SECTION DI
DRIVER INFORMATION SYSTEM

CONTENTS

PRECAUTION

PFP:00011

Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

NKS003TT

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

WARNING:

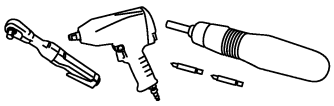
- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal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

PREPARATION

PFP:00002

Commercial Service Tools

NKS003TU

Tool name	Description
Power tool  PIIB1407E	Loosening bolts, nuts and screws

COMBINATION METERS

PFP:24814

System Description

NKS003TV

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 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.
- Digital meter is adopted for odo/trip meter.

  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.
- Dot matrix LCD is adopted to display “push engine starter”, “A/T position” and “ICC system* ”.
- Odo/trip meter and dot matrix LCD segments can be checked in self-diagnosis mode.
- Meters/gauges can be checked in self-diagnosis mode.

*: With ICC system

UNIFIED METER AND A/C AMP.

Refer to DI-28, "COMBINATION METER CONTROL FUNCTION" in “UNIFIED METER AND A/C AMP”.

POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times

- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to combination meter terminal 23,
- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to unified meter and A/C amp. terminal 54.

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 2, and
- to unified meter and A/C amp. terminal 41.

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 12,
- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to unified meter and A/C amp. terminal 53.

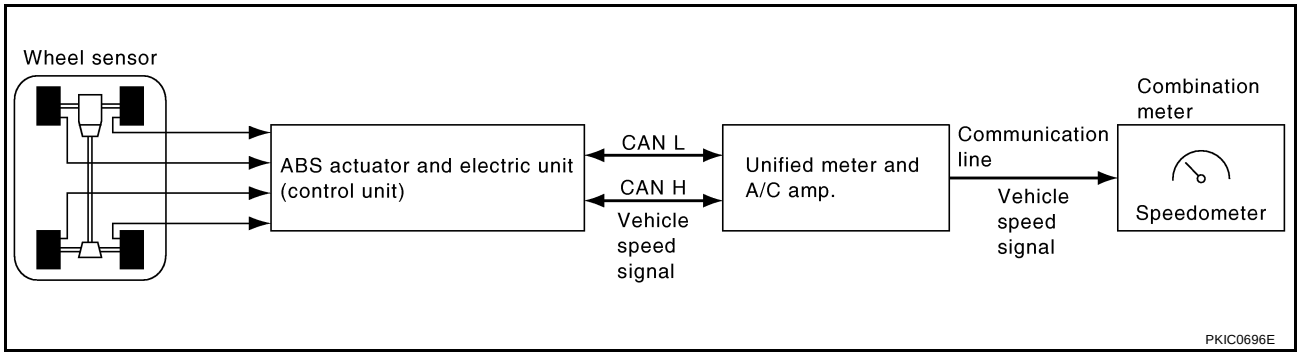
Ground is supplied

- to combination meter terminals 9, 10 and 11
- to unified meter and A/C amp. terminals 55 and 71
- through grounds M16 and M70.

SPEEDOMETER

The speedometer indicates the vehicle speed.

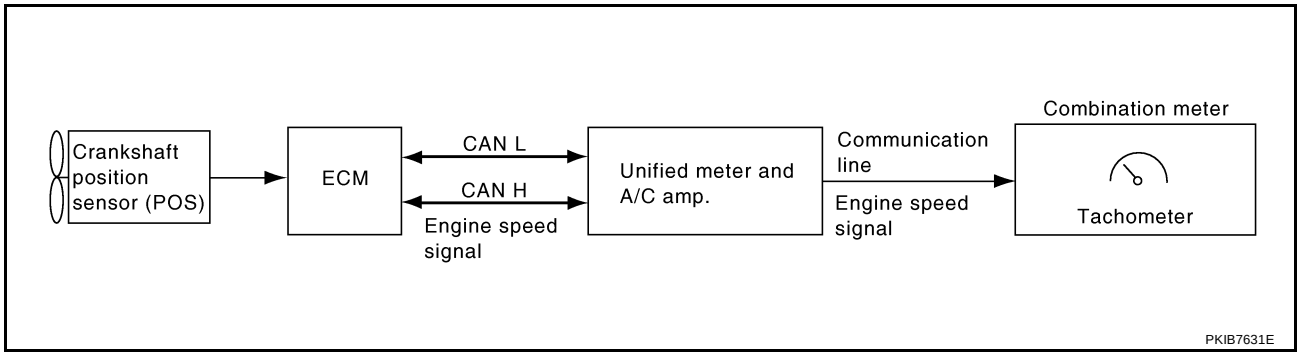
- ABS actuator and electric unit (control unit) converses a pulse signal from wheel sensor to vehicle speed signal, and transmit vehicle speed signal to unified meter and A/C amp. with CAN communication.
- Unified meter and A/C amp. transmits vehicle speed signal to combination meter with communication line.
- Combination meter converses vehicle speed signal to the angle signal, and commands to speedometer.



TACHOMETER

The tachometer indicates engine speed in revolutions per minute (rpm).

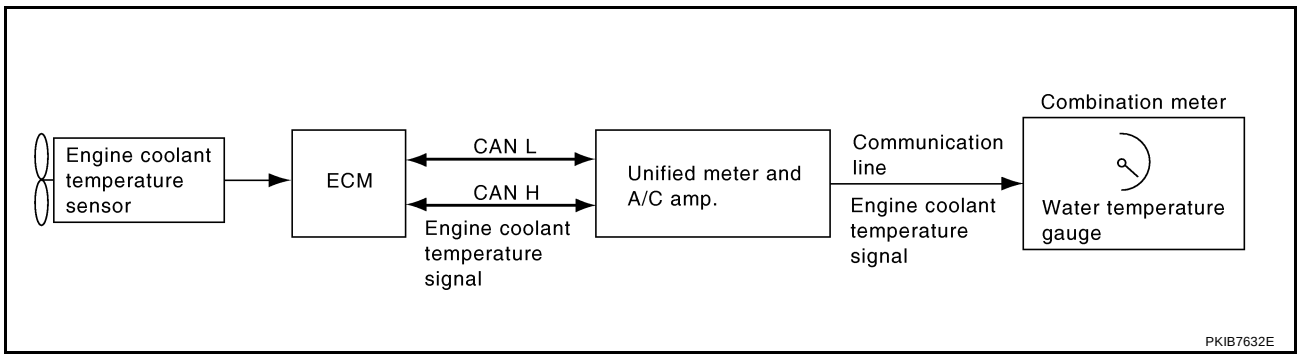
- ECM converses a signal from crankshaft position sensor to engine speed signal, and transmits to unified meter and A/C amp. with CAN communication.
- Unified meter and A/C amp. transmits engine speed signal to combination meter with communication line.
- Combination meter converses engine speed signal to the angle signal, and commands to tachometer.



WATER TEMPERATURE GAUGE

The water temperature gauge indicates the engine coolant temperature.

- ECM converses a signal from engine coolant temperature sensor to engine coolant temperature signal, and transmits to unified meter and A/C amp. with CAN communication.
- Unified meter and A/C amp. transmits engine coolant temperature signal to combination meter with communication line.
- Combination meter converses engine coolant temperature signal to the angle signal, and commands to water temperature gauge.



FUEL GAUGE

The fuel gauge indicates the approximate fuel level in the fuel tank.
The fuel gauge is regulated by a variable ground signal supplied

- from unified meter and A/C amp. terminal 58
- through the fuel level sensor unit and fuel pump (main) terminals 5 and 2, and
- through the fuel level sensor unit (sub) terminals 2 and 1
- to unified meter and A/C amp. terminal 42.

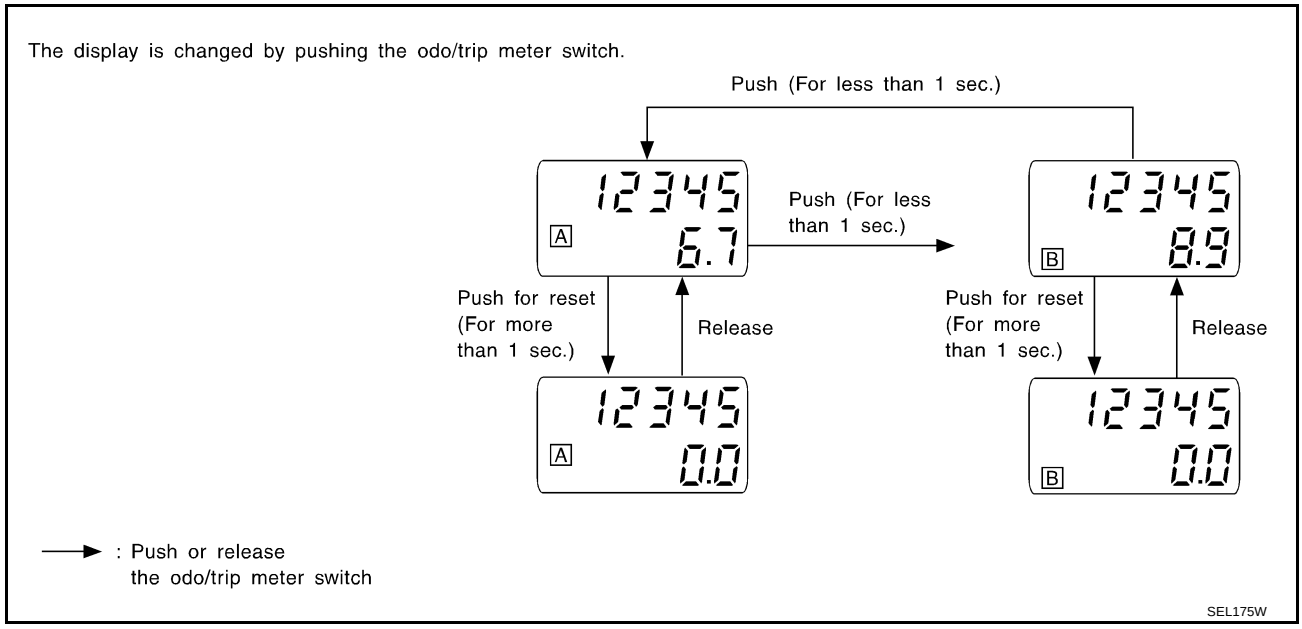
Unified meter and A/C amp. provides a fuel level signal to combination meter for fuel gauge with communication line between unified meter and A/C amp. and combination meter.

ODO/TRIP METER

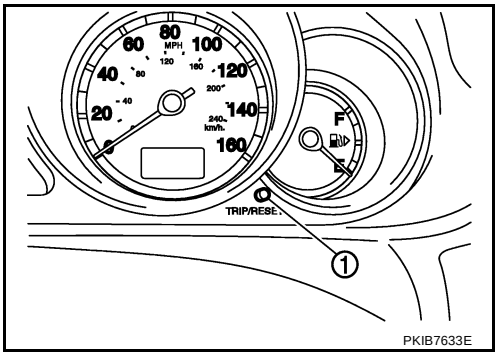
- ABS actuator and electric unit (control unit) converses a pulse signal from wheel sensor to vehicle speed signal, and transmits vehicle speed signal to unified meter and A/C amp. with CAN communication.
- Unified meter and A/C amp. converses vehicle speed signal to 8 pulse signal, and transmits to combination meter.
- Combination meter processes the 8 pulse signal and the memory signals from the meter memory circuit. Then the mileage is displayed.

How to Change The Display For Odo/trip Meter

Operating the odo/trip meter switch allows switching the mode in the following order.



- The odo/trip meter display switching and trip display resetting can be identified by the time from pressing the odo/trip meter switch (1) to releasing it.
- When resetting with “trip A” displayed, only “trip A” display is reset. (The same way for “trip B”.)



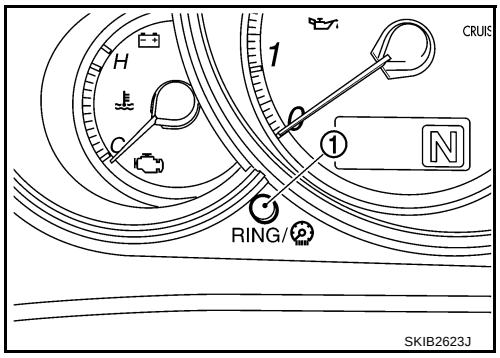
METER ILLUMINATION CONTROL

- Meter illumination* is controlled by the unified meter control unit.
- Ring illumination under normal operation and engine start excitement function can be turned ON/OFF with pressing meter illumination control switch for more than 1 second.

*: Illumination for ring, meter face, pointer, dot matrix LCD and odo/trip meter

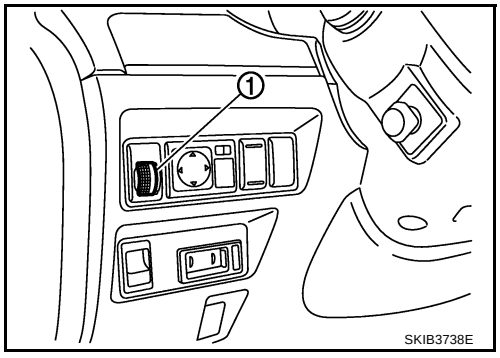
Daytime Mode

Meter illumination is adjusted to 5 steps by meter illumination control switch (1) in daytime mode.



Nighttime Mode

- Combination meter is transferred to nighttime mode with position light request signal from BCM with CAN communication.
- Meter illumination is adjusted to 16 steps by illumination control switch (1) in nighttime. Refer to LT-295, "ILLUMINATION" .



Driver Welcome Function

Ring illumination gradually turns ON when a driver gets in the vehicle with intelligent key and closes the driver side door.

NOTE:
Ring illumination gradually turns OFF when not turning the ignition switch ON at a certain period of time.

Engine Start Excitement Function

Combination meter detects the engine start when input engine speed signal at first. Pointers of speed meter and tachometer sweep and ring illumination gradually turns ON when combination meter detects the engine start. Then, combination meter starts the normal control.

NOTE:
- Water temperature gauge and fuel gauge do not function.
- Engine start excitement function can be turned ON/OFF with pressing meter illumination control switch for more than 1 second.

FAIL-SAFE

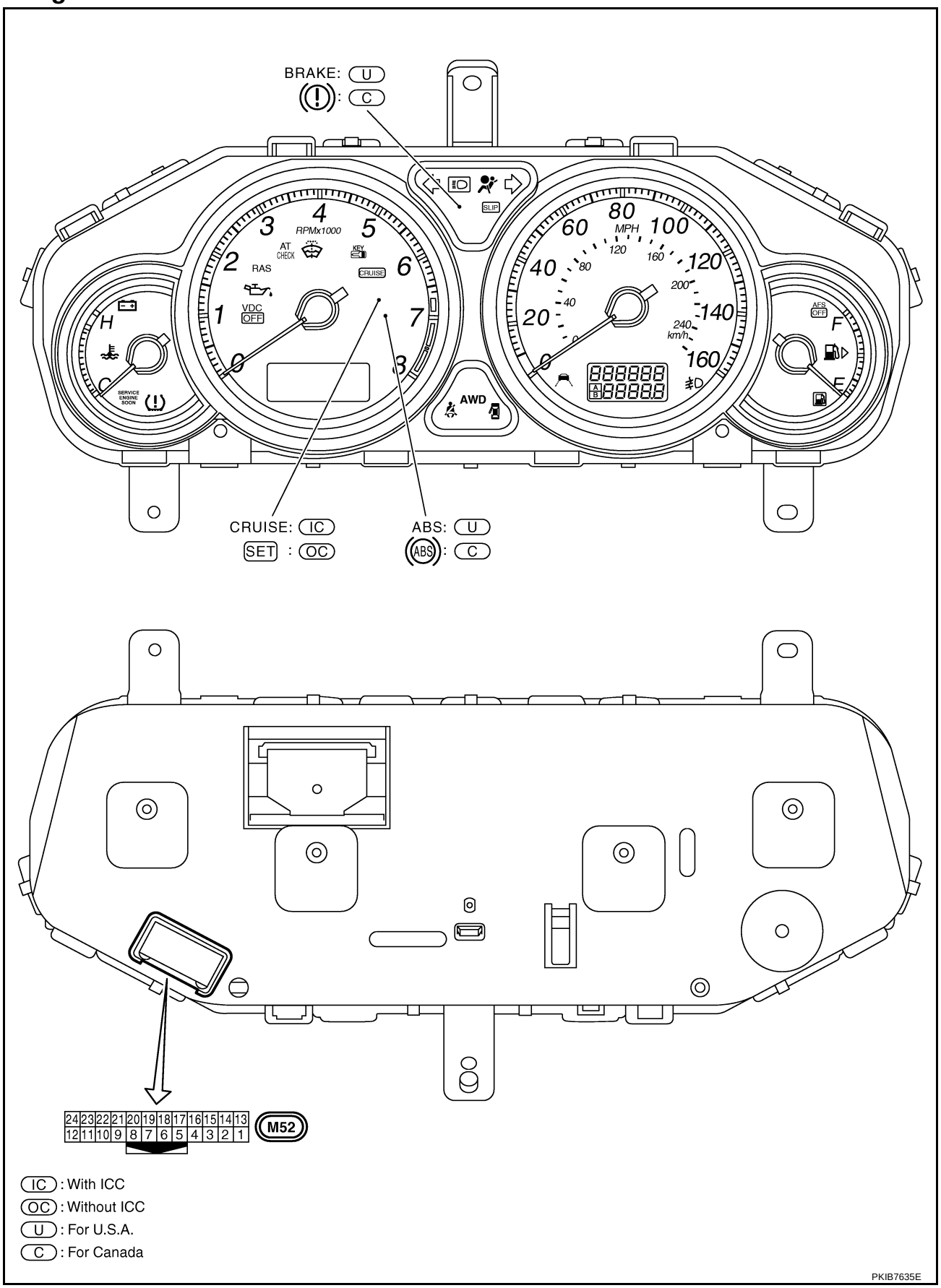
Combination meter performs fail-safe operation when unified meter and A/C amp. communication is malfunction.

Solution for communication error between the unified meter & A/C amp. and combination meter

Function		Specifications
Speedometer		Reset to zero by suspending communication.
Tachometer		
Fuel gauge		
Water temperature gauge		
Illumination control	Meter illumination	When suspending communication, change to nighttime mode.
Dot matrix LCD	Push engine starter	The display turns off by suspending communication.
	A/T position	
	ICC system	
Buzzer		The buzzer turns off by suspending communication.
Warning lamp/indicator lamp	ABS warning lamp	The lamp turns on by suspending communication.
	Brake warning lamp	
	CRUISE warning lamp	
	VDC OFF indicator lamp	
	SLIP indicator lamp	
	A/T CHECK warning lamp	The lamp turns off by suspending communication.
	AWD warning lamp	
	Oil pressure warning lamp	
	Door warning lamp	
	Malfunction indicator lamp	
	CRUISE indicator lamp	
	SET indicator lamp	
	Low tire pressure warning lamp	
	AFS OFF indicator lamp	
	Front fog indicator lamp	
	High beam indicator	
	Turn signal indicator lamp	
	Key warning lamp	

Arrangement of Combination Meter

NKS003TW

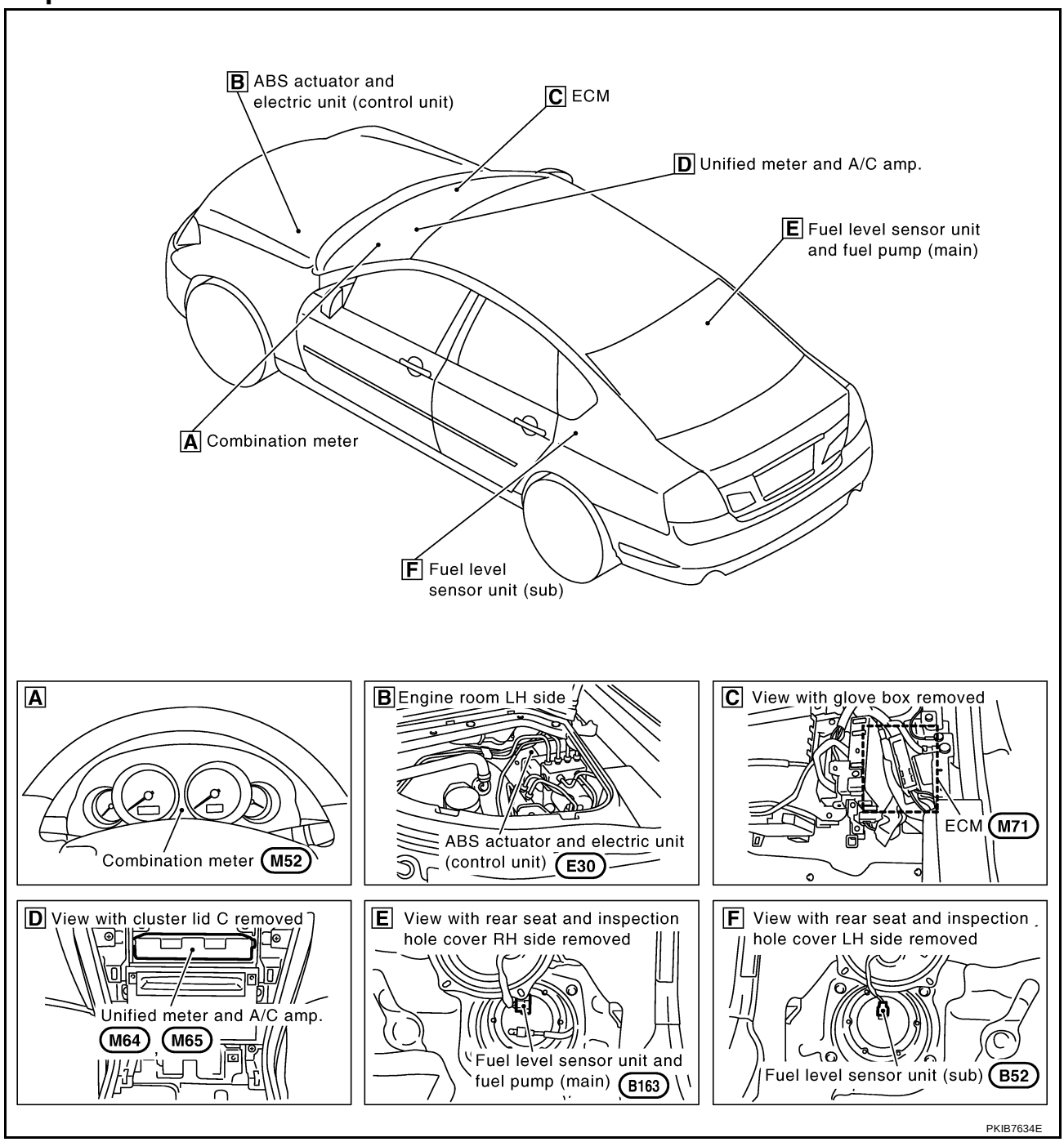


IC : With ICC
OC : Without ICC
U : For U.S.A.
C : For Canada

PKIB7635E

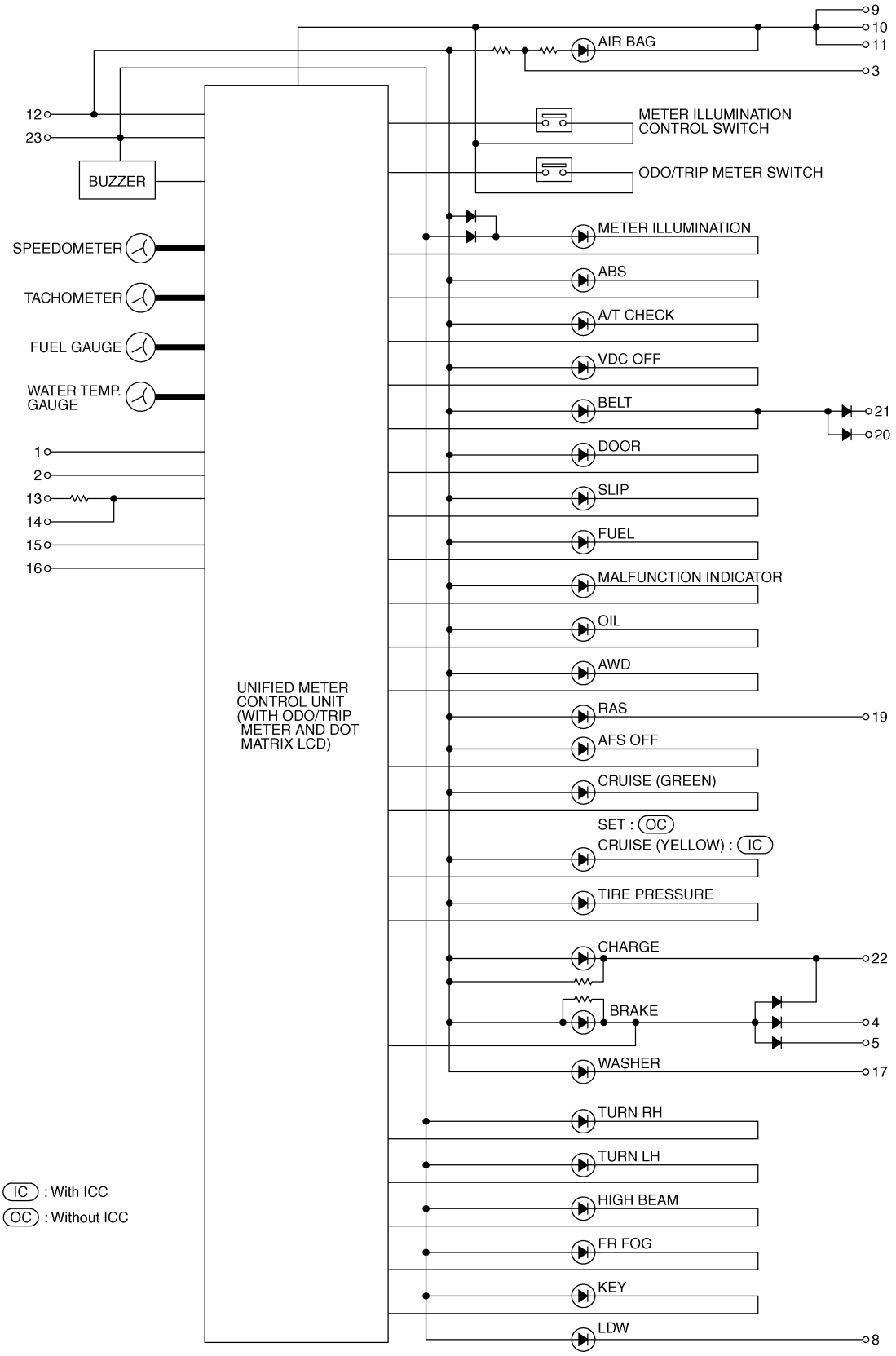
Component Parts and Harness Connector Location

NKS003TX



Internal Circuit

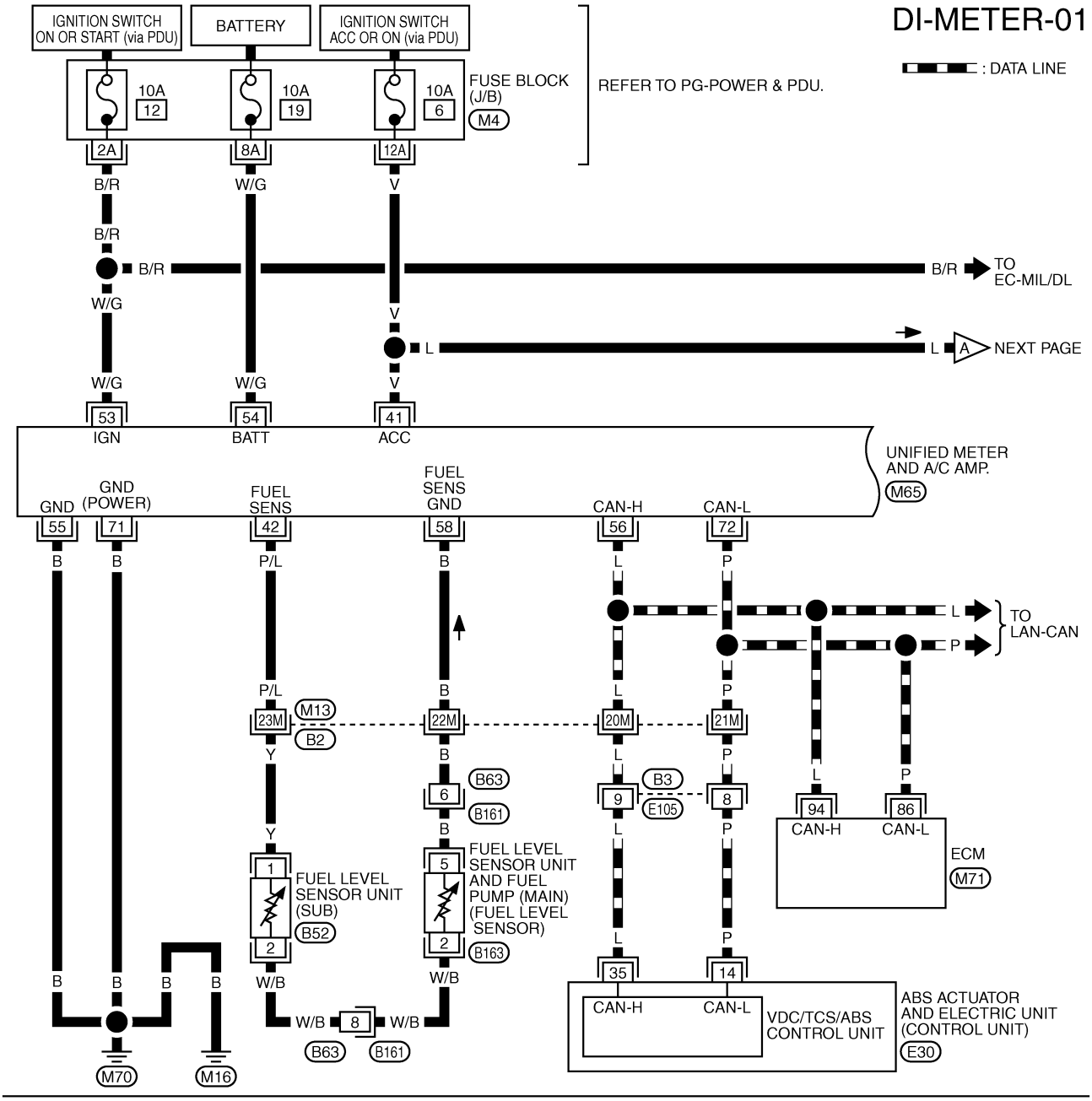
NKS003TY



TKWT3421E

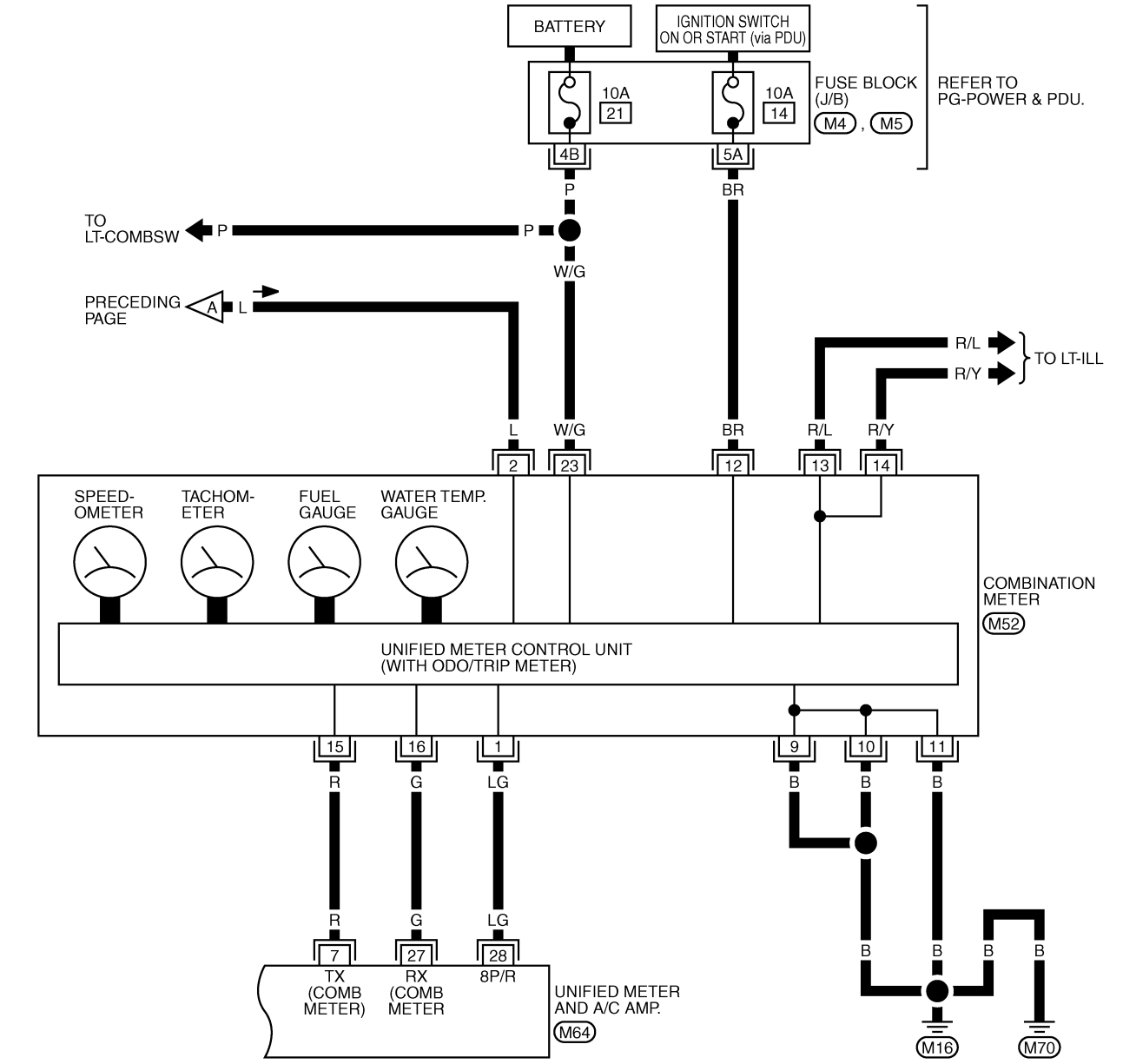
Wiring Diagram — METER —

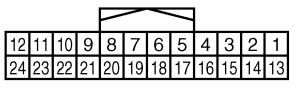
NKS003TZ

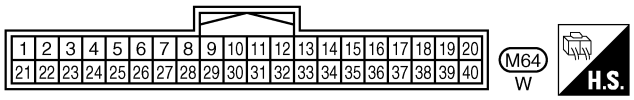


TKWT3422E

DI-METER-02





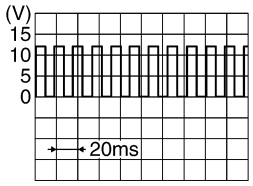
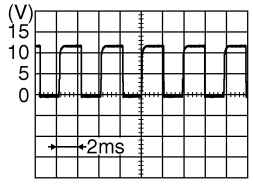
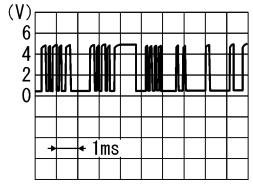
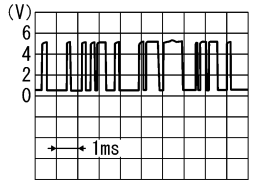


REFER TO THE FOLLOWING.
M4 , M5 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT3423E

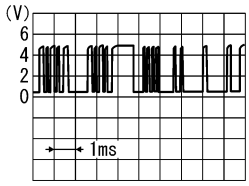
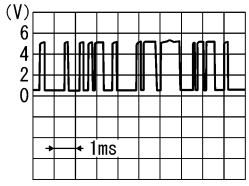
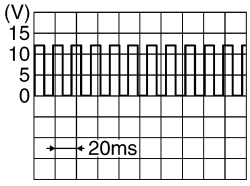
Terminals and Reference Value for Combination Meter

NKS003U0

Terminal No.	Wire color	Item	Condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
1	LG	Vehicle speed signal (8-pulse)	ON	Speedometer operated [When vehicle speed is approx. 40 km/h (25 MPH)]	**NOTE:** Maximum voltage may be 5 V due to specifications (connected units).  PKIA1935E
2	L	Ignition switch ACC or ON	ACC	—	Battery voltage
9	B	Ground	ON	—	0 V
10					
11					
12	BR	Ignition switch ON or START	ON	—	Battery voltage
13	R/L	Illumination (+)	ON	Lighting switch is turned ON.	12 V
				Lighting switch is turned OFF.	0 V
14	R/Y	Illumination signal input	ON	Lighting switch is turned ON, and illumination control switch is operated.	<e.g.> When brightness level is midway  SKIB4733E
				Lighting switch is turned OFF.	0 V
15	R	RX communication line (From unified meter and A/C amp.)	ON	—	 SKIA3362E
16	G	TX communication line (To unified meter and A/C amp.)	ON	—	 SKIA3361E
23	W/G	Battery power supply	OFF	—	Battery voltage

Terminals and Reference Value for Unified Meter and A/C Amp.

NKS003U1

Terminal No.	Wire color	Item	Condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
7	R	TX communication line (To combination meter)	ON	—	 SKIA3362E
27	G	RX communication line (From combination meter)	ON	—	 SKIA3361E
28	LG	Vehicle speed signal output (8-pulse)	ON	Speedometer operated [When vehicle speed is approx. 40 km/h (25 MPH)]	**NOTE:** Maximum voltage may be 5 V due to specifications (connected units).  PKIA1935E
41	V	Ignition switch ACC or ON	ACC	—	Battery voltage
42	P/L	Fuel level sensor signal	—	—	Refer to DI-26, "CHECK FUEL LEVEL SENSOR UNIT" .
53	W/G	Ignition switch ON or START	ON	—	Battery voltage
54	W/G	Battery power supply	OFF	—	Battery voltage
55	B	Ground	ON	—	0 V
56	L	CAN H	—	—	—
58	B	Fuel level sensor ground	ON	—	0 V
71	B	Ground (power)	ON	—	0 V
72	P	CAN L	—	—	—

Self-Diagnosis Mode of Combination Meter

NKS003U2

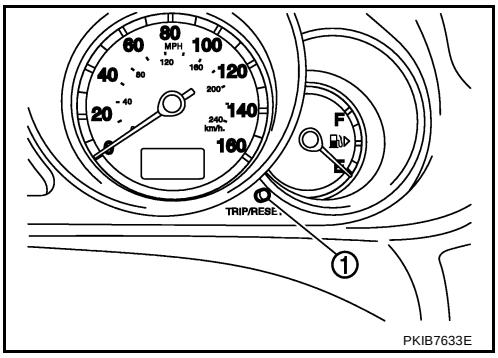
SELF-DIAGNOSIS FUNCTION

- Odo/trip meter segment and dot matrix LCD segment operation can be checked in self-diagnosis mode.
- Meters/gauges can be checked in self-diagnosis mode.

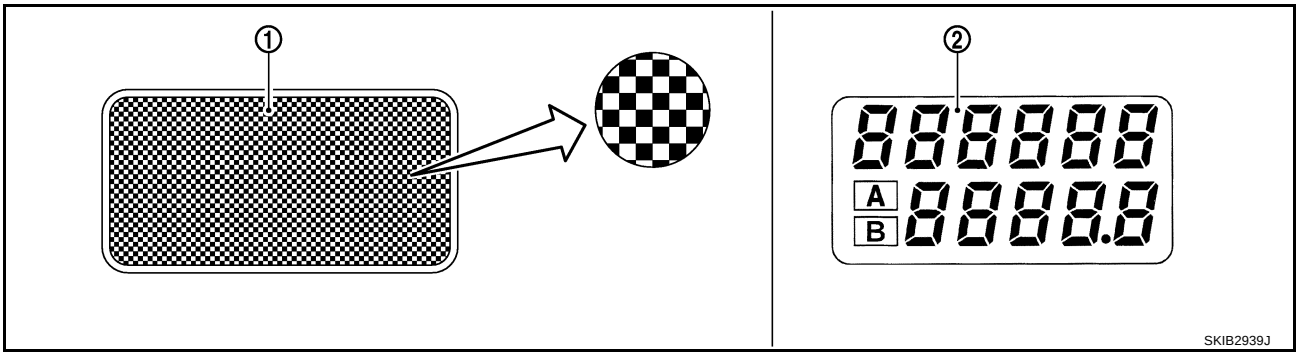
OPERATION PROCEDURE

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” is reset to “0000.0”. (The same way for “trip B”.)
2. Turn ignition switch OFF.
3. While pressing the odo/trip meter switch (1), turn ignition switch ON again.
4. Make sure that the trip meter displays “0000.0”.
5. Press the odo/trip meter switch (1) at least 3 times. (Within 7 seconds after the ignition switch is turned ON.)

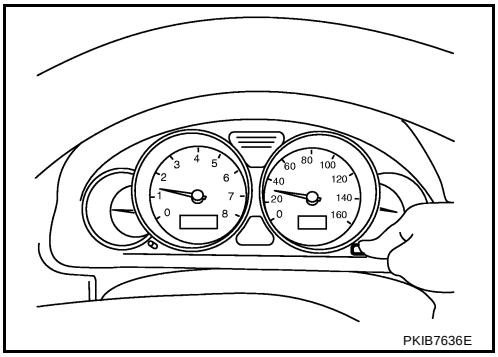


6. The unified meter control unit is turned to self-diagnosis mode.
   - Dot in all segments of dot matrix LCD (1) flashes alternately.
   - All the segments on the odo/trip meter (2) illuminates.
   - Water temperature gauge and fuel gauge return to zero, and at the same time, low-fuel warning indicator turns ON.



   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. Each meter activates during pressing odo/trip meter switch. (Then low-fuel warning lamp turns OFF.)

   NOTE:
   If any of the meter and gages is not activated, replace combination meter.



CONSULT-II Function (METER A/C AMP)

NKS003U3

Refer to DI-31, "CONSULT-II Function (METER A/C AMP)" in “UNIFIED METER AND A/C AMP”.

Trouble Diagnosis

NKS003U4

HOW TO PERFORM TROUBLE DIAGNOSIS

1. Confirm the symptom or customer complaint.
2. Perform preliminary check. Refer to DI-18, "PRELIMINARY CHECK" .
3. According to the symptom chart, make sure the cause of the symptom and repair or replace applicable parts. Refer to DI-18, "Symptom Chart" .
4. Does the meter operate normally? If yes, GO TO 5. If no, GO TO 2.
5. INSPECTION END

PRELIMINARY CHECK

1. CHECK OPERATION SELF-DIAGNOSIS MODE OF COMBINATION METER

Perform self-diagnosis mode of combination meter. Refer to DI-17, "OPERATION PROCEDURE" .

Does self-diagnosis mode operate?

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

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

Perform self-diagnosis of unified meter and A/C amp. Refer to DI-31, "CONSULT-II Function (METER A/C AMP)" .

Self-diagnostic results content

No malfunction detected>>INSPECTION END
Malfunction detected>>Check applicable parts, and repair or replace corresponding parts.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT OF COMBINATION METER

Check power supply and ground circuit of combination meter. Refer to DI-19, "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

NKS003U5

Symptom	Diagnosis/Service procedure
Speedometer or odo/trip meter indication is malfunction.	Refer to DI-20, "Vehicle Speed Signal Inspection" .
Tachometer indication is malfunction.	Refer to DI-21, "Engine Speed Signal Inspection" .
Water temperature gauge indication is malfunction.	Refer to DI-22, "Engine Coolant Temperature Signal Inspection" .
Fuel gauge indication is malfunction.	Refer to DI-22, "Fuel Level Sensor Signal Inspection" .
Low-fuel warning lamp indication is irregular.	
A/T position indicator is malfunction.	Refer to DI-59, "A/T Indicator Is Malfunction" .

Power Supply and Ground Circuit Inspection

NKS003U6

1. CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	21
Ignition switch ACC or ON	6
Ignition switch ON or START	14

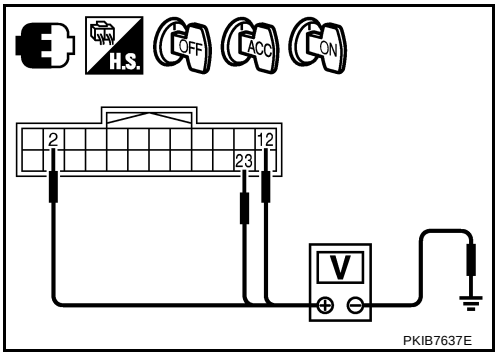
OK or NG

OK >> GO TO 2.
NG >> Be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between combination meter harness connector and ground.

Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Combination meter connector	Terminal				
M52	23	Ground	Battery voltage	Battery voltage	Battery voltage
	2		0 V	Battery voltage	Battery voltage
	12		0 V	0 V	Battery voltage



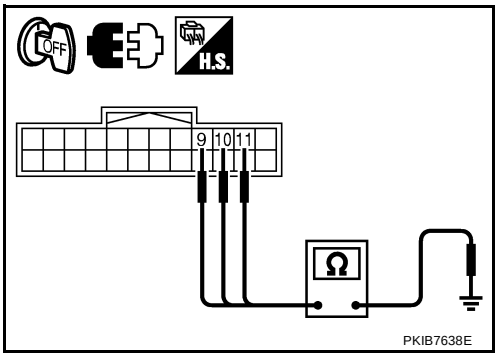
OK or NG

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

3. CHECK GROUND CIRCUIT

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

Combination meter connector	Terminal	Ground	Continuity
M52	9	Ground	Yes
	10		
	11		



OK or NG

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

Vehicle Speed Signal Inspection

NKS003U7

Symptom: Speedometer or odo/trip meter indication is malfunction.

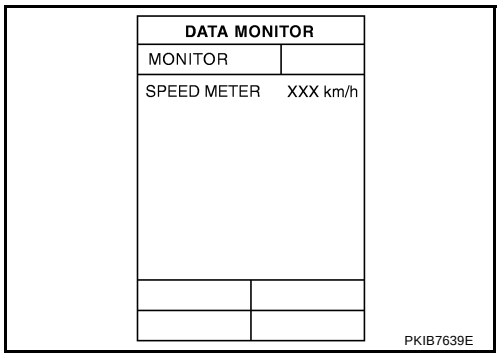
1. CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL

1. Connect CONSULT-II, and start engine.
2. Compare the value in “SPEED METER” of “DATA MONITOR” in “METER A/C AMP” to that in speedometer in the combination meter during driving.

Is the value in speedometer almost same as that in the monitor?

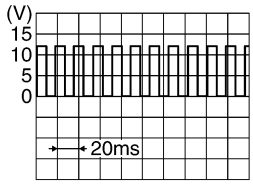
YES >> Preform self-diagnosis of ABS actuator and electric unit (control unit). Refer to BRC-22, "CONSULT-II Functions (ABS)" .

NO >> GO TO 2.

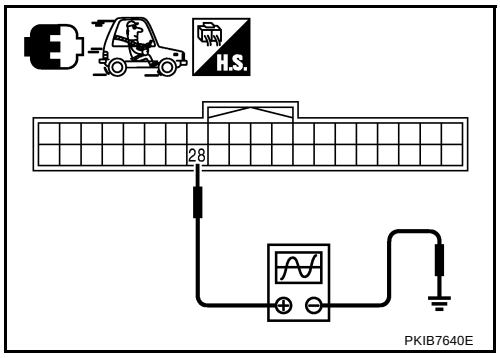


2. CHECK UNIFIED METER AND A/C AMP. OUTPUT SIGNAL

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

Terminals			Voltage (Approx.)
(+)		(–)	
Unified meter and A/C amp.connector	Terminal		
M64	28	Ground	

PKIA1935E



NOTE:

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

OK or NG

OK >> GO TO 3.

NG-1 >> If monitor indicates “0 V” constantly, perform the following.

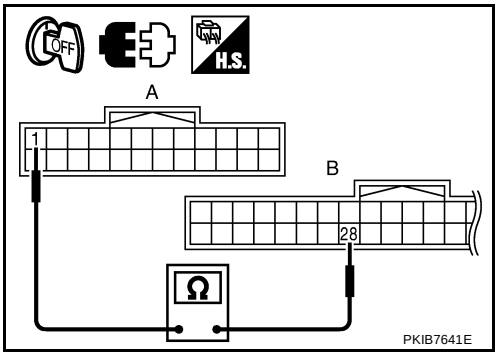
1. Check each unit inputting vehicle speed signal (8 pulse). Malfunction is caused by short circuit between each unit and unified meter and A/C amp.
2. Repair or replace malfunctioning parts.

NG-2 >> 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.

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 (A) and unified meter and A/C amp. harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M52	1	M64	28	Yes



OK or NG

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

Engine Speed Signal Inspection

NKS003U8

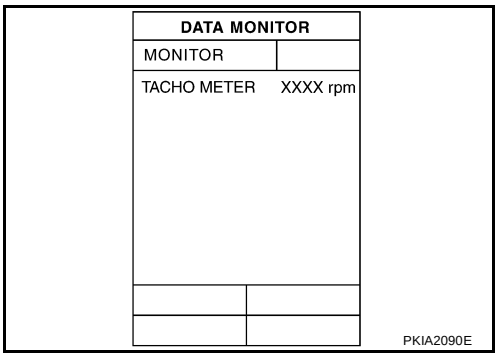
Symptom: Tachometer indication is malfunction.

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

1. Start engine and select “METER A/C AMP” on CONSULT-II.
2. Using “TACHO METER” on “DATA MONITOR”, compare the value of “DATA MONITOR” to that of tachometer of combination meter.

Is the value in tachometer almost same as the value in the monitor?

OK >> GO TO 2.
NG >> Replace combination meter. (Perform self-diagnosis of ECM when the value in the monitor indicates 8191.875 rpm. Then repair or replace the malfunction part.)

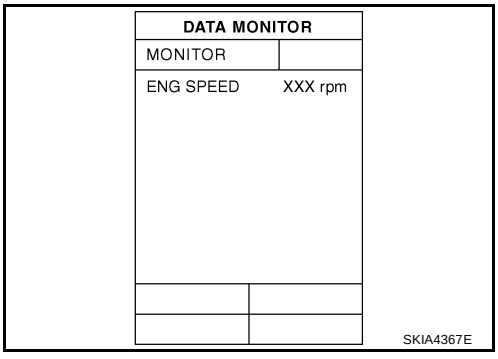


2. CHECK ECM OUTPUT SIGNAL

1. Select “ENGINE” on CONSULT-II.
2. Using “ENG SPEED” on “DATA MONITOR”, print out the CONSULT-II screen when the engine is idling.
3. Select “METER A/C AMP” on CONSULT-II.
4. Using “TACHO METER” on “DATA MONITOR”, compare the value of “DATA MONITOR” of the idling speed to that of the “ENG SPEED”.

OK or NG

OK >> Perform self-diagnosis of ECM. Refer to EC-133, "CONSULT-II Function (ENGINE)" (for VQ35DE) or EC-846, "CONSULT-II Function (ENGINE)" (for VK45DE).
NG >> Replace unified meter and A/C amp.



Engine Coolant Temperature Signal Inspection

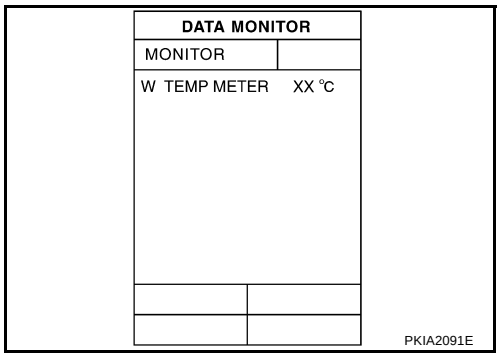
NKS003U9

Symptom: Water temperature gauge indication is malfunction.

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

1. Start engine and select “METER A/C AMP” on CONSULT-II.
2. Using “W TEMP METER” on “DATA MONITOR”, compare the value of “DATA MONITOR” to the indication of water temperature gauge 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)



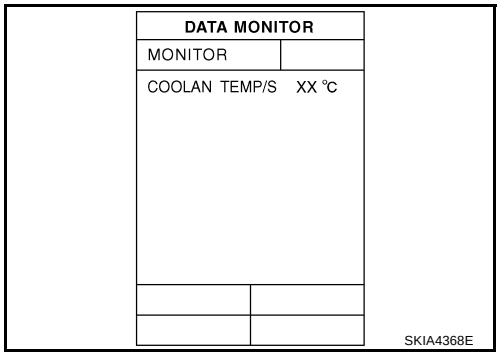
Is the indication of water temperature gauge same as the value in the monitor?

OK >> GO TO 2.

NG >> Replace combination meter. [Perform self-diagnosis of ECM when the value in the monitor indicates 215°C (419°F). Then repair or replace the malfunction part.]

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

1. Select “ENGINE” on CONSULT-II.
2. Using “COOLAN TEMP/S” on “DATA MONITOR”, print out the CONSULT-II screen.
3. Select “METER A/C AMP” on CONSULT-II.
4. Using “W TEMP METER” on “DATA MONITOR”, compare the value of “DATA MONITOR” to that of the “COOLAN TEMP/S”.



OK or NG

OK >> Perform self-diagnosis of ECM. Refer to EC-133, "CONSULT-II Function (ENGINE)" (for VQ35DE) or EC-846, "CONSULT-II Function (ENGINE)" (for VK45DE).

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

Fuel Level Sensor Signal Inspection

NKS003UA

Symptom:

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

NOTE:

The following symptoms are not malfunction.

Fuel level sensor unit

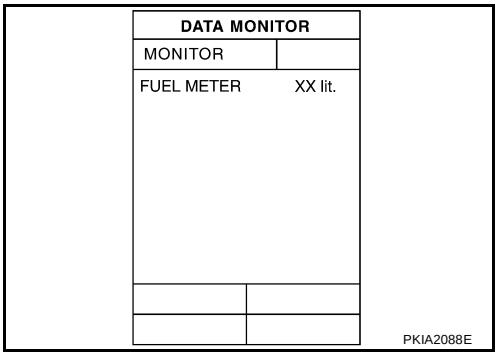
- Depending on vehicle position or driving circumstance, the fuel level in the tank varies, and the pointer may fluctuate.
- If the vehicle is fueled with the ignition switch ON, the pointer will move slowly.

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 A/C AMP” on CONSULT-II.
2. Using “FUEL METER” on “DATA MONITOR”, compare the value of “DATA MONITOR” to the indication of fuel gauge of combination meter.



Fuel gauge pointer	Reference value of data 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

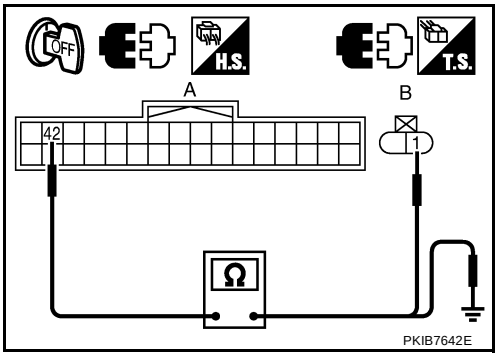
1. Turn ignition switch OFF.
2. Check components. Refer to DI-26, "CHECK FUEL LEVEL SENSOR UNIT" .

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 (A) and fuel level sensor unit (sub) harness connector (B).



A		B		Continuity
Connector	Terminal	Connector	Terminal	
M65	42	B52	1	Yes

3. Check continuity between unified meter and A/C amp. harness connector (A) and ground.

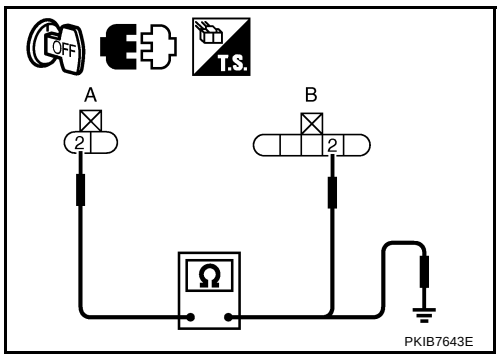
A		Ground	Continuity
Connector	Terminal		
M65	42		No

OK or NG

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

4. CHECK FUEL LEVEL SENSOR (MAIN-SUB) CIRCUIT

1. Disconnect fuel level sensor unit and fuel pump (main) connector.
2. Check continuity between fuel level sensor unit (sub) harness connector (A) and fuel level sensor unit and fuel pump (main) harness connector (B).



A		B		Continuity
Connector	Terminal	Connector	Terminal	
B52	2	B163	2	Yes

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

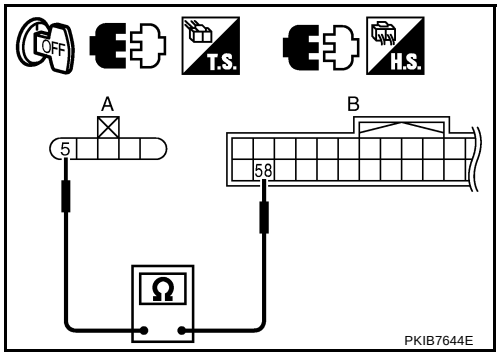
A		Ground	Continuity
Connector	Terminal		
B52	2		No

OK or NG

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

5. CHECK FUEL LEVEL SENSOR (MAIN) CIRCUIT

Check continuity between fuel level sensor unit and fuel pump (main) harness connector (A) and unified meter and A/C amp. harness connector (B).



A		B		Continuity
Connector	Terminal	Connector	Terminal	
B163	5	M65	58	Yes

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.

Fuel Gauge Pointer Fluctuates, Indicator Wrong Value or Varies

NKS003UB

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

NKS003UC

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-26, "CHECK FUEL LEVEL SENSOR UNIT" .
NO >> The float arm may interfere or bind with any of the components in the fuel tank.

Electrical Components Inspection

NKS003UD

CHECK FUEL LEVEL SENSOR UNIT

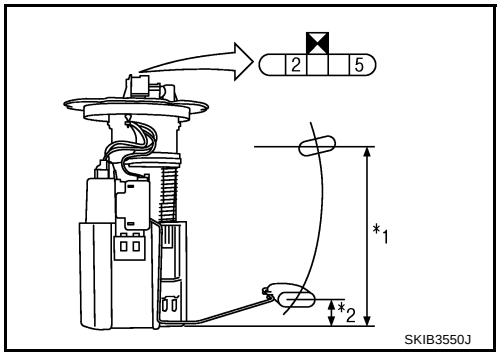
For removal, refer to FL-4, "FUEL LEVEL SENSOR UNIT, FUEL FILTER AND FUEL PUMP ASSEMBLY" .

Check Fuel Level Sensor Unit and Fuel Pump (Main)

Check resistance between terminals 2 and 5.

Terminal		Float position [mm (in)]			Resistance value [Ω]
2	5	*1	Full	210 (8.27)	Approx. 3
		*2	Empty	30 (1.18)	Approx. 80

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

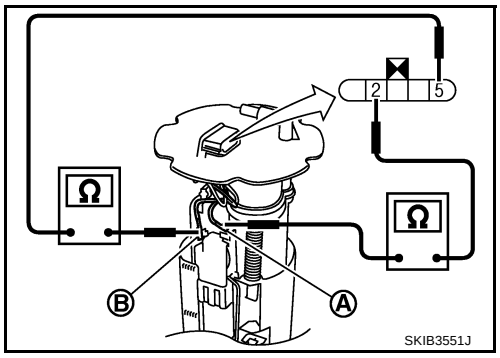


- If the results of check are NG, check the fuel level sensor unit and fuel pump (main) harness. Refer to DI-26, "Check Fuel Level Sensor Unit and Pump (Main) Harness" .

Check Fuel Level Sensor Unit and Pump (Main) Harness

Check continuity at following terminals.

Terminal	Continuity
2 - Signal terminal (A)	Yes
5 - Ground terminal (B)	



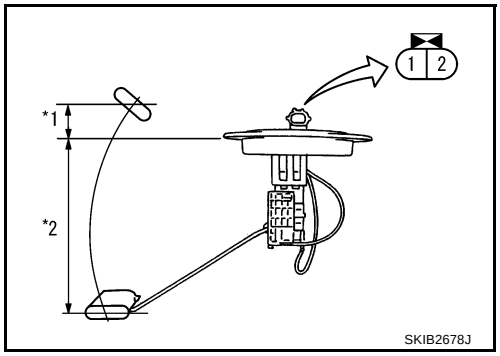
- If the results of check are NG, replace fuel pump assembly. If the results of check are OK, replace fuel level sensor unit.

Check Fuel Level Sensor Unit (Sub)

Check resistance between terminals 1 and 2.

Terminal		Float position [mm (in)]			Resistance value [Ω]
1	2	*1	Full	9 (0.35)	Approx. 3
		*2	Empty	179 (7.05)	Approx. 43

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

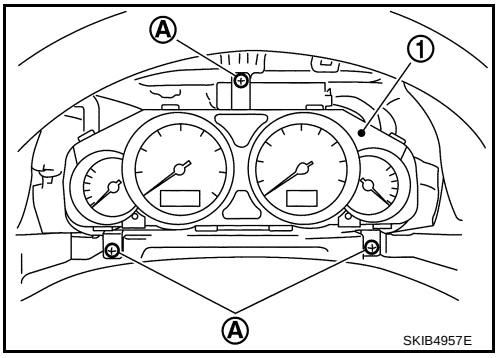


Removal and Installation of Combination Meter

NKS003UE

REMOVAL

1. Remove cluster lid A. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove the screws (A) using power tools, and pull out combination meter (1).
3. Disconnect connector, and remove combination meter (1).

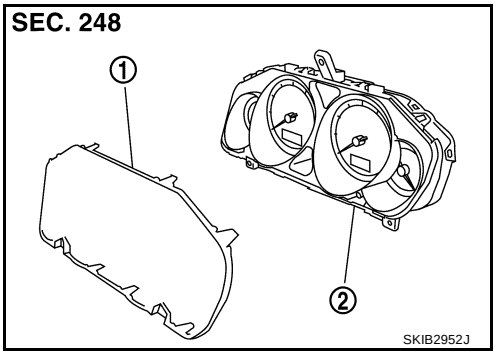


INSTALLATION

Installation is the reverse order of removal.

Disassembly and Assembly of Combination Meter

NKS003UF



1. Front cover
2. Unified meter control unit

DISASSEMBLY

Disengage tabs to separate front cover.

ASSEMBLY

Assembly is the reverse order of disassembly.

UNIFIED METER AND A/C AMP

PFP:27760

System Description

NKS003UG

For the unified meter and A/C amp., the signal required for controlling the combination meter are integrated in the A/C auto amp.

COMBINATION METER CONTROL FUNCTION

- Unified meter and A/C amp. inputs necessary information for combination meter from each unit with CAN communication and so on.
- Unified meter and A/C amp. outputs signals with communication line (TX, RX) between unified meter and A/C amp. and combination meter.
- Unified meter and A/C amp. corresponds a CONSULT-II function (self-diagnostic results, CAN diagnostic support monitor and data monitor).

Input/output Signals

Between unified meter and A/C amp. and combination meter.

Unit	Input from combination meter	Output to combination meter
Unified meter and A/C amp.	● Refuel status signal ● Low-fuel warning lamp condition signal ● Delivery destination data signal ● Combination meter receive error signal ● Combination meter specifications signal ● Odo date signal	● Vehicle speed signal ● Turn indicator signal ● High beam request signal ● Ring illumination request signal ● Position light request signal ● Front fog lamp request signal ● SET indicator lamp signal ● CRUISE indicator lamp signal ● Engine speed signal ● Fuel level sensor signal (resistance value) ● Engine coolant temperature signal ● CAN communication condition signal of A/T ● A/T position indicator signal ● Manual mode indicator signal ● A/T CHECK warning lamp signal ● AWD warning lamp signal ● Low tire pressure warning lamp signal ● VDC OFF indicator lamp signal ● SLIP indicator lamp signal ● ABS warning lamp signal ● Brake warning lamp signal ● Malfunction indicator lamp signal ● Oil pressure switch signal ● Door switch signal ● Buzzer request signal ● ICC warning lamp signal ● Meter display signal ● AFS OFF indicator signal

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-29, "AIR CONDITIONER CONTROL" in ATC section.

OTHER FUNCTIONS

Drive Computer Function

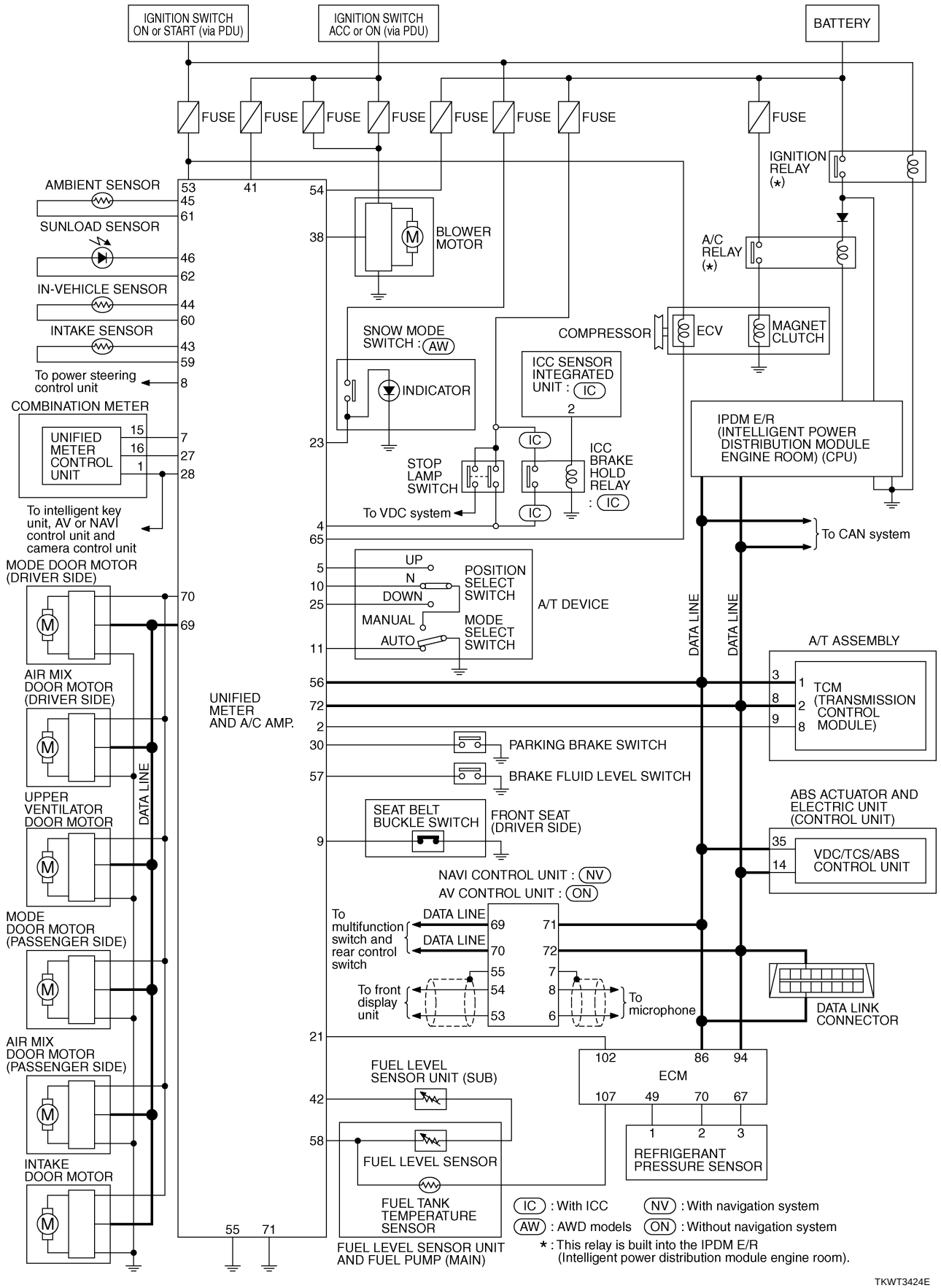
The signals required for the distance to empty (DTE) display are centralized in the unified meter and A/C amp., converted into data, and transmit to the AV control unit (without NAVI) or NAVI control unit (with NAVI) with CAN communication.

Signal Buffer Function

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

Schematic

NKS003UH



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

CONSULT-II Function (METER A/C AMP)

NKS003UI

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

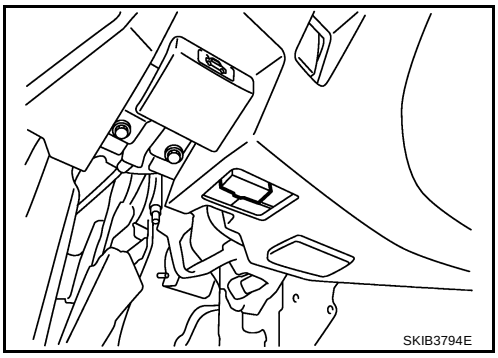
System	Diagnosis mode	Description	Reference page
METER A/C AMP	SELF-DIAG RESULTS	Unified meter and A/C amp. checks the conditions and displays memorized error.	DI-32
	CAN DIAG SUPPORT MNTR	The results of transmit/receive diagnosis of CAN communication can be read.	LAN-7
	DATA MONITOR	Displays unified meter and A/C amp. input data in real time.	DI-33

CONSULT-II BASIC OPERATION

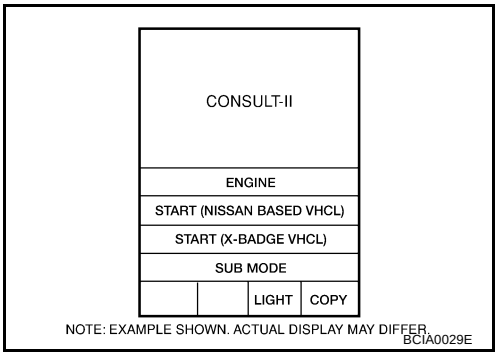
CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.

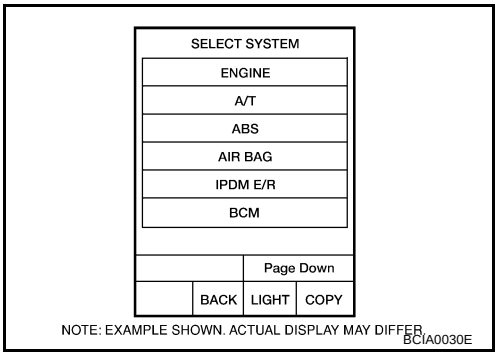
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, and then turn ignition switch ON.



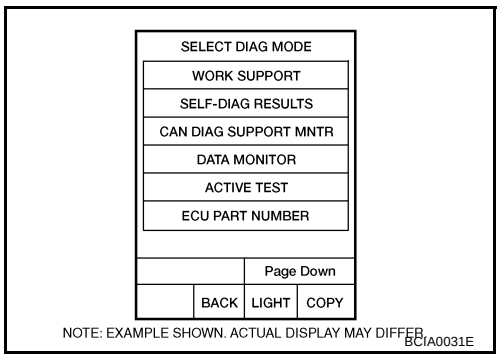
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “METER A/C AMP” on “SELECT SYSTEM” screen. If “METER A/C AMP” is not indicated, go to GI-40, "CONSULT-II Data Link Connector (DLC) Circuit" .



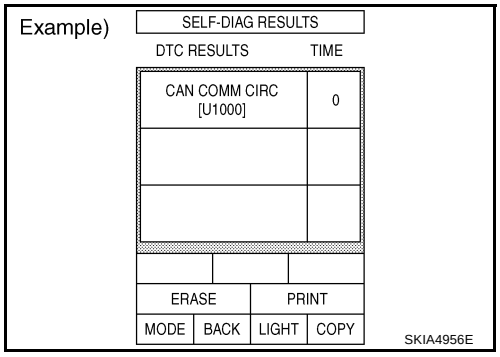
4. Select “SELF-DIAG RESULTS”, “CAN DIAG SUPPORT MNTR” or “DATA MONITOR”.



SELF-DIAG RESULTS

Operation Procedure

1. Touch “SELF-DIAG RESULTS” on “SELECT DIAG MODE” screen.
2. Self-diagnosis results are displayed.



Display Item List

Display item [Code]	Malfunction is detected when...	Reference page
CAN COMM CIRC [U1000]	Malfunction is detected in CAN communication. **CAUTION:** **Even when there is no malfunction on CAN communication system, malfunction may be misinterpreted when battery has low voltage (when maintaining 7 - 8 V for about 2 seconds) or 10A fuse [No. 19, located in the fuse block (J/B)] is disconnected.**	DI-36
METER COMM CIRC [B2202]	Malfunction is detected in communication between combination meter and unified meter and A/C amp.	DI-36
VEHICLE SPEED CIRC [B2205]	When an erroneous speed signal is input for 1 seconds. **CAUTION:** **Even when there is no malfunction on speed signal system, malfunction may be misinterpreted when battery has low voltage (when maintaining 7 - 8 V for about 2 seconds).**	DI-36

NOTE:
“TIME” means the following.

- 0: Means detected malfunction at present. (From malfunction detection to turning ignition switch OFF)
- 1-63: Means detected malfunction in past. (Displays number of ignition switch OFF → ON after detecting malfunction. “Self-diagnosis result” is erased when exceeding “63”.)

DATA MONITOR

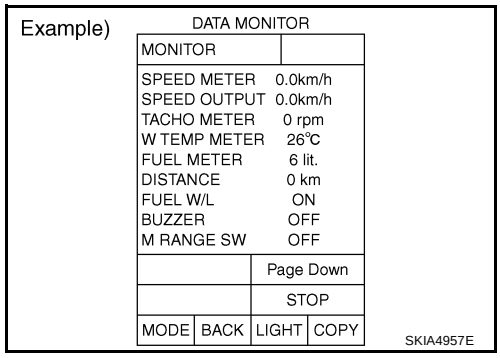
Operation Procedure

1. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.
2. Touch either “MAIN SIGNALS” or “SELECTION FROM MENU” on the “DATA MONITOR” screen.

MAIN SIGNALS	Monitors main signals.
SELECTION FROM MENU	Selects and monitors individual signal.

3. When “SELECTION FROM MENU” is selected, touch individual items to be monitored. When “MAIN SIGNALS” is selected, main items will be monitored.
4. Touch “START”.
5. Touch “RECORD” while monitoring, then the status of the monitored item can be recorded. To stop recording, touch “STOP”.

Example)



Display Item List

X: Applicable

Display item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Description
SPEED METER [km/h] or [mph]	X	X	Displays the value of vehicle speed signal, which is input from ABS actuator and electric unit (control unit).
SPEED OUTPUT [km/h] or [mph]	X	X	Displays the value of vehicle speed signal, which is transmitted to each unit with CAN communication.
TACHO METER [rpm]	X	X	Displays the value of engine speed signal, which is input from ECM.
W TEMP METER [°C] or [°F]	X	X	Displays the value of engine coolant temperature signal, which is input from ECM.
FUEL METER [lit.]	X	X	Displays the value, which processes a resistance signal from fuel gauge.
DISTANCE [km] or [mile]	X	X	Displays the value, which is calculated by vehicle speed signal from ABS actuator and electric unit (control unit), fuel gauge and fuel consumption from ECM.
FUEL W/L [ON/OFF]	X	X	Displays [ON/OFF] condition of low-fuel warning lamp.
MIL [ON/OFF]		X	Displays [ON/OFF] condition of malfunction indicator lamp.
AIR PRES W/L [ON/OFF]		X	Displays [ON/OFF] condition of low tire pressure warning lamp.
SEAT BELT W/L [ON/OFF]		X	Displays [ON/OFF] condition of seat belt warning lamp.
BUZZER [ON/OFF]	X	X	Displays [ON/OFF] condition of buzzer.
DOOR W/L [ON/OFF]		X	Displays [ON/OFF] condition of door warning lamp.
HI-BEAM IND [ON/OFF]		X	Displays [ON/OFF] condition of high beam indicator.
TURN IND [ON/OFF]		X	Displays [ON/OFF] condition of turn indicator.
FR FOG IND [ON/OFF]		X	Displays [ON/OFF] condition of front fog indicator.
OIL W/L [ON/OFF]		X	Displays [ON/OFF] condition of oil pressure warning lamp.
VDC/TCS IND [ON/OFF]		X	Displays [ON/OFF] condition of VDC/TCS OFF indicator lamp.
ABS W/L [ON/OFF]		X	Displays [ON/OFF] condition of ABS warning lamp.
SLIP IND [ON/OFF]		X	Displays [ON/OFF] condition of SLIP indicator lamp.
BRAKE W/L [ON/OFF]		X	Displays [ON/OFF] condition of brake warning lamp. *
KEY Y/G W/L [ON/OFF]		X	Displays [ON/OFF] condition of key warning lamp.

Display item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Description
PNP P SW [ON/OFF]	X	X	Displays [ON/OFF] condition of inhibitor switch P range.
M RANGE SW [ON/OFF]	X	X	Displays [ON/OFF] condition of manual mode range switch.
NM RANGE SW [ON/OFF]	X	X	Displays [ON/OFF] condition of except for manual mode range switch.
AT SFT UP SW [ON/OFF]	X	X	Displays [ON/OFF] condition of A/T shift-up switch.
AT SFT DWN SW [ON/OFF]	X	X	Displays [ON/OFF] condition of A/T shift-down switch.
AT P MODE SW		X	Displays [ON/OFF] condition of A/T POWER mode switch.
AT S MODE SW		X	Displays [ON/OFF] condition of A/T SNOW mode switch.
BRAKE SW [ON/OFF] *		X	Displays [ON/OFF] condition of brake switch (stop lamp switch).
AT-M IND [ON/OFF]	X	X	Displays [ON/OFF] condition of A/T manual mode indicator.
AT-M GEAR [5-1]	X	X	Displays [5-1] condition of A/T manual mode gear position.
P RANGE IND [ON/OFF]	X	X	Displays [ON/OFF] condition of A/T shift P range indicator.
R RANGE IND [ON/OFF]	X	X	Displays [ON/OFF] condition of A/T shift R range indicator.
N RANGE IND [ON/OFF]	X	X	Displays [ON/OFF] condition of A/T shift N range indicator.
D RANGE IND [ON/OFF]	X	X	Displays [ON/OFF] condition of A/T shift D range indicator.
AT IND [ON/OFF]		X	Displays [ON/OFF] condition of A/T indicator.
CRUISE IND [ON/OFF]		X	Displays [ON/OFF] condition of CRUISE indicator.
SET IND [ON/OFF]		X	Displays [ON/OFF] condition of SET indicator.
CRUISE W/L [ON/OFF]		X	Displays [ON/OFF] condition of CRUISE warning lamp.
4WD W/L [ON/OFF]		X	Displays [ON/OFF] condition of AWD warning lamp.
AFS OFF IND [ON/OFF]		X	Displays [ON/OFF] condition of AFS OFF indicator.

NOTE:
Monitored item that does not match the vehicle is deleted from the display automatically.
*: 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

NKS003UJ

1. CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	19
Ignition switch ACC or ON	6
Ignition switch ON or START	12

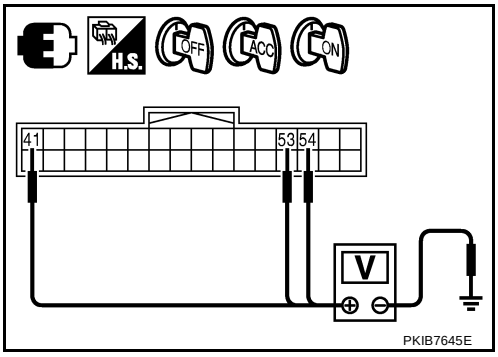
OK or NG

OK >> GO TO 2.
NG >> Be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

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

Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Unified meter and A/C amp. connector	Terminal				
M65	54	Ground	Battery voltage	Battery voltage	Battery voltage
	41		0 V	Battery voltage	Battery voltage
	53		0 V	0 V	Battery voltage



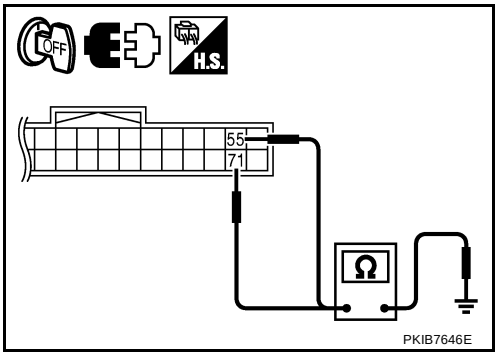
OK or NG

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.

Unified meter and A/C amp. connector	Terminal	Ground	Continuity
M65	55		Yes
	71		



OK or NG

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

DTC [U1000] CAN Communication Circuit

NKS003UK

Symptom: Displays “CAN COMM CIRC [U1000]” as a self-diagnosis results of unified meter and A/C amp.

1. CHECK CAN COMMUNICATION

1. Select “SELF-DIAG RESULTS” mode for “METER A/C AMP” with CONSULT-II.
2. Print out CONSULT-II screen.

>> Go to “LAN system”. Refer to LAN-7, "Precautions When Using CONSULT-II" .

DTC [B2202] Meter Communication Circuit

NKS003UL

Symptom: Displays “METER COMM CIRC [B2202]” as a self-diagnosis results of unified meter and A/C amp.

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.

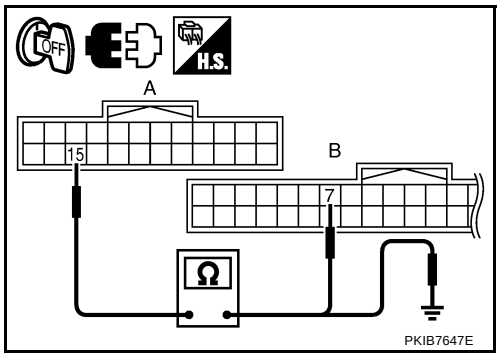
OK or NG

OK >> GO TO 2.
NG >> Repair terminal or connector.

2. CHECK CONTINUITY COMMUNICATION CIRCUIT (TX: UNIFIED METER AND A/C AMP.)

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 (A) and unified meter and A/C amp. harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M52	15	M64	7	Yes



4. Check continuity between combination meter harness connector (A) and ground.

A		Ground	Continuity
Connector	Terminal		
M52	15		No

OK or NG

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

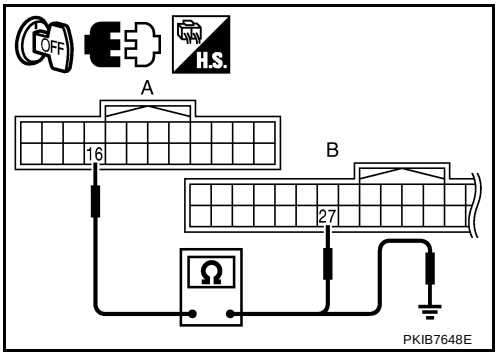
3. CHECK CONTINUITY COMMUNICATION CIRCUIT (RX: UNIFIED METER AND A/C AMP.)

1. Check continuity between combination meter harness connector (A) and unified meter and A/C amp. harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M52	16	M64	27	Yes

2. Check continuity between combination meter harness connector (A) and ground.

A		Ground	Continuity
Connector	Terminal		
M52	16		No



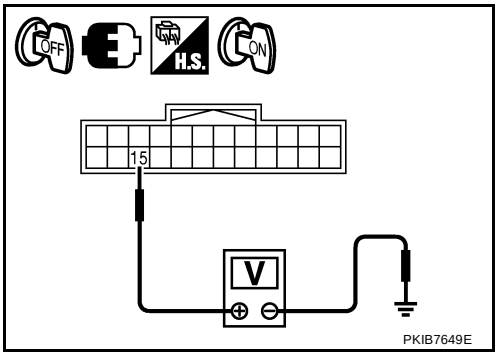
OK or NG

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

4. CHECK COMBINATION METER OUTPUT VOLTAGE (TX: UNIFIED METER AND A/C AMP.)

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

Terminals			Voltage (Approx.)
(+)		(–)	
Combination meter connector	Terminal		
M52	15	Ground	5 V

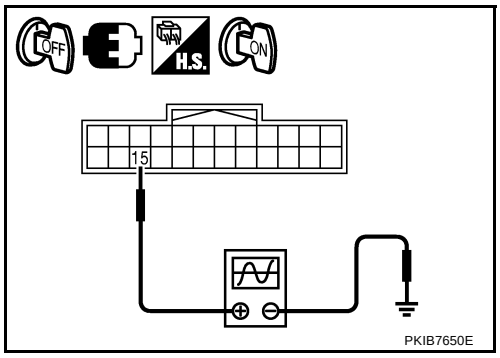


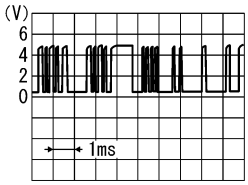
OK or NG

OK >> GO TO 5.
NG >> Replace combination meter.

5. CHECK COMMUNICATION SIGNAL (TX: 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 and ground.



Terminals			Voltage (Approx.)
(+)		(–)	
Combination meter connector	Terminal		
M52	15	Ground	

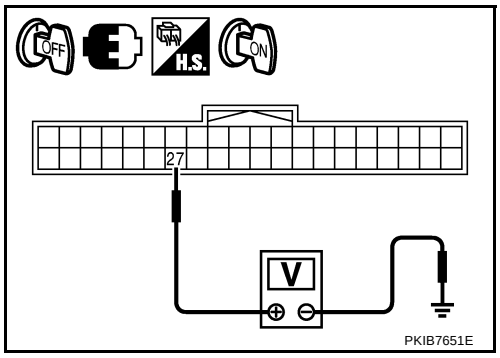
SKIA3362E

OK or NG

OK >> GO TO 6.
NG >> Replace unified meter and A/C amp.

6. CHECK UNIFIED METER AND A/C AMP OUTPUT VOLTAGE (RX: UNIFIED METER AND A/C AMP.)

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



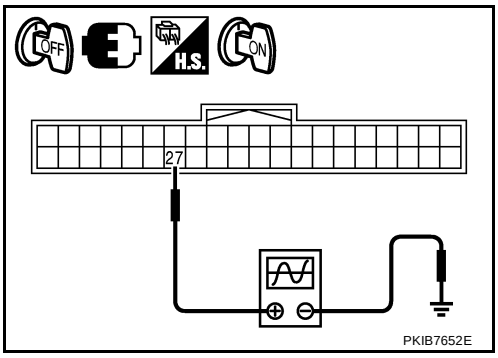
Terminals			Voltage (Approx.)
(+)		(–)	
Unified meter and A/C amp. connector	Terminal		
M64	27	Ground	5 V

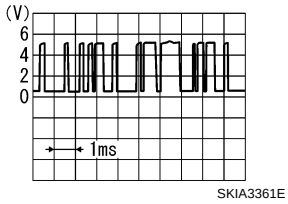
OK or NG

OK >> GO TO 7.
NG >> Replace unified meter and A/C amp.

7. CHECK COMMUNICATION SIGNAL (RX: UNIFIED METER AND A/C AMP.)

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



Terminals			Voltage (Approx.)
(+)		(–)	
Unified meter and A/C amp. connector	Terminal		
M64	27	Ground	

OK or NG

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

DTC [B2205] Vehicle Speed Circuit

NKS003UM

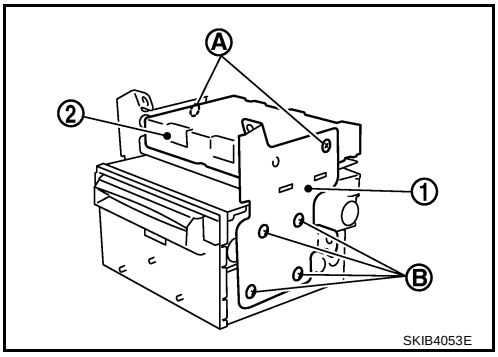
Symptom: Displays “VEHICLE SPEED CIRC [B2205]” as a self-diagnosis results of unified meter and A/C amp.
Preform self-diagnosis of ABS actuator and electric unit (control unit), and repair or replace malfunctioning parts. Refer to BRC-22, "CONSULT-II Functions (ABS)" .

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

NKS003UN

REMOVAL

1. Remove the audio unit. Refer to AV-130, "Audio Unit" (Without mobile entertainment system) or AV-285, "Audio Unit" . (With mobile entertainment system).
2. Remove the screws (A) 2.
3. Remove the screws (B) 4 and remove the bracket (1).
4. Remove unified meter and A/C amp. (2).



INSTALLATION

Installation is the reverse order of removal.

CAUTION:
Unified meter and A/C amp. screws (A) are different from other screws. Never confuse them when installing.

WARNING LAMPS

PFP:24814

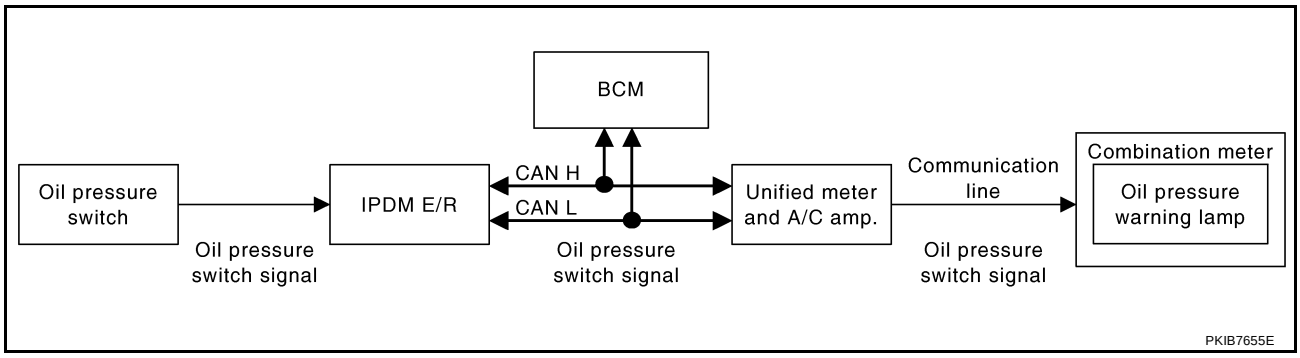
System Description

NKS003UO

OIL PRESSURE WARNING LAMP

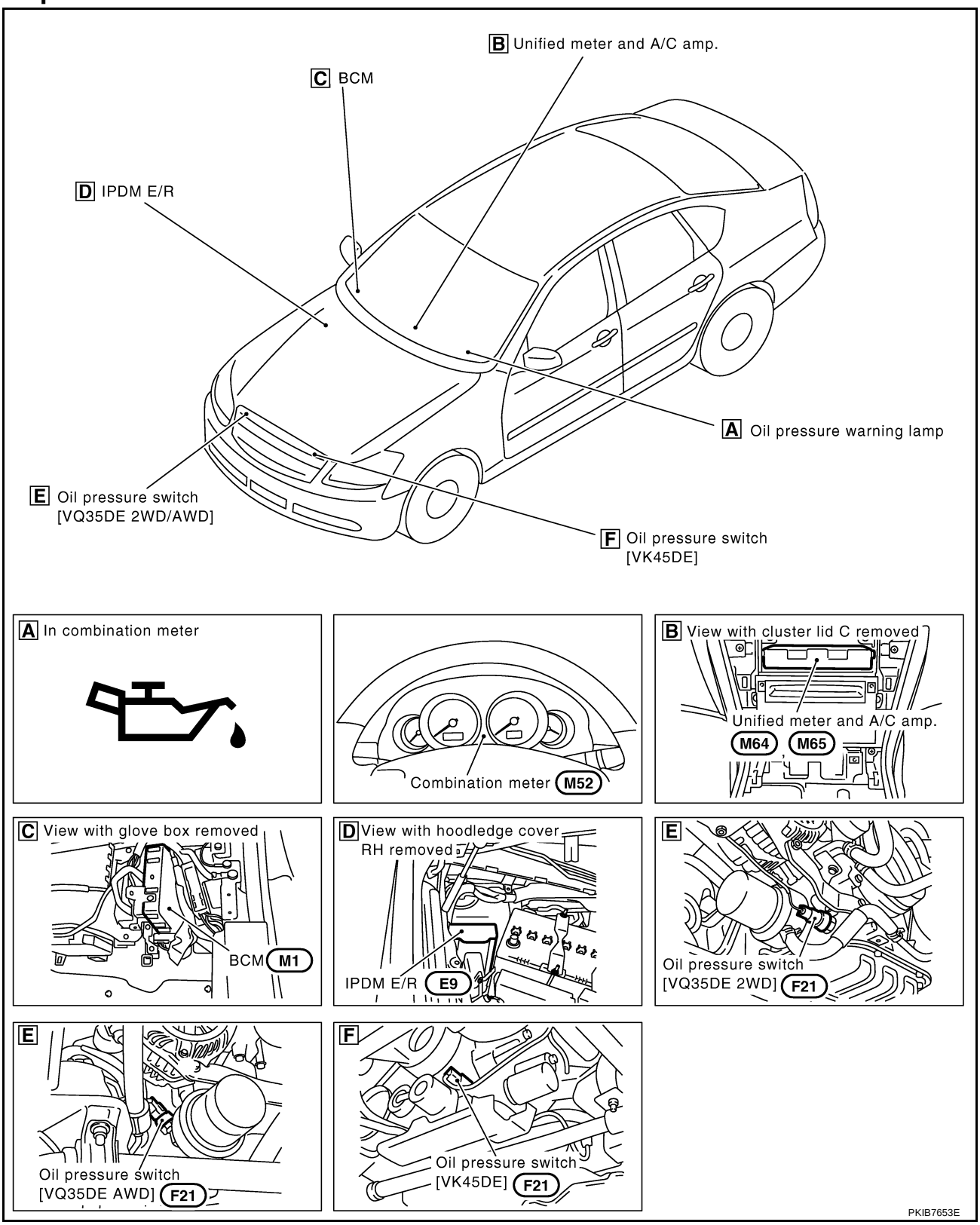
Oil pressure warning lamp turns ON when reducing engine oil pressure abnormally.

- IPDM E/R inputs oil pressure switch signal from oil pressure switch, and transmits the signal to unified meter and A/C amp. through BCM with CAN communication.
- Unified meter and A/C amp. transmits oil pressure switch signal to combination meter with communication line.
- Let the combination meter turn oil pressure warning lamp ON with received oil pressure switch signal.



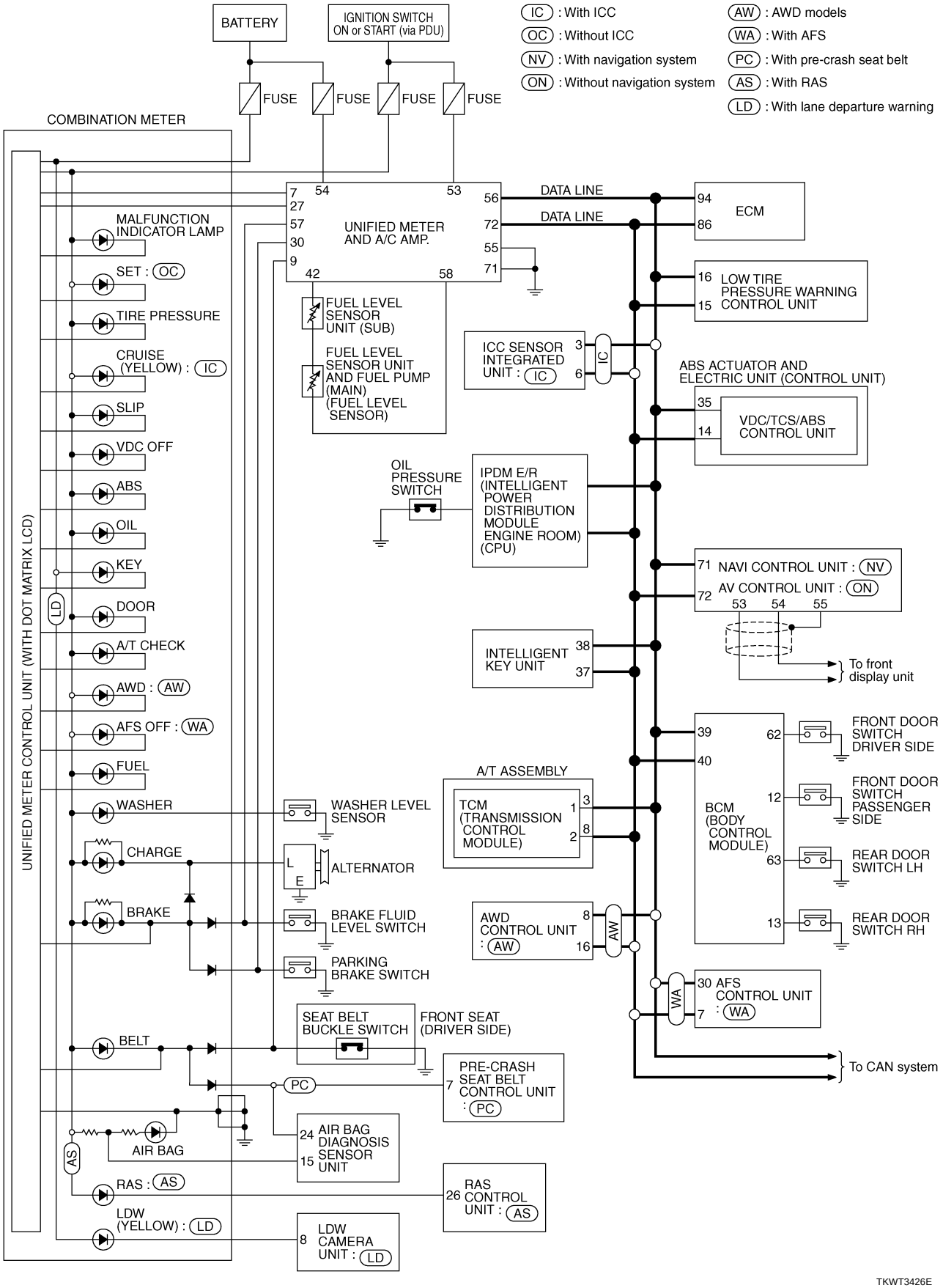
Component Parts and Harness Connector Location

NKS003UP



Schematic

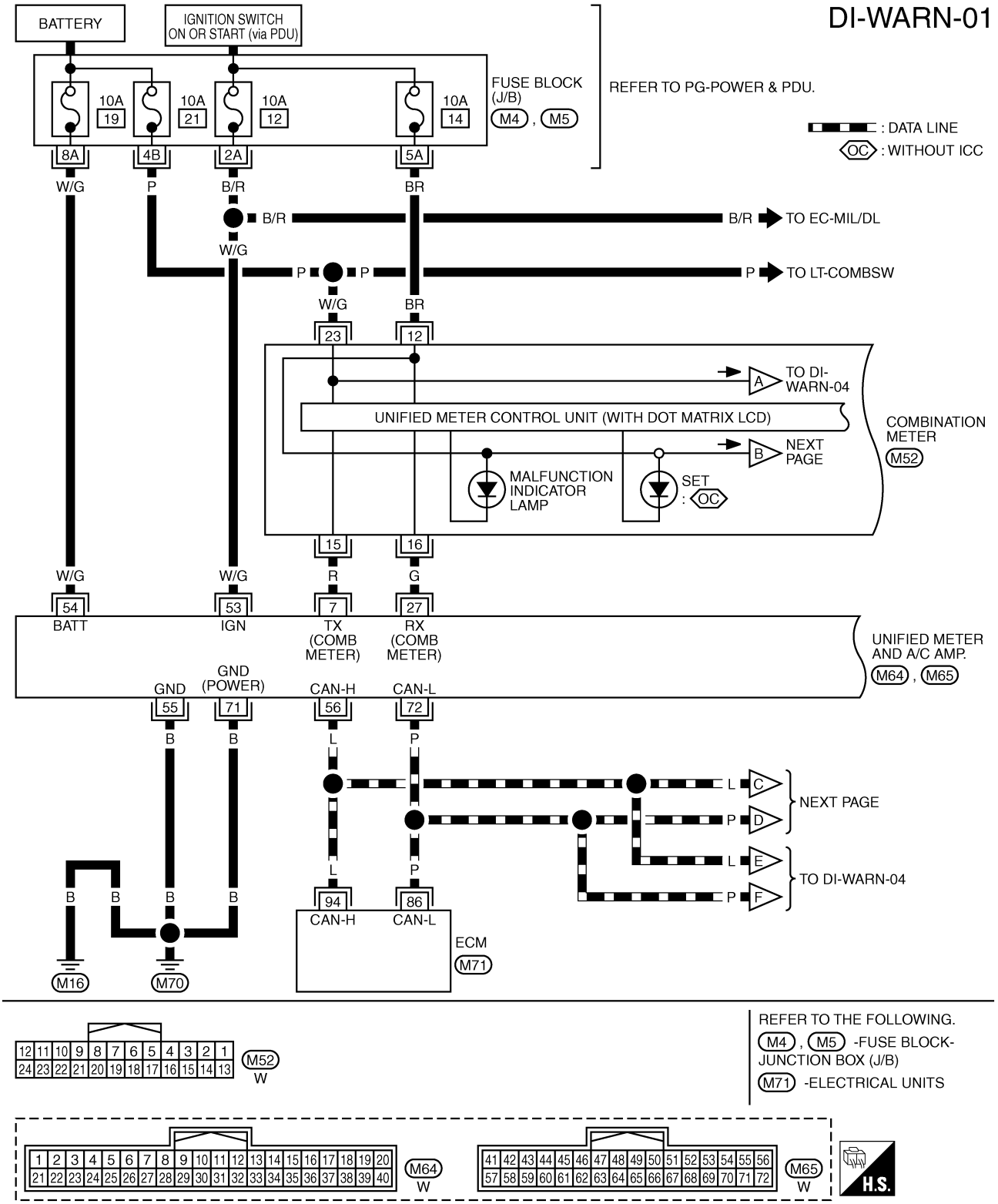
NKS003UQ



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

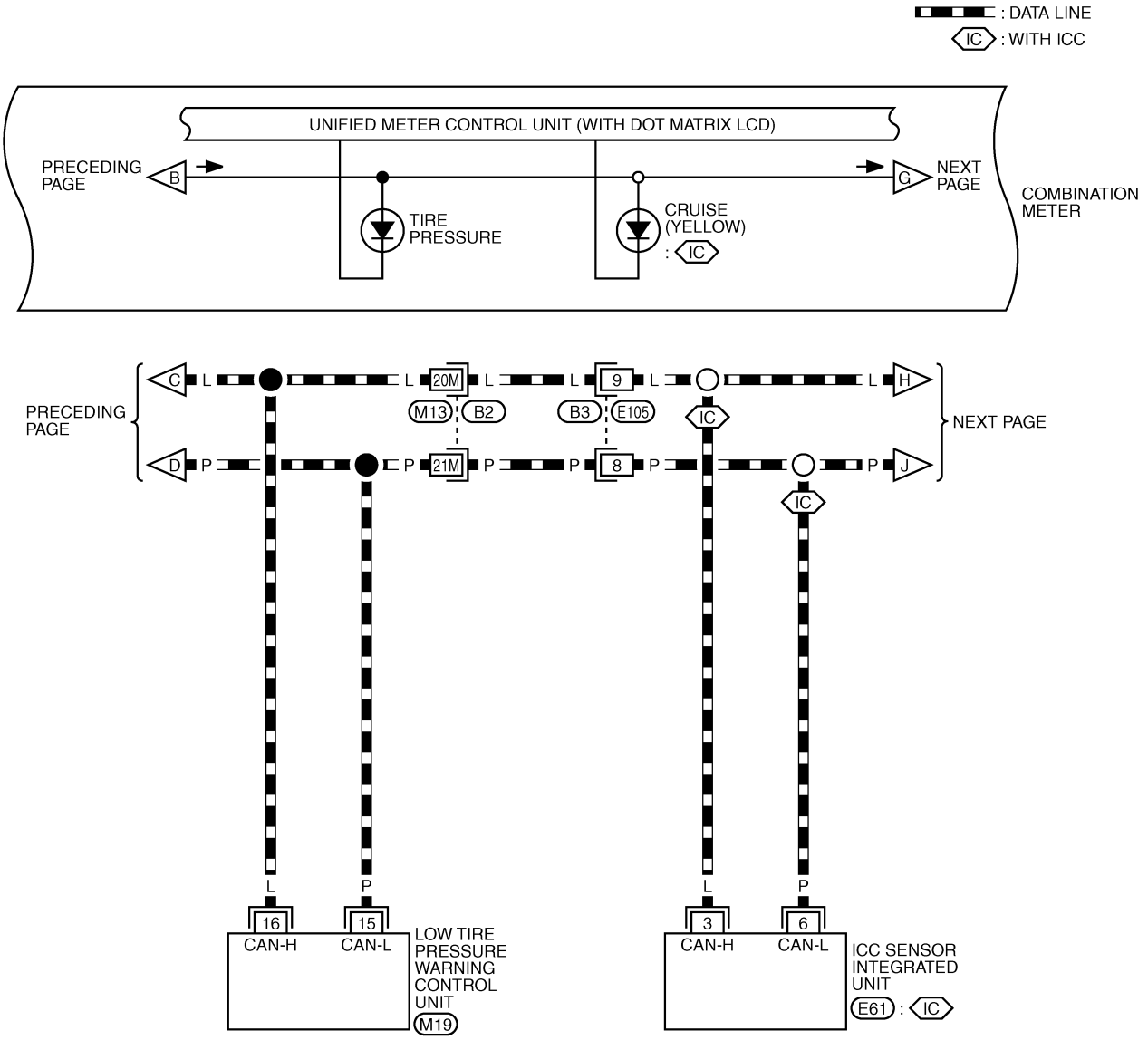
Wiring Diagram — WARN —

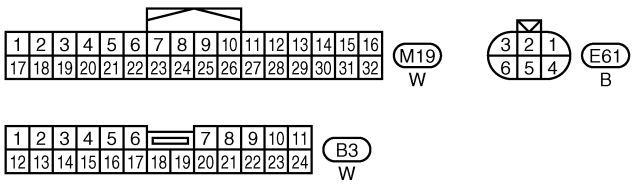
NKS003UR



TKWT3427E

DI-WARN-02



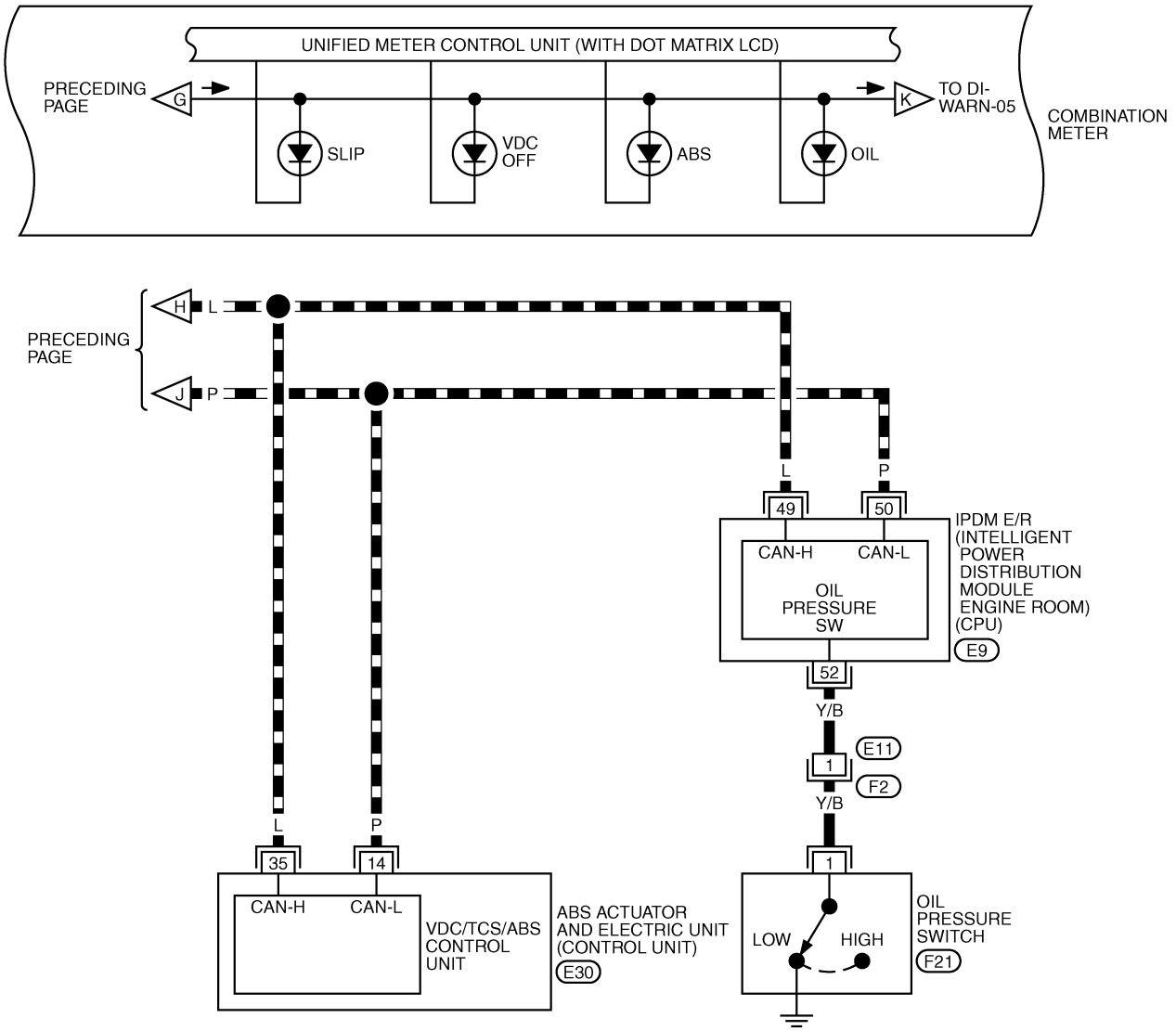


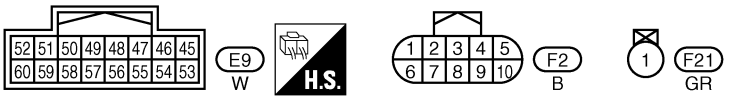
REFER TO THE FOLLOWING.
B2 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT3428E

DI-WARN-03

: DATA LINE

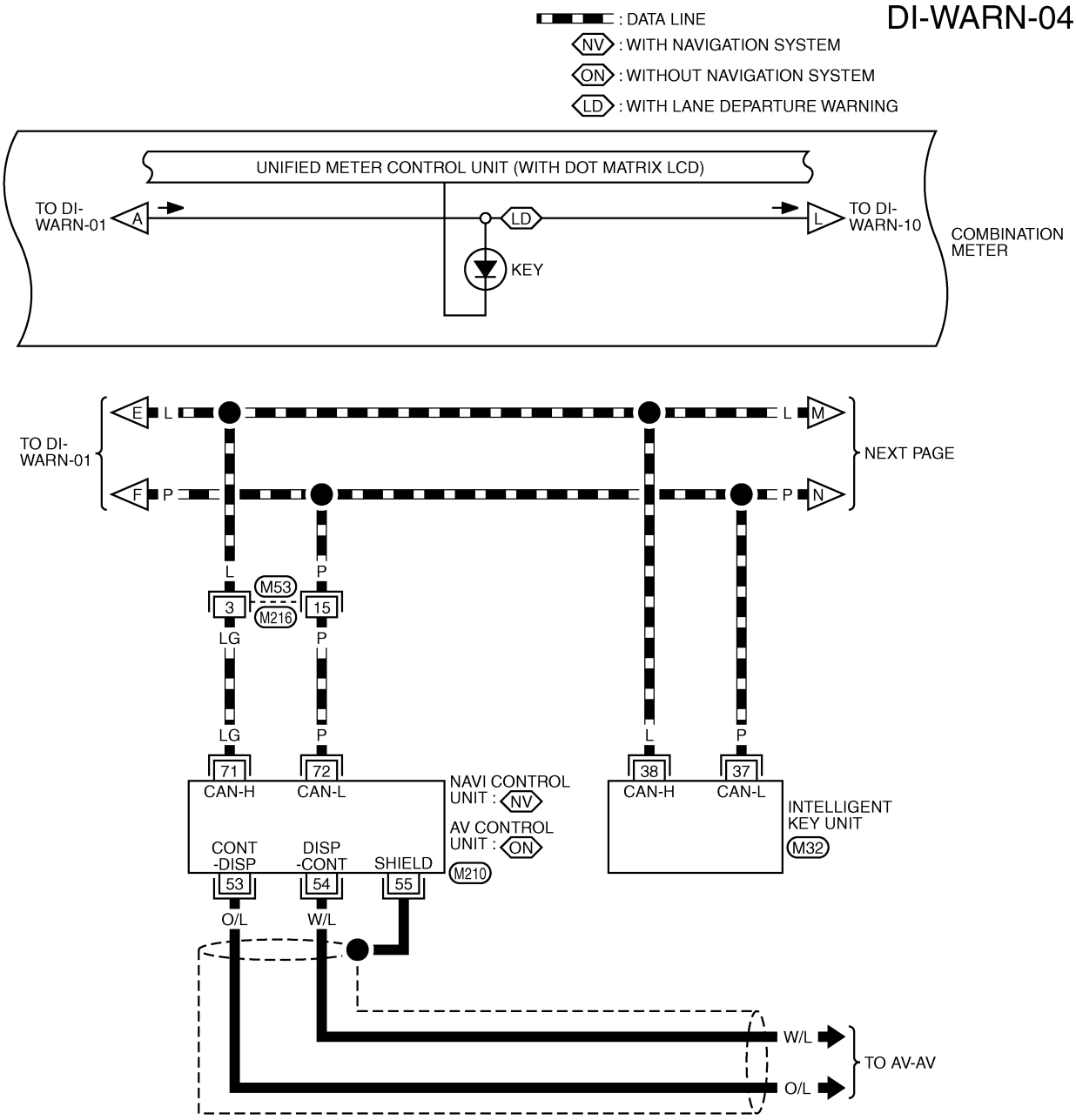




REFER TO THE FOLLOWING.
E30 -ELECTRICAL UNITS

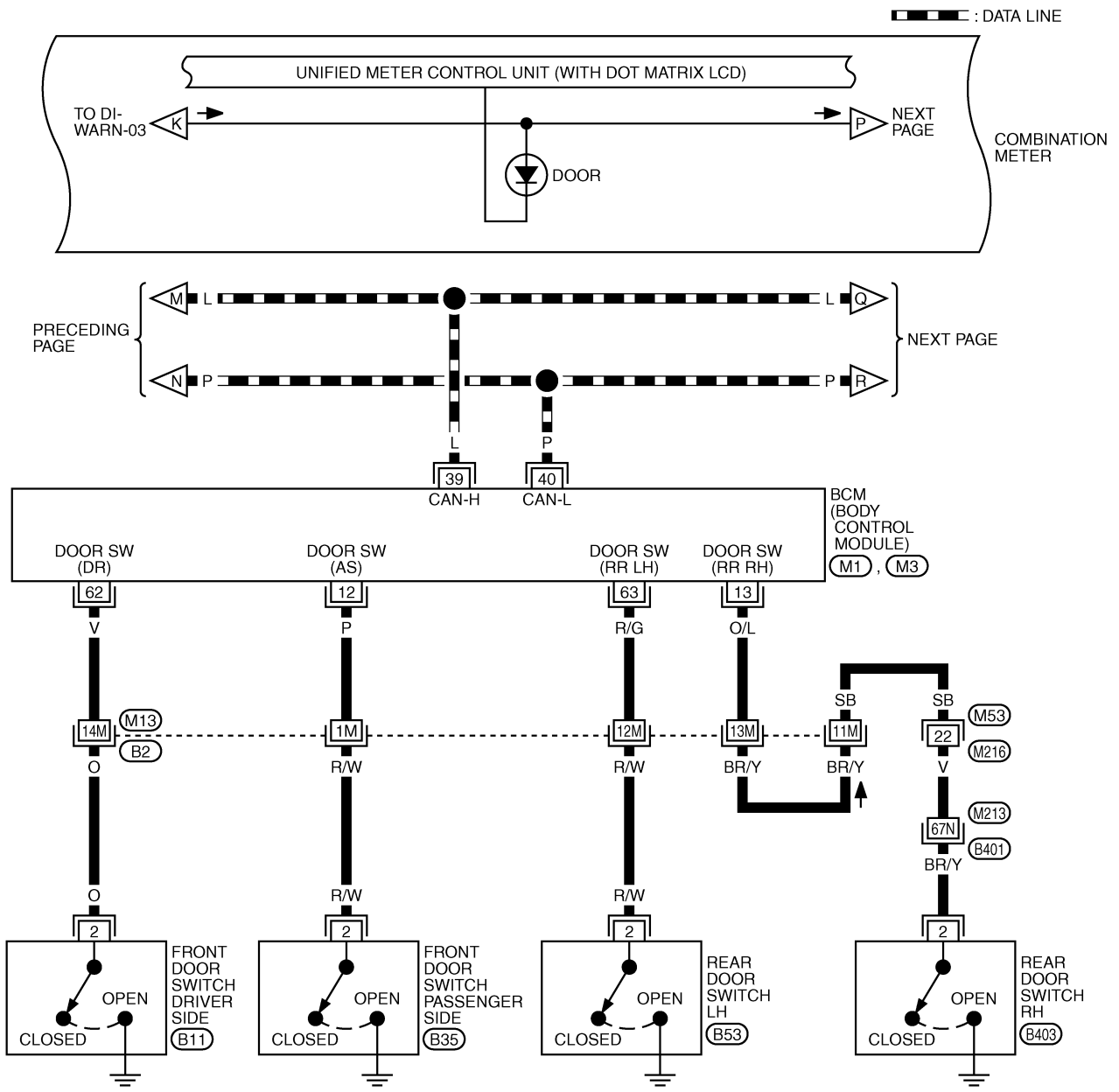
TKWT3429E

DI-WARN-04



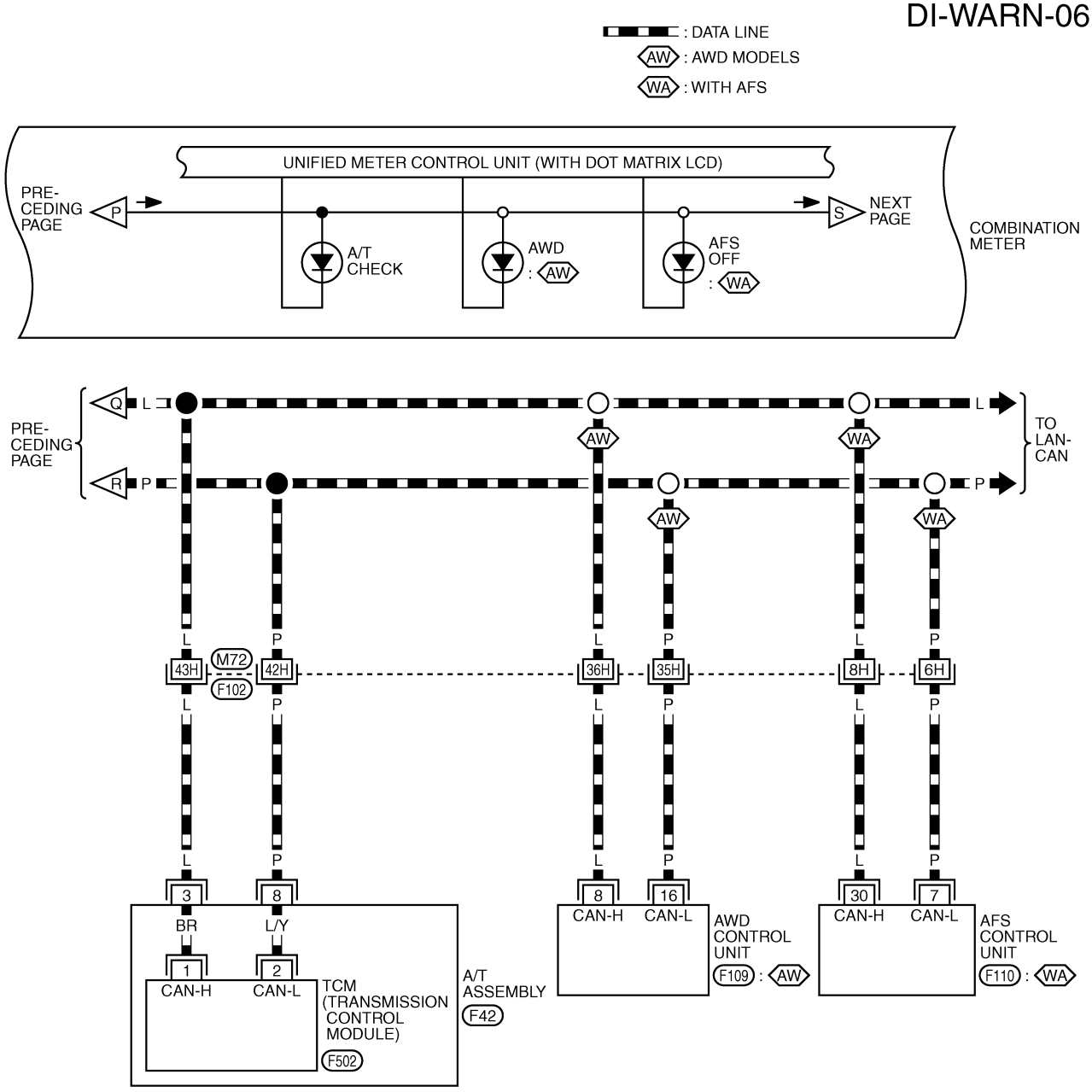
TKWT3430E

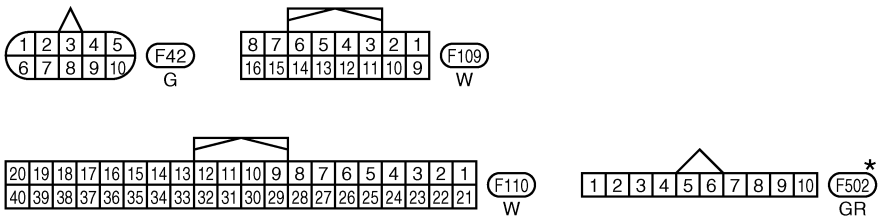
DI-WARN-05



TKWT3431E

DI-WARN-06

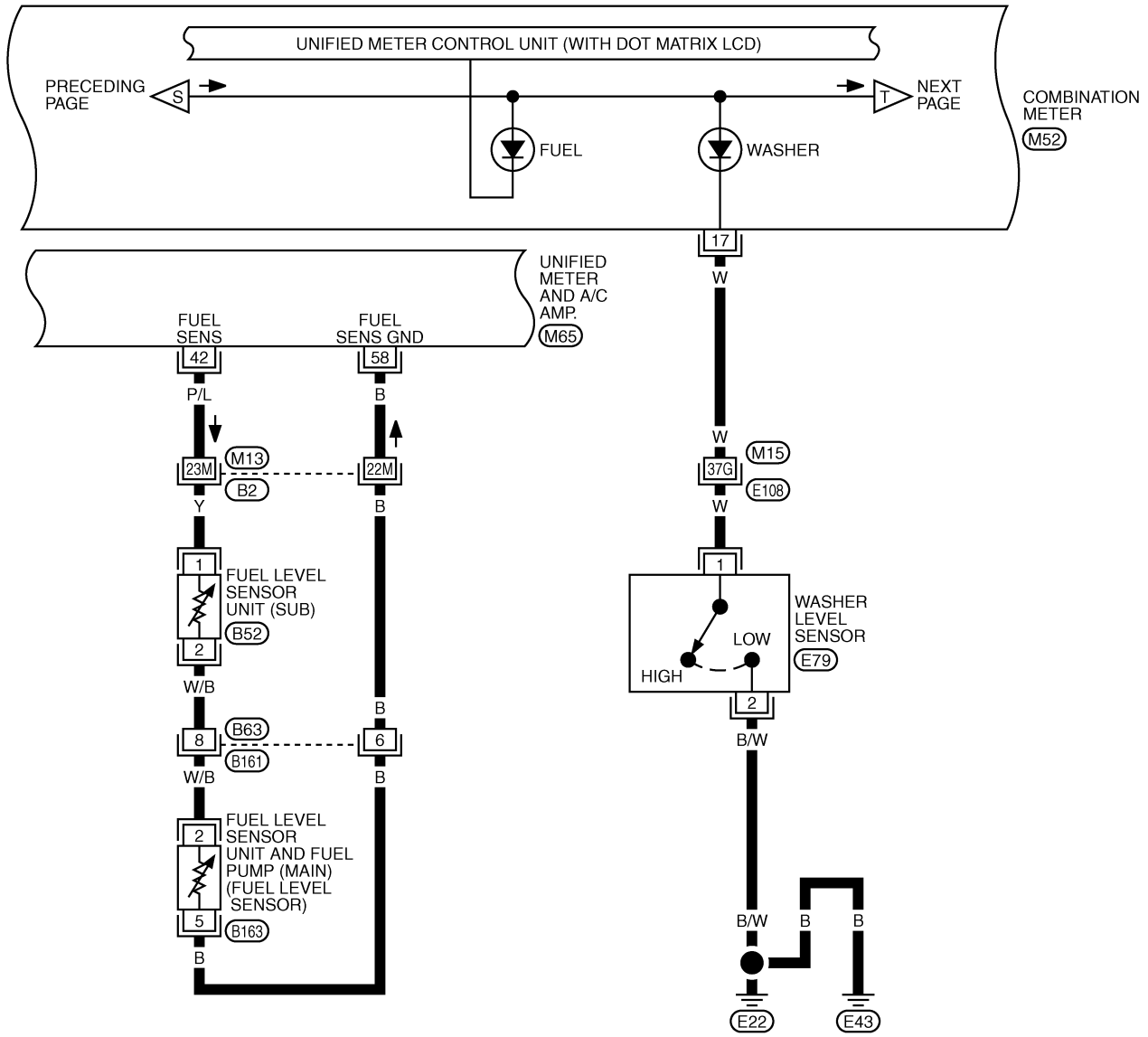


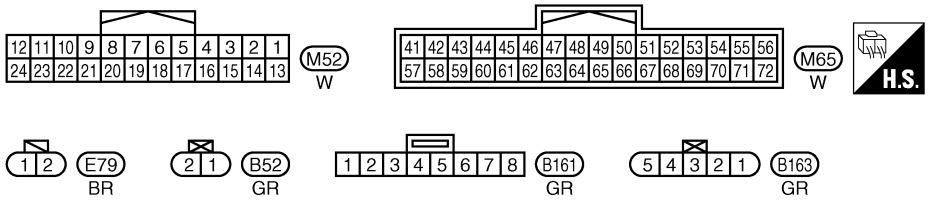


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

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

TKWT3432E

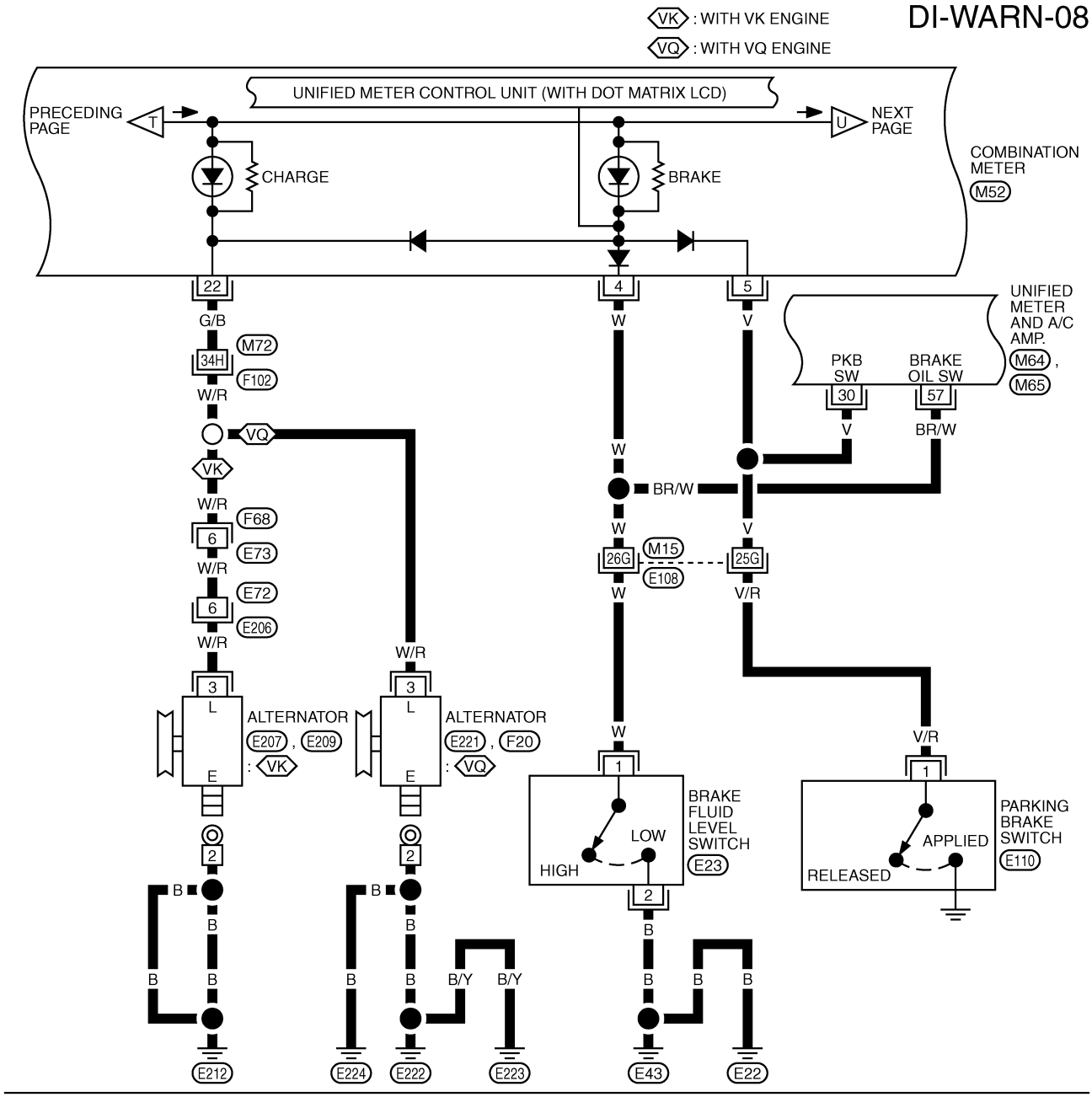




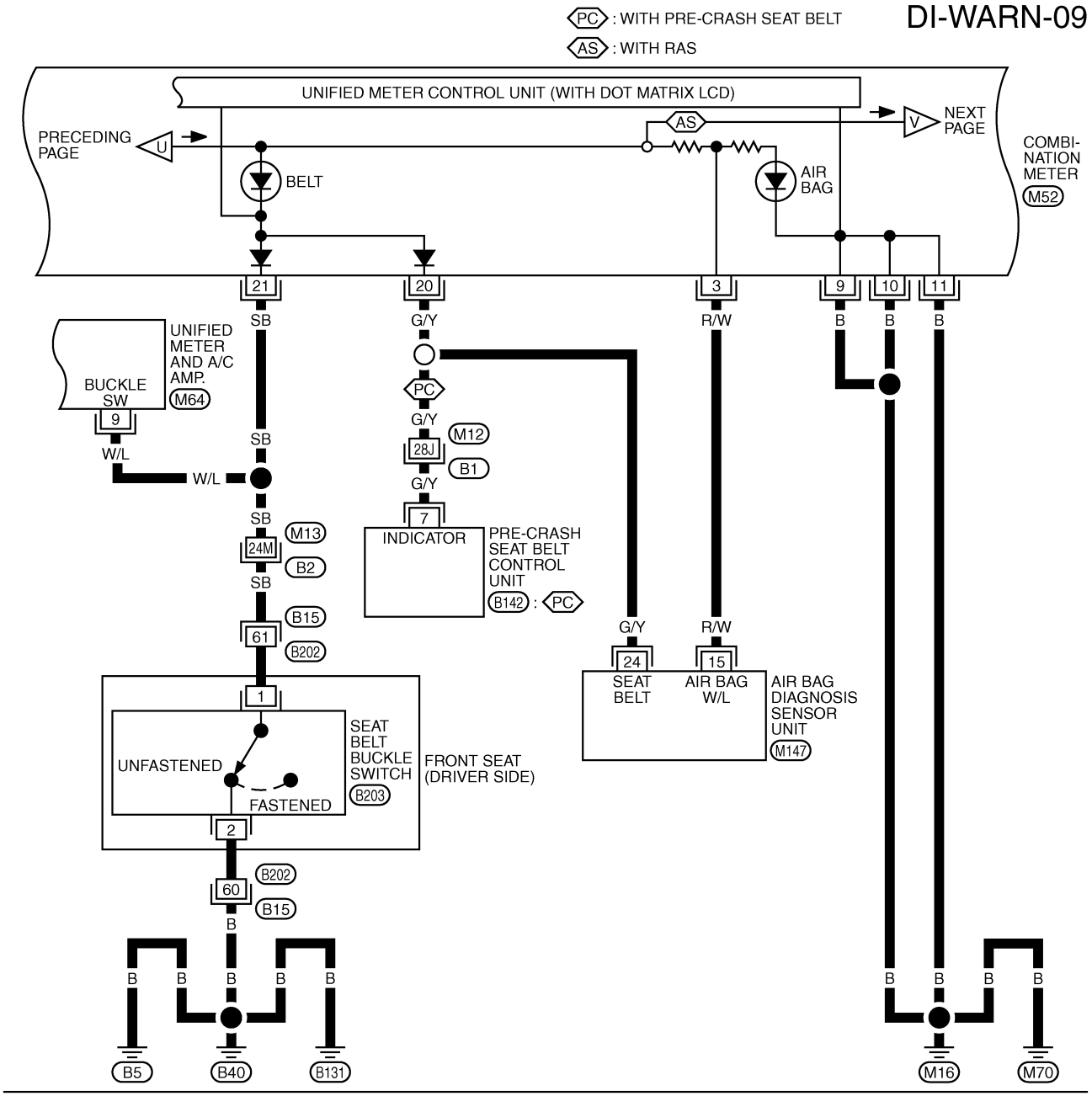
REFER TO THE FOLLOWING.
E108 , B2 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT3433E

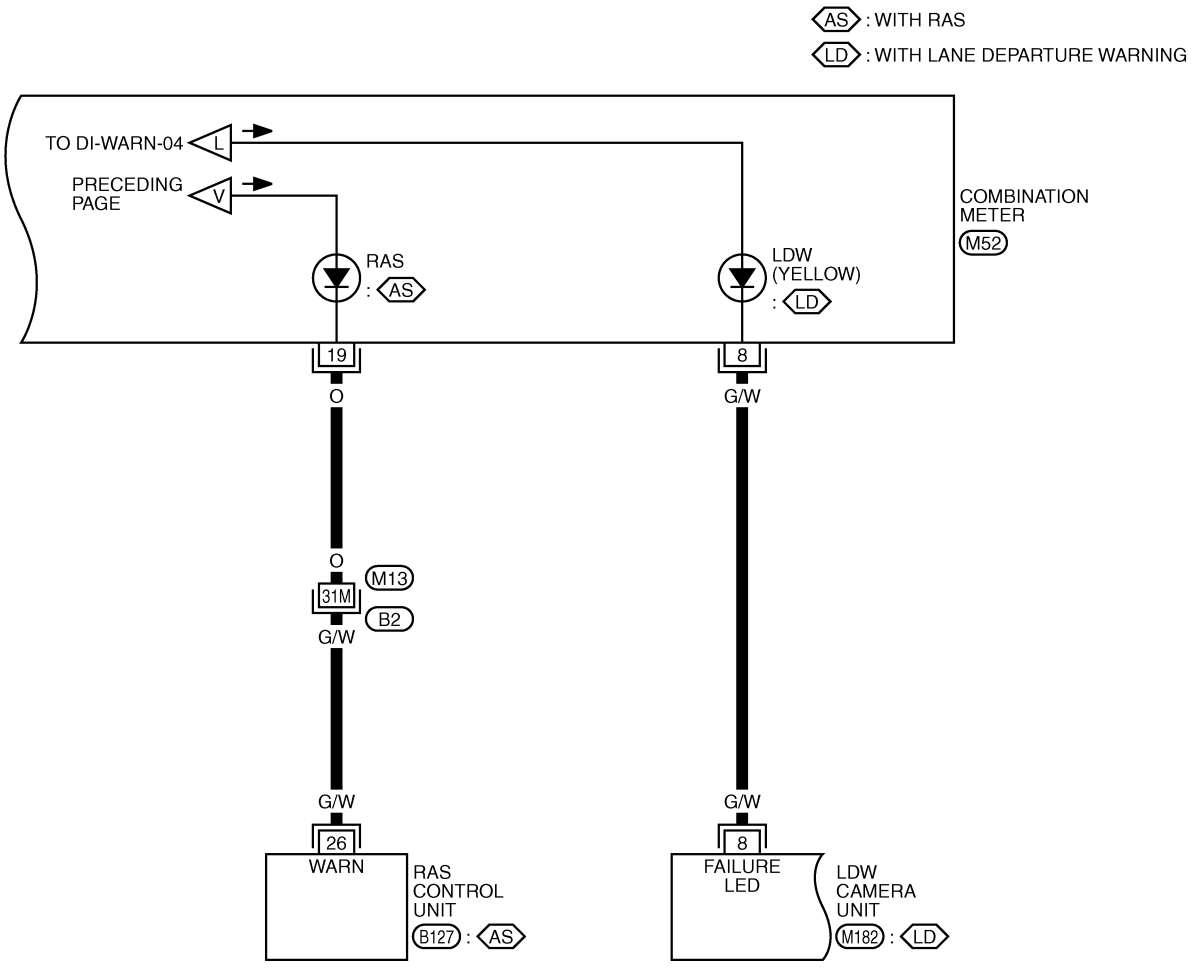
DI-WARN-08

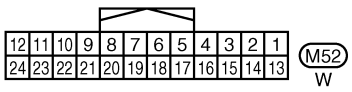


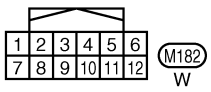
TKWT3434E


PC : WITH PRE-CRASH SEAT BELT
AS : WITH RAS
UNIFIED METER CONTROL UNIT (WITH DOT MATRIX LCD)
PRECEDING PAGE
U
BELT
AS
AIR BAG
V
NEXT PAGE
COMBI-NATION METER
M52
21
20
3
9
10
11
SB
G/Y
R/W
B
B
B
UNIFIED METER AND A/C AMP.
M64
BUCKLE SW
9
W/L
W/L
SB
24M
M13
B2
SB
B15
61
B202
PC
G/Y
28J
M12
B1
G/Y
7
INDICATOR
PRE-CRASH SEAT BELT CONTROL UNIT
B142 : PC
G/Y
R/W
24
15
SEAT BELT
AIR BAG W/L
AIR BAG DIAGNOSIS SENSOR UNIT
M147
1
UNFASTENED
FASTENED
SEAT BELT BUCKLE SWITCH
B203
FRONT SEAT (DRIVER SIDE)
2
B202
60
B15
B
B B B B B
B5
B40
B131
B B B B
M16
M70
M52
W
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.
REFER TO THE FOLLOWING.
B1 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M64
W
H.S.
M147
Y
B15
W
B142
W
B203
W

TKWT3435E







REFER TO THE FOLLOWING.

B2 -SUPER MULTIPLE JUNCTION (SMJ)

B127 -ELECTRICAL UNITS

TKWT3436E

Oil Pressure Warning Lamp Stays Off (Ignition Switch ON)

NKS003US

1. CHECK OPERATION OF OIL PRESSURE WARNING LAMP

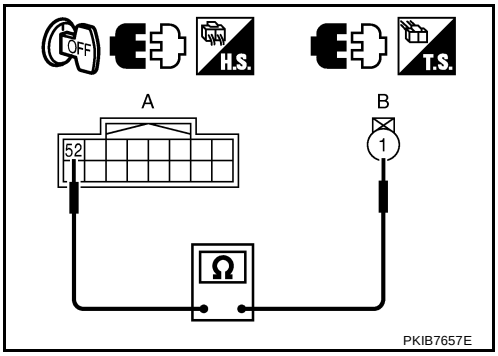
Activate IPDM E/R auto active test. Refer to PG-24, "Auto Active Test" .

Does oil pressure warning lamp is blinking?

YES >> GO TO 2.
NO >> GO TO 4.

2. CHECK OIL PRESSURE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and oil pressure switch connector.
3. Check continuity between IPDM E/R harness connector (A) and oil pressure switch harness connector (B).



A		B		Continuity
Connector	Terminal	Connector	Terminal	
E9	52	F21	1	Yes

OK or NG

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

3. CHECK OIL PRESSURE SWITCH

Check oil pressure switch. Refer to DI-55, "OIL PRESSURE SWITCH" .

OK or NG

OK >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .
NG >> Replace oil pressure switch.

4. CHECK UNIFIED METER AND A/C AMP. (CONSULT-II)

Perform self-diagnosis of unified meter and A/C amp. Refer to DI-31, "CONSULT-II Function (METER A/C AMP)" .

Self-diagnostic results content

No malfunction detected>> GO TO 5.
Malfunction detected>> Check applicable parts, and repair or replace corresponding parts.

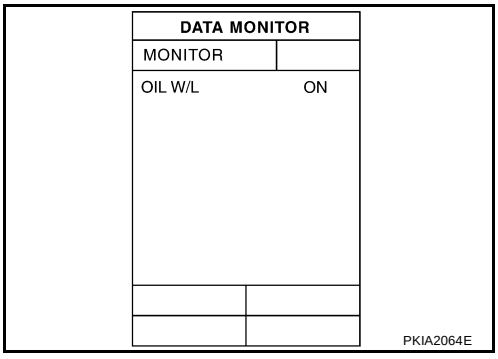
5. CHECK UNIFIED METER AND A/C AMP. INPUT SIGNAL

1. Select “METER A/C AMP” on CONSULT-II.
2. 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 >> GO TO 6.

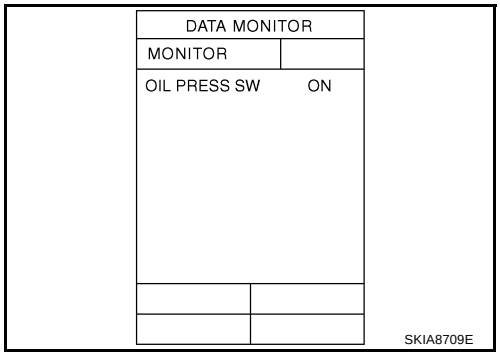
6. CHECK BCM INPUT SIGNAL

1. Select “SIGNAL BUFFER” of “BCM” on CONSULT-II.
2. Operate ignition switch with “OIL PRESS SW” of “DATA MONITOR” and check operate status.

“OIL PRESS SW”

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

When engine running : OFF



OK or NG

OK >> Replace BCM. Refer to BCS-17, "Removal and Installation of BCM" .

NG >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .

Oil Pressure Warning Lamp Does Not Turn Off (Oil Pressure Is Normal)

NKS003UT

NOTE:

For oil pressure inspection, refer to LU-8, "OIL PRESSURE CHECK" (VQ35DE) or LU-26, "OIL PRESSURE CHECK" (VK45DE).

1. CHECK OPERATION OF OIL PRESSURE WARNING LAMP

Activate IPDM E/R auto active test. Refer to PG-24, "Auto Active Test" .

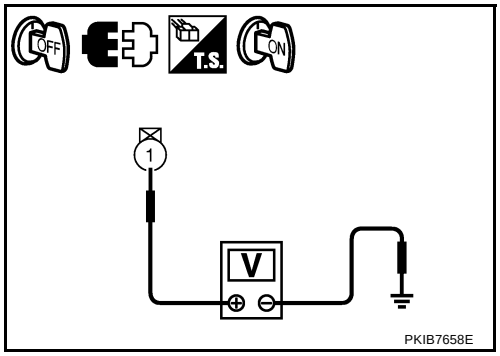
Does oil pressure warning lamp is blinking?

YES >> GO TO 2.

NO >> GO TO 5.

2. CHECK IPDM E/R OUTPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect oil pressure switch connector.
3. Turn ignition switch ON.
4. Check voltage between oil pressure switch harness connector and ground.



Terminals			Voltage (Approx.)
(+)		(–)	
Oil pressure switch connector	Terminal		
F21	1	Ground	12 V

OK or NG

OK >> GO TO 3.

NG >> GO TO 4.

3. CHECK OIL PRESSURE SWITCH

1. Turn ignition switch OFF.
2. Check oil pressure switch. Refer to DI-55, "OIL PRESSURE SWITCH" .

OK or NG

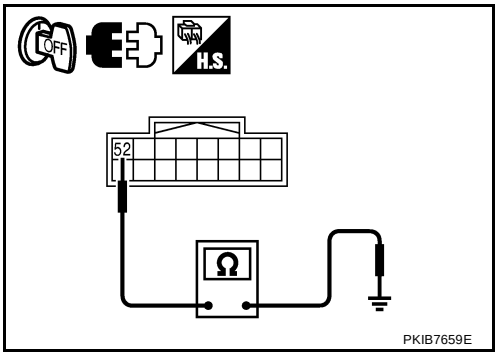
OK >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .

NG >> Replace oil pressure switch.

4. CHECK OIL PRESSURE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R connector	Terminal	Ground	Continuity
E9	52		No



OK or NG

OK >> Replace IPDM E/R. Refer to PG-31, "Removal and Installation of IPDM E/R" .

NG >> Repair harness or connector.

5. CHECK IPDM E/R (CONSULT-II)

Perform self-diagnosis of IPDM E/R. Refer to PG-20, "CONSULT-II Function (IPDM E/R)" .

Self-diagnostic results content

No malfunction detected>> Replace combination meter.

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

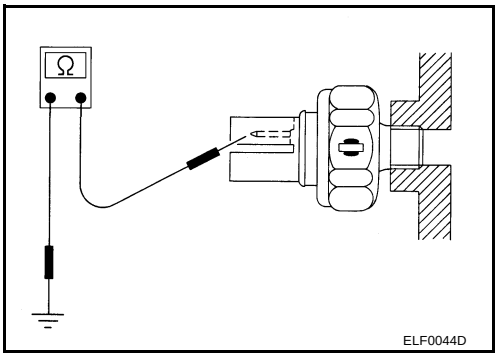
Electrical Component Inspection

NKS003UU

OIL PRESSURE SWITCH

Check continuity between oil pressure switch and ground.

Condition	Oil pressure [kPa (kg/cm^2 , psi)]	Continuity
Engine stopped	Less than 29 (0.3, 4)	Yes
Engine running	More than 29 (0.3, 4)	No



A/T INDICATOR

PFP:24814

System Description

NKS003UV

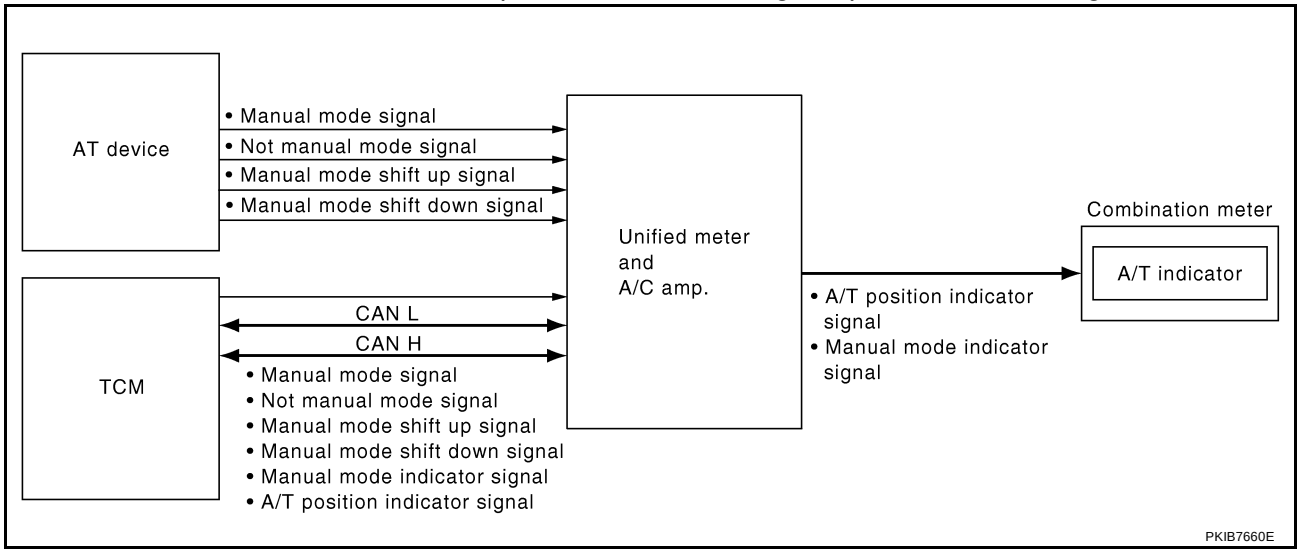
A/T position is displayed in the dot matrix LCD in the combination meter.

MANUAL MODE

- Unified meter and A/C amp. inputs manual mode signal and shift-up/down signal from A/T device (manual mode switch), 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 indicates A/T gear position and manual mode indicator, when receiving manual mode indicator signal and A/T position indicator signal.

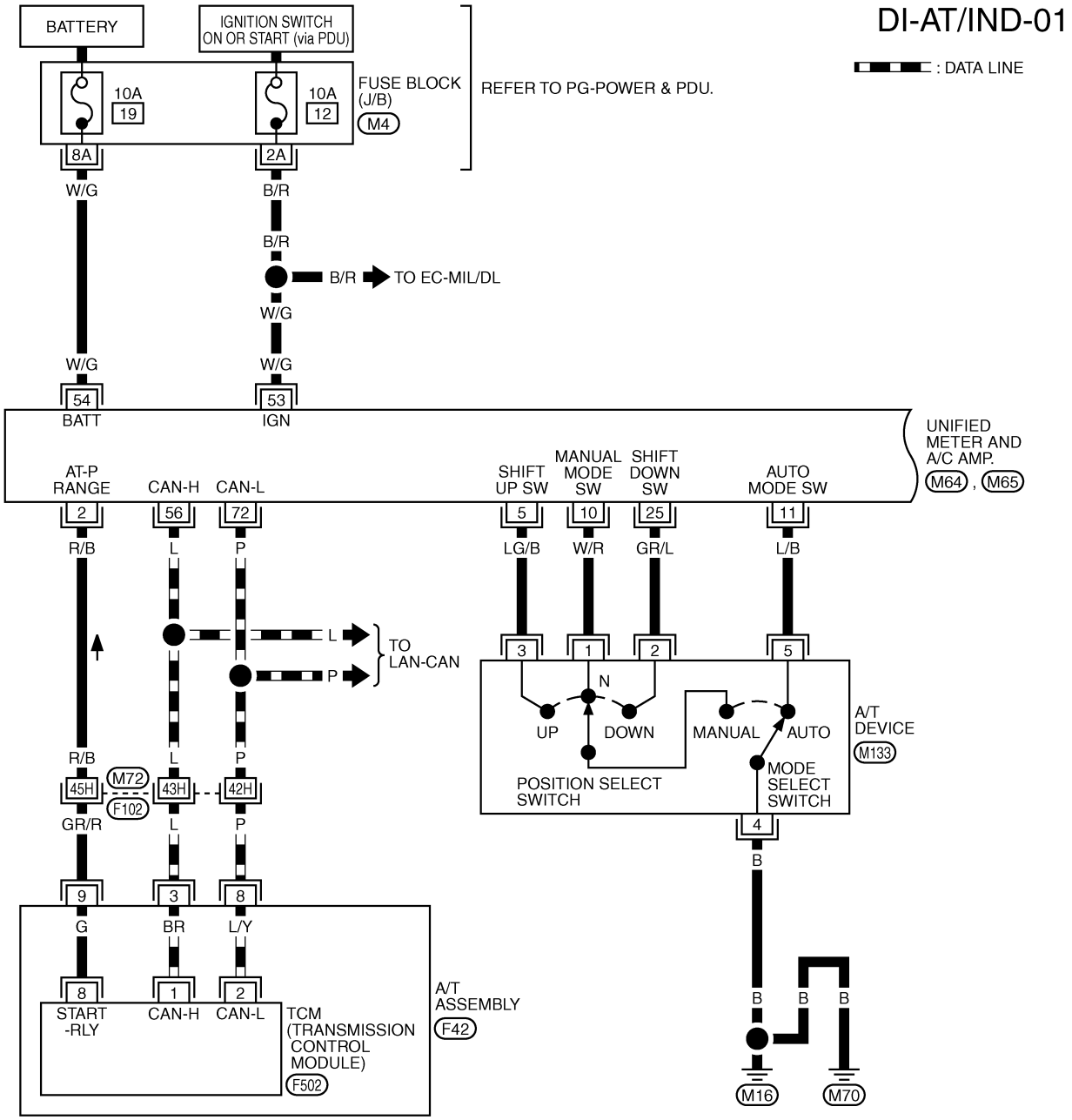
NOT MANUAL MODE

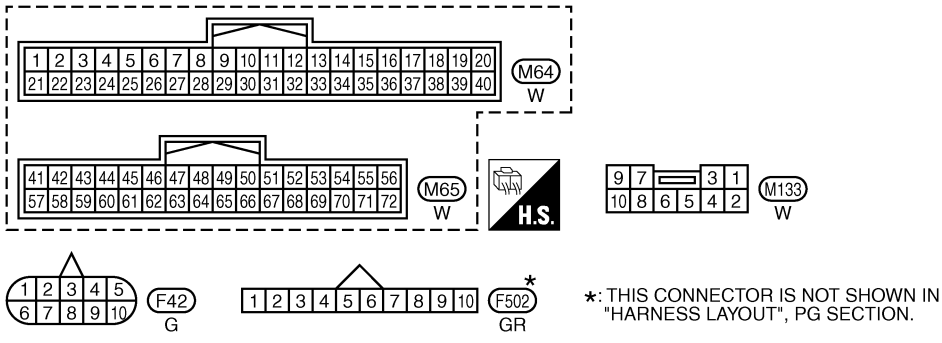
- Unified meter and A/C amp. inputs not manual mode signal from A/T device (manual mode switch), and transmits the signals to TCM with CAN communication.
- TCM transmits A/T position indicator signal to unified meter and A/C amp. with CAN communication.
- Unified meter and A/C amp. transmits A/T position indicator signal to combination meter with the communication line.
- Combination meter indicates A/T shift position when receiving A/T position indicator signal.



Wiring Diagram — AT/IND —

NKS003UW





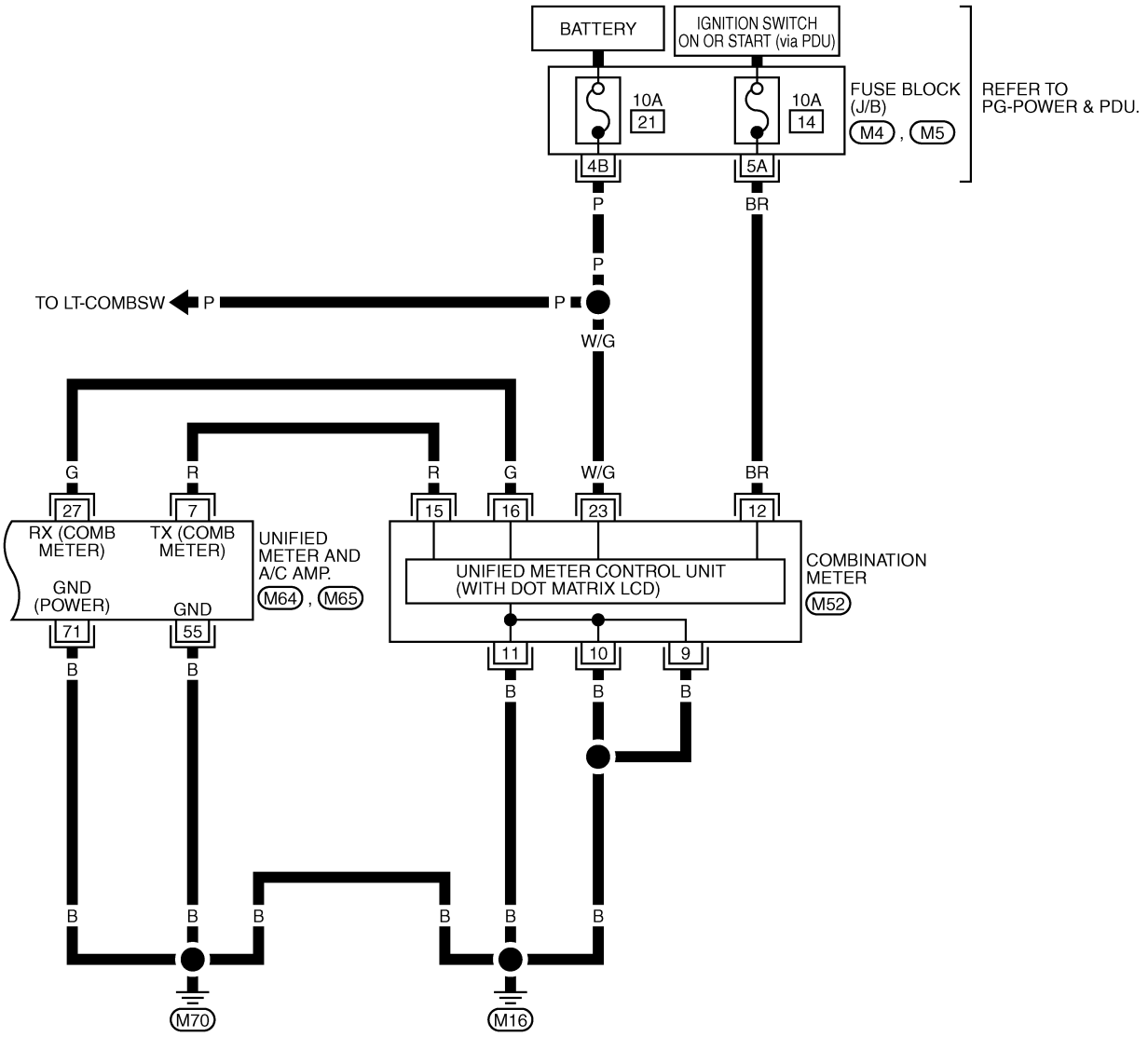
REFER TO THE FOLLOWING.

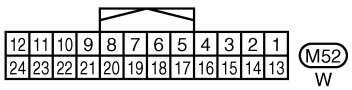
F102 -SUPER MULTIPLE JUNCTION (SMJ)

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

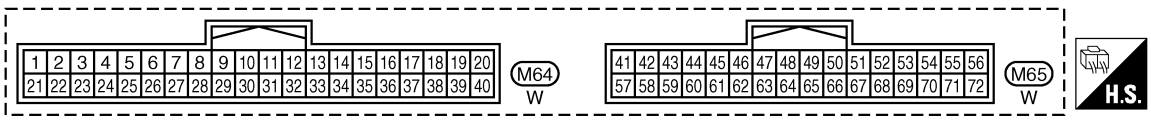
TKWT3438E

DI-AT/IND-02





REFER TO THE FOLLOWING.
M4 , M5 -FUSE BLOCK-JUNCTION BOX (J/B)



TKWT3439E

A/T Indicator Is Malfunction

NKS003UX

1. CHECK SEGMENTS OF A/T INDICATOR

Perform self-diagnosis mode of combination meter. Refer to DI-17, "OPERATION PROCEDURE" .

Are all segments displayed?

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

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

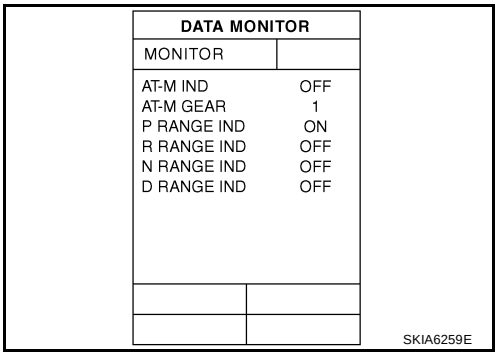
Perform self-diagnosis of unified meter and A/C amp. Refer to DI-31, "CONSULT-II Function (METER A/C AMP)" .

Self-diagnostic results content

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. Connect CONSULT-II and start engine.
2. Use “DATA MONITOR” of “METER A/C AMP” on CONSULT-II. Confirm each indication on the monitor when operating the shift lever.



Display item	Switch operation	Operation 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	ON
	Except for N range	OFF
D RANGE IND	D range	ON
	Except for D range	OFF

OK or NG

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

4. CHECK TCM (CONSULT-II)

Perform self-diagnosis of TCM. Refer to AT-90, "CONSULT-II Function (A/T)" .

Self-diagnostic results content

No malfunction detected>>Check TCM input/output signal. Refer to AT-89, "TCM Input/Output Signal Reference Values" .
Malfunction detected>>Check applicable part, and repair or replace corresponding parts.

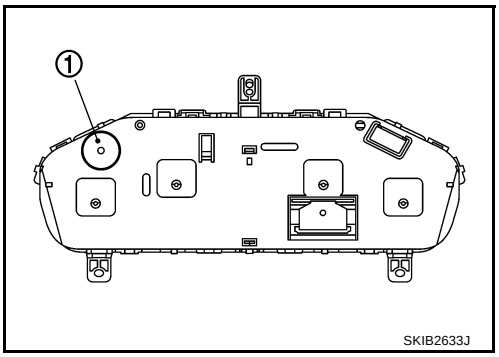
WARNING CHIME

PFP:24814

System Description

NKS003UY

- The buzzer (1) 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.



POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times

- through 50A fusible link (letter **F** , located in the fuse and fusible link block)
- to BCM terminal 55,
- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to BCM terminal 42, and
- to combination meter terminal 23,
- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to unified meter and A/C amp. terminal 54.

When ignition switch is in ON or START position, power is supplied

- through 15A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38,
- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to unified meter and A/C amp. terminal 53,
- through 10A fuse [No. 14, located in the fuse block (J/B)]
- to combination meter terminal 12.

Ground is supplied

- to BCM terminals 52,
- to unified meter and A/C amp. terminals 55 and 71, and
- to combination meter terminals 9, 10 and 11,
- through grounds M16 and M70.

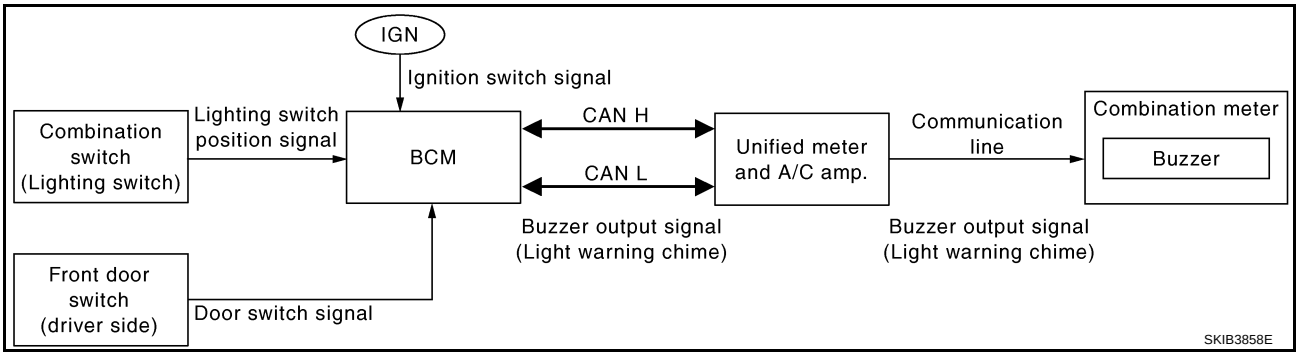
IGNITION KEY WARNING CHIME (WITH INTELLIGENT KEY)

Refer to BL-55, "WARNING FUNCTION" in intelligent key system.

LIGHT WARNING CHIME

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

- BCM detects ignition switch in OFF or ACC position, front door switch (driver side) ON, and lighting switch in 1ST or 2ND position. And then 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.



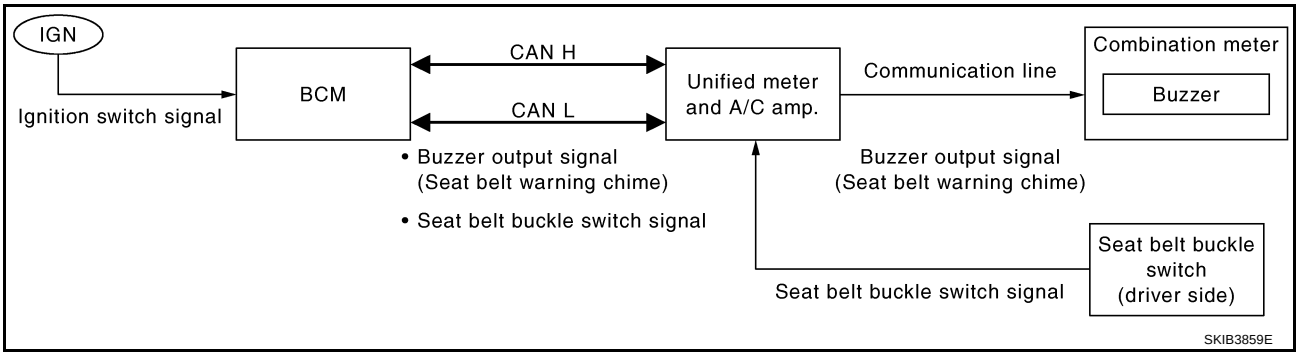
NOTE:

For further details of combination switch, refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

SEAT BELT WARNING CHIME

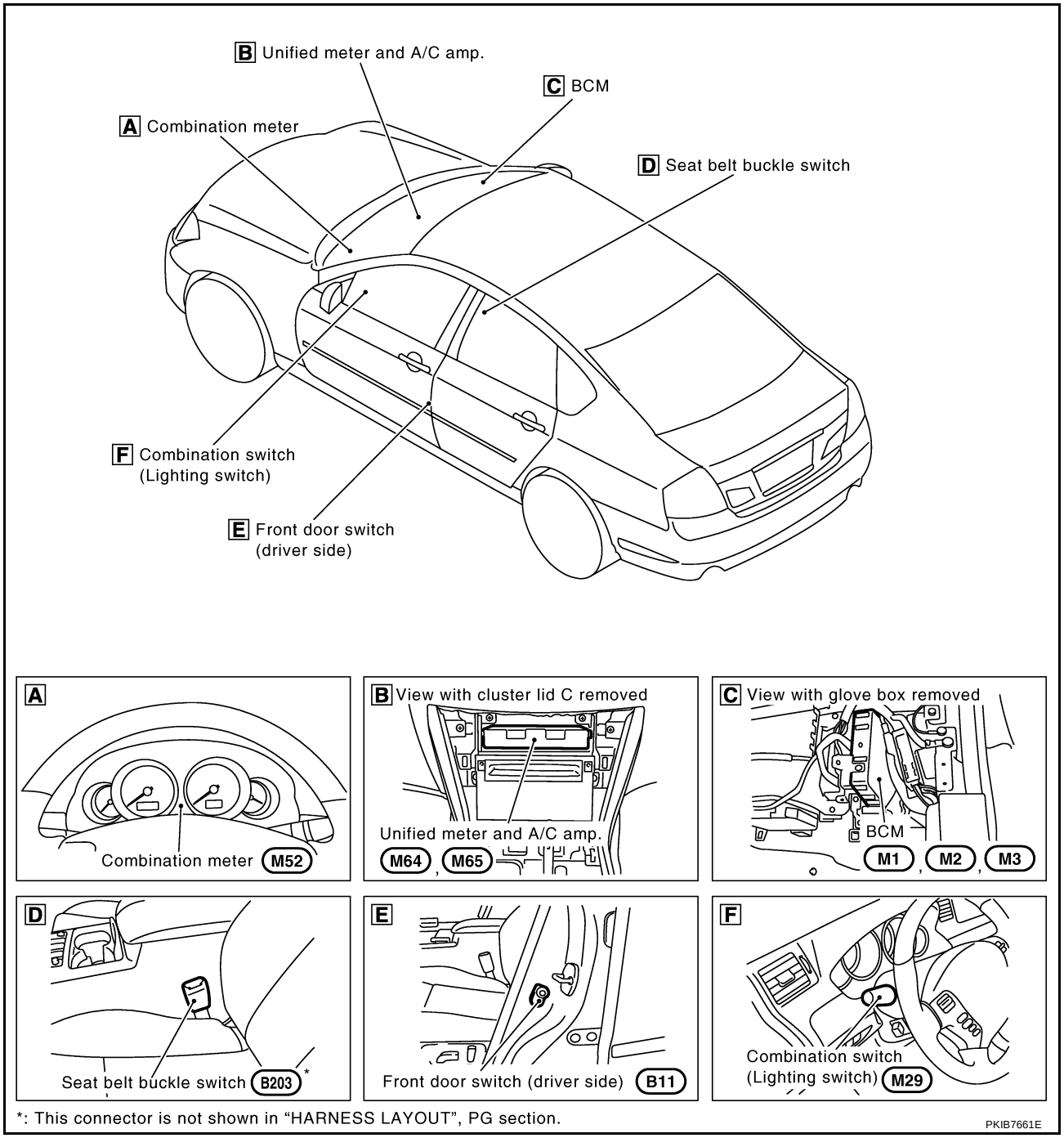
With ignition switch turned ON and driver seat belt unfastened, seat belt warning chime will sound for approximately 6 seconds.

- BCM receives seat belt buckle switch signal [seat belt buckle switch (driver side) ON] 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 transmits buzzer output signal (seat belt warning chime) to unified meter and A/C amp. with CAN communication line.
- Unified meter and A/C amp. transmits buzzer output signal (seat belt warning chime) to combination meter with communication line.
- When combination meter receives buzzer output signal (seat belt warning chime), it sounds the buzzer.



Component Parts and Harness Connector Location

NKS003UZ

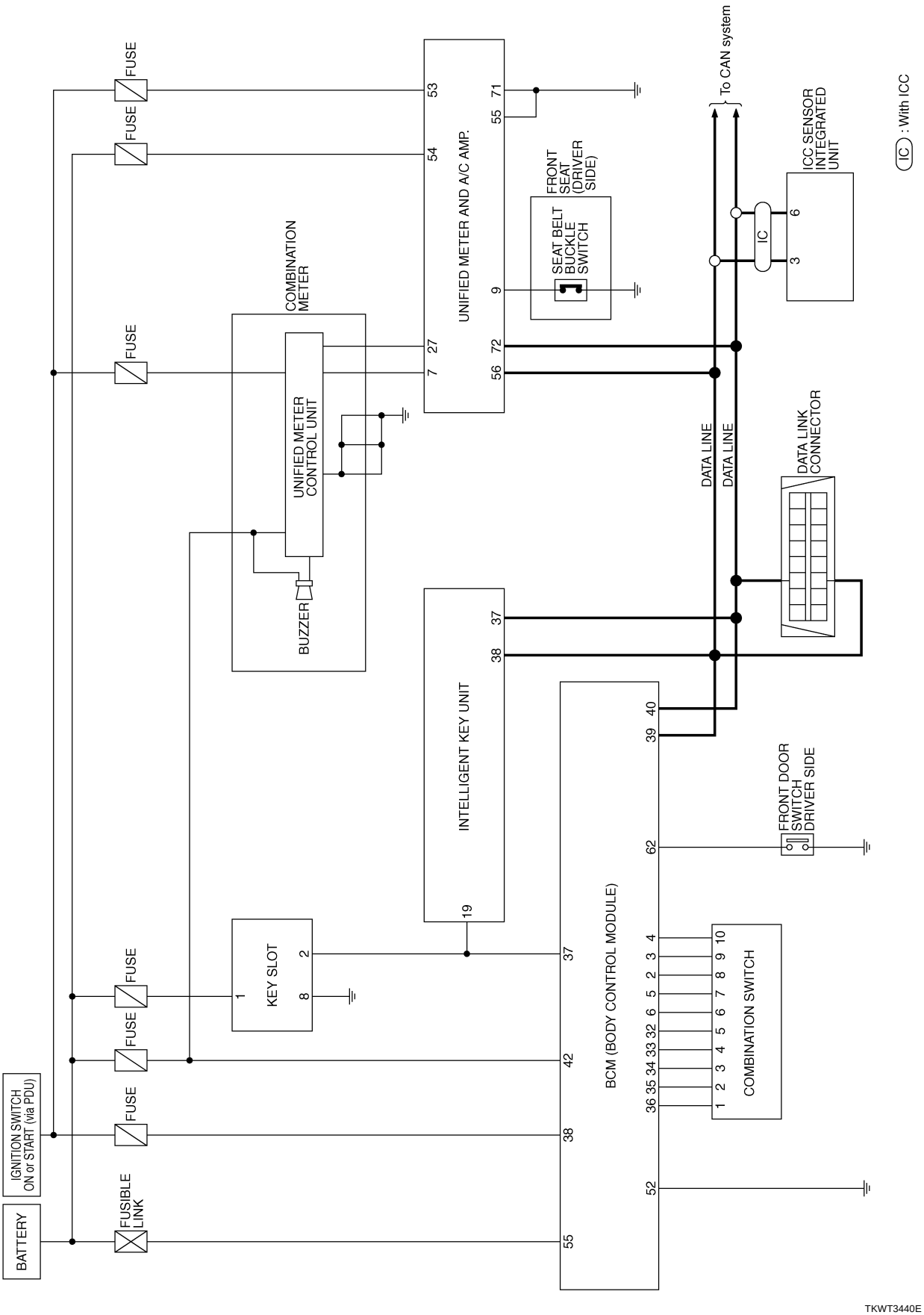


*: This connector is not shown in "HARNESS LAYOUT", PG section.

PKIB7661E

Schematic

NKS003V0

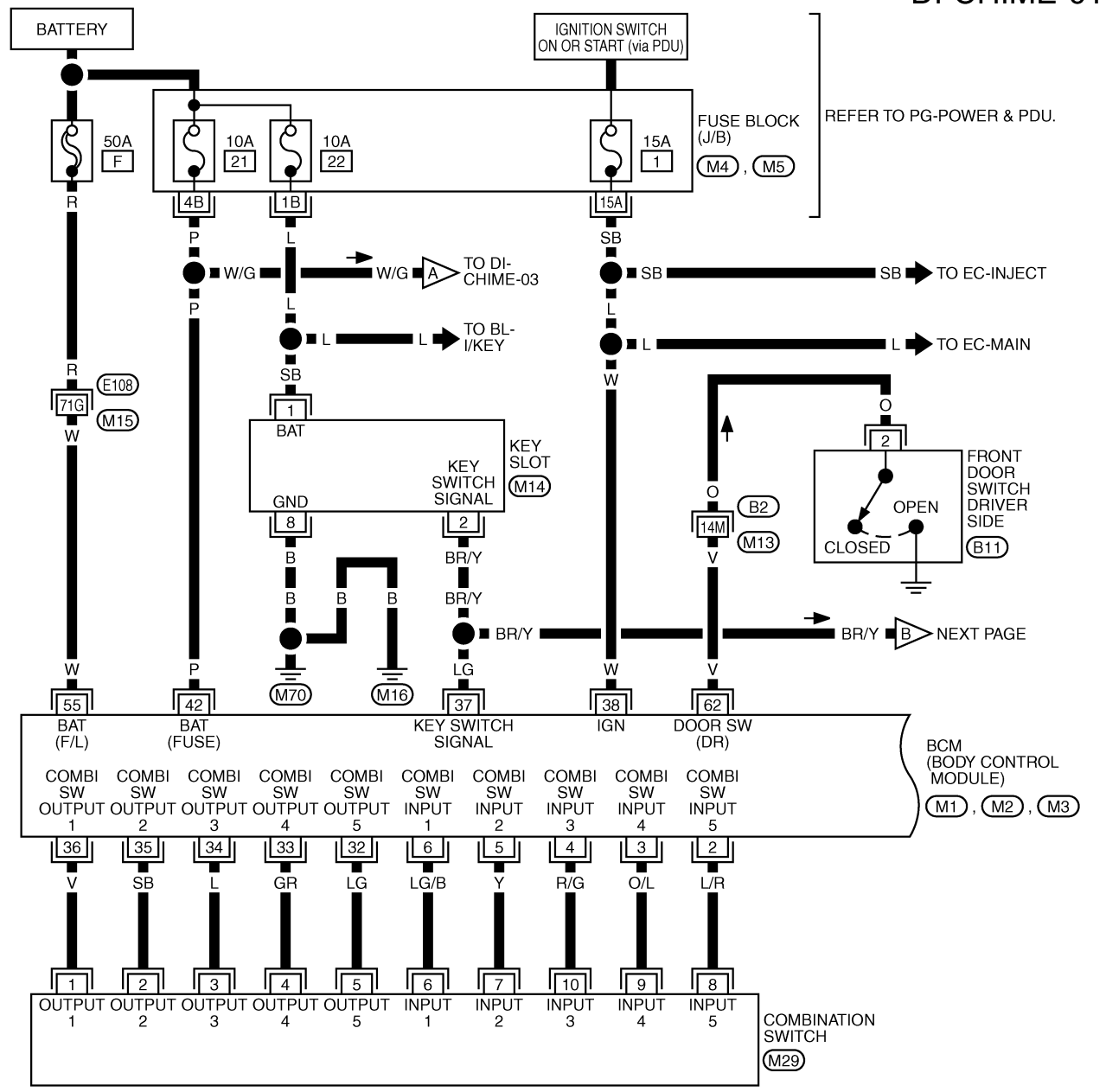


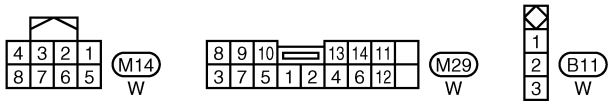
TKWT3440E

Wiring Diagram — CHIME —

NKS003V1

DI-CHIME-01





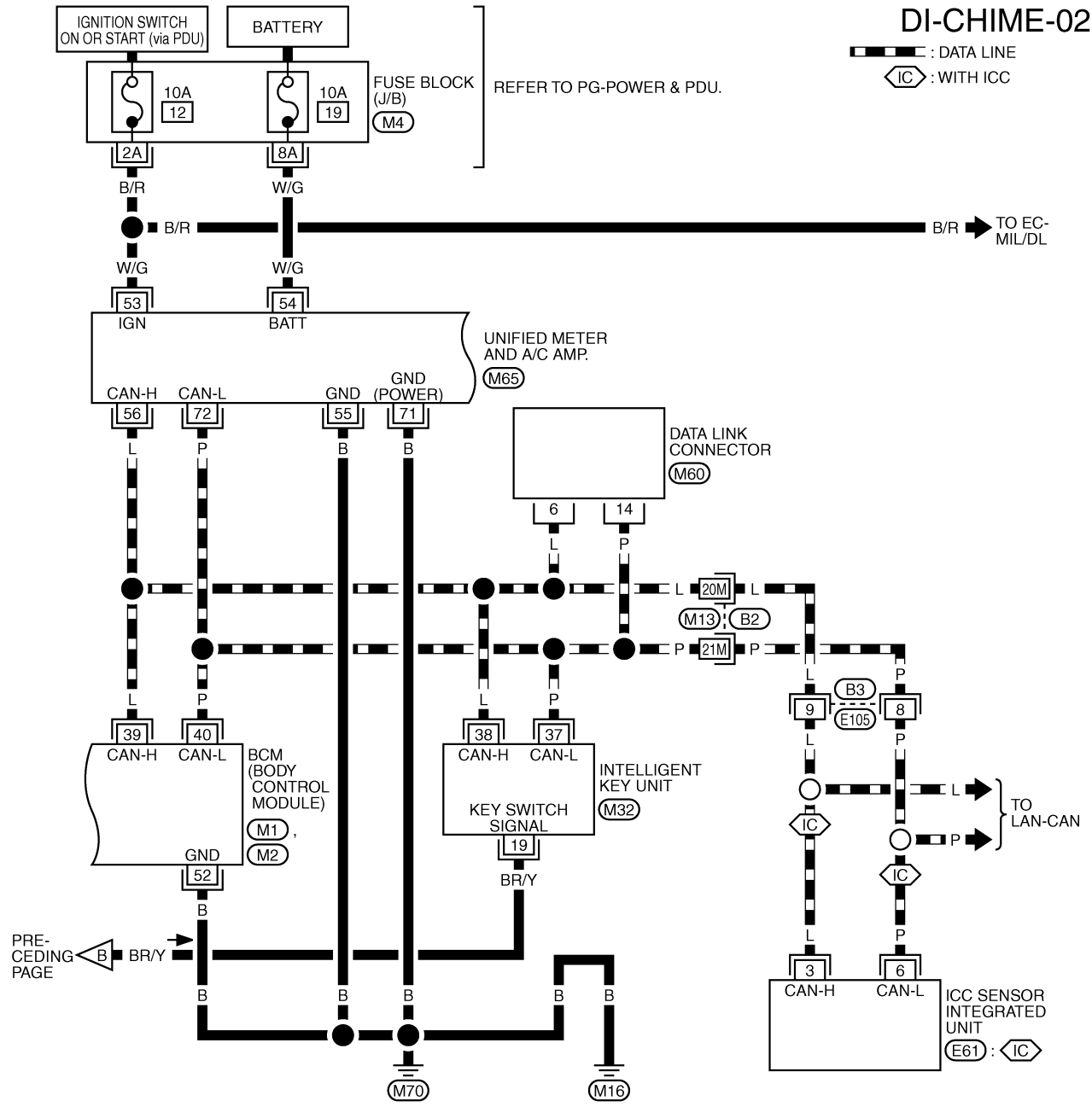
REFER TO THE FOLLOWING.

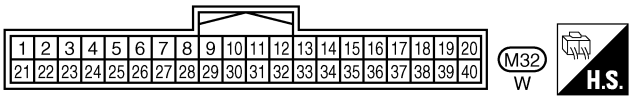
B2, E108 -SUPER MULTIPLE JUNCTION (SMJ)

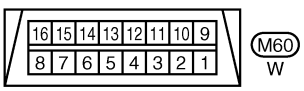
M4, M5 -FUSE BLOCK-JUNCTION BOX (J/B)

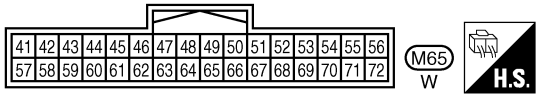
M1, M2, M3 -ELECTRICAL UNITS

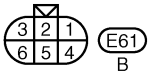
TKWT3441E

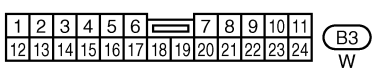












REFER TO THE FOLLOWING.

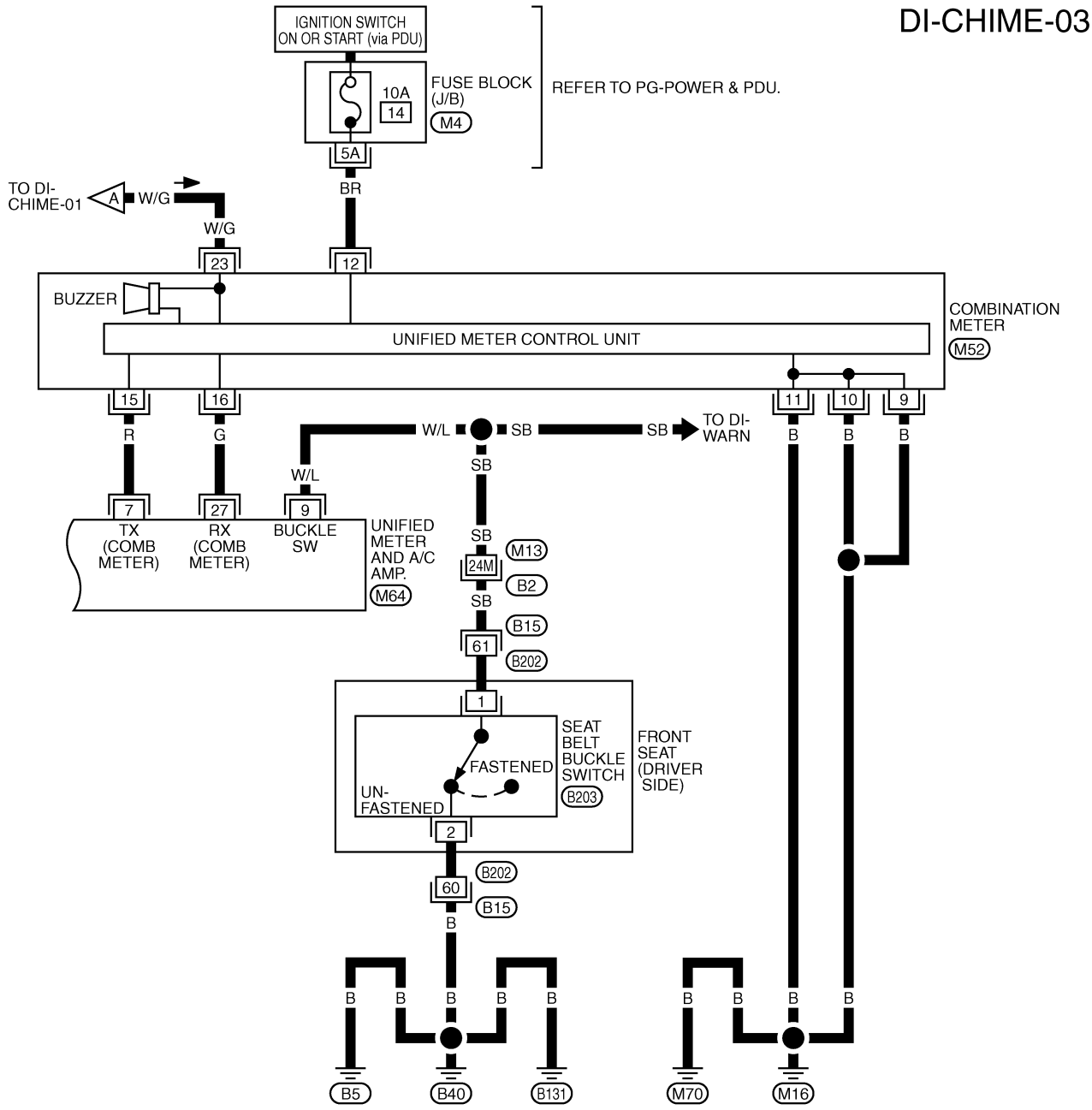
B2 -SUPER MULTIPLE JUNCTION (SMJ)

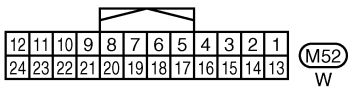
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

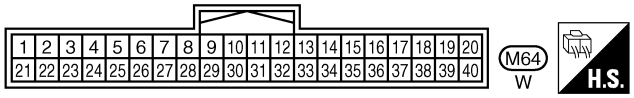
M1 , M2 -ELECTRICAL UNITS

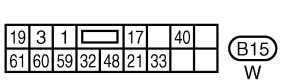
TKWT3442E

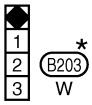
DI-CHIME-03











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

REFER TO THE FOLLOWING.

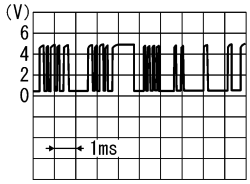
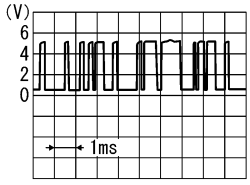
B2 -SUPER MULTIPLE JUNCTION (SMJ)

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

TKWT3443E

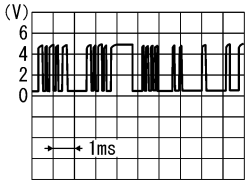
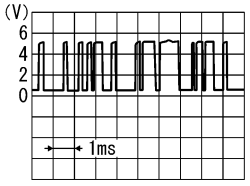
Terminals and Reference Value for Combination Meter

NKS003V2

Terminal No.	Wire color	Item	Condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
9	B	Ground	ON	—	0 V
10					
11					
12	BR	Ignition switch ON or START	ON	—	Battery voltage
15	R	RX communication line (From unified meter and A/C amp.)	ON	—	 SKIA3362E
16	G	TX communication line (To unified meter and A/C amp.)	ON	—	 SKIA3361E
23	W/G	Battery power supply	OFF	—	Battery voltage

Terminals and Reference Value for Unified Meter and A/C Amp.

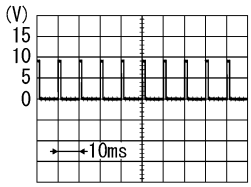
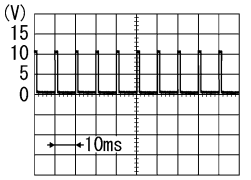
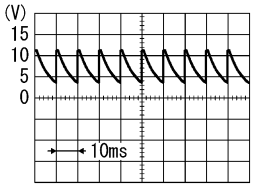
NKS003V3

Terminal No.	Wire color	Item	Condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
7	R	TX communication line (To combination meter)	ON	—	 SKIA3362E
9	W/L	Seat belt buckle switch (drive side)	ON	Seat belt is unfastened (Seat belt buckle switch ON)	0 V
				Seat belt is fastened (Seat belt buckle switch OFF)	12 V
27	G	RX communication line (From combination meter)	ON	—	 SKIA3361E
53	W/G	Ignition switch ON or START	ON	—	Battery voltage
54	W/G	Battery power supply	OFF	—	Battery voltage
55	B	Ground	ON	—	0 V
56	L	CAN H	—	—	—

Terminal No.	Wire color	Item	Condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
71	B	Ground (Power)	ON	—	0 V
72	P	CAN L	—	—	—

Terminals and Reference Value for BCM

NKS003V4

Terminal No.	Wire color	Item	Condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
2	L/R	Combination switch input 5	ON	Lighting switch is 1ST position (Wiper dial position 4)	 PKIB4957J
				Lighting switch is OFF position	0 V
33	GR	Combination switch output 4	ON	Lighting switch is 1ST position (Wiper dial position 4)	 PKIB4958J
				Lighting switch is OFF position	 PKIB4960J
37	LG	Key switch signal	OFF	Intelligent Key is inserted into key slot	12 V
				Intelligent Key is removed from key slot	0 V
38	W	Ignition switch ON or START	ON	—	Battery voltage
39	L	CAN H	—	—	—
40	P	CAN L	—	—	—
42	P	Battery power supply	OFF	—	Battery voltage
52	B	Ground	ON	—	0 V
55	W	Battery power supply	OFF	—	Battery voltage
62	V	Front door switch (driver side)	OFF	When driver side door is opened (Door switch ON)	0 V
				When driver side door is closed (Door switch OFF)	12 V

CONSULT-II Function (BCM)

NKS003V5

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

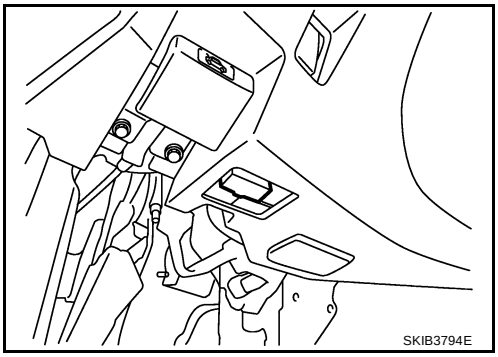
System	Test item	Diagnosis mode	Description	Reference page
BCM	BUZZER	DATA MONITOR	Displays BCM input data in real time.	DI-70
		ACTIVE TEST	Operation of electrical loads can be checked by sending driving signal to them.	DI-71
	BCM	SELF-DIAG RESULTS	BCM performs self-diagnosis of CAN communication.	DI-71

CONSULT-II BASIC OPERATION

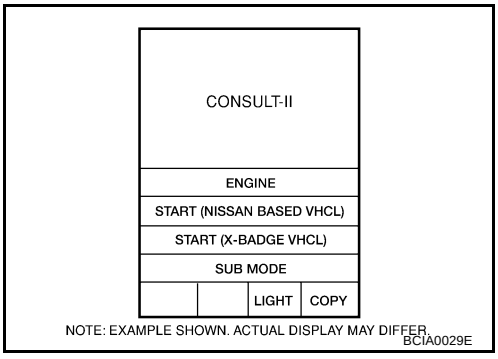
CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.

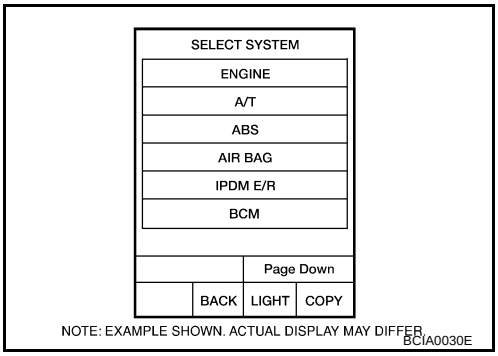
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, and then turn the ignition switch ON.



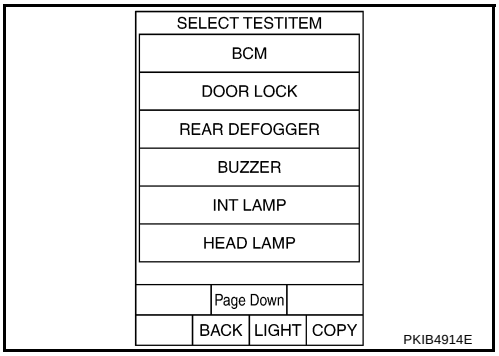
2. Touch “START (NISSAN BASED VHCL)”.



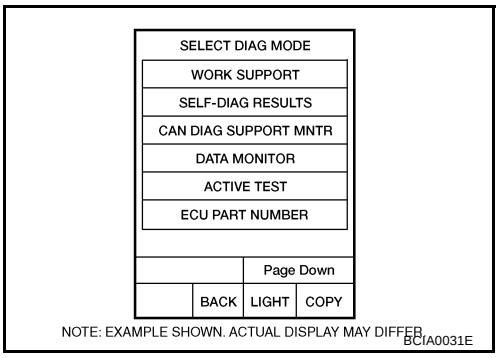
3. Touch “BCM” on “SELECT SYSTEM” screen. If “BCM” is not indicated, go to GI-40, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Touch “BUZZER” or “BCM”.



5. Select “DATA MONITOR”, “ACTIVE TEST” or “SELF-DIAG RESULTS”.



DATA MONITOR

Operation Procedure

1. Touch “BUZZER” on “SELECT TEST ITEM” screen.
2. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.
3. Touch “ALL SIGNALS” or “SELECTION FROM MENU” on “DATA MONITOR” screen.

ALL SIGNALS	Monitors main items.
SELECTION FROM MENU	Selects and monitors items.

4. If “SELECTION FROM MENU” is selected, touch the desired monitor item. If “ALL SIGNALS” is selected, all items required to control are monitored.
5. Touch “START”.
6. During monitoring, touching “RECORD” can start recording the monitored item status.

Display Item List

×: Applicable

Display item [Unit]	ALL SIGNALS	SELECTION FROM MENU	Description
IGN ON SW [ON/OFF]	X	X	Displays [ON/OFF] condition of ignition switch.
KEY ON SW [ON/OFF]	X	X	Displays [ON/OFF] condition of key switch.
DOOR SW-DR [ON/OFF]	X	X	Displays [ON/OFF] condition of front door switch (driver side).
TAIL LAMP SW [ON/OFF]	X	X	Displays [ON/OFF] condition of lighting switch.
FR FOG SW [ON/OFF]	X	X	Displays [ON/OFF] condition of front fog lamp switch.
BUCKLE SW [ON/OFF]	X	X	Displays [ON/OFF] condition of seat belt buckle switch (driver side).

ACTIVE TEST

Operation Procedure

1. Touch “BUZZER” on “SELECT TEST ITEM” screen.
2. Touch “ACTIVE TEST” on “SELECT DIAG MODE” screen.
3. Touch the item to be tested, and check the operation.
4. During the operation check, touching “OFF” deactivates the operation.

Display Item List

Display item	Description
LIGHT WARN ALM	This test is able to check light warning chime operation.
IGN KEY WARN ALM	This test is able to check key warning chime operation.
SEAT BELT WARN TEST	This test is able to check seat belt warning chime operation.

SELF-DIAG RESULTS

Operation Procedure

1. Touch “BCM” on “SELECT TEST ITEM” screen.
2. Touch “SELF-DIAG RESULTS” on “SELECT DIAG MODE” screen.
3. Self-diagnosis results are displayed.

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 “LAN system”. Refer to LAN-7, "Precautions When Using CONSULT-II" .

CONSULT-II Function (METER A/C AMP)

NKS003V6

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

System	Diagnosis mode	Description	Reference page
METER A/C AMP	SELF-DIAG RESULTS	Unified meter and A/C amp. checks the conditions and displays memorized error.	DI-32
	DATA MONITOR	Displays unified meter and A/C amp. input data in real time.	DI-33

NOTE:
For the further details, refer to DI-71, "CONSULT-II Function (METER A/C AMP)" .

Trouble Diagnosis

NKS003V7

HOW TO PERFORM TROUBLE DIAGNOSIS

1. Confirm the symptom and customer complaint.
2. Understand the outline of system. Refer to DI-60, "System Description" .
3. Perform the preliminary inspection. Refer to DI-71, "PRELIMINARY INSPECTION" .
4. Referring to trouble diagnosis chart, make sure the cause of the malfunction and repair or replace applicable parts. Refer to DI-72, "SYMPTOM CHART" .
5. Does warning chime system operate normally? If yes, GO TO 6. If no, GO TO 3.
6. INSPECTION END

PRELIMINARY INSPECTION

1. CHECK BCM (CONSULT-II)

Perform self-diagnosis of BCM. Refer to BCS-13, "CONSULT-II Function (BCM)" .

Self-diagnostic results content

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-II)

Perform self-diagnosis of unified meter and A/C amp. Refer to DI-71, "CONSULT-II Function (METER A/C AMP)" .

Self-diagnostic results content

No malfunction detected>> INSPECTION END
Malfunction detected>> Check applicable parts, and repair or replace corresponding parts.

SYMPTOM CHART

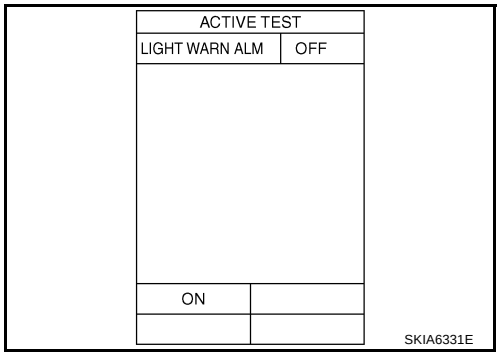
Symptom	Diagnosis/Service procedure
All warning chime systems do not activate.	Perform DI-72, "Meter Buzzer Circuit Inspection" .
Light warning chime does not activate.	Perform the following inspections. 1. DI-73, "Lighting Switch Signal Inspection" 2. DI-73, "Front Door Switch (Driver Side) Signal Inspection" Replace BCM, found normal function in the above inspections.
Seat belt warning chime does not activate.	Perform DI-74, "Seat Belt Buckle Switch Signal Inspection" . Replace BCM, found normal function in the above inspection.

Meter Buzzer Circuit Inspection

NKS003V8

1. CHECK OPERATION OF METER BUZZER

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



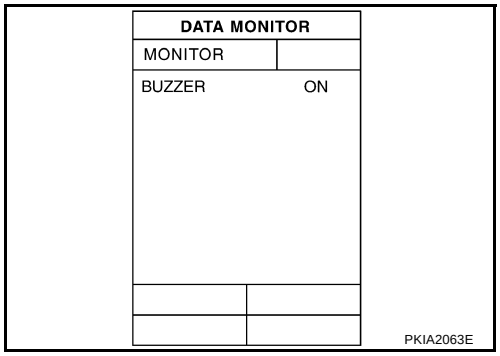
Does meter buzzer beep?

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

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

1. Select “METER A/C AMP” on CONSULT-II.
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-17, "Removal and Installation of BCM" .

3. CHECK BATTERY POWER SUPPLY OF COMBINATION METER

Check battery power supply of combination meter. Refer to DI-19, "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-35, "Power Supply and Ground Circuit Inspection" in unified meter and A/C amp.

OK or NG

OK >> Replace BCM. Refer to BCS-17, "Removal and Installation of BCM" .
NG >> Repair battery power supply circuit of unified meter and A/C amp.

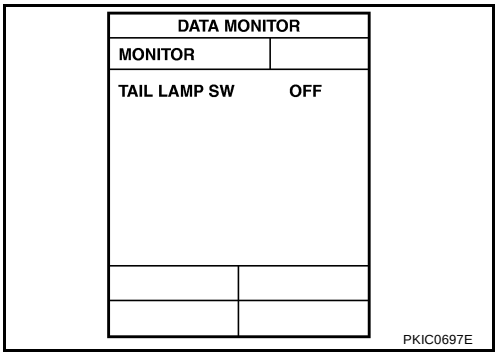
Lighting Switch Signal Inspection

NKS003V9

1. CHECK BCM INPUT SIGNAL

1. Select “BCM” on CONSULT-II.
2. With “DATA MONITOR” of “BUZZER”, confirm “TAIL LAMP SW” when the lighting switch is operated.

“TAIL LAMP SW”
Lighting switch ON (1st position) : ON
Lighting switch OFF : OFF



OK or NG

OK >> Lighting switch signal is OK. Return to DI-72, "SYMPTOM CHART" .
NG >> Check the lighting switch. Refer to LT-230, "Switch Circuit Inspection" .

Front Door Switch (Driver Side) Signal Inspection

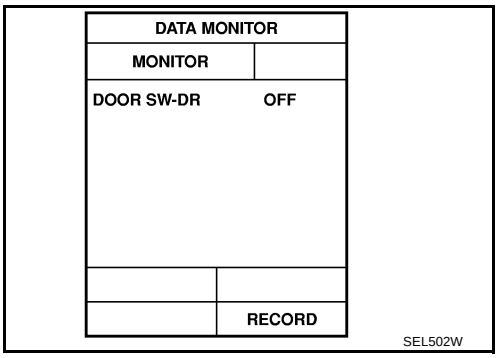
NKS003VA

1. CHECK BCM INPUT SIGNAL

With CONSULT-II

1. Select “BCM” on CONSULT-II.
2. With “DATA MONITOR” of “BUZZER”, confirm “DOOR SW-DR” when the driver side door is opened/closed.

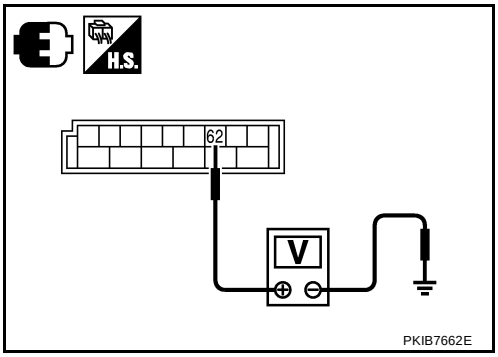
“DOOR SW-DR”
When driver side door is opened : ON
When driver side door is closed : OFF



Without CONSULT-II

Check voltage between BCM harness connector and ground.

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
BCM connector	Terminal		Driver side door:	
M3	62	Ground	Open	0 V
			Close	12 V

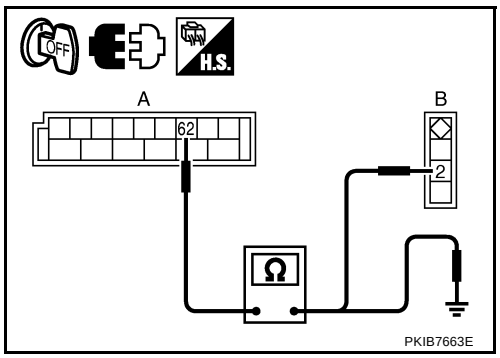


OK or NG

OK >> Front door switch (driver side) signal is OK. Return to DI-72, "SYMPTOM CHART" .
NG >> GO TO 2.

2. CHECK FRONT DOOR SWITCH (DRIVER SIDE) CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and front door switch (driver side) connector.
3. Check continuity between BCM harness connector (A) and front door switch (driver side) harness connector (B).



A		B		Continuity
Connector	Terminal	Connector	Terminal	
M3	62	B11	2	Yes

4. Check continuity between BCM harness connector (A) and ground.

A		Ground	Continuity
Connector	Terminal		
M3	62		No

OK or NG

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

3. CHECK FRONT DOOR SWITCH (DRIVER SIDE)

Check front door switch (driver side). Refer to DI-76, "FRONT DOOR SWITCH (DRIVER SIDE)" .

OK or NG

OK >> Replace BCM. Refer to BCS-17, "Removal and Installation of BCM" .
NG >> Replace front door switch (driver side).

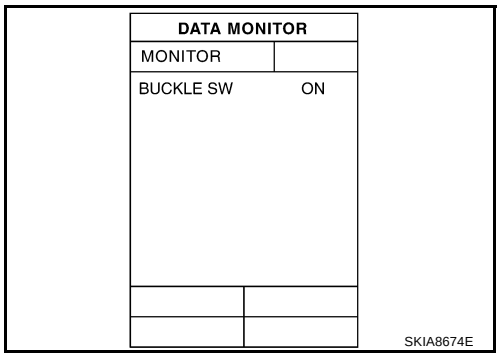
Seat Belt Buckle Switch Signal Inspection

NKS003VB

1. CHECK BCM INPUT SIGNAL

1. Select “BCM” on CONSULT-II.
2. With “DATA MONITOR” of “BUZZER”, confirm “BUCKLE SW” when the seat belt is fastened/unfastened.

“BUCKLE SW”
When seat belt is fastened : OFF
When seat belt is unfastened : ON

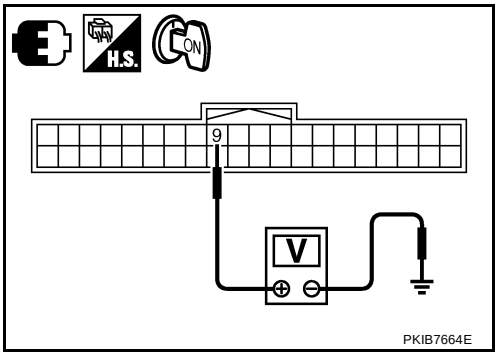


OK or NG

OK >> Seat belt buckle switch signal is OK. Return to DI-72, "SYMPTOM CHART" .
NG >> GO TO 2.

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

1. Turn ignition switch ON.
2. Check voltage between unified meter and A/C amp. harness connector and ground.



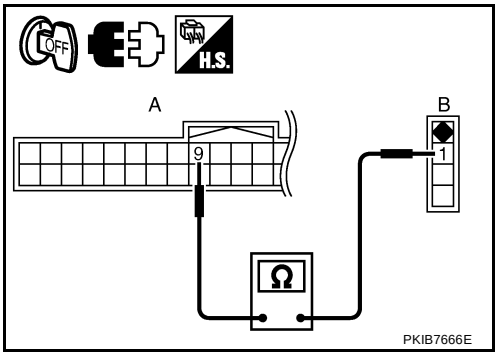
Terminals			Condition	Voltage (Approx.)
(+)		(–)		
Unified meter and A/C amp. connector	Terminal		Seat belt (driver side):	
M64	9	Ground	Fasten	12 V
			Unfasten	0 V

OK or NG

OK >> Replace unified meter and A/C amp.
NG >> GO TO 3.

3. CHECK SEAT BELT BUCKLE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect unified meter and A/C amp. connector and seat belt buckle switch (driver side) connector.
3. Check continuity between unified meter and A/C amp. harness connector (A) and seat belt buckle switch (driver side) harness connector (B).



A		B		Continuity
Connector	Terminal	Connector	Terminal	
M64	9	B203	1	Yes

4. Check harness continuity between unified meter and A/C amp. harness connector (A) and ground.

A		Ground	Continuity
Connector	Terminal		
M64	9		No

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-76, "SEAT BELT BUCKLE SWITCH (DRIVER SIDE)" .

OK or NG

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

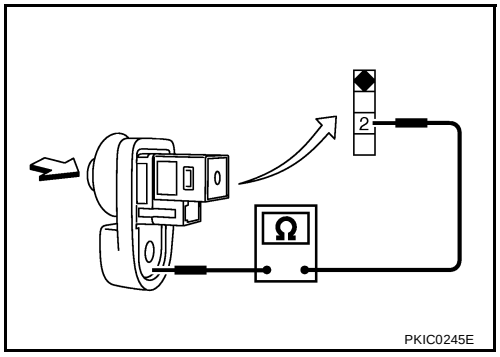
Electrical Component Inspection

NKS003VC

FRONT DOOR SWITCH (DRIVER SIDE)

Check continuity between terminal 2 and door switch case ground.

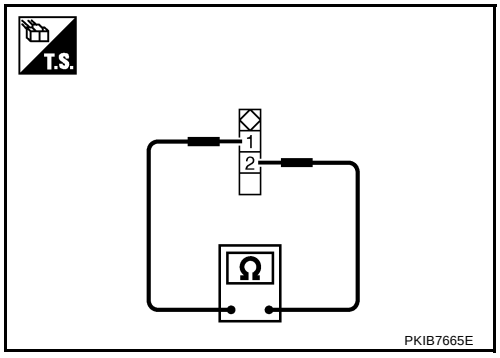
Terminal		Condition	Continuity
2	Door switch case ground	When door switch is released.	Yes
		When door switch is pushed.	No



SEAT BELT BUCKLE SWITCH (DRIVER SIDE)

Check continuity between terminals 1 and 2.

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



CAN COMMUNICATION

PFP:23710

System Description

NKS003VD

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

NKS003VE

Refer to LAN-34, "CAN Communication Unit" in “LAN SYSTEM”.

LANE DEPARTURE WARNING SYSTEM

PFP:28442

Precautions for Lane Departure Warning (LDW) system

NKS003VF

WARNING:

Lane Departure Warning (LDW) is only a warning device to inform the driver of an unintended lane departure. It will not steer the vehicle or prevent loss of control. It is the driver's responsibility to stay alert, drive safely, keep the vehicle in the traveling lane, and be in control of the vehicle at all times.

- **LDW system does not operate under the following conditions:**
  - **At speeds below approx. 72 km/h (45 MPH).**
  - **If it cannot detect lane markers.**
- **LDW system may not function properly under the following conditions:**
  - **On roads where a water puddle, dirt or snow is covering the lane markers.**
  - **On roads where the lane markers are faded or are not painted clearly.**
  - **On roads where the lane markers are painted yellow.**
- **LDW system may not monitor the lane markers in certain road, weather or driving conditions.**
  - **On roads where there are sharp curves.**
  - **Where the traveling lane merges or separates.**
  - **On roads where the discontinued lane markers are present, such as near tollgates, etc.**
  - **On roads where there are not general lane markers.**
  - **On roads where the lane width is too narrow.**
  - **During bad weather (rain, fog, snow, etc.).**
  - **When strong light (for example, at sunrise or sunset) is directly shining on the front of the vehicle.**
  - **When entering or exiting a tunnel where sudden changes in brightness occur.**
  - **When traveling close to the vehicle in front of you, which causes obstruction of the camera unit range.**
  - **When the vehicle's traveling direction does not align with the lane marker.**
  - **When rain, snow or dirt adhere to the windshield in front of the camera unit.**
- **Excessive noise interferes with warning system chime sound and the chime may not be heard.**

CAUTION:

To keep the LDW system operating properly, be sure to observe the following:

- **Always keep the windshield clean. The sensing capability of the camera unit depends on the condition of the windshield. See “Appearance and care” for cleaning instruction.**
- **Never strike or damage the areas around the camera unit.**
- **Never touch the camera lens.**
- **Never attach a sticker (including transparent material) or install an accessory near the camera unit.**
- **Never place reflective materials, such as a white paper or mirrors on the instrument panel. Reflection of the sunlight may adversely affect the camera unit's lane marker detection capability.**

System Description

NKS003VG

LDW SYSTEM OPERATION

- The Lane Departure Warning (LDW) system warns the driver when the vehicle is traveling close to either the left or the right of the traveling lane.
- The system monitors lane markers of the traveling lane using the LDW camera unit. When the LDW camera unit detects that the vehicle is traveling close to either the left or the right of the traveling lane, the LDW indicator lamp flashes and a chime sounds to alert the driver.

  NOTE:
  When activating turn signal, LDW system does not give a warning to the lane marker on the turn signal side.
- The LDW system can be turned on or off by pushing the LDW switch. When the system is on, the LDW system ON indicator illuminates.
- The LDW system has an automatic mode and manual mode.

In the automatic mode

- LDW system automatically turns on, when the ignition switch is turned to the ON position.
- LDW system ON indicator located on the LDW switch illuminates, indicating that the system is on.
- To cancel LDW system, push the LDW switch to turn off LDW system ON indicator.
- To turn on the system, push LDW switch again.

In the manual mode

- LDW system is still off when the ignition switch is turned to the ON position.
- The LDW switch must be pushed to turn on the system.

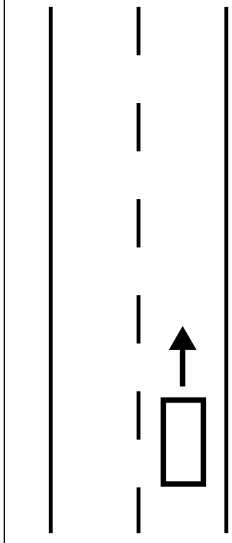
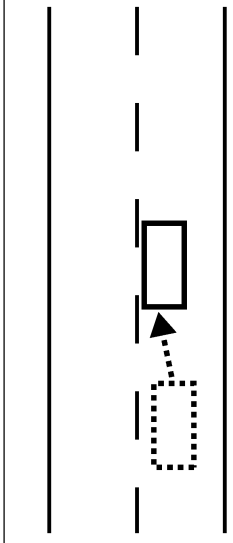
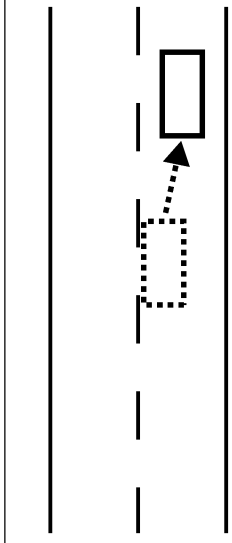
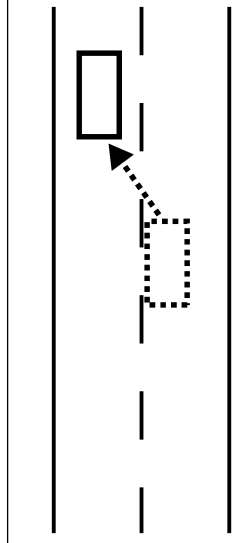
To the change modes

- Push and hold LDW switch for more than 4 seconds, when LDW system ON indicator is off.
- Then LDW chime sounds and blinking of LDW system ON indicator informs that the mode change is completed.

● Temporary disabled status at high temperature

- If the vehicle is parked in direct sunlight under high temperature conditions [approximately over 104 °F (40 °C)] and then started, the LDW system may sound a chime and cancel automatically. Then LDW system ON indicator will blink.
- When the interior temperature is reduced, the system will resume to operate automatically and the LDW system ON indicator illuminates.

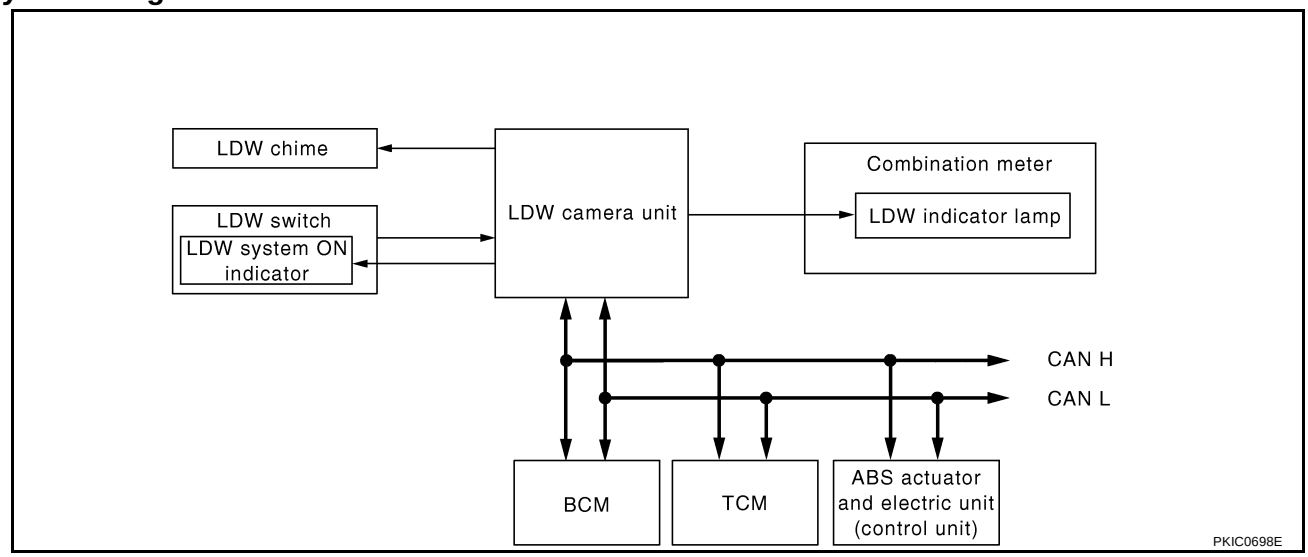
Warning Function

Driving Condition	Normal Driving	Entering into the warning range	Getting out of the warning range	Pass the warning range. (Going across the lane)
Warning	–	Give a warning* (Continue warning when vehicle edge is in the warning range.)	Stop the warning	Stop the warning
Example				

*: No warning when changing the course to the turn signal direction.

SKIB1783E

System Diagram



Components Description

Component	Description
LDW camera unit	Detects the lane marker by the built-in camera, gives judgement for the warning according to the result of detection and signals from each unit, and transmits the operation signal to LDW chime and LDW indicator lamp.
LDW switch	● Selects ON/OFF of the system. ● Indicates ON/OFF of the signal with LDW system ON indicator.
LDW chime	Gives a warning chime according to the direction from LDW camera unit.
LDW indicator lamp	Installed in combination meter, and indicates the system condition. ● Blinks when LDW system is functioning to alert the driver. ● Stays on when LDW system is malfunctioning.*
BCM	Transmits turn indicator signal to LDW camera unit with CAN communication signal.
ABS actuator and electric unit (control unit)	Transmits vehicle speed signal to LDW camera unit with CAN communication signal.
TCM	Transmits vehicle speed signal to LDW camera unit with CAN communication signal. (For detecting incorrect speed.)

NOTE:
*: This indicates in a few seconds for the system check during ignition switch ON.

POWER SUPPLY AND GROUND CIRCUIT

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

- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to LDW camera unit terminal 1.

Ground is supplied

- to LDW camera unit terminals 6 and 12
- through grounds M16 and M70.

Action Test

NKS003VH

LDW SYSTEM RUNNING TEST

WARNING:

- **Be careful when performing road test.**
- **Understand “Precautions” and “System Description” well before the road test. Refer to DI-78, "Precautions for Lane Departure Warning (LDW) system" and DI-78, "System Description" .**

Function Check

Check the LDW system operation according to the condition that the warning function works. Refer to DI-78, "LDW SYSTEM OPERATION" .

Camera Aiming Adjustment

NKS003VI

OUTLINE

Adjust the camera aiming every time the LDW camera unit is removed or installed.

CAUTION:

- **Place the vehicle on the level ground when the camera aiming adjustment is operated.**
- **Follow the CONSULT-II when adjusting the camera aiming. (Camera aiming adjustment cannot be operated without CONSULT-II.)**

PREPARATION

- Keep all tires inflated to correct pressures. Adjust the tire pressure to the specified pressure value.
- There is no-load in vehicle. Check if coolant, engine oil are filled up to correct level and fuel tank is full.
- Shift the gear into “P” position and release the parking brake.
- Clean the windshield.

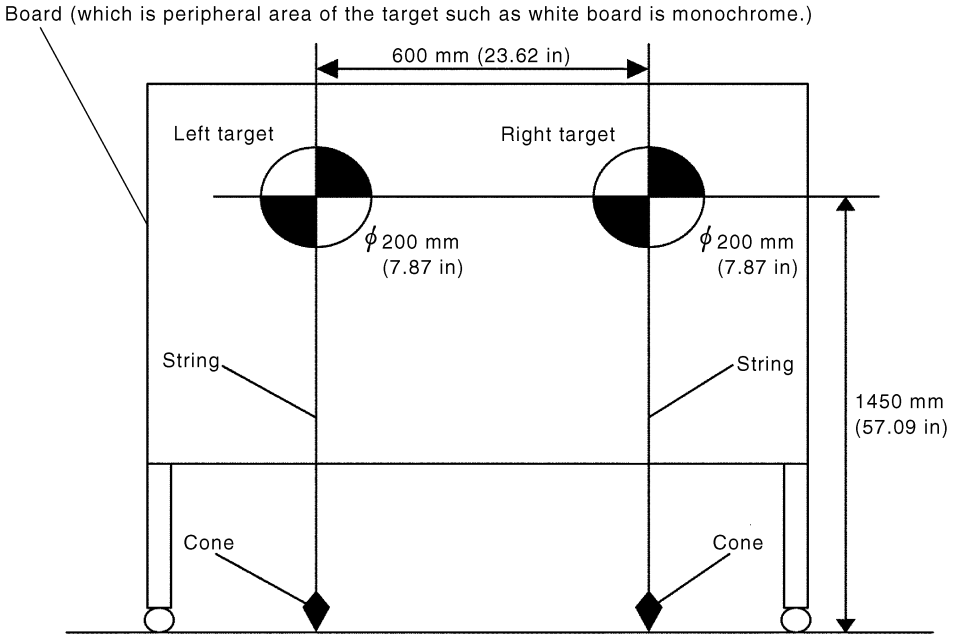
NOTE:

Do not place anything reflective on the upper surface of instrument panel.

TARGET SETTING

Preparation Aiming Adjustment Jig

For aiming adjustment, prepare the following jigs and targets.



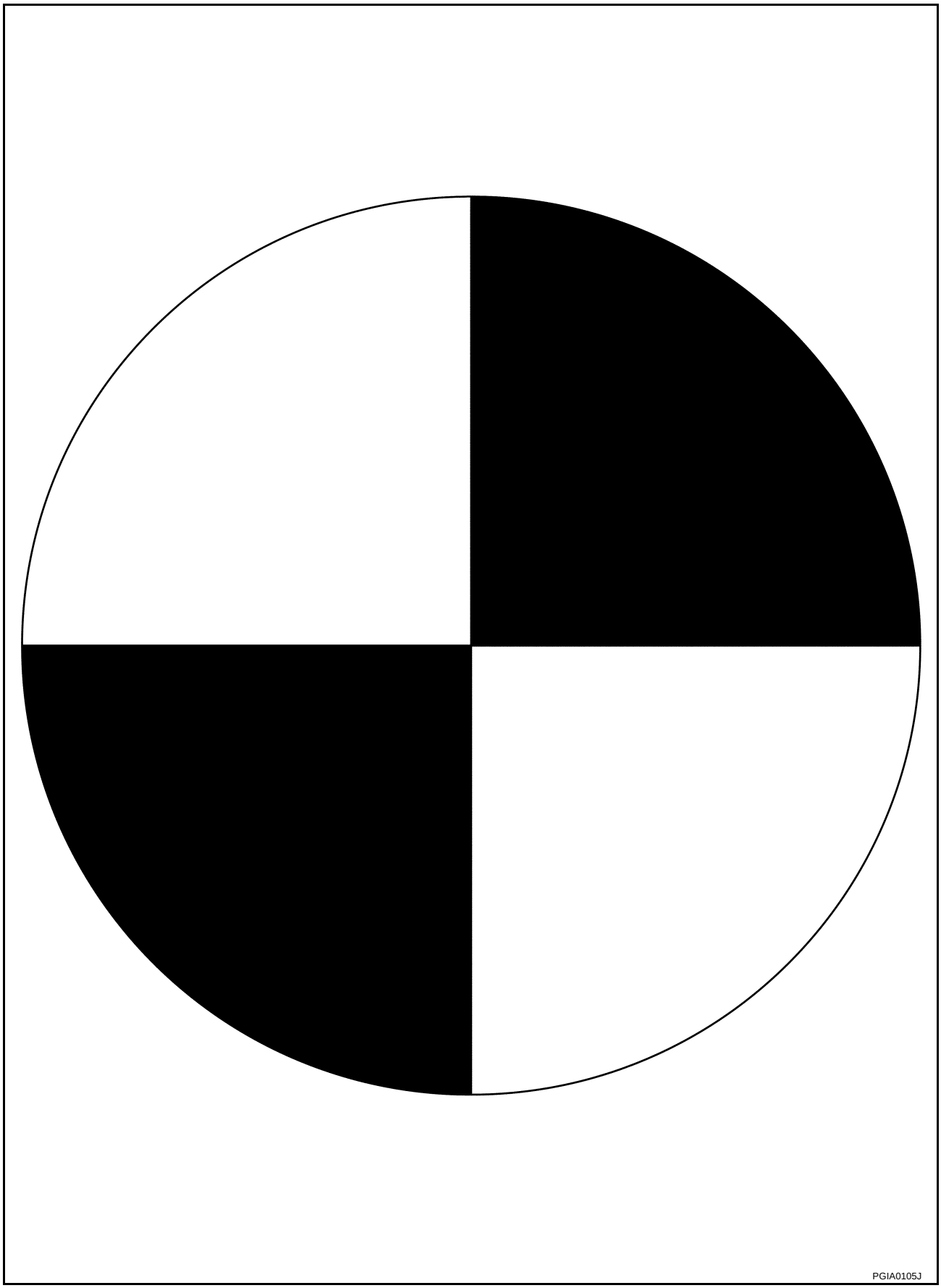
Enlarge the target mark attached in this SM (Next page) to 122%.
And stick the enlarged mark on a board with a scotch tape or a double-faced tape.
Notice that the cross of target is horizontal and vertical.

PKIB4693E

Target

NOTE:

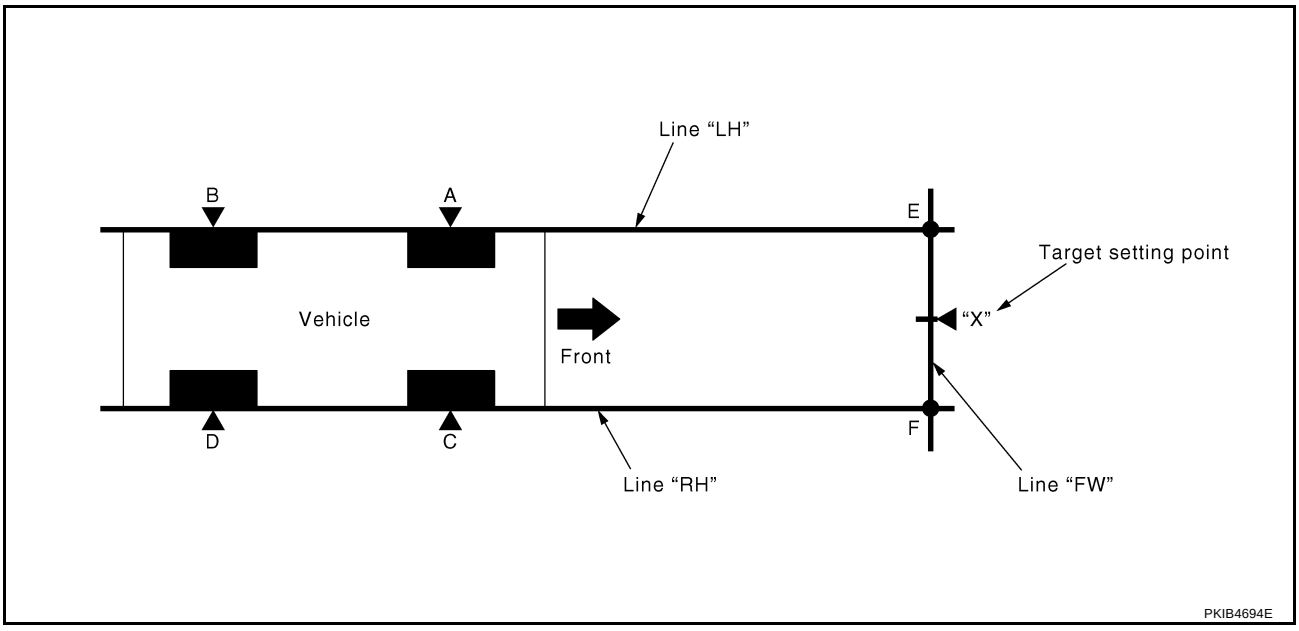
Enlarge this page to 122% size and print it out.



Target Setting

CAUTION:

- **Perform this operation in a horizontal position where there is a clear view for 5 m (16.4 ft) forward and 3 m (9.84 ft) wide.**
- **Place the target at a well-lighted location. (Poor lighting may make it hard to adjust.)**
- **The target may not be detected when there is a light source within 1.5 m (4.92 ft) from either side and within 1 m (3.28 ft) upward/downward from the target.**
- **Make sure location of the sun. (Sunlight should not shine directly on front of the vehicle.)**
- **The target may not be detected when there is the same pattern of black and white as the target when the pattern is within 1 m (3.28 ft) from either side and upward/downward position from the target. (It is desirable that the vehicle is positioned on the opposite side of a single-color wall.)**

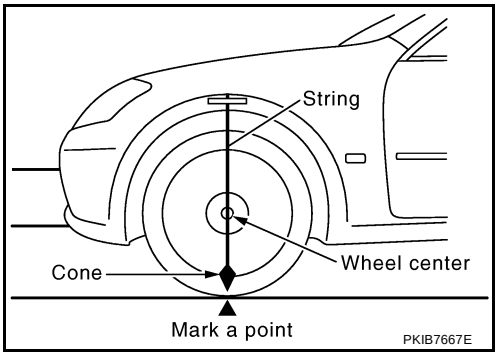


1. Mark a point at the center of lateral surface of each wheels (“A”, “B”, “C” and “D”).

   NOTE:
   Dangle a string with a cone from the fender so as to pass through the center of wheel, and then mark a point at the center of lateral surface of wheels.

2. Draw a line passing through points “A” and “B” on the left side of vehicle (line “LH”).

   NOTE:
   Approximately 4 m (13.12 ft) or more from the forward end of vehicle.



3. Mark points on the line “LH”, at the positions 3850 mm (151.57 in) from the point “A” (“E”).
4. Draw a line passing through the points “C” and “D” on the right side of vehicle as with the step 2 (line “RH”).

   NOTE:
   Approximately 4 m (13.12 ft) or more from the forward end of vehicle.

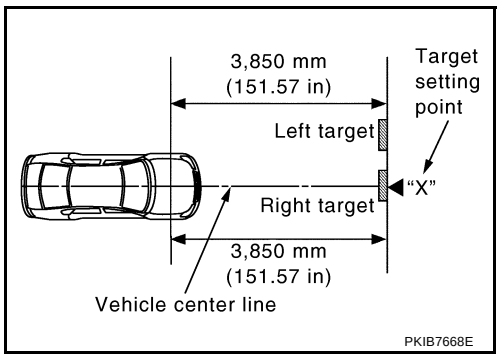
5. Mark points on the line “RH”, at the positions 3850 mm (151.57 in) from the point “C” (“F”).
6. Draw a line passing through the points “E” and “F” (line “FW”).

7. Mark point at the center of the point “E” and “F”, on the line “FW”.

CAUTION:

Make sure that “E” through “X” is equal to “F” through “X”.

8. Position the center of the right target to the point of “X”.



VEHICLE HEIGHT CHECK

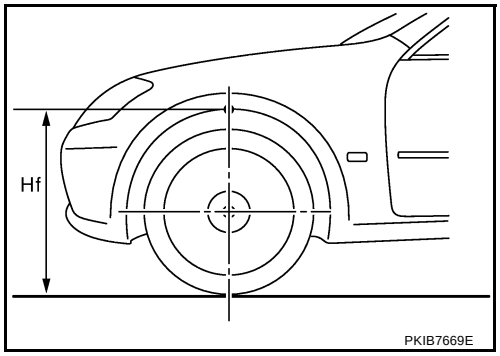
Measure the wheel arch height. And calculate “Dh”.

Dh [mm] = (Hfl + Hfr) ÷ 2 – 731

where,

Hfl: Front left wheel arch height [mm]

Hfr: Front right wheel arch height [mm]



NOTE:

“Dh” may be calculated as a minus value.

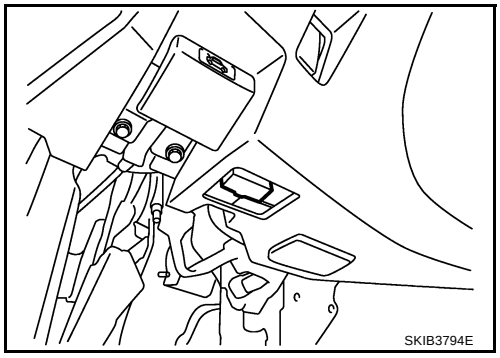
AIMING ADJUSTMENT

Operation Procedure

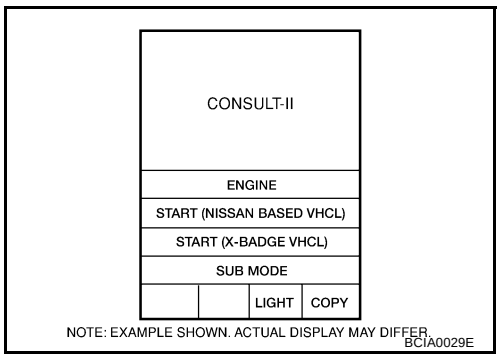
CAUTION:

- **Perform the adjustment under unloaded vehicle condition.**
- **LDW indicator is turned off after the removal/installation, and blinks after replacement.**

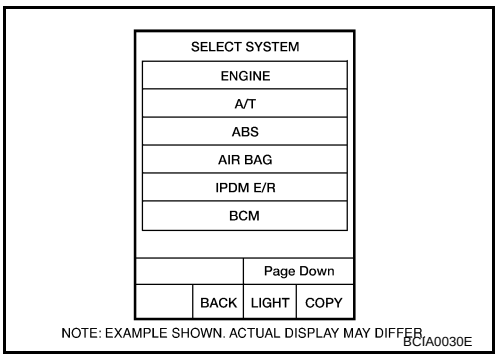
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, and then turn ignition switch ON.



2. Start the engine, wait for at least 10 seconds, and touch “START (NISSAN BASED VHCL)”.

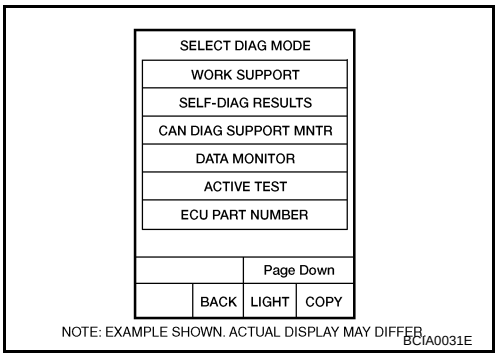


3. Touch “LDW”.
If “LDW” is not displayed, go to GI-40, "CONSULT-II Data Link Connector (DLC) Circuit" .



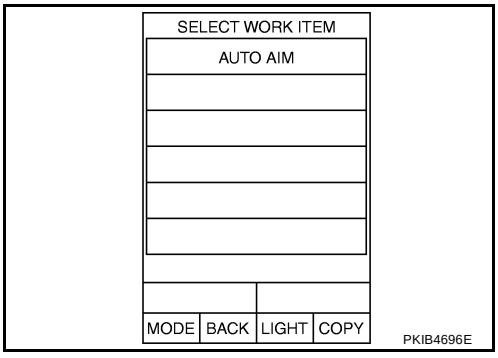
NOTE: EXAMPLE SHOWN. ACTUAL DISPLAY MAY DIFFER.
BCIA0030E

4. Touch “WORK SUPPORT”.



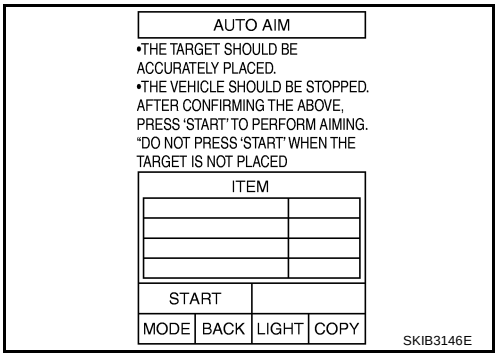
NOTE: EXAMPLE SHOWN. ACTUAL DISPLAY MAY DIFFER.
BCIA0031E

5. Touch “AUTO AIM”.



PKIB4696E

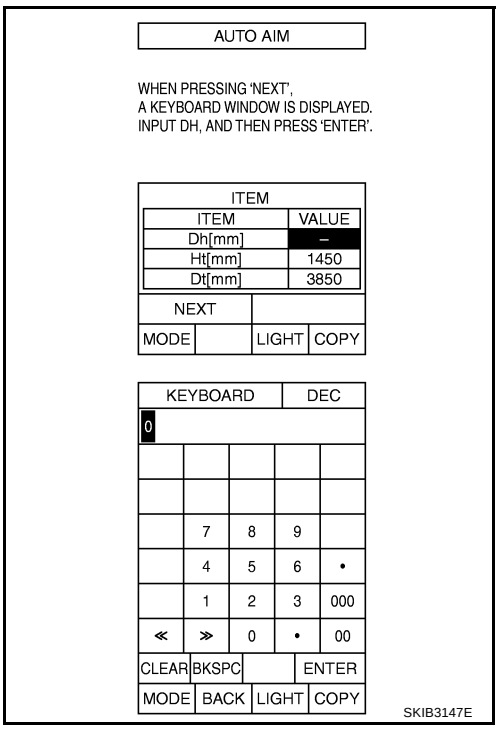
6. The target should be accurately placed.
The vehicle should be stopped.
After confirming the above, touch “START” to perform aiming.
CAUTION:
Never touch “START” when the target is not placed.



SKIB3146E

7. Touch “NEXT”, then a keyboard window is displayed. Input “Dh”, and then touch “ENTER”.

NOTE:
Check the value “Dh”. Refer to DI-84, "VEHICLE HEIGHT CHECK" .

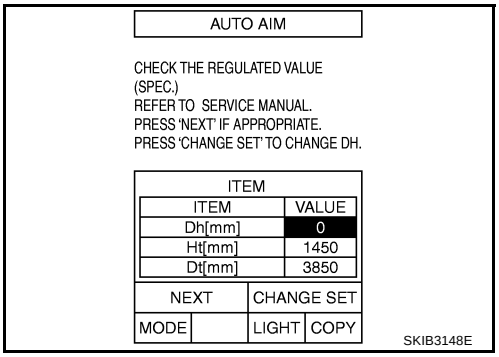


8. Check the regulated value. (Spec.)

NOTE:
Check the value input at step 8.

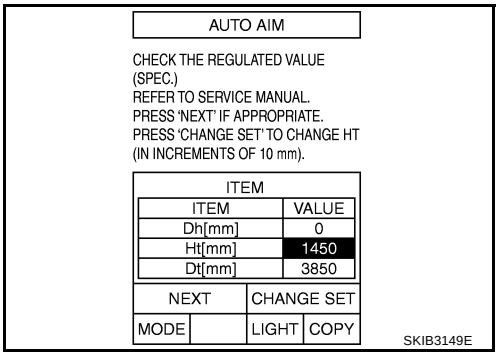
a. Touch “NEXT” if appropriate.

b. Touch “CHANGE SET” to change “Dh”.



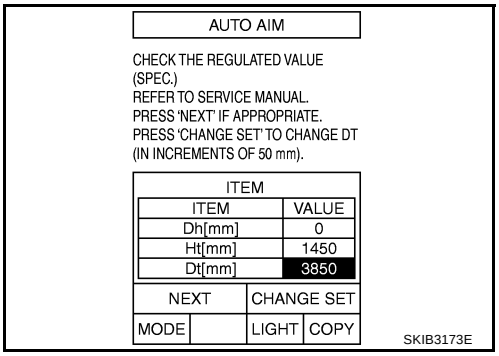
9. Touch “NEXT”.

CAUTION:
Never change “Ht”.

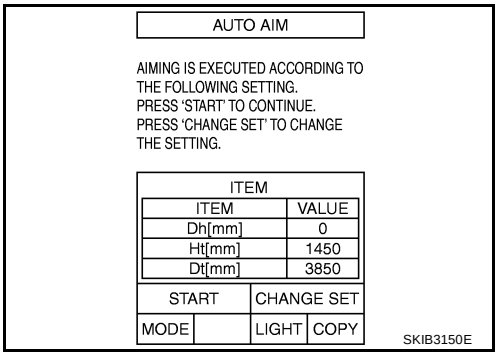


10. Touch “NEXT”.

CAUTION:
Never change “Dt”.

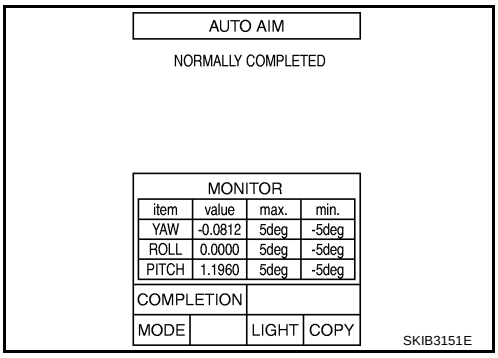


11. Touch “START”.

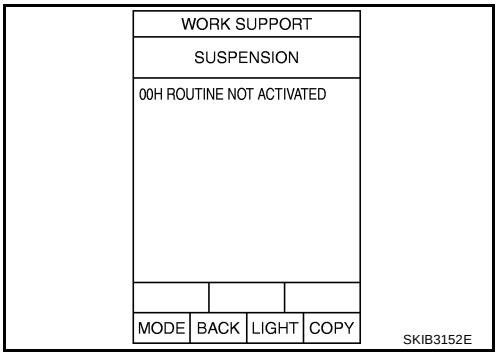


12. Check the display item.

a. When “NORMALLY COMPLETED” is displayed, touch “COMPLETION”.



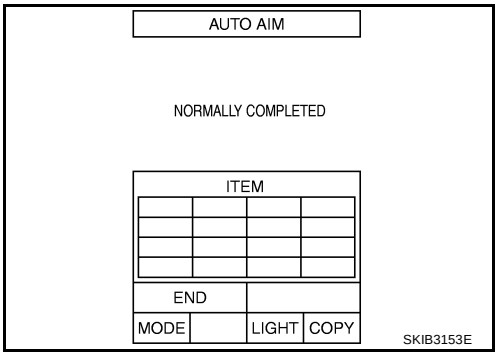
b. Perform the following services when displayed “SUSPENSION” or “ABNORMALLY COMPLETED”.



Displays item		Service procedure
SUSPENSION	00H Routine not activated	Position the target appropriately, and perform the aiming again. Refer to DI-81, "Camera Aiming Adjustment" .
	10H Writing error	
ABNORMALLY COMPLETED	—	

NOTE:
Replace camera unit if “suspension” is repeatedly indicated though the above two service is performed.

13. Check if “NORMALLY COMPLETED” is displayed and close the aiming adjustment procedure by touching “END”.

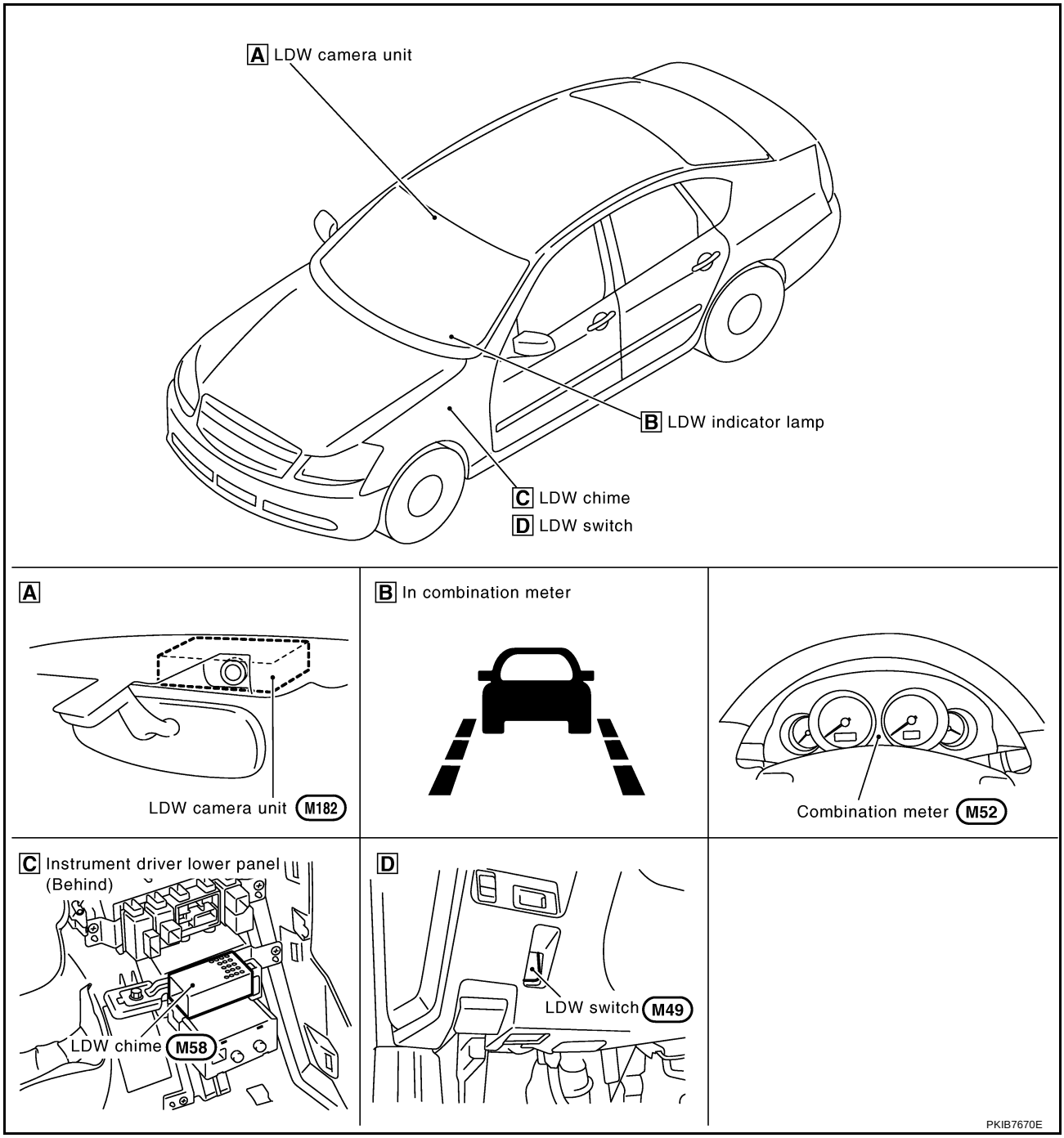


Check After The Adjustment

1. Perform the LDW camera unit self-diagnosis. Refer to DI-91, "CONSULT-II Function (LDW)" .
2. Test the LDW system operation by running test. Refer to DI-80, "LDW SYSTEM RUNNING TEST" .

Component Parts and Harness Connector Location

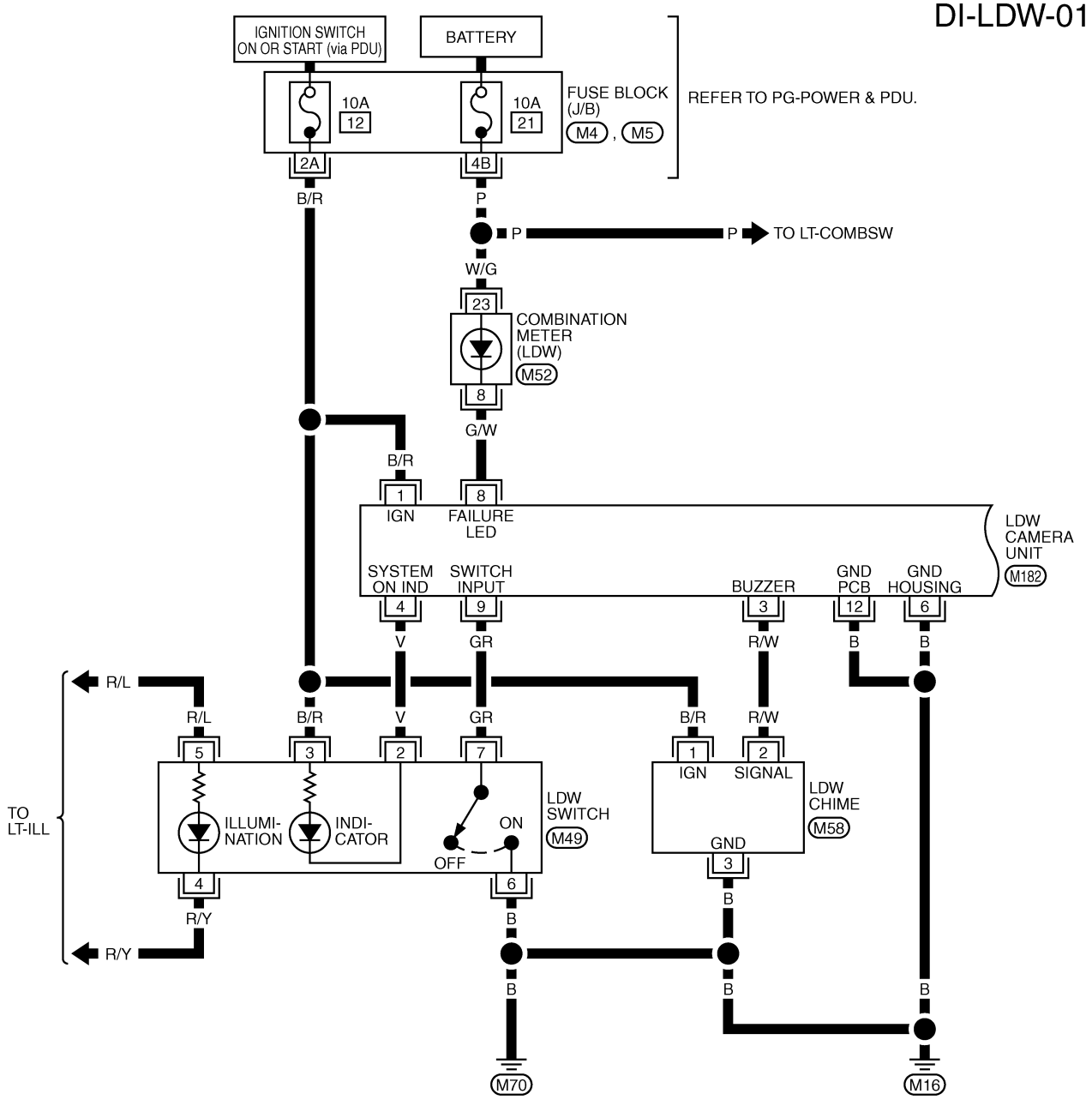
NKS003VJ

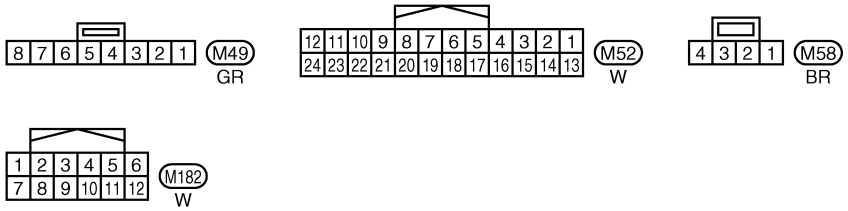


Wiring Diagram — LDW —

NKS003VK

DI-LDW-01

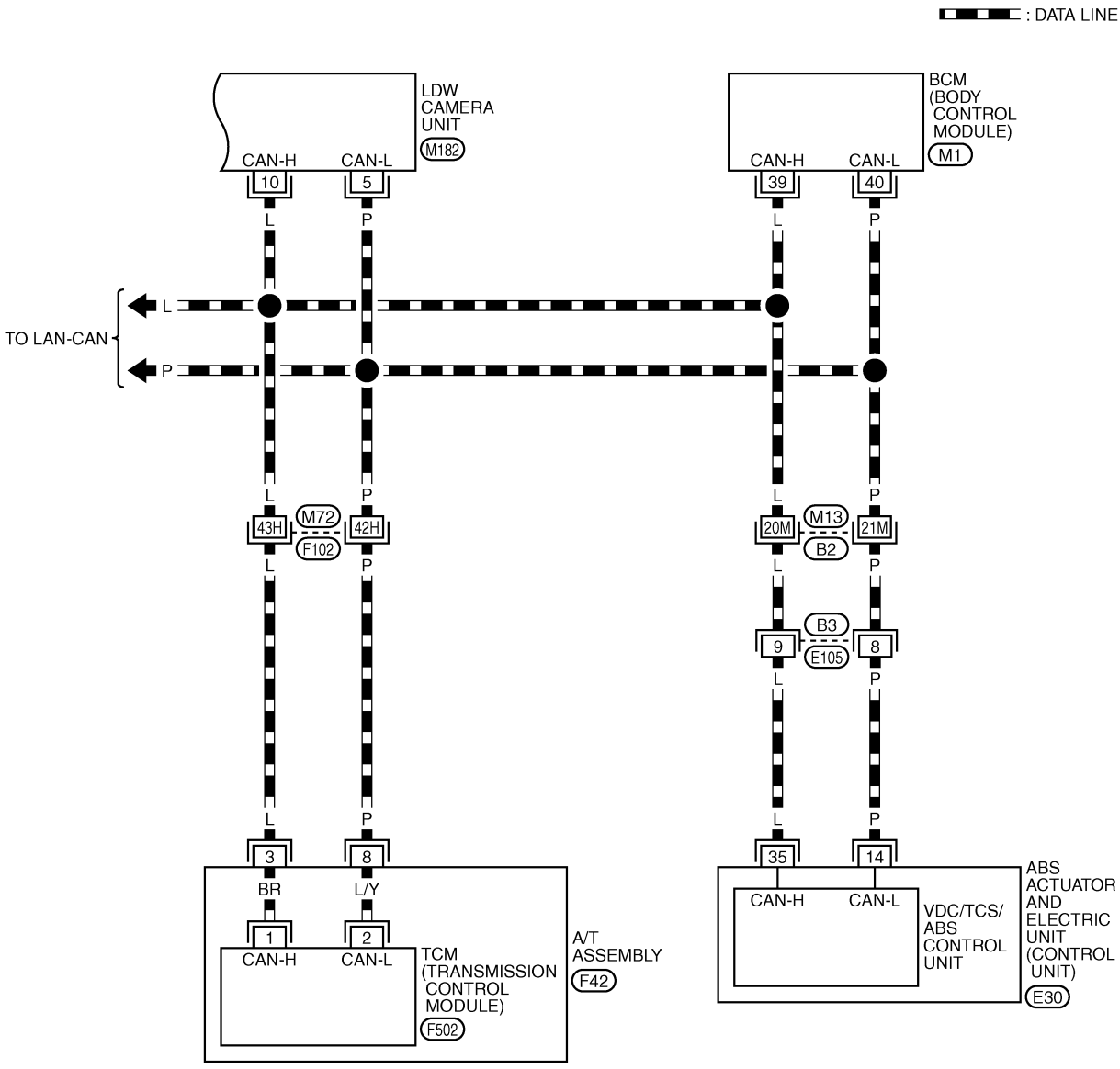


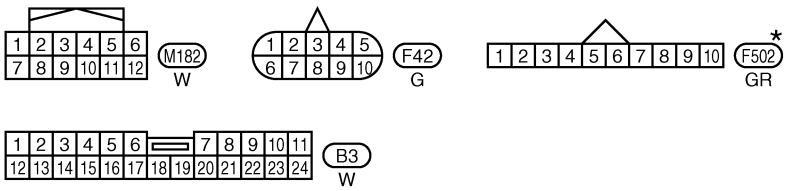


REFER TO THE FOLLOWING.
M4, M5 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT3444E

DI-LDW-02





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

REFER TO THE FOLLOWING.
F102 , B2 -SUPER MULTIPLE JUNCTION (SMJ)
M1 , E30 -ELECTRICAL UNITS

TKWT3445E

Terminals and Reference Value for LDW Camera Unit

NKS003VL

Terminal No.	Wire color	Item	Condition			Reference value (Approx.)
			Ignition switch	Operation or condition		
1	B/R	Ignition switch ON or START	ON	—		Battery voltage
3	R/W	LDW chime	ON	LDW chime	Activated*	0 V
					Not activated	12 V
4	V	System ON indicator	ON	LDW system	ON	0 V
					OFF	12 V
5	P	CAN L	—	—		—
6	B	Ground	ON	—		0 V
8	G/W	LDW indicator lamp	ON	LDW indicator lamp	Illuminated*	0 V
					Turned OFF	12 V
9	GR	LDW switch	ON	LDW switch	Pushed	0 V
					Released	5 V
10	L	CAN H	—	—		—
12	B	Ground	ON	—		0 V

NOTE:

*: Perform “ACTIVE TEST” with CONSULT-II. Refer to DI-94, "ACTIVE TEST" .

CONSULT-II Function (LDW)

NKS003VM

DESCRIPTION

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

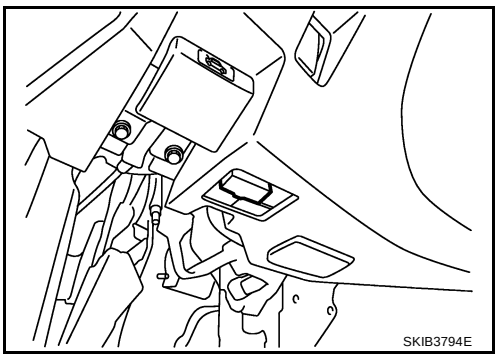
System	Diagnosis mode	Description	Reference page
LDW	WORK SUPPORT	Displays causes of automatic cancellation of the LDW system.	DI-92
	SELF-DIAG RESULTS	Displays malfunctioning system memorized in LDW camera unit.	DI-92
	DATA MONITOR	Displays real-time input/output data of LDW camera unit.	DI-93
	CAN DIAG SUPPORT MNTR	Displays the results of transmit/receive diagnosis of CAN communication.	LAN-7
	ACTIVE TEST	Enables operation check of electrical loads by sending driving signal to them.	DI-94
	ECU PART NUMBER	Displays part number of LDW camera unit.	—

CONSULT-II BASIC OPERATION

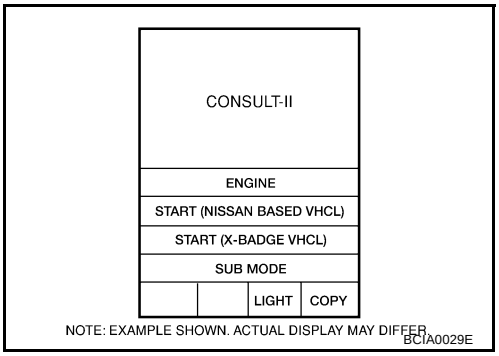
CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.

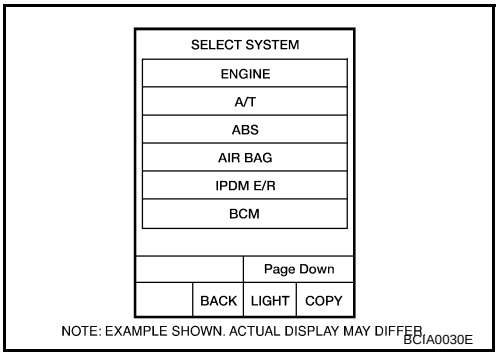
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, and then turn ignition switch ON.



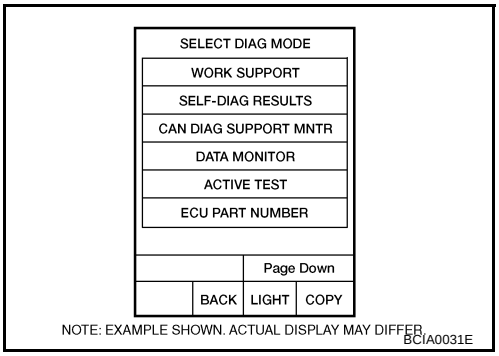
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “LDW” on “SELECT SYSTEM” screen.
If “LDW” is not displayed, go to GI-40, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Touch any field, “WORK SUPPORT”, “SELF-DIAG RESULTS”, “DATA MONITOR”, “CAN DIAG SUPPORT MNTR”, “ACTIVE TEST” or “ECU PART NUMBER”, on selection screen.



WORK SUPPORT

Operation Procedure

Touch “WORK SUPPORT” on “SELECT DIAG MODE” screen.

Display Item List

Operation	Function	Reference page
AUTO AIM	LDW camera unit calculates dislocation of the camera. Adjustment direction is displayed.	DI-81

SELF-DIAG RESULTS

Operation Procedure

1. Touch “SELF-DIAG RESULTS” on “SELECT DIAG MODE” screen.
2. See the displayed result of self-diagnosis.

Display Item List

Display item [Code]		Malfunction is detected when...	Reference page
CAMERA UNIT MALF	[C1B00]	LDW camera unit internal malfunction	DI-97
CAM AIMING INCMP	[C1B01]	LDW camera aiming is not adjusted.	DI-97
VHCL SPD DATA MALF	[C1B02]	LDW camera unit detected different vehicle speed signal from TCM and ABS actuator and electric unit (control unit).	DI-97
ABNRML TEMP DETECT	[C1B03]	Temperature around LDW camera unit is excessively high.	DI-97

Display item [Code]		Malfunction is detected when...	Reference page
CAN COMM CIRCUIT	[U1000]	LDW camera unit detected CAN communication malfunction.	DI-98
CONTROL UNIT (CAN)	[U1010]	LDW camera unit detected internal CAN communication circuit malfunction.	DI-98

NOTE:

- When a DTC is detected, the LDW system dose not operate.
- When the DTC except “ABNRML TEMP DETECT [C1B03] ” is detected, the LDW indicator lamp turns ON.
- When the DTC “ABNRML TEMP DETECT [C1B03] ” is detected, the LDW system ON indicator lamp blinks.

DATA MONITOR

Operation Procedure

1. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.
2. Touch any of “ALL SIGNALS” and “SELECTION FROM MENU” on selection screen.
3. Touch “START”.
4. Display the data monitor.
5. If necessary, touch “COPY” in turn, and print data.

Display Item List

Monitored Item [unit]		Description
MAIN SW	[ON/OFF]	Displays [ON/OFF] status as judged from LDW switch signal.
SW ON LAMP	[ON/OFF]	Displays [ON/OFF] status of LDW system ON indicator signal output.
INDICATE LAMP	[ON/OFF]	Displays [ON/OFF] status of LDW indicator signal output.
BUZZER OUTPUT	[ON/OFF]	Displays [ON/OFF] status of LDW chime operation signal output.
LDW INACCURAT	[ON/OFF]	Displays LDW camera unit status.
VHCL SPD SE	[km/h] or [mph]	Displays vehicle speed calculated by LDW camera unit through CAN communication [ABS actuator and electric unit (control unit) transmits wheel sensor signal through CAN communication].
VHCL SPD AT	[km/h] or [mph]	Displays vehicle speed calculated from A/T vehicle speed sensor by LDW camera unit through CAN communication (TCM transmits A/T vehicle speed sensor signal through CAN communication).
TURN SIGNAL	[OFF/LH/RH]	Displays “Turn signal” status, determined from BCM through CAN communication.
LANE DETCT LH	[ON/OFF]	Displays left lane marker is detected.
LANE DETCT RH	[ON/OFF]	Displays right lane marker is detected.
CROSS LANE LH	[ON/OFF]	Displays vehicle is crossing left lane.
CROSS LANE RH	[ON/OFF]	Displays vehicle is crossing right lane.
WARN LANE LH	[ON/OFF]	Displays warning for left lane.
WARN LANE RH	[ON/OFF]	Displays warning for right lane.
VALID POS LH	[VLD/INVLD]	Displays lateral position for left lane marker is valid.
VALID POS RH	[VLD/INVLD]	Displays lateral position for right lane marker is valid.
AIMING DONE	[OK/NG]	Displays camera aiming done.
AIMING RESULT	[OK/NOK]	Displays camera aiming result.
FCTRY AIM YAW	[deg]	Displays camera unit installation condition.
FCTRY AIM ROL	[deg]	Displays camera unit installation condition.
FCTRY AIM PIT	[deg]	Displays camera unit installation condition.
XOFFSET	[pixel]	Displays camera unit installation condition.

ACTIVE TEST

CAUTION:

- **Never perform the active test while driving.**
- **Active test cannot be started while LDW indicator lamp is illuminated.**

1. Touch “ACTIVE TEST” on “SELECT DIAG MODE” screen. Refer to DI-91, "CONSULT-II BASIC OPERATION" .
2. Touch any field, “BUZZER DRIVE ”, “SYSTEM ON LAMP DRIVE” and “INDICATOR LAMP DRIVE”, on selection screen.
3. Touch necessary item and “START”.
4. Active test screen will be shown.

Display Item List

Display item	Operation item	Function	Reference page
BUZZER DRIVE	LDW chime	Checks LDW chime operation.	DI-94
SYSTEM ON LAMP DRIVE	LDW system ON indicator	Checks LDW system ON indicator operation.	DI-94
INDICATOR LAMP DRIVE	LDW indicator lamp	Checks LDW indicator lamp operation.	DI-94

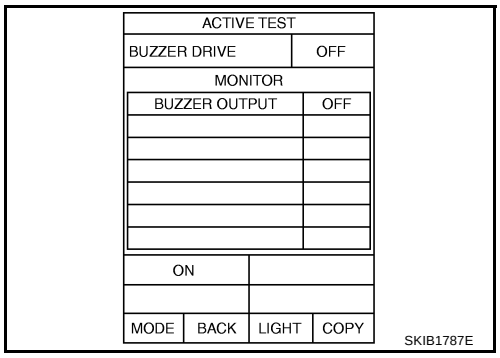
BUZZER DRIVE

Touch “ON” and “OFF” to check if LDW chime operates as follows.

“BUZZER DRIVE”

Touch “ON” : LDW chime is activated.

Touch “OFF” : LDW chime is not activated.



SYSTEM ON LAMP DRIVE

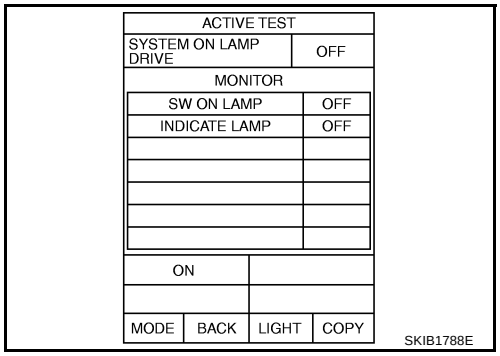
Touch “ON” and “OFF” to check if LDW system ON indicator operates as follows.

“SYSTEM ON LAMP DRIVE”

Touch “ON” : LDW system ON indicator illuminates.

Touch “OFF” : LDW system ON indicator turns OFF.

NOTE:
Perform “SYSTEM ON LAMP DRIVE” when LDW system ON indicator turns OFF.



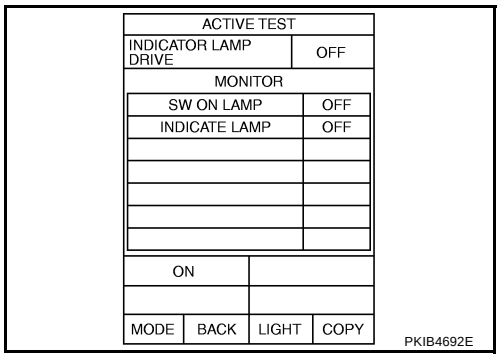
INDICATOR LAMP DRIVE

Touch “ON” and “OFF” to check that LDW indicator lamp operates as follows.

“INDICATOR LAMP DRIVE”

Touch “ON” : LDW indicator lamp illuminates.

Touch “OFF” : LDW indicator lamp OFF.



Trouble Diagnosis

NKS003VN

HOW TO PERFORM TROUBLE DIAGNOSIS

1. Check the symptom and customer complaint.
2. Understand the outline of system. Refer to DI-78, "System Description" .
3. Perform the preliminary inspection. Refer to DI-95, "PRELIMINARY INSPECTION" .
4. Referring to symptom chart, make sure the cause of the malfunction and repair or replace applicable parts. Refer to DI-96, "SYMPTOM CHART" .
5. Erase DTC and perform self-diagnosis of LDW system again. Then perform LDW system running test. Refer to DI-91, "CONSULT-II Function (LDW)" and DI-80, "LDW SYSTEM RUNNING TEST" .
6. Does LDW system operate normally? If yes, GO TO 7. If no, GO TO 3.
7. INSPECTION END

PRELIMINARY INSPECTION

1. CHECK CAMERA LENS AND WINDSHIELD

Are camera lens and windshield contaminated with foreign materials?

YES >> Clean camera lens and windshield.
NO >> GO TO 2.

2. CHECK CAMERA UNIT INSTALLATION CONDITION

Check camera unit installation condition (installation position, properly tightened, a bent bracket).

OK or NG

OK >> GO TO 3.
NG >> Install camera unit properly, and adjust camera aiming. Refer to DI-81, "Camera Aiming Adjustment" .

3. CHECK VEHICLE HEIGHT

Check vehicle height. Refer to FSU-19, "SERVICE DATA AND SPECIFICATIONS (SDS)" (2WD) or FSU-36, "SERVICE DATA AND SPECIFICATIONS (SDS)" (AWD).

Is vehicle height appropriate?

OK >> GO TO 4.
NG >> Repair vehicle to appropriate height.

4. CHECK LDW CAMERA UNIT (CONSULT-II)

Perform self-diagnosis of LDW camera unit. Refer to DI-91, "CONSULT-II Function (LDW)" .

Self-diagnostic results content

No malfunction detected>>GO TO 5.
Malfunction detected>>Check applicable parts, and repair or replace corresponding parts.

5. CHECK COMBINATION METER

Check combination meter function.

Do speedometer and turn signal indicator function normally?

YES >> INSPECTION END
NO >> Check combination meter. Refer to DI-18, "Trouble Diagnosis" .

SYMPTOM CHART

Symptom	Diagnosis/Service procedure
LDW system is not activated. (LDW system ON indicator turns ON/OFF.)	Perform the following inspections. 1. DI-98, "LDW Chime Circuit Inspection" 2. DI-102, "LDW Indicator Lamp Circuit Inspection" Replace LDW camera unit, found normal function in the above inspections.
LDW system does not turn ON/OFF. (LDW system ON indicator does not turn ON/OFF.)	Perform DI-99, "LDW Switch Circuit Inspection" . Replace LDW camera unit, found normal function in the above inspection.
Warning functions are untimely. (Example) ● Warning does not function when driving on lane markers. ● Warning functions when driving in a lane. ● Differs position from actual condition functions.	Perform DI-81, "Camera Aiming Adjustment" .
Functions when changing the course to the turn signal direction.	Perform DI-103, "Turn Signal Input Inspection" . Replace LDW camera unit, found normal function in the above inspection.
LDW indicator lamp does not illuminate with ignition switch ON.	Perform DI-102, "LDW Indicator Lamp Circuit Inspection" . Replace LDW camera unit, found normal function in the above inspection.

Power Supply and Ground Circuit Inspection

NKS003VO

1. CHECK FUSE

Check for blown LDW camera unit fuse.

Unit	Power source	Fuse No.
LDW camera unit	Ignition switch ON or START	12

OK or NG

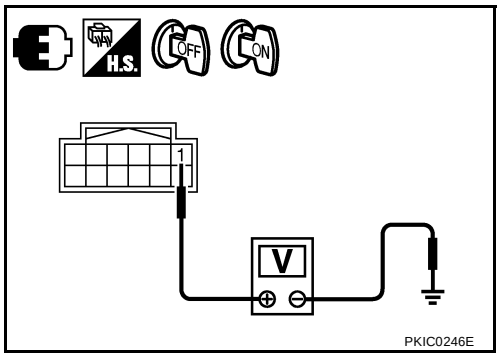
OK >> GO TO 2.

NG >> Be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between LDW camera unit and ground.

Terminals			Ignition switch position	
(+)		(–)	OFF	ON
LDW camera unit connector	Terminal			
M182	1	Ground	0 V	Battery voltage



OK or NG

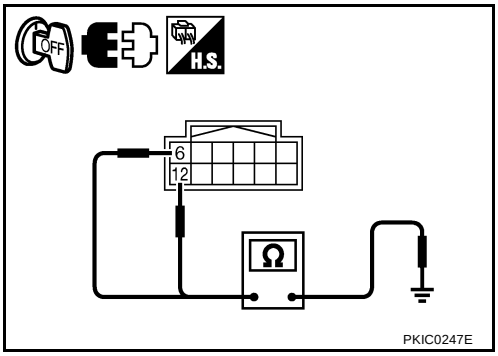
OK >> GO TO 3.

NG >> Check harness between LDW camera unit and fuse.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect LDW camera unit connector.
3. Check continuity between LDW camera unit harness connector and ground.

LDW camera unit connector	Terminal		Continuity
M182	6	Ground	Yes
	12		



OK or NG

OK >> Power supply and ground circuit are OK.
NG >> Repair ground harness.

DTC [C1B00] CAMERA UNIT MALF

NKS003VP

1. CHECK LDW CAMERA UNIT

1. Perform self-diagnosis of LDW camera unit.
2. Check if any item other than “[C1B00] CAMERA UNIT” is displayed on self-diagnosis display.

Is any displayed?

YES >> Repair or replace applicable item.
NO >> Replace LDW camera unit.

DTC [C1B01] CAM AIMING INCMP

NKS003VQ

1. PREFORM CAMERA AIMING ADJUSTMENT

1. Preform camera aiming adjustment. Refer to DI-81, "Camera Aiming Adjustment" .
2. Erase DTC and perform LDW camera unit self-diagnosis.

Self-diagnostic results content

No malfunction detected>>INSPECTION END
Malfunction detected>>Replace LDW camera unit.

DTC [C1B02] VHCL SPD DATA MALF

NKS003VR

1. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) {CONSULT-II}

Perform ABS actuator and electric unit (control unit) self-diagnosis. Refer to BRC-22, "CONSULT-II Functions (ABS)" .

Self-diagnostic results content

No malfunction detected>>GO TO 2.
Malfunction detected>>Check applicable parts, and repair or replace corresponding parts.

2. CHECK TCM (CONSULT-II)

Perform TCM self-diagnosis. Refer to AT-90, "CONSULT-II Function (A/T)" .

Self-diagnostic results content

No malfunction detected>>Replace LDW camera unit.
Malfunction detected>>Check applicable parts, and repair or replace corresponding parts.

DTC [C1B03] ABNRML TEMP DETECT

NKS003VS

1. COOLING CAMERA UNIT

1. Cooling camera unit.
2. Erase DTC and perform LDW camera unit self-diagnosis.

Self-diagnostic results content

No malfunction detected>>INSPECTION END
Malfunction detected>>Replace LDW camera unit.

DTC [U1000] CAN COMM CIRCUIT

NKS003VT

1. CHECK CAN COMMUNICATION

1. Select “SELF-DIAG RESULTS” mode for “LDW” with CONSULT-II.
2. Print out CONSULT-II screen.

>> Go to “LAN SYSTEM”. Refer to LAN-7, "Precautions When Using CONSULT-II" .

DTC [U1010] CONTROL UNIT (CAN)

NKS003VU

Replace LDW camera unit, when “[U1010] CONTROL UNIT (CAN)” is displayed on self-diagnosis display.

LDW Chime Circuit Inspection

NKS003VV

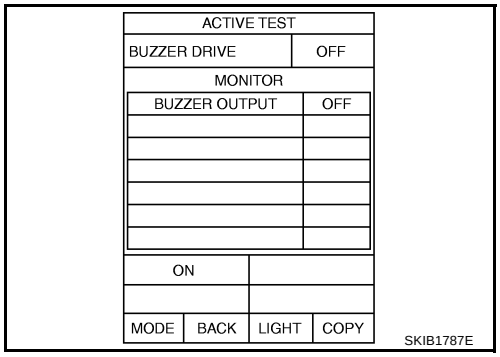
1. CHECK OPERATION OF LDW CHIME

Check LDW chime operation “BUZZER DRIVE” in “ACTIVE TEST” mode with CONSULT-II.

“BUZZER DRIVE”

Touch “ON” : LDW chime is activated.

Touch “OFF” : LDW chime is not activated.



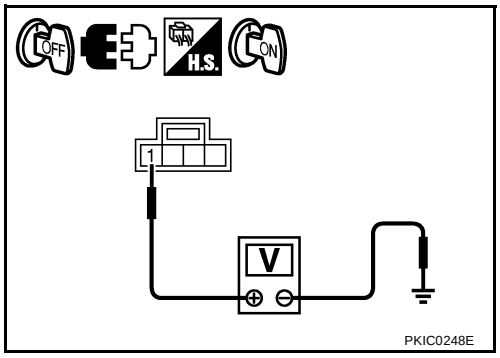
OK or NG

OK >> LDW chime is OK. Return to DI-96, "SYMPTOM CHART" .

NG >> GO TO 2.

2. CHECK LDW CHIME POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect LDW chime connector.
3. Turn ignition switch ON.
4. Check voltage between LDW chime harness connector and ground.



Terminals			Voltage (Approx.)
(+)		(–)	
LDW chime connector	Terminal		
M58	1	Ground	Battery voltage

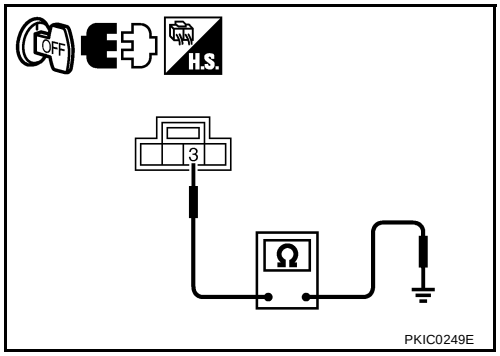
OK or NG

OK >> GO TO 3.

NG >> Check harness between fuse and LDW chime.

3. CHECK LDW CHIME GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between LDW chime harness connector and ground.



LDW chime connector	Terminal	Ground	Continuity
M58	3		Yes

OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.

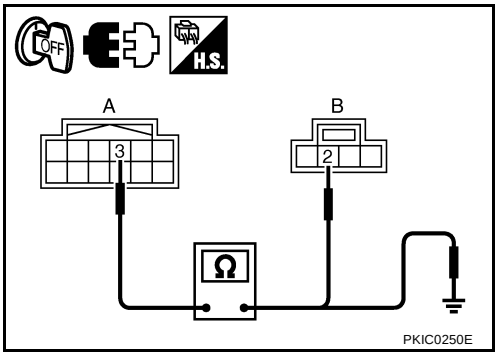
4. CHECK LDW CHIME SIGNAL CIRCUIT

1. Disconnect LDW camera unit connector.
2. Check continuity between LDW camera unit harness connector (A) and LDW chime harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M182	3	M58	2	Yes

3. Check continuity between LDW camera unit harness connector (A) and ground.

A		Ground	Continuity
Connector	Terminal		
M182	3		No



PKIC0250E

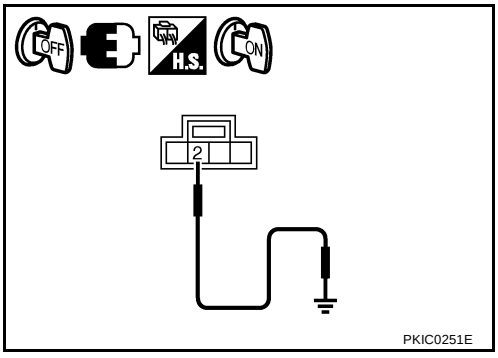
OK or NG

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

5. CHECK LDW CHIME

1. Connect LDW chime connector.
2. Turn ignition switch ON.
3. Apply ground to LDW chime terminal.
4. Check condition of the LDW chime.

LDW chime connector	Terminal	Ground	Condition
M58	2		LDW chime should operate.



PKIC0251E

OK or NG

OK >> Replace LDW camera unit.
NG >> Replace LDW chime.

LDW Switch Circuit Inspection

NKS003VW

1. CHECK OPERATION OF LDW SYSTEM ON INDICATOR

1. Turn ignition switch ON.
2. Check LDW system ON indicator operation when LDW switch is ON/OFF.

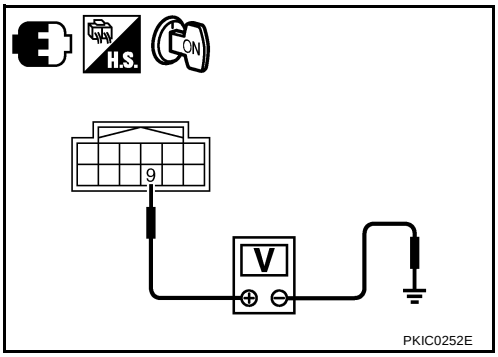
OK or NG

OK >> LDW system ON indicator is OK. Return to DI-96, "SYMPTOM CHART" .
NG >> GO TO 2.

2. CHECK LDW SWITCH SIGNAL INPUT

Check voltage between LDW camera unit harness connector and ground.

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
LDW camera unit connector	Terminal		LDW switch:	
M182	9	Ground	Push	0 V
			Release	5 V



PKIC0252E

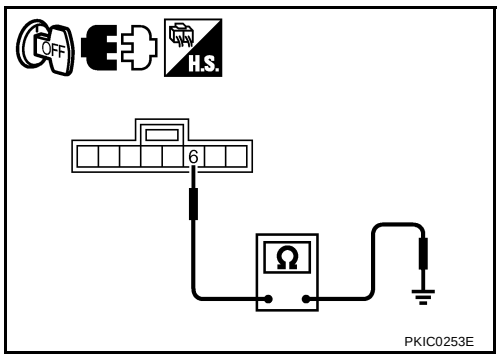
OK or NG

OK >> GO TO 6.
NG >> GO TO 3.

3. CHECK LDW SWITCH GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect LDW switch connector.
3. Check continuity between LDW switch connector and ground.

LDW switch connector	Terminal	Ground	Continuity
M49	6		Yes



OK or NG

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

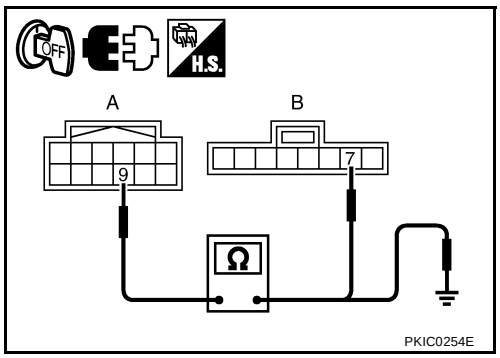
4. CHECK LDW SWITCH SIGNAL INPUT CIRCUIT

1. Disconnect LDW camera unit connector.
2. Check continuity between LDW camera unit harness connector (A) and LDW switch harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M182	9	M49	7	Yes

3. Check continuity between LDW camera unit harness connector (A) and ground.

A		Ground	Continuity
Connector	Terminal		
M182	9		No



OK or NG

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

5. CHECK LDW SWITCH

Check LDW switch. Refer to DI-103, "LDW SWITCH" .

OK or NG

OK >> Replace LDW camera unit.
NG >> Replace LDW switch.

6. CHECK OPERATION OF LDW SYSTEM ON INDICATOR

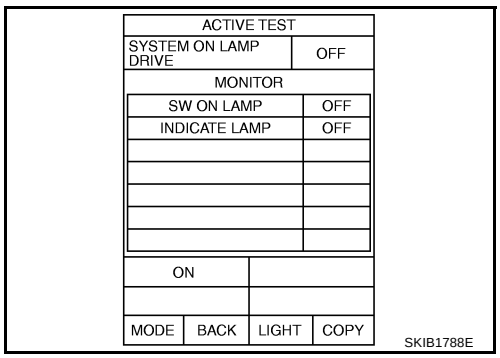
Check LDW system ON indicator operation “SYSTEM ON LAMP DRIVE” in “ACTIVE TEST” mode with CONSULT-II.

“SYSTEM ON LAMP DRIVE”

Touch “ON” : LDW system ON indicator illuminates.

Touch “OFF” : LDW system ON indicator turns OFF.

NOTE:
Perform “SYSTEM ON LAMP DRIVE” when LDW system ON indicator turns OFF.

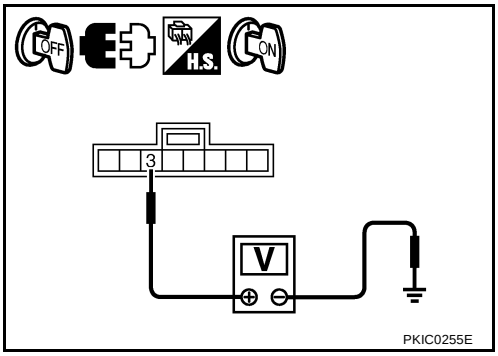


OK or NG

OK >> Replace LDW camera unit.
NG >> GO TO 7.

7. CHECK LDW SYSTEM ON INDICATOR POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect LDW switch connector.
3. Turn ignition switch ON.
4. Check voltage between LDW switch harness connector and ground.



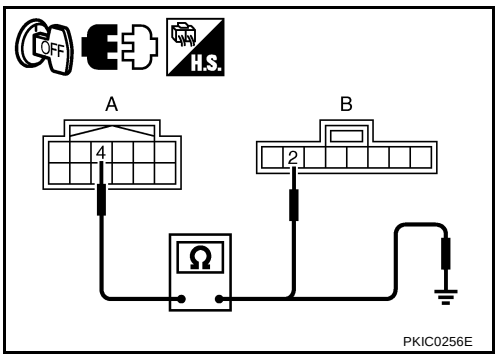
Terminals			Voltage (Approx.)
(+)		(–)	
LDW chime connector	Terminal		
M49	3	Ground	Battery voltage

OK or NG

OK >> GO TO 8.
NG >> Check harness between fuse and LDW switch.

8. CHECK LDW SYSTEM ON INDICATOR SIGNAL CIRCUIT

1. Disconnect LDW camera unit connector.
2. Check continuity between LDW camera unit harness connector (A) and LDW switch harness connector (B).



A		B		Continuity
Connector	Terminal	Connector	Terminal	
M182	4	M49	2	Yes

3. Check continuity between LDW camera unit harness connector (A) and ground.

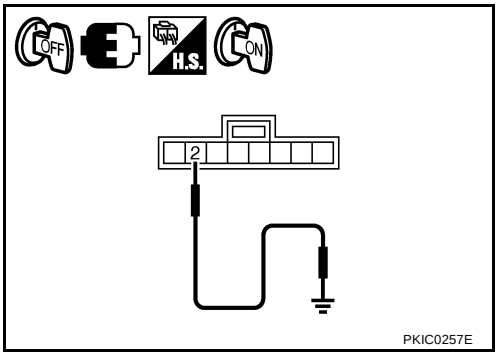
A		Ground	Continuity
Connector	Terminal		
M182	4		No

OK or NG

OK >> GO TO 9.
NG >> Repair harness or connector.

9. CHECK LDW SYSTEM ON INDICATOR

1. Connect LDW switch connector.
2. Turn ignition switch ON.
3. Apply ground to LDW switch terminal.
4. Check condition of the LDW system ON indicator.



LDW switch connector	Terminal	Ground	Condition
M49	2		LDW system ON indicator should illuminate.

OK or NG

OK >> Replace LDW camera unit.
NG >> Replace LDW switch.

LDW Indicator Lamp Circuit Inspection

NKS003VX

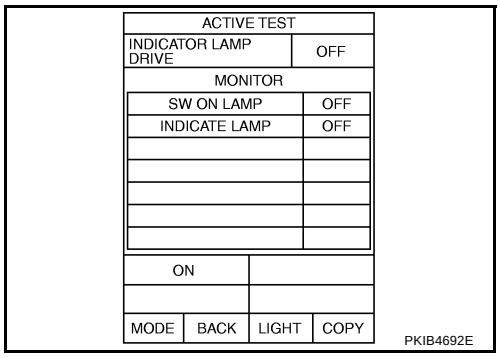
1. CHECK OPERATION OF LDW INDICATOR LAMP

Check LDW indicator operation “INDICATOR LAMP DRIVE” in “ACTIVE TEST” mode with CONSULT-II.

“INDICATOR LAMP DRIVE”

Touch “ON” : LDW indicator lamp illuminates.

Touch “OFF” : LDW indicator lamp OFF.



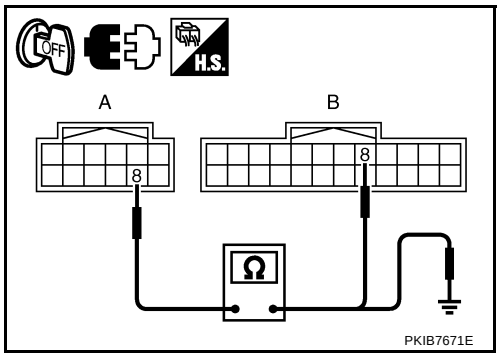
OK or NG

OK >> LDW indicator is OK. Return to DI-96, "SYMPTOM CHART" .

NG >> GO TO 2.

2. CHECK LDW INDICATOR LAMP SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect LDW camera unit connector and combination meter connector.
3. Check continuity between LDW camera unit harness connector (A) and combination meter harness connector (B).



A		B		Continuity
Connector	Terminal	Connector	Terminal	
M182	8	M52	8	Yes

4. Check continuity between LDW camera unit harness connector (A) and ground.

A		Ground	Continuity
Connector	Terminal		
M182	8		No

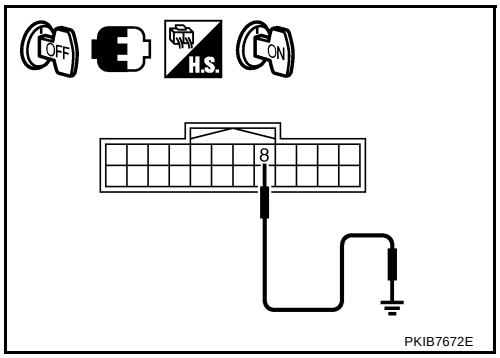
OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK LDW INDICATOR LAMP

1. Connect combination meter connector.
2. Turn ignition switch ON.
3. Apply ground to combination meter terminal.
4. Check condition of the LDW indicator lamp.



Combination meter connector	Terminal	Ground	Condition
M52	8		LDW indicator lamp should illuminate.

OK or NG

OK >> Replace LDW camera unit.

NG >> Replace combination meter.

Turn Signal Input Inspection

NKS003VY

1. CHECK TURN SIGNAL INPUT

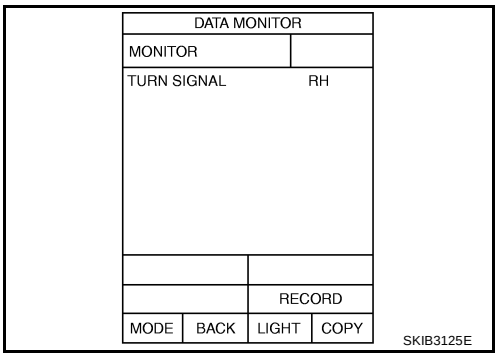
Check turn signal input “TURN SIGNAL” in “DATA MONITOR” mode with CONSULT-II.

“TURN SIGNAL”

When lighting switch is in TURN RH position : RH

When lighting switch is in TURN LH position : LH

When hazard switch is turned ON : RH/LH



OK or NG

OK >> Turn signal input is OK. Return to DI-96, "SYMPTOM CHART" .

NG >> Check turn signal and hazard warning lamps system, and repair or replace corresponding parts. Refer to LT-220, "How to Perform Trouble Diagnoses" .

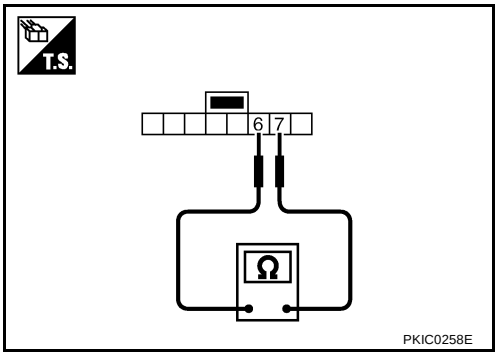
Electrical Component Inspection

NKS003VZ

LDW SWITCH

Check continuity between terminals 6 and 7.

Terminal		Condition	Continuity
6	7	When LDW switch is pushed.	Yes
		When LDW switch is released.	No

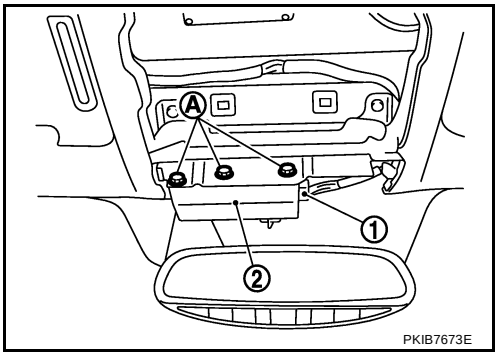


Removal and Installation for LDW Camera Unit

NKS003W0

REMOVAL

1. Remove roof console. Refer to EI-52, "HEADLINING" .
2. Disconnect LDW camera unit connector (1).
3. Remove the bolts (A), and remove LDW camera unit (2).



INSTALLATION

Installation is the reverse order of removal.

CAUTION:

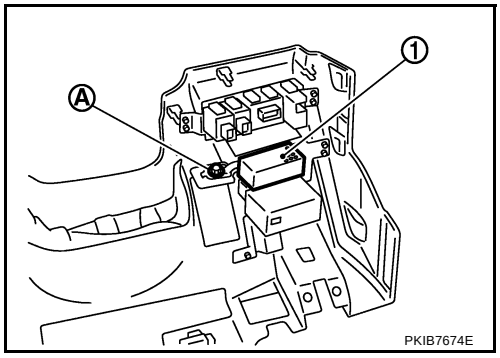
- **Remove the camera lens cap for replacement.**
- **Never give an impact to the LDW camera unit.**
- **Adjust the camera aiming every time the LDW camera unit is removed or installed. Refer to DI-81, "Camera Aiming Adjustment" .**

Removal and Installation for LDW Chime

NKS003W1

REMOVAL

1. Remove instrument side panel (LH). Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove the bolt (A).
3. Remove LDW chime (1).



INSTALLATION

Installation is the reverse order of removal.

Removal and Installation for LDW Switch

NKS003W2

Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .

COMPASS

PFP:24835

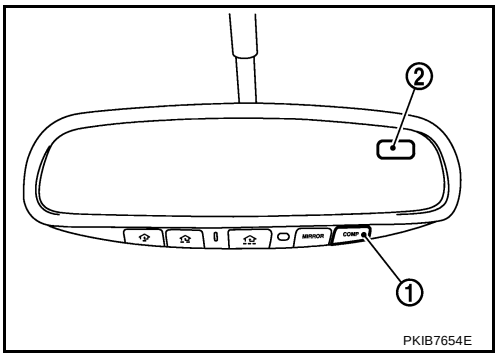
System Description

NKS003W3

This unit displays earth magnetism and heading direction of vehicle.

DIRECTION DISPLAY

Push “COMP” switch (1) when ignition switch is in “ON” or “START” position. The direction will be displayed.
Pushing “COMP” switch (1) a second time will turn off the display (2).



NOTE:

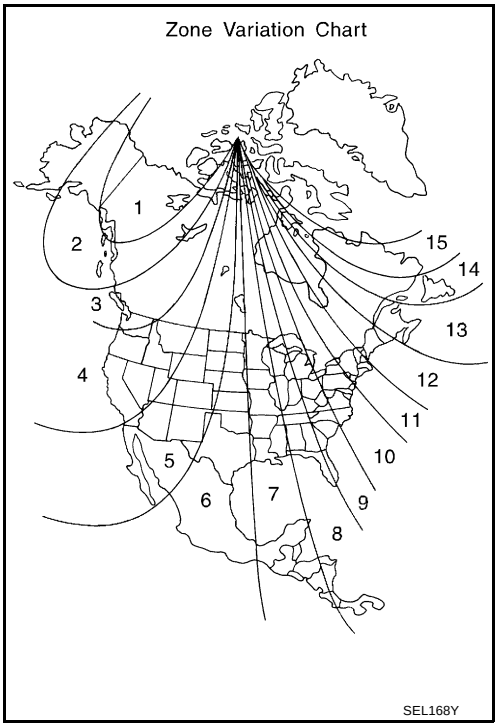
- Do not install the ski rack, antenna, etc. which are attached to the vehicle by means of a magnet. They affect the operation of the compass.
- The compass may not indicate the correct compass point in tunnels or while driving up or down a steep hill. (The compass returns to the correct compass point when the vehicle moves to an area where the geomagnetism is stabilized.)
- When cleaning the mirror, use a paper towel or similar material dampened with glass cleaner. Do not spray glass cleaner directly on the mirror as that may cause the liquid cleaner to enter the mirror housing.

Zone Variation Change Procedure

NKS003W4

The difference between magnetic north and geographical north is known as variance. In some areas, this difference can sometimes be great enough to cause false compass reading.
Follow these instructions to set the variance for the particular location if this happens:

1. Push “COMP” switch for more than 3 seconds. The current zone number will appear in the display.
2. Find the current location and variance one number on the zone variation chart.
3. Push “COMP” switch until the new zone number appears in the display. After stopping pushing the switch in, the display will show a compass direction within a few seconds.



Correction Functions of the Compass Display

NKS003W5

AUTOMATIC CORRECTION

The compass display is equipped with automatic correction function. If the direction is not shown correctly, perform manual correction procedure set out below.

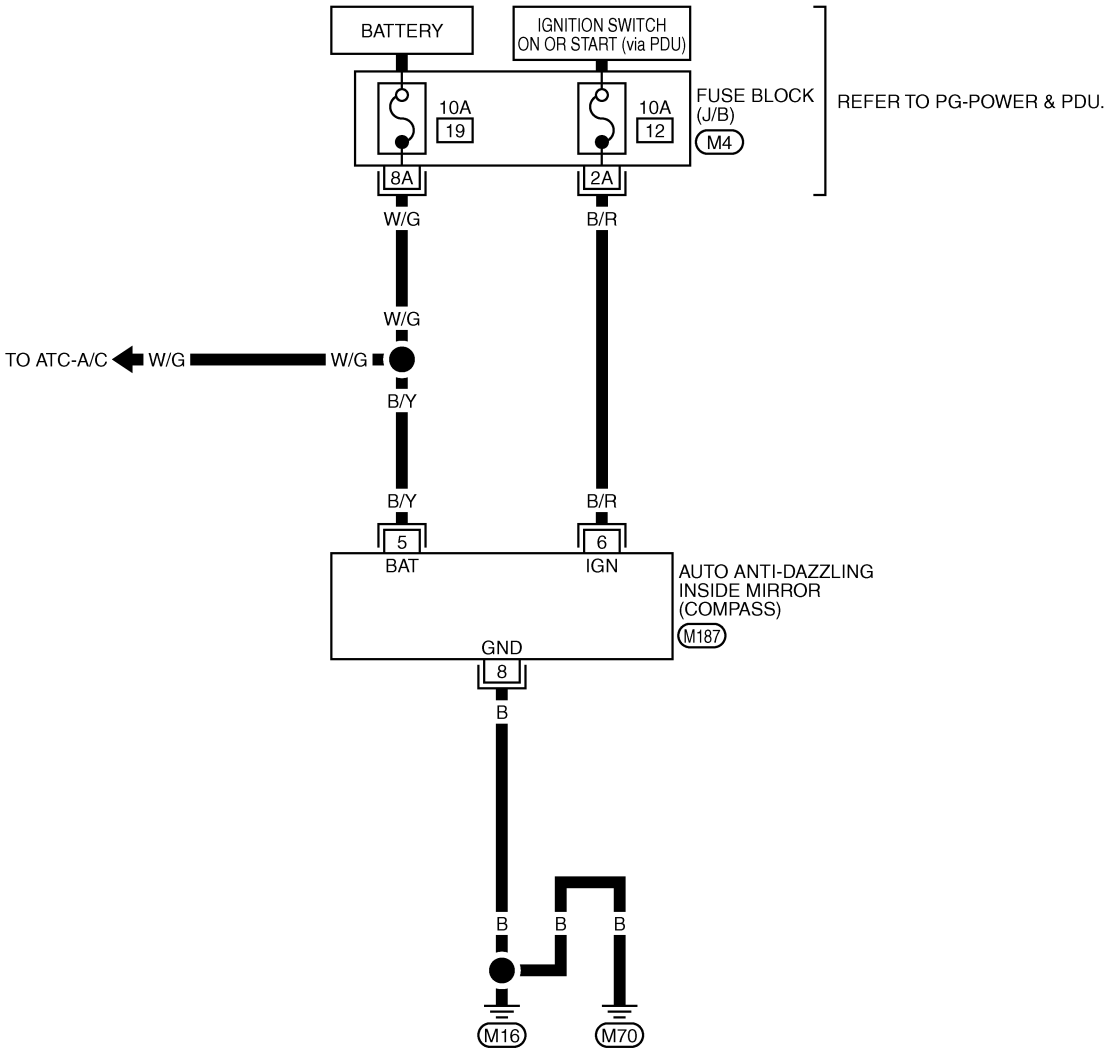
MANUAL CORRECTION PROCEDURE

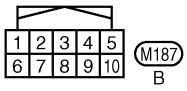
When the display reads “C” or “CAL”, calibrate the compass by driving the vehicle in 3 complete circles at less than 8 km/h (5 MPH).
The compass can be calibrated by driving the vehicle on everyday route. The compass will be calibrated once it has tracked 3 complete circles.
In places where the terrestrial magnetism is extremely disturbed, the initial correction procedure may start automatically.

Wiring Diagram – COMPAS –

NKS003W6

DI-COMPAS-01





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

TKWT3425E

Removal and Installation of Compass

NKS003W7

Refer to GW-71, "INSIDE MIRROR" .

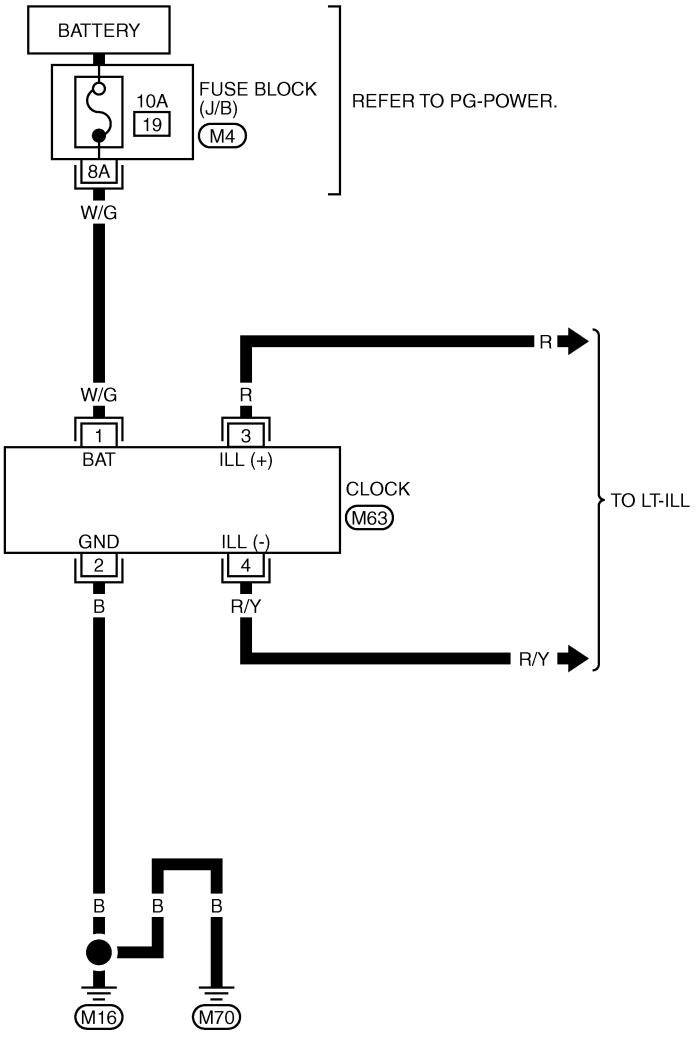
CLOCK

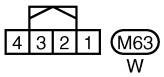
PFP:25820

Wiring Diagram — CLOCK —

NKS003W8

DI-CLOCK-01





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

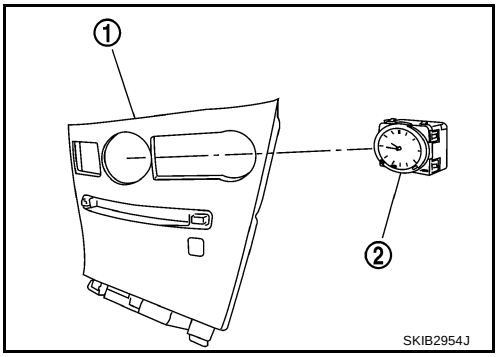
TKWT3446E

Removal and Installation of Clock

NKS003W9

REMOVAL

1. Remove cluster lid C (1). Refer to IP-17, "Removal and Installation of Cluster Lid C" .
2. Remove preset switch. Refer to AV-137, "Preset Switch" (Without mobile entertainment system) or AV-292, "Preset Switch" (With mobile entertainment system).
3. Disengage tabs, and remove clock (2) from cluster lid C (1).



INSTALLATION

Installation is the reverse order of removal.