SECTION DI
DRIVER INFORMATION SYSTEM

CONTENTS

SERVICE INFORMATION

PRECAUTION

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

INFOID:0000000005612480

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.**

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

WARNING:

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

Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:0000000005977485

NOTE:

- This Procedure is applied only to models with Intelligent Key system and NATS (NISSAN ANTI-THEFT SYSTEM).
- Remove and install all control units after disconnecting both battery cables with the ignition knob in the ″LOCK″ position.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

For models equipped with the Intelligent Key system and NATS, an electrically controlled steering lock mechanism is adopted on the key cylinder.
For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.
If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

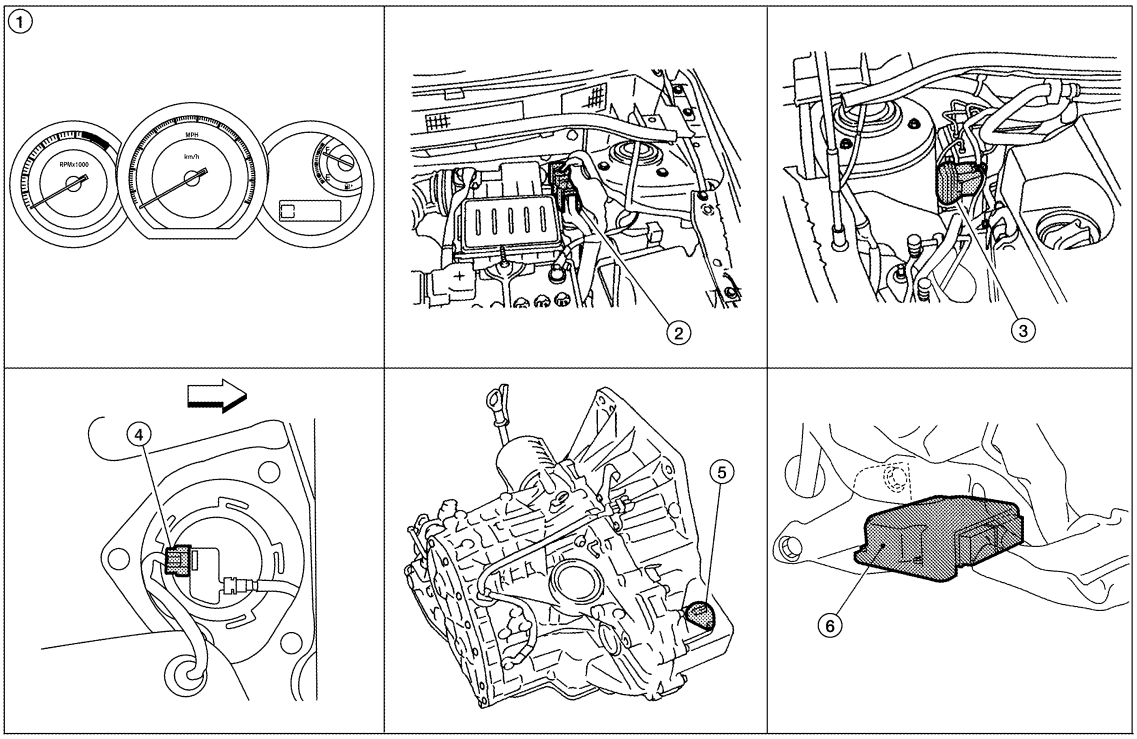
1. Connect both battery cables.
   NOTE:
   Supply power using jumper cables if battery is discharged.
2. Use the Intelligent Key or mechanical key to turn the ignition switch to the ″ACC″ position. At this time, the steering lock will be released.
3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.

5. When the repair work is completed, return the ignition switch to the ″LOCK″ position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT-III.

COMBINATION METERS

Component Parts and Harness Connector Location

INFOID:0000000005395007



WKIA5450E

1. Combination meter M24
2. ECM E16
3. ABS actuator and electric unit (control unit) E33
4. Fuel level sensor unit and fuel pump (fuel level sensor) B100 (view with rear seat and inspection hole cover removed) (⇐: Front)
5. Vehicle speed sensor F41 (A/T shown, M/T similar)
6. TCM E31 (view with instrument lower finisher removed)

System Description

INFOID:0000000005395008

UNIFIED METER CONTROL UNIT

- Speedometer, odo/trip meter, tachometer and fuel gauge are controlled by the unified meter control unit, which is built into the combination meter.
- Warning and indicator lamps are controlled by signals drawn from the CAN communication system, BCM (body control module), and components connected directly to the combination meter.
- Odo/trip meter and A/T indicator (with A/T) or CVT indicator (with CVT) segments can be checked in self-diagnosis mode.
- Meters/gauges can be checked in self-diagnosis mode.

POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times
- through 10A fuse [No. 13, located in the fuse block (J/B)]
- to combination meter terminal 27.

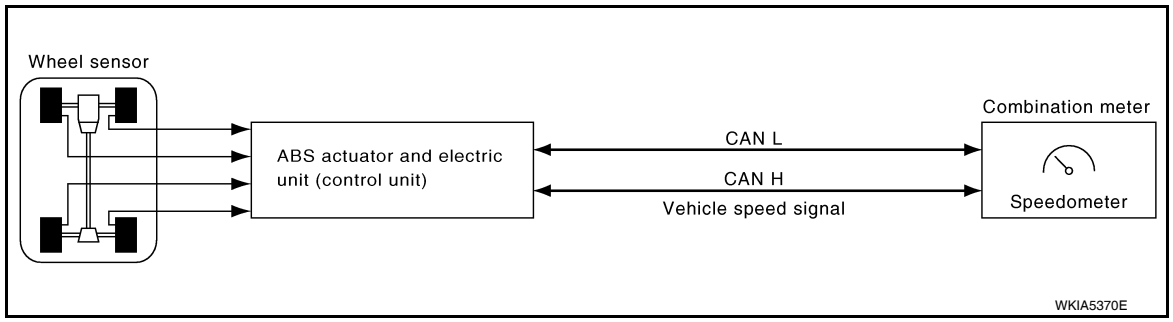
With the ignition switch in the ON or START position, power is supplied
- through 10A fuse [No. 14, located in the fuse block (J/B)]
- to combination meter terminal 28.

Ground is supplied
- to combination meter terminals 21, 22 and 23
- through grounds M57 and M61.

SPEEDOMETER

With ABS

The ABS actuator and electric unit (control unit) provides a vehicle speed signal to the combination meter via CAN communication lines.



Without ABS or CVT

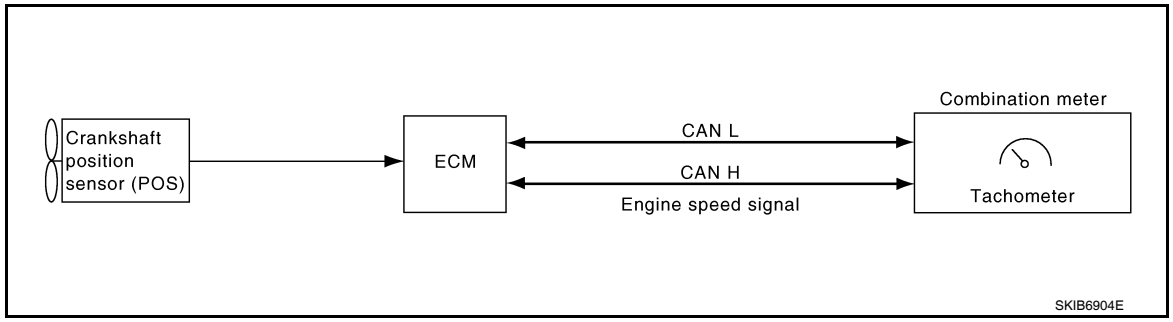
The vehicle speed sensor provides a vehicle speed signal to the combination meter for speedometer indication.

With CVT, Without ABS

The TCM provides a vehicle speed signal to the combination meter via CAN communication lines.

TACHOMETER

The tachometer indicates engine speed in revolutions per minute (rpm). The ECM provides an engine speed signal to combination meter via CAN communication lines.



FUEL GAUGE

The fuel gauge indicates the approximate fuel level in the fuel tank.

The fuel gauge is regulated by the unified meter control unit and a variable resistor signal supplied

- to combination meter terminal 24
- through fuel level sensor unit and fuel pump terminal 5
- through fuel level sensor unit and fuel pump terminal 2
- from combination meter terminal 6.

ODO/TRIP METER

The vehicle speed signal and the memory signals from the meter memory circuit are processed by the combination meter and the mileage is displayed.

How to Change the Display

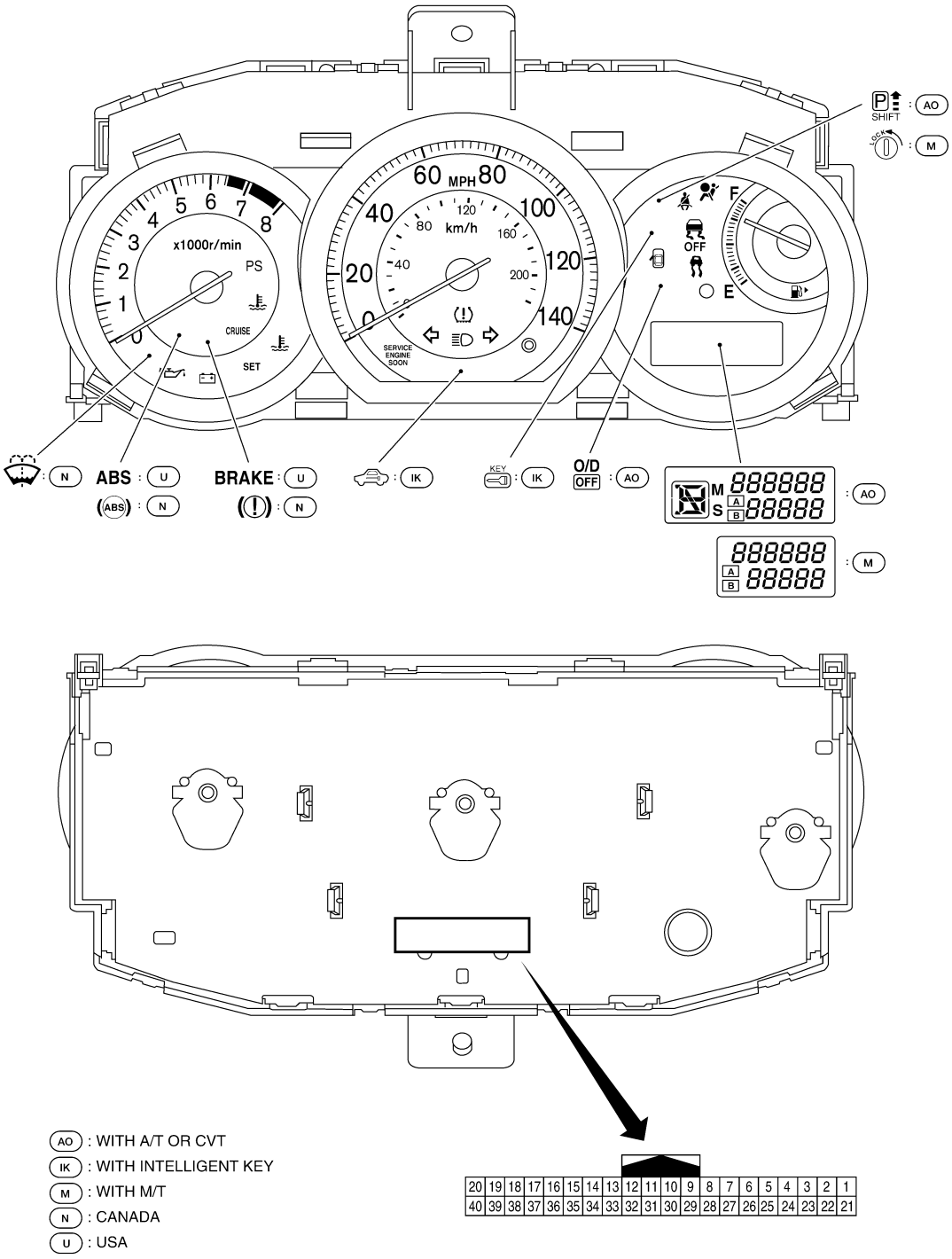
Refer to Owner's Manual for odo/trip meter operating instructions.

CAN COMMUNICATION SYSTEM DESCRIPTION

Refer to LAN-7 .

Arrangement of Combination Meter

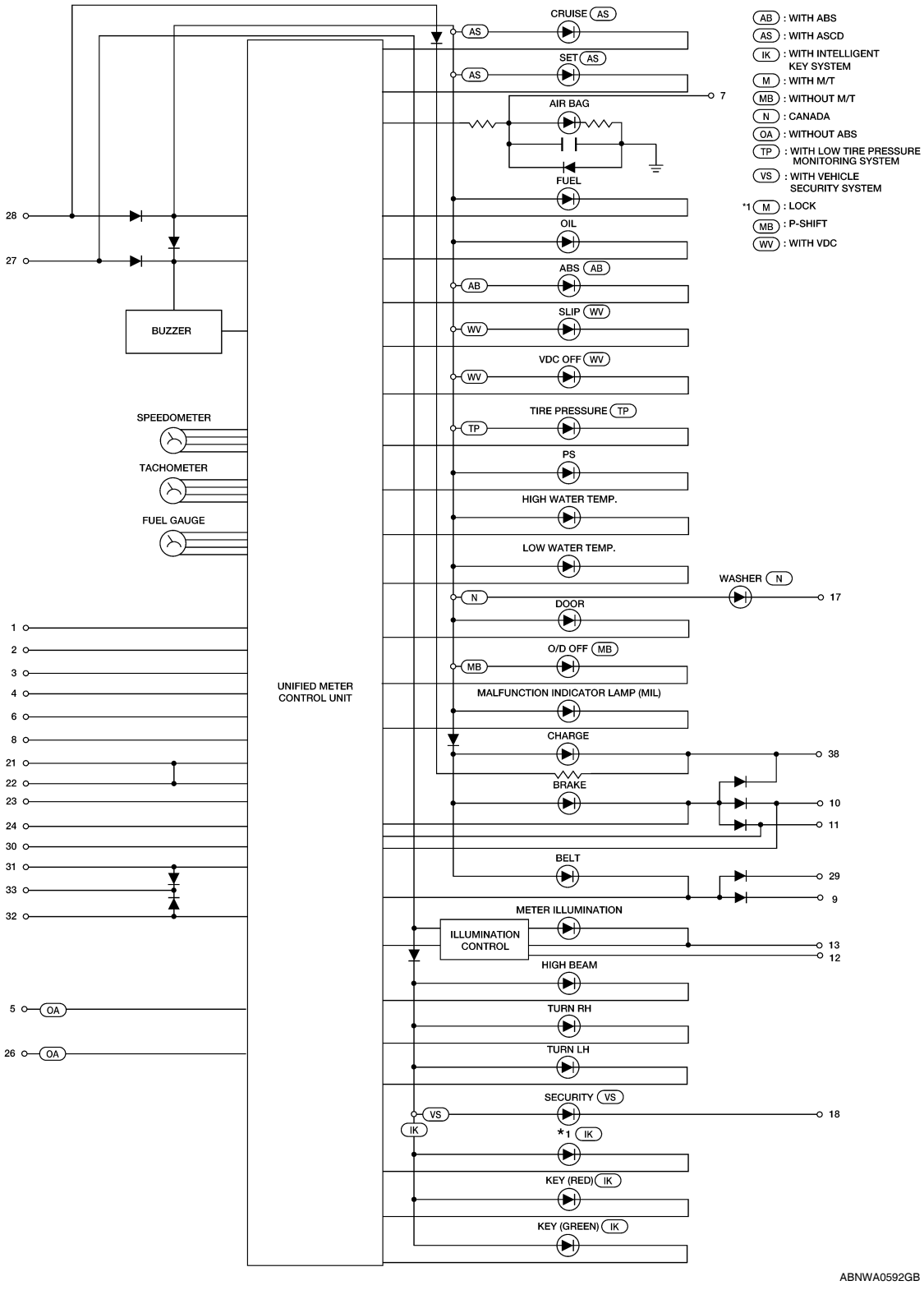
INFOID:0000000005395009



AWMIA1174GB

Internal Circuit

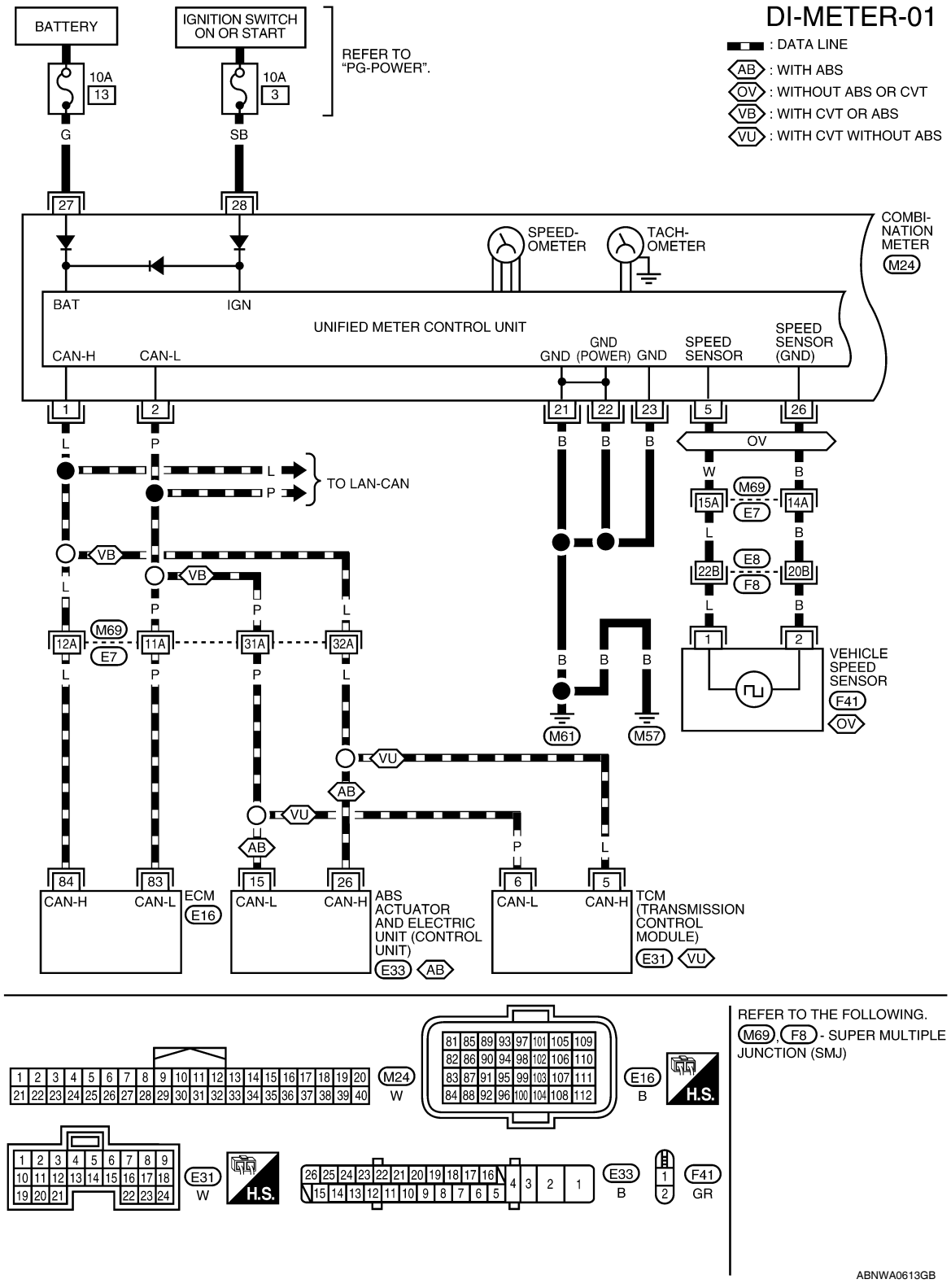
INFOID:0000000005395010



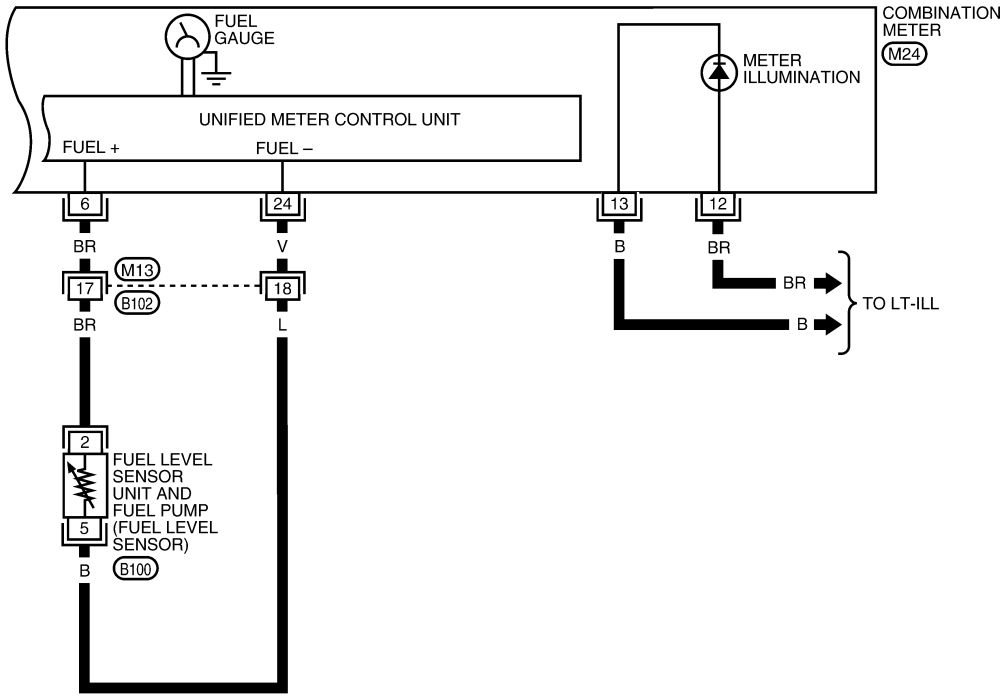
ABNWA0592GB

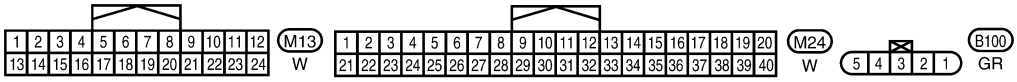
Wiring Diagram - METER -

INFOID:0000000005395011



DI-METER-02

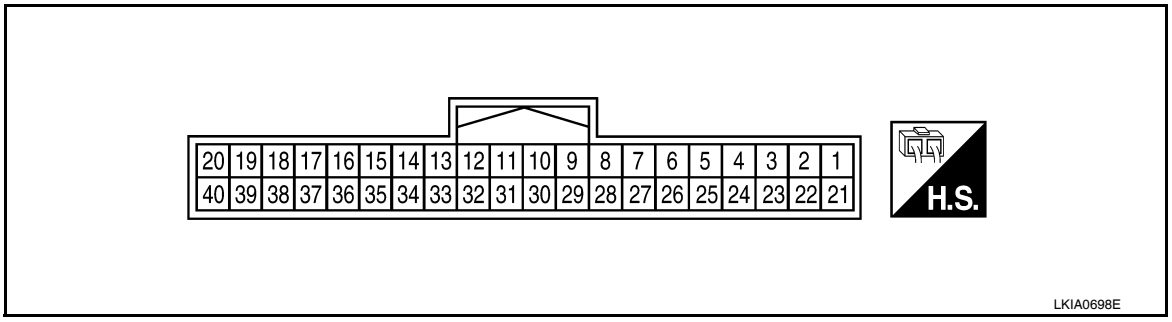




WKWA4989E

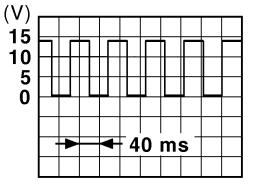
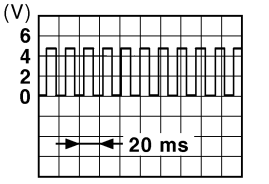
Combination Meter Harness Connector Terminal Layout

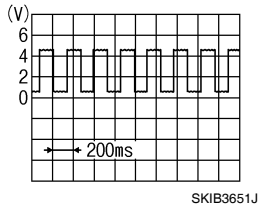
INFOID:0000000005395012



Terminal and Reference Value for Combination Meter

INFOID:0000000005395013

Terminal No.	Wire color	Item	Condition		Reference value (V) (Approx.)
			Ignition switch	Operation or condition	
1	L	CAN-H	—	—	—
2	P	CAN-L	—	—	—
3	G	Vehicle speed signal output (2-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). 
4	SB	Vehicle speed signal output (8-pulse)	ON	Speedometer operated [When vehicle speed is approx. 40 km/h (25 MPH)]	**NOTE:** Maximum voltage may be 12 V due to specifications (connected units). 
5	W	Vehicle speed signal (without ABS or CVT)	ON	Speedometer operated [When vehicle speed is approx. 20 km/h (12 MPH)]	240 Hz
6	BR	Fuel level sensor signal (+)	—	—	Refer to DI-20, "Electrical Component Inspection" .
8	P	O/D OFF switch	ON	O/D OFF switch pressed	0
				O/D OFF switch released	Battery voltage
9	Y	Seat belt buckle switch LH	ON	Unfastened (ON)	0
				Fastened (OFF)	Battery voltage
10	SB	Parking Brake switch	ON	Parking brake applied	0
				Parking brake released	Battery voltage
11	LG	Brake fluid level switch	ON	Brake fluid level low	0
				Brake fluid level normal	Battery voltage
12	BR	Illumination control switch (+)	—	—	Refer to LT-110, "System Description" .

Terminal No.	Wire color	Item	Condition		Reference value (V) (Approx.)
			Ignition switch	Operation or condition	
13	B	Illumination control switch (-)	—	—	Refer to LT-110, "System Description" .
17	G	Washer fluid level switch (Canada models)	ON	Washer fluid level low	0
				Washer fluid level normal	Battery voltage
21	B	Ground	—	—	0
22					
23					
24	V	Fuel level sensor ground (-)	ON	—	0
26	B	Vehicle speed sensor ground (without ABS or CVT)	ON	—	0
27	G	Battery power supply	OFF	—	Battery voltage
28	SB	Ignition switch ON or START	ON	—	Battery voltage
29	GR	Seat belt buckle switch RH	ON	Unfastened (ON)	0
				Fastened (OFF)	Battery voltage
30	G	Stop lamp switch	ON	Brake pedal depressed	Battery voltage
				Brake pedal released	0
31	V	A/T N-range input (with A/T)	ON	Transmission gear selector lever in N position	Battery voltage
				Transmission gear selector lever other than N position	0
32	W	A/T P-range input (with A/T)	ON	Transmission gear selector lever in P position	Battery voltage
				Transmission gear selector lever other than P position	0
33	Y	A/T PN output (with A/T)	ON	Transmission gear selector lever in P or N position	0
				Transmission gear selector lever other than P or N position	Battery voltage
35	BR	Engine coolant temperature signal output	ON	At idle [after warming up, approx. 80°C (176°F)] NOTE: The waveforms vary depending on engine coolant temperature.	 SKIB3651J
38	L	Generator	ON	Generator voltage low	0
				Generator voltage normal	Battery voltage

Self-Diagnosis Mode of Combination Meter

INFOID:0000000005395014

SELF-DIAGNOSIS MODE FUNCTION

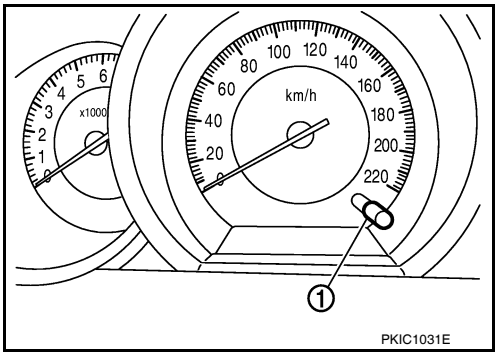
- Self-diagnosis can check for continuity between meter control circuit and each meter (speedometer, tachometer and fuel gauge).
- Self-diagnosis can check for odo/trip meter and A/T indicator (with A/T) or CVT indicator (with CVT) segment, low-fuel level warning lamp, low water temperature indicator lamp, and high water temperature warning lamp.

OPERATION PROCEDURE

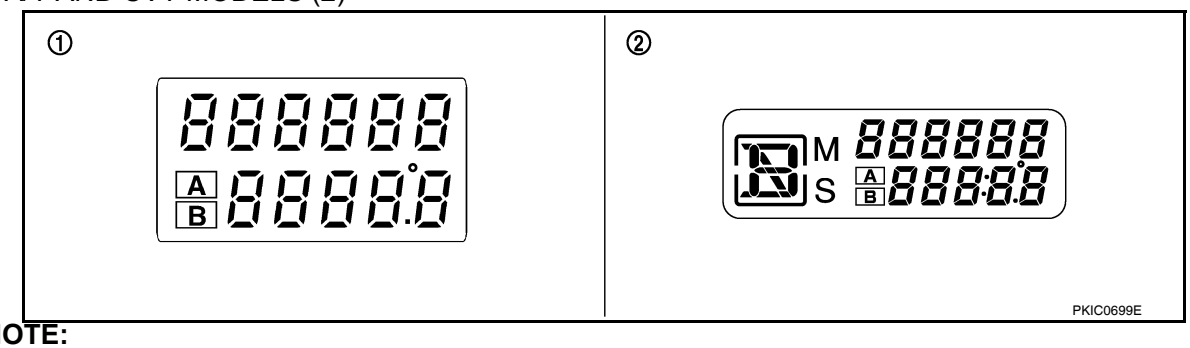
1. Turn the ignition switch ON, and switch the odo/trip meter to “trip A” or “trip B”.
   NOTE:

If the diagnosis function is activated with “trip A” displayed, the mileage on “trip A” will indicate “0000.0”, but the actual trip mileage will be retained. (The same applies for “trip B”.)

2. Turn ignition switch OFF.
3. While pushing the odo/trip meter switch (1), turn the ignition switch ON.
4. Confirm that the trip meter displays “0000.0”.
5. Push the odo/trip meter switch at least 3 times. (Within 7 seconds after the ignition switch is turned ON.)

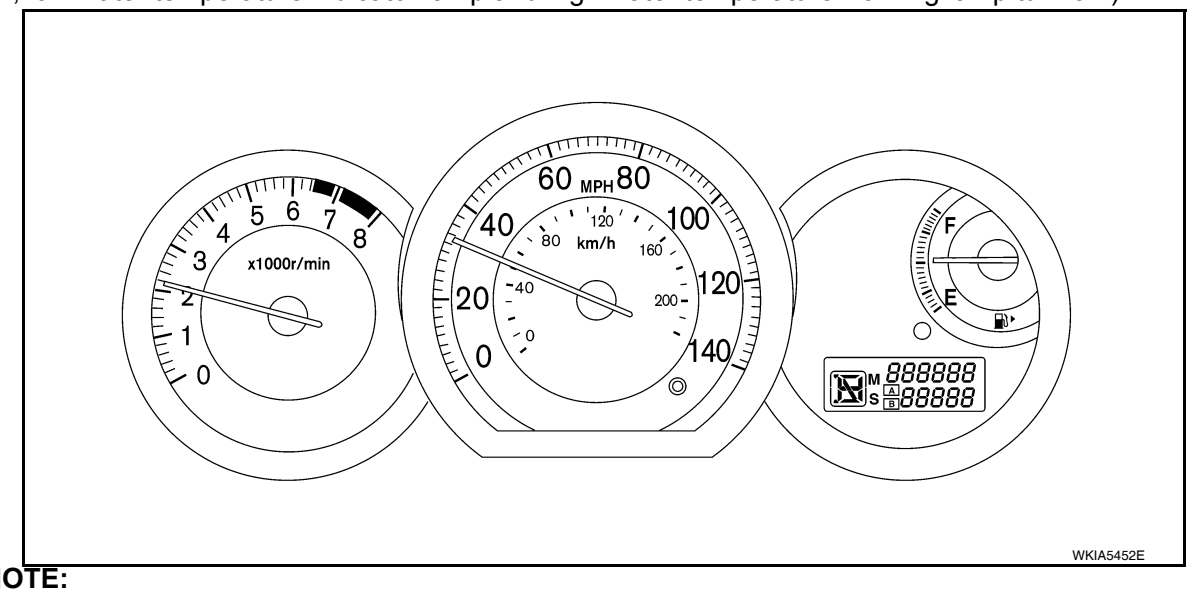


6. All the segments on the odo/trip meter, and simultaneously the low-fuel warning lamp indicator illuminates. At this time, the unified meter control unit is turned to self-diagnosis mode.
   - M/T MODELS (1)
   - A/T AND CVT MODELS (2)



NOTE:
- Check combination meter power supply and ground circuit when self-diagnosis mode of combination meter does not start. Replace combination meter if normal. Refer to IP-12, "Removal and Installation" .
- If any of the segments is not displayed, replace combination meter. Refer to IP-12, "Removal and Installation" .

7. Each meter activates while pressing odo/trip meter switch. (At this time, the low-fuel warning lamp turns off, low water temperature indicator lamp and high water temperature warning lamp turn on.)



NOTE:
If any of the meter and gages are not activated, replace combination meter. Refer to IP-12, "Removal and Installation" .

CONSULT-III Function (METER/M&A)

INFOID:0000000005395015

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

METER diagnosis mode	Description
SELF-DIAG RESULTS	Displays combination meter self-diagnosis results.
DATA MONITOR	Displays combination meter input/output data in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

SELF-DIAGNOSTIC RESULTS

Display Item List

CONSULT-III display	Malfunction	Reference page
CAN COMM CIRC [U1000]	Malfunction is detected in CAN communication lines. **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. 14, located in the fuse block (J/B)] is removed.**	DI-19
VEHICLE SPEED CIRC [B2205]	Malfunction is detected when an erroneous speed signal is input. **CAUTION:** **Even when there is no malfunction on speed signal system, malfunctions may be misinterpreted when battery has low voltage (when maintaining 7 - 8 V for about 2 seconds).**	DI-16

NOTE:
"TIME" indicates the following.
- 0: Indicates that a malfunction is detected at present.
- 1-63: Indicates that a malfunction was detected in the past. (Displays number of ignition switch OFF → ON cycles after malfunction is detected. Self-diagnostic result is erased when "63" is exceeded.)

DATA MONITOR

Display Item List

Display item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Contents
SPEED METER [km/h]	X	X	The value of vehicle speed signal, which is input from ABS actuator and electric unit (control unit).
SPEED OUTPUT [km/h]	X	X	The value of vehicle speed signal, which is transmitted to each unit with CAN communication.
TACHO METER [rpm]	X	X	The value of engine speed signal, which is input from ECM.
W TEMP METER [°C]	X	X	The value of engine coolant temperature signal, which is input from ECM.
FUEL METER [lit.]	X	X	The value, which processes a resistance signal from fuel gauge.
DISTANCE [km]	X	X	The value, which is calculated by vehicle speed signal from ABS actuator and electric unit (control unit), fuel gauge and fuel consumption signal from ECM.
FUEL W/L [ON/OFF]	X	X	Indicates [ON/OFF] condition of low-fuel warning lamp.
C-ENG W/L [ON/OFF]		X	Indicates [ON/OFF] condition of malfunction indicator lamp (MIL).
AIR PRES W/L		X	Indicates [ON/OFF] condition of low tire pressure warning lamp.
SEAT BELT W/L		X	Indicates [ON/OFF] condition of seat belt warning lamp.
BUZZER [ON/OFF]	X	X	Indicates [ON/OFF] condition of buzzer.
DOOR W/L [ON/OFF]		X	Indicates [ON/OFF] condition of door warning lamp.
HI-BEAM IND [ON/OFF]		X	Indicates [ON/OFF] condition of high beam indicator lamp.

Display item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Contents
TURN IND [ON/OFF]		X	Indicates [ON/OFF] condition of turn indicator.
OIL W/L [ON/OFF]		X	Indicates [ON/OFF] condition of oil pressure warning lamp.
VDC/TCS IND [ON/OFF]		X	Indicates [ON/OFF] condition of VDC OFF indicator lamp.
ABS W/L [ON/OFF]		X	Indicates [ON/OFF] condition of ABS warning lamp.
SLIP IND [ON/OFF]		X	Indicates [ON/OFF] condition of SLIP indicator lamp.
BRAKE W/L [ON/OFF]		X	Indicates [ON/OFF] condition of brake warning lamp.*
KEY G W/L [ON/OFF]		X	Indicates [ON/OFF] condition of KEY warning lamp (green).
KEY R W/L [ON/OFF]		X	Indicates [ON/OFF] condition of KEY warning lamp (red).
KEY KNOB W/L [ON/OFF]		X	Indicates [ON/OFF] condition of LOCK warning lamp.
PNP P SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of inhibitor P switch.
PNP N SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of inhibitor N switch.
O/D OFF SW [ON/OFF]		X	Indicates [ON/OFF] condition of O/D OFF switch.
BRAKE SW [ON/OFF]		X	Indicates [ON/OFF] condition of parking brake switch.
P RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T or CVT shift P range indicator.
R RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T or CVT shift R range indicator.
N RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T or CVT shift N range indicator.
D RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T or CVT shift D range indicator.
2 RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift 2 range indicator.
L RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of CVT shift L range indicator.
1 RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift 1 range indicator.
CRUISE IND [ON/OFF]		X	Indicates [ON/OFF] condition of CRUISE indicator.
SET IND [ON/OFF]		X	Indicates [ON/OFF] condition of SET indicator.
O/D OFF W/L [ON/OFF]		X	Indicates [ON/OFF] condition of O/D OFF indicator lamp.
EPS W/L [ON/OFF]		X	Indicates [ON/OFF] condition of EPS warning lamp.

NOTE:

Some items are not available due to vehicle specification.

*: The monitor will indicate “OFF” even though the brake warning lamp is on if either of the following conditions exist.

- The parking brake is engaged
- The brake fluid level is low

Trouble Diagnosis

INFOID:0000000005395016

HOW TO PERFORM TROUBLE DIAGNOSIS

1. Confirm the symptom or customer complaint.
2. Perform preliminary check. Refer to "PRELIMINARY CHECK" .
3. According to the symptom chart, repair or replace the cause of the malfunction. Refer to DI-15, "Symptom Chart" .
4. Does the meter operate normally? If so, GO TO 5. If not, GO TO 2.
5. Inspection End.

PRELIMINARY CHECK

1.CHECK SELF-DIAGNOSIS OPERATION OF COMBINATION METER

Perform self-diagnosis of combination meter. Refer to DI-11, "Self-Diagnosis Mode of Combination Meter" .

Does self-diagnosis mode operate?

YES >> GO TO 2.
NO >> Check power supply and ground circuit of combination meter. Refer to DI-15, "Power Supply and Ground Circuit Inspection" .

2.CHECK COMBINATION METER (CONSULT-III)

Select “METER/M&A” on CONSULT-III and perform self-diagnosis of combination meter. Refer to DI-13, "CONSULT-III Function (METER/M&A)" .

Self-diagnostic results content

No malfunction detected>> Refer to DI-15, "Symptom Chart" .
Malfunction detected>> Refer to DI-13, "CONSULT-III Function (METER/M&A)" .

Symptom Chart

INFOID:0000000005395017

Symptom	Possible cause
Improper speedometer and odo/trip meter indication.	Refer to DI-16, "Vehicle Speed Signal Inspection" .
Improper tachometer indication.	Refer to DI-17, "Engine Speed Signal Inspection" .
Improper fuel gauge indication.	Refer to DI-17, "Fuel Level Sensor Signal Inspection" .
Low-fuel warning lamp indication is irregular.	
Improper A/T position indication.	Refer to DI-36, "A/T Indicator Does Not Illuminate" .
Improper CVT position indication.	Refer to DI-41, "CVT Indicator Does Not Illuminate" .

Power Supply and Ground Circuit Inspection

INFOID:0000000005395018

1.CHECK FUSE

Check for blown combination meter fuses.

Power source	Fuse No.
Battery	13
Ignition switch ON or START	3

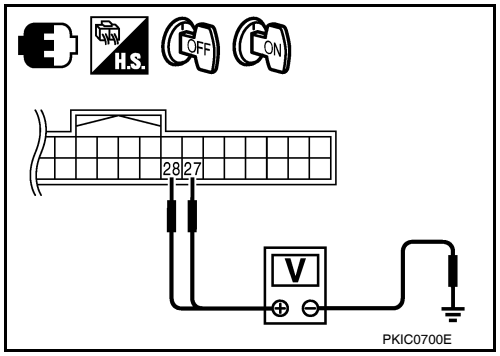
OK or NG

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

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between combination meter harness connector terminals and ground.

Terminals			Ignition switch position	
(+)		(–)	OFF	ON
Combination meter connector	Terminal			
M24	27	Ground	Battery voltage	Battery voltage
	28		0 V	Battery voltage



OK or NG

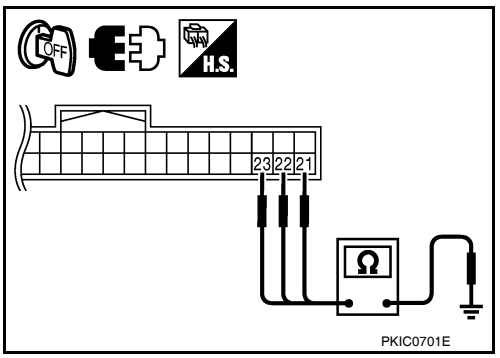
OK >> GO TO 3.
NG >> Repair harness or connector.

3.CHECK GROUND CIRCUIT

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

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

Combination meter connector	Terminal		Continuity
M24	21	Ground	Yes
	22		
	23		



OK or NG

OK >> Replace combination meter. Refer to IP-12, "Removal and Installation" .

NG >> Repair harness or connector.

Vehicle Speed Signal Inspection

INFOID:0000000005395019

Symptom:
- Improper speedometer and odo/trip meter indication.
- Display VEHICLE SPEED CIRC [B2205] at the result of self-diagnosis for combination meter.

WITH ABS

1.CHECK COMBINATION METER INPUT SIGNAL

1. Start engine and select “METER/M&A” on CONSULT-III.
2. Using “SPEED METER” on “DATA MONITOR”, compare the value of “DATA MONITOR” with speedometer pointer of combination meter.

OK or NG

OK >> Perform ABS actuator and electric unit (control unit) self-diagnosis. Refer to BRC-20, "CONSULT-III Function (ABS)" .

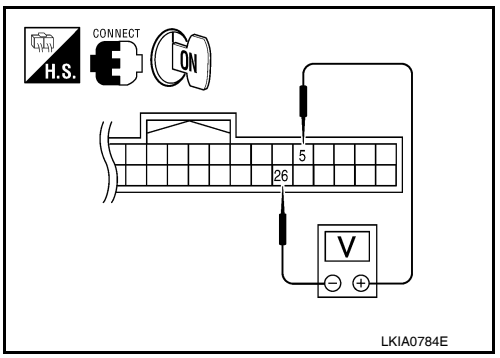
NG >> Replace combination meter. Refer to IP-12, "Removal and Installation" .

WITHOUT ABS OR CVT

1.CHECK VEHICLE SPEED SENSOR CIRCUITS

1. Remove vehicle speed sensor.
2. Turn ignition switch ON.
3. Rotate vehicle speed sensor while checking voltage between combination meter harness connector M24 terminals 5 and 26.

Terminals				Voltage (Approx.)
(+)		(–)		
Connector	Terminal	Connector	Terminal	
M24	5	M24	26	0.5



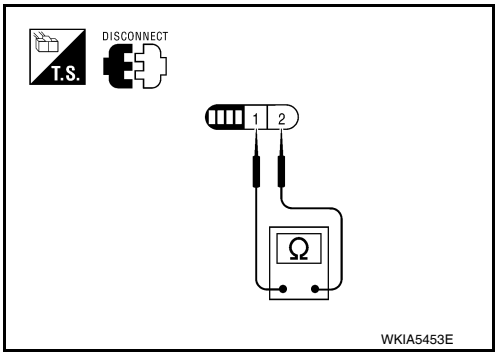
OK or NG

OK >> Replace combination meter. Refer to IP-12, "Removal and Installation" .

NG >> GO TO 2.

2.CHECK VEHICLE SPEED SENSOR

1. Turn ignition switch OFF.
2. Disconnect vehicle speed sensor connector.
3. Check resistance between vehicle speed sensor terminals 1 and 2.



Terminals				Resistance value (Approx.)
(+)		(–)		
Component	Terminal	Component	Terminal	
Vehicle speed sensor	1	Vehicle speed sensor	2	250Ω

OK or NG

OK >> Check harness or connector between combination meter and vehicle speed sensor.
NG >> Replace vehicle speed sensor.

WITH CVT, WITHOUT ABS

1.CHECK COMBINATION METER INPUT SIGNAL

1. Start engine and select “METER/M&A” on CONSULT-III.
2. Using “SPEED METER” on “DATA MONITOR”, compare the value of “DATA MONITOR” with speedometer pointer of combination meter.

OK or NG

OK >> Perform TCM self-diagnosis. Refer to CVT-48, "CONSULT-III Function (TRANSMISSION)" .
NG >> Replace combination meter. Refer to IP-12, "Removal and Installation" .

Engine Speed Signal Inspection

INFOID:0000000005395020

Symptom: Improper tachometer indication.

1.CHECK COMBINATION METER INPUT SIGNAL

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

OK or NG

OK >> Perform ECM self-diagnosis. Refer to EC-612, "CONSULT-III Function (ENGINE)" (MR18DE) or EC-98, "CONSULT-III Function" (HR16DE).
NG >> Replace combination meter. Refer to IP-12, "Removal and Installation" .

Fuel Level Sensor Signal Inspection

INFOID:0000000005395021

Symptom:
- Improper fuel gauge indication.
- Low-fuel warning lamp indication is irregular.

NOTE:
The following symptoms do not indicate a malfunction.
- Depending on vehicle position or driving circumstance, the fuel level in the tank shifts and the indication may fluctuate.
- If the vehicle is fueled with the ignition switch ON, the indication will update slowly.
- If the vehicle is tilted when the ignition switch is turned ON, fuel in the tank may flow to one direction resulting in a change of reading.

1.CHECK COMBINATION METER INPUT SIGNAL

1. Select “METER/M&A” on CONSULT-III.
2. Using “FUEL METER” on “DATA MONITOR”, compare the value of “DATA MONITOR” with fuel gauge pointer of combination meter.

Fuel gauge pointer	Reference value of data monitor [lit.]
Full	Approx. 49
3/4	Approx. 34
1/2	Approx. 22

Fuel gauge pointer	Reference value of data monitor [lit.]
1/4	Approx. 10
Empty	Approx. 4

OK or NG

OK >> GO TO 2.
NG >> Replace combination meter. Refer to IP-12, "Removal and Installation" .

2.CHECK HARNESS CONNECTOR

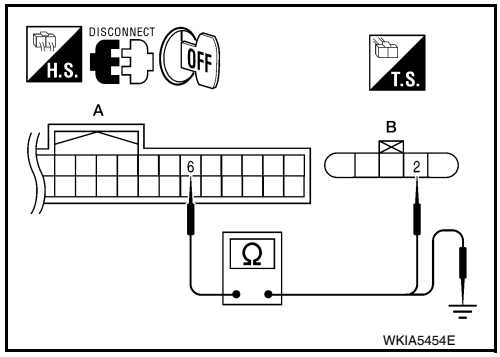
1. Turn ignition switch OFF.
2. Check combination meter and fuel level sensor unit terminals (meter-side and harness-side) for poor connection.

OK or NG

OK >> GO TO 3.
NG >> Repair or replace terminals or connectors.

3.CHECK FUEL LEVEL SENSOR UNIT CIRCUIT

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



A		B		Continuity
Connector	Terminal	Connector	Terminal	
M24	6	B100	2	Yes

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

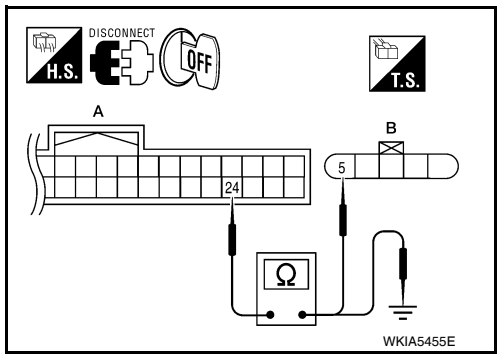
A		Ground	Continuity
Connector	Terminal		
M24	6		No

OK or NG

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

4.CHECK FUEL LEVEL SENSOR UNIT GROUND CIRCUIT

1. Check continuity between combination meter harness connector (A) and fuel level sensor unit and fuel pump harness connector (B).



A		B		Continuity
Connector	Terminal	Connector	Terminal	
M24	24	B100	5	Yes

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

A		Ground	Continuity
Connector	Terminal		
M24	24		No

OK or NG

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

5.CHECK FUEL LEVEL SENSOR UNIT

Check fuel level sensor unit. Refer to DI-20, "Electrical Component Inspection" .

OK or NG

OK >> 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. Repair or replace malfunctioning part, if necessary.

NG >> Replace fuel level sensor unit.

Fuel Gauge Fluctuates, Indicates Wrong Value, or Varies

INFOID:0000000005395022

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 at the instant of stopping?

YES >> The pointer fluctuation may be caused by fuel level change in the fuel tank. Condition is normal.

NO >> Ask the customer about the situation when the symptom occurs in detail, and perform the trouble diagnosis.

Fuel Gauge Does Not Move to Full-position

INFOID:0000000005395023

1.OBSERVE FUEL GAUGE

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

YES or NO

YES >> GO TO 2.

NO >> GO TO 3.

2.IDENTIFY FUELING CONDITION

Was the vehicle fueled with the ignition switch ON?

YES or NO

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.OBSERVE VEHICLE POSITION

Is the vehicle parked on an incline?

YES or NO

YES >> Check the fuel level indication with vehicle on a level surface.

NO >> GO TO 4.

4.OBSERVE FUEL GAUGE POINTER

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

YES or NO

YES >> Check the components. Refer to DI-20, "Electrical Component Inspection" .

NO >> The float arm may interfere or bind with any of the components in the fuel tank.

DTC [U1000] CAN Communication Circuit

INFOID:0000000005395024

Symptom: Display CAN COMM CIRC [U1000] at the result of self-diagnosis for combination meter.

1.CHECK CAN COMMUNICATION

1. Select "SELF-DIAG RESULTS" mode for "METER/M&A" with CONSULT-III.
2. Print out CONSULT-III screen.

>> Go to "CAN SYSTEM". Refer to LAN-17, "Trouble Diagnosis Flow Chart".

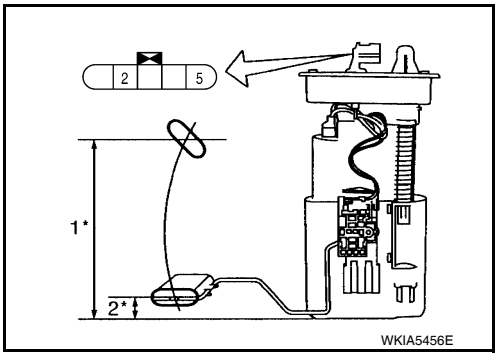
Electrical Component Inspection

INFOID:0000000005395025

FUEL LEVEL SENSOR UNIT CHECK

For removal, refer to FL-6, "Removal and Installation" .

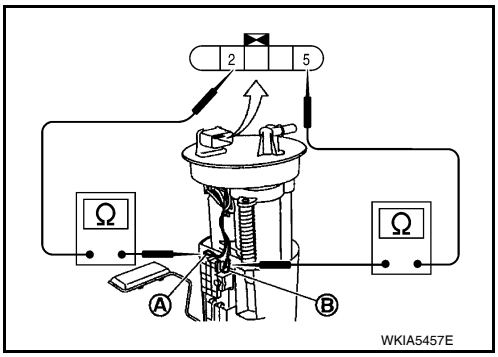
Check Fuel Level Sensor Unit and Fuel Pump
Check resistance between terminals 2 and 5.



Terminals		Float position mm (in)			Resistance value (Ω) (Approx.)
2	5	1*	Full	160 (8.07)	6
		2*	Empty	20 (1.02)	80

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

Check Fuel Level Sensor Unit and Fuel Pump Harness
Check continuity at the 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.

Removal and Installation

INFOID:0000000005395026

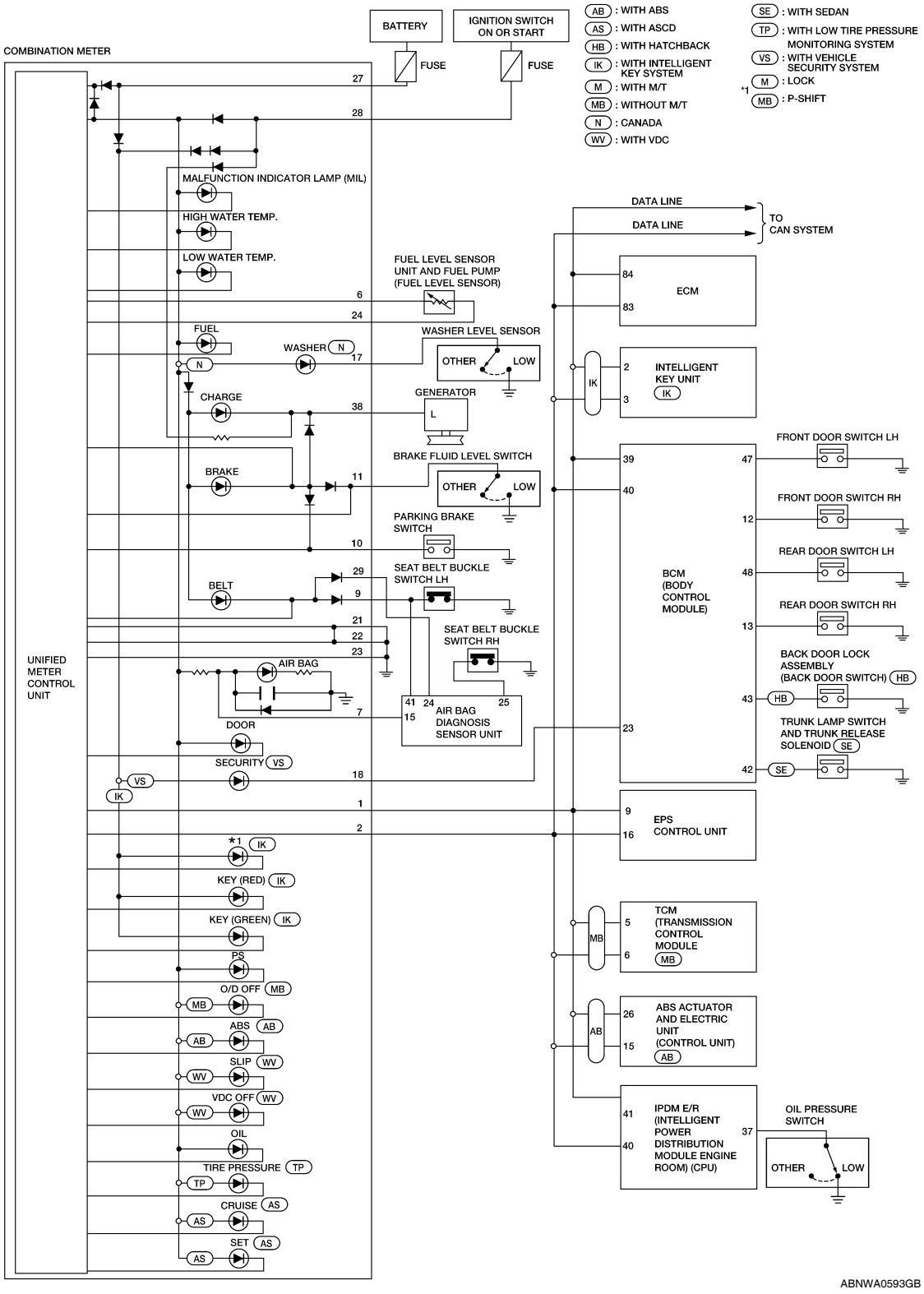
COMBINATION METER

Refer to IP-12, "Removal and Installation".

WARNING LAMPS

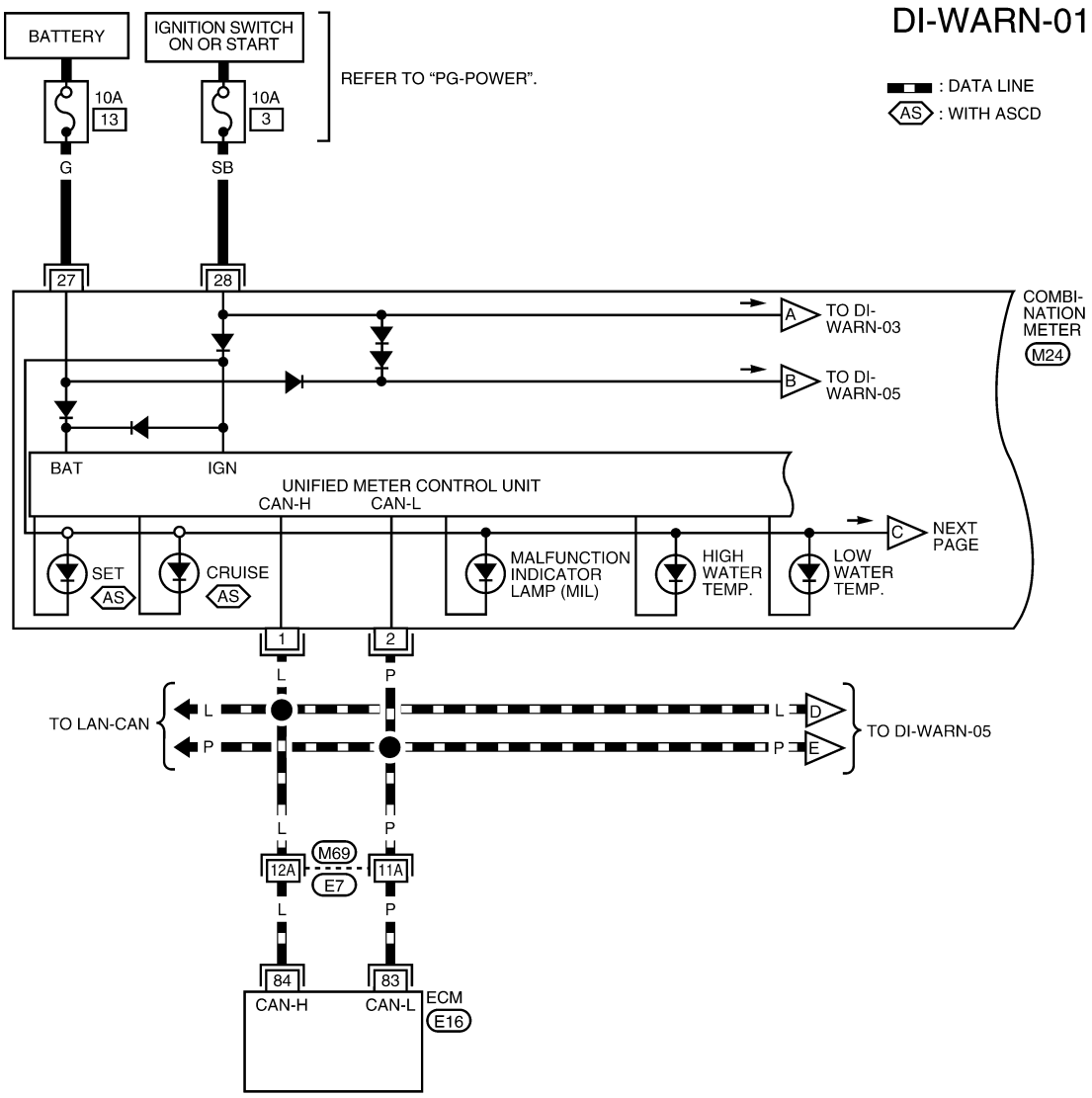
Schematic

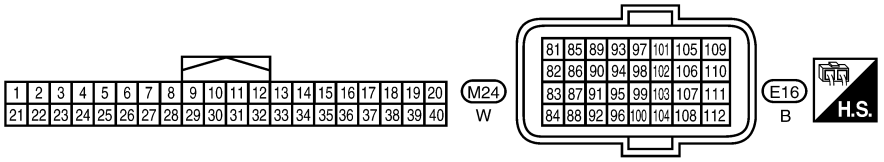
INFOID:0000000005395027



Wiring Diagram - WARN -

INFOID:0000000005395028



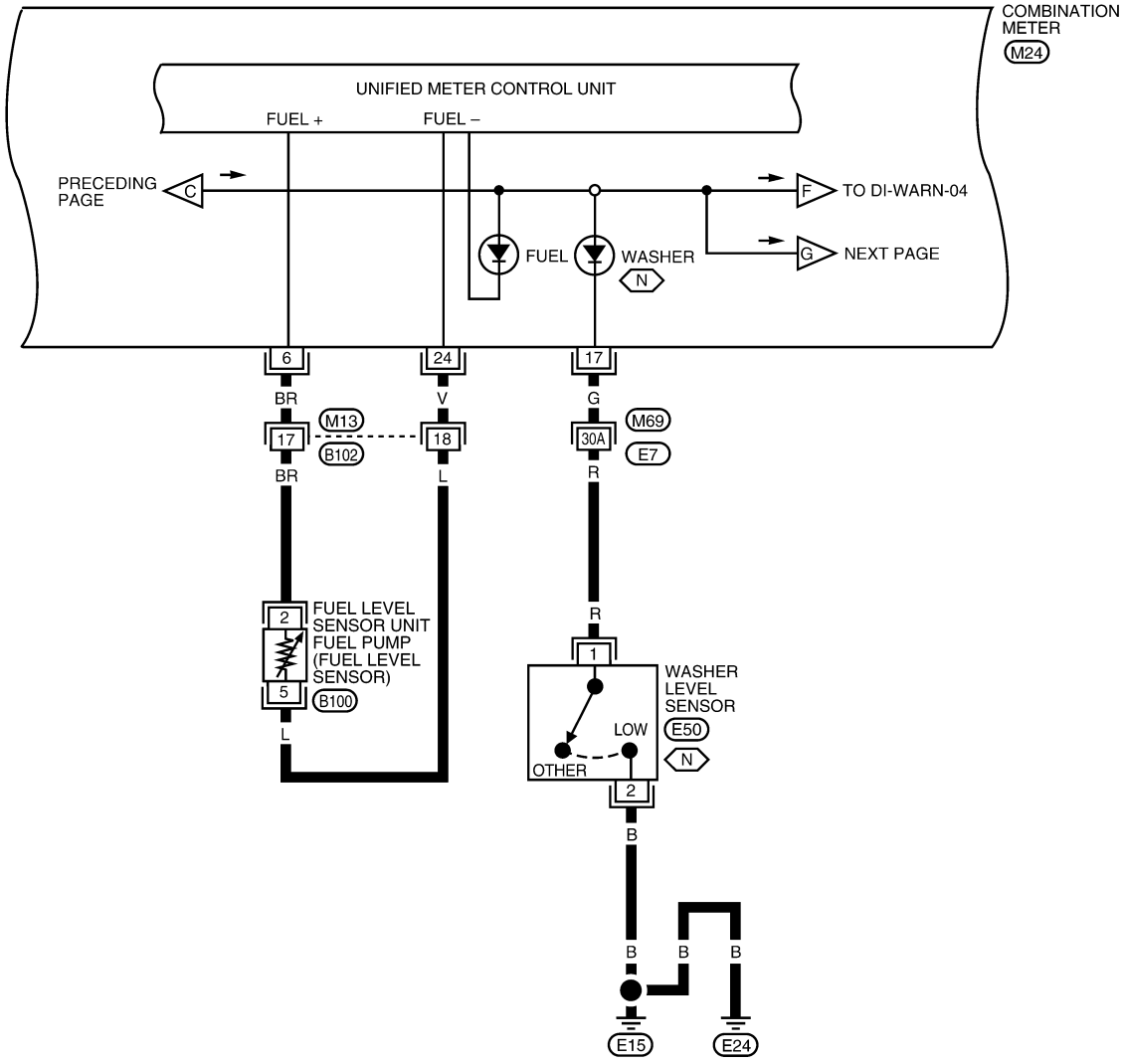


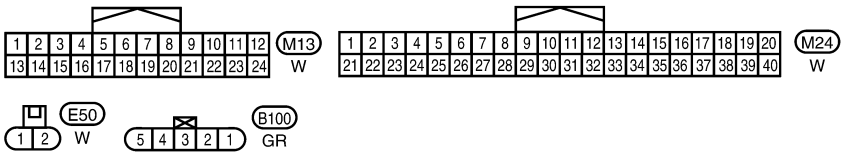
REFER TO THE FOLLOWING.
M69 - SUPER MULTIPLE JUNCTION (SMJ)

ABNWA0594GB

DI-WARN-02

N : CANADA



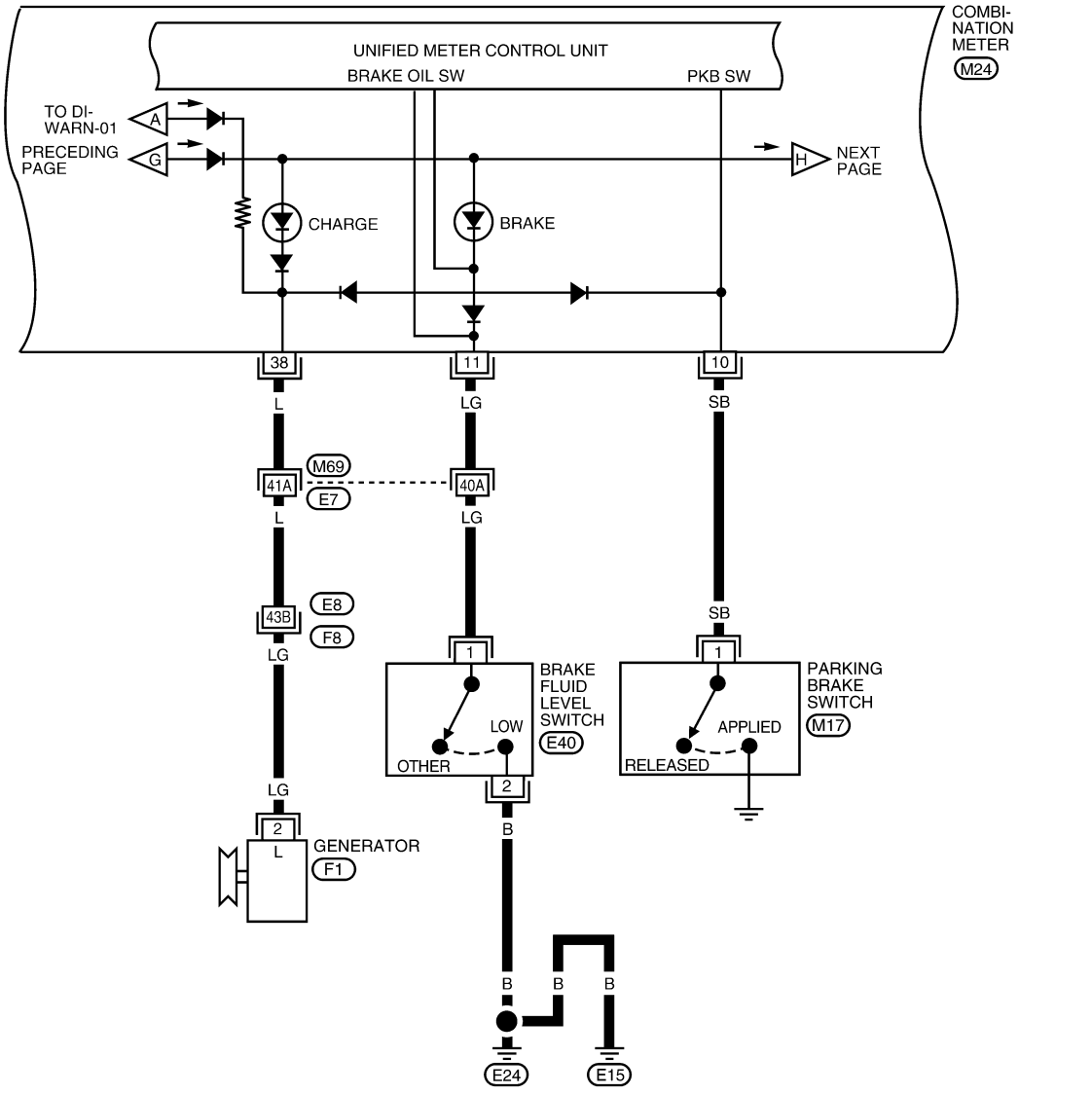


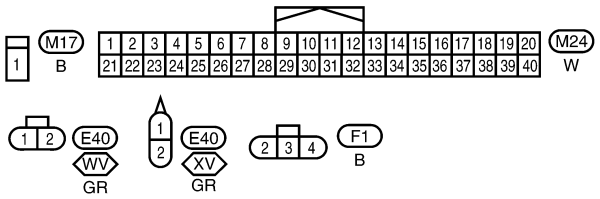
REFER TO THE FOLLOWING.
M69 - SUPER MULTIPLE JUNCTION (SMJ)

AANWA0047GB

DI-WARN-03

WV : WITH VDC
XV : WITHOUT VDC

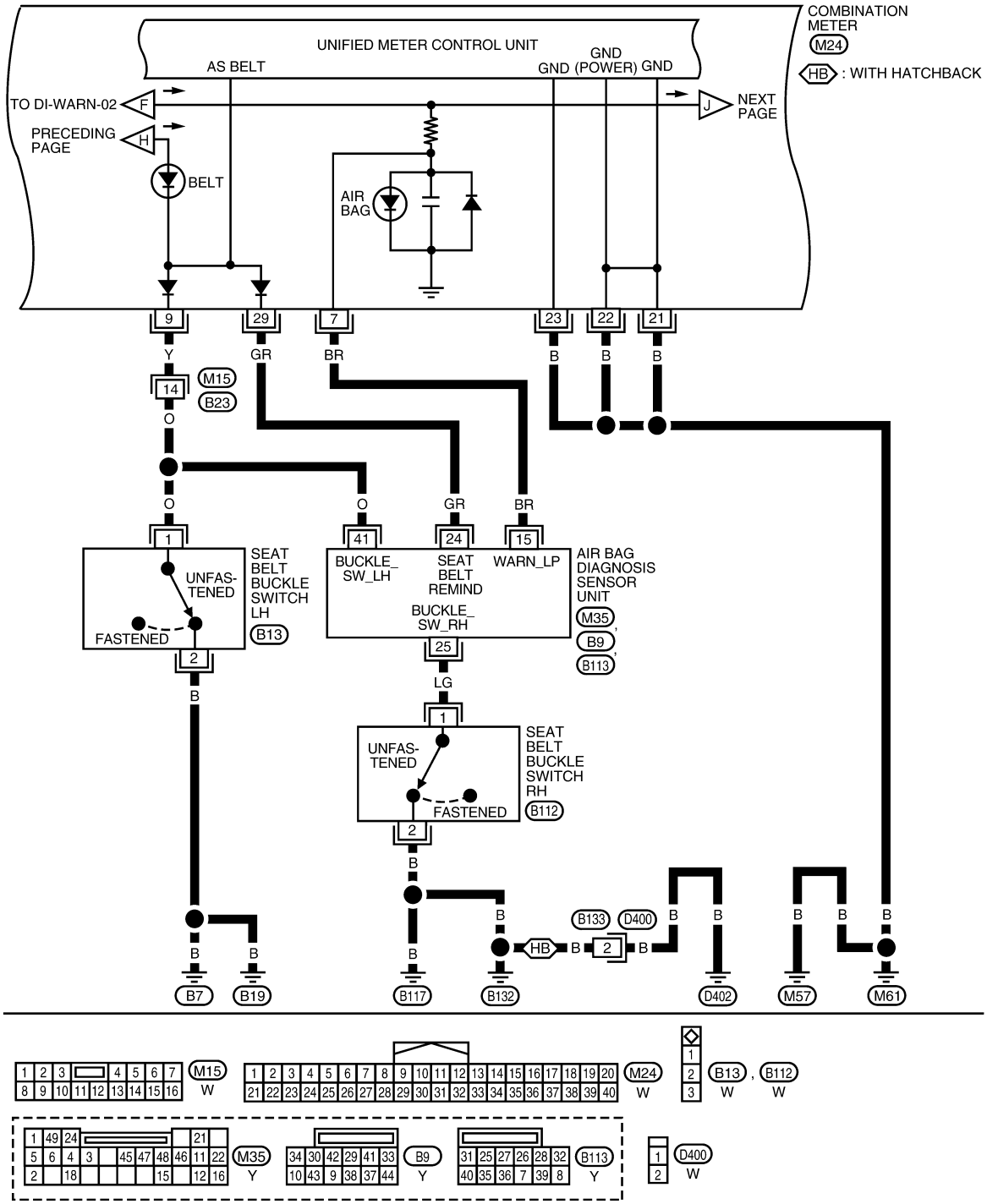




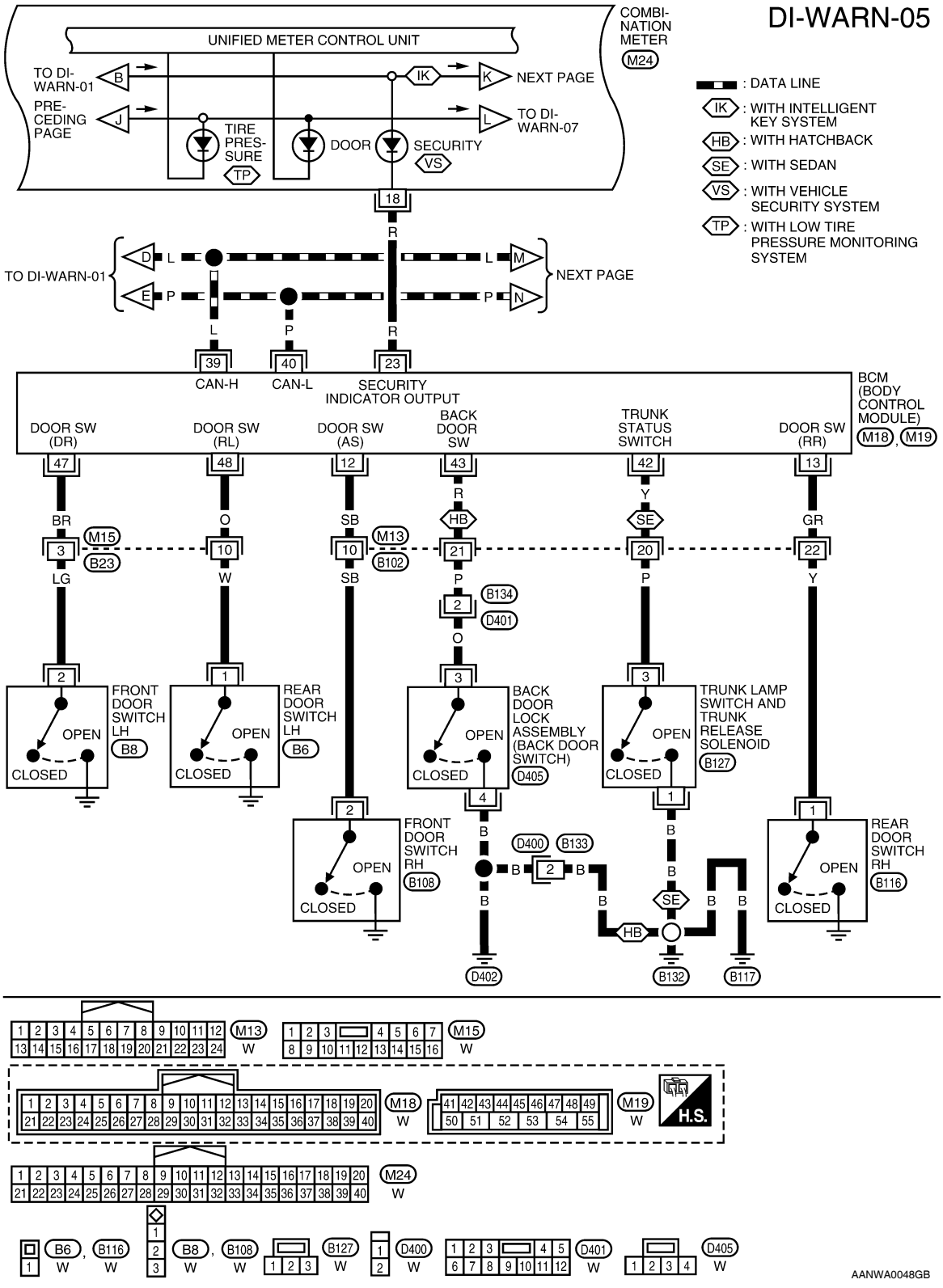
REFER TO THE FOLLOWING.
M69, F8 - SUPER MULTIPLE JUNCTION (SMJ)

ABNWA0614GB

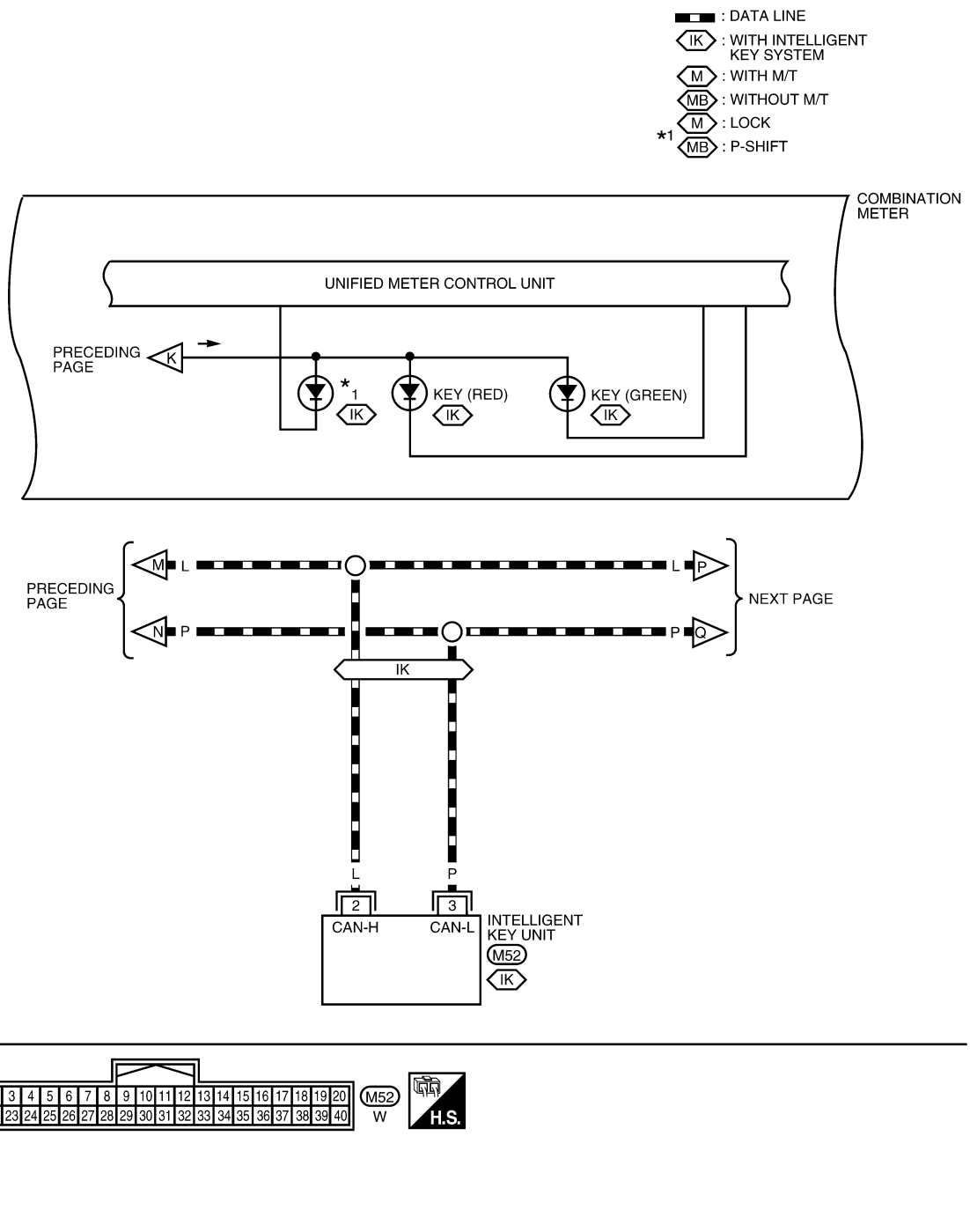
DI-WARN-04



WKWA5804E


DI-WARN-05
COMBI-NATION METER
M24
UNIFIED METER CONTROL UNIT
TO DI-WARN-01
PRE-CEDING PAGE
NEXT PAGE
TO DI-WARN-07
TIRE PRES-SURE
TP
DOOR
SECURITY
VS
: DATA LINE
: WITH INTELLIGENT KEY SYSTEM
: WITH HATCHBACK
: WITH SEDAN
: WITH VEHICLE SECURITY SYSTEM
: WITH LOW TIRE PRESSURE MONITORING SYSTEM
CAN-H
CAN-L
SECURITY INDICATOR OUTPUT
BCM (BODY CONTROL MODULE)
M18, M19
DOOR SW (DR)
DOOR SW (RL)
DOOR SW (AS)
BACK DOOR SW
TRUNK STATUS SWITCH
DOOR SW (RR)
FRONT DOOR SWITCH LH
REAR DOOR SWITCH LH
FRONT DOOR SWITCH RH
REAR DOOR SWITCH RH
BACK DOOR LOCK ASSEMBLY (BACK DOOR SWITCH)
TRUNK LAMP SWITCH AND TRUNK RELEASE SOLENOID
OPEN
CLOSED
AANWA0048GB

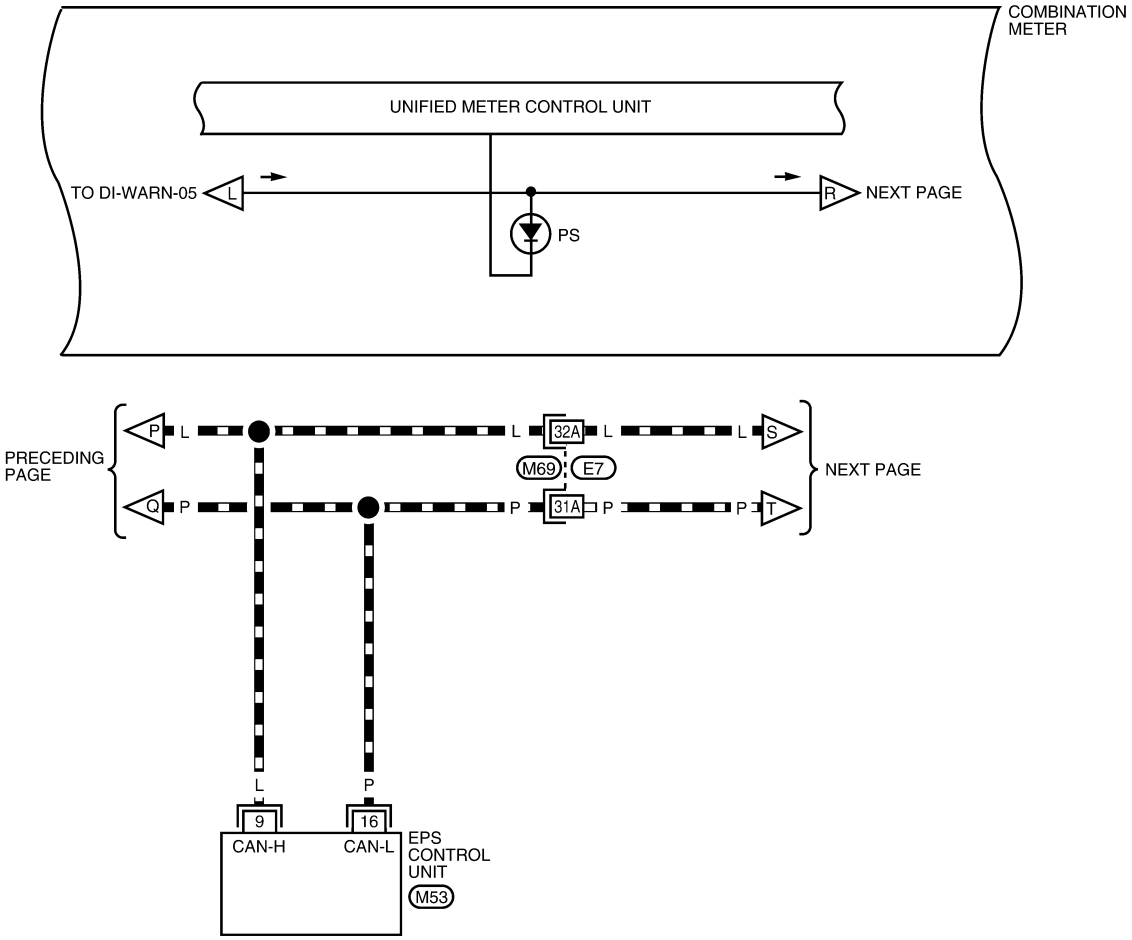
DI-WARN-06

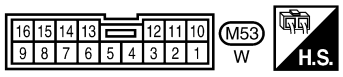


AANWA0049GB

DI-WARN-07

: DATA LINE



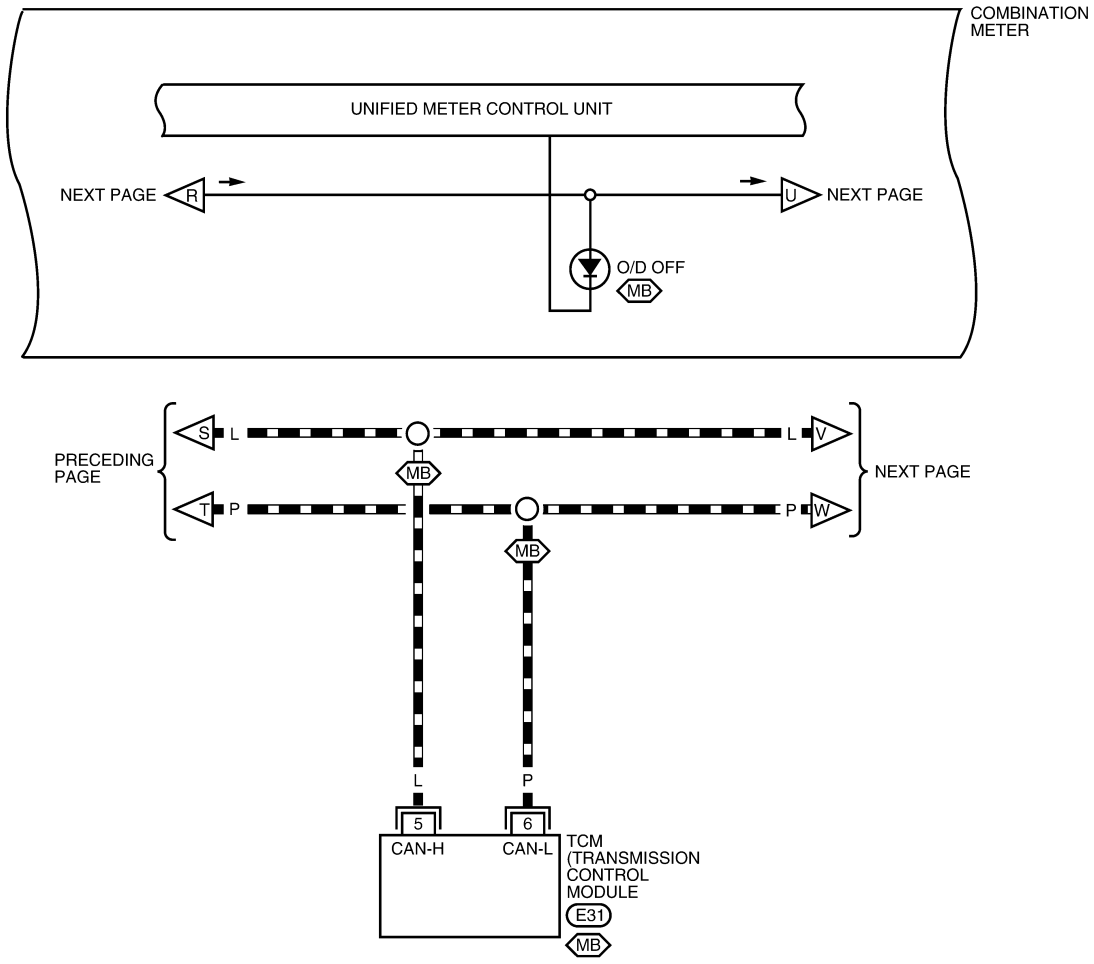


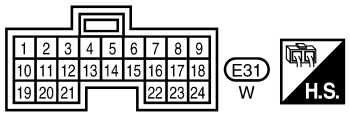
REFER TO THE FOLLOWING.
M69 - SUPER MULTIPLE JUNCTION (SMJ)

LKWA0357E

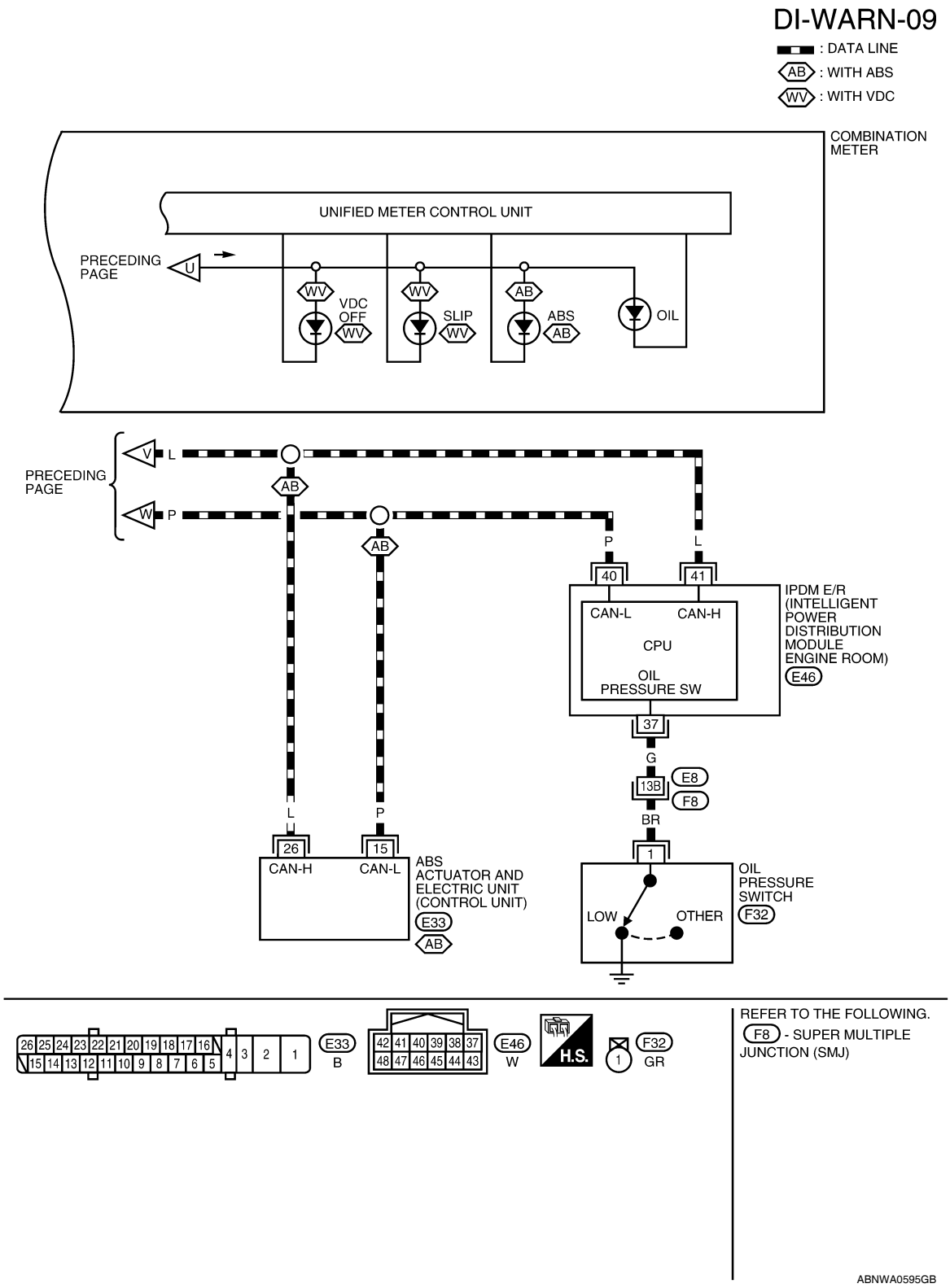
DI-WARN-08

: DATA LINE
MB : WITHOUT M/T





LKWA0358E



Oil Pressure Warning Lamp Stays Off (Ignition Switch ON)

INFOID:0000000005395029

1.CHECK OIL PRESSURE WARNING LAMP OPERATION

Activate IPDM E/R auto active test. Refer to PG-20, "Auto Active Test".

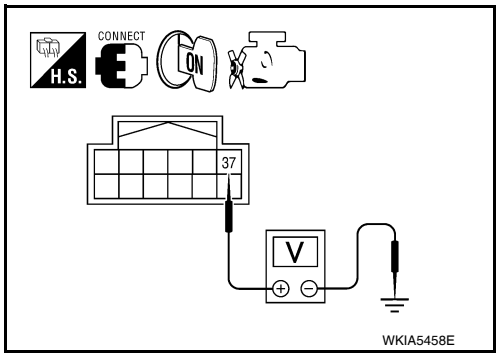
Does oil pressure warning lamp blink?

YES >> GO TO 2.
NO >> GO TO 5.

2.CHECK IPDM E/R INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between IPDM E/R harness connector and ground.

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
IPDM E/R connector	Terminal			
E46	37	Ground	Engine stopped	0 V



OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".

NG >> GO TO 3.

3.CHECK OIL PRESSURE SWITCH

1. Turn ignition switch OFF.
2. Disconnect oil pressure switch connector.
3. Check oil pressure switch. Refer to DI-32, "Component Inspection".

OK or NG

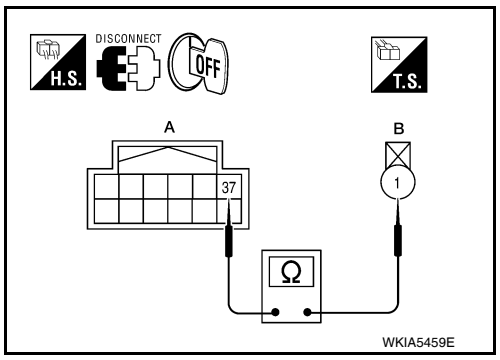
OK >> GO TO 4.

NG >> Replace oil pressure switch.

4.CHECK OIL PRESSURE SWITCH CIRCUIT

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

A		B		Continuity
Connector	Terminal	Connector	Terminal	
E46	37	F32	1	Yes



OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".

NG >> Repair harness or connector.

5.CHECK CAN COMMUNICATION

Select “METER/M&A” on CONSULT-III, and perform self-diagnosis of combination meter.

Self-diagnostic results content

No malfunction detected>> GO TO 6.

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

6.CHECK COMBINATION METER INPUT SIGNAL

Select “METER/M&A” on CONSULT-III. Operate ignition switch with “OIL W/L” of “DATA MONITOR” and check operation status.

“OIL W/L”

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

When engine running : OFF

OK or NG

OK >> Replace combination meter. Refer to IP-12, "Removal and Installation".

NG >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".

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

INFOID:0000000005395030

NOTE:
For oil pressure inspection, refer to LU-17, "Inspection".

1.CHECK OIL PRESSURE WARNING LAMP OPERATION

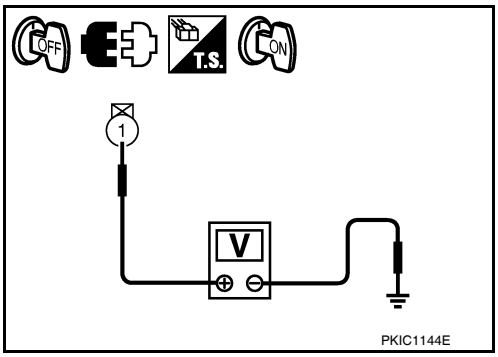
Activate IPDM E/R auto active test. Refer to PG-20, "Auto Active Test".

Does oil pressure warning lamp blink?

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		
F32	1	Ground	12 V

OK or NG

OK >> GO TO 3.
NG >> GO TO 4.

3.CHECK OIL PRESSURE SWITCH

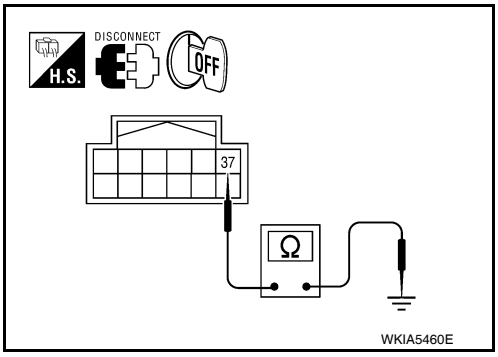
1. Turn ignition switch OFF.
2. Check oil pressure switch. Refer to DI-32, "Component Inspection".

OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "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
E46	37		No

OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".
NG >> Repair harness or connector.

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

Perform self-diagnosis of IPDM E/R. Refer to PG-18, "CONSULT-III Function (IPDM E/R)".

Self-diagnostic results content

No malfunction detected>>Replace combination meter. Refer to IP-12, "Removal and Installation".
Malfunction detected>> Check applicable parts, and repair or replace as necessary.

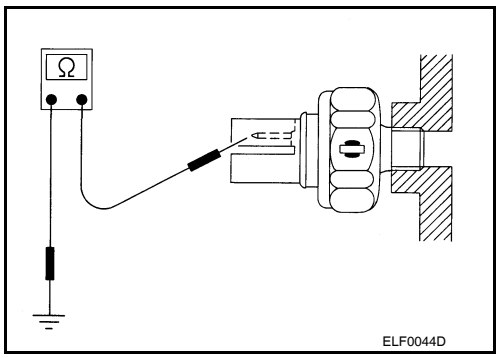
Component Inspection

INFOID:0000000005395031

OIL PRESSURE SWITCH

Check continuity between oil pressure switch and ground.

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

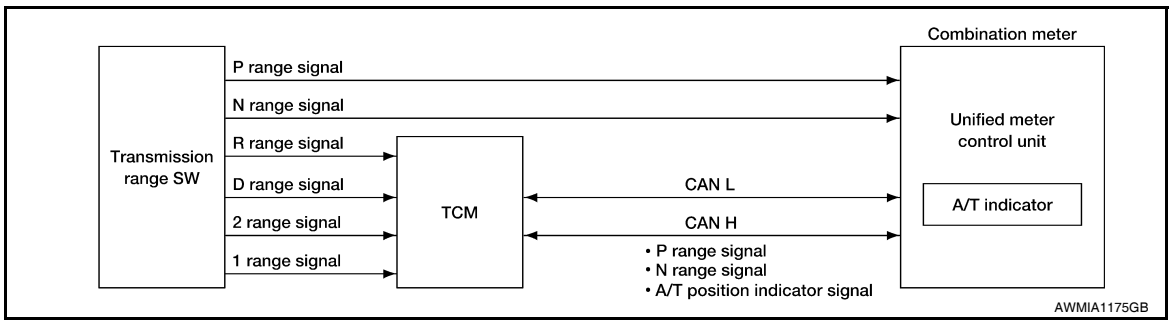


A/T INDICATOR

System Description

INFOID:0000000005395032

The TCM receives A/T indicator signals from the transmission range switch (R-range, D-range, 2-range and 1-range) and the combination meter (P-range and N-range). The TCM then sends A/T position indicator signals to the combination meter via CAN communication lines. The combination meter indicates the received shift position.

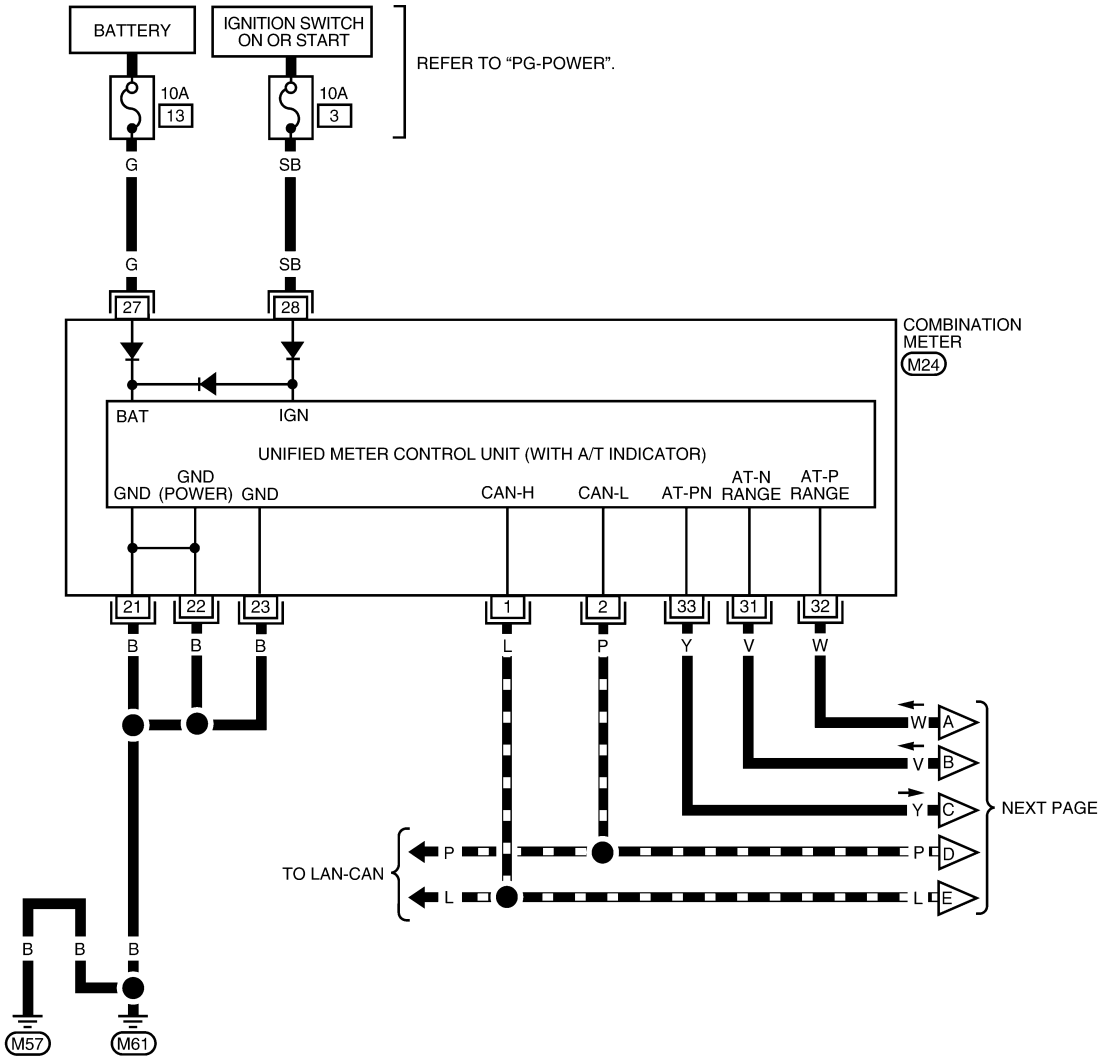


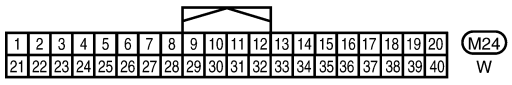
Wiring Diagram - AT/IND -

INFOID:0000000005395033

DI-AT/IND-01

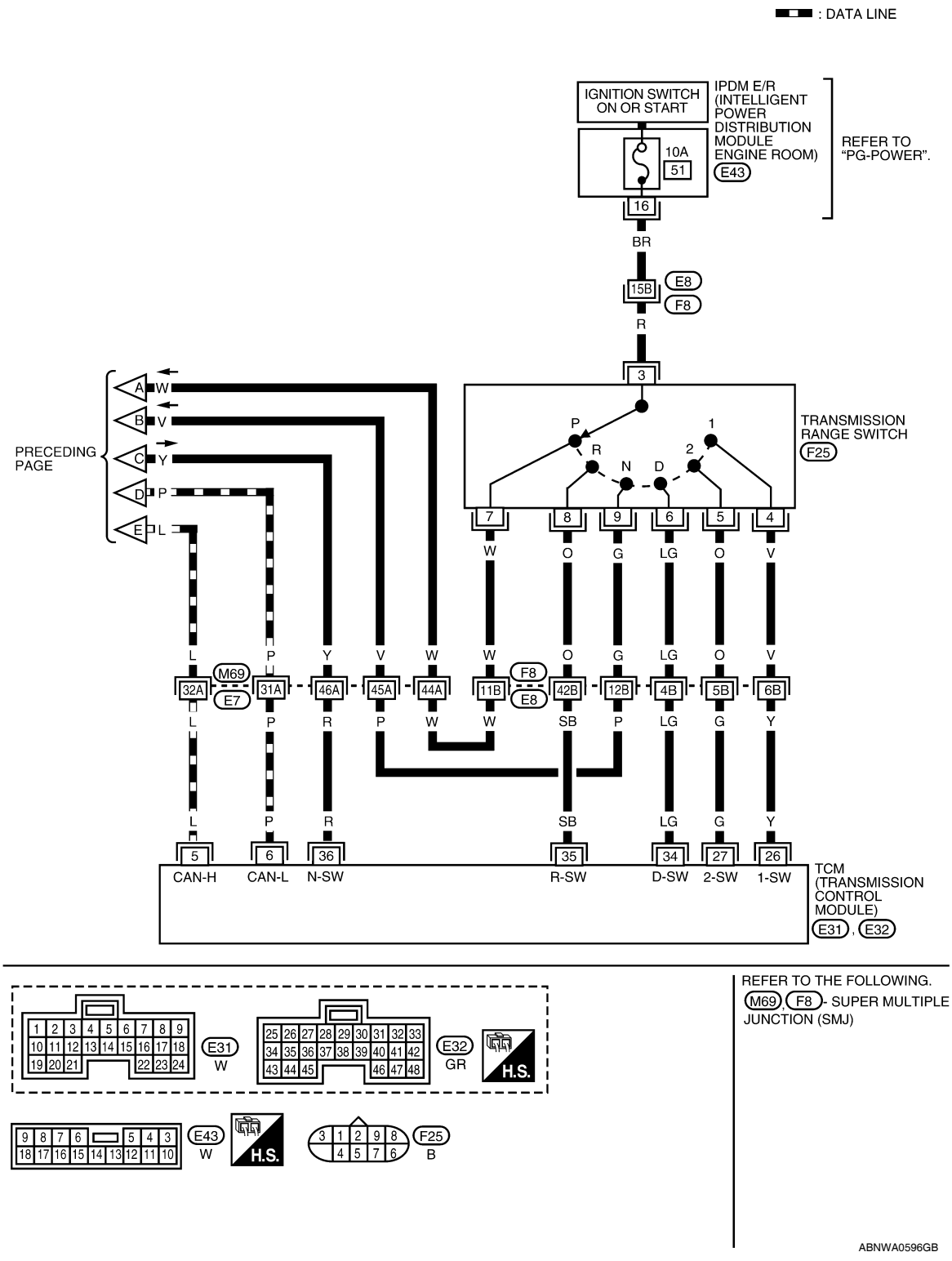
: DATA LINE





LKWA0360E

DI-AT/IND-02



A/T Indicator Does Not Illuminate

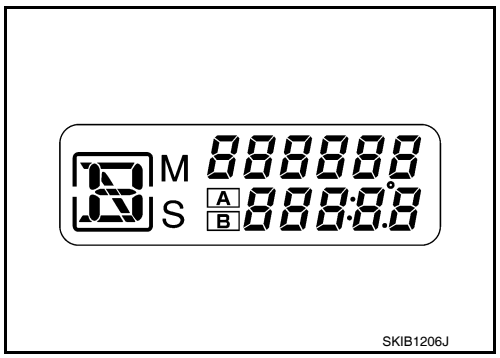
INFOID:0000000005395034

1. CHECK SEGMENT OF A/T INDICATOR

Perform self-diagnosis of combination meter. Refer to DI-11, "Self-Diagnosis Mode of Combination Meter".

Are all segments displayed?

YES >> GO TO 2.
NO >> Replace combination meter. Refer to IP-12, "Removal and Installation".



2. CHECK COMBINATION METER (CONSULT-III)

1. Connect CONSULT-III.
2. Select “METER/M&A” on CONSULT-III, and perform self-diagnosis of combination meter. Refer to DI-13, "CONSULT-III Function (METER/M&A)".

Self-diagnostic results content

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

3. CHECK COMBINATION METER INPUT SIGNAL

Use “DATA MONITOR” of “METER/M&A” on CONSULT-III. Confirm each indication on the monitor when operating the A/T selector lever.

CONSULT-III display	Switch operation	Operation status
P RANGE IND	P range position	ON
	Except for P range position	OFF
R RANGE IND	R range position	ON
	Except for R range position	OFF
N RANGE IND	N range position	ON
	Except for N range position	OFF
D RANGE IND	D range position	ON
	Except for D range position	OFF
2 RANGE IND	2 range position	ON
	Except for 2 range position	OFF
1 RANGE IND	1 range position	ON
	Except for 1 range position	OFF

OK or NG

OK >> Replace combination meter. Refer to IP-12, "Removal and Installation".
NG >> GO TO 4.

4. CHECK SELF-DIAGNOSIS RESULTS OF TCM

Perform self-diagnosis of TCM. Refer to AT-77, "CONSULT-III Function (TRANSMISSION)".

OK or NG

OK >> Check TCM input/output signal. Repair or replace malfunctioning part, if necessary. Refer to AT-31, "Input/Output Signal of TCM".
NG >> Check applicable part, and repair or replace as necessary.

CVT INDICATOR

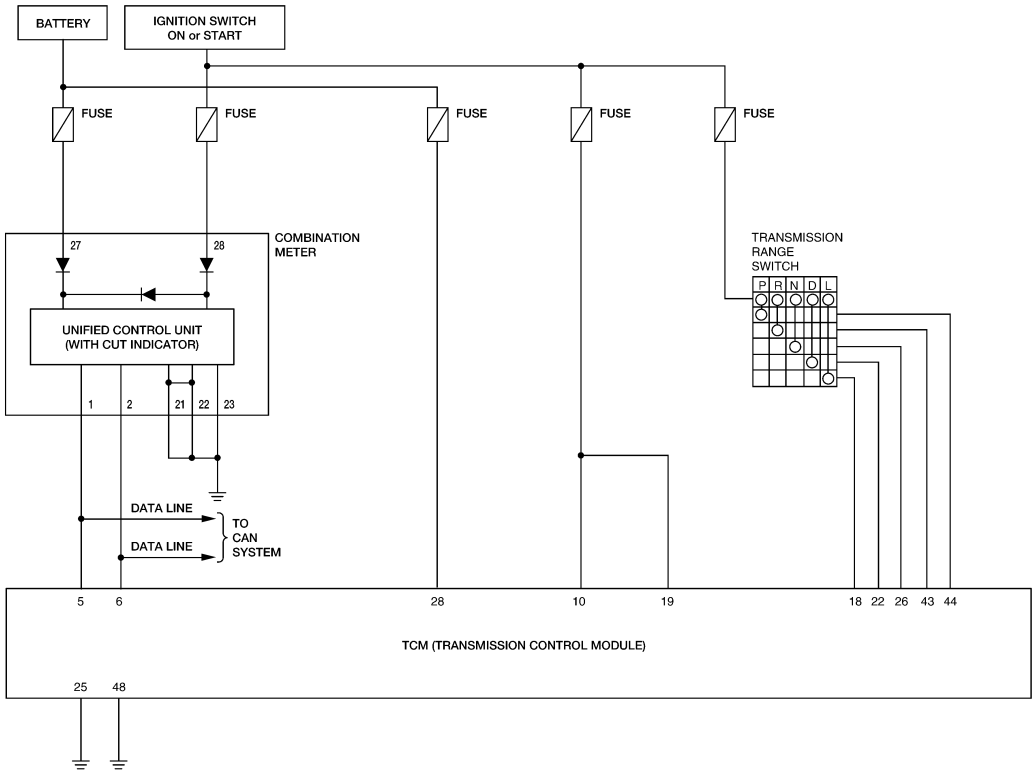
System Description

INFOID:0000000005395035

The TCM receives CVT indicator signals from the transmission range switch. The TCM then sends CVT position indicator signals to the combination meter via CAN communication lines. The combination meter indicates the received shift position.

Schematic

INFOID:0000000005395036



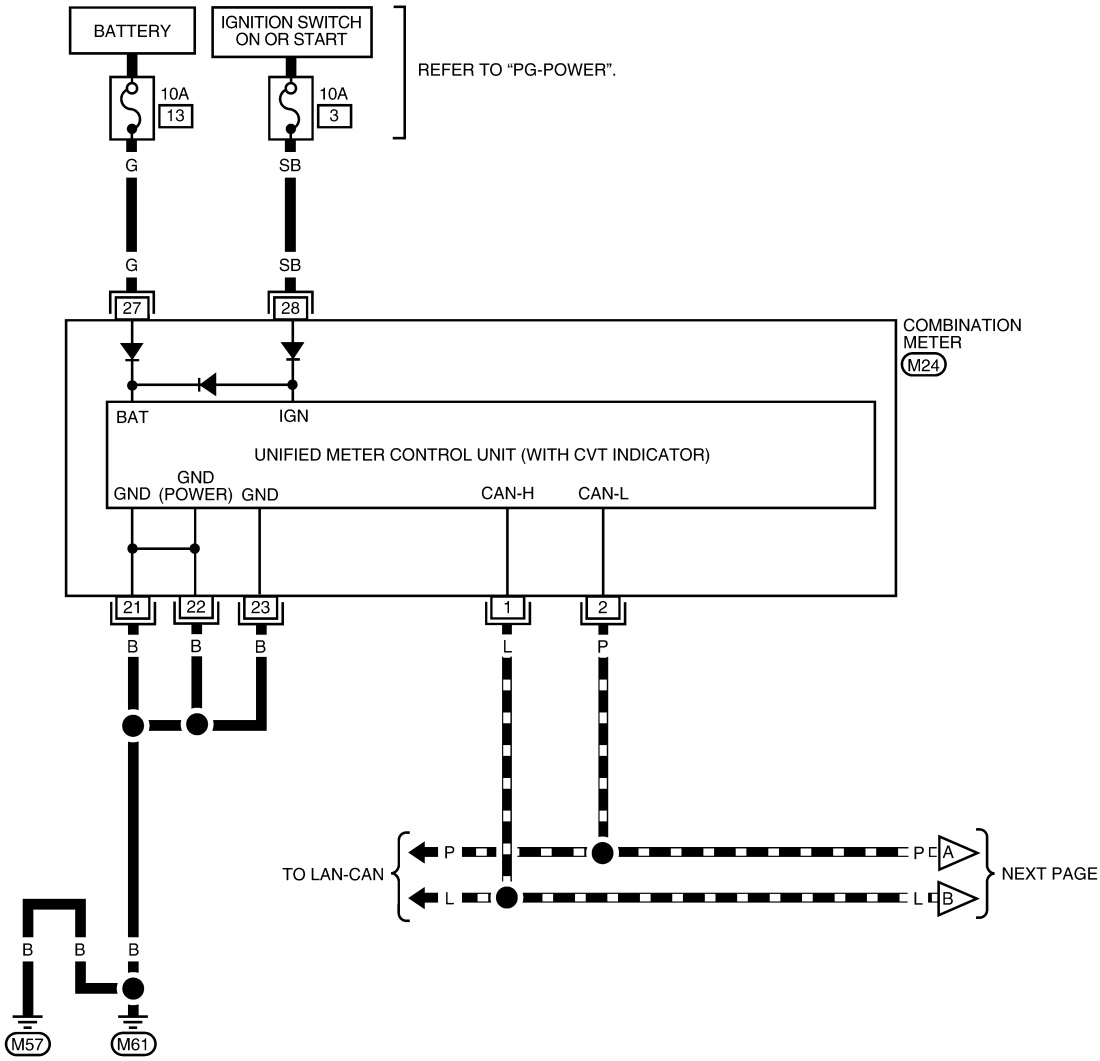
ABNWA0597GB

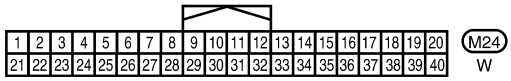
Wiring Diagram - CVTIND -

INFOID:0000000005395037

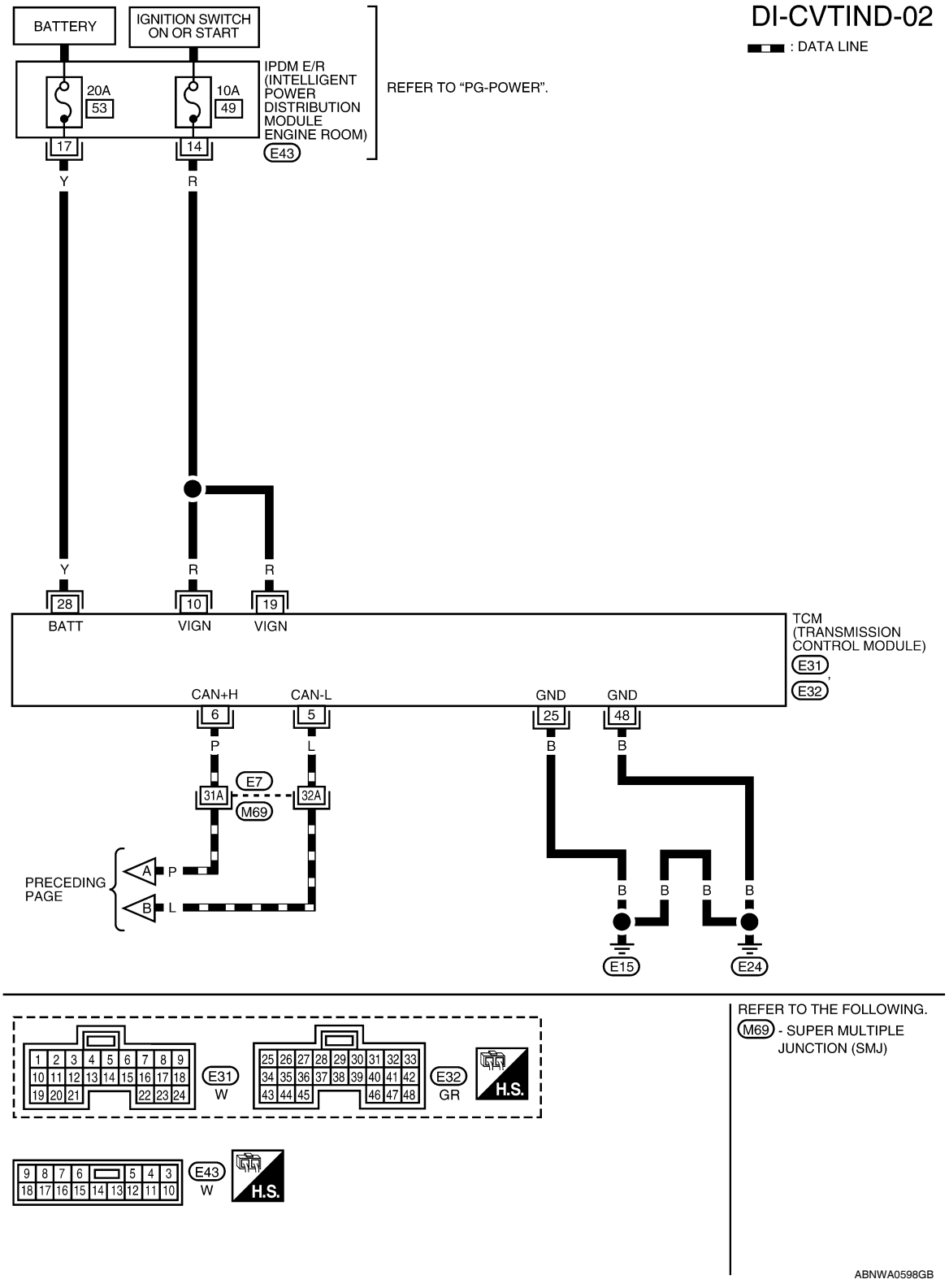
DI-CVTIND-01

: DATA LINE



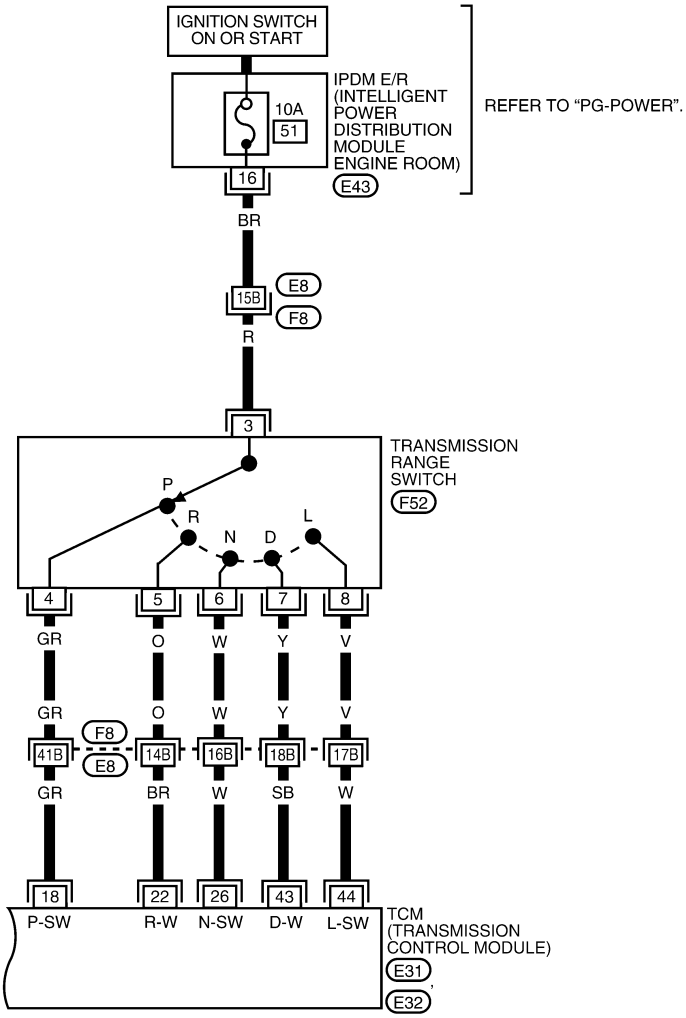


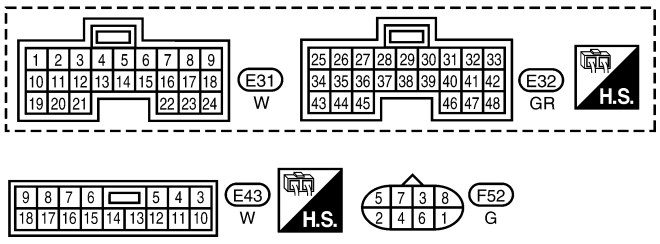
LKWA0362E


DI-CVTIND-02
: DATA LINE
BATTERY
IGNITION SWITCH ON OR START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E43
REFER TO "PG-POWER".
20A
53
10A
49
17
14
Y
R
Y
R
R
28
10
19
BATT
VIGN
VIGN
TCM (TRANSMISSION CONTROL MODULE)
E31
E32
CAN+H
CAN-L
GND
GND
6
5
25
48
P
L
B
B
E7
31A
32A
M69
PRECEDING PAGE
A
B
P
L
B
B
B
B
E15
E24
REFER TO THE FOLLOWING.
M69 - SUPER MULTIPLE JUNCTION (SMJ)
E31
W
E32
GR
H.S.
E43
W
H.S.
ABNWA0598GB

DI-CVTIND-03

: DATA LINE





REFER TO THE FOLLOWING.
F8 - SUPER MULTIPLE JUNCTION (SMJ)

ABNWA0599GB

CVT Indicator Does Not Illuminate

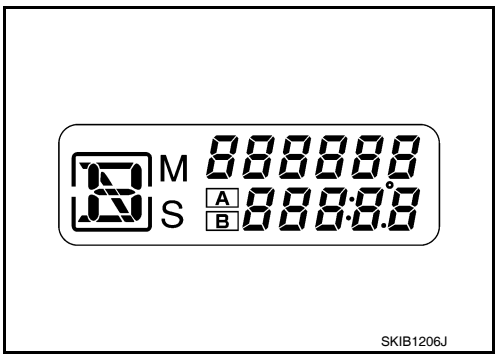
INFOID:0000000005395038

1. CHECK SEGMENT OF CVT INDICATOR

Perform self-diagnosis of combination meter. Refer to DI-11, "Self-Diagnosis Mode of Combination Meter".

Are all segments displayed?

YES >> GO TO 2.
NO >> Replace combination meter. Refer to IP-12, "Removal and Installation".



2. CHECK COMBINATION METER (CONSULT-III)

1. Connect CONSULT-III.
2. Select “METER/M&A” on CONSULT-III, and perform self-diagnosis of combination meter. Refer to DI-13, "CONSULT-III Function (METER/M&A)".

Self-diagnostic results content

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

3. CHECK COMBINATION METER INPUT SIGNAL

Use “DATA MONITOR” of “METER/M&A” on CONSULT-III. Confirm each indication on the monitor when operating the CVT selector lever.

CONSULT-III display	Switch operation	Operation status
P RANGE IND	P range position	ON
	Except for P range position	OFF
R RANGE IND	R range position	ON
	Except for R range position	OFF
N RANGE IND	N range position	ON
	Except for N range position	OFF
D RANGE IND	D range position	ON
	Except for D range position	OFF
L RANGE IND	L range position	ON
	Except for L range position	OFF

OK or NG

OK >> Replace combination meter. Refer to IP-12, "Removal and Installation".
NG >> GO TO 4.

4. CHECK SELF-DIAGNOSIS RESULTS OF TCM

Perform self-diagnosis of TCM. Refer to CVT-48, "CONSULT-III Function (TRANSMISSION)".

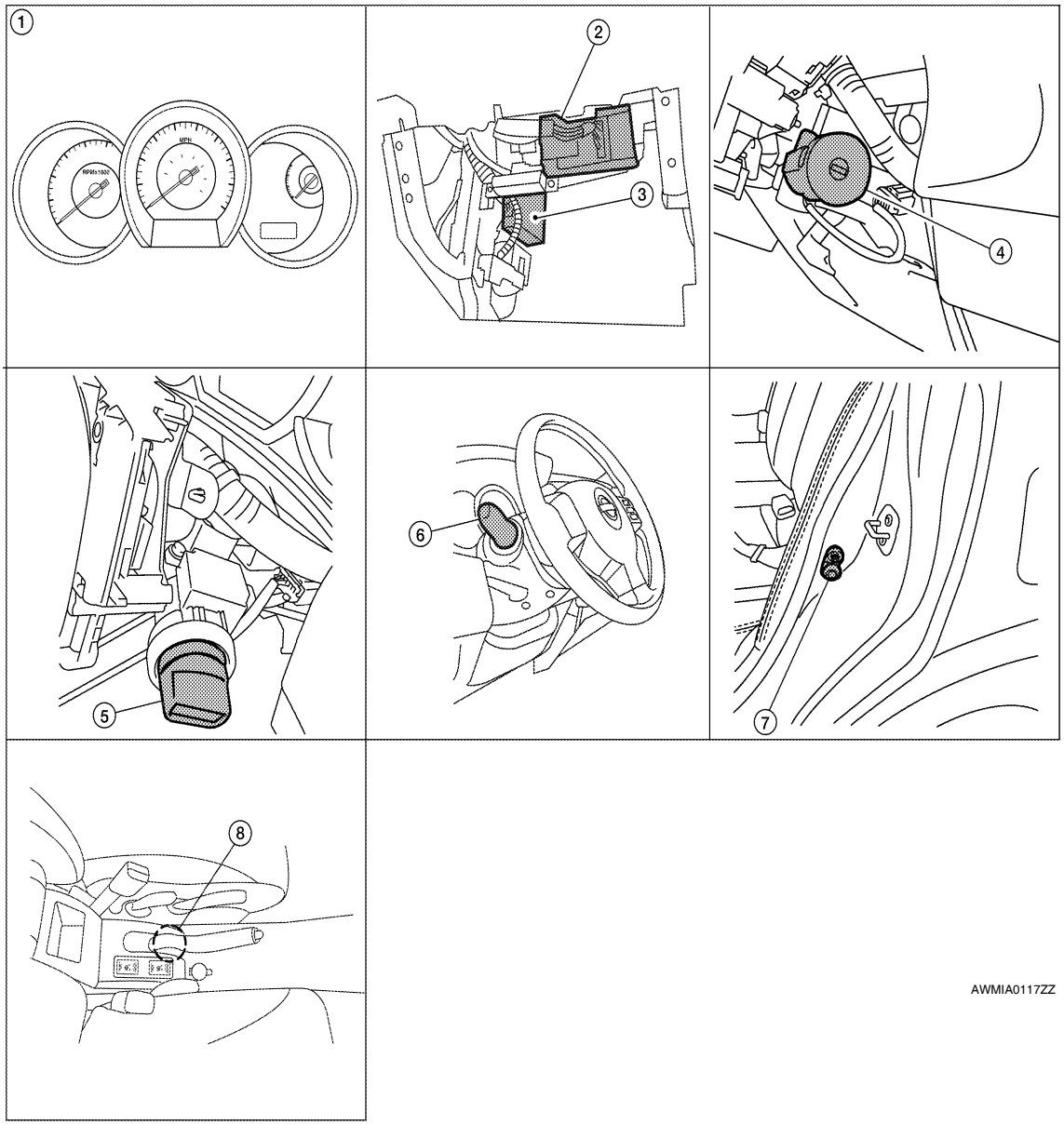
OK or NG

OK >> Check TCM input/output signal. Repair or replace malfunctioning part, if necessary. Refer to CVT-22, "Input/Output Signal of TCM".
NG >> Check applicable part, and repair or replace as necessary.

WARNING CHIME

Component Parts and Harness Connector Location

INFOID:0000000005395039



1. Combination meter M24
2. BCM M18, M19, M20 (view with glove box removed)
3. Intelligent Key unit M52 (with Intelligent Key)
4. Key switch and key lock solenoid M27 (without Intelligent Key)
5. Key switch and ignition knob switch M73 (with Intelligent Key)
6. Combination switch (lighting switch) M28
7. Front door switch LH B8
8. Parking brake switch M17

System Description

INFOID:0000000005395040

- Buzzer for warning chime system is installed in the combination meter.
- The buzzer sounds when combination meter receives buzzer output signal with CAN communication line.

POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times

- through 40A fusible link (letter **g**, located in the fuse and fusible link box)
- to BCM terminal 70,

- through 10A fuse [No. 8, located in the fuse block (J/B)]
- to BCM terminal 57,
- through 10A fuse [No. 13, located in the fuse block (J/B)]
- to combination meter terminal 27.

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

- through 10A fuse [No. 6, located in the fuse block (J/B)]
- to BCM terminal 38,
- through 10A fuse [No. 3, located in the fuse block (J/B)]
- to combination meter terminal 28.

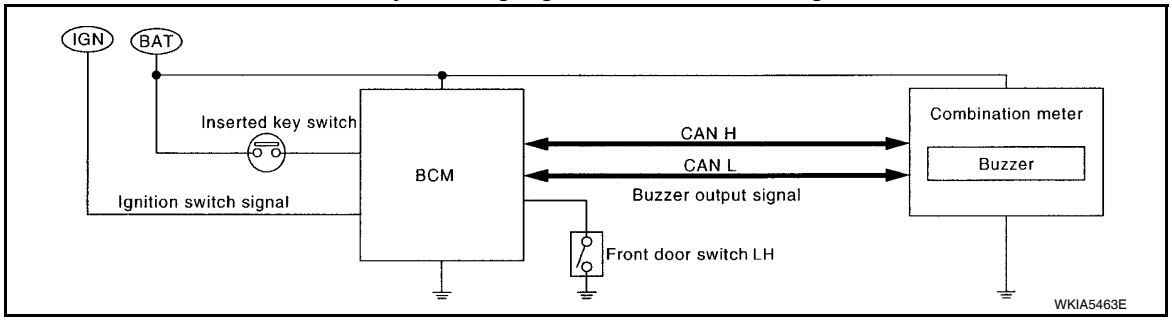
Ground is supplied

- to BCM terminal 67 and
- to combination meter terminals 21, 22 and 23
- through grounds M57 and M61.

IGNITION KEY WARNING CHIME (WITHOUT INTELLIGENT KEY)

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

- BCM detects key inserted into the ignition switch, and sends key warning signal to combination meter with CAN communication line.
- When combination meter receives key warning signal, it sounds warning chime.

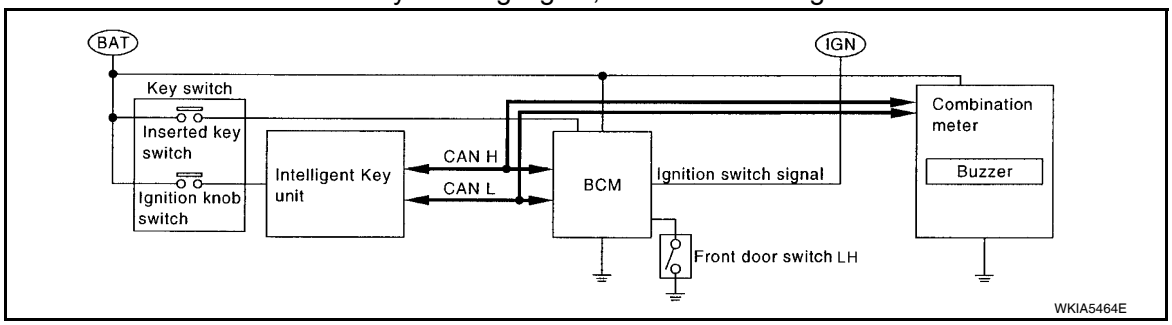


IGNITION KEY WARNING CHIME (WITH INTELLIGENT KEY)

When Mechanical Key Is Used

With the key inserted into the key switch, and the ignition switch in the LOCK or ACC position, when driver's door is opened, the warning chime will sound.

- BCM detects key inserted into the ignition switch, and sends key warning signal to combination meter with CAN communication line.
- When combination meter receives key warning signal, it sounds warning chime.



When Intelligent Key Is Carried With The Driver

Refer to BL-88, "System Description".

LIGHT WARNING CHIME

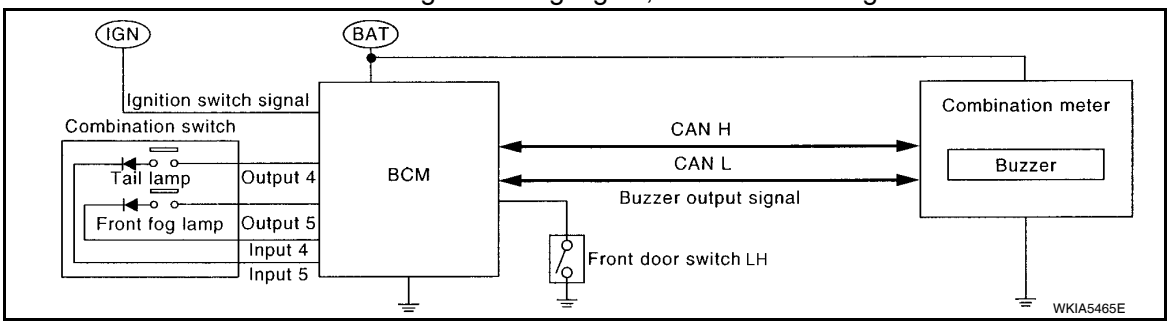
The warning chime sounds, when driver's door is opened (door switch ON) with lighting switch ON and the ignition switch is in any position other than ON or START.

NOTE:

BCM detected lighting switch in the 1st or 2nd position, refer to LT-65, "Combination Switch Reading Function".

- BCM detects headlamps are illuminated, and sends light warning signal to combination meter with CAN communication lines.

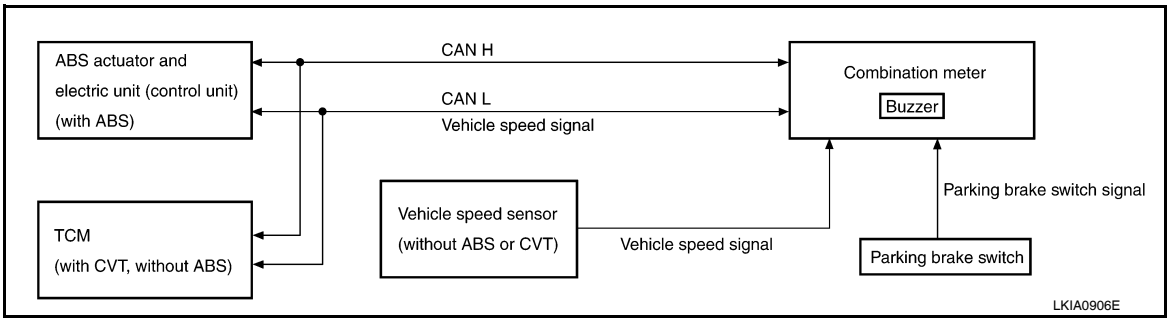
- When the combination meter receives light warning signal, it sounds warning chime.



PARKING BRAKE WARNING CHIME

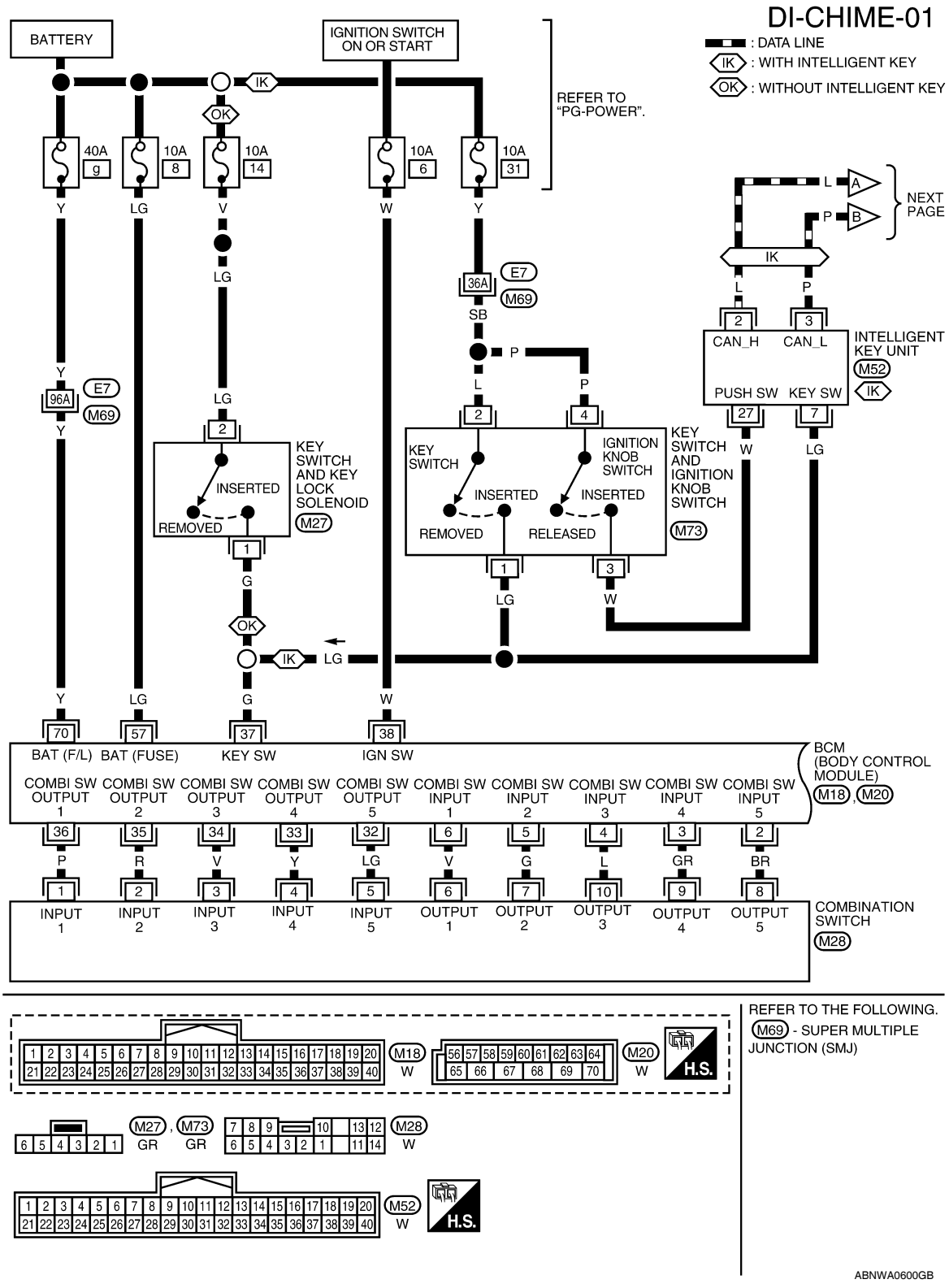
The parking brake warning chime sounds when the parking brake is applied and vehicle speed reaches approximately 2 km/h (1 MPH).

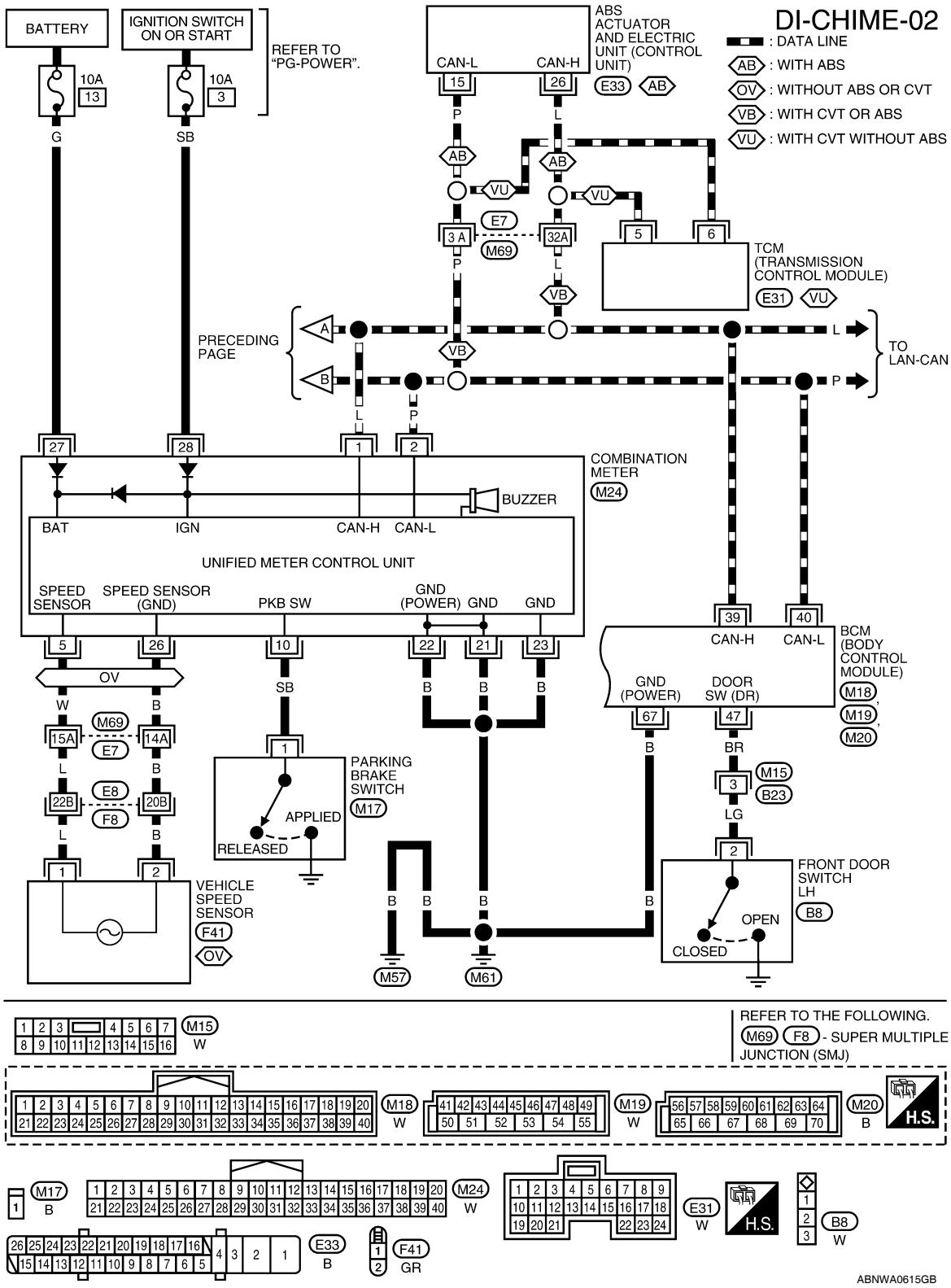
- The combination meter receives a parking brake applied signal from the parking brake switch.
- When the combination meter receives a vehicle speed signal from the ABS actuator and electric unit (control unit) (with ABS), vehicle speed sensor (without ABS or CVT) or the TCM (with CVT, without ABS), it sounds the buzzer.



Wiring Diagram - CHIME -

INFOID:0000000005395041





Terminal and Reference Value for BCM

INFOID:0000000005395042

Refer to BCS-12, "Terminal and Reference Value for BCM".

CONSULT-III Function (BCM)

INFOID:0000000005395043

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

BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

DATA MONITOR

Display Item List

Monitored item	ALL SIGNALS	SELECTION FROM MENU	Contents
IGN ON SW	X	X	Indicates [ON/OFF] condition of ignition switch.
KEY ON SW	X	X	Indicates [ON/OFF] condition of key switch.
DOOR SW-DR	X	X	Indicates [ON/OFF] condition of front door switch LH.
LIGHT SW 1ST	X	X	Indicates [ON/OFF] condition of lighting switch.
BUCKLE SW	X	X	Indicates [ON/OFF] condition of seat belt buckle switch LH.

ACTIVE TEST

Display Item List

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

SELF-DIAG RESULTS

Display Item List

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

NOTE:
If “CAN communication [U1000]” is indicated, after printing the monitor item, go to “LAN system”. Refer to LAN-17, "Trouble Diagnosis Flow Chart".

Trouble Diagnosis

INFOID:0000000005395044

HOW TO PERFORM TROUBLE DIAGNOSIS

1. Confirm the symptom and customer complaint.
2. Understand the outline of system. Refer to DI-43, "System Description".
3. Perform the preliminary inspection. Refer to "PRELIMINARY INSPECTION".
4. According to symptom chart, repair or replace the cause of the malfunction. Refer to "SYMPTOM CHART".
5. Does warning chime system operate normally? If it operates normally, GO TO 6. If not, GO TO 4.
6. Inspection End.

PRELIMINARY INSPECTION

1.CHECK BCM

Perform self-diagnosis of BCM. Refer to DI-47, "CONSULT-III 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 COMBINATION METER

Perform self-diagnosis of combination meter. Refer to DI-13, "CONSULT-III Function (METER/M&A)".

Self-diagnostic results content

No malfunction detected>> Inspection End.
Malfunction detected>> Check applicable parts, and repair or replace corresponding parts.

SYMPTOM CHART

Symptom		Diagnoses/Service procedure
All warning chime systems do not activate.		Perform the following inspections. • DI-49, "Combination Meter Buzzer Circuit Inspection" • DI-50, "Front Door Switch LH Signal Inspection" If above check is OK, replace BCM. Refer to BCS-19, "Removal and Installation of BCM".
Key warning chime does not activate.	Without Intelligent Key.	Perform DI-51, "Key Switch Signal Inspection (Without Intelligent Key)". If above check is OK, replace BCM. Refer to BCS-19, "Removal and Installation of BCM".
	With Intelligent Key, when mechanical key is used.	Perform DI-52, "Key Switch and Ignition Knob Switch Signal Inspection (With Intelligent Key, When Mechanical Key Is Used)". If above check is OK, replace BCM. Refer to BCS-19, "Removal and Installation of BCM".
	With Intelligent Key, when Intelligent Key is carried with the driver.	Refer to BL-119, "Trouble Diagnosis Symptom Chart".
Light warning chime does not activate.		Perform DI-54, "Lighting Switch Signal Inspection". If above check is OK, replace BCM. Refer to BCS-19, "Removal and Installation of BCM".
Parking brake warning chime does not activate		Perform the following inspections • DI-54, "Parking Brake Switch Signal Inspection" • DI-16, "Vehicle Speed Signal Inspection"

Combination Meter Buzzer Circuit Inspection

INFOID:0000000005395045

1.CHECK CHIME OPERATION

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

Does chime sound?

YES >> Combination meter buzzer circuit is OK. Return to DI-48, "Trouble Diagnosis".
NO >> GO TO 2.

2.CHECK COMBINATION METER INPUT SIGNAL

1. Select “METER/M&A” on CONSULT-III.
2. Turn on hazard switch or lighting switch while monitoring “BUZZER” of “DATA MONITOR” and check operation status.

“BUZZER”

While hazard switch or lighting switch is ON	**: ON and OFF repeatedly**
Except above	**: OFF**

OK or NG

OK >> Check battery power supply circuit of combination meter. If OK, replace combination meter. Refer to IP-12, "Removal and Installation".
NG >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM".

Front Door Switch LH Signal Inspection

INFOID:0000000005395046

1.CHECK BCM INPUT SIGNAL

With CONSULT-III

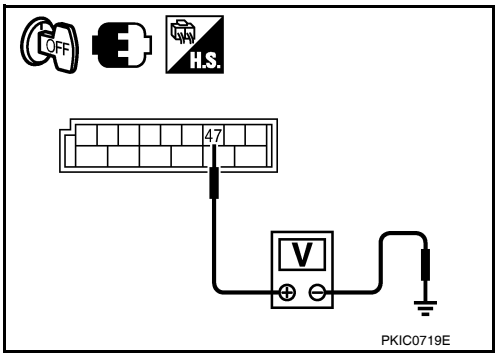
1. Select “BCM”.
2. With “DATA MONITOR” of “BUZZER”, confirm “DOOR SW-DR” when the driver's door is operated.

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

Without CONSULT-III

Check voltage between BCM harness connector and ground.

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
BCM connector	Terminal			
M19	47	Ground	Driver's door is opened	0
			Driver's door is closed	Battery voltage



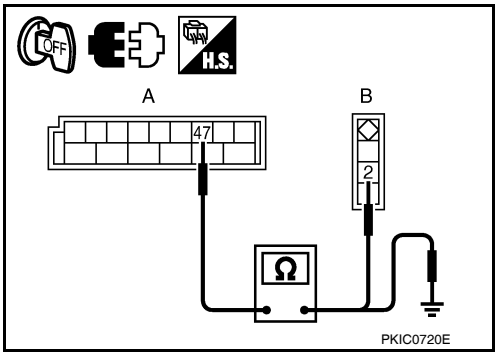
OK or NG

OK >> Front door switch LH signal is OK. Return to DI-48, "Trouble Diagnosis".
NG >> GO TO 2.

2.CHECK FRONT DOOR SWITCH LH CIRCUIT

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

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M19	47	B8	2	Yes



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

A		Ground	Continuity
Connector	Terminal		
M19	47		No

OK or NG

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

3.CHECK FRONT DOOR SWITCH LH

Check front door switch LH. Refer to DI-55, "Electrical Component Inspection".

OK or NG

OK >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM".
NG >> Replace front door switch LH.

Key Switch Signal Inspection (Without Intelligent Key)

INFOID:0000000005395047

1.CHECK FUSE

Check if the key switch and key lock solenoid 10A fuse [No. 14, located in the fuse block (J/B)] is blown.

OK or NG

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

2.CHECK BCM INPUT SIGNAL

With CONSULT-III

1. Select “BCM”.
2. With “DATA MONITOR” of “BUZZER”, confirm “KEY ON SW” when the key is operated.

“KEY ON SW”

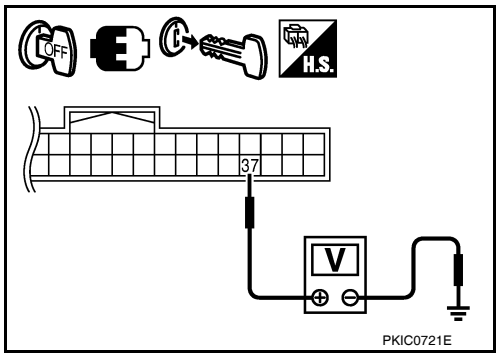
When key is inserted into ignition key cylinder : ON

When key is removed from ignition key cylinder : OFF

Without CONSULT-III

Check voltage between BCM harness connector and ground.

Terminals			Condition	Voltage (Approx.)
(+)		(−)		
BCM connector	Terminal			
M18	37	Ground	Key is inserted	Battery voltage
			Key is removed	0 V



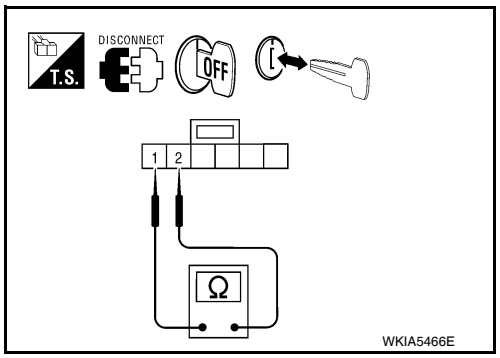
OK or NG

OK >> Key switch signal is OK. Return to DI-48, "Trouble Diagnosis".
NG >> GO TO 3.

3.CHECK KEY SWITCH

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

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



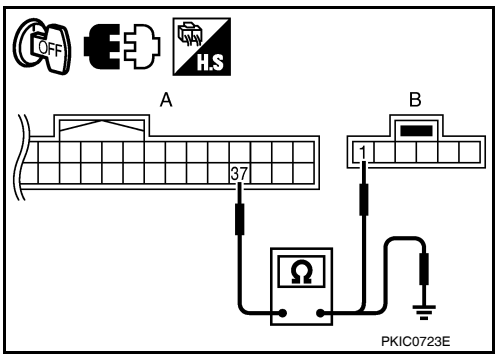
OK or NG

OK >> GO TO 4.
NG >> Replace key switch and key lock solenoid.

4.CHECK KEY SWITCH CIRCUIT

1. Disconnect BCM connector.

2. Check continuity between BCM harness connector (A) and key switch and key lock solenoid harness connector (B).



A		B		Continuity
Connector	Terminal	Connector	Terminal	
M18	37	M27	1	Yes

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

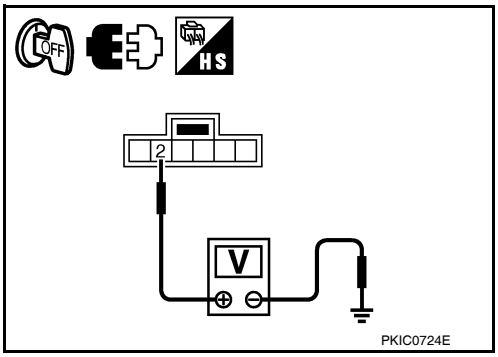
A		Ground	Continuity
Connector	Terminal		
M18	37		No

OK or NG

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

5.CHECK KEY SWITCH POWER SUPPLY CIRCUIT

Check voltage between key switch and key lock solenoid harness connector and ground.



Terminals			Voltage (Approx.)
(+)		(−)	
Key switch and key lock solenoid connector	Terminal		
M27	2	Ground	Battery voltage

OK or NG

OK >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM".
NG >> Repair harness or connector.

Key Switch and Ignition Knob Switch Signal Inspection (With Intelligent Key, When Mechanical Key Is Used)

INFOID:0000000005395048

1.CHECK FUSE

Check if the key switch and ignition knob switch 10A fuse (No. 31, located in the fuse and fusible link box) is blown.

OK or NG

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

2.CHECK BCM INPUT SIGNAL

With CONSULT-III

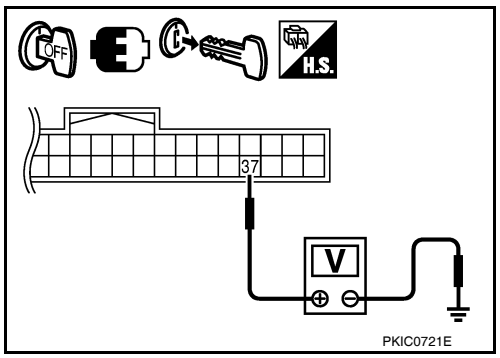
1. Select “BCM”.
2. With “DATA MONITOR” of “BUZZER”, confirm “KEY ON SW” when the key is operated.

“KEY ON SW”
When key is inserted into ignition key cylinder : ON
When key is removed from ignition key cylinder : OFF

Without CONSULT-III

Check voltage between BCM harness connector and ground.

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
BCM connector	Terminal			
M18	37	Ground	Key is inserted	Battery voltage
			Key is removed	0



OK or NG

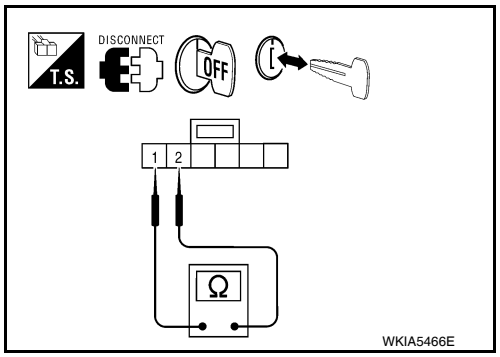
OK >> Key switch and ignition knob switch signal is OK. Return to DI-48, "Trouble Diagnosis".

NG >> GO TO 3.

3.CHECK KEY SWITCH

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

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



OK or NG

OK >> GO TO 4.

NG >> Replace key switch and ignition knob switch.

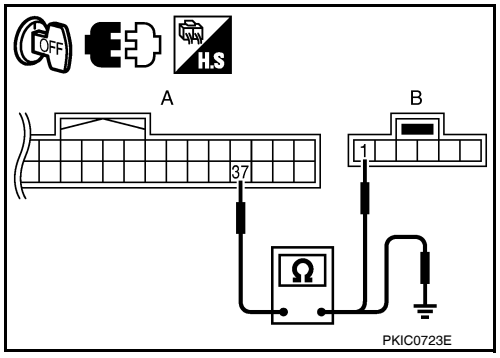
4.CHECK KEY SWITCH CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector (A) and key switch and ignition knob switch harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M18	37	M73	1	Yes

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

A		Ground	Continuity
Connector	Terminal		
M18	37		No



OK or NG

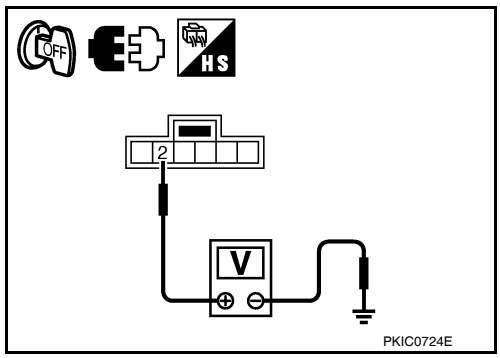
OK >> GO TO 5.

NG >> Repair harness or connector.

5.CHECK KEY SWITCH POWER SUPPLY CIRCUIT

Check voltage between key switch and ignition knob switch harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(−)	
Key switch and ignition knob switch connector	Terminal		
M73	2	Ground	Battery voltage



OK or NG

OK >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM".
NG >> Repair harness or connector.

Lighting Switch Signal Inspection

INFOID:0000000005395049

1.CHECK BCM INPUT SIGNAL

1. Select “BCM”.
2. With “DATA MONITOR” of “BUZZER”, confirm “LIGHT SW 1ST” when the lighting switch is operated.

“LIGHT SW 1ST”
Lighting switch (1st position) : ON
Lighting switch (OFF) : OFF

OK or NG

OK >> Lighting switch signal is OK. Return to DI-48, "Trouble Diagnosis".
NG >> Check the lighting switch. Refer to LT-66, "Combination Switch Inspection".

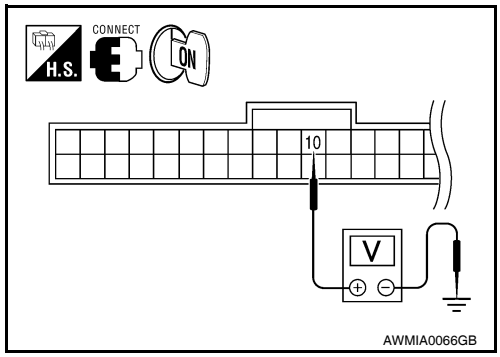
Parking Brake Switch Signal Inspection

INFOID:0000000005395050

1.CHECK PARKING BRAKE SWITCH SIGNAL INPUT (COMBINATION METER)

1. Turn ignition switch ON.
2. Check voltage between combination meter harness connector M24 terminal 10 and ground.

Terminals			Condition	Voltage (Approx.)
(+)		(−)		
Combination meter connector	Terminal			
M24	10	Ground	Parking brake released	Battery voltage
			Parking brake applied	0



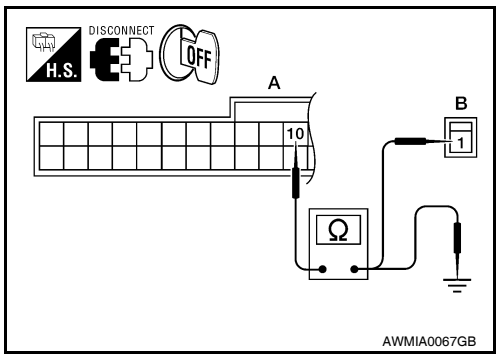
OK or NG

OK >> Replace combination meter. Refer to DI-20, "Removal and Installation".
NG >> GO TO 2.

2.CHECK PARKING BRAKE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector and parking brake switch connector.

3. Check continuity between combination meter harness connector (A) and parking brake switch harness connector (B).



A		B		Continuity
Connector	Terminal	Connector	Terminal	
M24	10	M17	1	Yes

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

A		Ground	Continuity
Connector	Terminal		
M24	10		No

OK or NG

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

3. CHECK PARKING BRAKE SWITCH

Check parking brake switch. Refer to DI-55, "Electrical Component Inspection".

OK or NG

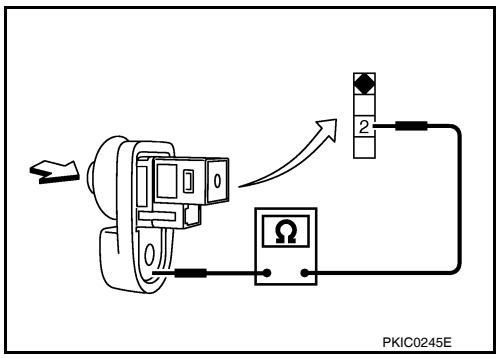
OK >> Check parking brake switch case ground.
NG >> Replace parking brake switch.

Electrical Component Inspection

INFOID:0000000005395051

FRONT DOOR SWITCH LH

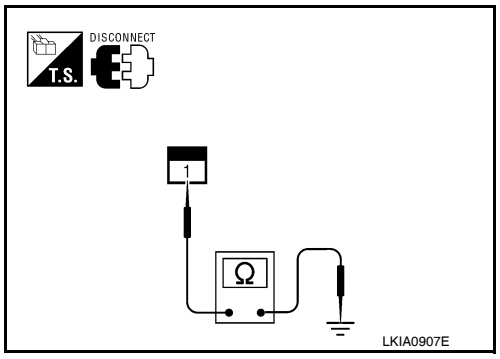
Check continuity between terminal 2 and door switch case ground.



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

PARKING BRAKE SWITCH

Check continuity between terminal 1 and parking brake switch case ground.



Terminal		Condition	Continuity
1	Parking brake switch case ground	When parking brake is applied.	Yes
		When parking brake is released.	No