SECTION LT
LIGHTING SYSTEM

CONTENTS

PRECAUTIONS

PFP:00011

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

EKS005KV

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.**

General precautions for service operations

EKS005KW

- Never work with wet hands.
- Turn the lighting switch OFF before disconnecting and connecting the connector.
- When checking the headlamp on/off operation, check it on vehicle and with the power connected to the vehicle-side connector.
- Do not touch the headlamp bulb glass surface with bare hands or allow oil or grease to get on it. Do not touch the headlamp bulb just after the headlamp is turned off, because it is very hot.
- When the bulb has burned out, wrap it in a thick vinyl bag and discard. Do not break the bulb.
- Leaving the bulb removed from the headlamp housing for a long period of time can deteriorate the performance of the lens and reflector (dirt, clouding). Always prepare a new bulb and have it on hand when replacing the bulb.
- Do not use organic solvent (paint thinner or gasoline) to clean lamps and to remove old sealant.

Wiring Diagrams and Trouble Diagnosis

EKS005KX

When you read wiring diagrams, refer to the following:

- Refer to GI-12, "How to Read Wiring Diagrams" in GI section.
- Refer to PG-4, "POWER SUPPLY ROUTING CIRCUIT" for power distribution in PG section.

When you perform trouble diagnosis, refer to the following:

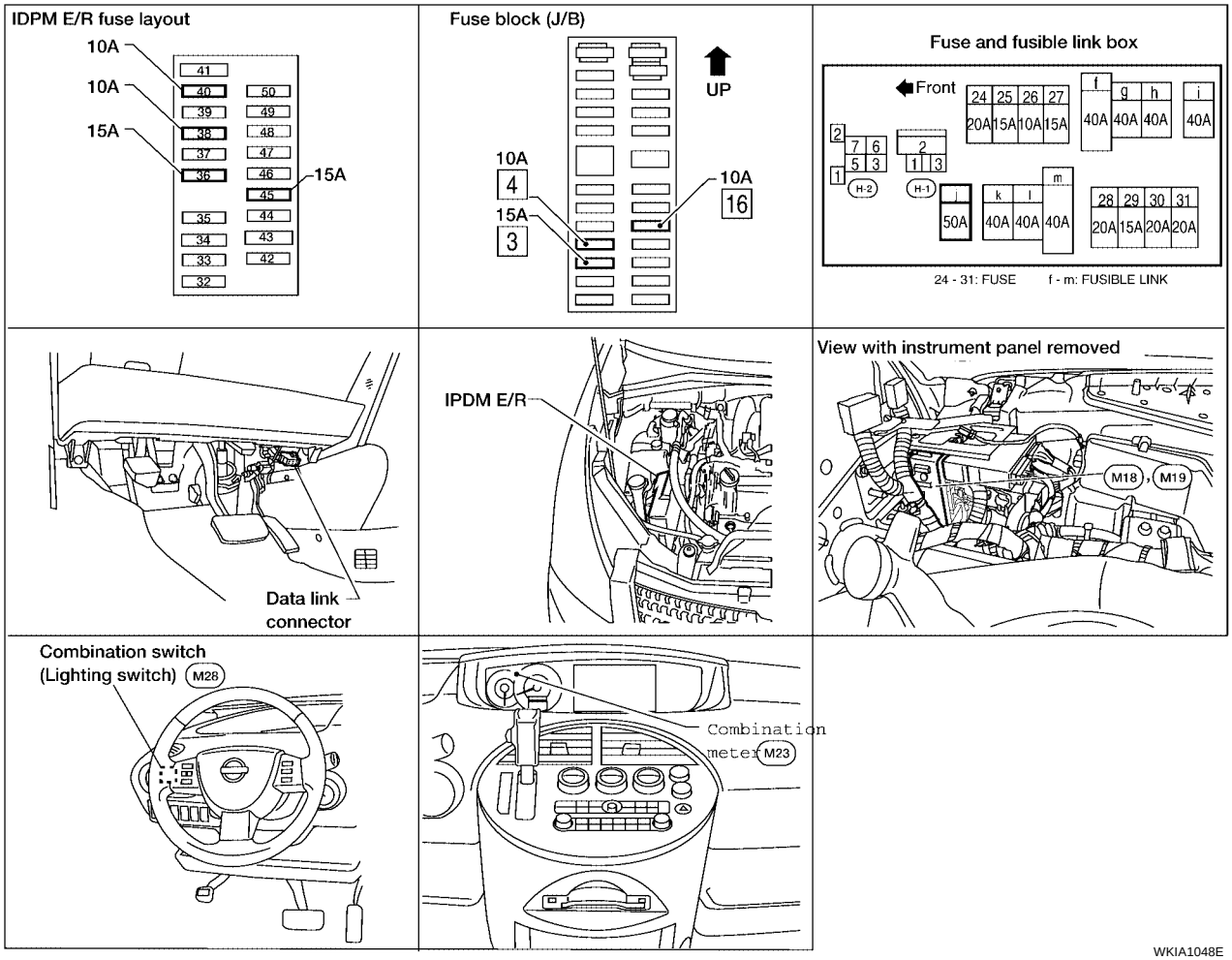
- Refer to GI-10, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES" in GI section.
- Refer to GI-25, "How to Perform Efficient Diagnosis for an Electrical Incident" in GI section.

HEADLAMP (FOR USA)

PFP:26010

Component Parts and Harness Connector Location

EKS0065X



WKIA1048E

System Description

EKS0065Y

Control of the headlamp system operation is dependent upon the position of the combination switch (lighting switch). When the lighting switch is placed in the 2ND position, the BCM (body control module) receives input requesting the headlamps (and tail lamps) illuminate. This input is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The CPU (central processing unit) of the IPDM E/R controls the headlamp high and headlamp low relay coils. When energized, these relays direct power to the respective headlamps, which then illuminate.

OUTLINE

Power is supplied at all times

- to headlamp high relay, located in the IPDM E/R, and
- to headlamp low relay, located in the IPDM E/R, and
- through 50A fusible link (letter **j** , located in the fuse and fusible link box)
- to BCM terminal 55, and
- through 15A fuse [No. 3, located in the fuse block (J/B)]
- to BCM terminal 42.

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

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

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

- through 10A fuse [No. 4, located in the fuse block (J/B)]

- to BCM terminal 11.

Ground is supplied

- to BCM terminals 49 (early production) and 52
- through grounds M57, M61 and M79, and
- to IPDM E/R terminals 38 and 60
- through grounds E9, E15 and E24.

Low Beam Operation

With the lighting switch in 2ND position, the BCM receives input requesting the headlamps to illuminate. This input is communicated to the IPDM E/R across the CAN communication lines. The CPU of the IPDM E/R controls the headlamp low relay coil. When energized, this relay directs power

- through 15A fuse (No. 36, located in the IPDM E/R)
- through IPDM E/R terminal 20
- to headlamp RH terminal 1, and
- through 15A fuse (No. 45, located in the IPDM E/R)
- through IPDM E/R terminal 30
- to headlamp LH terminal 1.

Ground is supplied

- to headlamp LH and RH terminal 2
- through grounds E9, E15 and E24.

With power and ground supplied, low beam headlamps illuminate.

High Beam Operation/Flash-to-Pass Operation

With the lighting switch in 2ND position and placed in HIGH or PASS position, the BCM receives input requesting the headlamp high beams to illuminate. This input is communicated to the IPDM E/R across the CAN communication lines. The CPU of the combination meter controls the ON/OFF status of the HIGH BEAM indicator. The CPU of the IPDM E/R controls the headlamp high relay coil. When energized, this relay directs power

- through 10A fuse (No. 40, located in the IPDM E/R)
- through IPDM E/R terminal 27
- to headlamp RH terminal 1, and
- through 10A fuse (No. 38, located in the IPDM E/R)
- through IPDM E/R terminal 28
- to headlamp LH terminal 1.

Ground is supplied

- to headlamp LH and RH terminal 2
- through grounds E9, E15 and E24.

With power and ground supplied, the high beam headlamps illuminate.

BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 2ND position (ON), and the ignition switch is turned from ON or ACC to OFF, the battery saver control feature is activated.
Under this condition, the headlamps remain illuminated for 5 minutes, unless the combination switch (lighting switch) position is changed. If the combination switch (lighting switch) position is changed, then the headlamps are turned off.

AUTO LIGHT OPERATION

Refer to LT-40, "System Description" for auto light operation.

VEHICLE SECURITY SYSTEM (PANIC ALARM)

The vehicle security system (panic alarm) will flash the high beams if the system is triggered. Refer to BL-58, "Panic Alarm Operation" .

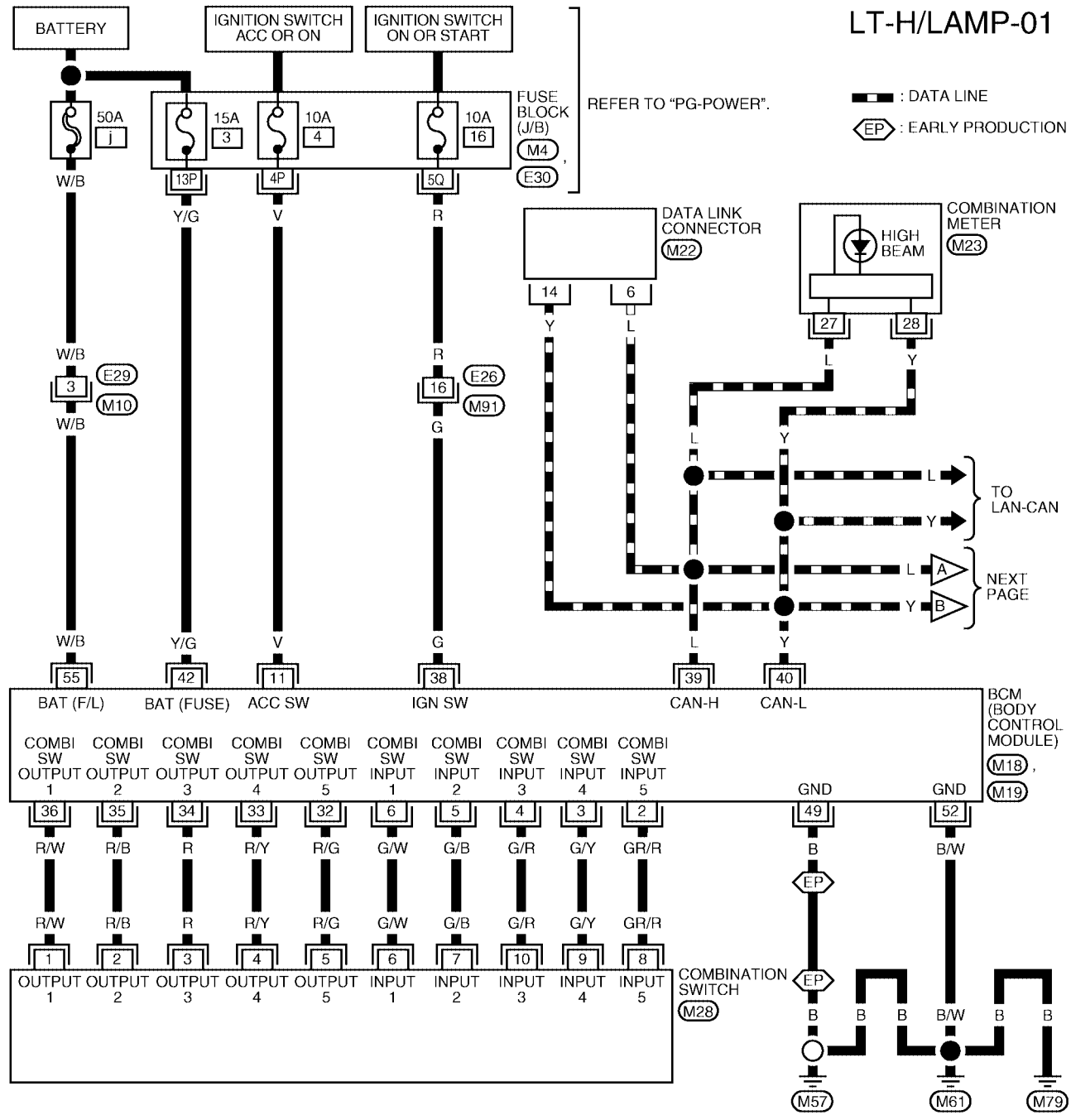
CAN Communication System Description

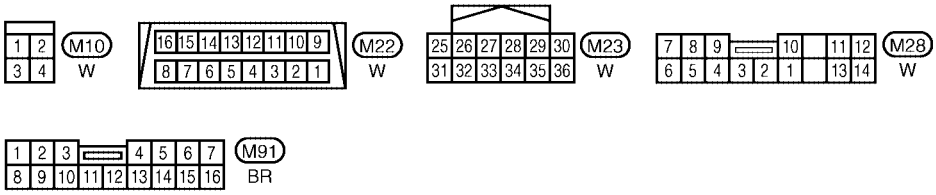
EKS0065Z

Refer to LAN-6, "CAN COMMUNICATION" .

Wiring Diagram — H/LAMP —

EKS00660

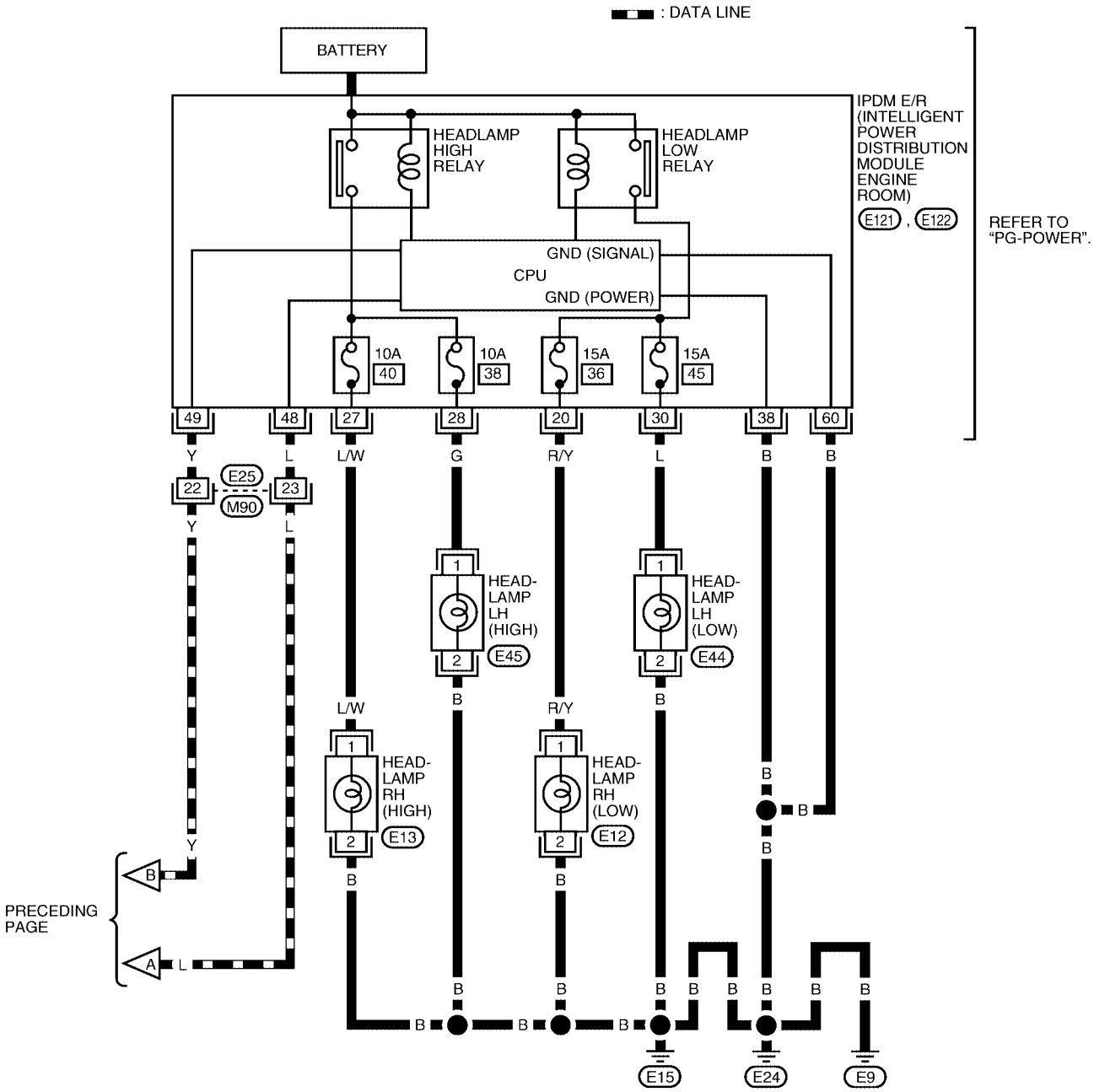


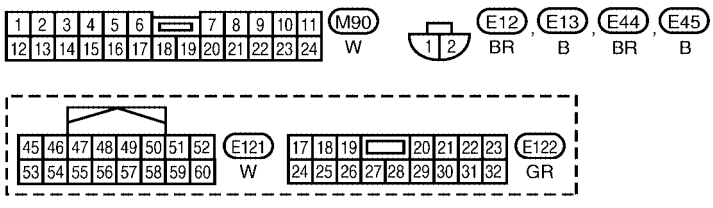


REFER TO THE FOLLOWING.
M4, E30 - FUSE BLOCK-JUNCTION BOX (J/B)
M18, M19 - ELECTRICAL UNITS

WKWA1421E

LT-H/LAMP-02

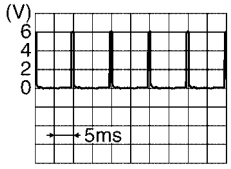
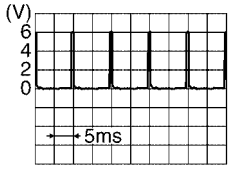
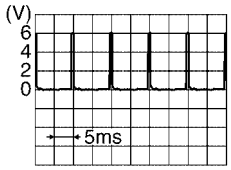


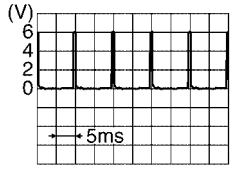


WKWA0540E

Terminals and Reference Values for BCM

EKS00661

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
2	GR/R	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
3	G/Y	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
4	G/R	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
5	G/B	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
6	G/W	Combination switch input 1			
11	V	Ignition switch (ACC)	ACC	—	Battery voltage
32	R/G	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
33	R/Y	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
34	R	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
35	R/B	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
36	R/W	Combination switch output 1			
38	G	Ignition switch (ON)	ON	—	Battery voltage
39	L	CAN-H	—	—	—
40	Y	CAN-L	—	—	—
42	Y/G	Battery power supply	OFF	—	Battery voltage
49*	B	Ground	ON	—	0V
52	B/W	Ground	ON	—	0V
55	W/B	Battery power supply (fusible link)	OFF	—	Battery voltage

* Early production

Terminals and Reference Values for IPDM E/R

EKS00662

Terminal No.	Wire color	Signal name	Measuring condition			Reference value (Approx.)
			Ignition switch	Operation or condition		
20	R/Y	Headlamp low (RH)	ON	Lighting switch 2ND position	OFF	0V
					ON	Battery voltage
27	L/W	Headlamp high (RH)	ON	Lighting switch HIGH or PASS position	OFF	0V
					ON	Battery voltage
28	G	Headlamp high (LH)	ON	Lighting switch HIGH or PASS position	OFF	0V
					ON	Battery voltage
30	L	Headlamp low (LH)	ON	Lighting switch 2ND position	OFF	0V
					ON	Battery voltage
38	B	Ground	ON	—		0V
48	L	CAN-H	—	—		—
49	Y	CAN-L	—	—		—
60	B	Ground	ON	—		0V

How to Proceed With Trouble Diagnosis

EKS00663

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-6, "System Description" .
3. Perform the Preliminary Check. Refer to LT-12, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the headlamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

EKS00664

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES OR FUSIBLE LINK

Check for blown fuses or fusible link.

Unit	Power source	Fuse No.
BCM	Battery	j
		3
	Ignition switch ON or START position	16
	Ignition switch ACC or ON position	4
IPDM E/R	Battery	36
		38
		40
		45

Refer to LT-8, "Wiring Diagram — H/LAMP —" .

OK or NG

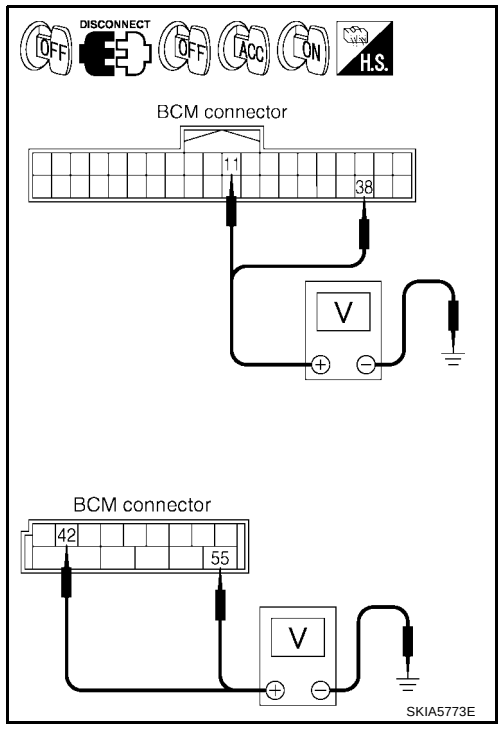
OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect BCM connectors.
2. Check voltage between BCM harness connector and ground.

Terminals			Ignition switch position		
(+)		(–)			
Connector	Terminal (Wire color)		OFF	ACC	ON
M18	11 (V)	Ground	0V	Battery voltage	Battery voltage
	38 (G)		0V	0V	Battery voltage
M19	42 (Y/G)		Battery voltage	Battery voltage	Battery voltage
	55 (W/B)		Battery voltage	Battery voltage	Battery voltage



OK or NG

OK >> GO TO 3.

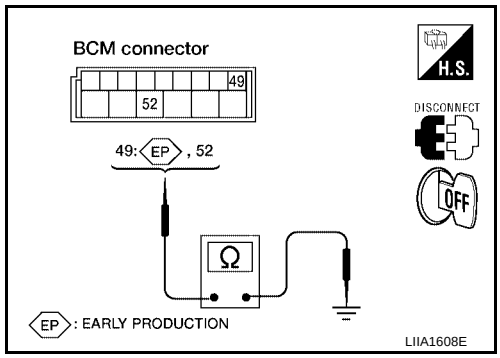
NG >> Check harness for open between BCM and fuse.

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

Terminals			Continuity
Connector	Terminal (Wire color)		
M19	49* (B)	Ground	Yes
	52 (B/W)		

* Early production



OK or NG

OK >> Inspection End.
NG >> Check ground circuit harness.

CONSULT-II Function (BCM)

EKS00665

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

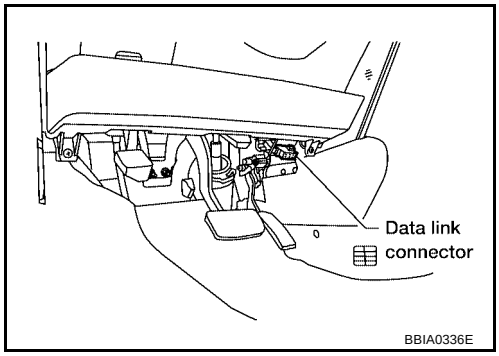
BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	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 OPERATION

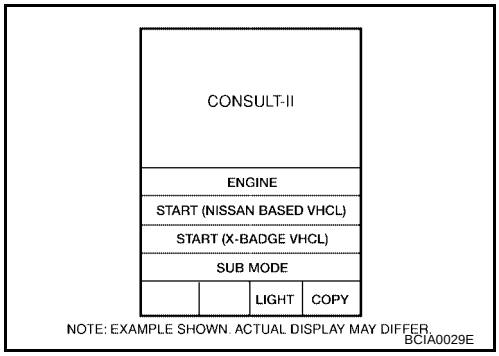
CAUTION:

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

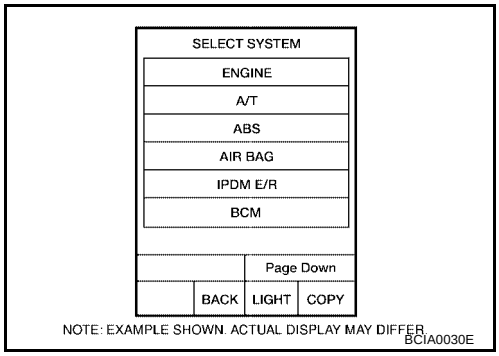
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



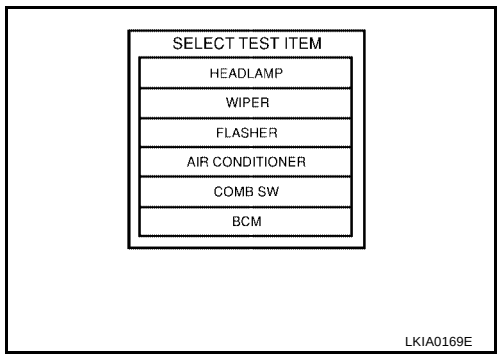
2. Touch "START (NISSAN BASED VHCL)".



3. Touch "BCM" on "SELECT SYSTEM" screen.
   If "BCM" is not indicated, go to GI-37, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.



WORK SUPPORT

Operation Procedure

1. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Touch "WORK SUPPORT" on "SELECT DIAG MODE" screen.
3. Touch item on "SELECT WORK ITEM" screen.
4. Touch "START".
5. Touch "CHANGE SETT".
6. The setting will be changed and "CUSTOMIZING COMPLETED" will be displayed.
7. Touch "END".

Display Item List

Item	Description	CONSULT-II	Factory setting
BATTERY SAVER SET	Exterior lamp battery saver control mode can be changed in this mode. Selects exterior lamp battery saver control mode between ON/OFF.	ON	×
		OFF	—

DATA MONITOR

Operation Procedure

1. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Touch either "ALL SIGNALS" or "SELECTION FROM MENU" on the "SELECT MONITOR ITEM" screen.

All signals	Monitors all the signals.
Selection from menu	Selects and monitors individual signal.

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

Display Item List

Monitor item		Contents
IGN ON SW	"ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
ACC ON SW	"ON/OFF"	Displays "ACC (ON)/OFF, Ignition OFF (OFF)" status judged from ignition switch signal.
HI BEAM SW	"ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	"ON/OFF"	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1ST	"ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.

Monitor item		Contents
AUTO LIGHT SW	"ON/OFF"	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
PASSING SW	"ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW	"ON/OFF"	Displays status (front fog lamp switch: ON/Others: OFF) of front fog lamp switch judged from lighting switch signal.
DOOR SW-DR	"ON/OFF"	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-AS	"ON/OFF"	Displays status of the passenger door as judged from the passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-RR	"ON/OFF"	Displays status of the rear door as judged from the rear door switch (RH) signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-RL	"ON/OFF"	Displays status of the rear door as judged from the rear door switch (LH) signal. (Door is open: ON/Door is closed: OFF)
BACK DOOR SW	"ON/OFF"	Displays status of the back door as judged from the back door switch signal. (Door is open: ON/Door is closed: OFF)
TURN SIGNAL R	"ON/OFF"	Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L	"ON/OFF"	Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
CARGO LAMP SW	"ON/OFF"	Displays status of cargo lamp switch.
OPTICAL SENSOR	[0 - 5V]	Displays "ambient light (close to 5V when dark/close to 0V when light)" judged from optical sensor signal.

ACTIVE TEST

Operation Procedure

1. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Touch item to be tested, and check operation of the selected item.
4. During the operation check, touching "BACK" deactivates the operation.

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON-OFF.
HEAD LAMP	Allows headlamp relay (HI, LO) to operate by switching ON-OFF.
FR FOG LAMP	Allows fog lamp relay to operate by switching ON-OFF.
CARGO LAMP	Allows cargo lamp to operate by switching ON-OFF.
CORNERING LAMP	Allows cornering lamp relay (RH, LH) to operate by switching ON-OFF.

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.
CAN communication system	CAN communication system 1 to 6 [U1000]	Malfunction is detected in CAN system.

CONSULT-II Function (IPDM E/R)

EKS00666

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

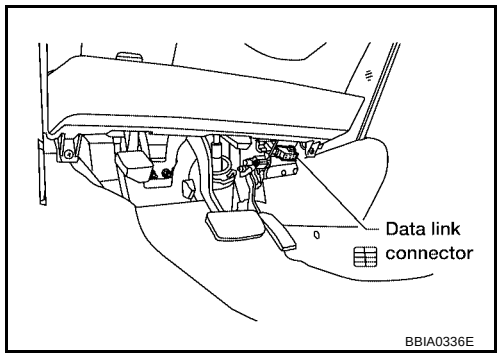
IPDM E/R diagnostic Mode	Description
SELF-DIAG RESULTS	Displays IPDM E/R self-diagnosis results.
DATA MONITOR	Displays IPDM E/R input/output data in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.

CONSULT-II OPERATION

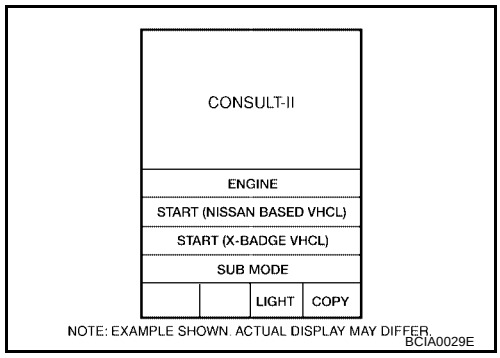
CAUTION:

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

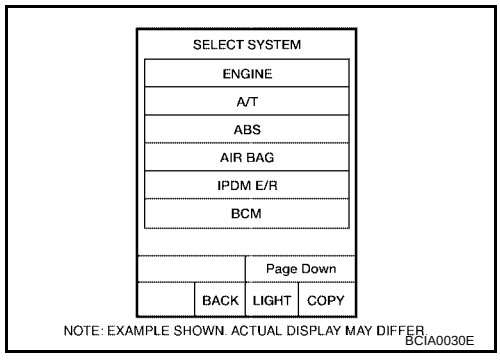
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn the ignition switch ON.



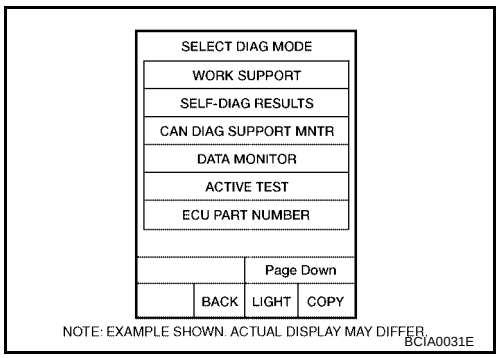
2. Touch "START (NISSAN BASED VHCL)".



3. Touch "IPDM E/R" on "SELECT SYSTEM" screen.
   If "IPDM E/R" is not displayed, go to GI-37, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Select the desired part to be diagnosed on the "SELECT DIAG MODE" screen.



DATA MONITOR

Operation Procedure

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

ALL SIGNALS	All items will be monitored.
MAIN SIGNALS	Monitor the predetermined item.
SELECTION FROM MENU	Select any item for monitoring.

3. Touch “START”.
4. Touch the required monitoring item on "SELECTION FROM MENU". In "ALL SIGNALS", all items are monitored. In "MAIN SIGNALS", predetermined items are monitored.
5. Touch "RECORD" while monitoring to record the status of the item being monitored. To stop recording, touch "STOP".

All Items, Main Items, Select Item Menu

Item name	CONSULT-II screen display	Display or unit	Monitor item selection			Description
			ALL SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
Position lights request	TAIL&CLR REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp low beam request	HL LO REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp high beam request	HL HI REQ	ON/OFF	×	×	×	Signal status input from BCM
Cornering lamp	CRNRNG LMP REQ	ON/OFF	×	–	×	Signal status input from BCM
Front fog lights request	FR FOG REQ	ON/OFF	×	×	×	Signal status input from BCM

NOTE:
Perform monitoring of IPDM E/R data with the ignition switch ON. When the ignition switch is at ACC, the display may not be correct.

ACTIVE TEST

Operation Procedure

1. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Touch item to be tested and check operation.
3. Touch "START".
4. Touch "STOP" while testing to stop the operation.

Test item	CONSULT-II screen display	Description
Tail lamp relay output	TAIL LAMP	Allows tail lamp relay to operate by switching operation ON-OFF at your option.

Test item	CONSULT-II screen display	Description
Headlamp relay (HI, LO) output	LAMPS	Allows headlamp relay (HI, LO) to operate by switching operation (OFF, HI, LO) at your option (Head lamp high beam repeats ON-OFF every 1 second).
Front fog lamp relay (FOG) output		Allows fog lamp relay (FOG) to operate by switching operation ON-OFF at your option.
Cornering lamp relay (RH, LH) output	CORNERING LAMP	Allows cornering lamp relay (RH, LH) to operate by switching operation ON-OFF at your option.

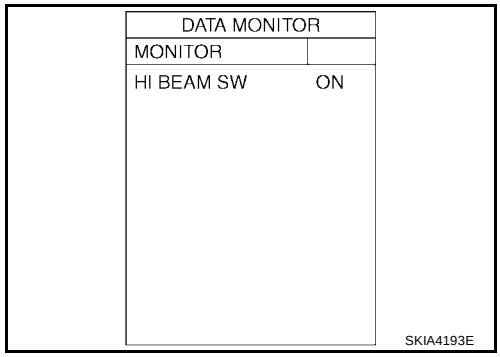
Headlamp HI Does Not Illuminate (Both Sides)

EKS006I0

1. CHECK COMBINATION SWITCH INPUT SIGNAL

Select “BCM” on CONSULT-II. With “HEAD LAMP” data monitor, make sure “HI BEAM SW” turns ON-OFF linked with operation of lighting switch.

When lighting switch is in HIGH position : HI BEAM SW ON



OK or NG

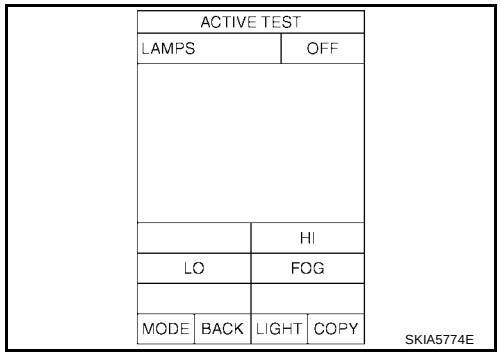
OK >> GO TO 2.

NG >> Check lighting switch. Refer to LT-102, "Combination Switch Inspection" .

2. HEADLAMP ACTIVE TEST

1. Select “IPDM E/R” on CONSULT-II, and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
2. Select “LAMPS” on “SELECT TEST ITEM” screen.
3. Touch “HI” on "ACTIVE TEST" screen.
4. Make sure headlamp high beam operates.

Headlamp high beam should operate.



OK or NG

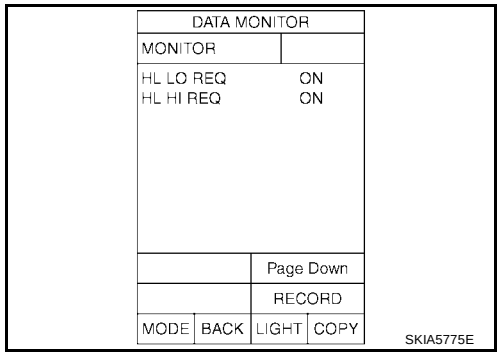
OK >> GO TO 3.

NG >> GO TO 4.

3. CHECK IPDM E/R

1. Select “IPDM E/R” on CONSULT-II, and select “DATA MONITOR” on “SELECT DIAG MODE” screen.
2. Make sure “HL LO REQ” and “HL HI REQ” turns ON when lighting switch is in HIGH position.

When lighting switch is in HIGH position : HL LO REQ ON
: HL HI REQ ON



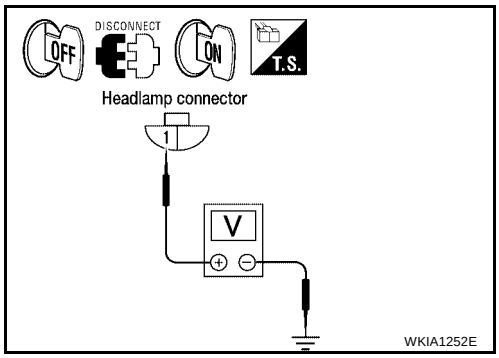
OK or NG

OK >> Replace IPDM E/R. Refer to PG-27, "Removal and Installation of IPDM E/R" .

NG >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .

4. CHECK HEADLAMP INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect headlamp RH and LH connectors.
3. Turn ignition switch ON.
4. Select “IPDM E/R” on CONSULT-II, and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
5. Select “LAMPS” on “SELECT TEST ITEM” screen.
6. Touch “HI” on "ACTIVE TEST" screen.
7. When headlamp high beam is operating, check voltage between headlamp RH and LH harness connector and ground.



Terminals				Voltage
(+)			(–)	
Connector		Terminal (Wire color)		
RH	E13	1 (L/W)	Ground	Battery voltage
LH	E45	1 (G)		

OK or NG

OK >> GO TO 6.
NG >> GO TO 5.

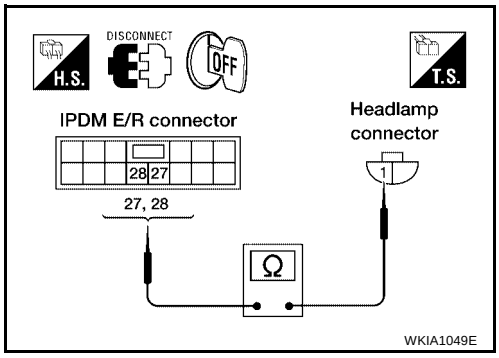
5. CHECK HEADLAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector E122 terminal 27 (L/W) and headlamp RH harness connector E13 terminal 1 (L/W).

27 (L/W) - 1 (L/W) : Continuity should exist.

4. Check continuity between IPDM E/R harness connector E122 terminal 28 (G) and headlamp LH harness connector E45 terminal 1 (G).

28 (G) - 1 (G) : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R. Refer to PG-27, "Removal and Installation of IPDM E/R" .
NG >> Repair harness or connector.

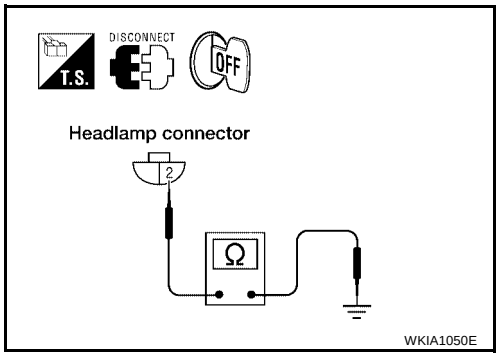
6. CHECK HEADLAMP GROUND

1. Check continuity between headlamp RH harness connector E13 terminal 2 (B) and ground.

2 (B) - Ground : Continuity should exist.

2. Check continuity between headlamp LH harness connector E45 terminal 2 (B) and ground.

2 (B) - Ground : Continuity should exist.



OK or NG

OK >> Check headlamp connector for damage or poor connection. Repair as necessary.
NG >> Repair harness or connector.

Headlamp HI Does Not Illuminate (One Side)

EKS00677

1. BULB INSPECTION

Inspect inoperative headlamp bulb.

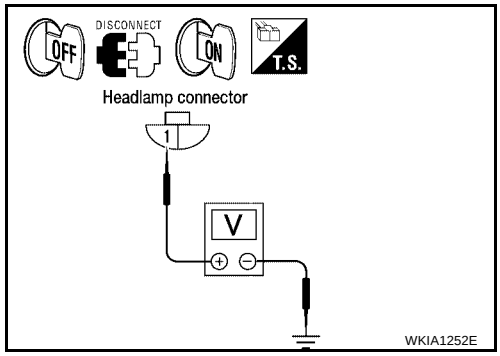
OK or NG

OK >> GO TO 2.
NG >> Replace headlamp bulb. Refer to LT-27, "HEADLAMP (INNER SIDE), FOR HIGH BEAM" .

2. CHECK POWER TO HEADLAMP

1. Disconnect inoperative headlamp connector.
2. Turn the HI beam headlamps ON.
3. Check voltage between inoperative headlamp terminal and ground.

Terminals				Voltage (Approx.)
(+)			(–)	
Connector		Terminal (Wire color)		
RH	E13	1 (L/W)	Ground	Battery voltage
LH	E45	1 (G)		



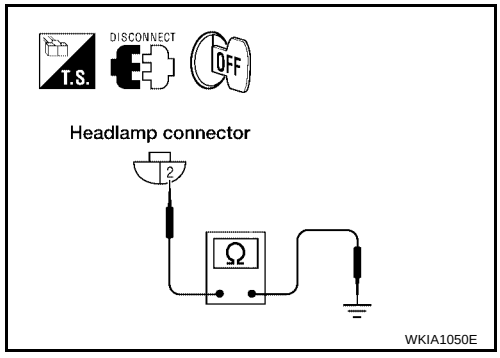
OK or NG

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

3. CHECK HEADLAMP GROUND

1. Turn the HI beam headlamps OFF.
2. Check continuity between inoperative headlamp connector and ground.

Terminals				Continuity
Connector		Terminal (Wire color)		
RH	E13	2 (B)	Ground	Yes
LH	E45			



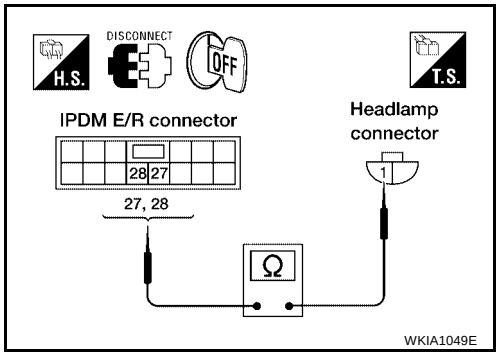
OK or NG

OK >> Check headlamp connector for damage or poor connection. Repair as necessary.
NG >> Repair open circuit in harness between inoperative headlamp and ground.

4. INSPECTION BETWEEN IPDM E/R AND HEADLAMPS

1. Disconnect IPDM E/R connector and inoperative headlamp connector.
2. Check continuity between harness connector terminals of IPDM E/R and harness connector terminals of inoperative headlamp.

Terminals					Continuity
IPDM E/R		Headlamp			
Connector	Terminal (wire color)	Connector		Terminal (wire color)	
E122	27 (L/W)	RH	E13	1 (L/W)	Yes
	28 (G)	LH	E45	1 (G)	



OK or NG

OK >> Replace IPDM E/R. Refer to PG-27, "Removal and Installation of IPDM E/R" .

NG >> Check for short circuits and open circuits in harness between IPDM E/R and headlamps. Repair as necessary.

High-Beam Indicator Lamp Does Not Illuminate

EKS00678

1. BULB INSPECTION

Inspect CAN communication system. Refer to LAN-6, "CAN COMMUNICATION" .

OK or NG

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

NG >> Repair as necessary.

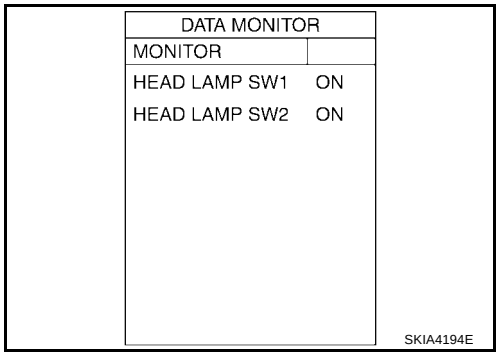
Headlamp LO Does Not Illuminate (Both Sides)

EKS00679

1. CHECK COMBINATION SWITCH INPUT SIGNAL

Select “BCM” on CONSULT-II. With “HEAD LAMP” data monitor, make sure “HEAD LAMP SW 1” and "HEAD LAMP SW 2" turns ON-OFF linked with operation of lighting switch.

When lighting switch is in 2ND position : HEAD LAMP SW 1 ON
: HEAD LAMP SW 2 ON



OK or NG

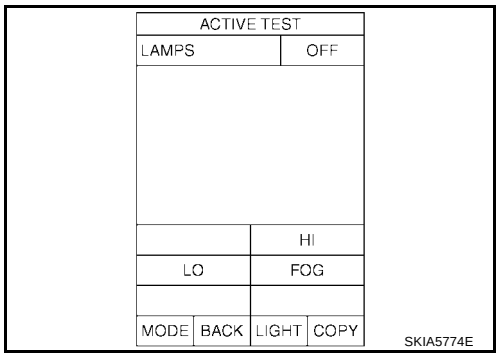
OK >> GO TO 2.

NG >> Check lighting switch. Refer to LT-102, "Combination Switch Inspection" .

2. HEADLAMP ACTIVE TEST

1. Select “IPDM E/R” on CONSULT-II, and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
2. Select “LAMPS” on “SELECT TEST ITEM” screen.
3. Touch “LO” on "ACTIVE TEST" screen.
4. Make sure headlamp low beam operates.

Headlamp low beam should operate.



OK or NG

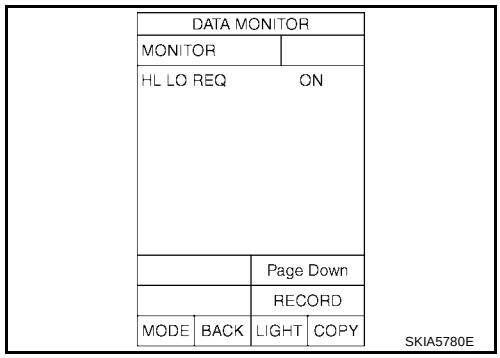
OK >> GO TO 3.

NG >> GO TO 4.

3. CHECK IPDM E/R

1. Select “IPDM E/R” on CONSULT-II, and select “DATA MONITOR” on “SELECT DIAG MODE” screen.
2. Make sure “HL LO REQ” turns ON when lighting switch is in 2ND position.

When lighting switch is in 2ND position : HL LO REQ ON



OK or NG

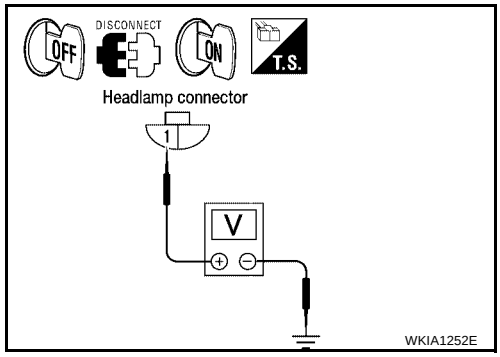
OK >> Replace IPDM E/R. Refer to PG-27, "Removal and Installation of IPDM E/R" .

NG >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .

4. CHECK HEADLAMP INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect headlamp RH and LH connector.
3. Turn ignition switch ON.
4. Select “IPDM E/R” on CONSULT-II, and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
5. Select “LAMPS” on “SELECT TEST ITEM” screen.
6. Touch “LO” on "ACTIVE TEST" screen.
7. When headlamp low beam is operating, check voltage between headlamp RH and LH harness connector and ground.

Terminals				Voltage
(+)			(–)	
Connector		Terminal (Wire color)		
RH	E12	1 (R/Y)	Ground	Battery voltage
LH	E44	1 (L)		



OK or NG

OK >> GO TO 6.

NG >> GO TO 5.

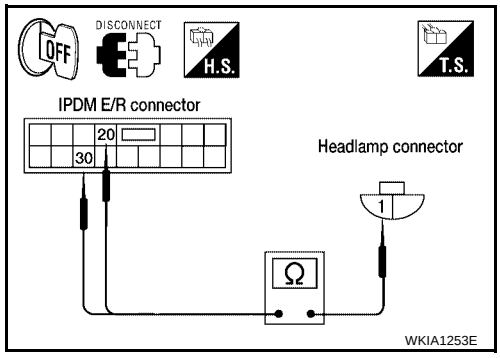
5. CHECK HEADLAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector E122 terminal 20 (R/Y) and headlamp RH harness connector E12 terminal 1 (R/Y).

20 (R/Y) - 1 (R/Y) : Continuity should exist.

4. Check continuity between IPDM E/R harness connector E122 terminal 30 (L) and headlamp LH harness connector E44 terminal 1 (L).

30 (L) - 1 (L) : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R. Refer to PG-27, "Removal and Installation of IPDM E/R" .

NG >> Repair harness or connector.

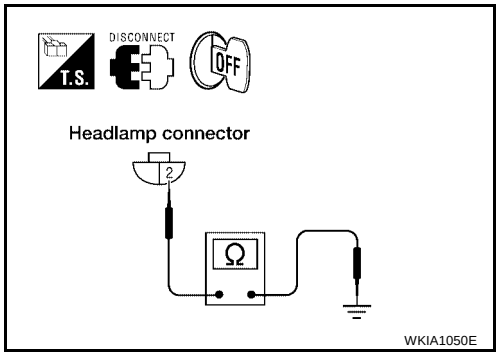
6. CHECK HEADLAMP GROUND

1. Turn ignition switch OFF.
2. Check continuity between headlamp RH harness connector E12 terminal 2 (B) and ground.

2 (B) - Ground : Continuity should exist.

3. Check continuity between headlamp LH harness connector E44 terminal 2 (B) and ground.

2 (B) - Ground : Continuity should exist.



OK or NG

OK >> Check headlamp connector for damage or poor connection. Repair as necessary.
NG >> Repair harness or connector.

Headlamp LO Does Not Illuminate (One Side)

EKS0067A

1. BULB INSPECTION

Inspect inoperative headlamp bulb.

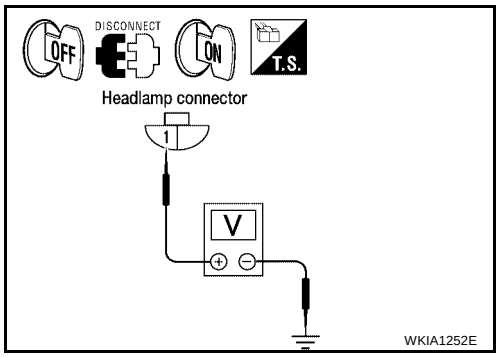
OK or NG

OK >> GO TO 2.
NG >> Replace headlamp bulb. Refer to LT-27, "HEADLAMP (OUTER SIDE), FOR LOW BEAM" .

2. CHECK POWER TO HEADLAMP

1. Disconnect inoperative headlamp connector.
2. Turn the low beam headlamps ON.
3. Check voltage between inoperative headlamp connector terminal and ground.

Terminals				Voltage (Approx.)
(+)			(–)	
Connector		Terminal		
RH	E12	1 (R/Y)	Ground	Battery voltage
LH	E44	1 (L)		



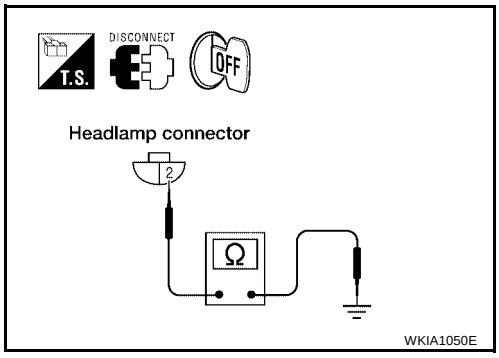
OK or NG

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

3. CHECK HEADLAMP GROUND

1. Turn the low beam headlamps OFF.
2. Check continuity between inoperative headlamp connector terminal and ground.

Terminals				Continuity
Connector		Terminal (Wire color)		
RH	E12	2 (B)	Ground	Yes
LH	E44			



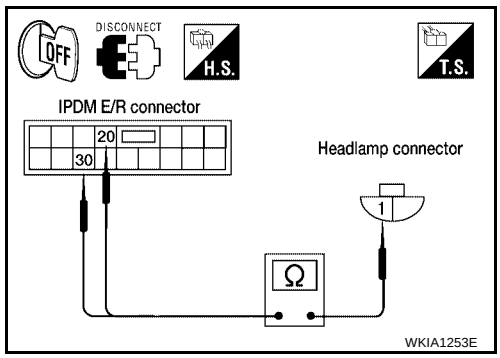
OK or NG

OK >> Check headlamp and IPDM E/R connector. Repair as necessary.
NG >> Repair open circuit in harness between inoperative headlamp and ground.

4. INSPECTION BETWEEN IPDM E/R AND HEADLAMPS

1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector terminals of IPDM E/R harness connector terminals of inoperative headlamp.

Terminals					Continuity
IPDM E/R		Headlamp			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E122	20 (R/Y)	RH	E12	1 (R/Y)	Yes
	30 (L)	LH	E44	1 (L)	



OK or NG

OK >> Replace IPDM E/R. Refer to PG-27, "Removal and Installation of IPDM E/R" .

NG >> Check for short circuits and open circuits in harness between IPDM E/R and headlamps. Repair as necessary.

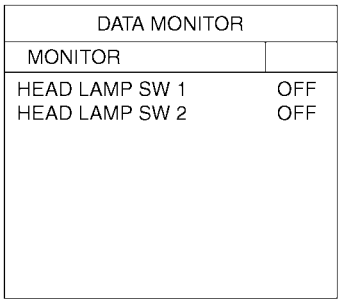
Headlamps Do Not Turn OFF

EKS0066E

1. CHECK COMBINATION SWITCH INPUT SIGNAL

Select “BCM” on CONSULT-II. With “HEAD LAMP” data monitor, make sure “HEAD LAMP SW 1” and “HEAD LAMP SW 2” turns ON-OFF linked with operation of lighting switch.

When lighting switch is in OFF position : HEAD LAMP SW 1 OFF
: HEAD LAMP SW 2 OFF



OK or NG

OK >> Replace IPDM E/R. Refer to PG-27, "Removal and Installation of IPDM E/R" .

NG >> GO TO 2.

2. CHECK LIGHTING SWITCH

Check lighting switch. Refer to LT-102, "Combination Switch Inspection" .

OK or NG

OK >> GO TO 3.

NG >> Replace lighting switch. Refer to LT-104, "Removal and Installation" .

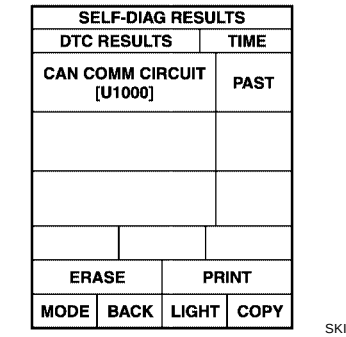
3. CHECKING CAN COMMUNICATIONS BETWEEN BCM AND IPDM E/R

Select “BCM” on CONSULT-II and perform self-diagnosis for BCM.

Display of self-diagnosis results

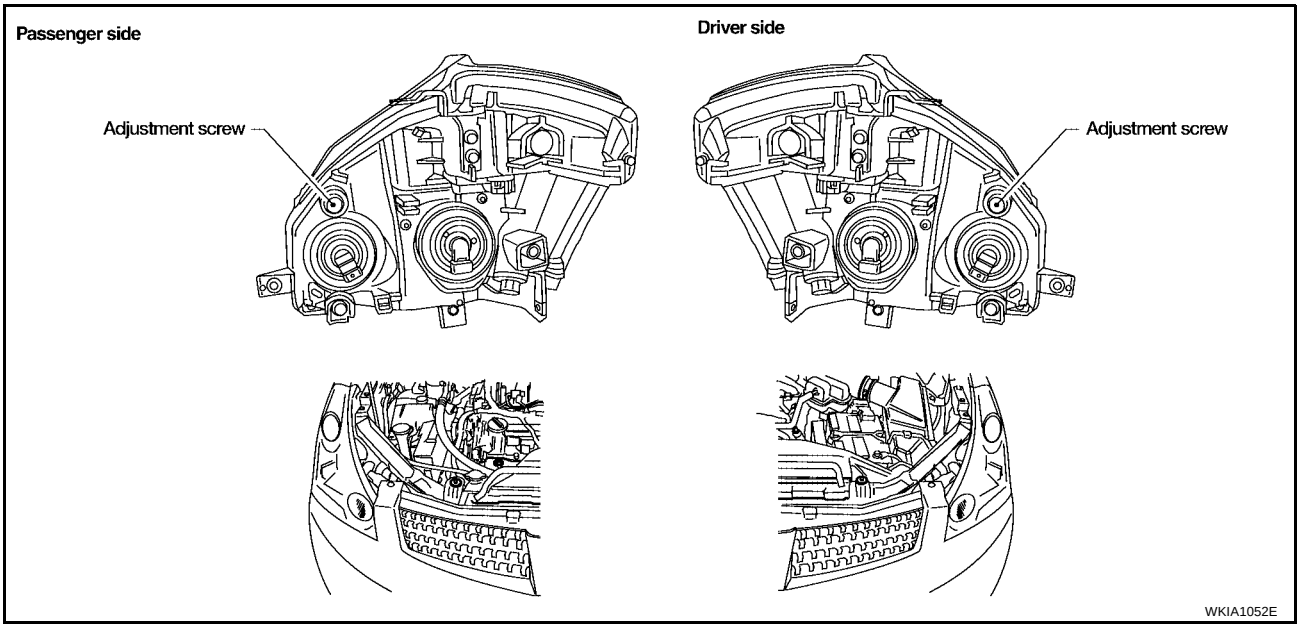
NO DTC>> Replace IPDM E/R. Refer to PG-27, "Removal and Installation of IPDM E/R" .

CAN COMM CIRCUIT>> Refer to BCS-13, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .



Aiming Adjustment

EKS0066H



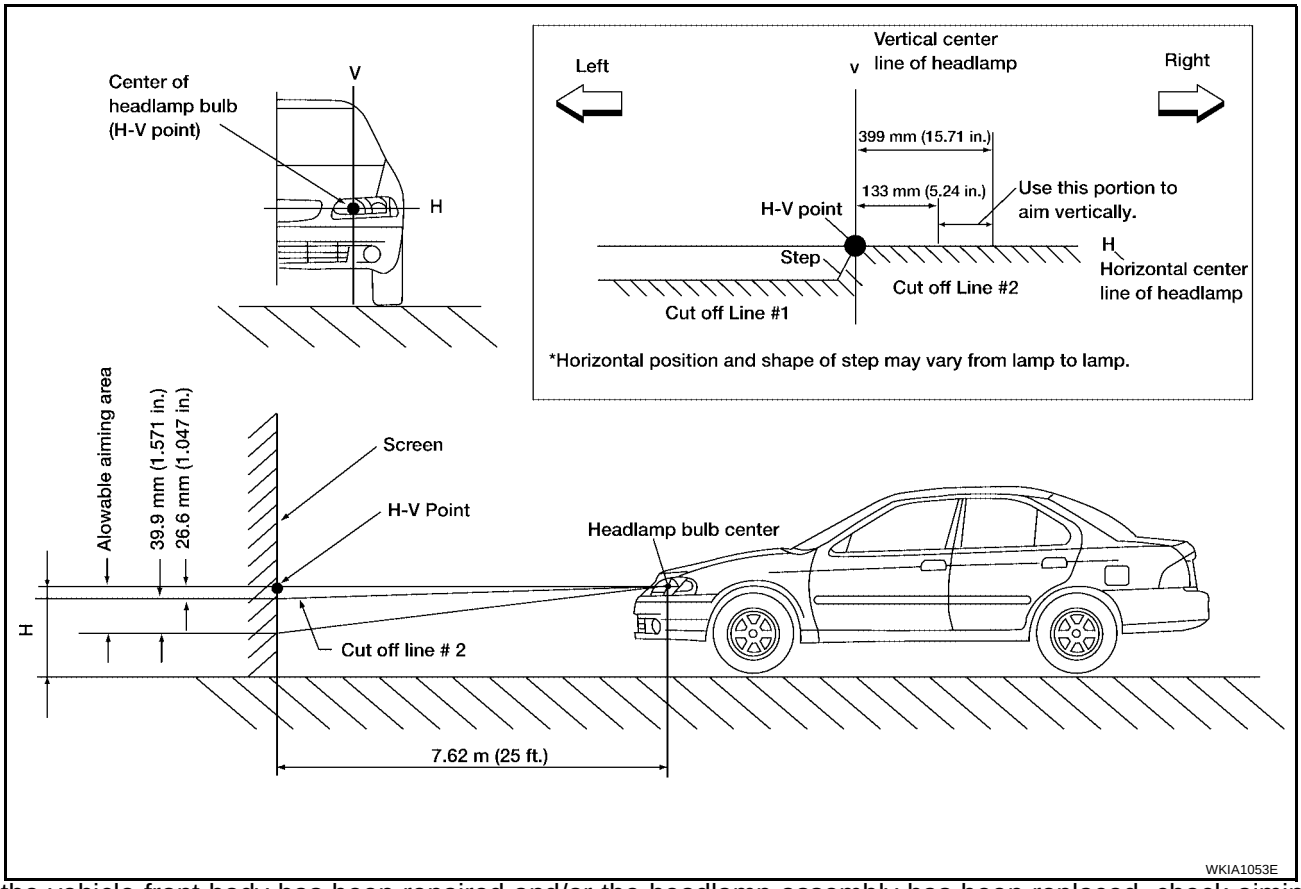
For details, refer to the regulations in your state.
Before performing aiming adjustment, check the following.

1. Ensure all tires are inflated to correct pressure.
2. Place vehicle and screen on level surface.
3. Ensure there is no load in vehicle other than the driver (or equivalent weight placed in driver's position). Coolant and engine oil filled to correct level, and fuel tank full.
4. Confirm spare tire, jack and tools are properly stowed.

LOW BEAM AND HIGH BEAM

NOTE:
Aim each headlamp individually and ensure other headlamp beam pattern is blocked from screen.

1. Turn headlamp low beam on.
2. Use adjusting screw to perform aiming adjustment.



If the vehicle front body has been repaired and/or the headlamp assembly has been replaced, check aiming. Use the aiming chart shown in the figure.

- **Basic illuminating area for adjustment should be within the range shown on the aiming chart. Adjust headlamps accordingly.**

Bulb Replacement

EKS0066I

HEADLAMP (OUTER SIDE), FOR LOW BEAM

1. Turn headlamp switch OFF.
2. Disconnect the electrical connector.
3. Turn the bulb counterclockwise to remove it.
4. Install in reverse order of removal.

HEADLAMP (INNER SIDE), FOR HIGH BEAM

1. Turn headlamp switch OFF.
2. Disconnect the electrical connector.
3. Turn the bulb counterclockwise to remove it.
4. Installation is reverse order of removal.

FRONT TURN SIGNAL/PARKING LAMP

1. Turn the bulb socket counterclockwise to unlock it.
2. Pull the bulb to remove it from the socket.
3. Installation is reverse order of removal.

CAUTION:

After installing the bulb, be sure to install the bulb socket securely to ensure watertightness.

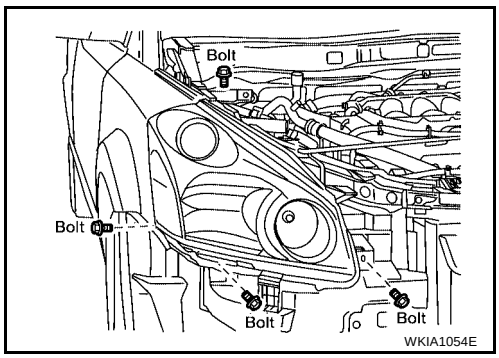
Removal and Installation

EKS0066J

REMOVAL

1. Remove the front fascia. Refer to EI-13, "Removal and Installation" .

2. Remove the headlamp mounting bolts.
3. Pull the headlamp toward the front of the vehicle, disconnect connectors, and remove from vehicle.



INSTALLATION

Install in the reverse order of removal.

Headlamp-to-radiator support mounting bolts:

: 6.5 N·m (0.66 kg-m, 58 in-lb)

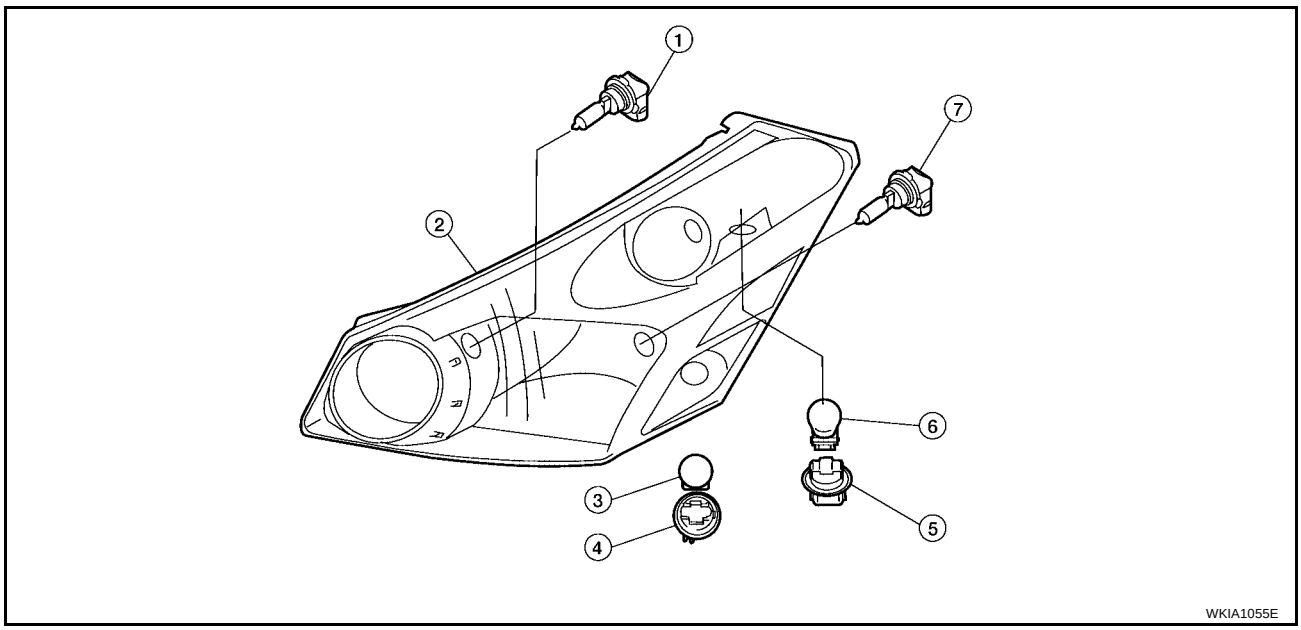
Headlamp-to-fender mounting bolt:

: 5.7 N·m (0.58 kg-m, 50 in-lb)

Disassembly and Assembly

EKS0066K

DISASSEMBLY



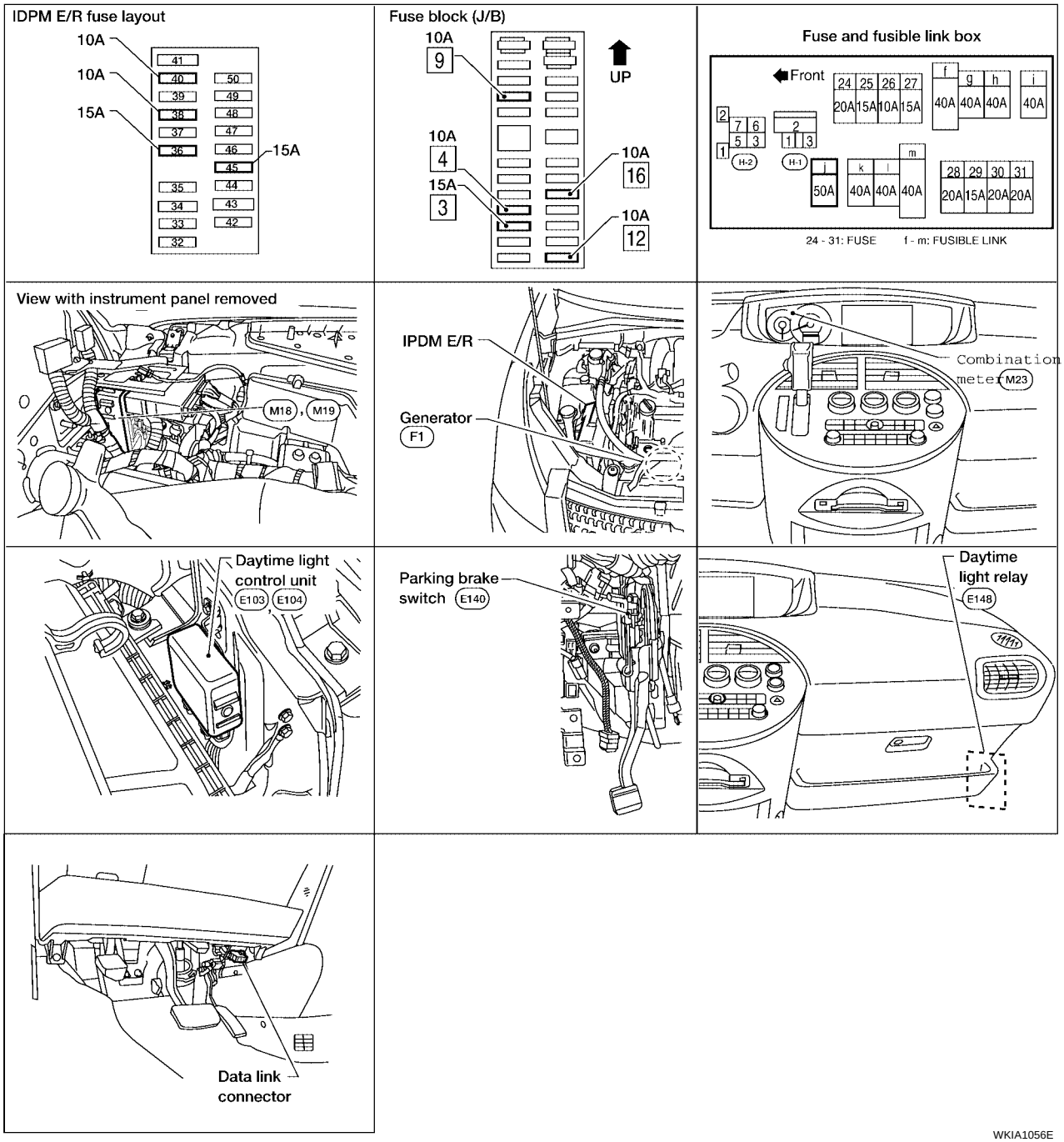
1. Headlamp bulb (High beam)
2. Headlamp assembly
3. Cornering lamp bulb
4. Cornering lamp bulb socket
5. Parking/turn signal lamp bulb socket
6. Parking/turn signal lamp bulb
7. Headlamp bulb (Low beam)

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

PFP:26010

Component Parts and Harness Connector Location

EKS0066L



WKIA1056E

System Description

EKS0066M

The headlamp system for Canada vehicles is equipped with a daytime light control unit that activates the high beam headlamps at approximately half illumination whenever the engine is running. If the parking brake is applied before the engine is started the daytime lights will not be illuminated. The daytime lights will illuminate once the parking brake is released. Thereafter, the daytime lights will continue to operate when the parking brake is applied.

Battery saver system is controlled by the BCM (body control module).

Power is supplied at all times

- to headlamp high relay located in the IPDM E/R (intelligent power distribution module engine room), and
- to headlamp low relay located in the IPDM E/R, and
- through 50A fusible link (letter **j** , located in the fuse and fusible link box)

- to BCM terminal 55, and
- through 15A fuse [No. 3, located in the fuse block (J/B)]
- to BCM terminal 42, and
- through 15A fuse (No. 29, located in the fuse and fusible link box).
- to daytime light control unit terminals 2 and 3

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)], and
- to daytime light control unit terminal 12, and
- through 10A fuse [No. 16, located in the fuse block (J/B)]
- to BCM terminal 38.

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

- through 10A fuse [No. 4, located in the fuse block (J/B)]
- to BCM terminal 11.

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

- through 10A fuse [No. 9, located in the fuse block (J/B)]
- to daytime light control unit terminal 1.

Ground is supplied

- to daytime light control unit terminal 9
- through grounds E9, E15 and E24, and
- to BCM terminals 49 (early production) and 52
- through grounds M57, M61 and M79.

HEADLAMP OPERATION

Low Beam Operation

With the lighting switch in 2ND position, the BCM receives input requesting the headlamps to illuminate. This input is communicated to the IPDM E/R across the CAN communication lines. The CPU (central processing unit) of the IPDM E/R controls the headlamp low relay coil. When energized, this relay directs power

- through 15A fuse (No. 45, located in the IPDM E/R)
- through IPDM E/R terminal 30
- to daylight control unit terminal 4 and
- to headlamp LH (low) terminal 1, and
- through 15A fuse (No. 36, located in the IPDM E/R)
- through IPDM E/R terminal 20
- to diode-3 terminal 3 and
- to headlamp RH (low) terminal 1.

Ground is supplied

- to headlamp LH (low) and RH (low) terminal 2
- through grounds E9, E15 and E24.

With power and ground supplied, low beam headlamps illuminate.

High Beam Operation/Flash-to-Pass Operation

With the lighting switch in 2ND position and placed in HIGH or PASS position, the BCM receives input requesting the headlamp high beams to illuminate. This input is communicated to the IPDM E/R across the CAN communication lines. The CPU of the combination meter controls the ON/OFF status of the HIGH BEAM indicator. The CPU of the IPDM E/R controls the headlamp high relay coil. When energized, this relay directs power

- through 10A fuse (No. 40, located in the IPDM E/R)
- through IPDM E/R terminal 27
- to diode-3 terminal 1 and
- to daytime light relay terminal 1.

When energized, this relay directs power

- through daytime light relay terminal 3

- to daytime light control unit terminal 8 and
- to terminal 1 of headlamp RH (high).

Also when the headlamp high relay is energized, it directs power

- to 10A fuse [No. 38, located in the IPDM E/R]
- through terminal 28 of the IPDM E/R
- to terminal 5 of the daytime light control unit
- through terminal 6 of the daytime light control unit
- to terminal 1 of headlamp LH (high).

Ground is supplied

- to daytime light relay terminal 2 and
- to headlamp RH (high) terminal 2
- through grounds E9, E15 and E24, and
- to headlamp LH (high) terminal 2 and
- to daytime light control unit terminal 7
- through daytime light control unit terminal 9
- through grounds E9, E15 and E24.

With power and ground supplied, the high beam headlamps illuminate.

BATTERY SAVER CONTROL

With the combination switch (lighting switch) is in the 2ND position (ON), and the ignition switch is turned from ON or ACC to OFF, the battery saver control feature is activated.
Under this condition, the headlamps remain illuminated for 5 minutes, unless the combination switch (lighting switch) position is changed. If the combination switch (lighting switch) position is changed, then the headlamps are turned off.

AUTO LIGHT OPERATION

For auto light operation, refer to LT-40, "System Description" .

DAYTIME LIGHT OPERATION

With the engine running, the lighting switch in the OFF or 1ST position and parking brake released, power is supplied

- through daytime light control unit terminal 6
- to headlamp LH (high) terminal 1
- through headlamp LH (high) terminal 2
- to daytime light control unit terminal 7
- through daytime light control unit terminal 8
- to headlamp RH (high) terminal 1.

Ground is supplied

- to headlamp RH (high) terminal 2
- through grounds E9, E15 and E24.

Because the high beam headlamps are now wired in series, they operate at half illumination.

OPERATION

After starting the engine with the lighting switch in the “OFF” or 1ST position, the headlamp high beam automatically turns on. Lighting switch operations other than the above are the same as conventional light systems.

Engine		With engine stopped									With engine running								
Lighting switch		OFF			1ST			2ND			OFF			1ST			2ND		
		Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P
Headlamp	High beam	–	–	–	–	–	×	×	–	×	●*	●*	×	●*	●*	×	×	–	×
	Low beam	–	–	–	–	–	×	×	×	×	–	–	×	–	–	×	×	×	×
Tail lamp		–	–	–	×	×	×	×	×	×	–	–	–	×	×	×	×	×	×
License and instrument illumination lamp		–	–	–	×	×	×	×	×	×	–	–	–	×	×	×	×	×	×

- Hi: “HIGH BEAM” position
- Lo: “LOW BEAM” position
- P: “FLASH TO PASS” position
- ×: Lamp “ON”
- –: Lamp “OFF”
- ●: Lamp dims. (Added functions)
- *: When starting the engine with the parking brake released, the daytime lights will operate.
  When starting the engine with the parking brake applied, the daytime lights will not operate.

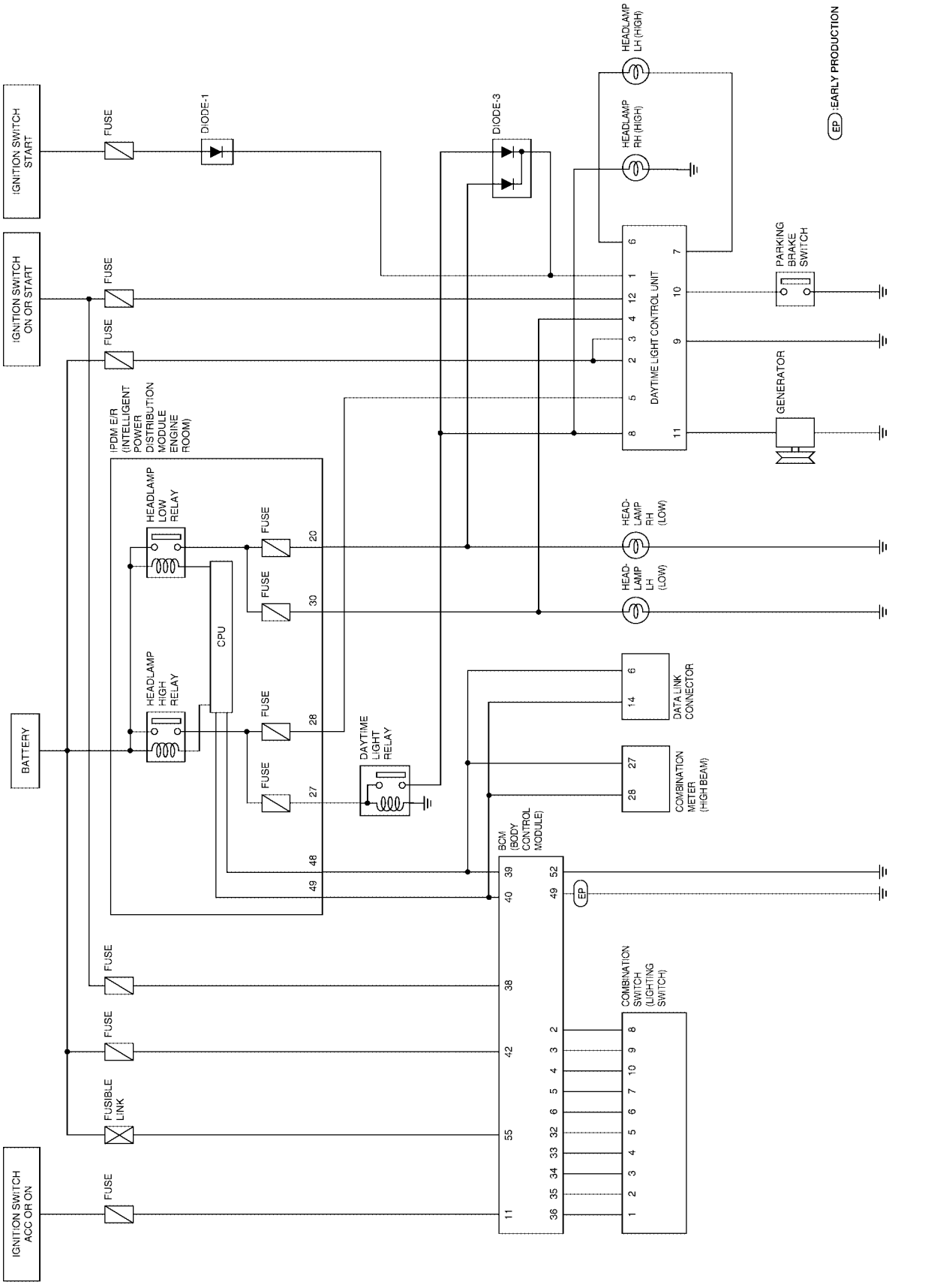
CAN Communication System Description

EKS0066N

Refer to LAN-6, "CAN COMMUNICATION" .

Schematic

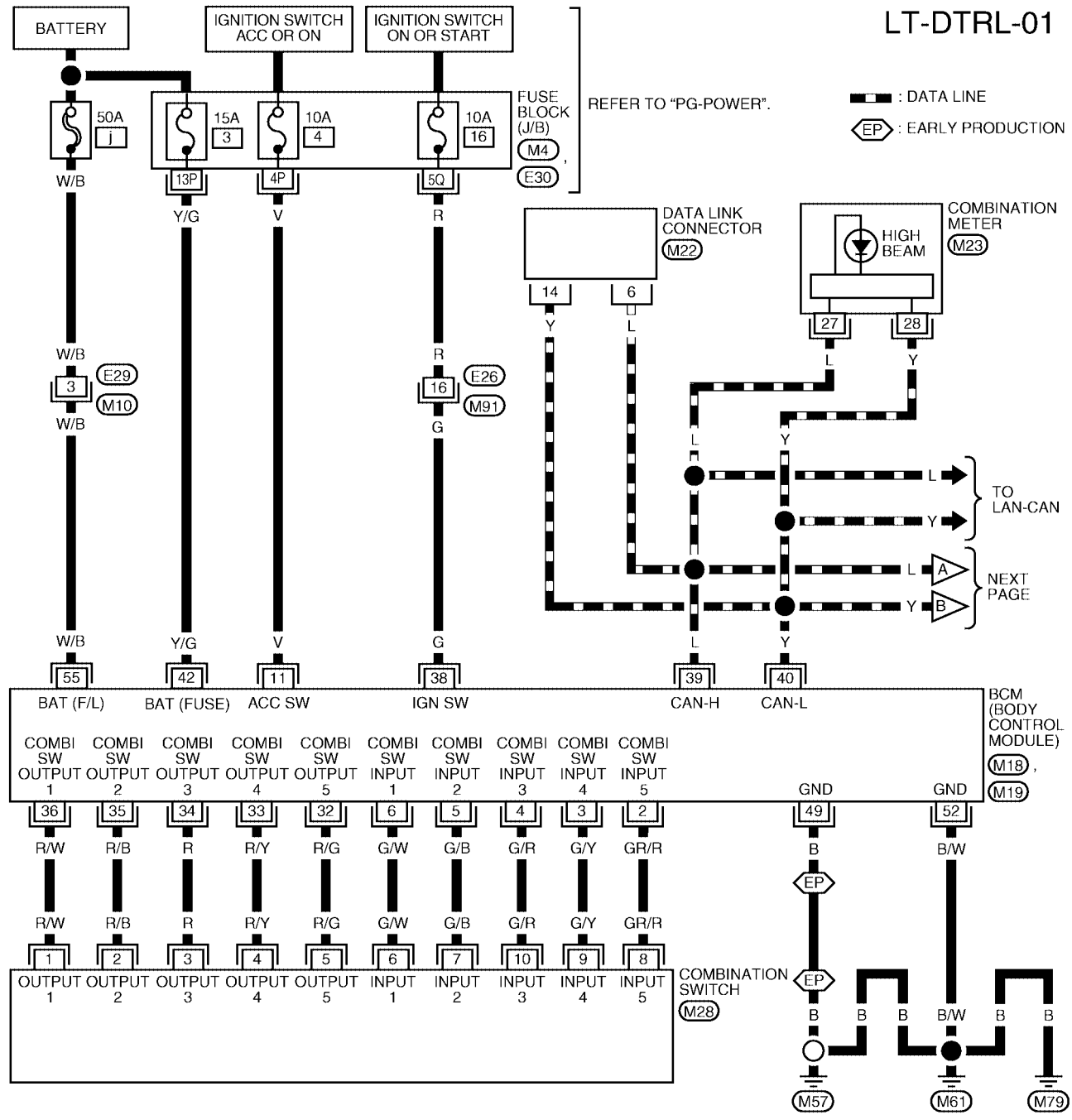
EKS0066O

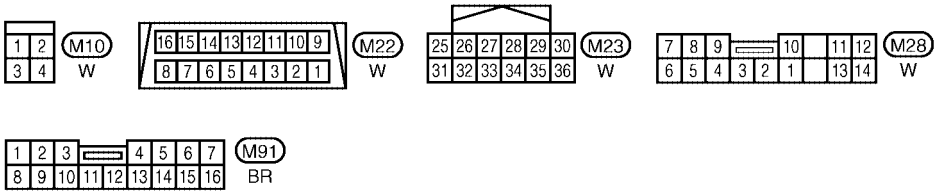


WKWA2793E

Wiring Diagram — DTRL —

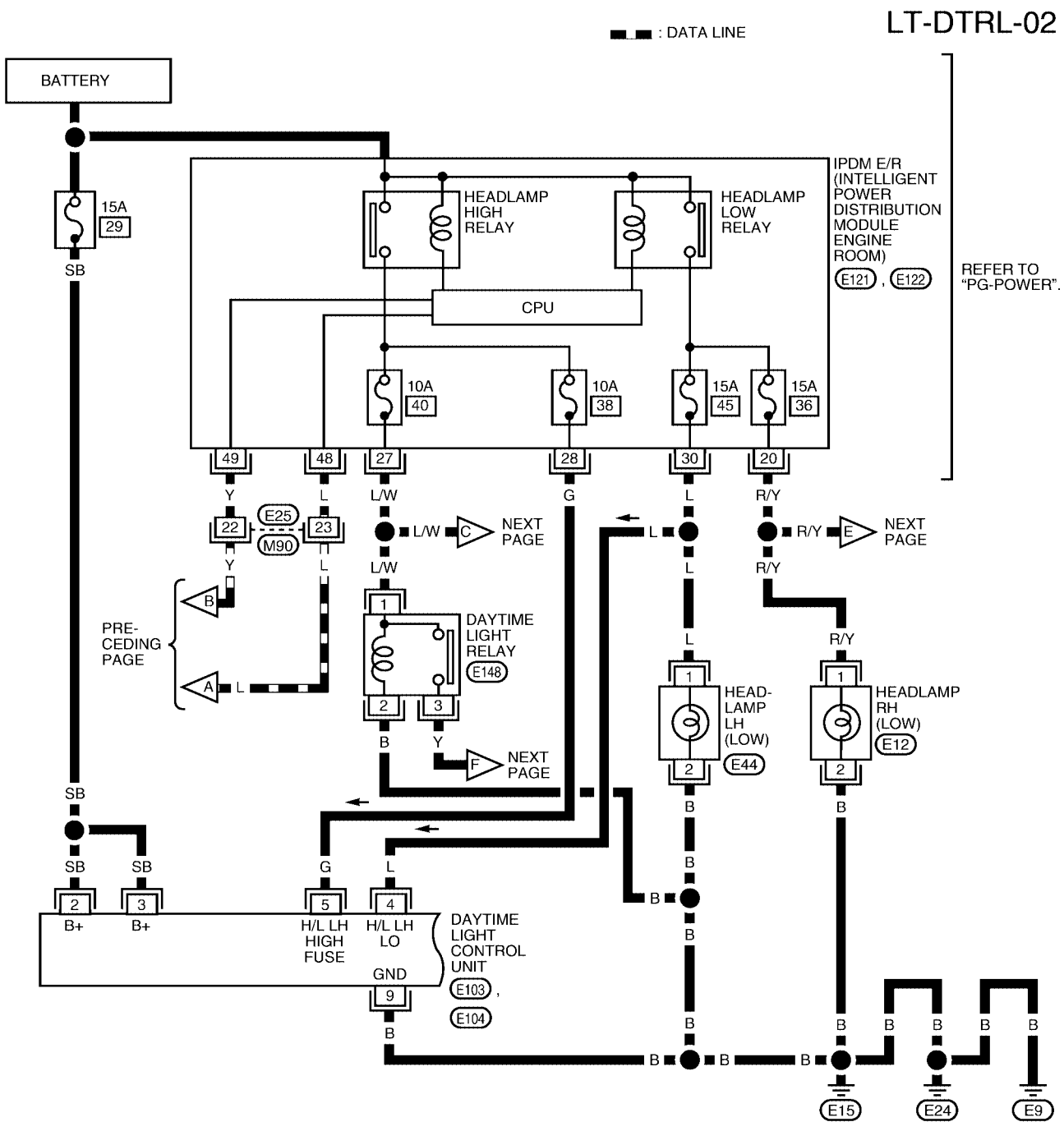
EKS0066P

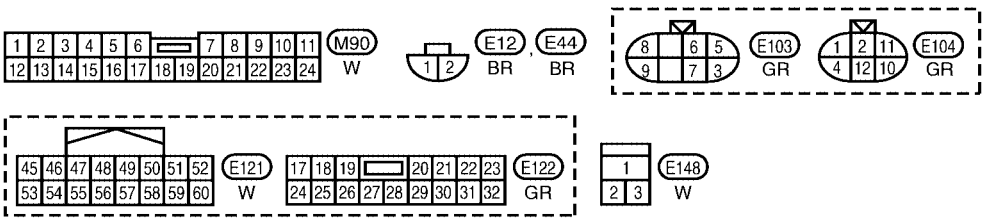




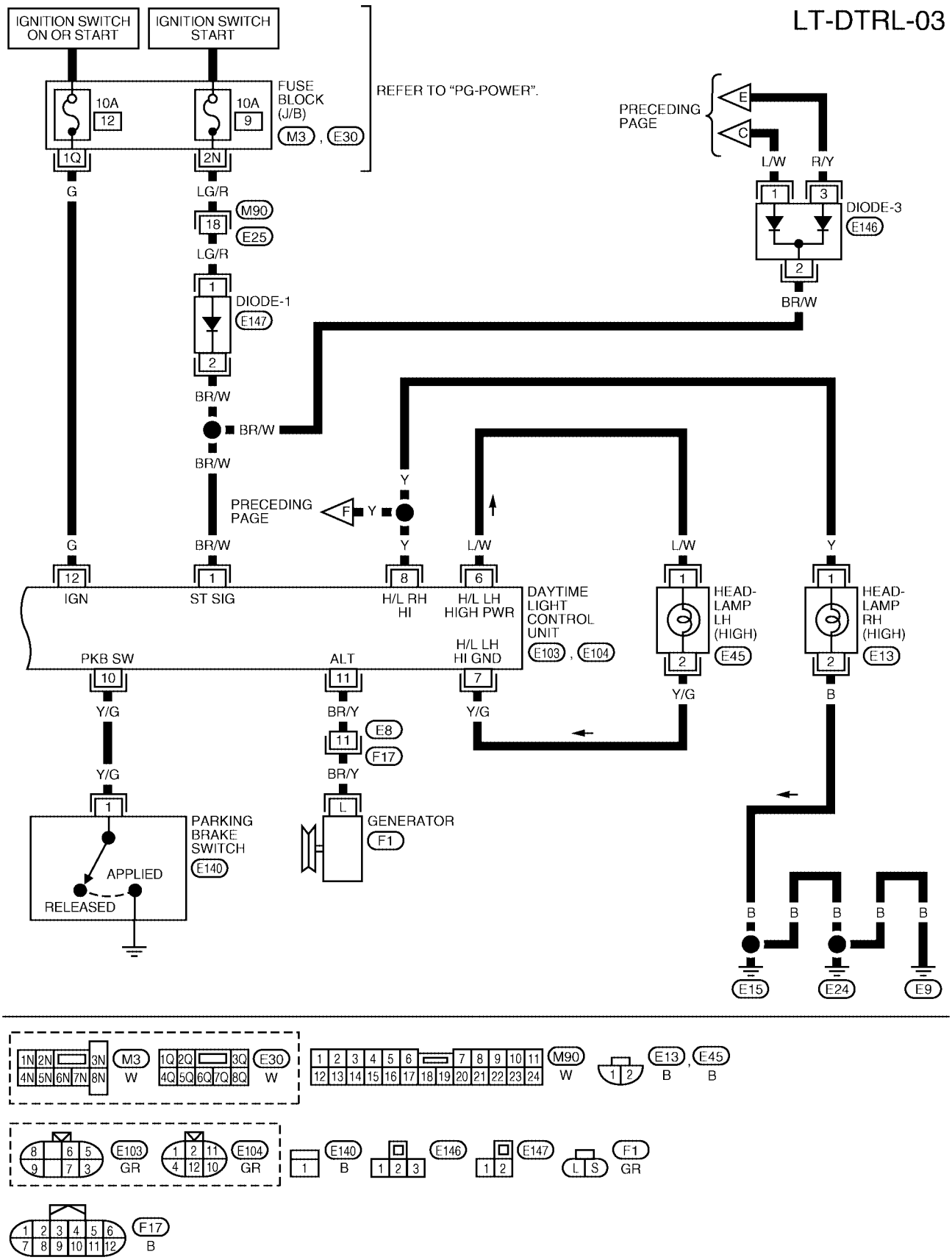
REFER TO THE FOLLOWING.
M4, E30 - FUSE BLOCK-JUNCTION BOX (J/B)
M18, M19 - ELECTRICAL UNITS

WKWA1422E


LT-DTRL-02
: DATA LINE
BATTERY
15A
29
SB
IPDM E/R
(INTELLIGENT
POWER
DISTRIBUTION
MODULE
ENGINE
ROOM)
E121 , E122
REFER TO
"PG-POWER".
HEADLAMP
HIGH
RELAY
HEADLAMP
LOW
RELAY
CPU
10A
40
10A
38
15A
45
15A
36
49
48
27
28
30
20
Y
L
L/W
G
L
R/Y
E25
22
23
M90
L/W
C
NEXT
PAGE
L
E
R/Y
PRE-
CEDING
PAGE
B
A
L
1
DAYTIME
LIGHT
RELAY
E148
2
3
B
Y
F
HEAD-
LAMP
LH
(LOW)
E44
HEADLAMP
RH
(LOW)
E12
SB
SB
SB
G
L
2
3
5
4
B+
B+
H/L LH
HIGH
FUSE
H/L LH
LO
GND
9
DAYTIME
LIGHT
CONTROL
UNIT
E103 ,
E104
B
E15
E24
E9


M90
W
E12 , E44
BR BR
E103
GR
E104
GR
E121
W
E122
GR
E148
W

WKWA0543E


LT-DTRL-03
IGNITION SWITCH ON OR START
IGNITION SWITCH START
10A 12
10A 9
FUSE BLOCK (J/B)
M3 , E30
REFER TO "PG-POWER".
1Q
2N
G
LG/R
M90
18
E25
LG/R
1
DIODE-1
E147
2
BR/W
BR/W
BR/W
PRECEDING PAGE
F
Y
Y
PRECEDING PAGE
E
C
L/W
R/Y
1
3
DIODE-3
E146
2
BR/W
G
BR/W
Y
L/W
L/W
Y
12
IGN
1
ST SIG
8
H/L RH HI
6
H/L LH HIGH PWR
DAYTIME LIGHT CONTROL UNIT
E103 , E104
H/L LH HI GND
7
1
HEAD-LAMP LH (HIGH)
E45
2
Y/G
1
HEAD-LAMP RH (HIGH)
E13
2
B
PKB SW
10
Y/G
ALT
11
BR/Y
E8
11
F17
BR/Y
Y/G
1
PARKING BRAKE SWITCH
E140
APPLIED
RELEASED
L
GENERATOR
F1
B B B B B
E15
E24
E9
1N 2N 3N 4N 5N 6N 7N 8N
M3
W
1Q 2Q 3Q 4Q 5Q 6Q 7Q 8Q
E30
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
M90
W
1 2
E13 , E45
B B
8 6 5 9 7 3
E103
GR
1 2 11 4 12 10
E104
GR
1
E140
B
1 2 3
E146
1 2
E147
L S
F1
GR
1 2 3 4 5 6 7 8 9 10 11 12
F17
B

WKWA1417E

Trouble Diagnoses

EKS0069J

DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

Terminal No.	Wire color	Item	Condition	Voltage (Approx.)
1	BR/W	Ignition switch start signal	Ignition switch in START position	Battery voltage
			All other conditions	0
2	SB	Battery	Ignition switch in all positions	Battery voltage
3	SB	Battery	Ignition switch in all positions	Battery voltage
4	L	Lighting switch headlamp LH low beam output	Lighting switch in the headlamp ON (2ND) position and low beam (B) position	Battery voltage
			All other conditions	0
5	G	Lighting switch headlamp LH high beam output	Lighting switch in the flash-to-pass (C) position or headlamp ON (2ND) position and high beam (A) position	Battery voltage
			All other conditions	0
6	L/W	Headlamp LH high beam	Lighting switch in the flash-to-pass (C) position or headlamp ON (2ND) position and high beam (A) position	Battery voltage
			With parking brake released, engine running and lighting switch in OFF or parking and tail lamp ON (1ST) positions **CAUTION:** **Block wheels and ensure selector lever is in P or N position.**	Battery voltage
			All other conditions	0
7	Y/G	Headlamp LH (high) control	Lighting switch in the flash-to-pass (C) position or headlamp ON (2ND) position and high beam (A) position and high beam position	0
			With parking brake released, engine running and lighting switch in OFF or parking and tail lamp ON (1ST) positions **CAUTION:** **Block wheels and ensure selector lever is in P or N position.**	Battery voltage
			All other conditions	0
8	Y	Lighting switch headlamp RH high beam output	Lighting switch in the flash-to-pass (C) position or headlamp ON (2ND) position and high beam (A) position	Battery voltage
			With parking brake released, engine running and lighting switch in OFF or parking and tail lamp ON (1ST) positions **CAUTION:** **Block wheels and ensure selector lever is in P or N position.**	6
			All other conditions	0
9	B	Ground	—	—
10	Y/G	Parking brake switch	Parking brake released	Battery voltage
			Parking brake set	0
11	BR/Y	Generator (L terminal)	When engine is running	Battery voltage
			All other conditions	0
12	G	Ignition switch on signal	Ignition switch OFF, ACC positions	0
			Ignition switch ON, START positions	Battery voltage

Aiming Adjustment

EKS0066R

Refer to LT-26, "Aiming Adjustment" .

Bulb Replacement

EKS0066S

Refer to LT-27, "Bulb Replacement" .

Removal and Installation For Headlamp

EKS0066T

Refer to LT-39, "Removal and Installation For Daytime Light Control Unit" .

Disassembly and Assembly For Headlamp

EKS0066U

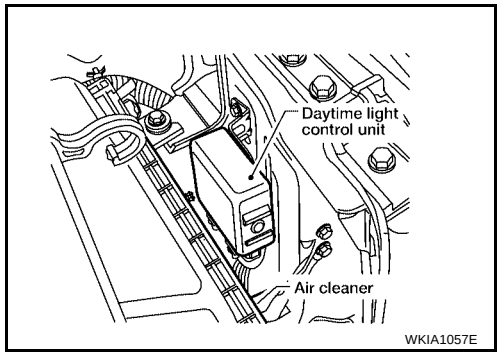
Refer to LT-29, "Disassembly and Assembly" .

Removal and Installation For Daytime Light Control Unit

EKS0069K

REMOVAL

1. Remove the daytime light control unit mounting bolt.
2. Disconnect connectors and remove from vehicle.



INSTALLATION

Install in the reverse order of removal.

Removal and Installation For Daytime Light Relay

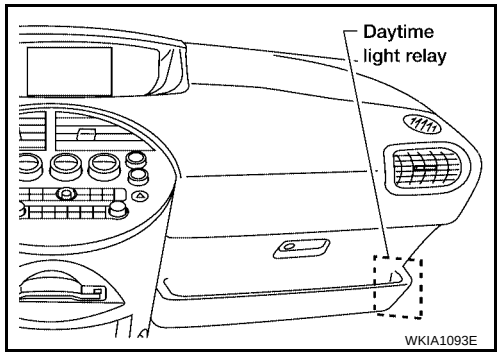
EKS0069M

REMOVAL

NOTE:

The daytime light relay is taped to the main wiring harness near the lower dash side finisher RH.

1. Remove the glove box assembly. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Carefully remove the tape holding the daytime light relay to the main harness.
3. Disconnect the connector.



INSTALLATION

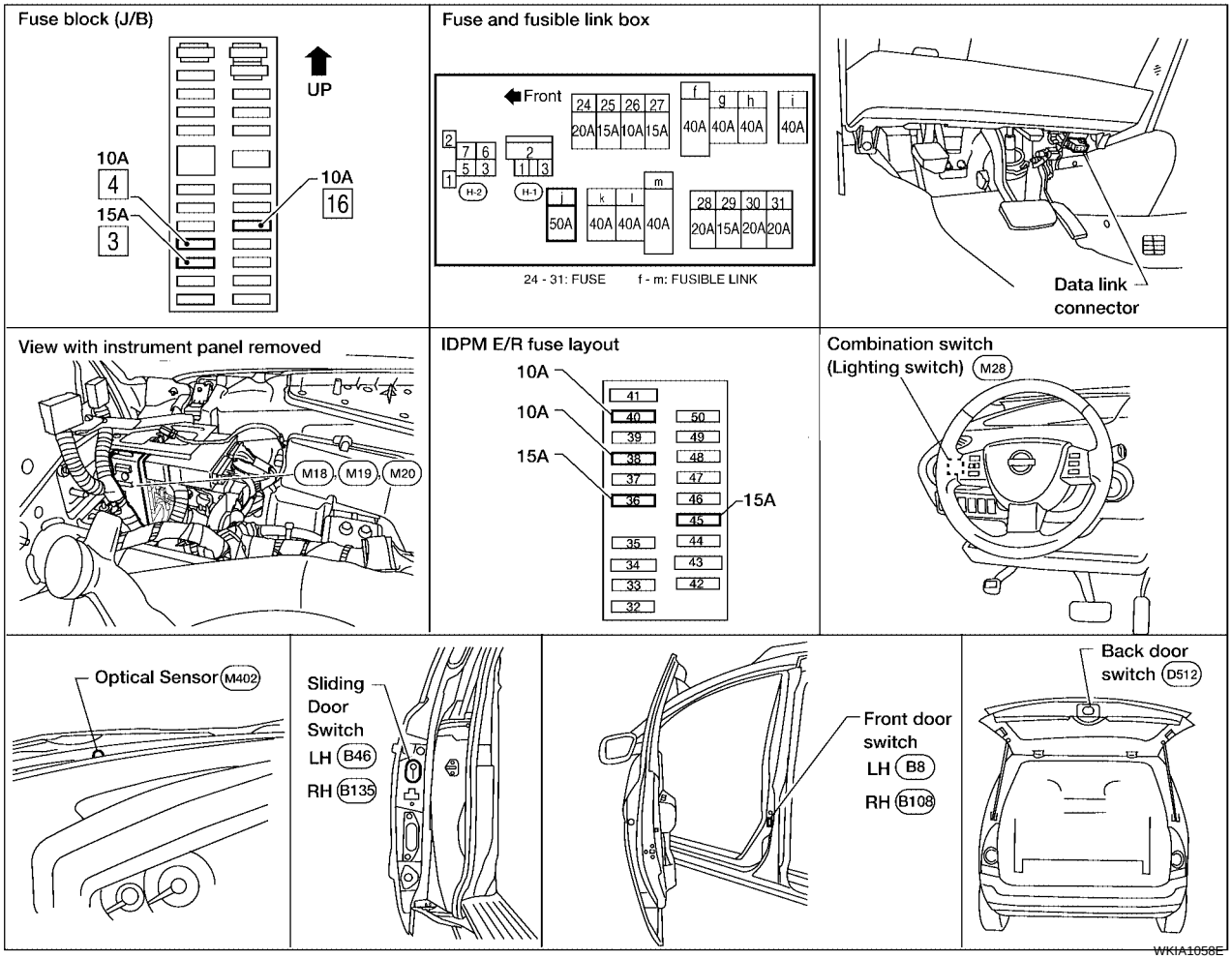
Install in the reverse order of removal.

AUTO LIGHT SYSTEM

PFP:28491

Component Parts and Harness Connector Location

EKS005M1



System Description

EKS005M2

Automatically turns on/off the parking lamps and the headlamps in accordance with ambient light.
Timing for when the lamps turn on/off can be selected using four modes.

OUTLINE

The auto light control system uses an optical sensor that detects outside brightness.
When the lighting switch is in “AUTO” position, it automatically turns on/off the parking lamps and the headlamps in accordance with the ambient light. Sensitivity can be adjusted in four steps. For the details of the setting, refer to LT-48, "SETTING CHANGE FUNCTIONS" .
Optical sensor ground is supplied

- through BCM (body control module) terminal 18
- to optical sensor terminal 3.

When ignition switch is turned to “ON” position and when outside brightness is darker than prescribed level, input is supplied

- to BCM terminal 43
- through optical sensor terminal 4.

The headlamps will then illuminate. For a description of headlamp operation, Refer to LT-6, "System Description" .

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the AUTO position, and the ignition switch is turned from ON or ACC to OFF, and one of the front doors is opened, the battery saver control feature is activated.
Under this condition, the headlamps remain illuminated for 5 minutes, then the headlamp are turned off.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

DELAY TIMER FUNCTION

When the ignition switch is ON and ACC is OFF while auto light switch is ON, the BCM turns on/off the headlamps. In delay timer function, auto timer sensor power source is OFF and BCM is not turned on/off by auto sensor signal. On condition that:

- when the state is ignition switch ON or ACC is ON and output judgment by auto light function is headlamp ON turn to ignition switch ON or ACC are OFF and front door switch (driver side), front door switch (passenger side) is ON, output judgment by auto light function should be headlamp ON for 5 minutes by timer. After time out, output judgment by auto light function should be headlamp OFF.
- when the state is front door switch (driver side), front door switch (passenger side), rear door switch LH, rear door switch RH is turned to ON from OFF 45 seconds or 5 minutes while timer is counting, timer stops, and re–starts counting for 5 minutes, then auto light function judges output as headlamp ON. After time out, auto light function judges output as headlamp OFF.
- when the state is front door switch (driver side), front door switch (passenger side), rear door switch LH, rear door switch RH or back door switch is ON turns to front door switch (driver side), front door switch (passenger side), rear door switch LH, rear door switch RH or back door switch are OFF 45 seconds or 5 minute while is counting, timer stops, and re–starts counting for 45 seconds, then auto light function judges output as headlamp ON. After timer out, auto light function judges output as headlamp OFF.
- when the state is ignition switch ON or ACC is ON or auto light switch OFF while timer is counting, timer stops counting and BCM turns on/off lamps according to headlamp function, front fog lamp function, auto light function and headlamp battery save function.

Delay timer control mode can be changed by the function setting of CONSULT-II.

CAN Communication System Description

EKS005M3

Refer to LAN-6, "CAN COMMUNICATION" .

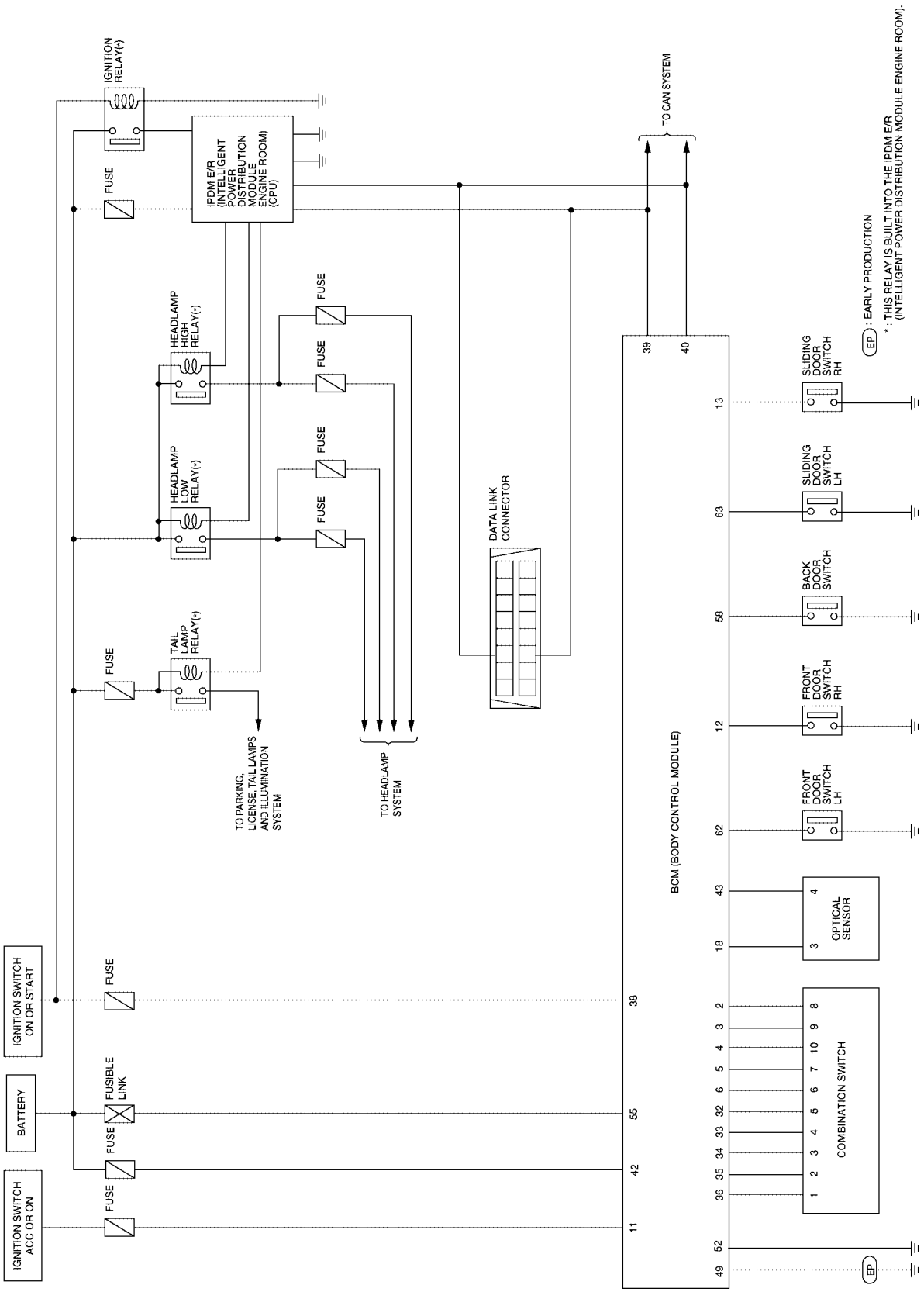
Major Components and Functions

EKS005M4

Components	Functions
BCM	● Turns on/off circuits of tail light and headlamp according to signals from light sensor, lighting switch (AUTO), driver door switch, passenger door switch, rear door switch, and ignition switch (ON, OFF).
Optical sensor	● Converts ambient light (lux) to voltage, and sends it to BCM. (Detects lightness of 50 to 1,300 lux)

Schematic

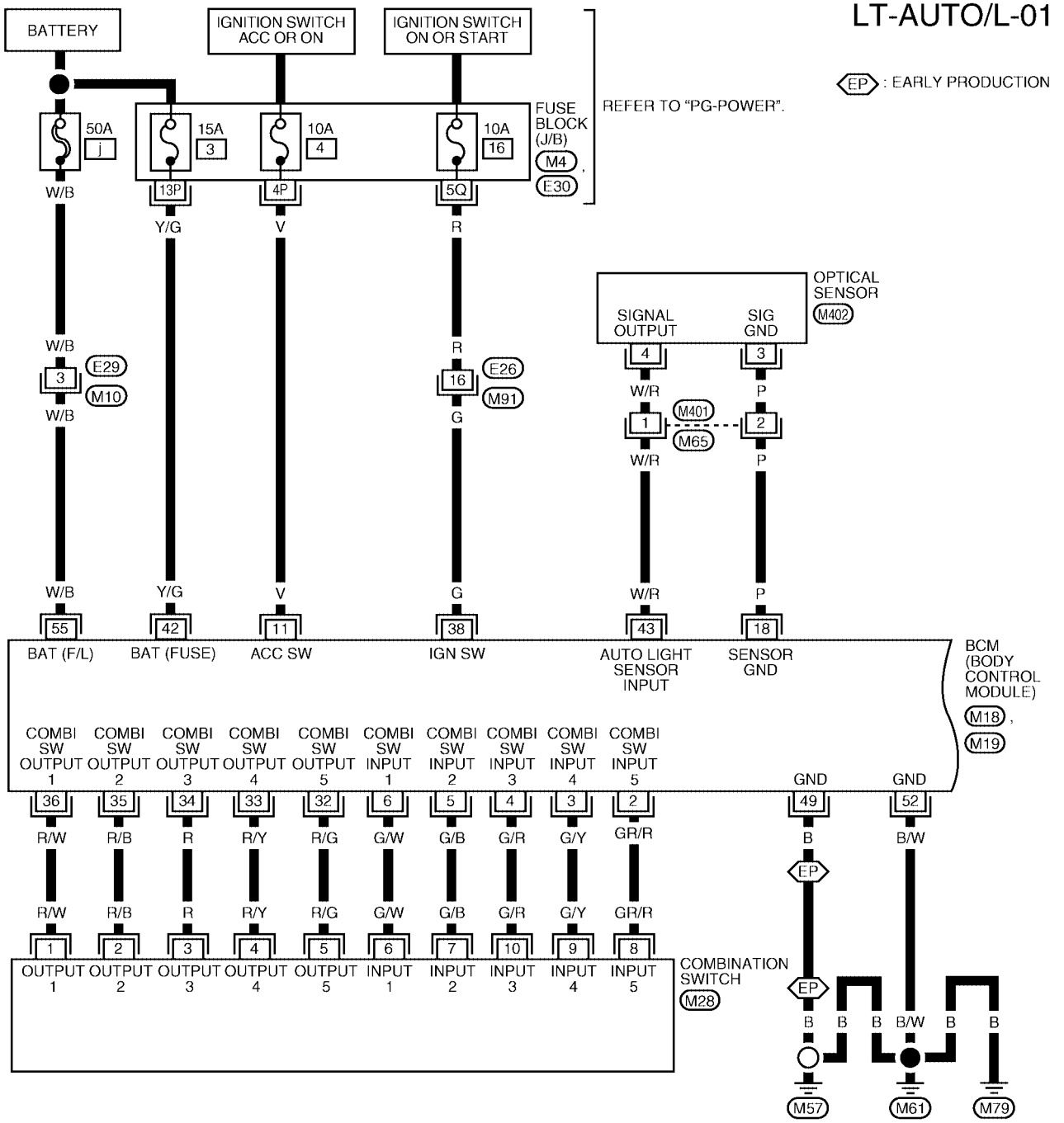
EKS005M5

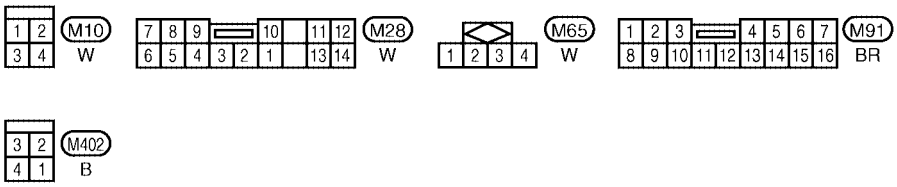


WKWA1663E

Wiring Diagram — AUTO/L —

EKS005M6





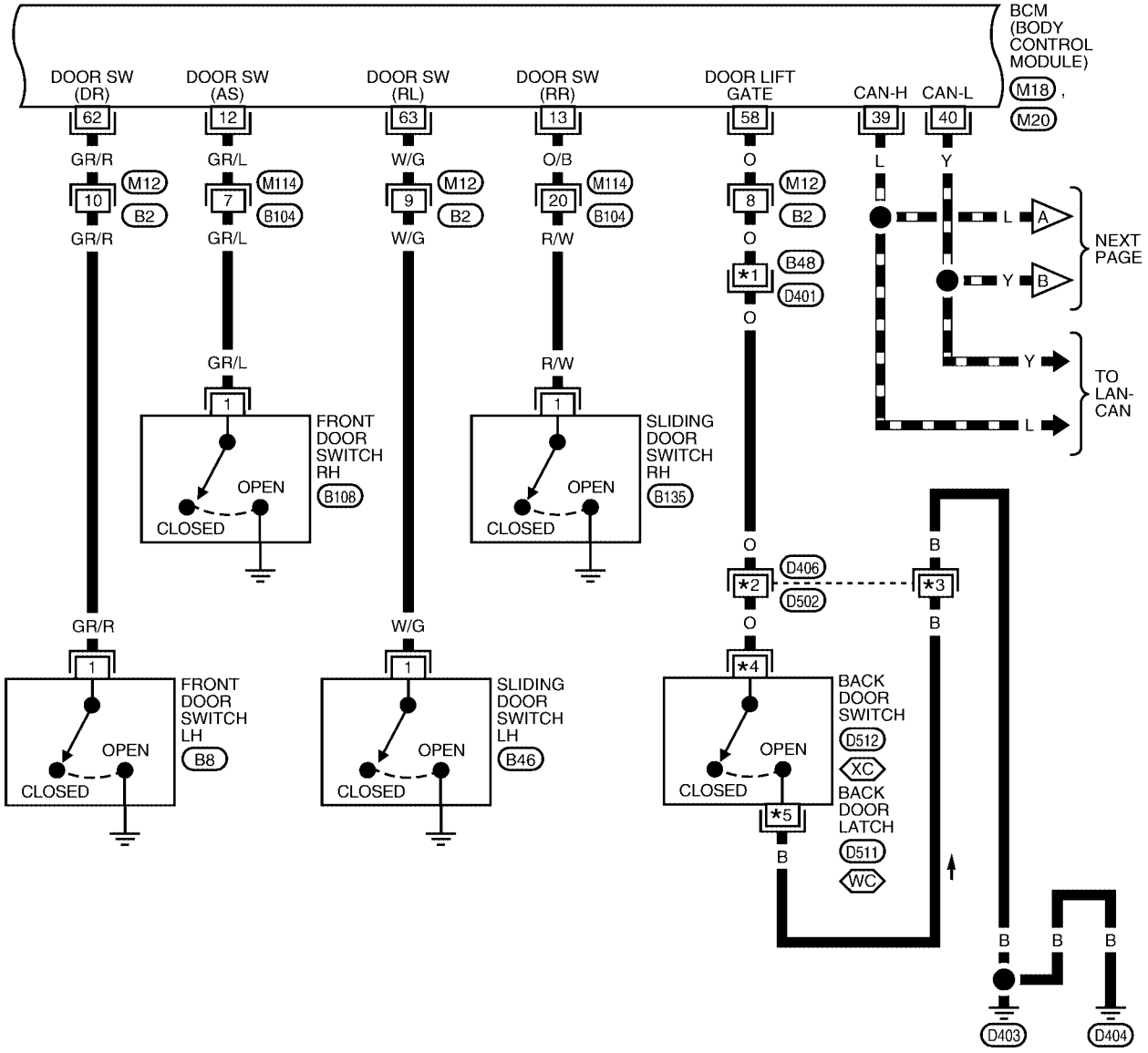
REFER TO THE FOLLOWING.
M4, E30 - FUSE BLOCK-JUNCTION BOX (J/B)
M18, M19 - ELECTRICAL UNITS

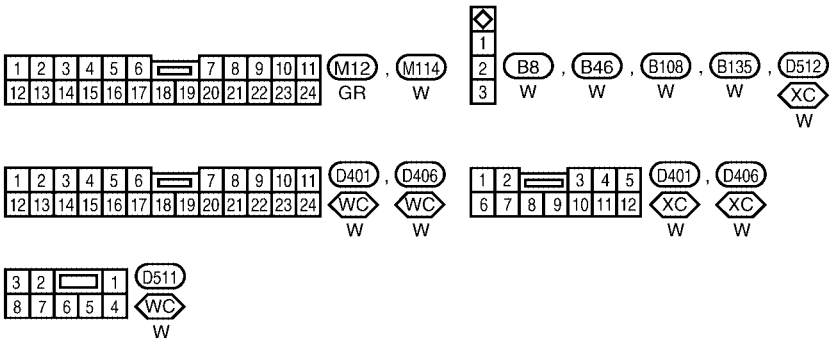
WKWA1423E

LT-AUTO/L-02

: DATA LINE
WC : WITH BACK DOOR AUTO CLOSURE SYSTEM
XC : WITHOUT BACK DOOR AUTO CLOSURE SYSTEM

*1 WC : 4, XC : 1
*2 WC : 4, XC : 1
*3 WC : 14, XC : 6
*4 WC : 7, XC : 1
*5 WC : 8, XC : 3

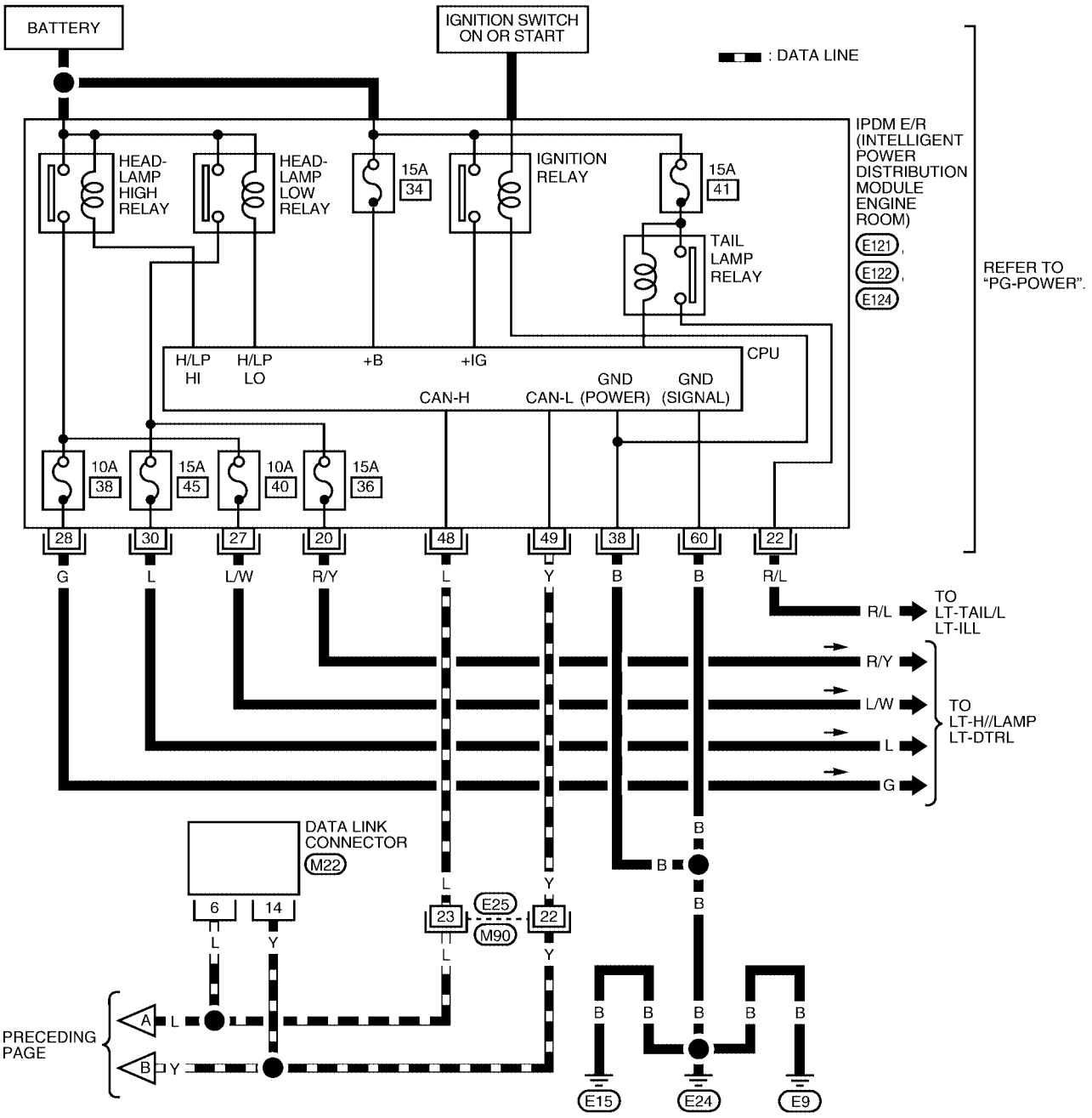


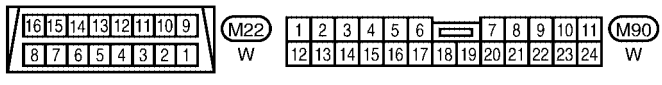


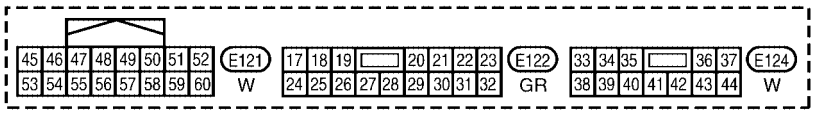
REFER TO THE FOLLOWING.
M18, M20 - ELECTRICAL UNITS

WKWA0547E

LT-AUTO/L-03



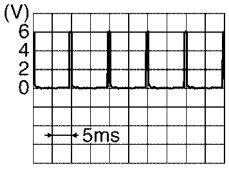
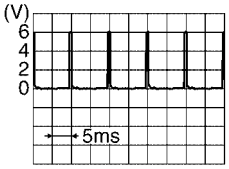
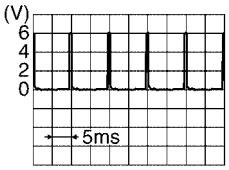


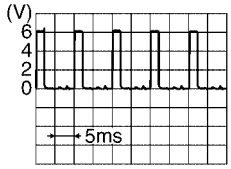
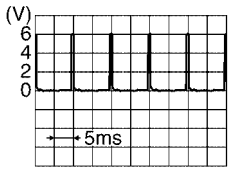


WKWA0548E

Terminals and Reference Values for BCM

EKS005M7

Terminal No.	Wire color	Signal name	Measuring condition			Reference value (Approx.)
			Ignition switch	Operation or condition		
2	GR/R	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5291E
3	G/Y	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5292E
4	G/R	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5291E
5	G/B	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5292E
6	G/W	Combination switch input 1				
11	V	Ignition switch (ACC)	ACC	—		Battery voltage
12	GR/L	Front door switch RH signal	OFF	Front door switch RH	ON (open)	0V
					OFF (closed)	Battery voltage
13	O/B	Sliding door switch RH signal	OFF	Sliding door switch RH	ON (open)	0V
					OFF (closed)	Battery voltage
18	P	Sensor ground	ON	—		0V
32	R/G	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5291E
33	R/Y	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5292E

Terminal No.	Wire color	Signal name	Measuring condition			Reference value (Approx.)
			Ignition switch	Operation or condition		
34	R	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5291E
35	R/B	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5292E
36	R/W	Combination switch output 1				
38	G	Ignition switch (ON)	ON	—		Battery voltage
39	L	CAN-H	—	—		—
40	Y	CAN-L	—	—		—
42	Y/G	Battery power supply	OFF	—		Battery voltage
43	W/R	Optical sensor signal	ON	When optical sensor is illuminated		3.1 V or more[Note]
				When optical sensor is not illuminated		0.6 V or less
49*	B	Ground	ON	—		0V
52	B/W	Ground	ON	—		0V
55	W/B	Battery power supply	OFF	—		Battery voltage
58	O	Back door switch signal	OFF	Back door switch	ON (open)	0V
					OFF (closed)	Battery voltage
62	GR/R	Front door switch LH signal	OFF	Front door switch LH	ON (open)	0V
					OFF (closed)	Battery voltage
63	W/G	Sliding door switch LH signal	OFF	Sliding door switch LH	ON (open)	0V
					OFF (closed)	Battery voltage

* Early production

NOTE:
Optical sensor must be completely subjected to work lamp light. If the optical sensor is insufficiently illuminated, the measured value may not satisfy standard.

Terminals and Reference Values for IPDM E/R

EKS005M8

Terminal No.	Wire color	Signal name	Measuring condition			Reference value (Approx.)
			Ignition switch	Operation or condition		
20	R/Y	Headlamp low (RH)	ON	Lighting switch 2ND position	OFF	0V
					ON	Battery voltage
22	R/L	Parking, license, and tail lamp	ON	Lighting switch 1ST position	OFF	0V
					ON	Battery voltage
27	L/W	Headlamp high (RH)	ON	Lighting switch HIGH or PASS position	OFF	0V
					ON	Battery voltage

Terminal No.	Wire color	Signal name	Measuring condition			Reference value (Approx.)
			Ignition switch	Operation or condition		
28	G	Headlamp high (LH)	ON	Lighting switch HIGH or PASS position	OFF	0V
					ON	Battery voltage
30	L	Headlamp low (LH)	ON	Lighting switch 2ND position	OFF	0V
					ON	Battery voltage
38	B	Ground	ON	—		0V
48	L	CAN-H	—	—		—
49	Y	CAN-L	—	—		—
60	B	Ground	ON	—		0V

How to Proceed With Trouble Diagnosis

EKS005M9

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-40, "System Description" .
3. Carry out the Preliminary Check. Refer to LT-48, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction. Refer to LT-55, "Trouble Diagnosis Chart by Symptom" .
5. Does the auto light system operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

EKS005MA

SETTING CHANGE FUNCTIONS

- Sensitivity of auto light system can be adjusted using CONSULT-II. Refer to LT-51, "WORK SUPPORT" .

CHECK BCM CONFIGURATION

1. CHECK BCM CONFIGURATION

- Confirm BCM configuration for "AUTO LIGHT" is set to "WITH". Refer to BCS-14, "READ CONFIGURATION PROCEDURE" .

OK or NG

OK >> Continue preliminary check. Refer to LT-48, "CHECK POWER SUPPLY AND GROUND CIRCUIT" .

NG >> Change BCM configuration for "AUTO LIGHT" to "WITH". Refer to BCS-16, "WRITE CONFIGURATION PROCEDURE" .

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES OR FUSIBLE LINK

Check for blown fuses or fusible link.

Unit	Power source	Fuse No.
BCM	Battery	j
		3
	Ignition switch ON or START position	16
	Ignition switch ACC or ON position	4
IPDM E/R	Battery	34
		36
		38
		40
		41
		45

Refer to LT-43, "Wiring Diagram — AUTO/L —" .

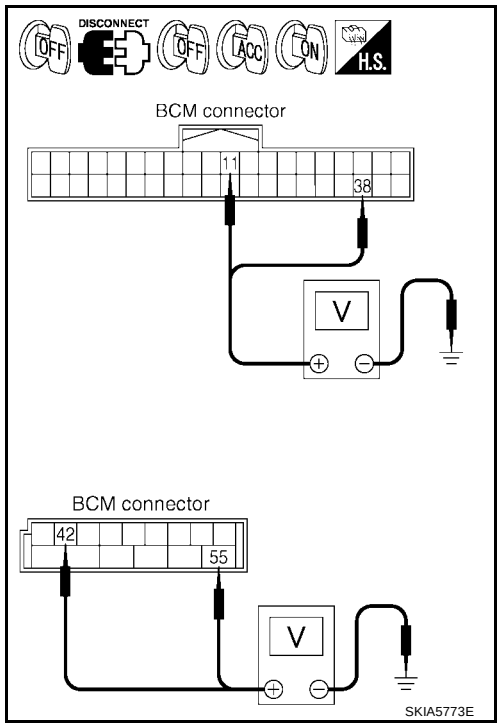
OK or NG

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

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect BCM connectors.
2. Check voltage between BCM harness connector and ground.

Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M18	11 (V)	Ground	0V	Battery voltage	Battery voltage
	38 (G)		0V	0V	Battery voltage
M19	42 (Y/G)		Battery voltage	Battery voltage	Battery voltage
	55 (W/B)		Battery voltage	Battery voltage	Battery voltage



OK or NG

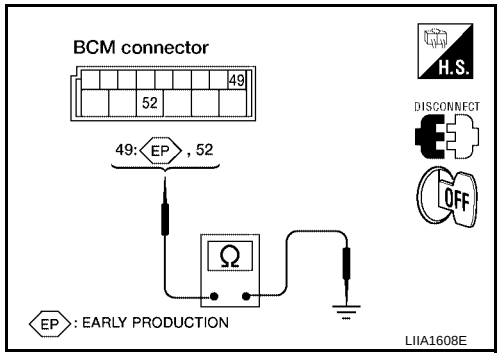
OK >> GO TO 3.
NG >> Check harness for open between BCM and fuse.

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

Terminals			Continuity
Connector	Terminal (Wire color)		
M19	49* (B)	Ground	Yes
	52 (B/W)		

* Early production



OK or NG

OK >> Inspection End.
NG >> Check ground circuit harness.

CONSULT-II Function (BCM)

EKS005MB

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

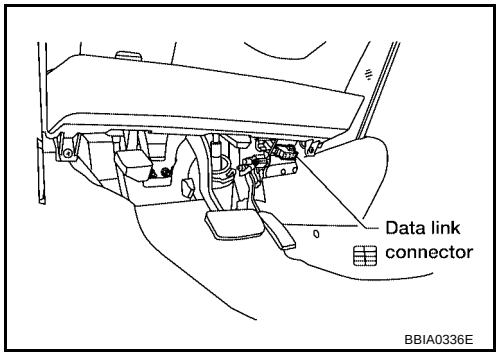
BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	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 OPERATION

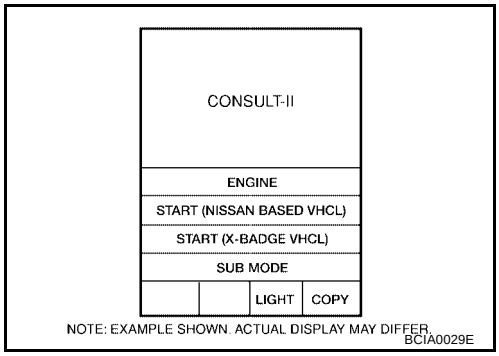
CAUTION:

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

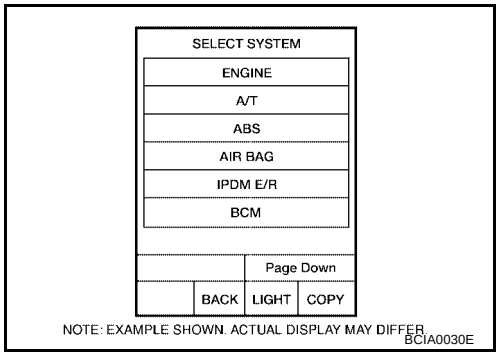
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



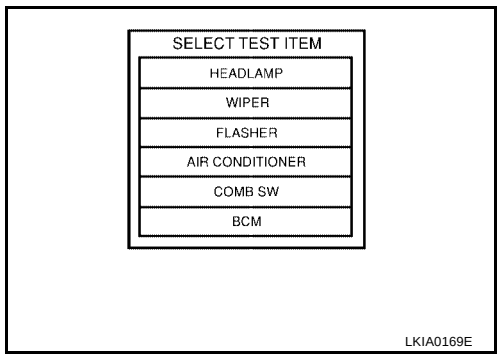
2. Touch "START (NISSAN BASED VHCL)".



3. Touch "BCM" on "SELECT SYSTEM" screen.
   If "BCM" is not indicated, go to GI-37, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.



WORK SUPPORT

Operation Procedure

1. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Touch "WORK SUPPORT" on "SELECT DIAG MODE" screen.
3. Touch "CUSTOM A/LIGHT SETTING" or "ILL DELAY SET" on "SELECT WORK ITEM" screen.
4. Touch “START”.
5. Touch "MODE 1-4" of setting to be changed (CUSTOM A/LIGHT SETTING). Touch "MODE1-8" of setting to be changed (ILL DELAY SET).
6. Touch "CHANGE SETT".
7. The setting will be changed and "CUSTOMIZING COMPLETED" will be displayed.
8. Touch "END".

Work Support Setting Item

- Sensitivity of auto light can be selected and set from four modes.

Work item	Description
CUSTOM A/LIGHT SETTING	Auto light sensitivity can be changed in this mode. Sensitivity can be adjusted in four modes. ● MODE 1 (Normal)/ MODE 2 (Sensitive)/MODE 3 (Desensitized)/MODE4 (Insensitive)
ILL DELAY SET	Auto light delay off timer period can be changed in this mode. Selects auto light delay off timer period among eight modes. ● MODE 1 (45 sec.)/MODE 2 (OFF)/MODE 3 (30 sec.)/MODE 4 (60 sec.)/MODE 5 (90 sec.)/ MODE 6 (120 sec.)/MODE 7 (150 sec.)/MODE 8 (180 sec.)

DATA MONITOR

Operation Procedure

1. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Touch either "ALL SIGNALS" or "SELECTION FROM MENU" on the "SELECT MONITOR ITEM" screen.

All signals	Monitors all the signals.
Selection from menu	Selects and monitors individual signal.

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

Display Item List

Monitor item		Contents
IGN ON SW	"ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
ACC ON SW	"ON/OFF"	Displays "ACC (ON)/OFF, Ignition OFF (OFF)" status judged from ignition switch signal.
HI BEAM SW	"ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.

Monitor item		Contents
HEAD LAMP SW 1	"ON/OFF"	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1ST	"ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW	"ON/OFF"	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
PASSING SW	“ON/OFF”	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW	"ON/OFF"	Displays status (front fog lamp switch: ON/Others: OFF) of front fog lamp switch judged from lighting switch signal.
DOOR SW-DR	"ON/OFF"	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-AS	"ON/OFF"	Displays status of the passenger door as judged from the passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-RR	"ON/OFF"	Displays status of the sliding door as judged from the sliding door switch (RH) signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-RL	"ON/OFF"	Displays status of the sliding door as judged from the sliding door switch (LH) signal. (Door is open: ON/Door is closed: OFF)
BACK DOOR SW	"ON/OFF"	Displays status of the back door as judged from the back door switch signal. (Door is open: ON/Door is closed: OFF)
TURN SIGNAL R	"ON/OFF"	Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L	"ON/OFF"	Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
CARGO LAMP SW	"ON/OFF"	Displays status of cargo lamp.
OPTICAL SENSOR	[0 - 5V]	Displays "ambient light (close to 5V when dark/close to 0V when light)" judged from optical sensor signal.

ACTIVE TEST

Operation Procedure

1. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Touch item to be tested and check operation of the selected item.
4. During the operation check, touching "BACK" deactivates the operation.

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON-OFF.
HEAD LAMP	Allows headlamp relay (HI, LO) to operate by switching ON-OFF.
FR FOG LAMP	Allows fog lamp relay to operate by switching ON-OFF.
CARGO LAMP	Allows cargo lamp to operate by switching ON-OFF.
CORNERING LAMP	Allows cornering lamp relay (RH, LH) to operate by switching ON-OFF.

CONSULT-II Function (IPDM E/R)

EKS005MC

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

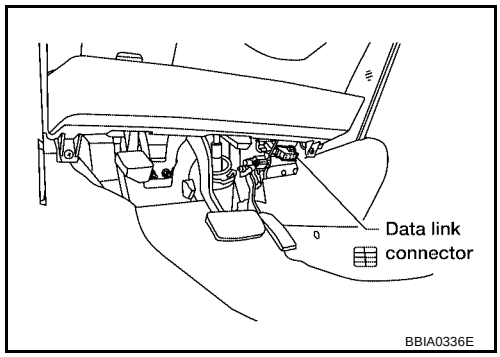
IPDM E/R diagnostic Mode	Description
SELF-DIAG RESULTS	Displays IPDM E/R self-diagnosis results.
DATA MONITOR	Displays IPDM E/R input/output data in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.

CONSULT-II OPERATION

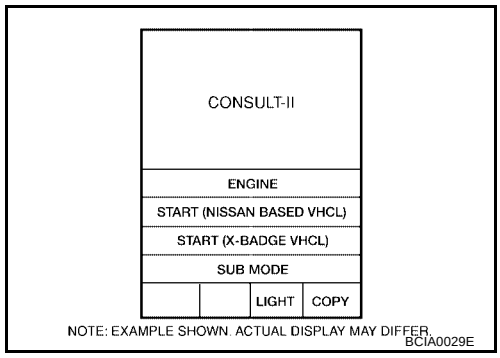
CAUTION:

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

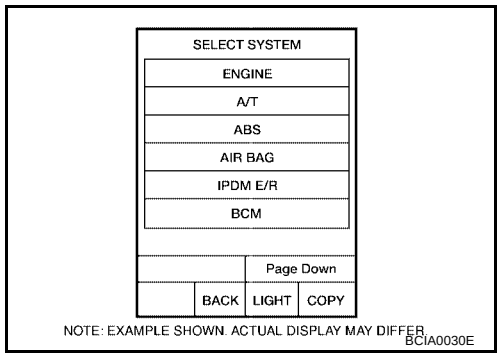
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn the ignition switch ON.



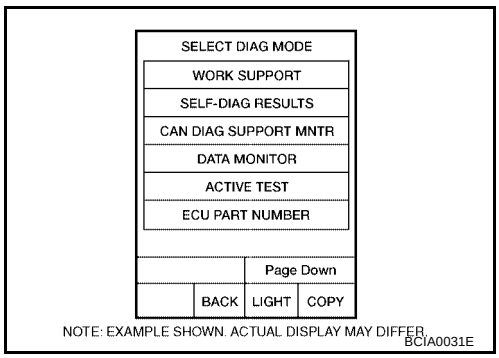
2. Touch "START (NISSAN BASED VHCL)".



3. Touch "IPDM E/R" on "SELECT SYSTEM" screen.
If "IPDM E/R" is not displayed, go to GI-37, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Select the desired part to be diagnosed on the "SELECT DIAG MODE" screen.



DATA MONITOR

Operation Procedure

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

ALL SIGNALS	All items will be monitored.
MAIN SIGNALS	Monitor the predetermined item.
SELECTION FROM MENU	Select any item for monitoring.

3. Touch "START".
4. Touch the required monitoring item on "SELECTION FROM MENU". In "ALL SIGNALS", all items are monitored. In "MAIN SIGNALS", predetermined items are monitored.
5. Touch "RECORD" while monitoring to record the status of the item being monitored. To stop recording, touch "STOP".

All Items, Main Items, Select Item Menu

Item name	CONSULT-II screen display	Display or unit	Monitor item selection			Description
			ALL SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
Position lights request	TAIL&CLR REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp low beam request	HL LO REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp high beam request	HL HI REQ	ON/OFF	×	×	×	Signal status input from BCM
Front fog lights request	FR FOG REQ	ON/OFF	×	×	×	Signal status input from BCM
Cornering lamp	CRNRNG LMP REQ	ON/OFF	×	–	×	Signal status input from BCM

NOTE:
Perform monitoring of IPDM E/R data with the ignition switch ON. When the ignition switch is at ACC, the display may not be correct.

ACTIVE TEST

Operation Procedure

1. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Touch item to be tested, and check operation.
3. Touch "START".
4. Touch "STOP" while testing to stop the operation.

Test item	CONSULT-II screen display	Description
Tail lamp relay output	TAIL LAMP	Allows tail lamp relay to operate by switching operation ON-OFF at your option.

Test item	CONSULT-II screen display	Description
Headlamp relay (HI, LO) output	LAMPS	Allows headlamp relay (HI, LO) to operate by switching operation (OFF, HI, LO) at your option (Headlamp high beam repeats ON-OFF every 1 second).
Front fog lamp relay output		Allows fog lamp relay to operate by switching operation ON-OFF at your option.
Cornering lamp relay (RH, LH) output	CORNERING LAMP	Allows cornering lamp relay (RH, LH) to operate by switching operation ON-OFF at your option.

Trouble Diagnosis Chart by Symptom

EKS005MD

Trouble phenomenon	Malfunction system and reference
● Parking lamps and headlamps will not illuminate when outside of the vehicle becomes dark. (Lighting switch 1st position and 2nd position operate normally.) ● Parking lamps and headlamp will not go out when outside of the vehicle becomes light. (Lighting switch 1st position and 2nd position operate normally.) ● Headlamps go out when outside of the vehicle becomes light, but parking lamps stay on.	● Refer to LT-51, "WORK SUPPORT" . ● Refer to LT-55, "Lighting Switch Inspection" . ● Refer to LT-56, "Optical Sensor System Inspection" . If above systems are normal, replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .
Parking lamps illuminate when outside of the vehicle becomes dark, but headlamps stay off. (Lighting switch 1st position and 2nd position operate normally.)	● Refer to LT-51, "WORK SUPPORT" . ● Refer to LT-56, "Optical Sensor System Inspection" . If above systems are normal, replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .
Auto light adjustment system will not operate. (Lighting switch AUTO, 1st position and 2nd position operate normally.)	● Refer to LT-56, "Optical Sensor System Inspection" . If above system is normal, replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .
Auto light adjustment system will not operate.	● CAN communication line to BCM inspection. Refer to BCS-13, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .
Shut off delay feature will not operate.	● CAN communication line inspection between BCM and combination meter. Refer to BCS-13, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" . ● Refer to BL-40, "Door Switch Check (Without Automatic Back Door System)" . If above system is normal, replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .

Lighting Switch Inspection

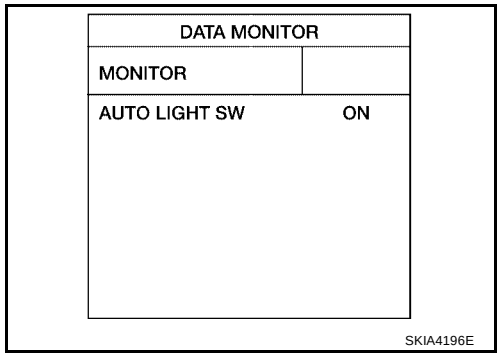
EKS005ME

1. CHECK LIGHTING SWITCH INPUT SIGNAL

With CONSULT-II

Select “BCM” on CONSULT-II. With “HEAD LAMP” data monitor, make sure “AUTO LIGHT SW” turns ON-OFF linked with operation of lighting switch.

When lighting switch is in AUTO position : AUTO LIGHT SW ON



Without CONSULT-II

Refer to LT-102, "Combination Switch Inspection" .

OK or NG

OK >> Inspection End.

NG >> Check lighting switch. Refer to LT-102, "Combination Switch Inspection" .

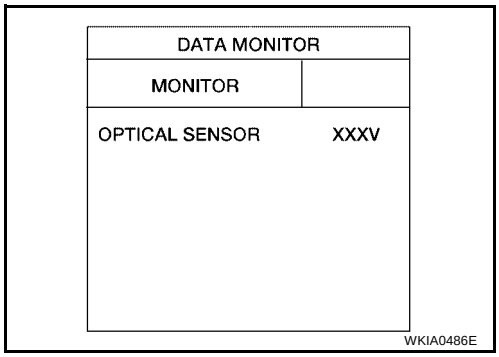
Optical Sensor System Inspection

EKS005MF

1. CHECK OPTICAL SENSOR INPUT SIGNAL

With CONSULT-II

Select “BCM” on CONSULT-II. With “OPTICAL SENSOR” data monitor, check difference in the voltage when the optical sensor is illuminated and not illuminated.



Illuminated

OPTICAL SENSOR : 3.0V or less

Not illuminated

OPTICAL SENSOR : 3.1V or more

CAUTION:

Optical sensor must be completely subjected to work lamp light. If the optical sensor is insufficiently illuminated, the measured value may not satisfy the standard.

Without CONSULT-II

GO TO 2.

OK or NG

OK >> Inspection End.

NG >> GO TO 2.

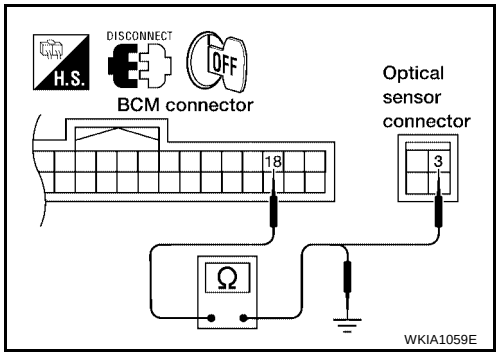
2. CHECK OPTICAL SENSOR SIGNAL GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and optical sensor connector.
3. Check continuity (open circuit) between BCM harness connector M18 terminal 18 (P) and optical sensor harness connector M402 terminal 3 (P).

18 (P) - 3 (P) : Continuity should exist.

4. Check continuity (short circuit) between BCM harness connector M18 terminal 18 (P) and ground.

18 (P) - Ground : Continuity should not exist.



OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

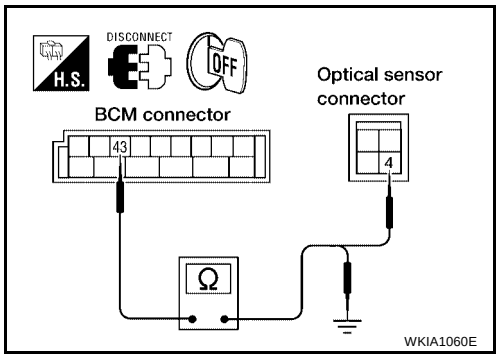
3. CHECK OPTICAL SENSOR SIGNAL CIRCUIT

1. Check continuity (open circuit) between BCM harness connector M19 terminal 43 (W/R) and optical sensor harness connector M402 terminal 4 (W/R).

43 (W/R) - 4 (W/R) : Continuity should exist.

2. Check continuity (short circuit) between BCM harness connector M19 terminal 43 (W/R) and ground.

43 (W/R) - Ground : Continuity should not exist.



OK or NG

OK >> Replace optical sensor. Refer to LT-57, "Removal and Installation of Optical Sensor" . Recheck sensor output with CONSULT-II. If NG, replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .

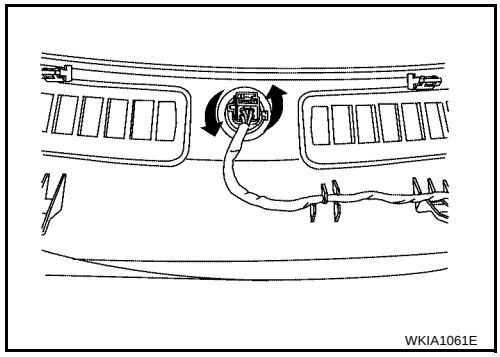
NG >> Repair harness or connector.

Removal and Installation of Optical Sensor

EKS005MG

REMOVAL

1. Remove defrost grille. Refer to IP-10, "Removal and Installation" .
2. Disconnect the connector.
3. Turn the optical sensor counterclockwise to remove it from defroster grille.



INSTALLATION

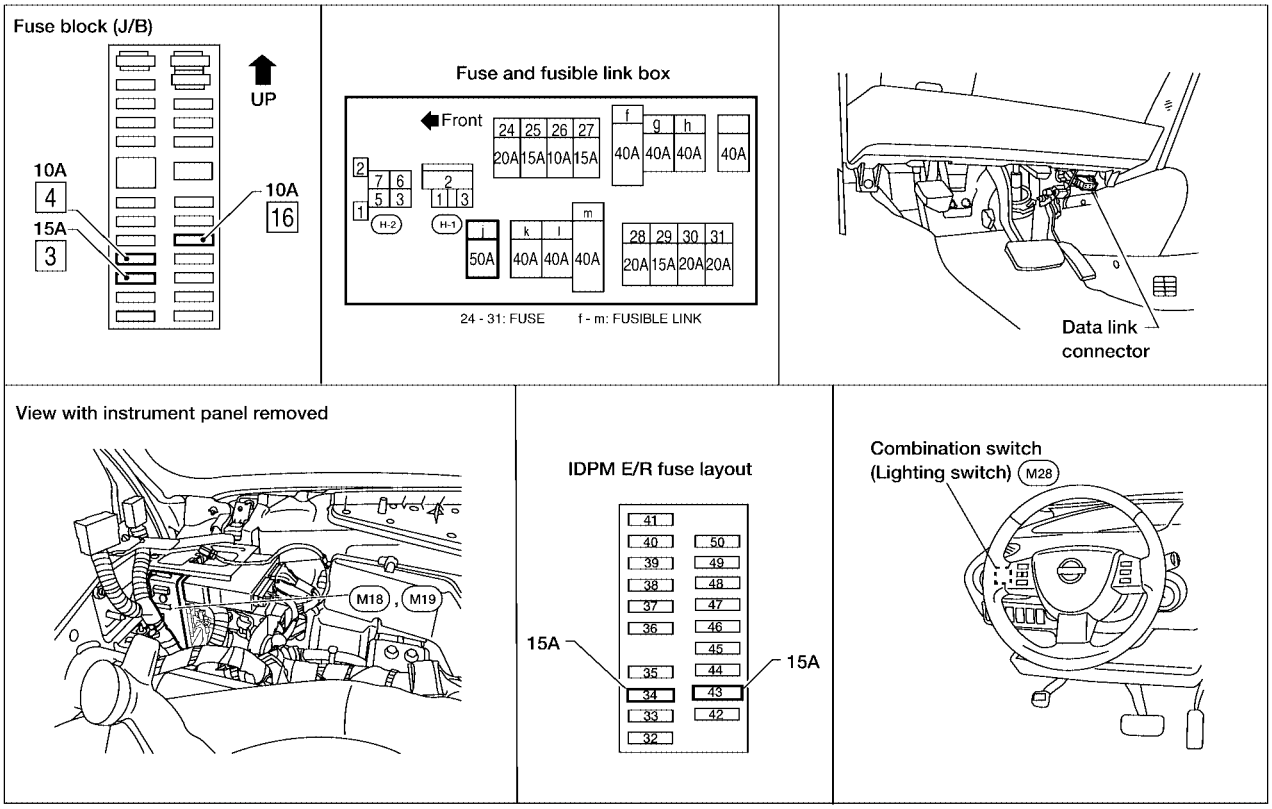
Install in the reverse order of removal.

FRONT FOG LAMP

PFP:26150

Component Parts and Harness Connector Location

EKS005MH



WKIA1062E

System Description

EKS005MI

Control of the fog lamps is dependent upon the position of the combination switch (lighting switch). The lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) for front fog lamp operation. When the lighting switch is placed in the fog lamp position, the BCM (body control module) receives input signal requesting the fog lamps to illuminate. When the headlamps are illuminated, this input signal is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The CPU (central processing unit) of the IPDM E/R controls the front fog lamp relay coil. When activated, this relay directs power to the front fog lamps.

OUTLINE

Power is supplied at all times

- through 15A fuse (No. 43, located in the IPDM E/R)
- to front fog lamp relay, located in the IPDM E/R, and
- through 15A fuse (No. 34, located in the IPDM E/R)
- to CPU of the IPDM E/R, and
- through 50A fusible link (letter **j** , located in the fuse and fusible link box)
- to BCM terminal 55, and
- through 15A fuse [No. 3, located in the fuse block (J/B)]
- to BCM terminal 42.

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

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

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

- through 10A fuse [No. 4, located in the fuse block (J/B)]

- to BCM terminal 11.

Ground is supplied

- to BCM terminals 49 (early production) and 52
- through grounds M57, M61 and M79, and
- to IPDM E/R terminals 38 and 60
- through grounds E9, E15 and E24.

FOG LAMP OPERATION

The fog lamp switch is built into the combination switch. The lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) and the fog lamp switch must be ON for fog lamp operation.
With the fog lamp switch in the ON position, the CPU of the IPDM E/R grounds the coil side of the fog lamp relay. The fog lamp relay then directs power

- through IPDM E/R terminal 37
- to front fog lamp LH terminal +, and
- through IPDM E/R terminal 36
- to front fog lamp RH terminal +.

Ground is supplied

- to front fog lamp LH and RH terminal –
- through grounds E9, E15 and E24.

With power and grounds supplied, the front fog lamps illuminate.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 2ND position (ON), the fog lamp switch is ON, and the ignition switch is turned from ON or ACC to OFF, the battery saver control feature is activated.
Under this condition, the fog lamps (and headlamps) remain illuminated for 5 minutes, then the fog lamps (and headlamps) are turned off.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

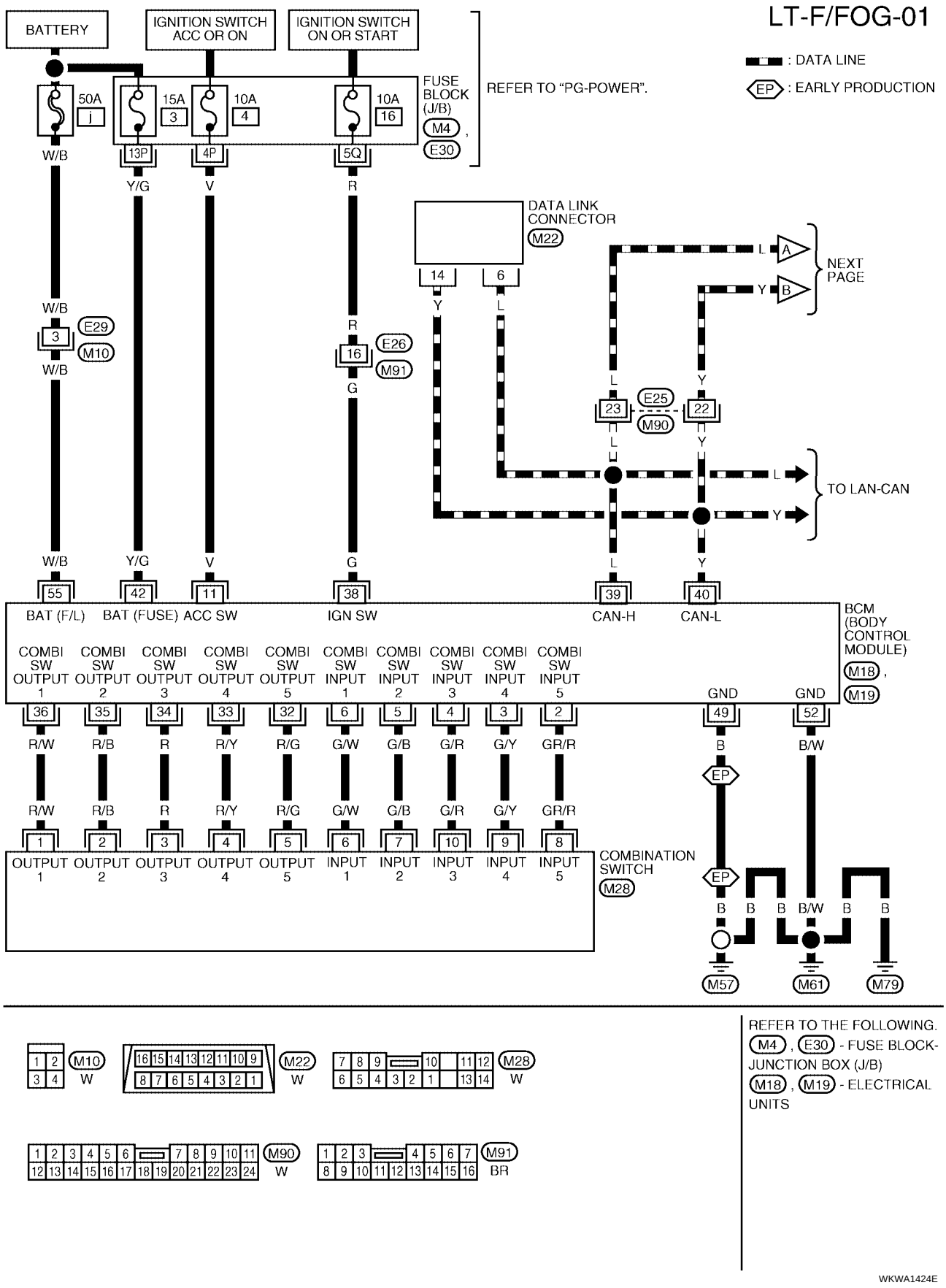
CAN Communication System Description

EKS005MJ

Refer to LAN-6, "CAN COMMUNICATION" .

Wiring Diagram — F/FOG —

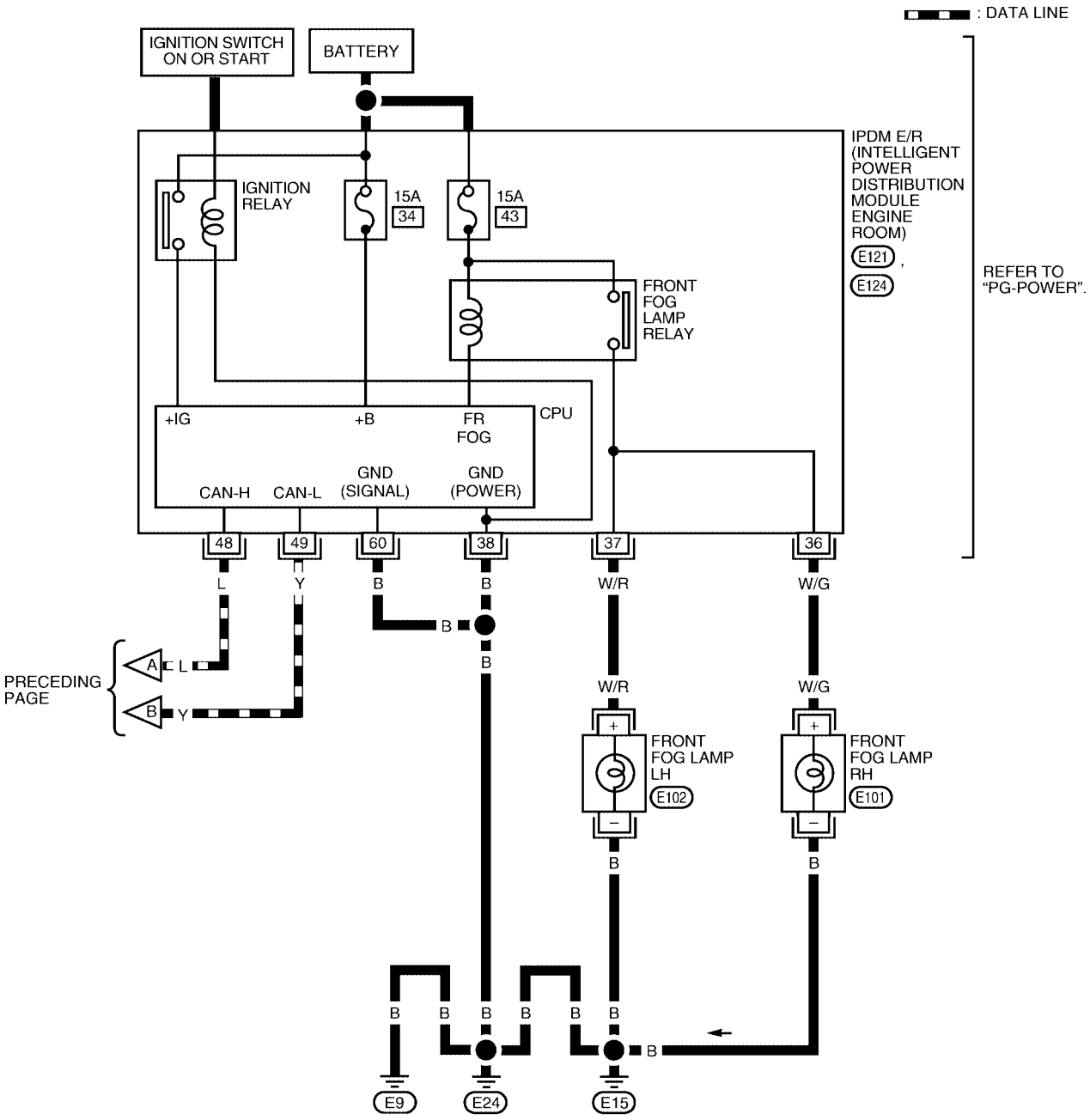
EKS005MK

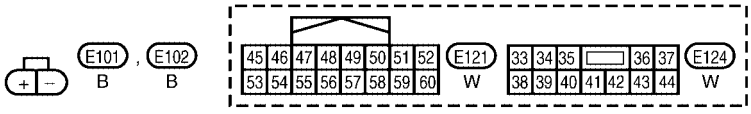


REFER TO THE FOLLOWING.
M4, E30 - FUSE BLOCK-JUNCTION BOX (J/B)
M18, M19 - ELECTRICAL UNITS

WKWA1424E

LT-F/FOG-02

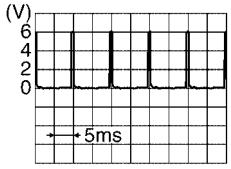
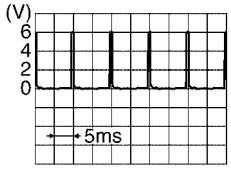
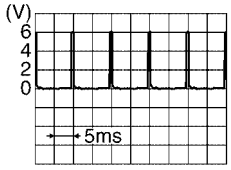


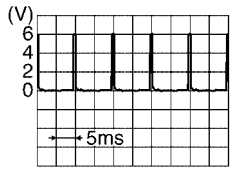


WKWA0550E

Terminals and Reference Values for BCM

EKS005ML

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
2	GR/R	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
3	G/Y	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
4	G/R	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
5	G/B	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
6	G/W	Combination switch input 1			
11	V	Ignition switch (ACC)	ACC	—	Battery voltage
32	R/G	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
33	R/Y	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
34	R	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
35	R/B	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
36	R/W	Combination switch output 1			
38	G	Ignition switch (ON)	ON	—	Battery voltage
39	L	CAN-H	—	—	—
40	Y	CAN-L	—	—	—
42	Y/G	Battery power supply	OFF	—	Battery voltage
49*	B	Ground	ON	—	0V
52	B/W	Ground	ON	—	0V
55	W/B	Battery power supply (fusible link)	OFF	—	Battery voltage

* Early production

Terminals and Reference Values for IPDM E/R

EKS005MM

Terminal No.	Wire color	Signal name	Measuring condition			Reference value (Approx.)
			Ignition switch	Operation or condition		
36	W/G	Front fog lamp (RH)	ON	Lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) and the front fog lamp switch must be ON	OFF	0V
					ON	Battery voltage
37	W/R	Front fog lamp (LH)	ON	Lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) and the front fog lamp switch must be ON	OFF	0V
					ON	Battery voltage
38	B	Ground	ON	—		0V
48	L	CAN-H	—	—		—
49	Y	CAN-L	—	—		—
60	B	Ground	ON	—		0V

How to Proceed With Trouble Diagnosis

EKS005MN

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-58, "System Description" .
3. Perform the Preliminary Check. Refer to LT-64, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the front fog lamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

EKS005MO

CHECK BCM CONFIGURATION

1. CHECK BCM CONFIGURATION

- Confirm BCM configuration for "FR FOG LAMP" is set to "WITH". Refer to BCS-14, "READ CONFIGURATION PROCEDURE" .

OK or NG

OK >> Continue preliminary check. Refer to LT-64, "CHECK POWER SUPPLY AND GROUND CIRCUIT" .

NG >> Change BCM configuration for "FR FOG LAMP" to "WITH". Refer to BCS-16, "WRITE CONFIGURATION PROCEDURE" .

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES OR FUSIBLE LINK

Check for blown fuses or fusible link.

Unit	Power source	Fuse No.
BCM	Battery	j
		3
	Ignition switch ON or START position	16
	Ignition switch ACC or ON position	4
IPDM E/R	Battery	34
		43

Refer to LT-60, "Wiring Diagram — F/FOG —" .

OK or NG

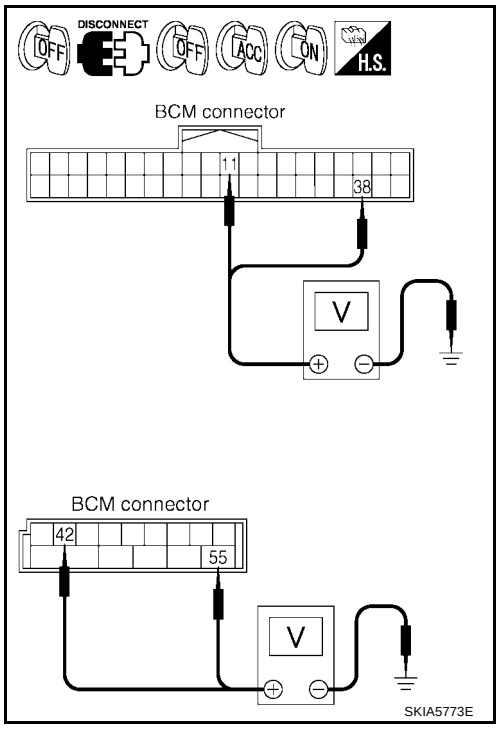
OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect BCM connectors.
2. Check voltage between BCM harness connector and ground.

Terminals			Ignition switch position		
(+)		(–)			
Connector	Terminal (Wire color)		OFF	ACC	ON
M18	11 (V)	Ground	0V	Battery voltage	Battery voltage
	38 (G)		0V	0V	Battery voltage
M19	42 (Y/G)		Battery voltage	Battery voltage	Battery voltage
	55 (W/B)		Battery voltage	Battery voltage	Battery voltage



OK or NG

OK >> GO TO 3.

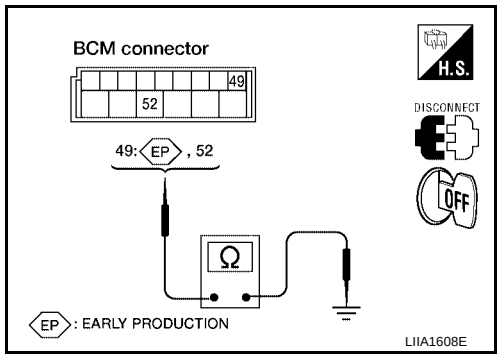
NG >> Check harness for open between BCM and fuse.

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

Terminals			Continuity
Connector	Terminal (Wire color)		
M19	49* (B)	Ground	Yes
	52 (B/W)		

* Early production



OK or NG

OK >> Inspection End.
NG >> Check ground circuit harness.

CONSULT-II Functions

EKS005MP

Refer to LT-14, "CONSULT-II Function (BCM)" in HEADLAMP (FOR USA).
Refer to LT-17, "CONSULT-II Function (IPDM E/R)" in HEADLAMP (FOR USA).

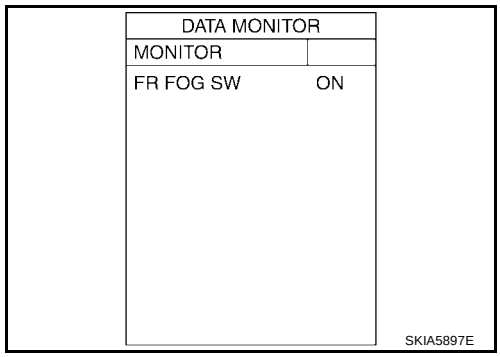
Front Fog Lamps Do Not Illuminate (Both Sides)

EKS006I1

1. CHECK COMBINATION SWITCH INPUT SIGNAL

Select “BCM” on CONSULT-II. With “HEAD LAMP” data monitor, make sure “FR FOG SW” turns ON-OFF linked with operation of lighting switch.

When lighting switch is in FOG position : FR FOG SW ON



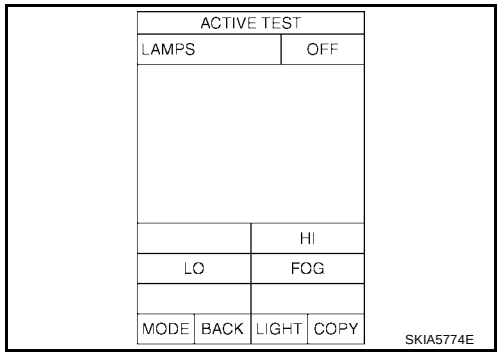
OK or NG

OK >> GO TO 2.
NG >> Check lighting switch. Refer to LT-102, "Combination Switch Inspection" .

2. FOG LAMP ACTIVE TEST

1. Select “IPDM E/R” on CONSULT-II, and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
2. Select “LAMPS” on “SELECT TEST ITEM” screen.
3. Touch “FOG” on "ACTIVE TEST" screen.
4. Make sure fog lamps operate.

Fog lamps should operate.



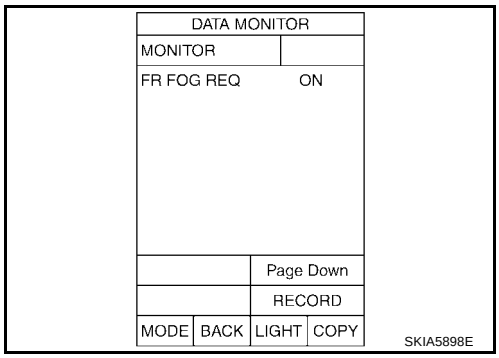
OK or NG

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

3. CHECK IPDM E/R

1. Select “IPDM E/R” on CONSULT-II, and select “DATA MONITOR” on “SELECT DIAG MODE” screen.
2. Make sure “FR FOG REQ” turns ON when lighting switch is in FOG position.

When lighting switch is in FOG position : FR FOG REQ ON



OK or NG

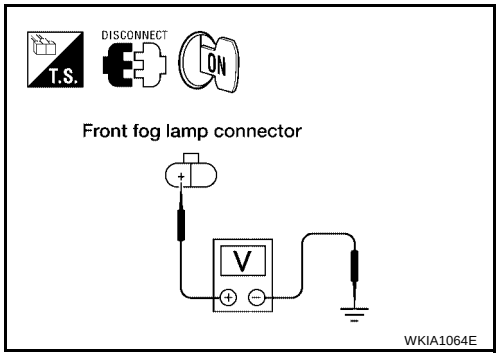
OK >> Replace IPDM E/R. Refer to PG-27, "Removal and Installation of IPDM E/R" .

NG >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .

4. IPDM E/R INSPECTION

Start auto active test. Refer to PG-21, "Auto Active Test" . When front fog lamp relay is operating, check voltage between left/right front fog lamp connector terminals and ground.

Terminals				Voltage (Approx.)
Front fog lamp (+)			(–)	
Connector		Terminal (wire color)		
RH	E101	+ (W/G)	Ground	Battery voltage
LH	E102	+ (W/R)		



OK or NG

OK >> Check front fog lamp bulbs and replace as necessary.

NG >> Replace IPDM E/R. Refer to PG-27, "Removal and Installation of IPDM E/R" .

Front Fog Lamp Does Not Illuminate (One Side)

EKS0066W

1. BULB INSPECTION

Inspect bulbs of lamps which do not illuminate.

OK or NG

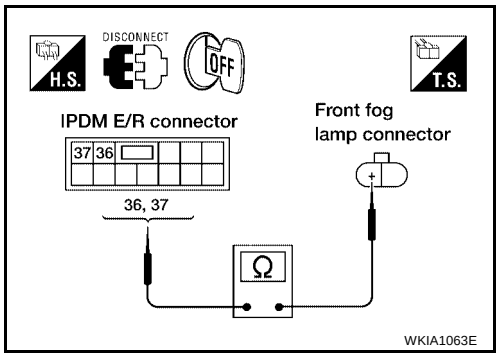
OK >> GO TO 2.

NG >> Replace lamp bulb. Refer to LT-68, "Bulb Replacement" .

2. INSPECTION BETWEEN IPDM E/R AND FRONT FOG LAMPS

1. Disconnect IPDM E/R connector and inoperative front fog lamp connector.
2. Check continuity between harness connector terminals of IPDM E/R and harness connector terminal of front fog lamps.

Terminals					Continuity
IPDM E/R		Front fog lamp			
Connector	Terminal (wire color)	Connector		Terminal (wire color)	
E124	36 (W/G)	RH	E101	+ (W/G)	Yes
	37 (W/R)	LH	E102	+ (W/R)	



OK or NG

OK >> Check ground circuit. If OK, replace IPDM E/R. Refer to PG-27, "Removal and Installation of IPDM E/R" . If NG, repair harness or connector.

NG >> Check for short circuits and open circuits in harness between IPDM E/R and front fog lamps.

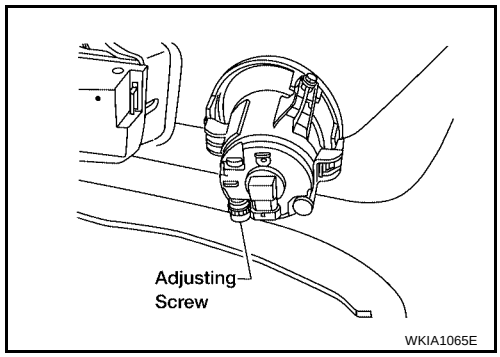
Aiming Adjustment

EKS0066X

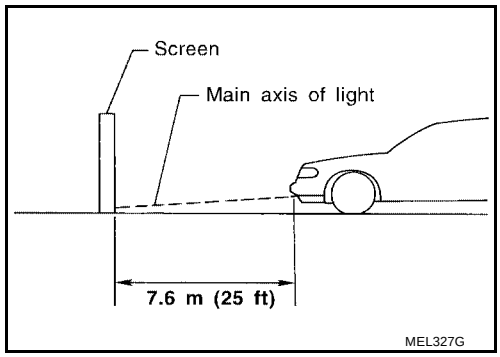
The fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb. Before performing aiming adjustment, make sure of the following.

- Keep all tires inflated to correct pressure.
- Place vehicle on level ground.
- See that vehicle is unloaded (except for full levels of coolant, engine oil and fuel, and spare tire, jack, and tools). Have the driver or equivalent weight placed in driver seat.

Adjust aiming in the vertical direction by turning the adjusting screw.

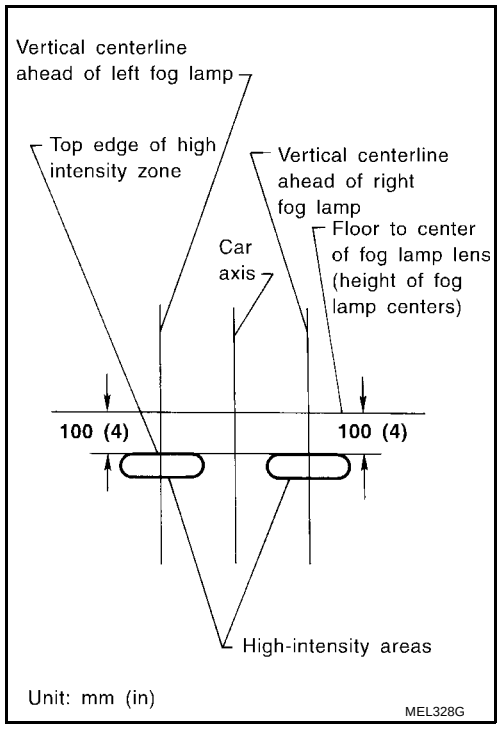


1. Set the distance between the screen and the center of the fog lamp lens as shown.
2. Turn front fog lamps ON.



3. Adjust front fog lamps using adjusting screw so that the top edge of the high intensity zone is 100 mm (4 in) below the height of the fog lamp centers as shown.

- When performing adjustment, if necessary, cover the headlamps and opposite fog lamp.



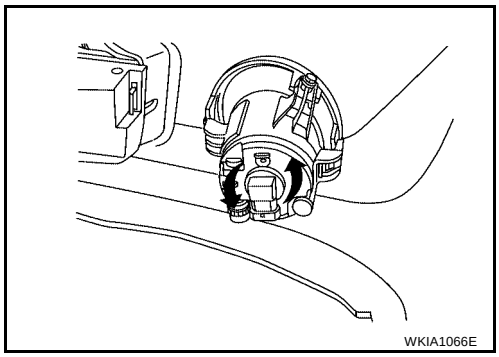
Bulb Replacement

EKS005MT

1. Position the front fender protector aside.
2. Disconnect electrical connector.
3. Turn the bulb counterclockwise to remove it.

CAUTION:

- **Do not touch the glass of bulb directly by hand. Keep grease and other oily matters away from it. Do not touch bulb by hand while it is lit or right after being turned off. Burning may result.**
- **Do not leave bulb out of fog lamp reflector for a long time because dust, moisture smoke, etc. May affect the performance of fog lamp. When replacing bulb, be sure to replace it with new one.**



Removal and Installation

EKS0066Y

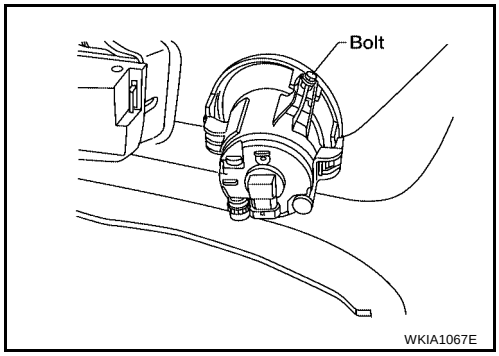
The fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb.

CAUTION:

- **Do not leave fog lamp assembly without bulb for a long period of time. Dust, moisture, smoke, etc. entering the fog lamp body may affect the performance. Remove the bulb from the headlamp assembly just before replacement bulb is installed.**
- **Grasp only the plastic base when handling the bulb. Never touch the glass envelope. Touching the glass could significantly affect the bulb life and/or fog lamp performance.**

1. Position the fender protector aside.
2. Disconnect electrical connector.
3. Remove bolt and pull fog lamp out of front fascia.

Install in the reverse order of removal.

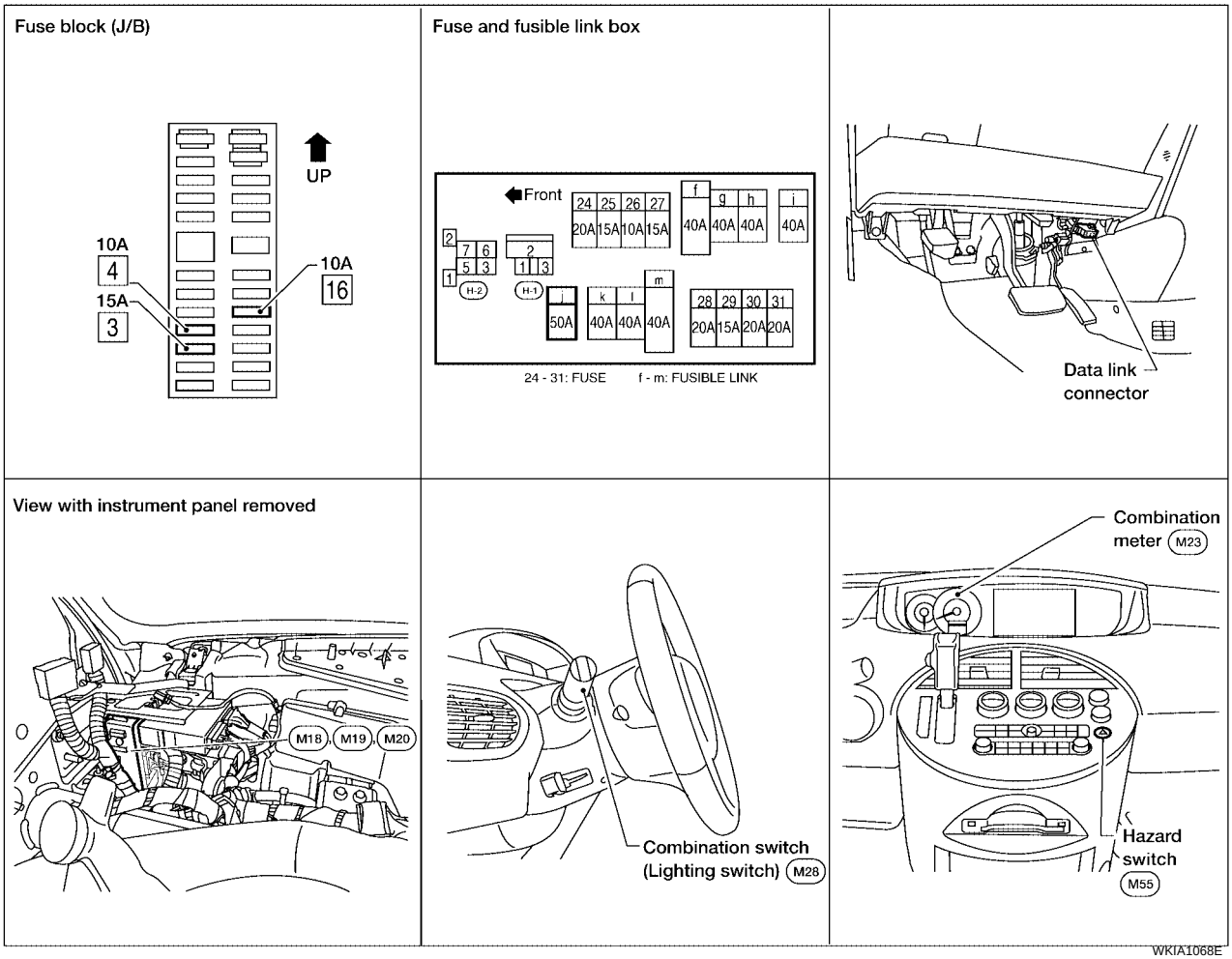


TURN SIGNAL AND HAZARD WARNING LAMPS

PFP:26120

Component Parts and Harness Connector Location

EKS005MV



System Description

EKS005MW

OUTLINE

Power is supplied at all times

- through 50A fusible link (letter **j** , located in the fuse and fusible link box)
- to BCM (body control module) terminal 55, and
- through 15A fuse [No. 3, located in the fuse block (J/B)]
- to BCM terminal 42, and
- through 15A fuse [No. 19, located in the fuse block (J/B)]
- to combination meter terminal 31.

TURN SIGNAL OPERATION

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

- through 10A fuse [No. 16, located in the fuse block (J/B)]
- to BCM terminal 38, and
- through 10A fuse [No. 14, located in the fuse block (J/B)]
- to combination meter terminal 30.

Ground is supplied

- to BCM terminals 49 (early production) and 52 and
- to combination meter terminal 32
- through grounds M57, M61 and M79.

LH Turn

When the turn signal switch is moved to the left position, BCM outputs turn signal from BCM terminal 45, interpreting it as turn signal is ON.
The BCM supplies power

- through BCM terminal 45
- to front combination lamp LH terminal 2
- through front combination lamp LH terminal 1
- to grounds E9, E15 and E24, and
- to rear combination lamp LH terminal 3
- through rear combination lamp LH terminal 5
- to grounds B7 and B19.

BCM sends signal to combination meter through CAN communication lines, and turns on turn signal indicator lamp within combination meter.

RH Turn

When the turn signal switch is moved to the right position, BCM outputs turn signal from BCM terminal 46, interpreting it as turn signal is ON.
The BCM supplies power

- through BCM terminal 46
- to front combination lamp RH terminal 2
- through front combination lamp RH terminal 1
- to grounds E9, E15 and E24, and
- to rear combination lamp RH terminal 3
- through rear combination lamp terminal 5
- to grounds B117 and B132.

BCM sends signal to combination meter through CAN communication lines, and turns on turn signal indicator lamp within combination meter.

HAZARD LAMP OPERATION

Power is supplied at all times

- through 50A fusible link (letter **j** , located in the fuse and fusible link box)
- to BCM terminal 55, and
- through 15A fuse [No. 19, located in the fuse block (J/B)]
- to combination meter terminal 31.

Ground is supplied

- through BCM terminals 49 (early production) and 52
- through combination meter terminal 32
- to grounds M57, M61 and M79.

When the hazard switch is depressed, ground is supplied

- through BCM terminal 29
- to hazard switch terminal 2
- through hazard switch terminal 1
- to grounds M57, M61 and M79.

When the hazard switch is depressed, BCM outputs turn signal from BCM terminals 45 and 46, interpreting it as turn signal is ON.
The BCM supplies power

- through BCM terminals 45 and 46
- to front combination lamp LH and RH terminal 2
- through front combination lamp LH and RH terminal 1
- to grounds E9, E15 and E24, and
- to rear combination lamp LH terminal 3
- through rear combination lamp LH terminal 5

- to grounds B7 and B19, and
- to rear combination lamp RH terminal 3
- through rear combination lamp terminal 5
- to grounds B117 and B132.

BCM sends signal to combination meter through CAN communication lines, and turns on turn signal indicator lamps within combination meter.

REMOTE KEYLESS ENTRY SYSTEM OPERATION

Power is supplied at all times

- through 50A fusible link (letter **j** , located in the fuse and fusible link box)
- to BCM terminal 55, and
- through 10A fuse [No. 3, located in the fuse block (J/B)]
- to BCM terminal 42, and
- through 15A fuse [No. 19, located in the fuse block (J/B)]
- to combination meter terminal 31.

Ground is supplied

- to BCM terminals 49 (early production) and 52 and
- to combination meter terminal 32
- through grounds M57, M61 and M79.

When the remote keyless entry system is triggered by input from the keyfob, BCM output turn signal from BCM terminals 45 and 46, interpreting it as turn signal is ON.
The BCM supplies power

- through BCM terminals 45 and 46
- to front combination lamp LH and RH terminal 2
- through front combination lamp LH and RH terminal 1
- to grounds E9, E15 and E24, and
- to rear combination lamp LH terminal 3
- through rear combination lamp LH terminal 5
- to grounds B7 and B19, and
- to rear combination lamp RH terminal 3
- through rear combination lamp terminal 5
- to grounds B117 and B132.

BCM sends signal to combination meter through CAN communication lines, and turns on turn signal indicator lamps within combination meter.
With power and input supplied, the BCM controls the flashing of the hazard warning lamps when keyfob is used to activate the remote keyless entry system.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

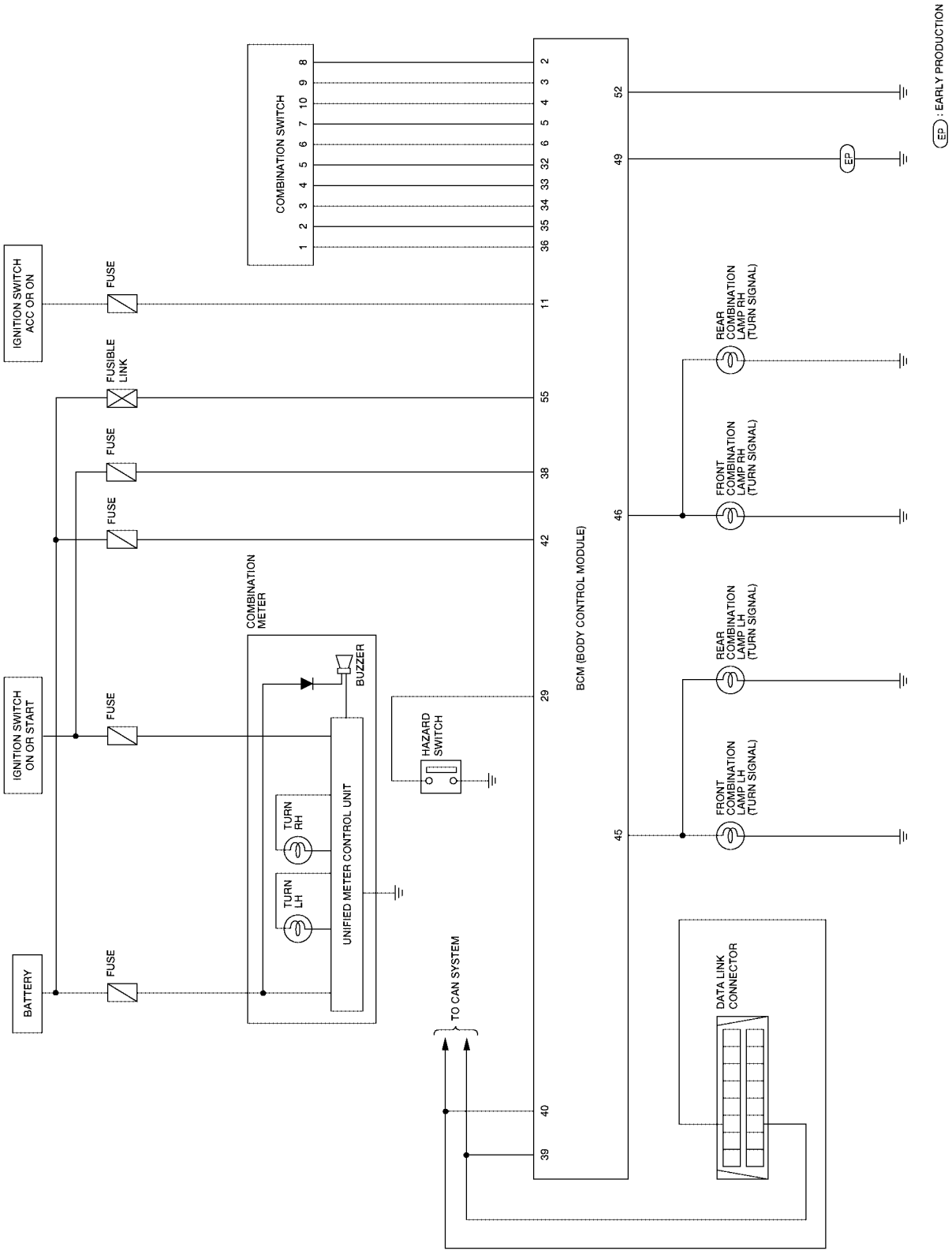
CAN Communication System Description

EKS005MX

Refer to LAN-6, "CAN COMMUNICATION" .

Schematic

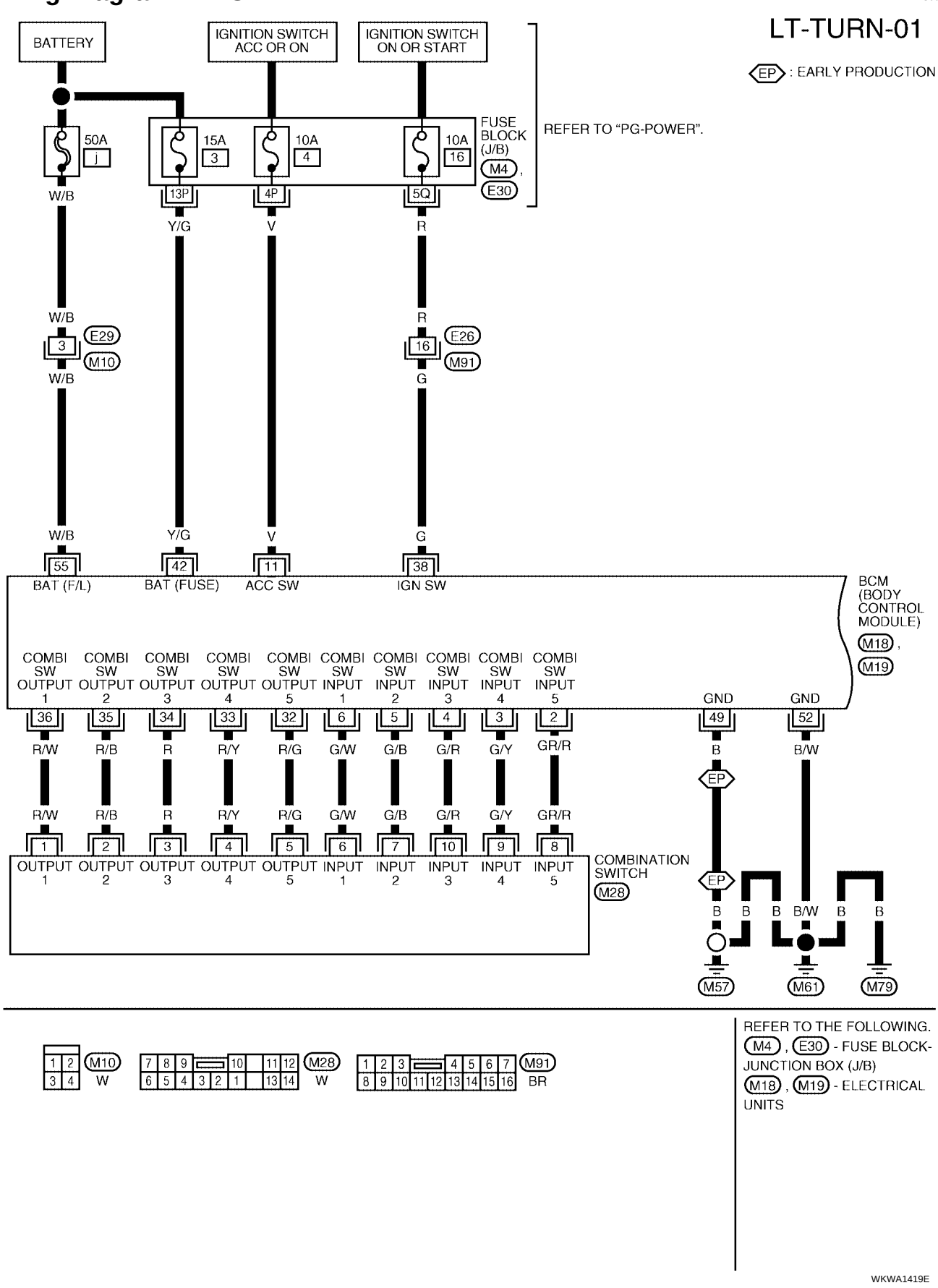
EKS005MY

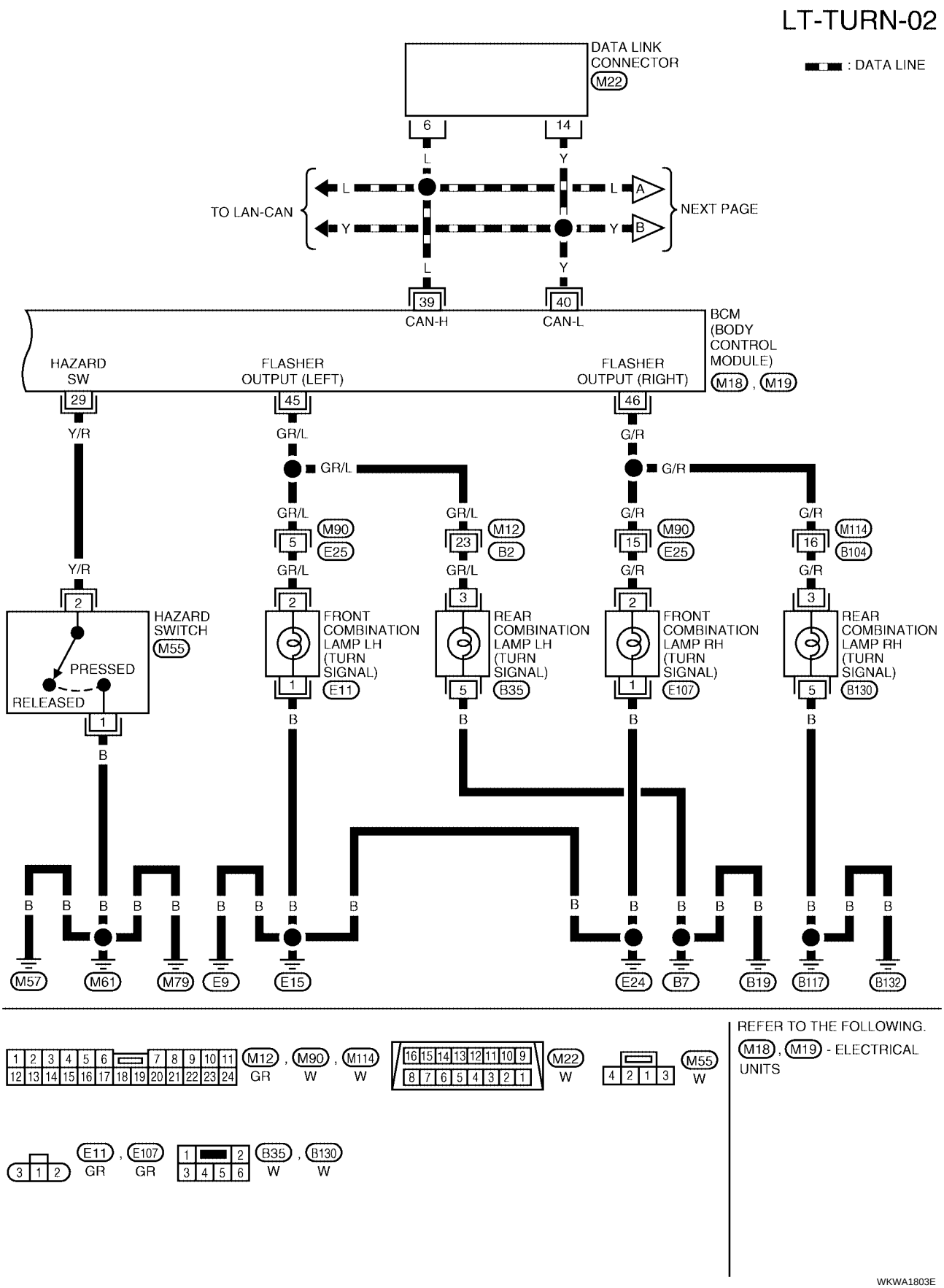


WKWA1677E

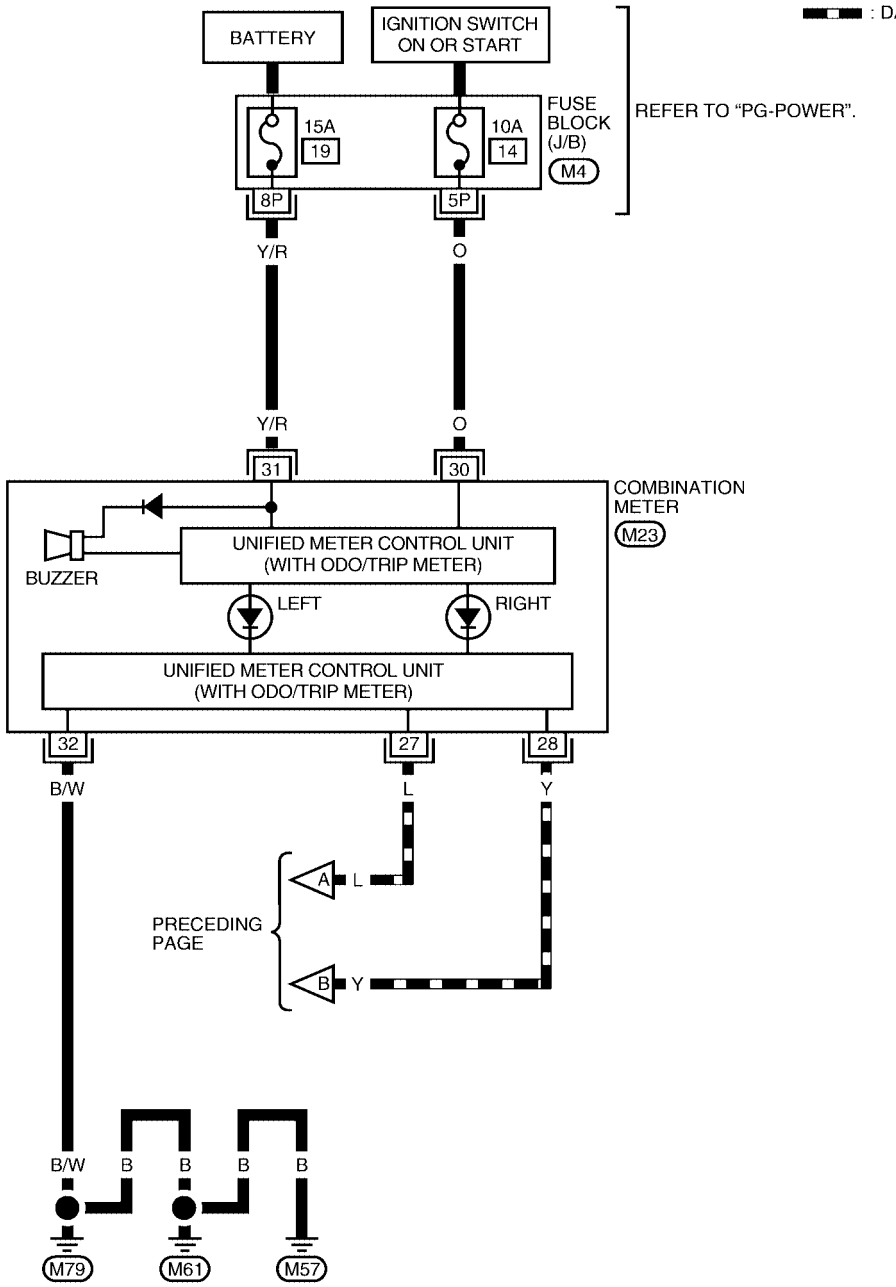
Wiring Diagram — TURN —

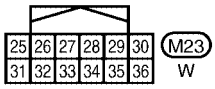
EKS005MZ




LT-TURN-02
: DATA LINE
DATA LINK CONNECTOR
M22
6
14
L
Y
TO LAN-CAN
L
Y
L
Y
A
B
NEXT PAGE
39
40
CAN-H
CAN-L
BCM (BODY CONTROL MODULE)
M18 , M19
HAZARD SW
FLASHER OUTPUT (LEFT)
FLASHER OUTPUT (RIGHT)
29
45
46
Y/R
GR/L
G/R
5
23
15
16
M90
E25
M12
B2
B104
M114
2
3
1
HAZARD SWITCH
M55
PRESSED
RELEASED
FRONT COMBINATION LAMP LH (TURN SIGNAL)
E11
REAR COMBINATION LAMP LH (TURN SIGNAL)
B35
FRONT COMBINATION LAMP RH (TURN SIGNAL)
E107
REAR COMBINATION LAMP RH (TURN SIGNAL)
B130
B
M57
M61
M79
E9
E15
E24
B7
B19
B117
B132
M12 , M90 , M114
GR
W
W
M22
W
M55
W
E11 , E107
GR
GR
B35 , B130
W
W
REFER TO THE FOLLOWING.
M18 , M19 - ELECTRICAL UNITS
WKWA1803E

LT-TURN-03



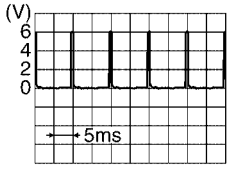
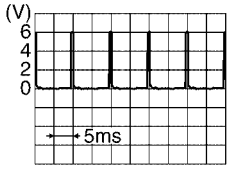
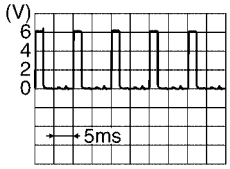
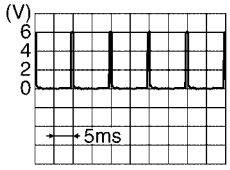


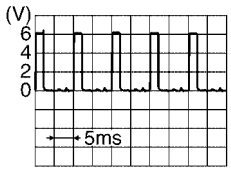
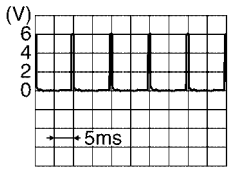
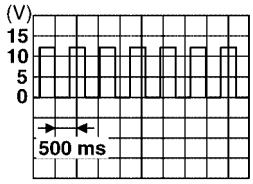
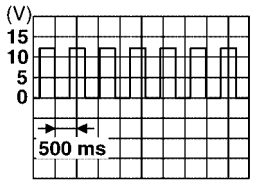
REFER TO THE FOLLOWING.
M4 - FUSE BLOCK - JUNCTION BOX (J/B)

WKWA0554E

Terminals and Reference Values for BCM

EKS005N0

Terminal No.	Wire color	Signal name	Measuring condition			Reference value (Approx.)
			Ignition switch	Operation or condition		
2	GR/R	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5291E
3	G/Y	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5292E
4	G/R	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5291E
5	G/B	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5292E
6	G/W	Combination switch input 1				
11	V	Ignition switch (ACC)	ACC	—		Battery voltage
29	Y/R	Hazard switch signal	OFF	Hazard switch	ON	0V
					OFF	5V
32	R/G	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5291E
33	R/Y	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5292E

Terminal No.	Wire color	Signal name	Measuring condition			Reference value (Approx.)
			Ignition switch	Operation or condition		
34	R	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5291E
35	R/B	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5292E
36	R/W	Combination switch output 1				
38	G	Ignition switch (ON)	ON	—		Battery voltage
39	L	CAN-H	—	—		—
40	Y	CAN-L	—	—		—
42	Y/G	Battery power supply	OFF	—		Battery voltage
45	GR/L	Turn signal (left)	ON	Combination switch	Turn left ON	 SKIA3009J
46	G/R	Turn signal (right)	ON	Combination switch	Turn right ON	 SKIA3009J
49*	B	Ground	ON	—		0V
52	B/W	Ground	ON	—		0V
55	W/B	Battery power supply	OFF	—		Battery voltage

* Early production

How to Proceed With Trouble Diagnosis

EKS005N1

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-69, "System Description" .
3. Perform preliminary check. Refer to LT-78, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Do turn signal and hazard warning lamps operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

EKS005N2

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES OR FUSIBLE LINK

Check for blown fuses or fusible link.

Unit	Power source	Fuse No.
BCM	Battery	j
	Battery	3
	Ignition switch ON or START position	16
	Ignition switch ACC or ON position	4

Refer to LT-73, "Wiring Diagram — TURN —" .

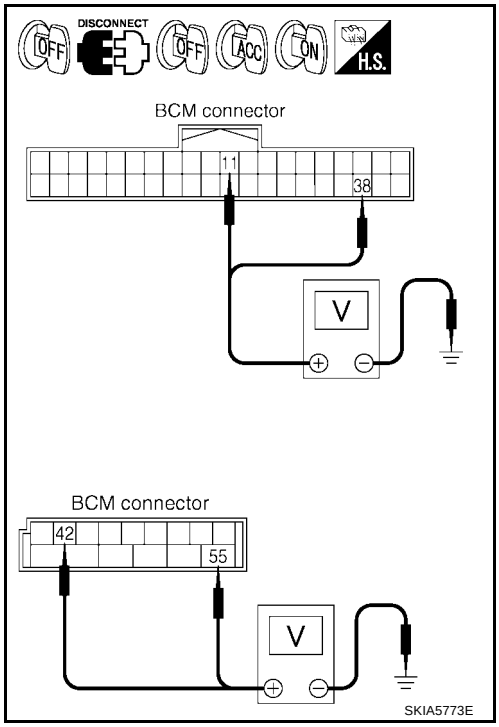
OK or NG

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

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect BCM connectors.
2. Check voltage between BCM harness connector and ground.

Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M18	11 (V)	Ground	0V	Battery voltage	Battery voltage
	38 (G)		0V	0V	Battery voltage
M19	42 (Y/G)		Battery voltage	Battery voltage	Battery voltage
	55 (W/B)		Battery voltage	Battery voltage	Battery voltage



OK or NG

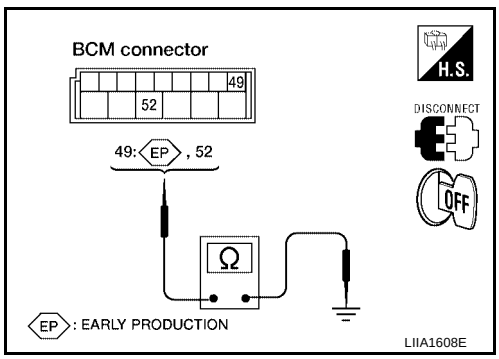
OK >> GO TO 3.
NG >> Check harness for open between BCM and fuse.

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

Terminals			Continuity
Connector	Terminal (Wire color)		
M19	49* (B)	Ground	Yes
	52 (B/W)		

* Early production



OK or NG

OK >> Inspection End.
NG >> Check ground circuit harness.

CONSULT-II Function (BCM)

EKS005N3

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

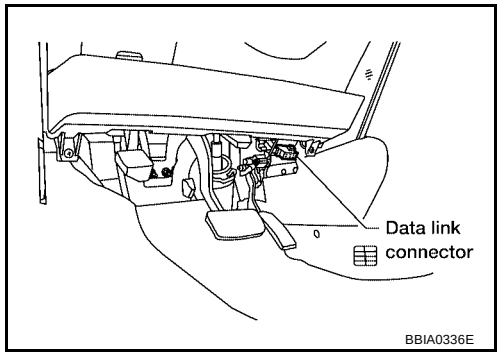
BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	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 OPERATION

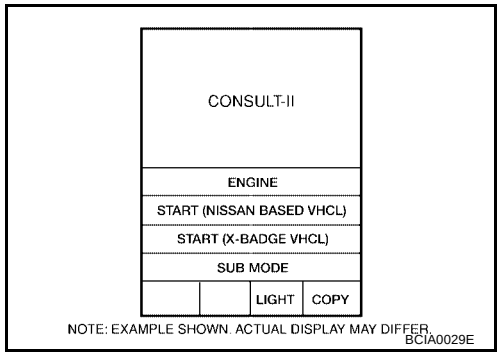
CAUTION:

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

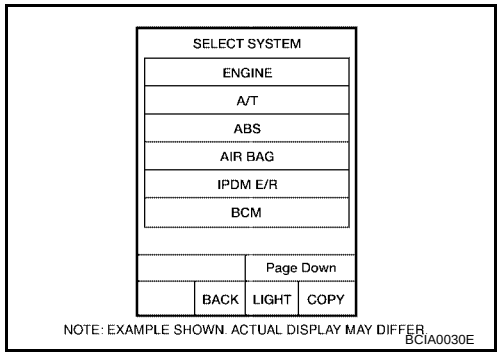
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



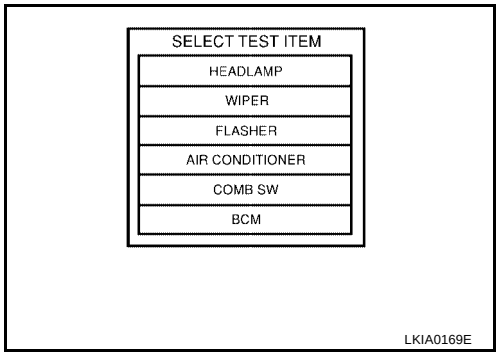
2. Touch "START (NISSAN BASED VHCL)".



3. Touch "BCM" on "SELECT SYSTEM" screen.
If "BCM" is not indicated, go to GI-37, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Touch "FLASHER" on "SELECT TEST ITEM" screen.



DATA MONITOR

Operation Procedure

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

All signals	Monitors all the signals.
Selection from menu	Selects and monitors the individual signal.

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

Display Item List

Monitor item		Contents
IGN ON SW	"ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
HAZARD SW	"ON/OFF"	Displays "Hazard ON (ON)/Hazard OFF (OFF)" status, determined from hazard switch signal.
TURN SIGNAL R	"ON/OFF"	Displays "Turn right (ON)/Other (OFF)" status, determined from lighting switch signal.
TURN SIGNAL L	"ON/OFF"	Displays "Turn left (ON)/Other (OFF)" status, determined from lighting switch signal.
BRAKE SW	"OFF"	Displays status of parking brake switch.

ACTIVE TEST

Operation Procedure

1. Touch "FLASHER" on "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Touch item to be tested and check operation of the selected item.
4. During the operation check, touching "BACK" deactivates the operation.

Display Item List

Test item	Description
FLASHER (RH)	Turn signal lamp (RH) can be operated by any ON-OFF operations.
FLASHER (LH)	Turn signal lamp (LH) can be operated by any ON-OFF operations.

Turn Signal Lamp Does Not Operate

EKS005N4

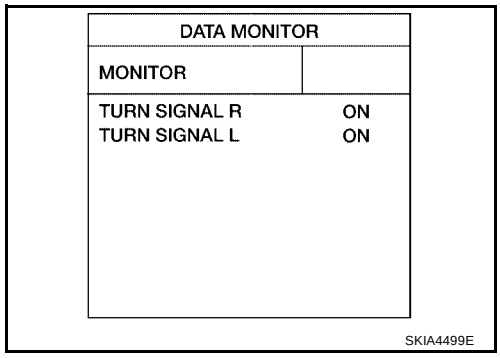
1. CHECK COMBINATION SWITCH INPUT SIGNAL

With CONSULT-II

Select “BCM” on CONSULT-II. With “FLASHER” data monitor, make sure “TURN SIGNAL R” and “TURN SIGNAL L” turns ON-OFF linked with operation of lighting switch.

When lighting switch is in TURN RH position : TURN SIGNAL R ON

When lighting switch is in TURN LH position : TURN SIGNAL L ON



Without CONSULT-II

Refer to LT-102, "Combination Switch Inspection" .

OK or NG

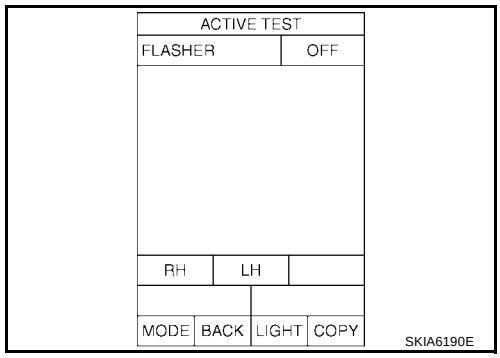
OK >> GO TO 2.

NG >> Check lighting switch. Refer to LT-102, "Combination Switch Inspection" .

2. ACTIVE TEST

With CONSULT-II

1. Select “FLASHER” during active test. Refer to LT-80, "ACTIVE TEST" .
2. Make sure “FLASHER RH” and “FLASHER LH” operate.



Without CONSULT-II

GO TO 3.

OK or NG

OK >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .

NG >> GO TO 3.

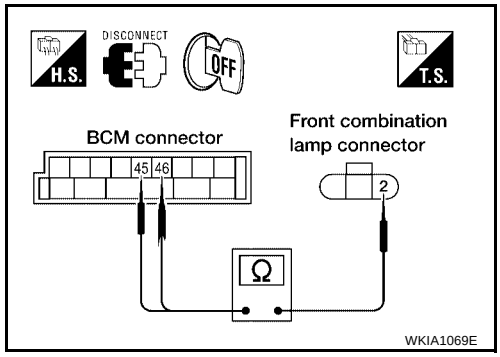
3. CHECK TURN SIGNAL LAMPS CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and front combination lamp LH and RH connectors.
3. Check continuity between BCM harness connector M19 terminal 45 (GR/L) and front combination lamp LH harness connector E11 terminal 2 (GR/L).

45 (GR/L) - 2 (GR/L) : Continuity should exist.

4. Check continuity between BCM harness connector M19 terminal 46 (G/R) and front combination lamp RH harness connector E107 terminal 2 (G/R).

46 (G/R) - 2 (G/R) : Continuity should exist.



OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.

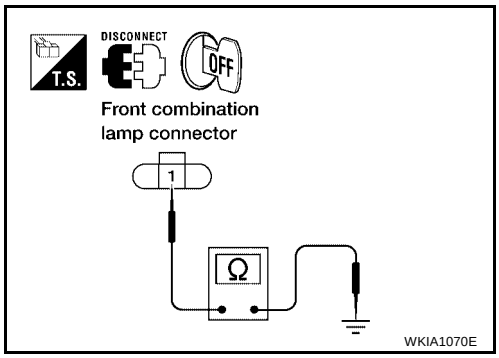
4. CHECK GROUND

1. Check continuity between front combination lamp LH harness connector E11 terminal 1 (B) and ground.

1 (B) - Ground : Continuity should exist.

2. Check continuity between front combination lamp RH harness connector E107 terminal 1 (B) and ground.

1 (B) - Ground : Continuity should exist.



OK or NG

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

5. CHECK BULB

Check bulb standard of each turn signal lamp is correct.

OK or NG

OK >> Replace BCM if turn signal lamps do not work after setting the connector again. Refer to BCS-19, "Removal and Installation of BCM" .
NG >> Replace turn signal lamp bulb. Refer to LT-27, "FRONT TURN SIGNAL/PARKING LAMP" .

Rear Turn Signal Lamp Does Not Operate

EKS005N5

1. CHECK TAIL LAMPS AND STOP LAMPS

Check bulb standard of each turn signal lamp is correct.

OK or NG

OK >> GO TO 2.
NG >> Replace turn signal lamp bulb. Refer to LT-124, "Bulb Replacement" .

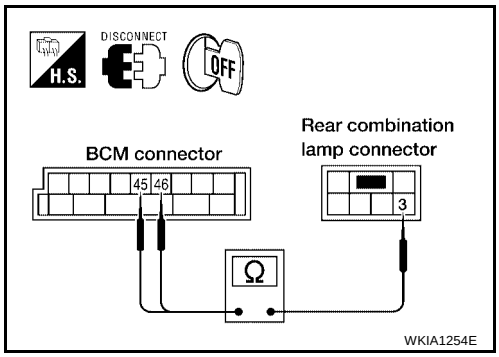
2. CHECK TURN SIGNAL LAMPS CIRCUIT

1. Disconnect BCM connector and rear combination lamp connector.
2. Check continuity between BCM harness connector M19 terminal 46 (G/R) and rear combination lamp RH harness connector B130 terminal 3 (G/R).

46 (G/Y) - 3 (G/R) : Continuity should exist.

3. Check continuity between BCM harness connector M19 terminal 45 (GR/L) and rear combination lamp LH harness connector B35 terminal 3 (GR/L).

45 (GR/L) - 3 (GR/L) : Continuity should exist.



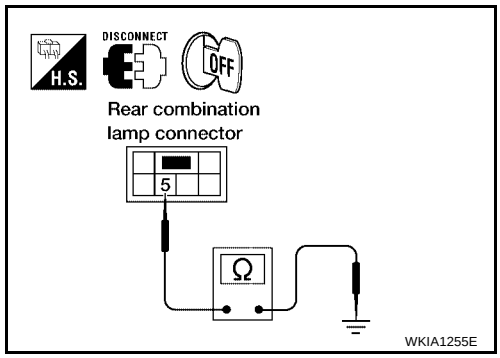
OK or NG

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

3. CHECK GROUND CIRCUIT

Check continuity between rear combination lamp harness connector B35 LH and B130 RH terminal 5 (B) and ground.

5 (B) - Ground : Continuity should exist.



OK or NG

OK >> Check rear combination lamp connector for proper connection. Repair as necessary.

NG >> Repair harness or connector.

Hazard Warning Lamp Does Not Operate But Turn Signal Lamps Operate

EKS005N6

1. CHECK BULB

Make sure bulb standard of each turn signal lamp is correct.

OK or NG

OK >> GO TO 2.

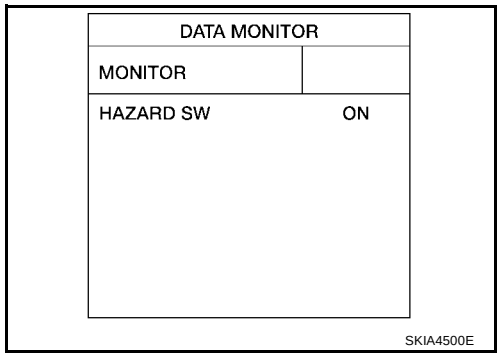
NG >> Replace turn signal lamp bulb. Refer to LT-27, "FRONT TURN SIGNAL/PARKING LAMP" for front turn signal bulb. Refer to LT-124, "Bulb Replacement" for rear turn signal bulb.

2. CHECK HAZARD SWITCH INPUT SIGNAL

With CONSULT-II

Select “BCM” on CONSULT-II. With “FLASHER” data monitor, make sure “HAZARD SW” turns ON-OFF linked with operation of hazard switch.

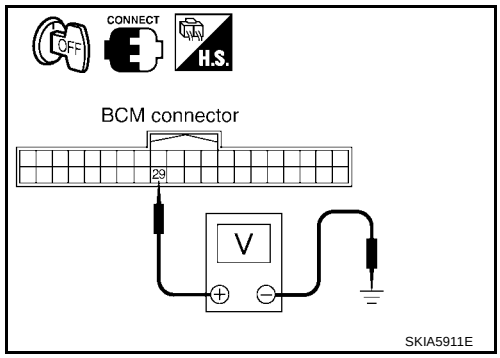
When hazard switch is in ON position : HAZARD SW ON



Without CONSULT-II

Check voltage between BCM harness connector M18 terminal 29 (Y/R) and ground.

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
Connector	Terminal (Wire color)			
M18	29 (Y/R)	Ground	Hazard switch is ON	0V
			Hazard switch is OFF	5V



OK or NG

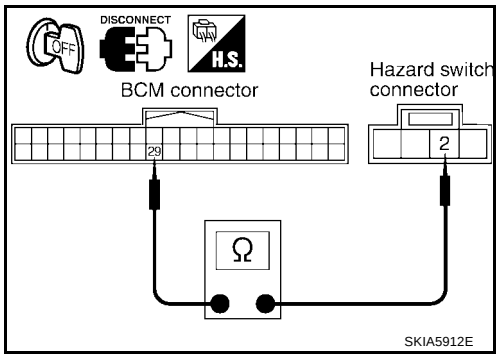
OK >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .

NG >> GO TO 3.

3. CHECK HAZARD SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and hazard switch connector.
3. Check continuity between BCM harness connector M18 terminal 29 (Y/R) and hazard switch harness connector M55 terminal 2 (Y/R).

29 (Y/R) - 2 (Y/R) : Continuity should exist.



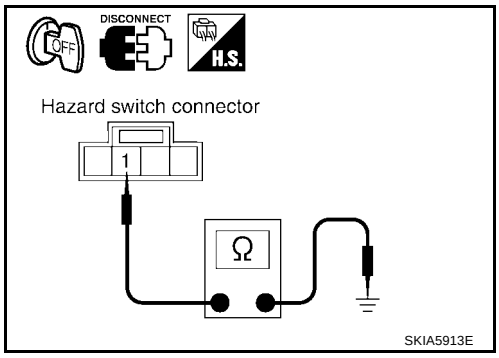
OK or NG

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

4. CHECK GROUND

Check continuity between hazard switch harness connector M55 terminal 1 (B) and ground.

1 (B) - Ground : Continuity should exist.



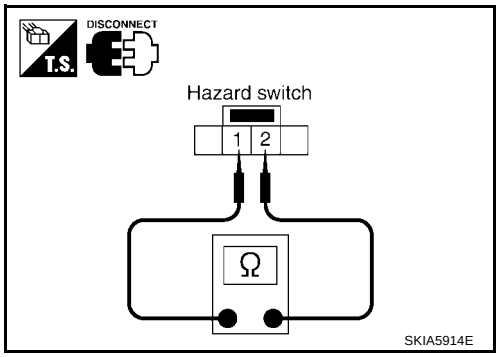
OK or NG

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

5. CHECK HAZARD SWITCH

1. Disconnect hazard switch connector.
2. Check continuity of hazard switch.

Terminal		Condition	Continuity
Hazard switch			
1	2	Hazard switch is ON	Yes
		Hazard switch is OFF	No



OK or NG

OK >> Replace BCM if turn signal lamps does not work after setting the connector again. Refer to BCS-19, "Removal and Installation of BCM" .
NG >> Replace hazard switch. Refer to LT-98, "Removal and Installation" .

Turn Signal Indicator Lamp Does Not Operate

EKS005N7

1. CHECK CAN COMMUNICATION SYSTEM

Check CAN communication. Refer to LAN-6, "CAN COMMUNICATION" .

OK or NG

OK >> Replace combination meter. Refer to IP-12, "Combination Meter" .
NG >> Repair as necessary.

Bulb Replacement (Front Turn Signal Lamp)

EKS005N8

Refer to LT-27, "FRONT TURN SIGNAL/PARKING LAMP" .

Bulb Replacement (Rear Turn Signal Lamp)

EKS005N9

Refer to LT-124, "Bulb Replacement" in REAR COMBINATION LAMP.

Removal and Installation of Front Turn Signal Lamp

EKS005NA

Refer to LT-27, "Removal and Installation" .

Removal and Installation of Rear Turn Signal Lamp

EKS005NB

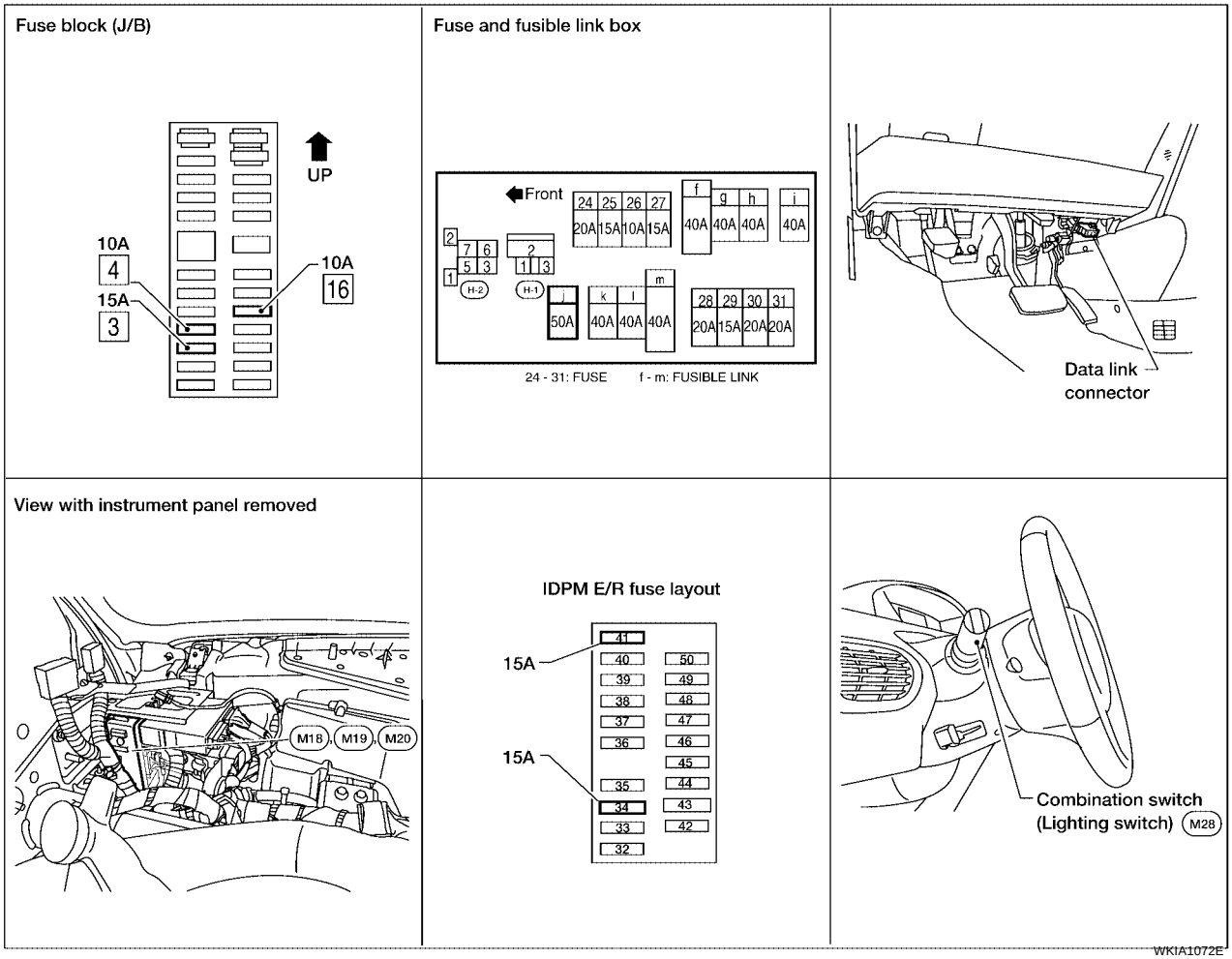
Refer to LT-124, "Removal and Installation" in REAR COMBINATION LAMP.

CORNERING LAMP

PFP:26100

Component Parts and Harness Connector Location

EKS005NC



System Description

EKS005ND

OUTLINE

Power is supplied at all times

- through 50A fusible link (letter **j** , located in the fuse and fusible link box)
- to BCM (body control module) terminal 55, and
- through 15A fuse [No. 3, located in the fuse block (J/B)]
- to BCM terminal 42, and
- through 15A fuse [No. 34, located in the IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) of the IPDM E/R, and
- through 15A fuse (No. 41, located in the IPDM E/R)
- to cornering lamp relay LH and RH.

CORNERING LAMP OPERATION

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

- to ignition relay, located in the IPDM E/R
- through 15A fuse [No. 16, located in the fuse block (J/B)]
- to BCM terminal 38.

Ground is supplied

- to BCM terminals 49 (early production) and 52
- through grounds M57, M61 and M79, and
- to IPDM E/R terminals 38 and 60

- through grounds E9, E15 and E24.

LH Turn

When the lighting switch is in the 2nd position or in the AUTO position (headlamp ON) and turn signal switch is moved to the left position, BCM sends signal through CAN communication lines to IPDM E/R. IPDM E/R then operates cornering lamp relay LH. It sends power from IPDM E/R terminal 34 to cornering lamp LH terminal +.
Cornering lamp turns on

- through cornering lamp terminal –
- to grounds E9, E15 and E24.

RH Turn

When the lighting switch is in the 2nd position or in the AUTO position (headlamp ON) and turn signal switch is moved to the right position, BCM sends signal through CAN communication lines to IPDM E/R. IPDM E/R then operates cornering lamp relay RH. It sends power from IPDM E/R terminal 23 to cornering lamp RH terminal +.
Cornering lamp turns on

- through cornering lamp terminal –
- to grounds E9, E15 and E24.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

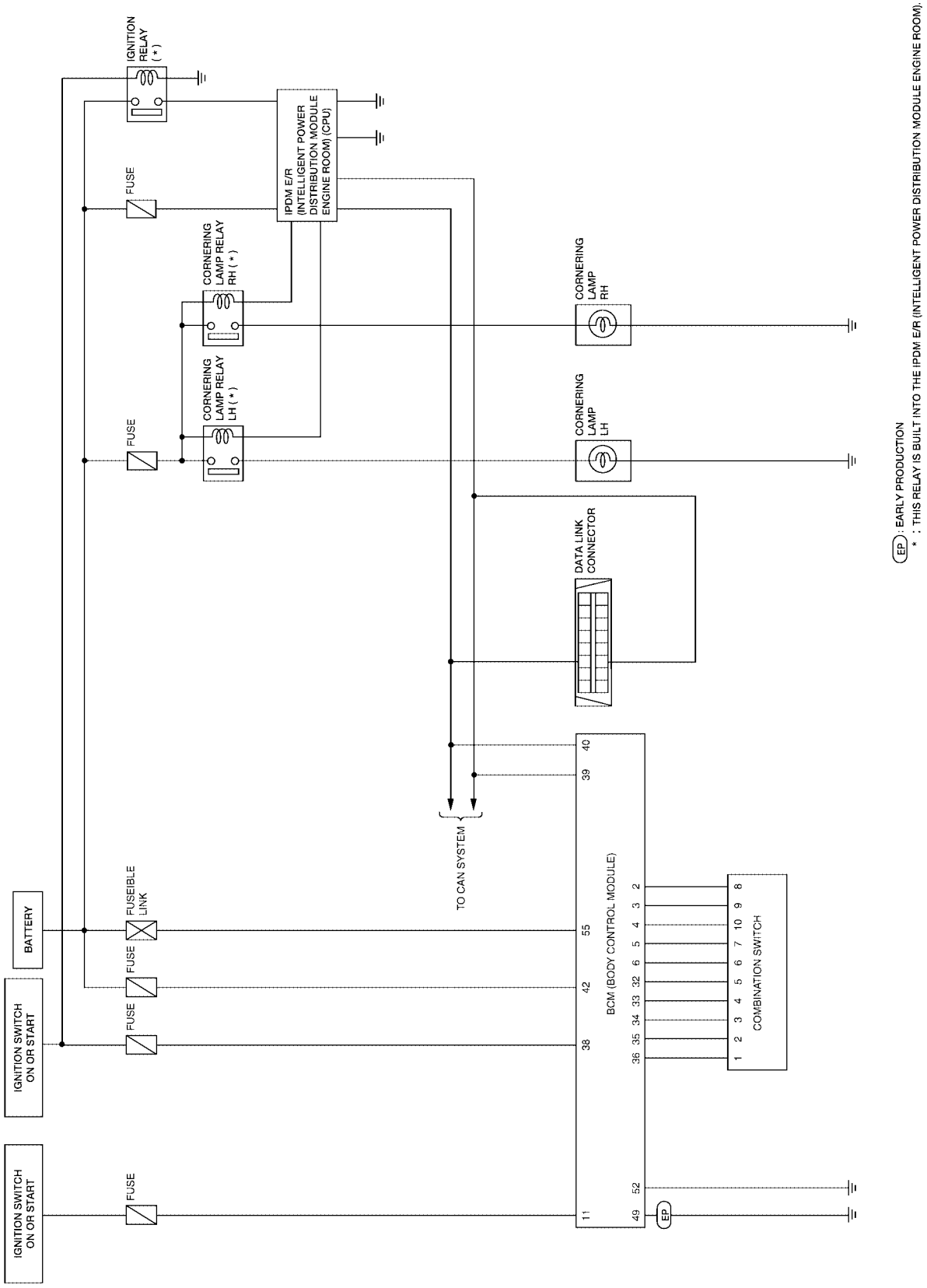
CAN Communication System Description

EKS005NE

Refer to LAN-6, "CAN COMMUNICATION" .

Schematic

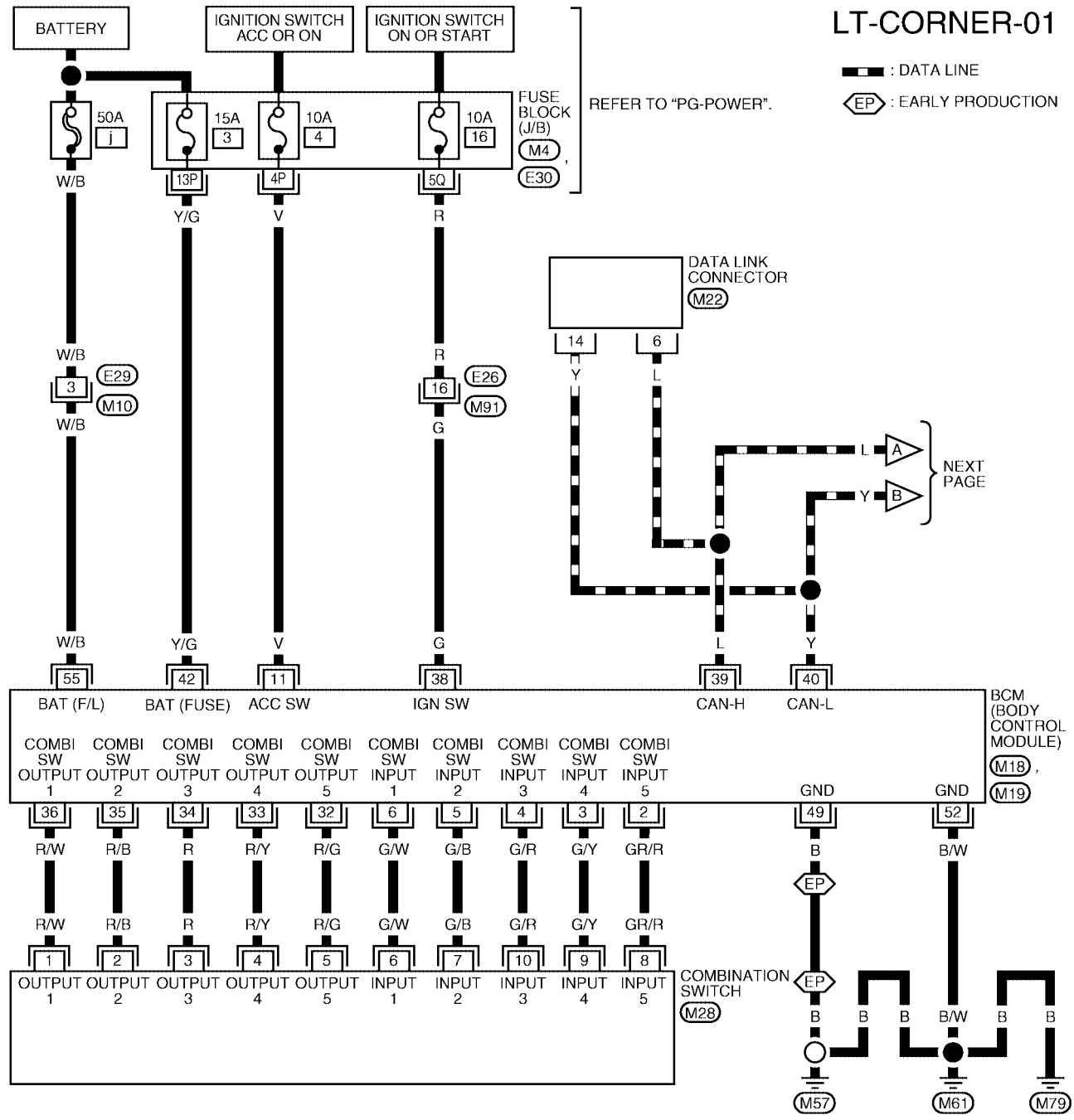
EKS005NF

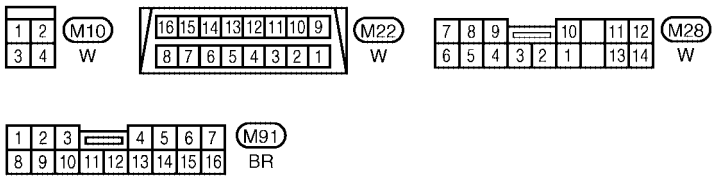


WKWA2794E

Wiring Diagram — CORNER —

EKS005NG

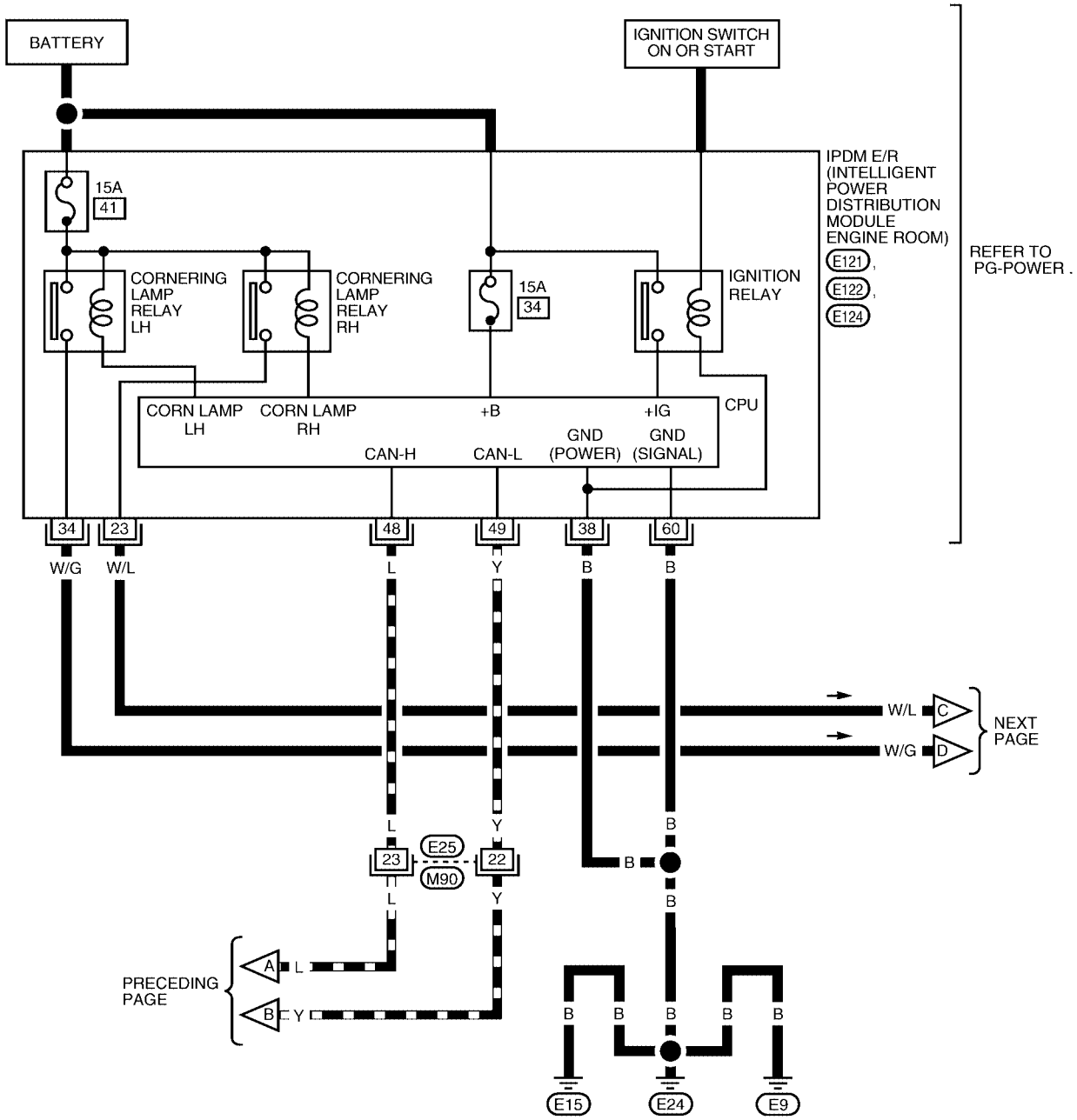


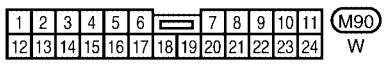


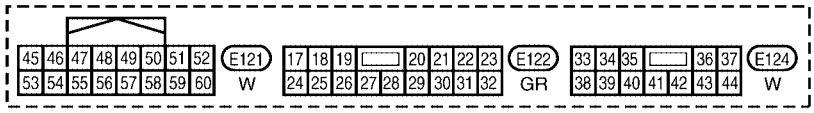
REFER TO THE FOLLOWING.
M4, E30 - FUSE BLOCK-JUNCTION BOX (J/B)
M18, M19 - ELECTRICAL UNITS

WKWA1425E

LT-CORNER-02

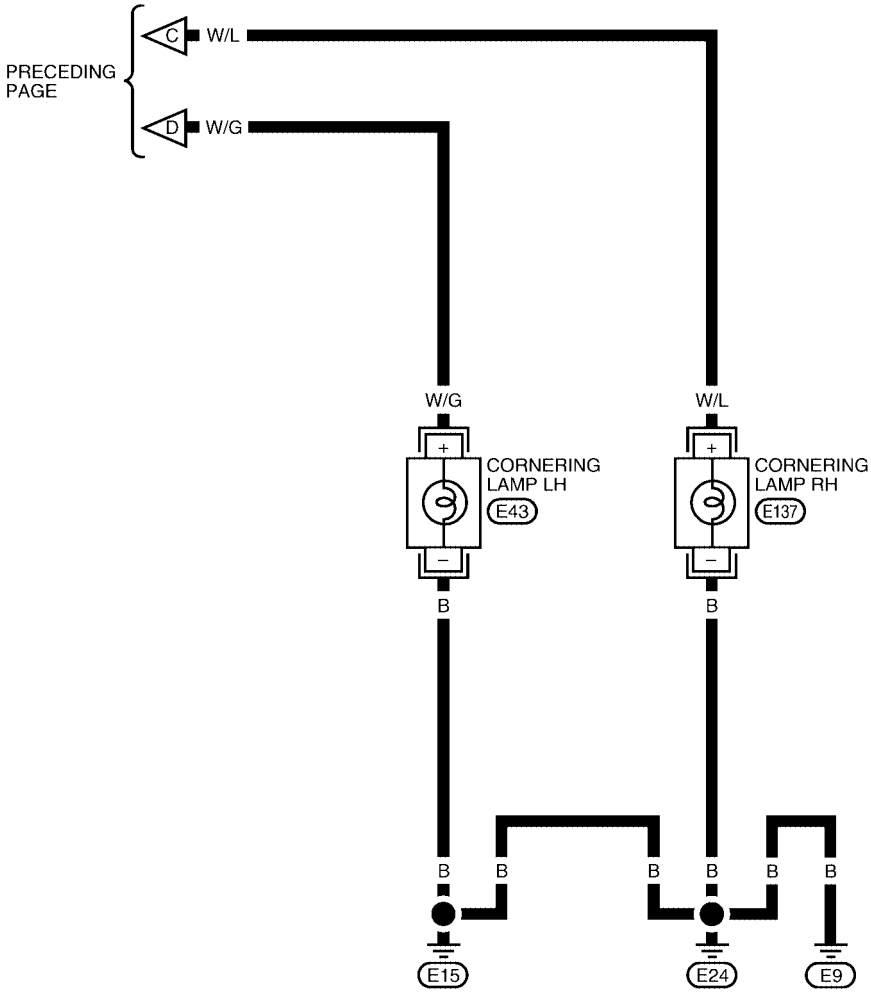






WKWA0556E

LT-CORNER-03

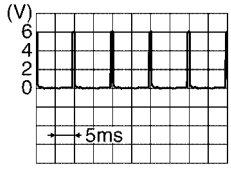
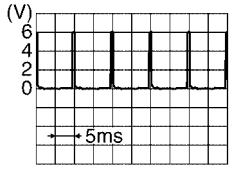
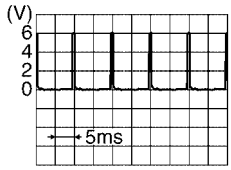
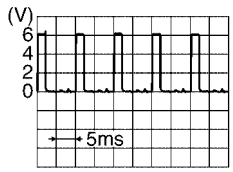


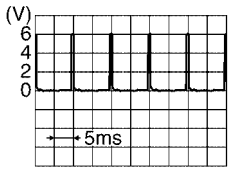
E43 GR , E137 GR

WKWA0557E

Terminals and Reference Values for BCM

EKS005NH

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
2	GR/R	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
3	G/Y	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
4	G/R	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
5	G/B	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
6	G/W	Combination switch input 1			
11	V	Ignition switch (ACC)	ACC	—	Battery voltage
32	R/G	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
33	R/Y	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
34	R	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
35	R/B	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
36	R/W	Combination switch output 1			
38	G	Ignition switch (ON)	ON	—	Battery voltage
39	L	CAN-H	—	—	—
40	Y	CAN-L	—	—	—
42	Y/G	Battery power supply	OFF	—	Battery voltage
49*	B	Ground	ON	—	0V
52	B/W	Ground	ON	—	0V
55	W/B	Battery power supply (fusible link)	OFF	—	Battery voltage

* Early production

Terminals and Reference Values for IPDM E/R

EKS005NI

Terminal No.	Wire color	Signal name	Measuring condition			Reference value (Approx.)
			Ignition switch	Operation or condition		
23	W/L	Cornering lamp RH	ON	Lighting switch in RH position	OFF	0V
					ON	Battery voltage
34	W/G	Cornering lamp LH	ON	Lighting switch in LH position	OFF	0V
					ON	Battery voltage
38	B	Ground	ON	—		0V
48	L	CAN-H	—	—		—
49	Y	CAN-L	—	—		—
60	B	Ground	ON	—		0V

How to Proceed With Trouble Diagnosis

EKS005NJ

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-86, "System Description" .
3. Perform preliminary check. Refer to LT-94, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Do turn signal and hazard warning lamps operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

EKS005NK

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES OR FUSIBLE LINK

Check for blown fuses or fusible link.

Unit	Power source	Fuse No.
BCM	Battery	j
	Battery	3
	Ignition switch ON or START position	16
	Ignition switch ACC or ON position	4
IPDM E/R	Battery	41

Refer to LT-89, "Wiring Diagram — CORNER —" .

OK or NG

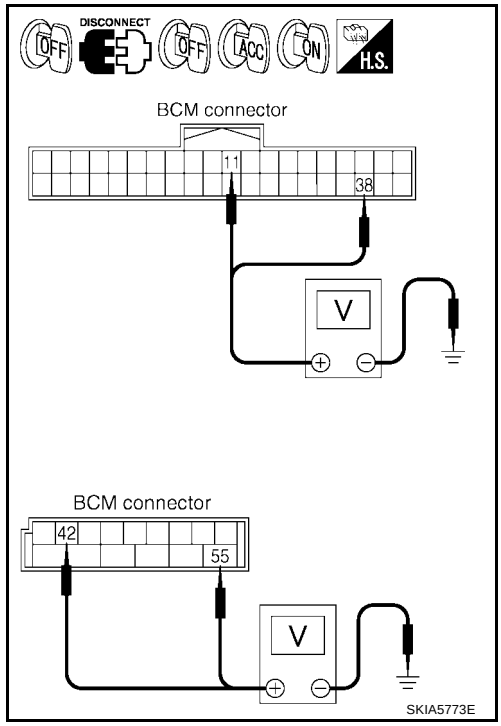
OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect BCM connectors.
2. Check voltage between BCM harness connector and ground.

Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M18	11 (V)	Ground	0V	Battery voltage	Battery voltage
	38 (G)		0V	0V	Battery voltage
M19	42 (Y/G)		Battery voltage	Battery voltage	Battery voltage
	55 (W/B)		Battery voltage	Battery voltage	Battery voltage



OK or NG

OK >> GO TO 3.

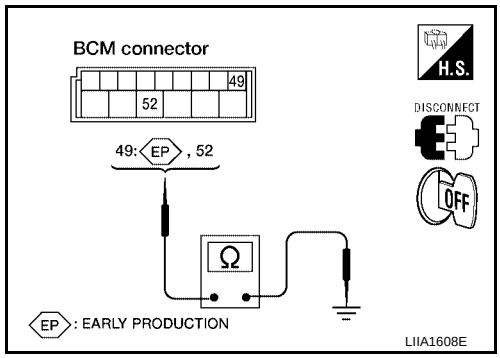
NG >> Check harness for open between BCM and fuse.

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

Terminals			Continuity
Connector	Terminal (Wire color)		
M19	49* (B)	Ground	Yes
	52 (B/W)		

* Early production



OK or NG

OK >> Inspection End.
NG >> Check ground circuit harness.

CONSULT-II Function

EKS005NL

Refer to LT-79, "CONSULT-II Function (BCM)" in TURN SIGNAL AND HAZARD WARNING LAMPS.
Refer to LT-17, "CONSULT-II Function (IPDM E/R)" in HEADLAMP (FOR USA).

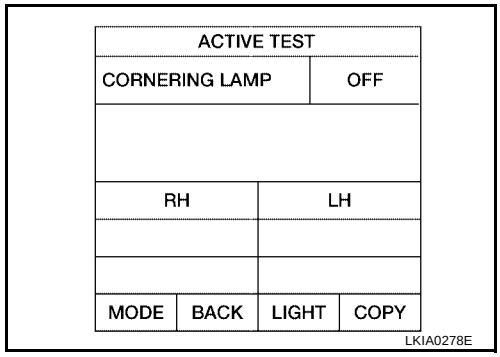
Cornering Lamp Does Not Operate

EKS005NM

1. ACTIVE TEST

With CONSULT-II

1. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select “CORNERING LAMP” on "SELECT TEST ITEM" screen.
3. Select "LH", then "RH" during active test.
4. Make sure cornering lamp LH and cornering lamp RH operate.



Without CONSULT-II
GO TO 3.

OK or NG

OK >> GO TO 2.
NG >> GO TO 3.

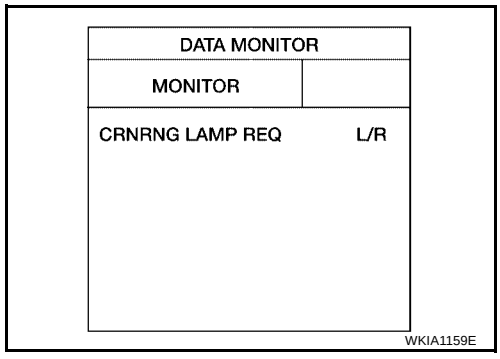
2. CHECK COMBINATION SWITCH INPUT SIGNAL

Select “IPDM E/R” on CONSULT-II, and select "DATA MONITOR" on "SELECT DIAG MODE" screen.
Make sure “CRNRNG LMP REQ” turns ON-OFF linked with operation of lighting switch.

NOTE:
Lighting switch must not be in OFF position.

When lighting switch is in TURN RH position : CRNRNG LMP REQ R

When lighting switch is in TURN LH position : CRNRNG LMP REQ L



OK or NG

OK >> Replace IPDM E/R. Refer to PG-27, "Removal and Installation of IPDM E/R" .
NG >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .

3. CHECK BULB

Check bulb standard of each cornering lamp is correct.

OK or NG

OK >> GO TO 4.
NG >> Replace cornering lamp bulb. Refer to LT-96, "Bulb Replacement" .

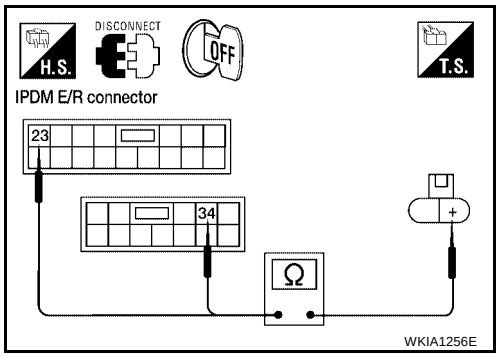
4. CHECK CORNERING LAMPS CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connectors and cornering lamp LH and RH connectors.
3. Check continuity between IPDM E/R harness connector E122 terminal 23 (W/L) and cornering lamp RH harness connector E137 terminal + (W/L).

   23 (W/L) - + (W/L) : Continuity should exist.

4. Check continuity between IPDM E/R harness connector E124 terminal 34 (W/G) and front cornering lamp LH harness connector E43 terminal + (W/G).

   34 (W/G) - + (W/G) : Continuity should exist.



OK or NG

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

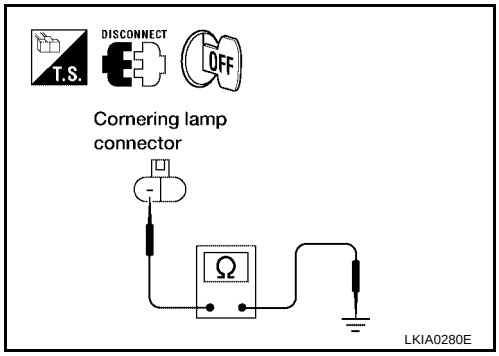
5. CHECK GROUND

1. Check continuity between cornering lamp LH harness connector E43 terminal – (B) and ground.

   – (B) - Ground : Continuity should exist.

2. Check continuity between cornering lamp RH harness connector E137 terminal – (B) and ground.

   – (B) - Ground : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R. Refer to PG-27, "Removal and Installation of IPDM E/R" .
NG >> Repair harness or connector.

Bulb Replacement

EKS005NN

1. Turn the bulb socket counterclockwise to unlock it.
2. Pull the bulb to remove it from the socket.
3. Installation is reverse order of removal.

LIGHTING AND TURN SIGNAL SWITCH

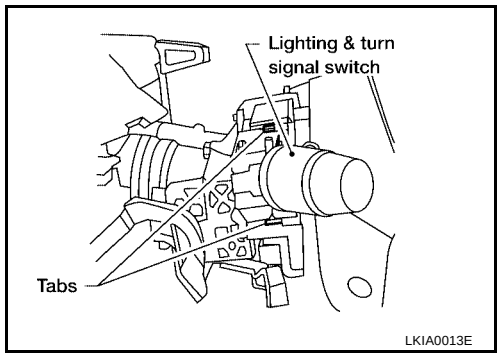
PFP:25540

Removal and Installation

EKS005NO

REMOVAL

1. Remove steering column cover.
2. While pressing tabs, pull lighting and turn signal switch toward driver door and disconnect from the base.



INSTALLATION

Installation in the reverse order of removal.

HAZARD SWITCH

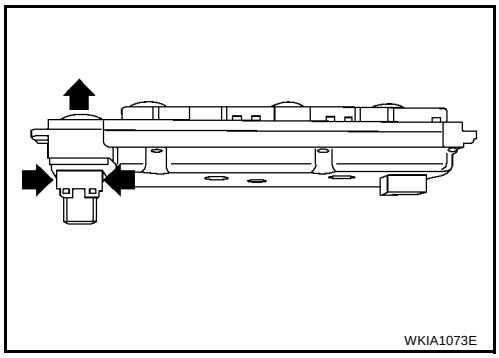
PFP:25290

Removal and Installation

EKS005NP

REMOVAL

1. Remove AV switch. Refer to AV-69, "Removal and Installation for AV Switch" .
2. While pressing the tabs, push out the hazard switch.



INSTALLATION

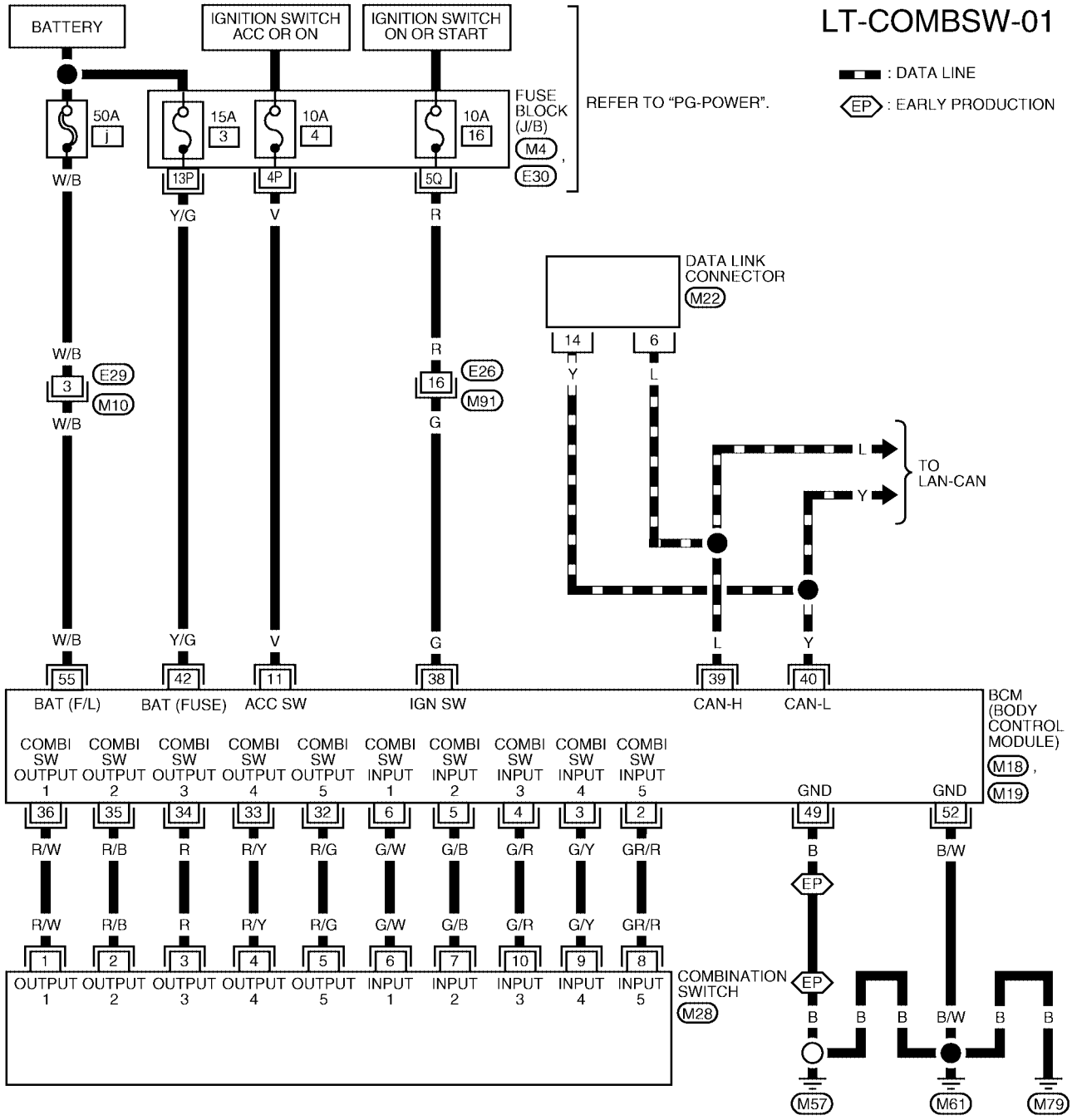
Install in the reverse order of removal.

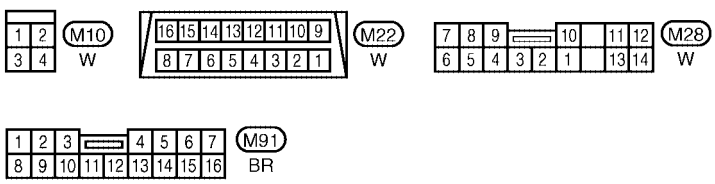
COMBINATION SWITCH

PFP:25567

Wiring Diagram — COMBSW —

EKS005NQ





REFER TO THE FOLLOWING.
M4, E30 - FUSE BLOCK-JUNCTION BOX (J/B)
M18, M19 - ELECTRICAL UNITS

WKWA1426E

Combination Switch Reading Function

EKS005NR

For details, refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

CONSULT-II Function (BCM)

EKS005NS

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

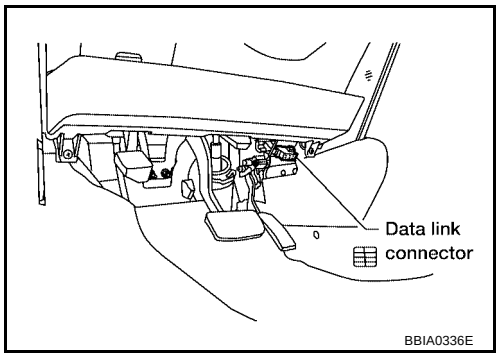
BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	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 OPERATION

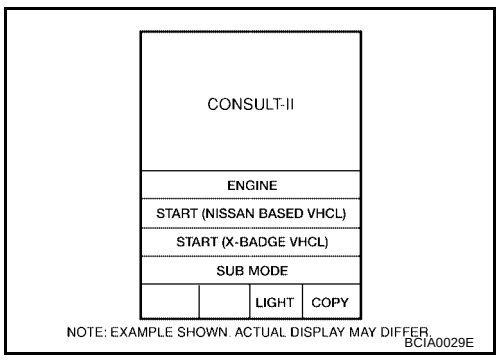
CAUTION:

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

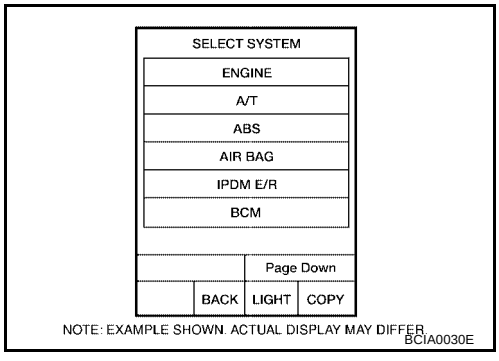
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



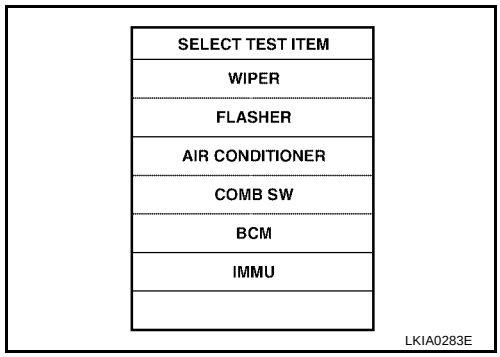
2. Touch "START (NISSAN BASED VHCL)".



3. Touch "BCM" on "SELECT SYSTEM" screen.
If "BCM" is not indicated, go to GI-37, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Touch "COMB SW".



DATA MONITOR

Operation Procedure

1. Touch "COMB SW" on "SELECT TEST ITEM" screen.
2. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Touch either "ALL SIGNALS" or "SELECTION FROM MENU" on "SELECT MONITOR ITEM" screen.

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

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

Display Item List

Monitor item name "OPERATION OR UNIT"		Contents
TURN SIGNAL R	"ON/OFF"	Displays "Turn Right (ON)/Other (OFF)" status, determined from lighting switch signal.
TURN SIGNAL L	"ON/OFF"	Displays "Turn Left (ON)/Other (OFF)" status, determined from lighting switch signal.
HI BEAM SW	"ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	"ON/OFF"	Displays "Headlamp switch 1 (ON)/Other (OFF)" status, determined from lighting switch signal.
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1ST	"ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
PASSING SW	"ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
AUTO LIGHT SW	"ON/OFF"	Displays "Auto light switch (ON)/Other (OFF)" status, determined from lighting switch signal.
FR FOG SW	"ON/OFF"	Displays "Front fog lamp switch (ON)/Other (OFF)" status, determined from lighting switch signal.
FR WIPER HI	"ON/OFF"	Displays "Front Wiper HI (ON)/Other (OFF)" status, determined from wiper switch signal.
FR WIPER LOW	"ON/OFF"	Displays "Front Wiper LOW (ON)/Other (OFF)" status, determined from wiper switch signal.
FR WIPER INT	"ON/OFF"	Displays "Front Wiper INT (ON)/Other (OFF)" status, determined from wiper switch signal.
FR WASHER SW	"ON/OFF"	Displays "Front Washer Switch (ON)/Other (OFF)" status, determined from wiper switch signal.
INT VOLUME	[1 - 7]	Displays intermittent operation knob setting (1 - 7), determined from wiper switch signal.
RR WIPER ON	"ON/OFF"	Displays "Rear Wiper (ON)/(OFF)" status, determined from wiper switch signal.
RR WIPER INT	"ON/OFF"	Displays "Rear Wiper INT (ON)/(OFF)" status, determined from wiper switch signal.
RR WASHER SW	"ON/OFF"	Displays "Rear Washer (ON)/(OFF)" status, determined from wiper switch signal.

Combination Switch Inspection

EKS005NT

1. SYSTEM CHECK

1. Referring to table below, check to which system malfunctioning switch belongs.

System 1	System 2	System 3	System 4	System 5
—	FR WASHER	FR WIPER LO	TURN LH	TURN RH
FR WIPER HI	—	FR WIPER INT	PASSING	HEAD LAMP1
INT VOLUME 1	RR WASHER	—	HEAD LAMP2	HI BEAM
RR WIPER INT	INT VOLUME 3	AUTO LIGHT	—	TAIL LAMP
INT VOLUME 2	RR WIPER ON	—	FR FOG	—

>> GO TO 2.

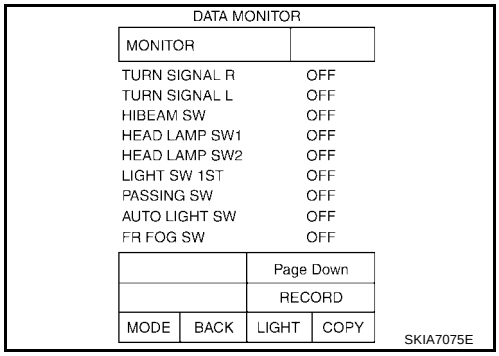
2. SYSTEM CHECK

With CONSULT-II

CAUTION:

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

1. Connect CONSULT-II, and select “COMB SW” on “SELECT TEST ITEM” screen.
2. Select “DATA MONITOR”.
3. Select “START”, and confirm that other switches in malfunctioning system operate normally.
   Example: When auto light switch is malfunctioning, confirm that “FRONT WIPER LOW” and “FRONT WIPER INT” in System 3, to which the auto light switch belongs, turn ON-OFF normally.



Without CONSULT-II

Operate combination switch, and confirm that other switches in malfunctioning system operate normally.
Example: When auto light switch is malfunctioning, confirm that "FRONT WIPER LOW" and "FRONT WIPER INT" in System 3, to which the auto light switch belongs, operate normally.

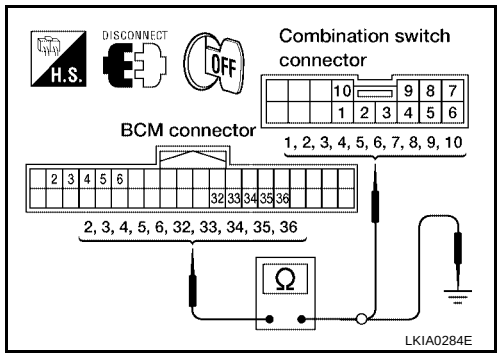
Check results

Other switches in malfunctioning system operate normally.>>Replace lighting switch or wiper switch.
Other switches in malfunctioning system do not operate normally.>>GO TO 3.

3. HARNESS INSPECTION

1. Disconnect BCM and combination switch connectors.
2. Check for continuity between BCM harness connector of the suspect system and the corresponding combination switch connector terminals.

Suspect system	Terminals				Continuity
	BCM		Combination switch		
	Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
1	M18	Input 1 6 (G/W)	M28	6 (G/W)	Yes
		Output 1 36 (R/W)		1 (R/W)	
2		Input 2 5 (G/B)		7 (G/B)	
		Output 2 35 (R/B)		2 (R/B)	
3		Input 3 4 (G/R)		10 (G/R)	
		Output 3 34 (R)		3 (R)	
4		Input 4 3 (G/Y)		9 (G/Y)	
		Output 4 33 (R/Y)		4 (R/Y)	
5		Input 5 2 (GR/R)		8 (GR/R)	
		Output 5 32 (R/G)		5 (R/G)	



3. Check for continuity between each terminal of BCM harness connector in suspect malfunctioning system and ground.

Suspect system	Terminals				Continuity
	BCM				
	Connector	Terminal (Wire color)			
1	M18	Input 1	6 (G/W)	Ground	No
		Output 1	36 (R/W)		
2		Input 2	5 (G/B)		
		Output 2	35 (R/B)		
3		Input 3	4 (G/R)		
		Output 3	34 (R)		
4		Input 4	3 (G/Y)		
		Output 4	33 (R/Y)		
5		Input 5	2 (GR/R)		
		Output 5	32 (R/G)		

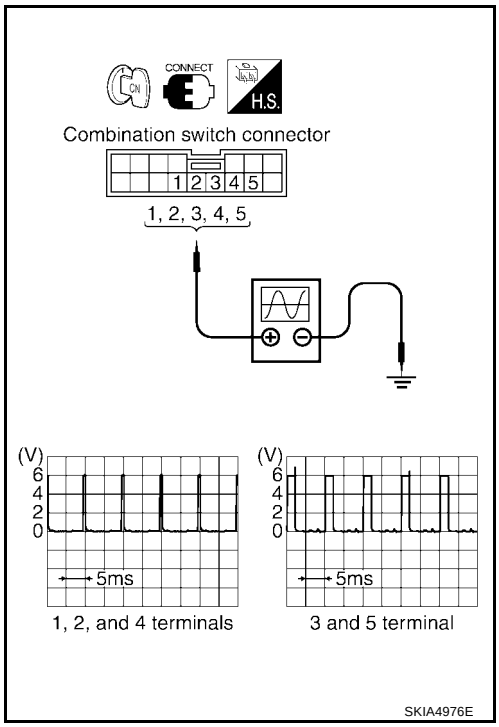
OK or NG

OK >> GO TO 4.
NG >> Check harness between BCM and combination switch for open or short circuit.

4. BCM OUTPUT TERMINAL INSPECTION

1. Turn lighting switch and wiper switch to OFF.
2. Set wiper dial to position 4.
3. Connect BCM and combination switch connectors, and check BCM output terminal voltage waveform of suspect malfunctioning system.

Suspect system	Terminals		
	Combination switch (+)		
	Connector	Terminal (Wire color)	
1	M28	Output 1	1 (R/W)
2		Output 2	2 (R/B)
3		Output 3	3 (R)
4		Output 4	4 (R/Y)
5		Output 5	5 (R/G)



OK or NG

OK >> Open circuit in combination switch, GO TO 5.
NG >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .

5. COMBINATION SWITCH INSPECTION

Referring to table below, perform combination switch inspection.

Procedure									
1	2		3	4		5	6		7
Replace lighting switch.	Confirm check results.	OK	INSPECTION END	Confirm check results.	OK	INSPECTION END	Confirm check results.	OK	INSPECTION END
		NG	Replace wiper switch.		NG	Replace switch base.		NG	Confirm symptom again.

>> Inspection End.

Removal and Installation

EKS005NU

For details, refer to LT-97, "Removal and Installation" .

Switch Circuit Inspection

EKS005NV

For details, refer to LT-102, "Combination Switch Inspection" .

STOP LAMP

PFP:26550

System Description

EKS005NW

Power is supplied at all times

- through 10A fuse [No. 20, located in fuse block (J/B)]
- to stop lamp switch terminal 1.

When the brake pedal is pressed, the stop lamp switch is closed and power is supplied

- through stop lamp switch terminal 2
- to rear combination lamp LH and RH terminal 1 and
- to high-mounted stop lamp terminal +.

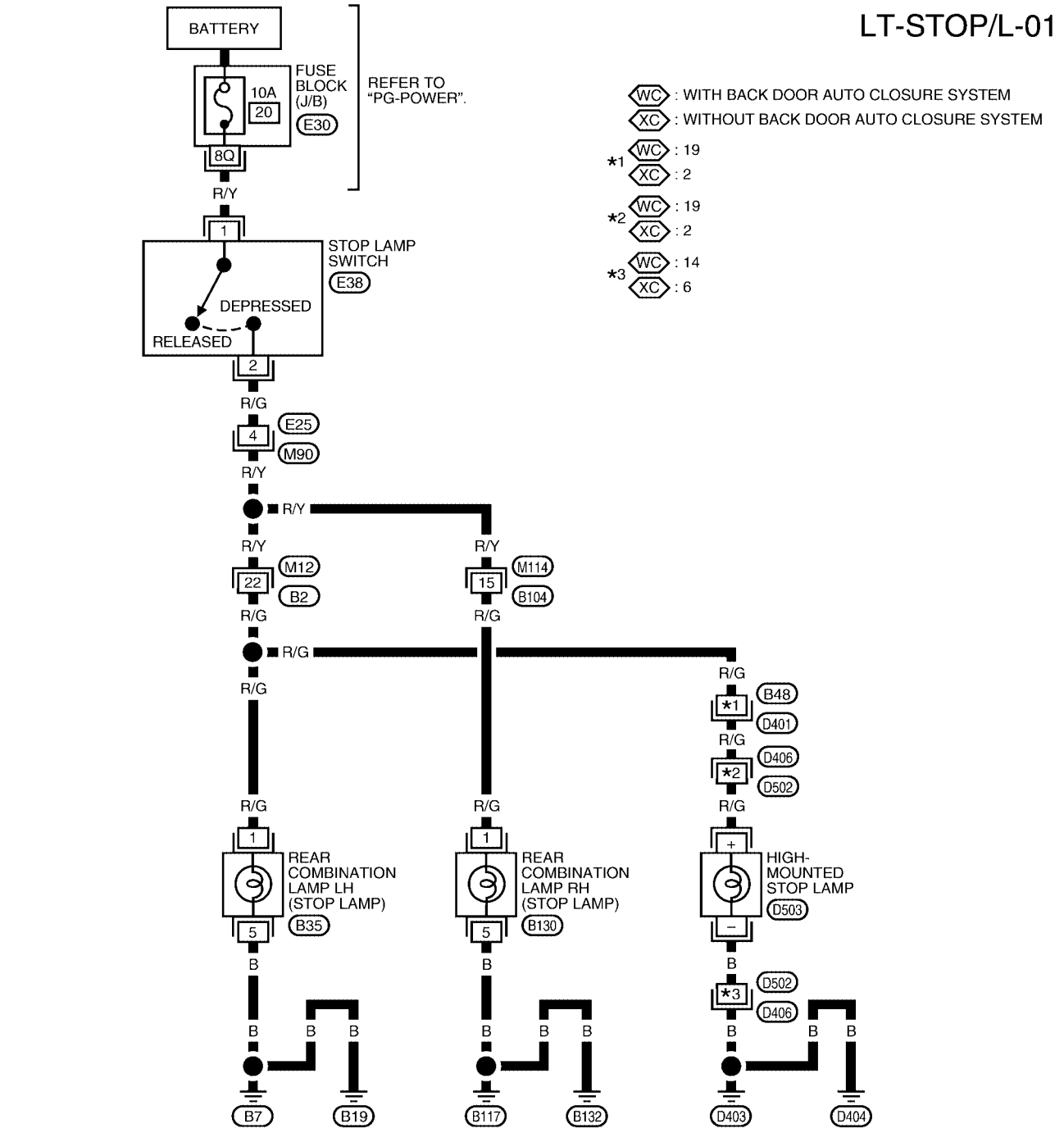
Ground is supplied

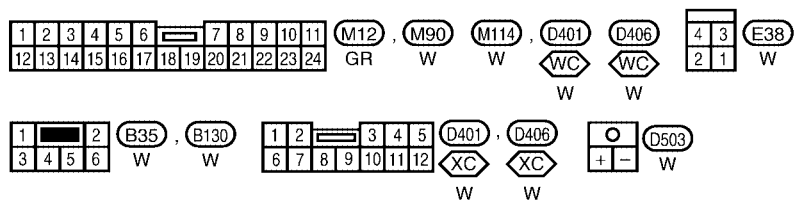
- to rear combination lamp LH terminal 5
- through grounds B7 and B19, and
- to rear combination lamp RH terminal 5
- through grounds B117 and B132, and
- to high-mounted stop lamp terminal –
- through grounds D403 and D404.

With power and ground supplied, the stop lamps illuminate.

Wiring Diagram — STOP/L —

EKS005NX





REFER TO THE FOLLOWING.
E30 - FUSE BLOCK - JUNCTION BOX (J/B)

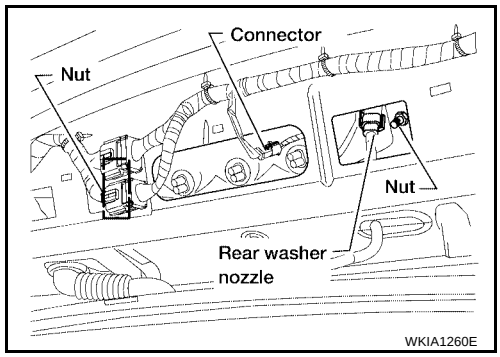
WKWA0558E

High-Mounted Stop Lamp

EKS005NY

BULB REPLACEMENT, REMOVAL AND INSTALLATION

1. Remove back door upper finisher. Refer to EI-34, "BACK DOOR UPPER FINISHER" .
2. Remove rear washer nozzle.
3. Disconnect connector.
4. Remove 2 nuts and remove high-mounted stop lamp.
5. Turn bulb socket counterclockwise to remove it from the high-mounted stop lamp housing.
6. Pull bulb from socket.
7. Install in the reverse order of removal.



Stop Lamp

EKS005NZ

BULB REPLACEMENT

Refer to LT-124, "Bulb Replacement" in REAR COMBINATION LAMP.

REMOVAL AND INSTALLATION

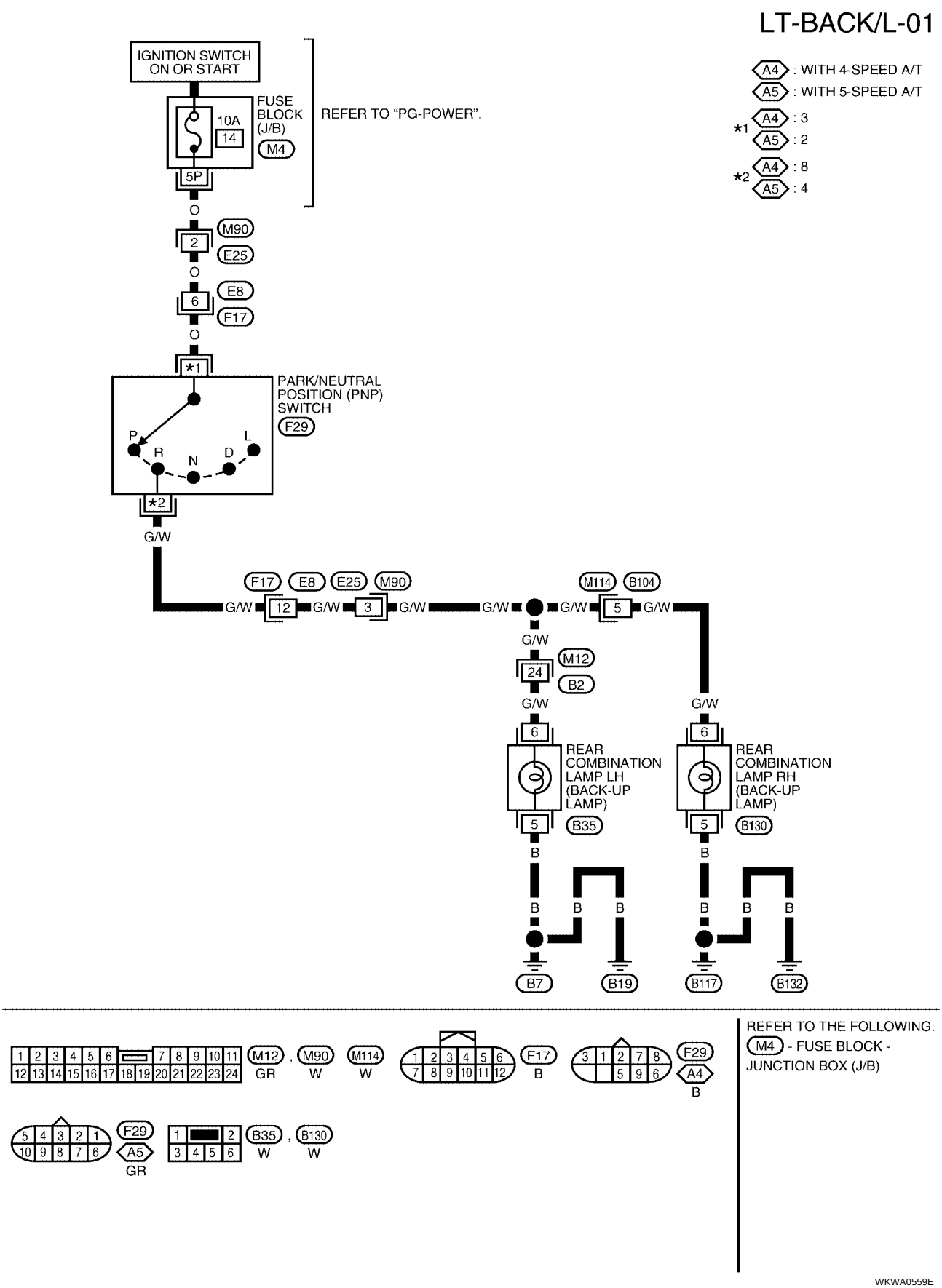
Refer to LT-124, "Removal and Installation" in REAR COMBINATION LAMP.

BACK-UP LAMP

PFP:26550

Wiring Diagram — BACK/L —

EKS005O0



WKWA0559E

Bulb Replacement

EKS005O1

Refer to LT-124, "Bulb Replacement" in REAR COMBINATION LAMP.

Removal and Installation

EKS005O2

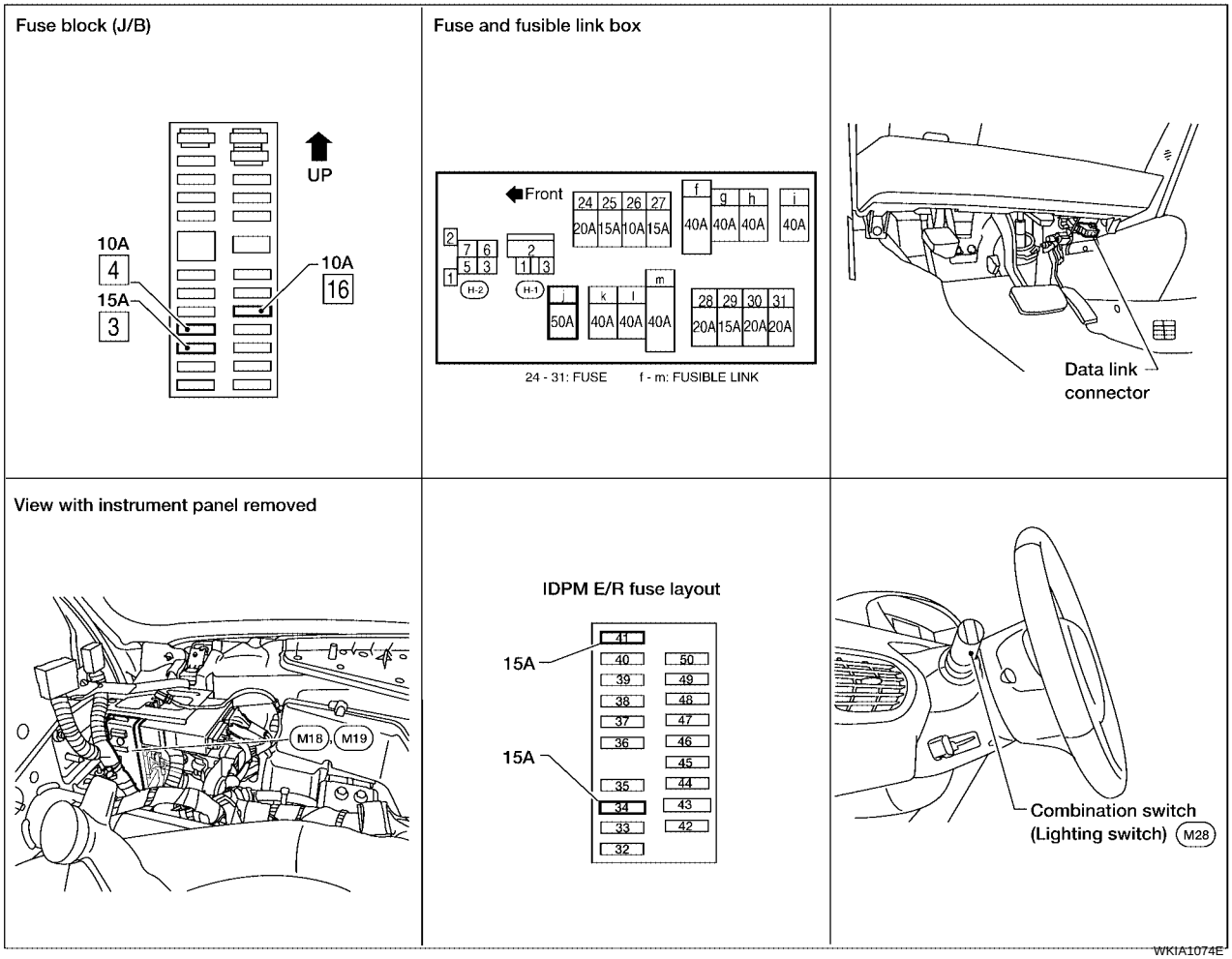
Refer to LT-124, "Removal and Installation" in REAR COMBINATION LAMP.

PARKING, LICENSE PLATE AND TAIL LAMPS

PFP:26550

Component Parts and Harness Connector Location

EKS005O3



System Description

EKS005O4

Control of the parking, license plate, and tail lamp operation is dependent upon the position of the lighting switch (combination switch). When the lighting switch is placed in the 1ST position, the BCM (body control module) receives input signal requesting the parking, license plate, side marker and tail lamps to illuminate. This input signal is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The CPU (central processing unit) of the IPDM E/R controls the tail lamp relay coil. This relay, when energized, directs power to the parking, license plate and tail lamps, which then illuminate.

Power is supplied at all times

- through 15A fuse (No. 41, located in the IPDM E/R)
- to tail lamp relay, located in the IPDM E/R, and
- through 15A fuse (No. 34, located in the IPDM E/R)
- to CPU of the IPDM E/R, and
- to ignition relay, located in the IPDM E/R, and
- through 50A fusible link (letter **j** , located in the fuse and fusible link box)
- to BCM terminal 55, and
- through 15A fuse [No. 3, located in the fuse block (J/B)]
- to BCM terminal 42.

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

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

- to ignition relay, located in the IPDM E/R.

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

- through 10A fuse [No. 4, located in the fuse block (J/B)]
- to BCM terminal 11.

Ground is supplied

- to BCM terminal 49 (early production) and 52
- through grounds M57, M61 and M79, and
- to IPDM E/R terminals 38 and 60
- through grounds E9, E15 and E24.

OPERATION BY LIGHTING SWITCH

With the lighting switch in the 1ST or 2ND position (or if the auto light system is activated), the BCM receives input signal requesting the parking, license plate, side marker and tail lamps to illuminate. This input signal is communicated to the IPDM E/R across the CAN communication lines. The CPU in the IPDM E/R controls the tail lamp relay coil, which when energized, directs power

- through IPDM E/R terminal 22
- to front combination lamp LH and RH terminal 3, and
- to license plate lamp LH and RH terminal +, and
- to rear combination lamp LH and RH terminal 2.

Ground is supplied

- to front combination lamp LH and RH terminal 1
- through grounds E9, E15 and E24, and
- to license plate lamp LH and RH terminal –
- through grounds D403 and D404, and
- to rear combination lamp LH terminal 5
- through grounds B7 and B19, and
- to rear combination lamp RH terminal 5
- through grounds B117 and B132.

With power and ground supplied, the parking, license plate and tail lamps illuminate.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 1ST (or 2ND) position, and the ignition switch is turned from ON or ACC to OFF, the battery saver control feature is activated.
Under this condition, the parking, license and tail lamps remain illuminated for 5 minutes, then the parking, license plate and tail lamps are turned off.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

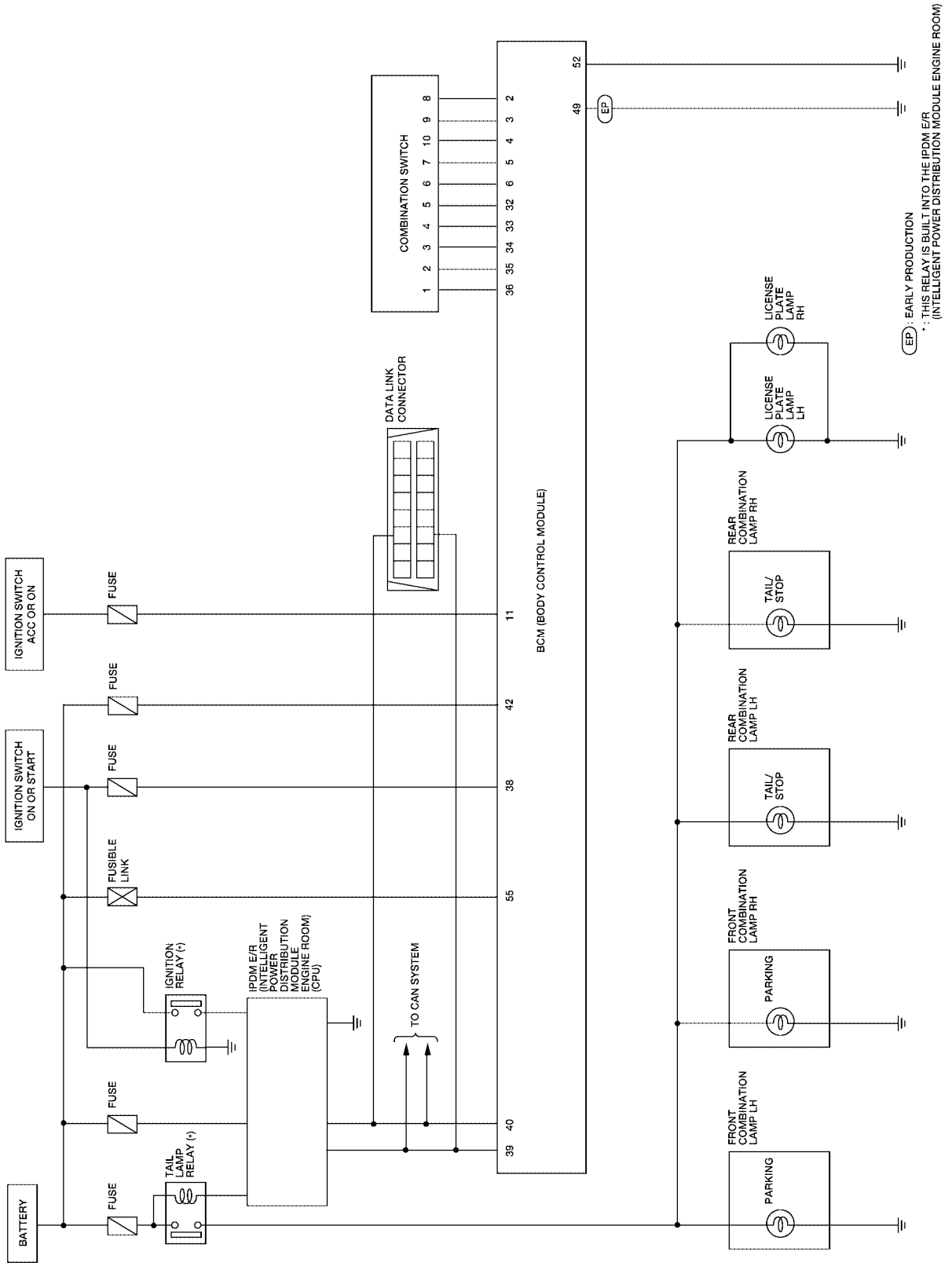
CAN Communication System Description

EKS005O5

Refer to LAN-6, "CAN COMMUNICATION" .

Schematic

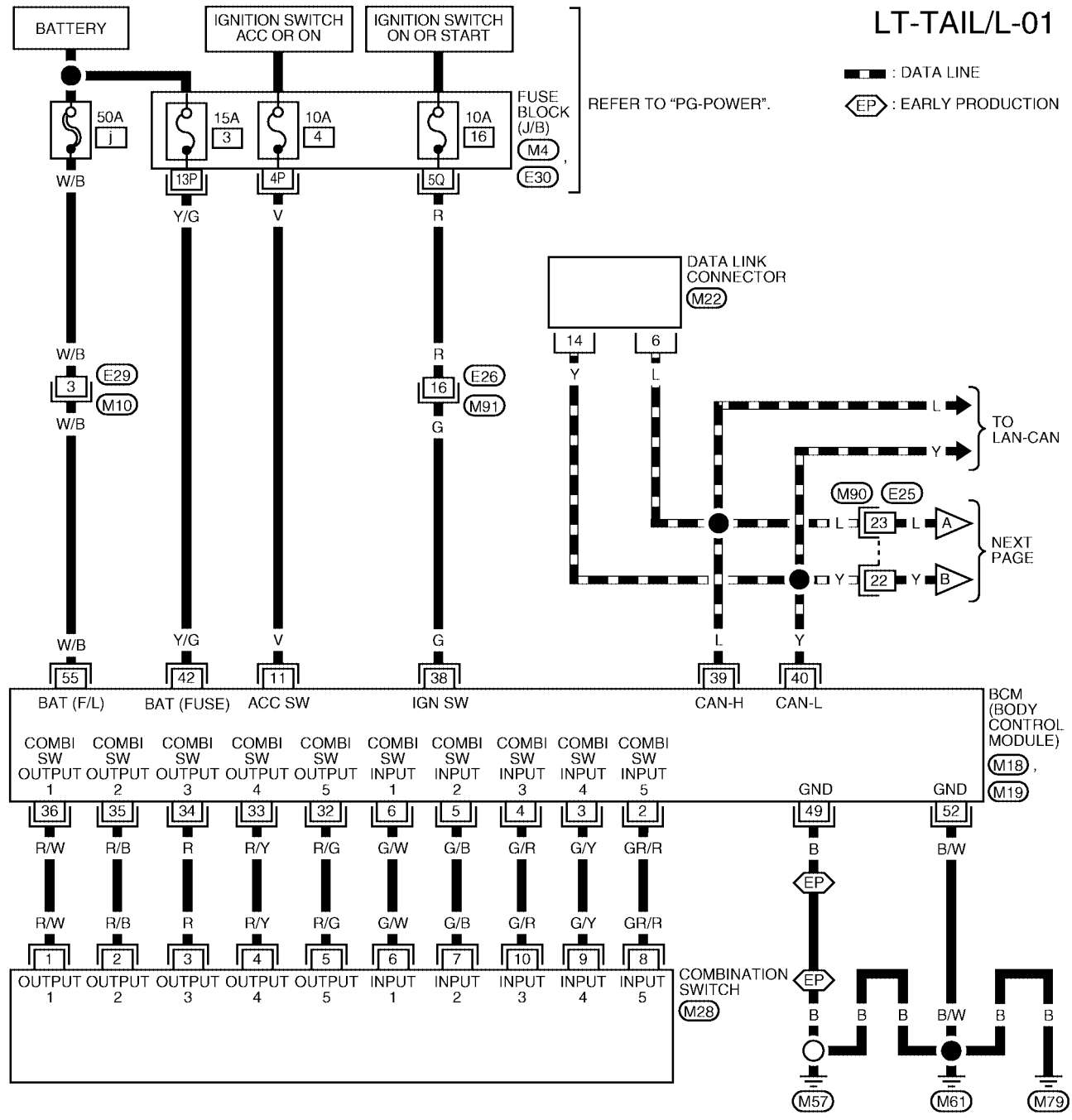
EKS005O6

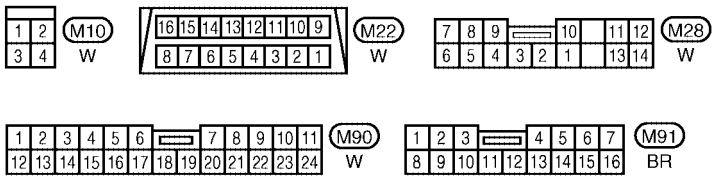


WKWA2795E

Wiring Diagram — TAIL/L —

EKS005O7

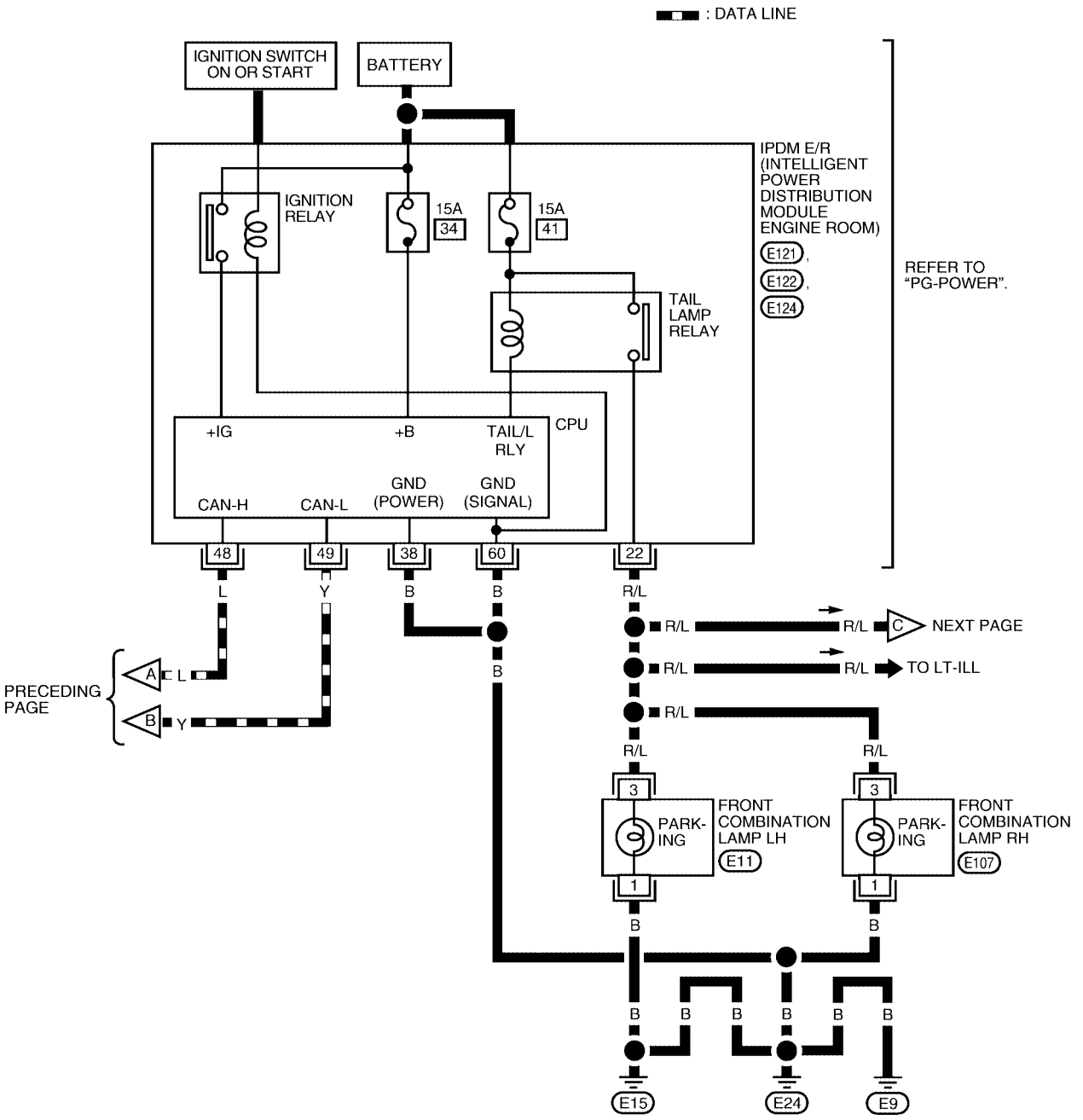


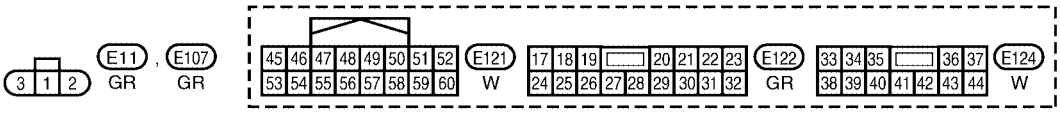


REFER TO THE FOLLOWING.
M4, E30 - FUSE BLOCK-JUNCTION BOX (J/B)
M18, M19 - ELECTRICAL UNITS

WKWA1427E

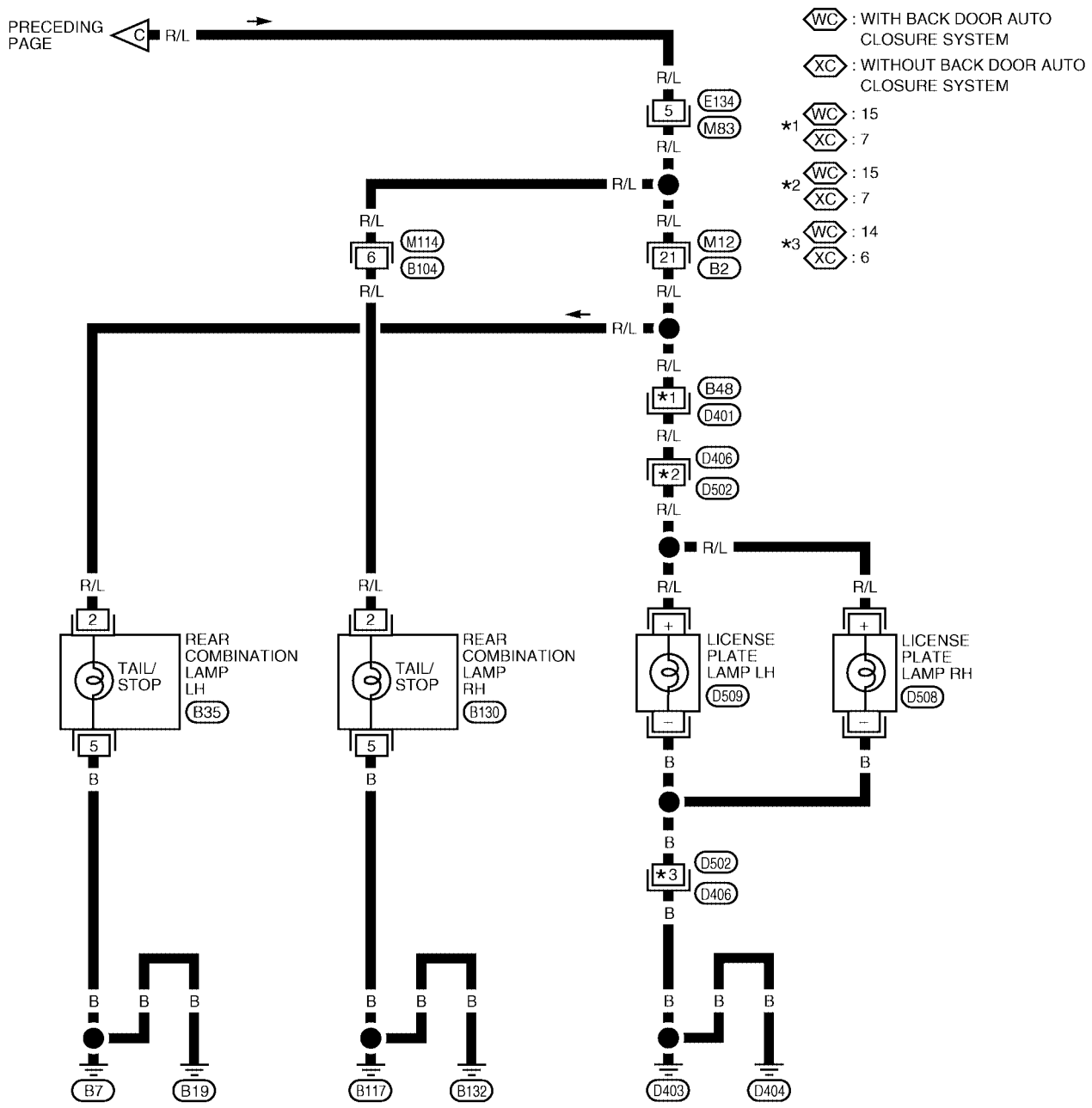
LT-TAIL/L-02

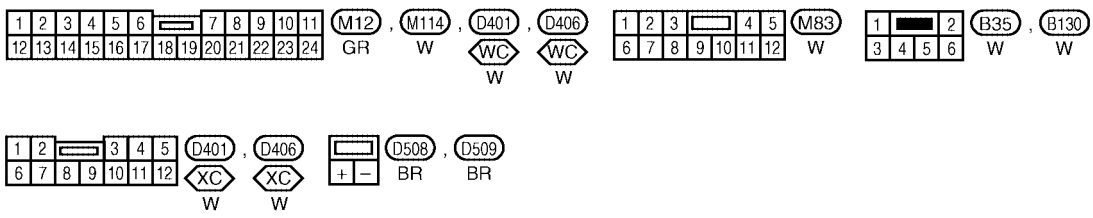




WKWA0562E

LT-TAIL/L-03

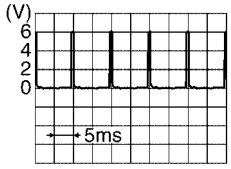
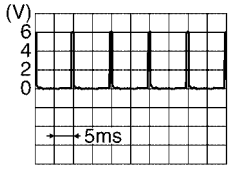
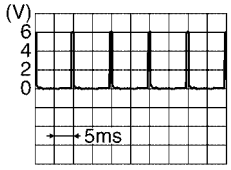


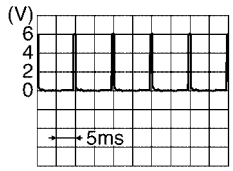


WKWA1420E

Terminals and Reference Values for BCM

EKS005O8

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
2	GR/R	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
3	G/Y	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
4	G/R	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
5	G/B	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
6	G/W	Combination switch input 1			
11	V	Ignition switch (ACC)	ACC	—	Battery voltage
32	R/G	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
33	R/Y	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
34	R	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
35	R/B	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
36	R/W	Combination switch output 1			
38	G	Ignition switch (ON)	ON	—	Battery voltage
39	L	CAN-H	—	—	—
40	Y	CAN-L	—	—	—
42	Y/G	Battery power supply	OFF	—	Battery voltage
49*	B	Ground	ON	—	0V
52	B/W	Ground	ON	—	0V
55	W/B	Battery power supply (fusible link)	OFF	—	Battery voltage

* Early production

Terminals and Reference Values for IPDM E/R

EKS005O9

Terminal No.	Wire color	Signal name	Measuring condition			Reference value (Approx.)
			Ignition switch	Operation or condition		
22	R/L	Parking, license, and tail lamp	ON	Lighting switch 1ST position	OFF	0V
					ON	Battery voltage
38	B	Ground	ON	—		0V
48	L	CAN-H	—	—		—
49	Y	CAN-L	—	—		—
60	B	Ground	ON	—		0V

How to Proceed With Trouble Diagnosis

EKS005OA

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-110, "System Description" .
3. Carry out the Preliminary Check. Refer to LT-117, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Do the parking, license and tail lamps operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

EKS005OB

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES OR FUSIBLE LINK

Check for blown fuses or fusible link.

Unit	Power source	Fuse No.
BCM	Battery	j
		3
	Ignition switch ON or START position	16
	Ignition switch ACC or ON position	4
IPDM E/R	Battery	34
		41

Refer to LT-113, "Wiring Diagram — TAIL/L —" .

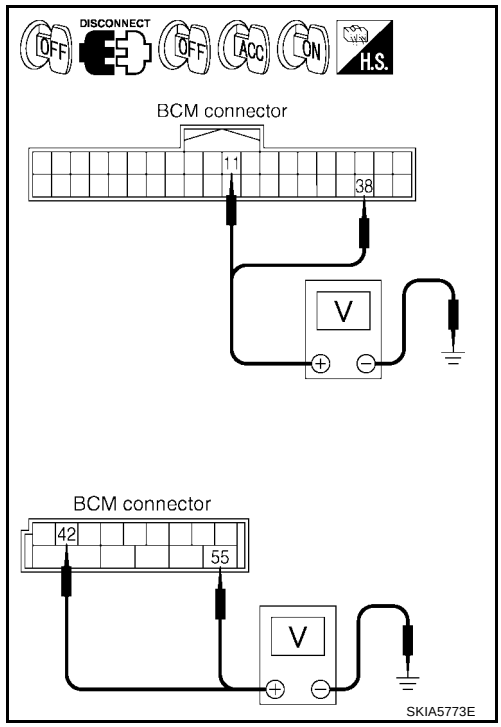
OK or NG

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

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect BCM connectors.
2. Check voltage between BCM harness connector and ground.

Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M18	11 (V)	Ground	0V	Battery voltage	Battery voltage
	38 (G)		0V	0V	Battery voltage
M19	42 (Y/G)		Battery voltage	Battery voltage	Battery voltage
	55 (W/B)		Battery voltage	Battery voltage	Battery voltage



OK or NG

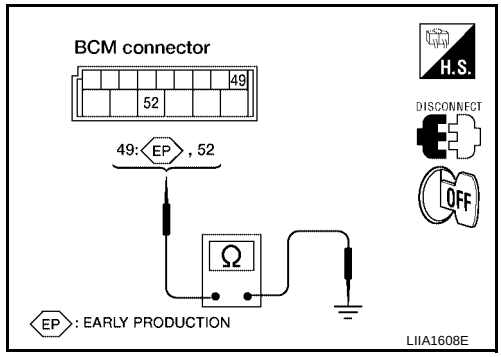
OK >> GO TO 3.
NG >> Check harness for open between BCM and fuse.

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

Terminals			Continuity
Connector	Terminal (Wire color)		
M19	49* (B)	Ground	Yes
	52 (B/W)		

* Early production



OK or NG

OK >> Inspection End.
NG >> Check ground circuit harness.

CONSULT-II Functions

EKS005OC

Refer to LT-14, "CONSULT-II Function (BCM)" in HEADLAMP (FOR USA).
Refer to LT-17, "CONSULT-II Function (IPDM E/R)" in HEADLAMP (FOR USA).

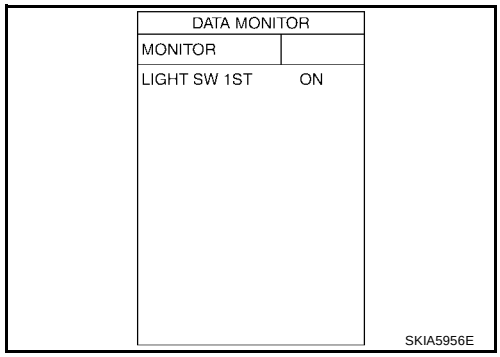
Parking, License Plate and/or Tail Lamps Do Not Illuminate

EKS005OD

1. CHECK COMBINATION SWITCH INPUT SIGNAL

With CONSULT-II

Select “BCM” on CONSULT-II. With “HEAD LAMP” data monitor, make sure “LIGHT SW 1ST” turns ON-OFF linked with operation of lighting switch.



When lighting switch is in 1ST position : LIGHT SW 1ST ON

Without CONSULT-II

Refer to LT-102, "Combination Switch Inspection" .

OK or NG

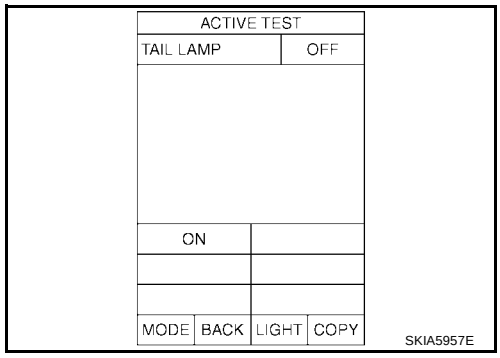
OK >> GO TO 2.

NG >> Check lighting switch. Refer to LT-102, "Combination Switch Inspection" .

2. ACTIVE TEST

With CONSULT-II

1. Select “IPDM E/R” on CONSULT-II, and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
2. Select “TAIL LAMP” on “SELECT TEST ITEM” screen.
3. Touch “ON” on "ACTIVE TEST" screen.
4. Make sure parking, license plate and tail lamp operation.



Parking, license plate and tail lamp should operate

Without CONSULT-II

1. Start auto active test. Refer to PG-21, "Auto Active Test" .
2. Make sure parking, license plate and tail lamp operation.

Parking, license plate and tail lamp should operate

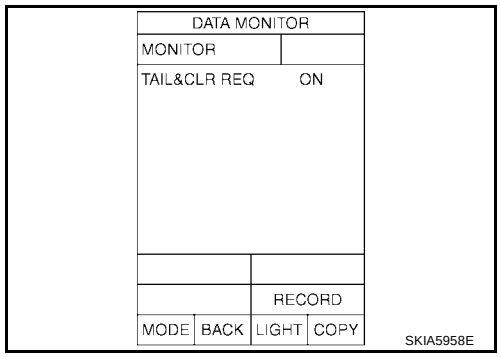
OK or NG

OK >> GO TO 3.

NG >> GO TO 4.

3. CHECK IPDM E/R

1. Select “IPDM E/R” on CONSULT-II, and select “DATA MONITOR” on “SELECT DIAG MODE” screen.
2. Make sure “TAIL&CLR REQ” turns ON when lighting switch is in 1ST position.



When lighting switch is in 1ST position : TAIL&CLR REQ ON

OK or NG

OK >> Replace IPDM E/R. Refer to PG-27, "Removal and Installation of IPDM E/R" .

NG >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .

4. CHECK INPUT SIGNAL

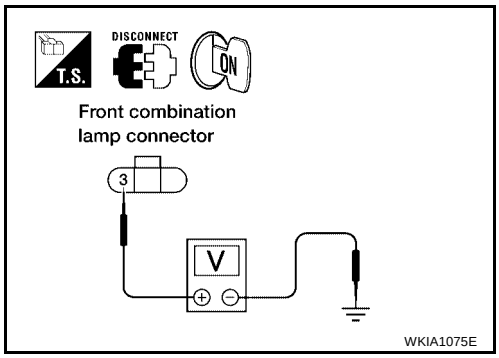
With CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front combination lamp, license plate lamp and rear combination lamp connectors.
3. Turn ignition switch ON.
4. Select “IPDM E/R” on CONSULT-II. and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
5. Select “TAIL LAMP” on “SELECT TEST ITEM” screen.
6. Touch “ON” on "ACTIVE TEST" screen.
7. When tail lamp is operating, check voltage between front combination lamp, license plate lamp, rear combination lamp harness connector and ground.

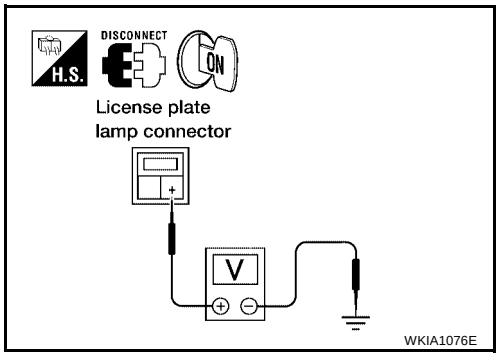
Without CONSULT-II

1. Turn ignition switch OFF.
2. Start auto active test. Refer to PG-21, "Auto Active Test" .
3. When tail lamp is operating, check voltage between front combination lamp, license plate lamp, rear combination lamp harness connector and ground.

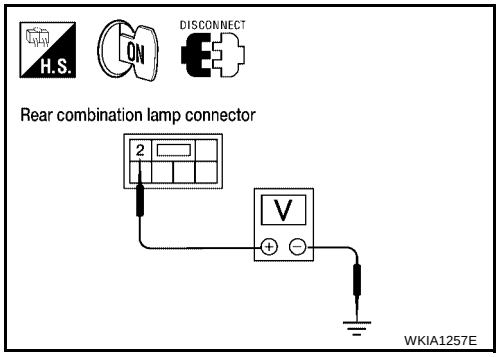
Terminals				Voltage
Front combination lamp (+)			(–)	
Connector		Terminal (Wire color)		
RH	E107	3 (R/L)	Ground	Battery voltage
LH	E11			



Terminals				Voltage
License plate lamp (+)			(–)	
Connector		Terminal (Wire color)		
RH	D508	+ (R/L)	Ground	Battery voltage
LH	D509			



Terminals				Voltage
Rear combination lamp (+)			(–)	
Connector		Terminal (Wire color)		
RH	B130	2 (R/L)	Ground	Battery voltage
LH	B35			



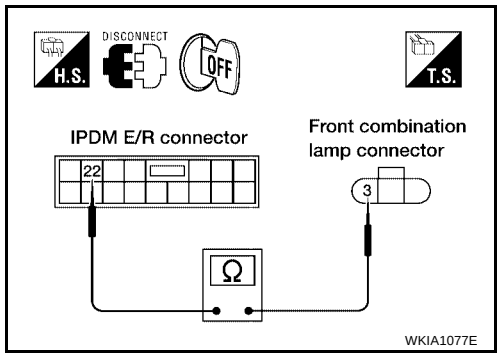
OK or NG

OK >> GO TO 6.
NG >> GO TO 5.

5. CHECK PARKING, LICENSE PLATE AND TAIL LAMP CIRCUIT

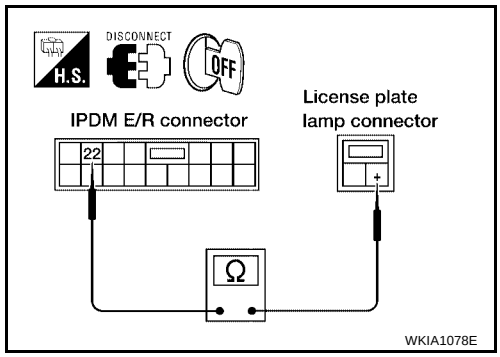
1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and front combination lamp harness connector.

Terminals					Continuity
IPDM E/R		Front combination lamp			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E122	22 (R/L)	RH	E107	3 (R/L)	Yes
		LH	E11		



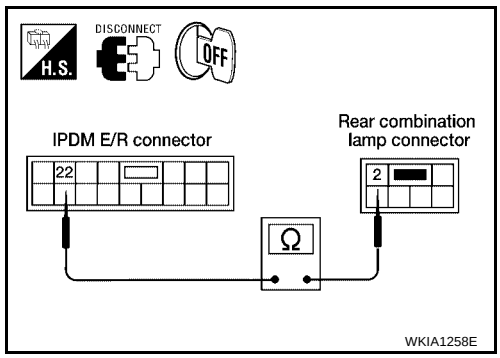
4. Check continuity between IPDM E/R harness connector and license plate lamp harness connector.

Terminals					Continuity
IPDM E/R		License plate lamp			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E122	22 (R/L)	RH	D508	+ (R/L)	Yes
		LH	D509		



5. Check continuity between IPDM E/R harness connector and rear combination lamp harness connector.

Terminals					Continuity
IPDM E/R		Rear combination lamp			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E122	22 (R/L)	RH	B130	2 (R/L)	Yes
		LH	B35		



OK or NG

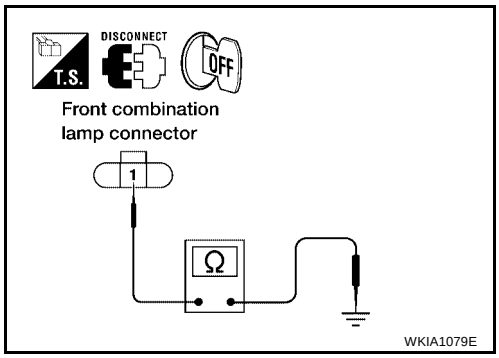
OK >> Replace IPDM E/R. Refer to PG-27, "Removal and Installation of IPDM E/R" .

NG >> Repair harness or connector.

6. CHECK GROUND

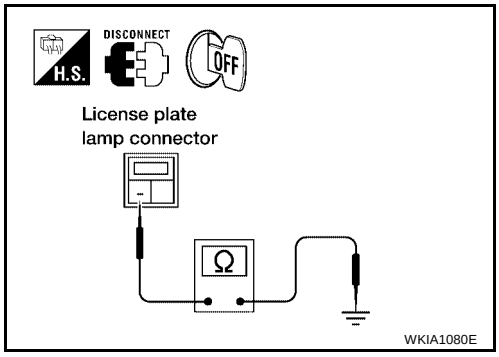
1. Check continuity between front combination lamp harness connector and ground.

Terminals				Continuity
Front combination lamp				
Connector		Terminal (Wire color)		
RH	E107	1 (B)	Ground	Yes
LH	E11			



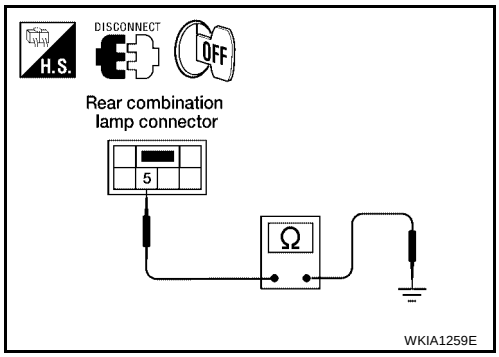
2. Check continuity between license lamp plate harness connector and ground.

Terminals				Continuity
License plate lamp				
Connector		Terminal (Wire color)		
RH	D508	– (B)	Ground	Yes
LH	D509			



3. Check continuity between rear combination lamp harness connector and ground.

Terminals				Continuity
Rear combination lamp				
Connector		Terminal (Wire color)		
RH	B130	5 (B)	Ground	Yes
LH	B35			



OK or NG

OK >> Check bulbs.
NG >> Repair harness or connector.

Parking, License Plate and Tail Lamps Do Not Turn OFF (After Approx. 10 Minutes)

EKS005OE

1. CHECK IPDM E/R

1. Turn ignition switch ON. Turn the combination switch (lighting switch) to the OFF position. Turn ignition switch OFF.
2. Verify that the parking, license plate, and tail lamps turn on and off after approximately 10 minutes.

OK or NG

OK >> Ignition relay malfunction. Refer to PG-16, "Function of Detecting Ignition Relay Malfunction" .
NG >> Inspection End.

Front Parking Lamp

EKS005OF

BULB REPLACEMENT

For bulb replacement, refer to LT-27, "FRONT TURN SIGNAL/PARKING LAMP" .

Tail Lamp

EKS005OG

BULB REPLACEMENT

For bulb replacement, refer to LT-124, "Bulb Replacement" .

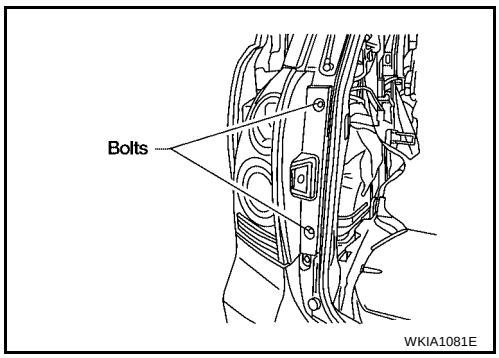
REAR COMBINATION LAMP

PFP:26554

Bulb Replacement

EKS005OI

1. Remove rear combination lamp mounting bolts.
2. Pull rear combination lamp to remove from the vehicle.
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb.
5. Install in the reverse order of removal.

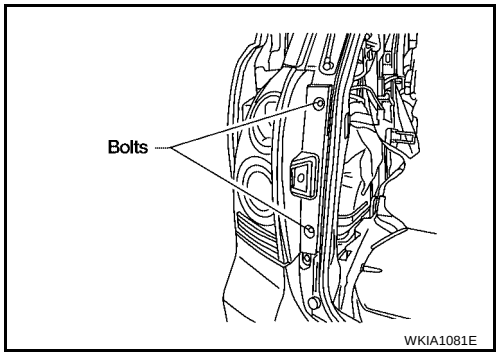


Removal and Installation

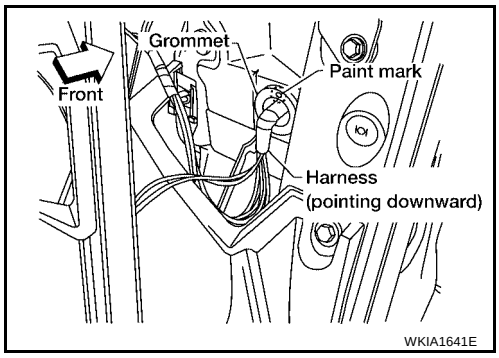
EKS005OJ

1. Remove rear lower finisher assembly. Refer to EI-34, "REAR LOWER FINISHER ASSEMBLY" .
2. Disconnect rear combination lamp connector.
3. Remove rear combination lamp mounting bolts.
4. Pull rear combination lamp to remove from the vehicle.

Rear combination lamp mounting bolts : 2.6 N·m (0.27 kg-m, 23 in-lb)



5. Install in the reverse order of removal noting the following.
   - Install rear combination lamp harness and grommet so that paint mark on grommet is at top and harness points down.

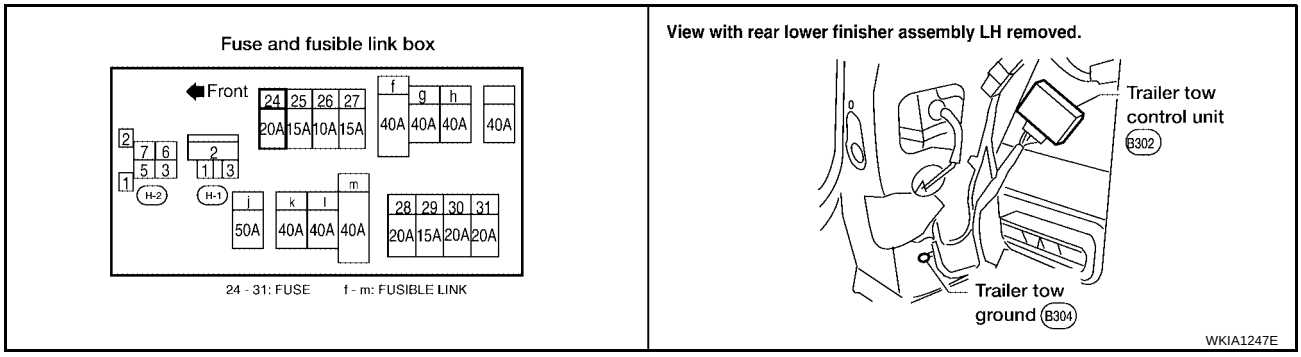


TRAILER TOW

PFP:93020

Component Parts and Harness Connector Location

EKS006HZ



System Description

EKS006HW

Power is supplied at all times

- through 20A fuse (No. 24, located in the fuse and fusible link box)
- to trailer tow control unit terminal 7.

Ground is supplied

- to trailer tow control unit terminal 5 and
- to trailer harness connector terminal 5
- through ground B304.

TRAILER TAIL LAMP OPERATION

The trailer tail lamps are controlled by the trailer tow control unit.
With the lighting switch in the parking and tail lamp ON (1ST) position, AUTO position (and the auto light system is activated) or headlamp ON (2ND) position, power is supplied

- to trailer tow control unit terminal 3
- through rear combination lamp LH.

TRAILER STOP, TURN SIGNAL AND HAZARD LAMP OPERATION

The trailer stop, turn signal and hazard lamps are all controlled by the trailer tow control unit. The trailer tow control unit regulates the amount of voltage supplied to the trailer lamps. If either turn signal or the hazard lamps are turned on and the trailer tow control unit gets a brake lamp input, the trailer tow control unit supplies more voltage to the trailer lamps to make them illuminate brighter.
Stop lamp input is supplied

- to trailer tow control unit terminal 8
- through rear combination lamp LH.

Left turn signal and hazard lamp input is supplied

- to trailer tow control unit terminal 4
- through rear combination lamp LH.

Right turn signal and hazard lamp input is supplied

- to trailer tow control unit terminal 9
- through rear combination lamp RH.

Based on the stop lamp, turn signal lamp and hazard lamp inputs to the trailer tow control unit, power is supplied to trailer stop/turn lamp LH

- through trailer tow control unit terminal 2
- to trailer harness connector terminal 2.

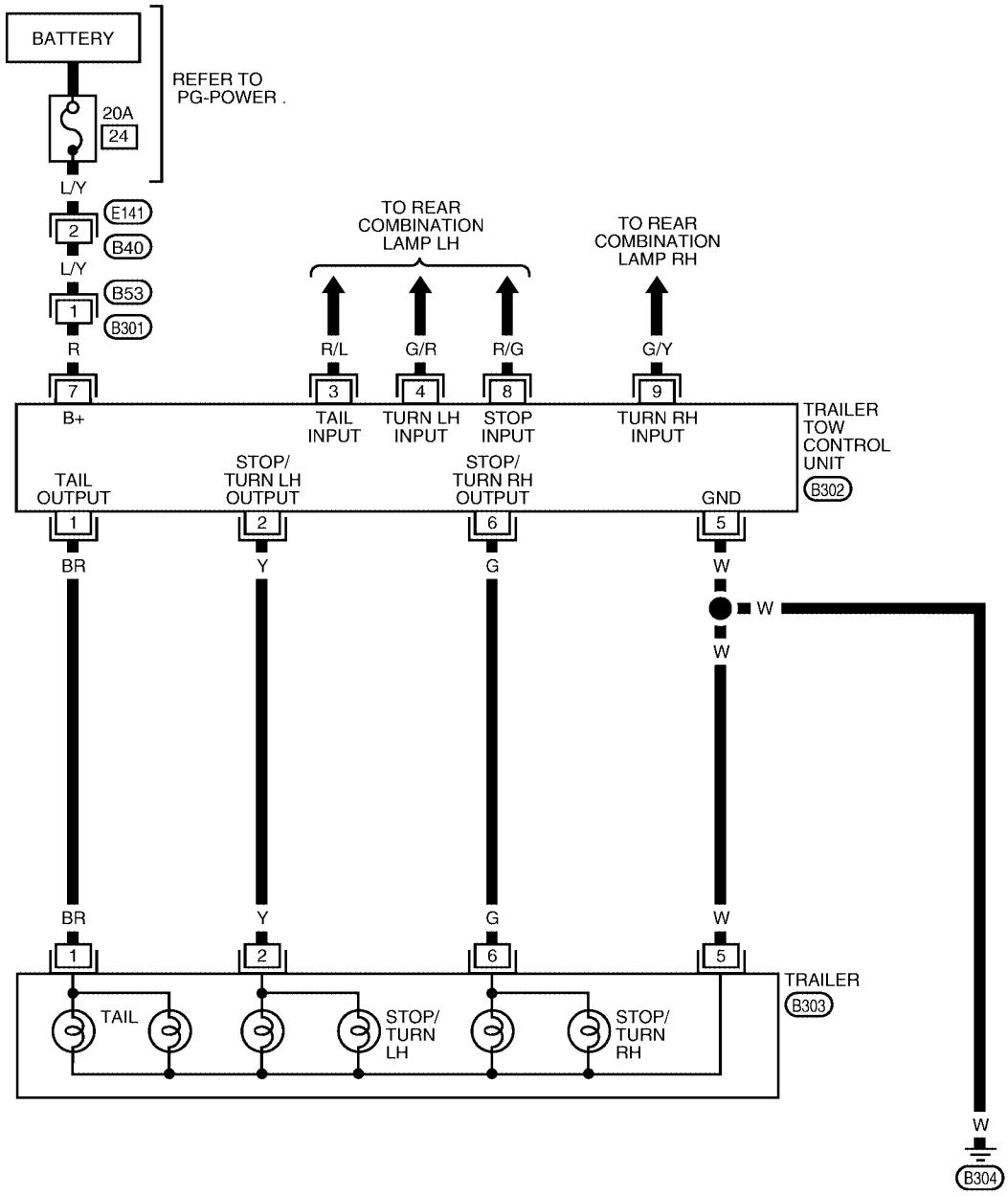
Power is also supplied to trailer stop/turn lamp RH

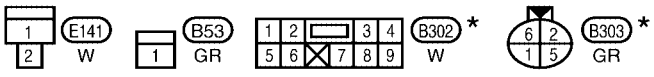
- through trailer tow control unit terminal 6
- to trailer harness connector terminal 6.

Wiring Diagram — T/TOW —

EKS006HX

LT-T/TOW-01





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

WKWA0564E

Trouble Diagnoses

EKS006HY

TRAILER TOW CONTROL UNIT INSPECTION TABLE

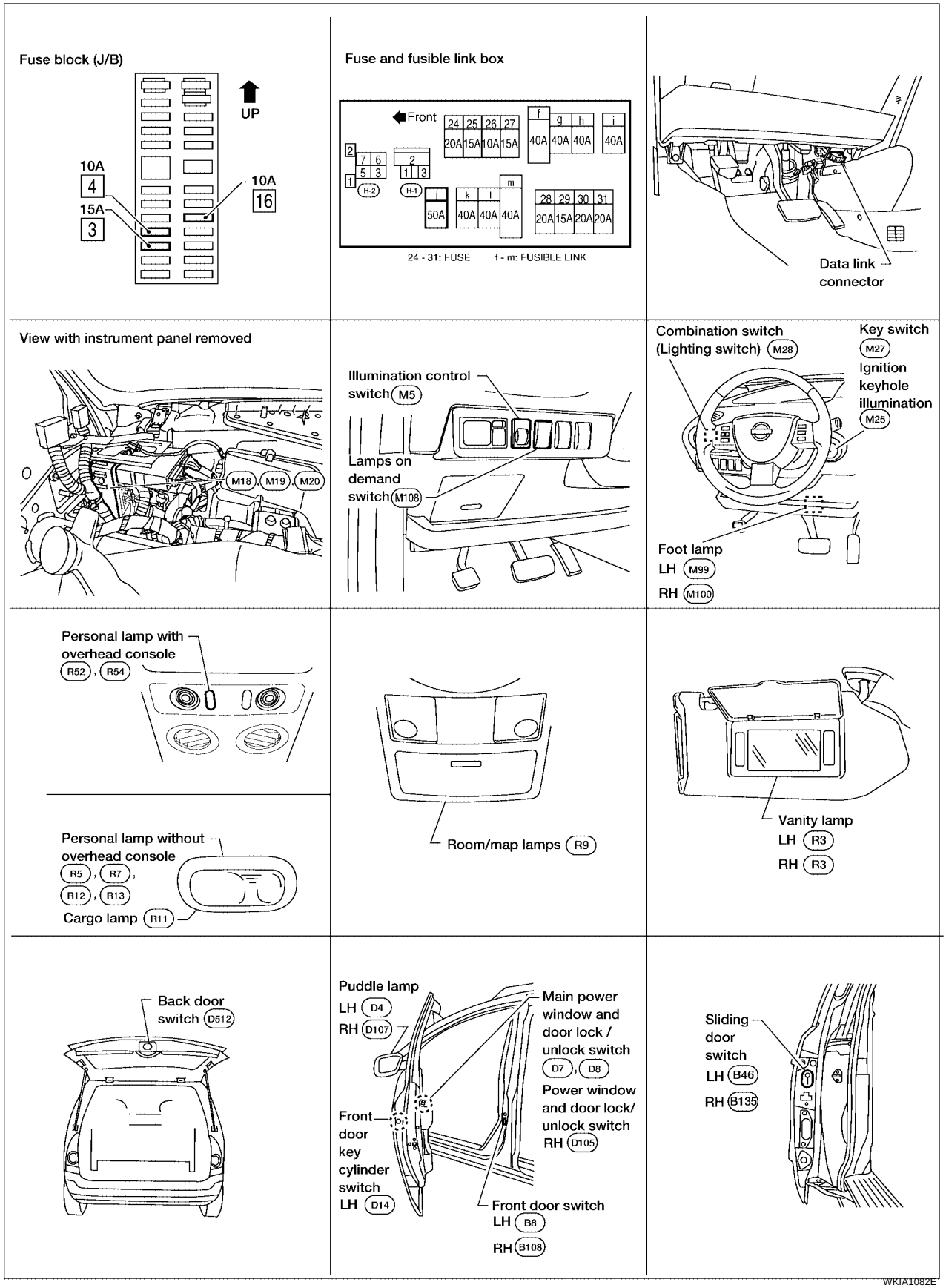
Terminal No.	Wire color	Item	Condition	Voltage (Approx.)
1	BR	Tail lamps signal output	When tail lamps operate	Battery voltage
			All other conditions	0
2	Y	Stop/LH turn lamp (output)	When brake pedal is depressed	Battery voltage
			When LH turn lamps or hazard lamps operate	Battery voltage (intermittently)
			All other conditions	0
3	R/L	Tail lamps signal input	When tail lamps operate	Battery voltage
			All other conditions	0
4	G/B	LH turn lamps input	When LH turn lamps or hazard lamps operate	Battery voltage (intermittently)
			All other conditions	0
5	W	Ground	—	—
6	G	Stop/RH turn lamp (output)	When brake pedal is depressed	Battery voltage
			When RH turn lamps or hazard lamps operate	Battery voltage (intermittently)
			All other conditions	0
7	R	Power supply	—	Battery voltage
8	R/G	Stop lamps signal input	When brake pedal is depressed	Battery voltage
			When brake pedal is released	0
9	G/Y	RH turn lamps input	When RH turn lamps or hazard lamps operate	Battery voltage (intermittently)
			All other conditions	0

INTERIOR ROOM LAMP

PFP:26410

Component Parts and Harness Connector Location

EKS005OK



WKIA1082E

System Description

EKS005OL

When lamps on demand switch is in DOOR position, room lamp and personal lamp ON/OFF is controlled by timer according to signals from switches including key switch, front door switch driver side, unlock signal from keyfob, door lock and unlock switch, key cylinder lock and unlock switch, ignition switch.
When room lamp and personal lamp turns ON, there is a gradual brightening over 1 second. When room lamp and personal lamp turns OFF, there is a gradual dimming over 1 second.
The room lamp and personal lamp timer is controlled by the BCM (body control module).
Room lamp and personal lamp timer control settings can be changed with CONSULT-II.
Ignition keyhole illumination turns ON when driver door is opened (door switch ON) or key is removed from key cylinder. Illumination turns OFF when driver door is closed (door switch OFF).
Step and foot lamp turns ON when driver door, passenger or rear doors are opened (door switch ON). Lamp turns OFF when driver, passenger and rear doors are closed (all door switches OFF).

POWER SUPPLY AND GROUND

Power is supplied at all times

- through 15A fuse [No. 19, located in the fuse block (J/B)]
- to key switch terminal 1
- through 15A fuse [No. 3, located in the fuse block (J/B)]
- to BCM terminal 42
- through 50A fusible link (letter **j** , located in the fuse and fusible link box)
- to BCM terminal 55.

When the key is inserted in key switch, power is supplied

- through the key switch terminal 2
- to BCM terminal 37.

With the ignition switch in the 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 terminals 49 (early production) and 52
- through grounds terminals M57, M61 and M79.

When the driver side door is opened, ground is supplied

- through case ground of front door switch LH
- to BCM terminal 62.

When the passenger side door is opened, ground is supplied

- through case ground of front door switch RH
- to BCM terminal 12.

When the sliding door LH is opened, ground is supplied

- through case ground of sliding door switch LH
- to BCM terminal 63.

When the sliding door RH is opened, ground is supplied

- through case ground of sliding door switch RH
- to BCM terminal 13.

When the liftgate is opened, ground is supplied

- to BCM terminal 58.
- through back door switch terminal 3 (without back door auto closure system) or terminal 8 (with back door auto closure system)
- to grounds terminals D403 and D404.

When the driver or passenger side door is unlocked by the door lock and unlock switch, BCM receives serial data

- through grounds terminals M57, M61 and M79
- to main power window and door lock/unlock switch terminal 14 (with rear power vent windows) or terminal 12 (without rear power vent windows) and power window and door lock/unlock switch RH terminal 16

- to BCM terminal 22.

When the driver side door is unlocked by the key, the BCM receives serial data

- through grounds M57, M61 and M79
- to front door key cylinder switch LH terminal 5
- from front door key cylinder switch LH terminal 1
- to main power window and door lock/unlock switch terminal 4 (with rear power vent windows) or terminal 6 (without rear power vent windows)
- from main power window and door lock/unlock switch terminal 14 (with rear power vent windows) or terminal 12 (without rear power vent windows)
- to BCM terminal 22.

When a signal, or combination of signals is received by BCM, ground is supplied

- through BCM terminal 48
- to lamps on demand switch terminal 3
- through lamps on demand switch terminal 4
- to interior room/map lamps terminal 2 and
- to personal lamps terminal 2 (without rear roof console assembly) or terminal 3 (with rear roof console assembly).

With power and ground supplied, the lamps illuminate.

SWITCH OPERATION

When driver door switch is ON (door is opened), ground is supplied

- through BCM terminal 1
- to ignition keyhole illumination terminal –.

And power is supplied

- through BCM terminal 41
- to ignition keyhole illumination terminal +.

When any door switch is ON (door is opened), ground is supplied

- through BCM terminal 47
- to front step lamp LH and RH and foot lamp LH and RH terminal –.

And power is supplied

- through BCM terminal 41
- to front step lamp LH and RH terminal +, puddle lamp LH and RH terminal 1, running board lamps terminal 2 and foot lamp LH and RH terminal +.

When map lamp switch is ON, ground is supplied

- through grounds M57, M61 and M79
- to map lamp terminal 3.

And power is supplied

- through BCM terminal 41
- to map lamp terminal 1.

When vanity mirror lamp (driver side and passenger side) is ON, ground is supplied

- through grounds M57, M61 and M79
- to vanity mirror lamp (driver side and passenger side) terminal –.

And power is supplied

- through BCM terminal 41
- to vanity mirror lamp (driver side and passenger side) terminal +.

When cargo lamp is ON, ground is supplied

- through grounds M57, M61 and M79
- to cargo lamp terminal 1.

And power is supplied

- through BCM terminal 41

- to cargo lamp terminal 2.

ROOM LAMP TIMER OPERATION

When lamps on demand switch is in DOOR position, and when all conditions below are met, BCM performs timer control (maximum 30 seconds) for interior room lamp and map lamp ON/OFF.
Power is supplied

- through 15A fuse [No. 19, located in the fuse block (J/B)]
- to key switch terminal 1.

Key is removed from ignition key cylinder (key switch OFF), power will not be supplied to BCM terminal 37.
Serial data is supplied

- to BCM terminal 22
- through main power window and door lock/unlock switch terminal 14 (with rear power vent windows) or 12 (without rear power vent windows).

At the time that driver door is opened, BCM detects that driver door is unlocked. It determines that interior room lamp and map lamp timer operation conditions are met, and turns the interior room lamp and map lamp ON for 30 seconds.
Key is in ignition key cylinder (key switch ON), power is supplied

- through key switch terminal 2
- to BCM terminal 37.

When key is removed from key switch (key switch OFF), power supply to BCM terminal 37 is terminated. BCM detects that key has been removed, determines that interior room lamp and map lamp timer conditions are met, and turns the interior room lamp and map lamp ON for 30 seconds.
When driver door opens → closes, and the key is not inserted in the key switch (key switch OFF), BCM terminal 62 changes between 0V (door open) → 12V (door closed). The BCM determines that conditions for interior room lamp and map lamp operation are met and turns the interior room lamp ON for 30 seconds.
Timer control is canceled under the following conditions.

- Driver door is locked (when locked with keyfob, main power window and door lock/unlock switch or door key cylinder switch)
- Driver door is opened (driver door switch turns ON)
- Ignition switch ON.

INTERIOR LAMP BATTERY SAVER CONTROL

If interior lamp is left “ON”, it will not be turned out even when door is closed.
BCM turns off interior lamp automatically to save battery 30 minutes after ignition switch is turned off.
BCM controls interior lamps listed below:

- Vanity lamp
- Room/map lamp
- Cargo lamp
- Personal lamp
- Step lamps
- Puddle lamps
- Foot lamps

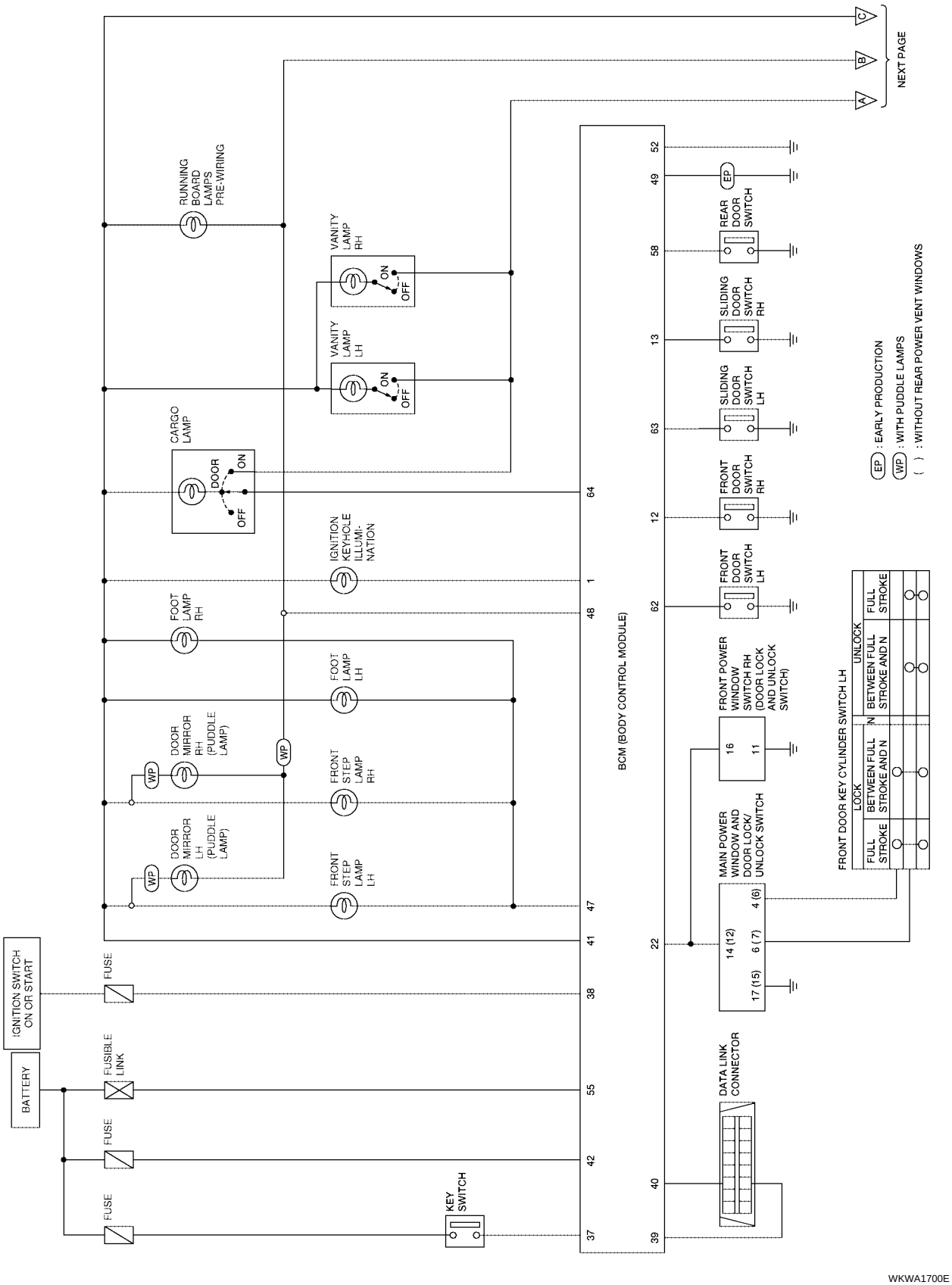
After lamps turn OFF by the battery saver system, the lamps illuminate again when

- signal from keyfob, or main power window and door lock/unlock switch or key cylinder is locked or unlocked,
- door is opened or closed,
- key is removed from ignition key cylinder or inserted in ignition key cylinder.

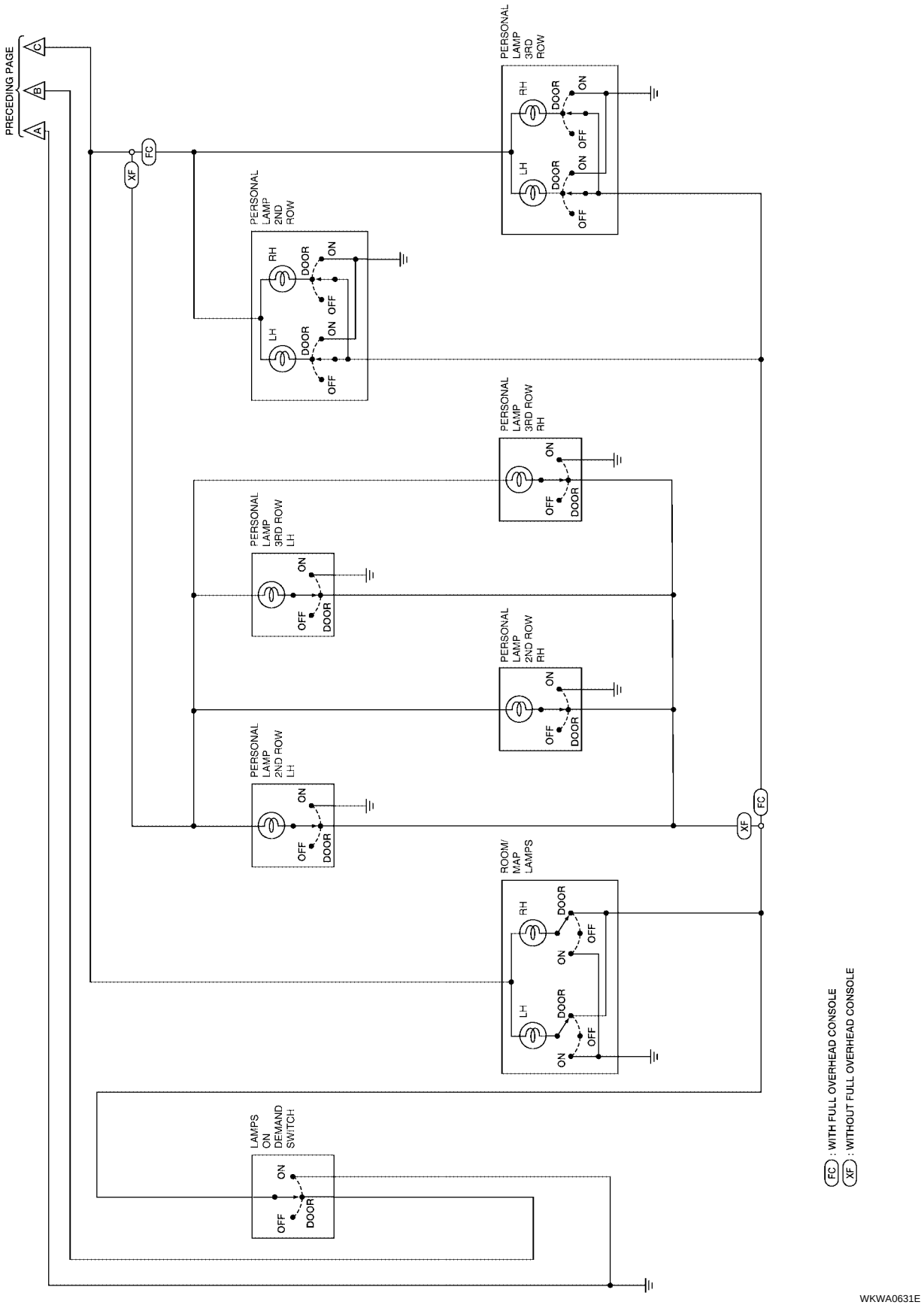
Interior lamp battery saver control period can be changed by the function setting of CONSULT-II.

Schematic

EKS005OM



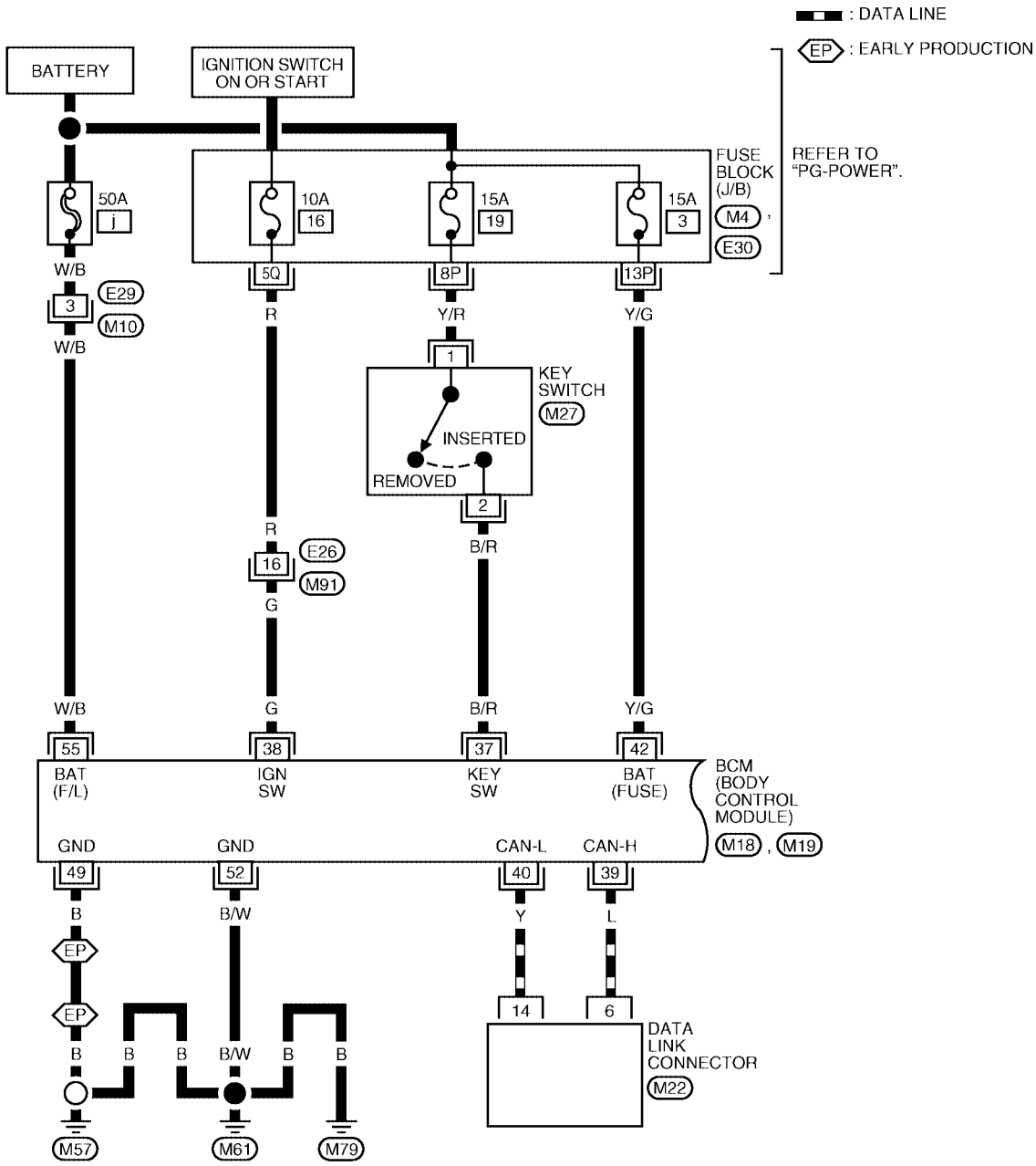
WKWA1700E

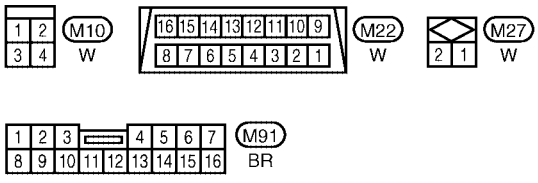

PRECEDING PAGE
C
B
A
FC
XF
PERSONAL LAMP 3RD ROW
RH
LH
DOOR
ON
OFF
PERSONAL LAMP 2ND ROW
PERSONAL LAMP 3RD ROW RH
PERSONAL LAMP 3RD ROW LH
PERSONAL LAMP 2ND ROW RH
PERSONAL LAMP 2ND ROW LH
ROOM/ MAP LAMPS
LAMPS ON DEMAND SWITCH
FC : WITH FULL OVERHEAD CONSOLE
XF : WITHOUT FULL OVERHEAD CONSOLE
WKWA0631E

Wiring Diagram — INT/L —

EKS005ON

LT-INT/L-01

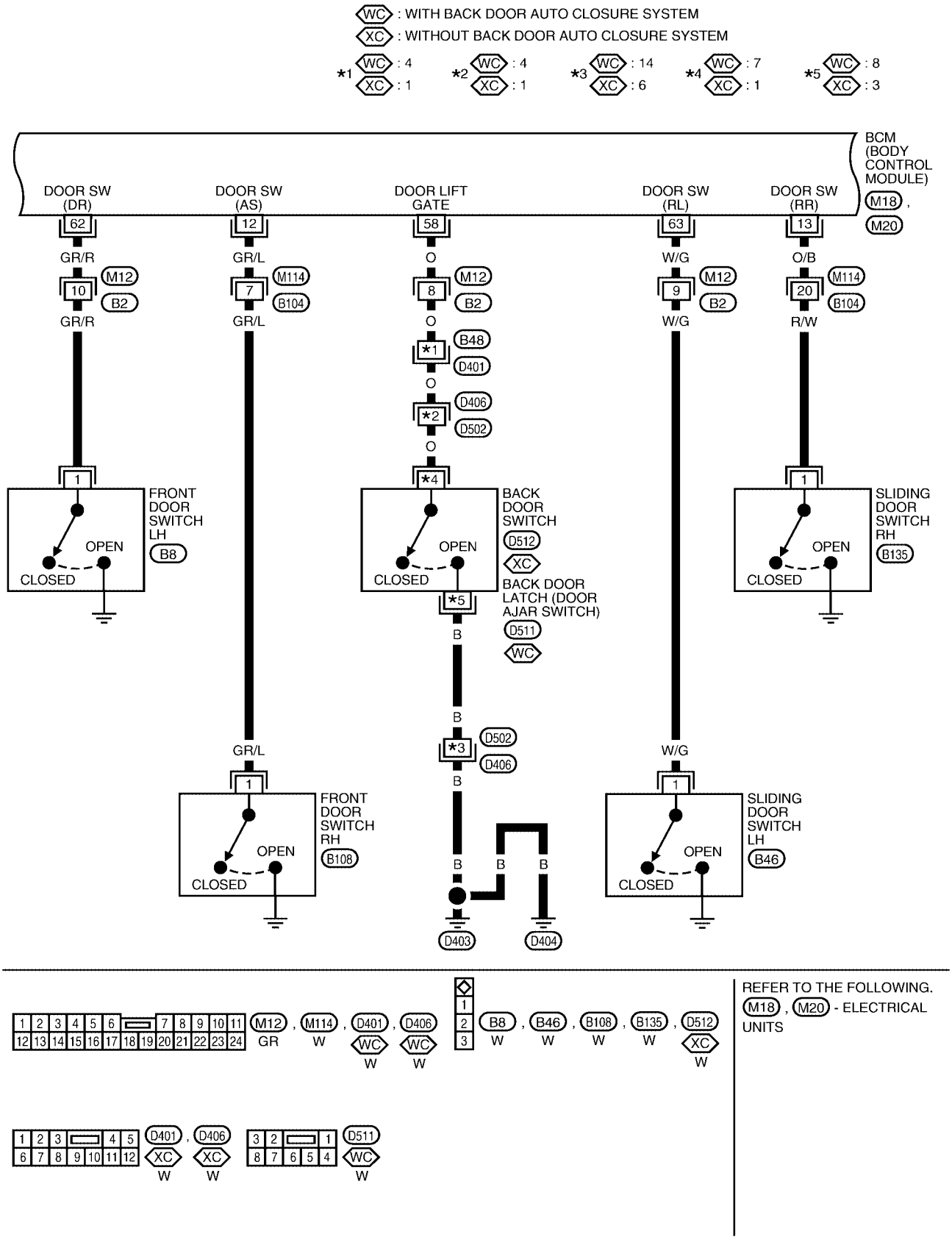




REFER TO THE FOLLOWING.
M4, M30 - FUSE BLOCK - JUNCTION BOX (J/B)
M18, M19 - ELECTRICAL UNITS

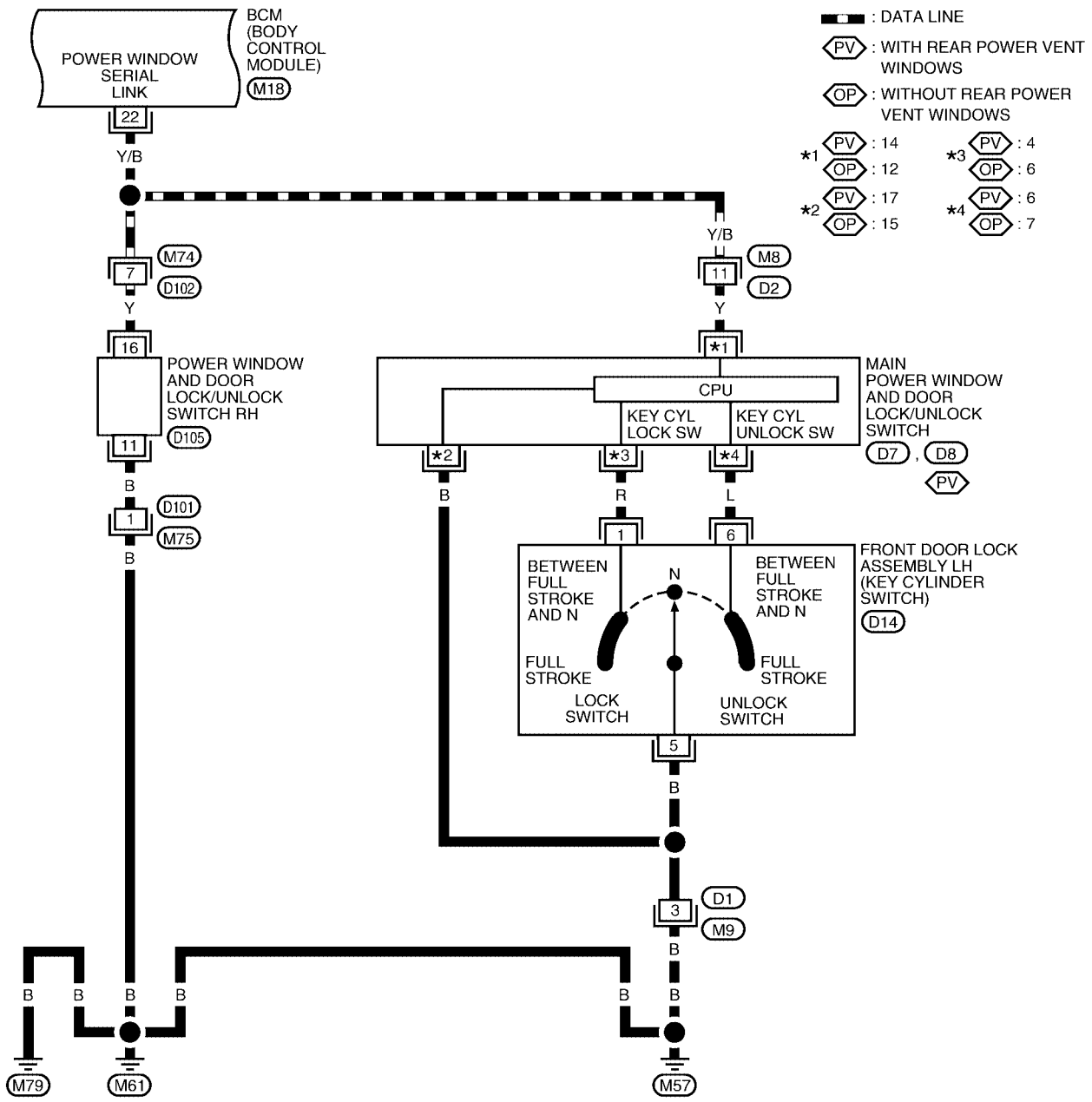
WKWA1428E

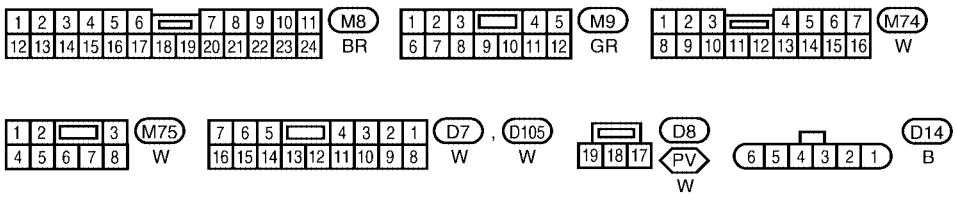
LT-INT/L-02



WKWA2796E

LT-INT/L-03

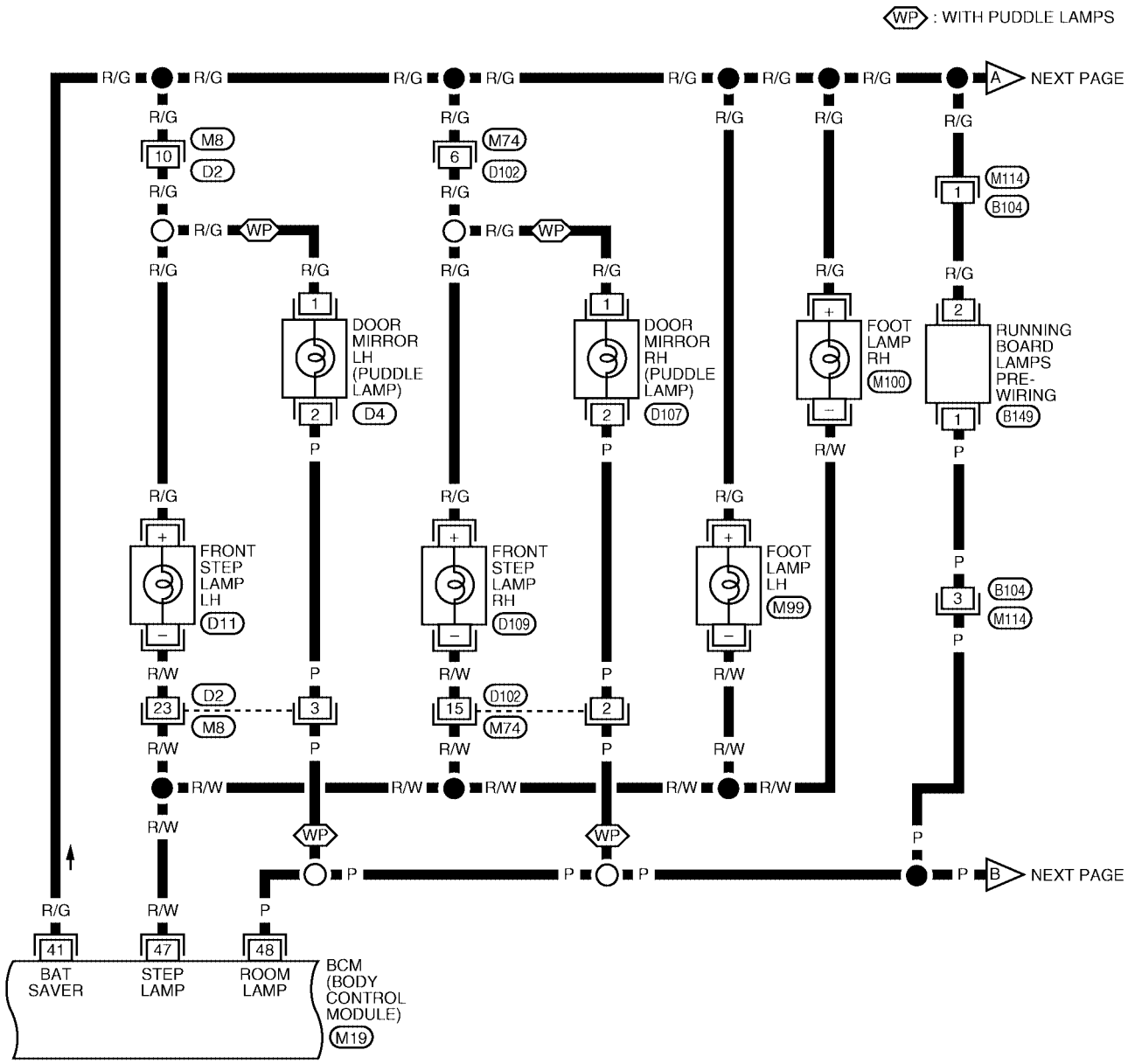


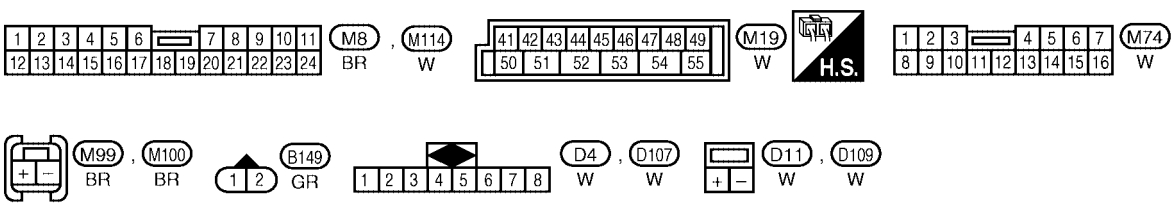


REFER TO THE FOLLOWING.
M18 - ELECTRICAL UNITS

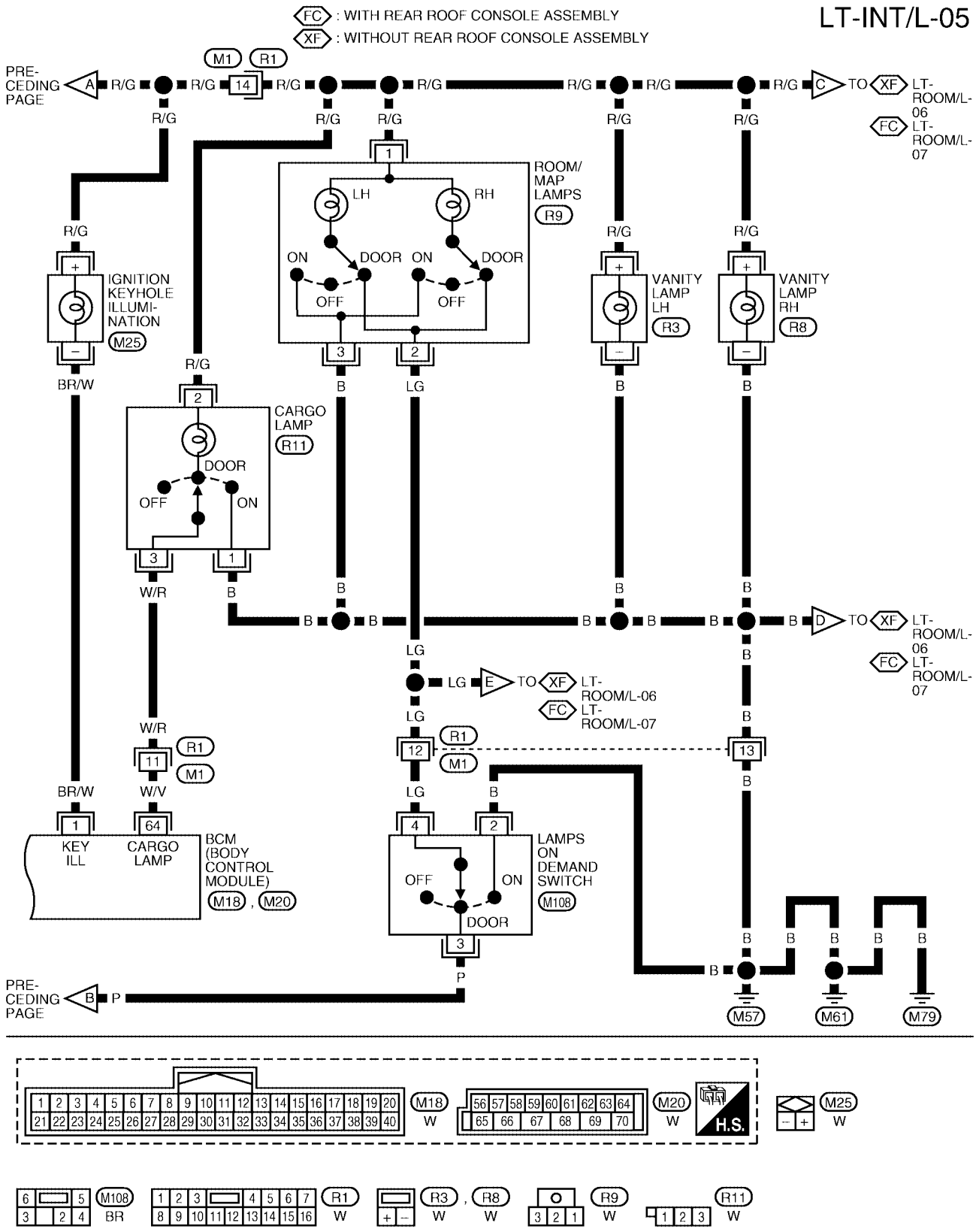
WKWA2797E

LT-INT/L-04

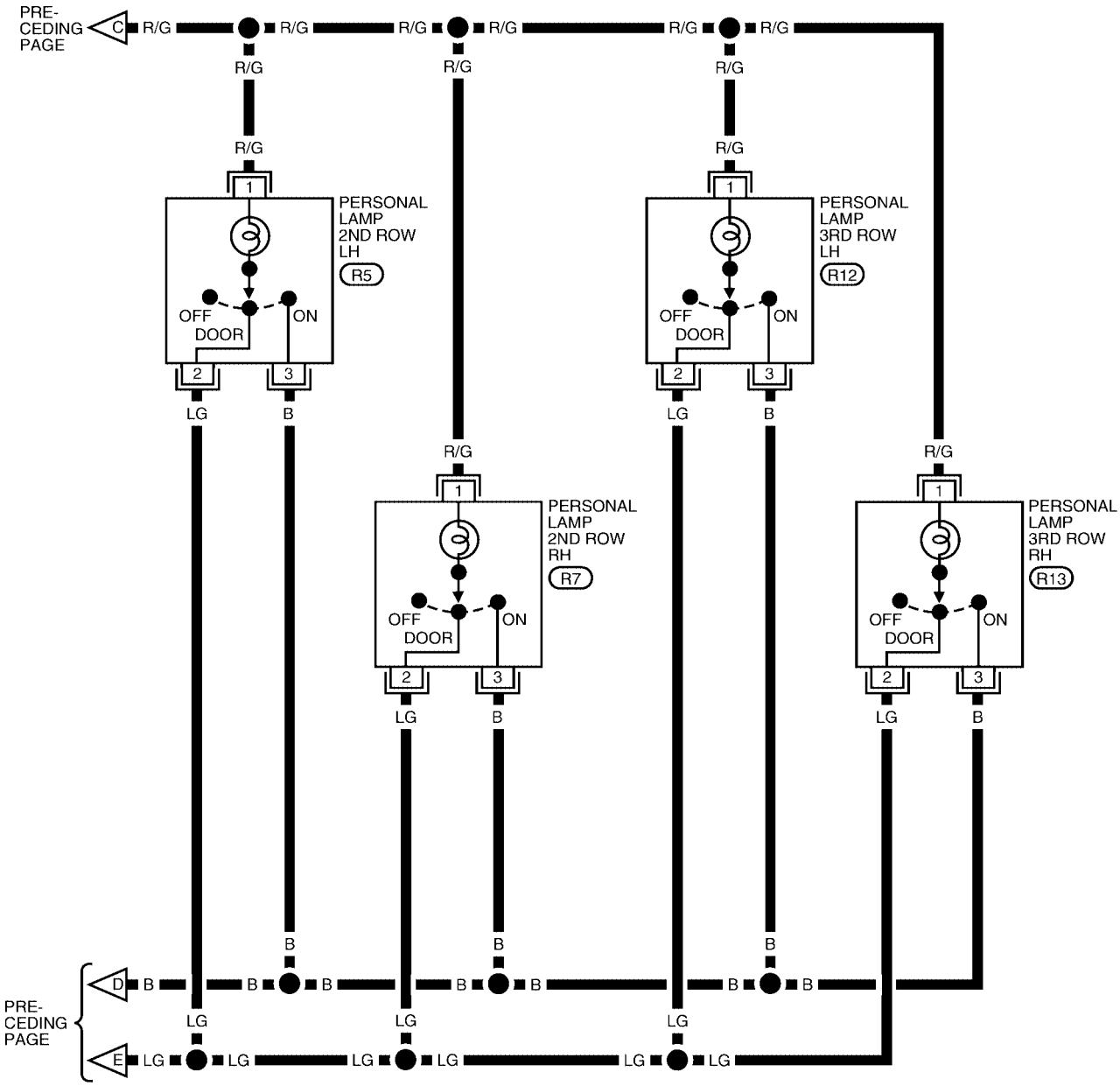


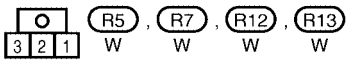


WKWA1415E


FC : WITH REAR ROOF CONSOLE ASSEMBLY
XF : WITHOUT REAR ROOF CONSOLE ASSEMBLY
LT-INT/L-05
PRE-CEDING PAGE
ROOM/ MAP LAMPS
R9
LH
RH
ON
DOOR
OFF
IGNITION KEYHOLE ILLUMI-NATION
M25
VANITY LAMP LH
R3
VANITY LAMP RH
R8
CARGO LAMP
R11
BCM (BODY CONTROL MODULE)
M18 , M20
KEY ILL
CARGO LAMP
LAMPS ON DEMAND SWITCH
M108
TO XF LT-ROOM/L-06
FC LT-ROOM/L-07
M57
M61
M79
M18
M20
M25
R1
R3 , R8
R9
R11
WKWA1416E

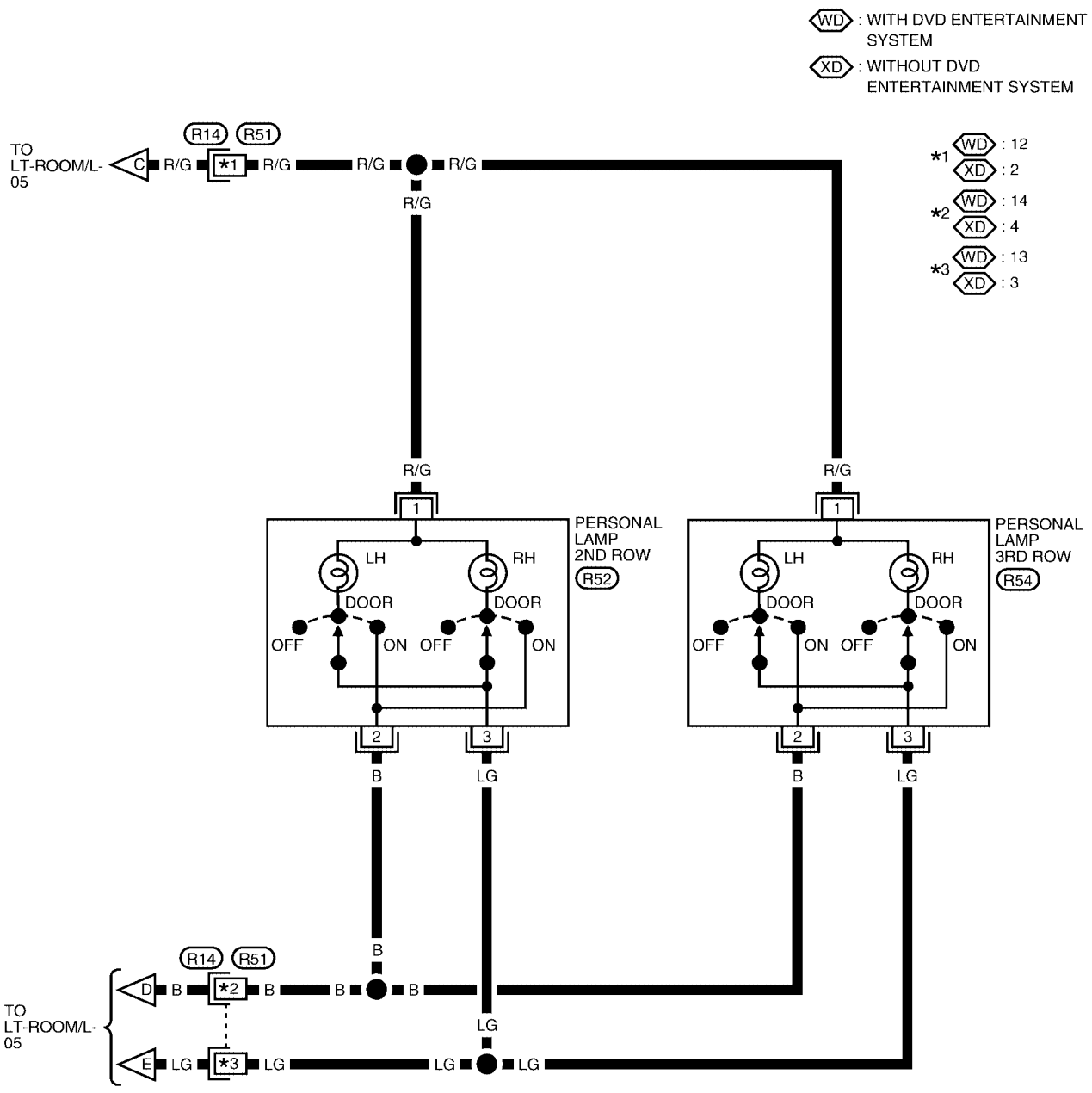
LT-INT/L-06

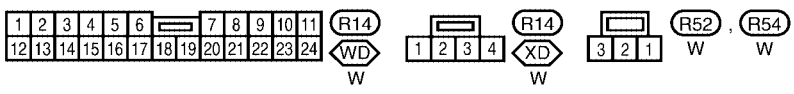




WKWA0571E

LT-INT/L-07

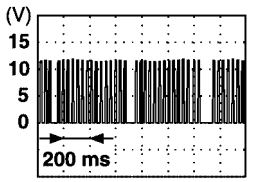




WKWA0572E

Terminals and Reference Values for BCM

EKS005OO

Terminal No.	Wire color	Signal name	Measuring condition				Reference value (Approx.)
			Ignition switch	Operation or condition			
1	BR/W	Ignition keyhole illumination signal	OFF	Door is locked. (SW OFF)			Battery voltage
				Door is unlocked. (SW ON)			0V
12	GR/L	Front door switch RH signal	OFF	Front door switch RH	ON (open)		0V
					OFF (closed)		Battery voltage
13	O/B	Sliding door switch RH signal	OFF	Sliding door switch RH	ON (open)		0V
					OFF (closed)		Battery voltage
22	Y/B	Power window switch serial link	—	—			 PIIA2344J
37	B/R	Key-in detection switch signal	OFF	Vehicle key is removed.			0V
				Vehicle key is inserted.			Battery voltage
38	G	Ignition power supply	ON	—			Battery voltage
39	L	CAN-H	—	—			—
40	Y	CAN-L	—	—			—
41	R/G	Battery saver output signal	OFF	30 minutes after ignition switch is turned to OFF			0V
			ON	—			Battery voltage
42	Y/G	Battery power supply	OFF	—			Battery voltage
47	R/W	Step lamp signal	OFF	Any door is open (ON)			0V
				All doors are closed (OFF)			Battery voltage
48	P	Interior room/map lamp signal	OFF	Lamps on demand switch: DOOR position	Any door switch	ON (open)	0V
						OFF (closed)	Battery voltage
49*	B	Ground	ON	—			0V
52	B/W	Ground	ON	—			0V
55	W/B	Battery power supply	OFF	—			Battery voltage
58	O	Back door switch signal	OFF	Back door switch	ON (open)		0V
					OFF (closed)		Battery voltage
62	GR/R	Front door switch LH signal	OFF	Front door switch LH	ON (open)		0V
					OFF (closed)		Battery voltage
63	W/G	Sliding door switch LH signal	OFF	Sliding door switch LH	ON (open)		0V
					OFF (closed)		Battery voltage
64	W/V	Cargo lamp signal	OFF	Cargo lamp switch: DOOR position	ON (open)		0V
					OFF (closed)		Battery voltage

* Early production

How to Proceed With Trouble Diagnosis

EKS005OP

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-129, "System Description" .
3. Carry out the Preliminary Check. Refer to LT-142, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the interior room lamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

EKS005OQ

SWITCH INSPECTION

- Ensure lamps on demand switch is in the DOOR or ON position.

INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES OR FUSIBLE LINK

Check for blown BCM fuses or fusible link.

Unit	Power source	Fuse or fusible link No.
BCM	Battery	j
		3
	Ignition switch ON or START position	16

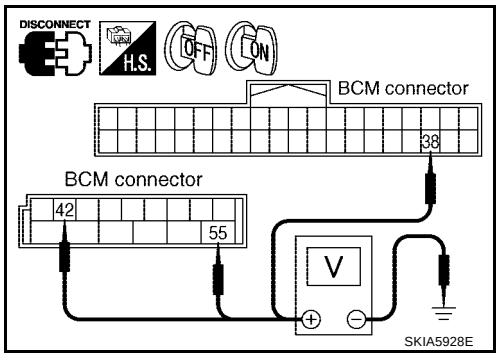
Refer to LT-134, "Wiring Diagram — INT/L —" .

OK or NG

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

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect BCM connectors.
2. Check voltage between BCM connector and ground.



Terminals			Ignition switch position	
(+)		(–)	OFF	ON
Connector	Terminal (Wire color)			
M19	42 (Y/G)	Ground	Battery voltage	Battery voltage
	55 (W/B)		Battery voltage	Battery voltage
M18	38 (G)		0V	Battery voltage

OK or NG

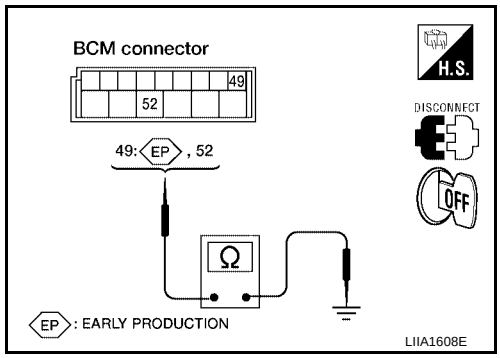
OK >> GO TO 3.
NG >> Check harness for open between BCM and fuse.

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

Terminals			Continuity
Connector	Terminal (Wire color)		
M19	49* (B)	Ground	Yes
	52 (B/W)		

* Early production



OK or NG

OK >> Inspection End.
NG >> Check harness ground circuit.

CONSULT-II Function (BCM)

EKS005OR

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

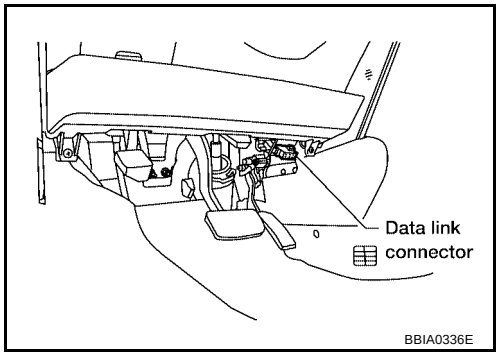
BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	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 OPERATION

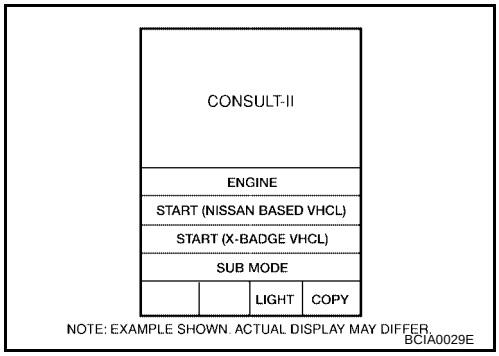
CAUTION:

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

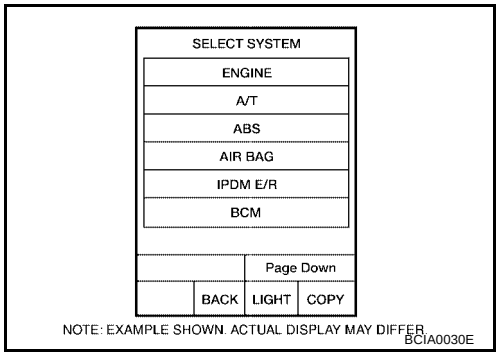
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



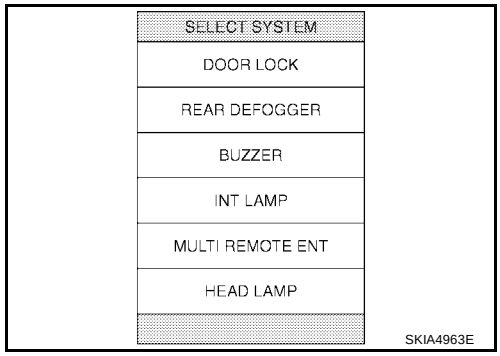
2. Touch "START (NISSAN BASED VHCL)".



3. Touch "BCM" on "SELECT SYSTEM" screen.
   If "BCM" is not indicated, go to GI-37, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Touch "INT LAMP" on "SELECT SYSTEM" screen.



WORK SUPPORT

Operation Procedure

1. Touch "INT LAMP" on "SELECT SYSTEM" screen.
2. Touch "WORK SUPPORT" on "SELECT DIAG MODE" screen.
3. Touch "SET I/L D-UNLCK INTCON" on "SELECT WORK ITEM" screen.
4. Touch "START".
5. Touch "CHANGE SETT".
6. The setting will be changed and "CUSTOMIZING COMPLETED" will be displayed.
7. Touch "END".

Display Item List

Item	Description	CONSULT-II
SET I/L D-UNLCK INTCON	The 30 seconds operating function of the interior room lamps and the ignition keyhole illumination can be selected when driver door is released (unlocked).	ON/OFF
ROOM LAMP ON TIME SET	The time in order to escalate illumination can be adjusted when the interior room lamps and the ignition keyhole illumination is turned on.	MODE 1 - 7
ROOM LAMP OFF TIME SET	The time in order to diminish illumination can be adjusted when the interior room lamps and the ignition keyhole illumination is turned off.	MODE 1 - 7

Reference between "MODE" and "TIME" for "TURN ON/OFF".

MODE	1	2	3	4	5	6	7
Time (sec.)	0.5	1	2	3	4	5	0

DATA MONITOR

Operation Procedure

1. Touch "INT LAMP" on "SELECT TEST ITEM" screen.
2. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Touch either "ALL SIGNALS" or "SELECTION FROM MENU" on "SELECT MONITOR ITEM" screen.

All signals	Monitors all the signals.
Selection from menu	Selects and monitors the individual signal.

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

Display Item List

Monitor item		Contents
IGN ON SW	"ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
KEY ON SW	"ON/OFF"	Displays "Key inserted (ON)/key removed (OFF)" status judged from the key switch signal.
DOOR SW-DR	"ON/OFF"	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-AS	"ON/OFF"	Displays "Door open (ON)/Door closed (OFF)" status, determined from passenger door switch signal.
DOOR SW-RR	"ON/OFF"	Displays "Door open (ON)/Door closed (OFF)" status, determined from sliding door switch RH signal.
DOOR SW-RL	"ON/OFF"	Displays "Door open (ON)/Door closed (OFF)" status, determined from sliding door switch LH signal.
BACK DOOR SW	"ON/OFF"	Displays "Door open (ON)/Door closed (OFF)" status, determined from back door switch signal.
KEY CYL LK-SW	"ON/OFF"	Displays "Door locked (ON)" status, determined from key cylinder lock switch in driver door.
KEY CYL UN-SW	"ON/OFF"	Displays "Door unlocked (OFF)" status, determined from key cylinder lock switch in driver door.
CDL LOCK SW	"ON/OFF"	Displays "Door locked (ON)/Door unlocked (OFF)" status, determined from locking detection switch in driver door.
CDL UNLOCK SW	"ON/OFF"	Displays "Door unlocked (OFF)" status, determined from locking detection switch in passenger door.
KEYLESS LOCK	"ON/OFF"	Displays "Locked (ON)/Other (OFF)" status, determined from lock signal.
KEYLESS UNLOCK	"ON/OFF"	Displays "Unlocked (ON)/Other (OFF)" status, determined from unlock signal.

ACTIVE TEST

Operation Procedure

1. Touch "INT LAMP" on "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Touch item to be tested and check operation of the selected item.
4. During the operation check, touching "BACK" deactivates the operation.

Display Item List

Test item	Description
INT LAMP	Interior room lamp can be operated by any ON-OFF operations.
IGN ILLUM	Ignition keyhole illumination can be operated by ON-OFF operation.

Room/Map Lamp Control Does Not Operate

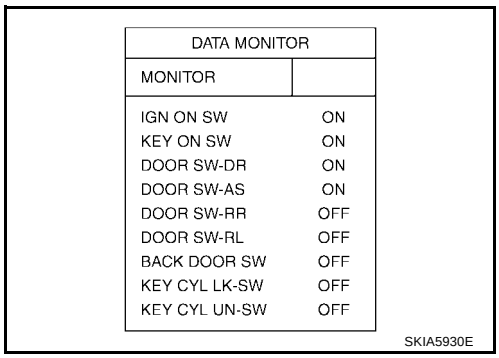
EKS005OS

1. CHECK EACH SWITCH

Select “BCM” on CONSULT-II. With “INT LAMP” data monitor, make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-146, "Display Item List" for switches and their functions.

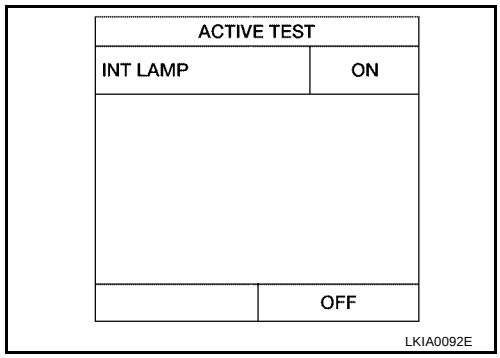
OK or NG

OK >> GO TO 2.
NG >> Inspect malfunctioning switch system.



2. ACTIVE TEST

1. Select “BCM” on CONSULT-II. Select “INT LAMP” active test.
2. When lamps on demand switch is in “DOOR” position, use active test to make sure interior room lamp operates.



OK or NG

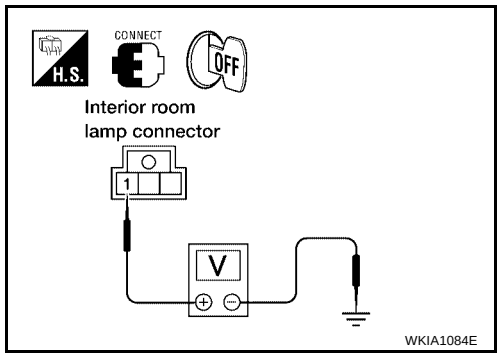
OK >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .

NG >> GO TO 3.

3. CHECK INTERIOR ROOM LAMP INPUT

1. Turn ignition switch OFF.
2. Check voltage between room/map lamp harness connector R9 terminal 1 (R/G) and ground.

Battery voltage should exist.



OK or NG

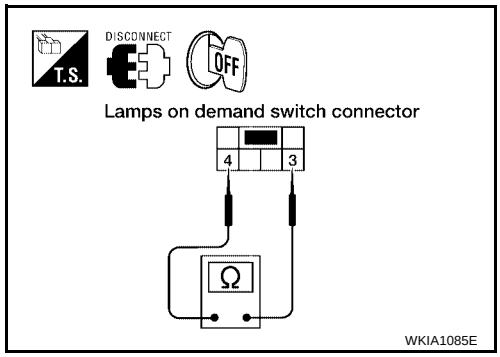
OK >> GO TO 4.

NG >> GO TO 6.

4. CHECK LAMPS ON DEMAND SWITCH

1. Disconnect lamps on demand switch connector.
2. Check continuity between lamps on demand switch terminals.

Terminal		Condition	Continuity
Lamps on demand switch			
3	4	Lamps on demand switch position: DOOR	Yes
		Lamps on demand switch position: OFF	No



OK or NG

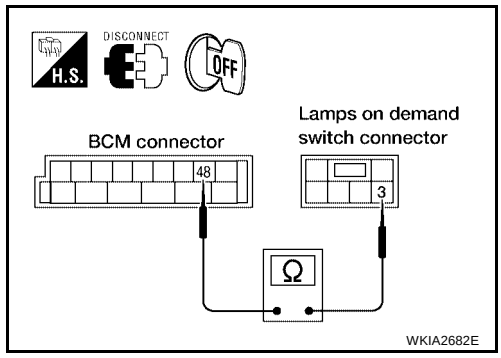
OK >> GO TO 5.

NG >> Replace lamps on demand switch.

5. CHECK INTERIOR ROOM LAMP CIRCUIT

1. Connect lamps on demand switch connector.
2. Turn lamps on demand switch to DOOR position.
3. Disconnect BCM connector.
4. Check continuity between BCM harness connector M19 terminal 48 (P) and lamps on demand switch harness connector M108 terminal 3 (P).

Continuity should exist.



OK or NG

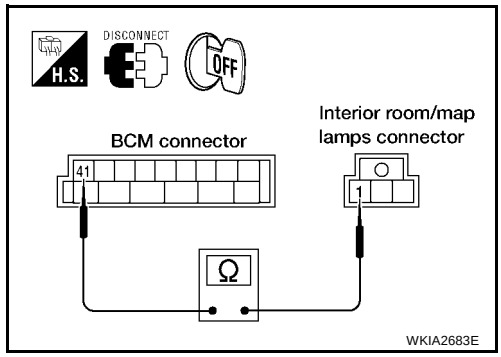
OK >> Replace BCM if interior lamp does not work after setting the connector again. Refer to BCS-19, "Removal and Installation of BCM" .

NG >> Repair harness or connector.

6. CHECK INTERIOR ROOM LAMP CIRCUIT

1. Disconnect BCM connector and interior room lamp connector.
2. Check continuity between BCM harness connector M19 terminal 41 (R/G) and interior room/map lamps harness connector R9 terminal 1 (R/G).

Continuity should exist.



OK or NG

OK >> Replace BCM if interior lamp does not work after setting the connector again. Refer to BCS-19, "Removal and Installation of BCM" .

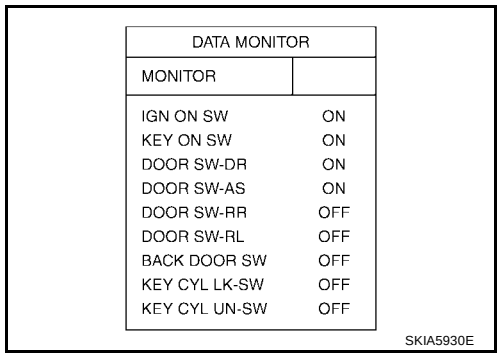
NG >> Repair harness or connector between BCM and room/map lamp or between room/map lamp and lamps on demand switch.

Personal Lamp Control Does Not Operate (Room/Map Lamps Operate)

EKS005OU

1. CHECK EACH DOOR SWITCH

Select “BCM” on CONSULT-II. With “INT LAMP” data monitor, make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-130, "SWITCH OPERATION" for switches and their function.



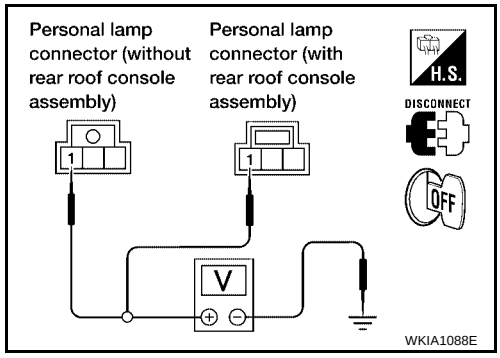
OK or NG

OK >> GO TO 2.
NG >> Inspect malfunctioning door switch.

2. CHECK PERSONAL LAMP OUTPUT

1. Turn ignition switch OFF.
2. Confirm lamps on demand switch is in the "DOOR" position.
3. Disconnect personal lamp connector.
4. Open any door.
5. Check voltage between personal lamp harness connector terminal 1 (R/G) and ground.

Battery voltage should exist.



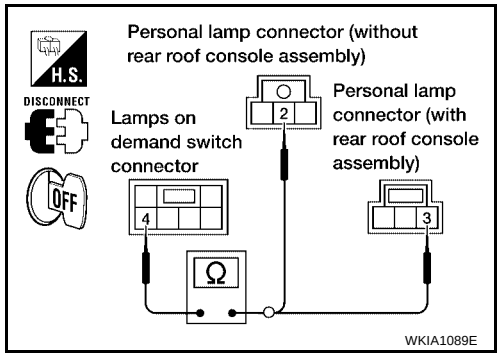
OK or NG

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

3. CHECK PERSONAL LAMP CONTROL CIRCUIT

1. Disconnect lamps on demand switch connector.
2. Check continuity between lamps on demand switch harness connector M108 terminal 4 (LG) and personal lamp harness connector terminal 2 (LG) (without rear roof console assembly) or terminal 3 (LG) (with rear roof console assembly).

Continuity should exist.



OK or NG

OK >> Replace personal lamp.
NG >> Repair harness or connector.

Ignition Keyhole Illumination Control Does Not Operate

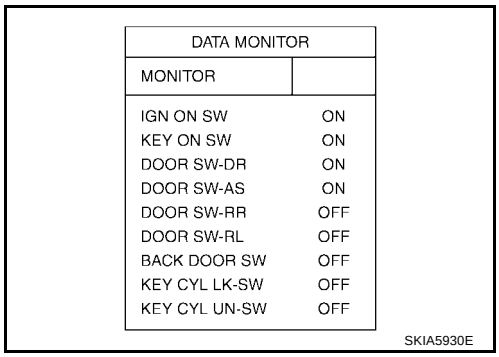
EKS005OV

1. CHECK EACH SWITCH

Select “BCM” on CONSULT-II. With “INT LAMP” data monitor, make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-146, "Display Item List" for switches and their functions.

OK or NG

OK >> GO TO 2.
NG >> Inspect malfunctioning switch system.

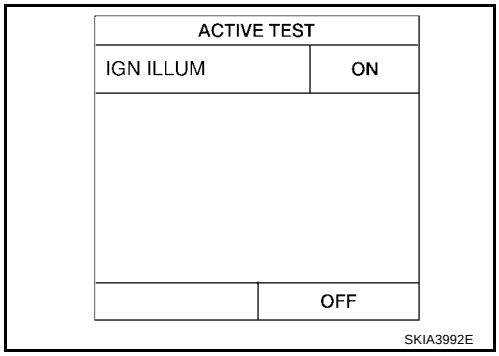


2. ACTIVE TEST

1. Select “BCM” on CONSULT-II. Select “INT LAMP”.
2. Select “IGN ILLUM” active test to make sure lamp operates.

OK or NG

OK >> Replace BCM.
NG >> GO TO 3.



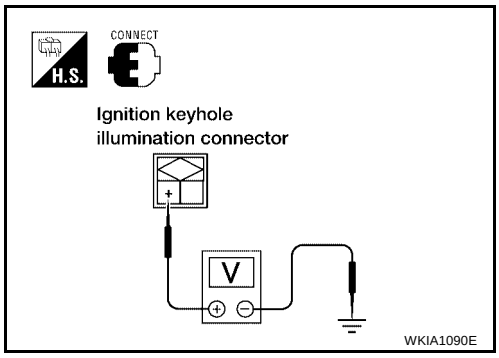
3. CHECK IGNITION KEYHOLE ILLUMINATION INPUT

1. Check voltage between ignition keyhole illumination harness connector M25 terminal + (R/G) and ground.

Battery voltage should exist.

OK or NG

OK >> GO TO 4.
NG >> GO TO 6.



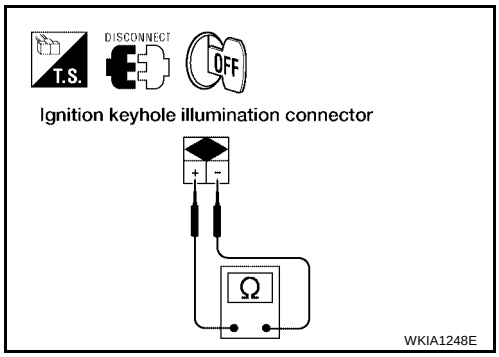
4. CHECK IGNITION KEYHOLE ILLUMINATION BULB

1. Disconnect ignition keyhole illumination connector.
2. Check continuity between ignition keyhole illumination terminals + and –.

Continuity should exist.

OK or NG

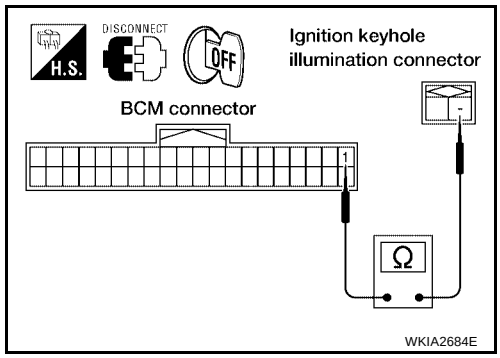
OK >> GO TO 5.
NG >> Replace ignition keyhole illumination bulb.



5. CHECK IGNITION KEYHOLE ILLUMINATION CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M18 terminal 1 (BR/W) and ignition keyhole illumination harness connector M25 terminal – (BR/W).

Continuity should exist.



OK or NG

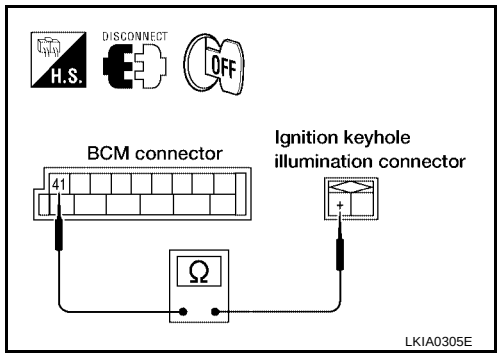
OK >> Replace BCM if ignition keyhole illumination does not work after setting the connector again. Refer to BCS-19, "Removal and Installation of BCM" .

NG >> Repair harness or connector.

6. CHECK IGNITION KEYHOLE ILLUMINATION CIRCUIT

1. Disconnect BCM connector and ignition keyhole illumination connector.
2. Check continuity between BCM harness connector M19 terminal 41 (R/G) and ignition keyhole illumination harness connector M25 terminal + (R/G).

Continuity should exist.



OK or NG

OK >> Replace BCM if ignition keyhole illumination does not work after setting the connector again. Refer to BCS-19, "Removal and Installation of BCM" .

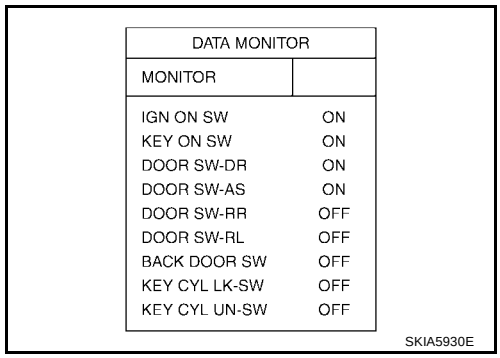
NG >> Repair harness or connector.

All Step/Foot/Puddle Lamps Do Not Operate

EKS005OW

1. CHECK EACH DOOR SWITCH

Select “BCM” on CONSULT-II. With “INT LAMP” data monitor, make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-146, "Display Item List" for switches and their functions.



OK or NG

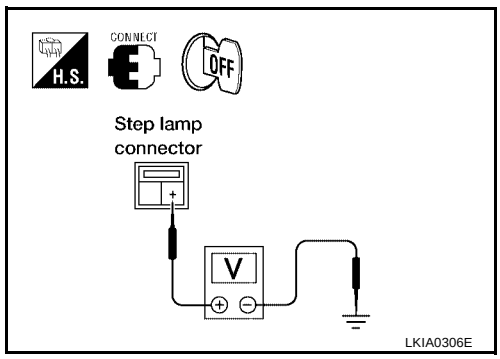
OK >> GO TO 2.

NG >> Inspect malfunctioning switch system.

2. CHECK STEP LAMP POWER SUPPLY

1. Turn ignition switch OFF.
2. Check voltage between front step lamp LH harness connector D11 terminal + (R/G) and ground.

Battery voltage should exist.



OK or NG

OK >> GO TO 3.

NG >> GO TO 4.

3. CHECK STEP LAMP CONTROL CIRCUIT

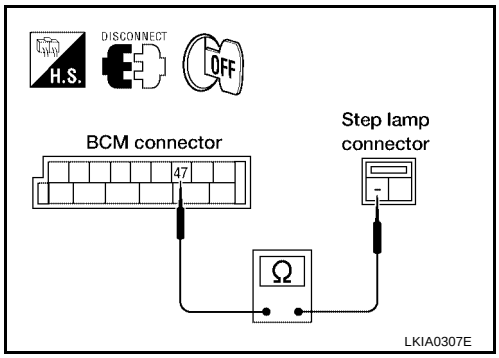
1. Disconnect BCM connector and front step lamp LH connector.
2. Check continuity between BCM harness connector M19 terminal 47 (R/W) and front step lamp LH harness connector D11 terminal – (R/W).

Continuity should exist.

OK or NG

OK >> Replace BCM if step lamp does not work after setting the connector again. Refer to BCS-19, "Removal and Installation of BCM" .

NG >> Repair harness or connector.



4. CHECK STEP LAMP CIRCUIT

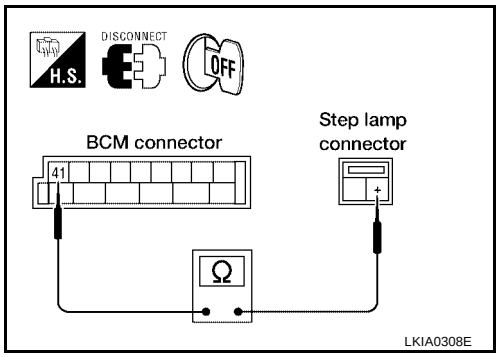
1. Disconnect BCM connector and step lamp LH connector.
2. Check continuity between BCM harness connector M19 terminal 41 (R/G) and front step lamp LH harness connector D11 terminal + (R/G).

Continuity should exist.

OK or NG

OK >> Replace BCM if step lamp does not work after setting the connector again. Refer to BCS-19, "Removal and Installation of BCM" .

NG >> Repair harness or connector.



All Interior Room Lamps Do Not Operate

EKS005OY

1. CHECK POWER SUPPLY CIRCUIT

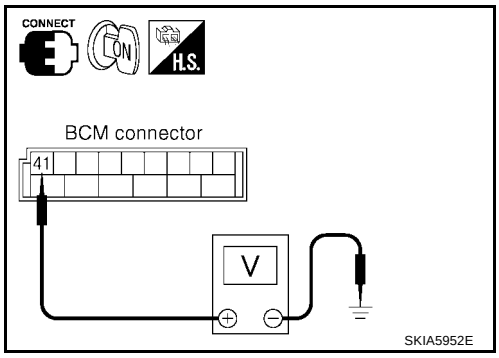
1. All interior room lamps switch are OFF.
2. Turn ignition switch ON.
3. Check voltage between BCM harness connector M19 terminal 41 (R/G) and ground.

Battery voltage should exist.

OK or NG

OK >> Repair harness or connector. In a case of making a short circuit, be sure to disconnect battery negative cable after repairing harness, and then reconnect.

NG >> Replace BCM. Refer to BCS-19, "Removal and Installation of BCM" .

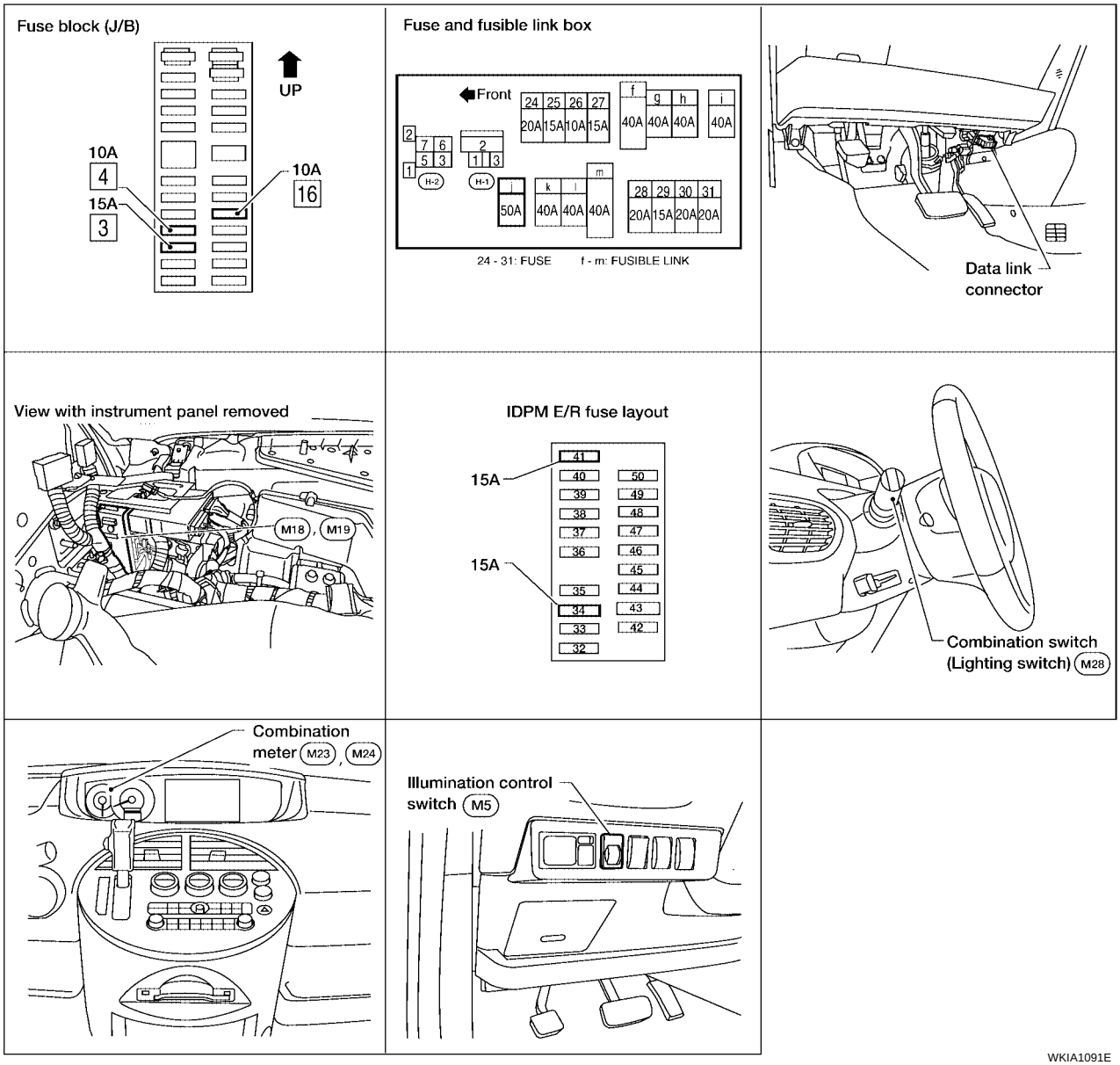


ILLUMINATION

PFP:27545

Component Parts and Harness Connector Location

EKS005OZ



WKIA1091E

System Description

EKS005P0

Control of the illumination lamps operation is dependent upon the position of the lighting switch (combination switch). When the lighting switch is placed in the 1ST or 2ND position (or if the auto light system is activated) the BCM (body control module) receives input signal requesting the illumination lamps to illuminate. This input signal is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The CPU (central processing unit) of the IPDM E/R controls the tail lamp relay coil. This relay, when energized, directs power to the illumination lamps, which then illuminate.

Power is supplied at all times

- through 15A fuse (No. 41, located in the IPDM E/R)
- to tail lamp relay, located in the IPDM E/R, and
- through 50A fusible link (letter **j** , located in the fuse and fusible link box)
- to BCM terminal 55, and
- through 15A fuse [No. 3 located in fuse block (J/B)]
- to BCM terminal 42, and
- through 15A fuse [No. 34 located in the IPDM E/R]

- to CPU of the IPDM E/R, and
- through 10A fuse [No.19 located in fuse block (J/B)]
- to combination meter terminal 31, and
- to ignition relay, located in the IPDM E/R, and
- through BCM terminal 54
- to power window and door lock/unlock switch RH terminal 10, and
- through BCM terminal 53
- to main power window and door lock/unlock switch terminal 10.

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

- through 10A fuse [No. 16, located in the fuse block (J/B)]
- to BCM terminal 38, and
- to ignition relay, located in the IPDM E/R, and
- through 10A fuse [No. 14 located in the fuse block (J/B)]
- to combination meter terminal 30.

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

- through 10A fuse [No. 4, located in the fuse block (J/B)]
- to BCM terminal 11.

Ground is supplied

- to BCM terminal 49 (early production) and 52 and
- to combination meter terminal 32
- through grounds M57, M61 and M79, and
- to IPDM E/R terminals 38 and 60
- through grounds E9, E15 and E24.

ILLUMINATION OPERATION BY LIGHTING SWITCH

With the lighting switch in the 1ST or 2ND position (or if the auto light system is activated), the BCM receives input signal requesting the illumination lamps to illuminate. This input signal is communicated to the IPDM E/R across the CAN communication lines. The CPU of the IPDM E/R controls the tail lamp relay coil, which, when energized, directs power

- through IPDM E/R terminal 22
- to illumination control switch terminal 1
- to glove box lamp terminal +
- to A/T device (illumination) terminal 3
- to TCS OFF switch (illumination) terminal 3 (without VDC)
- to VDC OFF switch (illumination) terminal 3 (with VDC)
- to hazard switch (illumination) terminal 3
- to AV switch (illumination) terminal 3
- to audio unit terminal 8
- to rear sonar system OFF switch terminal 5 (with rear sonar system)
- to lamps on demand switch terminal 5
- to display unit terminal 4 (without NAVI)
- to display control unit terminal 14 (with NAVI)
- to front air control terminal 23
- to NAVI control unit terminal 25 (with NAVI)
- to DVD player terminal 12 (with DVD entertainment system)
- to automatic door main switch terminal 5 (with power sliding door)
- to rear audio remote control unit terminal 6 (with rear audio remote control unit) and
- to rear air control terminal 1.

Illumination is controlled

- through illumination control switch terminal 2

- to A/T device terminal 4
- to TCS OFF switch terminal 4 (without VDC)
- to VDC OFF switch terminal 4 (with VDC)
- to audio unit terminal 7
- to hazard switch terminal 4
- to AV switch terminal 4
- to rear sonar system OFF switch terminal 4 (with rear sonar system)
- to lamps on demand switch terminal 6
- to front air control terminal 24 and
- to DVD player terminal 10 (with DVD entertainment system)
- to automatic door main switch terminal 7 (with power sliding door)
- to combination meter terminal 10.

Ground is supplied

- to illumination control switch terminal 3
- to glove box lamp terminal –
- to display unit terminal 6 (without NAVI)
- to display control unit terminal 3 (with NAVI)
- to main power window and door lock/unlock switch terminal 17 (with rear power vent windows) or terminal 15 (without rear power vent windows) and
- to power window and door lock/unlock switch RH terminal 11
- through grounds M57, M61 and M79, and
- to rear audio remote control unit terminal 15 (with rear audio remote control unit)
- through grounds B7 and B19, and
- to NAVI control unit terminal 30 (with NAVI) and
- to rear air control terminal 3
- through grounds B117 and B132.

With power and ground supplied, illumination lamps illuminate.

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 1ST or 2ND position (or if auto light system is activated), and the ignition switch is turned from ON or ACC to OFF, the battery saver control function is activated. Under this condition, the illumination lamps remain illuminated for 5 minutes, then the illumination lamps are turned off.
When the lighting switch is turned from OFF to 1ST or 2ND position (or if auto light system is activated) after illumination lamps are turned off by the battery saver control, the illumination lamps illuminate again.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

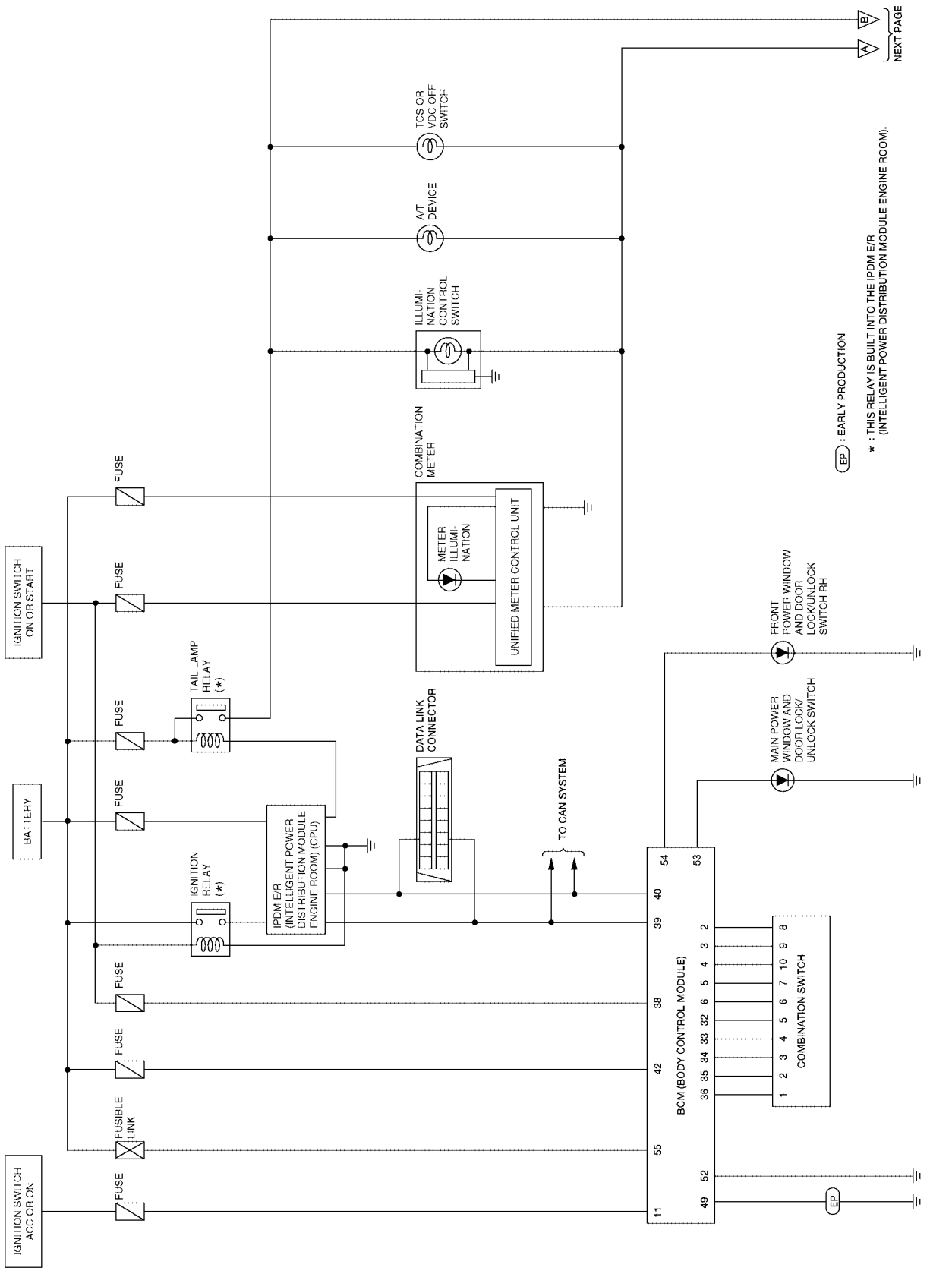
CAN Communication System Description

EKS005P1

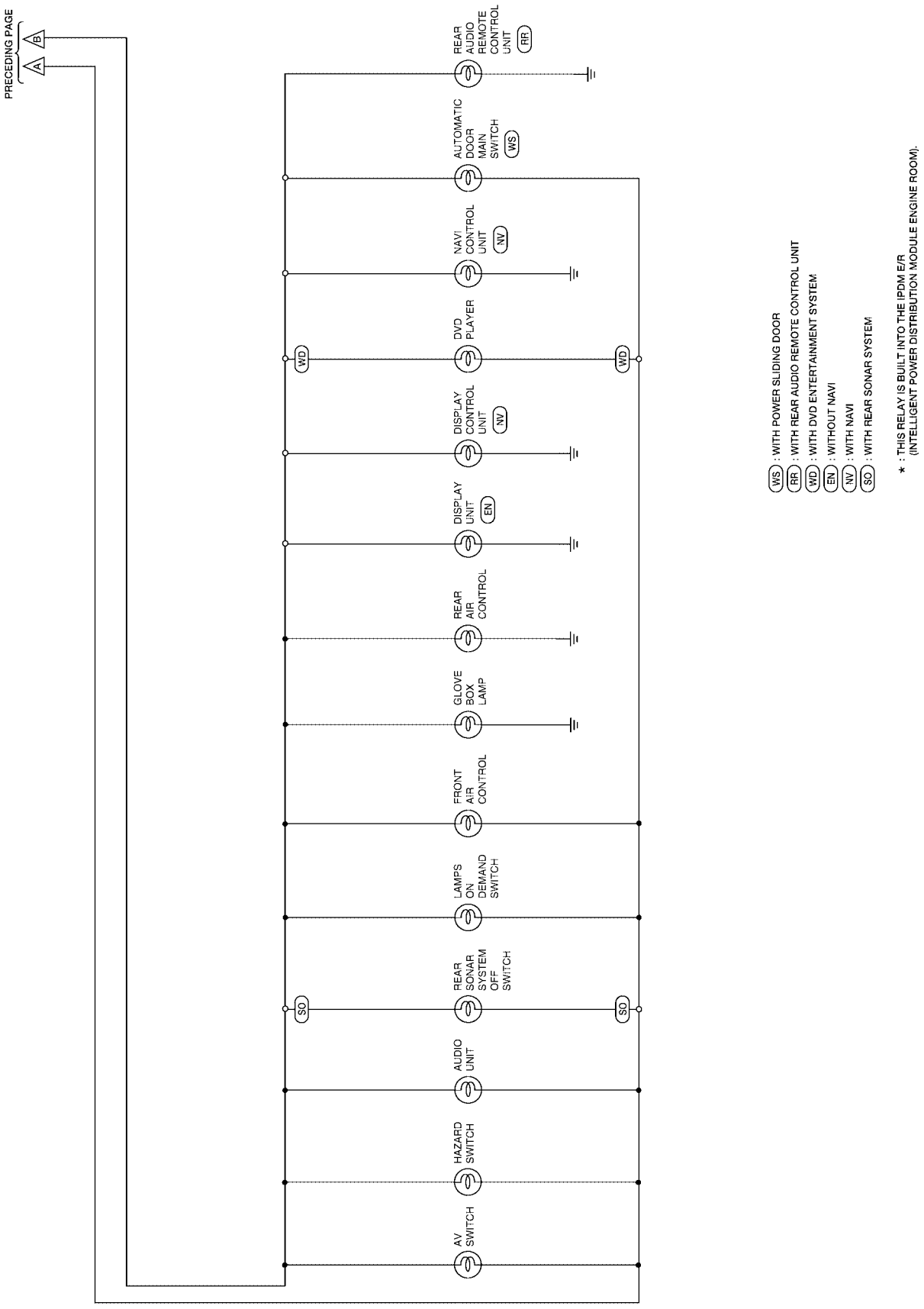
Refer to LAN-6, "CAN COMMUNICATION" .

Schematic

EKS005P2



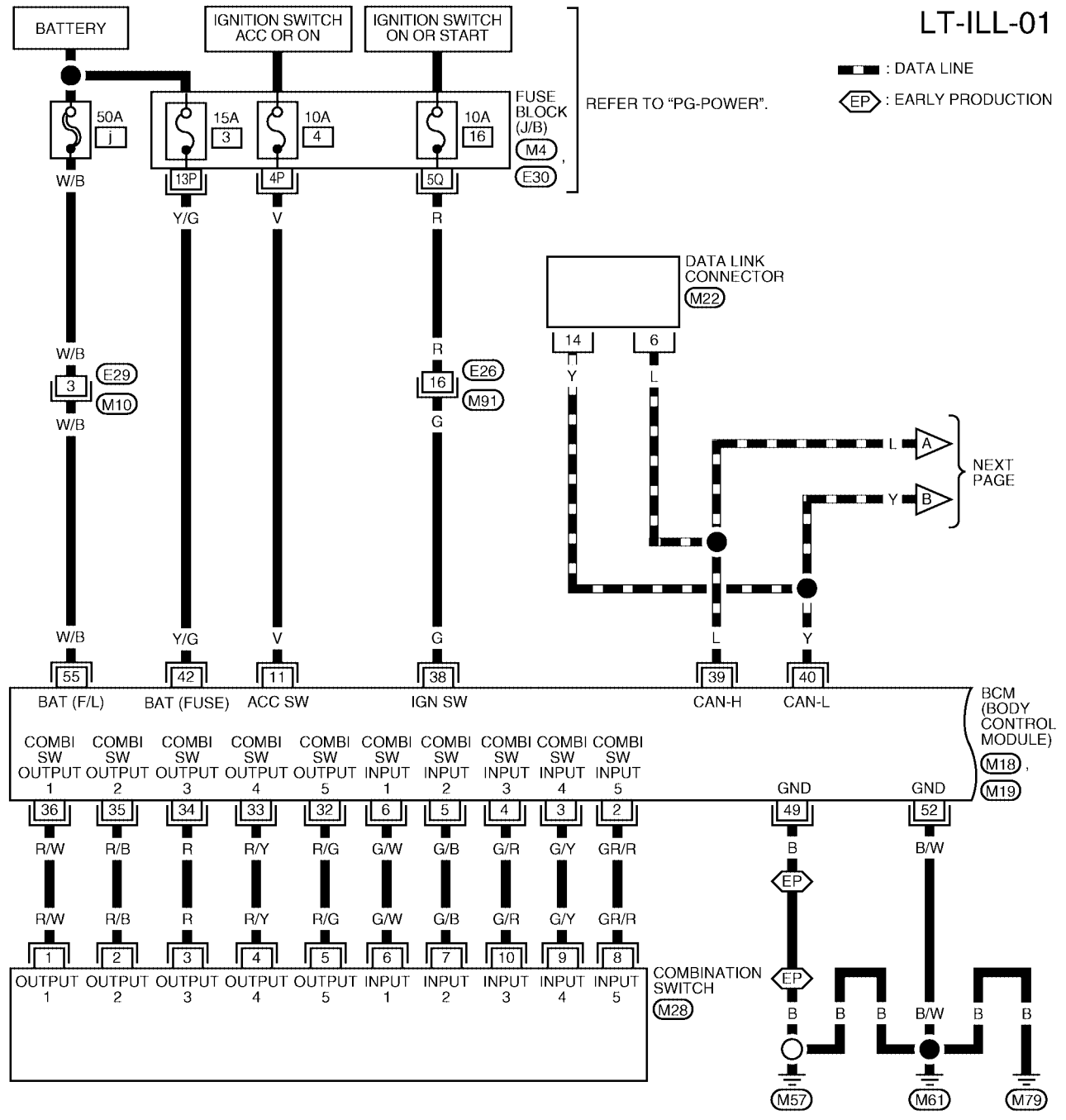
WKWA1701E

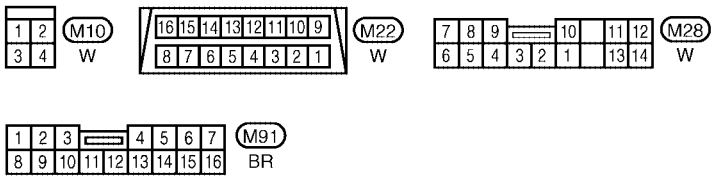

PRECEDING PAGE
A
B
REAR AUDIO REMOTE CONTROL UNIT (RR)
AUTOMATIC DOOR MAIN SWITCH (WS)
NAVI CONTROL UNIT (NV)
DVD PLAYER (WD)
DISPLAY CONTROL UNIT (NV)
DISPLAY UNIT (EN)
REAR AIR CONTROL
GLOVE BOX LAMP
FRONT AIR CONTROL
LAMPS ON DEMAND SWITCH
REAR SONAR SYSTEM OFF SWITCH (SO)
AUDIO UNIT
HAZARD SWITCH
AV SWITCH
(WS) : WITH POWER SLIDING DOOR
(RR) : WITH REAR AUDIO REMOTE CONTROL UNIT
(WD) : WITH DVD ENTERTAINMENT SYSTEM
(EN) : WITHOUT NAVI
(NV) : WITH NAVI
(SO) : WITH REAR SONAR SYSTEM
* : THIS RELAY IS BUILT INTO THE IPDM E/R
(INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM).

WKWA0633E

Wiring Diagram — ILL —

EKS005P3

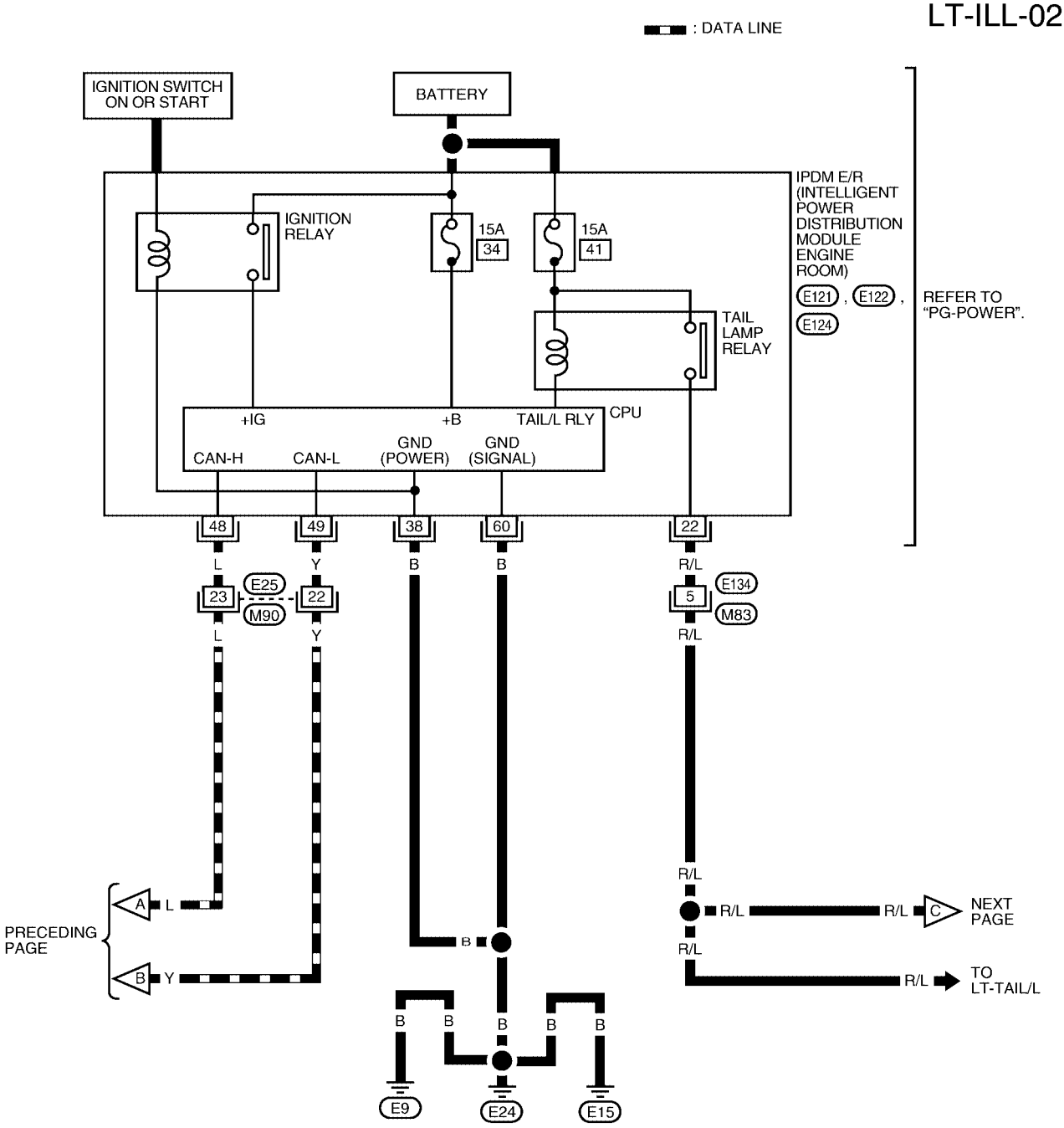


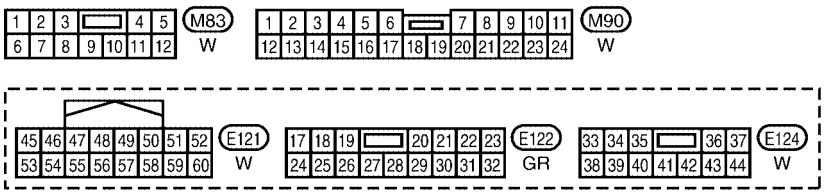


REFER TO THE FOLLOWING.
M4, E30 - FUSE BLOCK-JUNCTION BOX (J/B)
M18, M19 - ELECTRICAL UNITS

WKWA1429E

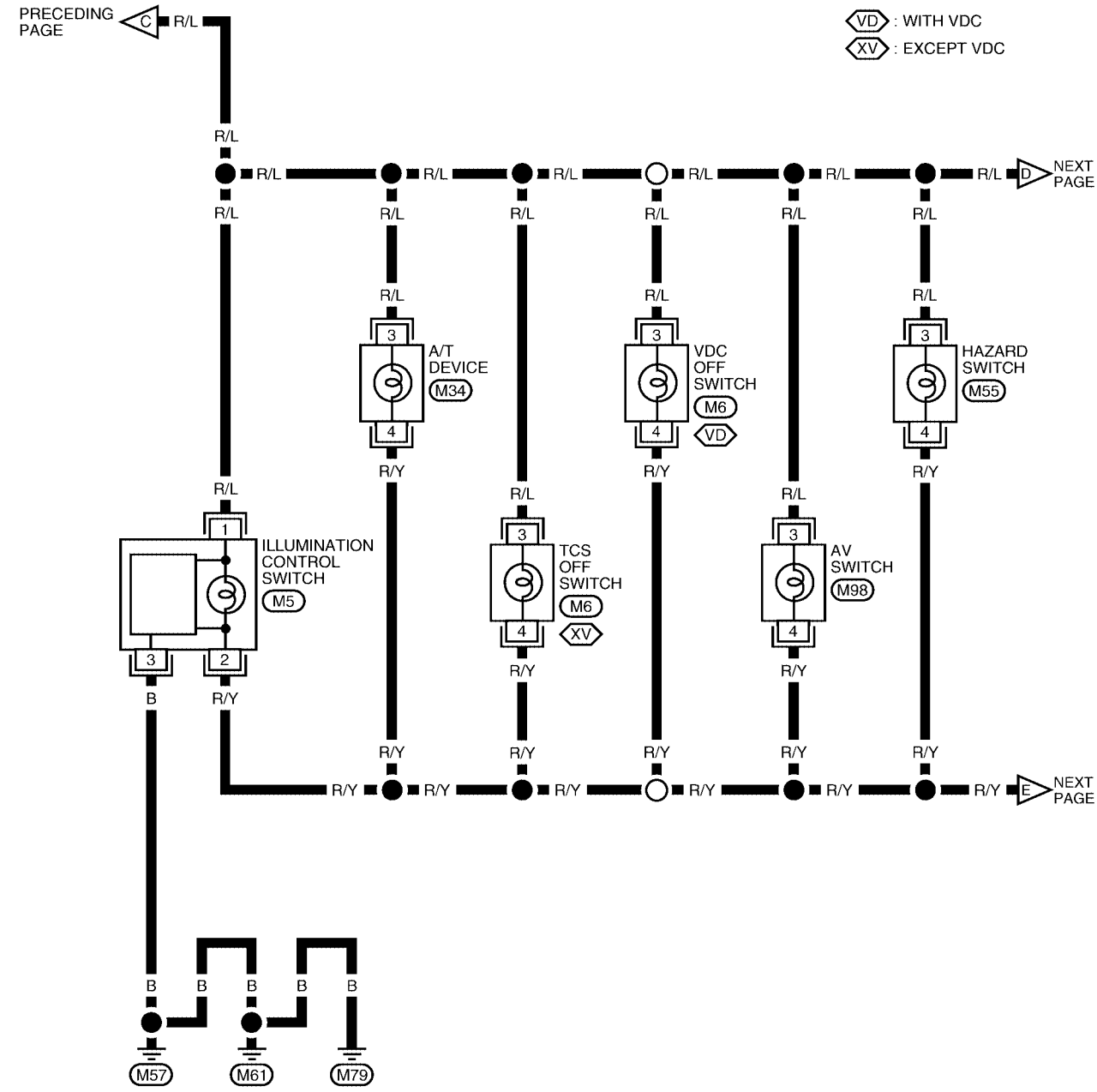
LT-ILL-02

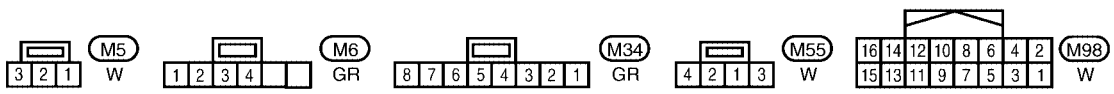




WKWA0575E

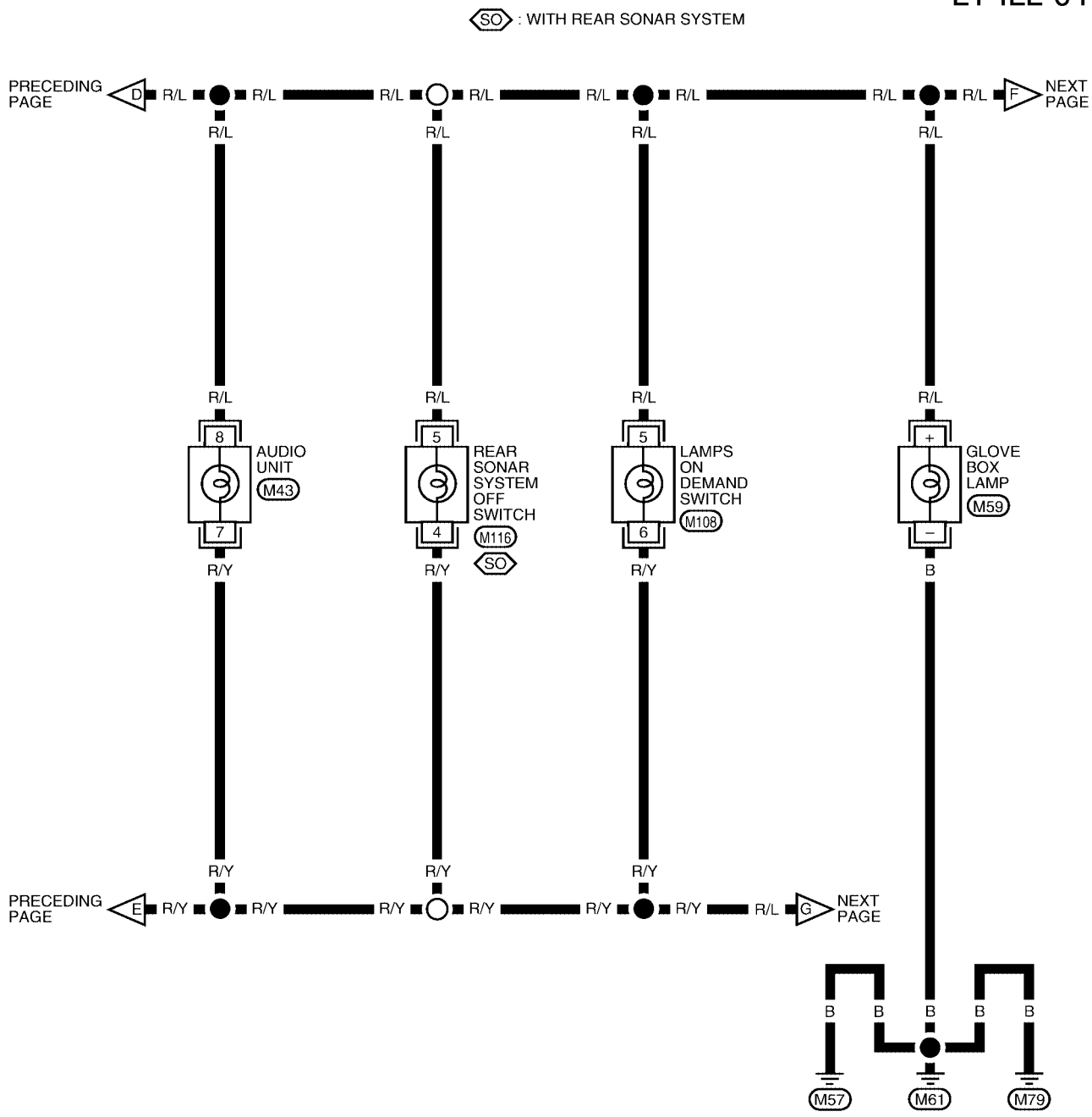
LT-ILL-03

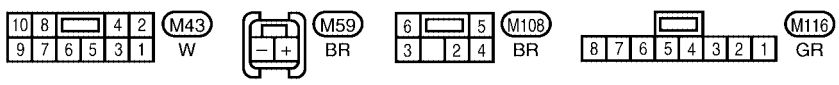




WKWA0576E

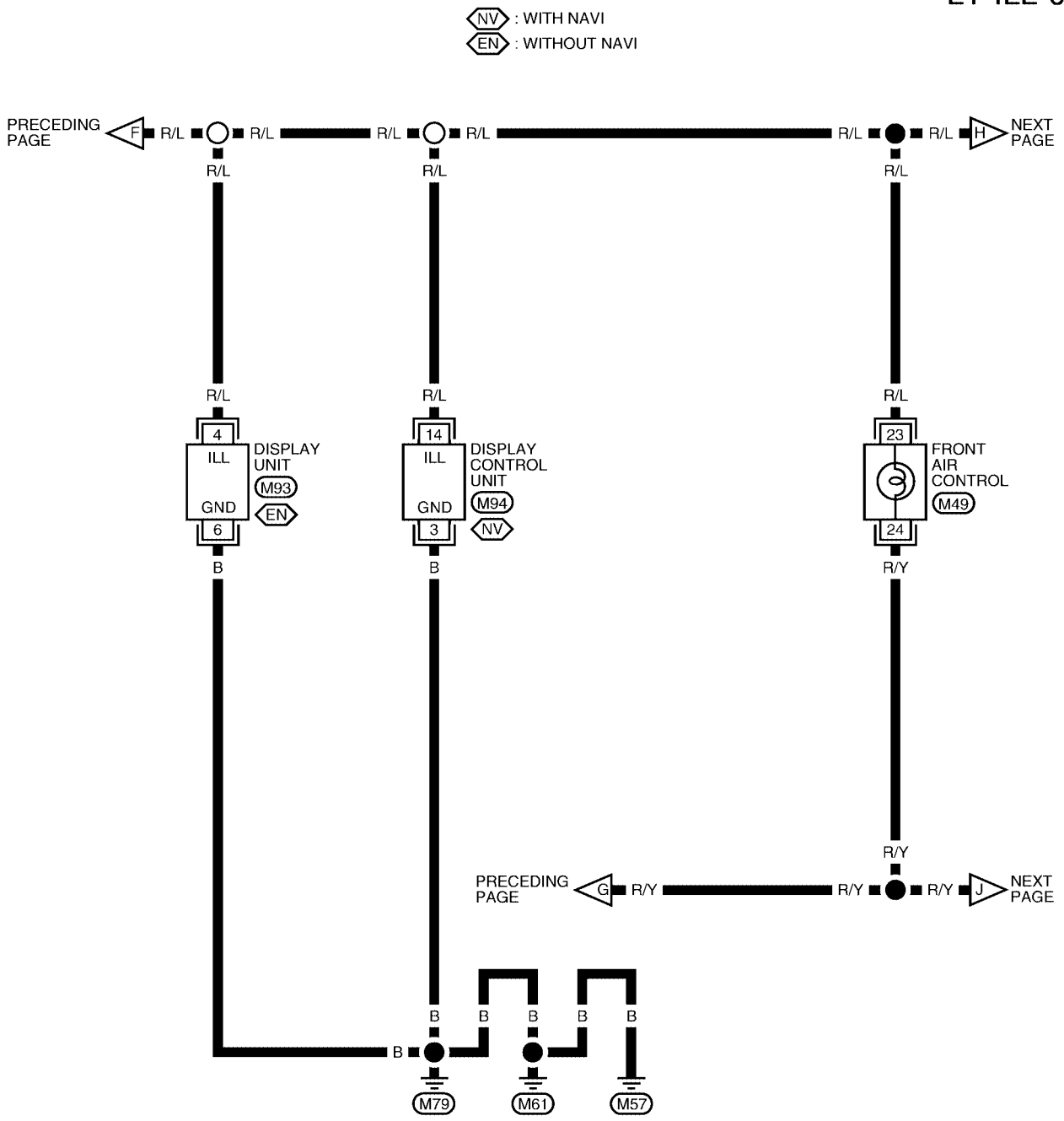
LT-ILL-04

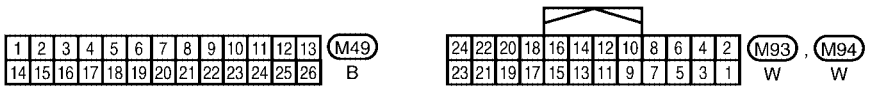




WKWA0577E

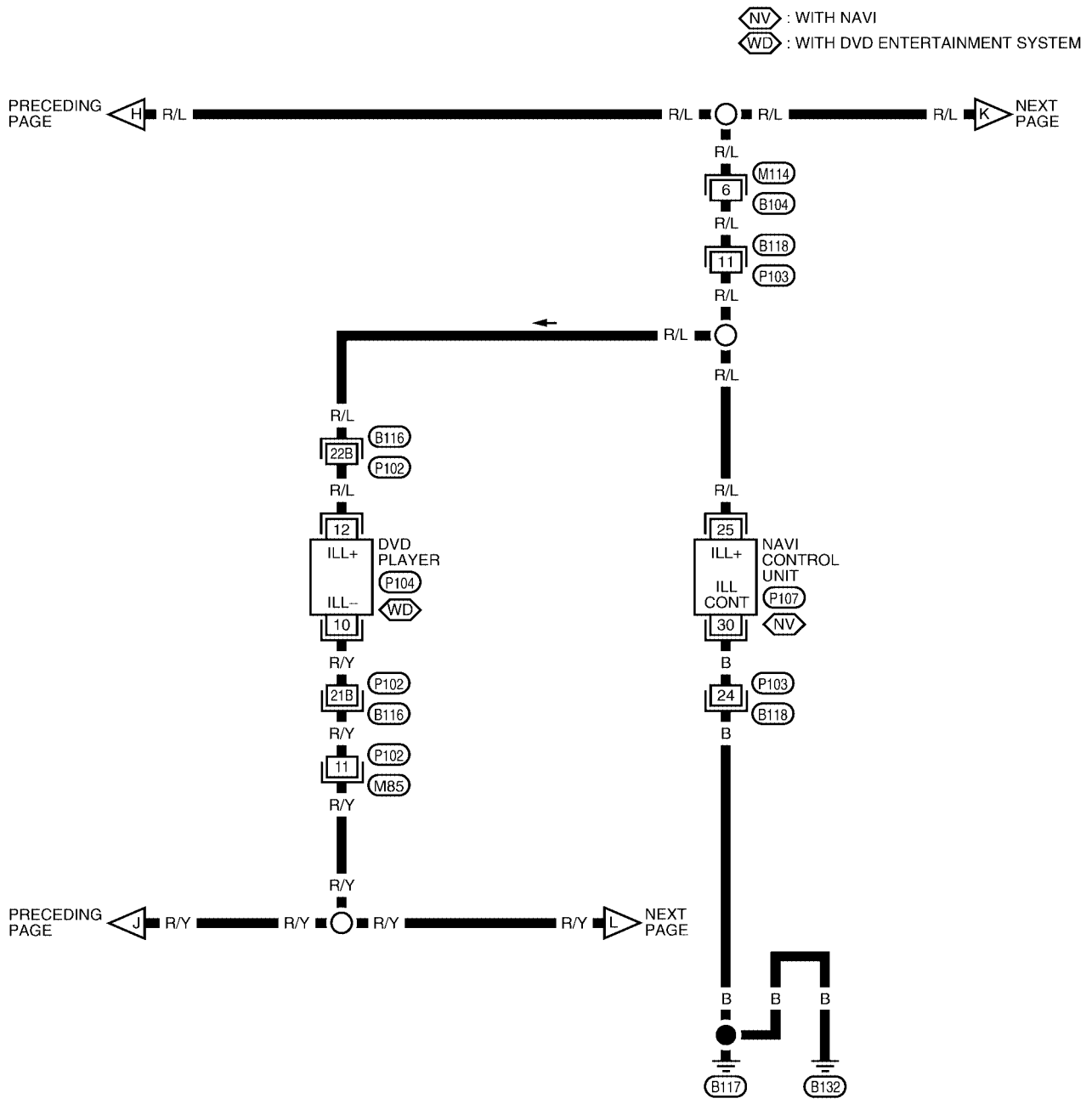
LT-ILL-05

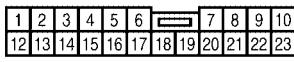


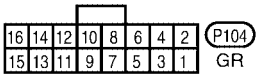


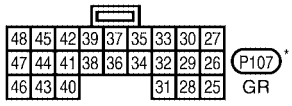
WKWA0578E

LT-ILL-06









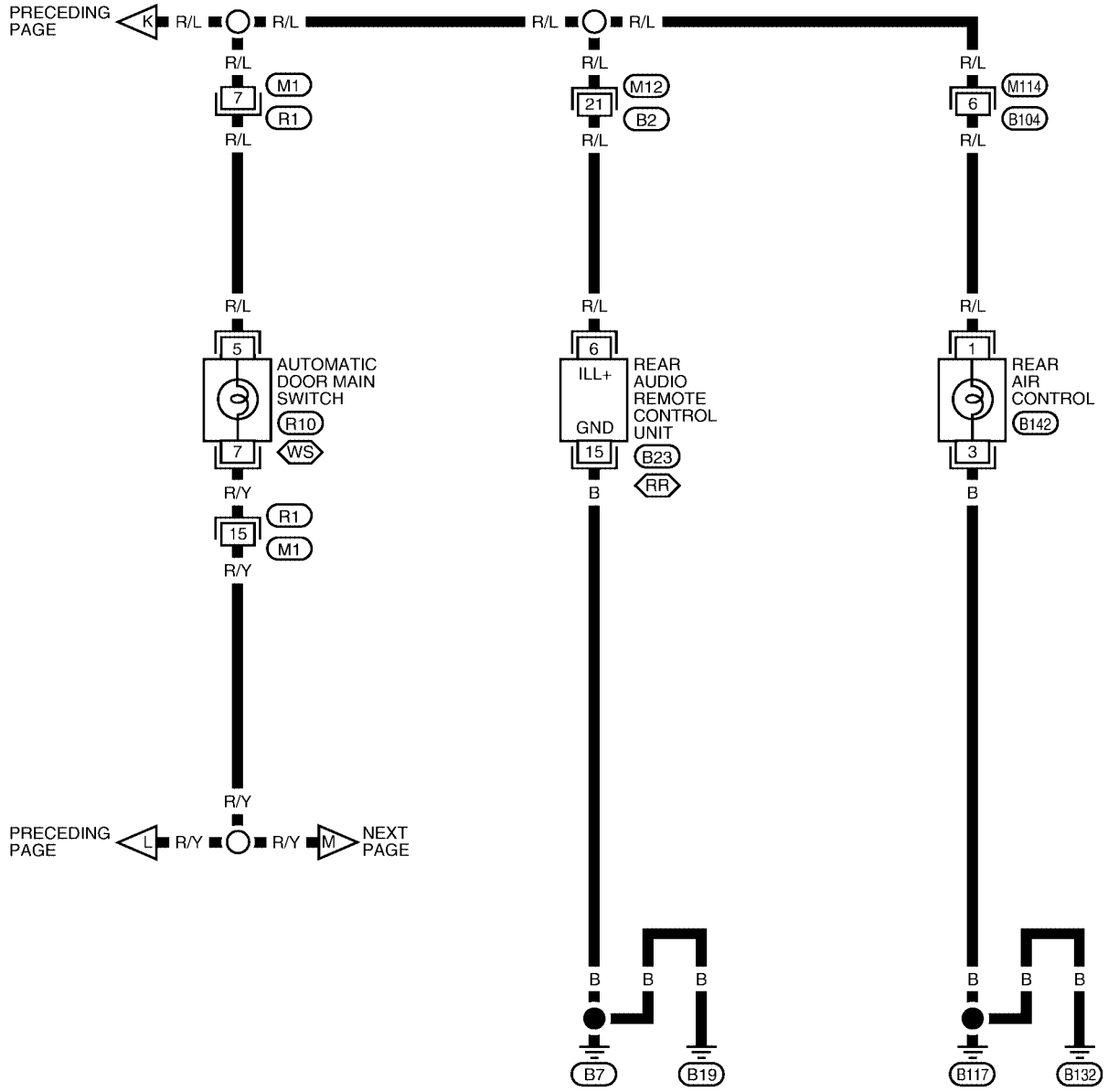
REFER TO THE FOLLOWING.
B116 - SUPER MULTIPLE JUNCTION (SMJ)

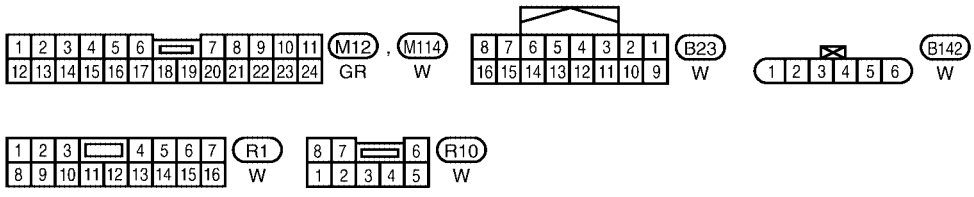
* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" IN PG SECTION.

WKWA0579E

LT-ILL-07

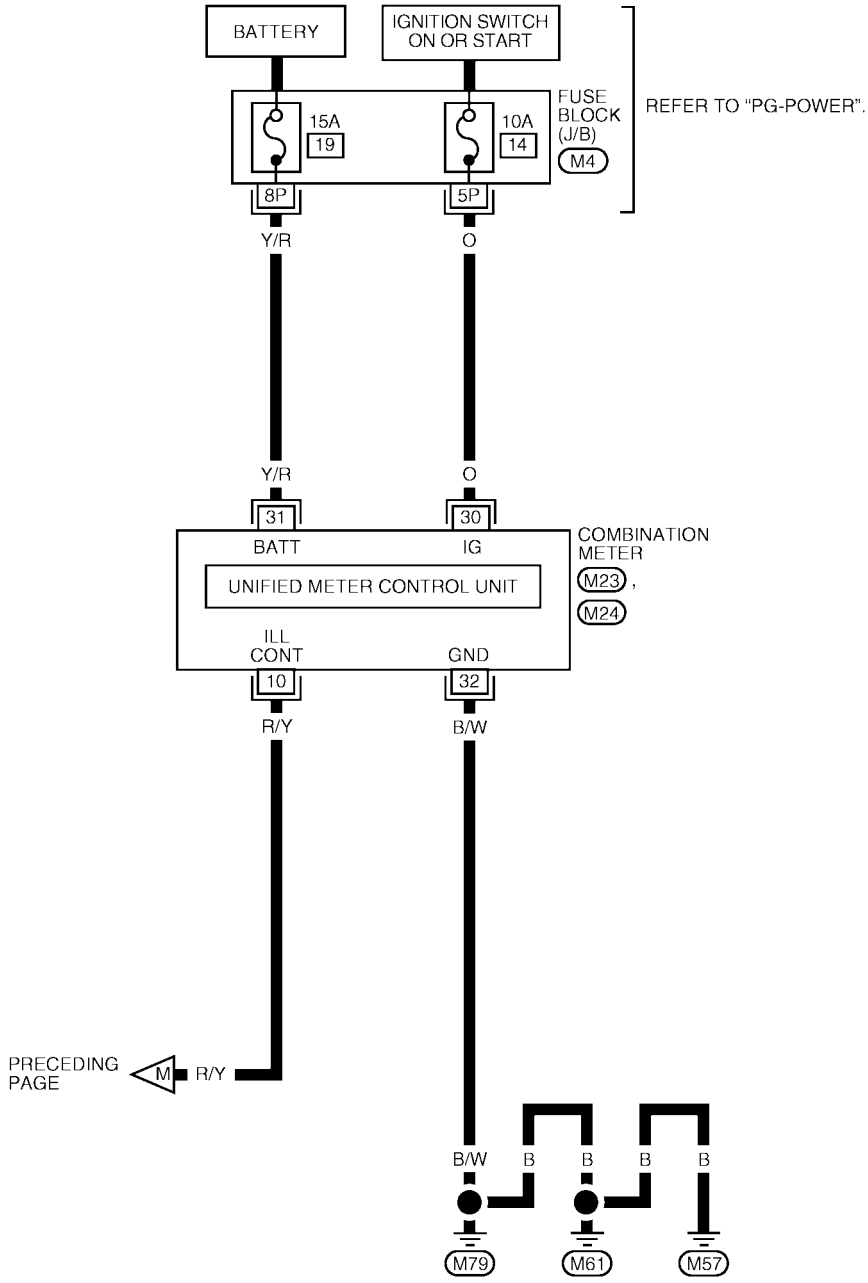
WS : WITH POWER SLIDING DOOR
RR : WITH REAR AUDIO REMOTE CONTROL UNIT

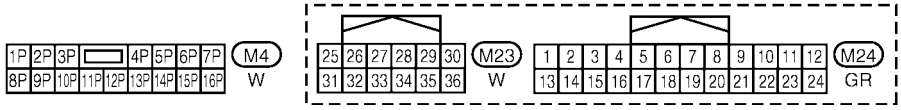




WKWA0580E

LT-ILL-08

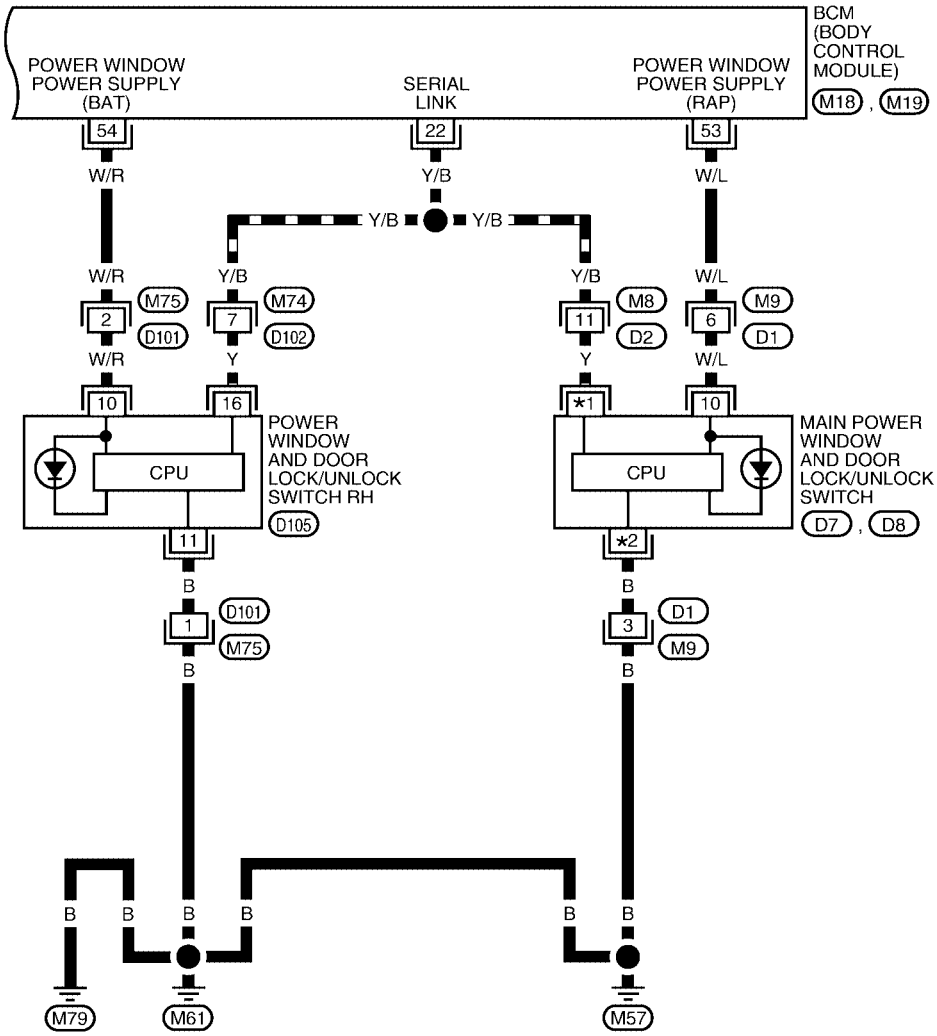


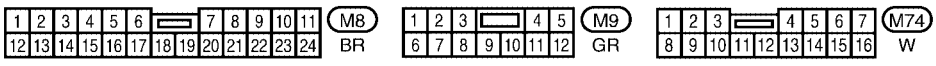


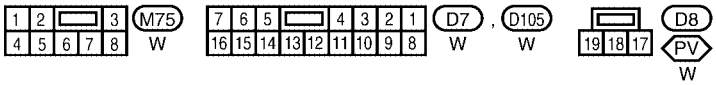
WKWA0581E

LT-ILL-09

: DATA LINE
PV : WITH REAR POWER VENTWINDOWS
OP : WITHOUT REAR POWER VENT WINDOWS
*1 PV : 14, OP : 12
*2 PV : 17, OP : 15







REFER TO THE FOLLOWING.
M18, M19 - ELECTRICAL UNITS

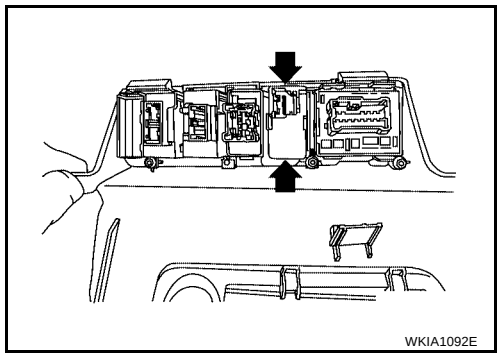
WKWA0582E

Removal and Installation

EKS005P4

ILLUMINATION CONTROL SWITCH

1. Remove lower driver instrument panel. Refer to IP-12, "Instrument Lower Panel LH" .
2. Carefully lift tabs and pull illumination control switch out of lower driver instrument panel.
3. Installation is the reverse order of removal.



BULB SPECIFICATIONS

PFP:26297

Headlamp

EKS00670

Item	Wattage (W)*
Low	51 (HB4)
High	60 (HB3)

*: Always check with the Parts Department for the latest parts information.

Exterior Lamp

EKS00671

Item		Wattage (W)*
Front combination lamp	Turn signal lamp/parking lamp	29/8
	Cornering lamp	27
Rear combination lamp	Stop/Tail lamp	27/7
	Turn signal lamp	27
	Back-up lamp	18
Fog lamp		55 (H11)
License plate lamp		5
High-mounted stop lamp		13

*: Always check with the Parts Department for the latest parts information.

Interior Lamp/Illumination

EKS00672

Item	Wattage (W)*
Glove box lamp	3.4
Ignition keyhole illumination lamp	0.74
Room/Map lamp	8
A/T device lamp	3
Foot lamp	3.4
Step lamp	3.8
Cargo lamp	7
Vanity mirror lamp	1.32
Personal lamp (with rear roof console assembly)	8
Personal lamp (without rear roof console assembly)	8
Puddle lamp	8
Running board lamp	3.4

*: Always check with the Parts Department for the latest parts information.