

SECTION

WCS

WARNING CHIME SYSTEM

A
B
C

CONTENTS

E

PRECAUTION	3	PARKING BRAKE RELEASE WARNING CHIME : System Diagram	12	F
PRECAUTIONS	3	PARKING BRAKE RELEASE WARNING CHIME : System Description	12	G
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER"	3	DIAGNOSIS SYSTEM (COMBINATION METER)	14	H
SYSTEM DESCRIPTION	4	CONSULT Function	14	
COMPONENT PARTS	4	DIAGNOSIS SYSTEM (BCM)	19	I
Component Parts Location	4	COMMON ITEM	19	J
Component Description	4	COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)	19	
Combination Meter	5	BUZZER	20	K
SYSTEM	6	BUZZER : CONSULT Function (BCM - BUZZER)....	20	
WARNING CHIME SYSTEM	6	ECU DIAGNOSIS INFORMATION	22	L
WARNING CHIME SYSTEM : System Diagram	6	COMBINATION METER	22	M
WARNING CHIME SYSTEM : System Description	6	Reference Value	22	
WARNING CHIME SYSTEM : Fail-Safe	7	Fail-Safe	30	
LIGHT REMINDER WARNING CHIME	8	DTC Index	32	
LIGHT REMINDER WARNING CHIME : System Diagram	8	BCM	33	
LIGHT REMINDER WARNING CHIME : System Description	8	List of ECU Reference	33	
FRONT FOG LIGHT REMINDER WARNING CHIME	9	WIRING DIAGRAM	34	WCS
FRONT FOG LIGHT REMINDER WARNING CHIME : System Diagram	10	WARNING CHIME SYSTEM	34	
FRONT FOG LIGHT REMINDER WARNING CHIME : System Description	10	Wiring Diagram	34	O
SEAT BELT WARNING CHIME	10	BASIC INSPECTION	35	
SEAT BELT WARNING CHIME : System Diagram	11	DIAGNOSIS AND REPAIR WORKFLOW	35	P
SEAT BELT WARNING CHIME : System Descrip- tion	11	Work Flow	35	
PARKING BRAKE RELEASE WARNING CHIME	12	DTC/CIRCUIT DIAGNOSIS	37	
		POWER SUPPLY AND GROUND CIRCUIT	37	
		COMBINATION METER	37	
		COMBINATION METER : Diagnosis Procedure	37	

METER BUZZER CIRCUIT	38	THE LIGHT REMINDER WARNING DOES	
Component Function Check	38	NOT SOUND	42
Diagnosis Procedure	38	Description	42
SEAT BELT BUCKLE SWITCH SIGNAL CIR-		Diagnosis Procedure	42
CUIT	39	THE PARKING BRAKE RELEASE WARNING	
Component Function Check	39	CONTINUES SOUNDING, OR DOES NOT	
Diagnosis Procedure	39	SOUND	43
Component Inspection	40	Description	43
PARKING BRAKE SWITCH SIGNAL CIR-		Diagnosis Procedure	43
CUIT	41	THE SEAT BELT WARNING CONTINUES	
Diagnosis Procedure	41	SOUNDING, OR DOES NOT SOUND	44
Component Inspection	41	Description	44
SYMPTOM DIAGNOSIS	42	Diagnosis Procedure	44

PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000008143388

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

WARNING:

Always observe the following items for preventing accidental activation.

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

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

WARNING:

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the 12V battery, and wait at least 3 minutes before performing any service.

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COMPONENT PARTS

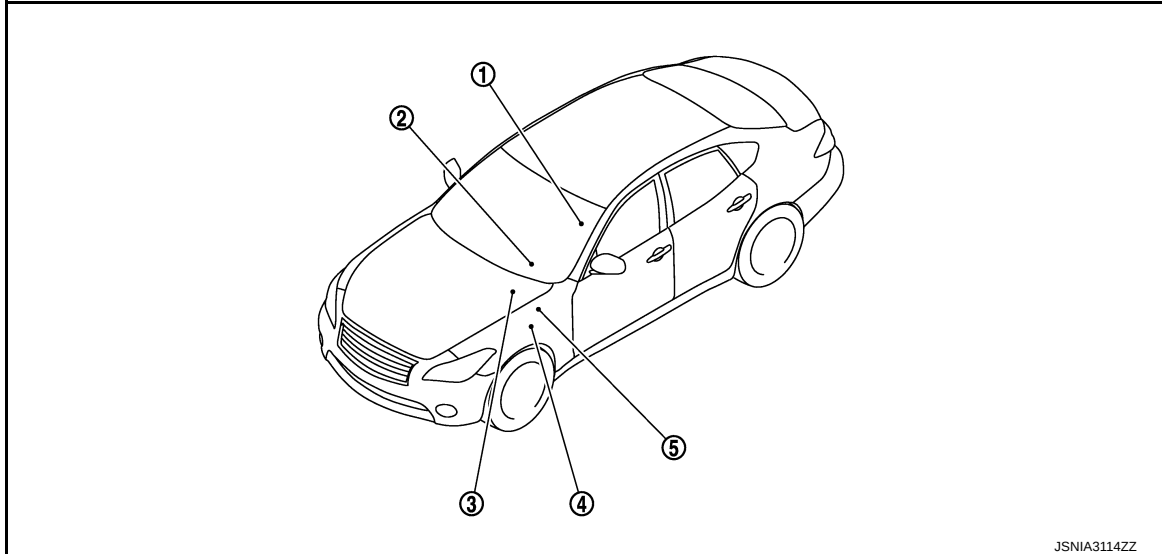
< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

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1. Seat belt buckle switch (driver side)
2. Combination meter
3. ABS actuator and electric unit (control unit)
Refer to [BRC-11, "Component Parts Location"](#).
4. Parking brake switch
5. BCM
Refer to [BCS-4, "BODY CONTROL SYSTEM : Component Parts Location"](#).

Component Description

INFOID:000000008143390

Unit	Description
Combination meter	- Receives a buzzer output signal from the BCM with CAN communication line and sounds the buzzer. - Judges whether the parking brake is released from the vehicle speed signal received from the ABS actuator and electric unit (control unit) with CAN communication line and the parking brake switch signal from the parking brake switch, and sounds the buzzer if necessary.
BCM	Based on the signals received from various units and switches, transmits the buzzer output signal to the combination meter via CAN communication.
ABS actuator and electric unit (control unit)	Transmits the vehicle speed signal to the combination meter via CAN communication.
Parking brake switch	Transmits the parking brake switch signal to the combination meter.
Seat belt buckle switch (driver side)	Transmits the seat belt buckle switch signal (driver side) to the combination meter.

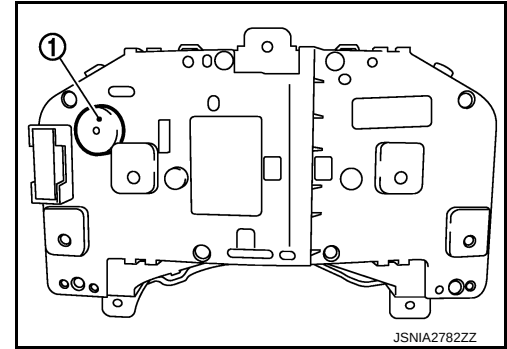
COMPONENT PARTS

< SYSTEM DESCRIPTION >

Combination Meter

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The buzzer (1) for the warning chime system is integrated in the combination meter.



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SYSTEM

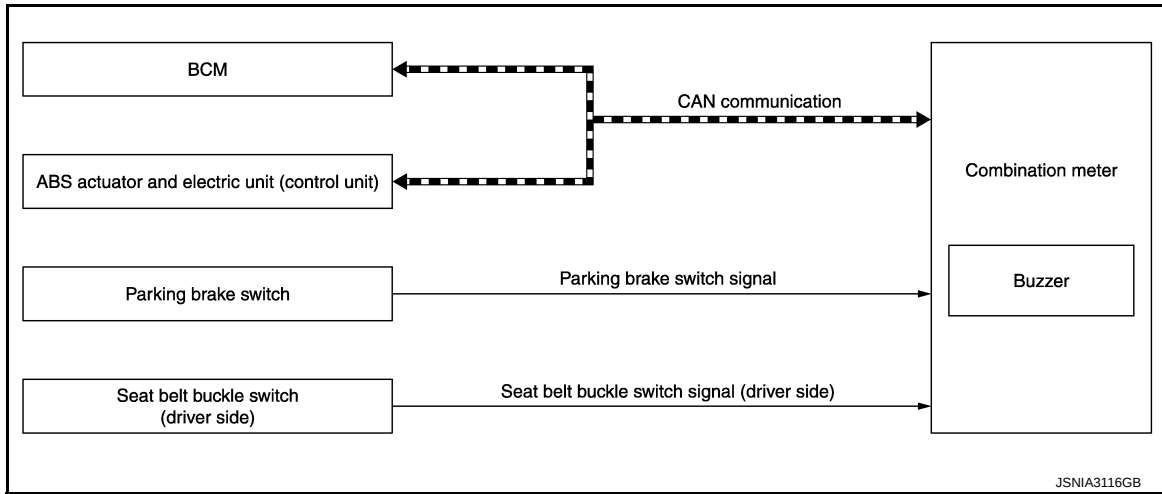
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SYSTEM

WARNING CHIME SYSTEM

WARNING CHIME SYSTEM : System Diagram

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WARNING CHIME SYSTEM : System Description

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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	Out line	Warning judgment unit	Refer to
Light reminder warning chime	The warning chime sounds when the ignition switch is in LOCK, OFF or ACC position with the combination switch (lighting switch) in the 1st or 2nd position and the driver side door open.	BCM	WCS-8, "LIGHT RE-MINDER WARNING CHIME : System Description"
Front fog light reminder warning chime	The warning chime sounds when the ignition switch is turned to LOCK, OFF or ACC position from ON position, with combination switch (lighting switch) is in AUTO position and the front fog lamp switch in ON position.	BCM	WCS-10, "FRONT FOG LIGHT RE-MINDER WARNING CHIME : System Description"

SYSTEM

< SYSTEM DESCRIPTION >

Warning functions	Out line	Warning judgment unit	Refer to
Seat belt warning chime	The warning chime sounds when the driver seat belt is unfastened with the ignition switch in ON position.	BCM	WCS-11, "SEAT BELT WARNING CHIME : System Description"
Parking brake release warning chime	The warning chime sounds when the ignition switch is in ON position with the parking brake in operation and the vehicle speed 7 km/h (4.3 MPH) or more.	Combination meter	WCS-12, "PARKING BRAKE RELEASE WARNING CHIME : System Description"

WARNING CHIME SYSTEM : Fail-Safe

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FAIL-SAFE

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

Function		Specifications
Speedometer		Reset to zero by suspending communication.
Tachometer		
Assist charge gauge		
Illumination control		When suspending communication, changes to nighttime mode.
Information display	Odo/trip meter	An indicated value is maintained at communications blackout.
	Shift position indicator	The display turns OFF by suspending communication.
	Door open warning	The display turns OFF by suspending communication.
	Trunk open warning	
	Fuel filler cap warning	
	Low tire pressure warning	
	Hybrid system over heat warning	
	Shift P warning	
	Energy monitor	The flow (arrow) of energy is not displayed.
	Li-ion battery state of charge	During communications blackout, the battery power indicates "0".
	Acceleration guide	During communications blackout, the accelerator guide indication is not displayed.
	EV mode odometer and twin trip odometer	During communications blackout, the indication is maintained.
	Current fuel consumption	During communications blackout, the last calculation is displayed.
	Average fuel consumption	During communications blackout, the last calculation is displayed.
	Average vehicle speed	During communications blackout, the last calculation is displayed.
	Travel distance	During communications blackout, the indication is maintained.
	Distance to empty	During communications blackout, "----" is displayed.
	Engine coolant temperature gauge	Sixty seconds after communications blackout, engine coolant temperature position is not displayed.
	Ambient temperature	During communications blackout, "----" is displayed.
Buzzer		The buzzer turns OFF by suspending communication.

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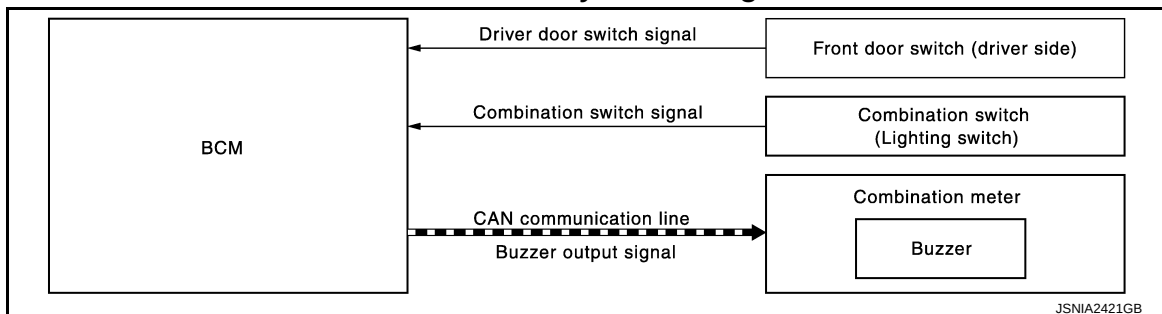
< SYSTEM DESCRIPTION >

	Function	Specifications
Warning lamp/indicator lamp	ABS warning lamp	The lamp turns ON by suspending communication.
	VDC warning lamp	
	VDC OFF indicator lamp	
	Brake warning lamp	
	Brake system warning lamp	
	IBA OFF indicator lamp	
	Malfunction indicator lamp	
	CRUISE warning lamp	
	Hybrid EPS (Electrical Power Steering) warning lamp	
	Approaching Vehicle Sound for Pedestrians temporally OFF indicator	
	Low tire pressure warning lamp	The lamp blinking caused by suspending communication.
	AFS OFF indicator lamp	
	High beam indicator lamp	
	Turn signal indicator lamp	The lamp turns OFF by suspending communication.
	Front fog lamp indicator lamp	
	Tail lamp indicator lamp	
	A/T CHECK indicator lamp	
	Lane departure warning lamp	
	LDP ON indicator lamp	
	Oil pressure warning lamp	
	ECO drive indicator	
	12-volt battery charge warning lamp	
	BSI ON indicator	
	BSW/BSI warning lamp	
	High water temperature warning lamp	
	READY to drive indicator lamp	
	Hybrid system warning lamp	
	EV indicator lamp	

LIGHT REMINDER WARNING CHIME

LIGHT REMINDER WARNING CHIME : System Diagram

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LIGHT REMINDER WARNING CHIME : System Description

INFOID:000000008143396

WARNING CHIME OPERATION CONDITIONS

If all of the following conditions are fulfilled.

SYSTEM

< SYSTEM DESCRIPTION >

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

WARNING CHIME CANCEL CONDITIONS

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

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

SIGNAL PATH

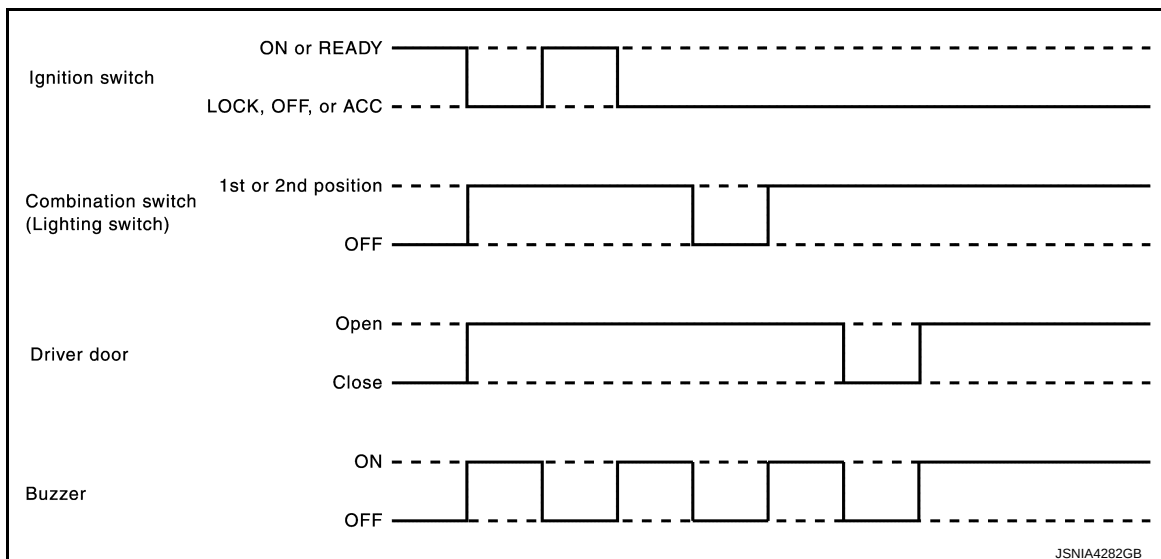
1. BCM requires warning chime output to combination meter when it judges light reminder warning chime is necessary from signals below.

Signal name	Signal path
Ignition switch signal	—
Combination switch signal	Combination switch (Lighting switch) → BCM
Driver door switch signal	Front door switch (driver side) → BCM

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

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

TIMING CHART



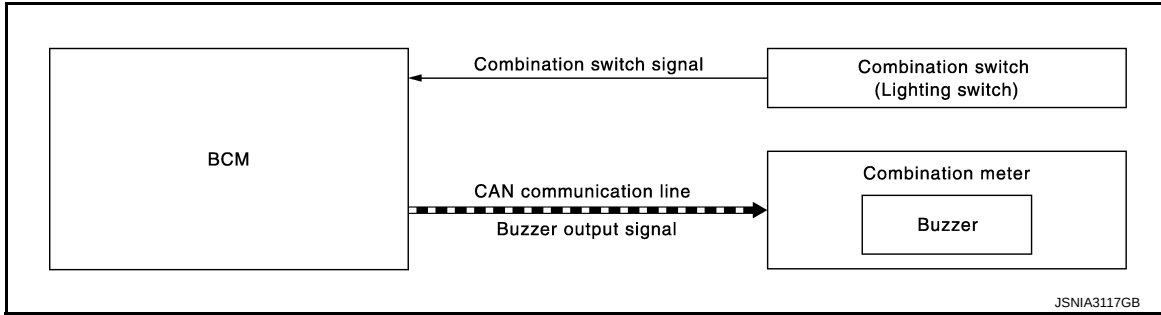
FRONT FOG LIGHT REMINDER WARNING CHIME

SYSTEM

< SYSTEM DESCRIPTION >

FRONT FOG LIGHT REMINDER WARNING CHIME : System Diagram

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FRONT FOG LIGHT REMINDER WARNING CHIME : System Description

INFOID:000000008143398

WARNING CHIME OPERATION CONDITIONS

Warning chime sounds for 2 seconds when the power switch is positioned at LOCK, OFF, or ACC if all the conditions described in the following table are satisfied.

Operation conditions	
Ignition switch	ON or READY
Combination switch (Lighting switch)	AUTO position and front fog lamp switch ON position

SIGNAL PATH

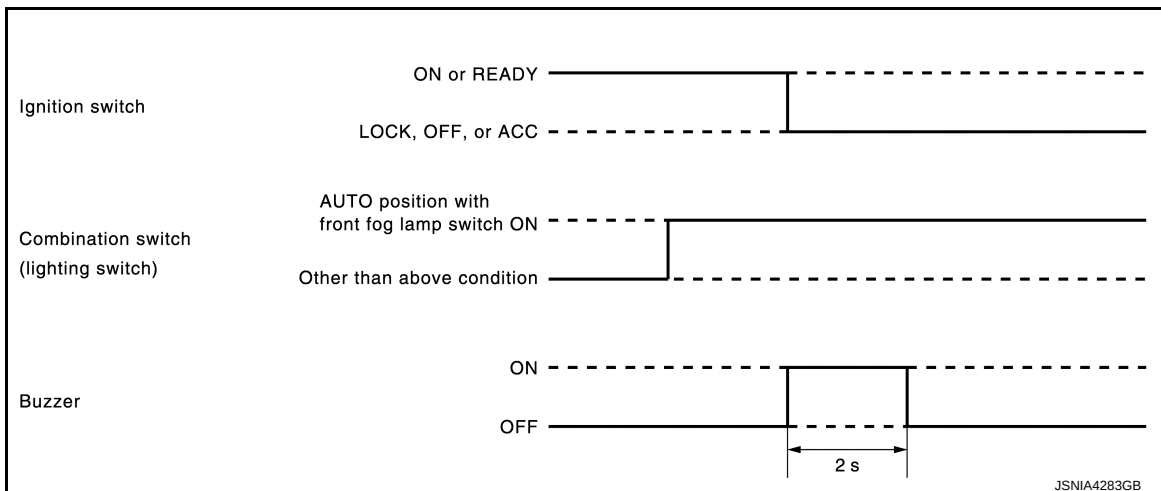
1. BCM requires warning chime output to combination meter when it judges front fog light reminder warning chime is necessary from signals below.

Signal name	Signal path
Ignition switch signal	—
Combination switch signal	Combination switch (Lighting switch) → BCM

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

Signal name	Signal path
Buzzer output signal	BCM  Combination meter

TIMING CHART



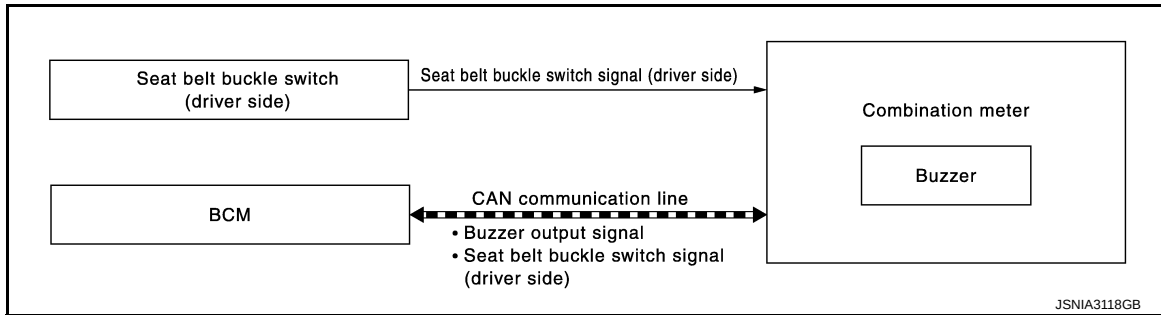
SEAT BELT WARNING CHIME

SYSTEM

< SYSTEM DESCRIPTION >

SEAT BELT WARNING CHIME : System Diagram

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SEAT BELT WARNING CHIME : System Description

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WARNING OPERATION CONDITIONS

If all of the following conditions are fulfilled.

Operation conditions	
Ignition switch	ON or READY
Driver seat belt	Unfastened [seat belt buckle switch (driver side) ON]

WARNING CANCEL CONDITIONS

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

Operation conditions	
Ignition switch	LOCK, OFF or ACC
Driver seat belt	Fastened [seat belt buckle switch (driver side) OFF]
6 seconds after the start of warning sound	

SIGNAL PATH

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

Signal name	Signal path
Ignition switch signal	—
Seat belt buckle switch signal (driver side)	Seat belt buckle switch (driver side) → Combination meter → CAN → BCM

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

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

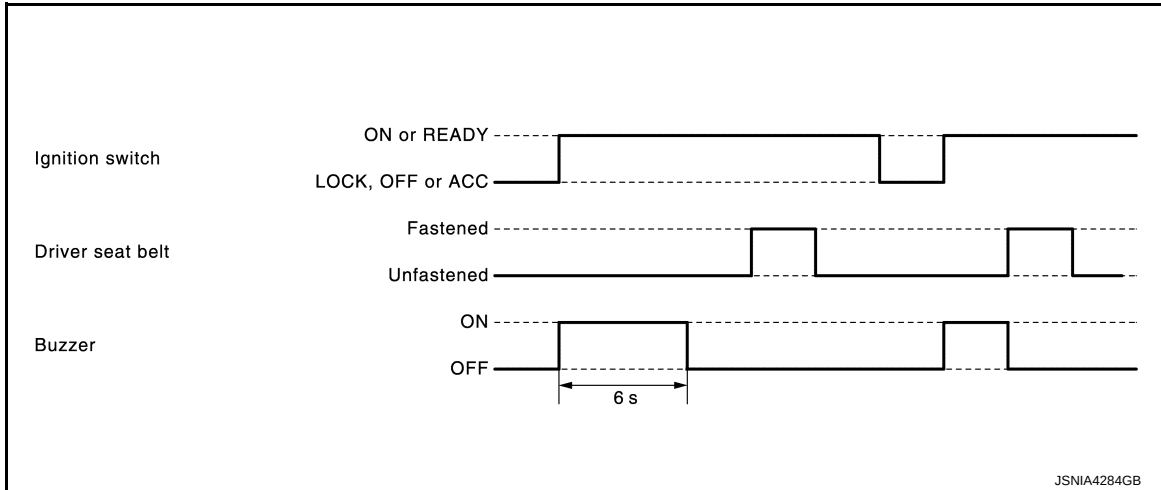
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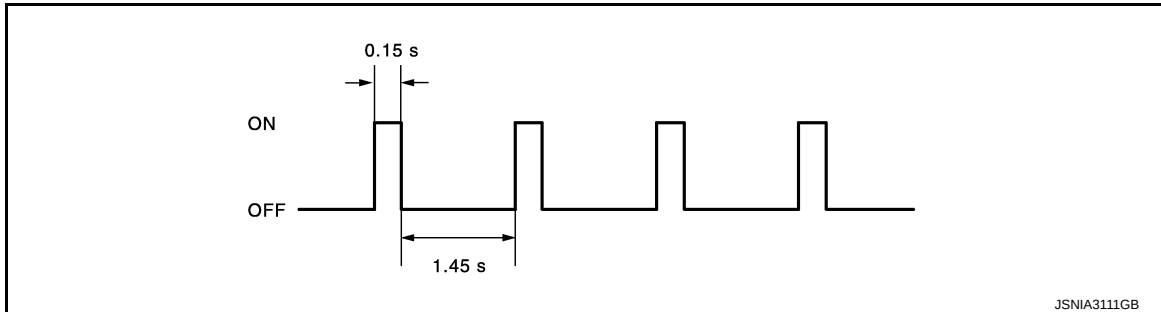
SYSTEM

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TIMING CHART



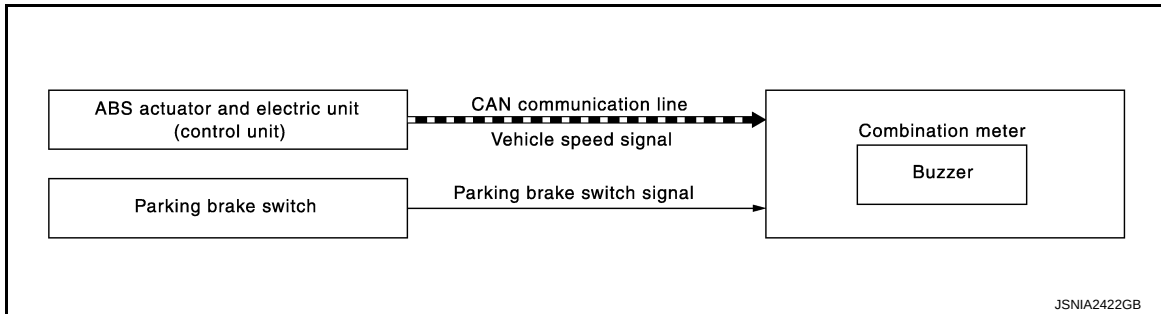
SOUND SPECIFICATION



PARKING BRAKE RELEASE WARNING CHIME

PARKING BRAKE RELEASE WARNING CHIME : System Diagram

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PARKING BRAKE RELEASE WARNING CHIME : System Description

INFOID:0000000008143402

WARNING OPERATION CONDITIONS

If all of the following conditions are fulfilled.

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

WARNING CANCEL CONDITIONS

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

SYSTEM

< SYSTEM DESCRIPTION >

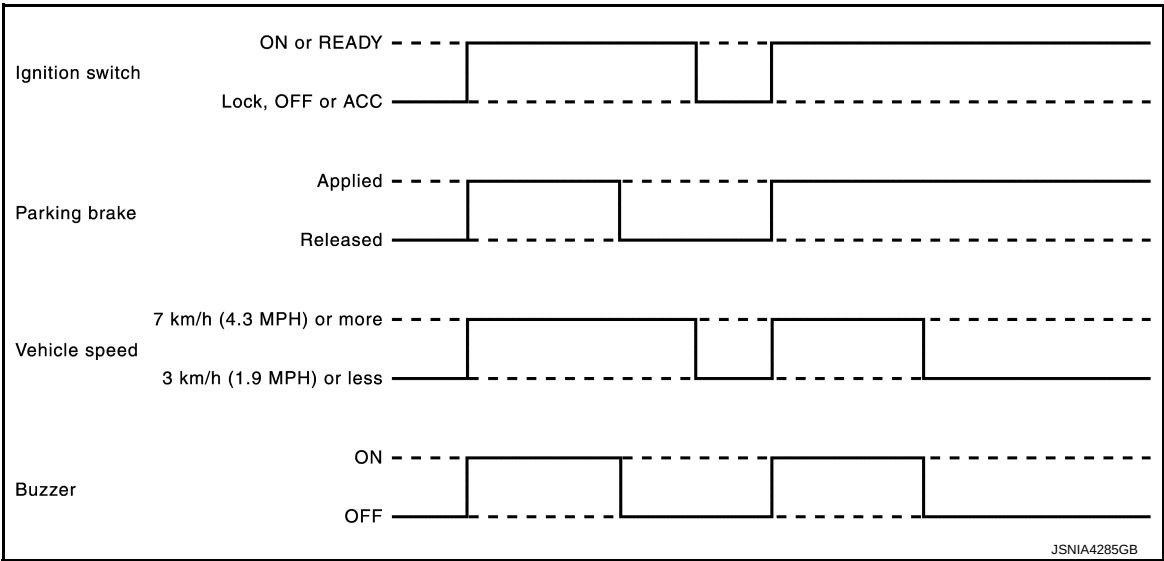
Operation conditions	
Ignition switch	LOCK, OFF or ACC
Parking brake	Release condition (parking brake switch OFF)
Vehicle speed	Approximately 3 km/h (1.9 MPH) or less

SIGNAL PATH

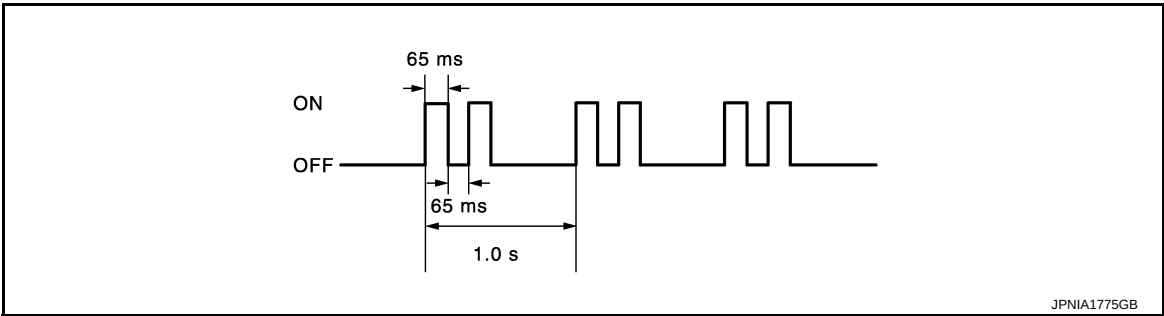
Combination meter sounds integrated buzzer when it judges that parking brake release warning chime is necessary from signals below.

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

TIMING CHART



SOUND SPECIFICATION



DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (COMBINATION METER)

CONSULT Function

INFOID:000000008485002

CONSULT APPLICATION ITEMS

CONSULT can perform the following diagnosis modes via CAN communication and the combination meter.

System	Diagnosis mode	Description
METER/M&A	Self Diagnostic Result	The combination meter checks the conditions and displays memorized errors.
	Data Monitor	Displays the combination meter input/output data in real time.
	Warning History	Lighting history of the warning lamp and indicator lamp can be checked.

SELF DIAG RESULT

Refer to [WCS-32. "DTC Index"](#).

DATA MONITOR

NOTE:

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

Display Item List

X: Applicable

Display item [Unit]	MAIN SIGNALS	Description
SPEED METER [km/h]	X	Value of vehicle speed signal received from ABS actuator and electric unit (control unit) via CAN communication. NOTE: 655.35 is displayed when the malfunction signal is received.
SPEED OUTPUT [km/h]	X	Vehicle speed signal value transmitted to other units via CAN communication. NOTE: 655.35 is displayed when the malfunction signal is received.
ODO OUTPUT [km/h or mph]		Odometer signal value transmitted to other units via CAN communication.
TACHO METER [rpm]	X	Value of the engine speed signal received from HPCM via CAN communication. NOTE: 8191.875 is displayed when the malfunction signal is received.
FUEL METER [L]	X	Fuel level indicated on combination meter.
W TEMP METER [°C]	X	Value of engine coolant temperature signal is received from HPCM via CAN communication. NOTE: 215 is displayed when the malfunction signal is input.
ABS W/L [On/Off]		Status of ABS warning lamp detected from ABS warning lamp signal is received from ABS actuator and electric unit (control unit) via CAN communication.
VDC/TCS IND [On/Off]		Status of VDC OFF indicator lamp detected from VDC OFF indicator lamp signal is received from ABS actuator and electric unit (control unit) via CAN communication.
SLIP IND [On/Off]		Status of VDC warning lamp detected from VDC warning lamp signal received from ABS actuator and electric unit (control unit) via CAN communication.
BRAKE W/L [On/Off]		Status of brake warning lamp detected from brake warning lamp signal is received from ABS actuator and electric unit (control unit) via CAN communication. NOTE: Displays "Off" if the brake warning lamp is illuminated when the valve check starts, the parking brake switch is turned ON or the brake fluid level switch is turned ON.
DOOR W/L [On/Off]		Status of door open warning detected from door switch signal received from BCM via CAN communication.
TRUNK/GLAS-H [On/Off]		Status of trunk open warning detected from trunk switch signal received from BCM via CAN communication.

DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

Display item [Unit]	MAIN SIGNALS	Description	
HI-BEAM IND [On/Off]		Status of high beam indicator lamp detected from high beam request signal is received from BCM via CAN communication.	A
TURN IND [On/Off]		Status of turn indicator lamp detected from turn indicator signal is received from BCM via CAN communication.	B
FR FOG IND [On/Off]		Status of front fog light indicator lamp detected from front fog light request signal is received from BCM via CAN communication.	C
LIGHT IND [On/Off]		Status of light indicator lamp detected from position light request signal is received from BCM via CAN communication.	
OIL W/L [On/Off]		Status of oil pressure warning lamp detected from oil pressure warning lamp signal is received from HPCM via CAN communication.	D
MIL [On/Off]		Status of malfunction indicator lamp detected from malfunctioning indicator lamp signal is received from HPCM via CAN communication.	E
CRUISE IND [On/Off]		- Status of CRUISE indicator detected from ASCD status signal is received from HPCM via CAN communication. (ASCD models) - Status of CRUISE indicator detected from meter display signal is received from ADAS control unit via CAN communication. (ICC models)	F
SET IND [On/Off]		- Status of SET indicator detected from ASCD status signal is received from HPCM via CAN communication. (ASCD models) - Status of SET indicator detected from meter display signal is received from ADAS control unit via CAN communication. (ICC models)	G
CRUISE W/L [On/Off]		Status of ICC warning lamp detected from ICC warning lamp signal is received from ADAS control unit via CAN communication.	H
BA W/L [On/Off]		Status of IBA OFF indicator lamp judged from IBA OFF indicator lamp signal received from ADAS control unit with CAN communication line.	
ATC/T-AMT W/L [On/Off]		Status of A/T CHECK warning lamp judged from A/T CHECK indicator lamp signal received from TCM with CAN communication line.	I
4WD W/L [Off]		This item is displayed, but cannot be monitored.	J
FUEL W/L [On/Off]		Low fuel warning status detected by the identified fuel level.	
WASHER W/L [On/Off]		Status of low washer fluid warning judged from washer level switch input to combination meter.	K
AIR PRES W/L [On/Off]		Status of low tire pressure warning lamp judged from low tire pressure warning lamp signal received from BCM with CAN communication line.	L
KEY G/Y W/L [On/Off]		Status of Intelligent Key system malfunction detected from Intelligent Key warning display signal is received from BCM via CAN communication.	
EPS W/L [On/Off]		Status of hybrid EPS (Electrical Power Steering) warning lamp detected from power steering warning lamp signal is received from power steering control module via CAN communication.	M
AFS OFF IND [On/Off]		Status of AFS OFF indicator lamp judged from AFS OFF indicator lamp signal received from AFS control unit with CAN communication line.	WCS
4WAS/RAS W/L [Off]		This item is displayed, but cannot be monitored.	
LANE W/L [On/Off]		Status of lane departure warning lamp judged from lane departure warning lamp signal received from ADAS control unit with CAN communication line.	O
LDP IND [On/Off]		Status of LDP ON indicator lamp judged from LDP ON indicator lamp signal received from ADAS control unit with CAN communication line.	P
READY IND [On/Off]		Status of READY to drive indicator lamp judged from READY to drive indicator lamp signal received from HPCM with CAN communication line.	
SYS FAIL W/L [On/Off]		Status of hybrid system warning lamp judged from hybrid system warning lamp signal received from HPCM with CAN communication line.	
SFT POSI W/L [On/Off]		Status of shift P warning judged from shift P warning signal received from HPCM with CAN communication line.	

DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

Display item [Unit]	MAIN SIGNALS	Description
HEV BRAKE W/L [On/Off]		Status of brake system warning lamp judged from brake warning lamp signal received from ABS actuator and electric unit (control unit) with CAN communication line.
CHAGE W/L [On/Off]		Status of 12-volt battery charge warning lamp judged from 12-volt battery charge warning lamp signal received from HPCM with CAN communication line.
DCA IND [On/Off]		Status of DCA system switch indicator judged from meter display signal received from ADAS control unit with CAN communication line.
LCD [B&P N, B&P I, ID NG, ROTAT, SFT P, INSRT, BATT, NO KY, OUTKY, LK WN]		Displays status of Intelligent Key system warning judged from meter display signal received from BCM with CAN communication line.
ACC TARGET [On/Off]		Status of vehicle ahead detection indicator judged from meter display signal received from ADAS control unit with CAN communication line.
ACC DISTANCE [Off, Short, Middle, Long]		Status of set distance indicator judged from meter display signal received from ADAS control unit with CAN communication line.
ACC OWN VHL [On/Off]		Status of own vehicle indicator judged from meter display signal received from ADAS control unit with CAN communication line.
ACC SET SPEED [On/Off]		Status of set vehicle speed indicator judged from meter display signal received from ADAS control unit with CAN communication line.
ACC UNIT [km/h/Off]		Status of display unit judged from meter display signal received from ADAS control unit with CAN communication line.
SHIFT IND [P, R, N, D, M1, M2, M3, M4, M5, M6, M7]		Status of shift position indicator judged from shift position signal received from TCM with CAN communication line.
ECO DRIVE IND G [On/Off]		Status of ECO drive indicator (green) judged from ECO drive indicator control signal received from HPCM with CAN communication line.
ECO DRIVE IND O [On/Off]		Status of ECO drive indicator (orange) judged from ECO drive indicator control signal received from HPCM with CAN communication line.
BSW IND [On/Off]		Status of BSI ON indicator (green) judged from BSI ON indicator signal received from ADAS control unit with CAN communication line.
BSW W/L [On/Off]		Status of BSW/BSI warning lamp (yellow) judged from BSW/BSI warning lamp signal received from ADAS control unit with CAN communication line.
DRIVE MODE STATS [SNOW, SN-EC, ECO, EC-ST, STD, ST-SP, SPORT, ERROR]		Status of drive mode select switch.
M RANGE SW [On/Off]		Status of manual mode switch.
NM RANGE SW [On/Off]		Status of non-manual mode switch.
AT SFT UP SW [On/Off]		Status of manual mode shift up switch.
AT SFT DWN SW [On/Off]		Status of manual mode shift down switch.
ST SFT UP SW [Off]		This item is displayed, but cannot be monitored.
ST SFT DWN SW [Off]		This item is displayed, but cannot be monitored.
PKB SW [On/Off]		Status of parking brake switch.
BUCKLE SW [On/Off]		Status of seat belt buckle switch (driver side).
BRAKE OIL SW [On/Off]		Status of brake fluid level switch.

DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

Display item [Unit]	MAIN SIGNALS	Description
ENTER SW [On/Off]		Status of  (ENTER) switch.
SELECT SW [On/Off]		Status of  (SELECT) switch.
DISTANCE [km]		Value of distance to empty calculated by combination meter.
OUTSIDE TEMP [°C or °F]		Ambient temperature value converted from ambient sensor signal received from ambient sensor. NOTE: This may not match with the temperature value indicated on the information display. (Because the information display value is a corrected value from the ambient sensor input value.)
FUEL LOW SIG [On/Off]		Status of fuel level low warning signal to output to AV control unit via CAN communication.
BUZZER [On/Off]	X	Buzzer status (in the combination meter) is detected from the buzzer output signal received from each unit via CAN communication and the warning output condition of the combination meter.
HILL HOLD WARNING [On/Off]		The status of hybrid system over heat warning judged from a hybrid system over heat warning signal received from HPCM via CAN communication.
ASSIST/CHARGE GAUGE [%]		The status of assist charge gauge judged from an assist charge signal received from HPCM via CAN communication.
EV IND [On/Off]		The status of EV indicator lamp judged from an EV indicator lamp signal received from HPCM via CAN communication.
REMAINING ENERGY GAUGE [%]		The status of li-ion battery state of charge judged from a li-ion battery state of charge signal received from HPCM via CAN communication.
ACCEL GAUGE [%]		The status of acceleration guide (accelerator angle) judged from an acceleration guide signal received from HPCM via CAN communication.
ECO ACCEL POSITION [%]		The status of acceleration guide (ECO driving guideline) judged from an acceleration guide signal received from HPCM via CAN communication.
ENERGY FLOW [MODE1, MODE2, MODE3, MODE4, MODE5, MODE6, MODE7, MODE8]		The status of energy monitor judged from an energy monitor signal received from HPCM via CAN communication.

NOTE:

Some items are not available according to vehicle specification.

Warning History

- Stores histories when warning/indicator lamp is turned on.
- “Warning 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 Warning History: Stores NO (0) turning on history of warning/indicator lamp.

NOTE:

- Warning 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.

Display Item

Display item	Description
ABS W/L	Lighting history of ABS warning lamp.
VDC/TCS IND	Lighting history of VDC OFF indicator lamp.
SLIP IND	Lighting history of VDC warning lamp.

DIAGNOSIS SYSTEM (COMBINATION METER)

< SYSTEM DESCRIPTION >

Display item	Description
BRAKE W/L	Lighting history of brake warning lamp.
DOOR W/L	Lighting history of door open warning.
TRUNK/GLAS-H	Lighting history of trunk open warning.
OIL W/L	Lighting history of oil pressure warning lamp.
C-ENG W/L	Lighting history of malfunction indicator lamp.
CRUISE IND	Lighting history of CRUISE indicator.
SET IND	Lighting history of SET indicator.
CRUISE W/L	Lighting history of ICC warning lamp.
BA W/L	Lighting history of IBA OFF indicator lamp.
ATC/T-AMT W/L	Lighting history of A/T CHECK warning lamp.
FUEL W/L	Lighting history of low fuel level warning.
WASHER W/L	Lighting history of low washer fluid warning.
AIR PRES W/L	Lighting history of low tire pressure warning lamp.
KEY G/Y W/L	Lighting history of Intelligent Key system malfunction.
EPS W/L	Lighting history of hybrid EPS (Electrical Power Steering) warning lamp.
AFS OFF IND	Lighting history of AFS OFF indicator lamp.
SYS FAIL W/L	Lighting history of hybrid system warning lamp.
SFT POSI W/L	Lighting history of shift P warning.
HEV BRAKE W/L	Lighting history of brake system warning lamp.
LANE W/L	Lighting history of lane departure warning lamp.
CHAGE W/L	Lighting history of 12-volt battery charge warning lamp.
BSW W/L	Lighting history of BSW/BSI warning lamp (yellow).

NOTE:

In items displayed on the CONSULT screen, only those listed in the above table are used.

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:000000008485007

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

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

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

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

×: Applicable item

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

*: This item is not used.

FREEZE FRAME DATA (FFD)

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

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

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

NOTE:

*: Refer to [PCS-34, "POWER DISTRIBUTION SYSTEM : System Description"](#) for details of the power supply position.

BUZZER

BUZZER : CONSULT Function (BCM - BUZZER)

INFOID:000000008143405

CONSULT APPLICATION ITEMS

Test item	Diagnosis mode	Description
BUZZER	Data Monitor	Displays BCM input data in real time.
	Active Test	Operation of electrical loads can be checked by sending driving signal to them.

DATA MONITOR

NOTE:

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

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

Display item [Unit]	Description
PUSH SW [On/Off]	Status of push-button ignition switch judged by BCM.
UNLK SEN-DR [On/Off]	Status of unlock sensor judged by BCM.
VEH SPEED 1 [km/h]	Value of vehicle speed signal received from combination meter with CAN communication line.
TAIL LAMP SW [On/Off]	Status of lighting switch judged by BCM using the combination switch readout function.
FR FOG SW [On/Off]	Status of front fog lamp switch judged by BCM using the combination switch readout function.
DOOR SW-DR [On/Off]	Status of driver side door switch judged by BCM.
CDL LOCK SW [On/Off]	Status of door lock unlock switch judged by BCM.

ACTIVE TEST

Display item [Unit]	Description
SEAT BELT WARN TEST	The seat belt warning chime operation can be checked by operating the relevant function (On/Off).
LIGHT WARN ALM	The light warning chime operation can be checked by operating the relevant function (On/Off).

WCS

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION

COMBINATION METER

Reference Value

INFOID:000000008485003

VALUES ON THE DIAGNOSIS TOOL

NOTE:

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

Monitor Item	Condition		Value/Status
SPEED METER [km/h]	Ignition switch ON	While driving	Input value of vehicle speed signal (CAN communication signal) NOTE: 655.35 is displayed when the mal- function signal is received
SPEED OUTPUT [km/h]	Ignition switch ON	While driving	Output value of vehicle speed signal (CAN communication signal) NOTE: 655.35 is displayed when the mal- function signal is received
ODO OUTPUT [km/h or mph]	Ignition switch ON	—	Output value of odometer signal (CAN communication signal)
TACHO METER [rpm]	Ignition switch ON	Engine running	Input value of engine speed signal (CAN communication signal) NOTE: 8191.875 is displayed when the mal- function signal is received
FUEL METER [L]	Ignition switch ON	—	Input value of fuel level sensor signal
W TEMP METER [°C]	Ignition switch ON	—	Input value of engine coolant tem- perature signal (CAN communica- tion signal) NOTE: 215 is displayed when the malfunc- tion signal is input
ABS W/L	Ignition switch ON	ABS warning lamp ON	On
		ABS warning lamp OFF	Off
VDC/TCS IND	Ignition switch ON	VDC OFF indicator lamp ON	On
		VDC OFF indicator lamp OFF	Off
SLIP IND	Ignition switch ON	VDC warning lamp ON	On
		VDC warning lamp OFF	Off
BRAKE W/L	Ignition switch ON	Brake warning lamp ON	On
		Brake warning lamp OFF	Off
DOOR W/L	Ignition switch ON	Door open warning ON	On
		Door open warning OFF	Off
TRUNK/GLAS-H	Ignition switch ON	Trunk open warning ON	On
		Trunk open warning OFF	Off
HI-BEAM IND	Ignition switch ON	High-beam indicator lamp ON	On
		High-beam indicator lamp OFF	Off
TURN IND	Ignition switch ON	Turn signal indicator lamp ON	On
		Turn signal indicator lamp OFF	Off

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Monitor Item	Condition		Value/Status	
FR FOG IND	Ignition switch ON	Front fog lamp indicator lamp ON	On	A
		Front fog lamp indicator lamp OFF	Off	
LIGHT IND	Ignition switch ON	Light indicator lamp ON	On	B
		Tail lamp indicator lamp OFF	Off	
OIL W/L	Ignition switch ON	Oil pressure warning lamp ON	On	C
		Oil pressure warning lamp OFF	Off	
MIL	Ignition switch ON	Malfunction indicator lamp ON	On	D
		Malfunction indicator lamp OFF	Off	
CRUISE IND	Ignition switch ON	CRUISE indicator ON	On	E
		CRUISE indicator OFF	Off	
SET IND	Ignition switch ON	SET indicator ON	On	F
		SET indicator OFF	Off	
CRUISE W/L	Ignition switch ON	CRUISE warning lamp ON	On	G
		CRUISE warning lamp OFF	Off	
BA W/L	Ignition switch ON	IBA OFF indicator lamp ON	On	H
		IBA OFF indicator lamp OFF	Off	
ATC/T-AMT W/L	Ignition switch ON	A/T check warning lamp ON	On	I
		A/T check warning lamp OFF	Off	
4WD W/L	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off	
FUEL W/L	Ignition switch ON	During low fuel warning indication	On	J
		Other than the above	Off	
WASHER W/L	Ignition switch ON	During low washer fluid warning indication	On	K
		Other than the above	Off	
AIR PRES W/L	Ignition switch ON	Low tire pressure warning lamp ON	On	L
		Low tire pressure warning lamp OFF	Off	
KEY G/Y W/L	Ignition switch ON	During Intelligent Key system malfunction indication	On	M
		Other than the above	Off	
EPS W/L	Ignition switch ON	Hybrid EPS (Electrical Power Steering) warning lamp ON	On	WCS
		Hybrid EPS (Electrical Power Steering) warning lamp OFF	Off	
AFS OFF IND	Ignition switch ON	AFS OFF indicator lamp ON	On	O
		AFS OFF indicator lamp OFF	Off	
4WAS/RAS W/L	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off	
LANE W/L	Ignition switch ON	Lane departure warning lamp ON	On	P
		Lane departure warning lamp OFF	Off	
LDP IND	Ignition switch ON	LDP ON indicator lamp ON	On	
		LDP ON indicator lamp OFF	Off	
READY IND	Ignition switch ON	READY to drive indicator lamp ON	On	
		READY to drive indicator lamp OFF	Off	
SYS FAIL W/L	Ignition switch ON	Hybrid system warning lamp ON	On	
		Hybrid system warning lamp OFF	Off	

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Monitor Item	Condition		Value/Status
SFT POSI W/L	Ignition switch ON	During shift P warning indication	On
		Other than the above	Off
HEV BRAKE W/L	Ignition switch ON	Brake system warning lamp ON	On
		Brake system warning lamp OFF	Off
CHAGE W/L	Ignition switch ON	12-volt battery charge warning lamp ON	On
		12-volt battery charge warning lamp OFF	Off
DCA IND	Ignition switch ON	During DCA system switch indicator indication	On
		Other than the above	Off
LCD	Ignition switch ON	During engine start information indication	B&P I
	Ignition switch ACC	During engine start information indication	B&P N
	Ignition switch LOCK	During key ID warning indication	ID NG
	Ignition switch LOCK	During steering lock information indication	ROTAT
	Ignition switch LOCK	During P position warning indication	SFT P
	Ignition switch LOCK	During Intelligent Key insert information indication	INSRT
	Ignition switch LOCK	During Intelligent Key low battery warning indication	BATT
	Ignition switch ON	During take away warning indication	NO KY
	Ignition switch LOCK	During key warning indication	OUTKY
	Ignition switch ON	During ACC warning indication	LK WN
ACC TARGET	Ignition switch ON	During vehicle ahead detection indicator indication	On
		Other than the above	Off
ACC DISTANCE	Ignition switch ON	When following distance set to "LONG"	LONG
		When following distance set to "MIDDLE"	MID
		When following distance set to "SHORT"	SHORT
		Set distance indicator not displayed	Off
ACC OWN VHL	Ignition switch ON	During own vehicle indicator indication	On
		Other than the above	Off
ACC SET SPEED	Ignition switch ON	During set vehicle speed indicator not displayed	Off
		During set vehicle speed indicator displayed	Indicates the set vehicle speed
ACC UNIT	Ignition switch ON	Set vehicle speed indicator unit display ON	On
		Set vehicle speed indicator unit display OFF	Off

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Monitor Item	Condition		Value/Status	
SHIFT IND	Ignition switch ON	During the indication of "P" by shift position indicator	P	A
		During the indication of "R" by shift position indicator	R	B
		During the indication of "N" by shift position indicator	N	
		During the indication of "D" by shift position indicator	D	C
		During the indication of "M1" by shift position indicator	M1	D
		During the indication of "M2" by shift position indicator	M2	
		During the indication of "M3" by shift position indicator	M3	E
		During the indication of "M4" by shift position indicator	M4	F
		During the indication of "M5" by shift position indicator	M5	
		During the indication of "M6" by shift position indicator	M6	G
		During the indication of "M7" by shift position indicator	M7	H
ECO DRIVE IND G	Ignition switch ON	ECO drive indicator (green) ON	On	
		ECO drive indicator (green) OFF	Off	
ECO DRIVE IND O	Ignition switch ON	ECO drive indicator (orange) ON	On	I
		ECO drive indicator (orange) OFF	Off	
BSW IND	Ignition switch ON	BSI ON indicator (green) ON	On	J
		BSI ON indicator (green) OFF	Off	
BSW W/L	Ignition switch ON	BSW/BSI warning lamp (yellow) ON	On	
		BSW/BSI warning lamp (yellow) OFF	Off	K
DRIVE MODE STATS	Ignition switch ON	Drive mode select switch in SNOW position	SNOW	
		Drive mode select switch in between SNOW and ECO position	SN-EC	L
		Drive mode select switch in ECO position	ECO	
		Drive mode select switch in between ECO and ● (STANDARD mode)	EC-ST	M
		Drive mode select switch ● (STANDARD mode) position	STD	
		Drive mode select switch in between ● (STANDARD mode) and SPORT	ST-SP	
		Drive mode select switch in SPORT position	SPORT	O
		Reception of an abnormal signal other than those above	ERROR	
M RANGE SW	Ignition switch ON	Selector lever in manual mode position	On	P
		Other than the above	Off	
NM RANGE SW	Ignition switch ON	Selector lever in manual mode position	Off	
		Other than the above	On	
AT SFT UP SW	Ignition switch ON	Selector lever in + position	On	
		Other than the above	Off	

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COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Monitor Item	Condition		Value/Status
AT SFT DWN SW	Ignition switch ON	Selector lever in – position	On
		Other than the above	Off
ST SFT UP SW	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off
ST SFT DWN SW	Ignition switch ON	NOTE: This item is displayed, but cannot be monitored.	Off
PKB SW	Ignition switch ON	Parking brake switch ON	On
		Parking brake switch OFF	Off
BUCKLE SW	Ignition switch ON	Driver seat belt not fastened	On
		Driver seat belt fastened	Off
BRAKE OIL SW	Ignition switch ON	Brake fluid level switch ON	On
		Brake fluid level switch OFF	Off
ENTER SW	Ignition switch ON	When  switch (enter switch) is pressed	On
		Other than above	Off
SELECT SW	Ignition switch ON	When  switch (select switch) is pressed	On
		Other than above	Off
DISTANCE [km]	Ignition switch ON	—	Distance to empty calculated by combination meter
OUTSIDE TEMP [°C or °F]	Ignition switch ON	—	Input value of ambient sensor signal (CAN communication signal) NOTE: This may not match the indicated value on the information display.
FUEL LOW SIG	Ignition switch ON	During low fuel warning indication	On
		Other than above	Off
BUZZER	Ignition switch ON	Buzzer ON	On
		Buzzer OFF	Off
HILL HOLD WARNING	Ignition switch ON	During hybrid system over heat warning indication	On
		Other than above	Off
ASSIST/CHARGE GAUGE	Ignition switch ON	Driving force (power generation) rate of traction motor	1 % - 100 %
		When traction motor is not responsible for power generation and traveling	0 %
		Driving force (traveling) rate of traction motor	(-1 %) - (-100 %)
EV IND	Ignition switch ON	EV indicator lamp ON	On
		EV indicator lamp OFF	Off
REMAINING ENERGY GAUGE	Ignition switch ON	—	Charging rate of Li-ion battery 0 % - 255 %
ACCEL GAUGE	Ignition switch ON	—	Accelerator angle 0 % - 127 %
ECO ACCEL POSITION	Ignition switch ON	—	ECO driving reference position of accelerator angle 0 % - 127 %

COMBINATION METER

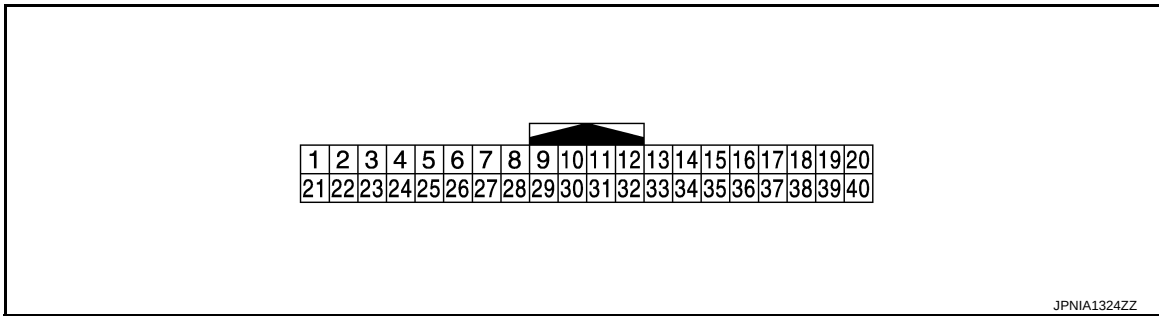
< ECU DIAGNOSIS INFORMATION >

Monitor Item	Condition		Value/Status
ENERGY FLOW	Ignition switch ON	When driving only by the engine	MODE1
		When driving by the engine while charging the Li-ion battery	MODE2
		When driving by the engine and the traction motor	MODE3
		When charging only by the engine	MODE4
		When driving by the traction motor	MODE5
		When charging by the cooperative regenerative brake	MODE6
		When charging by the engine and the cooperative regenerative brake	MODE7
		Other than above	MODE8

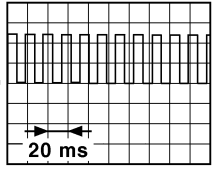
NOTE:

Some items are not available according to vehicle specification.

TERMINAL LAYOUT



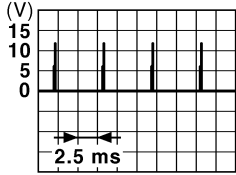
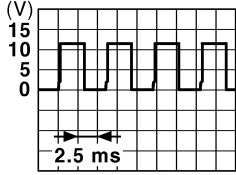
PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	—	Signal name	Input/ Output			
1 (W)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
2 (BG)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
4 (R)	Ground	Vehicle speed signal (8-pulse)	Output	Ignition switch ON	Speedometer operated [When vehicle speed is approx. 40 km/h (25 MPH)]	NOTE: The maximum voltage varies depending on the specification (destination unit). 

JSNIA0012GB

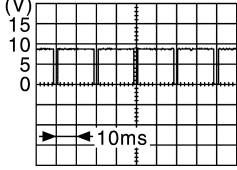
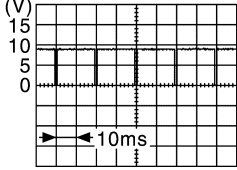
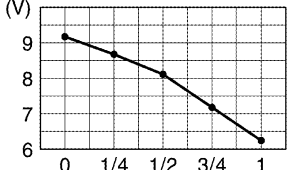
COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	—	Signal name	Input/ Output			
5 (B)	Ground	Illumination control signal	Output	Ignition switch ON	- Lighting switch 1ST position - When meter illumination is maximum	
					- Lighting switch 1ST position - When meter illumination is step 11	
					- Lighting switch 1ST position - When meter illumination is minimum	12 V
7 (SB)	6 (B)	Enter switch signal	Input	Ignition switch ON	When  switch (enter switch) is pressed	0 V
					Other than the above	5 V
8 (LG)	6 (B)	Select switch signal	Input	Ignition switch ON	When  switch (select switch) is pressed	0 V
					Other than the above	5 V
9 (G)	6 (B)	Illumination control switch signal (+)	Input	Ignition switch ON	When  switch [illumination control switch (+)] is pressed	0 V
					Other than the above	5 V
10 (GR)	6 (B)	Illumination control switch signal (-)	Input	Ignition switch ON	When  switch [illumination control switch (-)] is pressed	0 V
					Other than the above	5 V
11 (L)	6 (B)	Trip reset switch signal	Input	Ignition switch ON	When trip reset switch is pressed	0 V
					Other than the above	5 V
12 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
14 (L)	—	CAN-H	—	—	—	—
15 (P)	—	CAN-L	—	—	—	—
16 (R)	Ground	Air bag signal	Input	Ignition switch ON	Air bag warning lamp ON	3 V
					Air bag warning lamp OFF	0 V

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
19 (GR)	Ground	Communication signal (VSP → METER)	Input	Ignition switch ON	—	NOTE: Waveform shows reference val- ues.  JSMIA0536GB 0 - 12 V
20 (BG)	Ground	Communication signal (METER → VSP)	Output	Ignition switch ON	—	NOTE: Waveform shows reference val- ues.  JSMIA0537GB 0 - 12 V
23 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
26 (V)	Ground	Parking brake switch sig- nal	Input	Ignition switch ON	Parking brake applied	0 V
					Parking brake released	12 V
27 (V)	Ground	Brake fluid level switch signal	Input	Ignition switch ON	Brake fluid level is normal	12 V
					The brake fluid level is low- er than the low level	0 V
28 (G)	Ground	Security signal	Input	Ignition switch ON	Security indicator lamp ON	0 V
					Security indicator lamp OFF	12 V
29 (L)	Ground	Washer level switch sig- nal	Input	Ignition switch ON	Washer level switch ON	0 V
					Washer level switch OFF	5 V
34 (G)	24 (B)	Fuel level sensor signal	Input	Ignition switch ON	—	 JSNIA4076ZZ
35 (W)	Ground	Seat belt buckle switch signal (driver side)	Input	Ignition switch ON	When driver seat belt is fas- tened	12 V
					When driver seat belt is un- fastened	0 V

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COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
36 (G)	Ground	Passenger seat belt warning signal	Input	Ignition switch ON	- When driver seat belt is fastened - When getting in the passenger seat - When passenger seat belt is fastened	12 V
					- When driver seat belt is fastened - When getting in the passenger seat - When passenger seat belt is unfastened	0 V
37 (G)	Ground	Non-manual mode signal	Input	Ignition switch ON	Selector manual mode position	12 V
					Other than the above	0 V
38 (V)	Ground	Manual mode shift down signal	Input	Ignition switch ON	Selector lever shift down operation	0 V
					Other than the above	12 V
39 (L)	Ground	Manual mode shift up signal	Input	Ignition switch ON	Selector lever shift up operation	0 V
					Other than the above	12 V
40 (W)	Ground	Manual mode signal	Input	Ignition switch ON	Selector manual mode position	0 V
					Other than the above	12 V

Fail-Safe

INFOID:000000008485004

FAIL-SAFE

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

Function	Specifications
Speedometer	Reset to zero by suspending communication.
Tachometer	
Assist charge gauge	
Illumination control	When suspending communication, changes to nighttime mode.

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Function		Specifications
Information display	Odo/trip meter	An indicated value is maintained at communications blackout.
	Shift position indicator	The display turns OFF by suspending communication.
	Door open warning	The display turns OFF by suspending communication.
	Trunk open warning	
	Fuel filler cap warning	
	Low tire pressure warning	
	Hybrid system over heat warning	
	Shift P warning	
	Energy monitor	The flow (arrow) of energy is not displayed.
	Li-ion battery state of charge	During communications blackout, the battery power indicates "0".
	Acceleration guide	During communications blackout, the accelerator guide indication is not displayed.
	EV mode odometer and twin trip odometer	During communications blackout, the indication is maintained.
	Current fuel consumption	During communications blackout, the last calculation is displayed.
	Average fuel consumption	During communications blackout, the last calculation is displayed.
	Average vehicle speed	During communications blackout, the last calculation is displayed.
	Travel distance	During communications blackout, the indication is maintained.
	Distance to empty	During communications blackout, "----" is displayed.
	Engine coolant temperature gauge	Sixty seconds after communications blackout, engine coolant temperature position is not displayed.
	Ambient temperature	During communications blackout, "----" is displayed.
Buzzer		The buzzer turns OFF by suspending communication.

A
B
C
D
E
F
G
H
I
J
K
L
M
O
P

WCS

COMBINATION METER

< ECU DIAGNOSIS INFORMATION >

Function		Specifications
Warning lamp/indicator lamp	ABS warning lamp	The lamp turns ON by suspending communication.
	VDC warning lamp	
	VDC OFF indicator lamp	
	Brake warning lamp	
	Brake system warning lamp	
	IBA OFF indicator lamp	
	Malfunction indicator lamp	
	CRUISE warning lamp	
	Hybrid EPS (Electrical Power Steering) warning lamp	
	Approaching Vehicle Sound for Pedestrians temporally OFF indicator	
	Low tire pressure warning lamp	The lamp blinking caused by suspending communication.
	AFS OFF indicator lamp	
	High beam indicator lamp	
	Turn signal indicator lamp	The lamp turns OFF by suspending communication.
	Front fog lamp indicator lamp	
	Tail lamp indicator lamp	
	A/T CHECK indicator lamp	
	Lane departure warning lamp	
	LDP ON indicator lamp	
	Oil pressure warning lamp	
	ECO drive indicator	
	12-volt battery charge warning lamp	
	BSI ON indicator	
	BSW/BSI warning lamp	
	High water temperature warning lamp	
	READY to drive indicator lamp	
	Hybrid system warning lamp	
	EV indicator lamp	

DTC Index

INFOID:000000008485005

Display contents of CONSULT	Diagnostic item is detected when...	Refer to
CAN COMM CIRCUIT [U1000]	When combination meter is not transmitting or receiving CAN communication signal for 2 seconds or more.	MWI-59. "Diagnosis Procedure"
CONTROL UNIT (CAN) [U1010]	When detecting error during the initial diagnosis of the CAN controller of combination meter.	MWI-60. "Diagnosis Procedure"
VEHICLE SPEED [B2205]	The abnormal vehicle speed signal is input from the ABS actuator and electric unit (control unit) for 2 seconds or more.	MWI-61. "Diagnosis Procedure"
ENGINE SPEED [B2267]	If HPCM continuously transmits abnormal engine speed signals for 2 seconds or more.	MWI-62. "Diagnosis Procedure"
WATER TEMP [B2268]	If HPCM continuously transmits abnormal engine coolant temperature signals for 60 seconds or more.	MWI-63. "Diagnosis Procedure"

< ECU DIAGNOSIS INFORMATION >

BCM

List of ECU Reference

INFOID:0000000008143409

ECU	Reference
BCM	BCS-34. "Reference Value"
	BCS-54. "Fail-safe"
	BCS-54. "DTC Inspection Priority Chart"
	BCS-55. "DTC Index"

A
B
C
D
E
F
G
H
I
J
K
L
M
O
P

WARNING CHIME SYSTEM

< WIRING DIAGRAM >

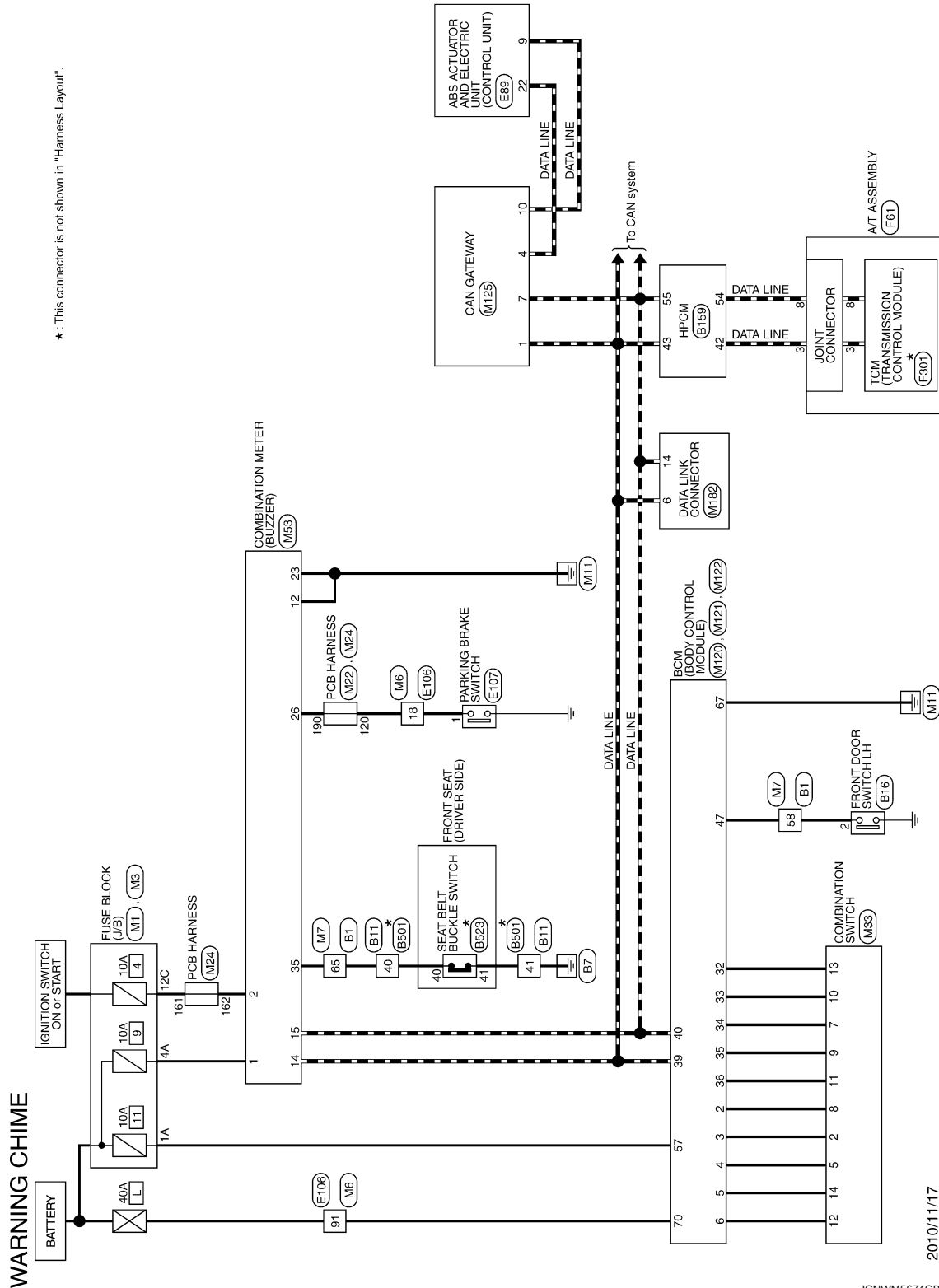
WIRING DIAGRAM

WARNING CHIME SYSTEM

Wiring Diagram

INFOID:000000008143410

For connector terminal arrangements, harness layouts, and alphabets in a  (option abbreviation; if not described in wiring diagram), refer to [GI-13. "Connector Information"](#).



2010/11/17

JCNWM5674GB

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

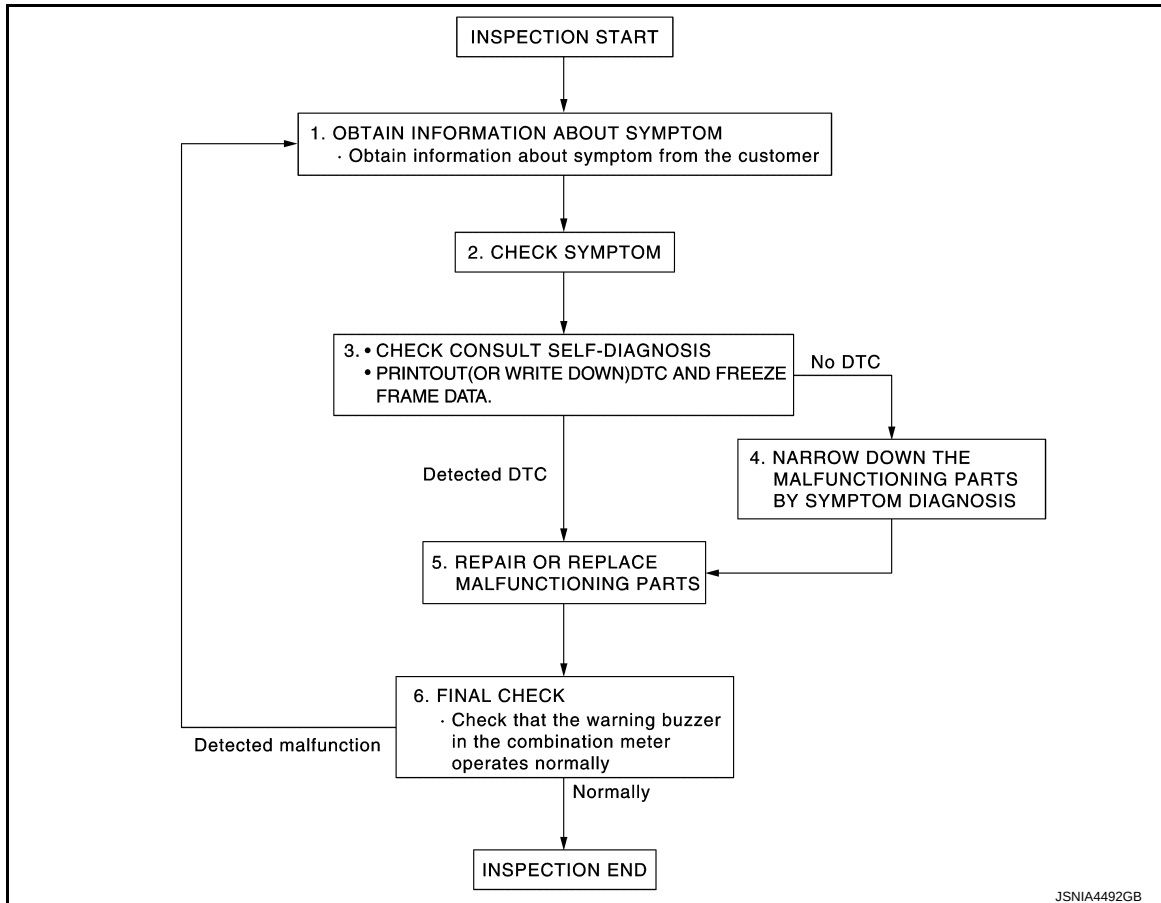
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000008143411

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

1. Connect CONSULT and perform self-diagnosis. Refer to [WCS-32, "DTC Index"](#).
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.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

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.

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT COMBINATION METER

COMBINATION METER : Diagnosis Procedure

INFOID:000000008485006

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	9
Ignition switch ON or START	4

Is the inspection result normal?

YES >> GO TO 2.

NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between combination meter harness connector and ground.

Terminals		Ignition switch position	Voltage (Approx.)
(+)	(-)		
Combination meter		OFF	Battery voltage
Connector	Terminal		
M53	1		
	2	ON	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check harness between combination meter and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector.
3. Check continuity between combination meter harness connector and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M53	12		Existed
	23		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

A
B
C
D
E
F
G
H
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M
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P

METER BUZZER CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

METER BUZZER CIRCUIT

Component Function Check

INFOID:000000008143413

1.CHECK OPERATION OF METER BUZZER

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

Does meter buzzer beep?

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

2.CHECK COMBINATION METER INPUT SIGNAL

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

BUZZER

Under the condition of buzzer input : On

Except above : Off

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-81, "Removal and Installation"](#).
NO >> Replace BCM. Refer to [BCS-80, "Removal and Installation"](#).

Diagnosis Procedure

INFOID:000000008143414

1.CHECK POWER SUPPLY OF COMBINATION METER

Check power supply of combination meter. Refer to [MWI-64, "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

Component Function Check

INFOID:000000008143415

1.CHECK COMBINATION METER INPUT SIGNAL

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

BUCKLE SW

When seat belt is fastened : Off

When seat belt is unfastened : On

>> INSPECTION END

Diagnosis Procedure

INFOID:000000008143416

1.CHECK COMBINATION METER INPUT SIGNAL

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

Terminals		Condition	Voltage (Approx.)	
(+)	(-)			
Combination meter				Ground
Connector	Terminal			
M53	35	When driver seat belt is fastened	12 V	
		When driver seat belt is unfastened	0 V	

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-81. "Removal and Installation"](#).

NO >> GO TO 2.

2.CHECK SEAT BELT BUCKLE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector and seat belt buckle switch (driver side) connector.
3. Check continuity between combination meter harness connector and seat belt buckle switch (driver side) harness connector.

Combination meter		Seat belt buckle switch (driver side)		Continuity
Connector	Terminal	Connector	Terminal	
M53	35	B523	40	Existed

4. Check harness continuity between combination meter harness connector and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M53	35		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.CHECK SEAT BELT BUCKLE SWITCH GROUND CIRCUIT

Check harness continuity between seat belt buckle switch (driver side) harness connector and ground.

SEAT BELT BUCKLE SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Seat belt buckle switch (driver side)		Ground	Continuity
Connector	Terminal		
B523	41		Existed

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Repair harness or connector.

Component Inspection

INFOID:000000008143417

1. CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE)

1. Turn ignition switch OFF.
2. Disconnect the seat belt buckle switch (driver side) connector.
3. Check continuity between terminals.

Terminal		Condition	Continuity
40	41	When seat belt is fastened	Not existed
		When seat belt is unfastened	Existed

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace seat belt buckle (driver side). Refer to [SB-11, "SEAT BELT BUCKLE : Removal and Installation"](#).

PARKING BRAKE SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

PARKING BRAKE SWITCH SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:000000008143418

1.CHECK COMBINATION METER INPUT SIGNAL

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

(+)		(-)	Condition		Voltage (Approx.)
Combination meter		Ground			
Connector	Terminal				
M53	26		Ignition switch ON	When parking brake is applied	0 V
				When parking brake is released	12 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.CHECK PARKING BRAKE SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector and parking brake switch connector.
3. Check continuity between combination meter harness connector and parking brake switch harness connector.

Terminals				Continuity
Combination meter		Parking brake switch		
Connector	Terminal	Connector	Terminal	
M53	26	E107	1	
				Existed

4. Check continuity between combination meter harness connector and ground.

Terminals			Continuity
Combination meter		Ground	
Connector	Terminal		
M53	26		Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

Component Inspection

INFOID:000000008143419

1.CHECK PARKING BRAKE SWITCH

Check parking brake switch. Refer to [BRC-142, "Component Inspection"](#).

Is the inspection result normal?

YES >> INSPECTION END.

NO >> Replace parking brake switch. Refer to [PB-7, "Exploded View"](#).

THE LIGHT REMINDER WARNING DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

THE LIGHT REMINDER WARNING DOES NOT SOUND

Description

INFOID:000000008143420

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

Diagnosis Procedure

INFOID:000000008143421

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 [EXL-93, "Symptom Table"](#).

2.CHECK DRIVER SIDE DOOR SWITCH SIGNAL CIRCUIT

Perform the check for the driver side door switch signal circuit. Refer to [DLK-61, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.CHECK DRIVER SIDE DOOR SWITCH

Perform a unit check for the driver side door switch. Refer to [DLK-63, "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace BCM. Refer to [BCS-80, "Removal and Installation"](#).

NO >> Replace driver side door switch. Refer to [DLK-180, "Removal and Installation"](#).

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

< SYMPTOM DIAGNOSIS >

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

Description

INFOID:000000008143422

- 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:000000008143423

1.CHECK PARKING BRAKE WARNING LAMP

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

When parking brake is applied : ON

When parking brake is released : OFF

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-81, "Removal and Installation"](#)

NO >> GO TO 2.

2.CHECK PARKING BRAKE SWITCH SIGNAL CIRCUIT

Perform check for the parking brake switch signal circuit. Refer to [BRC-141, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.CHECK PARKING BRAKE SWITCH

Perform a unit check for the parking brake switch. Refer to [BRC-142, "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-81, "Removal and Installation"](#)

NO >> Replace parking brake switch. Refer to [PB-7, "Exploded View"](#).

A
B
C
D
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F
G
H
I
J
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L
M
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P

WCS

THE SEAT BELT WARNING CONTINUES SOUNDING, OR DOES NOT SOUND

< SYMPTOM DIAGNOSIS >

THE SEAT BELT WARNING CONTINUES SOUNDING, OR DOES NOT SOUND

Description

INFOID:000000008143424

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

Diagnosis Procedure

INFOID:000000008143425

1.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 >> GO TO 2.
NO >> GO TO 4.

2.CHECK BCM OUTPUT SIGNAL

Check if the seat belt warning chime is activated by performing BCM active test. Refer to [WCS-20, "BUZZER : CONSULT Function \(BCM - BUZZER\)"](#).

Is the inspection result normal?

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

3.CHECK COMBINATION METER INPUT SIGNAL

Check if buzzer switches to proper condition (On/Off) on data monitor of combination meter. Refer to [MWI-36, "CONSULT Function"](#).

Buzzer active condition	: On
Buzzer non-active condition	: Off

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-81, "Removal and Installation"](#).
NO >> Replace BCM. Refer to [BCS-80, "Removal and Installation"](#).

4.CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE) CIRCUIT

Perform the check for the seat belt buckle switch (driver side) circuit. Refer to [WCS-39, "Diagnosis Procedure"](#).

Is the inspection result normal?

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

5.CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE)

Perform a unit check for the seat belt buckle switch (driver side). Refer to [WCS-40, "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-81, "Removal and Installation"](#).
NO >> Replace seat belt buckle (driver side). Refer to [SB-11, "SEAT BELT BUCKLE : Removal and Installation"](#).