

# DI

## SECTION

# DRIVER INFORMATION SYSTEM

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# DTC INDEX

< SERVICE INFORMATION >

## SERVICE INFORMATION

### DTC INDEX

U1000

INFOID:000000004657478

DTC	Items (CONSULT screen terms)	Reference
U1000	CAN COMM CIRCUIT	<a href="#">DI-47, "DTC [U1000] CAN Communication Circuit"</a>

B2201 - B2205

INFOID:000000004657479

DTC	Items (CONSULT screen terms)	Reference
B2201	TRIPLE METER COMMUNICATION CIRC	<a href="#">DI-47, "DTC [B2201] Triple Meter Communication Circuit"</a>
B2202	METER COMMUNICATION CIRC	<a href="#">DI-49, "DTC [B2202] Meter Communication Circuit"</a>
B2205	VEHICLE SPEED CIRC	<a href="#">DI-51, "DTC [B2205] Vehicle Speed Circuit"</a>

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# PRECAUTIONS

< SERVICE INFORMATION >

## PRECAUTIONS

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

INFOID:000000004657480

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 "SUPPLEMENTAL RESTRAINT SYSTEM" and "SEAT BELTS" of this Service Manual.

#### **WARNING:**

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

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

#### **WARNING:**

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

### Precaution for Battery Service

INFOID:000000004657481

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.

# COMBINATION METERS

< SERVICE INFORMATION >

## COMBINATION METERS

### System Description

INFOID:000000004657482

#### UNIFIED METER CONTROL UNIT

- Speedometer, odo/trip meter, tachometer, fuel gauge and water temperature gauge are controlled by the unified meter control unit, which is built into the combination meter. Unified meter control unit receives a signals from unified meter and A/C amp.
- Warning lamp and indicator lamp of combination meter are controlled by signals drawn from the unified meter and A/C amp.
- Odo/trip meter and A/T indicator segments can be checked in self-diagnosis mode.
- Meters/gauges can be checked in self-diagnosis mode.

#### UNIFIED METER AND A/C AMP.

Refer to [DI-42, "System Description"](#) in "UNIFIED METER AND A/C AMP".

#### POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times

- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to combination meter terminal 24.

With the ignition switch in the ON or START position, power is supplied

- through 10A fuse [No. 14, located in the fuse block (J/B)]
- to combination meter terminal 23.

With the ignition switch in the ACC or ON position, power is supplied

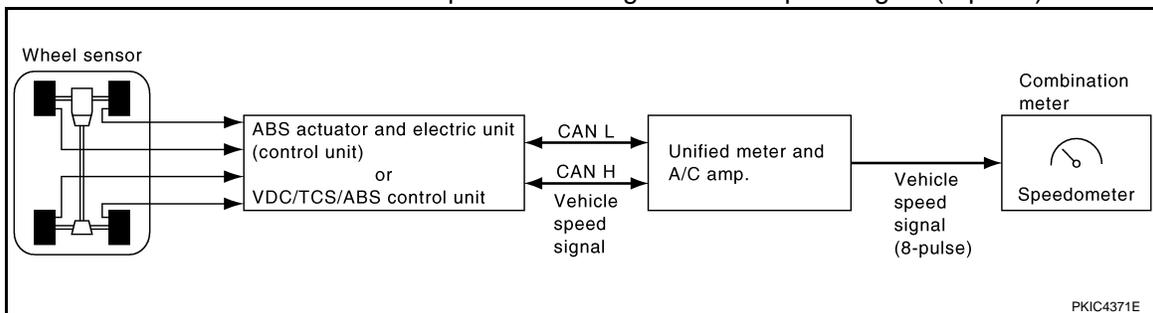
- through 10A fuse [No. 6, located in the fuse block (J/B)]
- to combination meter terminal 14.

Ground is supplied

- to combination meter terminals 10, 11 and 12
- through body grounds M30 and M66.

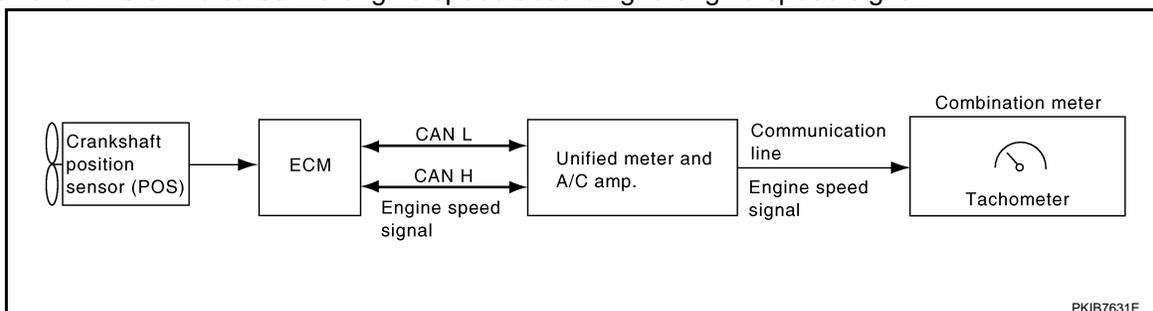
#### SPEEDOMETER

- VDC/TCS/ABS control unit [with VDC] or ABS actuator and electric unit (control unit) [without VDC] provides a vehicle speed signal to the unified meter and A/C amp. with CAN communication line.
- Unified meter and A/C amp. converts the vehicle speed signal to the 8-pulse signal, and outputs the vehicle speed signal (8-pulse) to combination meter.
- Combination meter indicates the vehicle speed according to vehicle speed signal (8-pulse).



#### TACHOMETER

- ECM provides engine speed signal to unified meter and A/C amp. with CAN communication line.
- Unified meter and A/C amp. transmits engine speed signal to combination meter with communication line.
- Combination meter indicates the engine speed according to engine speed signal.

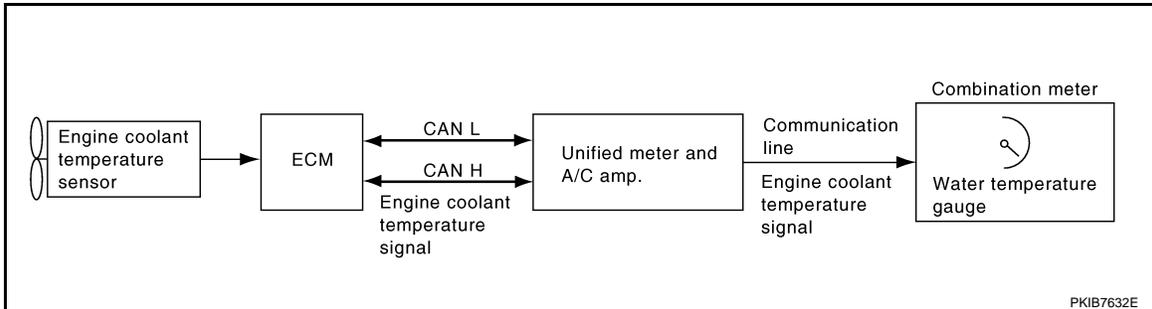


# COMBINATION METERS

## < SERVICE INFORMATION >

### WATER TEMPERATURE GAUGE

- ECM provides engine coolant temperature signal to unified meter and A/C amp. with CAN communication line.
- Unified meter and A/C amp. transmits engine coolant temperature signal to combination meter with communication line.
- Combination meter indicates the engine coolant temperature according to engine coolant temperature signal.



### FUEL GAUGE

- Unified meter and A/C amp. reads a resistor signal from fuel level sensor.

Signal is supplied

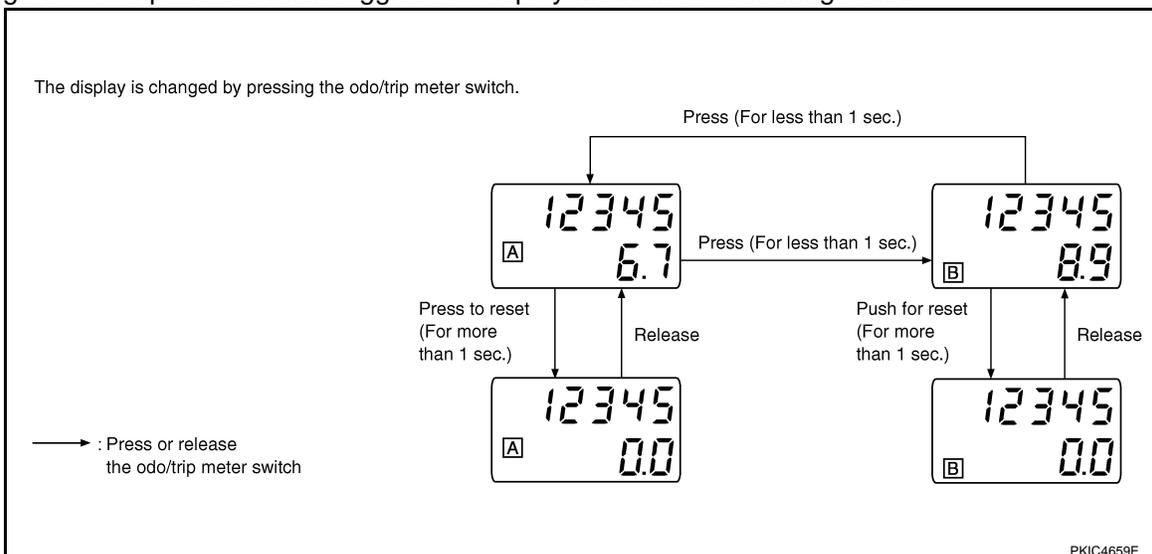
- from unified meter and A/C amp. terminal 36
- through fuel level sensor unit and fuel pump (main) terminals 5 and 2, and
- through fuel level sensor unit (sub) terminals 2 and 1
- to unified meter and A/C amp. terminal 28.
- Unified meter and A/C amp. provides a fuel level signal to combination meter with communication line.
- Combination meter indicates the approximate fuel level according to fuel level signal.

### ODO/TRIP METER

- VDC/TCS/ABS control unit [with VDC] or ABS actuator and electric unit (control unit) [without VDC] provides a vehicle speed signal to the unified meter and A/C amp. with CAN communication line.
- Unified meter and A/C amp. converts the vehicle speed signal to the 8-pulse signal, and outputs the vehicle speed signal (8-pulse) to combination meter.
- Combination meter uses the vehicle speed signal (8-pulse) to calculate the mileage, and displays it.

#### How to Change The Display

Pressing the odo/trip meter switch toggles the display mode in the following order.



- The odo/trip meter display mode toggling and trip display resetting can be identified by the time elapsed from pressing the odo/trip meter switch to releasing it.
- When resetting with “trip A” displayed, only “trip A” is reset. (The “trip B” functions in the same way.)

#### NOTE:

The record of the odo meter is kept even if the battery cable is disconnected. The record of the trip meter is erased when the battery cable is disconnected.

# COMBINATION METERS

## < SERVICE INFORMATION >

### ILLUMINATION CONTROL

#### Daytime Mode

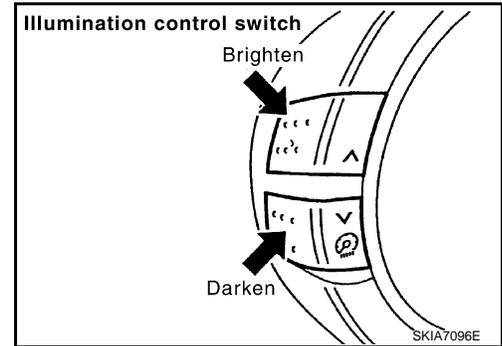
When ignition switch is turned ON, combination meter and triple meter illumination is turned ON by unified meter control unit.

#### Nighttime Mode

- Unified meter control unit is transferred to nighttime mode, with ignition switch turned ON and position light request signal from BCM with CAN communication.
- When in nighttime mode, trip computer switch, and illumination control switch illumination turns ON by unified meter control unit. Each illumination is controlled by unified meter control unit.
- Each illumination can be adjusted to 16 step by illumination control switch in nighttime mode.

#### NOTE:

For further details of illumination circuit, refer to [LT-144](#).



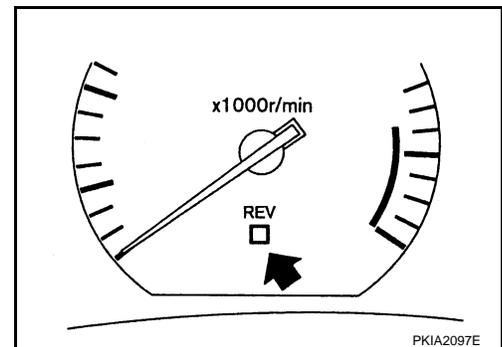
### SHIFT-UP INDICATOR

- Shift-up indicator can be used when shifting up at a constant engine speed from any gear while driving. It becomes a guide for shift-up timing.
- Shift-up indicator flashes approximately 500 rpm before reaching the engine speed set. It illuminates when reaching the engine speed set.

Shift-up engine speed can be set by the shift-up indicator setting mode on trip computer. Refer to [DI-25. "System Description"](#).

#### NOTE:

- There may be a time lag between the shift-up indicator illumination and the tachometer indication.
- If the battery cable is disconnected, the set engine speed becomes 7,000 rpm.



### FAIL-SAFE

Combination meter performs fail-safe operation when unified meter and A/C amp. communication is malfunction.

Function		Fail-safe operation
Speedometer		Return to zero
Tachometer		Reset to zero
Fuel gauge		
Water temperature gauge		
Illumination control	Combination meter illumination	Change to nighttime mode
Odo/trip meter		Integrate in response to 8-pulse input
A/T indicator		The display turns OFF
Meter buzzer		The meter buzzer turns OFF

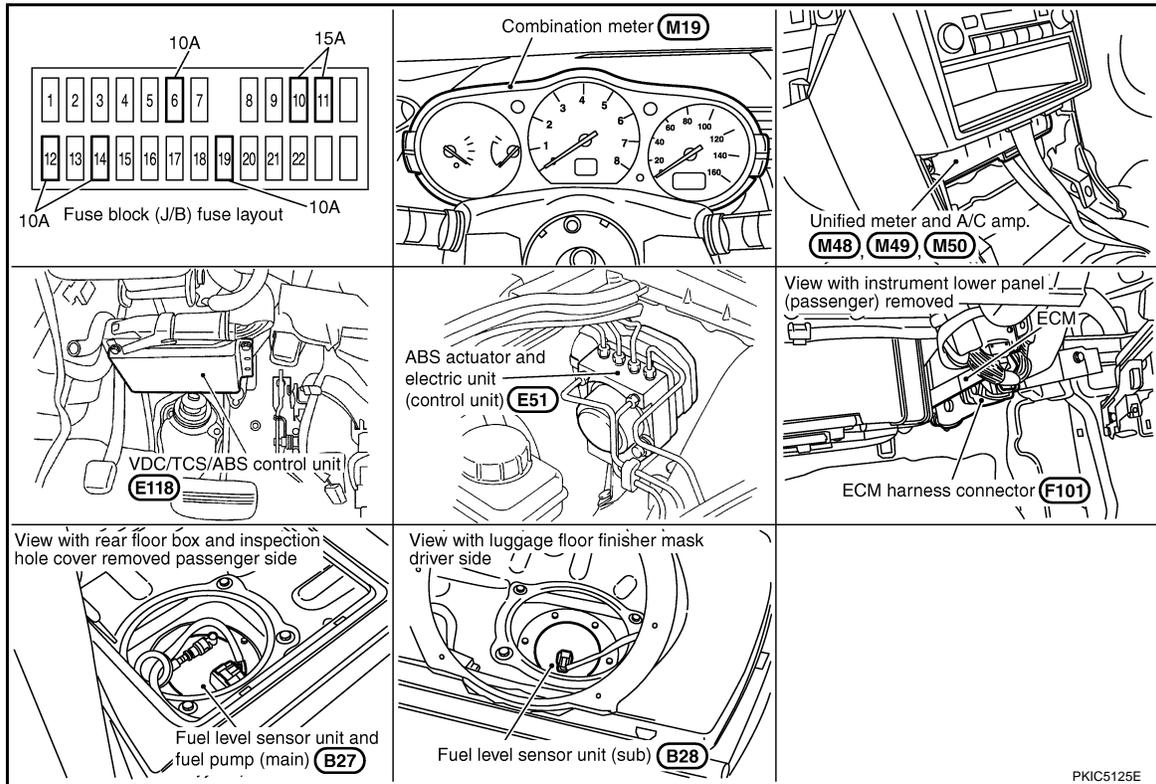
# COMBINATION METERS

## < SERVICE INFORMATION >

	Function	Fail-safe operation
Warning lamp/indicator lamp	ABS warning lamp	The lamp turns ON
	VDC OFF indicator lamp	
	TCS OFF indicator lamp	
	SLIP indicator lamp	
	Brake warning lamp	
	Tire pressure warning lamp	
Warning lamp/indicator lamp	A/T CHECK lamp	The lamp turns OFF
	Oil pressure warning lamp	
	Door warning lamp	
	High beam indicator lamp	
	Turn signal indicator lamp	
	Malfunction indicator lamp	
	CRUISE indicator lamp	
	SET indicator lamp	

## Component Parts and Harness Connector Location

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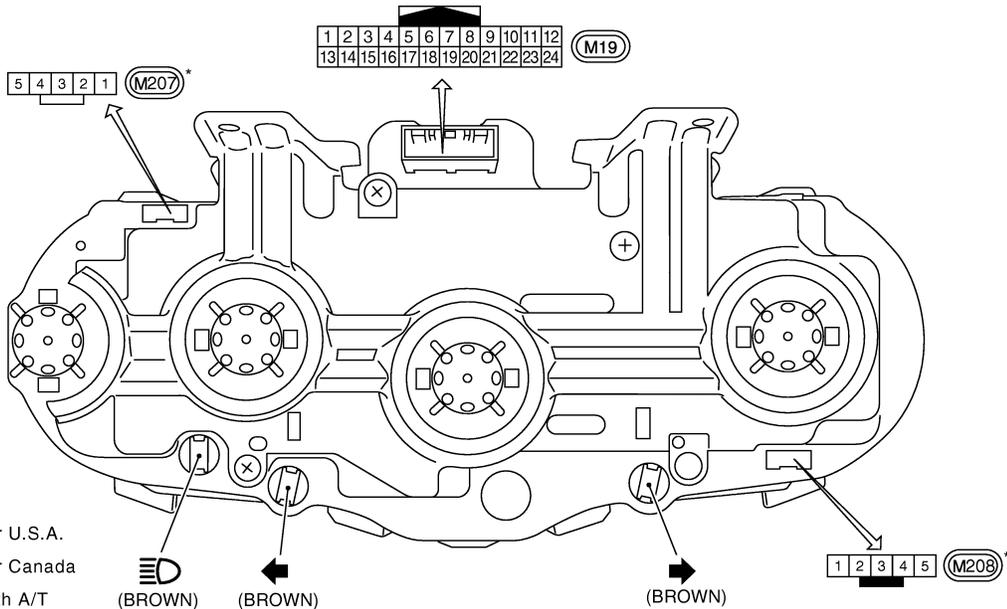
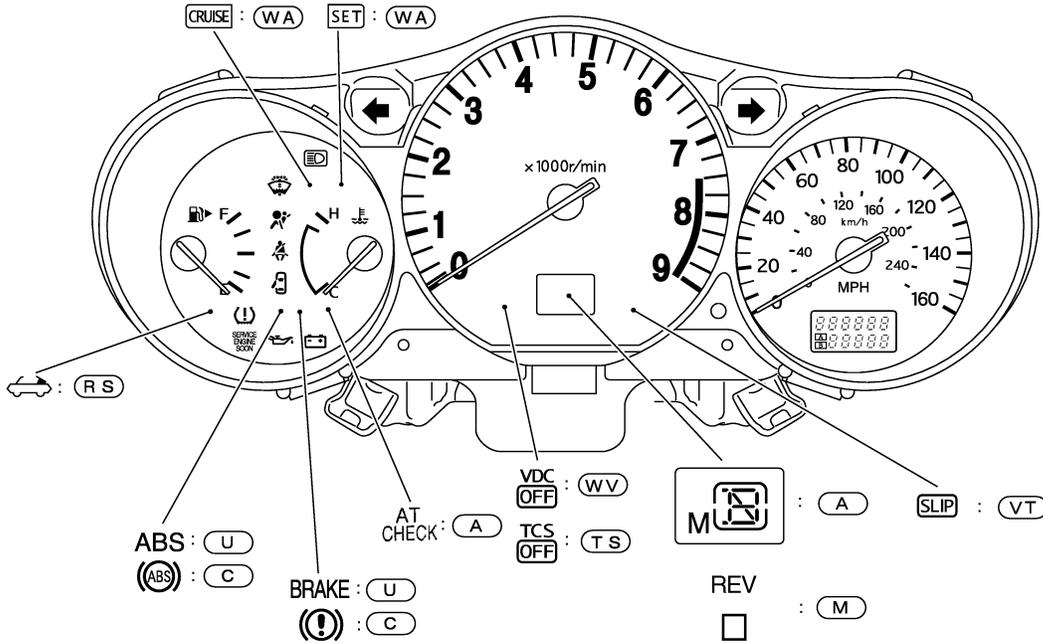


# COMBINATION METERS

< SERVICE INFORMATION >

## Arrangement of Combination Meter

INFOID:000000004657484



- (U) : For U.S.A.
- (C) : For Canada
- (A) : With A/T
- (M) : With M/T
- (RS) : Roadster models
- (WA) : With ASCD
- (WV) : With VDC system
- (TS) : With TCS without VDC system
- (VT) : With VDC system or TCS
- Bulb wattage : 1.4W
- ( ) : Bulb socket color

\* THIS CONNECTOR IS NOT SHOWN IN "HARNES LAYOUT", PG SECTION.

SKIB9134E

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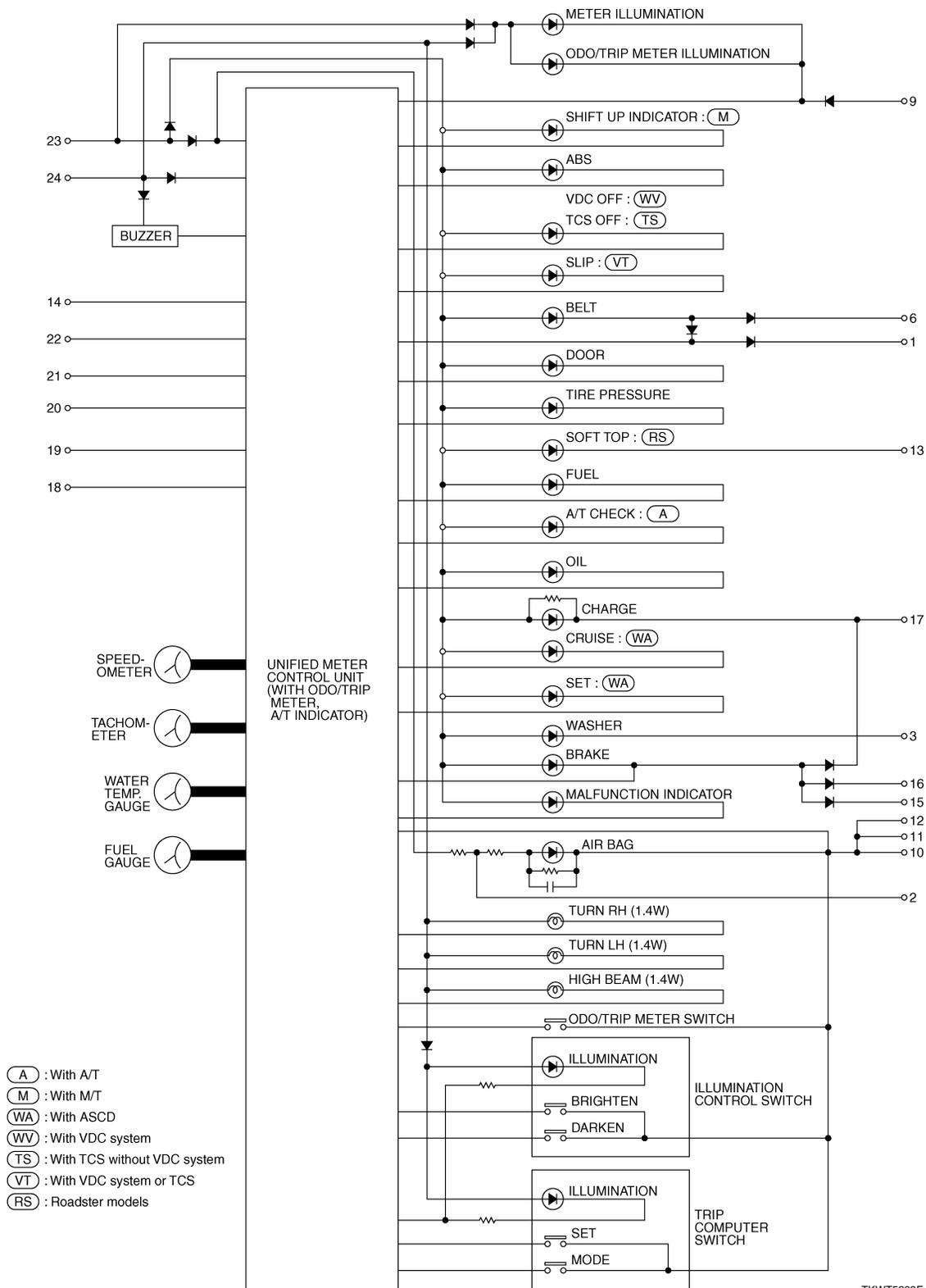
DI

# COMBINATION METERS

< SERVICE INFORMATION >

## Schematic

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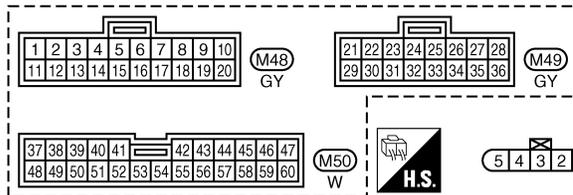
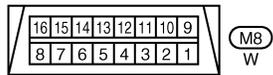
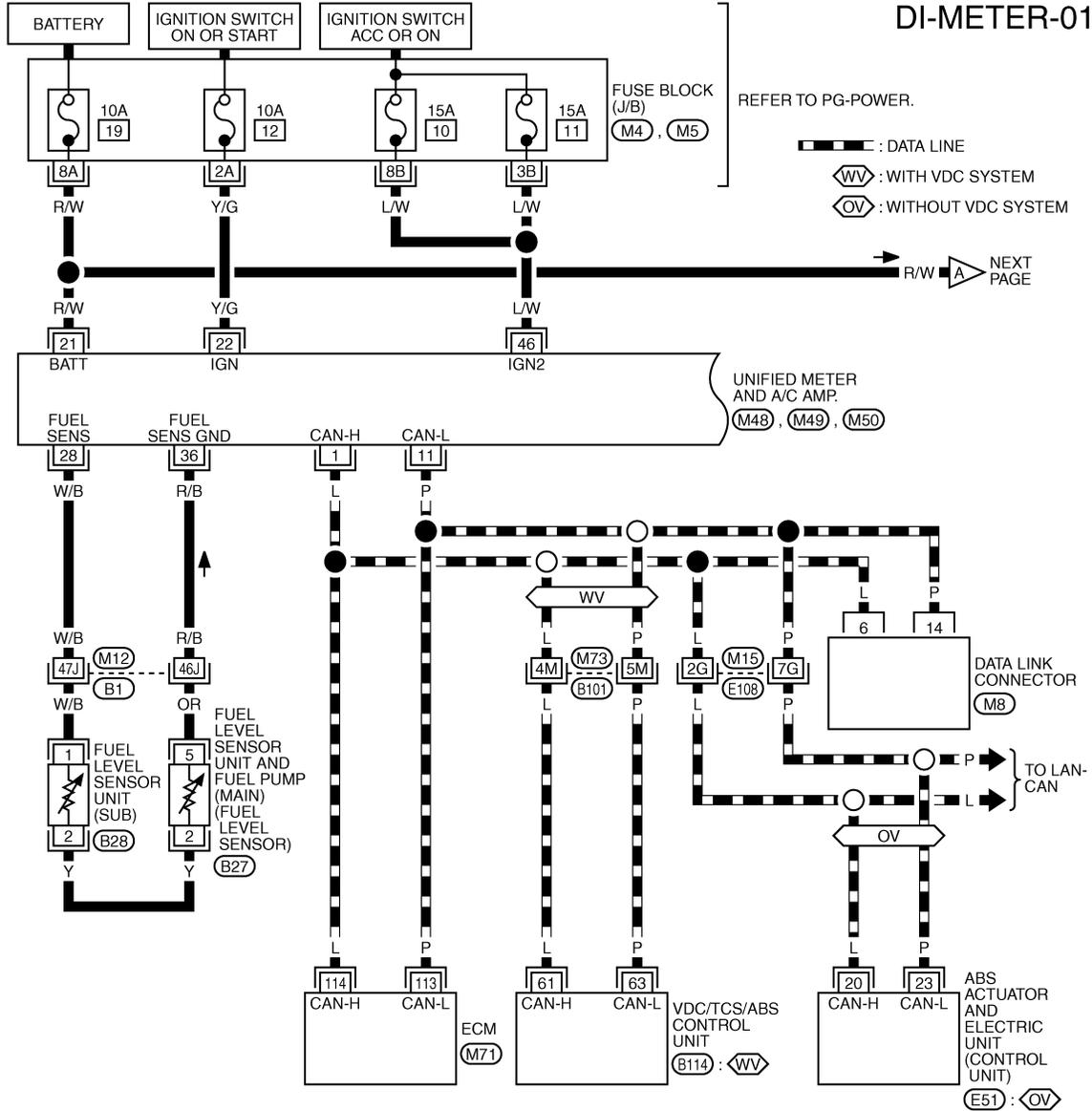
TKWT5603E

# COMBINATION METERS

< SERVICE INFORMATION >

## Wiring Diagram - METER -

INFOID:000000004657486



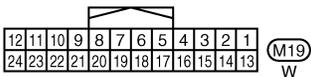
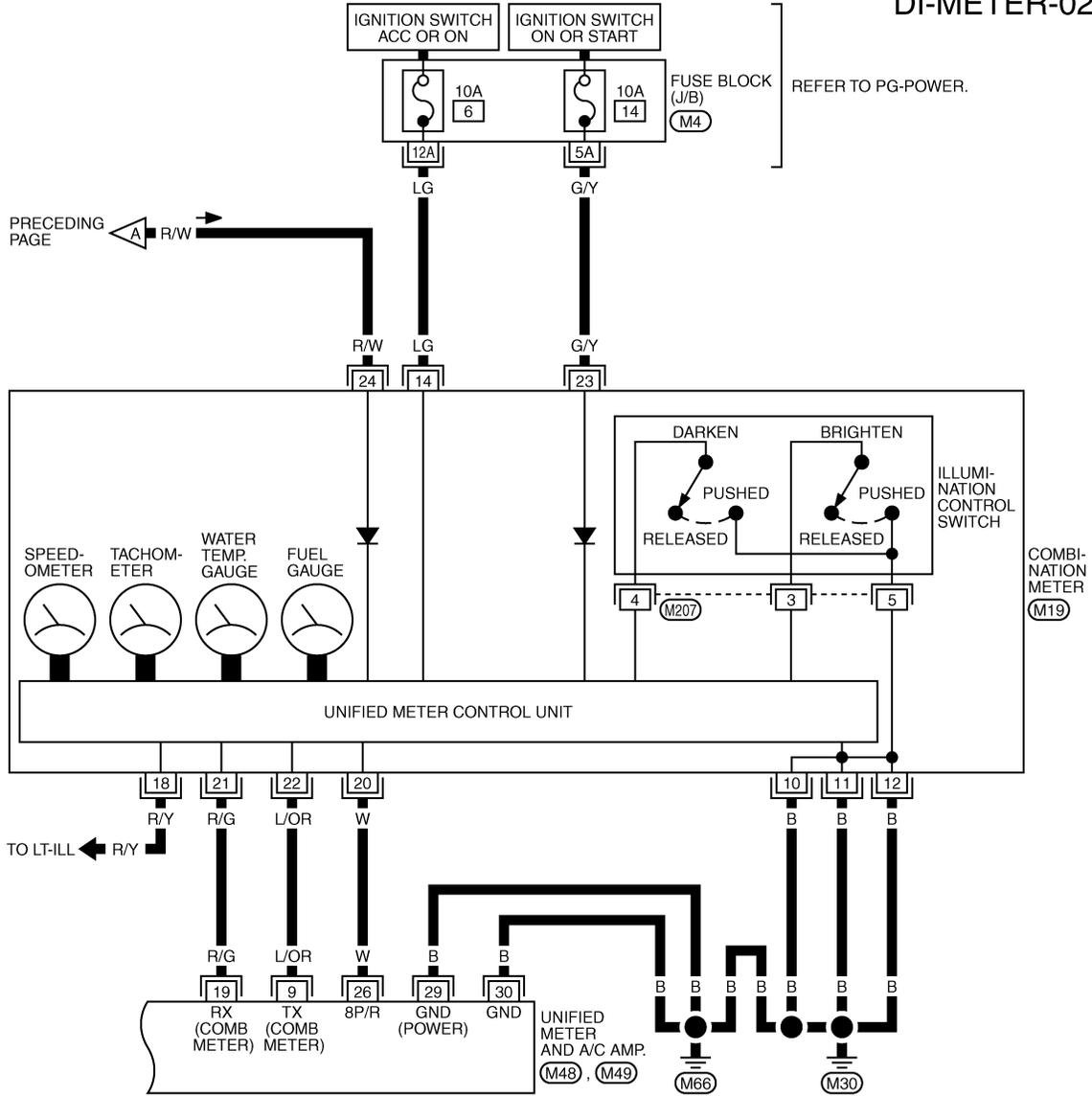
REFER TO THE FOLLOWING.  
 (E108), (B1), (B101) -SUPER MULTIPLE JUNCTION (SMJ)  
 (M4), (M5) -FUSE BLOCK-JUNCTION BOX (J/B)  
 (M71), (E51), (B114) -ELECTRICAL UNITS

TKWT5721E

# COMBINATION METERS

< SERVICE INFORMATION >

## DI-METER-02



\*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.  
 (M4) -FUSE BLOCK-JUNCTION BOX (J/B)

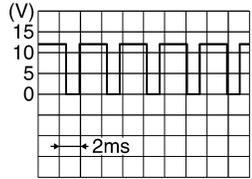
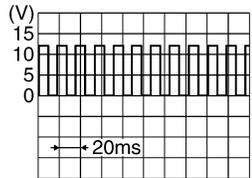
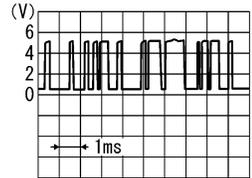
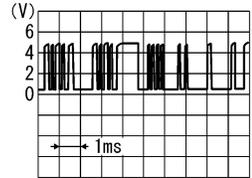
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# COMBINATION METERS

< SERVICE INFORMATION >

## Terminal and Reference Value for Combination Meter

INFOID:000000004657487

Terminal No.	Wire color	Item	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
10	B	Ground	ON	—	0 V
11					
12					
14	LG	ACC power supply	ACC	—	Battery voltage
18	R/Y	Illumination signal	ON	Lighting switch ON, then operate the illumination control switch.	<e.g.>When brightness level is midway  <small>PKIA3771E</small>
				Lighting switch OFF	0 V
20	W	Vehicle speed signal input (8-pulse)	ON	Speedometer operated. [When vehicle speed is approx. 40 km/h (25 MPH)]	<b>NOTE:</b> Maximum voltage may be 5 V due to specifications (connected units).  <small>PKIA1935E</small>
21	R/G	TX communication line (To unified meter and A/C amp.)	ON	—	 <small>SKIA3361E</small>
22	L/OR	RX communication line (From unified meter and A/C amp.)	ON	—	 <small>SKIA3362E</small>
23	G/Y	Ignition power supply	ON	—	Battery voltage
24	R/W	Battery power supply	OFF	—	Battery voltage

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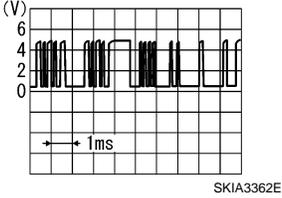
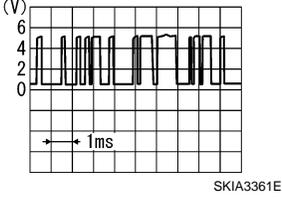
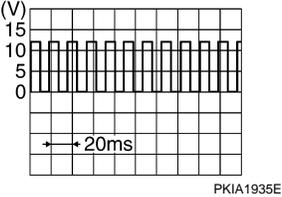


# COMBINATION METERS

< SERVICE INFORMATION >

## Terminal and Reference Value for Unified Meter and A/C Amp

INFOID:000000004657488

Terminal No.	Wire color	Item	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
1	L	CAN-H	—	—	—
9	L/OR	TX communication line (To combination meter)	ON	—	
11	P	CAN-L	—	—	—
19	R/G	RX communication line (From combination meter)	ON	—	
21	R/W	Battery power supply	OFF	—	Battery voltage
22	Y/G	Ignition power supply	ON	—	Battery voltage
26	W	Vehicle speed signal output (8-pulse)	ON	Speedometer operated. [When vehicle speed is approx. 40 km/h (25 MPH)]	<p><b>NOTE:</b> Maximum voltage may be 5 V due to specifications (connected units).</p> 
28	W/B	Fuel level sensor signal	—	—	Refer to <a href="#">DI-21, "Electrical Component Inspection"</a> .
29	B	Ground (For power)	ON	—	0 V
30	B	Ground	ON	—	0 V
36	R/B	Fuel level sensor ground	ON	—	0 V
46	L/W	ACC power supply	ACC	—	Battery voltage

## Self-Diagnosis Mode of Combination Meter

INFOID:000000004657489

### SELF-DIAGNOSIS FUNCTION

- Odo/trip meter segment and A/T indicator segment operation can be checked in self-diagnosis mode.
- Meters/gauges can be checked in self-diagnosis mode.

### OPERATION PROCEDURE

1. Turn ignition switch ON, and switch the odo/trip meter to "trip A" or "trip B".

**NOTE:**

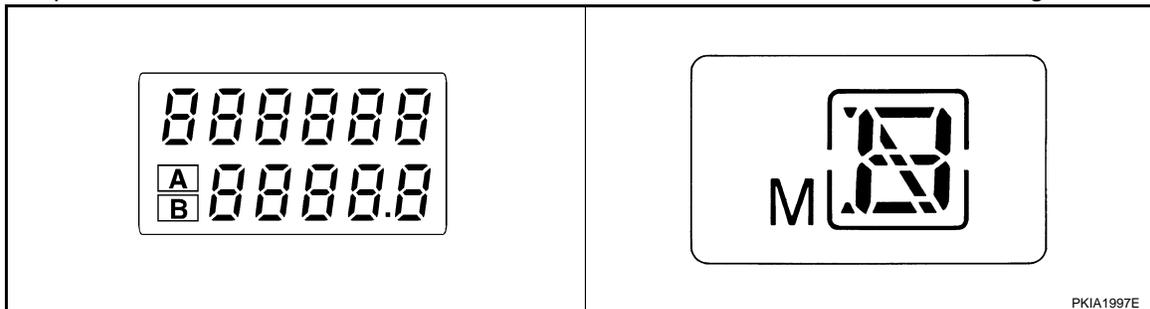
If the diagnosis function is activated with "trip A" displayed, the mileage on "trip A" will indicate "0000.0", but the actual trip mileage will be retained. (The "trip B" functions in the same way.)

2. Turn ignition switch OFF.
3. While pressing the odo/trip meter switch, turn ignition switch ON again.

# COMBINATION METERS

## < SERVICE INFORMATION >

4. Make sure that the trip meter displays "0000.0".
5. Press the odo/trip meter switch at least 3 times (within 7 seconds after the ignition switch is turned ON).
6. All the segments on the odo/trip meter and A/T indicator illuminate, and simultaneously the low-fuel warning lamp indicator illuminates. At this time, the unified meter control unit is turned to diagnosis mode.



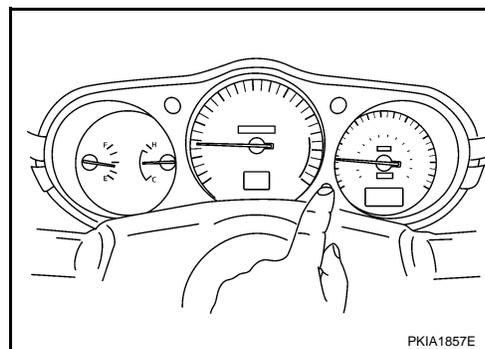
### NOTE:

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

7. Press the odo/trip meter switch. Each meter/gauge should indicate as shown in the figure while pressing odo/trip meter switch. (At this time, the low-fuel warning lamp goes off).

### NOTE:

If any of the meter/gauge is not activated, replace combination meter.



## CONSULT-III Function (METER/M&A)

INFOID:000000004657490

Refer to [DI-44, "CONSULT-III Function \(METER/M&A\)"](#) in "UNIFIED METER AND A/C AMP".

## Trouble Diagnosis

INFOID:000000004657491

### HOW TO PERFORM TROUBLE DIAGNOSIS

1. Confirm the symptom or customer complaint.
2. Perform preliminary check. Refer to "PRELIMINARY CHECK".
3. According to the symptom chart, make sure of the symptom cause and repair or replace applicable parts.
4. Does the meter operate normally? If so, GO TO 5. If not, GO TO 2.
5. INSPECTION END

### PRELIMINARY CHECK

#### 1. CHECK OPERATION OF SELF-DIAGNOSIS MODE (COMBINATION METER)

Perform self-diagnosis mode of combination meter. Refer to [DI-14, "Self-Diagnosis Mode of Combination Meter"](#).

Does self-diagnosis mode operation normally?

YES >> GO TO 2.

NO >> GO TO 3.

#### 2. CHECK UNIFIED METER AND A/C AMP. (CONSULT-III)

Perform self-diagnosis of unified meter and A/C amp. Refer to [DI-44, "CONSULT-III Function \(METER/M&A\)"](#).

#### Self-diagnostic results

No malfunction detected >> INSPECTION END

Malfunction detected >> Check applicable parts, and repair or replace corresponding parts.

# COMBINATION METERS

< SERVICE INFORMATION >

## 3. CHECK POWER SUPPLY AND GROUND CIRCUIT OF COMBINATION METER

Check power supply and ground circuit of combination meter. Refer to [DI-16, "Power Supply and Ground Circuit Inspection"](#).

**OK or NG**

- OK >> Replace combination meter.
- NG >> Repair power supply and ground circuit of combination meter.

### Symptom Chart

INFOID:000000004657492

Symptom	Possible cause
Speedometer and odo/trip meter indication is malfunction.	Refer to <a href="#">DI-17, "Vehicle Speed Signal Inspection"</a> .
Tachometer indication is malfunction.	Refer to <a href="#">DI-18, "Engine Speed Signal Inspection"</a> .
Water temperature gauge indication is malfunction.	Refer to <a href="#">DI-18, "Engine Coolant Temperature Signal Inspection"</a> .
Fuel gauge indication is malfunction.	Refer to <a href="#">DI-19, "Fuel Level Sensor Signal Inspection"</a> .
Low-fuel warning lamp indication is irregular.	
A/T position indicator is malfunction.	Refer to <a href="#">DI-66, "A/T Indicator Is Malfunction"</a> .
Illumination control does not operate.	Refer to <a href="#">DI-20, "Illumination Control Switch Inspection"</a> .

## Power Supply and Ground Circuit Inspection

INFOID:000000004657493

### 1. CHECK FUSE

Check for blown combination meter fuses.

Power source	Fuse No.
Battery	19
Ignition switch ACC or ON	6
Ignition switch ON or START	14

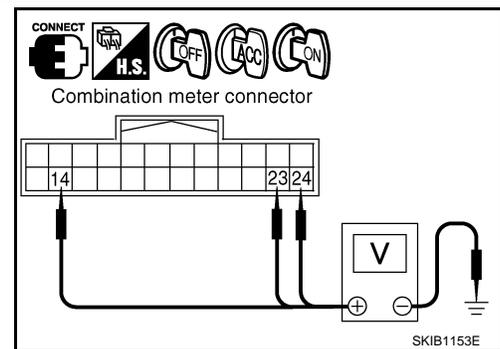
**OK or NG**

- OK >> GO TO 2.
- NG >> Be sure to eliminate cause of malfunction before installing new fuse. Refer to [PG-4](#).

### 2. CHECK POWER SUPPLY CIRCUIT

Check voltage between combination meter harness connector M19 terminals 24, 23, 14 and ground.

Terminals		(-)	Ignition switch position		
(+)	Terminal (Wire color)		OFF	ACC	ON
Connector M19	24	Ground	Battery voltage	Battery voltage	Battery voltage
	23		0 V	0 V	Battery voltage
	14		0 V	Battery voltage	Battery voltage



**OK or NG**

- OK >> GO TO 3.
- NG >> Repair harness between combination meter and fuse.

### 3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector.

# COMBINATION METERS

## < SERVICE INFORMATION >

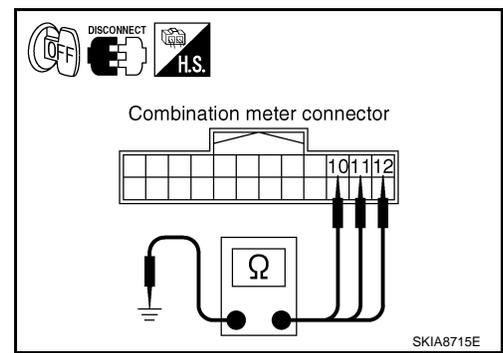
- Check continuity between combination meter harness connector M19 terminals 10, 11, 12 and ground.

**10 – Ground**

**11 – Ground**

**12 – Ground**

**: Continuity should exist.**



### OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.

## Vehicle Speed Signal Inspection

INFOID:000000004657494

Symptom: Indication is irregular for the Speedometer and odo/trip meter.

### 1. CHECK VDC/TCS/ABS CONTROL UNIT OR ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Perform the following units self-diagnosis.

- VDC/TCS/ABS control unit [with VDC]. Refer to [BRC-95, "CONSULT-III Function"](#).
- ABS actuator and electric unit (control unit) [without VDC (with TCS)]. Refer to [BRC-53, "CONSULT-III Function"](#).
- ABS actuator and electric unit (control unit) [without VDC (without TCS)]. Refer to [BRC-19, "CONSULT-III Function"](#).

### Self-diagnostic results

No malfunction detected >> GO TO 2.

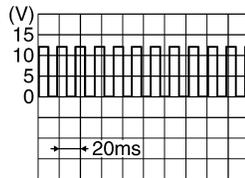
Malfunction detected >> Check applicable parts, and repair or replace corresponding parts.

### 2. CHECK UNIFIED METER AND A/C AMP. OUTPUT SIGNAL

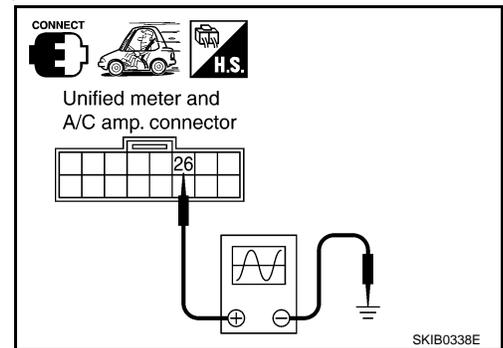
- Start engine and drive vehicle at approximately 40 km/h (25 MPH).
- Check voltage signal between unified meter and A/C amp. harness connector M49 terminal 26 and ground.

**NOTE:**  
Maximum voltage may be 5 V due to specifications (connected units).

**26 – Ground:**



PKIA1935E



### OK or NG

OK >> GO TO 3.

- NG >>
- If monitor indicates "0 V" constantly, repair or replace malfunctioning parts after checking each unit inputting vehicle speed signal (8 pulse), harness and connector between each unit and unified meter and A/C amp.
  - If monitor indicates "5 V" or "12 V" constantly, replace unified meter and A/C amp.

### 3. CHECK CONTINUITY BETWEEN COMBINATION METER AND UNIFIED METER AND A/C AMP.

- Turn ignition switch OFF.
- Disconnect combination meter connector and unified meter and A/C amp. connector.

# COMBINATION METERS

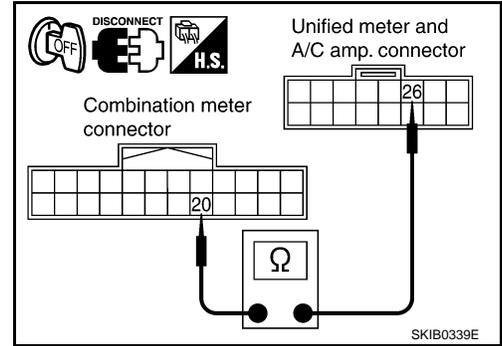
## < SERVICE INFORMATION >

3. Check continuity between combination meter harness connector M19 terminal 20 and unified meter and A/C amp. harness connector M49 terminal 26.

**20 – 26 : Continuity should exist.**

### OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness or connector.



## Engine Speed Signal Inspection

INFOID:000000004657495

Symptom: Tachometer indication is malfunction.

### 1. CHECK UNIFIED METER AND A/C AMP. OUTPUT SIGNAL

1. Start engine and select "METER/M&A" on CONSULT-III.
2. Using "TACHO METER" on "Data Monitor", compare the value of "Data Monitor" with tachometer pointer of combination meter.

### OK or NG

- OK >> GO TO 2.
- NG >> Replace combination meter.

### 2. CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL

1. Select "ENGINE" on CONSULT-III.
2. Using "ENG SPEED" on "Data Monitor", check the CONSULT-III screen when the engine is idling.
3. Select "METER/M&A" on CONSULT-III.
4. Using "TACHO METER" on "Data Monitor", compare the value of "Data monitor" of the idling speed with that of the "ENG SPEED".

### OK or NG

- OK >> Perform ECM self-diagnosis. Refer to [EC-111, "CONSULT-III Function \(ENGINE\)"](#).
- NG >> Replace unified meter and A/C amp.

## Engine Coolant Temperature Signal Inspection

INFOID:000000004657496

Symptom: Water temperature gauge indication is malfunction.

### 1. CHECK UNIFIED METER AND A/C AMP. OUTPUT SIGNAL

1. Start engine and select "METER/M&A" on CONSULT-III.
2. Using "W TEMP METER" on the "Data Monitor", compare the value of "Data Monitor" with water temperature gauge pointer of combination meter.

Water temperature gauge pointer	Reference value of data monitor [°C (°F)]
Hot	Approx. 130 (266)
Middle	Approx. 70 - 105 (158 - 221)
Cold	Approx. 50 (122)

### OK or NG

- OK >> GO TO 2.
- NG >> Replace combination meter.

### 2. CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL

1. Select "ENGINE" on CONSULT-III.
2. Using "COOLAN TEMP/S" on "Data Monitor", check the CONSULT-III screen.
3. Select "METER/M&A" on CONSULT-III.
4. Using "W TEMP METER" on, compare the value of "Data Monitor" with that of the "COOLAN TEMP/S".

### OK or NG

- OK >> Perform ECM self-diagnosis. Refer to [EC-111, "CONSULT-III Function \(ENGINE\)"](#).

# COMBINATION METERS

## < SERVICE INFORMATION >

NG >> Replace unified meter and A/C amp.

## Fuel Level Sensor Signal Inspection

INFOID:000000004657497

Symptom:

- Fuel gauge indication is malfunction.
- Low-fuel warning lamp indication is irregular.

### NOTE:

The following symptoms are not malfunction.

Fuel level sensor unit

- Depending on vehicle position or driving circumstance, the fuel level in the tank varies, and the pointer may fluctuate.
- If the vehicle is fueled with the ignition switch ON, the pointer will move slowly.

Low-fuel warning lamp

- Depending on vehicle position or driving circumstance, the fuel in the tank flows and the warning lamp ON timing may change.

## 1. CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL

1. Select "METER/M&A" on CONSULT-III.
2. Using "FUEL METER" on "Data Monitor", compare the value of "Data Monitor" with fuel gauge pointer of combination meter.

Fuel gauge indication	Value on monitor [lit.]
Full	Approx. 74
Three quarters	Approx. 61
Half	Approx. 42
A quarter	Approx. 22
Empty	Approx. 8

### OK or NG

OK >> GO TO 2.

NG >> Replace combination meter.

## 2. CHECK FUEL LEVEL SENSOR

1. Turn ignition switch OFF.
2. Check components. Refer to [DI-21. "Electrical Component Inspection"](#).

### OK or NG

OK >> GO TO 3.

NG >> Replace fuel level sensor unit.

## 3. CHECK FUEL LEVEL SENSOR (SUB) CIRCUIT

1. Disconnect unified meter and A/C amp. connector and fuel level sensor unit (sub) connector.
2. Check continuity between unified meter and A/C amp. harness connector M49 terminal 28 and fuel level sensor unit (sub) harness connector B28 terminal 1.

**28 – 1 : Continuity should exist.**

3. Check continuity between unified meter and A/C amp. harness connector M49 terminal 28 and ground.

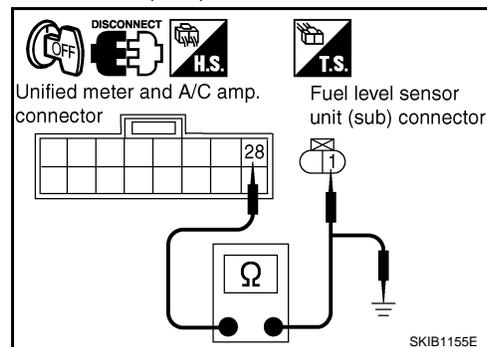
**28 – Ground : Continuity should not exist.**

### OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.

## 4. CHECK FUEL LEVEL SENSOR (MAIN·SUB) CIRCUIT



# COMBINATION METERS

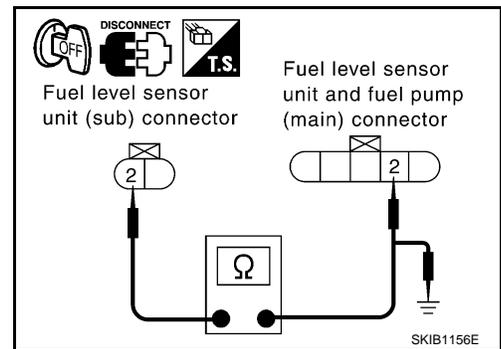
## < SERVICE INFORMATION >

1. Disconnect fuel level sensor unit and fuel pump (main) connector.
2. Check continuity between fuel level sensor unit (sub) harness connector B28 terminal 2 and fuel level sensor unit and fuel pump (main) harness connector B27 terminal 2.

**2 – 2** : Continuity should exist.

3. Check continuity between fuel level sensor unit (sub) harness connector B28 terminal 2 and ground.

**2 – Ground** : Continuity should not exist.



### OK or NG

OK >> GO TO 5.

NG >> Repair harness or connector.

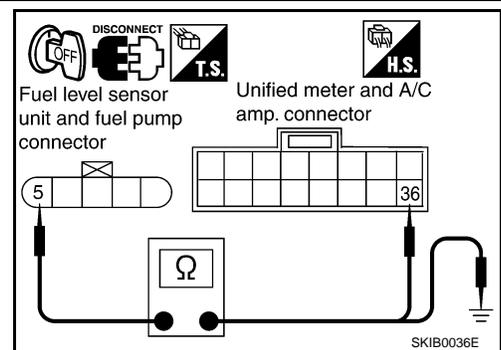
## 5. CHECK FUEL LEVEL SENSOR (MAIN) CIRCUIT

1. Check continuity between fuel level sensor unit and fuel pump (main) harness connector B27 terminal 5 and unified meter and A/C amp. harness connector M49 terminal 36.

**5 – 36** : Continuity should exist.

2. Check continuity between fuel level sensor unit and fuel pump (main) harness connector B27 terminal 5 and ground.

**5 – Ground** : Continuity should not exist.



### OK or NG

OK >> GO TO 6.

NG >> Repair harness or connector.

## 6. CHECK INSTALLATION CONDITION

Check fuel level sensor unit installation, and check whether the float arm interferes or binds with any of the internal components in the fuel tank.

### OK or NG

OK >> Replace unified meter and A/C amp.

NG >> Install the fuel level sensor unit properly.

## Illumination Control Switch Inspection

INFOID:000000004657498

Symptom: Illumination control does not operate.

## 1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Remove combination meter.
3. Remove rear finisher of combination meter.
4. Check illumination control switch connector for looseness.

### OK or NG

OK >> GO TO 2.

NG >> Repair illumination control switch connector.

## 2. CHECK ILLUMINATION CONTROL SWITCH

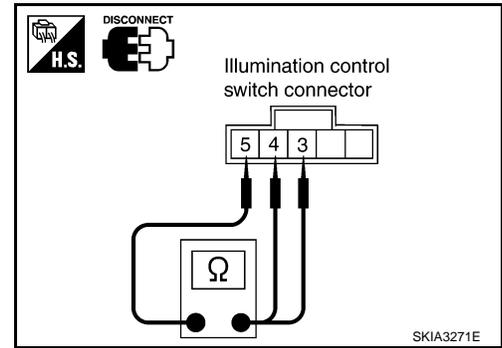
1. Disconnect illumination control switch connector.

# COMBINATION METERS

## < SERVICE INFORMATION >

- Check continuity between illumination control switch harness connector M207 terminals 3 or 4 and 5.

Terminal	Condition	Continuity
3	Illumination control switch upper side (BRIGHTEN) is pressed.	Yes
	Illumination control switch upper side (BRIGHTEN) is released.	No
4	Illumination control switch lower side (DARKEN) is pressed.	Yes
	Illumination control switch lower side (DARKEN) is released.	No



### OK or NG

- OK >> Replace combination meter.
- NG >> Replace illumination control switch.

## Fuel Gauge Pointer Fluctuates, Indicator Wrong Value or Varies

INFOID:000000004657499

### 1.CHECK FUEL GAUGE FLUCTUATION

Test drive vehicle to see if gauge fluctuates only during driving or at the instant of stopping.

Does the indication value vary only during driving or at the instant of stopping?

- YES >> The pointer fluctuation may be caused by fuel level change in the fuel tank. Condition is normal.
- NO >> Ask the customer about the situation when the symptom occurs in detail, and perform the trouble diagnosis.

## Fuel Gauge Does Not Move to FULL Position

INFOID:000000004657500

### 1.QUESTION 1

Does it take a long time for the pointer to move to FULL position?

- YES >> GO TO 2.
- NO >> GO TO 3.

### 2.QUESTION 2

Was the vehicle fueled with the ignition switch ON?

- YES >> Be sure to fuel the vehicle with the ignition switch OFF. Otherwise, it will take a long time to move to FULL position because of the characteristic of the fuel gauge.
- NO >> GO TO 3.

### 3.QUESTION 3

Is the vehicle parked on an incline?

- YES >> Check the fuel level indication with vehicle on a level surface.
- NO >> GO TO 4.

### 4.QUESTION 4

During driving, does the fuel gauge pointer move gradually toward EMPTY position?

- YES >> Check the fuel level sensor unit. Refer to [DI-21. "Electrical Component Inspection"](#).
- NO >> The float arm may interfere or bind with any of the components in the fuel tank.

## Electrical Component Inspection

INFOID:000000004657501

### FUEL LEVEL SENSOR UNIT

For removal, refer to [FL-4](#).

# COMBINATION METERS

## < SERVICE INFORMATION >

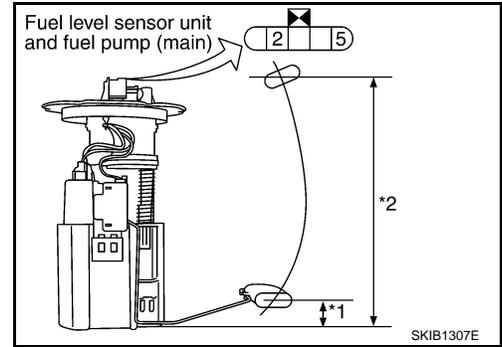
### Fuel Level Sensor Unit and Fuel Pump (Main)

Check the resistance between terminals 2 and 5.

Terminal		Float position [mm (in)]		Resistance value [ $\Omega$ ]	
2	5	*1	Empty	30 (1.18)	Approx. 80
		*2	Full	210 (8.27)	

\*1 and \*2: When float rod is in contact with stopper.

- If the results of check are NG, check the fuel level sensor unit and fuel pump (main) harness. Refer to "Fuel Level Sensor Unit and Pump (Main) Harness".

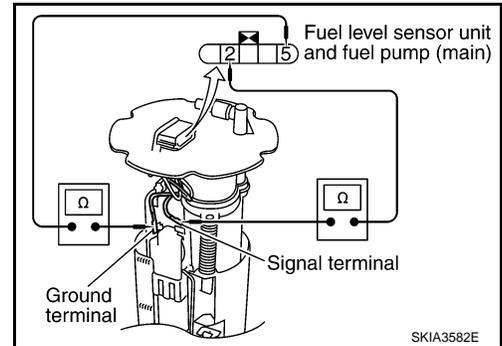


### Fuel Level Sensor Unit and Pump (Main) Harness

Check the continuity between the following terminals.

Terminal	Continuity
2 - Signal terminal	Yes
5 - Ground terminal	

- If the results of check are NG, replace fuel pump assembly. If the results of check are OK, replace fuel level sensor unit.

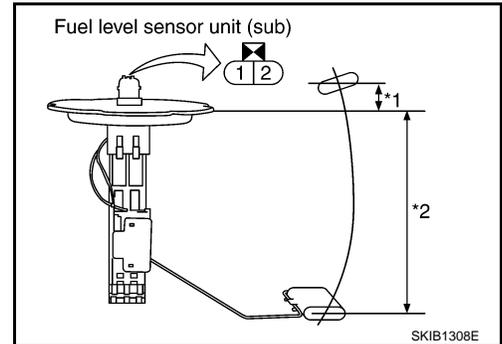


### Fuel Level Sensor Unit (Sub)

Check the resistance between terminals 1 and 2.

Terminal		Float position [mm (in)]		Resistance value [ $\Omega$ ]	
1	2	*1	Full	9 (0.35)	Approx. 3
		*2	Empty	179 (7.05)	

\*1 and \*2: When float rod is in contact with stopper.

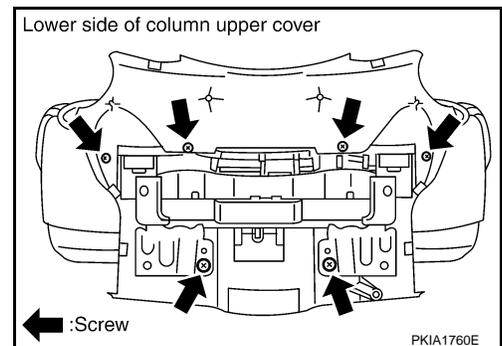


## Removal and Installation for Combination Meter

INFOID:000000004657502

### REMOVAL

1. Remove instrument driver panel lower. Refer to [IP-12](#).
2. Remove steering column lower cover. Refer to [IP-12](#).
3. Remove bolts (4) and remove column upper cover and combination meter assembly. Refer to [IP-12](#).
4. Remove screws (6) and remove combination meter.



### INSTALLATION

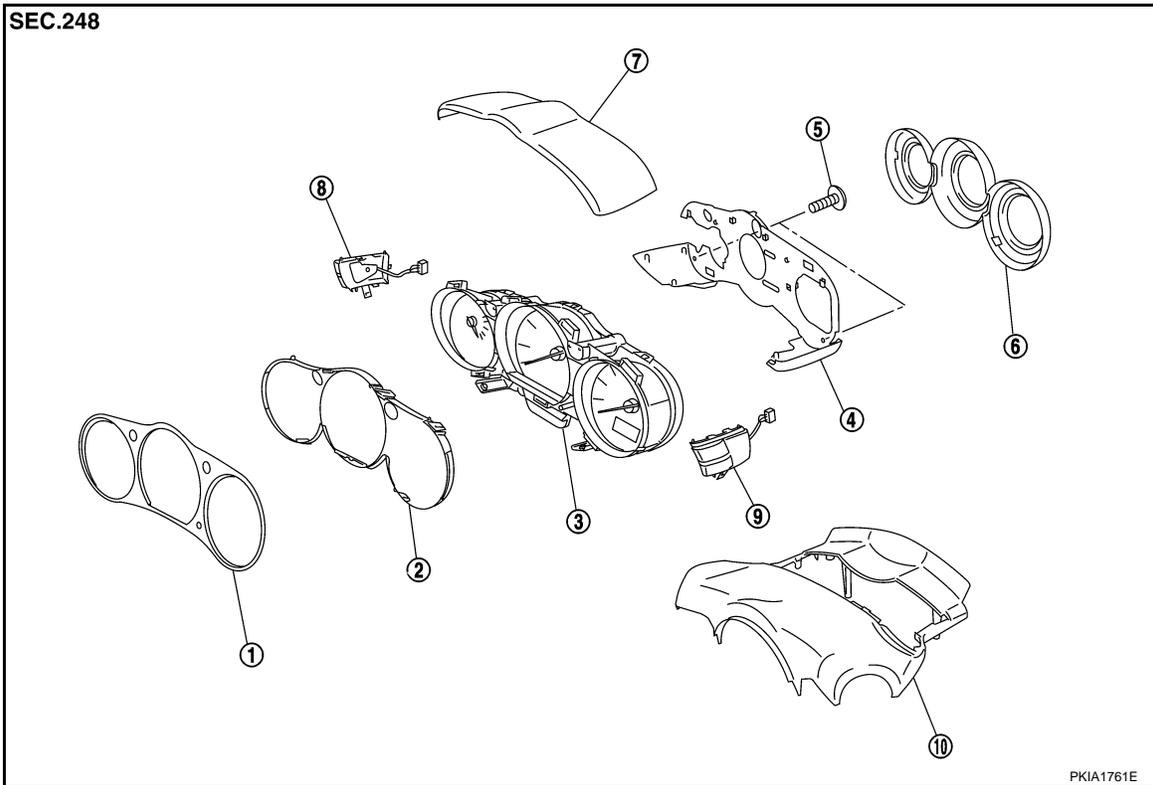
Installation is the reverse order of removal.

# COMBINATION METERS

< SERVICE INFORMATION >

## Disassembly and Assembly of Combination Meter

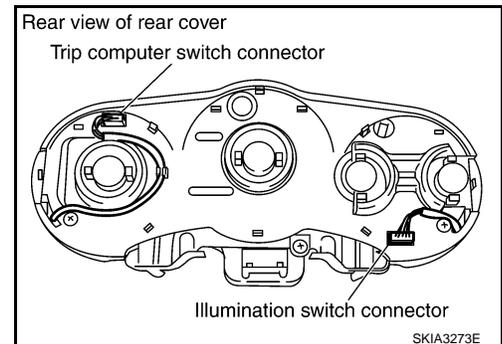
INFOID:000000004657503



- |                                 |                                |                               |
|---------------------------------|--------------------------------|-------------------------------|
| 1. Front finisher               | 2. Front cover                 | 3. Unified meter control unit |
| 4. Rear cover                   | 5. Screws                      | 6. Rear finisher              |
| 7. Upper cover                  | 8. Illumination control switch | 9. Trip computer switch       |
| 10. Steering column upper cover |                                |                               |

### DISASSEMBLY

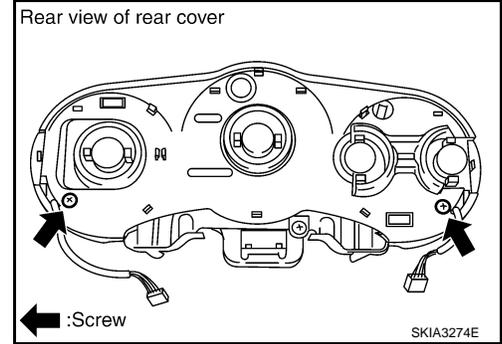
1. Remove screws (6) to separate steering column upper cover.
2. Disengage tabs (2) to separate front finisher.
3. Disengage tabs (8) to separate rear finisher.
4. Disconnect illumination control switch connector and trip computer switch connector.



## COMBINATION METERS

### < SERVICE INFORMATION >

5. Remove screws (2) and remove rear cover.



6. Disengage tabs (4) to separate upper cover from rear cover.

7. Remove illumination control switch.

8. Remove trip computer switch.

9. Disengage tabs (7) to separate front cover.

### ASSEMBLY

Assembly is the reverse order of disassembly.

# TRIPLE METERS

< SERVICE INFORMATION >

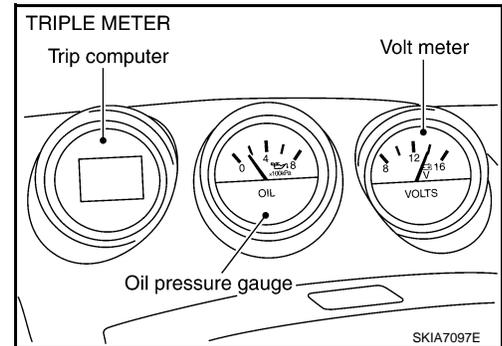
## TRIPLE METERS

### System Description

INFOID:000000004657504

#### TRIPLE METER

- Oil pressure gauge and voltmeter are controlled by the triple meter.
- Trip computer is controlled by the signals from the unified meter and A/C amp.
- Triple meter operation can be checked with self-diagnosis mode of combination meter.



#### UNIFIED METER AND A/C AMP.

Refer to [DI-42. "System Description"](#) in "UNIFIED METER AND A/C AMP".

#### POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times

- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to triple meter terminal 2.

With the ignition switch in the ON or START position, power is supplied

- through 10A fuse [No. 14, located in the fuse block (J/B)]
- to triple meter terminal 3.

Ground is supplied

- to triple meter terminal 1
- through grounds M30 and M66.

#### VOLTMETER

When ignition switch is turned to the ON position, the voltmeter indicates the battery voltage.

#### OIL PRESSURE GAUGE

With the ignition switch in the ON or START position, power is supplied

- through triple meter terminal 9
- to oil pressure sensor terminal 1.

Ground is supplied

- to triple meter terminal 7
- through oil pressure sensor terminal 3.

And triple meter reads oil pressure signal from oil pressure sensor

- from oil pressure sensor terminal 2
- to triple meter terminal 8.

#### NOTE:

- Triple meter judges an oil pressure condition by oil pressure signal, and transmits oil pressure warning lamp signal to combination meter through unified meter and A/C amp. with communication line.
- Oil pressure gauge is not designed to indicate the low oil level. Use the oil level gauge to check the oil level.

#### TRIP COMPUTER

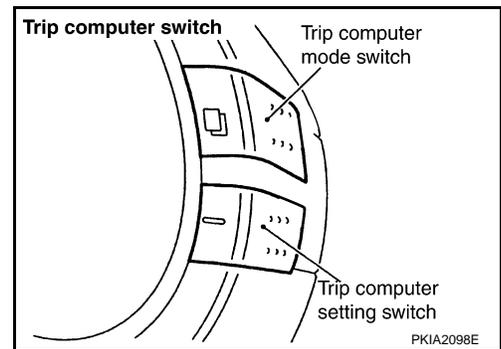
Function

When the ignition switch is turned ON, the display scrolls all the modes. And then shows the mode chosen before the ignition switch is turned OFF.

# TRIPLE METERS

## < SERVICE INFORMATION >

- Trip computer is operated by the trip computer switch.
- Trip computer receives a switch signal from combination meter through the unified meter and A/C amp. with communication line. The mode of the trip computer is the following.
- Vehicle speed
- Ambient air temperature
- DTE (distance to empty)
- Average fuel consumption
- Average vehicle speed
- Trip time
- Trip distance
- Stopwatch
- Shift-up indicator setting mode



### How to Change/ Reset the Displayed Mode

- The displayed mode can be selected in the following order by momentarily pressing the trip computer mode switch.
  - Vehicle speed → Ambient air temperature → DTE → Average fuel consumption and average vehicle speed → Trip time and trip distance → Stopwatch → Shift-up indicator setting
- Holding the trip computer setting switch for more than 1 second resets the displayed mode (Average fuel consumption, average vehicle speed, trip time, trip distance or stopwatch).

### NOTE:

When the ambient air temperature warning, the tire pressure warning, and the DTE warning, match warning conditions at the same time, the display automatically displays the ambient air temperature warning.

### Vehicle Speed

- Trip computer receives vehicle speed signal from combination meter through the unified meter and A/C amp. with communication line.
- Trip computer displays the vehicle speed according to vehicle speed signal.

### Ambient Air Temperature

- Unified meter and A/C amp. reads ambient air temperature signal from ambient air temperature sensor.

### Signal is supplied

- from unified meter and A/C amp. terminal 39
- through ambient sensor terminal 1 and 2
- to unified meter and A/C amp. terminal 49.
- Trip computer receives ambient air temperature signal from the unified meter and A/C amp. with communication line.
- Trip computer displays ambient air temperature according to ambient air temperature signal.

### NOTE:

- Indication range is between  $-30$  and  $55$  °C ( $-22$  and  $131$  °F).
- When ambient air temperature is less than  $-30$  °C ( $-22$  °F) or more than  $55$  °C ( $131$  °F), the display shows "--".
- When ambient air temperature is less than  $3$  °C ( $37$  °F) continuously, the display shows "ICY" as warning. At more than  $4$  °C ( $39$  °F) the display stops showing "ICY".

### DTE (Distance to Empty)

- Unified meter and A/C amp. uses following signals to calculate the DTE signal.
  - Fuel remaining signal (from the fuel level sensor unit)
  - Fuel consumption signal (from ECM)
  - Vehicle speed signal [from VDC/TCS/ABS control unit or ABS actuator and electric unit (control unit)]
- Trip computer receives DTE signal from the unified meter and A/C amp. with communication line.
- Trip computer displays the DTE according to DTE signal.
- The indication is refreshed every 30 seconds.

### NOTE:

- When fuel remaining is less than approx.  $10$  ℓ ( $10$ - $5/8$  US qt,  $8$ - $3/4$  Imp qt), the display shows "dte" blink as a warning. And the fuel remaining is less than approx.  $8$  ℓ ( $8$ - $1/2$  US qt,  $7$  Imp qt), the display shows "----".
- When the battery cable is disconnected and reconnected, the display shows "----" for 30 seconds.

### Average Fuel Consumption

- Unified meter and A/C amp. uses following signals to calculate the average fuel consumption signal.
  - Fuel consumption signal (from ECM)
  - Vehicle speed signal [from VDC/TCS/ABS control unit or ABS actuator and electric unit (control unit)]

# TRIPLE METERS

## < SERVICE INFORMATION >

- Trip computer receives the average fuel consumption signal from the unified meter and A/C amp. with communication line. A
- Trip computer displays the average fuel consumption according to the average fuel consumption signal.
- The indication is refreshed every 30 seconds.

**NOTE:**

If the average fuel consumption is reset, the average vehicle speed is reset at the same time. While driving about 1/3 miles (500 m) or for 80 seconds after resetting, the display shows “----”. B

### Average Vehicle Speed

- Unified meter and A/C amp. uses following signals to calculate the average vehicle speed signal. C
  - Trip distance signal
  - Trip time signal
- Trip computer receives the average vehicle speed signal from the unified meter and A/C amp. with communication line. D
- Trip computer displays the average vehicle speed according the average vehicle speed signal.
- The indication shows refreshed every 30 seconds. E

**NOTE:**

If the average vehicle speed is reset, the average fuel consumption will be reset at the same time. After resetting, the display will show “----” for 30 seconds. F

### Trip Time

- Unified meter and A/C amp. calculates the time during ignition switch ON.
- Trip computer receives the trip time signal from the unified meter and A/C amp. with communication line. G
- Trip computer displays trip time according to the trip time signal.

**NOTE:**

If trip time is reset, trip distance is reset at the same time. H

### Trip Distance

- Unified meter and A/C amp. uses following signals to calculate the average fuel consumption signal. I
  - Trip time signal
  - Vehicle speed signal from VDC/TCS/ABS control unit or ABS actuator and electric unit (control unit)
- Trip computer receives the trip distance signal from the unified meter and A/C amp. with communication line.
- Trip computer displays the trip distance according to the trip distance signal.

**NOTE:**

If trip distance is reset, trip time will be reset at the same time. J

### Stopwatch

Trip computer displays stopwatch.

**NOTE:**

- After 100 hours, the time will start from the reset display again.
- Even if the display is switched to the other mode while the time is starting, the stopwatch continues to advance until the time in the stopwatch mode is stopped. L
- When the ignition switch is turned OFF, the stopwatch is reset.

### Shift-up Indicator Setting Mode

Trip computer setting switch	Press and hold (for more than 1 sec.)	Press (for less than 1 sec.)
Setting engine speed	Increase setting engine speed by 500 rpm.	Increase setting engine speed by 100 rpm.

**NOTE:**

The range of engine speed is 2,000 - 8,000 rpm (when exceeding 8,000 rpm returns to 2,000 rpm). N

### FAIL-SAFE

Triple meter performs fail-safe operation when unified meter and A/C amp. communication is malfunctioning. O



# TRIPLE METERS

## < SERVICE INFORMATION >

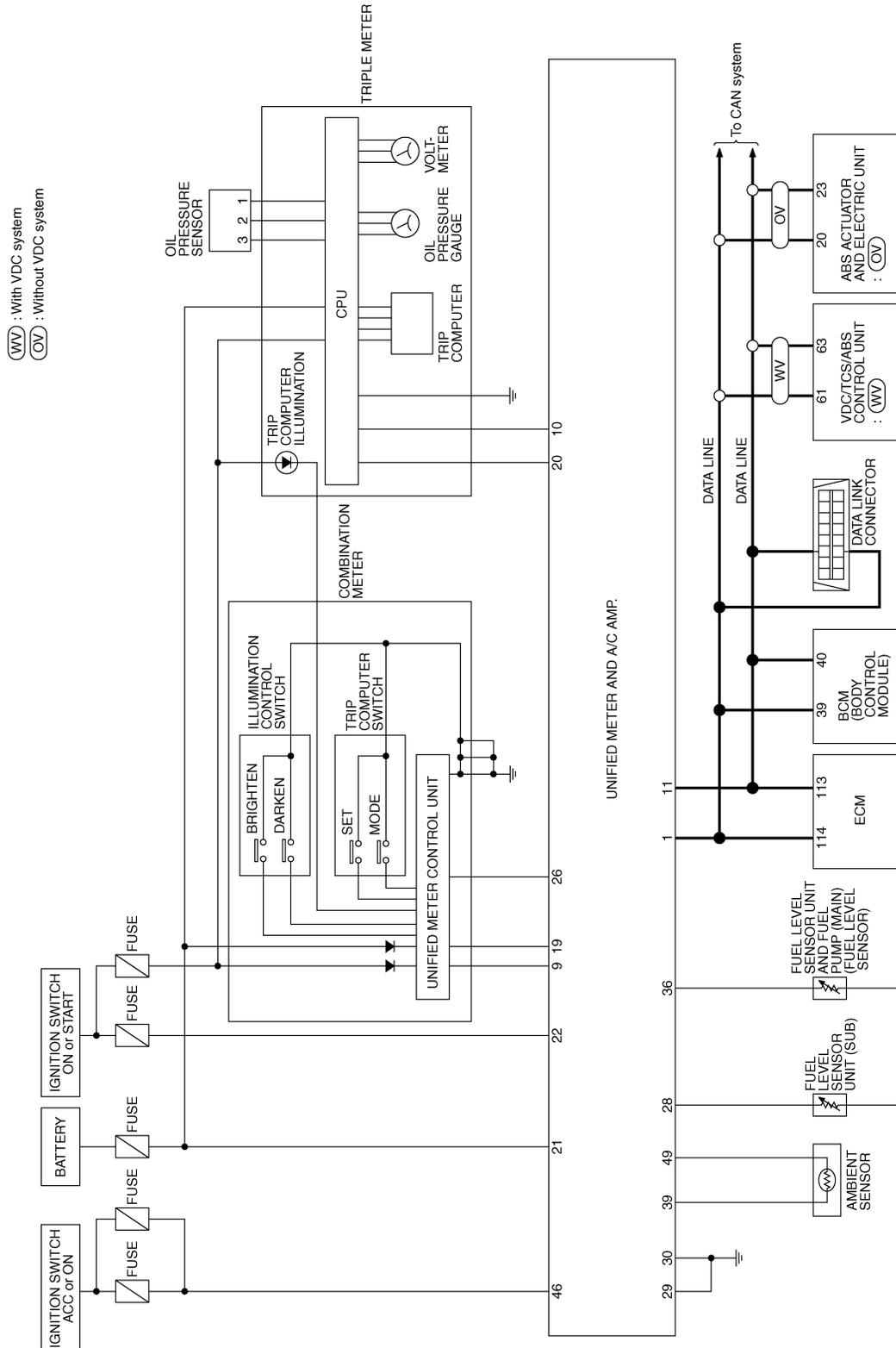
	Function	Fail-safe operation
Trip computer	Vehicle speed indication	Displays "--"
	Outside air temperature indication	Displays "--"
	DTE (Distance to empty) indication	Displays "----"
	Average fuel consumption indication	
	Average vehicle speed indication	
	Trip distance indication	
	Trip time indication	Displays "--:--"
Illumination control	Triple meter illumination	Change to nighttime mode.

# TRIPLE METERS

< SERVICE INFORMATION >

## Schematic

INFOID:000000004657505



TKWT5722E

A  
B  
C  
D  
E  
F  
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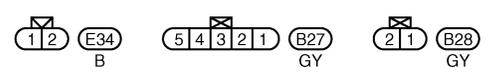
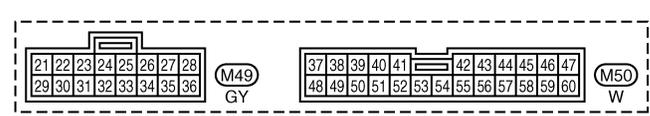
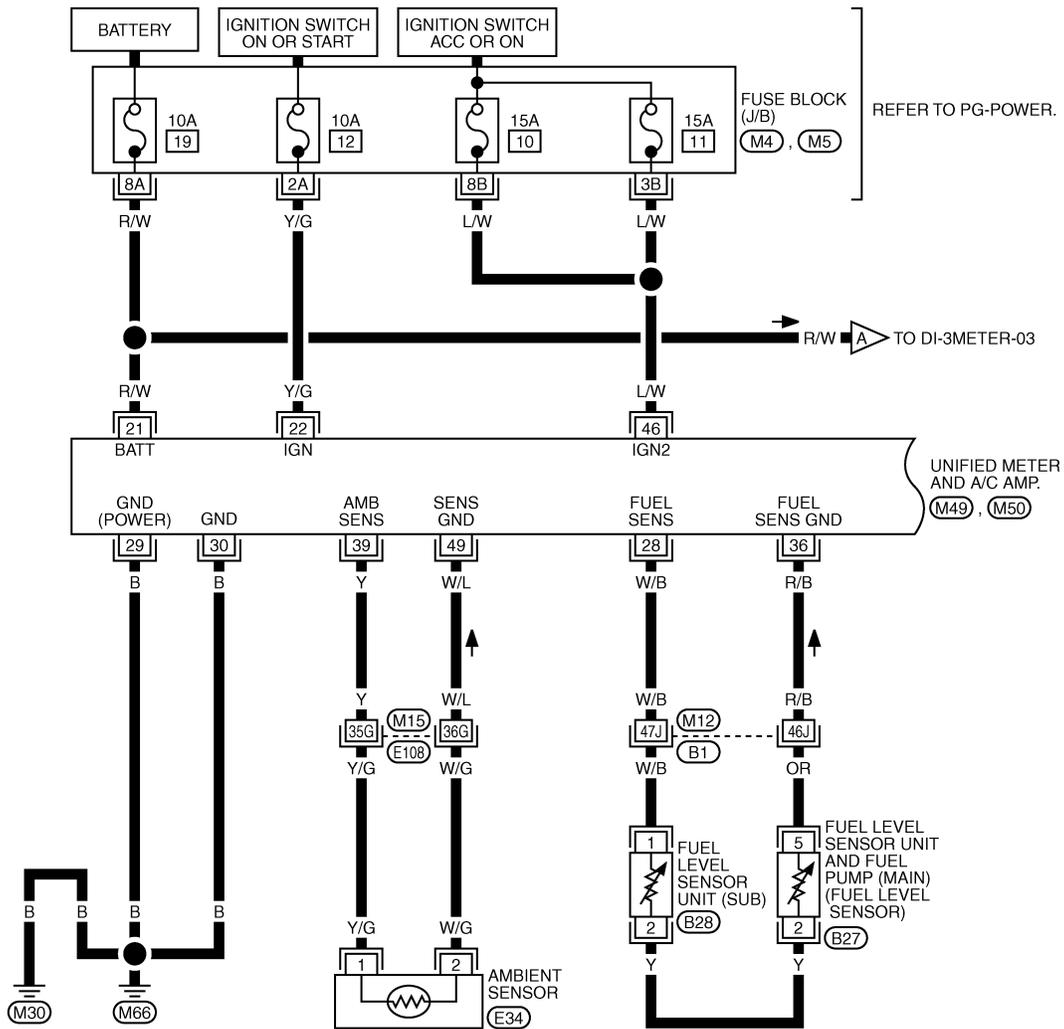
# TRIPLE METERS

< SERVICE INFORMATION >

## Wiring Diagram - 3METER -

INFOID:000000004657506

### DI-3METER-01



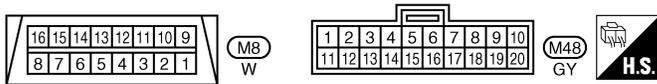
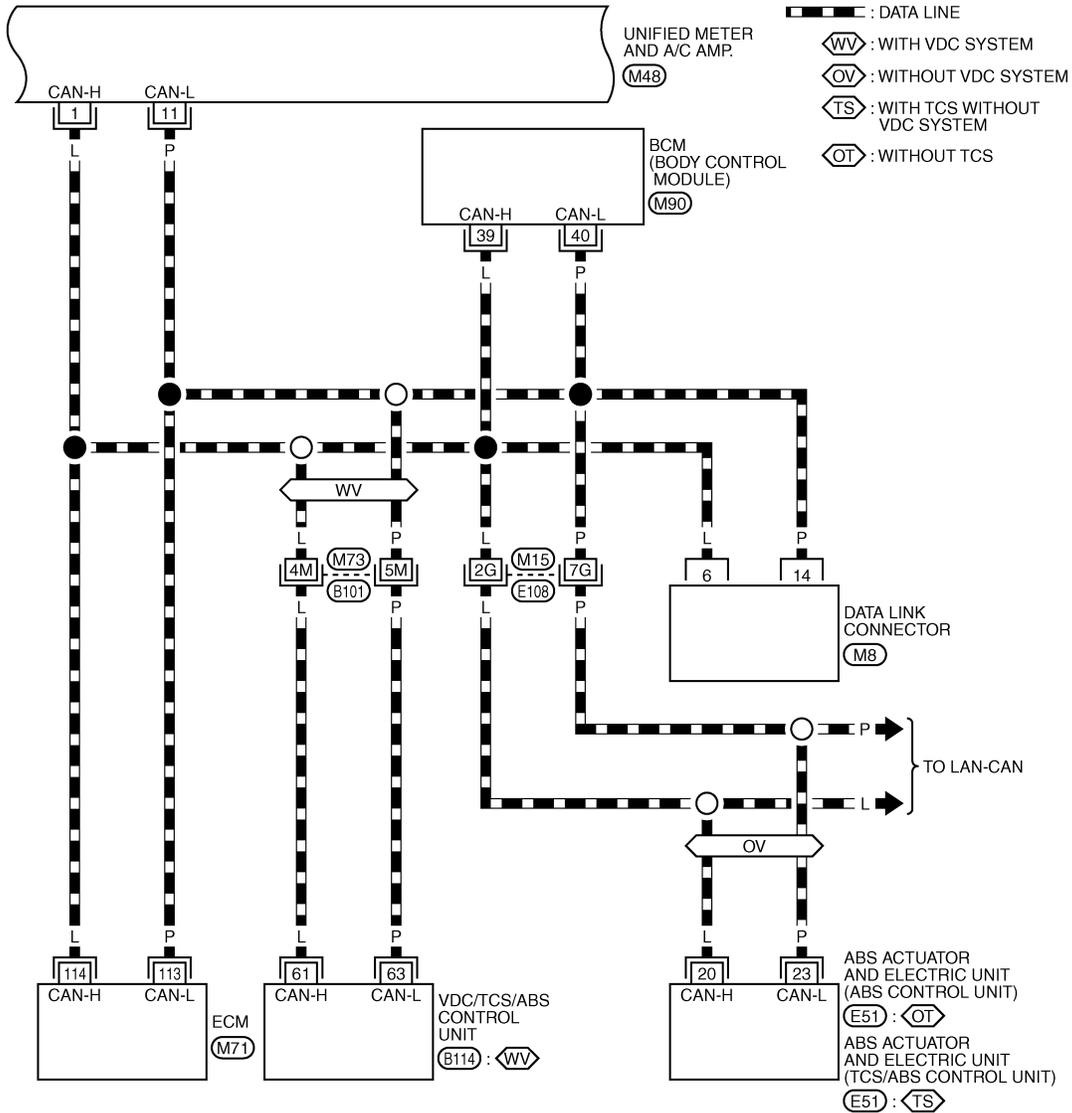
REFER TO THE FOLLOWING.  
 (E108), (B1) -SUPER MULTIPLE JUNCTION (SMJ)  
 (M4), (M5) -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT3991E

# TRIPLE METERS

< SERVICE INFORMATION >

## DI-3METER-02



REFER TO THE FOLLOWING.

(E108), (B101) -SUPER MULTIPLE JUNCTION (SMJ)

(M71), (M90), (E51), (B114) -ELECTRICAL UNITS

TKWT5723E

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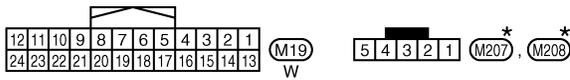
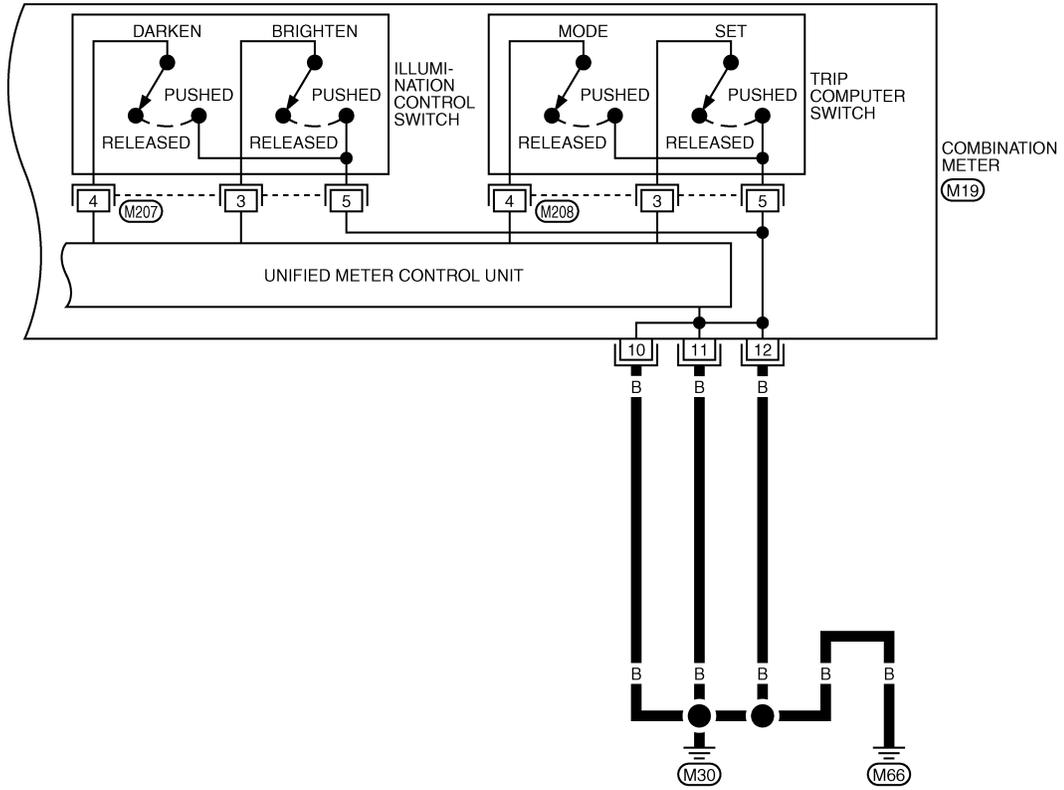
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# TRIPLE METERS

< SERVICE INFORMATION >

DI-3METER-04



\*: THIS CONNECTOR IS NOT SHOWN IN "HARNES LAYOUT", PG SECTION.

TKWB1893E

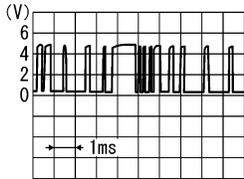
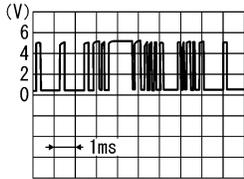
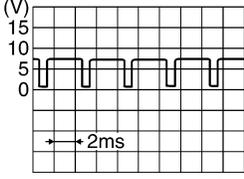
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# TRIPLE METERS

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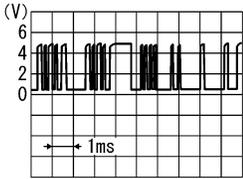
## Terminal and Reference Value for Triple Meter

INFOID:000000004657507

Terminal No.	Wire color	Item	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
1	B	Ground	ON	—	0 V
2	R/W	Battery power supply	OFF	—	Battery voltage
3	G/Y	Ignition power supply	ON	—	Battery voltage
4	P	TX communication line (To unified meter and A/C amp.)	ON	—	 <p style="text-align: right; font-size: small;">SKIA3364E</p>
5	L/B	RX communication line (From unified meter and A/C amp.)	ON	—	 <p style="text-align: right; font-size: small;">SKIA3363E</p>
7	G/OR	Oil pressure sensor ground	ON	—	0 V
8	LG/R	Oil pressure sensor signal	ON	When ignition switch is in ON position (Engine stopped.)	1 V
				Engine running [When the oil pressure is 80 psi (500 kPa)]	3 V
9	R/L	Oil pressure sensor power supply	ON	—	5 V
12	R	Illumination signal input	ON	Lighting switch ON, then operate the illumination control switch.	<p>&lt;e.g.&gt; When brightness level is midway</p>  <p style="text-align: right; font-size: small;">SKIA7256E</p>
				Lighting switch OFF	0 V

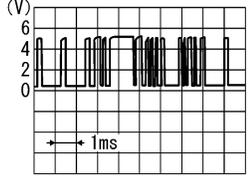
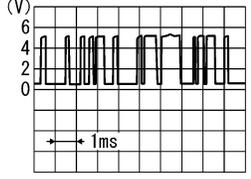
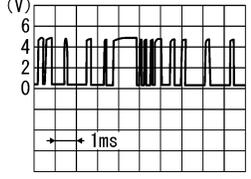
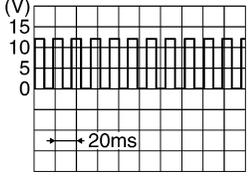
## Terminal and Reference Value for Unified Meter and A/C Amp

INFOID:000000004657508

Terminal No.	Wire color	Item	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
1	L	CAN-H	—	—	—
9	L/OR	TX communication line (To combination meter)	ON	—	 <p style="text-align: right; font-size: small;">SKIA3362E</p>

# TRIPLE METERS

## < SERVICE INFORMATION >

Terminal No.	Wire color	Item	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
10	L/B	TX communication line (To triple meter)	ON	—	 <small>SKIA3363E</small>
11	P	CAN-L	—	—	—
19	R/G	RX communication line (From combination meter)	ON	—	 <small>SKIA3361E</small>
20	P	RX communication line (From triple meter)	ON	—	 <small>SKIA3364E</small>
21	R/W	Battery power supply	OFF	—	Battery voltage
22	Y/G	Ignition power supply	ON	—	Battery voltage
26	W	Vehicle speed signal output (8-pulse)	ON	Speedometer operated. [When vehicle speed is approx. 40 km/h (25 MPH)]	<p><b>NOTE:</b> Maximum voltage may be 5 V due to specifications (connected units).</p>  <small>PKIA1935E</small>
28	W/B	Fuel level sensor signal	—	—	Refer to <a href="#">DI-21</a> , "Electrical Component Inspection".
29	B	Ground (For power)	ON	—	0 V
30	B	Ground	ON	—	0 V
36	R/B	Fuel level sensor ground	ON	—	0 V
39	Y	Ambient sensor signal	—	—	Refer to <a href="#">ATC-78</a> , "Ambient Sensor Circuit".
46	L/W	ACC power supply	ACC	—	Battery voltage
49	W/L	Ambient sensor ground	ON	—	Approx. 0 V

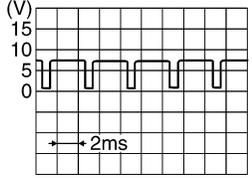
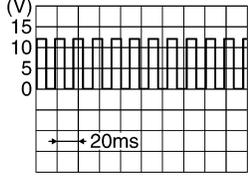
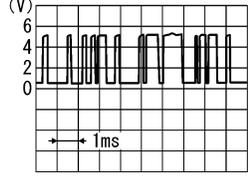
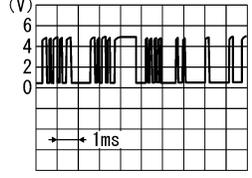
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# TRIPLE METERS

< SERVICE INFORMATION >

## Terminal and Reference Value for Combination Meter

INFOID:000000004657509

Terminal No.	Wire color	Item	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
10	B	Ground	ON	—	0 V
11					
12					
19	R	Illumination signal output	ON	Lighting switch ON, then operate the illumination control switch.	<p>&lt;e.g.&gt; When brightness level is midway</p>  <p>SKIA7256E</p>
				Lighting switch OFF	0 V
20	W	Vehicle speed signal input (8-pulse)	ON	Speedometer operated. [When vehicle speed is approx. 40 km/h (25 MPH)]	<p><b>NOTE:</b> Maximum voltage may be 5 V due to specifications (connected units).</p>  <p>PKIA1935E</p>
21	R/G	TX communication line (To unified meter and A/C amp.)	ON	—	 <p>SKIA3361E</p>
22	L/OR	RX communication line (From unified meter and A/C amp.)	ON	—	 <p>SKIA3362E</p>
23	G/Y	Ignition power supply	ON	—	Battery voltage
24	R/W	Battery power supply	OFF	—	Battery voltage

## Self-Diagnosis Mode of Triple Meter

INFOID:000000004657510

### SELF-DIAGNOSIS FUNCTION

Triple meter operation can be checked with self-diagnosis mode of combination meter.

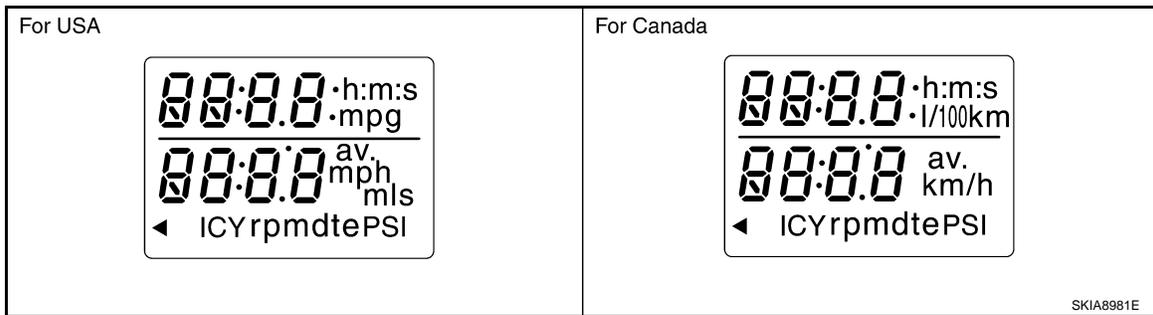
### OPERATION PROCEDURE

1. While pressing the odo/trip meter switch, turn ignition switch ON.
2. Make sure that the trip meter displays "0000.0".

# TRIPLE METERS

## < SERVICE INFORMATION >

- Press the odo/trip meter switch at least 3 times (within 7 seconds after the ignition switch is turned ON).
- All the segments on the trip computer illuminate. At this time, the triple meter is turned to self-diagnosis mode.



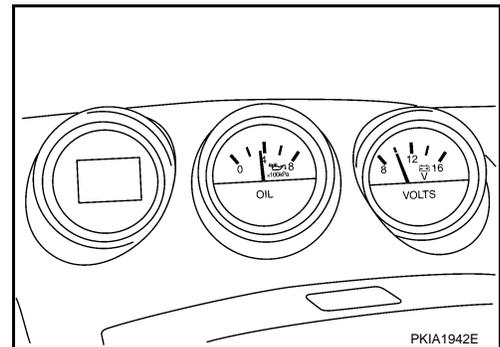
### NOTE:

If any of the segments is not displayed, replace triple meter.

- Press the odo/trip meter switch. voltmeter and oil pressure gauge should indicate as shown in the figure while pressing odo/trip meter switch.

### NOTE:

If voltmeter or oil pressure gauge is not activated, replace triple meter.



INFOID:000000004657511

## CONSULT-III Function (METER/M&A)

Refer to [DI-44. "CONSULT-III Function \(METER/M&A\)"](#) in "UNIFIED METER AND A/C AMP".

## Trouble Diagnosis

INFOID:000000004657512

### HOW TO PERFORM TROUBLE DIAGNOSIS

- Confirm the symptom or customer complaint.
- Perform diagnosis according to diagnosis flow. Refer to "PRELIMINARY CHECK".
- According to the symptom chart, repair or replace the cause of the symptom.
- Does the meter operate normally? If so, GO TO 5. If not, GO TO 2.
- INSPECTION END

### PRELIMINARY CHECK

#### 1. CHECK COMMUNICATION LINE

Perform self-diagnosis of unified meter and A/C amp.

#### Self-diagnostic results content

No malfunction detected >> GO TO 2.

Malfunction detected >> Check applicable parts, and repair or replace corresponding parts.

#### 2. CHECK OPERATION OF SELF-DIAGNOSIS MODE (COMBINATION METER)

Activate self-diagnosis mode of combination meter. Refer to [DI-14. "Self-Diagnosis Mode of Combination Meter"](#).

#### Does self-diagnosis mode operate?

YES >> GO TO 3.

NO >> Check combination meter power supply and ground circuit. If normal, replace combination meter.

#### 3. CHECK OPERATION OF SELF-DIAGNOSIS MODE (TRIPLE METER)

Check operation of triple meter in self-diagnosis mode. Refer to [DI-36. "Self-Diagnosis Mode of Triple Meter"](#).

#### Does self-diagnosis mode operation namely?

# TRIPLE METERS

## < SERVICE INFORMATION >

YES >> INSPECTION END  
NO >> GO TO 4.

### 4. CHECK POWER SUPPLY AND GROUND CIRCUIT OF TRIPLE METER

Check power supply and ground circuit of triple meter.

#### OK or NG

OK >> Replace triple meter.  
NG >> Repair power supply and ground circuit of triple meter.

### Symptom Chart

INFOID:000000004657513

Trouble phenomenon	Possible cause
Speed indication is not displayed properly.	Refer to <a href="#">DI-38, "Vehicle Speed Signal Inspection"</a> .
Ambient air temperature indication is not displayed properly. (It may take a short time to steady the indication after ignition switch is turned ON.) <b>NOTE:</b> If the meter is powered up with the ambient sensor disconnected, ambient air temperature display will show "---" even if the sensor is reconnected. In this case, with the sensor connected, disconnect and reconnect the battery, then the correct temperature will be displayed.	Refer to <a href="#">ATC-78, "Ambient Sensor Circuit"</a> in "ATC".
DTE (distance to empty) indication is not displayed properly.	Refer to <a href="#">DI-38, "Fuel Consumption Monitor Signal Inspection"</a> .
Average fuel consumption indication is not displayed properly.	
Shift-up indicator setting indication is not displayed properly or shift-up indicator does not operate properly.	Refer to <a href="#">DI-40, "Trip Computer Switch Inspection"</a> .
Average vehicle speed indication is not indicated properly.	Replace triple meter.
Trip distance indication is not indicated properly.	
Trip time indication is not indicated properly.	
Stopwatch indication is not displayed properly.	
Indication is malfunction of voltmeter.	
Indication is malfunction of oil pressure gauge.	Refer to <a href="#">DI-39, "Oil Pressure Sensor Signal Inspection"</a> .
Trip computer switch is not operate.	Refer to <a href="#">DI-40, "Trip Computer Switch Inspection"</a> .

### Vehicle Speed Signal Inspection

INFOID:000000004657514

Symptom: Speed indication is not displayed properly.

#### 1. CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL

1. Start engine and select "METER/M&A" on CONSULT-III.
2. Using "SPEED METER" on the "Data Monitor", compare the value of "Data Monitor" with speed indication of trip computer.

#### OK or NG

OK >> Refer to [DI-17, "Vehicle Speed Signal Inspection"](#) of "COMBINATION METERS".  
NG >> Replace triple meter.

### Fuel Consumption Monitor Signal Inspection

INFOID:000000004657515

Symptom:

- DTE (distance to empty) indication is not displayed properly.
- Average fuel consumption indication is not displayed properly.

#### 1. CHECK ECM (CONSULT-III)

Perform self-diagnosis of ECM. Refer to [EC-111, "CONSULT-III Function \(ENGINE\)"](#).

#### Self-diagnostic results

No malfunction detected >> Replace unified meter and A/C amp.

# TRIPLE METERS

## < SERVICE INFORMATION >

Malfunction detected>>Check applicable parts, and repair or replace corresponding parts.

### Oil Pressure Sensor Signal Inspection

INFOID:000000004657516

Symptom: Indication is malfunction of oil pressure gauge.

#### 1. CHECK OIL PRESSURE SENSOR SIGNAL INPUT

1. Turn ignition switch ON.
2. Check voltage between triple meter harness connector M44 terminal 8 and ground.

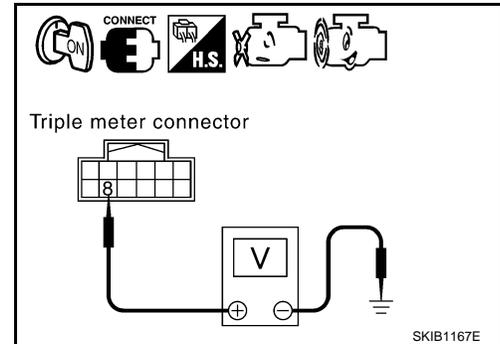
**8 – Ground**

**When ignition switch is in ON position (Engine stopped.) : Approx. 1 V**

**Engine running [When the oil pressure is 80 psi (500 kPa)] : Approx. 3 V**

#### OK or NG

- OK >> Replace triple meter.  
NG >> GO TO 2.



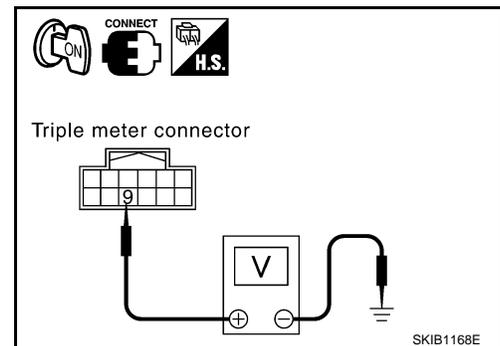
#### 2. CHECK OIL PRESSURE SENSOR POWER SUPPLY

Check voltage between triple meter harness connector M44 terminal 9 and ground.

**9 – Ground : Approx. 5 V**

#### OK or NG

- OK >> GO TO 3.  
NG >> Replace triple meter.



#### 3. CHECK OIL PRESSURE SENSOR POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect triple meter and oil pressure switch connector.
3. Check continuity between triple meter harness connector M44 terminal 9 and oil pressure sensor harness connector F21 terminal 1.

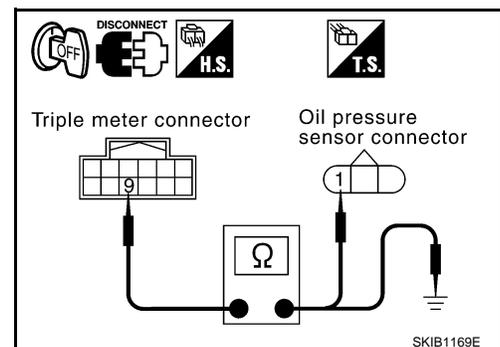
**9 – 1 : Continuity should exist.**

4. Check continuity between triple meter harness connector M44 terminal 9 and ground.

**9 – Ground : Continuity should not exist.**

#### OK or NG

- OK >> GO TO 4.  
NG >> Repair harness or connector.



#### 4. CHECK OIL PRESSURE SENSOR SIGNAL CIRCUIT

# TRIPLE METERS

## < SERVICE INFORMATION >

1. Check continuity between triple meter harness connector M44 terminal 8 and oil pressure sensor harness connector F21 terminal 2.

**8 – 2 : Continuity should exist.**

2. Check continuity between triple meter harness connector M44 terminal 8 and ground.

**8 – Ground :Continuity should not exist.**

### OK or NG

- OK >> GO TO 5.
- NG >> Repair harness or connector.

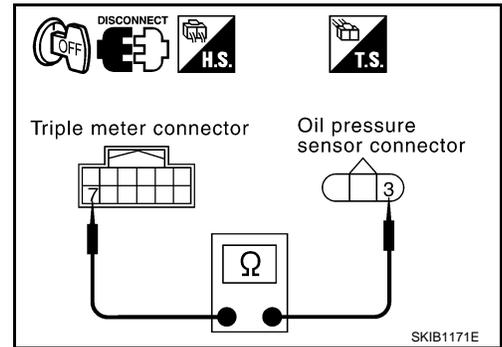
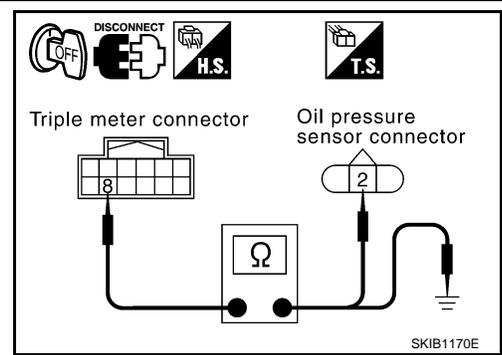
## 5.CHECK OIL PRESSURE SENSOR GROUND CIRCUIT

Check continuity between triple meter harness connector M44 terminal 7 and oil pressure sensor harness connector F21 terminal 3.

**7 – 3 : Continuity should exist.**

### OK or NG

- OK >> Replace oil pressure sensor.
- NG >> Repair harness or connector.



## Trip Computer Switch Inspection

INFOID:000000004657517

### Symptom:

- Shift-up indicator setting indication is not displayed properly or shift-up indicator does not operate properly.
- Trip computer switch does not operate.

## 1.CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Remove combination meter. Refer to [DI-22, "Removal and Installation for Combination Meter"](#).
3. Remove rear finisher to combination meter. Refer to [DI-23, "Disassembly and Assembly of Combination Meter"](#).
4. Check trip computer switch connector for looseness.

### OK or NG

- OK >> GO TO 2.
- NG >> Repair trip computer switch connector.

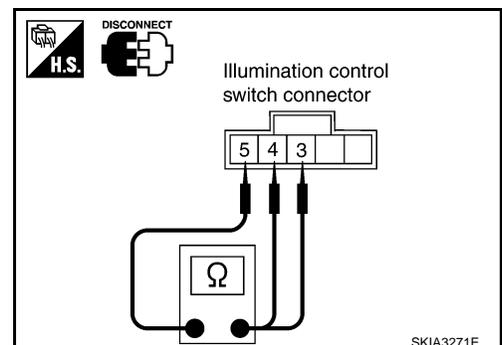
## 2.CHECK CIRCUIT

1. Disconnect trip computer switch connector.
2. Check continuity between trip computer switch harness connector M208 terminals 3, 4 and 5.

Terminal	Condition	Continuity
3	Setting switch is pressed.	Yes
	Setting switch is released.	No
4	Mode switch is pressed.	Yes
	Mode switch is released.	No

### OK or NG

- OK >> Replace combination meter.
- NG >> Replace trip computer switch.



# TRIPLE METERS

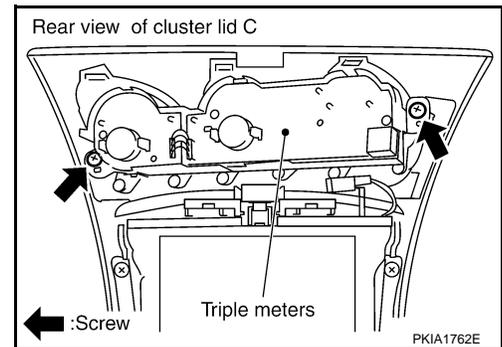
< SERVICE INFORMATION >

## Removal and Installation of Triple Meters

INFOID:000000004657518

### REMOVAL

1. Remove cluster lid C. Refer to [IP-12](#).
2. Remove screws (2), and remove triple meters.

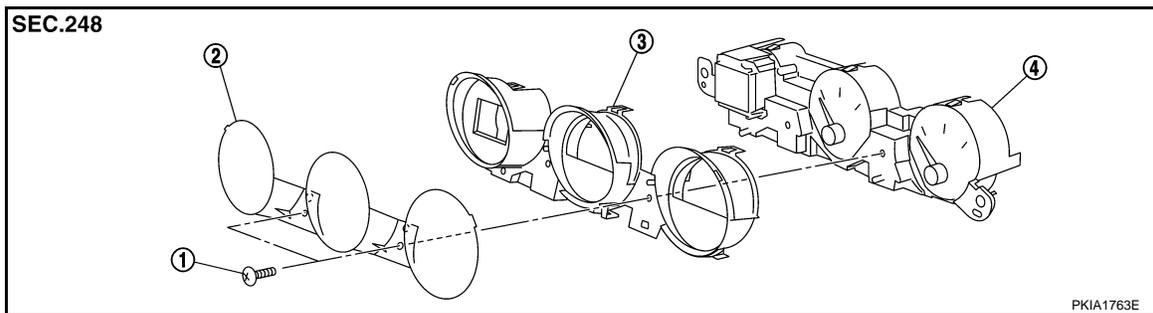


### INSTALLATION

Installation is the reverse order of removal.

## Disassembly and Assembly of Triple Meters

INFOID:000000004657519



1. Screw
2. Front cover
3. Upper housing
4. Triple meter

### DISASSEMBLY

1. Remove screws (2), and remove front cover.
2. Disengage tabs (6) to separate upper housing.

### ASSEMBLY

Assembly is the reverse order of disassembly.

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# UNIFIED METER AND A/C AMP

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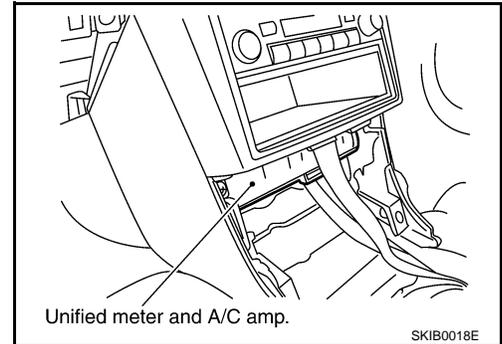
## UNIFIED METER AND A/C AMP

### System Description

INFOID:000000004657520

#### DESCRIPTION

- For the unified meter and A/C amp., the signal required for controlling the combination meter and triple meter are integrated in the A/C auto amp.
- Unified meter and A/C amp. corresponds a CONSULT-III function (Self Diagnosis Result, CAN Diagnosis Support Monitor and Data Monitor).



#### COMBINATION METER CONTROL FUNCTION

- Unified meter and A/C amp. receives necessary information for combination meter from each unit.
- Unified meter and A/C amp. converses with the combination meter transmits a signal through with communication line (TX, RX) between unified meter and A/C amp. and combination meter.

Input/output signals between unified meter and A/C amp. and combination meter.

Unit	Input	Output
Unified meter and A/C amp.	<ul style="list-style-type: none"> <li>• Seat belt buckle switch signal (Driver's side)</li> <li>• Trip computer mode switch signal</li> <li>• Trip computer setting switch signal</li> <li>• Illumination control nighttime required signal</li> <li>• Refuel status signal</li> <li>• Vehicle speed signal</li> <li>• Low-fuel warning lamp condition signal</li> <li>• Self-diagnosis condition signal</li> <li>• Odo/trip switch signal</li> <li>• Delivery destination data signal</li> <li>• Combination meter receive error signal</li> <li>• Combination meter specifications signal</li> <li>• Triple meter specifications signal</li> </ul>	<ul style="list-style-type: none"> <li>• Engine speed signal</li> <li>• Engine coolant temperature signal</li> <li>• Fuel level sensor signal (resistance value)</li> <li>• Malfunction indicator lamp signal</li> <li>• ABS warning lamp signal</li> <li>• Tire pressure warning lamp signal</li> <li>• Brake warning lamp signal</li> <li>• Oil pressure warning lamp signal</li> <li>• Turn indicator signal</li> <li>• High beam request signal</li> <li>• VDC OFF indicator lamp signal</li> <li>• TCS OFF indicator lamp signal</li> <li>• SLIP indicator lamp signal</li> <li>• CRUISE indicator lamp signal</li> <li>• SET indicator lamp signal</li> <li>• A/T CHECK indicator lamp signal</li> <li>• A/T position indicator signal</li> <li>• Manual mode indicator signal</li> <li>• Manual mode gear position signal</li> <li>• Shift-up indicator setting signal</li> <li>• CAN communication condition signal of A/T</li> <li>• Door switch signal</li> <li>• Position lights request signal</li> <li>• Buzzer output signal</li> </ul>

#### NOTE:

Combination meter performs fail-safe operation when unified meter and A/C amp. communication is malfunctioning. Refer to [DI-5, "System Description"](#).

#### TRIPLE METER CONTROL FUNCTION

- Unified meter and A/C amp. receives necessary information for triple meter from each unit.
- Unified meter and A/C amp. calculates necessary information for trip computer.
- Unified meter and A/C amp. converses with the combination meter transmits a signal with through communication line (TX, RX) between unified meter and A/C amp. and triple meter.

# UNIFIED METER AND A/C AMP

## < SERVICE INFORMATION >

Input/output signals between unified meter and A/C amp. and triple meter

Unit	Input	Output	A
Unified meter and A/C amp.	<ul style="list-style-type: none"> <li>• LCD indication condition signal</li> <li>• Shift-up indicator setting signal</li> <li>• Oil pressure warning lamp signal</li> <li>• Triple meter receive error signal</li> </ul>	<ul style="list-style-type: none"> <li>• Ambient air temperature signal</li> <li>• Ambient air temperature warning signal</li> <li>• Trip distance signal</li> <li>• Trip time signal</li> <li>• Average vehicle speed signal</li> <li>• Average fuel consumption signal</li> <li>• Vehicle speed signal</li> <li>• DTE (Distance to empty) signal</li> <li>• DTE (Distance to empty) warning signal</li> <li>• Tire pressure warning signal</li> <li>• Trip computer mode switch signal</li> <li>• Trip computer setting switch signal</li> <li>• Self-diagnosis condition signal</li> <li>• Odo/trip switch signal</li> <li>• Triple meter specifications signal</li> </ul>	<p>B</p> <p>C</p> <p>D</p> <p>E</p>

### NOTE:

Triple meter performs fail-safe operation when unified meter and A/C amp. communication is malfunctioning. Refer to [DI-25, "System Description"](#).

### A/C AUTO AMP. FUNCTION

Unified meter and A/C amp. controls each operation for A/C auto amp. Regarding A/C control, refer to [ATC-21](#) in ATC section.

### OTHER FUNCTIONS

#### Signal Buffer Function

Unified meter and A/C amp. transmits each signal to other units with CAN communication.

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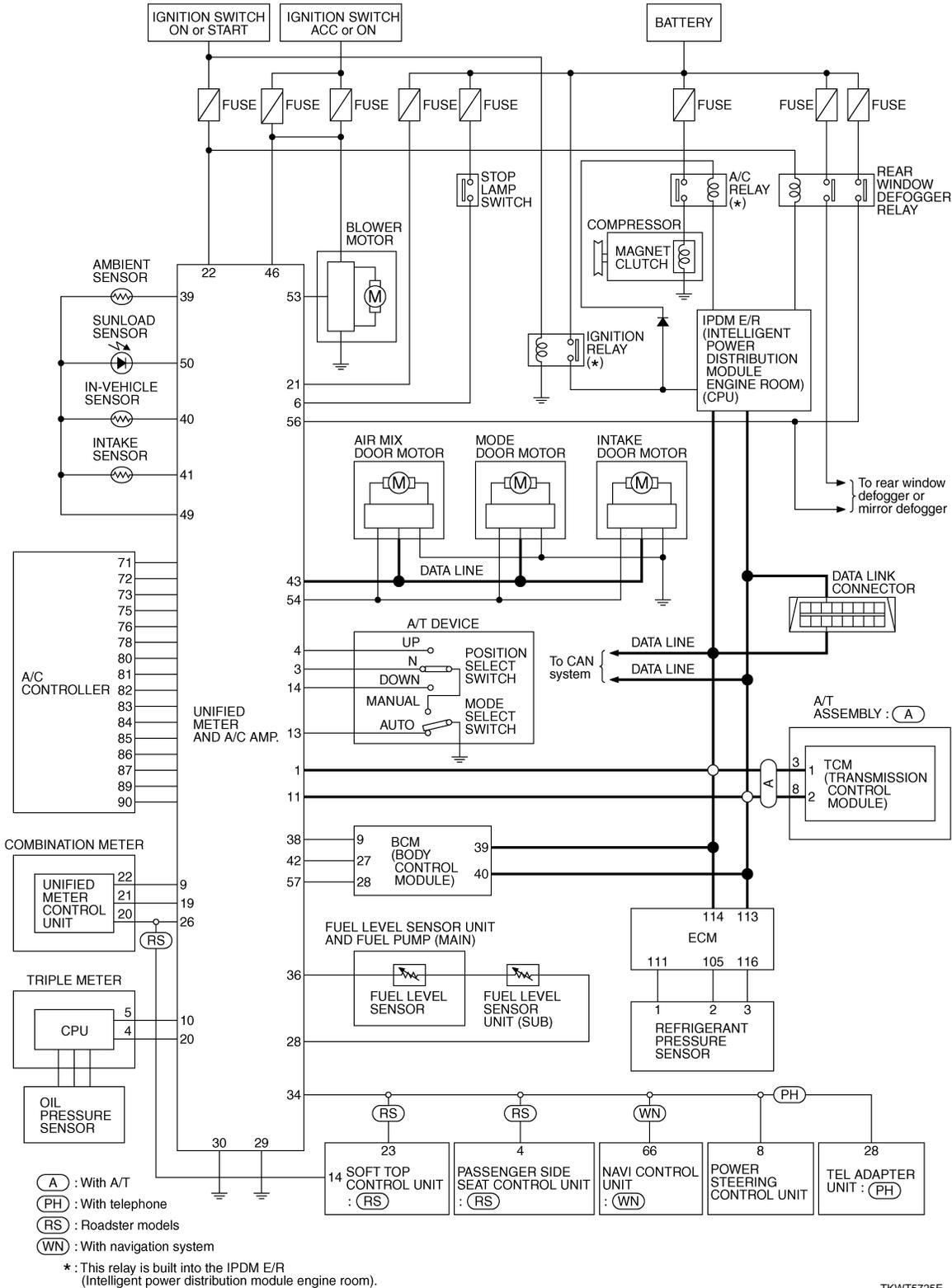
DI

# UNIFIED METER AND A/C AMP

< SERVICE INFORMATION >

## Schematic

INFOID:000000004657521



## CONSULT-III Function (METER/M&A)

INFOID:000000004657522

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

# UNIFIED METER AND A/C AMP

## < SERVICE INFORMATION >

System	Diagnosis mode	Description
METER/M&A	Self Diagnostic Result	Unified meter and A/C amp. check the conditions and displays memo-rized erro.
	Data Monitor	Displays unified meter and A/C amp. input data in real time.

## SELF-DIAGNOSTIC RESULTS

### Display Item List

Display item [Code]	Malfunction is detected when...	Reference page
CAN COMM CIRC [U1000]	When unified meter and A/C amp. is not transmitting or receiving CAN communication signal for 2 seconds or less.	<a href="#">DI-47</a>
T/METER COMM CIRC [B2201]	Malfunction is detected in communication of between triple meter and unified meter and A/C amp.	<a href="#">DI-47</a>
METER COMM CIRC [B2202]	Malfunction is detected in communication of between combination meter and unified meter and A/C amp.	<a href="#">DI-49</a>
VEHICLE SPEED CIRC [B2205]	When an erroneous signal is input. <b>CAUTION:</b> <b>Even when there is no malfunction on speed signal system, malfunction may be misinterpreted when battery has low voltage (when maintaining 7 - 8 V for about 2 seconds).</b>	<a href="#">DI-51</a>

### NOTE:

"TIME" means the following.

- 0: Means detected malfunction at present.
- 1-63: Means detected malfunction in past. (Displays number of ignition switch OFF → ON after detecting malfunction. "Self Diagnostic Result" is erased when exceeding "63".)

## DATA MONITOR

### Display Item List

Monitor item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Contents
SPEED METER [km/h] or [mph]	X	X	This is the angle correction value after the speed signal from the VDC/TCS/ABS control unit [with VDC system] or ABS actuator and electric unit (control unit) [without VDC system] is converted into the vehicle speed.
SPEED OUTPUT [km/h] or [mph]	X	X	This is the angle correction value before the speed signal from the VDC/TCS/ABS control unit [with VDC system] or ABS actuator and electric unit (control unit) [without VDC system] is converted into the vehicle speed.
TACHO METER [rpm]	X	X	This is the converted value for the engine speed signal from the ECM.
W TEMP METER [°C] or [°F]	X	X	This is the converted value for the engine coolant temperature signal from the ECM.
FUEL METER [lit.]	X	X	This is the processed value for the signal (resistance value) from the fuel gauge.
DISTANCE [km] or [mile]	X	X	This is the calculated value for the speed signal from the VDC/TCS/ABS control unit [with VDC system] or ABS actuator and electric unit (control unit) [without VDC system] and the signal (resistance signal) from the fuel gauge.
FUEL W/L [On/Off]	X	X	Indicates [On/Off] condition of low-fuel warning lamp.
MIL [On/Off]		X	Indicates [On/Off] condition of malfunction indicator lamp.
AIR PRES W/L [On/Off]		X	Indicates [On/Off] condition of low tire pressure warning lamp.
SEAT BELT W/L <sup>*1</sup> [On/Off]		X	Indicates [On/Off] condition of seat belt warning lamp.

# UNIFIED METER AND A/C AMP

## < SERVICE INFORMATION >

Monitor item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Contents
BUZZER [On/Off]	X	X	Indicates [On/Off] condition of buzzer.
DOOR W/L [On/Off]		X	Indicates [On/Off] condition of door warning lamp.
HI-BEAM IND [On/Off]		X	Indicates [On/Off] condition of high beam indicator.
TURN IND [On/Off]		X	Indicates [On/Off] condition of turn indicator.
OIL W/L [On/Off]		X	Indicates [On/Off] condition of oil pressure warning lamp.
VDC/TCS IND [On/Off]		X	Indicates [On/Off] condition of VDC/TCS OFF indicator lamp.
ABS W/L [On/Off]		X	Indicates [On/Off] condition of ABS warning lamp.
SLIP IND [On/Off]		X	Indicates [On/Off] condition of SLIP indicator lamp.
BRAKE W/L <sup>*2</sup> [On/Off]		X	Indicates [On/Off] condition of brake warning lamp.
M RANGE SW [On/Off]	X	X	Indicates [On/Off] condition of manual mode range switch.
NM RANGE SW [On/Off]	X	X	Indicates [On/Off] condition of except for manual mode range switch.
AT SFT UP SW [On/Off]	X	X	Indicates [On/Off] condition of A/T shift up switch.
AT SFT DWN SW [On/Off]	X	X	Indicates [On/Off] condition of A/T shift down switch.
AT P MODE SW [On/Off]		X	Indicates [On/Off] condition of A/T power mode switch.
AT S MODE SW [On/Off]		X	Indicates [On/Off] condition of A/T snow mode switch.
BRAKE SW [On/Off]		X	Indicates [On/Off] condition of brake switch (stop lamp switch).
AT-M IND [On/Off]	X	X	Indicates [On/Off] condition of A/T manual mode indicator.
AT-M GEAR [5/4/3/2/1]	X	X	Indicates [5/4/3/2/1] condition of A/T manual mode gear position.
P RANGE IND [On/Off]	X	X	Indicates [On/Off] condition of A/T shift P range indicator.
R RANGE IND [On/Off]	X	X	Indicates [On/Off] condition of A/T shift R range indicator.
N RANGE IND [On/Off]	X	X	Indicates [On/Off] condition of A/T shift N range indicator.
D RANGE IND [On/Off]	X	X	Indicates [On/Off] condition of A/T shift D range indicator.
AT CHECK W/L [On/Off]		X	Indicates [On/Off] condition of A/T CHECK warning lamp.
CRUISE IND [On/Off]		X	Indicates [On/Off] condition of CRUISE indicator.
SET IND [On/Off]		X	Indicates [On/Off] condition of SET indicator.

### NOTE:

Any monitored item that does not match the vehicle being diagnosed is deleted from the display automatically.

\*1: It dose not change when fastening or unfastening the passenger seat belt.

\*2: Monitor keeps indicating "Off" when brake warning lamp is on by the parking brake operation or low brake fluid level.

## Power Supply and Ground Circuit Inspection

INFOID:000000004657523

### 1. CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	19
Ignition switch ACC or ON	10,11
Ignition switch ON or START	12

### OK or NG

OK >> GO TO 2.

NG >> Be sure to eliminate cause of malfunction before installing new fuse. Refer to [PG-4](#).

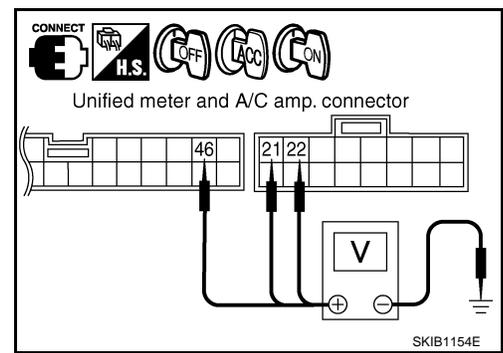
### 2. CHECK POWER SUPPLY CIRCUIT

# UNIFIED METER AND A/C AMP

## < SERVICE INFORMATION >

Check voltage between unified meter and A/C amp. harness connector terminals and ground.

Terminals		(-)	Ignition switch position		
(+)			OFF	ACC	ON
Connector	Terminal				
M49	21	Ground	Battery voltage	Battery voltage	Battery voltage
M50	46		0 V	Battery voltage	Battery voltage
M49	22		0 V	0 V	Battery voltage



### OK or NG

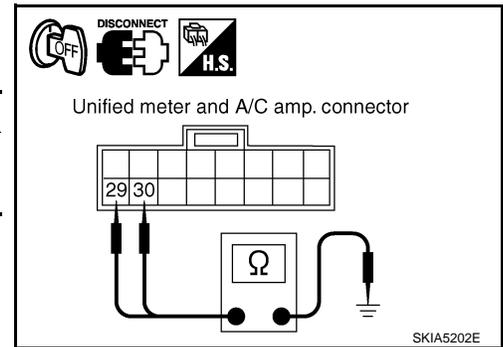
OK >> GO TO 3.

NG >> Check harness between unified meter and A/C amp. and fuse.

## 3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect unified meter and A/C amp. connector.
3. Check continuity between unified meter and A/C amp. harness connector and ground.

Connector	Terminal	Ground	Continuity
M49	29		
	30		



### OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.

## DTC [U1000] CAN Communication Circuit

INFOID:000000004657524

Symptom: Display CAN COMM CIRC [U1000] at the result of self-diagnosis for unified meter and A/C amp.

### 1. CHECK CAN COMMUNICATION

1. Select "Self Diagnostic Result" mode for "METER/M&A" with CONSULT-III.

>> Go to "LAN system". Refer to [LAN-41. "CAN System Specification Chart"](#).

## DTC [B2201] Triple Meter Communication Circuit

INFOID:000000004657525

Symptom: Display T/METER COMM CIRC [B2201] at the result of self-diagnosis for unified meter and A/C amp.

### NOTE:

For the wiring diagram, refer to [DI-30. "Wiring Diagram - 3METER -"](#).

### 1. CHECK CONNECTOR

Check triple meter, unified meter and A/C amp. and terminals (triple meter side, unified meter and A/C amp. side, and harness side) for looseness or bent terminals.

### OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

### 2. CHECK METER/GAUGES VISUALLY

Does the pointer on the meter/gauges fluctuate at the engine start?

Is the fluctuation acceptable?

YES >> GO TO 3.

# UNIFIED METER AND A/C AMP

## < SERVICE INFORMATION >

NO >> GO TO 6.

### 3. CHECK CONTINUITY COMMUNICATION CIRCUIT (TX: TRIPLE METER)

1. Turn ignition switch OFF.
2. Disconnect triple meter connector and unified meter and A/C amp. connector.
3. Check continuity between triple meter harness connector M44 terminal 4 and unified meter and A/C amp. harness connector M48 terminal 20.

**4 – 20 : Continuity should exist.**

4. Check continuity between triple meter harness connector M44 terminal 4 (P) and ground.

**4 – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.

### 4. CHECK VOLTAGE OF UNIFIED METER AND A/C AMP.

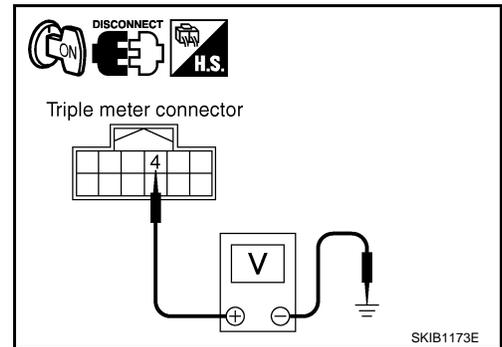
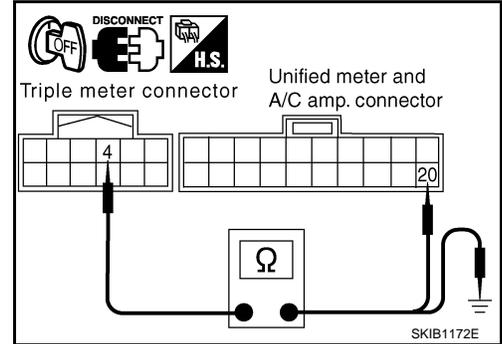
1. Connect unified meter and A/C amp. connector.
2. Turn ignition switch ON.
3. Check voltage between triple meter harness connector M44 terminal 4 and ground.

**4 – Ground : Approx. 5 V**

OK or NG

OK >> GO TO 5.

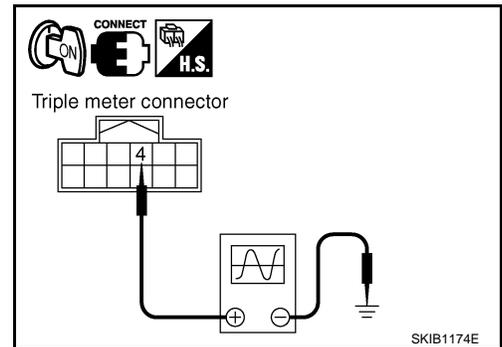
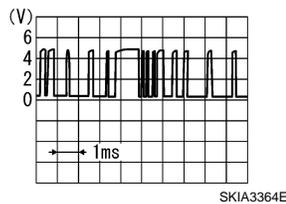
NG >> Replace unified meter and A/C amp.



### 5. CHECK VOLTAGE SIGNAL OF COMBINATION METER

1. Turn ignition switch OFF.
2. Connect triple meter connector.
3. Turn ignition switch ON.
4. Check voltage signal between triple meter harness connector M44 terminal 4 and ground.

**4 – Ground:**



OK or NG

OK >> Replace unified meter and A/C amp.

NG >> Replace triple meter.

### 6. CHECK CONTINUITY COMMUNICATION CIRCUIT (RX: TRIPLE METER)

1. Turn ignition switch OFF.
2. Disconnect triple meter connector and unified meter and A/C amp. connector.

# UNIFIED METER AND A/C AMP

## < SERVICE INFORMATION >

- Check continuity between triple meter harness connector M44 terminal 5 and unified meter and A/C amp. harness connector M48 terminal 10.

**5 – 10 : Continuity should exist.**

- Check continuity between triple meter harness connector M44 terminal 5 and ground.

**5 – Ground : Continuity should not exist.**

### OK or NG

- OK >> GO TO 7.
- NG >> Repair harness or connector.

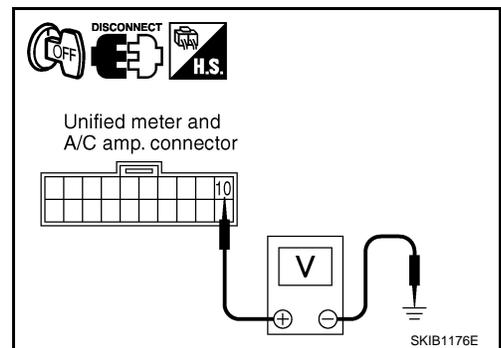
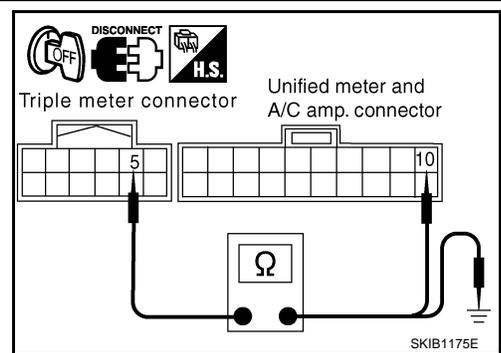
## 7. CHECK VOLTAGE OF COMBINATION METER

- Connect triple meter connector.
- Turn ignition switch ON.
- Check voltage between unified meter and A/C amp. harness connector M48 terminal 10 and ground.

**10 – Ground : Approx. 5 V**

### OK or NG

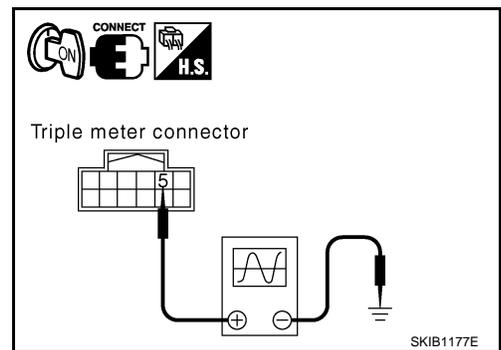
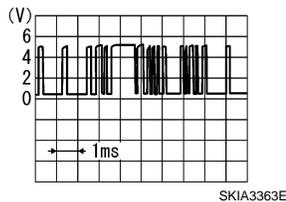
- OK >> GO TO 8.
- NG >> Replace triple meter.



## 8. CHECK VOLTAGE SIGNAL OF UNIFIED METER AND A/C AMP.

- Turn ignition switch OFF.
- Connect triple meter connector and unified meter and A/C amp. connector.
- Turn ignition switch ON.
- Check voltage signal between triple meter harness connector M44 terminal 5 and ground.

**5 – Ground:**



### OK or NG

- OK >> Replace triple meter.
- NG >> Replace unified meter and A/C amp.

## DTC [B2202] Meter Communication Circuit

INFOID:000000004657526

Symptom: Display METER COMM CIRC [B2202] at the result of self-diagnosis for unified meter and A/C amp.

### NOTE:

For the wiring diagram, refer to [DI-11, "Wiring Diagram - METER -"](#).

## 1. CHECK CONNECTOR

Check combination meter, unified meter and A/C amp. and terminals (combination meter side, unified meter and A/C amp. side, and harness side) for looseness or bent terminals.

### OK or NG

- OK >> GO TO 2.

# UNIFIED METER AND A/C AMP

## < SERVICE INFORMATION >

NG >> Repair terminal or connector.

### 2. CHECK METER/GAUGES VISUALLY

Does the pointer on the meter/gauges fluctuate at the engine start?

Is the fluctuation acceptable?

YES >> GO TO 3.

NO >> GO TO 6.

### 3. CHECK CONTINUITY COMMUNICATION CIRCUIT (TX: COMBINATION METER)

1. Turn ignition switch OFF.
2. Disconnect combination meter connector and unified meter and A/C amp. connector.
3. Check continuity between combination meter harness connector M19 terminal 21 and unified meter and A/C amp. harness connector M48 terminal 19.

**21 – 19 : Continuity should exist.**

4. Check continuity between combination meter harness connector M19 terminal 21 and ground.

**21 – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.

### 4. CHECK VOLTAGE OF UNIFIED METER AND A/C AMP.

1. Connect unified meter and A/C amp. connector.
2. Turn ignition switch ON.
3. Check voltage between combination meter harness connector M19 terminal 21 and ground.

**21 – Ground : Approx. 5 V**

OK or NG

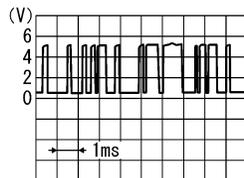
OK >> GO TO 5.

NG >> Replace unified meter and A/C amp.

### 5. CHECK VOLTAGE SIGNAL OF COMBINATION METER

1. Turn ignition switch OFF.
2. Connect combination meter connector.
3. Turn ignition switch ON.
4. Check voltage signal between combination meter harness connector M19 terminal 21 and ground.

**21 – Ground:**

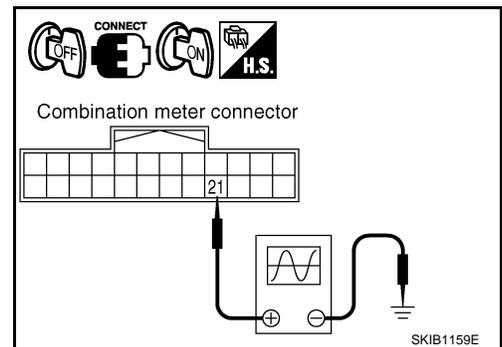
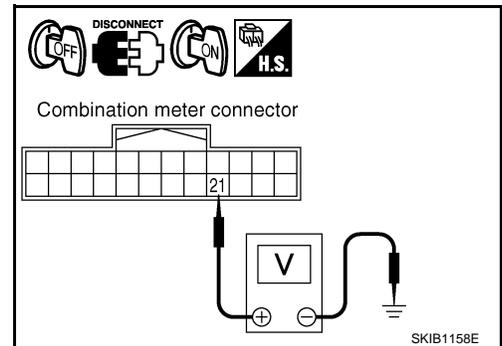
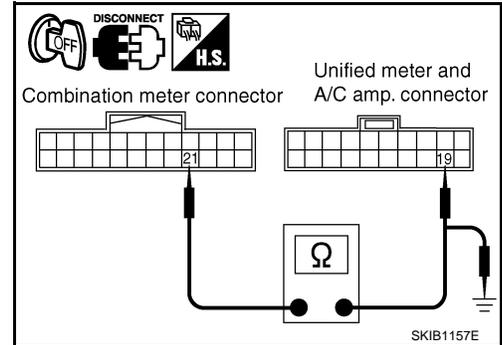


SKIA3361E

OK or NG

OK >> Replace unified meter and A/C amp.

NG >> Replace combination meter.



# UNIFIED METER AND A/C AMP

< SERVICE INFORMATION >

## 6. CHECK CONTINUITY COMMUNICATION CIRCUIT (RX: COMBINATION METER)

1. Turn ignition switch OFF.
2. Disconnect combination meter connector and unified meter and A/C amp. connector.
3. Check continuity between combination meter harness connector M19 terminal 22 and unified meter and A/C amp. harness connector M48 terminal 9.

**22 – 9 : Continuity should exist.**

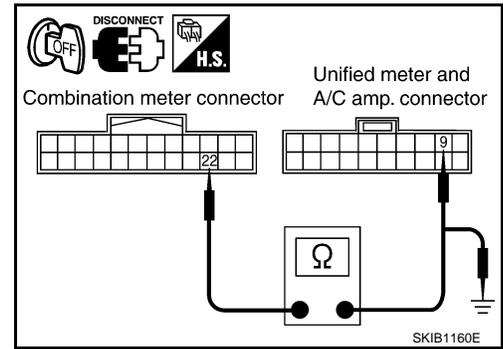
4. Check continuity between combination meter harness connector M19 terminal 22 (L/OR) and ground.

**22 – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 7.

NG >> Repair harness or connector.



## 7. CHECK VOLTAGE OF COMBINATION METER

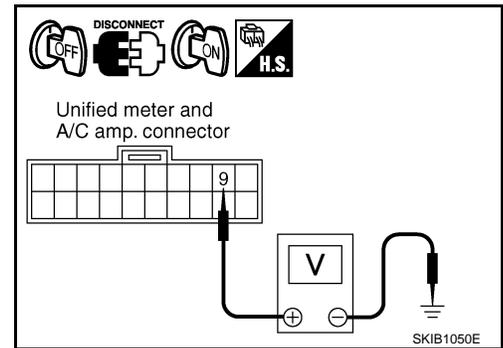
1. Connect combination meter connector.
2. Turn ignition switch ON.
3. Check voltage between unified meter and A/C amp. harness connector M48 terminal 9 and ground.

**9 – Ground : Approx. 5 V**

OK or NG

OK >> GO TO 8.

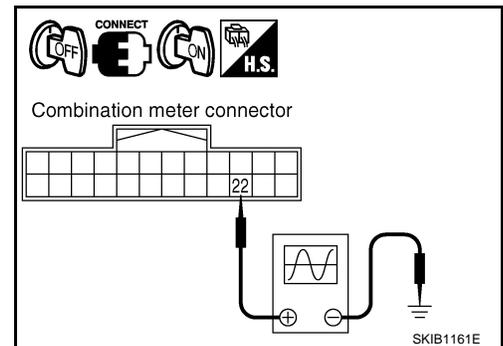
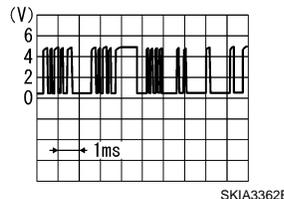
NG >> Replace combination meter.



## 8. CHECK VOLTAGE SIGNAL OF UNIFIED METER AND A/C AMP.

1. Turn ignition switch OFF.
2. Connect unified meter and A/C amp. connector.
3. Turn ignition switch ON.
4. Check voltage signal between combination meter harness connector M19 terminal 22 and ground.

**22 – Ground:**



OK or NG

OK >> Replace combination meter.

NG >> Replace unified meter and A/C amp.

## DTC [B2205] Vehicle Speed Circuit

INFOID:000000004657527

Symptom: Display VEHICLE SPEED CIRC [B2205] at the result of self-diagnosis for unified meter and A/C amp.

### 1. CHECK VDC/TCS/ABS CONTROL UNIT OR ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Perform the following unit self-diagnosis.

- VDC/TCS/ABS control unit [with VDC]. Refer to [BRC-95. "CONSULT-III Function"](#).

# UNIFIED METER AND A/C AMP

## < SERVICE INFORMATION >

- ABS actuator and electric unit (control unit) [without VDC]. Refer to [BRC-53. "CONSULT-III Function"](#) (with TCS) or [BRC-19. "CONSULT-III Function"](#) (without TCS).

### Self-diagnostic results content

No malfunction detected>>Replace unified meter and A/C amp.

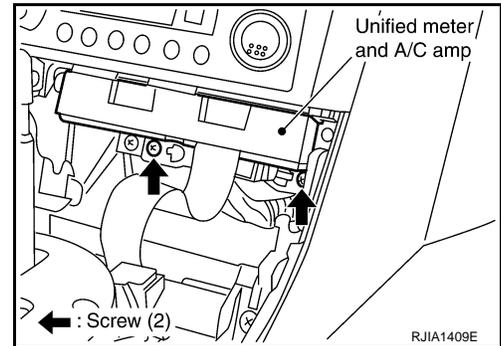
Malfunction detected>>Check applicable parts, and repair or replace corresponding parts.

## Removal and Installation of Unified Meter and A/C Amp

INFOID:000000004657528

### REMOVAL

1. Remove the console finisher (A/T) or console boot (M/T). Refer to [IP-12](#).
2. Remove the fixing screws, then remove the unified meter and A/C amp.



### INSTALLATION

Installation is the reverse order of removal.

# WARNING LAMPS

< SERVICE INFORMATION >

## WARNING LAMPS

---

### System Description

INFOID:000000004657529

#### OIL PRESSURE WARNING LAMP

- Triple meter reads oil pressure signal from oil pressure sensor.
- Triple meter judges an oil pressure condition by oil pressure signal, and transmits oil pressure warning lamp signal to unified meter and A/C amp. with communication line.
- Unified meter and A/C amp. transmits oil pressure switch signal to combination meter with communication line.
- Combination meter turns oil pressure warning lamp according to oil pressure switch signal.

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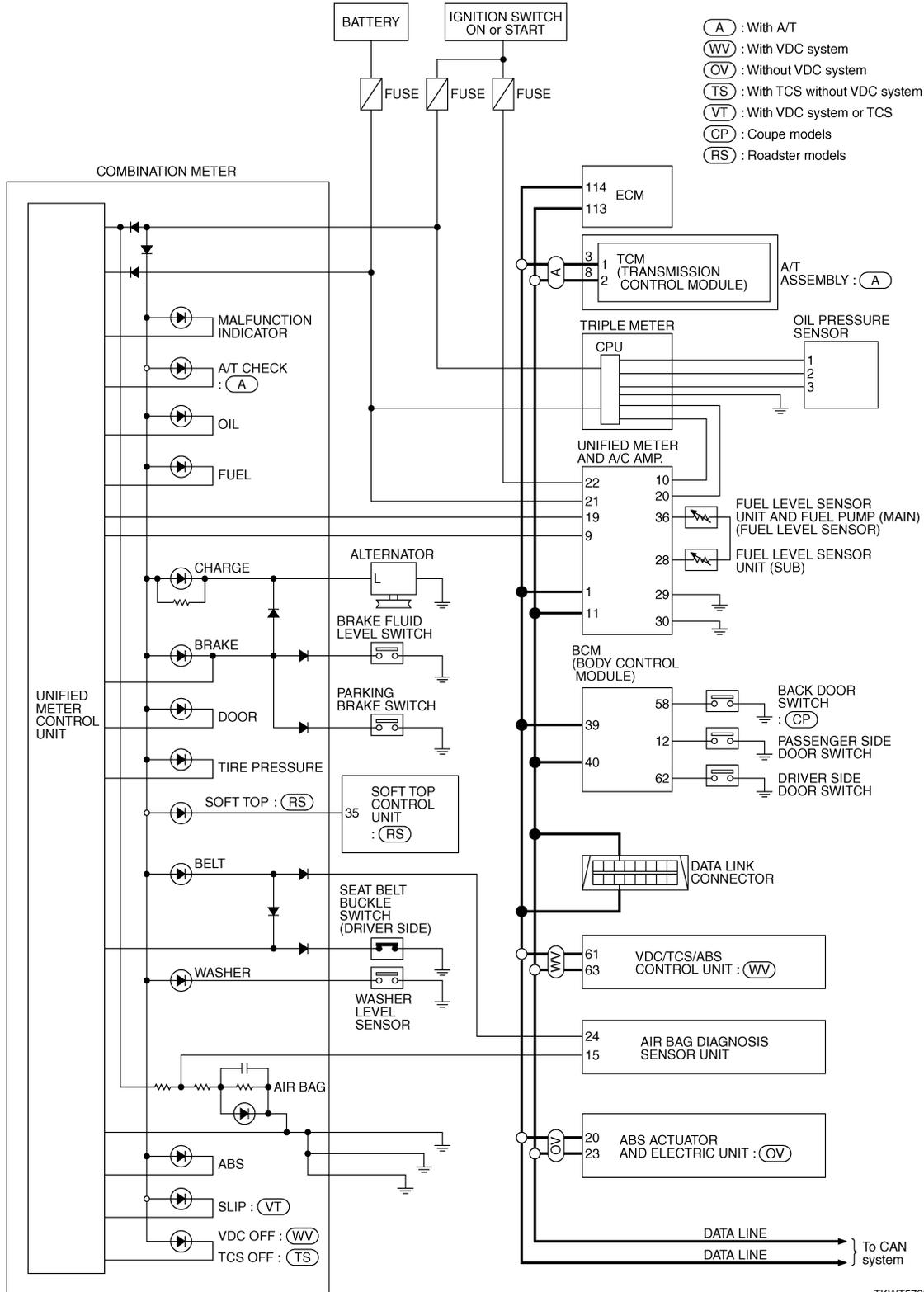
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# WARNING LAMPS

< SERVICE INFORMATION >

## Schematic

INFOID:000000004657530



**NOTE:**  
For the further details, refer to descriptions on each system.

TKWT5726E

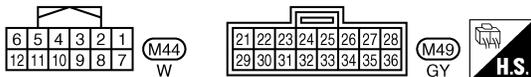
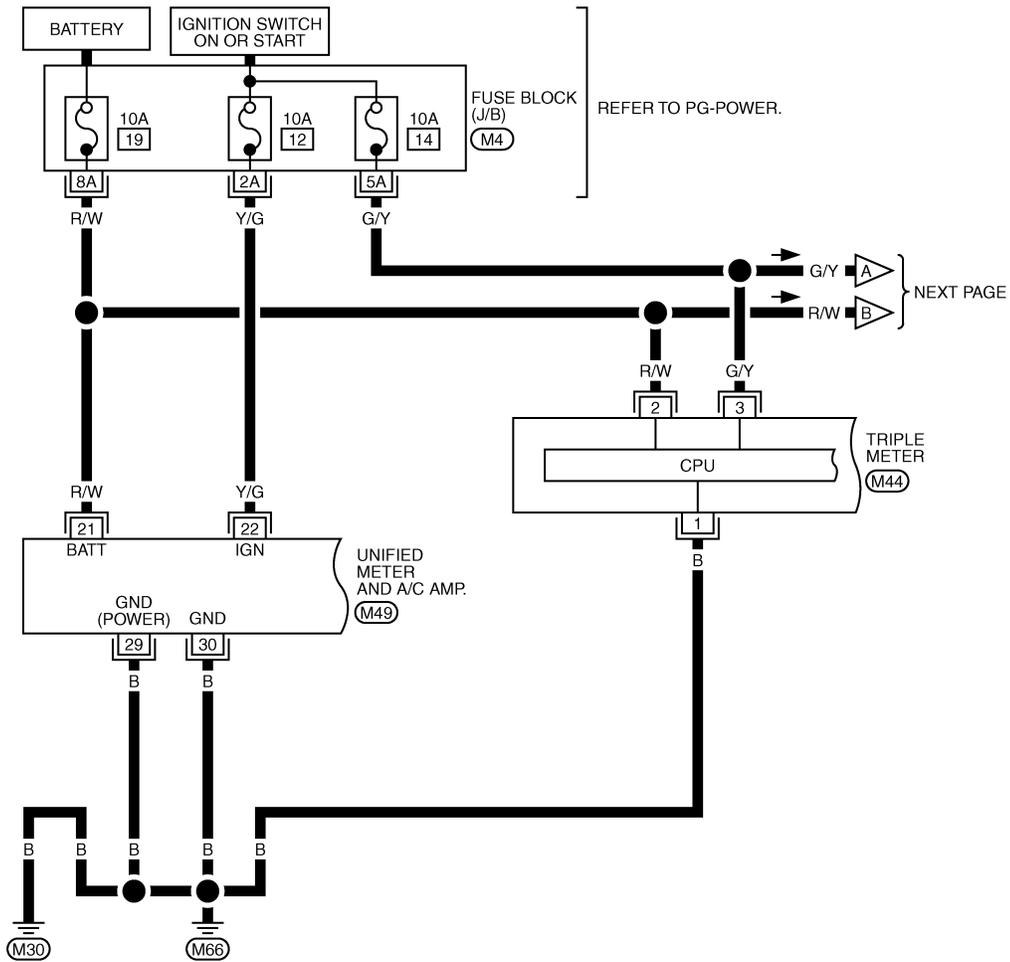
# WARNING LAMPS

< SERVICE INFORMATION >

## Wiring Diagram - WARN -

INFOID:000000004657531

DI-WARN-01



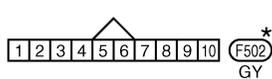
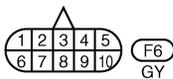
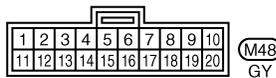
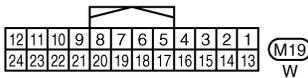
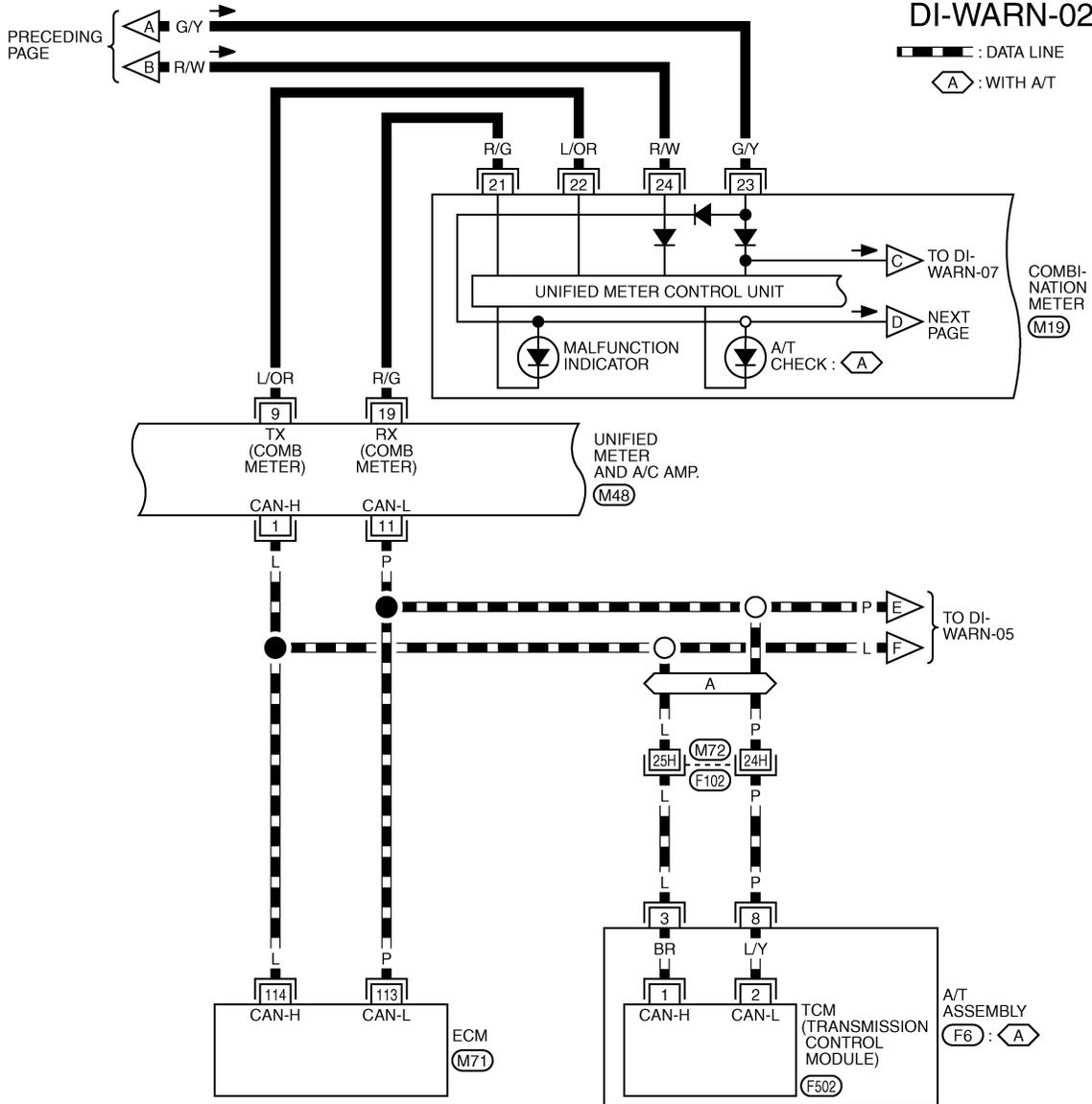
REFER TO THE FOLLOWING.  
 (M4) - FUSE BLOCK-JUNCTION BOX (J/B)

TKWT0485E

# WARNING LAMPS

< SERVICE INFORMATION >

DI-WARN-02



\*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.

(F102) -SUPER MULTIPLE JUNCTION (SMJ)

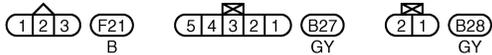
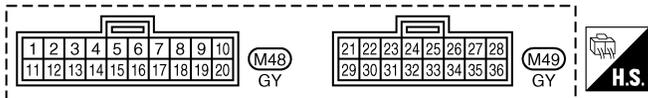
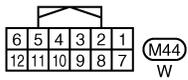
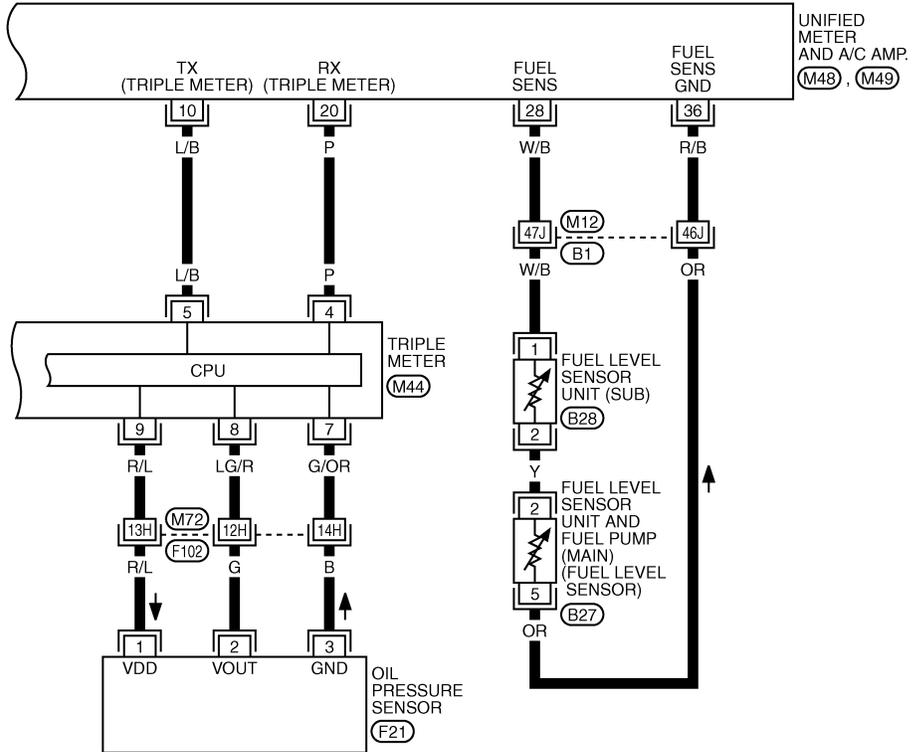
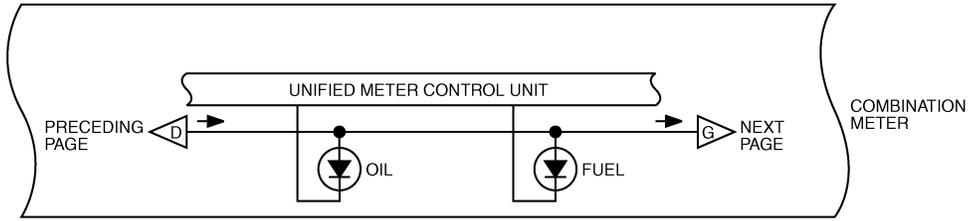
(M71) -ELECTRICAL UNITS

TKWT5727E

# WARNING LAMPS

< SERVICE INFORMATION >

DI-WARN-03



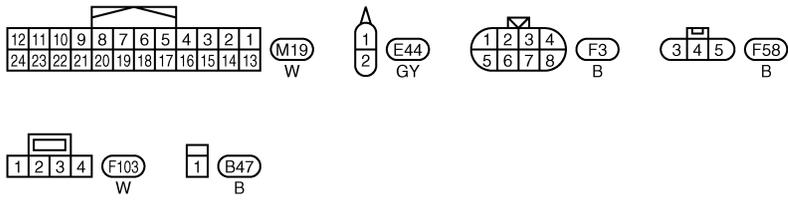
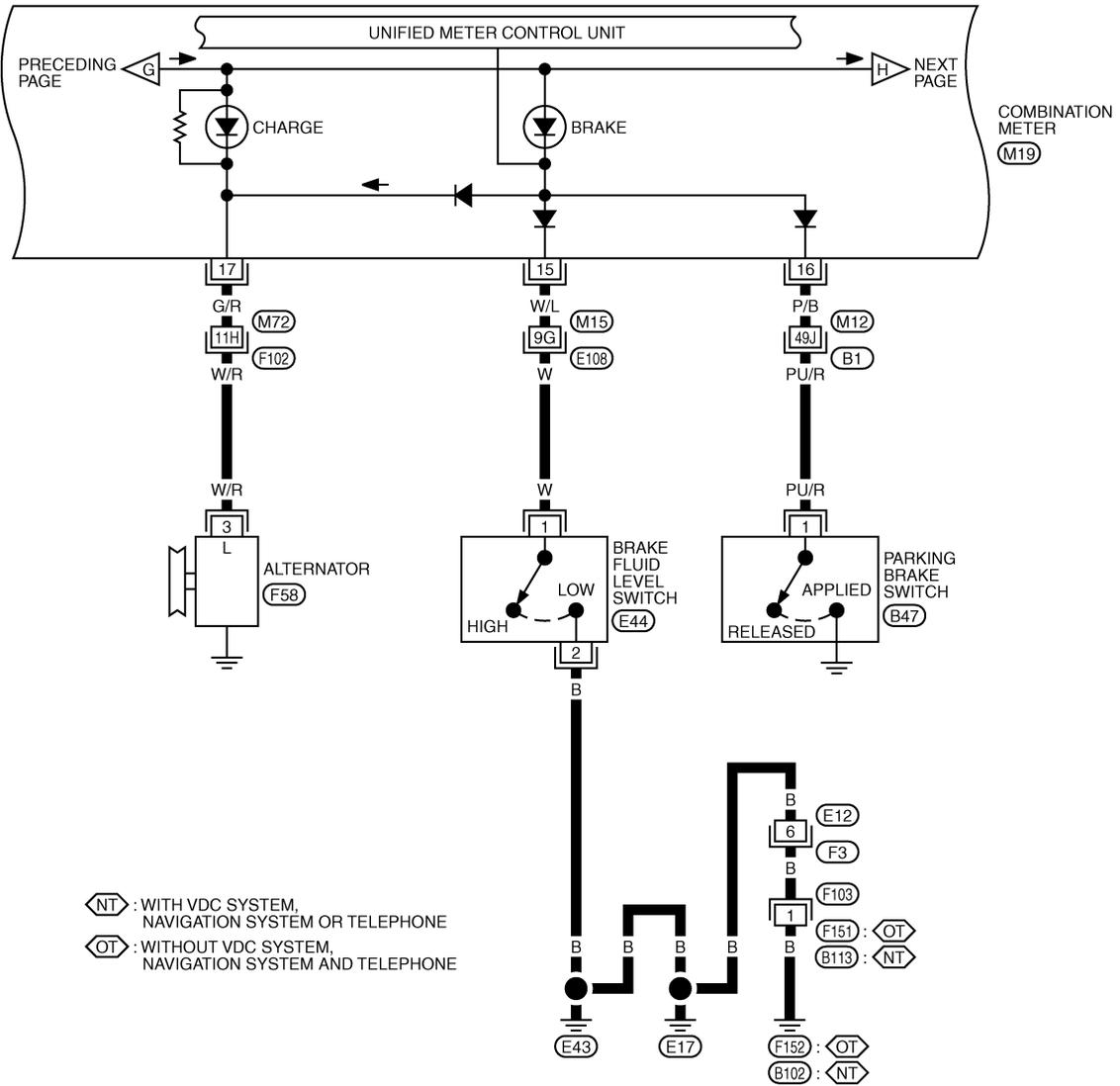
REFER TO THE FOLLOWING.  
(F102), (B1) -SUPER MULTIPLE JUNCTION (SMJ)

TKWT5728E

# WARNING LAMPS

< SERVICE INFORMATION >

DI-WARN-04



REFER TO THE FOLLOWING.  
 (E108), (F102), (B1) -SUPER  
 MULTIPLE JUNCTION (SMJ)

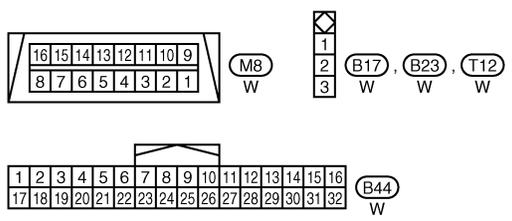
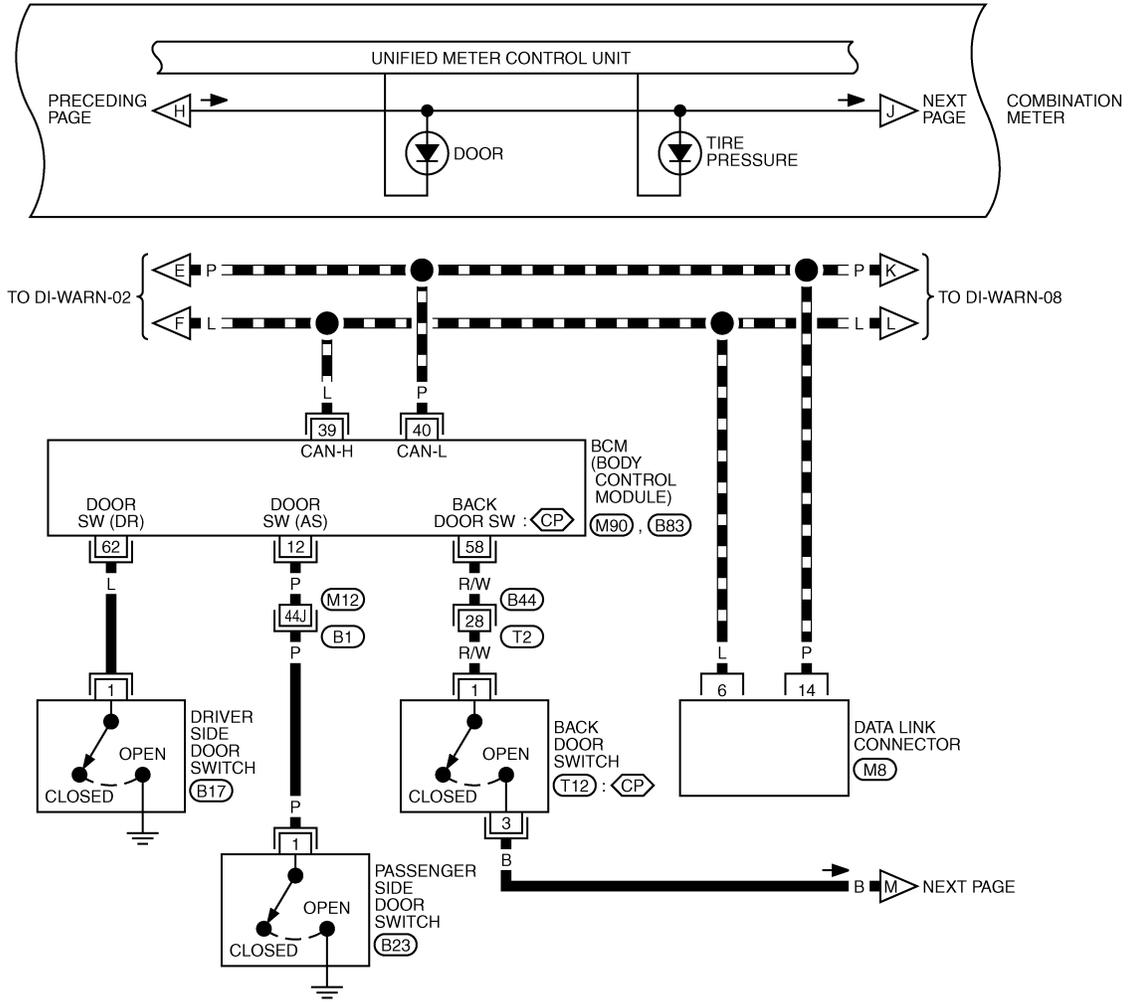
TKWT5729E

# WARNING LAMPS

< SERVICE INFORMATION >

## DI-WARN-05

▬ : DATA LINE  
 ◁CP▷ : COUPE MODELS



REFER TO THE FOLLOWING.  
 (B1) -SUPER MULTIPLE JUNCTION (SMJ)  
 (M90), (B83) -ELECTRICAL UNITS

TKWT3995E

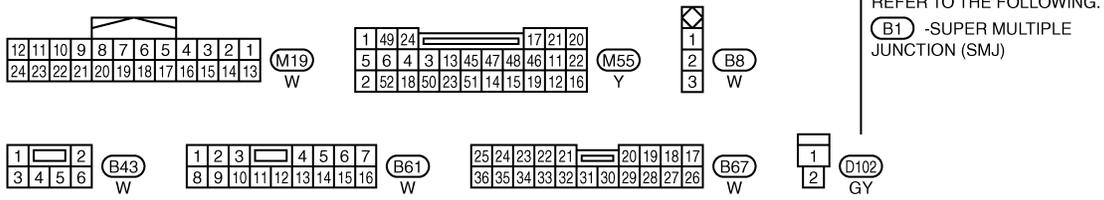
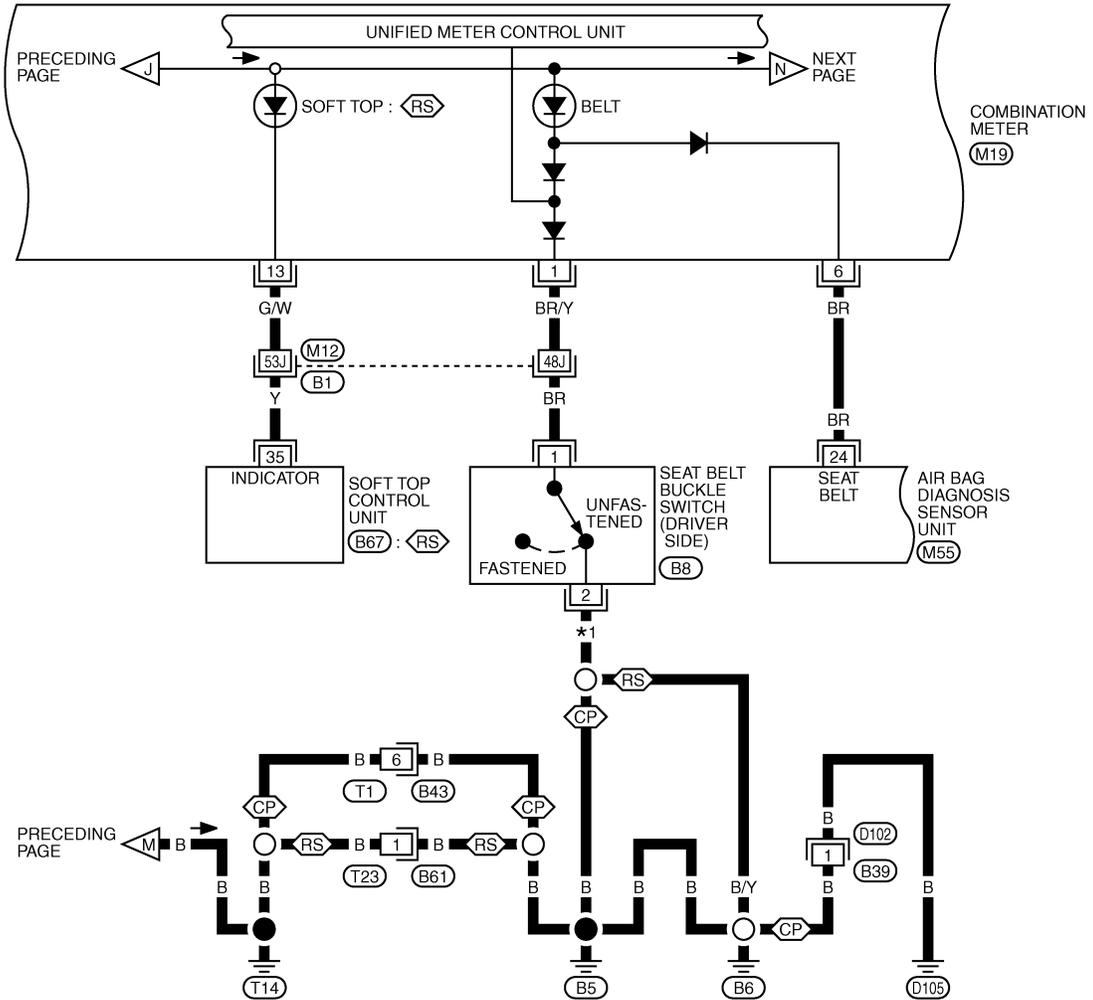
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# WARNING LAMPS

< SERVICE INFORMATION >

DI-WARN-06

CP : COUPE MODELS \*1 B : CP  
RS : ROADSTER MODELS B/Y : RS



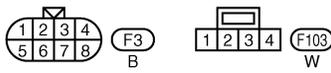
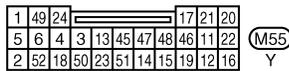
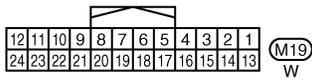
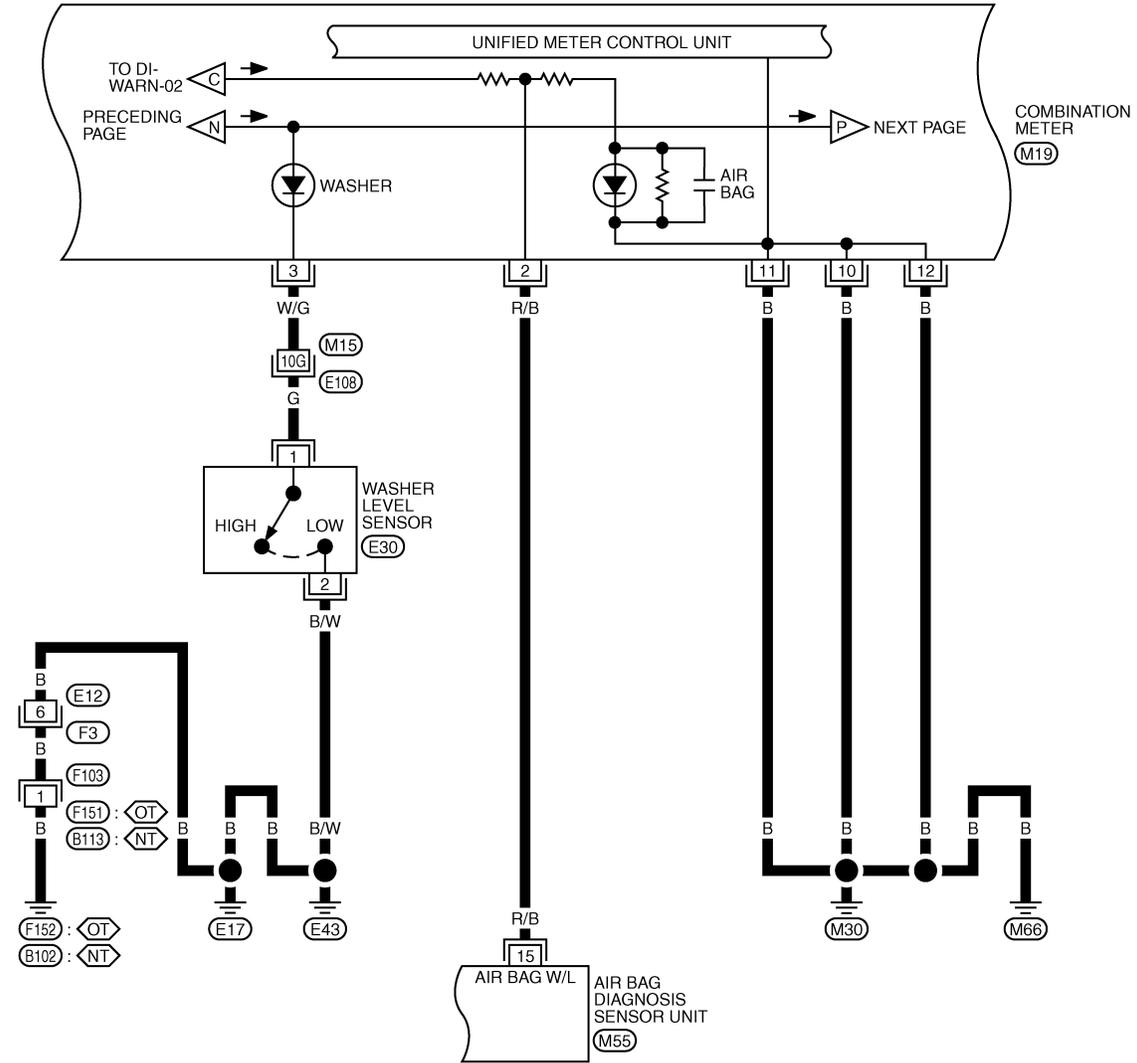
TKWT5730E

# WARNING LAMPS

< SERVICE INFORMATION >

DI-WARN-07

- : WITH VDC SYSTEM, NAVIGATION SYSTEM OR TELEPHONE
- : WITHOUT VDC SYSTEM, NAVIGATION SYSTEM AND TELEPHONE



REFER TO THE FOLLOWING.  
 -SUPER MULTIPLE JUNCTION (SMJ)

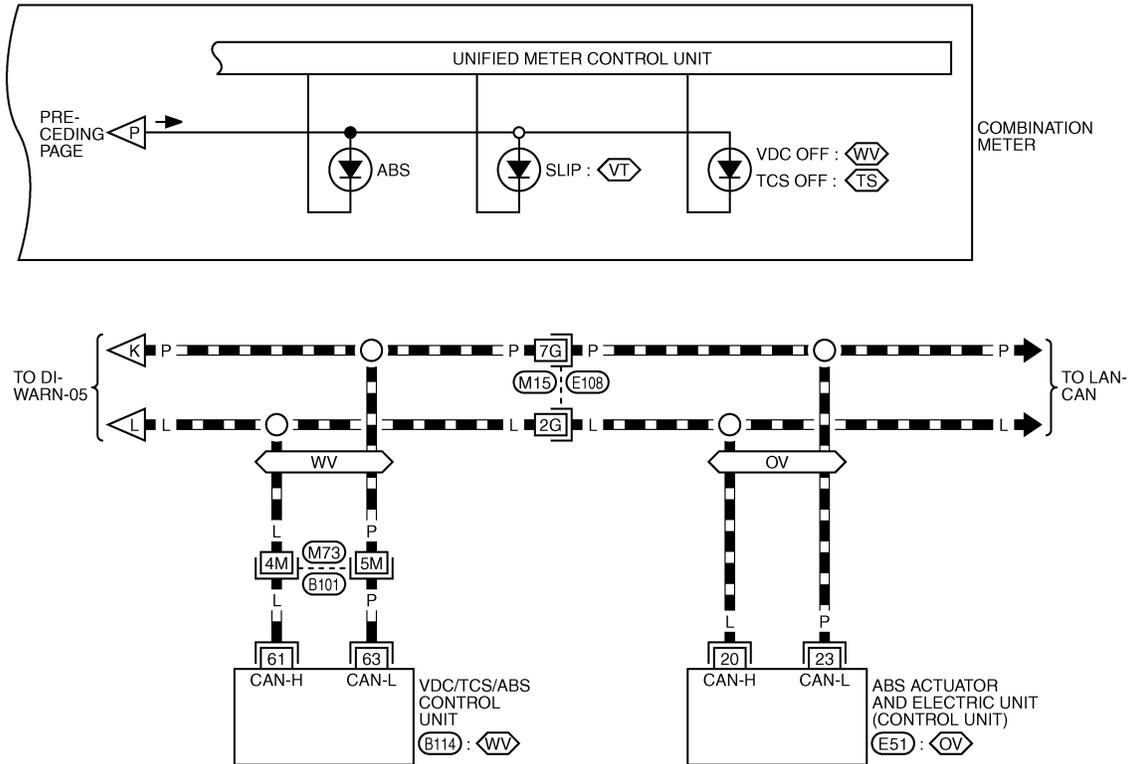
TKWT5731E

# WARNING LAMPS

< SERVICE INFORMATION >

## DI-WARN-08

- ▬ : DATA LINE
- ◊WV : WITH VDC SYSTEM
- ◊OV : WITHOUT VDC SYSTEM
- ◊TS : WITH TCS WITHOUT VDC SYSTEM
- ◊VT : WITH VDC SYSTEM OR TCS



REFER TO THE FOLLOWING.  
 (E108), (B101) -SUPER MULTIPLE JUNCTION (SMJ)  
 (E51), (B114) -ELECTRICAL UNITS

TKW5612E

INFOID:000000004657532

### CONSULT-III Function (METER/M&A)

Refer to [DI-15, "CONSULT-III Function \(METER/M&A\)"](#) in "UNIFIED METER AND A/C AMP".

Oil Pressure Warning Lamp Stays Off (Ignition Switch ON) or Stays On (Oil Pressure Is Normal)

INFOID:000000004657533

**NOTE:**

# WARNING LAMPS

## < SERVICE INFORMATION >

For oil pressure inspection, refer to [LU-5. "Inspection"](#).

### 1. CHECK OIL PRESSURE GAUGE

Start the engine.

Does oil pressure gauge operate?

YES >> GO TO 2.

NO >> Check oil pressure sensor signal.

### 2. CHECK COMMUNICATION LINE

Perform self-diagnosis of unified meter and A/C amp. Refer to [DI-15. "CONSULT-III Function \(METER/M&A\)"](#).

Self-diagnostic results

No malfunction detected>>GO TO 3.

Malfunction detected>>Check applicable parts, and repair or replace corresponding parts.

### 3. CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL

Select "METER/M&A" on CONSULT-III. Operate ignition switch with "OIL W/L" of "Data Monitor" and check operation status.

**"OIL W/L"**

**When ignition switch is in ON position (Engine stopped.) : ON**

**When engine running : OFF**

OK or NG

OK >> Replace combination meter.

NG >> Replace triple meter.

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DI

# A/T INDICATOR

< SERVICE INFORMATION >

## A/T INDICATOR

### System Description

INFOID:000000004657534

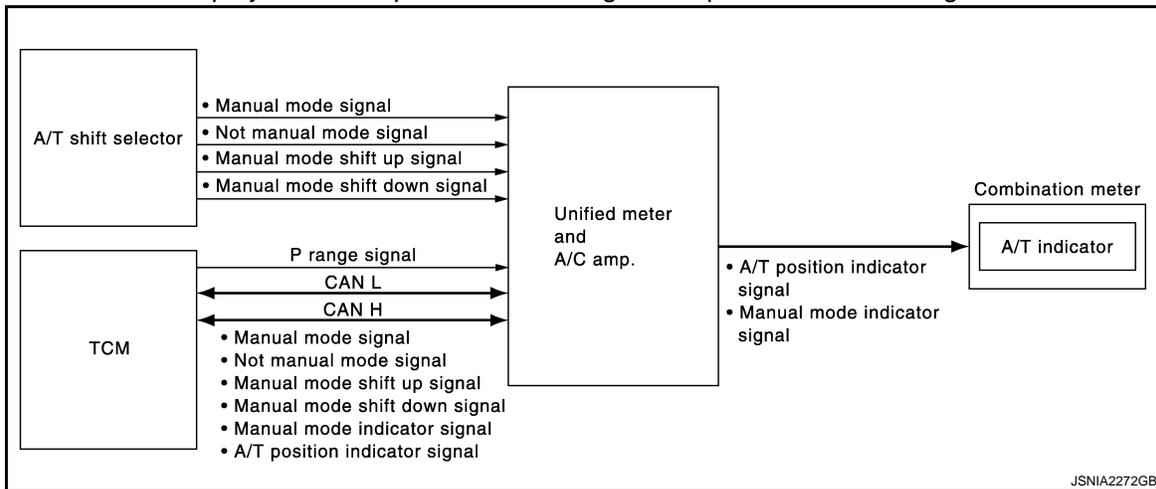
A/T position is displayed in the A/T indicator in the combination meter.

#### MANUAL MODE

- Unified meter and A/C amp. reads manual mode signal and shift-up/down signal from A/T shift selector, and transmits the signals to TCM with CAN communication.
- TCM processes manual mode signal and shift-up/down signal, and transmits manual mode indicator signal and A/T position indicator signal to unified meter and A/C amp. with CAN communication.
- Unified meter and A/C amp. transmits manual mode indicator signal and A/T position indicator signal to combination meter with the communication line.
- Combination meter displays A/T gear position and manual mode indicator according to A/T position indicator signal and manual mode indication signal.

#### NOT MANUAL MODE

- Unified meter and A/C amp. reads not manual mode signal from A/T shift selector, and transmits the signals to TCM with CAN communication.
- TCM transmits A/T position indicator signal to unified meter and A/C amp. with CAN communication.
- Unified meter and A/C amp. transmits A/T position indicator signal to combination meter with the communication line.
- Combination meter displays A/T shift position according to A/T position indicator signal.



# A/T INDICATOR

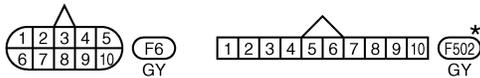
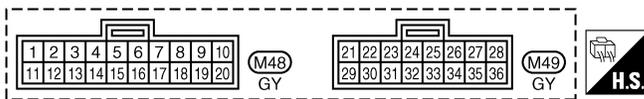
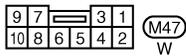
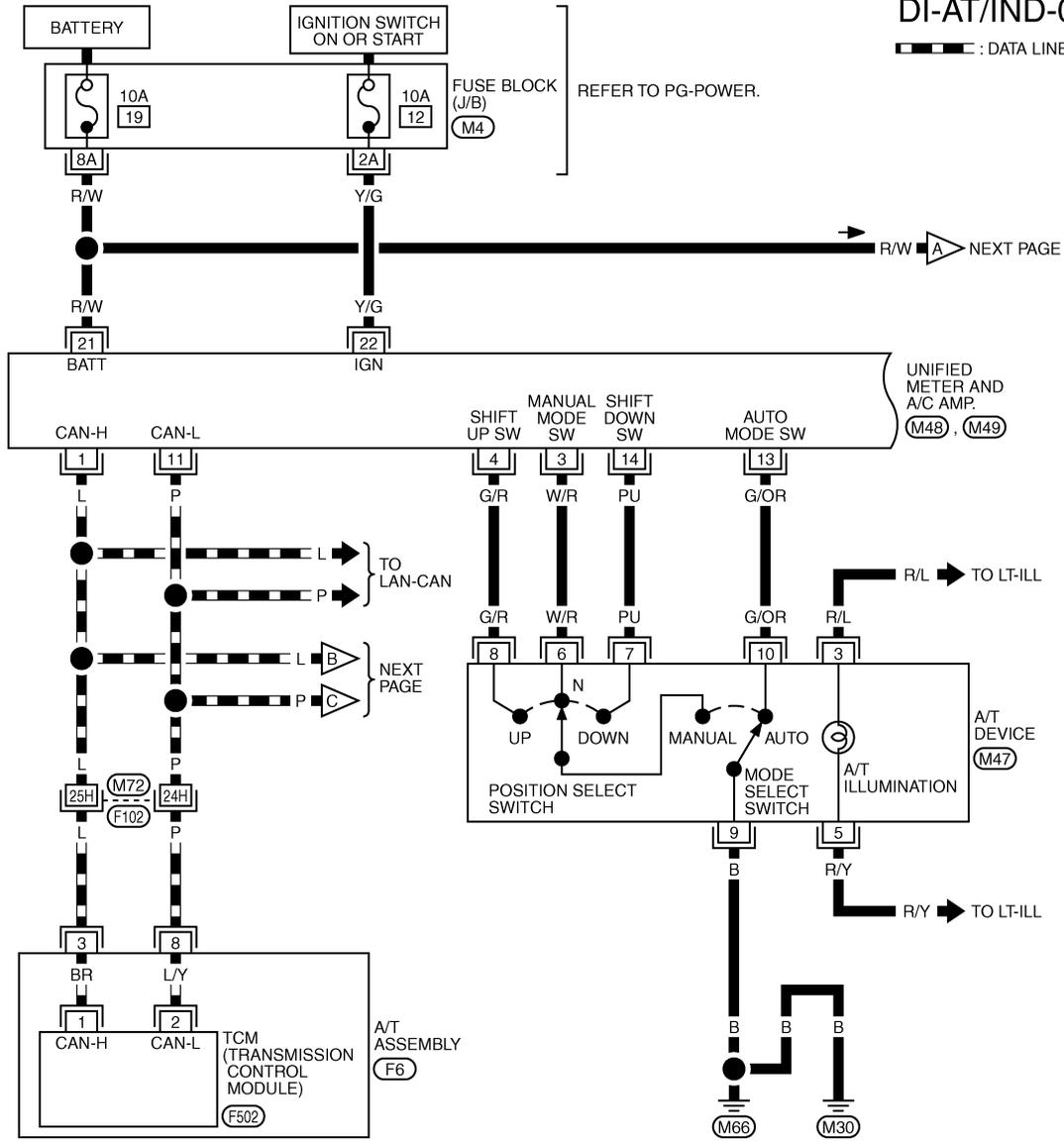
< SERVICE INFORMATION >

## Wiring Diagram - AT/IND -

INFOID:000000004657535

DI-AT/IND-01

▬ : DATA LINE



\*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.

- (F102) -SUPER MULTIPLE JUNCTION (SMJ)
- (M4) -FUSE BLOCK-JUNCTION BOX (J/B)

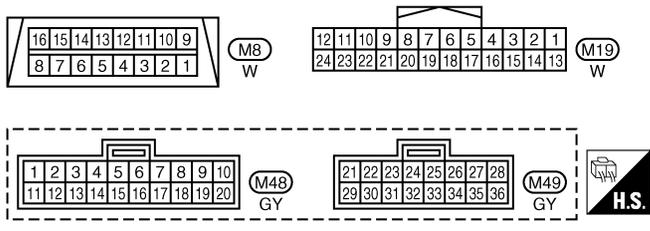
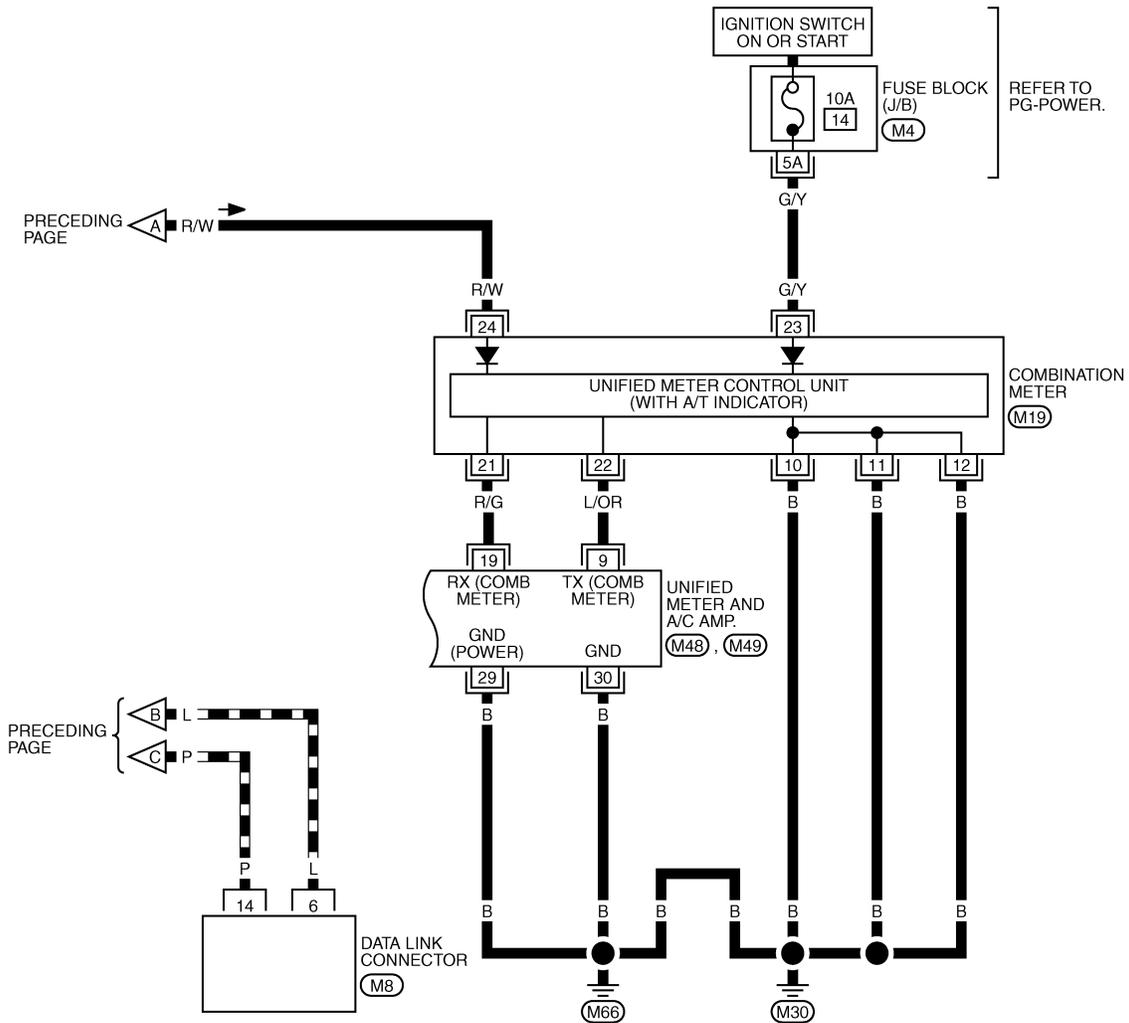
TKWT5732E

# A/T INDICATOR

< SERVICE INFORMATION >

DI-AT/IND-02

▬ : DATA LINE



REFER TO THE FOLLOWING.  
 (M4) - FUSE BLOCK-JUNCTION BOX (J/B)

## CONSULT-III Function (METER/M&A)

Refer to [DI-44, "CONSULT-III Function \(METER/M&A\)"](#) in "UNIFIED METER AND A/C AMP".

## A/T Indicator Is Malfunction

### 1. CHECK A/T INDICATOR SEGMENTS

TKWKT2309E  
 INFOID:000000004657536  
 INFOID:000000004657537

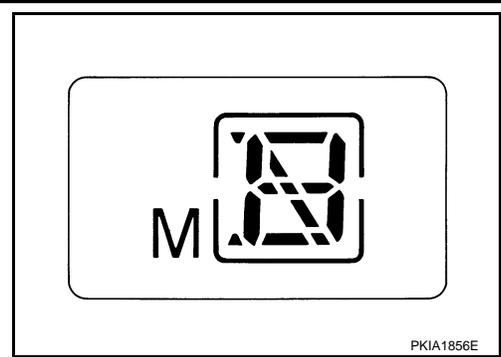
# A/T INDICATOR

## < SERVICE INFORMATION >

Perform self-diagnosis mode of combination meter. Refer to [DI-14, "Self-Diagnosis Mode of Combination Meter"](#).

Are all segments displayed?

- YES >> GO TO 2.
- NO >> Replace combination meter.



## 2. CHECK UNIFIED METER AND A/C AMP. (CONSULT-III)

Perform self-diagnosis of unified meter and A/C amp. Refer to [DI-44, "CONSULT-III Function \(METER/M&A\)"](#).

Self-diagnostic results

- No malfunction detected>>GO TO 3.
- Malfunction detected>> Check applicable parts, and repair or replace corresponding parts.

## 3. CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL

1. Use "Data Monitor" of "METER/M&A" on CONSULT-III. Confirm each indication on the monitor when shifting the selector lever.

CONSULT-III display	Selector lever position	Status
AT-M IND	Manual mode range	ON
	Except for manual mode range	OFF
AT-M GEAR	Manual mode range (shift up or down)	5-1
	Except for manual mode range	1
P RANGE IND	P range	ON
	Except for P range	OFF
R RANGE IND	R range	ON
	Except for R range	OFF
N RANGE IND	N range position	ON
	Except for N range	OFF
D RANGE IND	D range position	ON
	Except for D range	OFF

OK or NG

- OK >> Replace combination meter.
- NG >> GO TO 4.

## 4. CHECK TCM (CONSULT-III)

Perform TCM self-diagnosis. Refer to [AT-81, "CONSULT-III Function \(TRANSMISSION\)"](#).

Self-diagnostic results

- No malfunction detected>>Replace unified meter and A/C amp.
- Malfunction detected>>Check applicable parts, and repair or replace corresponding parts.

# WARNING CHIME

< SERVICE INFORMATION >

## WARNING CHIME

### System Description

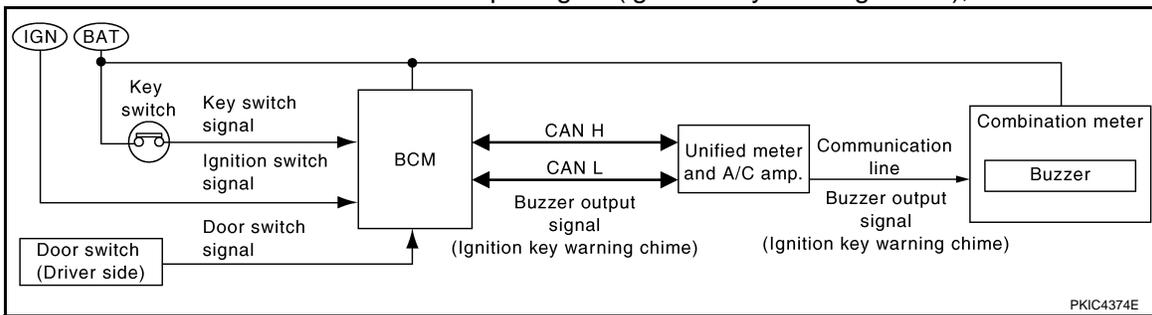
INFOID:000000004657538

- The buzzer for warning chime system is installed in the combination meter.
- The buzzer sounds when the combination meter receives buzzer output signal from each unit through unified meter and A/C amp.

### IGNITION KEY WARNING CHIME

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

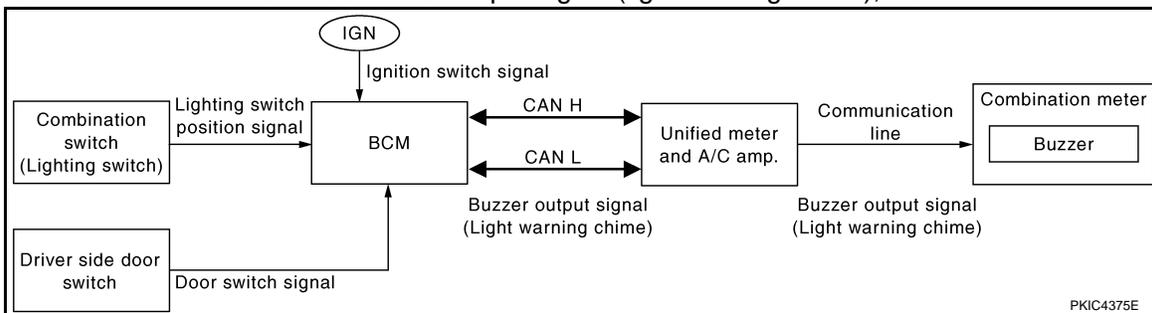
- BCM detects key inserted into the key switch, ignition switch in OFF or ACC position, and driver side door switch ON. And then, BCM transmits buzzer output signal (ignition key warning chime) to unified meter and A/C amp. with CAN communication.
- Unified meter and A/C amp. transmits buzzer output signal (ignition key warning chime) to combination meter with communication line.
- When combination meter receives buzzer output signal (ignition key warning chime), it sounds the buzzer.



### LIGHT WARNING CHIME

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

- BCM detects ignition switch in OFF or ACC position, driver side door switch ON, and lighting switch in 1ST or 2ND position. And then, BCM transmits buzzer output signal (light warning chime) to unified meter and A/C amp. with CAN communication line.
- Unified meter and A/C amp. transmits buzzer output signal (light warning chime) to combination meter with communication line.
- When combination meter receives buzzer output signal (light warning chime), it sounds the buzzer.



### NOTE:

For further details of combination switch, refer to [LT-81. "Combination Switch Reading Function"](#).

### SEAT BELT WARNING CHIME

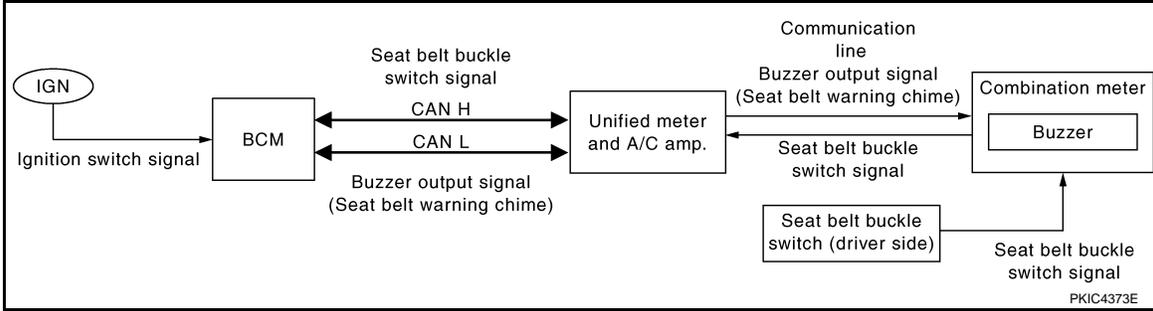
With ignition switch turned ON and driver seat belt unfastened, seat belt warning chime sounds for approximately 6 seconds.

- Combination meter reads a ON/OFF signal from seat belt buckle switch, and transmits seat belt buckle switch signal to unified meter and A/C amp. with communication line.
- BCM receives seat belt buckle switch signal (driver side) from unified meter and A/C amp. with CAN communication line.
- BCM detects ignition switch turned ON and seat belt buckle switch (driver side) ON. And then, BCM transmits buzzer output signal (seat belt warning chime) to unified meter and A/C amp. with CAN communication.
- Unified meter and A/C amp. transmits buzzer output signal (seat belt warning chime) to combination meter with communication line.

# WARNING CHIME

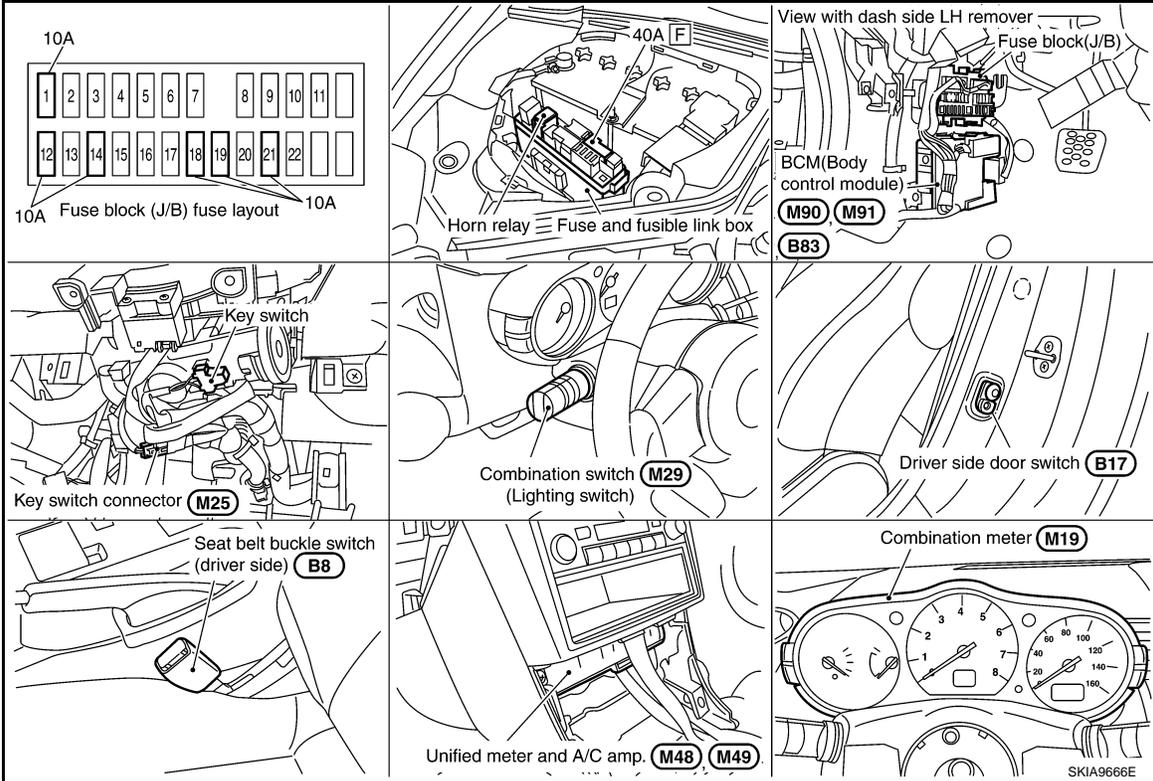
## < SERVICE INFORMATION >

- When combination meter receives buzzer output signal (seat belt warning chime), it sounds the buzzer.



## Component Parts and Harness Connector Location

INFOID:000000004657539



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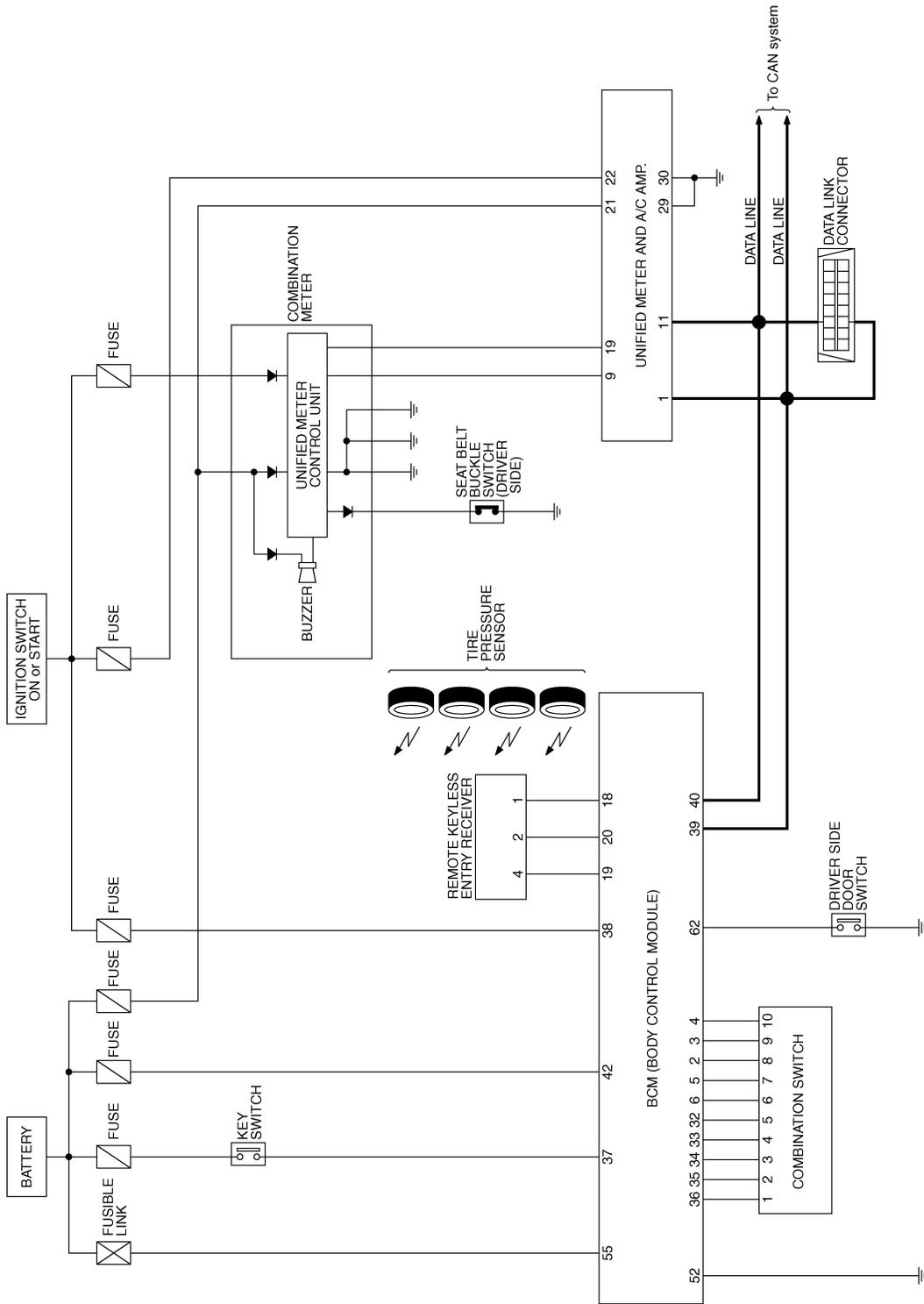
DI

# WARNING CHIME

< SERVICE INFORMATION >

## Schematic

INFOID:000000004657540



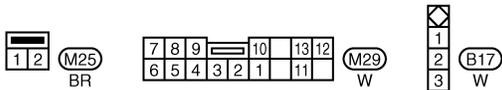
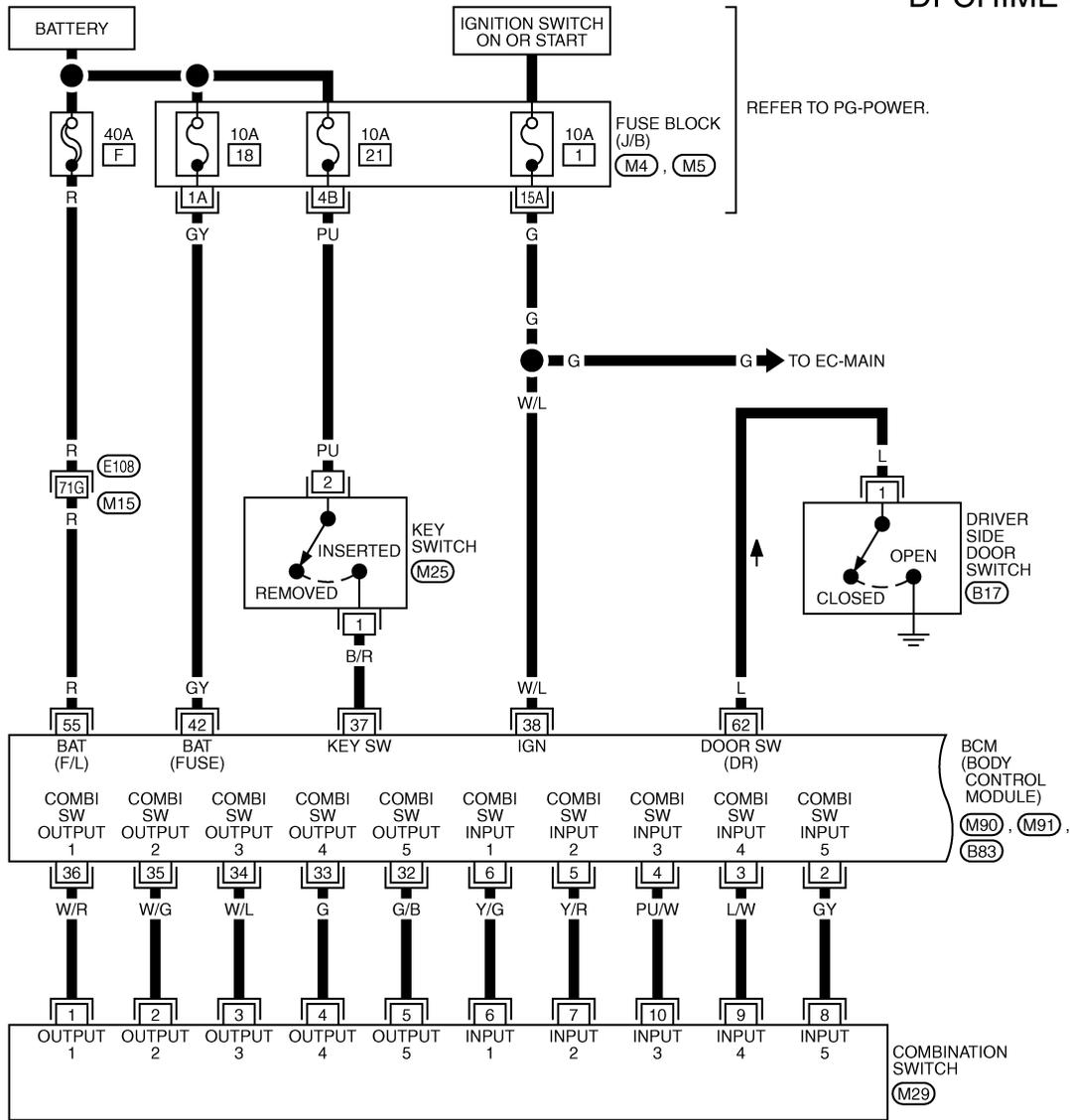
TKWT2310E

# WARNING CHIME

## < SERVICE INFORMATION > Wiring Diagram - CHIME -

INFOID:000000004657541

### DI-CHIME-01



REFER TO THE FOLLOWING.

(E108) -SUPER MULTIPLE JUNCTION (SMJ)

(M4), (M5) -FUSE BLOCK-JUNCTION BOX (J/B)

(M90), (M91), (B83) -ELECTRICAL UNITS

TKWT5733E

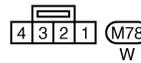
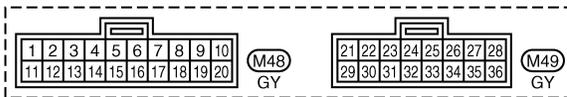
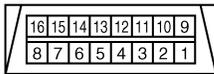
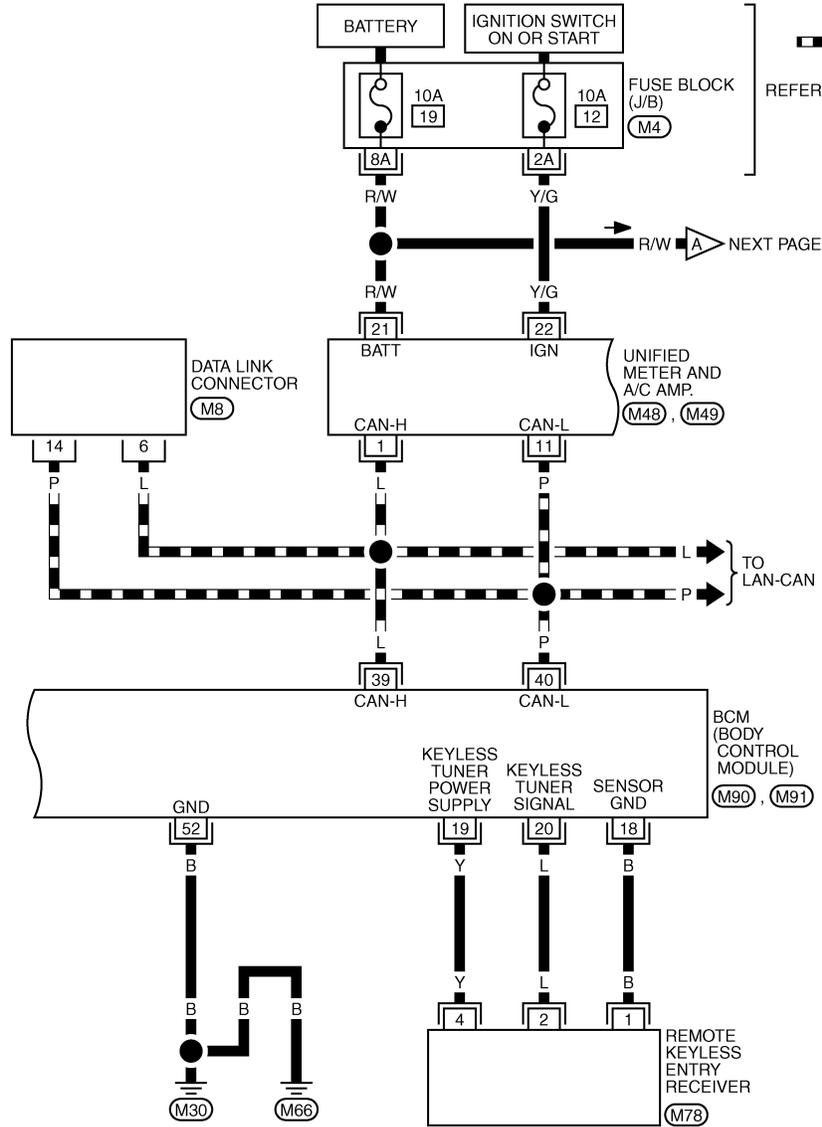
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# WARNING CHIME

< SERVICE INFORMATION >

## DI-CHIME-02



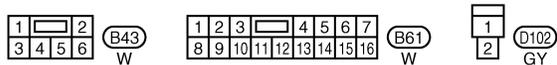
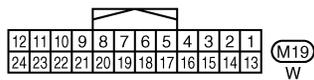
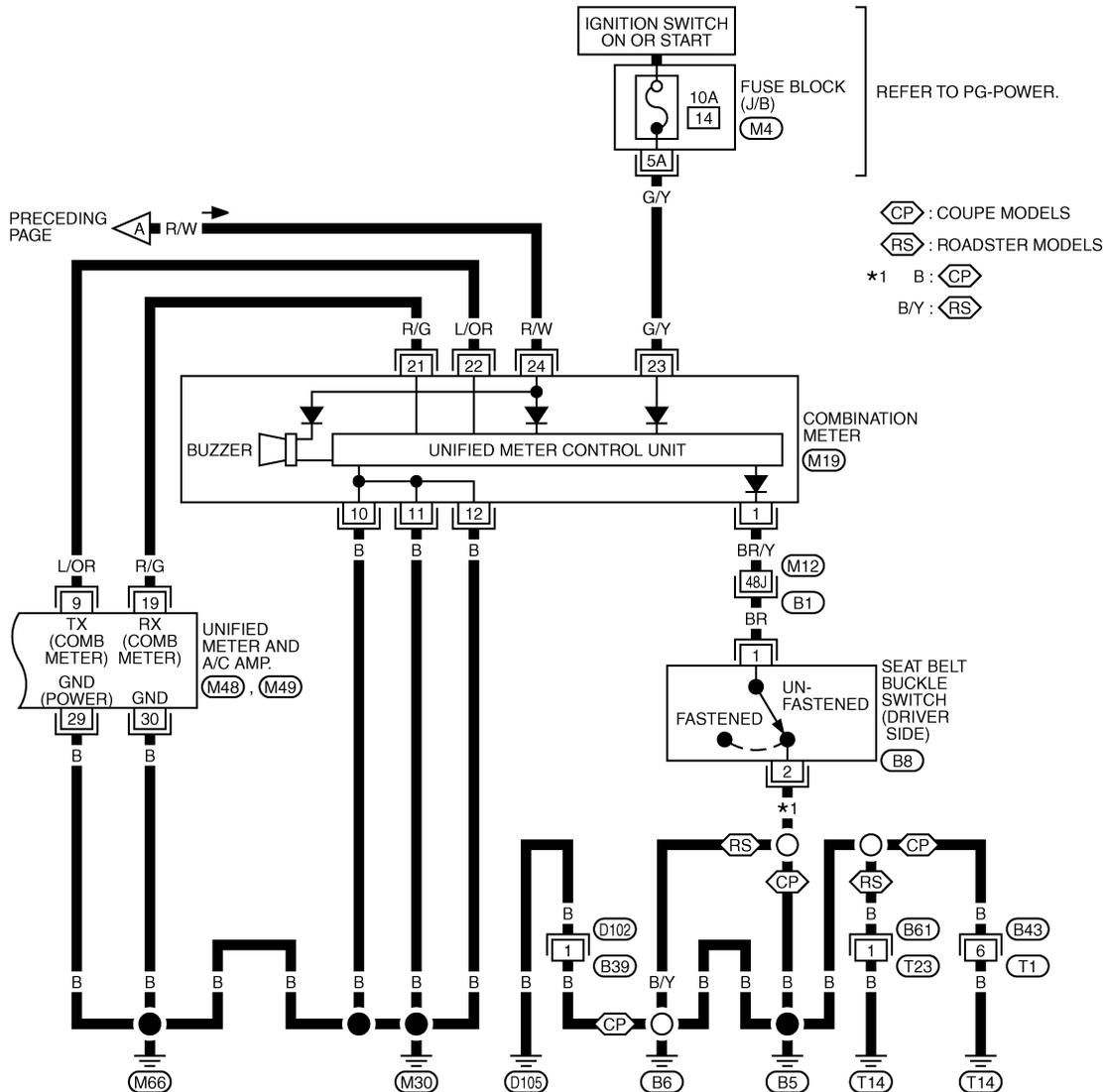
REFER TO THE FOLLOWING.  
 (M4) - FUSE BLOCK-JUNCTION BOX (J/B)  
 (M90), (M91) - ELECTRICAL UNITS

TKWT2312E

# WARNING CHIME

< SERVICE INFORMATION >

DI-CHIME-03



REFER TO THE FOLLOWING.  
 (B1) -SUPER MULTIPLE JUNCTION (SMJ)  
 (M4) -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT5734E

INFOID:000000004657542

## Terminal and Reference Value for BCM

### CAUTION:

- Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF not to be fluctuated by overloaded.
- Turn wiper dial position to 4 except when checking waveform or voltage of wiper dial position. Wiper dial position can be confirmed on CONSULT-III. Refer to [LT-85, "CONSULT-III Function \(BCM\)"](#).

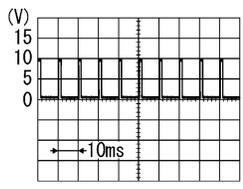
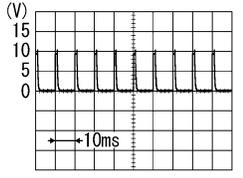
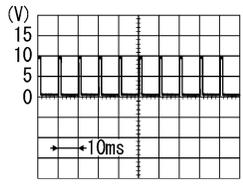
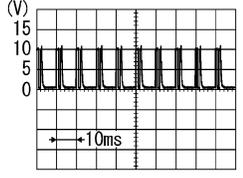
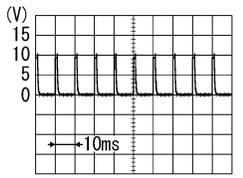
# WARNING CHIME

< SERVICE INFORMATION >

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
2	GY	Combination switch input 5	ON	OFF	0 V
				Any of the conditions below <ul style="list-style-type: none"> <li>• Lighting switch 1ST</li> <li>• Lighting switch HIGH beam (Operates only HIGH beam switch)</li> <li>• Turn signal switch to right</li> </ul>	<p style="text-align: right;">PKIB4959J</p>
				Lighting switch 2ND	<p style="text-align: right;">PKIB4953J</p>
3	L/W	Combination switch input 4	ON	OFF	0 V
				Any of the conditions below <ul style="list-style-type: none"> <li>• Lighting switch 2ND</li> <li>• Lighting switch PASSING (Operates only PASSING switch)</li> <li>• Turn signal switch to left</li> </ul>	<p style="text-align: right;">PKIB4959J</p>
				Lighting, turn, wiper switch (Wiper intermittent dial position 4)	<p style="text-align: right;">PKIB4959J</p>
4	PU/W	Combination switch input 3	ON	OFF	0 V
				Any of the conditions below <ul style="list-style-type: none"> <li>• Front wiper switch MIST</li> <li>• Front wiper switch INT</li> <li>• Front wiper switch LO</li> </ul>	<p style="text-align: right;">PKIB4959J</p>
				Lighting, turn, wiper switch (Wiper intermittent dial position 4)	<p style="text-align: right;">PKIB4959J</p>

# WARNING CHIME

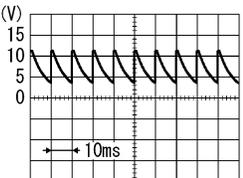
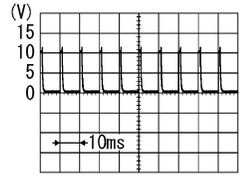
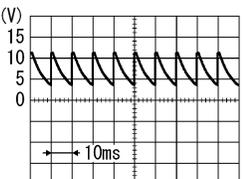
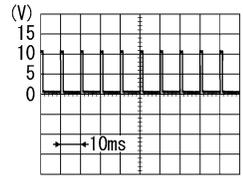
## < SERVICE INFORMATION >

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)	
			Ignition switch	Operation or condition		
5	Y/R	Combination switch input 2	ON	Lighting, turn, wiper switch	OFF (Wiper intermittent dial position 4)	0 V
					Any of the conditions below <ul style="list-style-type: none"> <li>• Front washer switch</li> <li>• Rear washer switch</li> <li>• Wiper intermittent dial position 1</li> <li>• Wiper intermittent dial position 5</li> <li>• Wiper intermittent dial position 6</li> </ul>	 1.0 V
					Rear wiper switch ON (Wiper intermittent dial position 4)	 0.8 v
6	Y/G	Combination switch input 1	ON	Lighting, turn, wiper switch	OFF (Wiper intermittent dial position 4)	0 V
					Any of the conditions below <ul style="list-style-type: none"> <li>• Front wiper switch HI</li> <li>• Rear wiper switch INT</li> <li>• Wiper intermittent dial position 3</li> </ul>	 1.0 V
					Any of the conditions below <ul style="list-style-type: none"> <li>• Wiper intermittent dial position 1</li> <li>• Wiper intermittent dial position 2</li> </ul>	 1.7 V
					Any of the conditions below <ul style="list-style-type: none"> <li>• Wiper intermittent dial position 6</li> <li>• Wiper intermittent dial position 7</li> </ul>	 0.8 V

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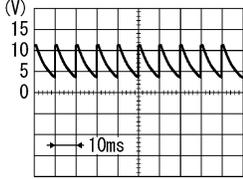
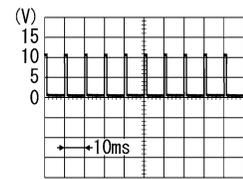
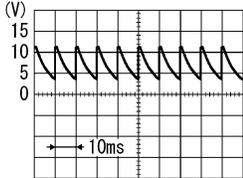
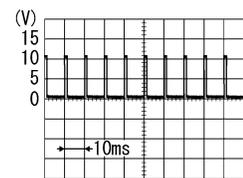
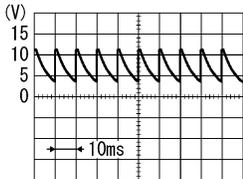
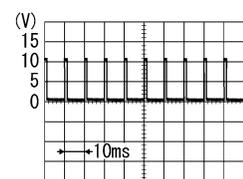
# WARNING CHIME

## < SERVICE INFORMATION >

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
18	B	Remote keyless entry receiver (Ground)	—	—	Refer to <a href="#">WT-17, "Control Unit Input/Output Signal Standard for BCM"</a> .
19	Y	Remote keyless entry receiver (Power supply)			
20	L	Remote keyless entry receiver (Signal)			
32	G/B	Combination switch output 5	ON	Lighting, turn, wiper switch	OFF (Wiper intermittent dial position 4)  PKIB4960J 7.2 V
					Any of the conditions below <ul style="list-style-type: none"> <li>• Wiper intermittent dial position 1</li> <li>• Wiper intermittent dial position 2</li> <li>• Wiper intermittent dial position 6</li> <li>• Wiper intermittent dial position 7</li> </ul>  PKIB4956J 1.0 V
33	G	Combination switch output 4	ON	Lighting, turn, wiper switch	OFF (Wiper intermittent dial position 4)  PKIB4960J 7.2 V
					Any of the conditions below <ul style="list-style-type: none"> <li>• Lighting switch 1ST (The same result with lighting switch 2ND)</li> <li>• Rear wiper switch INT</li> <li>• Wiper intermittent dial position 1</li> <li>• Wiper intermittent dial position 5</li> <li>• Wiper intermittent dial position 6</li> </ul>  PKIB4958J 1.2 V

# WARNING CHIME

## < SERVICE INFORMATION >

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
34	W/L	Combination switch output 3	ON	Lighting, turn, wiper switch	 <p>7.2 V</p>
				Any of the conditions below	 <p>1.2 V</p>
35	W/G	Combination switch output 2	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	 <p>7.2 V</p>
				Any of the conditions below	 <p>1.2 V</p>
36	W/R	Combination switch output 1	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	 <p>7.2 V</p>
				Any of the conditions below	 <p>1.2 V</p>

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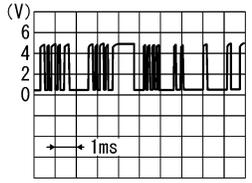
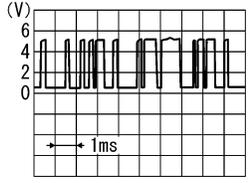
# WARNING CHIME

## < SERVICE INFORMATION >

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
37	B/R	Key switch signal	OFF	Key is removed.	0 V
				Key is inserted.	12 V
38	W/L	Ignition power supply	ON	—	Battery voltage
39	L	CAN-H	—	—	—
40	P	CAN-L	—	—	—
42	GY	Battery power supply (FUSE)	OFF	—	Battery voltage
52	B	Ground	ON	—	0 V
55	R	Battery power supply (F/L)	OFF	—	Battery voltage
62	L	Driver side door switch signal	OFF	Door switch is released. (Door switch ON)	0 V
				Door switch is pressed. (Door switch OFF)	5 V

## Terminal and Reference Value for Unified Meter and A/C Amp

INFOID:000000004657543

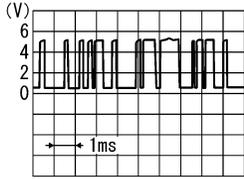
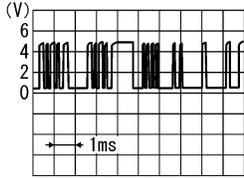
Terminal No.	Wire color	Item	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
1	L	CAN-H	OFF	—	—
9	L/OR	TX communication line (To combination meter)	ON	—	 <p style="text-align: right; font-size: small;">SKIA3362E</p>
11	P	CAN-L	OFF	—	—
19	R/G	RX communication line (From combination meter)	ON	—	 <p style="text-align: right; font-size: small;">SKIA3361E</p>
21	R/W	Battery power supply	OFF	—	Battery voltage
22	Y/G	Ignition power supply	ON	—	Battery voltage
29	B	Ground (POWER)	ON	—	0 V
30	B	Ground	ON	—	0 V

# WARNING CHIME

< SERVICE INFORMATION >

## Terminal and Reference Value for Combination Meter

INFOID:000000004657544

Terminal No.	Wire color	Item	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
1	BR/Y	Seat belt buckle switch (Driver side)	ON	Seat belt is unfastened.	0 V
				Seat belt is fastened.	5 V
10	B	Ground	ON	—	0 V
11					
12					
21	R/G	TX communication line (To unified meter and A/C amp.)	ON	—	 <p style="text-align: right; font-size: small;">SKIA3361E</p>
22	L/OR	RX communication line (From unified meter and A/C amp.)	ON	—	 <p style="text-align: right; font-size: small;">SKIA3362E</p>
23	G/Y	Ignition power supply	ON	—	Battery voltage
24	R/W	Battery power supply	OFF	—	Battery voltage

### CONSULT-III Function (METER/M&A)

INFOID:000000004657545

Refer to [DI-44. "CONSULT-III Function \(METER/M&A\)"](#) in "UNIFIED METER AND A/C AMP".

### CONSULT-III Function (BCM)

INFOID:000000004657546

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

#### DIAGNOSTIC ITEMS DESCRIPTION

System	Test item	Diagnosis mode	Description
BCM	BCM	Self Diagnostic Result	BCM performs self-diagnosis of CAN communication.
	BUZZER	Data Monitor	The input data to the BCM control unit is displayed in real time.
		Active Tset	Operation of electrical loads can be checked by sending driving signal to them.

### DATA MONITOR

#### Display Item List

Monitor item [Unit]	ALL SIGNALS	SELECTION FROM MENU	Contents
IGN ON SW [On/Off]	X	X	Indicates [On/Off] condition of ignition switch.
KEY ON SW [On/Off]	X	X	Indicates [On/Off] condition of key switch.
DOOR SW-DR [On/Off]	X	X	Indicates [On/Off] condition of driver side door switch.

# WARNING CHIME

## < SERVICE INFORMATION >

Monitor item [Unit]	ALL SIGNALS	SELECTION FROM MENU	Contents
LIGHT SW 1ST [On/Off]	X	X	Indicates [On/Off] condition of lighting switch.
BUCKLE SW [On/Off]	X	X	Indicates [On/Off] condition of seat belt switch.

## ACTIVE TEST

### Display Item List

Test item	Malfunction is detected when...
LIGHT WARN ALM	This test is able to check light warning chime operation.
IGN KEY WARN ALM	This test is able to check ignition key warning chime operation.
SEAT BELT WARN ALM	This test is able to check seat belt warning chime operation.

## SELF-DIAGNOSTIC RESULTS

### Display Item List

Display item [Code]	Malfunction is detected when...
CAN communication [U1000]	Malfunction is detected in CAN communication.

### NOTE:

If "CAN communication [U1000]" is indicated, after printing the monitor item, go to "CAN system". Refer to [LAN-41. "CAN System Specification Chart"](#).

## Trouble Diagnosis

INFOID:000000004657547

## HOW TO PERFORM TROUBLE DIAGNOSIS

1. Confirm the symptom and customer complaint.
2. Understand the outline of system. Refer to [DI-68. "System Description"](#).
3. Perform the preliminary inspection. Refer to "PRELIMINARY INSPECTION".
4. Referring to trouble diagnosis chart, make sure the cause of the malfunction and repair or replace applicable parts. Refer to [DI-81. "Symptom Chart"](#).
5. Does warning chime system operate normally? If yes, GO TO 6. If no, GO TO 4.
6. INSPECTION END

## PRELIMINARY INSPECTION

### 1. CHECK BCM (CONSULT-III)

Perform self-diagnosis of BCM. Refer to [BCS-13. "CONSULT-III Function \(BCM\)"](#).

#### Self-diagnostic results

No malfunction detected>> GO TO 2.

Malfunction detected>> Check applicable parts, and repair or replace corresponding parts.

### 2. CHECK UNIFIED METER AND A/C AMP. (CONSULT-III)

Perform self-diagnosis of unified meter and A/C amp. Refer to [DI-44. "CONSULT-III Function \(METER/M&A\)"](#).

#### Self-diagnostic results

No malfunction detected>> INSPECTION END

Malfunction detected>> Check applicable parts, and repair or replace corresponding parts.

# WARNING CHIME

< SERVICE INFORMATION >

## Symptom Chart

INFOID:000000004657548

Symptom	Diagnoses/Service procedure
All warning chimes do not activate.	Perform the following inspections. 1. <a href="#">DI-81. "Power Supply and Ground Circuit Inspection"</a> . 2. <a href="#">DI-82. "Meter Buzzer Circuit Inspection"</a> . Replace BCM, found normal function in the above inspections.
Ignition key warning chime does not activate.	Perform the following inspections. 1. <a href="#">DI-83. "Key Switch Signal Inspection"</a> . 2. <a href="#">DI-82. "Driver Side Door Switch Signal Inspection"</a> . Replace BCM, found normal function in the above inspection.
Light warning chime does not activate.	Perform the following inspections. 1. <a href="#">DI-84. "Lighting Switch Signal Inspection"</a> . 2. <a href="#">DI-82. "Driver Side Door Switch Signal Inspection"</a> . Replace BCM, found normal function in the above inspection.
Seat belt warning chime does not activate.	Perform <a href="#">DI-85. "Seat Belt Buckle Switch (Driver Side) Signal Inspection"</a> . Replace BCM, found normal function in the above inspection.

## Power Supply and Ground Circuit Inspection

INFOID:000000004657549

### 1. CHECK FUSE AND FUSIBLE LINK

Check for blown BCM fuse and fusible link.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	F
		18
	Ignition switch ON or START	1

#### OK or NG

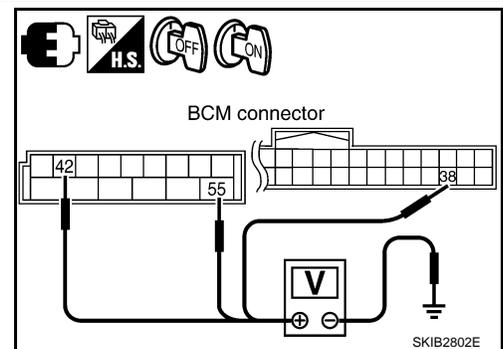
OK >> GO TO 2.

NG >> Be sure to eliminate cause of malfunction before installing new fuse. Refer to [PG-4](#).

### 2. CHECK POWER SUPPLY CIRCUIT

Check voltage between BCM harness connector and ground.

Terminals		Ignition switch position		
(+)			OFF	ON
Connector	Terminal (Wire color)	(-)		
M91	42	Ground	Battery voltage	Battery voltage
	55			
M90	38		0 V	Battery voltage



#### OK or NG

OK >> GO TO 3.

NG >> Repair harness between BCM and fuse.

### 3. CHECK GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect BCM connector.

# WARNING CHIME

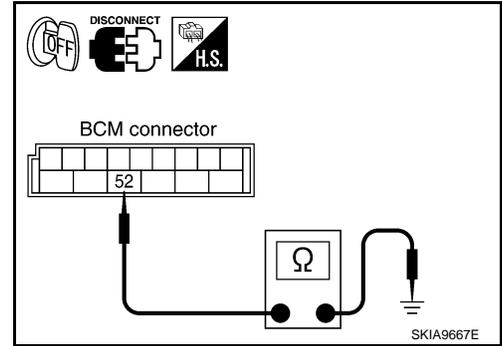
## < SERVICE INFORMATION >

3. Check continuity between BCM harness connector M91 terminal 52 and ground.

**52 – Ground : Continuity should exist.**

### OK or NG

- OK >> INSPECTION END  
NG >> Repair harness or connector.



INFOID:000000004657550

## Meter Buzzer Circuit Inspection

### 1. CHECK OPERATION OF METER BUZZER

1. Select "BUZZER" of "BCM" on CONSULT-III.
2. Perform "LIGHT WARN ALM", "IGN KEY WARN ALM" or "SEAT BELT WARN ALM" of "ACTIVE TEST".

#### Does meter buzzer beep?

- YES >> GO TO 3.  
NO >> GO TO 2.

### 2. CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL

1. Select "METER/M&A" on CONSULT-III.
2. With "Data Monitor", confirm "BUZZER" under the condition of buzzer input. (Seat belt warning chime, turn signal lamp operate, etc.)

#### "BUZZER"

**Under the condition of buzzer input : ON**  
**Except above : OFF**

### OK or NG

- OK >> Replace combination meter.  
NG >> Replace BCM. Refer to [BCS-15, "Removal and Installation of BCM"](#).

### 3. CHECK BATTERY POWER SUPPLY OF COMBINATION METER

Check battery power supply of combination meter. Refer to [DI-16, "Power Supply and Ground Circuit Inspection"](#) in combination meter.

### OK or NG

- OK >> GO TO 4.  
NG >> Repair battery power supply circuit of combination meter.

### 4. CHECK BATTERY POWER SUPPLY OF UNIFIED METER AND A/C AMP.

Check battery power supply of unified meter and A/C amp. Refer to [DI-46, "Power Supply and Ground Circuit Inspection"](#) in unified meter and A/C amp.

### OK or NG

- OK >> Replace BCM. Refer to [BCS-15, "Removal and Installation of BCM"](#).  
NG >> Repair battery power supply circuit of unified meter and A/C amp.

## Driver Side Door Switch Signal Inspection

INFOID:000000004657551

### 1. CHECK BCM INPUT SIGNAL

#### Ⓟ With CONSULT-III

1. Select "BCM".
2. With "Data Monitor" of "BUZZER", confirm "DOOR SW-DR" when the driver side door is operated.

**"DOOR SW-DR"**

# WARNING CHIME

## < SERVICE INFORMATION >

- When driver side door is opened : ON
- When driver side door is closed : OFF

### ⊗ Without CONSULT-III

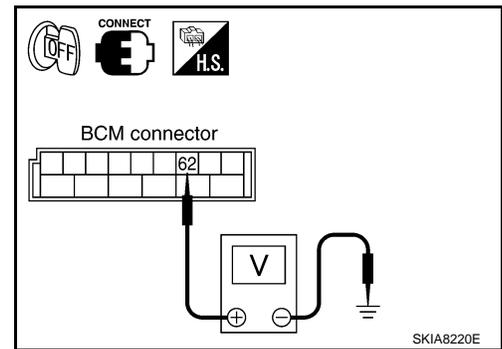
Check voltage between BCM harness connector B83 terminal 62 and ground.

#### 62 – Ground

- When driver side door is opened : Approx. 0 V
- When driver side door is closed : Approx. 5 V

#### OK or NG

- OK >> INSPECTION END
- NG >> GO TO 2.



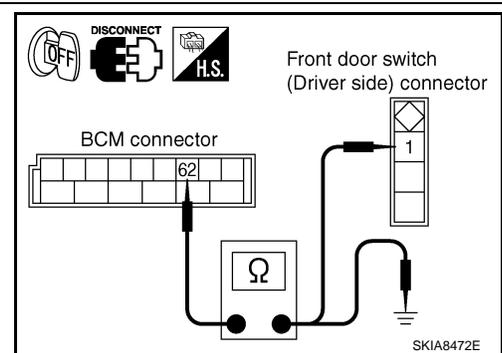
## 2. CHECK DRIVER SIDE DOOR SWITCH CIRCUIT

1. Disconnect BCM connector and driver side door switch connector.
2. Check continuity between BCM harness connector B83 terminal 62 and driver side door switch harness connector B17 terminal 1.

62 – 1 : Continuity should exist.

3. Check continuity between BCM harness connector B4 terminal 62 (W) and ground.

62 – Ground : Continuity should not exist.



#### OK or NG

- OK >> GO TO 3.
- NG >> Repair harness or connector.

## 3. CHECK DRIVER SIDE DOOR SWITCH

Check driver side door switch. Refer to [DI-85. "Component Inspection"](#).

#### OK or NG

- OK >> Replace BCM. Refer to [BCS-15. "Removal and Installation of BCM"](#).
- NG >> Replace driver side door switch.

## Key Switch Signal Inspection

INFOID:000000004657552

### 1. CHECK FUSE

Check if the key switch 10A fuse [No. 21, located in the fuse block (J/B)] is blown.

#### OK or NG

- OK >> GO TO 2.
- NG >> Be sure to repair the cause of malfunction before installing new fuse. Refer to [PG-4](#).

### 2. CHECK BCM INPUT SIGNAL

#### Ⓜ With CONSULT-III

1. Select "BCM".
2. With "Data Monitor" of "BUZZER", confirm "KEY ON SW" when the key switch is operated.

#### "KEY ON SW"

- When key is inserted to ignition key cylinder : ON
- When key is removed from ignition key cylinder : OFF

#### ⊗ Without CONSULT-III

## WARNING CHIME

### < SERVICE INFORMATION >

Check voltage between BCM harness connector M90 terminal 37 and ground.

#### 37 – Ground

When key is inserted to ignition key cylinder : Approx. 12 V

When key is removed from ignition key cylinder : Approx. 0 V

#### OK or NG

OK >> INSPECTION END

NG >> GO TO 3.

### 3.CHECK KEY SWITCH

Check continuity between key switch. Refer to [DI-85, "Component Inspection"](#).

#### OK or NG

OK >> GO TO 4.

NG >> Replace key switch.

### 4.CHECK KEY SWITCH CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M90 terminal 37 and key switch harness connector M25 terminal 1.

37 – 1 : Continuity should exist.

3. Check continuity between BCM harness connector M90 terminal 37 and ground.

37 – Ground : Continuity should not exist.

#### OK or NG

OK >> GO TO 5.

NG >> Repair harness or connector.

### 5.CHECK KEY SWITCH POWER SUPPLY CIRCUIT

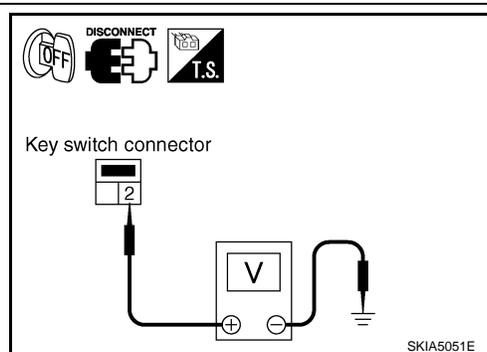
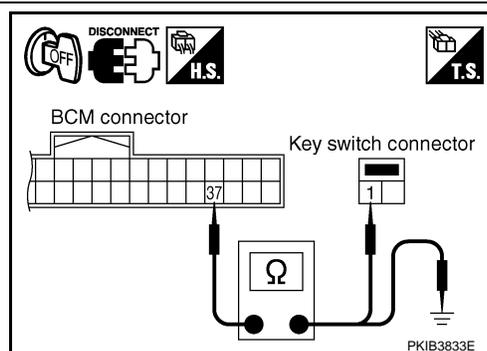
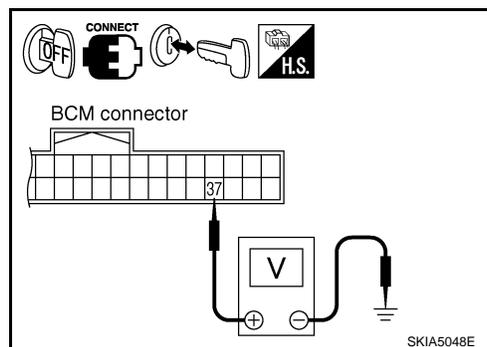
Check voltage between key switch harness connector M25 terminal 2 and ground.

2 – Ground : Battery voltage

#### OK or NG

OK >> Replace BCM. Refer to [BCS-15, "Removal and Installation of BCM"](#).

NG >> Check continuity between key switch and fuse.



## Lighting Switch Signal Inspection

INFOID:000000004657553

### 1.CHECK BCM INPUT SIGNAL

1. Select "BCM" on CONSULT-III.
2. With "Data Monitor" of "BUZZER", confirm "LIGHT SW 1ST" when the lighting switch is operated.

#### "LIGHT SW 1ST"

Lighting switch (1st position) : ON

Lighting switch (OFF) : OFF

#### OK or NG

# WARNING CHIME

## < SERVICE INFORMATION >

- OK >> INSPECTION END
- NG >> Check lighting switch. Refer to [LT-86. "Combination Switch Inspection"](#).

### Seat Belt Buckle Switch (Driver Side) Signal Inspection

INFOID:000000004657554

#### 1. CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE) SIGNAL INPUT (BCM)

1. Select "BCM" on CONSULT-III.
2. With "Data Monitor" of "BUZZER", confirm "BUCKLE SW" when the seat belt buckle switch (driver side) is operated.

##### "BUCKLE SW"

When seat belt is fastened : OFF

When seat belt is unfastened : ON

##### OK or NG

- OK >> INSPECTION END
- NG >> GO TO 2.

#### 2. CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE) SIGNAL INPUT (COMBINATION METER)

1. Turn ignition switch ON.
2. Check voltage between combination meter harness connector M19 terminal 1 and ground.

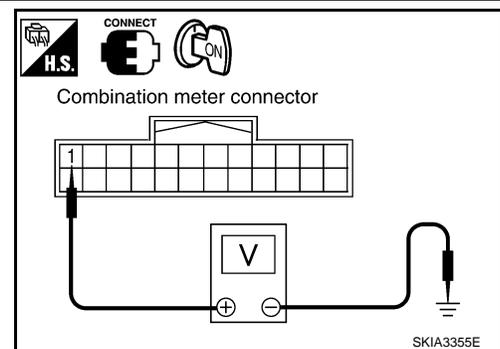
1 – Ground

When seat belt is fastened : Approx. 12 V

When seat belt is unfastened : Approx. 0 V

##### OK or NG

- OK >> Replace combination meter.
- NG >> GO TO 3.



#### 3. CHECK SEAT BELT BUCKLE SWITCH (DRIVER SIDE) CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector and seat belt buckle switch (driver side) connector.
3. Check continuity between combination meter harness connector M19 terminal 1 and seat belt buckle switch (driver side) harness connector B8 terminal 1.

1 – 1 : Continuity should exist.

4. Check continuity between combination meter harness connector M19 terminal 1 and ground.

1 – Ground : Continuity should not exist.

##### OK or NG

- OK >> GO TO 4.
- NG >> Repair harness or connector.

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

Check seat belt buckle switch (driver side). Refer to [DI-85. "Component Inspection"](#).

##### OK or NG

- OK >> Check seat belt buckle switch (driver side) ground circuit.
- NG >> Replace seat belt buckle switch (driver side).

### Component Inspection

INFOID:000000004657555

#### DRIVER SIDE DOOR SWITCH

# WARNING CHIME

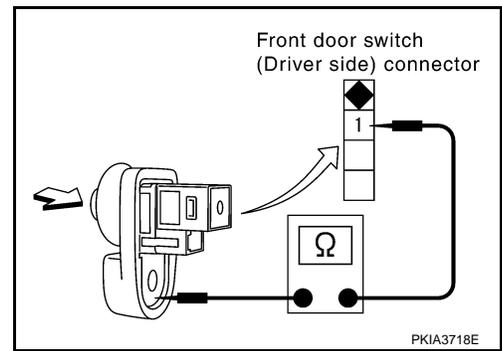
## < SERVICE INFORMATION >

Check continuity between terminal 1 and door switch case ground.

### 1 – Door switch case ground

**When driver side door switch is released : Continuity should exist.**

**When driver side door switch is pressed : Continuity should not exist.**



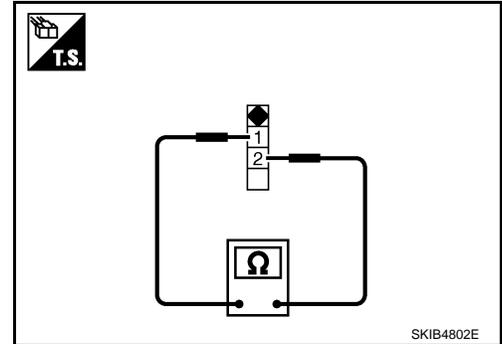
## SEAT BELT BUCKLE SWITCH (DRIVER SIDE)

Check continuity between terminals 1 and 2.

### 1 – 2

**When seat belt (driver side) is fastened : Continuity should not exist.**

**When seat belt (driver side) is unfastened : Continuity should exist.**



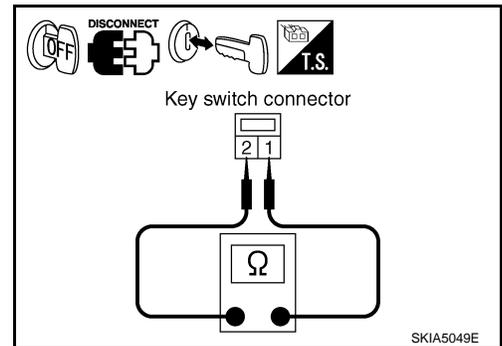
## KEY SWITCH

Check continuity between key switch terminals 1 and 2.

### 1 – 2

**When key is inserted to ignition key cylinder : Continuity should exist.**

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



# CAN COMMUNICATION

< SERVICE INFORMATION >

## CAN COMMUNICATION

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### System Description

INFOID:000000004657556

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

### CAN Communication Unit

INFOID:000000004657557

Refer to [LAN-41, "CAN System Specification Chart"](#) in "LAN SYSTEM".

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