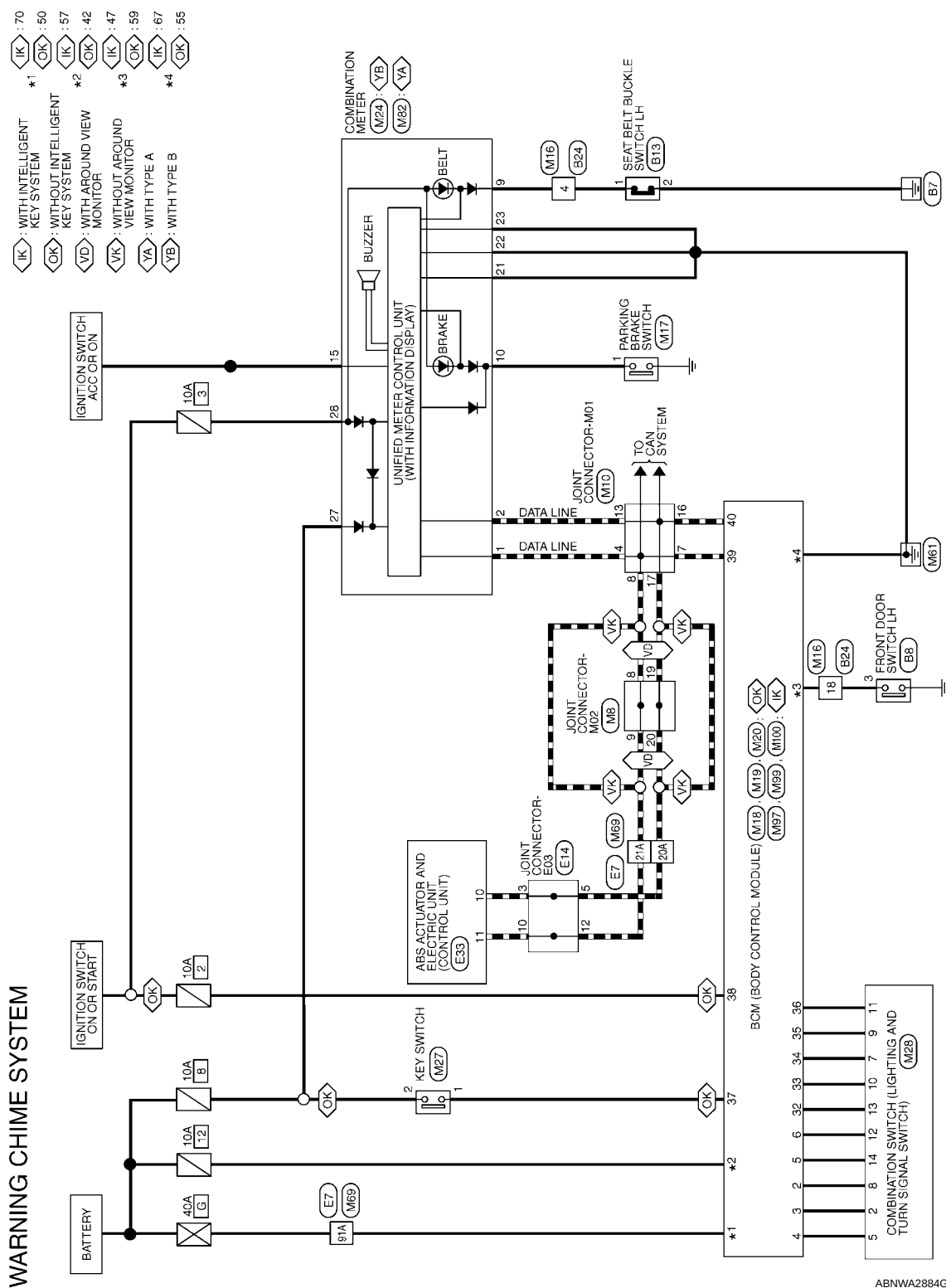
ECU	Reference
BCM (with Intelligent Key system)	BCS-30, "Reference Value"
	BCS-48, "Fail-safe"
	BCS-49, "DTC Inspection Priority Chart"
	BCS-50, "DTC Index"
BCM (without Intelligent Key system)	BCS-101, "Reference Value"
	BCS-115, "Fail-safe"
	BCS-115, "DTC Inspection Priority Chart"
	BCS-115, "DTC Index"
COMBINATION METER (TYPE A)	MWI-21, "Reference Value"
	MWI-23, "Fail-safe"
	MWI-24, "DTC Index"
COMBINATION METER (TYPE B)	MWI-74, "Reference Value"
	MWI-77, "Fail-safe"
	MWI-77, "DTC Index"

< WIRING DIAGRAM >

WARNING CHIME SYSTEM

Wiring Diagram

INFOID:0000000012432684



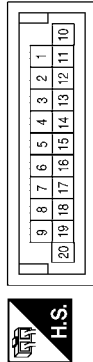
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WARNING CHIME SYSTEM

< WIRING DIAGRAM >

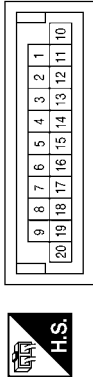
WARNING CHIME SYSTEM CONNECTORS

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



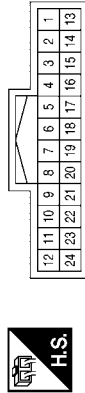
Terminal No.	Color of Wire	Signal Name
8	L	-
9	L	-
19	P	-
20	P	-

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



Terminal No.	Color of Wire	Signal Name
4	L	-
7	L	-
8	L	-
13	P	-
16	P	-
17	P	-

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



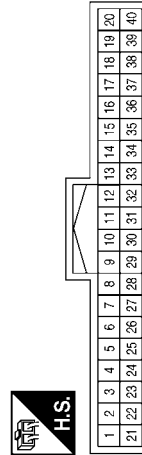
Terminal No.	Color of Wire	Signal Name
4	V	-
18	SB	-

Connector No.	M17
Connector Name	PARKING BRAKE SWITCH
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	SB	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE) (WITHOUT INTELLIGENT KEY SYSTEM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	BR	COMBINATION SW INPUT 5
3	Y	COMBINATION SW INPUT 4
4	L	COMBINATION SW INPUT 3
5	G	COMBINATION SW INPUT 2
6	R	COMBINATION SW INPUT 1

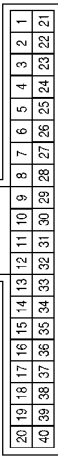
Terminal No.	Color of Wire	Signal Name
32	P	COMBINATION SW OUTPUT 5
33	V	COMBINATION SW OUTPUT 4
34	W	COMBINATION SW OUTPUT 3
35	GR	COMBINATION SW OUTPUT 2
36	LG	COMBINATION SW OUTPUT 1
37	Y	KEY SW
38	O	IGN SW
39	L	CAN-H
40	P	CAN-L

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WARNING CHIME SYSTEM

< WIRING DIAGRAM >

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

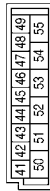
Terminal No.	Color of Wire	Signal Name
1	L	CAN-H
2	P	CAN-L
9	V	SEAT BELT BUCKLE SW
10	SB	PKB SW
15	R	ACC SW
21	B	GND (ILL)
22	B	GND (POWER)
23	B	GND (CIRCUIT)
27	R/W	BAT
28	GR	IGN

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE) (WITHOUT INTELLIGENT KEY SYSTEM)
Connector Color	BLACK




Terminal No.	Color of Wire	Signal Name
59	SB	DOOR SWITCH (DR)

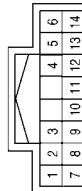
Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE) (WITHOUT INTELLIGENT KEY SYSTEM)
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
42	Y	BATTERY (FUSE)
50	G	BATTERY (FIL)
55	B	GND

Terminal No.	Color of Wire	Signal Name
9	GR	-
10	V	-
11	LG	-
12	R	-
13	P	-
14	G	-

Connector No.	M28
Connector Name	COMBINATION SWITCH (LIGHT AND TURN SIGNAL SWITCH)
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
2	Y	-
5	L	-
7	W	-
8	BR	-

Connector No.	M27
Connector Name	KEY SWITCH
Connector Color	BROWN




Terminal No.	Color of Wire	Signal Name
1	Y	-
2	LG	-

AANIA3165GB

WARNING CHIME SYSTEM

< WIRING DIAGRAM >

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



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

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

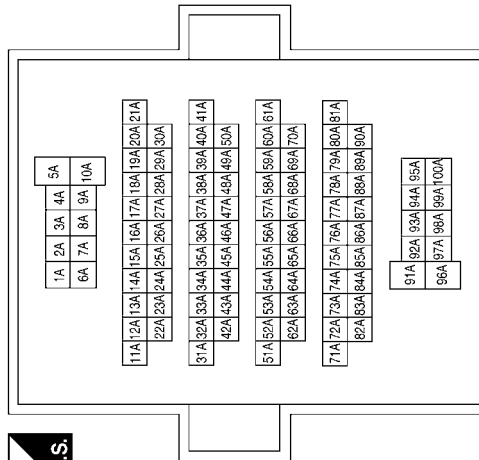
Connector No.	M100
Connector Name	BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY SYSTEM)
Connector Color	BLACK



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

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

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



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



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

Terminal No.	Color of Wire	Signal Name
3	P	-
5	P	-
10	L	-
12	L	-

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WARNING CHIME SYSTEM

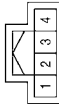
< WIRING DIAGRAM >

Connector No.	B13
Connector Name	SEAT BELT BUCKLE SWITCH LH
Connector Color	WHITE



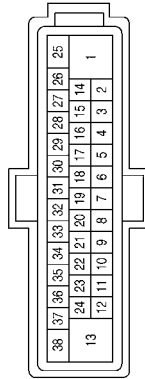
Terminal No.	Color of Wire	Signal Name
1	BG	—
2	B	—

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



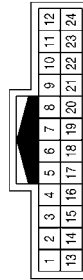
Terminal No.	Color of Wire	Signal Name
3	LG	—

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



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

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



Terminal No.	Color of Wire	Signal Name
4	BG	—
18	LG	—

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

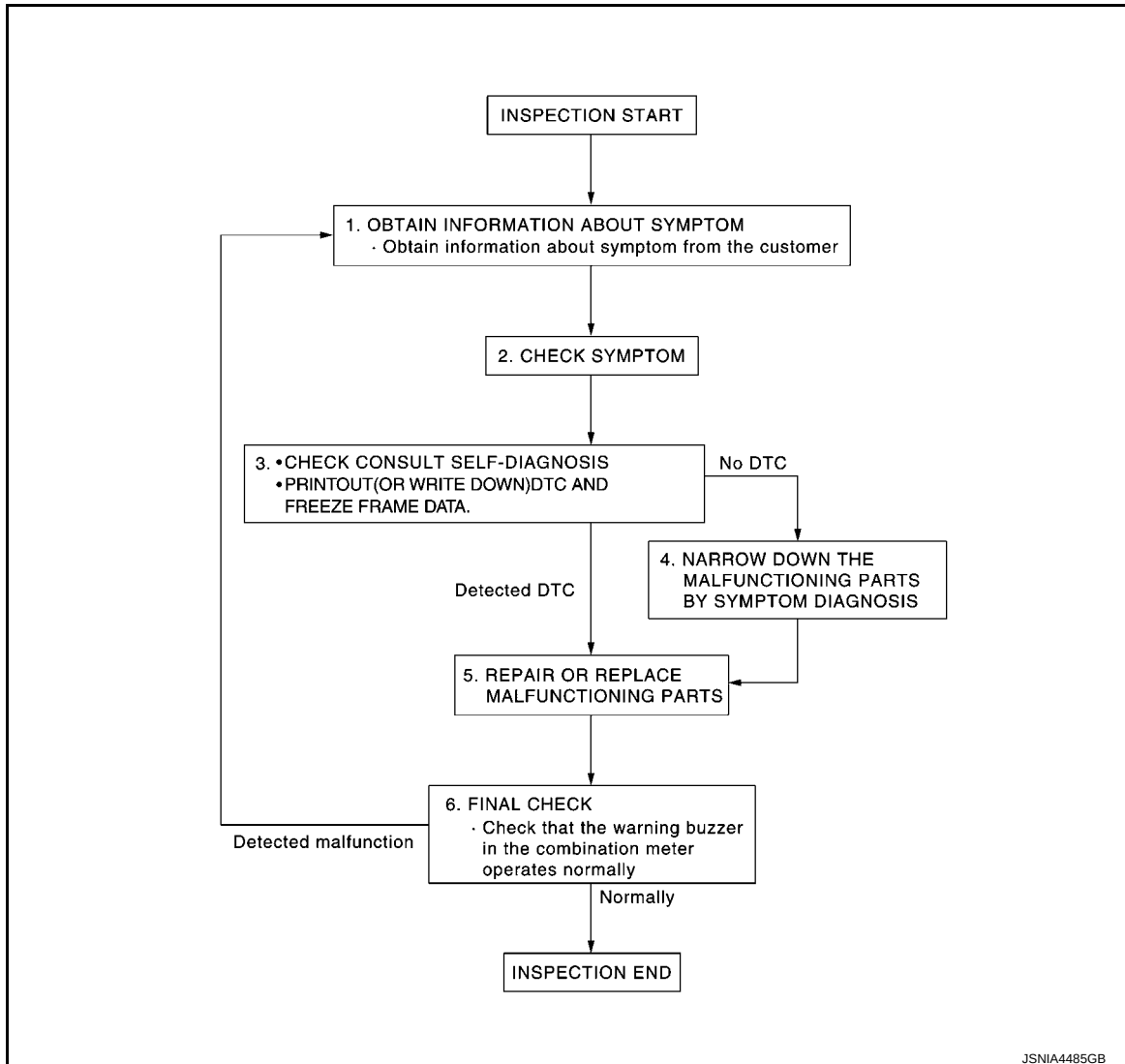
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000012432685

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 if any other malfunctions are present.

>> GO TO 3.

3.CHECK CONSULT SELF-DIAGNOSIS RESULTS

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

1. Connect CONSULT and perform self-diagnosis. Refer to [MWI-24. "DTC Index"](#) (Type A) or [MWI-77. "DTC Index"](#) (Type B).
2. When DTC is detected, follow the instructions below:
 - Record DTC and Freeze Frame Data.

Are self-diagnosis results normal?

YES >> GO TO 4.

NO >> GO TO 5.

4.NARROW DOWN MALFUNCTIONING PARTS BY SYMPTOM DIAGNOSIS

Perform symptom diagnosis and narrow down the 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.

A

B

C

D

E

F

G

H

I

J

K

L

M

WCS

O

P

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

COMBINATION METER (TYPE A)

COMBINATION METER (TYPE A) : Diagnosis Procedure

INFOID:0000000012542990

Regarding Wiring Diagram information, refer to [MWI-26, "Wiring Diagram"](#).

1. CHECK FUSE

Check that the following fuses are not blown.

Power source	Fuse No.
Battery	8
Ignition switch ON or START	3
Ignition switch ACC or ON	18

Is the fuse blown?

YES >> Replace the blown fuse after repairing the affected circuit.

NO >> GO TO 2.

2. POWER SUPPLY CIRCUIT CHECK

1. Disconnect combination meter connector.
2. Check voltage between combination meter harness connector M82, terminals 27, 28, 15 and ground.

Terminals			Ignition switch position			
(+) (+)		(-)	OFF	ACC	ON	START
Connector	Terminal					
M82	27	Ground	Battery voltage	Battery voltage	Battery voltage	Battery voltage
	28		0V	0V	Battery voltage	Battery voltage
	15		0V	Battery voltage	Battery voltage	0V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connector.

3. GROUND CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect combination meter connector.
3. Check continuity between combination meter harness connector M82, terminals 21, 22, 23 and ground.

Terminals			Continuity
(+)		(-)	
Connector	Terminal		
M82	21	Ground	Yes
	22		
	23		

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace harness or connector.

COMBINATION METER (TYPE B)

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

COMBINATION METER (TYPE B) : Diagnosis Procedure

INFOID:000000012542991

Regarding Wiring Diagram information, refer to [MWI-79, "Wiring Diagram"](#).

1.CHECK FUSE

Check that the following fuses are not blown.

Power source	Fuse No.
Battery	8
Ignition switch ON or START	3
Ignition switch ACC or ON	18

Is the fuse blown?

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

2.POWER SUPPLY CIRCUIT CHECK

1. Disconnect combination meter connector.
2. Check voltage between combination meter harness connector M24, terminals 27, 28, 15 and ground.

Terminals		Ignition switch position			
(+) (–)		OFF	ACC	ON	START
Connector	Terminal				
M24	27	Battery voltage	Battery voltage	Battery voltage	Battery voltage
	28	0V	0V	Battery voltage	Battery voltage
	15	0V	Battery voltage	Battery voltage	0V

Is the inspection result normal?

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

3.GROUND CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect combination meter connector.
3. Check continuity between combination meter harness connector M24, terminals 21, 22, 23 and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal		
M24	21	Ground	Yes
	22		
	23		

Is the inspection result normal?

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

BCM (BODY CONTROL SYSTEM) (WITH INTELLIGENT KEY SYSTEM)

BCM (BODY CONTROL SYSTEM) (WITH INTELLIGENT KEY SYSTEM) : Diagnosis Procedure

INFOID:000000012542992

Regarding Wiring Diagram information, refer to [BCS-52, "Wiring Diagram"](#).

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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	12 (10A)
70		G (40A)

Is the fuse blown?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit.

NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

1. Disconnect BCM connector M99.
2. Check voltage between BCM connector M99 and ground.

BCM		Ground	Voltage
Connector	Terminal		
M99	57	—	Battery voltage
	70		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.CHECK GROUND CIRCUIT

Check continuity between BCM connector M99 and ground.

BCM		Ground	Continuity
Connector	Terminal		
M99	67	—	Yes

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair harness or connector.

BCM (BODY CONTROL SYSTEM) (WITHOUT INTELLIGENT KEY SYSTEM)

BCM (BODY CONTROL SYSTEM) (WITHOUT INTELLIGENT KEY SYSTEM) : Diagnosis Procedure

INFOID:0000000012542993

Regarding Wiring Diagram information, refer to [BCS-117, "Wiring Diagram"](#).

1.CHECK FUSES AND FUSIBLE LINK

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

Terminal No.	Signal name	Fuses and fusible link No.
37	Battery power supply	8 (10A)
42		12 (10A)
50		G (40A)
11	Ignition switch ACC or ON	18 (10A)
38	Ignition switch ON or START	2 (10A)

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Is the fuse blown?

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

2.CHECK POWER SUPPLY CIRCUIT

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

BCM		Ground	Ignition switch position		
Connector	Terminal		OFF	ACC	ON
M18	11		0 V	Battery voltage	Battery voltage
	37		Battery voltage		
	38		0 V	0 V	
M19	42		Battery voltage	Battery voltage	
	50				

Is the inspection result normal?

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

3.CHECK GROUND CIRCUIT

Check continuity between BCM connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M19	55	—	Yes

Is the inspection result normal?

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

METER BUZZER CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

METER BUZZER CIRCUIT

Component Function Check

INFOID:0000000012432690

1.CHECK OPERATION OF METER BUZZER

1. Select "BUZZER" of "BCM" using CONSULT.
2. Perform "LIGHT WARN ALM" in "Active Test".

Does meter buzzer activate?

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

2.CHECK COMBINATION METER INPUT SIGNAL

Select "Data Monitor" of "METER/M&A" using CONSULT and check the "BUZZER" monitor value.

Monitor item	Condition	Status
BUZZER	Under the condition of buzzer input	On
	Except above	Off

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-54, "Removal and Installation"](#) (Type A) or [MWI-115, "Removal and Installation"](#) (Type B).
NO >> Replace BCM. Refer to [BCS-74, "Removal and Installation"](#) (with Intelligent Key system) or [BCS-137, "Removal and Installation"](#) (without Intelligent Key system).

Diagnosis Procedure

INFOID:0000000012432691

1.CHECK POWER SUPPLY OF COMBINATION METER

Check power supply of combination meter. Refer to [MWI-43, "COMBINATION METER : Diagnosis Procedure"](#) (Type A) or [MWI-98, "COMBINATION METER : Diagnosis Procedure"](#) (Type B).

NOTE:

To identify combination meter type, refer to [WCS-3, "Information"](#).

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

TYPE A

TYPE A : Description

INFOID:0000000012432692

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

TYPE A : Component Function Check

INFOID:0000000012432693

1. CHECK COMBINATION METER INPUT SIGNAL

Select "Data Monitor" of "METER/M&A" using "CONSULT" and check the "BUCKLE SW" monitor value.

Monitor item	Condition	Status
BUCKLE SW	When seat belt LH is fastened	OFF
	When seat belt LH is unfastened	ON

Is the inspection result normal?

YES >> Inspection End.

NO >> Refer to [WCS-39, "TYPE A : Diagnosis Procedure"](#).

TYPE A : Diagnosis Procedure

INFOID:0000000012432694

Regarding Wiring Diagram information, refer to [WCS-26, "Wiring Diagram"](#).

1. CHECK COMBINATION METER INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between combination meter harness connector M82 terminal 9 and ground.

Combination meter		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M82	9	—	When seat belt LH is fastened	Battery voltage
			When seat belt LH is unfastened	0 V

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-54, "Removal and Installation"](#) (Type A).

NO >> GO TO 2.

2. CHECK SEAT BELT BUCKLE SWITCH LH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter harness connector M82 and seat belt buckle switch LH harness connector B13.
3. Check continuity between combination meter harness connector M82 terminal 9 and seat belt buckle switch LH harness connector B13 terminal 1.

Combination meter		Seat belt buckle switch LH		Continuity
Connector	Terminal	Connector	Terminal	
M82	9	B13	1	Yes

4. Check continuity between combination meter harness connector M82 terminal 9 and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M82	9	—	No

Is the inspection result normal?

SEAT BELT BUCKLE SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

3. CHECK SEAT BELT BUCKLE SWITCH LH GROUND CIRCUIT

Check continuity between seat belt buckle switch LH harness connector B13 terminal 2 and ground.

Seat belt buckle switch LH		Ground	Continuity
Connector	Terminal		
B13	2	—	Yes

Is the inspection result normal?

- YES >> Check the seat belt buckle switch LH. Refer to [SR-35, "Removal and Installation"](#).
NO >> Repair or replace harness or connector.

TYPE A : Component Inspection

INFOID:0000000012432695

1. CHECK SEAT BELT BUCKLE SWITCH LH

1. Turn ignition switch OFF.
2. Disconnect the seat belt buckle switch LH.
3. Check continuity between the seat belt buckle switch LH terminals 1 and 2.

Terminal		Condition	Continuity
1	2	When seat belt is fastened	No
		When seat belt is unfastened	Yes

Is the inspection result normal?

- YES >> Inspection End.
NO >> Replace the seat belt buckle switch LH. Refer to [SR-35, "Removal and Installation"](#).

TYPE B

TYPE B : Description

INFOID:0000000012432696

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

TYPE B : Component Function Check

INFOID:0000000012432697

1. CHECK COMBINATION METER INPUT SIGNAL

Select "Data Monitor" of "METER/M&A" using "CONSULT" and check the "BUCKLE SW" monitor value.

Monitor item	Condition	Status
BUCKLE SW	When seat belt LH is fastened	OFF
	When seat belt LH is unfastened	ON

Is the inspection result normal?

- YES >> Inspection End.
NO >> Refer to [WCS-40, "TYPE B : Diagnosis Procedure"](#).

TYPE B : Diagnosis Procedure

INFOID:0000000012432698

Regarding Wiring Diagram information, refer to [WCS-26, "Wiring Diagram"](#).

1. CHECK COMBINATION METER INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between combination meter harness connector M24 terminal 9 and ground.

SEAT BELT BUCKLE SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Combination meter		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M24	9	—	When seat belt LH is fastened	Battery voltage
			When seat belt LH is unfastened	0 V

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-115, "Removal and Installation"](#) (Type B).

NO >> GO TO 2.

2. CHECK SEAT BELT BUCKLE SWITCH LH CIRCUIT

- Turn ignition switch OFF.
- Disconnect combination meter harness connector M24 and seat belt buckle switch LH harness connector B13.
- Check continuity between combination meter harness connector M24 terminal 9 and seat belt buckle switch LH harness connector B13 terminal 1.

Combination meter		Seat belt buckle switch LH		Continuity
Connector	Terminal	Connector	Terminal	
M24	9	B13	1	Yes

- Check continuity between combination meter harness connector M24 terminal 9 and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M24	9	—	No

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connector.

3. CHECK SEAT BELT BUCKLE SWITCH LH GROUND CIRCUIT

Check continuity between seat belt buckle switch LH harness connector B13 terminal 2 and ground.

Seat belt buckle switch LH		Ground	Continuity
Connector	Terminal		
B13	2	—	Yes

Is the inspection result normal?

YES >> Check the seat belt buckle switch LH. Refer to [SR-35, "Removal and Installation"](#).

NO >> Repair or replace harness or connector.

TYPE B : Component Inspection

INFOID:000000012432699

1. CHECK SEAT BELT BUCKLE SWITCH LH

- Turn ignition switch OFF.
- Disconnect the seat belt buckle switch LH.
- Check continuity between the seat belt buckle switch LH terminals 1 and 2.

Terminal		Condition	Continuity
1	2		
1	2	When seat belt is fastened	No
		When seat belt is unfastened	Yes

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace the seat belt buckle switch LH. Refer to [SR-35, "Removal and Installation"](#).

PARKING BRAKE SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

PARKING BRAKE SWITCH SIGNAL CIRCUIT

TYPE A

TYPE A : Component Function Check

INFOID:0000000012432700

1.CHECK PARKING BRAKE SWITCH OPERATION

Check that brake warning lamp in combination meter turns ON/OFF when parking brake is actuated.

Is the inspection result normal?

YES >> Inspection End.

NO >> Proceed to diagnosis procedure. Refer to [WCS-42. "TYPE A : Diagnosis Procedure"](#).

TYPE A : Diagnosis Procedure

INFOID:0000000012432701

Regarding Wiring Diagram information, refer to [WCS-26. "Wiring Diagram"](#).

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect combination meter and parking brake switch connectors.
3. Check connectors and terminals for deformation, disconnection, looseness or damage.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace as necessary.

2.CHECK PARKING BRAKE SWITCH

Check parking brake switch. Refer to [WCS-42. "TYPE A : Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace parking brake switch. Refer to [PB-6. "Exploded View"](#).

3.CHECK PARKING BRAKE SWITCH SIGNAL

 With CONSULT.

1. Connect combination meter connector and parking brake switch connectors.
2. Turn ignition switch ON.
3. Select "METER/M&A".
4. Monitor "PKB SW" in "Data Monitor" while applying and releasing the parking brake.

Monitor item	Condition	Status
PKB SW	When parking brake is applied	On
	When parking brake is released	Off

Is the inspection result normal?

YES >> Refer to [WCS-32. "Work Flow"](#).

NO >> GO TO 4.

4.CHECK PARKING BRAKE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter and parking brake switch connectors.
3. Check continuity between combination meter connector M82 terminal 10 and parking brake switch connector M17 terminal 1.

Combination meter		Parking brake switch		Continuity
Connector	Terminal	Connector	Terminal	
M82	10	M17	1	Yes

4. Check continuity between combination meter connector and ground.

PARKING BRAKE SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Combination meter		—	Continuity
Connector	Terminal		
M82	10	Ground	No

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-54, "Removal and Installation"](#) (Type A).
NO >> Repair or replace malfunctioning components.

TYPE A : Component Inspection

INFOID:0000000012432702

1.CHECK PARKING BRAKE SWITCH

1. Turn ignition switch OFF.
2. Disconnect parking brake switch connector.
3. Check continuity between parking brake switch terminal 1 and ground.

Parking brake switch terminal	—	Condition	Continuity
1	Ground	Parking brake actuated	Yes
		Parking brake released	No

Is the inspection result normal?

- YES >> Inspection End.
NO >> Replace parking brake switch. Refer to [PB-6, "Exploded View"](#).

TYPE B

TYPE B : Component Function Check

INFOID:0000000012432703

1.CHECK PARKING BRAKE SWITCH OPERATION

Check that brake warning lamp in combination meter turns ON/OFF when parking brake is actuated.

Is the inspection result normal?

- YES >> Inspection End.
NO >> Proceed to diagnosis procedure. Refer to [WCS-43, "TYPE B : Diagnosis Procedure"](#).

TYPE B : Diagnosis Procedure

INFOID:0000000012432704

Regarding Wiring Diagram information, refer to [WCS-26, "Wiring Diagram"](#).

1.CONNECTOR INSPECTION

1. Turn ignition switch OFF.
2. Disconnect combination meter and parking brake switch connectors.
3. Check connectors and terminals for deformation, disconnection, looseness or damage.

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace as necessary.

2.CHECK PARKING BRAKE SWITCH

Check parking brake switch. Refer to [WCS-44, "TYPE B : Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace parking brake switch. Refer to [PB-6, "Exploded View"](#).

3.CHECK PARKING BRAKE SWITCH SIGNAL

 With CONSULT.

1. Connect combination meter connector and parking brake switch connectors.

PARKING BRAKE SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

- Turn ignition switch ON.
- Select "METER/M&A".
- Monitor "PKB SW" in "Data Monitor" while applying and releasing the parking brake.

Monitor item	Condition	Status
PKB SW	When parking brake is applied	ON
	When parking brake is released	OFF

Is the inspection result normal?

- YES >> Refer to [WCS-32. "Work Flow"](#).
NO >> GO TO 4.

4.CHECK PARKING BRAKE SWITCH CIRCUIT

- Turn ignition switch OFF.
- Disconnect combination meter and parking brake switch connectors.
- Check continuity between combination meter connector M24 terminal 10 and parking brake switch connector M17 terminal 1.

Combination meter		Parking brake switch		Continuity
Connector	Terminal	Connector	Terminal	
M24	10	M17	1	Yes

- Check continuity between combination meter connector and ground.

Combination meter		—	Continuity
Connector	Terminal		
M24	10	Ground	No

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-115. "Removal and Installation"](#) (Type B).
NO >> Repair or replace malfunctioning components.

TYPE B : Component Inspection

INFOID:0000000012432705

1.CHECK PARKING BRAKE SWITCH

- Turn ignition switch OFF.
- Disconnect parking brake switch connector.
- Check continuity between parking brake switch terminal 1 and ground.

Parking brake switch terminal	—	Condition	Continuity
1	Ground	Parking brake actuated	Yes
		Parking brake released	No

Is the inspection result normal?

- YES >> Inspection End.
NO >> Replace parking brake switch. Refer to [PB-6. "Exploded View"](#).

KEY SWITCH SIGNAL CIRCUIT (WITHOUT INTELLIGENT KEY)

< DTC/CIRCUIT DIAGNOSIS >

KEY SWITCH SIGNAL CIRCUIT (WITHOUT INTELLIGENT KEY)

Description

INFOID:0000000012432706

Transmits a key switch signal to the BCM.

Component Function Check

INFOID:0000000012432707

1. CHECK BCM INPUT SIGNAL

Select Data Monitor for BCM and check the KEY ON SW monitor value.

Monitor Item	Condition	Status
KEY ON SW	When key is removed from key cylinder	OFF
	When key is inserted into key cylinder	ON

Is the inspection result normal?

YES >> Inspection End.

NO >> Refer to [WCS-45, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:0000000012432708

Regarding Wiring Diagram information, refer to [WCS-26, "Wiring Diagram"](#).

1. CHECK FUSE

Check if the key switch 10A fuse [No. 8, located in the fuse block (J/B)] is blown.

Is the fuse blown?

YES >> Replace the fuse after repairing the affected circuit.

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	Battery voltage
		Key is inserted	0V

Is the inspection result normal?

YES >> Inspection End.

NO >> GO TO 3.

3. CHECK KEY SWITCH CIRCUIT

1. Disconnect BCM connector M18 and key switch.
2. Check continuity between BCM harness connector M18 terminal 37 and key switch harness connector M27 terminal 1.

BCM		Key switch		Continuity
Connector	Terminal	Connector	Terminal	
M18	37	M27	1	Yes

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

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 POWER SUPPLY CIRCUIT

Check voltage between key switch harness connector M27 terminal 2 and ground.

Terminals			Voltage (Approx.)
(+)		(-)	
Key switch	Terminal		
M27	2	Ground	Battery voltage

Is the inspection result normal?

YES >> Replace key switch.

NO >> Repair or replace harness.

Component Inspection

INFOID:0000000012432709

1. CHECK KEY SWITCH

1. Turn ignition switch OFF.
2. Disconnect key switch.
3. Check continuity between key switch terminals 1 and 2.

Terminal		Condition	Continuity
1	2	When key is removed from key cylinder	No
		When key is inserted into key cylinder	Yes

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace key switch.

THE PARKING BRAKE RELEASE WARNING CONTINUES SOUNDING, OR DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

THE PARKING BRAKE RELEASE WARNING CONTINUES SOUNDING, OR DOES NOT SOUND

Description

INFOID:0000000012432710

- The parking brake warning buzzer sounds continuously during vehicle travel though the parking brake is released.
- The parking brake warning buzzer does not sound at all even though driving the vehicle with the parking brake applied.

Diagnosis Procedure

INFOID:0000000012432711

NOTE:

To identify combination meter type, refer to [WCS-3, "Information"](#).

1.CHECK PARKING BRAKE WARNING LAMP

1. Start the engine.
2. Check the operation of the brake warning lamp by operating the parking brake.

Condition	Seat belt warning lamp
When parking brake is applied	ON
When parking brake is released	OFF

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-54, "Removal and Installation"](#) (Type A) or [MWI-115, "Removal and Installation"](#) (Type B).
- NO >> GO TO 2.

2.CHECK PARKING BRAKE SWITCH SIGNAL CIRCUIT

Check the parking brake switch signal circuit. Refer to [WCS-42, "TYPE A : Diagnosis Procedure"](#) (Type A) or [WCS-43, "TYPE B : Diagnosis Procedure"](#) (Type B).

Is the inspection result normal?

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

3.CHECK PARKING BRAKE SWITCH

Check the parking brake switch. Refer to [WCS-43, "TYPE A : Component Inspection"](#) (Type A) or [WCS-44, "TYPE B : Component Inspection"](#) (Type B).

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-54, "Removal and Installation"](#) (Type A) or [MWI-115, "Removal and Installation"](#) (Type B).
- NO >> Replace parking brake switch. Refer to [PB-6, "Exploded View"](#).

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THE SEAT BELT REMINDER WARNING CONTINUES SOUNDING, OR DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

THE SEAT BELT REMINDER WARNING CONTINUES SOUNDING, OR DOES NOT SOUND

Description

INFOID:0000000012432712

- Seat belt reminder warning does not sound.
- Seat belt reminder warning sounds continuously.

Diagnosis Procedure

INFOID:0000000012432713

NOTE:

To identify combination meter type, refer to [WCS-3, "Information"](#).

1.CHECK WARNING CHIME OPERATION

1. Select "BUZZER" of "BCM" using CONSULT.
2. Perform "SEAT BELT WARN TEST" in "Active Test".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace combination meter. Refer to [MWI-54, "Removal and Installation"](#) (Type A) or [MWI-115, "Removal and Installation"](#) (Type B).

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.

Condition	Seat belt warning lamp
Driver seat belt fastened	OFF
Driver seat belt not fastened	ON

Is the inspection result normal?

YES >> Replace BCM. Refer to [BCS-74, "Removal and Installation"](#) (with Intelligent Key system) or [BCS-137, "Removal and Installation"](#) (without Intelligent Key system).

NO >> GO TO 3.

3.CHECK SEAT BELT BUCKLE SWITCH LH CIRCUIT

Check the seat belt buckle switch LH circuit. Refer to [WCS-39, "TYPE A : Diagnosis Procedure"](#) (Type A) or [WCS-40, "TYPE B : Diagnosis Procedure"](#) (Type B).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness or connector.

4.CHECK SEAT BELT BUCKLE SWITCH LH

Check the seat belt buckle switch LH. Refer to [WCS-40, "TYPE A : Component Inspection"](#) (Type A) or [WCS-41, "TYPE B : Component Inspection"](#) (Type B).

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-54, "Removal and Installation"](#) (Type A) or [MWI-115, "Removal and Installation"](#) (Type B).

NO >> Replace the seat belt buckle switch LH. Refer to [SR-35, "Removal and Installation"](#).

THE LIGHT REMINDER WARNING DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

THE LIGHT REMINDER WARNING DOES NOT SOUND

Description

INFOID:0000000012432714

Light reminder warning chime does not sound even though headlamps are illuminated.

Diagnosis Procedure

INFOID:0000000012432715

1.CHECK COMBINATION SWITCH (LIGHTING SWITCH) OPERATION

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

Do they operate normally?

YES >> GO TO 2.

NO >> Refer to [WCS-32, "Work Flow"](#).

2.CHECK FRONT DOOR SWITCH LH SIGNAL CIRCUIT

Check the front door switch LH signal circuit. Refer to [DLK-98, "Diagnosis Procedure"](#) (with Intelligent Key system) or [DLK-232, "Diagnosis Procedure"](#) (without Intelligent Key system).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connector.

3.CHECK FRONT DOOR SWITCH LH

Check the front door switch LH. Refer to [DLK-99, "Component Inspection"](#) (with Intelligent Key system) or [DLK-234, "Component Inspection"](#) (without Intelligent Key system).

Is the inspection result normal?

YES >> Replace BCM. Refer to [BCS-74, "Removal and Installation"](#) (with Intelligent Key system) or [BCS-137, "Removal and Installation"](#) (without Intelligent Key system).

NO >> Replace front door switch LH. Refer to [DLK-181, "Removal and Installation"](#) (with Intelligent Key system) or [DLK-308, "Removal and Installation"](#) (without Intelligent Key system).

THE KEY WARNING DOES NOT SOUND (WITHOUT INTELLIGENT KEY)

< SYMPTOM DIAGNOSIS >

THE KEY WARNING DOES NOT SOUND (WITHOUT INTELLIGENT KEY)

Description

INFOID:0000000012432716

The key warning chime does not sound, when all of the following conditions are fulfilled.

- Key inserted into the key cylinder (key switch signal ON).
- Ignition switch is in ACC or OFF (ignition switch signal OFF).
- Driver side door is open (front door switch LH ON)

Diagnosis Procedure

INFOID:0000000012432717

1.CHECK BCM INPUT SIGNAL

1. Connect CONSULT.
2. Select the "Data Monitor" of "BCM (BUZZER)" and check the "KEY ON SW" monitor value.

Monitor item	Condition	Status
KEY ON SW	Under the condition of buzzer input	On
	Except above	Off

Is the inspection result normal?

YES >> Replace BCM. Refer to [BCS-137, "Removal and Installation"](#).

NO >> GO TO 2.

2.CHECK KEY SWITCH SIGNAL CIRCUIT

Check the key switch signal circuit. Refer to [WCS-45, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connector.

3.CHECK KEY SWITCH

Check the key switch. Refer to [WCS-46, "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace BCM. Refer to [BCS-137, "Removal and Installation"](#).

NO >> Replace key switch.