SECTION DI
DRIVER INFORMATION SYSTEM

CONTENTS

PRECAUTION

PFP:00011

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

EKS00FEW

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:

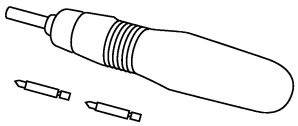
- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal 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 Tool

EKS00FEY

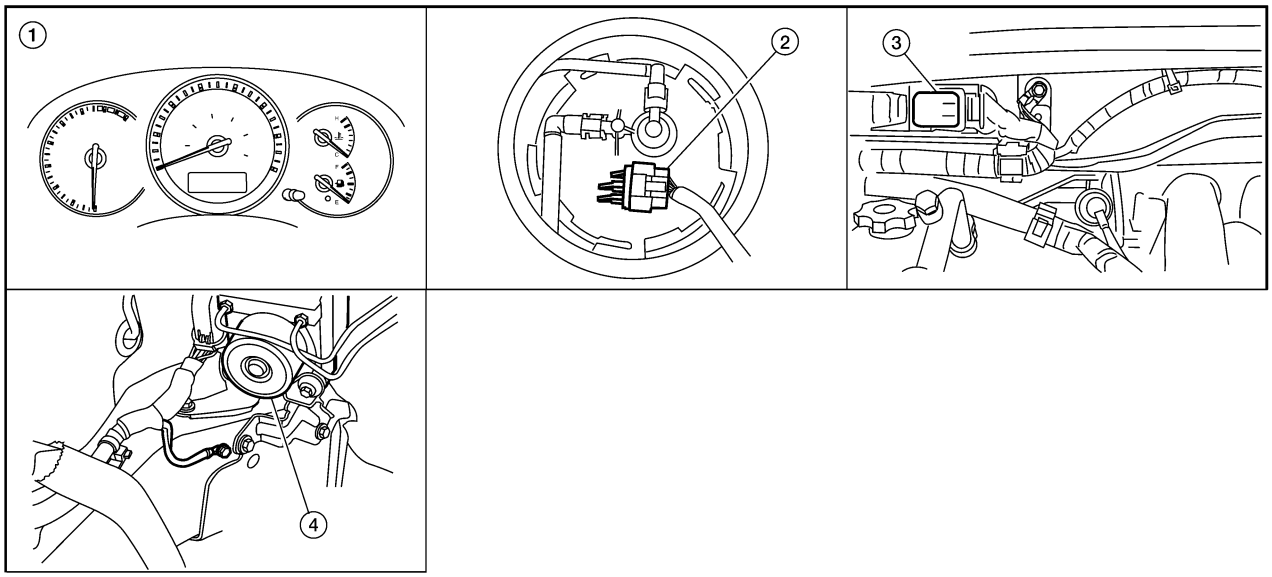
Tool name	Description
Power tool  PBIC0191E	Loosening bolts and nuts

COMBINATION METERS

PFP:24814

Component Parts and Harness Connector Location

EKS00I97



WKIA5219E

1. Combination meter M24
2. Fuel level sensor unit and fuel pump (fuel level sensor) B252 (view with fuel tank removed)
3. ECM E16
4. ABS actuator and electric unit (control unit) E125 (view with engine removed)

System Description

EKS00FEZ

UNIFIED METER CONTROL UNIT

- Speedometer, odometer, tachometer, fuel gauge and water temperature gauge are controlled by the combination meter.
- Warning indicators are controlled by signals drawn from the CAN communication system and components connected directly to the combination meter.
- Digital meter is adopted for odometer.

  NOTE:
  The record of the odometer is kept even if the battery cable is disconnected. The record of the trip meter is erased when the battery is disconnected.
- Odometer/trip meter and A/T indicator segments can be checked in self-diagnosis mode.
- Meters/gauges can be checked in self-diagnosis mode.
- All warning indicators except air bag, washer fluid, security and seat belt can be checked in self-diagnosis mode.

NOTE:
Under the following conditions, the meters will perform a homing function. The meter pointers will move down slightly and then move back to the resting position. This is a normal design condition.

- Approximately 60 seconds after turning the ignition switch from the ON to the OFF position
- If the battery is disconnected and then reconnected

Illumination control

The unified meter control unit outputs the odometer, A/T indicator, fuel and temperature gauge lighting when the ignition switch is turned on. When the lighting switch is turned on, the illumination control switch can be used to adjust the brightness of the combination meter and instrument panel switch illumination. When the ignition switch is in the START position, the combination meter dial lighting and illumination control switch lighting are turned off. For additional combination meter illumination control information, refer to LT-141, "System Description" .

POWER SUPPLY AND GROUND CIRCUIT

Power is supplied at all times

- through 15A fuse [No.19, located in the fuse block (J/B)]
- to combination meter terminal 40.

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

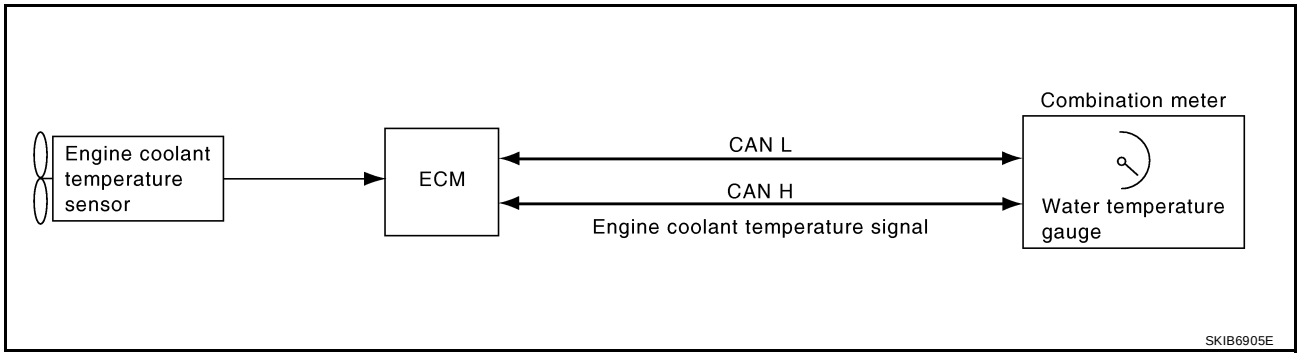
- through 10A fuse [No.14, located in the fuse block (J/B)]
- to combination meter terminal 38.

Ground is supplied

- to combination meter terminal 20
- through body grounds M57, M61 and M79.

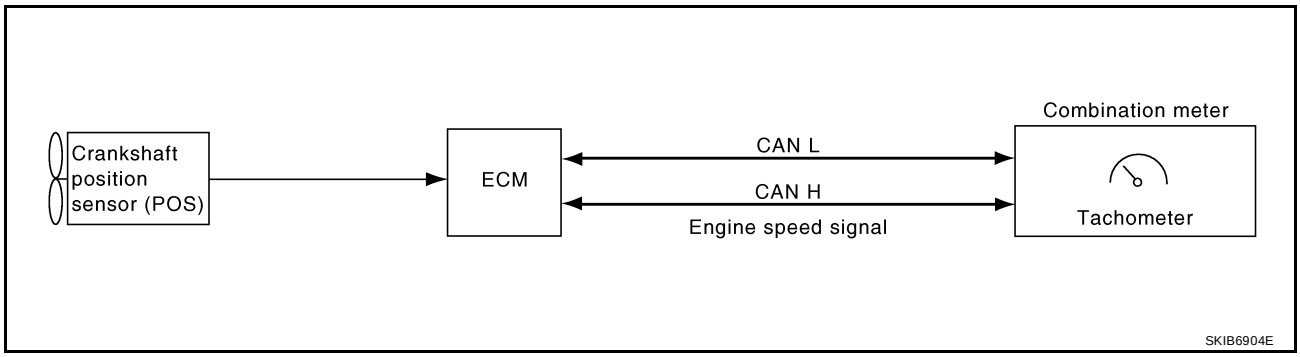
WATER TEMPERATURE GAUGE

The water temperature gauge indicates the engine coolant temperature.
ECM provides a water temperature signal to combination meter via CAN communication lines.



TACHOMETER

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



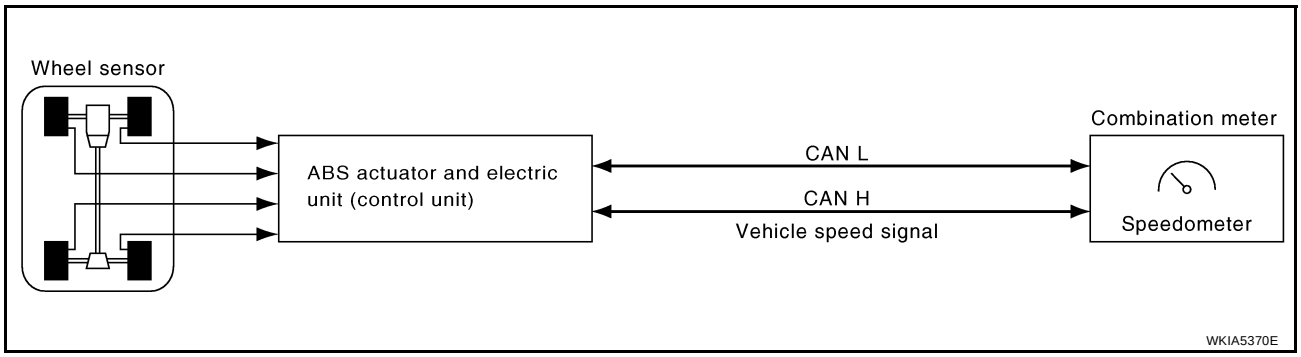
FUEL GAUGE

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 6
- through fuel level sensor unit and fuel pump terminal 2
- through fuel level sensor unit and fuel pump terminal 5
- from combination meter terminal 4.

SPEEDOMETER

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

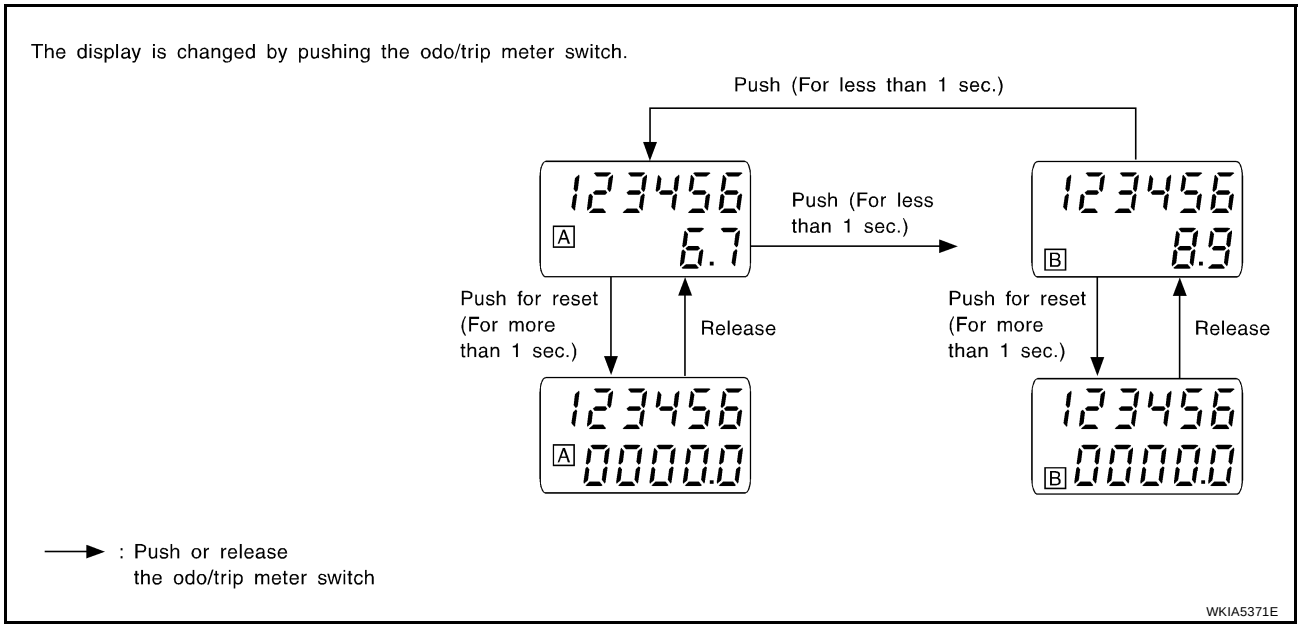


ODO/TRIP METER

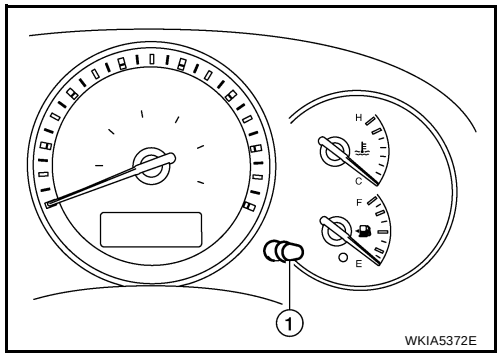
- The ABS actuator and electric unit (control unit) converts a pulse signal received from the wheel sensor into a vehicle speed signal. This signal is then transmitted to the unified meter via CAN communication.
- The vehicle speed signal and the memory signals from the meter memory circuit are processed by the combination meter and the mileage is displayed.

How to Change the Display For Odo/Trip Meter

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



- The odo/trip meter display mode toggling and trip display resetting can be identified by the amount of time that elapses from pressing the odo/trip meter switch (1) to releasing it.
- When resetting with trip A displayed only trip A display is reset. (Trip B operates the same way.)



FAIL-SAFE

Combination meter performs a fail-safe operation for the functions listed below when communication is lost.

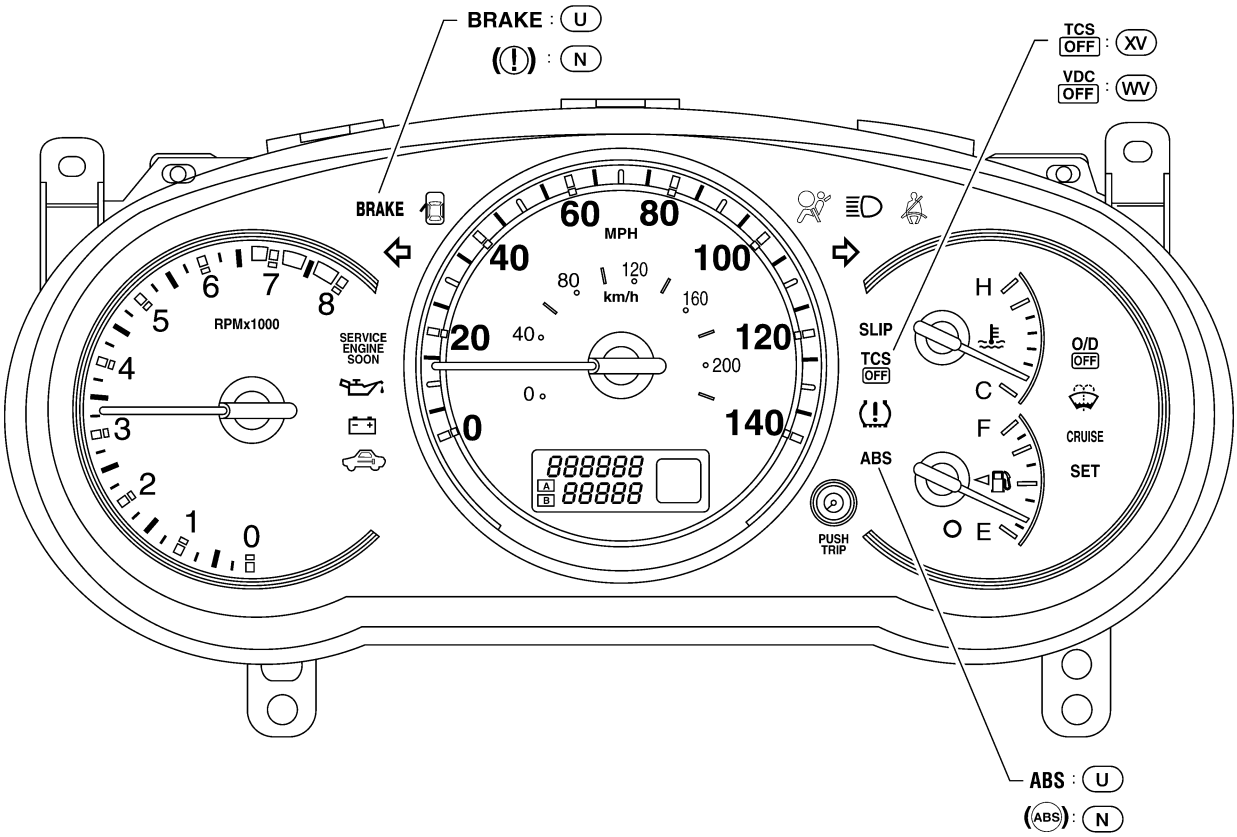
Function		Fail-safe specifications
Speedometer		Zero indication
Tachometer		
Fuel gauge		
Water temperature gauge		
Illumination control	Meter illumination	Change to nighttime mode when communication is lost.
Segment LCD	Odometer	Freeze current indication.
	A/T position	Display turns off.
Buzzer		Buzzer turns off.
Warning/indicator lamp	ABS warning lamp	Lamp turns on when communication is lost.
	Brake warning lamp	
	TCS/VDC OFF indicator lamp	
	SLIP indicator lamp	
	O/D OFF warning lamp	Lamp turns off when communication is lost.
	Oil pressure warning lamp	
	Door warning lamp	
	Malfunction indicator lamp	
	CRUISE indicator lamp	
	SET indicator lamp	
	High beam indicator	
	Turn signal indicator lamp	
	Driver and passenger seat belt warning lamp	Lamp turns off when disconnected.
	Charge warning lamp	
	Security indicator lamp	
	Air bag warning lamp	Lamp turns on when disconnected.
	Low tire pressure warning lamp	Lamp will flash every second for 1 minute and then stay on continuously thereafter.

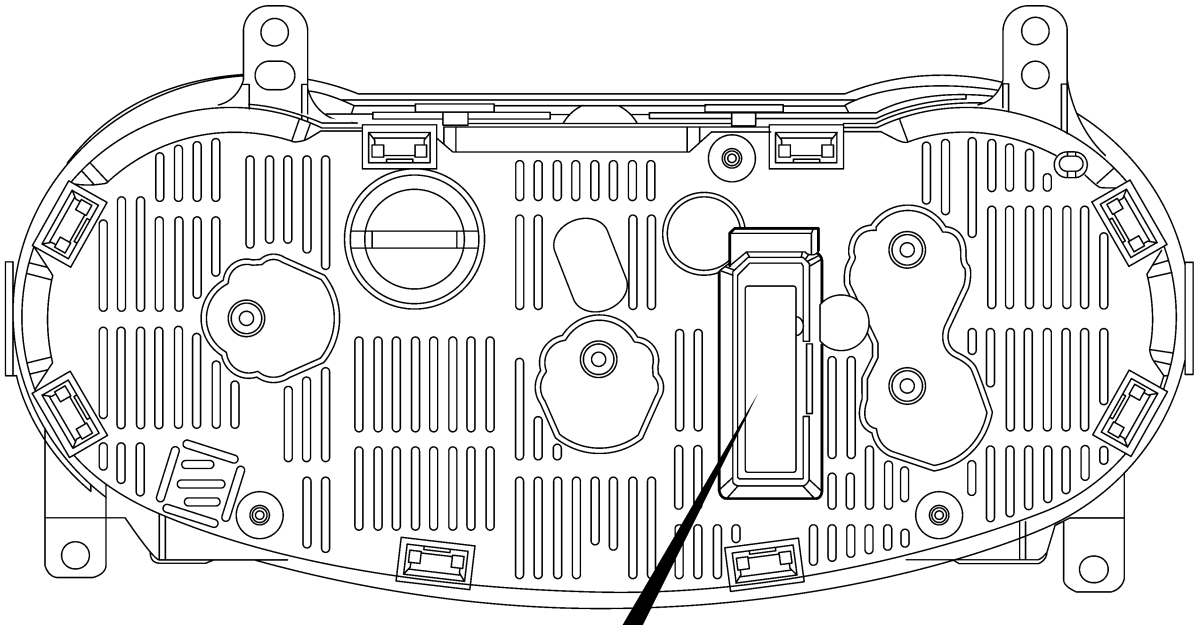
CAN COMMUNICATION SYSTEM DESCRIPTION

Refer to LAN-4, "SYSTEM DESCRIPTION" .

Arrangement of Combination Meter

EKS00FF1





N : CANADA
U : USA
WV : WITH VDC
XV : WITHOUT VDC

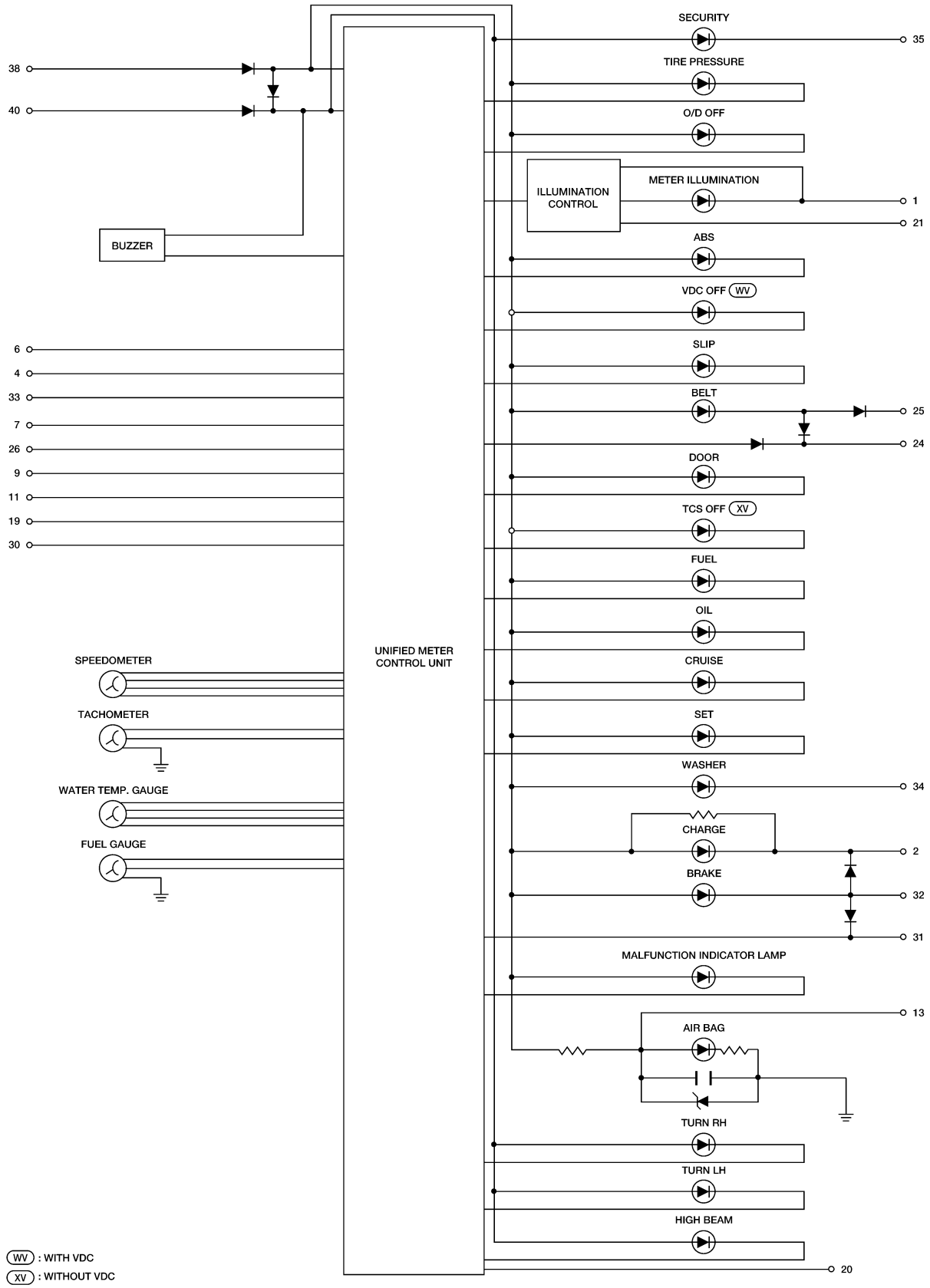
20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21

M24

LKIA0708E

Internal Circuit

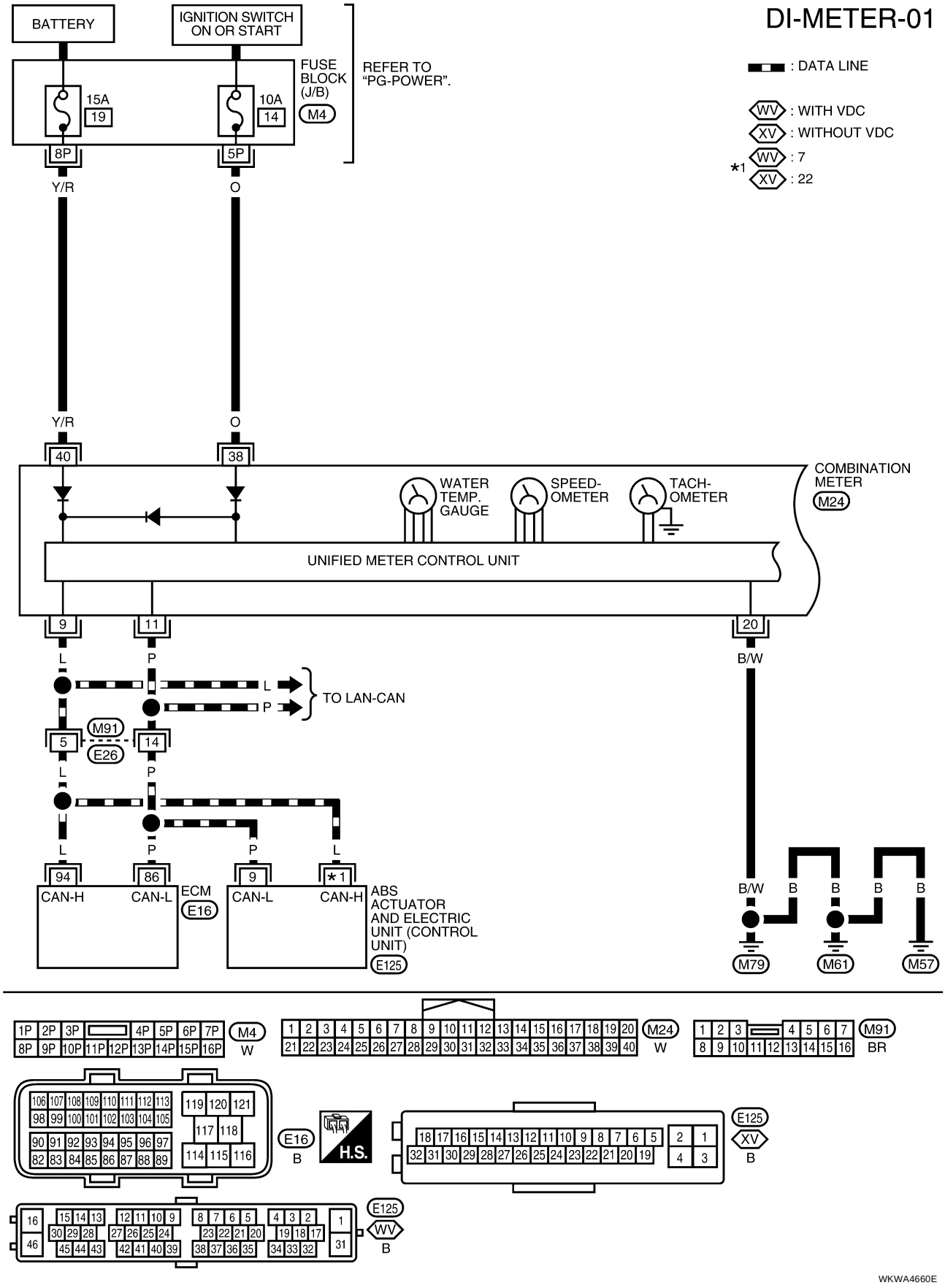
EKS00FF2



WKWA4659E

Wiring Diagram — METER —

EKS00FF3



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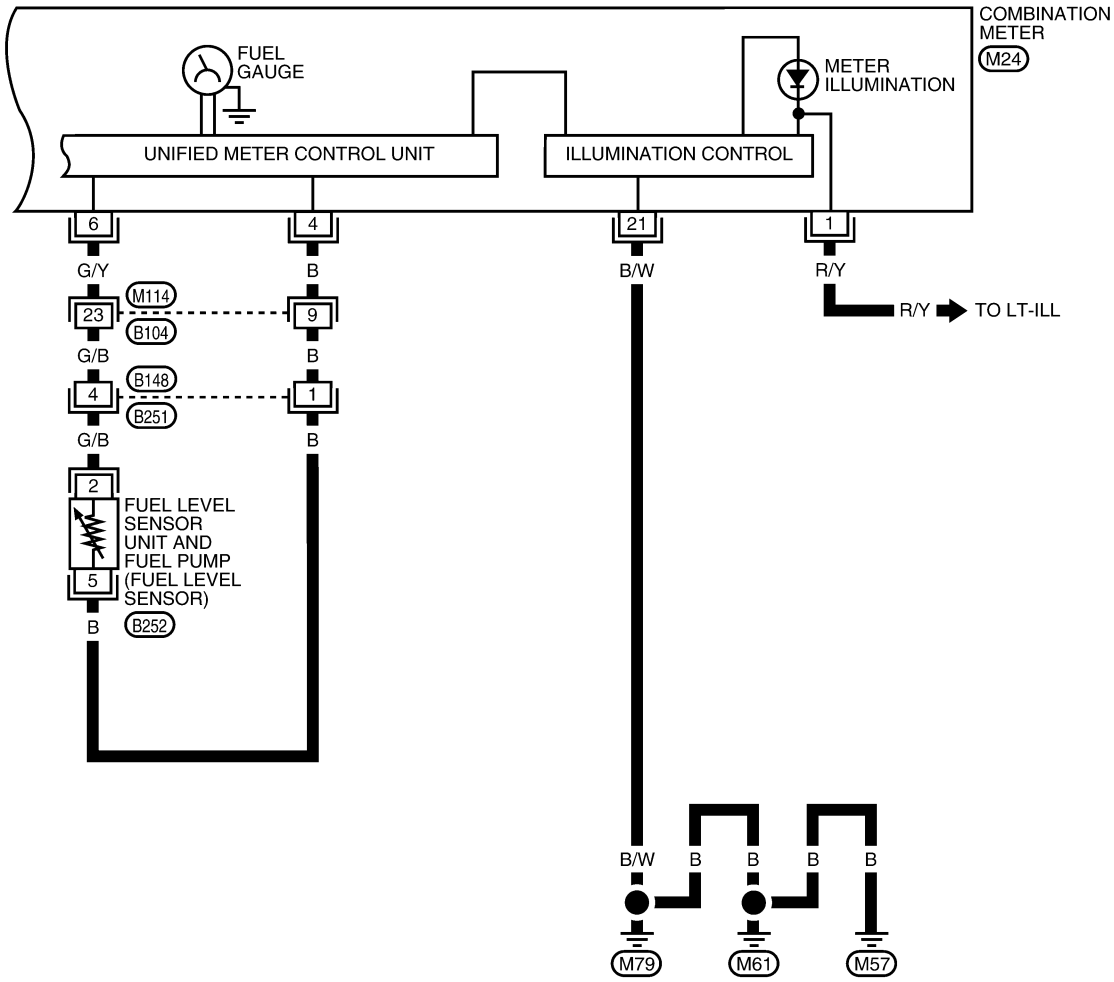
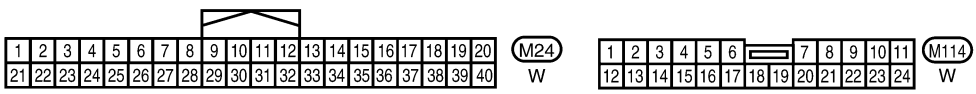
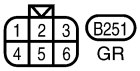
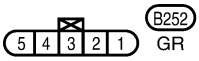
DI-METER-02





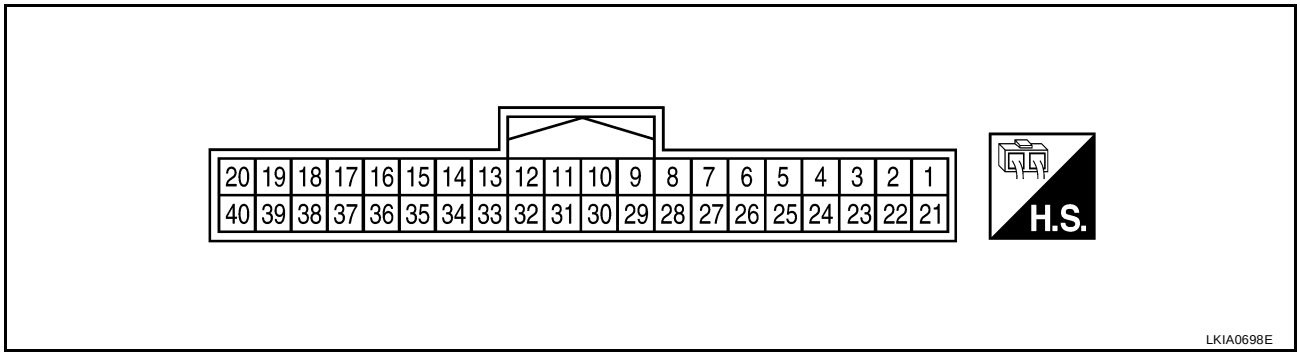




WKWA4661E

Combination Meter Harness Connector Terminal Layout

EKS00HSD



Terminals and Reference Value for Combination Meter

EKS00FF4

Terminal No.	Wire color	Item	Condition		Reference value (V) (Approx.)
			Ignition switch	Operation or condition	
1	R/Y	Illumination control switch	—	Lighting switch ON	Refer to LT-142, "ILLUMINATION OPERATION BY LIGHTING SWITCH" .
4	B	Fuel level sensor signal input	—	—	Refer to DI-22, "Fuel Level Sensor Unit Inspection" .
6	G/Y	Fuel level sensor signal output	—	—	
9	L	CAN-H	—	—	—
11	P	CAN-L	—	—	—
20	B/W	Ground	ON	—	0V
21	B/W	Illumination ground	ON	—	0V
38	O	Ignition switch ON or START	ON	—	Battery voltage
40	Y/R	Battery power supply	OFF	—	Battery voltage

Self-Diagnosis Mode of Combination Meter

EKS00HSC

SELF-DIAGNOSIS FUNCTION

The following items can be checked during Combination Meter Self-Diagnosis Mode.

- Gauge sweep and present gauge values.
- Illuminates all odometer/trip meters and A/T indicator segments.
- Illuminates all micro controlled lamps/LEDs regardless of switch position.
- Displays estimated present battery voltage.
- Displays seat belt buckle switch LH status.

HOW TO INITIATE COMBINATION METER SELF-DIAGNOSIS MODE

NOTE:

- Once entered, combination meter self-diagnosis mode will function with the ignition switch in ON or START. Combination meter self-diagnosis mode will exit upon turning the ignition switch to OFF or ACC.
- If the diagnosis function is activated with trip A displayed, the mileage on trip A is reset to 0000.0. (Trip B operates the same way.)

To initiate combination meter self-diagnosis mode, refer to the following procedure.

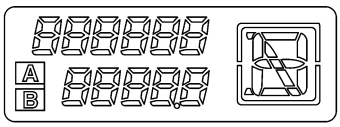
1. Turn the ignition switch ON, while pressing the odometer/trip meter switch for 5 - 8 seconds. When the diagnosis function is activated, the odometer/trip meter will display tESt.

NOTE:

Check combination meter power supply and ground circuit when self-diagnosis mode of combination meter does not start. Refer to DI-20, "Power Supply and Ground Circuit Inspection" . Replace combination meter if normal. Refer to IP-12, "Combination Meter" .

COMBINATION METER SELF-DIAGNOSIS MODE FUNCTIONS

To interpret combination meter self-diagnosis mode functions, refer to the following table.

Event	Odometer Display	Description of Test/Data	Notes:
Odometer/trip meter A/B switch held from 5 to 8 seconds (or until released)	tESt		Initiating self-diagnosis mode
Switch released	GAGE	Performs sweep of all gauges, then displays present gauge values.	Gauges sweep within 10 seconds
Switch pressed	(All segments illuminated)	Lights all LCD segments. Compare with picture.	 WKIA5373E
Switch pressed	bulb	Illuminates all micro-controlled lamps/LEDs.	Part may not be configured for all lamps (functions) that turn on during test. This is normal.
Switch pressed	r XXXX, FAIL	Return to normal operation of all lamps/LEDs and displays "r XXXX".	If a malfunction exists, "FAIL" will flash.
Switch pressed	nrXXXX	N/A	
Switch pressed	EE XX, FAIL	Displays "EE XX".	If a malfunction exists, "FAIL" will flash.
Switch pressed (4 times)	DtXX through Epr XX	N/A	
Switch pressed	1nF XX	Displays 8-bit market info value in Hex format.	$31 = USA $2A = Canada
Switch pressed (3 times)	cYL XX through tF	N/A	

Event	Odometer Display	Description of Test/Data	Notes:
Switch pressed	XXXXX	"Corrected" speed value in hundredths of MPH. Gauge indication may be slightly higher. This is normal.	Will display "-----" if message is not received. Will display "99999" if data received is invalid.
Switch pressed	XXXXX	"Corrected" speed value in hundredths of KPH. Gauge indication may be slightly different. This is normal.	Will display "-----" if message is not received. Will display "99999" if data received is invalid.
Switch pressed	t XXXX	Tachometer value in RPM. Gauge indication may be higher at higher RPM. This is normal.	Will display "-----" if message is not received.
Switch pressed	F1XXXX	Present fuel level A/D input. This input represents fuel sender input.	000-009 = Short circuit 010-254 = Normal range 255 = Open circuit
Switch pressed	F2XXXX	"Filtered" fuel level. Fuel gauge indicates present filtered level per indication standard.	000-009 = Short circuit 010-254 = Normal range 255 = Open circuit
Switch pressed	XXXC	Last temperature gauge input value in degrees C. Temperature gauge indicates present temperature per indication standard.	Will display "---"C if message is not received. Will display "999" if data received is invalid. High = 130 deg C Normal = 70 - 105 deg C Low = less than 50 deg C
Switch pressed	BAtXXX	Estimated present battery voltage.	
Switch pressed	rES -X	Seat belt buckle switch LH status.	1= Buckled 0 = Unbuckled
Switch pressed (31 times)	PA -XX through PA1-XX	N/A	
Switch pressed	GAGE		Return to beginning of self-diagnosis cycle.

CONSULT-II Function (METER)

EKS00HS9

CONSULT-II 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.

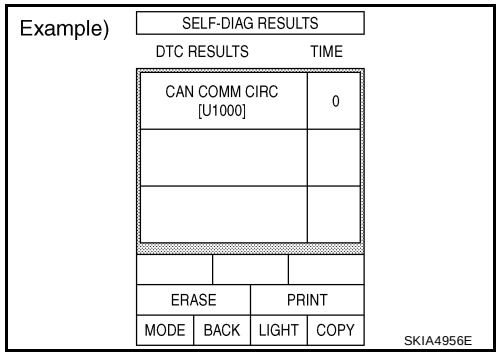
CONSULT-II START PROCEDURE

Refer to GI-37, "CONSULT-II Start Procedure" .

SELF-DIAGNOSTIC RESULTS

Operation Procedure

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



Display Item List

CONSULT-II 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 7V-8V for about 2 seconds) or 10A fuse [No. 19, located in the fuse block (J/B)] is removed.**	DI-24
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 7V-8V for about 2 seconds).**	DI-25

"TIME" indicates the condition of the self-diagnosis results judged by each signal input.

- Normal: If the system is presently operating properly, but had a malfunction in the past, the time will indicate "1-63".
- Malfunction: Soon after detecting malfunctions by self-diagnoses or current malfunction, "0" is indicated.

After the system returns to normal operating condition, every time the ignition switch is cycled (turned to OFF from ON), a value of one is added to the counter (i.e. "1"→"2"→"3"···"63"). When the ignition switch is cycled 64 times, the result of the self-diagnoses will be erased. If a malfunction is detected again, "0" will be indicated.

DATA MONITOR

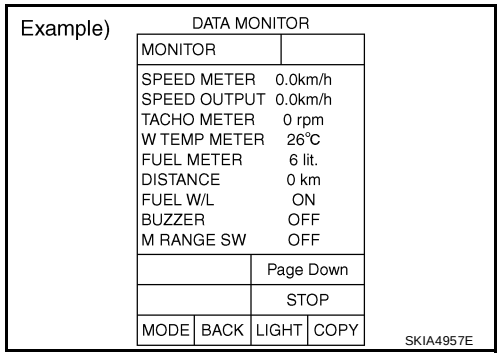
Operation Procedure

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

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

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

Example)



Display Item List

Display item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Contents
SPEED METER [km/h] or [mph]	X	X	This is the angle correction value after the speed signal from the ABS actuator and electric unit (control unit) is converted into the vehicle speed.
SPEED OUTPUT [km/h] or [mph]	X	X	This is the angle correction value before the speed signal from the ABS actuator and electric unit (control unit) is converted into the vehicle speed.
TACHO METER [rpm]	X	X	This is the converted value for the engine speed signal from the ECM.
W TEMP METER [°C] or [°F]	X	X	This is the converted value for the water temp signal from the ECM.
FUEL METER [lit.]	X	X	This is the processed value for the signal (resistance value) from the fuel gauge.
DISTANCE [km]	X	X	This is the calculated value for the speed signal from the ABS actuator and electric unit (control unit), the signal (resistance signal) from the fuel gauge and fuel consumption 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.
AIR PRES W/L [ON/OFF]		X	Indicates [ON/OFF] condition of low tire pressure indicator lamp.
SEAT BELT W/L [ON/OFF]		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.
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.

Display item [Unit]	MAIN SIGNALS	SELECTION FROM MENU	Contents
BRAKE W/L [ON/OFF]		X	Indicates [ON/OFF] condition of brake warning lamp.*
PNP P SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of park/neutral position (park) switch.
PNP N SW [ON/OFF]	X	X	Indicates [ON/OFF] condition of park/neutral position (neutral) 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 shift P range indicator.
R RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift R range indicator.
N RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift N range indicator.
D RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift D range indicator.
4 RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift 4 range indicator.
3 RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift 3 range indicator.
2 RANGE IND [ON/OFF]	X	X	Indicates [ON/OFF] condition of A/T shift 2 range indicator.
O/D OFF W/L [ON/OFF]		X	Indicates [ON/OFF] condition of O/D OFF indicator lamp.
CRUISE IND [ON/OFF]		X	Indicates [ON/OFF] condition of CRUISE indicator.
SET IND [ON/OFF]		X	Indicates [ON/OFF] condition of SET indicator.

*: Monitor keeps indicating “OFF” when brake warning lamp is on because of parking brake operation or low brake fluid level.

Trouble Diagnosis

EKS00FF6

HOW TO PERFORM TROUBLE DIAGNOSIS

1. Confirm the symptom or customer complaint.
2. Perform preliminary check. Refer to DI-19, "PRELIMINARY CHECK" .
3. According to the symptom chart, repair or replace the cause of the symptom.
4. Does the meter operate normally? If so, go to 5. If not, go to 2.
5. Inspection End.

PRELIMINARY CHECK

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

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

Does self-diagnosis mode operate normally?

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

2. CHECK COMBINATION METER (CONSULT-II)

Perform self-diagnosis of combination meter. Refer to DI-16, "SELF-DIAGNOSTIC RESULTS" .

Self-diagnostic results

No malfunction detected>>Inspection End.
Malfunction detected>>Refer to DI-16, "Display Item List" .

3. CHECK POWER SUPPLY AND GROUND CIRCUIT OF COMBINATION METER

Check power supply and ground circuit of combination meter. Refer to DI-20, "Power Supply and Ground Circuit Inspection" .

OK or NG

OK >> Replace combination meter. Refer to IP-12, "Combination Meter" .
NG >> Repair power supply and ground circuit of combination meter.

Symptom Chart

EKS00I94

Trouble phenomenon	Possible cause
Improper speedometer or odometer indication.	Refer to DI-21, "Vehicle Speed Signal Inspection" .
Improper tachometer indication.	Refer to DI-21, "Engine Speed Signal Inspection" .
Improper water temperature gauge indication.	Refer to DI-21, "Water Temperature Signal Inspection" .
Improper fuel gauge indication.	Refer to DI-22, "Fuel Level Sensor Unit Inspection" .
Low-fuel warning lamp indication is irregular.	
Improper A/T position indication.	Refer to DI-35, "A/T INDICATOR" .
Illumination control does not operate.	Refer to LT-141, "ILLUMINATION" .

Power Supply and Ground Circuit Inspection

EKS00FF8

1. CHECK FUSES

Check for blown combination meter fuses.

Unit	Power source	Fuse No.
Combination meter	Battery	19
	Ignition switch ON or START	14

Refer to DI-11, "Wiring Diagram — METER —" .

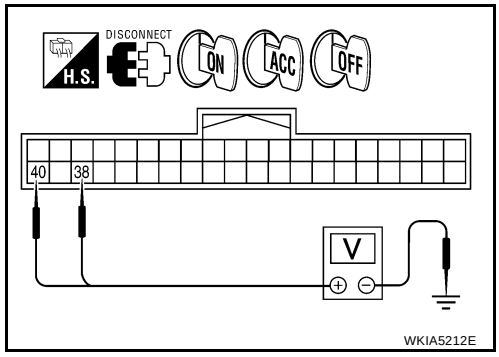
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-4, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect combination meter connector.
2. Check voltage between combination meter harness connector terminals and ground.

Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal				
M24	38	Ground	0V	0V	Battery voltage
	40		Battery voltage	Battery voltage	Battery voltage



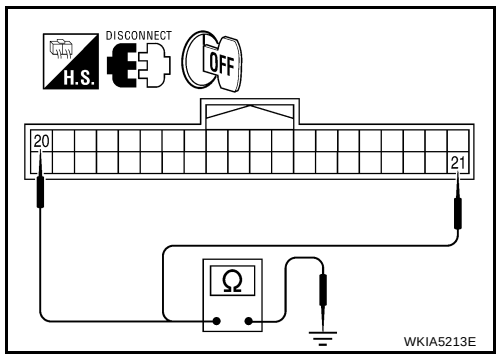
OK or NG

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

3. CHECK GROUND CIRCUIT

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

Terminals			Continuity
(+)		(–)	
Connector	Terminal		
M24	20	Ground	Yes
	21		



OK or NG

OK >> Inspection End.
NG >> Repair harness or connector.

Vehicle Speed Signal Inspection

EKS00FFA

1. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF-DIAGNOSIS

Perform ABS actuator and electric unit (control unit) self-diagnosis.

- With traction control but without VDC system, refer to BRC-24, "SELF-DIAGNOSIS" .
- With VDC system, refer to BRC-70, "SELF-DIAGNOSIS" .

OK or NG

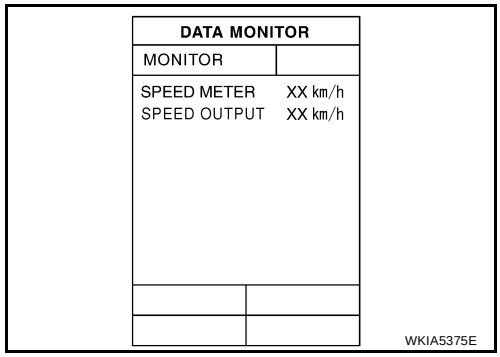
OK >> GO TO 2.
NG >> Perform "Diagnostic Procedure" for displayed DTC.

2. COMPARE SPEEDOMETER AND DATA MONITOR INDICATIONS

1. Select "METER" on CONSULT-II.
2. Drive the vehicle at different speeds and compare speedometer gauge indication with "SPEED METER" and "SPEED OUTPUT" of "DATA MONITOR". Speedometer and "DATA MONITOR" indications should be close.

OK or NG

OK >> Inspection End.
NG >> Replace combination meter. Refer to IP-12, "Combination Meter" .



Water Temperature Signal Inspection

EKS00FFB

1. CHECK ECM SELF-DIAGNOSIS

Perform ECM self-diagnosis. Refer to EC-122, "SELF-DIAG RESULTS MODE" .

OK or NG

OK >> GO TO 2.
NG >> Perform "Diagnostic Procedure" for displayed DTC.

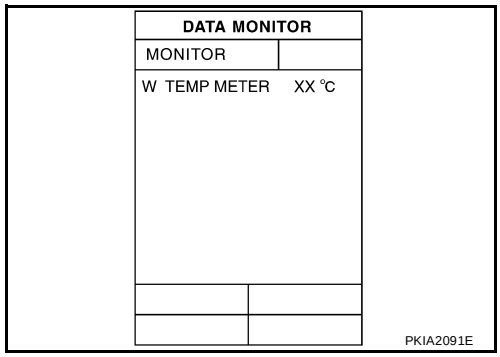
2. COMPARE WATER TEMPERATURE GAUGE AND DATA MONITOR INDICATIONS

1. Select "METER" on CONSULT-II.
2. Run the engine at different temperatures and compare water temperature gauge indication with "W TEMP METER" of "DATA MONITOR". Indication should be as follows:

High: 130°C (266°F)
Normal: 70 - 105°C (158 - 221°F)
Cold: Less than 50°C (122°F)

OK or NG

OK >> Inspection End.
NG >> Replace combination meter. Refer to IP-12, "Combination Meter" .



Engine Speed Signal Inspection

EKS00FFC

1. CHECK ECM SELF-DIAGNOSIS

Perform ECM self-diagnosis. Refer to EC-122, "SELF-DIAG RESULTS MODE" .

OK or NG

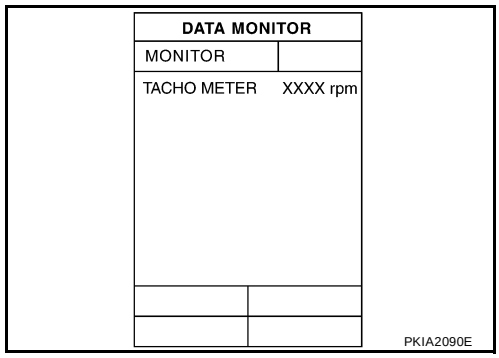
OK >> GO TO 2.
NG >> Perform "Diagnostic Procedure" for displayed DTC.

2. COMPARE TACHOMETER AND DATA MONITOR INDICATIONS

1. Select "METER" on CONSULT-II.
2. Run the engine at different speeds and compare tachometer gauge indication with "TACHO METER" of "DATA MONITOR". Tachometer and "DATA MONITOR" indications should be close.

OK or NG

OK >> Inspection End.
NG >> Replace combination meter. Refer to IP-12, "Combination Meter" .



Fuel Level Sensor Unit Inspection

EKS00FFD

FUEL LEVEL SENSOR UNIT

The following symptoms do not indicate a malfunction.

- Depending on vehicle position or driving circumstance, the fuel 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.

LOW-FUEL WARNING LAMP

Depending on vehicle posture or driving circumstances, the fuel level in the tank varies, and the warning lamp ON timing may be changed.

1. CHECK SELF-DIAGNOSIS

Perform combination meter self-diagnosis. Refer to DI-14, "Self-Diagnosis Mode of Combination Meter" .

OK or NG

OK >> GO TO 2.
NG >> Replace the combination meter. Refer to IP-12, "Combination Meter" .

2. CHECK HARNESS CONNECTOR

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

OK or NG

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

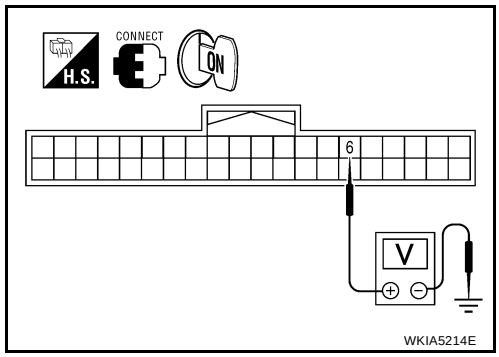
3. CHECK HARNESS CONNECTOR OUTPUT SIGNAL

1. Disconnect fuel level sensor unit and fuel pump connector.
2. Turn ignition switch ON.
3. Check voltage between combination meter harness connector M24 terminal 6 and ground.

Battery voltage should exist.

OK or NG

OK >> GO TO 4.
NG >> Replace the combination meter. Refer to IP-12, "Combination Meter" .



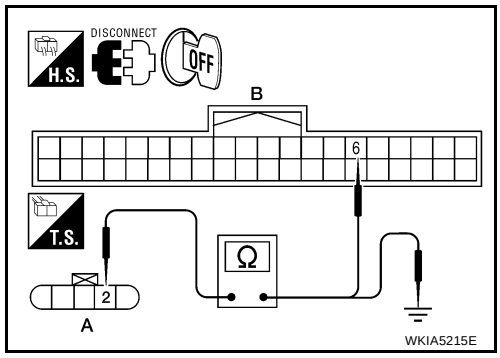
4. CHECK HARNESS FOR OPEN OR SHORT CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector.
3. Check continuity between combination meter harness connector M24 (B) terminal 6 and fuel level sensor unit and fuel pump harness connector B252 (A) terminal 2.

Continuity should exist.

4. Check continuity between fuel level sensor unit and fuel pump harness connector B252 (A) terminal 2 and ground.

Continuity should not exist.



OK or NG

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

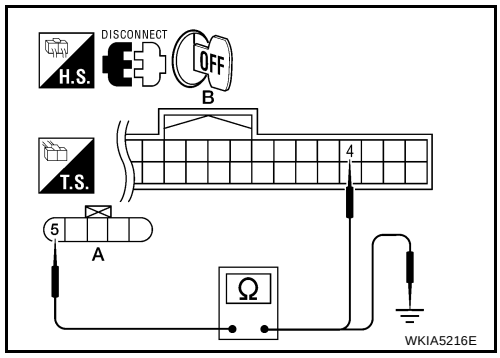
5. CHECK FUEL LEVEL SENSOR CIRCUIT

1. Check continuity between combination meter harness connector M24 (B) terminal 4 and fuel level sensor unit and fuel pump harness connector B252 (A) terminal 5.

Continuity should exist.

2. Check continuity between fuel level sensor unit and fuel pump harness connector B252 (A) terminal 5 and ground.

Continuity should not exist.



OK or NG

OK >> GO TO 6.
NG >> Repair harness or connector.

6. CHECK INSTALLATION CONDITION

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

OK or NG

OK >> GO TO 7.
NG >> Install the fuel level sensor unit properly.

7. CHECK FUEL LEVEL SENSOR UNIT

Check the fuel level sensor unit. Refer to DI-25, "FUEL LEVEL SENSOR UNIT CHECK" .

OK or NG

OK >> Replace the combination meter. Refer to IP-12, "Combination Meter" .
NG >> Replace the fuel level sensor unit. Refer to FL-5, "Removal and Installation" .

Fuel Gauge Fluctuates, Indicates Wrong Value, or Varies

EKS00FFE

1. CHECK FUEL GAUGE FLUCTUATION

Test drive vehicle to see if gauge fluctuates only during driving or just before or just after stopping.

Does the indication value vary only during driving or just before or just after stopping?

YES >> The 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

EKS00FFF

1. CHECK POINTER MOVEMENT TO FULL-POSITION

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. CHECK IGNITION SWITCH POSITION

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 for the pointer 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. CHECK POINTER MOVEMENT TO EMPTY-POSITION

During driving, does the fuel gauge move gradually toward empty-position?

YES or NO

YES >> Check the fuel level sensor unit. Refer to DI-25, "FUEL LEVEL SENSOR UNIT CHECK" .
NO >> Check fuel level sensor unit installation, and determine whether the float arm interferes or binds with any of the internal components in the fuel tank.

DTC [U1000] CAN Communication Circuit

EKS00HSA

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" with CONSULT-II.
2. Print out CONSULT-II screen.

>> Go to "CAN SYSTEM". Refer to LAN-44, "TROUBLE DIAGNOSIS" .

DTC [B2205] Vehicle Speed Circuit

EKS00HSB

Symptom: Display VEHICLE SPEED CIRC [B2205] at the result of self-diagnosis for combination meter.

1. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Perform ABS actuator and electric unit (control unit) self-diagnosis. Refer to BRC-24, "SELF-DIAGNOSIS" (TCS/ABS) or BRC-70, "SELF-DIAGNOSIS" (VDC/TCS/ABS).

Are self-diagnosis result items displayed?

YES >> After checking and repairing the applicable item, perform the ABS actuator and electric unit (control unit) self-diagnosis again.

NO >> Replace combination meter. Refer to IP-12, "Combination Meter" .

Electrical Components Inspection

EKS00FFG

FUEL LEVEL SENSOR UNIT CHECK

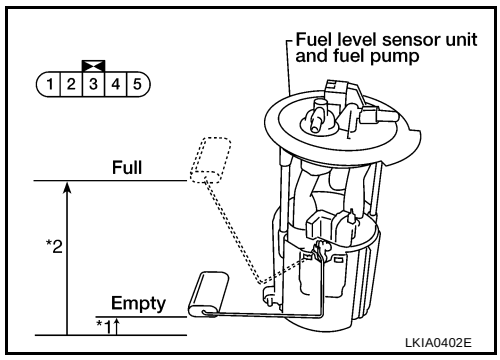
For removal, refer to FL-5, "Removal and Installation" .

Check Fuel Level Sensor Unit and Fuel Pump

Check resistance between fuel level sensor unit and fuel pump connector terminals 2 and 5.

Terminals		Float position mm (in)			Resistance value Ω (Approx.)
2	5	*1	Empty	15 (0.59)	81
		*2	Full	193 (7.6)	5

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



Combination Meter

EKS00FFH

REMOVAL AND INSTALLATION

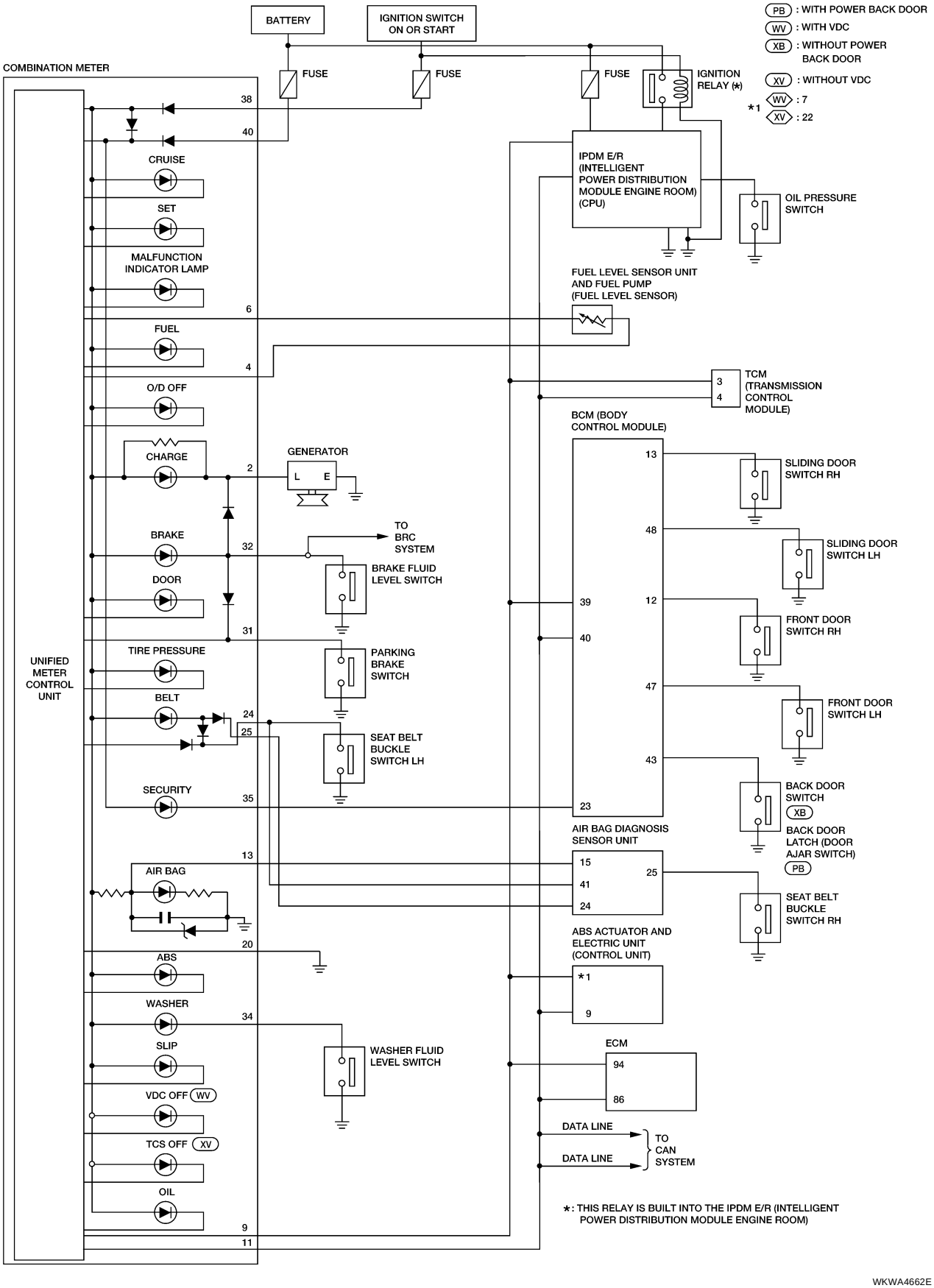
Refer to IP-12, "Combination Meter" .

WARNING LAMPS

PFP:24814

Schematic

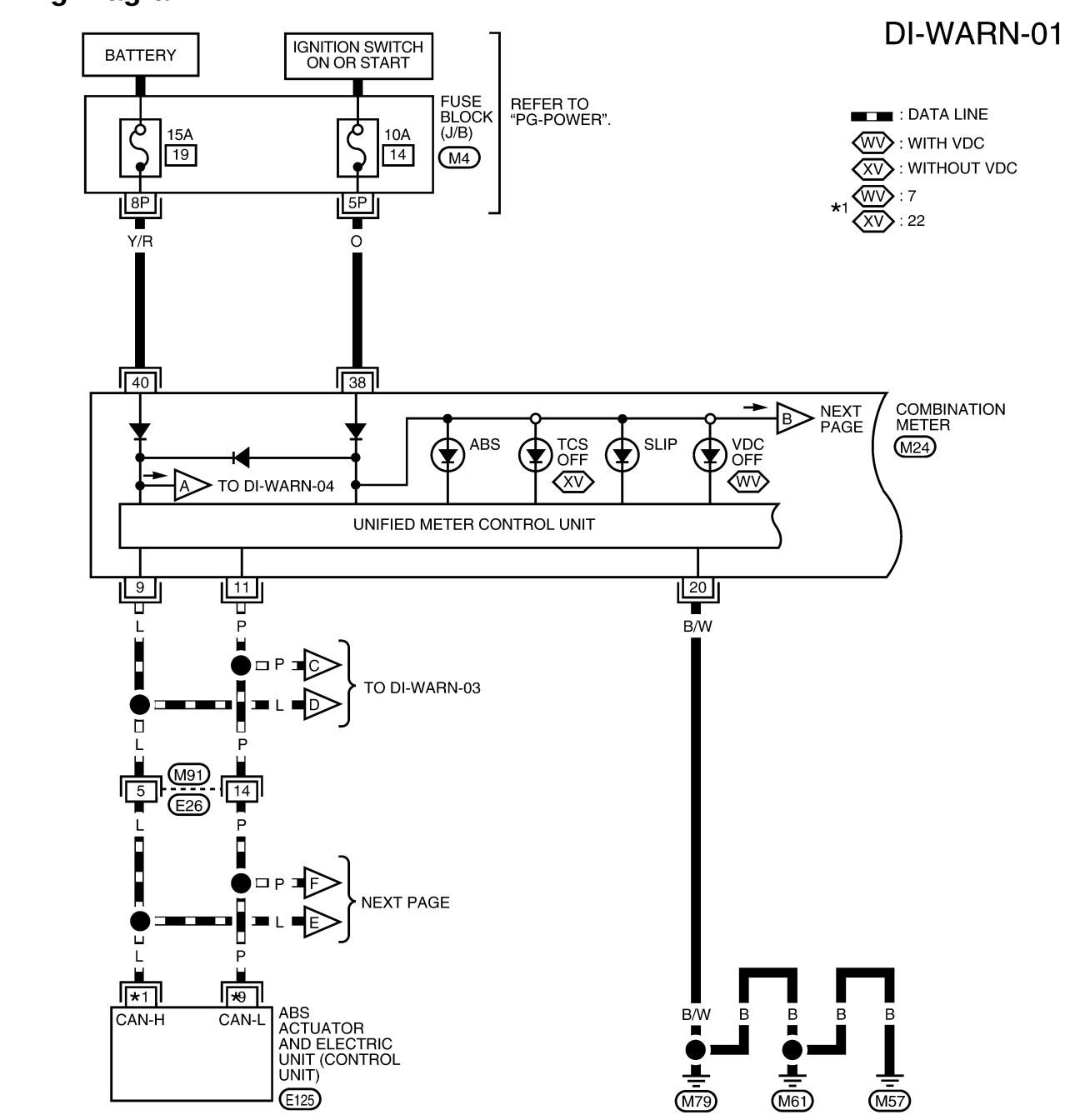
EKS00FFI

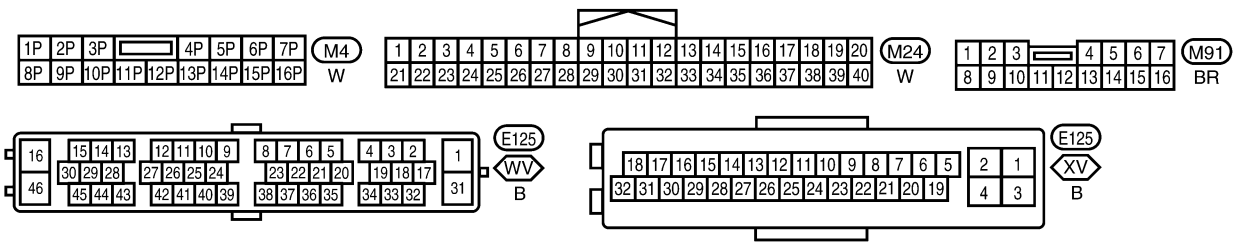


WKWA4662E

Wiring Diagram — WARN —

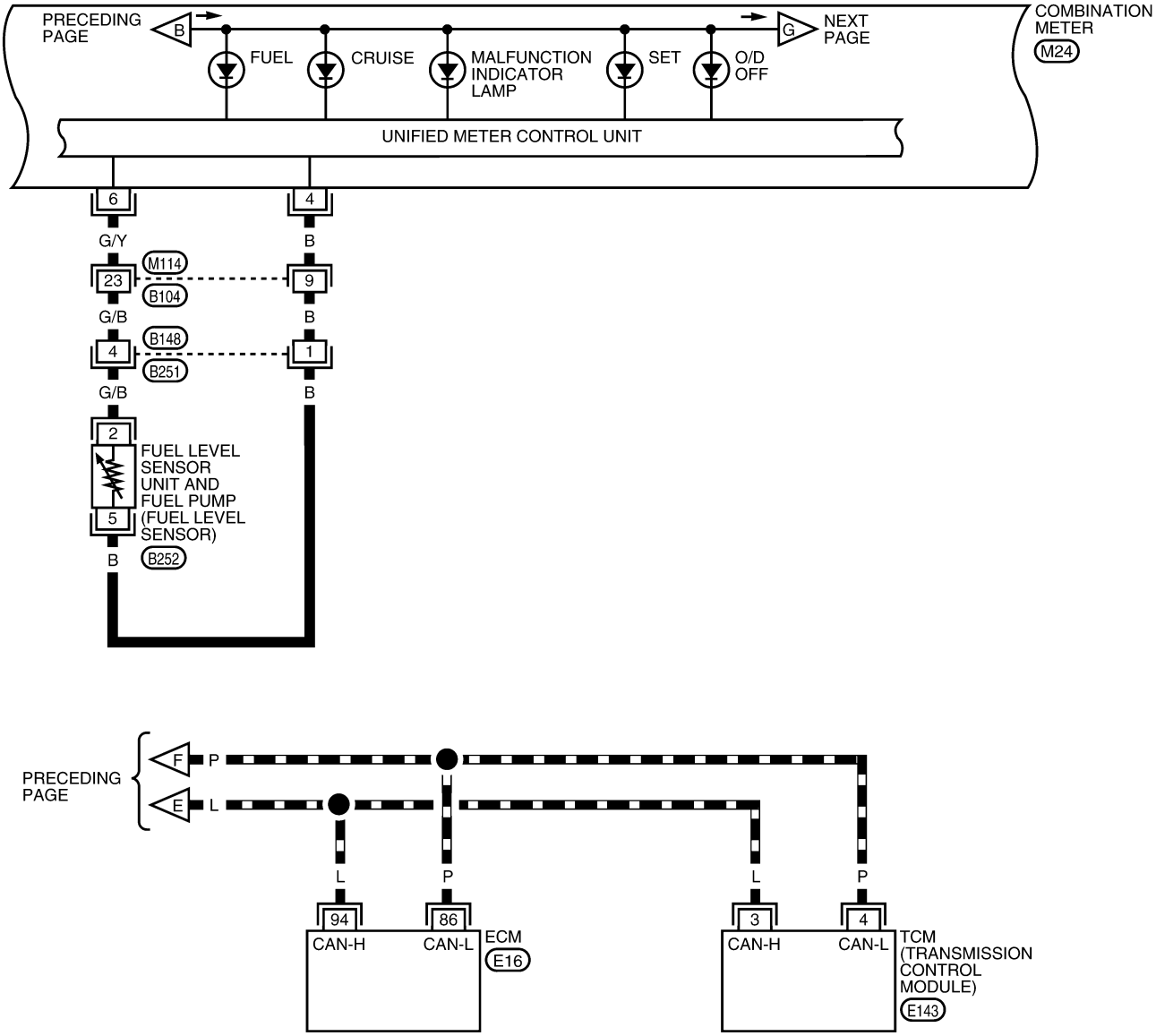
EKS00FFJ

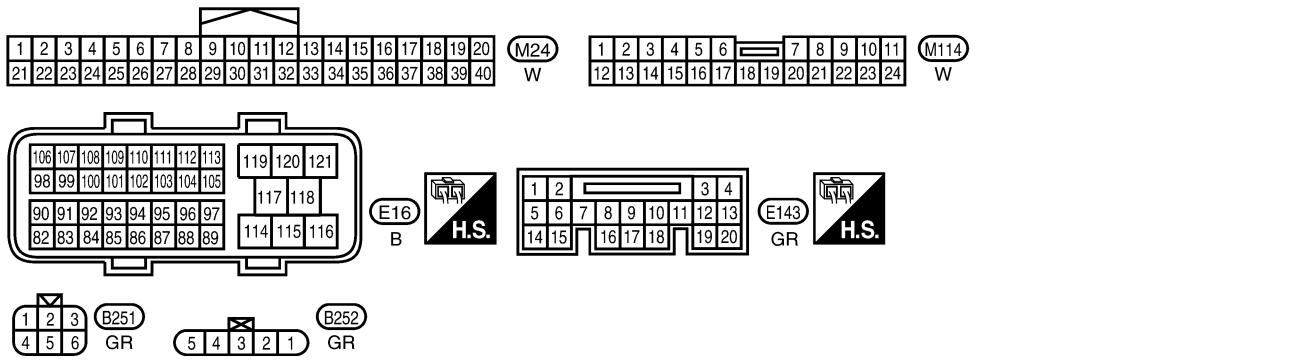




WKWA4663E

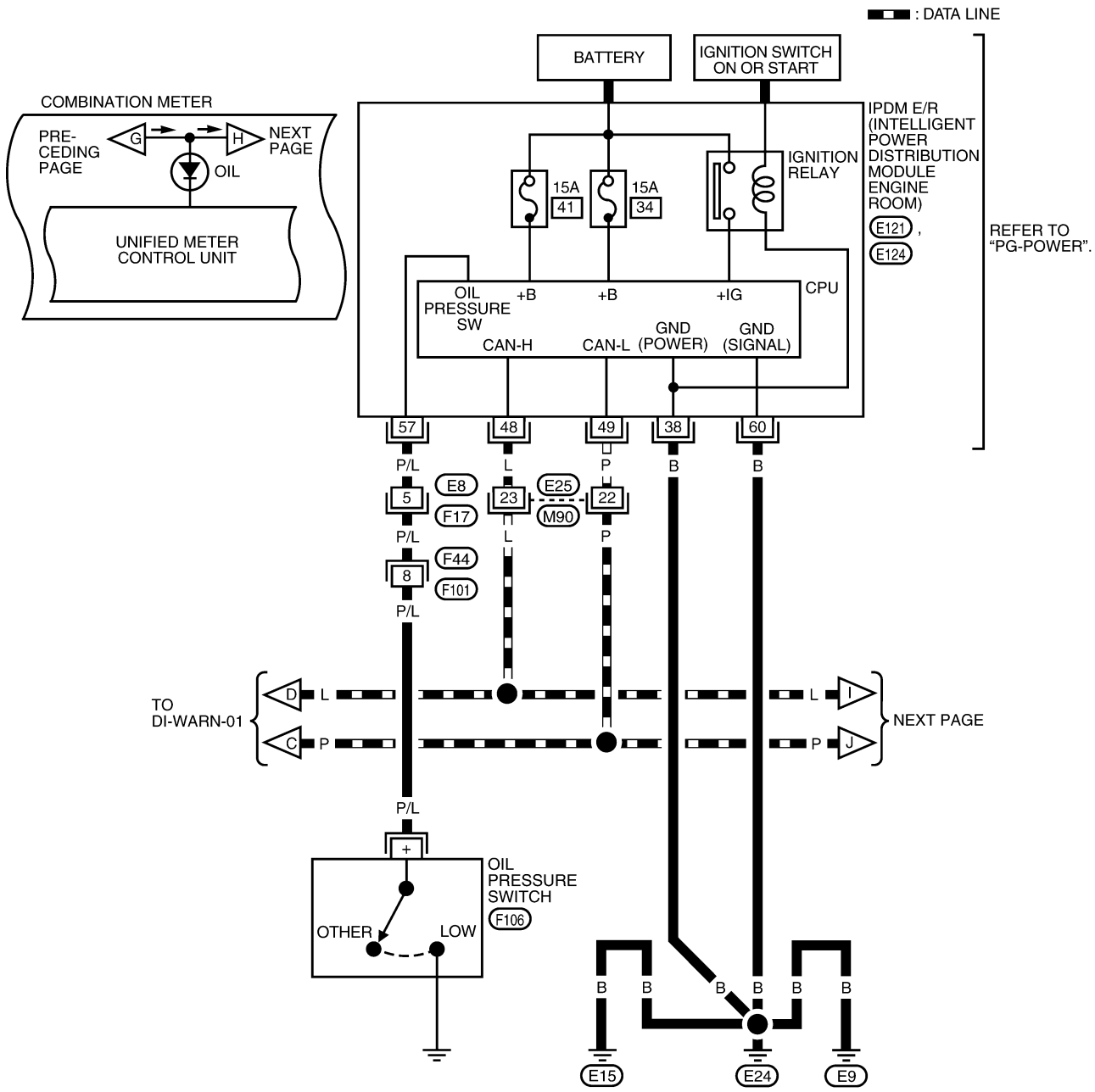
DI-WARN-02

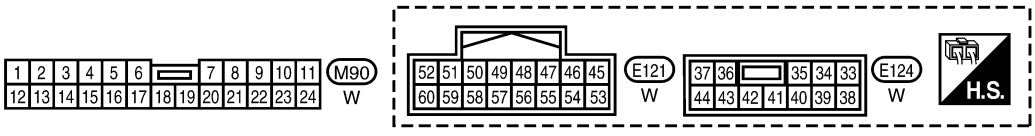


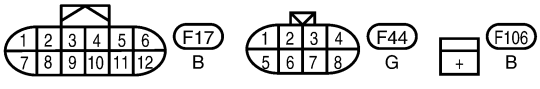


WKWA4664E

DI-WARN-03

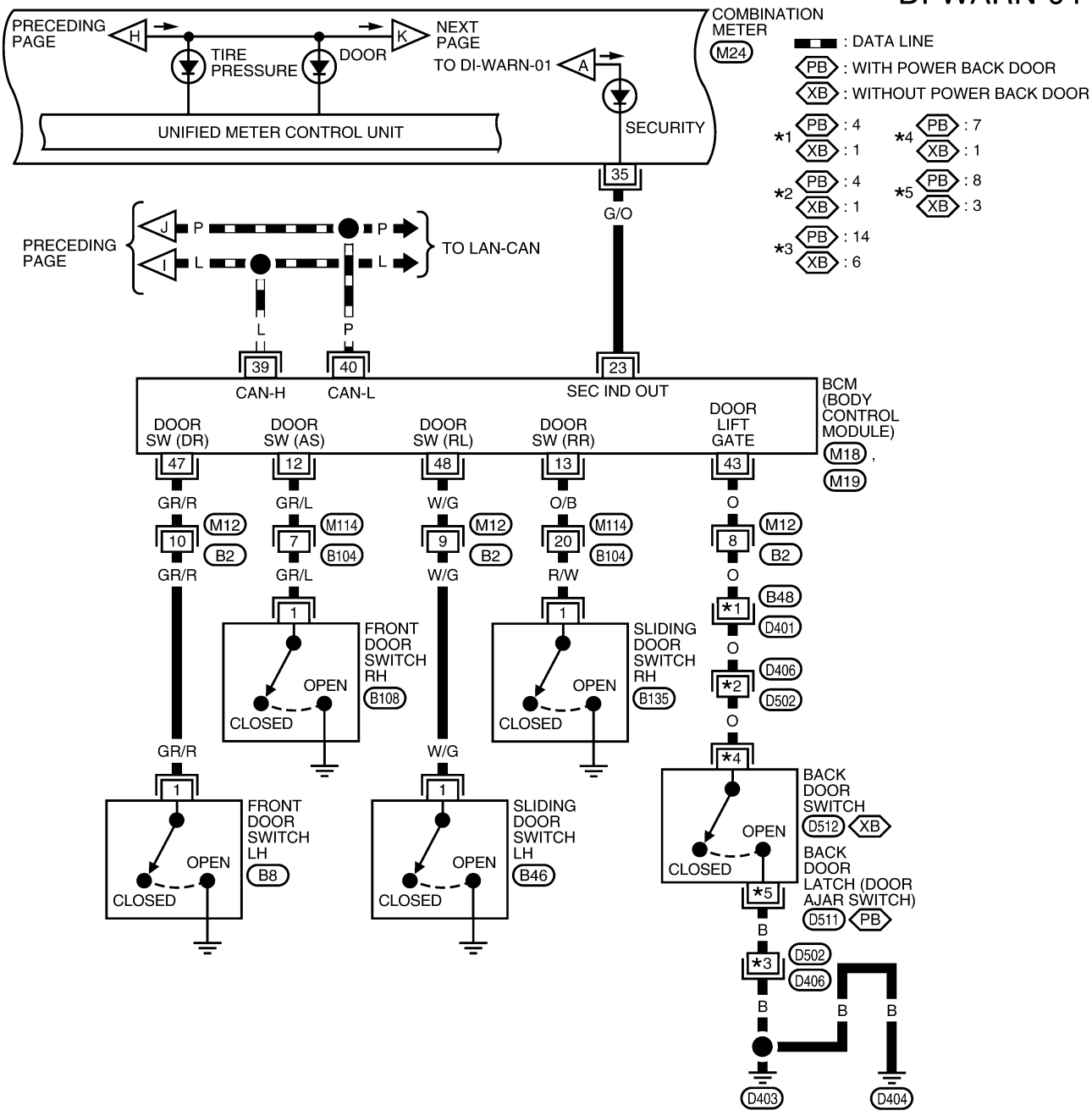


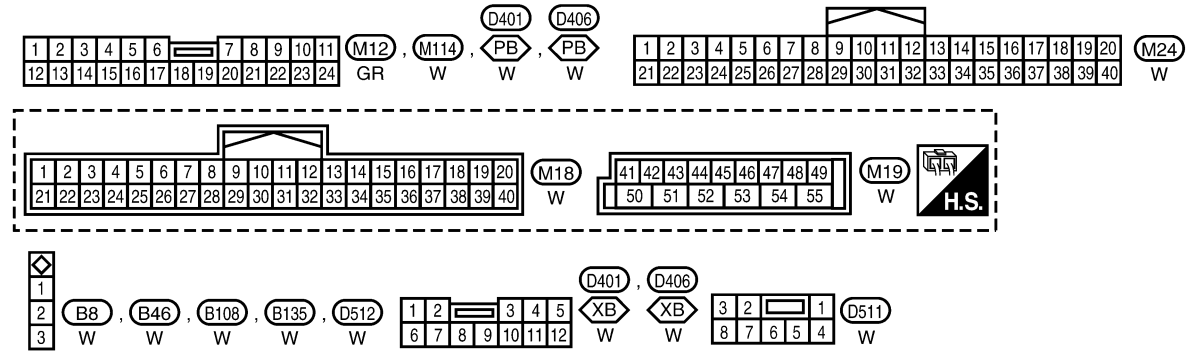




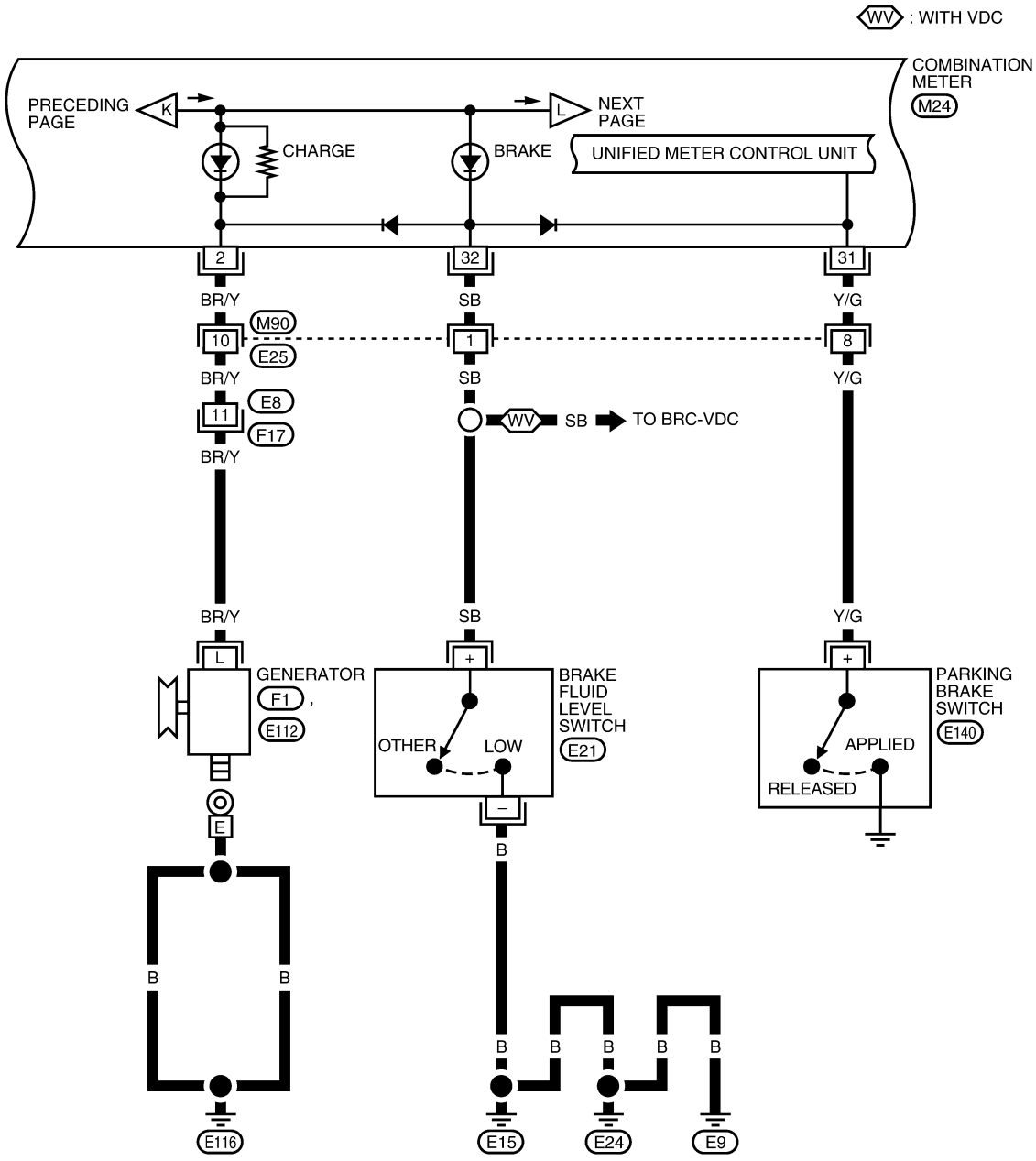
WKWA4665E

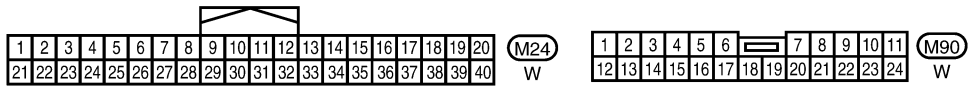
DI-WARN-04

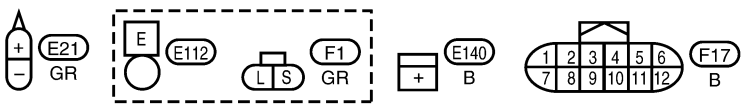

PRECEDING PAGE
H
TIRE PRESSURE
DOOR
K
NEXT PAGE
TO DI-WARN-01
A
SECURITY
UNIFIED METER CONTROL UNIT
COMBINATION METER
M24
: DATA LINE
PB : WITH POWER BACK DOOR
XB : WITHOUT POWER BACK DOOR
*1 PB : 4 XB : 1
*2 PB : 4 XB : 1
*3 PB : 14 XB : 6
*4 PB : 7 XB : 1
*5 PB : 8 XB : 3
35
G/O
PRECEDING PAGE
J
I
P
L
TO LAN-CAN
39
40
23
CAN-H
CAN-L
SEC IND OUT
BCM (BODY CONTROL MODULE)
M18 , M19
DOOR SW (DR)
DOOR SW (AS)
DOOR SW (RL)
DOOR SW (RR)
DOOR LIFT GATE
47
12
48
13
43
GR/R
GR/L
W/G
O/B
O
M12
M114
B2
B104
10
7
9
20
8
R/W
B48
*1
D401
D406
*2
D502
*4
*5
D512
XB
D511
PB
B
*3
FRONT DOOR SWITCH RH
B108
SLIDING DOOR SWITCH RH
B135
FRONT DOOR SWITCH LH
B8
SLIDING DOOR SWITCH LH
B46
BACK DOOR SWITCH
BACK DOOR LATCH (DOOR AJAR SWITCH)
OPEN
CLOSED
D403
D404


M12 , M114 , D401 PB , D406 PB
GR W W W
M24 W
M18 W
M19 W
H.S.
B8 , B46 , B108 , B135 , D512
W W W W W
D401 XB , D406 XB
W W
D511 W
WKWA4666E

DI-WARN-05

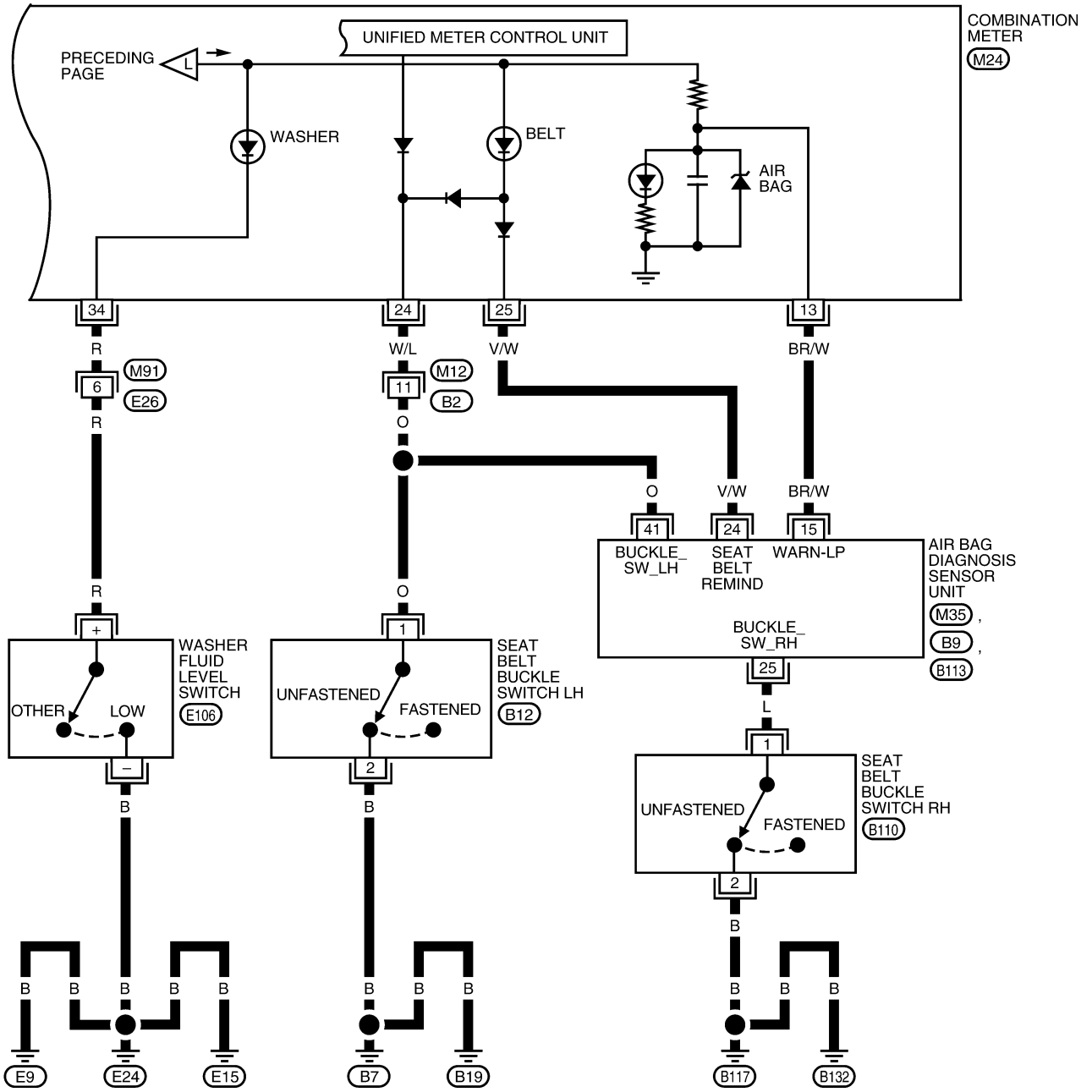


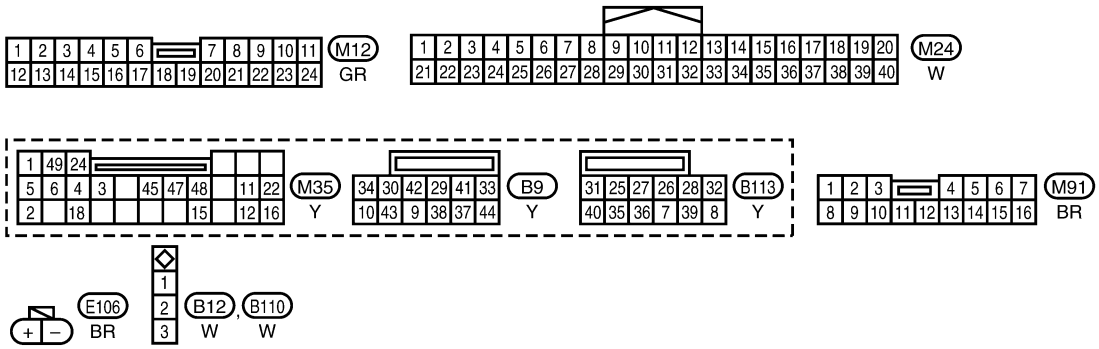




WKWA4667E

DI-WARN-06





WKWA4668E

Oil Pressure Warning Lamp Stays Off (Ignition Switch ON)

EKS00FFK

1. CHECK IPDM E/R OUTPUT SIGNAL

Activate IPDM E/R auto active test. Refer to PG-23, "Auto Active Test" .

Is oil pressure warning lamp blinking?

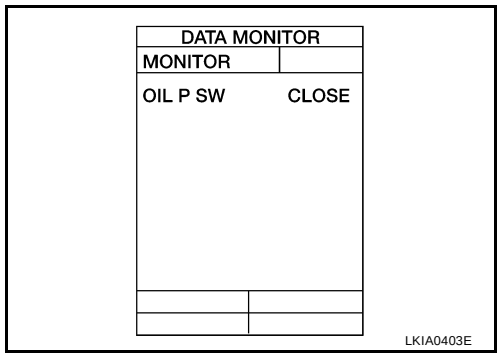
YES >> GO TO 3.
NO >> GO TO 2.

2. CHECK IPDM E/R INPUT SIGNAL

Select “DATA MONITOR” of “IPDM E/R”. Refer to PG-21, "CONSULT-II Function (IPDM E/R)" . Operate ignition switch with “OIL P SW” of data monitor and check operation status.

When ignition switch is in ON position (Engine stopped) : OIL P SW CLOSE

When engine running : OIL P SW OPEN



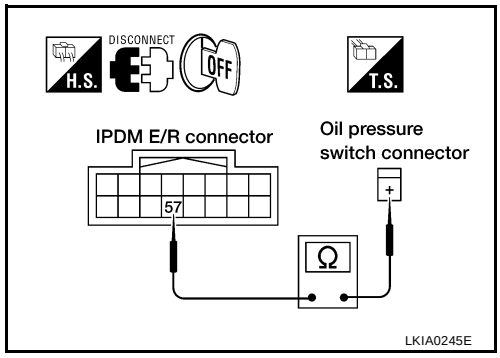
OK or NG

OK >> Replace the BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> Replace the IPDM E/R. Refer to PG-33, "Removal and Installation of IPDM E/R" .

3. CHECK OIL PRESSURE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector E121 and oil pressure switch connector F106.
3. Check continuity between IPDM E/R harness connector E121 terminal 57 and oil pressure switch harness connector F106 terminal +.

Continuity should exist.



OK or NG

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

4. CHECK OIL PRESSURE SWITCH

Check oil pressure switch. Refer to DI-34, "OIL PRESSURE SWITCH" .

OK or NG

OK >> Replace the IPDM E/R. Refer to PG-33, "Removal and Installation of IPDM E/R" .
NG >> Replace the oil pressure switch.

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

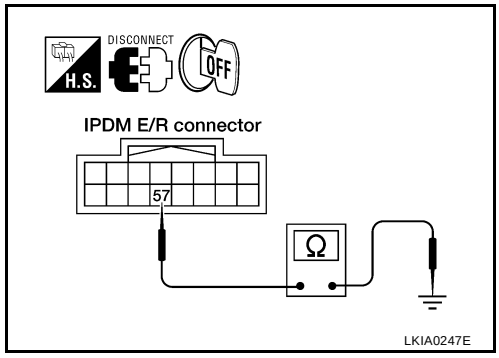
EKS00FFL

NOTE:
For oil pressure inspection, refer to LU-8, "ENGINE OIL PRESSURE CHECK" .

1. CHECK OIL PRESSURE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector E121 and oil pressure switch connector F106.
3. Check continuity between IPDM E/R harness connector E121 terminal 57 and ground.

Continuity should not exist.



OK or NG

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

2. CHECK OIL PRESSURE SWITCH

Check oil pressure switch. Refer to DI-34, "OIL PRESSURE SWITCH" .

OK or NG

OK >> Replace IPDM E/R. Refer to PG-33, "Removal and Installation of IPDM E/R" .
NG >> Replace oil pressure switch.

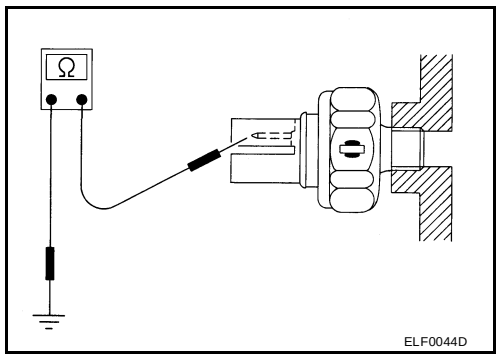
Component Inspection

EKS00FFM

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

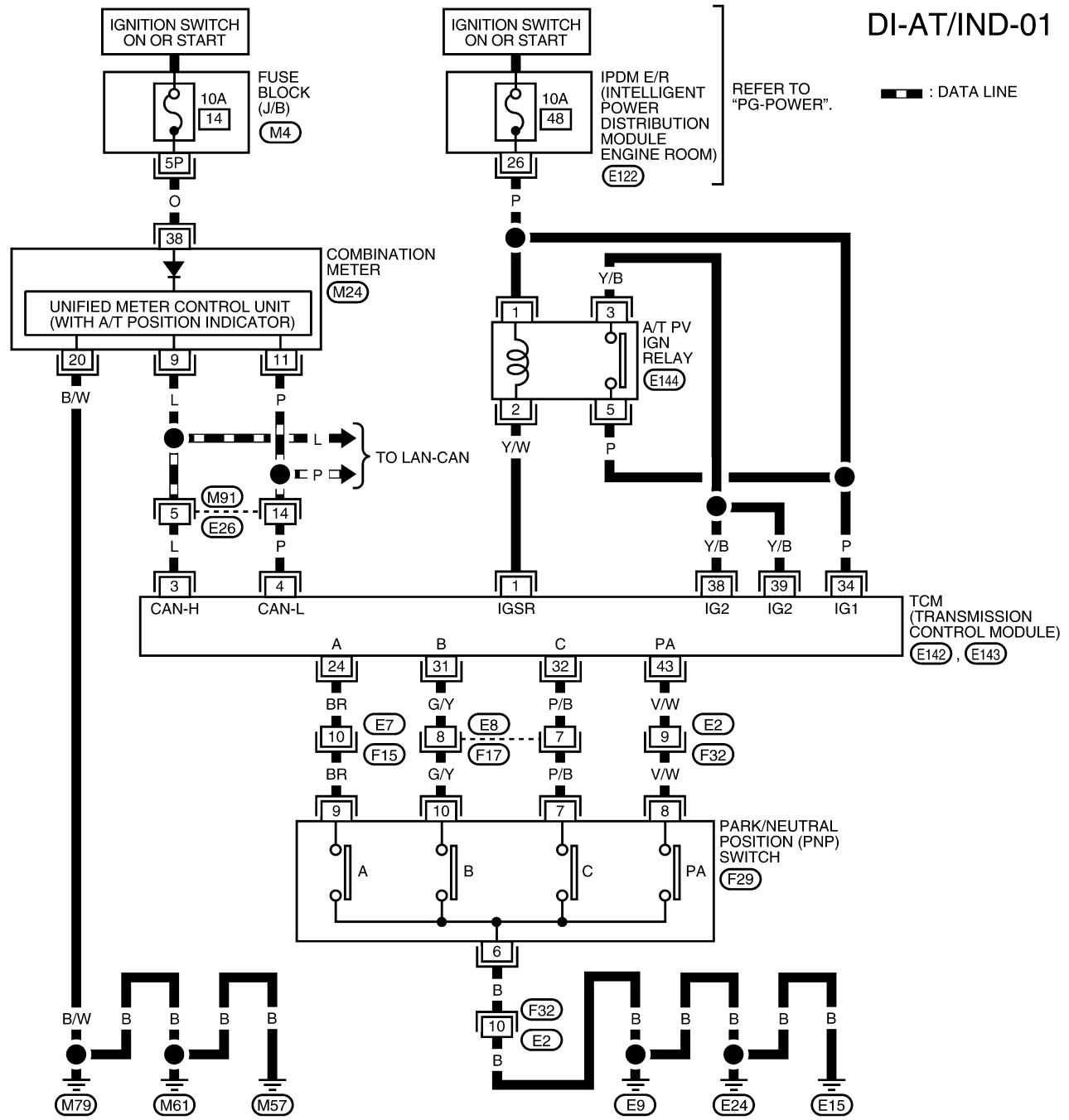


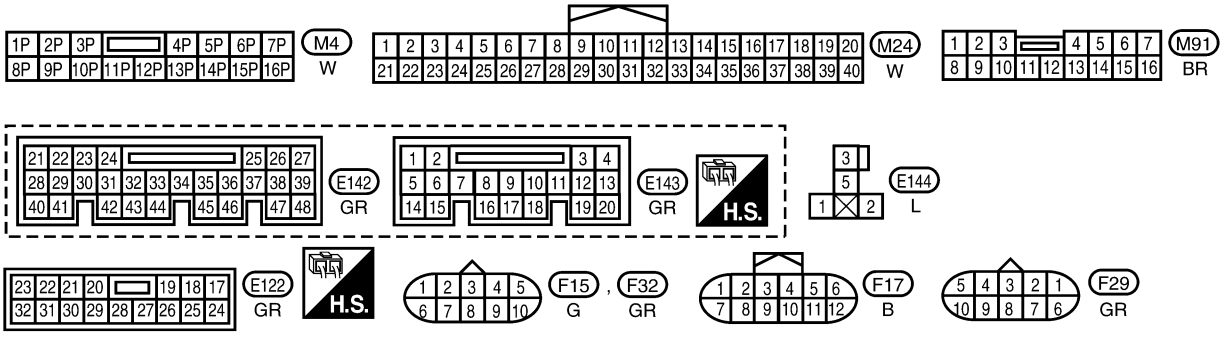
A/T INDICATOR

PFP:24814

Wiring Diagram — AT/IND —

EKS00FFN





WKWA4669E

Trouble Diagnosis

EKS00FFO

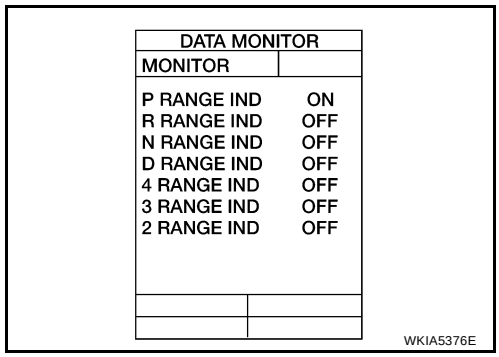
A/T Indicator Does Not Illuminate

EKS00FFP

1. CHECK COMBINATION METER INPUT SIGNAL

1. Select "METER" on CONSULT-II.
2. Using "DATA MONITOR", confirm each indication while operating the shift lever.

NOTE:
If more than one input is ON, A/T indicator will enter fail-safe function and the display will turn off.



CONSULT-II 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
4 RANGE IND	4 range position	ON
	Except for 4 range position	OFF
3 RANGE IND	3 range position	ON
	Except for 3 range position	OFF
2 RANGE IND	2 range position	ON
	Except for 2 range position	OFF

OK or NG

OK >> Replace combination meter. Refer to IP-12, "Combination Meter" .
NG >> GO TO 2.

2. CHECK TCM

Perform self-diagnosis of TCM. Refer to AT-75, "SELF-DIAG RESULT MODE" .

OK or NG

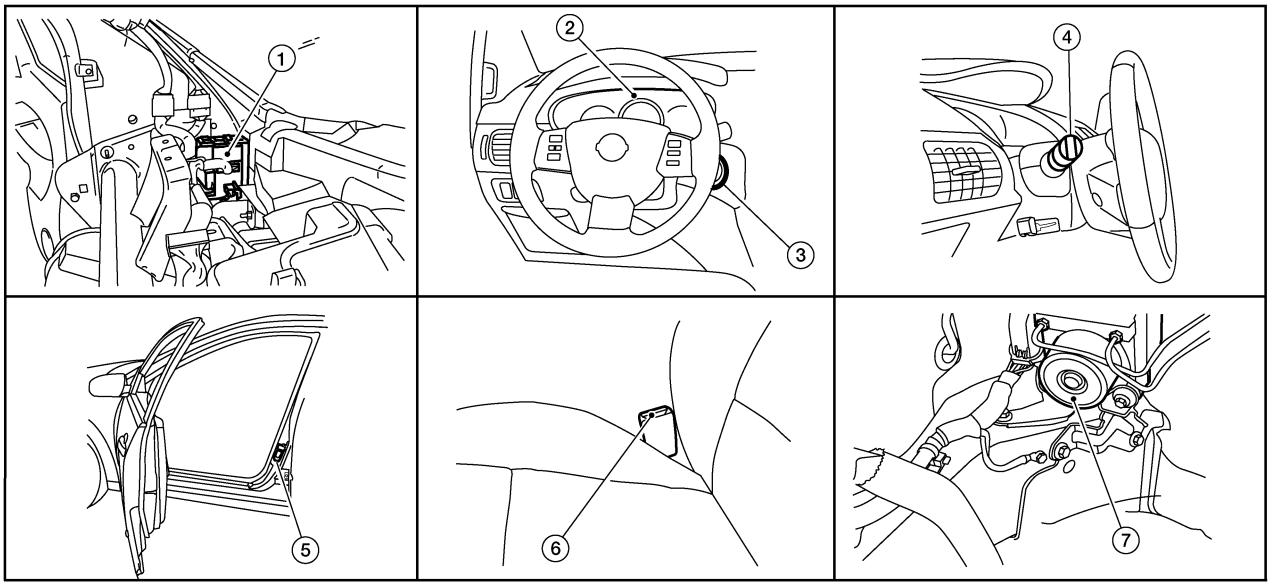
OK >> Replace combination meter. Refer to IP-12, "Combination Meter" .
NG >> Perform "Diagnostic Procedure" for displayed DTC.

WARNING CHIME

PFP:24814

Component Parts and Harness Connector Location

EKS00FFQ



WKIA5220E

1. BCM M18, M19, M20 (view with instrument panel removed)
2. Combination meter M24
3. Key switch M27
4. Combination switch (lighting switch) M28
5. Front door switch LH B8
6. Seat belt buckle switch LH B12
7. ABS actuator and electric unit (control unit) E125 (view with engine removed)

System Description

EKS00FFR

FUNCTION

Power is supplied at all times

- through 50A fuse (letter **j** , located in the fuse and fusible link box)
- to BCM terminal 70, and
- through 15A fuse [No. 19, located in the fuse block (J/B)]
- to key switch terminal 1.

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

- through 10A fuse [No. 16, located in the fuse block (J/B)]
- to BCM terminal 38.

Ground is supplied

- to BCM terminal 67
- through body grounds M57, M61, and M79.

NOTE:

When ignition key warning chime, light warning chime, and seat belt warning chime are required at the same time, the priorities for each chime are the following.

1. Light warning chime
2. Ignition key warning chime
3. Seat belt warning chime

IGNITION KEY WARNING CHIME

With the key inserted in the ignition switch, the ignition switch in OFF position, and the driver's door open, the warning chime will sound.

Power is supplied

- through key switch terminal 2

- to BCM terminal 37.

Ground is supplied

- to BCM terminal 47
- through front door switch LH terminal 1.

Front door switch LH is case grounded.
BCM detects key inserted into the ignition switch, and sends key warning signal to combination meter via CAN communication lines. When combination meter receives key warning signal, it sounds warning chime.

LIGHT WARNING CHIME

With the key removed from the ignition switch, the driver's door open, and the lighting switch (part of the combination switch) in 1st or 2nd position, the warning chime will sound. [This is the operation of the light warning chime, except when headlamp battery saver control operates (for 5 minutes after ignition switch is turned to OFF or ACC position) and headlamps do not illuminate.]
Signal is supplied

- from combination switch (lighting switch) terminals 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10
- to BCM terminals 2, 3, 4, 5, 6, 32, 33, 34, 35 and 36.

NOTE:
BCM detected lighting switch in 1st or 2nd position. Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

Ground is supplied

- to BCM terminal 47
- through front door switch LH terminal 1.

Front door switch LH is case grounded.
BCM detects headlamps are illuminated, and sends light warning signal to combination meter via CAN communication lines. When combination meter receives light warning signal, it sounds warning chime.

SEAT BELT WARNING CHIME

When the ignition switch is turned ON with the seat belt unfastened (seat belt buckle switch LH unfastened), warning chime will sound for approximately 6 seconds.
Ground is supplied

- to combination meter terminal 24
- through seat belt buckle switch LH terminal 1.

Seat belt buckle switch LH terminal 2 is grounded through body grounds B7 and B19.
Combination meter sends seat belt buckle switch LH unfastened signal to BCM via CAN communication line.
BCM receives seat belt buckle switch LH unfastened signal from combination meter via CAN communication line, and sends seat belt warning signal to combination meter via CAN communication line. When the combination meter receives the seat belt warning signal, it sounds the warning chime. The BCM controls the (6 second) duration of the seat belt warning chime.

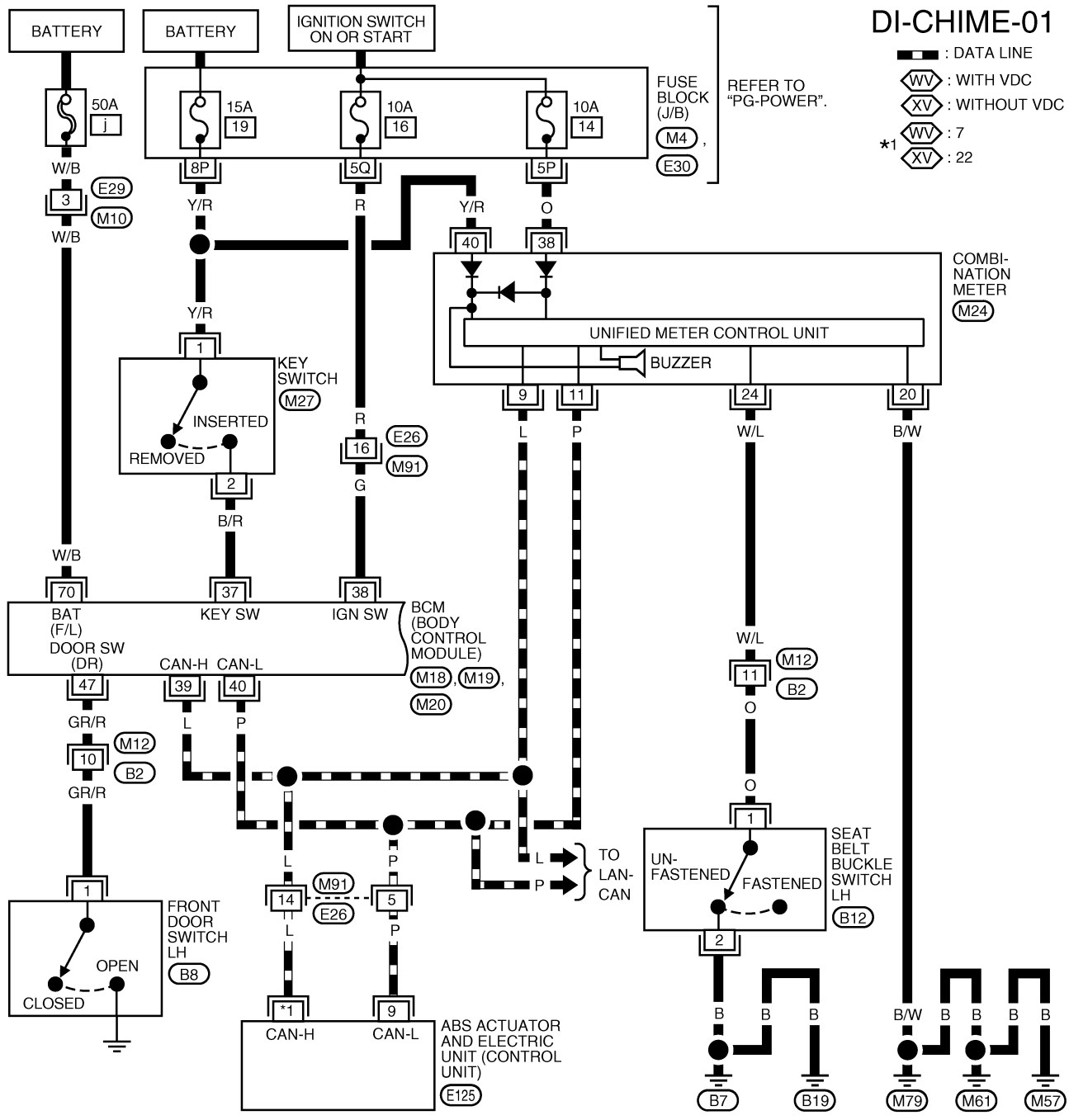
CAN Communication System Description

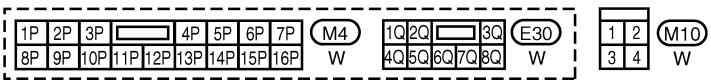
EKS00FFS

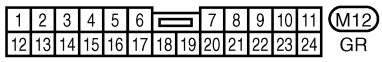
Refer to LAN-4, "SYSTEM DESCRIPTION" .

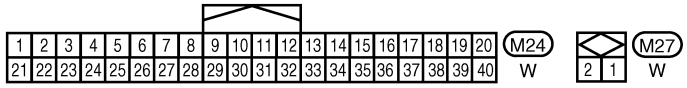
Wiring Diagram — CHIME —

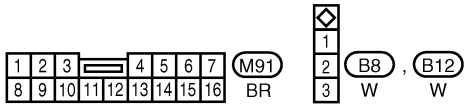
EKS00FFT







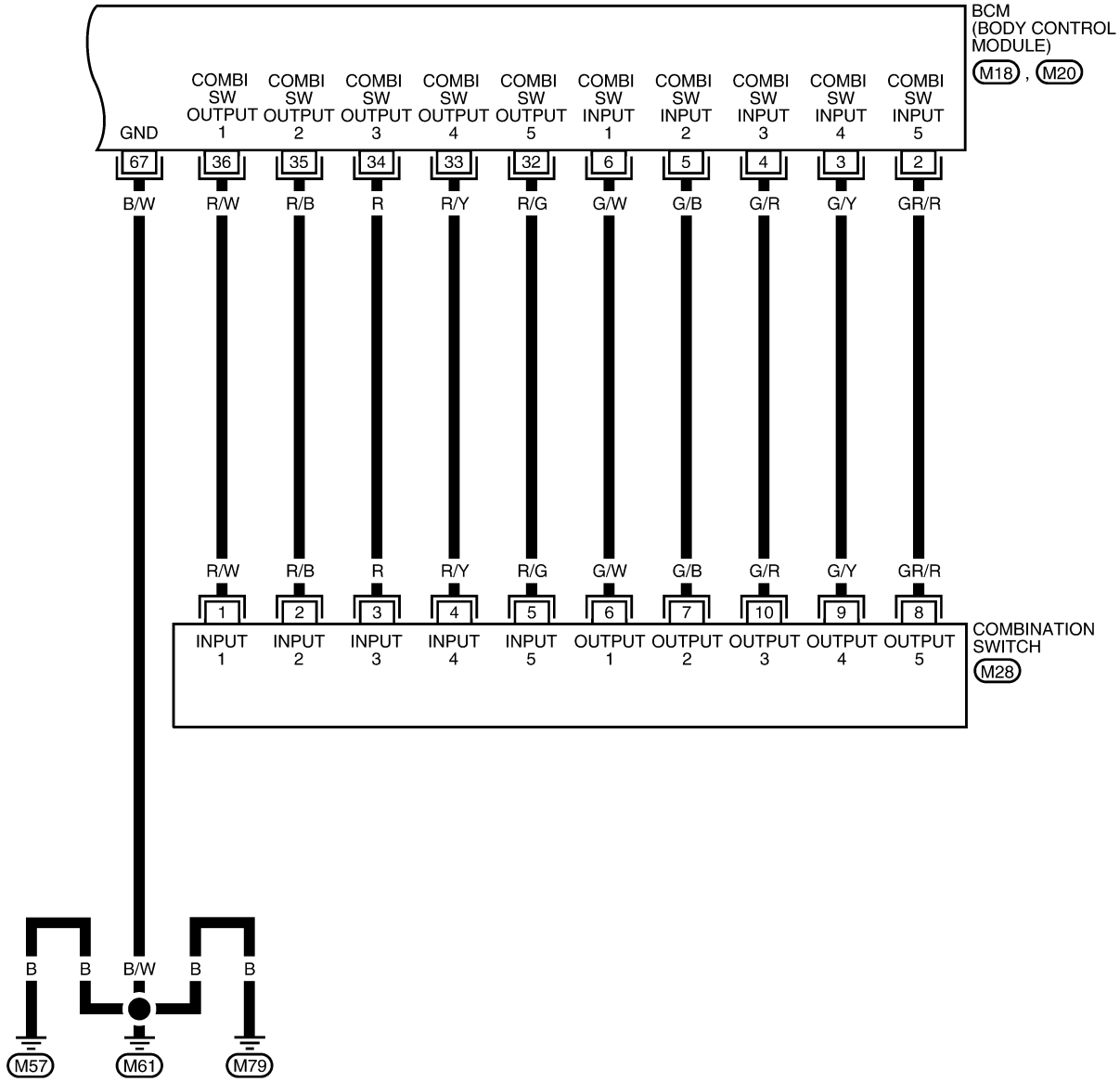


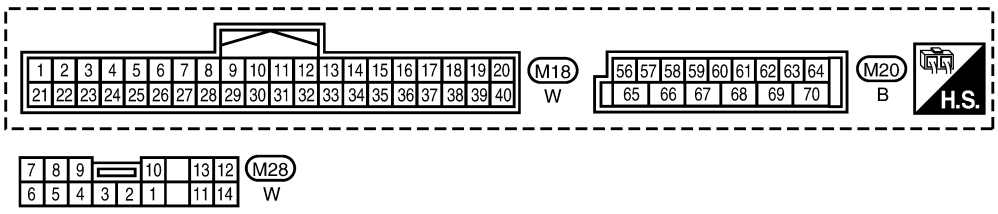


REFER TO THE FOLLOWING.
M18, M19, M20, E125
- ELECTRICAL UNITS

WKWA4670E

DI-CHIME-02





WKWA4671E

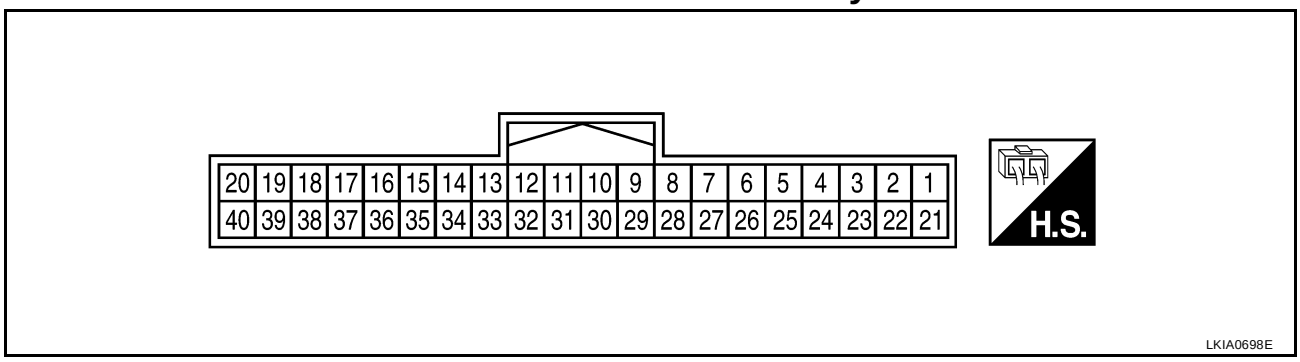
Terminals and Reference Value for BCM

EKS00FFU

Refer to BCS-12, "Terminals and Reference Values for BCM" .

Combination Meter Harness Connector Terminal Layout

EKS00HSE



Terminals and Reference Value for Combination Meter

EKS00FFV

Terminal No.	Wire color	Item	Condition		Reference value (V) (Approx.)
			Ignition switch	Measurement method	
9	L	CAN-H	OFF	—	—
11	P	CAN-L	OFF	—	—
20	B/W	Ground	OFF	—	0V
24	W/L	Seat belt buckle switch LH	ON	Unfastened (ON)	0
				Fastened (OFF)	Battery voltage
38	O	Ignition switch ON or START	ON	—	Battery voltage
40	Y/R	Battery power supply	OFF	—	Battery voltage

How to Proceed With Trouble Diagnosis

EKS00FFW

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to DI-37, "System Description" .
3. Perform the preliminary check. Refer to DI-41, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the warning chime operate properly? If so, go to 6. If not, go to 3.
6. Inspection End.

Preliminary Check

EKS00FFX

INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

Refer to BCS-15, "BCM Power Supply and Ground Circuit Check" .

CONSULT-II Function (BCM)

EKS00FFY

CONSULT-II 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.

CONSULT-II START PROCEDURE

Refer to GI-37, "CONSULT-II Start Procedure" .

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

Data Monitor Item

Monitored item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
KEY ON SW	Indicates [ON/OFF] condition of key switch.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch (driver side).
LIGHT SW 1ST	Indicates [ON/OFF] condition of lighting switch.

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.

Active Test Item

Test item	Malfunction is detected when···
LIGHT WARN ALM	This test is able to check light warning chime operation. Light warning chime sounds for 2 seconds after touching “ON” on CONSULT-II screen.
IGN KEY WARN ALM	This test is able to check key warning chime operation. Key warning chime sounds for 2 seconds after touching “ON” on CONSULT-II screen.
SEAT BELT WARN TEST	This test is able to check seat belt warning chime operation. Seat belt warning chime sounds for 2 seconds after touching “ON” on CONSULT-II screen.

SELF-DIAGNOSTIC RESULTS

Operation Procedure

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

Display Item List

Monitored Item	CONSULT-II display	Description
CAN communication	CAN communication [U1000]	Malfunction is detected in CAN communication.

NOTE:
If "CAN communication U1000" is indicated, after printing the monitor item, go to "CAN System". Refer to LAN-44, "TROUBLE DIAGNOSIS" .

All Warning Chimes Do Not Operate

EKS00FFZ

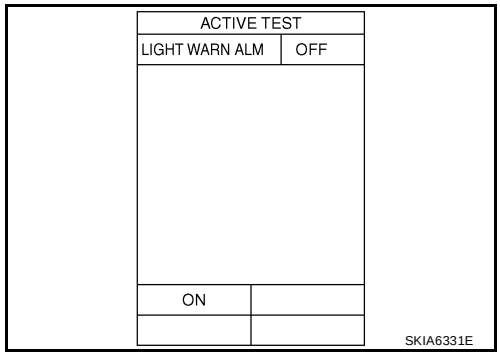
1. CHECK BCM CHIME OPERATION

Select "BUZZER" on CONSULT-II, and perform "LIGHT WARN ALM", "IGN KEY WARN ALM", OR "SEAT BELT WARN TEST" active test.

Does chime sound?

YES >> Replace the BCM. Refer to BCS-25, "Removal and Installation of BCM" .

NO >> Replace the combination meter. Refer to IP-12, "Combination Meter" .



Key Warning Chime and Light Warning Chime Do Not Operate (Seat Belt Warning Chime Does Operate)

EKS00FG0

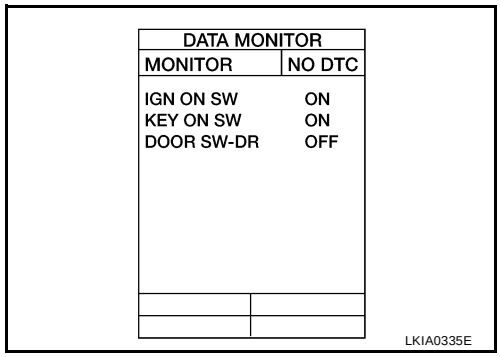
1. CHECK BCM INPUT SIGNAL

With CONSULT-II

1. Select "BCM" on CONSULT-II.
2. With "DATA MONITOR" of "BUZZER", confirm "DOOR SW-DR" changes with the status of front door LH.

When front door LH is opened : DOOR SW-DR ON

When front door LH is closed : DOOR SW-DR OFF



Without CONSULT-II

Check voltage between BCM harness connector M19 terminal 47 and ground.

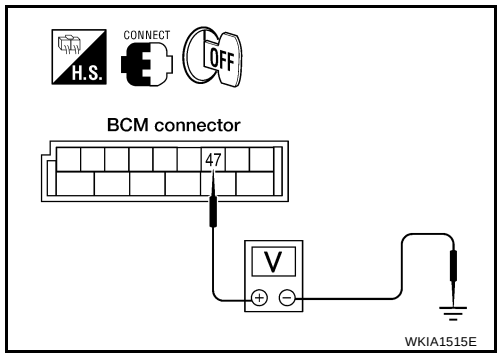
When front door LH is opened : Approx. 0V

When front door LH is closed : Approx. 5V

OK or NG

OK >> Replace the BCM. Refer to BCS-25, "Removal and Installation of BCM" .

NG >> GO TO 2.



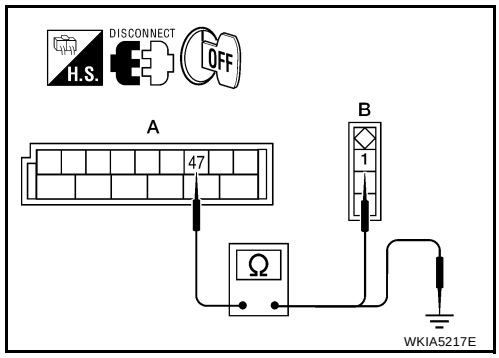
2. CHECK FRONT DOOR SWITCH LH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector M19 (A) and front door switch LH connector B8 (B).
3. Check continuity between BCM harness connector M19 (A) terminal 47 and front door switch LH harness connector B8 (B) terminal 1.

Continuity should exist.

4. Check continuity between BCM harness connector M19 (A) terminal 47 and ground.

Continuity should not exist.



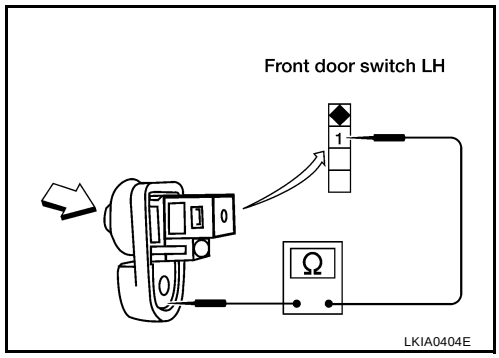
OK or NG

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

3. CHECK FRONT DOOR SWITCH LH

Check continuity between front door switch LH terminal 1 and exposed metal of switch while pushing and releasing switch.

When front door LH switch is released	**: Continuity should exist.**
When front door LH switch is pushed	**: Continuity should not exist.**



OK or NG

OK >> Replace the BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> Replace the front door switch LH.

Key Warning Chime Does Not Operate

EKS00FG1

1. CHECK FUSE

Check if the key switch 15A fuse [No. 19, located in the fuse block (J/B)] is blown. Refer to DI-39, "Wiring Diagram — CHIME —" .

Is the fuse blown?

YES >> Replace the fuse. Be sure to repair the cause of malfunction before installing new fuse.
NO >> GO TO 2.

2. CHECK WARNING CHIME OPERATION

With key removed from the ignition and the front door LH open, turn the lighting switch to 1st or 2nd position.

Does warning chime sound?

YES >> GO TO 3.
NO >> Go to DI-43, "All Warning Chimes Do Not Operate" or DI-43, "Key Warning Chime and Light Warning Chime Do Not Operate (Seat Belt Warning Chime Does Operate)" .

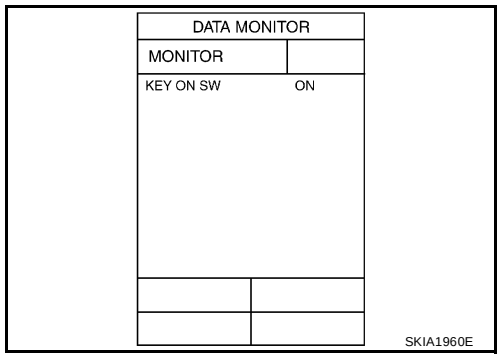
3. CHECK BCM INPUT SIGNAL

With CONSULT-II

With "DATA MONITOR" of "BUZZER", confirm "KEY ON SW" changes when the key is inserted/removed from the ignition key cylinder.

When key is inserted in ignition key cylinder : KEY ON SW ON

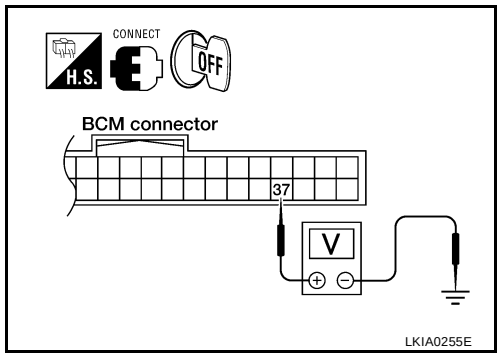
When key is removed from ignition key cylinder : KEY ON SW OFF



Without CONSULT-II

Check voltage between BCM harness connector M18 terminal 37 and ground.

Terminals			Condition	Voltage (V)
(+)		(–)		
Connector	Terminal			
M18	37	Ground	Key is inserted	Battery voltage
			Key is removed	0



OK or NG

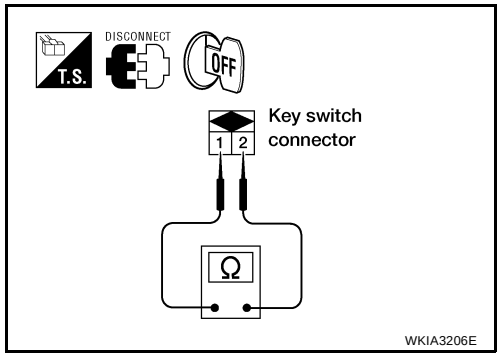
OK >> Replace the BCM. Refer to BCS-25, "Removal and Installation of BCM" .

NG >> GO TO 4.

4. CHECK KEY SWITCH

1. Disconnect key switch connector.
2. Check continuity between key switch terminals 1 and 2.

Terminals		Condition	Continuity
1	2	Key is inserted	Yes
		Key is removed	No



OK or NG

OK >> GO TO 5.

NG >> Replace the key switch.

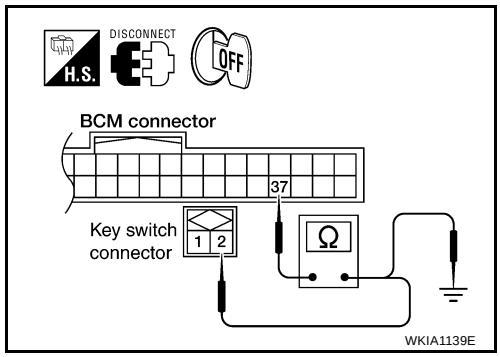
5. CHECK KEY SWITCH CIRCUIT

1. Disconnect BCM connector M18.
2. Check continuity between BCM harness connector M18 terminal 37 and key switch harness connector M27 terminal 2.

Continuity should exist.

3. Check continuity between BCM harness connector M18 terminal 37 and ground.

Continuity should not exist.



OK or NG

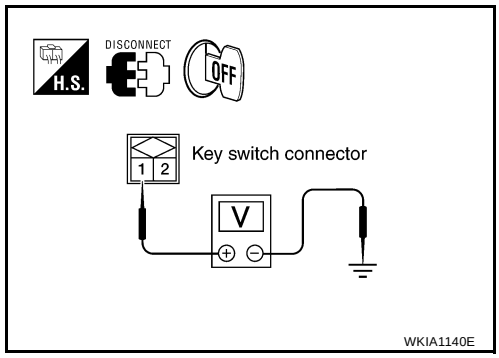
OK >> GO TO 6.

NG >> Repair harness or connector.

6. CHECK KEY SWITCH POWER SUPPLY CIRCUIT

Check voltage between key switch harness connector M27 terminal 1 and ground.

Battery voltage should exist.



OK or NG

OK >> Replace the BCM. Refer to BCS-25, "Removal and Installation of BCM" .

NG >> Check harness for open between key switch and fuse.

Light Warning Chime Does Not Operate

EKS00FG2

1. CHECK WARNING CHIME OPERATION

Check key warning chime and seat belt warning chime functions.

Do key warning chime and seat belt warning chime sound?

YES >> GO TO 2.

NO >> Go to DI-43, "All Warning Chimes Do Not Operate" .

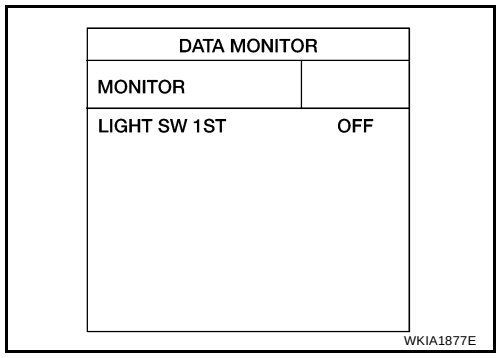
2. CHECK BCM INPUT SIGNAL

With CONSULT-II

1. Select "BCM".
2. With "DATA MONITOR" of "BUZZER", confirm "LIGHT SW 1ST" status changes when the lighting switch is moved from ON (1st position) to OFF.

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

Lighting switch OFF : LIGHT SW 1ST OFF



Without CONSULT-II

Check combination switch. Refer to LT-89, "Combination Switch Reading Function" .

OK or NG

OK >> Replace the BCM. Refer to BCS-25, "Removal and Installation of BCM" .

NG >> Check lighting switch. Refer to LT-89, "Combination Switch Reading Function" .

Seat Belt Warning Chime Does Not Operate

EKS00FG3

1. CHECK WARNING CHIME OPERATION

1. With key removed from the ignition and the front door LH open, turn the lighting switch to 1st or 2nd position.
2. Return lighting switch to OFF position, and insert key into ignition.

Does warning chime sound for both steps?

YES >> GO TO 2.

NO >> Go to DI-43, "All Warning Chimes Do Not Operate" .

2. CHECK SEAT BELT WARNING LAMP OPERATION

Turn ignition switch ON. Buckle and unbuckle driver seat belt while watching seat belt warning lamp.

NOTE:
While performing this test, the front passenger seat must be unoccupied.

When seat belt is fastened : Warning lamp OFF
When seat belt is unfastened : Warning lamp ON

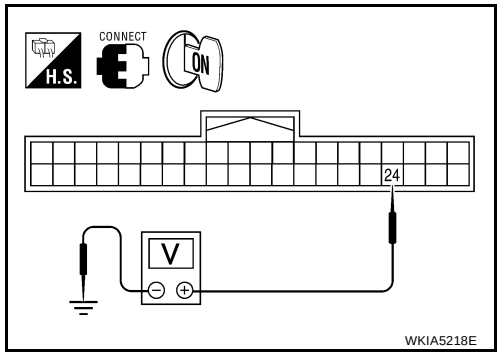
OK or NG

OK >> Replace the BCM. Refer to BCS-25, "Removal and Installation of BCM" .
NG >> GO TO 3.

3. CHECK COMBINATION METER INPUT SIGNAL

Check voltage between combination meter harness connector M24 terminal 24 and ground.

Terminals			Condition	Voltage (V) (Approx.)
(+)		(–)		
Connector	Terminal			
M24	24	Ground	Seat belt is fastened	Battery voltage
			Seat belt is unfastened	0



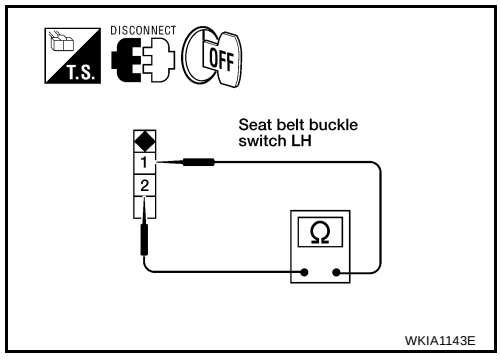
OK or NG

OK >> Replace the combination meter. Refer to IP-12, "Combination Meter" .
NG >> GO TO 4.

4. CHECK SEAT BELT BUCKLE SWITCH

1. Turn ignition switch OFF.
2. Disconnect seat belt buckle switch LH connector.
3. Check continuity between seat belt buckle switch LH terminals 1 and 2.

Terminals		Condition	Continuity
1	2	Seat belt is fastened	No
		Seat belt is unfastened	Yes



OK or NG

OK >> GO TO 5.
NG >> Replace the seat belt buckle switch LH.

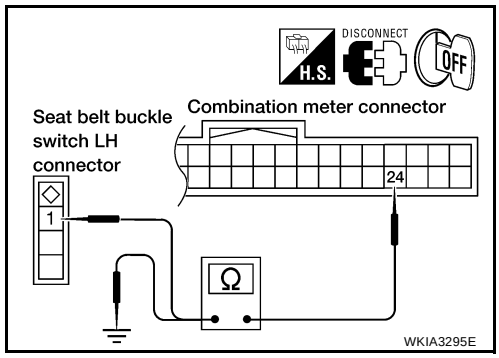
5. CHECK SEAT BELT BUCKLE SWITCH CIRCUIT

1. Disconnect combination meter connector.
2. Check continuity between combination meter harness connector M24 terminal 24 and seat belt buckle switch LH harness connector B12 terminal 1.

Continuity should exist.

3. Check continuity between combination meter harness connector M24 terminal 24 and ground.

Continuity should not exist.



OK or NG

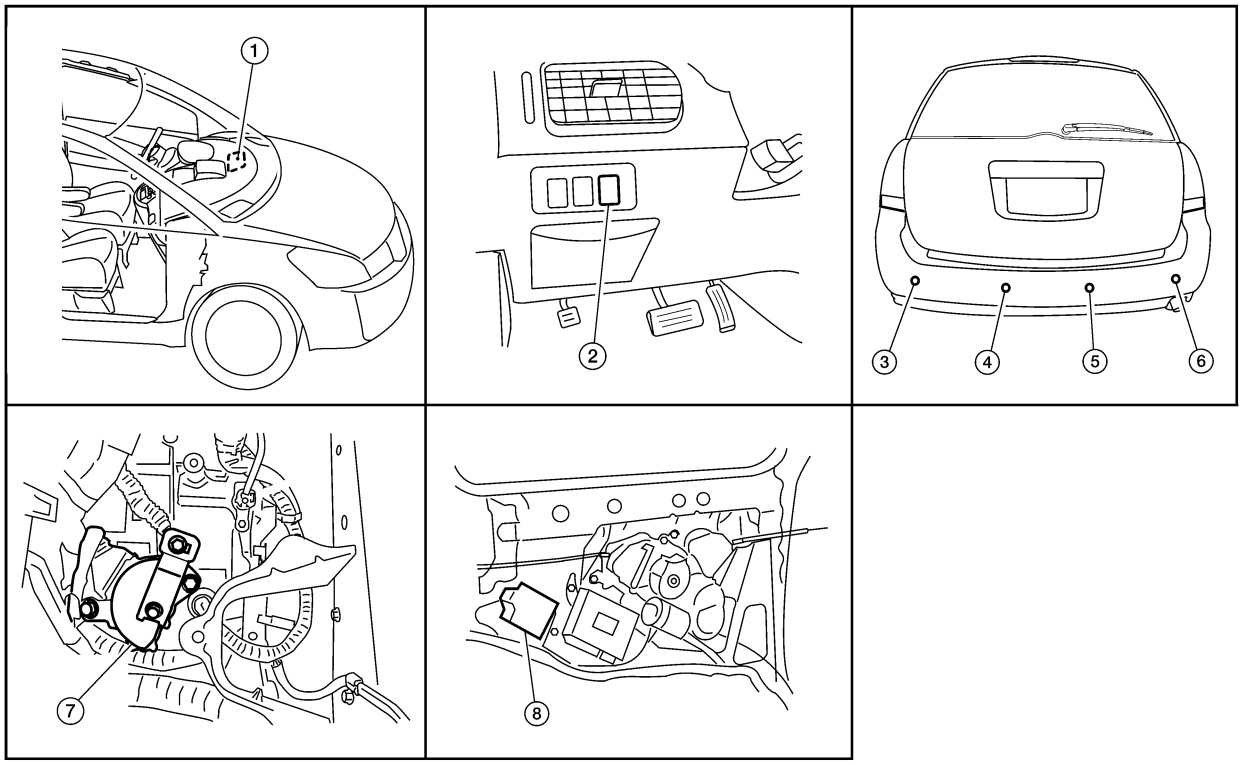
OK >> Check seat belt buckle switch ground circuit.
NG >> Repair harness or connector.

REAR SONAR SYSTEM

PFP:28532

Component Parts and Harness Connector Location

EKS00FG4



WKIA5221E

1. Sonar buzzer M117
2. Rear sonar system OFF switch M116
3. Rear sonar sensor LH outer B202
4. Rear sonar sensor LH inner B203
5. Rear sonar sensor RH inner B204
6. Rear sonar sensor RH outer B205
7. Park/neutral position (PNP) switch F29 (view with battery tray removed)
8. Sonar control unit B56 (view with rear lower finisher assembly LH removed)

System Description

EKS00FG5

FUNCTION

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 sonar control unit terminal 8, and
- through 10A fuse [No. 14, located in the fuse block (J/B)]
- to park/neutral position (PNP) switch terminal 2.

Ground is supplied

- to sonar control unit terminal 6
- through body grounds B7 and B19.

With the ignition switch in the ON or START position, and the selector lever in the R position, power is supplied

- to sonar control unit terminal 5
- from park/neutral position (PNP) switch terminal 4.

With power and ground supplied, selector lever in R position, and the rear sonar system OFF switch ON, the rear sonar system will detect obstacles within 1.8 m (5.9 ft) of the rear sonar sensors. The vehicle operator is notified of obstacles by varied lengths of tone from the sonar buzzer depending on distance of obstacle being sensed.

REAR SONAR SYSTEM OFF SWITCH

With power and ground supplied to the sonar control unit, selector lever in R position, the sonar system can be disabled and the sonar buzzer silenced by momentarily pressing the rear sonar system OFF switch. The rear sonar system OFF indicator lamp will be illuminated in the rear sonar system OFF switch.
To disable the rear sonar system, ground is supplied

- to sonar control unit terminal 13
- through rear sonar system OFF switch terminal 7
- through rear sonar system OFF switch terminal 6
- from body grounds M57, M61, and M79.

To light the rear sonar system OFF indicator, power is supplied

- to the rear sonar system OFF switch terminal 3
- from sonar control unit terminal 4.

Ground is supplied

- to the rear sonar system OFF switch terminal 2
- from body grounds M57, M61, and M79.

The rear sonar system and buzzer will be disabled and the rear sonar system OFF indicator will be illuminated until the ignition switch is turned OFF. When the ignition is turned ON, the rear sonar system will be enabled. Depressing the rear sonar system OFF switch momentarily will enable the rear sonar system also. Enabling the rear sonar system will cause the rear sonar system OFF indicator to go out.

SONAR BUZZER

With the power supplied to the sonar control unit, selector lever in R position and a stationary object at least 7.0 cm (2.8 in.) wide and 10.0 cm (3.9 in.) tall closer than 1.8 meters (5.9 ft.) will be detected by the rear sonar sensors, the sonar buzzer will sound a tone. As the vehicle approaches the object, the rate of the tone will increase. When the object is less than 25.0 cm (10 in.) from the rear bumper, the tone will sound continuously.
Power is supplied

- to sonar buzzer terminal +
- from sonar control unit terminal 7.

Ground is supplied

- to sonar buzzer terminal -
- from sonar control unit terminal 3.

REAR SONAR SENSOR

With power and ground supplied to the rear sonar sensors, the sonar sensors transmit a 38.4 kHz ultrasonic signal. This signal is reflected back to the sensor by objects large enough and close enough to be detected. The rear sonar sensors measure the time from the transmitted signal to the time the signal is reflected back and sends this information to the sonar control unit.
Power is supplied

- to rear sonar sensors terminal 1
- from sonar control unit terminal 16.

Ground is supplied

- to rear sonar sensors terminal 3
- from sonar control unit terminal 15.

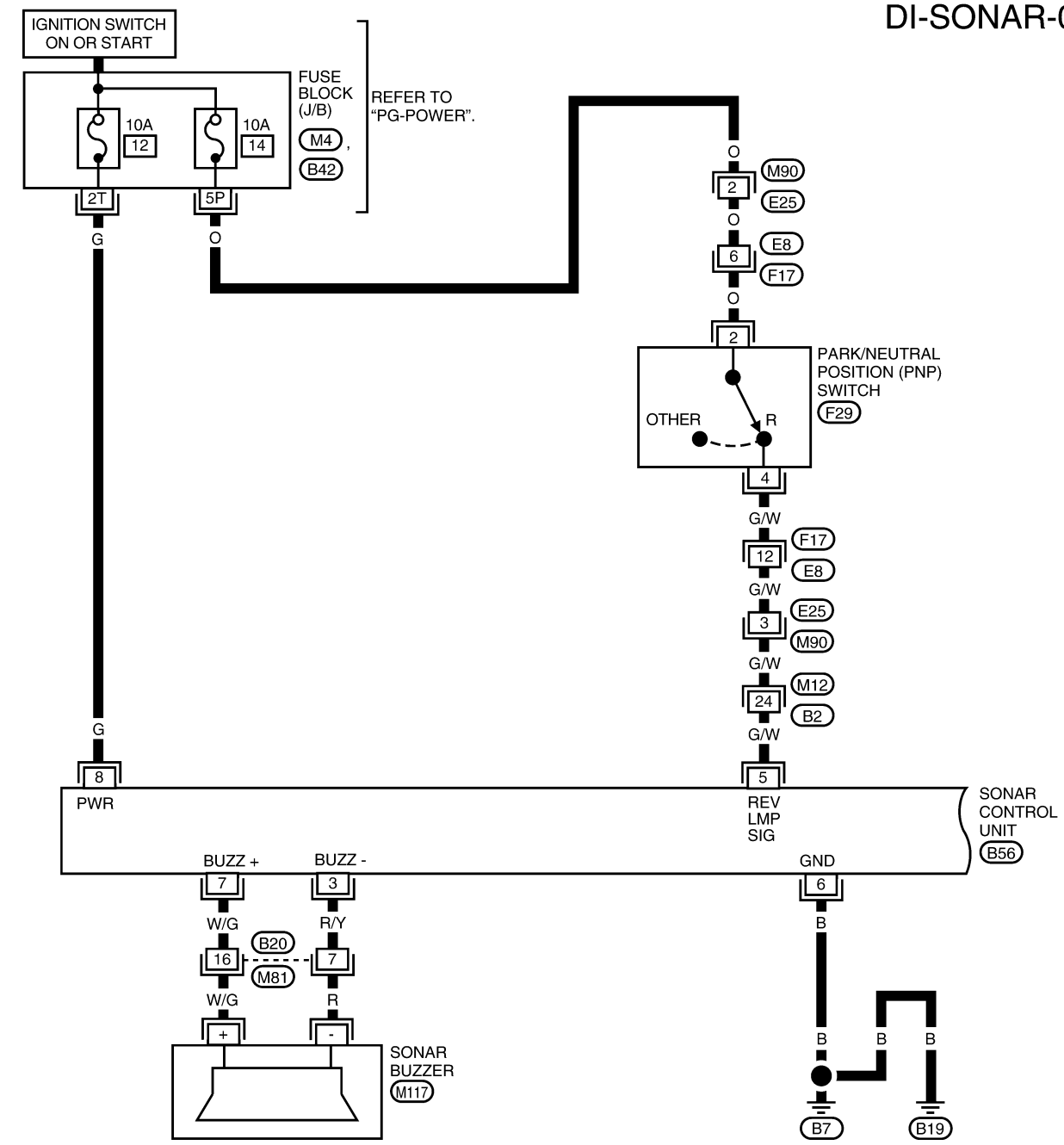
Signal is supplied

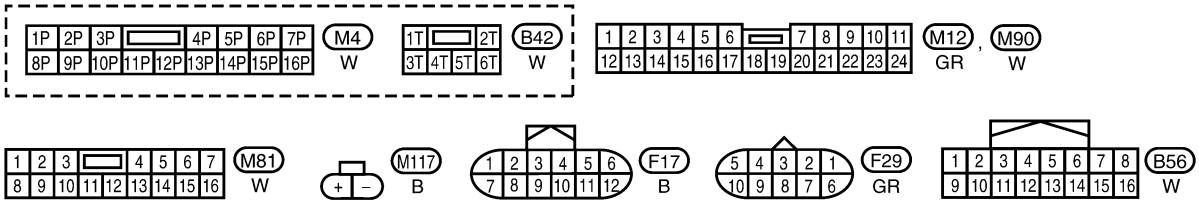
- to sonar control unit terminals 9, 10, 11 and 12
- from rear sonar sensors terminal 2.

Wiring Diagram — SONAR —

EKS00FG6

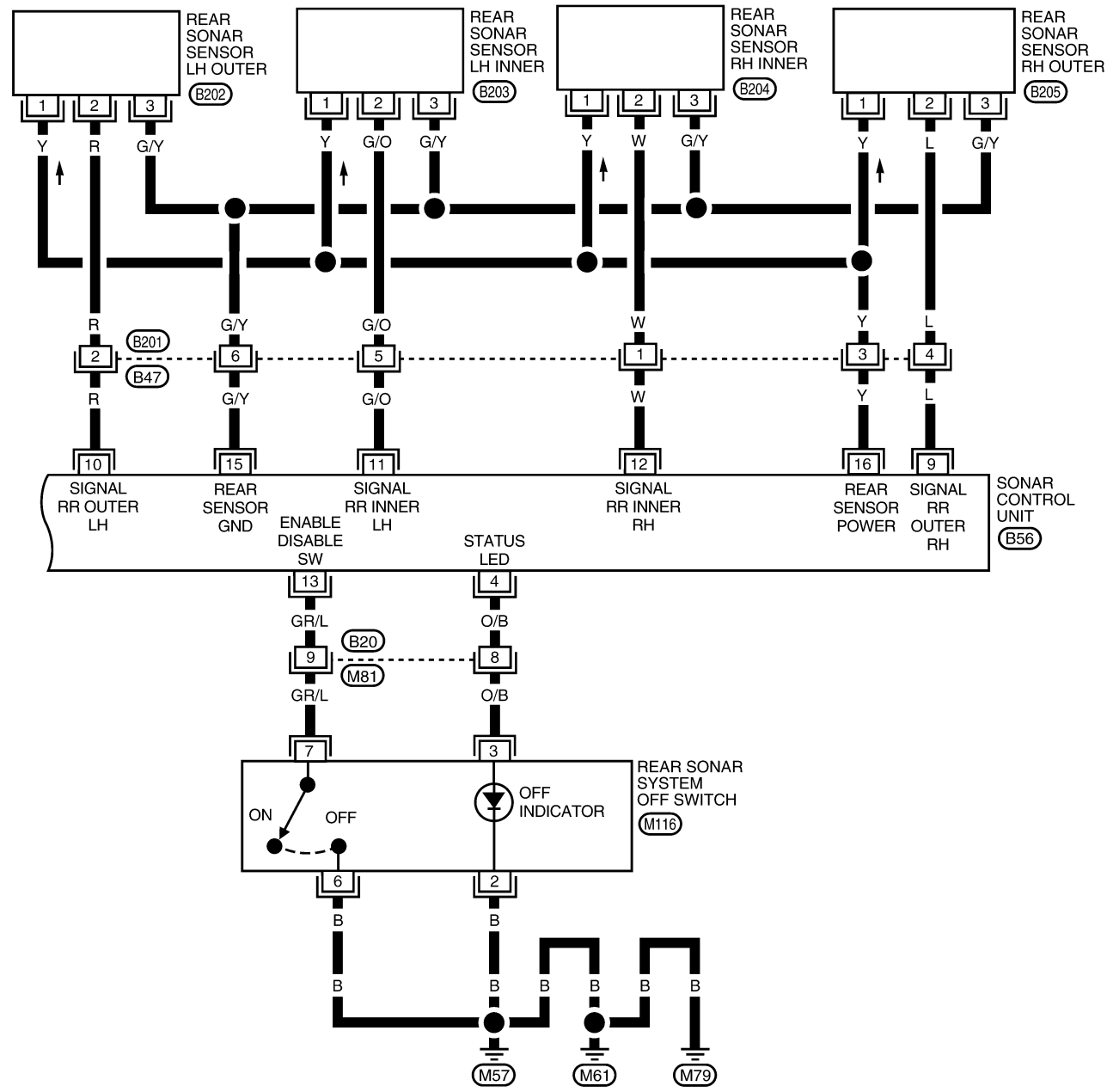
DI-SONAR-01

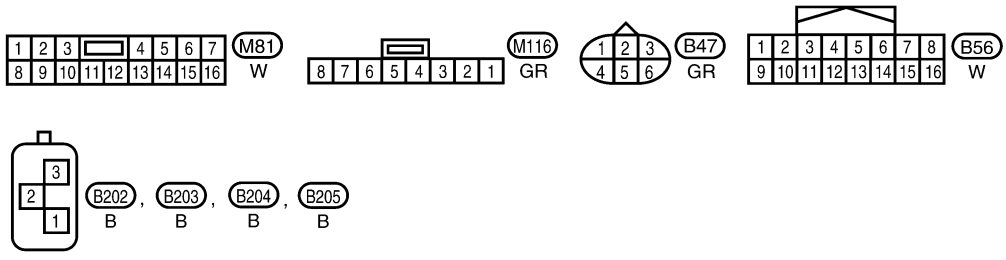




WKWA4672E

DI-SONAR-02

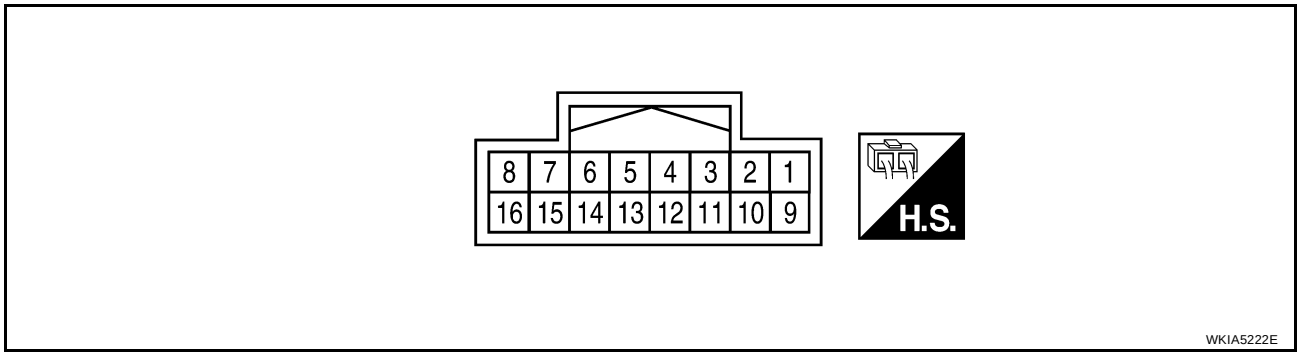




WKWA4673E

Sonar Control Unit Harness Connector Terminal Layout

EKS00HSF



Terminals And Reference Value For Sonar Control Unit

EKS00FG7

Terminal (Wire color)	Item	Condition			Reference value (V) (Approx.)
		Ignition switch	Operation		
3 (R/Y)	Sonar buzzer return	ON	—		0
4 (O/B)	Rear sonar system OFF indicator output	ON	Rear sonar system OFF switch	ON	0
				OFF	Battery voltage
5 (G/W)	Reverse signal	ON	Selector lever	R position	Battery voltage
			Selector lever	Not R position	0
6 (B)	Sonar control unit ground	OFF	—		0
7 (W/G)	Sonar buzzer drive signal	ON	● Rear sonar system OFF switch ON ● Selector lever in R position ● No obstacles		Battery voltage
			● Rear sonar system OFF switch ON ● Selector lever in R position ● Distance between rear sonar sensor and obstacle is <0.25 m (0.82 ft) or less.		0
			● Rear sonar system OFF switch ON ● Selector lever in R position ● Distance between rear sonar sensor and obstacle is 0.25 to 1.8 m (0.82 to 5.9 ft).		Cycles between 0.001 and 12
8 (G)	Sonar control unit power	ON	—		Battery voltage
9 (L)	Rear sonar sensor signal - RH outer	ON	● Rear sonar system OFF switch ON ● Selector lever in R position ● No obstacles		Battery voltage
10 (R)	Rear sonar sensor signal - LH outer	ON	● Rear sonar system OFF switch ON ● Selector lever in R position ● No obstacles		Battery voltage
11 (G/O)	Rear sonar sensor signal - LH inner	ON	● Rear sonar system OFF switch ON ● Selector lever in R position ● Distance obstacles		Battery voltage
12 (W)	Rear sonar sensor signal - RH inner	ON	● Rear sonar system OFF switch ON ● Selector lever in R position ● Distance obstacles		Battery voltage
13 (GR/L)	Rear sonar system OFF switch signal	ON	Rear sonar system OFF switch	ON	0
				OFF	9

Terminal (Wire color)	Item	Condition		Reference value (V) (Approx.)
		Ignition switch	Operation	
15 (G/Y)	Rear sonar sensor ground	ON	—	0
16 (Y)	Rear sonar sensor power	ON	Ignition switch ON	Battery voltage

How to Proceed With Trouble Diagnosis

EKS00FG8

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to DI-49, "System Description" .
3. Perform pre-diagnosis inspection. Refer to DI-54, "Pre-diagnosis Inspection" .
4. Perform self-diagnosis. Refer to DI-54, "Self-diagnosis Function" .
5. Perform the preliminary check. Refer to DI-56, "Preliminary Check" .
6. Check symptom and repair or replace the cause of malfunction. Refer to DI-57, "Symptom Chart" .
7. Does the rear sonar system operate properly? If so, go to 8. If not, go to 3.
8. Inspection End.

Pre-diagnosis Inspection

EKS00FG9

SENSOR STATUS CHECK

- Check that the rear sonar sensor is not frozen.
- Check that snow, mud, or other foreign objects are not adhering to the rear sonar sensor.
- Check that there is no deformation, scratches, or other damage to the rear sonar sensor.
- Check that water has not accumulated in the rear sonar sensor.

CAUTION:

Use water, cotton swab, or other soft material for cleaning the sensor.

1. Check that there are no obstacles within each rear sonar sensor's detection range.

	Detection range
Rear sonar sensors	Approx. 1.8 m (5.9 ft) maximum

2. Check that there are no nearby ultrasound sources (such as the sounds of vehicle horns, motorcycle engines, or truck air brakes).
3. Check that the vehicle is on a level surface.

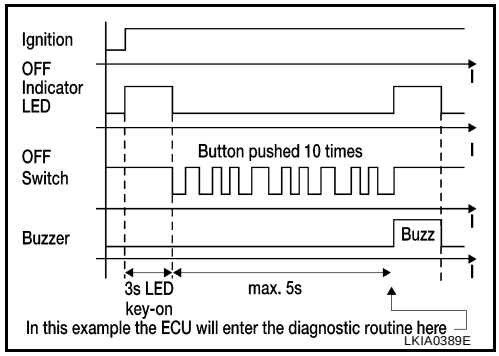
Self-diagnosis Function

EKS00FGA

There are four modes of self-diagnosis; entering diagnostics, requesting number of fault codes, requesting fault codes, and idling or clearing fault codes. These steps must be followed in order. Self-diagnosis can be manually exited by turning the ignition OFF, or selecting reverse gear. Self-diagnosis will automatically exit if a message is repeated five times without acknowledgement, before reporting number of faults if no switch activity is detected for thirty seconds or in idle mode if no switch activity is detected for thirty seconds.

ENTERING DIAGNOSTICS MODE

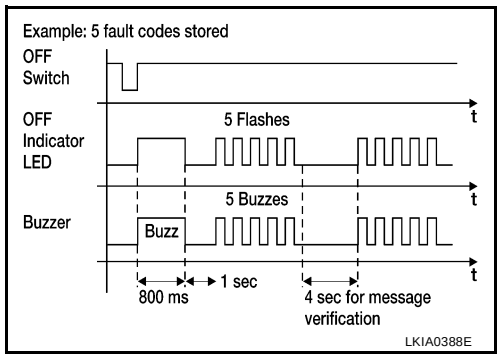
1. Turn ignition switch ON. Rear sonar system OFF switch indicator lamp comes on for three seconds and then goes out.
2. Immediately push rear sonar system OFF switch ten times within five seconds.
3. The the sonar buzzer sounds once and the rear sonar system OFF indicator flashes once.



REQUESTING NUMBER OF FAULT CODES MODE

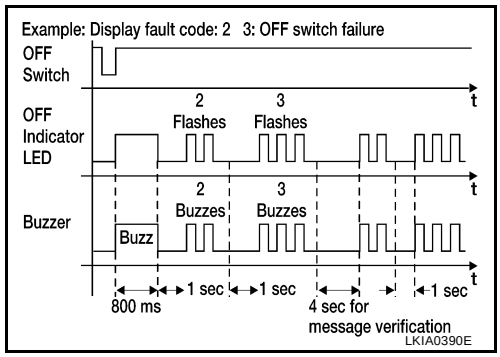
1. While in diagnostic mode, push rear sonar system OFF switch once.
2. The sonar buzzer will sound once.
3. Rear sonar system OFF indicator will flash once and sonar buzzer will sound once for each fault code detected.
4. There will be a four second pause.
5. The number of fault codes will repeat then pause five times.

NOTE:
Self-diagnosis will exit unless requesting fault codes occurs before five repeats ends.



REQUESTING FAULT CODES MODE

1. While in requesting number of fault codes mode, push rear sonar system OFF switch once.
2. The sonar buzzer will sound once.
3. Rear sonar system OFF indicator will flash and sonar buzzer will sound the first digit of the fault code followed by a one second pause.
4. Rear sonar system OFF indicator will flash and sonar buzzer will sound the second digit of the fault code followed by a four second pause.
5. The fault codes will repeat then pause five times.



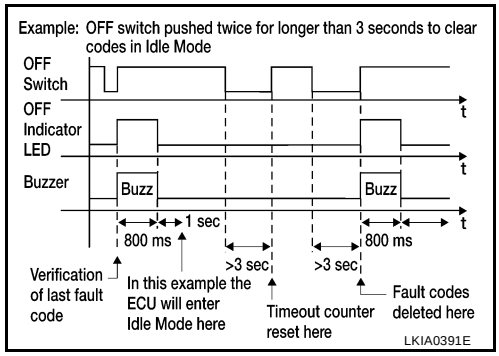
NOTE:
Requesting fault codes will exit unless the fault code is acknowledged before five repeats ends.
The fault code is acknowledged by pushing the rear sonar system OFF switch once (the sonar buzzer may sound). When all fault codes have been indicated, idle mode will be entered. See the following table for fault code identification.

Fault Code	Malfunction	Page Reference
1 1	Rear sonar sensor LH outer	Check harness for open or short. If NG repair or replace harness. If OK replace sensor. Refer to EI-16, "Removal and Installation" .
1 2	Rear sonar sensor LH inner	
1 3	Rear sonar sensor RH inner	
1 4	Rear sonar sensor RH outer	
2 1	Sonar buzzer	DI-58, "SONAR BUZZER"
2 2	Rear sonar system OFF indicator	DI-58, "REAR SONAR SYSTEM OFF INDICATOR"
2 3	Rear sonar system OFF switch	DI-58, "REAR SONAR SYSTEM OFF SWITCH"
2 4	Sonar control unit	Replace sonar control unit. Refer to DI-58, "Sonar Control Unit"

IDLING OR CLEARING FAULT CODES MODE

NOTE:
While in idle mode, self-diagnosis will automatically exit if no activity occurs for thirty seconds.

1. Push and hold rear sonar system OFF switch for three seconds to reset time-out counter.
2. Push and hold rear sonar system OFF switch for three seconds to clear codes.



Preliminary Check

EKS00FGB

INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

Check for blown rear sonar system fuse.

UNIT	POWER SOURCE	FUSE
Sonar control unit	ON or START	12

Refer to DI-51, "Wiring Diagram — SONAR —" .

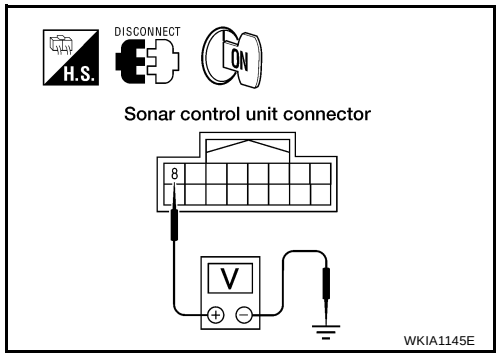
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse. Refer to PG-4, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect sonar control unit connector.
2. Check voltage between sonar control unit connector B56 terminal 8 and ground.

Terminals			Ignition switch position
(+)		(-)	ON or START
Connector	Terminal		
B56	8	Ground	Battery voltage



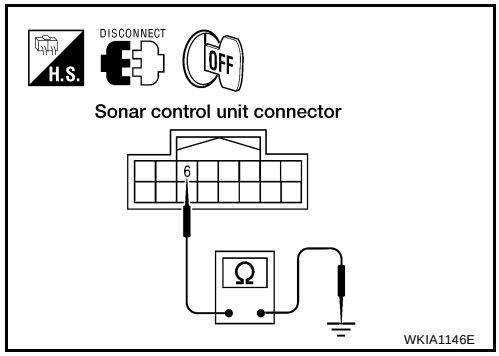
OK or NG

OK >> GO TO 3.
NG >> Check harness for open between sonar control unit and fuse.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between sonar control unit connector B56 terminal 6 and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal		
B56	6	Ground	Yes



OK or NG

OK >> Inspection End.
NG >> Repair harness or connector.

Symptom Chart

EKS00FGC

Symptom	Repair order
When the rear sonar system OFF switch is OFF, the indicator lamp does not light and the buzzer does not sound.	1. Check rear sonar system OFF switch for malfunction. Refer to DI-58, "REAR SONAR SYSTEM OFF SWITCH" . 2. Check rear sonar system OFF switch ground circuit. 3. Check harness and connections between rear sonar system OFF switch and sonar control unit. 4. Replace sonar control unit. Refer to DI-58, "Sonar Control Unit" .
When the rear sonar system OFF switch is OFF, the indicator lamp does not light but buzzer sounds.	1. Check rear sonar system OFF indicator for malfunction. Refer to DI-58, "REAR SONAR SYSTEM OFF INDICATOR" . 2. Check harness and connections between rear sonar system OFF indicator and sonar control unit. 3. Replace sonar control unit. Refer to DI-58, "Sonar Control Unit" .
When the rear sonar system OFF switch is OFF, the sonar buzzer does not sound but indicator lamp lights up.	1. Check sonar buzzer. Refer to DI-58, "SONAR BUZZER" . 2. Check harness and connections between sonar buzzer and sonar control unit. 3. Replace sonar control unit. Refer to: DI-58, "Sonar Control Unit" .
When rear sonar system OFF switch is OFF, the rear sonar system OFF indicator lamp lights up and the sonar buzzer sounds intermittently (for about 4 seconds).	1. Check harness between rear sonar sensors and sonar control unit for an open condition. 2. Check rear sonar sensors for malfunction. 3. Replace sonar control unit. Refer to DI-58, "Sonar Control Unit" .
The rear sonar system operates with the rear sonar system OFF switch ON.	1. Check rear sonar system OFF switch for malfunction. Refer to DI-58, "REAR SONAR SYSTEM OFF SWITCH" . 2. Check rear sonar system OFF switch ground circuit. 3. Check harness and connections between rear sonar system OFF switch and sonar control unit. 4. Replace sonar control unit. Refer to DI-58, "Sonar Control Unit" .
When the selector lever is in the R position and the rear sonar system OFF switch is OFF, the sonar system does not operate.	1. Check for PNP switch failure. Refer to AT-81, "Diagnostic Procedure" . 2. Check harness and connections between sonar control unit and PNP/reverse lamp circuits. 3. Replace sonar control unit. Refer to DI-58, "Sonar Control Unit" .
When the rear sonar system OFF switch is OFF, the indicator lamp lights up and buzzer sounds although there is no obstacle within the detection range.	1. Check for adhesion of snow, mud, or other foreign objects to rear sonar sensors; dew condensation; etc. Refer to DI-54, "Pre-diagnosis Inspection" . 2. Check harness and connections between rear sonar sensors and sonar control unit. 3. Check rear sonar sensors for malfunction. 4. Replace sonar control unit. Refer to DI-58, "Sonar Control Unit" .
The rear sonar sensors do not operate according to the distance between each sensor and the obstacle. (There is a large error in the obstacle detection distance.)	1. Check rear sonar sensors for malfunction. 2. Replace sonar control unit. Refer to DI-58, "Sonar Control Unit" .

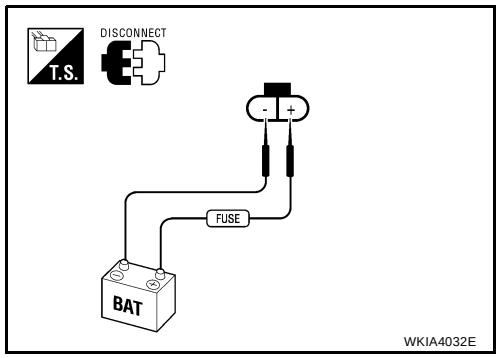
Component Inspection

EKS00FGD

SONAR BUZZER

Disconnect the sonar buzzer connector M117, and apply battery voltage (approx. 12V) to terminal +. Check the buzzer operation when terminal - is connected to battery ground.

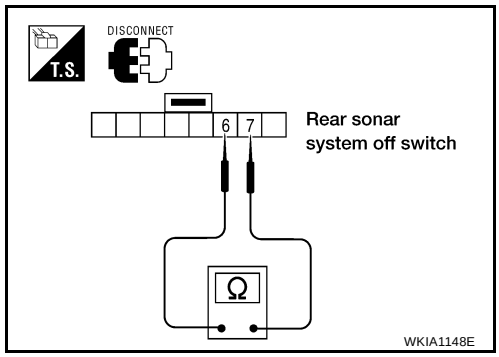
	Terminal to be inspected	Condition	Operation
Sonar buzzer	+	Approx. 12V	Sonar buzzer sounds
	-	Ground	



REAR SONAR SYSTEM OFF SWITCH

Disconnect the rear sonar system OFF switch connector M116. Check continuity between the following terminals.

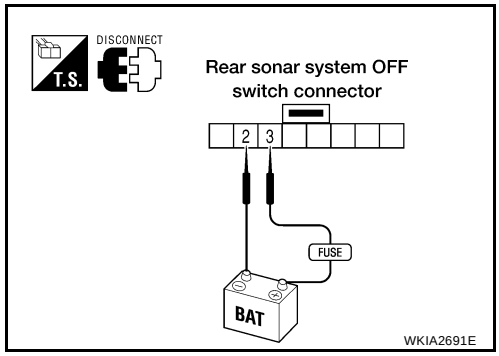
Rear sonar system OFF switch	Terminal to be inspected	Continuity
ON	6 - 7	Yes
OFF		No



REAR SONAR SYSTEM OFF INDICATOR

Disconnect the rear sonar system OFF switch connector M116, and apply battery voltage (approx. 12V) to terminal 3. Check the rear sonar system OFF indicator operation when terminal 2 is connected to battery ground.

	Terminal to be inspected	Condition	Operation
Rear sonar system OFF switch	3	Approx. 12V	Rear sonar system OFF indicator lights
	2	Ground	



Rear Sonar Sensors

EKS00FGE

REMOVAL AND INSTALLATION

Refer to EI-16, "Removal and Installation" for rear sonar sensor removal and installation procedures.

Sonar Control Unit

EKS00GAQ

REMOVAL AND INSTALLATION

Removal

1. Remove the rear lower finisher assembly LH. Refer to EI-33, "LEFT SIDE" to gain access to sonar control unit.
2. Disconnect electrical connector then remove sonar control unit.

INSTALLATION

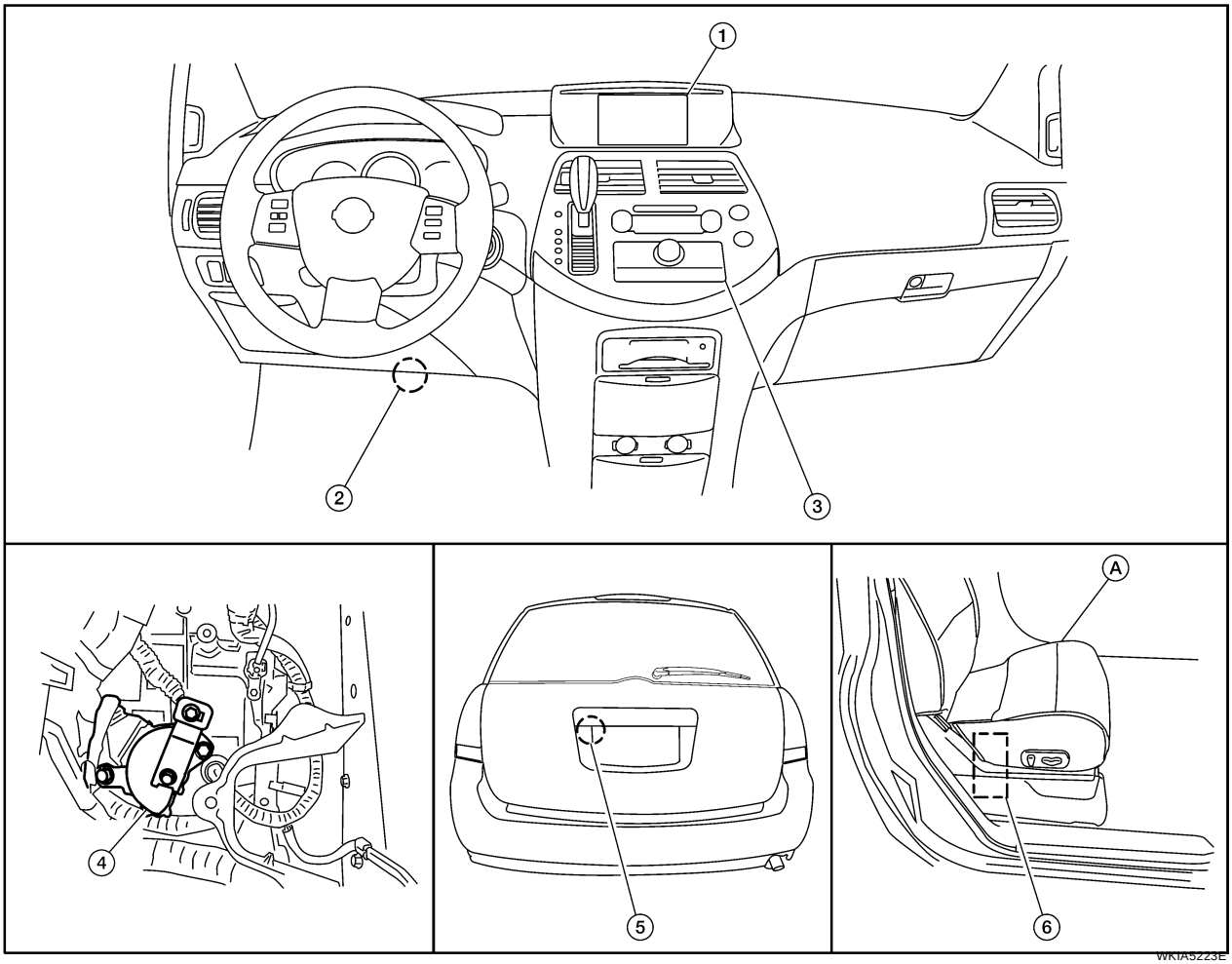
Installation is in the reverse order of removal.

REAR VIEW MONITOR

PFP:28260

Component Parts and Harness Connector Location

EKS00FPV



1. Display unit M93
   Display control unit M94, M95
2. Data link connector M22
3. AV switch M98
4. Park/neutral position (PNP) switch F29 (view with battery tray removed)
5. Rear view camera D518
6. Rear view camera control unit B512
   A. Passenger seat

System Description

EKS00FPW

- When the A/T selector is in the R position, the display unit shows a view to the rear of the vehicle.
- Lines which indicate the vehicle clearance and distances are also displayed.

POWER SUPPLY AND GROUND

Power is supplied at all times

- through 20A fuse (No. 31, located in the fuse and fusible link box)
- to rear view camera control unit terminal 1.

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

- through 10A fuse [No. 4, located in the fuse block (J/B)]
- to rear view camera control unit terminal 2.

Ground is supplied

- to rear view camera control unit terminal 3
- through grounds B117 and B132
- to rear view camera terminal 2
- through grounds D403 and D404.

AV COMMUNICATION LINE

Rear view camera control unit is connected to the following units with AV communication line. Each unit transmits/receives data with AV communication line.

- NAVI control unit (with NAVI)
- Display unit
- Display control unit
- AV switch

REAR VIEW CAMERA OPERATION

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

- through 10A fuse [No. 14, located in the fuse block (J/B)]
- to park/neutral position (PNP) switch terminal 2.

When A/T selector lever is in R position, power is supplied

- through park/neutral position (PNP) switch terminal 4
- to rear view camera control unit terminal 4.

Then, rear view camera control unit sends camera ON signal

- through rear view camera control unit terminal 8
- to rear view camera terminal 1.

An image taken by rear view camera is sent

- through rear view camera terminals 3 and 4
- to rear view camera control unit terminals 9 and 10.

Then an image is sent

- through rear view camera control unit terminals 11 and 12
- to display unit terminals 4 and 15.

An image of rear view will be projected on the display.

Side Distance Guideline

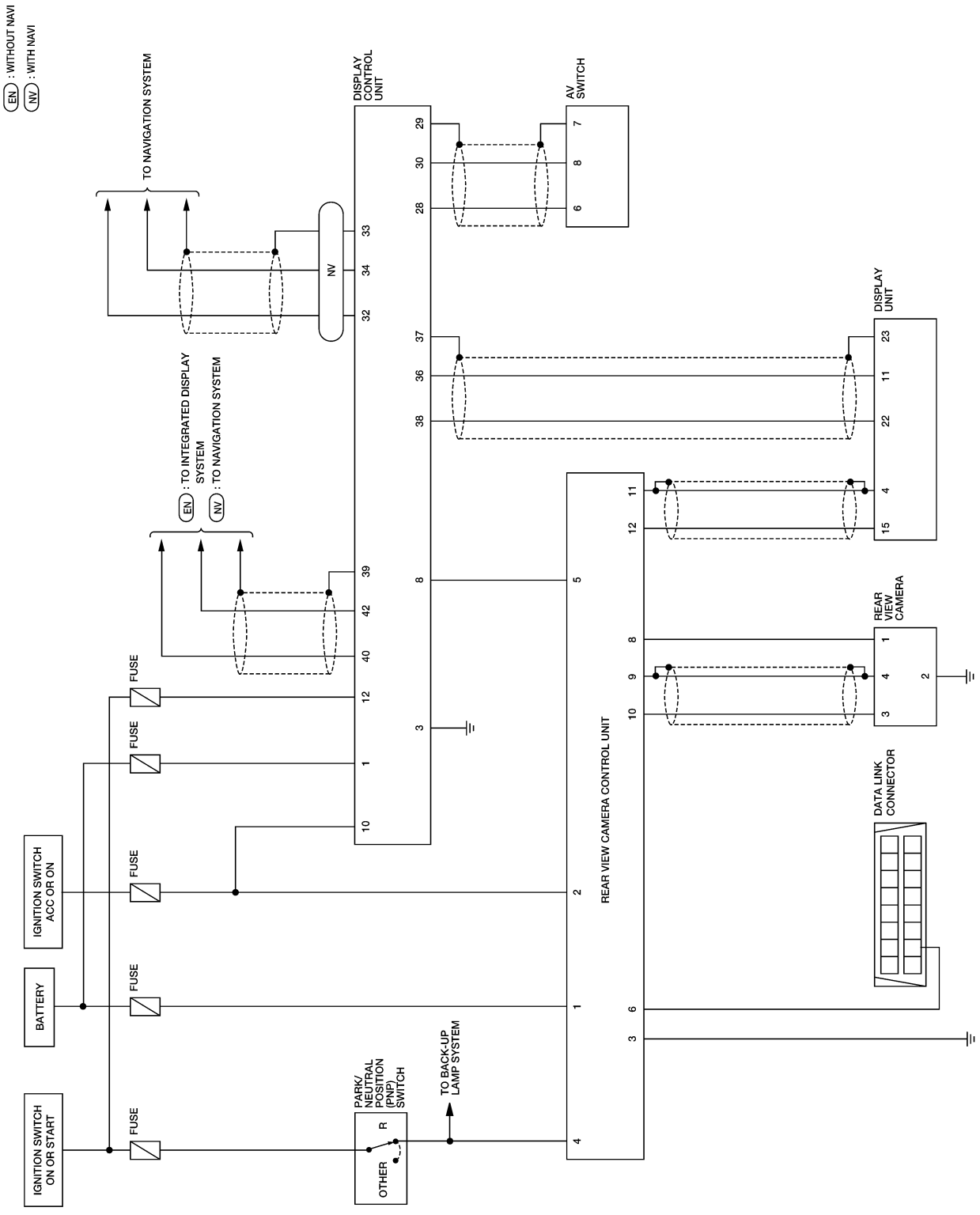
When A/T selector lever is in R position, rear view camera control unit is sent rear view camera guideline image

- through rear view camera control unit terminals 11 and 12
- to display unit terminals 4 and 15.

Rear view camera guideline will be projected on the display.
Display shows image from rear view camera image and rear view camera guideline.

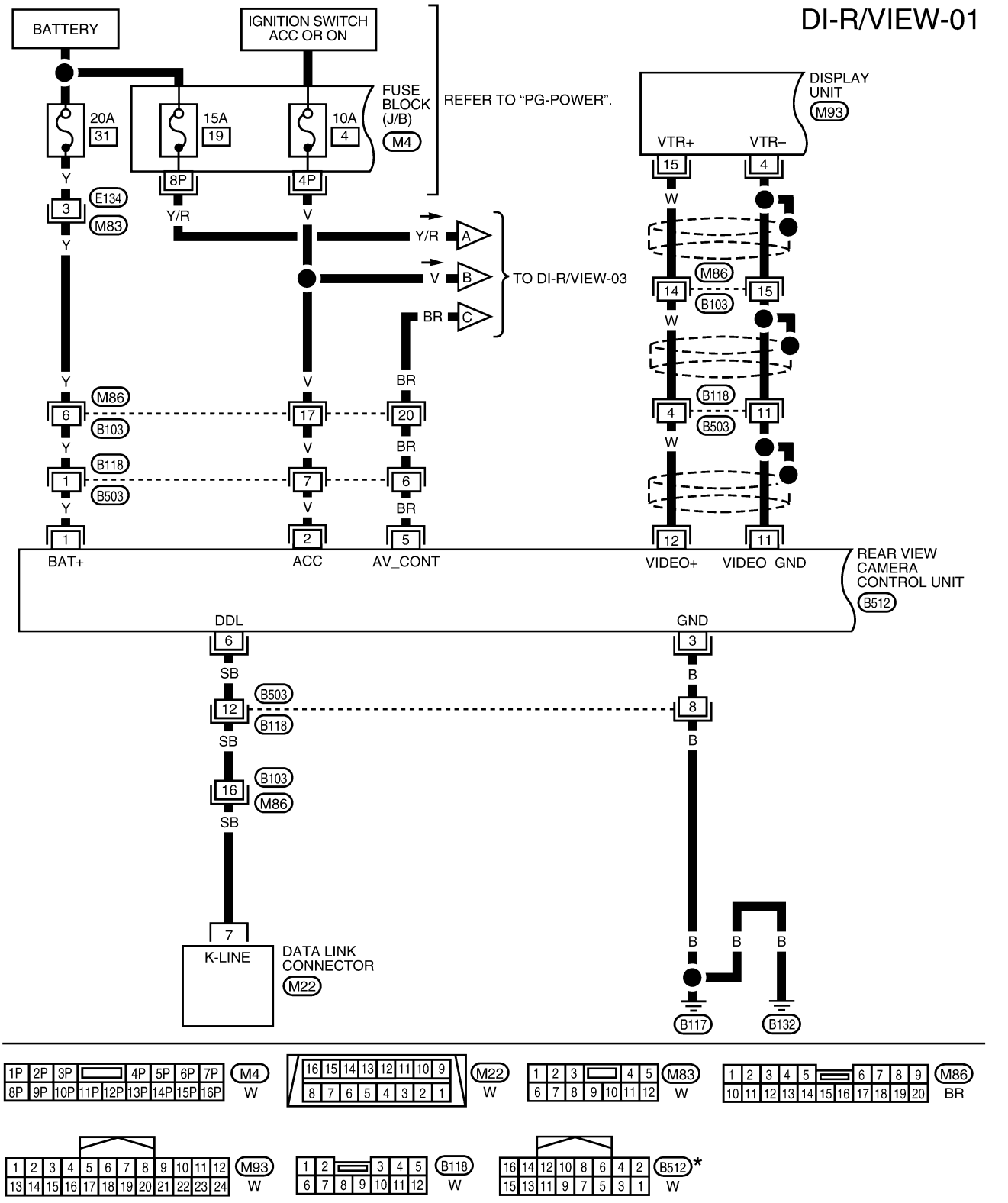
Schematic

EKS00FPX



Wiring Diagram — R/VIEW —

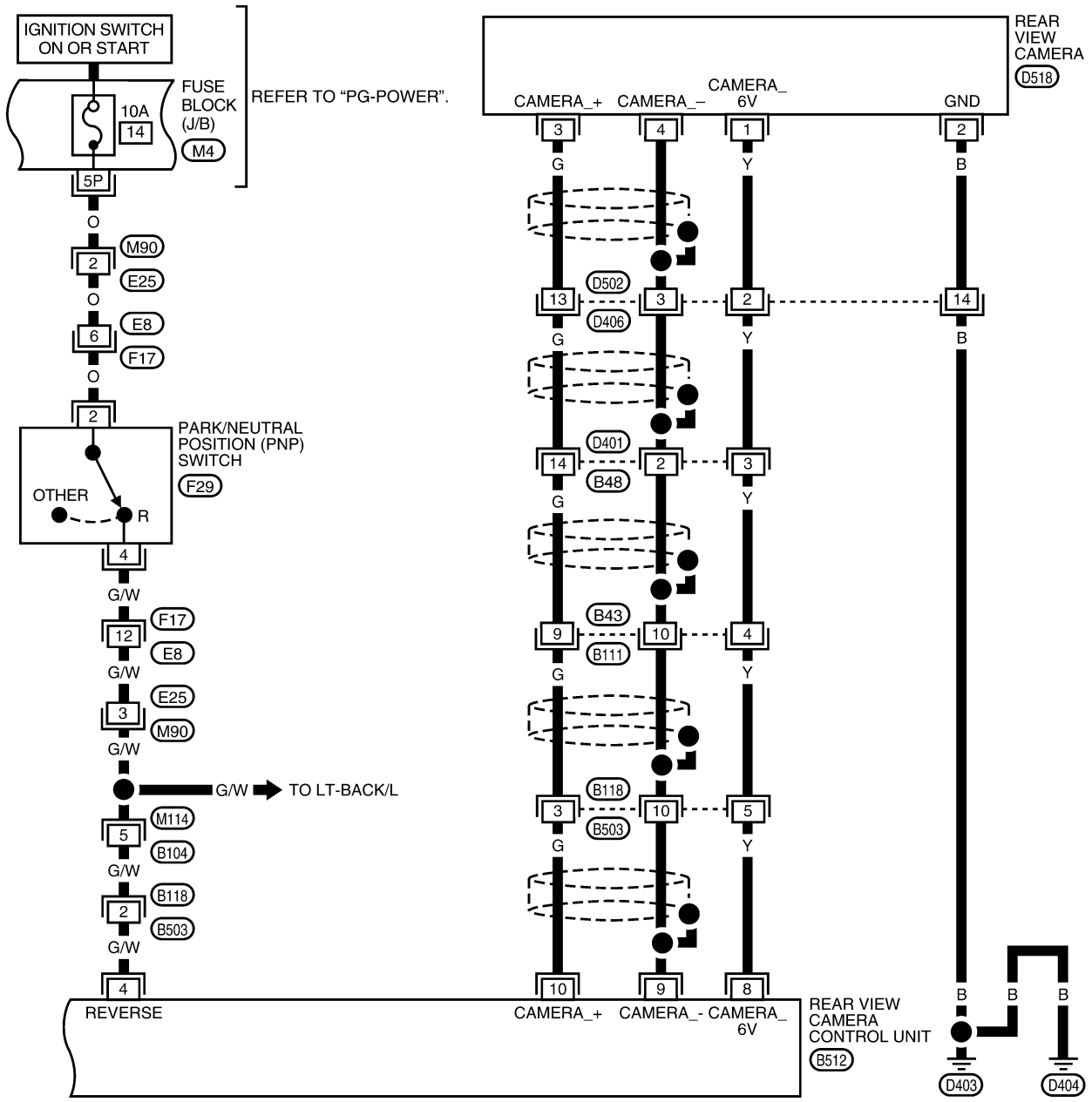
EKS00FPY

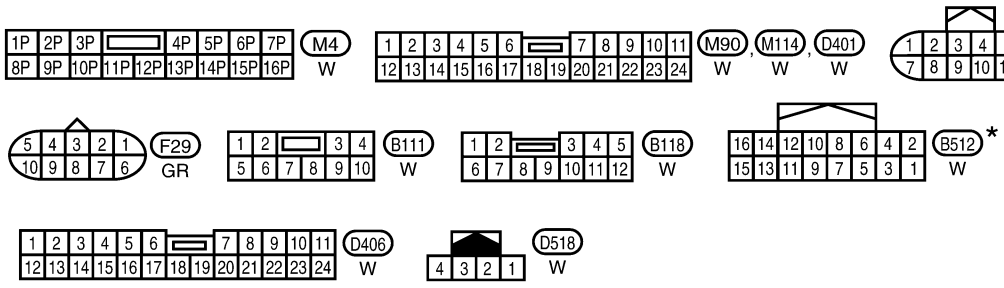


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

WKWA4674E

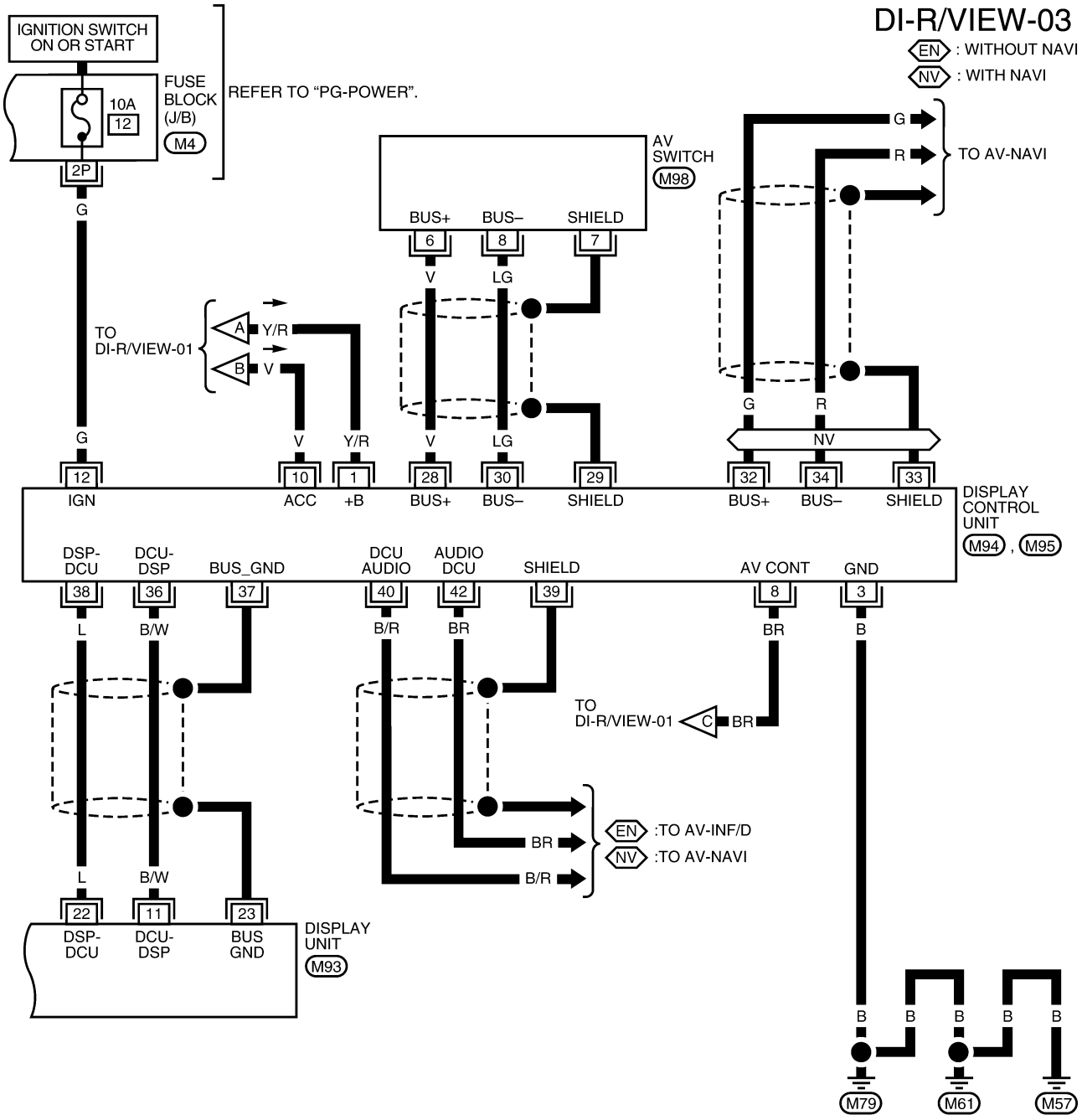
DI-R/VIEW-02

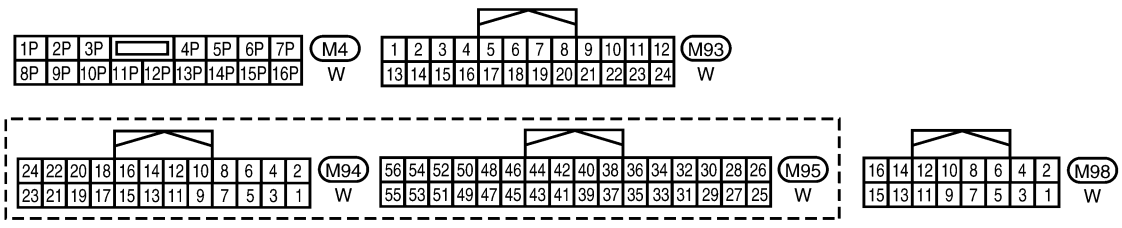




*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

WKWA4675E

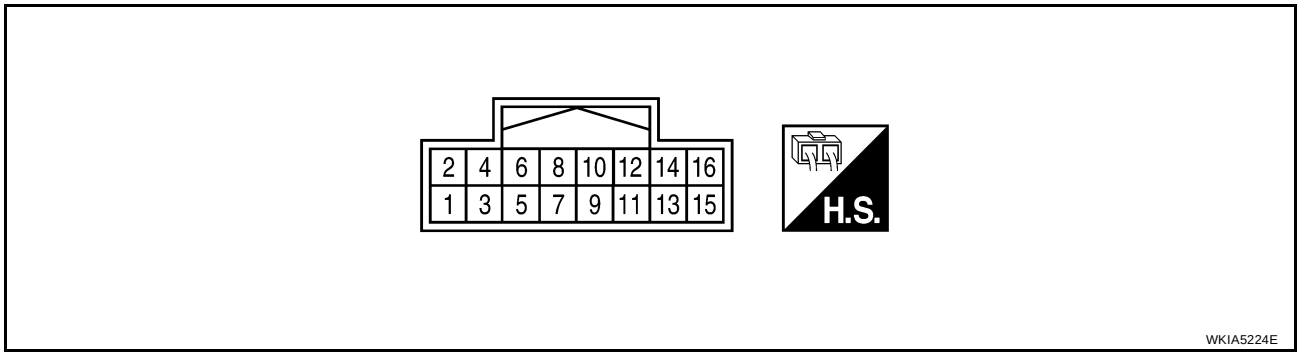

DI-R/VIEW-03
EN : WITHOUT NAVI
NV : WITH NAVI
IGNITION SWITCH ON OR START
FUSE BLOCK (J/B)
M4
10A 12
2P
REFER TO "PG-POWER".
AV SWITCH
M98
BUS+ BUS– SHIELD
6 8 7
V LG
G R
TO AV-NAVI
TO DI-R/VIEW-01
A Y/R
B V
G V Y/R V LG
NV
12 10 1 28 30 29 32 34 33
IGN ACC +B BUS+ BUS– SHIELD BUS+ BUS– SHIELD
DISPLAY CONTROL UNIT
M94 , M95
DSP-DCU DCU-DSP BUS_GND DCU AUDIO AUDIO DCU SHIELD AV CONT GND
38 36 37 40 42 39 8 3
L B/W B/R BR BR B
TO DI-R/VIEW-01 C BR
EN :TO AV-INF/D
NV :TO AV-NAVI
BR
B/R
L B/W
22 11 23
DSP-DCU DCU-DSP BUS GND
DISPLAY UNIT
M93
B B B B B
M79 M61 M57


1P 2P 3P 4P 5P 6P 7P
8P 9P 10P 11P 12P 13P 14P 15P 16P
M4
W
1 2 3 4 5 6 7 8 9 10 11 12
13 14 15 16 17 18 19 20 21 22 23 24
M93
W
24 22 20 18 16 14 12 10 8 6 4 2
23 21 19 17 15 13 11 9 7 5 3 1
M94
W
56 54 52 50 48 46 44 42 40 38 36 34 32 30 28 26
55 53 51 49 47 45 43 41 39 37 35 33 31 29 27 25
M95
W
16 14 12 10 8 6 4 2
15 13 11 9 7 5 3 1
M98
W

WKWA4676E

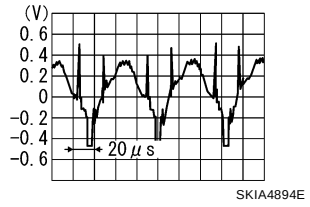
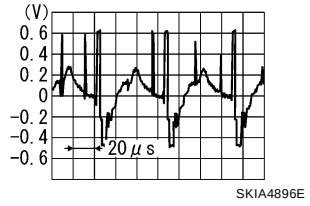
Rear View Camera Control Unit Harness Connector Terminal Layout

EKS00HSG



Terminals and Reference Value for Rear View Camera Control Unit

EKS00FPZ

Terminal No.	Wire color	Item	Condition		Reference value (V) (Approx.)
			Ignition switch	Operation	
1	Y	Battery power	OFF	—	Battery voltage
2	V	ACC power	ACC	—	Battery voltage
3	B	Ground	OFF	—	0
4	G/W	Reverse signal input	ON	A/T selector lever R position	Battery voltage
				A/T selector lever in other than R position	0
5	BR	AV Control	ON	—	0
6	SB	DDL	—	—	—
8	Y	Camera power output	ON	A/T selector lever R position	6
9	—	Camera image input (–)	ON	—	0
10	G	Camera image input (+)	ON	A/T selector lever R position	 SKIA4894E
11	—	Shield ground	—	—	—
12	W	Composite image output	ON	A/T selector lever R position	 SKIA4896E

CONSULT-II Function (REARVIEW CAMERA)

EKS00FQ0

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

REARVIEW CAMERA diagnostic mode	Description
WORK SUPPORT	Supports inspection and adjustments. Commands are transmitted to the rearview camera control unit for setting the status suitable for required operation, input/output signals are received from the rear-view camera control unit and received data is displayed.
DATA MONITOR	Displays rearview camera control unit input/output data in real time.
ECU PART NUMBER	Rearview camera control unit part number can be read.

CONSULT-II START PROCEDURE

Refer to GI-37, "CONSULT-II Start Procedure" .

WORK SUPPORT

Operation Procedure

1. Touch “WORK SUPPORT” on “SELECT DIAG MODE” screen.
2. Touch either “SELCT GUIDELINE PATTERN” or “ADJ GUIDELINE POSITION” on the “SELECT WORK ITEM” screen.

SELCT GUIDELINE PATTERN	Side distance guideline is optional from two patterns.
ADJ GUIDELINE POSITION	Side distance guideline is adjustable toward up and down, right and left.

Refer to DI-67, "SIDE DISTANCE GUIDELINE CORRECTION PROCEDURE" for detail.

DATA MONITOR

Operation Procedure

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

ALL SIGNALS	Monitors all signals.
SELECTION FROM MENU	Selects and monitors individual signal.

3. When “SELECTION FROM MENU” is selected, touch individual items to be monitored. When “ALL SIGNALS” is selected, all 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”.

Display Item List

Display item [Unit]	ALL SIGNALS	SELECTION FROM MENU	Contents
R POSI SIG [ON/OFF]	X	X	Indicates [ON/OFF] condition of R position signal input.

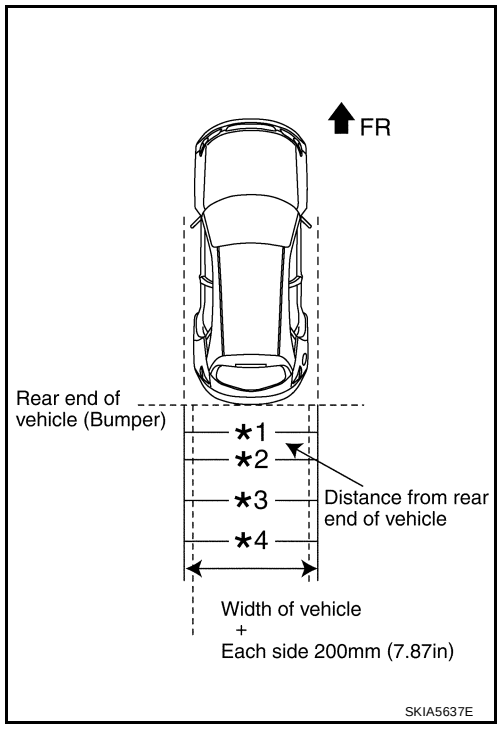
Side Distance Guideline Correction

EKS00FQ1

This mode is used to modify the side distance guidelines if they are dislocated from the rear view monitor image, because of variations of body/camera mounting conditions.

SIDE DISTANCE GUIDELINE CORRECTION PROCEDURE

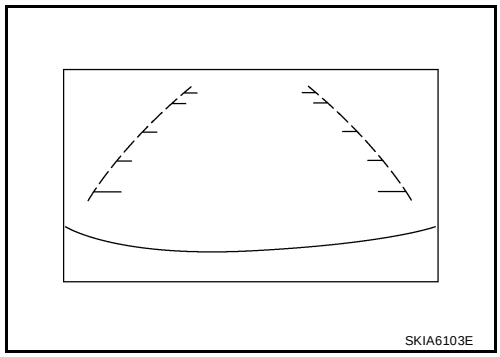
1. Create a correction line to modify the screen.
   Draw lines on the rearward of the vehicle passing through the following points: 200 mm (7.87 inch) from both sides of the vehicle, and
   - *1: 0.5 m (1.5 feet)
   - *2: 1 m (3 feet)
   - *3: 2 m (7 feet)
   - *4: 3 m (10 feet)
     and from the rear end of the bumper



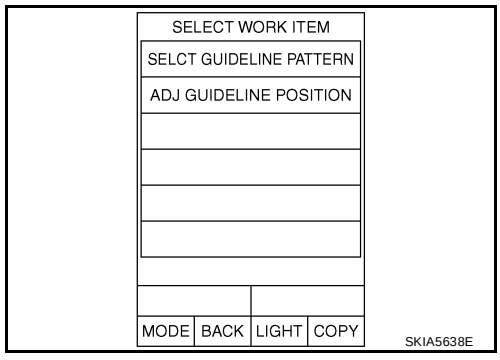
2. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON. Touch “REARVIEW CAMERA” on “SELECT SYSTEM” screen.

   CAUTION:
   Stop engine for safety when correcting side distance guideline.

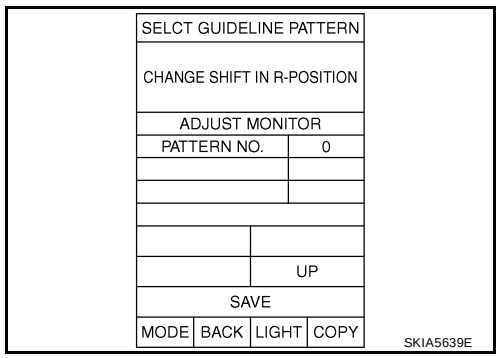
3. Shift the A/T selector lever to R position.



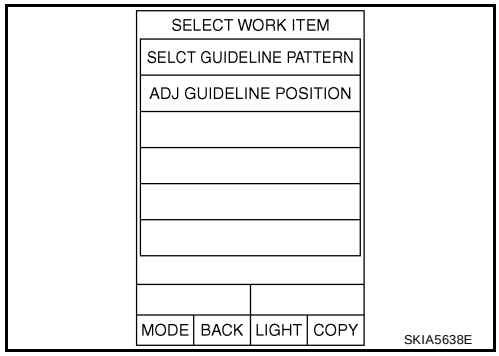
4. Touch “SELCT GUIDELINE PATTERN” on “SELECT WORK ITEM” screen.



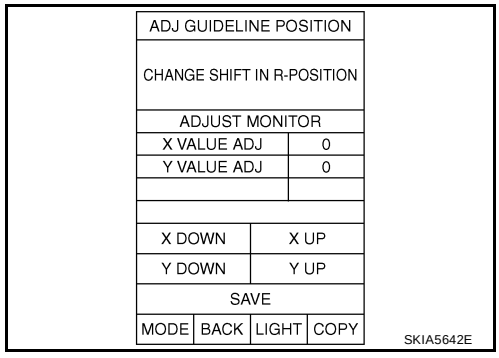
5. Touch “UP” or “DOWN”, and select the guide line, “PATTERN NO. 0” or “PATTERN NO. 1”, which is the closest to the corrected line.
6. Touch “SAVE”, and confirm the guide line.
7. Touch “END”.



8. Touch “ADJ GUIDELINE POSITION” on “SELECT WORK ITEM” screen.



9. Adjust the guide line touching “X UP”, “X DOWN”, “Y UP” or “Y DOWN” so that the corrected line can fit the guide line.
10. Touch “SAVE”, and confirm the guide line.
11. Touch “END” to finish correcting.



Power Supply and Ground Circuit Inspection

EKS00FQ2

1. CHECK FUSES

Check for blown rear view camera system fuses.

Unit	Power source	Fuse No.
Rear view camera control unit	Battery	31
	Ignition switch ACC or ON	4

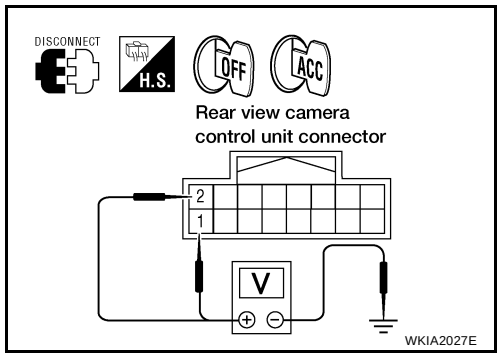
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse. Refer to PG-4, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect rear view camera control unit connector.
2. Check voltage between rear view camera control unit and ground.

Terminals			OFF	ACC
(+)		(–)		
Connector	Terminal			
B512	1	Ground	Battery voltage	Battery voltage
	2	Ground	0V	Battery voltage



OK or NG

OK >> GO TO 3.
NG >> Check harness for open between rear view camera control unit and fuse.

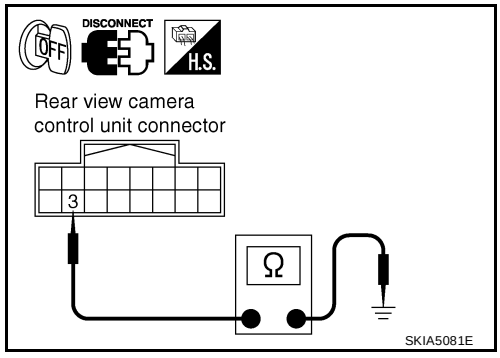
3. CHECK REAR VIEW CAMERA CONTROL UNIT GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between rear view camera control unit harness connector B512 terminal 3 and ground.

Continuity should exist.

OK or NG

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



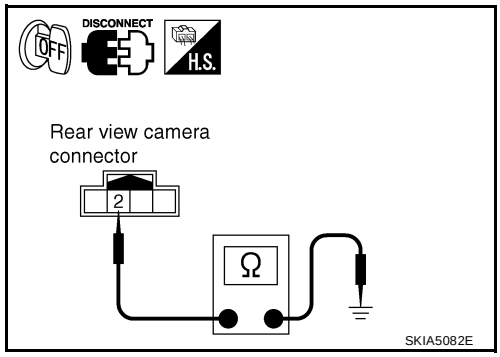
4. CHECK REAR VIEW CAMERA GROUND CIRCUIT

1. Disconnect rear view camera connector.
2. Check continuity between rear view camera harness connector D518 terminal 2 and ground.

Continuity should exist.

OK or NG

OK >> Inspection End.
NG >> Repair harness or connector.



Rear View Is Not Displayed With The A/T Selector Lever In R Position

EKS00FQ3

1. BACK-UP LAMP INSPECTION

1. Turn ignition switch ON.
2. Shift A/T selector lever to R position.

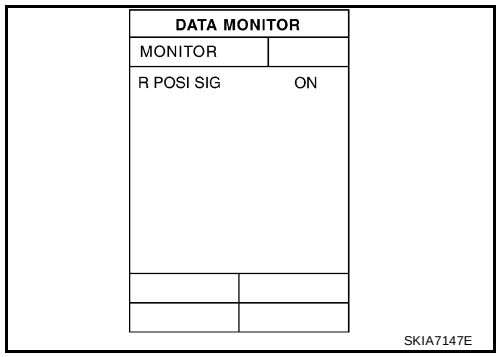
Does back-up lamp illuminate?

YES >> GO TO 2.
NO >> Check back-up lamp system. Refer to LT-98, "BACK-UP LAMP" .

2. CHECK REVERSE POSITION INPUT SIGNAL

With CONSULT-II

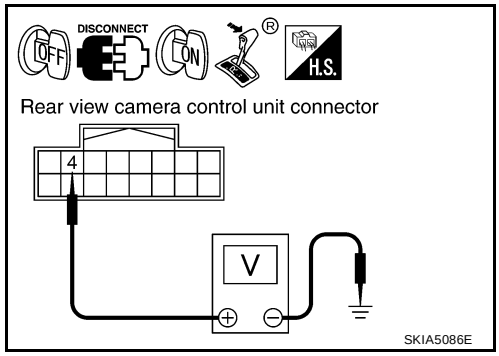
Select “DATA MONITOR” of “REARVIEW CAMERA”. Operate ignition switch with “R POSI SIG” of “DATA MONITOR” and check operate status.



Without CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect rear view camera control unit connector.
3. Turn ignition switch ON.
4. Shift A/T selector lever to R position.
5. Check voltage between rear view camera control unit harness connector B512 terminal 4 and ground.

Battery voltage should exist.



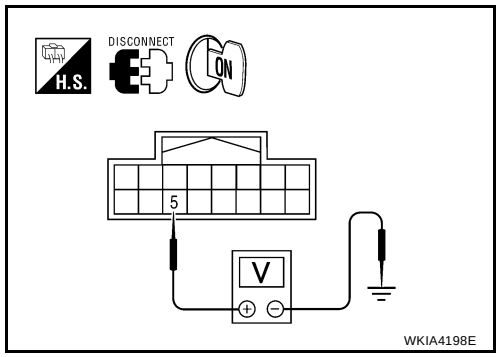
OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short between rear view camera control unit and park/neutral position (PNP) switch.

3. CHECK DISPLAY CONTROL UNIT OUTPUT SIGNAL

Check voltage between rear view camera control unit harness connector B512 terminal 5 and ground.

Voltage : Approx. 5V



OK or NG

OK >> GO TO 5.
NG >> GO TO 4.

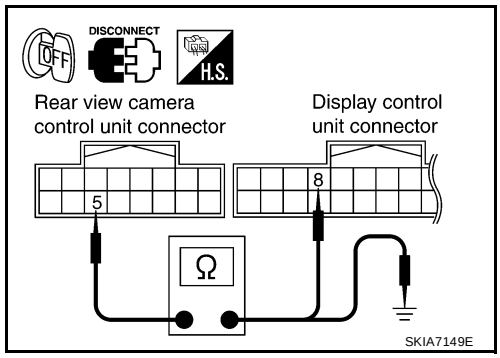
4. CHECK DISPLAY CONTROL UNIT CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display control unit connector.
3. Check continuity between rear view camera control unit harness connector B512 terminal 5 and display control unit harness connector M94 terminal 8.

Continuity should exist.

4. Check continuity between rear view camera control unit harness connector B512 terminal 5 and ground.

Continuity should not exist.



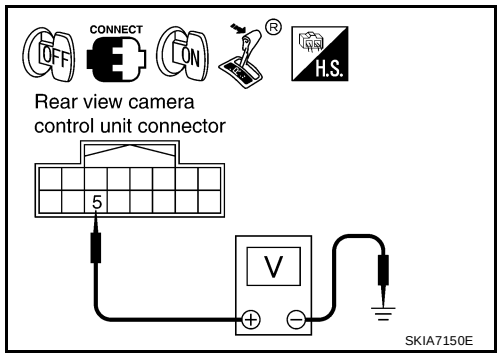
OK or NG

OK >> Replace display control unit. Refer to AV-169, "DISPLAY CONTROL UNIT" .
NG >> Repair harness or connector.

5. CHECK AV CONTROL SIGNAL

1. Turn ignition switch OFF.
2. Connect rear view camera control unit connector.
3. Turn ignition switch ON.
4. Shift A/T selector lever to R position.
5. Check voltage between rear view camera control unit harness connector B512 terminal 5 and ground.

Voltage : Approx. 0V



OK or NG

OK >> GO TO 6.
NG >> Replace rear view camera control unit. Refer to DI-74, "Rear View Camera Control Unit" .

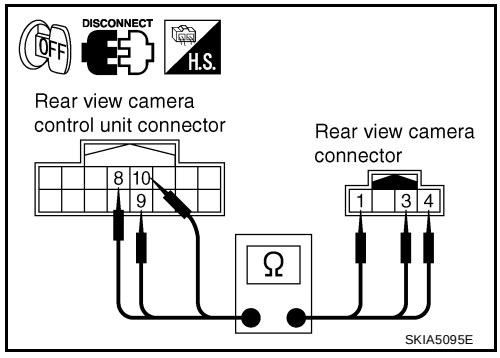
6. CHECK REAR VIEW CAMERA OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear view camera connector.
3. Check continuity between rear view camera control unit harness connector B512 terminal 8 and rear view camera harness connector D518 terminal 1.

Continuity should exist.

4. Check continuity between rear view camera control unit harness connector B512 terminal 9 and rear view camera harness connector D518 terminal 4.

Continuity should exist.



5. Check continuity between rear view camera control unit harness connector B512 terminal 10 and rear view camera harness connector D518 terminal 3.

Continuity should exist.

OK or NG

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

7. CHECK REAR VIEW CAMERA SHORT CIRCUIT

1. Check continuity between rear view camera control unit harness connector B512 terminal 8 and ground.

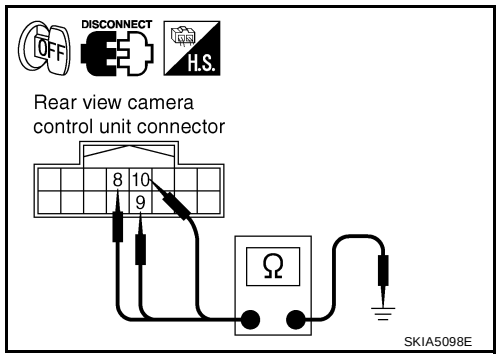
   Continuity should not exist.

2. Check continuity between rear view camera control unit harness connector B512 terminal 9 and ground.

   Continuity should not exist.

3. Check continuity between rear view camera control unit harness connector B512 terminal 10 and ground.

   Continuity should not exist.



OK or NG

OK >> GO TO 8.
NG >> Repair harness on connector.

8. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit. Refer to DI-69, "Power Supply and Ground Circuit Inspection" .

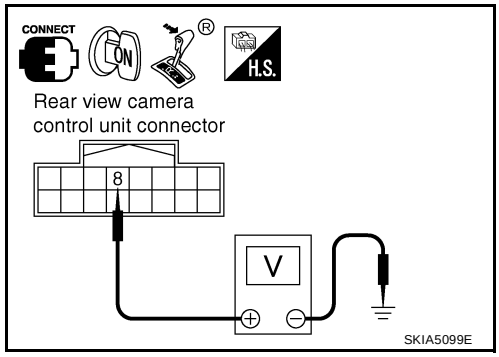
OK or NG

OK >> GO TO 9.
NG >> Repair power supply or ground circuit.

9. CHECK REAR VIEW CAMERA CONTROL UNIT OUTPUT SIGNAL

1. Connect rear view camera control unit connector.
2. Turn ignition switch ON.
3. Shift A/T selector lever to R position.
4. Check voltage between rear view camera control unit harness connector B512 terminal 8 and ground.

   Voltage : Approx. 6V



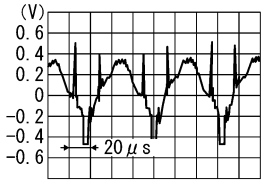
OK or NG

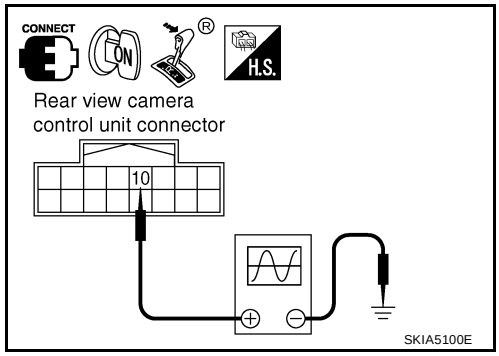
OK >> GO TO 10.
NG >> Replace the rear view camera control unit. Refer to DI-74, "Rear View Camera Control Unit" .

10. CHECK REAR VIEW CAMERA SIGNAL

1. Connect rear view camera connector.
2. Turn ignition switch ON.
3. Shift A/T selector lever to R position.
4. Check voltage signal between rear view camera control unit harness connector B512 terminal 10 and ground.

   10 - Ground:





OK or NG

OK >> GO TO 11.
NG >> Replace the rear view camera. Refer to DI-74, "Rear View Camera" .

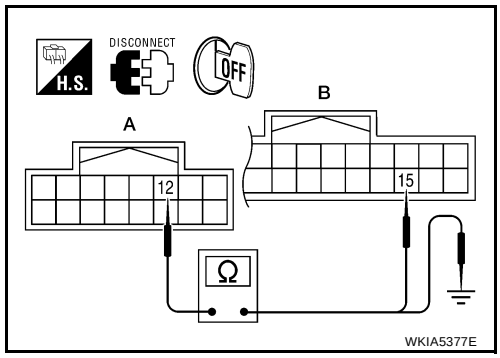
11. CHECK COMPOSITE SIGNAL OPEN OR SHORT CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear view camera control unit connector and display unit connector.
3. Check continuity between rear view camera control unit harness connector B512 (A) terminal 12 and display unit harness connector M93 (B) terminal 15.

Continuity should exist.

4. Check continuity between rear view camera control unit harness connector B512 (A) terminal 12 and ground.

Continuity should not exist.



OK or NG

OK >> GO TO 12.
NG >> Repair harness or connector.

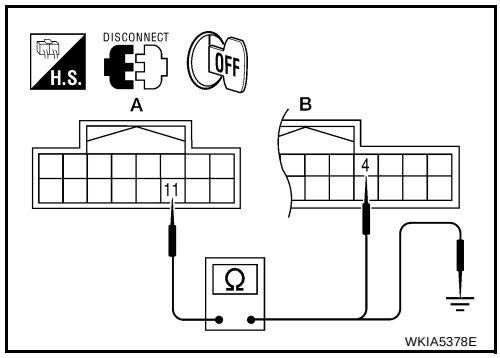
12. CHECK COMPOSITE SIGNAL GROUND CIRCUIT

1. Check continuity between rear view camera control unit harness connector B512 (A) terminal 11 and display unit harness connector M93 (B) terminal 4.

Continuity should exist.

2. Check continuity between rear view camera control unit harness connector B512 (A) terminal 11 and ground.

Continuity should not exist.



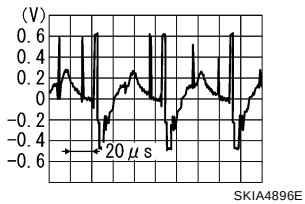
OK or NG

OK >> GO TO 13.
NG >> Repair harness or connector.

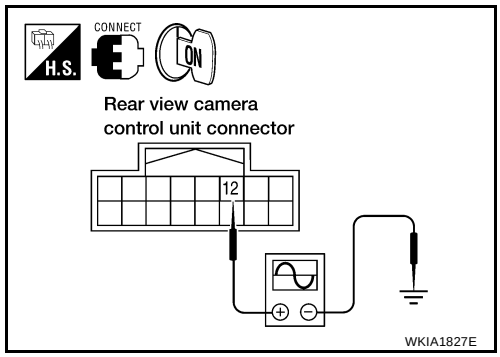
13. CHECK REAR VIEW CAMERA CONTROL UNIT COMPOSITE SIGNAL

1. Connect rear view camera control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Check voltage signal between rear view camera control unit harness connector B512 terminal 12 and ground.

12 - Ground:



SKIA4896E



OK or NG

OK >> Replace the display unit. Refer to AV-168, "DISPLAY UNIT" .
NG >> Replace the rear view camera control unit. Refer to DI-74, "Rear View Camera Control Unit" .

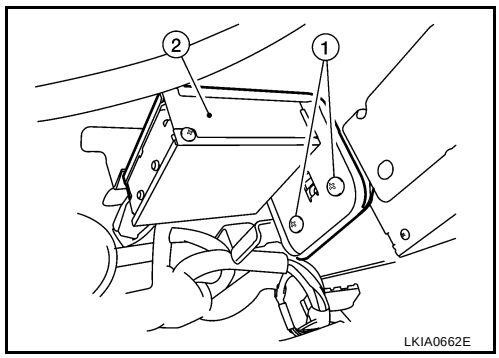
Rear View Camera Control Unit

EKS00FQ4

REMOVAL AND INSTALLATION

Removal

1. Disconnect the battery negative terminal.
2. Remove the front passenger seat. Refer to SE-84, "FRONT SEAT" .
3. Disconnect the rear view camera control unit connector.
4. Remove the screws (1) and remove the rear view camera control unit (2).



Installation

Installation is in the reverse order of removal.

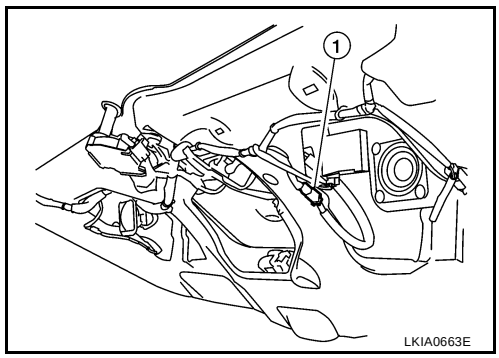
Rear View Camera

EKS00FQ5

REMOVAL AND INSTALLATION

Removal

1. Remove back door lower finisher. Refer to EI-37, "BACK DOOR LOWER FINISHER" .
2. Remove license lamp finisher. Refer to EI-24, "LICENSE LAMP FINISHER" .
3. Disconnect rear view camera connector (1).
4. Remove rear view camera screw and remove rear view camera.



Installation

Installation is in the reverse order of removal.

NOTE:

After installing rear view camera, perform side distance guideline correction procedure. Refer to DI-67, "SIDE DISTANCE GUIDELINE CORRECTION PROCEDURE" .