# А SECTION MAN В METER, WARNING LAMP & INDICATOR С

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# BASIC INSPECTION DIAGNOSIS AND REPAIR WORK FLOW

#### Work flow

INFOID:000000011488233

#### **OVERALL SEQUENCE**



- Reference 2...MWI-100, "DTC Index".
- Reference 3...MWI-72, "Diagnosis Procedure".
- Reference 4...MWI-73, "Component Inspection".
- Reference 5...MWI-68, "COMBINATION METER : Diagnosis Procedure".

#### 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.

## **DIAGNOSIS AND REPAIR WORK FLOW**

< BASIC INSPECTION >	
2. СНЕСК ЅҮМРТОМ	_
<ul> <li>Check the symptom based on the information obtained from the customer.</li> <li>Check that any other malfunctions are present.</li> </ul>	_ A
>> GO TO 3	В
<b>3.</b> CHECK ON BOARD DIAGNOSIS OPERATION	
Check that the on board diagnosis function operates. Refer to MWI-54, "Diagnosis Description".	С
Does the on board diagnosis function operate normally?	
YES >> GO TO 4.	D
$\Delta$ check consult set e diagnosis destits	
Connect CONSULT and perform cell diagnesis. Refer to MM/L 100. "DTC Index"	
<ol> <li>When DTC is detected, follow the instructions below:</li> <li>Record DTC and Freeze Frame Data.</li> </ol>	L
Are self-diagnosis results normal?	F
YES >> GO TO 5.	
5. NARROW DOWN THE MALFUNCTIONING PARTS BY SYMPTOM DIAGNOSIS	G
Perform symptom diagnosis and narrow down the malfunctioning parts.	_
	Н
>> GO TO 10.	11
<b>6.</b> CHECK METER CONTROL SWITCH SIGNAL CIRCUIT	
Check meter control switch signal circuit. Refer to MWI-72, "Diagnosis Procedure".	
Is inspection result OK?	
NO >> GO TO 10.	J
7. CHECK METER CONTROL SWITCH	
Check meter control switch. Refer to MWI-73, "Component Inspection".	K
Is inspection result OK?	
YES >> GO TO 8.	I
8. CHECK COMBINATION METER POWER SUPPLY AND GROUND CIRCUITS	
Check combination meter power supply and ground circuits. Refer to <u>MWI-68. "COMBINATION METER</u>	: M
Is inspection result OK?	
YES >> GO TO 9.	MW
NO $>>$ GO TO 10.	
<b>9.</b> REPLACE COMBINATION METER	
Replace combination meter.	0
>> GO TO 11.	
10.REPAIR OR REPLACE MALFUNCTIONING PARTS	Ρ
Repair or replace the malfunctioning parts.	_
<b>NOTE:</b> If DTC is displayed, erase DTC after repair or replace malfunctioning parts	

lisplayed, er ning p repair or repla

>> GO TO 11.

#### DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

# 11.FINAL CHECK

Check that the combination meter operates normally. <u>Do they operate normally?</u> YES >> INSPECTION END

NO >> GO TO 1.

# < SYSTEM DESCRIPTION > SYSTEM DESCRIPTION METER SYSTEM METER SYSTEM

## METER SYSTEM : System Diagram



#### **METER SYSTEM : System Description**

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#### COMBINATION METER

- The combination meter receives the signals that are required to control the operation of each meter gauge, indicator lamp/warning lamp, and information display from each unit, switch, and sensor.
- The combination meter is equipped with the drive computer function. Using the signal obtained from each unit, switch, and sensor, the combination meter displays warnings and information to the information display.
- The combination meter incorporates a buzzer function that sounds an audible alarm with the integrated buzzer device. Refer to <u>WCS-5</u>, "WARNING CHIME SYSTEM : System Description" for details.
- The combination meter integrates the meter circuit check function, the dot matrix check function that checks the information display operation, and the segment check function that checks the shift position indicator operation.
- The combination meter integrates the diagnosis function, and it can perform a diagnosis using CONSULT.

#### METER CONTROL FUNCTION LIST

Р

#### < SYSTEM DESCRIPTION >

System		Description	Signal source
Meter gauges	Speedometer	Receives the vehicle speed signal, and indicates the vehicle speed.	ABS actuator and electric unit (control unit)
	Tachometer	Receives the engine speed signal, and indicates the engine speed.	ECM
	Fuel gauge	Receives the fuel level sensor signal, and indi- cates the remaining fuel level.	Fuel level sensor unit
	Engine coolant temperature gauge	Receives the engine coolant temperature signal, and indicates the engine coolant temperature.	ECM
Shift position indicator	Shift position indicator	Receives the shift position signal, and displays the shift position.	ТСМ
Oil pressure warning lamp	Oil pressure warning lamp	Receives the oil pressure sensor signal, and illu- minates the lamp.	Oil pressure sensor
Up-shift indica- tor		Receives the engine speed signal and shift posi-	ECM
	Up-shift indicator	tion signal (manual mode status), and illuminates/ turns off/blinks the indicator.	ТСМ
Master warn- ing lamp	Master warning lamp	Illuminates the lamp according to warning output on information display.	_
Information display	Instantaneous fuel consump- tion display	Calculates the instantaneous fuel consumption based on received vehicle speed signal and fuel consumption monitor signal, and displays the re- sult.	ECM
			ABS actuator and electric unit (control unit)
	Vehicle speed display	Based on the received vehicle speed signal, displays the vehicle speed.	ABS actuator and electric unit (control unit)
	CRUISE control system sta- tus display	Based on the received ASCD status signal, displays the CRUISE control system setting status.	ECM

#### < SYSTEM DESCRIPTION >

	System	Description	Signal source	
	Average fuel consumption display	Based on the received vehicle speed signal and fuel consumption monitor signal, calculates the average fuel consumption from the previous reset	ECM ABS actuator and electric unit	A
	Average vehicle speed dis-	to the next reset, and displays the result. Calculates average vehicle speed in a reset-to- reset interval based on received vehicle speed	(control unit) ABS actuator and electric unit	В
	play	signal and displays it.	(control unit)	С
	Travel time display	from a previous reset to the next reset.	_	_
	Travel distance display	set-to-reset interval based on received vehicle speed signal and displays it.	ABS actuator and electric unit (control unit)	D
		Based on the received fuel consumption monitor	ECM	E
	Possible driving distance display	signal, vehicle speed signal, and fuel level sensor signal, calculates the possible driving distance,	ABS actuator and electric unit (control unit)	
		and displays the result.	Fuel level sensor unit	F
	Ambient air temperature dis- play	Based on the received ambient sensor signal, corrects the ambient air temperature value, and displays the result.	Ambient sensor	0
	Illumination control display	Based on the received illumination control switch signal, displays the illumination status.	Meter control switch	G
	Travel time interruption display	Displays a warning of duration after IGN ON. (If enabled)	_	Н
Information	Low ambient air temperature display	Based on the ambient sensor signal, displays a warning when the ambient air temperature becomes $3^{\circ}C$ ( $37^{\circ}F$ ) or less. (If enabled)	Ambient sensor	I
	Engine oil maintenance dis- play	The distance for engine oil replacement can be set.	_	
	Engine oil maintenance warn- ing display	Displays a warning when the arbitrarily set engine oil replacement distance is reached.	_	J
	Engine oil level normal dis- play	Based on the received oil level sensor signal, displays that the engine oil level is at a normal value.	Oil level sensor	К
	Engine oil level display	Based on the received oil level sensor signal, displays the engine oil level.	Oil level sensor	
	Engine oil level warning dis- play	Based on the received oil level sensor signal, displays a warning on engine oil level.	Oil level sensor	L
	Transmission oil maintenance display	The distance for transmission oil replacement can be set.	_	M
	Transmission oil maintenance warning display	Displays a warning when the arbitrarily set trans- mission oil replacement distance is reached.	_	
	Oil filter maintenance display	The distance for oil filter replacement can be set.		MW
	Oil filter maintenance warning display	Displays a warning when the arbitrarily set oil filter replacement distance is reached.		
	Tire maintenance display	The distance for tire replacement can be set.	—	0
	Tire maintenance warning dis- play	Displays a warning when the arbitrarily set tire re- placement distance is reached.	_	
	Other maintenance display	The replacement distance for the arbitrarily set parts can be set.	_	Ρ
	Other maintenance warning display	Displays a warning when the arbitrarily set parts replacement distance is reached.	_	

#### < SYSTEM DESCRIPTION >

System	Description	Signal source
Door open warning display	Based on the received door switch signal, displays a warning that a door is ajar.	BCM
Trunk open warning display	Based on the received trunk switch signal, displays a warning that the trunk is ajar.	BCM
Darking broke release wern	Based on the received parking brake switch sig-	Parking brake switch
ing display	nal and vehicle speed signal, displays a warning that the parking brake is not released.	ABS actuator and electric unit (control unit)
Low fuel warning display	Receives the fuel level sensor signal, and displays a warning if the fuel level decreases to approximately 13.5 $\ell$ (3-5/8 US gal, 3 Imp gal) or less [1.0 $\ell$ (1/4 US gal, 1/4 Imp gal) fuel residues included].	Fuel level sensor unit
Low washer fluid warning display	Based on the received washer level switch signal, displays a warning for washer level.	Washer level switch
Engine oil level sensor abnor- mality warning display	Based on the received oil level sensor signal, dis- plays the engine oil level sensor malfunction warning.	Oil level sensor
Shift lever position warning display	Based on the received shift lever position warning display signal, displays the shift lever position warning.	ТСМ
Shift " P " warning display	Based on the received shift lever position check display signal, issues a warning to change the shift position to P range.	ТСМ
Transmission system check display	Based on the received transmission system check display signal, displays that the transmis- sion system check is in progress.	ТСМ
Run-flat tire warning display	Based on the received run-flat tire warning dis- play signal, displays a warning that the tire is punctured.	Low tire pressure warning con- trol unit
Transmission clutch high tem- perature warning display	Based on the received transmission clutch high temperature warning display signal, displays a warning that the transmission clutch temperature is high.	ТСМ
Transmission oil high temper- ature warning display	Based on the received transmission oil high tem- perature warning display signal, displays a warn- ing that the transmission oil temperature is high.	ТСМ
Low tire pressure warning display	Based on the received low tire pressure warning display signal, displays a warning that the tire internal pressure is low.	Low tire pressure warning con- trol unit
AWD clutch high temperature warning display	Based on the received AWD clutch high tempera- ture warning display signal, displays a warning that the AWD clutch temperature is high.	AWD control unit
Front/rear tire size discrepan- cy warning display	Based on the received front/rear tire size discrep- ancy warning display signal, displays a warning that there is a difference between front and rear tire speed.	AWD control unit
Transmission system warning display	Based on the received transmission system warning display signal, displays a warning that a malfunction is present in the transmission sys- tem.	тсм
Tire pressure monitoring sys- tem warning display	Based on the received tire pressure monitoring system warning display signal, displays a warning that an abnormality is present in the tire pressure warning system.	Low tire pressure warning con- trol unit
AWD system warning display	Based on the received AWD system warning dis- play signal, displays a warning that a malfunction is present in the AWD system.	AWD control unit

Information display

#### < SYSTEM DESCRIPTION >

	System	Description	Signal source	^
	Anti-lock braking system (ABS) warning display	Based on the received ABS warning display sig- nal, displays a warning that a malfunction has oc- curred to ABS.	ABS actuator and electric unit (control unit)	A
	Vehicle dynamic control (VDC) system warning dis- play	Based on the received VDC warning display sig- nal, displays a warning that a malfunction is present in VDC.	ABS actuator and electric unit (control unit)	B
	Engine system warning dis- play	Based on the received engine status signal, dis- plays a warning that a malfunction is present in the engine system.	ECM	С
Information display	CRUISE control system warn- ing display	Based on the received ASCD status signal, de- tects the CRUISE system malfunction, and dis- plays a warning that an inspection is necessary.	ECM	D
	Engine oil low pressure warn- ing display	Based on the received oil pressure sensor signal, displays a warning that the engine oil pressure is low.	Oil pressure sensor	E
	Low brake fluid warning dis- play	Based on the received brake fluid level switch sig- nal, displays a warning that the brake fluid is de- creased.	Brake fluid level switch	F
	Reverse warning	Based on the buzzer output signal (reverse warn- ing chime), displays a warning that the shift posi- tion is in R.	ВСМ	G
		Based on the low beam request signal, and LED	Front combination lamp	
	Head lamp warning	headlamp warning signal (LH/RH), displays a warning that a malfunction has occurred to LED headlamp.	ВСМ	Η

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#### < SYSTEM DESCRIPTION >



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#### < SYSTEM DESCRIPTION >

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## **METER SYSTEM : Component Parts Location**

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- Fuel level sensor unit 1. (Sub)
- Front combination lamp RH 4.
- 7. Oil level sensor

- Fuel level sensor unit 2. (Main)
- 5. Oil pressure sensor
- 8. Washer level switch
- Door switch (passenger side) 3.

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- 6. Ambient sensor
- 9. Front combination lamp LH

#### < SYSTEM DESCRIPTION >

10. AWD control unit 11. Brake fluid level switch 12. ABS actuator and electric unit (control unit) 13. Door switch (driver side) 14. TCM 15. Trunk switch 16. Combination meter 17. Combination switch (Lighting switch) 18. Low tire pressure warning control unit 20. BCM 19. Parking brake 21. ECM A. Under rear seat Β. Right side of engine C. Radiator core support (center) D. Oil pan LH upper Ε. Front RH seat under F. Trunk room left back G. Lower instrument panel LH Н. Dashboard side lower (passenger I. Glove box assembly back seat side)

## **METER SYSTEM : Component Description**

Unit	Description
	Based on received signals from each unit, switch, and sensor, controls the following items.
	Speedometer     Tachometer
Combination meter	Engine coolant temperature gauge     Fuel gauge
	Warning lamp     Indicator lamp
	Information display
Fuel level sensor unit	Detects the fuel level in fuel tank using the fuel level sensor unit, and transmits the fuel gauge signal to the combination meter.
Oil pressure sensor	Detects the oil pressure of engine oil, and transmits the oil pressure sensor signal to the combi- nation meter.
	Transmits the following signals to the combination meter via CAN communication.
ECM	Engine speed signal     Engine coolant temperature signal
ECIVI	Fuel consumption monitor signal     Malfunction indicator lamp signal
	Engine status signal     ASCD status signal
	Transmits the following signals to the combination meter via CAN communication.
ABS actuator and electric unit (control unit)	Vehicle speed signal     ABS warning display signal
(	VDC warning display signal
BCM	Transmits signals received from each unit and switch to the combination meter via CAN commu- nication.
	Transmits the following signals to the combination meter via CAN communication.
	Shift position signal     Shift lever position warning display signal
ТСМ	Transmission oil high temperature warning display signal     Transmission clutch high temperature warn- ing display signal
	Transmission system warning display signal     Transmission system check display signal
	Shift lever position check display signal
	Transmits the following signals to the combination meter via CAN communication.
AWD control unit	AWD clutch high temperature warning dis- play signal     AWD system warning display signal
	<ul> <li>Front/rear tire size discrepancy warning dis- play signal</li> </ul>
Low tire pressure warning control unit	Transmits the following signals to the combination meter via CAN communication.
	Run-flat tire warning display signal     Low tire pressure warning display signal
	Tire pressure monitoring system warning dis- play signal

#### < SYSTEM DESCRIPTION >

Unit	[	Description	_
	Transmits the following signals to the combination meter.		
Motor control owitch	• Illumination control switch signal (+)	• Illumination control switch signal (-)	
Meter control switch	Trip A/B reset switch signal	Select switch signal	В
	Enter switch signal		
Brake fluid level switch	Transmits the brake fluid level switch signal	to the combination meter.	
Parking brake switch	Transmits the parking brake switch signal to the combination meter.		
Oil level sensor	Transmits the oil level sensor signal to the	combination meter.	
Washer level switch	Transmits the washer level switch signal to	the combination meter.	D
Ambient sensor	Transmits the ambient sensor signal to the combination meter.		
Front combination lamp LH	Transmits the front combination lamp LH signal to the combination meter.		
Front combination lamp RH	Transmits the front combination lamp RH signal to the combination meter.		

## **SPEEDOMETER**

# SPEEDOMETER : System Diagram



#### **SPEEDOMETER : System Description**

INFOID:000000011488239

- ABS actuator and electric unit (control unit) converts the rectangular wave signal from wheel sensor to the vehicle speed signal, and transmits the signal to the combination meter via CAN communication.
- The combination meter receives the vehicle speed signal from the ABS actuator and electric unit (control Κ unit) via CAN communication, and indicates the vehicle speed.

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#### < SYSTEM DESCRIPTION >

## **SPEEDOMETER : Component Parts Location**

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- 1. Fuel level sensor unit (Sub)
- 4. Front combination lamp RH
- 7. Oil level sensor

- 2. Fuel level sensor unit (Main)
- 5. Oil pressure sensor
- 8. Washer level switch
- 3. Door switch (passenger side)
- 6. Ambient sensor
- 9. Front combination lamp LH

#### < SYSTEM DESCRIPTION >

10.	AWD control unit	11.	Brake fluid level switch	12.	ABS actuator and electric unit (con- trol unit)	А
13.	Door switch (driver side)	14.	ТСМ	15.	Trunk switch	
16.	Combination meter	17.	Combination switch (Lighting switch)	18.	Low tire pressure warning control unit	
19.	Parking brake	20.	BCM	21.	ECM	В
A.	Under rear seat	В.	Right side of engine	C.	Radiator core support (center)	
D.	Oil pan LH upper	E.	Front RH seat under	F.	Trunk room left back	
G.	Lower instrument panel LH	Н.	Dashboard side lower (passenger seat side)	I.	Glove box assembly back	С

# SPEEDOMETER : Component Description

Unit	Des	scription
	Based on received signals from each unit, swit	tch, and sensor, controls the following items.
	Speedometer	Tachometer
Combination meter	Engine coolant temperature gauge	Fuel gauge
	Warning lamp	Indicator lamp
	Information display	
Fuel level sensor unit	Detects the fuel level in fuel tank using the fuel nal to the combination meter.	level sensor unit, and transmits the fuel gauge sig-
Oil pressure sensor	Detects the oil pressure of engine oil, and tran nation meter.	smits the oil pressure sensor signal to the combi-
	Transmits the following signals to the combina	tion meter via CAN communication.
ECM	Engine speed signal	Engine coolant temperature signal
	Fuel consumption monitor signal	<ul> <li>Malfunction indicator lamp signal</li> </ul>
	Engine status signal	ASCD status signal
	Transmits the following signals to the combina	tion meter via CAN communication.
ABS actuator and electric unit	Vehicle speed signal	ABS warning display signal
	VDC warning display signal	
BCM	Transmits signals received from each unit and nication.	switch to the combination meter via CAN commu-
	Transmits the following signals to the combina	tion meter via CAN communication.
	Shift position signal	<ul> <li>Shift lever position warning display signal</li> </ul>
ТСМ	<ul> <li>Transmission oil high temperature warning display signal</li> </ul>	<ul> <li>Transmission clutch high temperature warn- ing display signal</li> </ul>
	• Transmission system warning display signal	Transmission system check display signal
	Shift lever position check display signal	
	Transmits the following signals to the combina	tion meter via CAN communication.
AWD control unit	<ul> <li>AWD clutch high temperature warning dis- play signal</li> </ul>	AWD system warning display signal
	<ul> <li>Front/rear tire size discrepancy warning dis- play signal</li> </ul>	
Low tire pressure warning control unit	Transmits the following signals to the combina	tion meter via CAN communication.
	Run-flat tire warning display signal	<ul> <li>Low tire pressure warning display signal</li> </ul>
	<ul> <li>Tire pressure monitoring system warning dis play signal</li> </ul>	-

#### < SYSTEM DESCRIPTION >

Unit	Description		
	Transmits the following signals to the combination meter.		
Meter control switch	Illumination control switch signal (+)     Illumination control switch signal (-)		
	Trip A/B reset switch signal     Select switch signal		
	Enter switch signal		
Brake fluid level switch	Transmits the brake fluid level switch signal to the combination meter.		
Parking brake switch	Transmits the parking brake switch signal to the combination meter.		
Oil level sensor	Transmits the oil level sensor signal to the combination meter.		
Washer level switch	Transmits the washer level switch signal to the combination meter.		
Ambient sensor	Transmits the ambient sensor signal to the combination meter.		
Front combination lamp LH	Transmits the front combination lamp LH signal to the combination meter.		
Front combination lamp RH	Transmits the front combination lamp RH signal to the combination meter.		

## TACHOMETER

## **TACHOMETER : System Diagram**



## **TACHOMETER : System Description**

- · ECM reads the crankshaft position signal from the crankshaft position sensor, and transmits the engine speed signal to the combination meter via CAN communication.
- The combination meter receives the engine speed signal from ECM via CAN communication, and indicates the engine speed.

#### < SYSTEM DESCRIPTION >

# **TACHOMETER : Component Parts Location**



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- 1. (Sub)
- Front combination lamp RH 4.
- 7. Oil level sensor

- (Main)
- 5. Oil pressure sensor
- 8. Washer level switch
- 6. Ambient sensor
- 9. Front combination lamp LH

#### < SYSTEM DESCRIPTION >

10. AWD control unit 11. Brake fluid level switch 12. ABS actuator and electric unit (control unit) 13. Door switch (driver side) 14. TCM 15. Trunk switch 16. Combination meter 17. Combination switch (Lighting switch) 18. Low tire pressure warning control unit 20. BCM 19. Parking brake 21. ECM A. Under rear seat Β. Right side of engine C. Radiator core support (center) D. Oil pan LH upper Ε. Front RH seat under F. Trunk room left back G. Lower instrument panel LH H. Dashboard side lower (passenger I. Glove box assembly back seat side)

# **TACHOMETER : Component Description**

Unit	Description
	Based on received signals from each unit, switch, and sensor, controls the following items.
	Speedometer     Tachometer
Combination meter	Engine coolant temperature gauge     Fuel gauge
	Warning lamp     Indicator lamp
	Information display
Fuel level sensor unit	Detects the fuel level in fuel tank using the fuel level sensor unit, and transmits the fuel gauge sig- nal to the combination meter.
Oil pressure sensor	Detects the oil pressure of engine oil, and transmits the oil pressure sensor signal to the combi- nation meter.
	Transmits the following signals to the combination meter via CAN communication.
ECM	Engine speed signal     Engine coolant temperature signal
ECIVI	Fuel consumption monitor signal     Malfunction indicator lamp signal
	Engine status signal     ASCD status signal
	Transmits the following signals to the combination meter via CAN communication.
ABS actuator and electric unit (control unit)	Vehicle speed signal     ABS warning display signal
	VDC warning display signal
BCM	Transmits signals received from each unit and switch to the combination meter via CAN commu- nication.
	Transmits the following signals to the combination meter via CAN communication.
	Shift position signal     Shift lever position warning display signal
ТСМ	Transmission oil high temperature warning display signal     Transmission clutch high temperature warn- ing display signal
	Transmission system warning display signal     Transmission system check display signal
	Shift lever position check display signal
	Transmits the following signals to the combination meter via CAN communication.
AWD control unit	<ul> <li>AWD clutch high temperature warning dis- play signal</li> <li>AWD system warning display signal</li> </ul>
	<ul> <li>Front/rear tire size discrepancy warning dis- play signal</li> </ul>
	Transmits the following signals to the combination meter via CAN communication.
Low tire pressure warning control	Run-flat tire warning display signal     Low tire pressure warning display signal
unit	<ul> <li>Tire pressure monitoring system warning dis- play signal</li> </ul>

#### < SYSTEM DESCRIPTION >

Description		
Transmits the following signals to the combination meter.		
Illumination control switch signal (+)	• Illumination control switch signal (-)	
Trip A/B reset switch signal	Select switch signal	E
Enter switch signal		
Transmits the brake fluid level switch signa	I to the combination meter.	
Transmits the parking brake switch signal to the combination meter.		
Transmits the oil level sensor signal to the combination meter.		
Transmits the washer level switch signal to the combination meter.		
Transmits the ambient sensor signal to the combination meter.		
Transmits the front combination lamp LH signal to the combination meter.		
Transmits the front combination lamp RH signal to the combination meter.		
	Transmits the following signals to the comb Illumination control switch signal (+) Trip A/B reset switch signal Enter switch signal Transmits the brake fluid level switch signal Transmits the parking brake switch signal to Transmits the oil level sensor signal to the Transmits the washer level switch signal to Transmits the ambient sensor signal to the Transmits the front combination lamp LH si Transmits the front combination lamp RH s	Description         Transmits the following signals to the combination meter.         Illumination control switch signal (+)       Illumination control switch signal (-)         Trip A/B reset switch signal       Select switch signal         Enter switch signal       Select switch signal         Transmits the brake fluid level switch signal to the combination meter.         Transmits the parking brake switch signal to the combination meter.         Transmits the oil level sensor signal to the combination meter.         Transmits the washer level switch signal to the combination meter.         Transmits the ambient sensor signal to the combination meter.         Transmits the front combination lamp LH signal to the combination meter.         Transmits the front combination lamp RH signal to the combination meter.

## ENGINE COOLANT TEMPERATURE GAUGE

## ENGINE COOLANT TEMPERATURE GAUGE : System Diagram



## ENGINE COOLANT TEMPERATURE GAUGE : System Description

- ECM reads the engine coolant temperature signal from the engine coolant temperature sensor, and transmits the signal to the combination meter via CAN communication.
- The combination meter receives the engine coolant temperature signal from ECM via CAN communication, K and indicates the engine coolant temperature.

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#### < SYSTEM DESCRIPTION >

## ENGINE COOLANT TEMPERATURE GAUGE : Component Parts Location



- 1. Fuel level sensor unit (Sub)
- 4. Front combination lamp RH
- 7. Oil level sensor

- 2. Fuel level sensor unit (Main)
- 5. Oil pressure sensor
- 8. Washer level switch
- 3. Door switch (passenger side)
- 6. Ambient sensor
- 9. Front combination lamp LH

#### < SYSTEM DESCRIPTION >

10.	AWD control unit	11.	Brake fluid level switch	12.	ABS actuator and electric unit (con- trol unit)	A
13.	Door switch (driver side)	14.	ТСМ	15.	Trunk switch	
16.	Combination meter	17.	Combination switch (Lighting switch)	18.	Low tire pressure warning control unit	
19.	Parking brake	20.	BCM	21.	ECM	В
Α.	Under rear seat	В.	Right side of engine	C.	Radiator core support (center)	
D.	Oil pan LH upper	E.	Front RH seat under	F.	Trunk room left back	
G.	Lower instrument panel LH	Н.	Dashboard side lower (passenger seat side)	I.	Glove box assembly back	С

# ENGINE COOLANT TEMPERATURE GAUGE : Component Description

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Unit	Desc	cription
	Based on received signals from each unit, swite	ch, and sensor, controls the following items.
	Speedometer	Tachometer
Combination meter	Engine coolant temperature gauge	Fuel gauge
	Warning lamp	Indicator lamp
	Information display	
Fuel level sensor unit	Detects the fuel level in fuel tank using the fuel level in al to the combination meter.	evel sensor unit, and transmits the fuel gauge sig-
Oil pressure sensor	Detects the oil pressure of engine oil, and trans nation meter.	smits the oil pressure sensor signal to the combi-
	Transmits the following signals to the combination	ion meter via CAN communication.
ECM	Engine speed signal	Engine coolant temperature signal
ECIVI	<ul> <li>Fuel consumption monitor signal</li> </ul>	<ul> <li>Malfunction indicator lamp signal</li> </ul>
	Engine status signal	ASCD status signal
	Transmits the following signals to the combination	ion meter via CAN communication.
ABS actuator and electric unit (control unit)	Vehicle speed signal	ABS warning display signal
	<ul> <li>VDC warning display signal</li> </ul>	
BCM	Transmits signals received from each unit and s nication.	switch to the combination meter via CAN commu-
	Transmits the following signals to the combination	ion meter via CAN communication.
	Shift position signal	Shift lever position warning display signal
ТСМ	<ul> <li>Transmission oil high temperature warning display signal</li> </ul>	<ul> <li>Transmission clutch high temperature warn- ing display signal</li> </ul>
	• Transmission system warning display signal	<ul> <li>Transmission system check display signal</li> </ul>
	Shift lever position check display signal	
	Transmits the following signals to the combination	ion meter via CAN communication.
AWD control unit	<ul> <li>AWD clutch high temperature warning dis- play signal</li> </ul>	AWD system warning display signal
	<ul> <li>Front/rear tire size discrepancy warning dis- play signal</li> </ul>	
Low tire pressure warning control unit	Transmits the following signals to the combination	ion meter via CAN communication.
	Run-flat tire warning display signal	<ul> <li>Low tire pressure warning display signal</li> </ul>
	<ul> <li>Tire pressure monitoring system warning dis- play signal</li> </ul>	

#### < SYSTEM DESCRIPTION >

Unit	Description		
	Transmits the following signals to the combination meter.		
Meter control switch	Illumination control switch signal (+)     Illumination control switch signal (-)		
	Trip A/B reset switch signal     Select switch signal		
	Enter switch signal		
Brake fluid level switch	Transmits the brake fluid level switch signal to the combination meter.		
Parking brake switch	Transmits the parking brake switch signal to the combination meter.		
Oil level sensor	Transmits the oil level sensor signal to the combination meter.		
Washer level switch	Transmits the washer level switch signal to the combination meter.		
Ambient sensor	Transmits the ambient sensor signal to the combination meter.		
Front combination lamp LH	Transmits the front combination lamp LH signal to the combination meter.		
Front combination lamp RH	Transmits the front combination lamp RH signal to the combination meter.		

## FUEL GAUGE

## FUEL GAUGE : System Diagram

Fuel level sensor unit (sub) M Fuel level sensor unit (main)	Combination meter	
		JPNIA1143GB

## FUEL GAUGE : System Description

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#### CONTROL OUTLINE

The combination meter reads the fuel level sensor signal (resistance value) from the fuel level sensor unit, and indicates the fuel level to the fuel gauge.

#### **REFUEL CONTROL**

When the ignition switch is turned from OFF to ON, or when all the following conditions are met, it performs a control to move the fuel gauge pointer faster than normal.

- Ignition switch ON
- Vehicle stop status
- Fuel level fluctuation is  $15 \ell$  (4 US gal, 3-1/4 lmp gal) or more.

#### < SYSTEM DESCRIPTION >

## FUEL GAUGE : Component Parts Location



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- 1. (Sub)
- Front combination lamp RH 4.
- 7. Oil level sensor

- Fuel level sensor unit (Main)
- 5. Oil pressure sensor
- 8. Washer level switch
- 3. Door switch (passenger side)
- 6. Ambient sensor
- 9. Front combination lamp LH

#### < SYSTEM DESCRIPTION >

10. AWD control unit 11. Brake fluid level switch 12. ABS actuator and electric unit (control unit) 13. Door switch (driver side) 14. TCM 15. Trunk switch 16. Combination meter 17. Combination switch (Lighting switch) 18. Low tire pressure warning control unit 20. BCM 19. Parking brake 21. ECM A. Under rear seat Β. Right side of engine C. Radiator core support (center) D. Oil pan LH upper Ε. Front RH seat under F. Trunk room left back G. Lower instrument panel LH H. Dashboard side lower (passenger I. Glove box assembly back seat side)

# FUEL GAUGE : Component Description

Unit	Description
	Based on received signals from each unit, switch, and sensor, controls the following items.
	Speedometer     Tachometer
Combination meter	Engine coolant temperature gauge     Fuel gauge
	Warning lamp     Indicator lamp
	Information display
Fuel level sensor unit	Detects the fuel level in fuel tank using the fuel level sensor unit, and transmits the fuel gauge signal to the combination meter.
Oil pressure sensor	Detects the oil pressure of engine oil, and transmits the oil pressure sensor signal to the combi- nation meter.
	Transmits the following signals to the combination meter via CAN communication.
ECM	Engine speed signal     Engine coolant temperature signal
ECIVI	Fuel consumption monitor signal     Malfunction indicator lamp signal
	Engine status signal     ASCD status signal
	Transmits the following signals to the combination meter via CAN communication.
ABS actuator and electric unit (control unit)	Vehicle speed signal     ABS warning display signal
	VDC warning display signal
BCM	Transmits signals received from each unit and switch to the combination meter via CAN commu- nication.
	Transmits the following signals to the combination meter via CAN communication.
	Shift position signal     Shift lever position warning display signal
ТСМ	Transmission oil high temperature warning display signal     Transmission clutch high temperature warn- ing display signal
	Transmission system warning display signal     Transmission system check display signal
	Shift lever position check display signal
	Transmits the following signals to the combination meter via CAN communication.
AWD control unit	<ul> <li>AWD clutch high temperature warning dis- play signal</li> <li>AWD system warning display signal</li> </ul>
	<ul> <li>Front/rear tire size discrepancy warning dis- play signal</li> </ul>
Low tire pressure warning control unit	Transmits the following signals to the combination meter via CAN communication.
	Run-flat tire warning display signal     Low tire pressure warning display signal
	Tire pressure monitoring system warning dis- play signal

#### < SYSTEM DESCRIPTION >

Unit	Description				
	Transmits the following signals to the combination meter.				
Meter control switch	Illumination control switch signal (+)     Illumination control switch signal (-)				
	Trip A/B reset switch signal     Select switch signal	В			
	Enter switch signal				
Brake fluid level switch	Transmits the brake fluid level switch signal to the combination meter.				
Parking brake switch	Transmits the parking brake switch signal to the combination meter.				
Oil level sensor	Transmits the oil level sensor signal to the combination meter.				
Washer level switch	Transmits the washer level switch signal to the combination meter.				
Ambient sensor	Transmits the ambient sensor signal to the combination meter.				
Front combination lamp LH	Transmits the front combination lamp LH signal to the combination meter.				
Front combination lamp RH	Transmits the front combination lamp RH signal to the combination meter.				

# ODO/TRIP METER

# ODO/TRIP METER : System Diagram



## **ODO/TRIP METER : System Description**

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- ABS actuator control unit reads the rectangular wave signal received from wheel sensor, and transmits the vehicle speed signal to the combination meter via CAN communication.
- The combination meter receives the vehicle speed signal from the ABS actuator and electric unit (control kunit) via CAN communication, then calculates and displays the travel distance.

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#### < SYSTEM DESCRIPTION >

## **ODO/TRIP METER : Component Parts Location**



- 1. Fuel level sensor unit (Sub)
- 4. Front combination lamp RH
- 7. Oil level sensor

- 2. Fuel level sensor unit (Main)
- 5. Oil pressure sensor
- 8. Washer level switch
- 3. Door switch (passenger side)
- 6. Ambient sensor
- 9. Front combination lamp LH

#### < SYSTEM DESCRIPTION >

10.	AWD control unit	11.	Brake fluid level switch	12.	ABS actuator and electric unit (con- trol unit)	А
13.	Door switch (driver side)	14.	ТСМ	15.	Trunk switch	
16.	Combination meter	17.	Combination switch (Lighting switch)	18.	Low tire pressure warning control unit	
19.	Parking brake	20.	BCM	21.	ECM	В
Α.	Under rear seat	В.	Right side of engine	C.	Radiator core support (center)	
D.	Oil pan LH upper	E.	Front RH seat under	F.	Trunk room left back	
G.	Lower instrument panel LH	Н.	Dashboard side lower (passenger seat side)	I.	Glove box assembly back	С

# ODO/TRIP METER : Component Description

Unit	Desc	cription			
	Based on received signals from each unit, swite	ch, and sensor, controls the following items.			
	Speedometer	Tachometer			
Combination meter	Engine coolant temperature gauge	Fuel gauge			
	Warning lamp	Indicator lamp			
	Information display				
Fuel level sensor unit	Detects the fuel level in fuel tank using the fuel level sensor unit, and transmits the fuel gauge sig- nal to the combination meter.				
Oil pressure sensor	Detects the oil pressure of engine oil, and trans nation meter.	mits the oil pressure sensor signal to the combi-			
	Transmits the following signals to the combination	ion meter via CAN communication.			
FOM	Engine speed signal	Engine coolant temperature signal			
ECIVI	Fuel consumption monitor signal	Malfunction indicator lamp signal			
	Engine status signal	ASCD status signal			
	Transmits the following signals to the combination	ion meter via CAN communication.			
ABS actuator and electric unit	Vehicle speed signal	ABS warning display signal			
	VDC warning display signal				
BCM	Transmits signals received from each unit and switch to the combination meter via CAN commu- nication.				
	Transmits the following signals to the combination	ion meter via CAN communication.			
	Shift position signal	Shift lever position warning display signal			
ТСМ	<ul> <li>Transmission oil high temperature warning display signal</li> </ul>	<ul> <li>Transmission clutch high temperature warn- ing display signal</li> </ul>			
	• Transmission system warning display signal	<ul> <li>Transmission system check display signal</li> </ul>			
	Shift lever position check display signal				
	Transmits the following signals to the combination	ion meter via CAN communication.			
AWD control unit	<ul> <li>AWD clutch high temperature warning dis- play signal</li> </ul>	AWD system warning display signal			
	<ul> <li>Front/rear tire size discrepancy warning dis- play signal</li> </ul>				
	Transmits the following signals to the combination	ion meter via CAN communication.			
Low tire pressure warning control	Run-flat tire warning display signal	Low tire pressure warning display signal			
unit	<ul> <li>Tire pressure monitoring system warning dis- play signal</li> </ul>				

#### < SYSTEM DESCRIPTION >

Unit	Description					
	Transmits the following signals to the combination meter.					
Meter control switch	Illumination control switch signal (+)     Illumination control switch signal (-)					
	Trip A/B reset switch signal     Select switch signal					
	Enter switch signal					
Brake fluid level switch	Transmits the brake fluid level switch signal to the combination meter.					
Parking brake switch	Transmits the parking brake switch signal to the combination meter.					
Oil level sensor	Transmits the oil level sensor signal to the combination meter.					
Washer level switch	Transmits the washer level switch signal to the combination meter.					
Ambient sensor	Transmits the ambient sensor signal to the combination meter.					
Front combination lamp LH	Transmits the front combination lamp LH signal to the combination meter.					
Front combination lamp RH	Transmits the front combination lamp RH signal to the combination meter.					

## SHIFT POSITION INDICATOR

## SHIFT POSITION INDICATOR : System Diagram



## SHIFT POSITION INDICATOR : System Description

INFOID:000000011488259

- The combination meter receives the shift position signal from TCM via CAN communication, and displays the shift position to the shift position indicator.
- The combination meter receives the shift position signal from TCM via CAN communication. If the status does not allow a shift change, it blinks the shift position indicator.

#### < SYSTEM DESCRIPTION >

# SHIFT POSITION INDICATOR : Component Parts Location

INFOID:000000011488260

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- 1. (Sub)
- Front combination lamp RH 4.
- 7. Oil level sensor

- (Main)
- Oil pressure sensor 5.
- 8. Washer level switch
- 6. Ambient sensor
- 9. Front combination lamp LH

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#### < SYSTEM DESCRIPTION >

10.	AWD control unit	11.	Brake fluid level switch	12.	ABS actuator and electric unit (con- trol unit)
13.	Door switch (driver side)	14.	ТСМ	15.	Trunk switch
16.	Combination meter	17.	Combination switch (Lighting switch)	18.	Low tire pressure warning control unit
19.	Parking brake	20.	BCM	21.	ECM
Α.	Under rear seat	В.	Right side of engine	C.	Radiator core support (center)
D.	Oil pan LH upper	Ε.	Front RH seat under	F.	Trunk room left back
G.	Lower instrument panel LH	Н.	Dashboard side lower (passenger	I.	Glove box assembly back

# SHIFT POSITION INDICATOR : Component Description

seat side)

Unit	Description					
	Based on received signals from each unit, switch	h, and sensor, controls the following items.				
	Speedometer	Tachometer				
Combination meter	Engine coolant temperature gauge	Fuel gauge				
	Warning lamp	Indicator lamp				
	Information display					
Fuel level sensor unit	Detects the fuel level in fuel tank using the fuel le nal to the combination meter.	Detects the fuel level in fuel tank using the fuel level sensor unit, and transmits the fuel gauge signal to the combination meter.				
Oil pressure sensor	Detects the oil pressure of engine oil, and transr nation meter.	nits the oil pressure sensor signal to the combi-				
	Transmits the following signals to the combination	on meter via CAN communication.				
ECM	Engine speed signal	Engine coolant temperature signal				
ECIVI	<ul> <li>Fuel consumption monitor signal</li> </ul>	<ul> <li>Malfunction indicator lamp signal</li> </ul>				
	Engine status signal	ASCD status signal				
	Transmits the following signals to the combination	on meter via CAN communication.				
ABS actuator and electric unit (control unit)	Vehicle speed signal	ABS warning display signal				
()	VDC warning display signal					
BCM	Transmits signals received from each unit and switch to the combination meter via CAN commu- nication.					
	Transmits the following signals to the combination	on meter via CAN communication.				
	Shift position signal	Shift lever position warning display signal				
ТСМ	<ul> <li>Transmission oil high temperature warning display signal</li> </ul>	<ul> <li>Transmission clutch high temperature warn- ing display signal</li> </ul>				
	Transmission system warning display signal	Transmission system check display signal				
	Shift lever position check display signal					
	Transmits the following signals to the combination	on meter via CAN communication.				
AWD control unit	AWD clutch high temperature warning dis- play signal	AWD system warning display signal				
	Front/rear tire size discrepancy warning dis- play signal					
	Transmits the following signals to the combination	on meter via CAN communication.				
Low tire pressure warning control	Run-flat tire warning display signal	<ul> <li>Low tire pressure warning display signal</li> </ul>				
unit	Tire pressure monitoring system warning dis- play signal					

#### < SYSTEM DESCRIPTION >

Unit	Description			
	Transmits the following signals to the combination meter.	A		
	Illumination control switch signal (+)     Illumination control switch signal (-)			
Meter control switch	Trip A/B reset switch signal     Select switch signal	В		
	Enter switch signal			
Brake fluid level switch	Transmits the brake fluid level switch signal to the combination meter.			
Parking brake switch	Transmits the parking brake switch signal to the combination meter.	С		
Oil level sensor	Transmits the oil level sensor signal to the combination meter.			
Washer level switch	Transmits the washer level switch signal to the combination meter.	D		
Ambient sensor	Transmits the ambient sensor signal to the combination meter.			
Front combination lamp LH	Transmits the front combination lamp LH signal to the combination meter.			
Front combination lamp RH	Transmits the front combination lamp RH signal to the combination meter.	Ε		
OIL PRESSURE WAF	RNING LAMP			
	NING LAMP : System Diagram	F		
		G		
Oil p	ressure sensor Combination meter	Н		

## OIL PRESSURE WARNING LAMP : System Description

#### OIL PRESSURE WARNING LAMP

#### **Control Outline**

The combination meter reads the oil pressure sensor signal from oil pressure sensor, and illuminates/turns off the oil pressure warning lamp.

#### NOTE:

The display of engine oil pressure warning on the information display is shown/turned off simultaneously with the illumination/turning off of the oil pressure warning lamp.

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#### < SYSTEM DESCRIPTION >

## OIL PRESSURE WARNING LAMP : Component Parts Location

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- 1. Fuel level sensor unit (Sub)
- 4. Front combination lamp RH
- 7. Oil level sensor

- 2. Fuel level sensor unit (Main)
- 5. Oil pressure sensor
- 8. Washer level switch
- 3. Door switch (passenger side)
- 6. Ambient sensor
- 9. Front combination lamp LH

#### < SYSTEM DESCRIPTION >

10.	AWD control unit	11.	Brake fluid level switch	12.	ABS actuator and electric unit (con- trol unit)	А
13.	Door switch (driver side)	14.	ТСМ	15.	Trunk switch	
16.	Combination meter	17.	Combination switch (Lighting switch)	18.	Low tire pressure warning control unit	
19.	Parking brake	20.	BCM	21.	ECM	В
Α.	Under rear seat	В.	Right side of engine	C.	Radiator core support (center)	
D.	Oil pan LH upper	E.	Front RH seat under	F.	Trunk room left back	
G.	Lower instrument panel LH	Н.	Dashboard side lower (passenger seat side)	I.	Glove box assembly back	С

# OIL PRESSURE WARNING LAMP : Component Description

Unit	Descr	iption				
	Based on received signals from each unit, switch	n, and sensor, controls the following items.				
	Speedometer	Tachometer				
Combination meter	Engine coolant temperature gauge	• Fuel gauge				
	Warning lamp	Indicator lamp				
	Information display					
Fuel level sensor unit	Detects the fuel level in fuel tank using the fuel le nal to the combination meter.	Detects the fuel level in fuel tank using the fuel level sensor unit, and transmits the fuel gauge signal to the combination meter.				
Oil pressure sensor	Detects the oil pressure of engine oil, and transmotion meter.	nits the oil pressure sensor signal to the combi-				
	Transmits the following signals to the combination	on meter via CAN communication.				
FCM	Engine speed signal	Engine coolant temperature signal				
	Fuel consumption monitor signal	Malfunction indicator lamp signal				
	Engine status signal	ASCD status signal				
	Transmits the following signals to the combination	on meter via CAN communication.				
ABS actuator and electric unit (control unit)	Vehicle speed signal	ABS warning display signal				
	<ul> <li>VDC warning display signal</li> </ul>					
BCM	Transmits signals received from each unit and switch to the combination meter via CAN commu- nication.					
	Transmits the following signals to the combination	on meter via CAN communication.				
	Shift position signal	Shift lever position warning display signal				
ТСМ	<ul> <li>Transmission oil high temperature warning display signal</li> </ul>	<ul> <li>Transmission clutch high temperature warn- ing display signal</li> </ul>				
	Transmission system warning display signal	Transmission system check display signal				
	Shift lever position check display signal					
	Transmits the following signals to the combination	on meter via CAN communication.				
AWD control unit	<ul> <li>AWD clutch high temperature warning dis- play signal</li> </ul>	AWD system warning display signal				
	<ul> <li>Front/rear tire size discrepancy warning dis- play signal</li> </ul>					
	Transmits the following signals to the combination	on meter via CAN communication.				
Low tire pressure warning control	Run-flat tire warning display signal	Low tire pressure warning display signal				
unit	<ul> <li>Tire pressure monitoring system warning dis- play signal</li> </ul>					

#### < SYSTEM DESCRIPTION >

Unit	Description				
	Transmits the following signals to the combination meter.				
Meter control switch	Illumination control switch signal (+)     Illumination control switch signal (-)				
	Trip A/B reset switch signal     Select switch signal				
	Enter switch signal				
Brake fluid level switch	Transmits the brake fluid level switch signal to the combination meter.				
Parking brake switch	Transmits the parking brake switch signal to the combination meter.				
Oil level sensor	Transmits the oil level sensor signal to the combination meter.				
Washer level switch	Transmits the washer level switch signal to the combination meter.				
Ambient sensor	Transmits the ambient sensor signal to the combination meter.				
Front combination lamp LH	Transmits the front combination lamp LH signal to the combination meter.				
Front combination lamp RH	Transmits the front combination lamp RH signal to the combination meter.				

# METER ILLUMINATION CONTROL

## METER ILLUMINATION CONTROL : System Diagram



## METER ILLUMINATION CONTROL : System Description

#### METER ILLUMINATION CONTROL FUNCTION

Every time when the illumination control switch (1) is pressed, the illuminance of meter illumination can be adjusted in 22 steps. (Illuminance can be adjusted both in daytime and nighttime modes.)



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### < SYSTEM DESCRIPTION >

# METER ILLUMINATION CONTROL : Component Parts Location

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- 1. (Sub)
- Front combination lamp RH 4.
- 7. Oil level sensor

- (Main)
- Oil pressure sensor 5.
- 8. Washer level switch
- 6. Ambient sensor
- 9. Front combination lamp LH

### < SYSTEM DESCRIPTION >

10.	AWD control unit	11.	Brake fluid level switch	12.	ABS actuator and electric unit (con- trol unit)
13.	Door switch (driver side)	14.	ТСМ	15.	Trunk switch
16.	Combination meter	17.	Combination switch (Lighting switch)	18.	Low tire pressure warning control unit
19.	Parking brake	20.	BCM	21.	ECM
Α.	Under rear seat	В.	Right side of engine	C.	Radiator core support (center)
D.	Oil pan LH upper	E.	Front RH seat under	F.	Trunk room left back
G.	Lower instrument panel LH	H.	Dashboard side lower (passenger seat side)	I.	Glove box assembly back

# METER ILLUMINATION CONTROL : Component Description

INFOID:000000011488269

Unit	Description				
	Based on received signals from each unit, switch, and sensor, controls the following items.				
	Speedometer     Tachometer				
Combination meter	Engine coolant temperature gauge     Fuel gauge				
	Warning lamp     Indicator lamp				
	Information display				
Fuel level sensor unit	Detects the fuel level in fuel tank using the fuel level sensor unit, and transmits the fuel gauge sig- nal to the combination meter.				
Oil pressure sensor	Detects the oil pressure of engine oil, and transmits the oil pressure sensor signal to the combi- nation meter.				
	Transmits the following signals to the combination meter via CAN communication.				
ECM	Engine speed signal     Engine coolant temperature signal				
ECIVI	Fuel consumption monitor signal     Malfunction indicator lamp signal				
	Engine status signal     ASCD status signal				
	Transmits the following signals to the combination meter via CAN communication.				
ABS actuator and electric unit (control unit)	Vehicle speed signal     ABS warning display signal				
	VDC warning display signal				
BCM	Transmits signals received from each unit and switch to the combination meter via CAN communication.				
	Transmits the following signals to the combination meter via CAN communication.				
	Shift position signal     Shift lever position warning display signal				
ТСМ	Transmission oil high temperature warning display signal     Transmission clutch high temperature warn- ing display signal				
	Transmission system warning display signal     Transmission system check display signal				
	Shift lever position check display signal				
	Transmits the following signals to the combination meter via CAN communication.				
AWD control unit	<ul> <li>AWD clutch high temperature warning dis- play signal</li> <li>AWD system warning display signal</li> </ul>				
	<ul> <li>Front/rear tire size discrepancy warning dis- play signal</li> </ul>				
	Transmits the following signals to the combination meter via CAN communication.				
Low tire pressure warning control	Run-flat tire warning display signal     Low tire pressure warning display signal				
unit	<ul> <li>Tire pressure monitoring system warning dis- play signal</li> </ul>				

#### < SYSTEM DESCRIPTION >

Unit	Description		
	Transmits the following signals to the combination meter.	- A	
Motor control switch	Illumination control switch signal (+)     Illumination control switch signal (-)		
	Trip A/B reset switch signal     Select switch signal	В	
	Enter switch signal		
Brake fluid level switch	Transmits the brake fluid level switch signal to the combination meter.		
Parking brake switch	Transmits the parking brake switch signal to the combination meter.		
Oil level sensor	Transmits the oil level sensor signal to the combination meter.		
Washer level switch	Transmits the washer level switch signal to the combination meter.		
Ambient sensor	Transmits the ambient sensor signal to the combination meter.		
Front combination lamp LH	Transmits the front combination lamp LH signal to the combination meter.		
Front combination lamp RH	Transmits the front combination lamp RH signal to the combination meter.	E	

# **INFORMATION DISPLAY**

# INFORMATION DISPLAY : System Diagram



# **INFORMATION DISPLAY : System Description**

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#### DESCRIPTION

- The combination meter inputs the information required to control the operation of information display by using the communication signals and others from each unit.
- The combination meter integrates the drive computer function, and performs the warning display/information display by using the signals received from each unit, sensor, and switch.
- When the enter switch signal or select switch signal is received, the combination meter can check, change screens, perform setting, or reset the warning, indication, information, and setting on the information display.

#### INSTANTANEOUS FUEL CONSUMPTION

**Control Outline** 

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#### < SYSTEM DESCRIPTION >

- The combination meter receives the fuel consumption monitor signal from ECM and the vehicle speed signal from the ABS actuator control unit via CAN communication.
- Based on the fuel consumption monitor signal and vehicle speed signal that are received via CAN communication, the combination meter calculates the instantaneous fuel consumption, and displays the result.

#### **VEHICLE SPEED**

**Control Outline** 

- The combination meter receives the vehicle speed signal from the ABS actuator and electric unit (control unit) via CAN communication.
- Based on the vehicle speed signal received via CAN communication, the combination meter displays the vehicle speed.

#### CRUISE CONTROL SYSTEM STATUS

Control Outline

- The combination meter receives the ASCD status signal from ECM via CAN communication.
- Based on the ASCD status signal received via CAN communication, the combination meter displays the CRUISE control system setting status.

#### NOTE:

When the CRUISE control system is OFF, the CRUISE control system status is not displayed.

#### AVERAGE FUEL CONSUMPTION

**Control Outline** 

- The combination meter receives the fuel consumption monitor signal from ECM and the vehicle speed signal from the ABS actuator control unit via CAN communication.
- Based on the fuel consumption monitor signal and vehicle speed signal that are received via CAN communication, the combination meter calculates the average fuel consumption, and displays the result.
- The average fuel consumption displayed on the information display is updated at approximately 30-second intervals.

#### NOTE:

"-----" is displayed for approximately 30 seconds just after the reset operation and after the ignition switch is OFF  $\rightarrow$  ON. It is displayed simultaneously until the vehicle is driven approximately 500 m (0.3 mile).

#### AVERAGE VEHICLE SPEED

**Control Outline** 

- The combination meter receives the vehicle speed signal from the ABS actuator and electric unit (control unit) via CAN communication.
- Based on the vehicle speed signal received via CAN communication and on the travel time measured in combination meter, the combination meter calculates the average vehicle speed, and displays the result.
- The average vehicle speed displayed on the information display is updated at approximately 30-second intervals.

#### NOTE:

"-----" is displayed for 30 seconds just after the reset operation and after the ignition switch is OFF  $\rightarrow$  ON. It is displayed simultaneously until the vehicle is driven approximately 500 m (0.3 mile).

#### TRAVEL TIME

Control Outline

The combination meter measures and displays travel time (ignition switch ON time).

#### TRAVEL DISTANCE

Control Outline

The combination meter receives the vehicle speed signal from the ABS actuator and electric unit (control unit) via CAN communication, then calculates and displays the travel distance.

#### POSSIBLE DRIVING DISTANCE

Control Outline

- The combination meter receives the fuel consumption monitor signal from ECM and the vehicle speed signal from the ABS actuator control unit via CAN communication.
- Based on the signal received via CAN communication and on the fuel level sensor signal received from the fuel level sensor unit, the combination meter calculates the possible driving distance, and displays the result.

#### < SYSTEM DESCRIPTION >

#### NOTE:

- -" is displayed for 30 seconds after the ignition switch is OFF  $\rightarrow$  ON. It is displayed simultaneously until the vehicle is driven approximately 500 m (0.3 mile).
- The indicated values may not match each other when refueling with the ignition switch ON. Refer to MWI-24. "FUEL GAUGE : System Description".

#### AMBIENT AIR TEMPERATURE

- Combination meter calculates outside air temperature based on the signal received from ambient sensor. and displays the result on information display.
- · Combination meter corrects the indicated temperature using ignition switch signal, ambient sensor signal and vehicle speed signal.

#### Correction Process (Right after ignition switch is turned ON)

D The detected temperature by ambient sensor is displayed when the vehicle enters in both of the following condition.

- When the detected temperature is higher than the indicated temperature on information display.
- When the duration of ignition switch OFF to ON is long.
- The last indicated temperature is displayed when the vehicle enters in either of the following conditions.
- When the detected temperature by ambient sensor is lower than the indicated temperature on information display.
- When the duration of ignition switch OFF to ON is short.

Correction Process (When the ignition switch is ON)

- The detected temperature by ambient sensor is displayed under the following condition.
- When the detected temperature is lower than the indicated temperature on information display.
- The indicated temperature is not updated under the following condition.
- When the detected temperature by ambient sensor is higher than the indicated temperature on information Н display [at a speed of 20 km/h (12 MPH) or less].

The indicated temperature on information display rises slowly to reach the detected temperature by ambient sensor under the following condition.

 When the detected temperature is higher than the indicated temperature on information display [at a speed of more than 20 km/h (12 MPH)].

The indicated temperature on information display rises to reach the detected temperature by ambient sensor under the following condition.

 When the detected temperature is higher than the indicated temperature on information display [while driving a certain period of time at a speed of more than 20 km/h (12 MPH)].

NOTE:

- "-----" is displayed for 2.5 seconds right after ignition switch is turned ON.
- The input value of ambient sensor, displayed on CONSULT data monitor, is the direct reading before correction. (This means that the reading may not match the indicated temperature on information display.)
- If a battery or combination meter is removed and installed, the detected temperature by ambient sensor is displayed, right after ignition switch is turned ON.
- The indicated temperature may be higher than the actual temperature because of heat radiation from engine or reflection of heat on road surface.

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### < SYSTEM DESCRIPTION >

Setting item list

	Item	5		Setting range	Setting unit (Press and hold for 1 second or more)	Description	
	Up shift			AUTO, OFF, 3000 rpm – 6300 rpm	100 rpm (500 rpm)	The engine speed signal is re- ceived from ECM via CAN commu- nication, and the up-shift indicator can be set to ON/blink/OFF de- pending on the engine speed.	
Alert	Timer			OFF, 0.5HOUR- 6HOUR	30 minutes (60 minutes)	An alarm message is displayed on the information display when the set travel time is reached.	
	ICY			ON/OFF		When the ambient air temperature becomes 3 °C (37 °F) or lower, the ambient sensor signal is received from the ambient sensor and a freeze caution alarm message is displayed on the information dis- play.	
	Oil			Replace- ment dis- tance	No setting – 15000 km No setting – 9500 miles	500 km (1000 km) 250 miles (500 miles)	<ul> <li>An engine oil replacement distance warning is displayed on the information display.</li> <li>When the set distance is reached, a warning is displayed requesting replacement of the engine oil.</li> </ul>
Maintenance		Engine	Remain- ing amount			<ul> <li>The oil level sensor signal is received from oil level sensor, and the engine oil level is displayed in 5 steps.</li> <li>The oil level sensor signal is received from the oil level sensor, and an indication is displayed that the engine oil level is at a normal value.</li> <li>The oil level sensor signal is received from the oil level sensor, and an indication is displayed that the engine oil level sensor, and an indication is displayed that the engine oil level sensor, and an indication is displayed that the engine oil level sensor, and an indication is displayed that the engine oil level is abnormal.</li> </ul>	
		Tr	Trans- mission	Replace- ment dis- tance	No setting – 90000 km No setting – 55500 miles	500 km (1000 km) 250 miles (500 miles)	When the set distance is reached, a warning is displayed requesting replacement of the transmission oil.
	Filter		Replace- ment dis- tance	No setting – 15000 km No setting – 9500 miles	500 km (1000 km) 250 miles (500 miles)	When the set distance is reached, a warning is displayed requesting replacement of the oil filter.	
	Tire	Tire Replace- ment dis- tance		No setting – 30000 km No setting – 18500 miles	500 km (1000 km) 250 miles (500 miles)	When the set distance is reached, a warning is displayed requesting replacement of the tires.	
Ontions	Language	ENGLISH	I/FRANCAIS	_	_	Changing the language setting can be performed.	
Οριιοιο	Unit	METRIC/	US	_	—	Changing the unit setting can be performed.	

**NOTE:** Engine oil level display

#### < SYSTEM DESCRIPTION >

<ul> <li>When the following conditions are satisfied, the combination meter reads the resistance value of oil level sensor, and displays the oil level on the information display. The combination meter does not read the oil level sensor resistance value within 5 minutes after the previous reading of oil level sensor resistance value by the combination meter.</li> <li>1. Turn the ignition switch OFF.</li> <li>2. Wait for 5 minutes or more, then open the driver door.</li> </ul>	A
DOOR OPEN WARNING	
Control Outline The combination meter receives the door switch signal from BCM via CAN communication, then judges and displays the door open warning.	С
TRUNK OPEN WARNING	D
Control Outline The combination meter receives the trunk switch signal from BCM via CAN communication, then judges and displays the trunk open warning.	E
PARKING BRAKE RELEASE WARNING	
Control Outline	F
Based on the vehicle speed signal received from ABS actuator and electric unit (control unit) via CAN commu- nication and on the parking brake switch signal received from parking brake switch, the combination meter judges and displays the parking brake release warning.	G
Warning Operation Condition	
<ul> <li>The system judges that the parking brake is not released when the following conditions are satisfied.</li> <li>Vehicle speed is 7 km/h (4.3 MPH) or higher</li> <li>Parking brake switch ON</li> </ul>	Η
LOW FUEL WARNING	
<ul> <li>Control Outline</li> <li>Using the fuel gauge signal sent from the fuel level sensor unit, the combination meter judges and displays the fuel level warning.</li> </ul>	J
<ul> <li>Warning Operation Condition</li> <li>Fuel level: Approximately 13.5 ℓ (3-5/8 US gal, 3 lmp gal) or less [1.0 ℓ (1/4 US gal, 1/4 lmp gal) fuel residues included].</li> </ul>	K
LOW WASHER FLUID WARNING	
<ul> <li>Control Outline</li> <li>The combination meter receives the washer level switch signal from the washer level switch.</li> <li>Based on the received washer level switch signal, the combination meter displays the low washer fluid warning.</li> </ul>	L
Warning Operation Condition	
<ul> <li>The low washer fluid warning is displayed if the washer level switch remains ON for 180 seconds or more.</li> <li>Even when the washer level switch is turned OFF while displaying the low washer fluid warning, the warning remains displayed if it is within 30 seconds.</li> </ul>	MW
Washer level switch OFF	0

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# ENGINE OIL LEVEL SENSOR ABNORMALITY WARNING

Low washer fluid warning

ON

OFF

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180 sec

or less

**Control Outline** 

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180 sec

or more

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30 sec

or more

30 sec

or less

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#### < SYSTEM DESCRIPTION >

- Under the following conditions, the combination meter displays the oil level sensor warning.
- Oil level sensor is open (resistance value of oil level sensor signal circuit exceeds 20 Ω).
- Oil level sensor is shorted (resistance value of oil level sensor signal circuit is less than 3  $\Omega$ ).

#### SHIFT LEVER POSITION WARNING

#### Control Outline

- The combination meter receives the shift lever position warning display signal from TCM via CAN communication.
- Based on the shift lever position warning display signal received via CAN communication, the combination meter displays the shift lever position warning.

#### SHIFT "P" WARNING

**Control Outline** 

- The combination meter receives the shift lever position check display signal from TCM via CAN communication.
- Based on the shift lever position check display signal received via CAN communication, the combination meter displays the shift "P" warning.

#### TRANSMISSION SYSTEM CHECK

Control Outline

- The combination meter receives the transmission system check display signal from TCM via CAN communication.
- Based on the transmission system check display signal received via CAN communication, the combination meter displays the transmission system check.

#### RUN-FLAT TIRE WARNING

Control Outline

- The combination meter receives the run-flat tire warning display signal from the low tire pressure warning control unit via CAN communication.
- Based on the run-flat tire warning display signal received via CAN communication, the combination meter displays the run-flat tire warning.

#### TRANSMISSION CLUTCH HIGH TEMPERATURE WARNING

#### **Control Outline**

- The combination meter receives the transmission clutch high temperature warning display signal from TCM via CAN communication.
- Based on the transmission clutch high temperature warning display signal received via CAN communication, the combination meter displays the transmission clutch high temperature warning.

#### TRANSMISSION OIL HIGH TEMPERATURE WARNING

- The combination meter receives the transmission oil high temperature warning display signal from TCM via CAN communication.
- Based on the transmission oil high temperature warning display signal received via CAN communication, the combination meter displays the transmission oil high temperature warning.

#### LOW TIRE PRESSURE WARNING

Control Outline

- The combination meter receives the low tire pressure warning display signal from the low tire pressure warning control unit via CAN communication.
- Based on the low tire pressure warning display signal received via CAN communication, the combination meter displays the low tire pressure warning.

#### AWD CLUTCH HIGH TEMPERATURE WARNING

Control Outline

- The combination meter receives the AWD clutch high temperature warning display signal from the AWD control unit via CAN communication.
- Based on the AWD clutch high temperature warning display signal received via CAN communication, the combination meter displays the AWD clutch high temperature warning.

#### FRONT/REAR TIRE SIZE DISCREPANCY WARNING

#### < SYSTEM DESCRIPTION >

#### **Control Outline**

- The combination meter receives the front/rear tire discrepancy warning display signal from the AWD control A unit via CAN communication.
- Based on the front/rear tire discrepancy warning display signal received via CAN communication, the combination meter displays the front/rear tire discrepancy warning.

#### TRANSMISSION SYSTEM WARNING

#### **Control Outline**

- The combination meter receives the transmission system warning display signal from TCM via CAN communication.
- Based on the transmission system warning display signal received via CAN communication, the combination
  meter displays the transmission system warning.

#### TIRE PRESSURE MONITORING SYSTEM WARNING

#### Control Outline

- The combination meter receives the tire pressure monitoring system warning display signal from the low tire pressure warning control unit via CAN communication.
- Based on the tire pressure monitoring system warning display signal received via CAN communication, the combination meter displays the tire pressure monitoring system warning.

#### AWD SYSTEM WARNING

**Control Outline** 

- The combination meter receives the AWD system warning display signal from the AWD control unit via CAN communication.
- Based on the AWD system warning display signal received via CAN communication, the combination meter displays the AWD system warning.

#### ANTI-LOCK BRAKING SYSTEM (ABS) WARNING

Control Outline

- The combination meter receives the ABS warning display signal from the ABS control unit via CAN communication.
- Based on the ABS warning display signal received via CAN communication, the combination meter displays J the anti-lock braking system (ABS) warning.

#### VEHICLE DYNAMIC CONTROL (VDC) SYSTEM WARNING

#### **Control Outline**

- The combination meter receives the VDC warning display signal from the ABS control unit via CAN communication.
- Based on the VDC warning display signal received via CAN communication, the combination meter displays the vehicle dynamic control (VDC) system warning.

#### ENGINE SYSTEM WARNING

**Control Outline** 

- The combination meter receives the engine status signal from ECM via CAN communication.
- Based on the engine status signal received via CAN communication, the combination meter displays the mwi engine system warning.

#### CRUISE CONTROL SYSTEM WARNING

Control Outline

- The combination meter receives the ASCD status signal from ECM via CAN communication.
- Based on the ASCD status signal received via CAN communication, the combination meter displays the cruise control system warning.

#### ENGINE OIL LOW PRESSURE WARNING

**Control Outline** 

- The combination meter receives the oil pressure sensor signal from the oil pressure sensor.
- Based on the received oil pressure sensor signal, the combination meter displays the insufficient engine oil low pressure warning.

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#### < SYSTEM DESCRIPTION >

#### LOW BRAKE FLUID WARNING

**Control Outline** 

- The combination meter receives the brake fluid level switch signal from the brake fluid level switch.
- Based on the received brake fluid level switch signal, the combination meter displays the low brake fluid warning.

#### **REVERSE WARNING**

Control Outline

- The combination meter receives the buzzer output signal (reverse warning chime) from the BCM via CAN communication.
- Based on the received buzzer output signal (reverse warning chime), the combination meter displays the reverse warning.

#### HEADLAMP WARNING

Control Outline

- The combination meter receives the low beam request signal from the BCM via CAN communication.
- The combination meter receives the LED headlamp warning signal (LH/RH) from the front combination lamp (LH/RH).
- Based on the received low beam request signal, and LED headlamp warning signal (LH/RH) the combination meter displays the headlamp warning.

### < SYSTEM DESCRIPTION >

# **INFORMATION DISPLAY : Component Parts Location**



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- 1. (Sub)
- Front combination lamp RH 4.
- 7. Oil level sensor

- (Main)
- Oil pressure sensor 5.
- 8. Washer level switch
- Door switch (passenger side) 3.
- 6. Ambient sensor
- 9. Front combination lamp LH

### < SYSTEM DESCRIPTION >

10. AWD control unit 12. ABS actuator and electric unit (control unit) 13. Door switch (driver side) 14. TCM 15. Trunk switch 16. Combination meter 17. Combination switch (Lighting switch) 18. Low tire pressure warning control unit 19. Parking brake 20. BCM 21. ECM Α. Under rear seat Β. Right side of engine C. Radiator core support (center) D. Oil pan LH upper E. Front RH seat under F. Trunk room left back G. Lower instrument panel LH Н. Dashboard side lower (passenger L. Glove box assembly back

# INFORMATION DISPLAY : Component Description

Unit Description Based on received signals from each unit, switch, and sensor, controls the following items. Speedometer Tachometer Combination meter • Engine coolant temperature gauge · Fuel gauge Warning lamp Indicator lamp · Information display Detects the fuel level in fuel tank using the fuel level sensor unit, and transmits the fuel gauge sig-Fuel level sensor unit nal to the combination meter. Detects the oil pressure of engine oil, and transmits the oil pressure sensor signal to the combi-Oil pressure sensor nation meter. Transmits the following signals to the combination meter via CAN communication. Engine speed signal Engine coolant temperature signal ECM Fuel consumption monitor signal Malfunction indicator lamp signal · ASCD status signal Engine status signal Transmits the following signals to the combination meter via CAN communication. ABS actuator and electric unit · Vehicle speed signal · ABS warning display signal (control unit) VDC warning display signal Transmits signals received from each unit and switch to the combination meter via CAN commu-BCM nication. Transmits the following signals to the combination meter via CAN communication. · Shift position signal · Shift lever position warning display signal Transmission oil high temperature warning · Transmission clutch high temperature warn-TCM display signal ing display signal • Transmission system warning display signal • Transmission system check display signal · Shift lever position check display signal Transmits the following signals to the combination meter via CAN communication. · AWD clutch high temperature warning dis-· AWD system warning display signal AWD control unit play signal Front/rear tire size discrepancy warning display signal Transmits the following signals to the combination meter via CAN communication. Low tire pressure warning control Run-flat tire warning display signal Low tire pressure warning display signal unit · Tire pressure monitoring system warning display signal

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- 11. Brake fluid level switch
- seat side)

#### < SYSTEM DESCRIPTION >

Unit	Description		
	Transmits the following signals to the combination meter.	- A	
Motor control switch	Illumination control switch signal (+)     Illumination control switch signal (-)		
	Trip A/B reset switch signal     Select switch signal	В	
	Enter switch signal		
Brake fluid level switch	Transmits the brake fluid level switch signal to the combination meter.		
Parking brake switch	Transmits the parking brake switch signal to the combination meter.		
Oil level sensor	Transmits the oil level sensor signal to the combination meter.		
Washer level switch	Transmits the washer level switch signal to the combination meter.		
Ambient sensor	Transmits the ambient sensor signal to the combination meter.		
Front combination lamp LH	Transmits the front combination lamp LH signal to the combination meter.		
Front combination lamp RH	Transmits the front combination lamp RH signal to the combination meter.	E	

# UP-SHIFT INDICATOR

# UP-SHIFT INDICATOR : System Diagram



# **UP-SHIFT INDICATOR : System Description**

- The combination meter receives the engine speed signal from ECM and the shift position signal (manual mode range) from TCM via CAN communication, and illuminates/turns off/blinks the up-shift indicator.
- The engine speed at which the up-shift indicator is illuminated/turned off/blinked can be set with the setting function of information display.
- OFF: All of the up-shift indicators do not illuminate.
- 3,000 to 6,300 rpm: Engine speed can be set at which the up-shift indicator (green) is illuminated.
- AUTO: Up-shift indicator (green) does not illuminate. The up-shift indicator (yellow) and up-shift indicator (red) is turned on/off according to the set value.

### **UP-SHIFT INDICATOR (GREEN)**

- Using the setting function of information display, the up-shift warning speed can be set.
- The up-shift indicator (green) is illuminated/turned off/blinked according to the engine speed.
- OFF: If the actual engine speed is lower than the arbitrarily set engine speed, which is 3,000 to 6,300 rpm set by the setting function of information display, by 500 rpm or more, the up-shift warning lamp is turned OFF.

Also, while the up-shift indicator (green) is blinking or illuminated, if the actual engine speed becomes lower than the arbitrarily set engine speed by 600 rpm or more, the up-shift warning lamp is turned OFF.

- Blink: If the actual engine speed is lower than the arbitrarily set engine speed by 500 rpm or more, the upshift indicator (green) is blinked.
- ON: When the actual engine speed exceeds the arbitrarily set engine speed, the up-shift indicator (green) is illuminated.

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Also, while the up-shift indicator (green) is blinking or illuminated, if the actual engine speed becomes lower than the arbitrarily set engine speed by 100 rpm or more, the up-shift indicator is blinked.

#### **UP-SHIFT INDICATOR (YELLOW)**

The up-shift indicator (yellow) is turned ON/OFF according to the engine speed.

- OFF: When the engine speed is less than 6,300 rpm, the up-shift indicator (yellow) does not illuminate. Also, while the up-shift indicator (yellow) is illuminated, when the engine speed becomes 6,200 rpm or lower, the up-shift indicator (yellow) is turned OFF.
- ON: When the engine speed becomes 6,300 rpm or more, the up-shift indicator (yellow) is illuminated.

#### **UP-SHIFT INDICATOR (RED)**

The up-shift indicator (red) is turned ON/OFF according to the engine speed.

- OFF: When the engine speed is less than 6,800 rpm, the up-shift indicator (red) does not illuminate. Also, while the up-shift indicator (red) is illuminated, when the engine speed becomes 6,700 rpm or lower, the up-shift indicator (red) is turned OFF.
- ON: When the engine speed becomes 6,800 rpm or more, the up-shift indicator (red) is illuminated.

### < SYSTEM DESCRIPTION >

# **UP-SHIFT INDICATOR : Component Parts Location**

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- Fuel level sensor unit 1. (Sub)
- Front combination lamp RH 4.
- 7. Oil level sensor

- Fuel level sensor unit 2. (Main)
- 5. Oil pressure sensor
- 8. Washer level switch
- Door switch (passenger side) 3.
- 6. Ambient sensor
- 9. Front combination lamp LH

### < SYSTEM DESCRIPTION >

10. AWD control unit 11. Brake fluid level switch 12. ABS actuator and electric unit (control unit) 13. Door switch (driver side) 14. TCM 15. Trunk switch 16. Combination meter 17. Combination switch (Lighting switch) 18. Low tire pressure warning control unit 19. Parking brake 20. BCM 21. ECM Α. Under rear seat Β. Right side of engine C. Radiator core support (center) D. Oil pan LH upper E. Front RH seat under F. Trunk room left back G. Lower instrument panel LH H. Dashboard side lower (passenger L. Glove box assembly back

# **UP-SHIFT INDICATOR : Component Description**

Unit Description Based on received signals from each unit, switch, and sensor, controls the following items. Speedometer Tachometer Combination meter • Engine coolant temperature gauge · Fuel gauge Warning lamp Indicator lamp · Information display Detects the fuel level in fuel tank using the fuel level sensor unit, and transmits the fuel gauge sig-Fuel level sensor unit nal to the combination meter. Detects the oil pressure of engine oil, and transmits the oil pressure sensor signal to the combi-Oil pressure sensor nation meter. Transmits the following signals to the combination meter via CAN communication. Engine speed signal Engine coolant temperature signal ECM Fuel consumption monitor signal Malfunction indicator lamp signal · Engine status signal · ASCD status signal Transmits the following signals to the combination meter via CAN communication. ABS actuator and electric unit · Vehicle speed signal · ABS warning display signal (control unit) VDC warning display signal Transmits signals received from each unit and switch to the combination meter via CAN commu-BCM nication. Transmits the following signals to the combination meter via CAN communication. · Shift position signal · Shift lever position warning display signal Transmission oil high temperature warning · Transmission clutch high temperature warn-TCM display signal ing display signal • Transmission system warning display signal • Transmission system check display signal · Shift lever position check display signal Transmits the following signals to the combination meter via CAN communication. · AWD clutch high temperature warning dis-· AWD system warning display signal AWD control unit play signal Front/rear tire size discrepancy warning display signal Transmits the following signals to the combination meter via CAN communication. Low tire pressure warning control • Run-flat tire warning display signal Low tire pressure warning display signal unit · Tire pressure monitoring system warning display signal

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seat side)

### < SYSTEM DESCRIPTION >

Unit	C	Description	
	Transmits the following signals to the combi	ination meter.	A
Motor control quitch	• Illumination control switch signal (+)	<ul> <li>Illumination control switch signal (-)</li> </ul>	
	Trip A/B reset switch signal	Select switch signal	В
	Enter switch signal		
Brake fluid level switch	Transmits the brake fluid level switch signal to the combination meter.		
Parking brake switch	Transmits the parking brake switch signal to the combination meter.		
Oil level sensor	Transmits the oil level sensor signal to the combination meter.		
Washer level switch	Transmits the washer level switch signal to the combination meter.		
Ambient sensor	Transmits the ambient sensor signal to the combination meter.		
Front combination lamp LH	Transmits the front combination lamp LH signal to the combination meter.		
Front combination lamp RH	Transmits the front combination lamp RH si	gnal to the combination meter.	E

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# DIAGNOSIS SYSTEM (METER)

**Diagnosis Description** 

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#### SELF-DIAGNOSIS MODE

Using the self-diagnosis mode function, the combination meter can check the drive circuit of each meter (speedometer, tachometer, engine coolant temperature gauge, and fuel gauge), dot matrix (odo/trip meter, information display), and the LCD function of segment (shift position indicator).

#### OPERATION PROCEDURE

1. Turn the ignition switch ON, and switch the tripmeter to "trip A" or "trip B". **NOTE:** 

If the diagnosis function is activated with "trip A" displayed, the mileage on "trip A" is reset to "0000.0". (The same way for "trip B".)

- 2. Turn the ignition switch OFF.
- While pressing the trip A/B reset switch (1), turn the ignition switch ON again.
- 4. Check that the tripmeter displays "0000.0".
- 5. Press the trip A/B reset switch at least 3 times (within 7 seconds after the ignition switch is turned ON).



- 6. The combination meter self-diagnosis mode starts.
  - On the information display (1), the dots of the dot matrix blink alternately.
  - Pointers of speedometer, tachometer, and engine coolant temperature gauge return to zero, and all of the segments of shift position indicator illuminate.



#### NOTE:

- If the self diagnosis mode of combination meter does not start, check the combination meter power supply and ground circuit. When everything is normal, replace the combination meter.
- If any section of the dot matrix on information display or of the segment in shift position indicator does not illuminate, replace the combination meter.

#### < SYSTEM DESCRIPTION >

7. When the trip A/B reset switch is pressed, (while the trip A/B reset switch is pressed) each meter operates.



#### NOTE:

If any meter does not operate, replace the combination meter. The figure is reference.

# CONSULT Function (METER/M&A)

CONSULT can perform the following diagnosis modes by the CAN communication with combination meter.

Diagnosis mode	Description	
Self Diagnosis Result	Displays names of malfunctioning systems judged by and stored in combination meter.	
Data Monitor	Displays combination meter input/output data in real time.	
Warning History	Displays the illumination record of warning lamp and indicator lamp.	

### SELF DIAGNOSTIC RESULT

#### NOTE:

Details of time display

- CRNT: Displays during the current malfunctioning detection.
- PAST: Displays if any previous malfunction is present when the current status is normal. IGN counter
- The IGN counter is displayed on the freeze frame data (FFD).
- The IGN counter indicates the number of times ignition switch is turned ON after the DTC detection.
- The number is 0 when a malfunction is detected now.
- The number increases like  $1 \rightarrow 2 \rightarrow 3 \rightarrow ... 38 \rightarrow 39$  after returning to the normal condition whenever the ignition switch is turned OFF  $\rightarrow$  ON.
- The number is fixed to 39 unit the self-diagnosis results are erased if it is over 39.

Display contents of CONSULT	Diagnostic item is detected if
CAN COMM CIRCUIT [U1000]	Combination meter cannot communicate CAN communication signal for 2 seconds or more.
CONTROL UNIT (CAN) [U1010]	Malfunction is detected during initial diagnosis of combination meter CAN controller.
VEHICLE SPEED [B2205]	Abnormal vehicle speed signal is received from ABS actuator and electric unit (control unit).
ENGINE SPEED [B2267]	ECM continuously transmits abnormal engine speed signal for 2 seconds or more.
WATER TEMP [B2268]	ECM continuously transmits abnormal engine coolant temperature signal for 60 seconds or more.

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#### < SYSTEM DESCRIPTION >

OIL LEV SEN OPEN [B2321]	Signal from oil level sensor is broken (resistance value of oil level sensor exceeds 20 $\Omega$ ).
OIL LEV SEN SHORT [B2322]	Signal from oil level sensor is shorted (resistance value of oil level sensor is less than 3 $\Omega$ ).

#### DATA MONITOR

#### NOTE:

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

Monitor item	MAIN ITEMS	Description
SPEED METER [km/h]	x	Vehicle speed signal value received from ABS actuator and electric unit (control unit) via CAN communication. <b>NOTE:</b> 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. <b>NOTE:</b> 655.35 is displayed when the malfunction signal is received.
ODO OUTPUT [km]		Odometer value transmitted to other units via CAN communication.
TACHO METER [rpm]	×	Engine speed signal value received from ECM via CAN communication. <b>NOTE:</b> 8191.875 is displayed when the malfunction signal is received.
FUEL METER [L]	Х	Fuel level value indicated on combination meter.
W TEMP METER [ <sup>°</sup> C]	x	Engine coolant temperature signal value received from ECM via CAN communication. <b>NOTE:</b> 215 is displayed when the malfunction signal is received.
ABS W/L [On/Off]		ABS warning lamp status judged by the ABS malfunction signal received from ABS actuator and electric unit (control unit) via CAN communication.
VDC/TCS IND [On/Off]		VDC OFF indicator lamp status judged by the VDC OFF indicator lamp signal received from ABS actuator and electric unit (control unit) via CAN communication.
SLIP IND [On/Off]		VDC warning lamp status judged by the VDC warning lamp signal received from ABS ac- tuator and electric unit (control unit) via CAN communication.
BRAKE W/L [On/Off]		Brake warning lamp status judged by the brake warning lamp signal received from ABS actuator and electric unit (control unit) via CAN communication. <b>NOTE:</b> OFF is displayed when the bulb check is operating, when the brake fluid level switch is ON, or when the brake warning lamp is illuminated when the parking brake switch is ON or the brake fluid level switch is ON during the bulb check operation.
DOOR W/L [On/Off]		Door open warning status judged by the door switch signal received from BCM via CAN communication.
HI-BEAM IND [On/Off]		High beam indicator lamp status judged by the high beam request signal received from BCM via CAN communication.
TURN IND [On/Off]		Turn signal indicator lamp status judged by the turn indicator signal received from BCM via CAN communication.
RR FOG IND [Off]		NOTE: This Item is displayed, but cannot be monitored.
OIL W/L [On/Off]		Oil pressure warning lamp status judged by the oil pressure sensor signal received from oil pressure sensor.
LIGHT IND [On/Off]		Tail lamp indicator lamp status judged by the tail lamp request signal received from BCM via CAN communication.
MIL [On/Off]		MIL status judged by the malfunction indicator lamp received from ECM via CAN commu- nication.
CRUISE IND [On/Off]		CRUISE indicator lamp status judged by the ASCD status signal received from ECM via CAN communication.

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#### < SYSTEM DESCRIPTION >

Monitor item	MAIN ITEMS	Description	
SET IND [On/Off]		SET indicator lamp status judged by the ASCD status signal received from ECM via CAN communication.	
ATC/T-AMT W/L [On/Off]		Transmission check warning lamp status judged by the transmission warning light signal received from TCM via CAN communication.	
4WD W/L [On/Off]		AWD warning lamp status judged by the AWD warning lamp signal received from AWD control unit via CAN communication.	
FUEL W/L [On/Off]		Low fuel warning status judged by the fuel level sensor signal received from fuel level sensor unit.	
WASHER W/L [On/Off]		Low washer fluid warning status judged by the washer level switch signal received from washer level switch.	
AIR PRES W/L [On/Off]		Tire pressure warning lamp status judged by the tire pressure warning lamp signal re- ceived from low tire pressure warning control unit via CAN communication.	
KEY G/Y W/L [On/Off]		KEY warning lamp (green/yellow) status judged by the KEY warning lamp signal received from BCM via CAN communication.	
LCD [B&P N, B&P I, ID NG, ROTAT, SFT P, INSRT, BATT, NO KY, OUTKY, LK WNI		Displays status of Intelligent Key system warning detected from meter display signal is re- ceived from BCM via CAN communication.	
SHIFT IND [P/R/N/A1/A2/A3/A4/A5/ A6/M1/M2/M3/M4/M5/ M6]		Shift position status judged by the shift position signal received from TCM via CAN com- munication.	
PKB SW [On/Off]		Parking brake switch status judged by the parking brake switch signal received from park- ing brake switch.	
BUCKLE SW [On/Off]		Seat belt buckle switch (driver side) status judged by the seat belt buckle switch signal (driver side) received from seat belt buckle switch (driver side).	
BRAKE OIL SW [On/Off]		Brake fluid level switch status judged by the brake fluid level switch signal received from brake fluid level switch.	
A/C AMP CONN [On/Off]		A/C auto amp. connection recognition status judged by the A/C auto amp. connection recognition signal received from A/C auto amp.	
ENTER SW [On/Off]		Enter switch status judged by the enter switch signal received from meter control switch.	
SELECT SW [On/Off]		Select switch status judged by the select switch signal received from meter control switch.	
DISTANCE [km]		Possible driving distance value judged by combination meter.	
OUTSIDE TEMP [ <sup>°</sup> C]		Ambient sensor value converted from ambient sensor signal received from ambient sensor. <b>NOTE:</b> This may not match the temperature value indicated on information display. (Because the information display value is a corrected value from the ambient sensor input value.)	
FUEL LOW SIG [On/Off]		Low fuel warning signal status that is output to AV control unit via CAN communication.	
CRANKING SIG [On/Off]		Cranking status judged by the engine status signal received from ECM via CAN commu- nication.	
ST CNT SIG [On/Off]		Starter relay status judged by the starter relay status signal received from BCM via CAN communication.	
BUZZER [On/Off]	Х	Status of buzzer integrated in combination meter judged with buzzer output signal re- ceived from each unit via CAN communication and with warning output condition of com- bination meter.	
ENG OIL TMP [ <sup>°</sup> C]		Engine oil temperature status judged by the engine oil temperature signal received from ECM via CAN communication.	

#### < SYSTEM DESCRIPTION >

Monitor item	MAIN ITEMS	Description	
ENG OIL PRESS [MPa]		Engine oil pressure value judged by the oil pressure sensor signal received from oil pressure sensor.	
TM OIL TMP [ <sup>°</sup> C]		Transmission oil temperature value judged by the transmission oil temperature signal re- ceived from TCM via CAN communication.	
TM OIL PRESS [MPa]		Transmission oil pressure value judged by the transmission oil pressure signal received from TCM via CAN communication.	
A/F RATIO		Air-fuel ratio value judged by the air-fuel ratio signal received from ECM via CAN comm nication.	
BOOST PRESS [kPa]		Boost pressure value judged by the boost pressure signal received from ECM via CAN communication.	
THRTL POSI [%]		Throttle position value judged by the throttle position signal received from ECM via CAN communication.	
TRQ DSTRBT [%]		Front torque distribution rate value judged by the front torque distribution rate signal re- ceived from AWD control unit via CAN communication.	
AMT P SFT [On/Off]		P engagement warning display status judged by the shift lever position check display sig- nal received from TCM via CAN communication.	
AMT SYS CHCK		Transmission system check display status judged by the transmission system check display signal received from TCM via CAN communication.	
AMT SFT POSI [On/Off]		Shift lever position warning display status judged by the shift lever position warning display signal received from TCM via CAN communication.	
AMT OIL TMP H [On/Off]	Transmission oil high temperature warning display status judged by the transmis high temperature warning display signal received from TCM via CAN communication of the temperature warning display signal received from TCM via CAN communication of the temperature warning display signal received from temperature warning display signal		
AMT CL TMP H [On/Off]		Transmission clutch high temperature warning display status judged by the transmission clutch high temperature warning display signal received from TCM via CAN communication.	
AMT CHCK [Off]		NOTE: This Item is displayed, but cannot be monitored.	
AMT MALF [On/Off]		Transmission system warning display status judged by the transmission system warning display signal received from TCM via CAN communication.	
TPMS FLT TIRE [On/Off]		Run-flat tire warning display status judged by the run-flat tire warning display signal re- ceived from low tire pressure warning control unit via CAN communication.	
TPMS PRESS L [On/Off]		Low tire pressure warning display status judged by the low tire pressure warning display signal received from low tire pressure warning control unit via CAN communication.	
TPMS MALF [On/Off]		Tire pressure monitoring system warning display status judged by the tire pressure mon- itoring system warning display signal received from low tire pressure warning control unit via CAN communication.	
4WD CL TMP H [On/Off]		Display status of AWD clutch high temperature warning display signal judged by the AWD clutch high temperature warning display signal received from AWD control unit via CAN communication.	
4WD TIRE CHCK [On/Off]		Display status of front/rear tire size discrepancy warning display judged by the front/rear tire size discrepancy warning display signal received from AWD control unit via CAN communication.	
4WD SYS MALF [On/Off]		Display status of AWD system warning display signal judged by the AWD system warning display signal received from AWD control unit via CAN communication.	
ABS MALF [On/Off]	Display status of anti-lock braking system (ABS) warning display judged by the ABS w ing display signal received from ABS actuator and electric unit (control unit) via CAN of munication.		
VDC MALF [On/Off]		Display status of vehicle dynamic control (VDC) system warning display judged by the VDC system warning display signal received from ABS actuator and electric unit (control unit) via CAN communication.	
ENG SYS CHCK [On/Off]		Display status of engine system warning display judged by the engine status signal re- ceived from ECM via CAN communication.	

#### < SYSTEM DESCRIPTION >

Monitor item	MAIN ITEMS	Description	
ASCD SYS MALF [On/Off]		Display status of cruise control system warning display judged by the ASCD status signal received from ECM via CAN communication.	
ASCD REQ SPD [km]		ASCD set vehicle speed value that is judged by the ASCD status signal received from ECM via CAN communication.	
ASCD STATUS [Off, ASCD]		Display status of ASCD status display judged by the ASCD status signal received from ECM via CAN communication.	
ASCD SPD BLNK [On/Off]		Blinking status of ASCD set vehicle speed that is judged by the ASCD status signal re- ceived from ECM via CAN communication.	
LED LMP R OPEN [On/Off]		Status of front combination lamp RH judged based on LED headlamp (RH) warning sign input from front combination lamp RH.	
LED LMP L OPEN [On/Off]		Status of front combination lamp LH judged based on LED headlamp (LH) warning signal input from front combination lamp LH.	

#### NOTE:

Some items are not available according to vehicle specifications.

#### 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 the brake is applied or the brake fluid level gets low.

#### Display Item

Display Item	Description	
ABS W/L	Lighting history of ABS warning lamp.	V
VDC & TCS OFF W/L	Lighting history of VDC OFF indicator lamp.	
SLIP IND	Lighting history of VDC warning lamp.	
BRAKE W/L	Lighting history of brake warning lamp.	L
DOOR W/L	Lighting history of door open warning indication.	
TRUNK/GLASS HATCH	Lighting history of trunk open warning indication.	
OIL W/L	Lighting history of oil pressure warning lamp.	M
C-ENG W/L	Lighting history of malfunction indicator lamp (MIL).	
CRUISE IND	Lighting history of CRUISE indicator lamp.	MWI
SET IND	Lighting history of SET indicator lamp.	
ATC/T-AMT W/L	Lighting history of transmission warning lamp.	
AT OIL TEMP W/L	Lighting history of transmission oil high-temperature warning.	0
4WD W/L	Lighting history of AWD warning lamp.	
FUEL W/L	Lighting history of low fuel warning.	P
WASHER W/L	Lighting history of low washer fluid warning.	I
TIRE PRESS W/L	Lighting history of tire pressure warning lamp.	
KEY GREEN/YELLOW IND	Lighting history of KEY warning lamp (green/yellow).	
KEY RED W/L	Lighting history of KEY warning lamp (red).	
SFT OPERATION W/L	Lighting history of shift lever position check warning.	

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### < SYSTEM DESCRIPTION >

Display Item	Description	
CHARGE W/L	Lighting history of charge warning lamp.	
OIL LEV LOW	Lighting history of oil level warning.	

#### NOTE:

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

# DTC/CIRCUIT DIAGNOSIS U1000 CAN COMM CIRCUIT

# Description

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CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-board multiplex communication line with high data communication speed and excellent error detection ability. A modern vehicle is equipped with many ECUs, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, 2 control units are connected with 2 communication lines (CAN-L-line and CAN-H-line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

# DTC Logic

INFOID:000000011488281

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### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Diagnostic item is detected if	Probable malfunction location	
U1000	CAN COMM CIRCUIT	Combination meter cannot communicate CAN communication signal for 2 seconds or more	CAN communication system	(

### Diagnosis Procedure

**1.**PERFORM THE SELF-DIAGNOSIS

- 1. Turn the ignition switch ON and wait for 2 seconds or more.
- 2. Check the self diagnosis result of the "METER/M&A".

Is CAN communication system displayed?

- YES >> Refer to LAN-15, "Trouble Diagnosis Flow Chart".
- NO >> Refer to <u>GI-39</u>, "Intermittent Incident".

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# U1010 CONTROL UNIT (CAN)

### Description

Initial diagnosis of combination meter

### DTC Logic

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INFOID:000000011488283

### DTC DETECTION LOGIC

DTC	Display contents of CON- SULT	Diagnostic item is detected if	Probable malfunction location	
U1010	CONTROL UNIT (CAN)	Malfunction is detected during initial diagnosis of combination meter CAN controller	Combination meter	

# **Diagnosis Procedure**

**1.**REPLACE THE COMBINATION METER.

If DTC U1010 is detected, replace the combination meter.

>> INSPECTION END

# **B2205 VEHICLE SPEED**

# Description

The vehicle speed signal is transmitted from the ABS actuator and electric unit (control unit) to the combination meter via CAN communication.

### DTC Logic

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### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Diagnostic item is detected if	Probable malfunction location	[
B2205	VEHICLE SPEED	Abnormal vehicle speed signal is received from ABS actuator and electric unit (control unit) for 2 seconds or more	ABS actuator and electric unit (control unit)	E

### Diagnosis Procedure

# $1. {\tt perform self-diagnosis of abs actuator and control unit}$

Perform Self Diagnostic Result of ABS actuator and electric unit (control unit). Repair or replace the malfunctioning parts.

>> Refer to BRC-133, "DTC No. Index (GT-R certified NISSAN dealer)".

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# **B2267 ENGINE SPEED**

### Description

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#### The engine speed signal is transmitted from ECM to the combination meter via CAN communication.

### DTC Logic

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### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Diagnostic item is detected if	Probable malfunction location
B2267	ENGINE SPEED	ECM continuously transmits abnormal engine speed signal for 2 seconds or more	ECM

# **Diagnosis Procedure**

INFOID:000000011488291

# **1.**PERFORM ECM SELF DIAGNOSIS

Perform Self Diagnostic Result of ECM. Repair or replace the malfunctioning parts.

>> Refer to EC-592, "DTC Index".

### **B2268 WATER TEMP**

# < DTC/CIRCUIT DIAGNOSIS >

# B2268 WATER TEMP

# Description

The coolant temperature is transmitted from ECM to the combination meter via CAN communication.

DTC Logic

INFOID:000000011488293

INFOID:000000011488292

# DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Diagnostic item is detected if	Probable malfunction location	D	
B2268	WATER TEMP	ECM continuously transmits abnormal cool- ant temperature signal for 60 seconds or more	ECM		
Diagnosis Procedure					
<b>1.</b> PERF	1. PERFORM ECM SELF DIAGNOSIS				
Perform Self Diagnostic Result of ECM. Repair or replace the malfunctioning parts.					
	>> Refer to <u>EC-592, "DTC Index"</u> .				

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# B2321, B2322 OIL LEVEL SENSOR

### Description

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The oil level sensor detects the level of engine oil, and then transmits the oil level signal to the combination meter.

### DTC Logic

INFOID:000000011488296

### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Diagnostic item is detected if	Probable malfunction location	
B2321	OIL LEV SEN OPEN	Oil level sensor signal circuit is open. (Resistance value of oil level sensor exceeds 20 $\Omega$ )	20  • Oil level sensor signal circuit	
B2322	OIL LEV SEN SHORT	Oil level sensor signal circuit is shorted. (Resistance value of oil level sensor is less than $3 \Omega$ )	Oil level sensor	

#### NOTE:

When the following conditions are satisfied, the combination meter reads the resistance value of oil level sensor. The combination meter does not read the oil level sensor resistance value within 5 minutes after the previous reading of oil level sensor resistance value by the combination meter.

1. Turn the ignition switch OFF.

2. Wait for 5 minutes or more, then open the driver door.

DTC (B2321: OIL LEV SEN OPEN, B2322: OIL LEV SEN SHORT) is also detected at the timing described above.

### **Diagnosis Procedure**

INFOID:0000000011488297

# 1. CHECK OIL LEVEL SENSOR SIGNAL CIRCUIT

1. Turn the ignition switch OFF.

2. Disconnect the connectors of combination meter and oil level sensor.

3. Check for continuity between the combination meter harness connector and the oil level sensor harness connector.

Combina	Combination meter		Oil level sensor	
Connector	Terminal	Connector Terminal		Continuity
M53	20	F38	3	Existed

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

Combination meter			Continuity
Connector	Terminal	Ground	Continuity
M53	20		Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the harnesses or connectors.

2.CHECK OIL LEVEL SENSOR GROUND CIRCUIT

Check for continuity between the combination meter harness connector and the oil level sensor harness connector.

Combina	Combination meter		Oil level sensor	
Connector	Terminal	Connector Terminal		Continuity
M53	19	F38	1	Existed

Is the inspection result normal?

# B2321, B2322 OIL LEVEL SENSOR

< DTC/CIRCUIT DIAGNOSIS >		
YES >> INSPECTION END NO >> Repair the harnesses o	r connectors.	А
Component Inspection		INFOID:000000011488298
<b>1.</b> CHECK OIL LEVEL SENSOR		В
<ol> <li>Turn the ignition switch OFF.</li> <li>Disconnect the oil level sensor</li> <li>Check the resistance between of</li> </ol>	connector. oil level sensor terminals 1 and 3.	C
Terminal	Resistance value (Ω)	D
1 3	5 - 11	D
Is the inspection result normal?YES>> INSPECTION ENDNO>> Replace the oil level se	nsor.	E
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		MV
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### POWER SUPPLY AND GROUND CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

# POWER SUPPLY AND GROUND CIRCUIT COMBINATION METER

# **COMBINATION METER : Diagnosis Procedure**

INFOID:000000011488299

# 1.CHECK FUSES

Check that the following fuses are not blown:

Power source	Fuse No.
Battery	11
Ignition switch ON or START	4

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the fuse with a new one after repairing the applicable circuit.

# 2. CHECK POWER SUPPLY CIRCUIT

Check the voltage between the combination meter harness connector terminals and the ground.

Terminal No.	Signal name	Ignition switch	Voltage
1	Battery power supply	OFF	Battery voltage
2	Ignition signal	ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harness between the fuse and the combination meter.

3. CHECK GROUND CIRCUIT

1. Turn the ignition switch OFF.

2. Disconnect the combination meter connector.

3. Check for continuity between the combination meter harness connector terminals and the ground.

Combina	Combination meter		Continuity
Connector	Terminal	Ground	Continuity
M52	3	- Existe	Evicted
IVI33	5		Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the harnesses or connectors.

# FUEL LEVEL SENSOR SIGNAL CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# FUEL LEVEL SENSOR SIGNAL CIRCUIT

### Description

Detects the fuel level in fuel tank using the fuel level sensor unit, and transmits the fuel level sensor signal to the combination meter.

# **Component Function Check**

**1.**PERFORM COMPONENT FUNCTION CHECK (1)

- 1. Turn ignition switch OFF.
- Disconnect the connectors of the fuel level sensor unit (sub) and the fuel level sensor unit and fuel pump (main).
- 3. Connect variable resistor between harness connector terminals located on the vehicle side of the fuel level sensor unit (sub) and the fuel level sensor unit and fuel pump (main).

Fuel level sensor unit (sub)		Fuel level sensor unit	and fuel pump (main)
Connector	Terminals	Connector	Terminals
B27	1	B225	3

4. Set variable resistor according to the resistance value shown in the following table and turn ignition switch ON.

Resistance (Ω) <sup>*</sup> (Approx.)	Fuel gauge indication position (Approx.)
Less than 12	F
27	3/4
46	1/2
61	1/4
More than 82	E

\*: Reference resistance values used when the combination meter judges the indication position of the fuel gauge.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Refer to <u>MWI-69</u>, "Diagnosis Procedure".

2. PERFORM COMPONENT FUNCTION CHECK (2)

Check the fuel level sensor unit (sub) and the fuel level sensor unit and fuel pump (main). Refer to <u>MWI-71,</u> "Component Inspection (GT-R certified NISSAN dealer)".

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace the fuel level sensor unit (sub) or the fuel level sensor unit and fuel pump (main). Refer to MWI FL-6, "Removal and Installation (GT-R certified NISSAN dealer)".

### Diagnosis Procedure

### 1.CHECK FUEL LEVEL SENSOR UNIT (SUB) CIRCUIT

1. Turn the ignition switch OFF.

2. Disconnect the connectors of combination meter and fuel level sensor unit (sub).

3. Check for continuity between the combination meter harness connector and the fuel level sensor unit (sub) harness connector.

### **MWI-69**

INFOID:000000011488302

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INFOID:000000011488300

INFOID:000000011488301

# FUEL LEVEL SENSOR SIGNAL CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

Combina	tion meter	Fuel level sensor unit (sub)		Continuity	
Connector	Terminal	Connector Terminal		Continuity	
M53	38	B27	1	Existed	

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

Combination meter			Continuity
Connector Terminal		Ground	Continuity
M53	38		Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the harnesses or connectors.

 $2. {\sf CHECK \ FUEL \ LEVEL \ SENSOR \ UNIT \ (MAIN-SUB) \ CIRCUIT}$ 

1. Disconnect fuel level sensor unit and fuel pump (main) connector.

2. Check for continuity between the fuel level sensor unit (sub) harness connector and the fuel level sensor unit and fuel pump (main) harness connector.

Fuel level ser	nsor unit (sub)	Fuel level sensor unit and fuel pump (main)		Continuity
Connector	Terminal	Connector	Terminal	
B27	2	B225	2	Existed

3. Check for continuity between the fuel level sensor unit (sub) harness connector and the ground.

Fuel level sensor unit (sub)			Continuity
Connector	Terminal	Ground	Continuity
B27	2		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

# 3. CHECK FUEL LEVEL SENSOR UNIT AND FUEL PUMP (MAIN) CIRCUIT

1. Check for continuity between the fuel level sensor unit and fuel pump (main) harness connector and the combination meter harness connector.

Fuel level sensor unit and fuel pump (main)		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	*
B225	3	M53	18	Existed

2. Check for continuity between the fuel level sensor unit and fuel pump (main) harness connector and the ground.

Fuel level sensor unit and fuel pump (main)			Continuity	
Connector	Terminal Ground	Ground		
B225	3		Not existed	

Is the inspection result normal?

YES >> Replace combination meter. Refer to <u>MWI-114, "Removal and Installation"</u>.

NO >> Repair the harnesses or connectors.

# FUEL LEVEL SENSOR SIGNAL CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# Component Inspection (GT-R certified NISSAN dealer)

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# 1.CHECK FUEL LEVEL SENSOR UNIT (MAIN)

Check the resistance value of fuel level sensor unit (main).

- 2 3 Full
- Empty

:Approx. 3.0  $\Omega$ :Approx. 90.0 Ω



#### Standard float position

a near peenen	
Full (A) [mm (in)]	:Approx. 282.2 (11.11)
Empty (B) [mm (in)]	:Approx. 19.2 (0.756)

#### Is the inspection result normal?

YES >> GO TO 2.

>> Replace the fuel level sensor unit (main). NO

# 2.CHECK FUEL LEVEL SENSOR UNIT (SUB)

Check the resistance value of fuel level sensor unit (sub).

1 – 2 Full Empty

:Approx. 3.0  $\Omega$ :Approx. 45.9 Ω



Standard float position	
Full (A) [mm (in)]	:Approx. 29.9 (1.177)
Empty (B) [mm (in)]	:Approx. 218.3 (8.59)

#### Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace the fuel level sensor unit (sub).

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### METER CONTROL SWITCH SIGNAL CIRCUIT

• Illumination control switch signal (-)

· Select switch signal

#### < DTC/CIRCUIT DIAGNOSIS >

# METER CONTROL SWITCH SIGNAL CIRCUIT

### Description

INFOID:000000011488304

INFOID:000000011488305

Transmits the following signals to the combination meter.

- Illumination control switch signal (+)
  - Trip A/B reset switch signal
  - Enter switch signal

### **Diagnosis Procedure**

# 1. CHECK METER CONTROL SWITCH INPUT SIGNAL

- 1. Turn the ignition switch ON.
- 2. Measure voltage between the following terminals of the combination meter.

Terminal No.	Condition	Voltage (Approx.)
23 – 6	When 💏 - switch is pressed	0 V
20 0	Other than the above	5 V
24 – 6	When 💏 + switch is pressed	0 V
	Other than the above	5 V
25 – 6	When trip A/B reset switch is pressed	0 V
	Other than the above	5 V
26 6	When enter switch is pressed	0 V
20 - 0	Other than the above	5 V
27 – 6	When select switch is pressed	0 V
	Other than the above	5 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

# 2. CHECK METER CONTROL SWITCH SIGNAL CIRCUIT

- 1. Turn the ignition switch OFF.
- 2. Disconnect the connectors of combination meter and meter control switch.
- 3. Check for continuity between the combination meter harness connector terminal and the meter control switch harness connector.

Combination meter		Meter control switch		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M53	6	M54	2	Existed
	23		3	
	24		1	
	25		8	
	26		6	
	27		7	

4. Check for continuity between the combination meter harness connector and the ground.
# **METER CONTROL SWITCH SIGNAL CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

Combi	nation motor					
Como			Continuity			
Connector	Ierminal					
	6					
	23	Ground				
M53	24		Not existed			
	25					
	26					
	27					
YES >>   NO >>	NSPECTION END Repair the harnesses	or connector	ſS.			
			SWITCH			
UNIT INS. Turn the Disconn Check th	PECTION OF METER ignition switch OFF. ect the meter control e continuity of meter	R CONTROL switch conne	SWITCH		 	 
UNIT INS . Turn the . Disconn . Check th	PECTION OF METER ignition switch OFF. ect the meter control e continuity of meter	R CONTROL switch conne control switc	SWITCH ector. h.			
UNIT INS. Turn the Disconn Check th Terminal No.	PECTION OF METER ignition switch OFF. ect the meter control e continuity of meter Operation and st Press the enter switch	R CONTROL switch conne control switc	SWITCH ector. h. Continuity Existed	 _ _	 	
UNIT INS Turn the Disconn Check th Terminal No.	PECTION OF METER ignition switch OFF. ect the meter control e continuity of meter Operation and st Press the enter switch Other than the above	R CONTROL switch conne control switc	SWITCH ector. h. Continuity Existed Not existed		 	
UNIT INS Turn the Disconn Check th ferminal No. 6 2	PECTION OF METER ignition switch OFF. ect the meter control e continuity of meter Operation and st Press the enter switch Other than the above Press the select switch	R CONTROL switch conne control switc	SWITCH ector. h. Continuity Existed Not existed Existed	<b>-</b> - -		
UNIT INS Turn the Disconn Check th Terminal No. 6 2 7 2	PECTION OF METER ignition switch OFF. ect the meter control e continuity of meter Operation and st Press the enter switch Other than the above Press the select switch Other than the above	R CONTROL switch conne control switc tatus	SWITCH ector. h. Continuity Existed Not existed Existed Not existed	 - - -	 	
UNIT INS Turn the Disconn Check th Terminal No. 6 2 7 2	PECTION OF METER ignition switch OFF. ect the meter control e continuity of meter Operation and st Press the enter switch Other than the above Press the select switch Other than the above Press the trip A/B reset	R CONTROL switch conne control switc tatus t switch.	SWITCH ector. h. Continuity Existed Not existed Existed Not existed Existed	<b>-</b> - - -		
.UNIT INSTurn the Disconn Check theTerminal No.627282	PECTION OF METER ignition switch OFF. ect the meter control e continuity of meter Operation and st Press the enter switch Other than the above Press the select switch Other than the above Press the trip A/B reset Other than the above	R CONTROL switch conne control switc tatus tatus tswitch.	SWITCH ector. h. Continuity Existed Not existed Existed Not existed Existed Not existed			
. UNIT INS. Turn the Disconn. Disconn. Check thTerminal No.62728232	PECTION OF METER ignition switch OFF. ect the meter control e continuity of meter Operation and st Press the enter switch Other than the above Press the select switch Other than the above Press the trip A/B reset Other than the above	R CONTROL switch conne control switc tatus tatus t switch.	SWITCH ector. h. Continuity Existed Not existed Existed Not existed Existed Not existed Existed Not existed	<b>-</b> - - -		
. UNIT INS         . Turn the         . Disconn         . Disconn         . Check th         Terminal No.         6       2         7       2         8       2         3       2	PECTION OF METER ignition switch OFF. ect the meter control e continuity of meter Operation and st Press the enter switch Other than the above Press the select switch Other than the above Press the trip A/B reset Other than the above Press the CT switch Other than the above	R CONTROL switch conne control switc tatus t switch.	SWITCH ector. h. Continuity Existed Not existed Existed Not existed Existed Not existed Existed Not existed	- - - - -		
UNIT INS           . Turn the           . Disconn           . Disconn           . Check th           Terminal No.           6           7           8           2           3           1	PECTION OF METER ignition switch OFF. ect the meter control e continuity of meter Operation and st Press the enter switch Other than the above Press the select switch Other than the above Press the trip A/B reset Other than the above	R CONTROL Switch conne control switch tatus tatus t switch.	SWITCH ector. h. Continuity Existed Not existed Existed Not existed Existed Not existed Existed Not existed Existed			

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# **OIL PRESSURE SENSOR SIGNAL CIRCUIT**

#### < DTC/CIRCUIT DIAGNOSIS >

# OIL PRESSURE SENSOR SIGNAL CIRCUIT

#### Description

Detects the engine oil pressure and transmits the oil pressure sensor signal to the combination meter.

#### Component Function Check

1. CHECK COMBINATION METER INPUT SIGNAL

#### 1. Connect CONSULT.

2. Select the "DATA MONITOR" for the "METER/M&A", and then check the "OIL W/L" monitor value.

OIL W/L	
Ignition switch ON	:On
Engine running	:Off

>> INSPECTION END

#### **Diagnosis** Procedure

INFOID:000000011488309

INFOID:000000011488307

INFOID:000000011488308

# 1. CHECK OIL PRESSURE SENSOR CIRCUIT

- 1. Turn the ignition switch OFF.
- 2. Disconnect the connectors of combination meter and oil pressure sensor.
- 3. Check for continuity between the combination meter harness connector and the oil pressure sensor harness connector.

Combina	tion meter	Oil press	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
M53	34	E255	1	Existed
M53	35	E255	2	Existed
M53	14	E255	3	Existed

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

Combina	tion meter		Continuity
Connector	Terminal	*	Continuity
M53	34	Ground	Not existed
M53	35	*	Not existed
M53	14	*	Not existed

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Repair the harnesses or connectors.

#### **Component Inspection**

# 1.CHECK OIL PRESSURE SENSOR

Check the voltage between the combination meter terminal 35 and the ground.

Condition	Measuring condition	Voltage (V)
Engine stop	Ignition switch ON	Approx. 1
Engine running	Oil pressure is at 500 kPa	Approx. 3

Is the inspection result normal?

#### Revision: 2015 June

#### **MWI-74**

INFOID:000000011488310

#### COUDE CENCOR CIONAL CIRCUIT \_

	OIL PRESSURE SENSOR SIGNAL CIRCUIT	
< DTC/	CIRCUIT DIAGNOSIS >	
YES NO	>> INSPECTION END >> Replace the oil pressure switch.	A
		В
		С
		_
		D
		E
		F
		G
		н
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# PARKING BRAKE SWITCH SIGNAL CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# PARKING BRAKE SWITCH SIGNAL CIRCUIT

#### Description

Transmits the parking brake switch signal to the combination meter.

#### **Diagnosis** Procedure

INFOID:000000011488312

INFOID:000000011488311

# 1. CHECK COMBINATION METER INPUT SIGNAL

1. Turn the ignition switch ON.

2. Check the voltage between the combination meter harness connector and the ground.

Probe				N / 14	
(+) Combination meter		(-)	Measuring condition	Voltage (Approx.)	
		(-)			
Connector	Terminal	Cround	Parking brake operated	0 V	
M53	31	Ground	Parking brake released	5 V	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

## 2. CHECK PARKING BRAKE SWITCH SIGNAL CIRCUIT

- 1. Turn the ignition switch OFF.
- 2. Disconnect the connectors of combination meter and parking brake switch.
- Check for continuity between the combination meter harness connector and the parking brake switch harness connector.

Combina	tion meter	Parking b	Continuity	
Connector	Terminal	Connector Terminal		Continuity
M53	31	M132	1	Existed

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

Combina	tion meter		Continuity	
Connector	Connector Terminal		Continuity	
M53	M53 31		Not existed	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the harnesses or connectors.

### Component Inspection

**1.**CHECK PARKING BRAKE SWITCH

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

Parking brake switch		Mossuring condition	Continuity	
(+)	(-)	Measuring condition	Continuity	
1	Ground	Parking brake applied	Existed	
i Giouna		Parking brake released	Not exist	

#### YES >> INSPECTION END

### **MWI-76**

INFOID:000000011488313

# PARKING BRAKE SWITCH SIGNAL CIRCUIT

NO	>> Replace the parking brake switch.	
		A
		В
		С
		D
		E
		-
		F
		G
		Н
		I
		J
		K
		L
		M

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# WASHER LEVEL SWITCH SIGNAL CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# WASHER LEVEL SWITCH SIGNAL CIRCUIT

#### Description

INFOID:000000011488314

When the washer fluid in washer tank is less than the specified level, and washer level switch is turned ON, the washer level switch transmits the washer level switch signal to the combination meter.

#### **Diagnosis Procedure**

INFOID:000000011488315

# 1. CHECK COMBINATION METER INPUT SIGNAL

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

Probe				No. Italia	
(+) Combination meter		(-)	Measuring condition	Voltage (Approx.)	
Connector	Terminal	Ground	Washer level switch ON	0 V	
M53	33	Ground	Washer level switch OFF	5 V	

Is the inspection result normal?

2. CHECK WASHER LEVEL SWITCH CIRCUIT

- 1. Turn the ignition switch OFF.
- 2. Disconnect the connectors of combination meter and washer level switch.
- 3. Check for continuity between the combination meter harness connector and the washer level switch harness connector.

Combina	tion meter	Washer level switch		n meter Washer level switch		Continuity
Connector	Terminal	Connector Terminal		Continuity		
M53	33	E30	1	Existed		

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

Combina	tion meter		Continuity	
Connector Terminal		Ground	Continuity	
M53	33		Not existed	

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair the harnesses or connectors.

#### **Component Inspection**

## **1.**CHECK WASHER LEVEL SWITCH

- 1. Turn the ignition switch OFF.
- 2. Disconnect the washer level switch connector.
- 3. Check the washer level switch.

Terminal	Washer level switch	Continuity
1 - 2	ON	Existed
1 - 2	OFF	Not existed

Is the inspection result normal?

YES >> INSPECTION END

#### **MWI-78**

INFOID:0000000011488316

# WASHER LEVEL SWITCH SIGNAL CIRCUIT

)	>> Replace the washer level switch.	

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# A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

# A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL CIRCUIT

## Description

INFOID:000000011488317

A/C auto amp. transmit the A/C auto amp. connection recognition signal to the combination meter.

#### **Diagnosis** Procedure

INFOID:000000011488318

# 1. CHECK A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL

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

(+	Voltage		
Combination meter			(Approx.)
Connector Terminal		Ground	
M53 7			5 V
s the inspection	on result norn	nal?	1

YES >> INSPECTION END

YES >> INSPECTIO NO >> GO TO 2.

# 2. CHECK A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect combination meter connector and A/C auto amp. connector.
- 3. Check continuity between combination meter harness connector terminal and A/C auto amp. harness connector terminal.

Combina	tion meter	A/C auto amp.		n meter A/C auto amp.		Continuity
Connector	Terminal	Connector terminal		Continuity		
M53	7	M66	34	Existed		

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

Combina	tion meter		Continuity	
Connector Terminal		Ground	Continuity	
M53	7	*	Not existed	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

# ECU DIAGNOSIS INFORMATION COMBINATION METER

## **Reference Value**

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#### CONSULT DATA MONITOR REFERENCE VALUES

#### 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		Measuring condition	Standard/Status
SPEED METER [km/h]	Ignition switch ON	While driving	Equivalent to speedometer reading <b>NOTE:</b> 655.35 is displayed when the mal- function signal is received
SPEED OUTPUT [km/h]	Ignition switch ON	While driving	Equivalent to speedometer reading <b>NOTE:</b> 655.35 is displayed when the mal- function signal is received
ODO OUTPUT [km]	Ignition switch ON	_	Equivalent to odometer reading in combination meter
TACHO METER [rpm]	Ignition switch ON	While driving	Approximately the same as ta- chometer reading <b>NOTE:</b> 8191.875 is displayed when the malfunction signal is received
FUEL METER [L]	Ignition switch ON	_	Values according to fuel level
W TEMP METER [°C]	Ignition switch ON	_	Values according to engine coolant temperature <b>NOTE:</b> 215 is displayed when the malfunc- tion signal is input
	Ignition switch	ABS warning lamp ON	On
ABS W/L	<b>ON</b>	ABS warning lamp OFF	Off
	Ignition switch	VDC OFF indicator lamp ON	On
VDC/TCS IND	ON	VDC OFF indicator lamp OFF	Off
	Ignition switch	VDC warning lamp ON	On
SEIF IND	ON	VDC warning lamp OFF	Off
BRAKE W/I	Ignition switch	Brake warning lamp ON	On
	ON	Brake warning lamp OFF	Off
	Ignition switch	<ul><li>Door open warning display</li><li>Trunk open warning display</li></ul>	On
DOORWIL	ON	<ul><li>Door open warning is not displayed</li><li>Trunk open warning is not displayed</li></ul>	Off
	Ignition switch	High beam indicator lamp ON	On
	ON	High beam indicator lamp OFF	Off
	Ignition switch	Turn signal indicator lamp ON	On
	ON	Turn signal indicator lamp OFF	Off
RR FOG IND	Ignition switch ON	This item is displayed, but cannot be moni- tored.	Off
	Ignition switch	Oil pressure warning lamp ON	On
UIL W/L	ON	Oil pressure warning lamp OFF	Off

Monitor item	Measuring condition		Standard/Status
	Ignition switch	Tail lamp indicator lamp ON	On
	ON	Tail lamp indicator lamp OFF	Off
MIL	Ignition switch	Malfunction indicator lamp (MIL) ON	On
	ON	Malfunction indicator lamp (MIL) OFF	Off
	Ignition switch	CRUISE indicator lamp ON	On
CROISE IND	ON	CRUISE indicator lamp OFF	Off
	Ignition switch	SET indicator lamp ON	On
SET IND	ON	SET indicator lamp OFF	Off
	Ignition switch	Transmission warning lamp ON	On
ATC/T-AIVIT W/L	ON	Transmission warning lamp OFF	Off
	Ignition switch	AWD warning lamp ON	On
400 VV/L	ON	AWD warning lamp OFF	Off
	Ignition switch	Low fuel warning display	On
FUEL W/L	ON	Low fuel warning is not displayed	Off
	Ignition switch	Low washer fluid warning display	On
WASHER W/L	ON	Low washer fluid warning is not displayed	Off
	Ignition switch ON	Tire pressure warning lamp ON	On
AIR PRES W/L		Tire pressure warning lamp OFF	Off
	Ignition switch ON	KEY warning lamp (green/yellow) ON	On
KEYG/YW/L		KEY warning lamp (green/yellow) OFF	Off
	Ignition switch ON	Engine start indication is displayed	B&P I
	Ignition switch ACC	Engine start indication is displayed	B&P N
	Ignition switch LOCK	Key ID NG warning is displayed	ID NG
	Ignition switch LOCK	Steering lock rotation operation signal illumi- nated	ROTAT
	Ignition switch LOCK	P engagement warning is displayed	SFT P
LCD	Ignition switch LOCK	Key insertion indication is displayed	INSRT
	Ignition switch LOCK	Intelligent Key low battery notice warning is displayed	BATT
	Ignition switch ON	Key removal warning is displayed	NO KY
	Ignition switch LOCK	Key reminder warning is displayed	OUT KY
	Ignition switch ON	ACC warning is displayed	LK WN

Monitor item		Measuring condition	Standard/Status	
		Shift position P is displayed	Р	А
		Shift position R is displayed	R	
		Shift position N is displayed	Ν	В
		Shift position A1 is displayed	A1	
		Shift position A2 is displayed	A2	
		Shift position A3 is displayed	A3	С
		Shift position A4 is displayed	A4	
SHIFT IND	Ignition switch	Shift position A5 is displayed	A5	D
	ON	Shift position A6 is displayed	A6	D
		Shift position M1 is displayed	M1	
		Shift position M2 is displayed	M2	Ε
		Shift position M3 is displayed	M3	
		Shift position M4 is displayed	M4	
		Shift position M5 is displayed	M5	F
		Shift position M6 is displayed	M6	
		Parking brake switch ON	On	G
PKB SW	ON	Parking brake switch OFF	Off	0
		Seat helt not fastened		
BUCKLE SW	Ignition switch	Seat belt fastened	0#	Н
		Brake fluid lovel switch ON		
BRAKE OIL SW	Ignition switch	Brake fluid level switch OFF	01	
		A/C guite amp is not connected		
A/C AMP CONN	Ignition switch		01	
		Arc auto amp. is connected		J
ENTER SW	Ignition switch	Enter switch is pet pressed	01	
		Select switch is being pressed		
SELECT SW	Ignition switch	Select switch is net pressed	01	Κ
		Select switch is not pressed		
[km]	Ignition switch	—	by combination meter	L
			Equivalent to ambient air tempera-	
OUTSIDE TEMP	Ignition switch		ture NOTE:	_
[°C]	ON		This may not match the indicated	M
			value on information display.	
FUEL LOW SIG	Ignition switch	Low fuel warning is displayed	On	٨N
	ON	Low fuel warning is not displayed	Off	
CRANKING SIG	At engine crank	ing	On	
	Ignition switch C	DN	Off	0
ST CNT SIG	At engine crank	ing	On	
	Ignition switch C	DN	Off	P
BUZZER	Ignition switch	Buzzer ON	On	٢
	ON	Buzzer OFF	Off	
ENG OIL TMP	Ignition switch ON		Values according to engine oil tem- perature	
ENG OIL PRESS	Ignition switch ON	_	Values according to engine oil pres- sure	

Monitor item		Measuring condition	Standard/Status
TM OIL TMP	Ignition switch ON	_	Values according to transmission oil temperature
TM OIL PRESS	Ignition switch ON	_	Values according to transmission oil pressure
A/F RATIO	Ignition switch ON	_	Values according to engine air-fuel ratio
BOOST PRESS	Ignition switch ON	_	Values according to boost pressure
THRTL POSI	Ignition switch ON	_	Values according to throttle position
TRQ DSTRBT	Ignition switch ON	_	Values according to front torque distribution rate
	Ignition switch	Shift " P " warning display ON	On
AMIT P SFT	ON	Shift " P " warning display OFF	Off
	Ignition switch	Transmission system check display ON	On
AMT SYS CHCK	ŎN	Transmission system check display ON	Off
	Ignition switch	Shift lever position warning display ON	On
AMT SET POSI	ŎN	Shift lever position warning display OFF	Off
	Ignition switch ON	Transmission oil high temperature warning display ON	On
AMT OIL TMP H		Transmission oil high temperature warning display OFF	Off
	Ignition switch ON	Transmission clutch high temperature warn- ing display ON	On
AMT CL TMP H		Transmission clutch high temperature warn- ing display OFF	Off
AMT CHCK	Ignition switch ON	It is displayed, but not used.	Off
	Ignition switch ON	Transmission system warning display ON	On
		Transmission system warning display OFF	Off
	Ignition switch ON	Run-flat tire warning display ON	On
IPMS FLI TIRE		Run-flat tire warning display OFF	Off
	Ignition switch	Low tire pressure warning display ON	On
IPMS PRESS L	<b>ON</b>	Low tire pressure warning display OFF	Off
	Ignition switch ON	Tire pressure monitoring system warning display ON	On
TPMS MALF		Tire pressure monitoring system warning display OFF	Off
	Ignition switch	AWD clutch high temperature warning dis- play ON	On
4WD CL TMP H	ON	AWD clutch high temperature warning dis- play OFF	Off
	Ignition switch	Front/rear tire size discrepancy warning display ON	On
	ŌN	Front/rear tire size discrepancy warning display OFF	Off
	Ignition switch	AWD system warning display ON	On
4WD SYS MALF	ŌN	AWD system warning display OFF	Off

#### < ECU DIAGNOSIS INFORMATION >

Monitor item		Measuring condition	Standard/Status
	Ignition switch	Anti-lock braking system (ABS) warning display ON	On
ADS MALF	ON	Anti-lock braking system (ABS) warning display OFF	Off
	Ignition switch	Vehicle dynamic control (VDC) system warn- ing display ON	On
VDC MALF	ON	Vehicle dynamic control (VDC) system warn- ing display OFF	Off
	Ignition switch	Engine system warning display ON	On
ENG STS CHCK	ON	Engine system warning display OFF	Off
ASCD SYS MALF	lauritien erritele	CRUISE control system warning display ON	On
	ON	CRUISE control system warning display OFF	Off
ASCD REQ SPD	Ignition switch ON	While driving	Same value as ASCD set vehicle speed
	Ignition switch	ASCD system OFF	Off
ASCD STATUS	ŌN	ASCD system ON	ASCD
	Ignition switch	Blinking status of ASCD set vehicle speed (displayed)	On
ASCD SPD BLNK	ŌN	Blinking status of ASCD set vehicle speed (not displayed)	Off
	Ignition switch	Front combination lamp RH malfunction	On
LED LMP R OPEN	ŎN	Front combination lamp RH normal	Off
	Ignition switch	Front combination lamp LH malfunction	On
LED LMP L OPEN	ŎN	Front combination lamp LH normal	Off

#### NOTE:

Some items are not available according to vehicle specifications.

#### **TERMINAL LAYOUT**



#### INPUT/OUTPUT SIGNAL STANDARD

Termi (Wire	nal No. color)	Description			Condition	Value					
+	-	Signal name	Input/ Output		Condition	(Approx.)					
1 (V)	Ground	Battery power supply	Input	Igni- tion switch OFF	_	Battery voltage	F				
2 (W)	Ground	Ignition power supply	Input	Igni- tion switch ON		Battery voltage					

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Terminal No. (Wire color)		Description			Condition	Value		
+	-	Signal name	Input/ Output		Condition	(Approx.)		
3 (B)	Ground	Ground	_	Igni- tion switch ON	_	0 V		
5 (B)	Ground	Ground	_	Igni- tion switch ON	_	0 V		
6 (W)	Ground	Meter control switch ground	_	Igni- tion switch ON	_	0 V		
7 (Y)	Ground	A/C auto amp. connection recognition signal	Input	Igni- tion switch ON	_	5 V		
8 (SB)	Ground	Ambient sensor ground	_	Igni- tion switch ON	_	0 V		
9 (P)	Ground	Ambient sensor	Input	Igni- tion switch ON	_	Refer to <u>HAC-44, "Component</u> Inspection".		
12 (L)	Ground	Vehicle speed signal (2- pulse)	Output	lgni- tion switch ON	Vehicle speed is approxi- mately 40 km/h (25 MPH)	NOTE: The maximum voltage varies de- pending on the specification (destination unit).		
13 (V)	Ground	Vehicle speed signal (8- pulse)	Output	Igni- tion switch ON	Vehicle speed is approxi- mately 40 km/h (25 MPH)	NOTE: The maximum voltage varies depending on the specification (destination unit).		
14 (B)	Ground	Oil pressure sensor ground	_	Igni- tion switch ON		0 V		
15				lgni- tion	Air bag warning lamp ON	5 V		
(R)	Ground	Air bag signal	Input	switch ON	Air bag warning lamp OFF	0 V		

Termi (Wire	nal No. e color)	Description			Condition	Value	А
+	-	Signal name	Input/ Output		Condition	(Approx.)	
16 (R)	Ground	LED headlamp (RH) warn- ing signal	Input	Igni- tion switch ON	Headlamp ON Headlamp OFF	1 V 12 V	B
18 (L)	Ground	Fuel level sensor signal ground	_	Igni- tion switch ON	_	0 V	D
19 (R)	Ground	Oil level sensor ground	_	Igni- tion switch ON	_	0 V	E
20 (W)	Ground	Oil level sensor signal	Input	Igni- tion switch ON	_	Refer to <u>MWI-67, "Component</u> Inspection".	F
21 (L)	Ground	CAN-H	_	Igni- tion switch ON	_	_	G
22 (P)	Ground	CAN-L	_	Igni- tion switch ON		_	H
23 (LG)	6 (W)	Illumination control switch signal (-)	Input	Igni- tion switch	When 🕉 switch is pressed	0 V	1
24 (BR)	6 (W)	Illumination control switch signal (+)	Input	Igni- tion switch	When C <sup>5+</sup> switch is pressed	0 V	J
()	(,			ON	Other than the above	5 V	K
25	6	Trip A/B reset switch signal	Input	Igni- tion	When trip A/B reset switch is pressed	0 V	I
(G)	(vv)		-	ON	Other than the above	5 V	-
26	6	Enter switch signal	Input	lgni- tion	When enter switch is pressed	0 V	M
(BG)	(W)		mpor	switch ON	Other than the above	5 V	
27	6	Select switch signal	Input	lgni- tion	When select switch is pressed	0 V	MW
(SB)	(vv)	-	·	ON	Other than the above	5 V	
28	Ground	Alternator signal	Input	lgni- tion	Charging warning lamp ON	0 V	0
(BR)	Ground	nitemator signal	mput	switch ON	Charging warning lamp OFF	12 V	Ρ

Terminal No. (Wire color)		Description				Value				
+	-	Signal name	Input/ Output		Condition	(Approx.)				
29	Ground	Seat belt buckle switch sig-	loout	lgni- tion	<ul><li>When getting in the passenger seat</li><li>When passenger seat belt is fastened.</li></ul>	12 V				
(G)	Ground	nal (passenger side)	input	switch ON	<ul><li>When getting in the passenger seat</li><li>When passenger seat belt is unfastened</li></ul>	0 V				
30	Ground	Seat belt buckle switch sig-	Input	lgni- tion	When driver seat belt is fastened	12 V				
(LG)	Ground	nal (driver side)	input	switch ON	When driver seat belt is unfastened	0 V				
				lgni-	Parking brake applied	0 V				
31 (V)	Ground	Parking brake switch sig- nal	Input	tion switch ON	Parking brake released	5 V				
				Igni-	Brake fluid level is normal	0 V				
32 (V)	Ground	Brake fluid level switch sig- nal	Input	tion switch ON	Brake fluid level is MIN lev- el or less	5 V				
33	Ground	Washer level switch signal	Input	lgni- tion	Low washer fluid warning display ON	0 V				
(L)	Cround	washer level switch signal	input	switch ON	Low washer fluid warning display OFF	5 V				
34 (GR)	Ground	Oil pressure sensor power	Output	Igni- tion switch ON	_	5 V				
35 (W)	Ground	Oil pressure sensor signal	Input	Igni- tion switch ON	_	Refer to <u>MWI-74, "Component</u> Inspection".				
38 (BG)	Ground	Fuel level sensor signal	Input	lgni- tion switch ON		(V) 4 3 2 1 0 E 1/4 1/2 3/4 F NNNA0108ZZ				
30		I ED headlamp (I H) warn-		Igni-	Headlamp ON	1 V				
(Y)	Ground	ing signal	Input	switch ON	Headlamp OFF	12 V				





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				B1		49	>			Connector No. B45
				WIRE TO WIRE		21	SHELD		100 G -	Connector Name TCM
				TH80FW-CS16-TM4		52	8			Connector Type RH40FB-RZ8-L-LH-Z
						53	œ	,	Connector No. B12	
					6 2 6 2 7 6 1	55		, ,	Connector Name SEAT BELT BUCKLE SWITCH (DRIVER SIDE)	
					83 255 7 2 83 255 8 3	57	: 0		Connector Type TK03FW	H.S. 47 43 33 35 31 27 23 19 15 11 7 3
				2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/	<u> </u>	88	ۍ ت	,	4	46 42 38 34 26 14 10
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Specification         Specification         The main and the molecular of the main and the main and the molecular o	Boolifedition         Constrained					61	≻			]]
64         6	1         1	1         1	1         1	Signal Name	[Specification]	88	SHELD		23	Terminal Color Of Signal Name [Specification] No. Wire
66       6       -	8       8       9       9       9       9       0       00000         9       1       1       1       1       1       1       1       0       00000         1       1       1       1       1       1       1       1       0       00000         1       1       1       1       1       1       1       1       0       00000         1       1       1       1       1       1       1       1       0       00000         1       1       1       1       1       1       1       1       0       00000         1       1       1       1       1       1       1       1       0       00000       00000       00000       00000       00000       00000       0       000000       00000       000000					64	œ			1 W POWER SUPPLY (MEMORY BACK-UP)-2
1         1	1       1					65	σ	,		3 B GROUND
1         1	1         1					99	5		I erminal Color Of Signal Name [Specification]	4 B GROUND
1         1	1         1	10         1				67	g	,	No. Wire	5 W POWER SUPPLY (MEMORY BACK-UP)-3
1       1	7       Net L       - <td></td> <td></td> <td></td> <td></td> <td>69</td> <td>۹.</td> <td></td> <td></td> <td>7 B GROUND</td>					69	۹.			7 B GROUND
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7       2 metu, attrine attrine control unit         7       5       9       - With addite office control unit         7       5       5       - With addite office control unit         7       5       5       - With addite office control unit         7       5       5       - With addite office control unit         7       5       1       - With addite office control unit         7       5       - With addite office control unit       - With addite office control unit         7       6       - With addite office control unit	2         3         4         1/01         1	12       2mtu       Imtume secondrum         12       2mtu       Imtume secondrum         12       2       Imtume secondrum         12       2       Imtume secondrum         12       1       1       1       1       1       1         12       1				< F	SHELU	<ul> <li>Prefixed and a set of a se</li></ul>		
12         V         - (mm andre control ung)           78         8         - </td <td>1/2         8         -           1</td> <td>1/2       V       - Tommation one control         1/2       V       - Too</td> <td></td> <td></td> <td></td> <td>2/</td> <td>SHIELU</td> <td>- [without active holse control unit]</td> <td>- 1 </td> <td></td>	1/2         8         -           1	1/2       V       - Tommation one control         1/2       V       - Too				2/	SHIELU	- [without active holse control unit]	- 1 	
13         28         0	1         2         3         4         -	1       2       3       0				7	> 6	- [ WITH ACTIVE FOISE CONFOLUMIT	CONTRECTOR IND. BZ/	
70         8         9         1	77       8       9       7       9       0       1					27	8		Connector Name FUEL LEVEL SENSOR UNIT (SUB)	
1/1         1/2 <td></td> <td></td> <td></td> <td></td> <td></td> <td>6 5</td> <td>- 0</td> <td></td> <td>Committee Trung CC 709ECV</td> <td>15 F CAREL 16 W CTODIAMECWITCH CICNAL</td>						6 5	- 0		Committee Trung CC 709ECV	15 F CAREL 16 W CTODIAMECWITCH CICNAL
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1/1         1/1 <td>1         1</td> <td></td> <td></td> <td></td> <td></td> <td>0/</td> <td>,</td> <td></td> <td>đ</td> <td></td>	1         1					0/	,		đ	
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81         0	1         1	Bit         Chromatine andrea         Current source         Current source<	B         D         Without active moles control ural bits         D			8				
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20         3         - With adhen objee control until 3         7         - With adhen objee control until 3         - With adhen objee control until 3         - Model Estable MO 3 SIGNUL           9         V         V         V         V         V         Model Estable MO 3 SIGNUL           9         V         V         V         Model Estable MO 3 SIGNUL         - Model Estable MO 3 SIGNUL           9         V         V         V         Model Estable MO 3 SIGNUL         - Model Estable MO 3 SIGNUL           9         V         V         Model Estable MO 3 SIGNUL         - Model Estable MO 3 SIGNUL           9         V         Model Estable MO 3 SIGNUL         - Model Estable MO 3 SIGNUL         - Model Estable MO 3 SIGNUL           <	Image: Signer	Image: Note:	Bit         C         Number control unal control control control control unal control unal control cont			28	뛾	<ul> <li>[Without active noise control unit]</li> </ul>		26 LG HANGE SENSOR POWER SOURCE 2
3         N         -         -         -         Number servers         -         -         Number servers	Image: Signed Sector Control undification Sector Control Control Sector Control Sector Control undification Sector Control undification Sector Control Control Control Sector Control Control Control Sector Control Cont	Image: Section control unity         Image: Section control unity         Image: Section control unity           Image: Section control unity         Image: Section control unity         Image: Section control unity           Image: Section control unity         Image: Section control unity         Image: Section control unity           Image: Section control unity         Image: Section control unity         Image: Section control unity           Image: Section control unity         Image: Section control unity         Image: Section control unity           Image: Section control unity         Image: Section control unity         Image: Section control unity           Image: Section control unity         Image: Section control unity         Image: Section control unity           Image: Section control unity         Image: Section control unity         Image: Section control unity           Image: Section control unity         Image: Section control unity         Image: Section control unity           Image: Section control unity         Image: Section control unity         Image: Section control unity           Image: Section control unity         Image: Section control unity         Image: Section control unity           Image: Section control unity         Image: Section control unity         Image: Section control unity           Image: Section control unity         Image: Section control unity         Image: Section control unity	Image: Market Series Cartal unit         Image: Series Cartal unit         Image: Series Cartal unit           8         V         - (Wind active mose control unit)         Friendi active mose control unit           8         V         - (Wind active mose control unit)			20	5 1	- [With active noise control unit		2/ G HANGE SENSOR NO SIGNAL
1         -	No.         With attribute         Terminal         Color         Signal Name         Signal Nam         Signal Name         Signal N	Image: Signal system         Image: Signal system         Image: Signal system         Image: Signal system           Image: Signal system         Image: Signal system         Image: Signal system         Image: Signal system           Image: Signal system         Image: Signal system         Image: Signal system         Image: Signal system           Image: Signal system         Image: Signal system         Image: Signal system         Image: Signal system           Image: Signal system         Image: Signal system         Image: Signal system         Image: Signal system           Image: Signal system         Image: Signal system         Image: Signal system         Image: Signal system           Image: Signal system         Image: Signal system         Image: Signal system         Image: Signal system           Image: Signal system         Image: Signal system         Image: Signal system         Image: Signal system           Image: Signal system         Image: Signal system         Image: Signal system         Image: Signal system           Image: Signal system         Image: Signal system         Image: Signal system         Image: Signal system           Image: Signal system         Image: Signal system         Image: Signal system         Image: Signal system           Image: Signal system         Image: Signal system         Image: Signal system         Image: Signal system	13         1         Terminal Control           14         1			3	<b>x</b> ;	- [With active noise control unit]		28 V AUTOMNUAL RANGE CHANGE SWITCH 2 SKINAL
NHELU         Number Stresson           68         V	No.         Number Short         Numer Short	Image         NH-LU         NH-LU <th< td=""><td>NHELD         NHELD         NHHEL Short         NHHEL</td><td></td><td></td><td>3</td><td>-</td><td>- [Without active noise control unit]</td><td>- -</td><td>31 SB ENGINE SPEED SIGNAL</td></th<>	NHELD         NHELD         NHHEL Short         NHHEL			3	-	- [Without active noise control unit]	- -	31 SB ENGINE SPEED SIGNAL
Bit         V         No.         Wre         - </td <td>Bit         C         V         Set         NE         MORE         ANGE         Set         MORE         ANGE         ANGE<td>10         V         N</td><td>Bit         V         N</td><td></td><td></td><td>84</td><td>SHELU</td><td></td><td>I erminal Color Of Signal Name [Specification]</td><td>33 V HANGE SENSOH NO.1 SIGNAL</td></td>	Bit         C         V         Set         NE         MORE         ANGE         Set         MORE         ANGE         ANGE <td>10         V         N</td> <td>Bit         V         N</td> <td></td> <td></td> <td>84</td> <td>SHELU</td> <td></td> <td>I erminal Color Of Signal Name [Specification]</td> <td>33 V HANGE SENSOH NO.1 SIGNAL</td>	10         V         N	Bit         V         N			84	SHELU		I erminal Color Of Signal Name [Specification]	33 V HANGE SENSOH NO.1 SIGNAL
86         S3         1 (With undartise mose control undi)         1         W         33         6 R MORE SENSON CONSON SIGNAL SIGNAL           86         W         - (With active mose control undi)         2         3         6 R MORE SENSON MOR SIGNAL           87         L         - (With active mose control undi)         2         3         7         6 R MORE SENSON MOR SIGNAL           88         P	Bit         SB         TWITTERING         TUTTERING         TUTERING	8E         25        (Mithual ratike orison control until)           8F         L         L         Matche Enterson Not 35 (SML)           8F         P        (Mithual ratike orison control until)         2         G         R         R INOE ENTERNING NULL           8F         P        (Mithual ratike orison control until)         2         G         R         R INOE ENTERNING NULL           8F         P        (Mithual ratike orison control until)         2         G         R         R INOE ENTERNING NULL           8F         P          2         G         R         RADORE ENTERNING NULL           9F         P          2         G         R         RODE ENTERNING SIGNUL           9F         P          2         G         R         RADORE ENTERNING SIGNUL           9F         P          2         G         R         RADORE ENTERNING SIGNUL           9F         F          2         G         R         RADORE ENTERNING SIGNUL           9F         F         G         R         RADORE ENTERNING SIGNUL         2         2           10F         F         R         RADORE ENTERNING SIGNUL<	86         28         - (Whau active mose control until)         1         W         C         A mode Sensor NU 03 SIGNAL           87         1         1         W         P mode Sensor NU 03 SIGNAL         23         A         F mode Sensor NU 03 SIGNAL           87         1         N         P mode Sensor NU 03 SIGNAL         23         A         F mode Sensor NU 23 SIGNAL           88         1         N         P mode Sensor NU 03 SIGNAL         23         A         F mode Sensor NU 03 SIGNAL           90         V         -         -         -         -         A         F mode Sensor NU 23 SIGNAL           91         PG         -         -         -         -         -         A           92         PG         -         -         -         -         -         A         -         A         -         A         -         A         -         A         -			85	>	,	No. Wire	34 BG SAVE MODE SWITCH SIGNAL
86         W         - (Wrht acther noise control und)         2         1         37         1         AnoDE Sentiscont Landon           87         L         L         Punctor         P         PanoLE Sentiscont Landon         AnoDE Sentiscont Landon         AnoLE Landon	Bit         Umbache rotes control und         2         G         TH NODE SINGNI NO.2 SIGNAL           Bit         L         MM active rotes control und         2         G         T         MOLE SHIFTSI HERMON SIGNAL           Bit         P         MM active rotes control und         2         G         T         MOLE SHIFTSI HERMON SIGNAL           Bit         P         MM active rotes control und         2         G         T         Provide SHIESRIN NO.2 SIGNAL           Bit         P         MM active rotes control und         G         P         MMGE SHIESRIN SIGNAL           Bit         P         MM active rotes control und         G         P         MMGE SHIESRIN NO.2 SIGNAL           Bit         P         MM active rotes control und         G         P         MMGE SHIESRIN NO.2 SIGNAL           Bit         P         C         P         MM active rotes control und         G         MM active rotes	Bit         M         With active roles carried und         2         G         N         MODE: SWIND: RISONL           87         L         No         -         Mine active roles carried und         -         -         -         -         -         -         MODE: SWIND: RISONL         -	10         M         -(With active roles control und)         2         3         R         NODE SMORIN LOS SIGNIN.           87         L         M         MODE SURVIL NO.2 SIGNIN.         239         W         Polon Estimicant active a			98	SB	<ul> <li>[Without active noise control unit]</li> </ul>		35 G RANGE SENSOR NO.3 SIGNAL
87         L         38         R         RAMGE SINGOR NU.2 SIGNAL           88         P         -         -         38         R         R         RAMGE SINGOR NU.2 SIGNAL           89         SHELD         -         -         39         V         2         L         PADDLE SHIFTER SHIFTLE SINGAL           90         V         -         -         42         L         PADDLE SENDER SIGNAL           91         SR         -         -         -         43         P         PANGE SENSOR NO.5 SIGNAL           92         BR         -         -         -         45         D         PANGE SENSOR NO.5 SIGNAL           93         SR         -         -         -         45         D         RANGE SENSOR NO.5 SIGNAL           93         SR         -         -         -         45         D         RANGE SENSOR NO.5 SIGNAL           94         GR         -         -         -         -         46         W         -         -           95         Y         -         -         -         47         G         SANE MODE LAMP SIGNAL           96         Y         -         -         -         -<	87         L         NAMGE SINFIN ON 25 (SUML)           88         P         -<	87         L         -         -           88         P         -	87         1         -			98	≥	<ul> <li>[With active noise control unit]</li> </ul>	2 6	37 GR R MODE SWITCH SIGNAL
0         P         39         W         Proble strettistattrettist	0         1         0         1         0         1         0         1         0         1         0         1         0         1         0         0         1         0         0         1         0         0         1         0         0         1         0         0         1         0         0         1         0         0         1         0         1         0         1         0         1         0         1         0         1         0         1         1         0         1	88         P         N         Monte Serrerististant control serreristant control servet           91         V         - </td <td>88         P         -</td> <td></td> <td></td> <td>87</td> <td>-1</td> <td></td> <td></td> <td>38 R RANGE SENSOR NO.2 SIGNAL</td>	88         P         -			87	-1			38 R RANGE SENSOR NO.2 SIGNAL
8         BHELD         .         42         L         Indrestinent Instructionationationationationationationationa	0         0         0         1         Dotto Entitiestuational           20         V         P         - <td>0         0         1         00000 SMRTII SIRVILL           20         V         -</td> <td>80         5 HELD         -           90         5 HELD         -           90         7         -         -           91         8         -         -         -           92         8         -         -         -         -           93         53         -         -         -         -         -           94         67         -</td> <td></td> <td></td> <td>88</td> <td>٩</td> <td></td> <td></td> <td>39 W PADDLE SHIFTER (SHIFT-UP SWITCH) SIGNAL</td>	0         0         1         00000 SMRTII SIRVILL           20         V         -	80         5 HELD         -           90         5 HELD         -           90         7         -         -           91         8         -         -         -           92         8         -         -         -         -           93         53         -         -         -         -         -           94         67         -			88	٩			39 W PADDLE SHIFTER (SHIFT-UP SWITCH) SIGNAL
90         V	0         V	90         V	90         V			88	SHIELD	-		42 L PADDLE SHIFTER (SHIFT-DOWN SWITCH) SIGNAL
92         BR            93         SB            93         SB            94         GR         RAMDE ENSIDIATION DS GIONAL           95         BG            96         BG            97         Y            97         Y            97         Y	22         BH          44         GR         RAMGE SIRSEN DO SIGNUL           10         20         20         20         20         20         20           10         20         20         20         20         20         200L         200L           11         20         20         20         20         20         200L         200L           12         1         1         1         1         24         24         24F         200L         200H           13         1         1         1         1         34F         1         2         34F         200L         200H         200H	92         B4         ·           13         53         64         FN05         56/04L           13         54         7         4         54         7           14         67         7         4         51/04L         4           15         7         4         1         54/04L         4           15         7         4         1         54/04L         4           16         7         4         1         54/04L         4           17         1         1         1         54/04L         1           16         1         1         1         1         1         1           1 <td< td=""><td>42         64         67         R-MORE ENSION           32         53         54         64         74           34         64         74         7         7           35         74         7         7         14         7           36         7         7         7         14         7         2           37         7         1         7         5         3         14</td><td></td><td></td><td>06</td><td>&gt;</td><td></td><td></td><td>43 P RANGE SENSOR NO.4 SIGNAL</td></td<>	42         64         67         R-MORE ENSION           32         53         54         64         74           34         64         74         7         7           35         74         7         7         14         7           36         7         7         7         14         7         2           37         7         1         7         5         3         14			06	>			43 P RANGE SENSOR NO.4 SIGNAL
93         58	33         35         45         45         45         45         45         46         47<	38         58         mone         43         58         mone         Man	43         53			92	В			44 GR RANGE SENSOR NO.5 SIGNAL
94         GR         .         46         W         Swift 100K SOLENOD CONTROL SIGNUL           .	94         6R         ×         45         W         Switching Control statutions           95         FG         -	1         1         1         4         N         Serence control spow           1         1         1         1         1         1         1         1           1	94         6F         V         Herritocxnexicus           95         80         V         9         Total           97         V         9         Status         Status           97         V         9         Status         Status           91         V         9         Status         Status           91         V         9         Status         Status			93	SB			45 BG R MODE LAMP SIGNAL
	35     BG     -     -     47     G     SAVE MODE LAWP SIGNAL       36     Y     -     -     -     -       98     LG     -     -     -	98     BC3        99     LG        91     Y        92	35         BG         -			94	GR			46 W SHIFT LOCK SOLENOID CONTROL SIGNAL
						95	g			47 G SAVE MODE LAMP SIGNAL
						96	>			
						79	>	,		
						80	9			

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# COMBINATION METER < ECU DIAGNOSIS INFORMATION >

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INFOID:000000011488321

# Fail-safe

If the CAN communication with each unit is activates, the combination meter broken the fail-safe control.

#### < ECU DIAGNOSIS INFORMATION >

	System	Processing			
Speedometer					
Tachometer		Returns to zero when communication is			
Engine coolant temperatu	ire gauge				
Meter illumination control		Shifts to night mode when communication is blocked.			
Shift position indicator		Turned OFF when communication is blocked.			
	Door open warning				
	Trunk open warning				
	Parking brake release warning				
	Shift " P " warning				
	Transmission system check				
	Shift lever position warning				
	Transmission clutch high temperature warning				
	Transmission oil high temperature warning				
	Transmission system warning				
	Run-flat tire warning	Indication is turned OFF when communication			
	Low tire pressure warning	is blocked.			
	Tire pressure monitoring system warning				
	AWD clutch high temperature warning				
Information display	Front/rear tire size discrepancy warning				
	AWD system warning				
	Anti-lock braking system (ABS) warning				
	Vehicle dynamic control (VDC) system warning				
	Engine system warning				
	CRUISE control system warning				
	CRUISE control system status				
	Reverse warning				
	Vehicle speed display	0 km/h (0 MPH) is indicated when communi- cation is blocked.			
	Possible driving distance				
	Average fuel consumption	Displays the last calculation result calculated			
	Instantaneous fuel consumption	blocked.			
	Average vehicle speed				
Warning buzzer		Warning is turned OFF when communication is blocked.			

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#### < ECU DIAGNOSIS INFORMATION >

	System	Processing
	ABS warning lamp	
	VDC warning lamp	
	Brake warning lamp	Turned ON when communication is broken.
	AWD warning lamp	
	Malfunction indicator lamp (MIL)	
	Tire pressure warning lamp	Blinks first, then illuminates after approxi- mately 1 minute.
	High beam indicator lamp	
Warning lamp/indicator	Turn signal indicator lamp	
lamp	Tail lamp indicator lamp	
	CRUISE indicator lamp	
	SET indicator lamp	
	KEY warning lamp	Turned OFF when communication is broken.
	Up-shift indicator (green)	
	Up-shift indicator (yellow)	
	Up-shift indicator (red)	
	Transmission check warning lamp	
	VDC OFF indicator lamp	

# **DTC** Index

NOTE:

Details of time display

- CRNT: Displays during the current malfunctioning detection.
- PAST: Displays if any previous malfunction is present when the current status is normal.

IGN counter

- The IGN counter is displayed in the freeze frame data (FFD).
- The IGN counter indicates the number of times ignition switch is turned ON after the DTC detection.
- When a trouble is currently being detected, it displays "0".
- After the status returns to normal, the indication value is incriminated as "1  $\rightarrow$  2  $\rightarrow$  3  $\rightarrow$  ... 38  $\rightarrow$  39" every time the ignition switch is turned OFF  $\rightarrow$  ON.
- When the operation count of ignition switch OFF → ON exceeds 39, the indication will be fixed at "39" until the self-diagnosis is deleted.

Display contents of CONSULT	Diagnostic item is detected if	Refer to
CAN COMM CIRCUIT [U1000]	Combination meter cannot communicate CAN communication signal for 2 sec- onds or more	<u>MWI-61.</u> <u>"Diagno-</u> sis Proce- dure"
CONTROL UNIT (CAN) [U1010]	Malfunction is detected during initial diagnosis of combination meter CAN con- troller	<u>MWI-62,</u> <u>"Diagno-</u> <u>sis Proce-</u> <u>dure"</u>
VEHICLE SPEED [B2205]	Abnormal vehicle speed signal is received from ABS actuator and electric unit (control unit) for 2 seconds or more	<u>MWI-63,</u> <u>"Diagno-</u> <u>sis Proce-</u> <u>dure"</u>
ENGINE SPEED [B2267]	ECM continuously transmits abnormal engine speed signal for 2 seconds or more	<u>MWI-64,</u> <u>"Diagno-</u> <u>sis Proce-</u> <u>dure"</u>

INFOID:000000011488322

# < ECU DIAGNOSIS INFORMATION >

Display contents of CONSULT	Diagnostic item is detected if	Refer to	
WATER TEMP [B2268]	ECM continuously transmits abnormal coolant temperature signal for 60 sec- onds or more	<u>MWI-65,</u> <u>"Diagno-</u> <u>sis Proce-</u> <u>dure"</u>	B
OIL LEV SEN OPEN [B2321]	Signal from oil level sensor is open (resistance value of oil level sensor is larger than 20 $\Omega).$	<u>MWI-66,</u> "Diagno- sis Proce- dure"	С
OIL LEV SEN SHORT [B2322]	Signal from oil level sensor is shorted (resistance value of oil level sensor is smaller than 3 $\Omega$ ).	<u>MWI-66,</u> "Diagno- sis Proce- dure"	D

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## THE FUEL GAUGE POINTER DOES NOT MOVE

#### < SYMPTOM DIAGNOSIS >

# SYMPTOM DIAGNOSIS THE FUEL GAUGE POINTER DOES NOT MOVE

#### Description

INFOID:000000011488323

Fuel gauge pointer does not move from a certain position

**Diagnosis Procedure** 

INFOID:000000011488324

**1.**CONDUCTING THE COMBINATION METER SELF-DIAGNOSIS MODE

Perform the self-diagnosis mode of combination meter, and then check that the fuel gauge operates normally. Refer to <u>MWI-54, "Diagnosis Description"</u>.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the combination meter.

2. CHECK FLOAT INTERFERENCE

Check that the float arm interferes with or binds to other components in the fuel tank.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning part.

3.CHECK FUEL LEVEL SENSOR SIGNAL CIRCUIT

Check the fuel level sensor signal circuit. Refer to <u>MWI-69. "Component Function Check"</u>. <u>Is the inspection result normal?</u>

YES >> Refer to GI-39, "Intermittent Incident".

NO >> Repair or replace malfunctioning parts.

# THE METER CONTROL SWITCH IS INOPERATIVE

< SYMPTOM DIAGNOSIS >		
THE METER CONTROL SWITCH IS INOPERATIVE		Δ
Description	INFOID:0000000011488325	/ \
		D
<ul> <li>If any of the following malfunctions are found for the meter control switch operation</li> <li>All switches are inoperative</li> <li>The specified switch cannot be operated</li> </ul>		D
Diagnosis Procedure	INFOID:0000000011488326	С
1. CHECK METER CONTROL SWITCH SIGNAL CIRCUIT		D
Perform the meter control switch signal circuit inspection. Refer to MWI-72. "Diagnosis Procedure	<u>e"</u> .	D
Is the inspection result normal? YES >> GO TO 2. NO >> Repair the harnesses or connectors.		Е
		F
Perform the unit inspection of meter control switch. Refer to <u>MWI-73, "Component Inspection"</u> . Is the inspection result normal?		1
YES >> Replace the combination meter. NO >> Replace the meter control switch.		G
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# THE OIL PRESSURE WARNING LAMP DOES NOT TURN ON OR OFF < SYMPTOM DIAGNOSIS >

# THE OIL PRESSURE WARNING LAMP DOES NOT TURN ON OR OFF

## Description

INFOID:000000011488327

Oil pressure warning lamp does not illuminate when ignition switch turns ON, or oil pressure warning lamp stays illuminated while engine is running (when oil pressure is normal).

#### **Diagnosis Procedure**

INFOID:000000011488328

**1.**CHECK COMBINATION METER INPUT SIGNAL

Connect CONSULT, and perform the combination meter input signal inspection. Refer to <u>MWI-74, "Compo-nent Function Check"</u>.

Is the inspection result normal?

YES >> Replace the combination meter.

NO >> GO TO 2.

2.CHECK OIL PRESSURE SENSOR SIGNAL CIRCUIT

Perform the oil pressure sensor signal circuit inspection. Refer to MWI-74, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair the harnesses or connectors.

3.CHECK OIL PRESSURE SENSOR

Perform the unit inspection of oil pressure sensor. Refer to <u>MWI-74, "Component Inspection"</u>.

Is the inspection result normal?

- YES >> Replace the combination meter.
- NO >> Replace the oil pressure sensor.

# THE PARKING BRAKE RELEASE WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

# < SYMPTOM DIAGNOSIS > THE PARKING BRAKE RELEASE WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY A Description NFOID:000000111488329 • The parking brake warning is displayed during vehicle travel even though the parking brake is released B • The parking brake warning is not displayed even though the vehicle is being driven with the parking brake is released C Diagnosis Procedure NFOID:00000011148830 C 1.BRAKE WARNING LAMP OPERATION CHECK D

1. Start the engine.

2. Operate the parking brake, then check the illumination status of brake warning lamp.

Parking brake applied	:ON
Parking brake released	:OFF

Is the inspection result normal?

YES >> Replace the combination meter.

NO >> GO TO 2.

**2.**CHECK PARKING BRAKE SWITCH SIGNAL CIRCUIT

Perform the parking brake switch signal circuit inspection. Refer to <u>MWI-76, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u> YES >> GO TO 3. NO >> Repair the harnesses or connectors.

 $\mathbf{3.}$ CHECK PARKING BRAKE SWITCH

Perform the unit inspection of parking brake switch. Refer to <u>MWI-76, "Component Inspection"</u>. Is the inspection result normal?

YES >> Replace the combination meter.

NO >> Replace the parking brake switch.

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# THE DOOR OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DIS-PLAY

< SYMPTOM DIAGNOSIS >

# THE DOOR OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

# Description

INFOID:0000000011488331

- The door open warning is displayed while all doors are fully closed.
- The door open warning is not displayed while a door is not fully closed.

# Diagnosis Procedure

INFOID:000000011488332

# **1.**CHECK BCM INPUT SIGNAL

Connect CONSULT and inspect the BCM input signals. Refer to <u>DLK-63, "Component Function Check"</u>. <u>Is the inspection result normal?</u>

YES >> GO TO 2.

NO >> GO TO 3.

2. CHECK COMBINATION METER INPUT SIGNAL

1. Connect CONSULT.

2. Select "DATA MONITOR" for the "METER/M&A", and then check the "DOOR W/L" monitor value.

DOOR W/L Door open : On Door closed : Off

Is the inspection result normal?

YES >> Replace the combination meter.

NO >> Replace BCM. Refer to <u>BCS-89</u>, "Removal and Installation".

**3.**CHECK DOOR SWITCH SIGNAL CIRCUIT

Perform the door switch signal circuit inspection. Refer to DLK-63, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair the harnesses or connectors.

**4.**CHECK DOOR SWITCH

Perform the unit inspection of door switch. Refer to <u>DLK-64, "Component Inspection"</u>.

Is the inspection result normal?

YES >> Replace the combination meter.

NO >> Replace the malfunctioning door switch. Refer to <u>DLK-258</u>, "Removal and Installation".

# THE TRUNK OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

< SYMPTOM DIAGNOSIS >

# THE TRUNK OPEN WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

Description	В
<ul> <li>The trunk warning while the trunk lid is fully closed.</li> <li>Trunk warning is not displayed while the trunk lid is not fully closed.</li> </ul>	
Diagnosis Procedure	С
1.CHECK BCM INPUT SIGNAL Connect CONSULT and inspect the BCM input signals. Refer to <u>DLK-63, "Component Function Check"</u> .	D
Is the inspection result normal? YES >> GO TO 2. NO >> GO TO 3.	Е
<ol> <li>CHECK COMBINATION METER INPUT SIGNAL</li> <li>Connect CONSULT.</li> <li>Select "DATA MONITOR" for the "METER/M&amp;A", and then check the "DOOR W/L" monitor value.</li> </ol>	F
DOOR W/L Trunk lid open : On Trunk lid closed : Off	G
Is the inspection result normal?	Н
YES >> Replace the combination meter. NO >> Replace BCM. Refer to <u>BCS-89, "Removal and Installation"</u> . <b>3.</b> CHECK TRUNK LID OPENER SWITCH SIGNAL CIRCUIT	
Perform the trunk lid opener switch signal circuit inspection. Refer to <u>DLK-77, "Diagnosis Procedure"</u> . <u>Is the inspection result normal?</u> YES >> GO TO 4. NO >> Repair the harpesses or connectors	J
4. CHECK TRUNK LID OPENER SWITCH	Κ
Perform the unit inspection of trunk lid opener switch. Refer to <u>DLK-78, "Component Inspection"</u> .	
Is the inspection result normal?	L
<ul> <li>YES &gt;&gt; Replace the combination meter.</li> <li>NO &gt;&gt; Replace the trunk lid opener switch. Refer to <u>DLK-266, "Removal and Installation"</u>.</li> </ul>	_
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## THE LOW WASHER FLUID WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

< SYMPTOM DIAGNOSIS >

# THE LOW WASHER FLUID WARNING CONTINUES DISPLAYING, OR DOES NOT DISPLAY

# Description

INFOID:000000011488335

• Low washer fluid warning is still displayed even after washer fluid is added.

• Low washer fluid warning is not displayed even when washer fluid is not filled.

### Diagnosis Procedure

INFOID:000000011488336

1. CHECK WASHER LEVEL SWITCH SIGNAL CIRCUIT

Check the washer level switch signal circuit. Refer to MWI-78, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the harnesses or connectors.

**2.**CHECK WASHER LEVEL SWITCH COMPONENT PARTS

Perform the inspection of washer level switch component parts. Refer to <u>MWI-78</u>, "<u>Component Inspection</u>". <u>Is the inspection result normal?</u>

YES >> Replace the combination meter.

NO >> Replace the washer level switch. Refer to <u>WW-94, "Removal and Installation"</u>.
# THE AMBIENT TEMPERATURE DISPLAY IS INCORRECT

< SYMPTOM DIAGNOSIS >	
THE AMBIENT TEMPERATURE DISPLAY IS INCORRECT	Δ
Description	00011488337
<ul> <li>The displayed ambient air temperature is higher than the actual temperature.</li> <li>The displayed ambient air temperature is lower than the actual temperature.</li> </ul>	В
Diagnosis Procedure	00011488338
NOTE:	С
Before starting diagnosis, check if the symptom is applicable to the "Symptom by normal operation". Re <u>MWI-110, "INFORMATION DISPLAY : Description"</u> .	efer to
<b>1.</b> CHECK A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL CIRCUIT	_
Perform the A/C auto amp. connection recognition signal circuit inspection. Refer to <u>MV "Diagnosis Procedure"</u> .	<u>₩I-80,</u> E
Is the inspection result normal?	
YES >> GO TO 2.	F
2 CHECK AMBIENT SENSOR SIGNAL CIRCUIT	I
Perform the ambient sensor signal circuit inspection. Pefer to HAC 42. "Diagnosis Presedure"	<u> </u>
Is the inspection result normal?	G
YES >> GO TO 3.	
NO >> Repair the harnesses or connectors.	Н
3. CHECK AMBIENT SENSOR	
Perform the unit inspection of ambient sensor. Refer to HAC-44, "Component Inspection".	
Is the inspection result normal?	I
YES >> Replace the combination meter.	
NO >> Replace the ambient sensor.	J

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< SYMPTOM DIAGNOSIS >

# NORMAL OPERATING CONDITION INFORMATION DISPLAY

#### **INFORMATION DISPLAY : Description**

INFOID:000000011488339

#### OIL LEVEL DISPLAY

After mounting/removing of battery or combination meter, the combination meter power supply is cut off temporarily. Therefore, the engine oil amount data may be erased from the combination meter, causing the oil level to be not displayed. Refer to <u>MWI-39</u>, "INFORMATION DISPLAY : System Description" for the condition that the combination meter reads the resistance of oil level sensor.

#### AMBIENT AIR TEMPERATURE

For the ambient air temperature display, the value is displayed on the information display after the signal from ambient sensor is corrected by the combination meter. Therefore, the indication value may not match the actual ambient air temperature. Refer to <u>MWI-39</u>, "INFORMATION DISPLAY : System Description" for details on the correction process.

#### POSSIBLE DRIVING DISTANCE

The calculated distance to empty may differ from the actual distance to empty if the refueling amount is approximately  $15\ell$  (4 US gal, 3-1/4 Imp gal) or less. This is because the refuel control (moves the fuel gauge needle quicker than normal judging that the driver is refueling the vehicle) is not performed in such a case.

# < PRECAUTION > PRECAUTION PRECAUTIONS

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

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 battery, and wait at least 3 minutes before performing any service.

#### Precaution for Battery Service

Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

# Precautions for Removing Battery Terminal

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

#### NOTE:

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

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

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

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

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

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#### < PREPARATION >

# PREPARATION

# PREPARATION

# **Commercial Service Tools**

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# < REMOVAL AND INSTALLATION > **REMOVAL AND INSTALLATION** COMBINATION METER

# Exploded View

#### REMOVAL

Cluster Lid A Refer to IP-12, "Exploded View".

**Combination Meter** 



- Cluster lid A rear cover 1.
- 4. Meter housing

DISASSEMBLY

- Cluster lid A front cover 7.
- Combination meter 2.

Meter control switch

5.

- 3.
  - 6. Cluster lid A under cover

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Revision: 2015 June

#### **MWI-113**

# **COMBINATION METER**

# < REMOVAL AND INSTALLATION >

#### Removal and Installation

#### REMOVAL

- 1. Remove the cluster lid A from the vehicle. Refer to IP-13, "Removal and Installation".
- 2. Remove the meter control switch connector (1) from the combination meter (2).
- 3. Remove the screws (A), and then remove the cluster lid A rear cover (3).
- 4. Remove screws (B).



5. Remove the screws (A), and then remove the combination meter (1).



INSTALLATION Install in the reverse order of removal.

#### **Disassembly and Assembly**

#### DISASSEMBLY

- 1. Remove the tabs, and then remove the upper housing.
- 2. Remove the tabs, and then remove the front cover.

#### ASSEMBLY

Assemble the reverse order of disassembly.

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#### METER CONTROL SWITCH

# < REMOVAL AND INSTALLATION >

# METER CONTROL SWITCH

#### Exploded View

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REMOVAL Refer to <u>IP-12, "Exploded View"</u>.

#### DISASSEMBLY



# Removal and Installation

#### REMOVAL

- 1. Remove the combination meter.
- 2. Remove the screws (A), and then remove the cluster lid A front cover (1).
- NNNA0109ZZ
- 3. Remove the screws (A), and then remove the bracket and meter housing (1).



# METER CONTROL SWITCH

#### < REMOVAL AND INSTALLATION >

4. Remove the screws (A), and then remove the drive computer switch (1), illumination control switch, and trip A/B reset switch (2).



INSTALLATION Install in the reverse order of removal.